Operation and Monitoring Report

June 2021 to May 2022

City of North Tonawanda

30 June 2022, Revised 13 October 2022

→ The Power of Commitment

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1. Introduction

This report is the 21st annual Operation and Monitoring Report (O&M Report) for the remedial actions constructed at the Gratwick-Riverside Park Site (Site) located in North Tonawanda, New York. This report covers the period from June 2021 to May 2022 and was prepared pursuant to Section 7.0 of the report entitled "Operation and Maintenance Manual" (O&M Manual) dated March 2002 (revised January 2004, May 2009, and June 2014). It is noted that New York State Department of Environmental Conservation (NYSDEC) approval for the O&M Manual was given on April 20, 2005. All O&M activities have been performed in accordance with the methods and frequencies specified in the O&M Manual and as modified in previous annual reports and approved by NYSDEC. In accordance with the approved monitoring changes, the groundwater is monitored annually in six wells and an additional six wells are monitored once every 2 years as of May 2013. The surface water quality of the Niagara River adjacent to the Site is not impacted by the Site and is no longer monitored. A draft revised O&M Manual was submitted to NYSDEC on May 4, 2022. The collected groundwater that is discharged from the Site is monitored semi-annually in accordance with the City of North Tonawanda Wastewater Discharge Permit (effective March 1, 2022). A copy of the permit is included in Appendix A.

2. Groundwater Withdrawal System (GWS)

Full-time operation of the Groundwater Withdrawal System (GWS) at the Site started on May 4, 2001. The objectives of the GWS are to:

i.) Achieve and maintain an inward gradient from the Niagara River toward the GWS.

ii.) Achieve and maintain an upward gradient from the fill alluvium layer beneath the GWS.

In order to determine whether the objectives are being met, hydraulic and chemical monitoring programs have been developed. These programs include Site groundwater and GWS effluent monitoring. The wells, manholes, wet wells, and storm sewer outfalls that comprise the monitoring network are shown on Figure 2.1. The monitoring programs are described in the following subsections.

2.1 Hydraulic Monitoring

Hydraulic monitoring consists of the collection of water levels in monitoring wells and manholes and River water levels at the storm sewer outfalls. These data used to determine the vertical and horizontal gradients for the groundwater.

The water levels in four GWS manholes and in the River were monitored to confirm that an inward gradient exists. The water levels in five GWS manholes and in four monitoring wells installed near the GWS alignment in the materials directly overlying the confining unit were monitored to confirm that an upward gradient exists. The specific manholes and monitoring wells used to determine the horizontal and vertical gradients are listed in Table 2.1.

Groundwater elevations are measured on a monthly basis. The measured water levels for the time period June 2013 through May 2022 are provided in Table 2.2. Hydrographs for the locations monitored are presented in Appendix B. The horizontal and vertical gradients for this reporting period are provided in Tables 2.3 and 2.4, respectively. The water levels and horizontal and vertical gradients to May 2012 were previously provided and thus are not provided in this report.

The results for the horizontal gradient evaluation show that:

i.) Inward horizontal gradients were achieved by May 11, 2001, within 1 week of the start of pumping the GWS.

ii.) The inward gradients were maintained for the next 14 years (into 2015) except for a few locations in isolated areas of the GWS.

Since 2015, there have been three exceptions as follows:

i.) the area of River North/MH-2 (November 2015 through June 2020)

ii.) the area of River Middle/MH-8 (March 016 through August 2020)

iii.) the area of River South/MH-12 (December 2019 through March 2020)

As indicated in previous Operation & Maintenance Reports, short periods of outward gradient (even 365 days) do not adversely affect the effectiveness of the remedy because:

i.) The outward gradients occurred over only a portion of the barrier wall.

ii.) The 36-inch barrier wall is 6 inches thicker than the design thickness thereby providing extra protection.

iii.) Any outward migration of Site groundwater into the barrier wall during the periods of outward gradient is more than offset by the inward migration of river water into the barrier wall during the long periods of inward gradient.

iv.) Since 2015, the groundwater level on the upgradient side of the barrier wall was never higher than the elevation of the top of the barrier wall (i.e., 568.5 ft amsl) except in the immediate vicinity of MH-2 in April 2018, April through June 2019, and from December 2019 through May 2020; at MH-14 from July through August 2016, May 2019, and January through March 2020; and at MH-16 from January through May 2020 and July 2021, when water levels during these months ranged between 568.52 to 568.90 ft amsl. However, the water elevation decreased in MH-2 below the top elevation of the barrier wall to 566.9 ft amsl or lower following cleaning of this section of collection pipe on June 18, 2020 (see Section 2.5). Thus, no significant overtopping occurred except for short sections of the barrier wall.

As outward gradients have in some places persisted for several years, investigations were conducted in 2020 into the causes and potential remedies of high water levels present in the inward wells. As a result, between June and December 2020, cleaning of the GWS collection pipe and forcemain was performed. Further details are provided in Section 2.5. These activities have restored inward gradients at all locations; River North/MH-2 as of July 2020, River Middle/MH-8 as of September 2020, and River South/MH 12 as of May 2020.

The results for the horizontal gradient evaluation showed that the horizontal gradients during the June 2021 through May 2022 reporting period were continually inward for all four monitoring locations, with the exception of River South/MH-12 in March 2022. However, this gradient was very minor (0.02 feet which is within the margin of water level measurement error) and persisted for only one month.

The results for the vertical gradient evaluation showed that the vertical gradients during the June 2021 through May 2022 reporting period were continually upward for all four monitoring locations, with the exception of MW-9 in October 2021. However, this gradient persisted for only one month and was very minor.

2.2 Groundwater Quality Monitoring

Groundwater quality monitoring consists of the collection of water samples from on-Site overburden monitoring wells (OGC-1 through OGC-8 and MW-6 through MW-9) and the analysis of these samples to determine the concentrations of chemicals in the groundwater. The purpose of the groundwater quality monitoring program is to monitor the anticipated improvement in the quality of the overburden groundwater:

i.) Between the barrier wall and the River (OGC-1 through OGC-8)

ii.) In the fill/alluvium beneath the GWS (MW-6 through MW-9)

The monitoring wells designated as MWs are located on the inside of the barrier wall and monitoring wells designated OGCs are located between the barrier wall and the river.

Groundwater quality monitoring locations are presented on Figure 2.1 and the analytical parameters and frequency are listed in Table 2.5.

As approved by the NYSDEC on October 9, 2018, the current sampling frequency for May 2019 to present was:

Annual	Once Every 2 Years (Even Years)
MW-6	MW-7
MW-8	OGC-1
MW-9	OGC-2
OGC-3	OGC-4
OGC-6	OGC-5
OGC-7	OGC-8

2.2.1 Sample Results

A summary of compounds detected in the groundwater samples for this reporting period is provided in Table 2.6 and pH levels are provided in Table 2.7.

To evaluate the trends in the groundwater chemistry and evaluate the appropriate frequency of future sampling, the VOCs and SVOCs were summed and plotted on Figures 2.2 through 2.13 for each of the 12 monitoring wells included in the program. It is believed that the sum of the VOCs (i.e., TVOCs) and SVOCs (i.e., TSVOCs) best represent the trends in the groundwater chemistry.

Review of the TVOC and TSVOC concentrations for the 12 wells sampled in 2022 show the following trends:

i.) TVOCs:
- Low level (i.e., no individual parameters with concentrations greater than Class GA standards) in seven of the twelve wells.
- Relative constant concentrations with random fluctuations in MW-8, MW-9, OGC-5, OGC-6, and OGC-7.

ii.) TSVOCs:
- Low level (i.e., no individual parameters with concentrations greater than Class GA standards) in nine of the twelve wells sampled.
- Relatively constant concentrations with random fluctuations in MW-8, MW-9, and OGC-3.

All the wells had either non-detect or low level TVOC concentrations in this reporting period. With regard to TSVOC concentrations, all the wells had either non-detect or low level TSVOC concentrations in this reporting period, except for MW-8 (97 μg/L in April 2022 compared to 121.4 μg /L in April 2021), OGC-3 (48.3 μg/L in April 2022 compared to (67.9 μg/L in April 2021), and MW-9 (259.6 μg/L in April 2022 compared to 425.7 μg/L in April 2021).

In general, the number of wells with no individual compound concentrations above Class GA standards and decreasing or constant but fluctuating low level concentrations, shows that the groundwater is being remediated.

Additional description of the TVOC and TSVOC concentrations is provided in the following paragraphs.

Monitoring Wells between Barrier Wall and River

The TVOC concentrations for OGC-1 on Figure 2.6 show that the concentrations since November 2003 ranged between non-detect and 7.4 μg/L. The TSVOC concentrations since November 2003 have fluctuated between non-detect and 3 μg/L. No individual parameters were detected in the April 2022 sampling event.

The TVOC concentrations for OGC-2 on Figure 2.7 have been non-detect since May 2006. The TSVOC concentrations were all non-detect since monitoring of the remedy started except for the May 2014 sample which had a TSVOC concentration of 0.8 μg/L. No individual parameters with were detected in the April 2022 sampling event.

The TVOC concentrations for OGC-3 shown on Figure 2.8 were less than 11 μg/L between May 2009 and May 2017 with the May 2018 sample result being 24 μg/L, since decreasing since to 1.4 μg/L in 2022. The TSVOC

concentrations have decreased from 300 μg/L in November 2003 to 48 μg/L in April 2022. No parameters were detected above Class GA standards except for phenol but the concentration has been generally decreasing over time.

The TVOC concentrations for OGC-4 shown on Figure 2.9 fluctuated between non-detect and 6 μg/L for the time period from November 2002 to May 2010 and were non-detect since May 2010 until April 2022 with the exception of the May 2016 sample (3.6 μg/L). The TSVOC concentrations have fluctuated widely but have continually decreased since May 2004 with a non-detect concentrations in May 2018. The single compound responsible for the higher historic concentrations was phenol. No individual parameters with were detected in the April 2022 sampling event.

The TVOC concentrations for OGC-5 shown on Figure 2.10, ranged from non-detect to 5 μg/L since November 2003 (except for May 2008 at 5.8 μg/L and May 2018 at 9.1 μg/L). The TSVOC concentrations ranged from non-detect to 2 μg/L since February 2003. No individual parameters with concentrations greater than Class GA standards were detected in the April 2022 except for benzene (1.2 μg/L).

The TVOC concentrations for OGC-6 shown on Figure 2.11 have continually decreased from 1,650 μg/L in the May 2013 sample to 55.1 μg/L in the April 2022 sample. The TSVOC concentrations decreased from 157 μg/L in May 2008 to 3.3 μg/L in the April 2022 sample.

The TVOC concentrations for OGC-7 shown on Figure 2.12 have decreased from 60 μg/L in November 2003 to 8.71 μg/L in the April 2022 sample. The TSVOC concentrations have been less than 2 μg/L since November 2001 (April 2022 result was non-detect).

The TVOC concentrations for OGC-8 shown on Figure 2.13 decreased from 460 μg/L in May 2001 to 29 μg/L in May 2004 and have ranged from non-detect to 30 μg/L since that time (April 2022 was 11.4 μg/L). The TSVOC concentrations decreased from 139 μg/L in August 2001 to 25 μg/L in May 2003 and have remained below that concentration since that time with a slight increase in May 2020 to 36.3 μg/L. The TSVOC concentration decreased in May 2022 to 21.7/22.4 μg/L.

Monitoring Wells On-Site - Inside Barrier Wall

The TVOC concentrations for MW-6 shown on Figure 2.2 had been less than 5 μg/L since May 2007, but had increased in recent years, rising to 93.3 μg/L in 2019 and further to 104 μg/L in 2020. The TSVOC concentrations, previously low level, had increased to 5,206 μg/L in 2020, but have since decreased. No parameters were detected in 2022.

The TVOC and TSVOC concentrations for MW-7 on Figure 2.3 show that both TVOC and TSVOC have remained low level. TVOC concentrations ranged from non-detect to 4 μg/L since May 2006. TSVOC concentrations ranged from non-detect to 6 μg/L since May 2004. No parameters were detected in 2022.

The TVOC concentrations for MW-8 on Figure 2.4 show that the TVOC concentrations have decreased from 142 μg/L in May 2009 to 11.1 μg/L in April 2022. The TSVOC concentrations since May 2011 have generally been in the 70 to 100 μg/L range, except for May 2021 (121.4 μg/L). the TSVOC concentration was 97 μg/L in April 2022. No parameters were detected above Class GA standards in OGC-3 outside the barrier wall directly downgradient from MW-8 except for phenol.

The TVOC concentrations for MW-9 on Figure 2.5 show that the TVOC concentrations have generally ranged between 9 and 38 μg/L. The TSVOC concentrations have fluctuated between 120 to 520 μg/L between August 2002 and May 2016 and then increased to 926 μg/L in May 2018 and have since decreased to 259.6 μg/L in April 2022. No parameters were detected above Class GA standards in OGC-4 outside the barrier wall directly downgradient from MW-9.

All MWs are located on the inside of the barrier wall and a net inward gradient has been consistently maintained in the vicinity of these wells except for the 2015/2020 time period previously described; however, the analytical data for the OGCs outside the barrier wall directly downgradient of the MWs do not indicate migration through the barrier wall. Thus, the TVOCs and TSVOCs are not migrating to the Niagara River.

Laboratory analytical reports are presented in Appendix C. The QA/QC Review/ Data Usability Summary of the April 2022 groundwater results are included in Appendix D. The electronic deliverables were provided to the NYSDEC by email on June 30, 2022.

2.3 Effluent Monitoring Program

Groundwater from the GWS is discharged to the POTW without the need for pretreatment. The monitoring performed during the construction phase of the remedy clearly showed that the minimal chemical presence in the groundwater collected in the GWS is easily treated at the POTW and therefore no on-Site pretreatment is necessary. The effluent samples are collected at the monitoring station (meter building), which is located at the south end of the Site as shown on Figure 2.1. The analytical parameters monitored since 2007 are listed in Table 2.8.

2.3.1 Sample Results

Effluent samples are collected semi-annually and consist of 24-hour composite and grab samples collected and analyzed for VOCs, SVOCs, metals, and wet chemistry parameters.

Laboratory analytical reports are presented in Appendix C. The QA/QC reviews of the discharge results from October 2021 and April 2022 are provided in Appendix D.

The effluent sample results for this reporting period are provided in Table 2.9. To assist in evaluating the chemical concentration trends in the effluent discharge from the GWS, the measured concentrations for the following parameters are plotted: TVOCs, TSVOCs, pH, total suspended solids (TSS), and biochemical oxygen demand (BOD) (see Figures 2.14 through 2.17). It is believed that these parameters are representative of the trends in the chemistry of the water discharged to the POTW and, as such, can also be used to determine an appropriate monitoring frequency for the effluent.

As shown on Figure 2.14, the TVOCs generally peak in the spring and then decline reaching a trough in the fall. This pattern may be attributable to additional flushing during the spring snow melt. The long-term trend of the TVOC concentrations shows an overall decrease with time from a peak concentration of 760 μg/L in April 2002 to 16.2 μg/L in May 2022. The effluent TSVOC results on Figure 2.14 show no apparent seasonal pattern. The TSVOC concentrations decreased with time until March 2011 (non-detect) and then showed increases in April 2015 (89 μg/L) and May 2017 (150 μg/L). The TSVOC concentration in May 2021 and May 2022 was 21 μg/L and 22 μg/L, respectively, but in October 2021 was non-detect.

The pH levels are presented on Figure 2.15. As shown on Figure 2.15, the pH levels range between 7.3 and 11.6. An apparent trend in the pH levels is higher pH levels in the winter/spring and lower pH levels in the summer/fall.

The TSS concentrations presented on Figure 2.16 are generally low level (i.e., <20 mg/L) and show higher concentrations occurring in the early spring and late summer/fall with elevated concentrations (maximum of 278 milligrams per liter [mg/L]) in the spring of 2005. Because TSS may be related to the discharge flow rate, the monthly discharge volume (see Table 2.10) is plotted on Figure 2.18. Comparison of the results presented on these two figures shows an apparent correlation between higher flows and greater TSS concentrations except for the 2005 spring results.

The BOD concentrations are presented on Figure 2.17. As shown on Figure 2.17, BOD concentrations have randomly ranged from 4 to 29 mg/L since May 2002 with a one-time peak of 45 μg/L in September 2012. The BOD concentrations were compared with the discharge volume but showed no apparent correlation.

In summary, the trends and low level TVOC and TSVOC concentrations described above support the semi-annual sampling frequency in the current City of North Tonawanda Industrial Wastewater Discharge Permit.

2.4 GWS Operations

The volume of water pumped on a monthly basis from the Site to the City POTW for treatment is presented in Table 2.10 and plotted on Figure 2.18. The monthly volumes show that during the time period of initial dewatering of the Site (i.e., May and June 2001) the monthly volumes ranged from 2,300,000 to 2,900,000 gallons. For the time period from June 2007 to May 2021, not including the months when the flow meter malfunctioned, the monthly volumes ranged from 23,800 to 2,661,000 gallons except for March 2009 which had a volume of 4,239,000 gallons. As indicated on Figure 2.18, the monthly volumes since June 2020 have increased when compared to the monthly volumes for previous years since 2018. This is likely the result of cleaning of the GWS collection pipe and forcemain completed between June 2020 and December 2020 as indicated in in the 2021 Operation and Monitoring Report.

The total measured volume of water discharged from the Site for the time period from May 2001 to May 2022 was 210,140,627 gallons with 21,047,948 gallons (41 gallons per minute [gpm] average) pumped during the 12 months from June 2021 through May 2022. This is consistent with the previous reporting period (June 2020 through May 2021) and is a significant increase from the June 2019 through May 2020 reporting period where 12,445,387 gallons (24 gallons per minute [gpm] average) were pumped.

Section 5.0 of the O&M Manual describes the procedures to be followed in case pumping of the GWS needs to be stopped to prevent the discharge of untreated water from the Site by the City POTW (i.e., wet weather shutdown). Wet weather shutdowns did not occur during this reporting period.

Furthermore, the treatment of the Site groundwater by the City POTW did not require any modifications to the standard operations of the City POTW and did not cause any operational upsets of the City POTW from June 2021 to May 2022.

2.5 GWS Maintenance

This section describes the primary GWS maintenance activities performed during the June 2021 through May 2022 time period. Maintenance or cleaning of the GWS was not required during this reporting period.

3. Site Inspections

Site inspections were performed on a monthly basis. The Monthly Inspection Logs for June 2021 through May 2022 are included in Appendix E. In summary, the June 2021 through May 2022 inspections identified:

– Soil erosion with wire mesh exposed along portions of the shoreline from June 2021 through May 2022. consistent with that observed from June 2020 to May 2021.

The City of North Tonawanda and NYSDEC completed a review of minor soil erosion identified above at the Site on January 28, 2022. Actions to address the minor erosion were not required at this time.

4. Conclusions/Recommendations

4.1 Operation and Maintenance

The constructed remedy is achieving the remedial action objectives.

4.2 Monitoring

Based on the most recent results for the twelve wells listed in Section 2.2, the groundwater TVOC concentrations are:

i.) Less than Class GA levels in seven of the 12 wells sampled.

ii.) Relatively constant in five wells.

The groundwater TSVOC concentrations are:

i.) Less than Class GA levels in nine of the 12 wells sampled.

ii.) Relatively constant in three of the wells.

The groundwater sample collection frequency is:

Annual	Once Every 2 Years (Even Years)
MW-6	MW-7
MW-8	OGC-1
MW-9	OGC-2
OGC-3	OGC-4
OGC-6	OGC-5
OGC-7	OGC-8

The individual VOC and SVOC compound concentrations in the five of the wells scheduled to be sampled once every 2 years are all less than their respective Class GA levels. This supports the scheduled frequency for these wells.

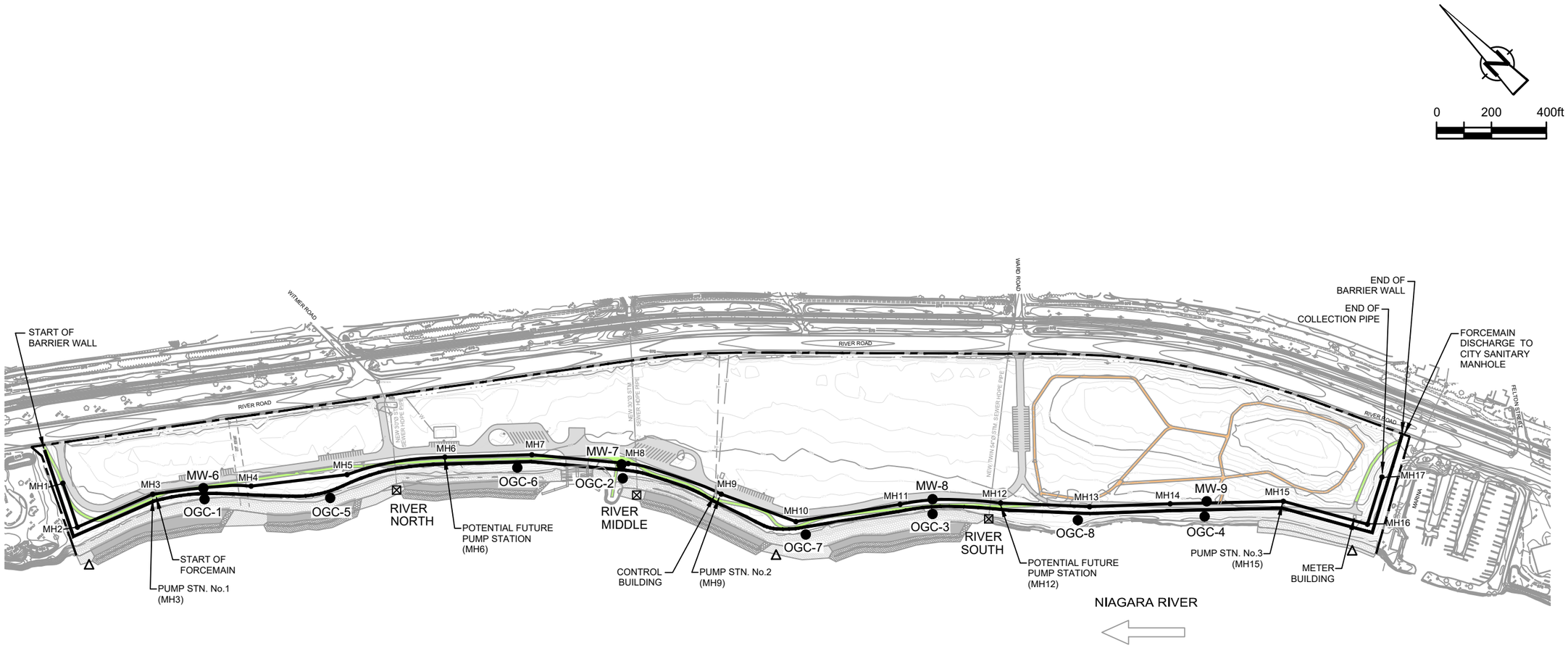
Thus, it is recommended that the same sampling frequency be used for the 5-year period from May 2019 through May 2023.

Pursuant to the discharge permit effective March 1, 2021, semi-annual monitoring was performed during the time period June 2021 through May 2022. The trends in the effluent from the GWS to the POTW support the continuation of the sampling frequency at semi-annual. Flow monitoring will continue to be performed monthly as a check on the operation of the GWS.

Monthly monitoring of the sediment thickness in the GWS manholes will continue. If necessary to insure flow in the collection pipe, any sediment will be removed during low flow conditions, which typically occur in late summer. No sediment was removed during this reporting period.

4.3 Notifications to City of North Tonawanda

Notifications of anomalies in the visual inspections, discharge volumes and/or groundwater levels were and will continue to be provided to the City of North Tonawanda Public Works Engineering and Wastewater Treatment Department within a few days of measurement of the anomaly to allow for timely maintenance.



LEGEND

- PROPERTY BOUNDARY
- BARRIER WALL
- MH11 — GROUNDWATER COLLECTION SYSTEM
- ● OGC-1 MW-1 — MONITORING WELL LOCATION
- ⊠ RIVER SOUTH — SURFACE WATER LEVEL MONITORING LOCATION
- △ — SURFACE WATER CHEMICAL MONITORING LOCATION (NO SAMPLING AFTER APRIL 2008)

figure 2.1

MONITORING NETWORK
GRATWICK-RIVERSIDE PARK SITE
North Tonawanda, New York

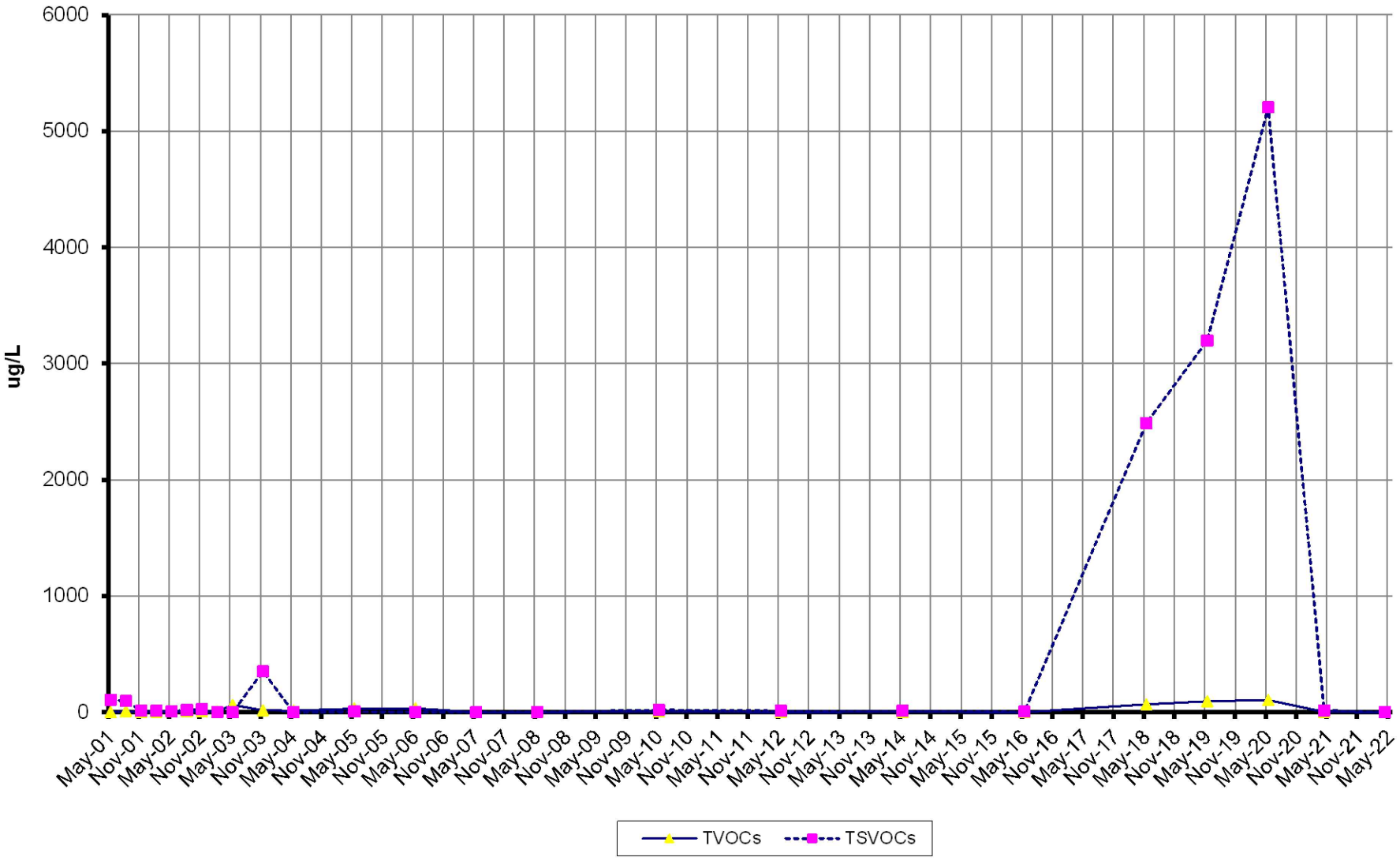


figure 2.2

MW-6 TVOC AND TSVOC CONCENTRATIONS
GRATWICK-RIVERSIDE PARK SITE
North Tonawanda, New York

GHD

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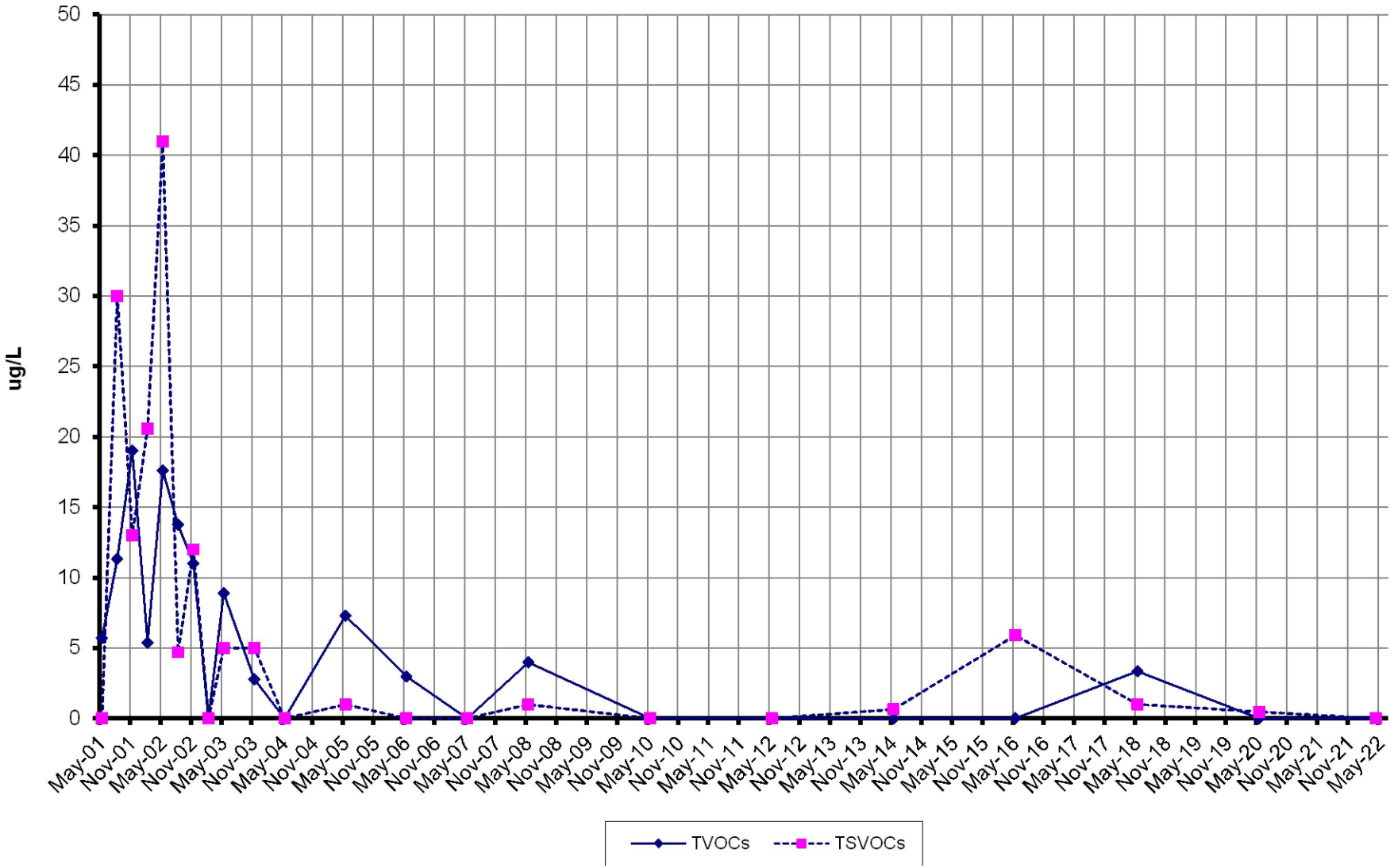

figure 2.3

MW-7 TVOC AND TSVOC CONCENTRATIONS
GRATWICK-RIVERSIDE PARK SITE
North Tonawanda, New York

GHD

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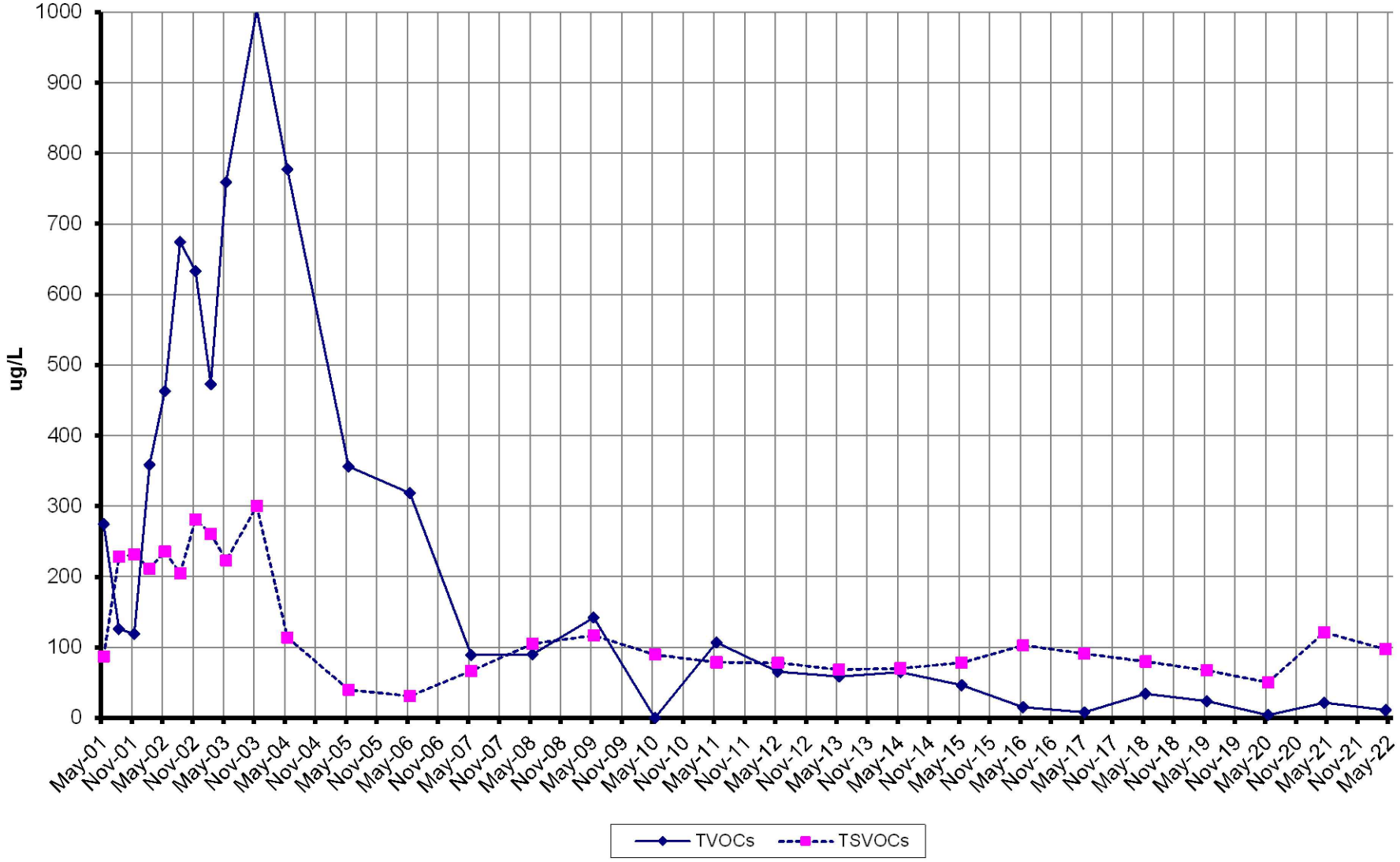

figure 2.4

MW-8 TVOC AND TSVOC CONCENTRATIONS
GRATWICK-RIVERSIDE PARK SITE
North Tonawanda, New York

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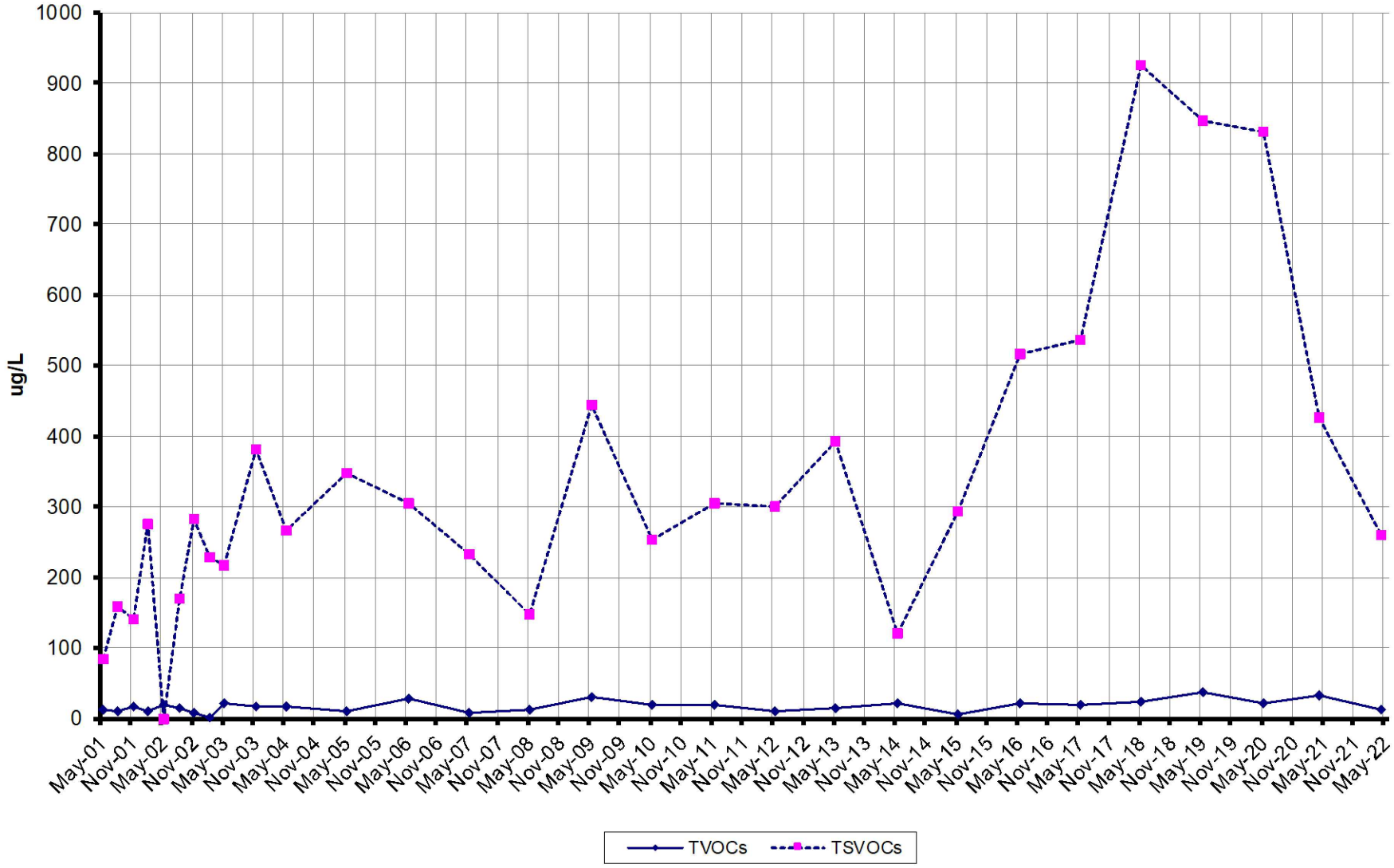

figure 2.5

MW-9 TVOC AND TSVOC CONCENTRATIONS
GRATWICK-RIVERSIDE PARK SITE
North Tonawanda, New York

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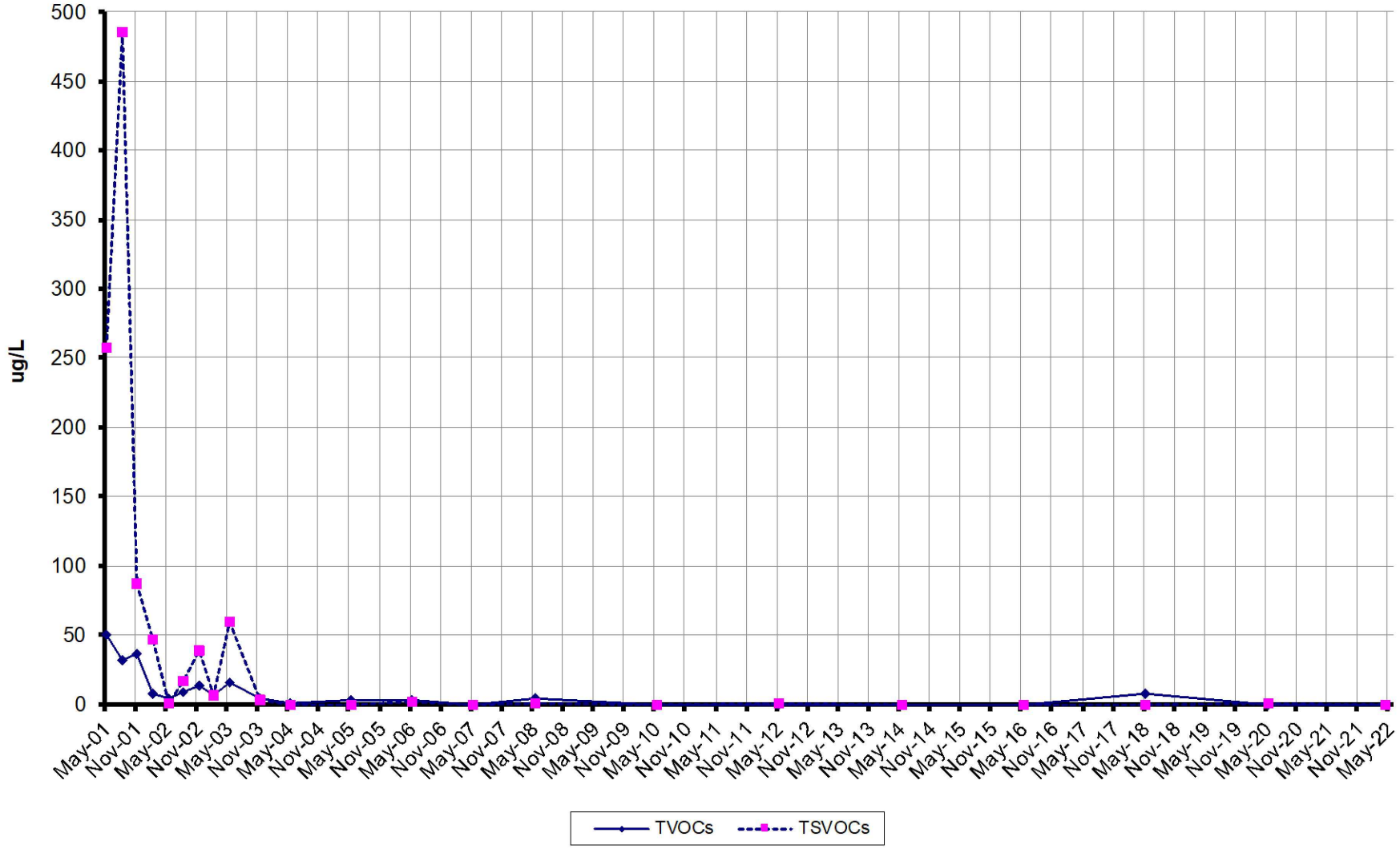

figure 2.6

OGC-1 TVOC AND TSVOC CONCENTRATIONS
GRATWICK-RIVERSIDE PARK SITE
North Tonawanda, New York

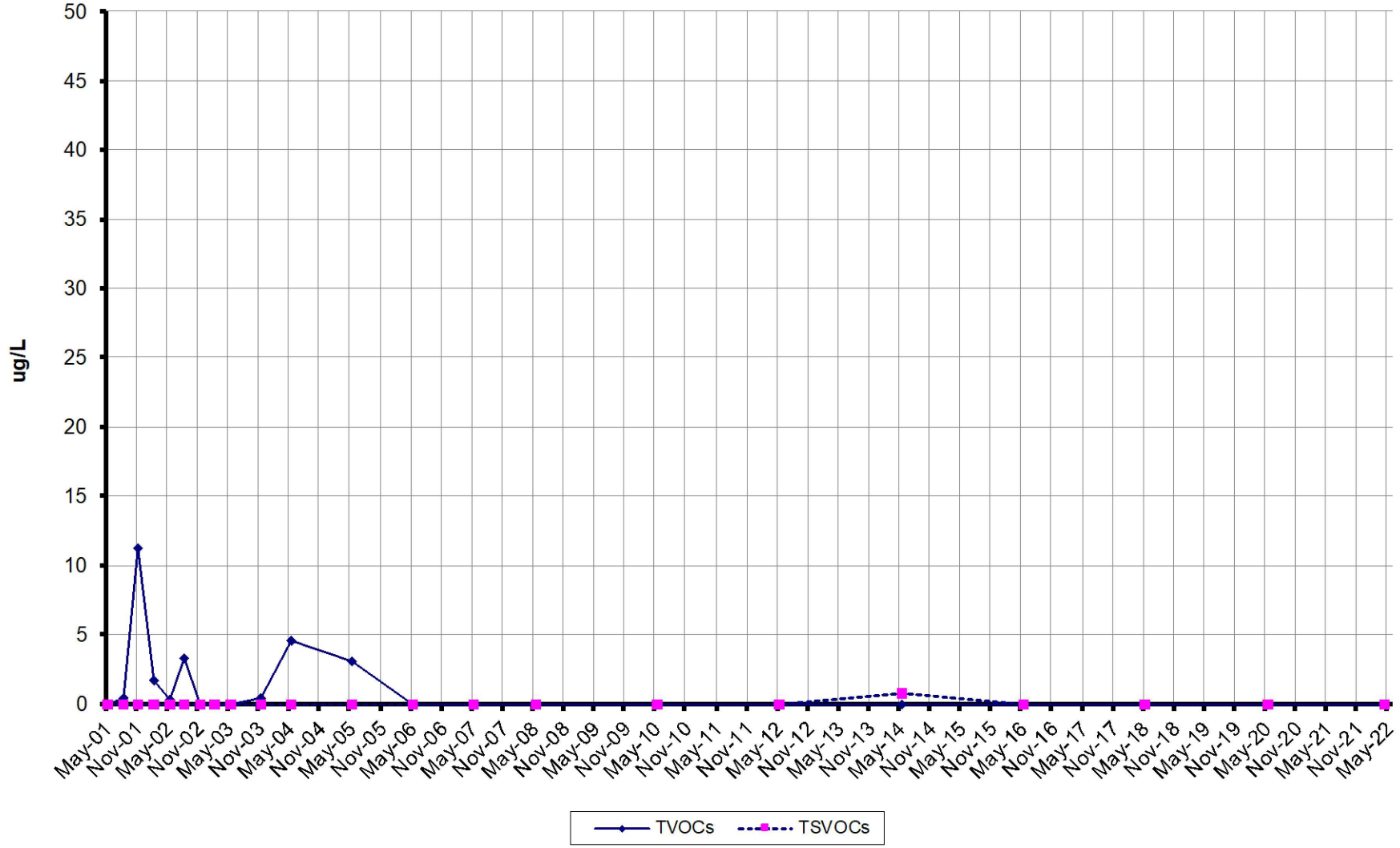

figure 2.7

OGC-2 TVOC AND TSVOC CONCENTRATIONS
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North Tonawanda, New York

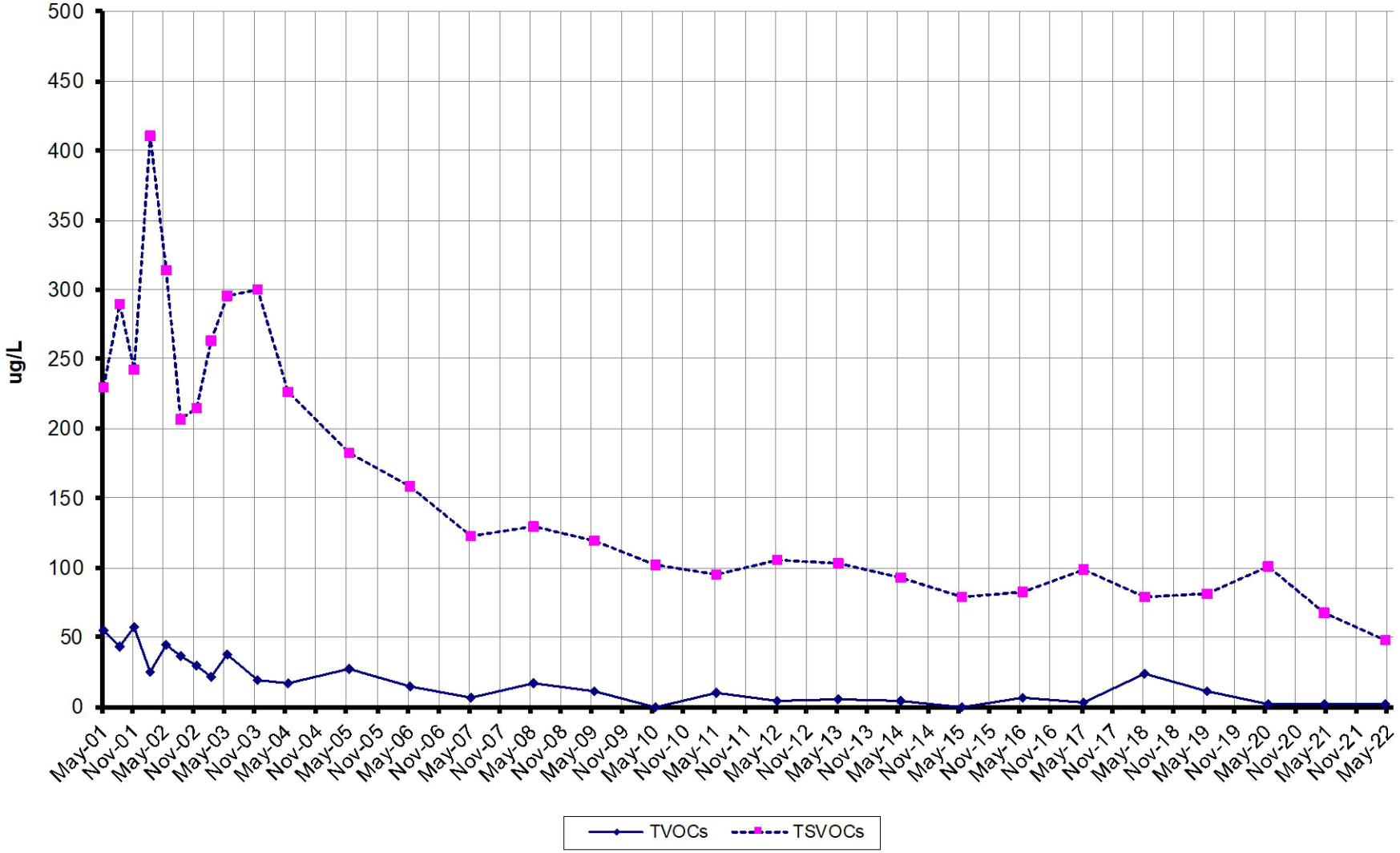

figure 2.8

OGC-3 TVOC AND TSVOC CONCENTRATIONS
GRATWICK-RIVERSIDE PARK SITE
North Tonawanda, New York

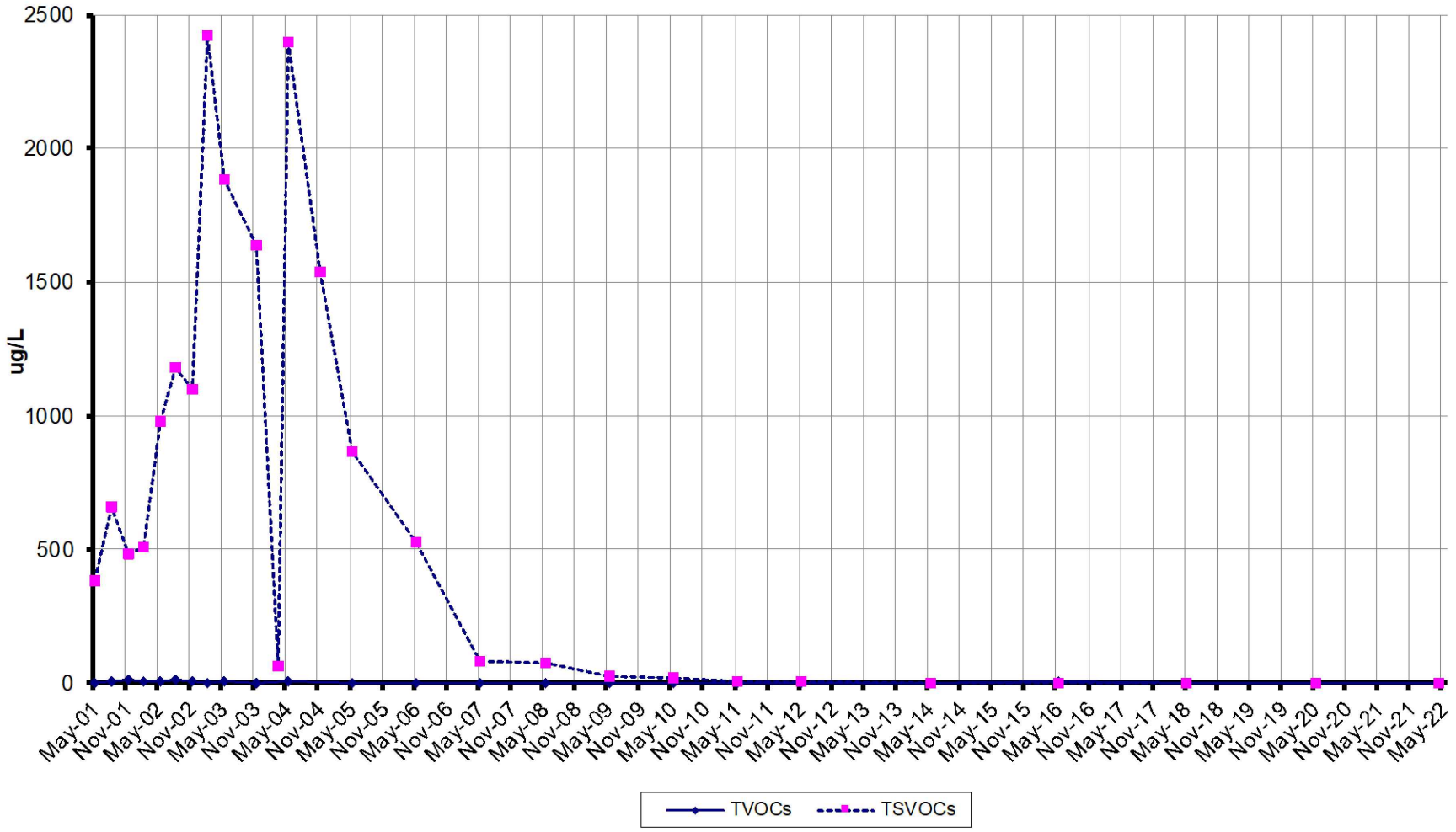

figure 2.9

OGC-4 TVOC AND TSVOC CONCENTRATIONS
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North Tonawanda, New York

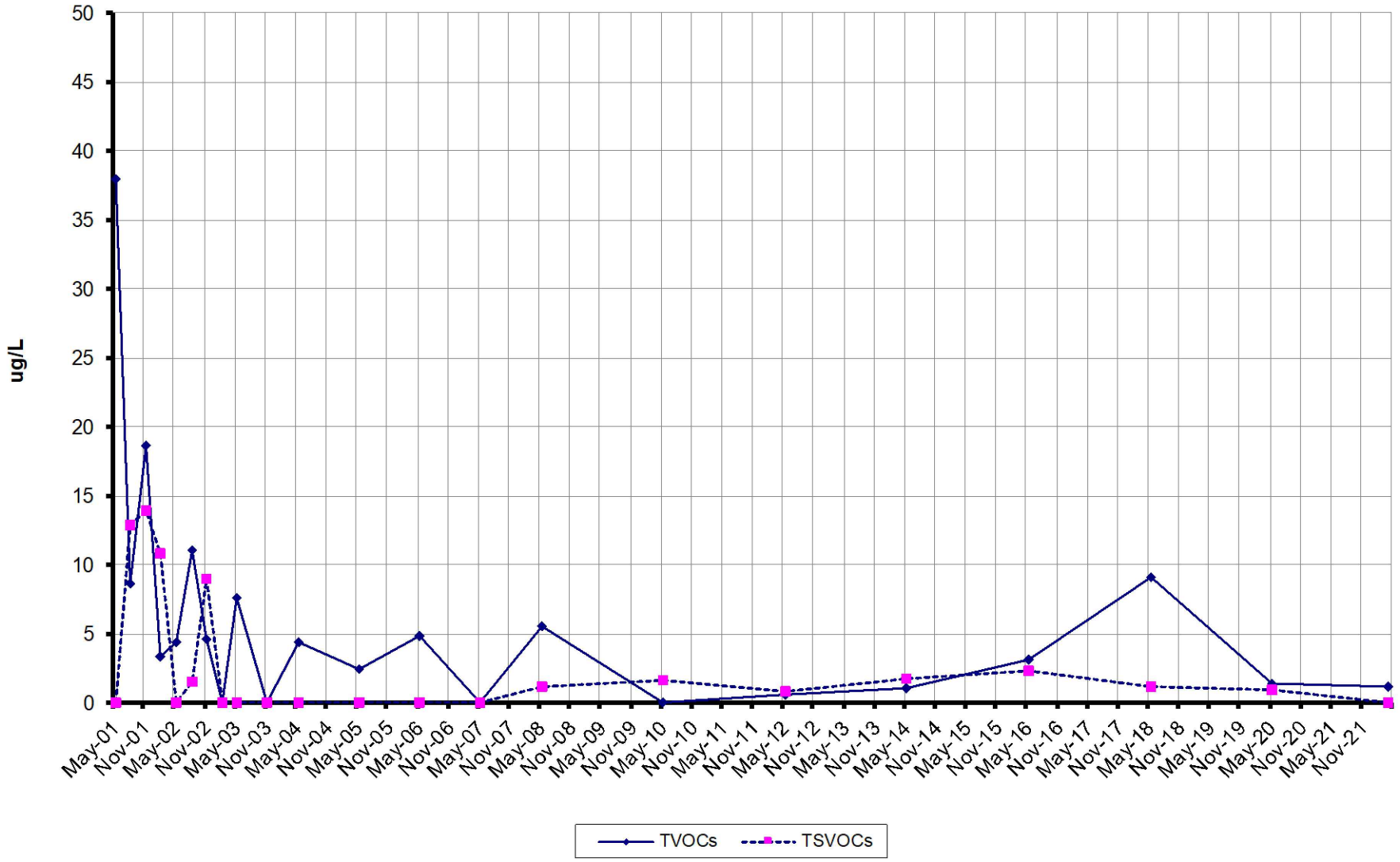

figure 2.10

OGC-5 TVOC AND TSVOC CONCENTRATIONS
GRATWICK-RIVERSIDE PARK SITE
North Tonawanda, New York

GHD

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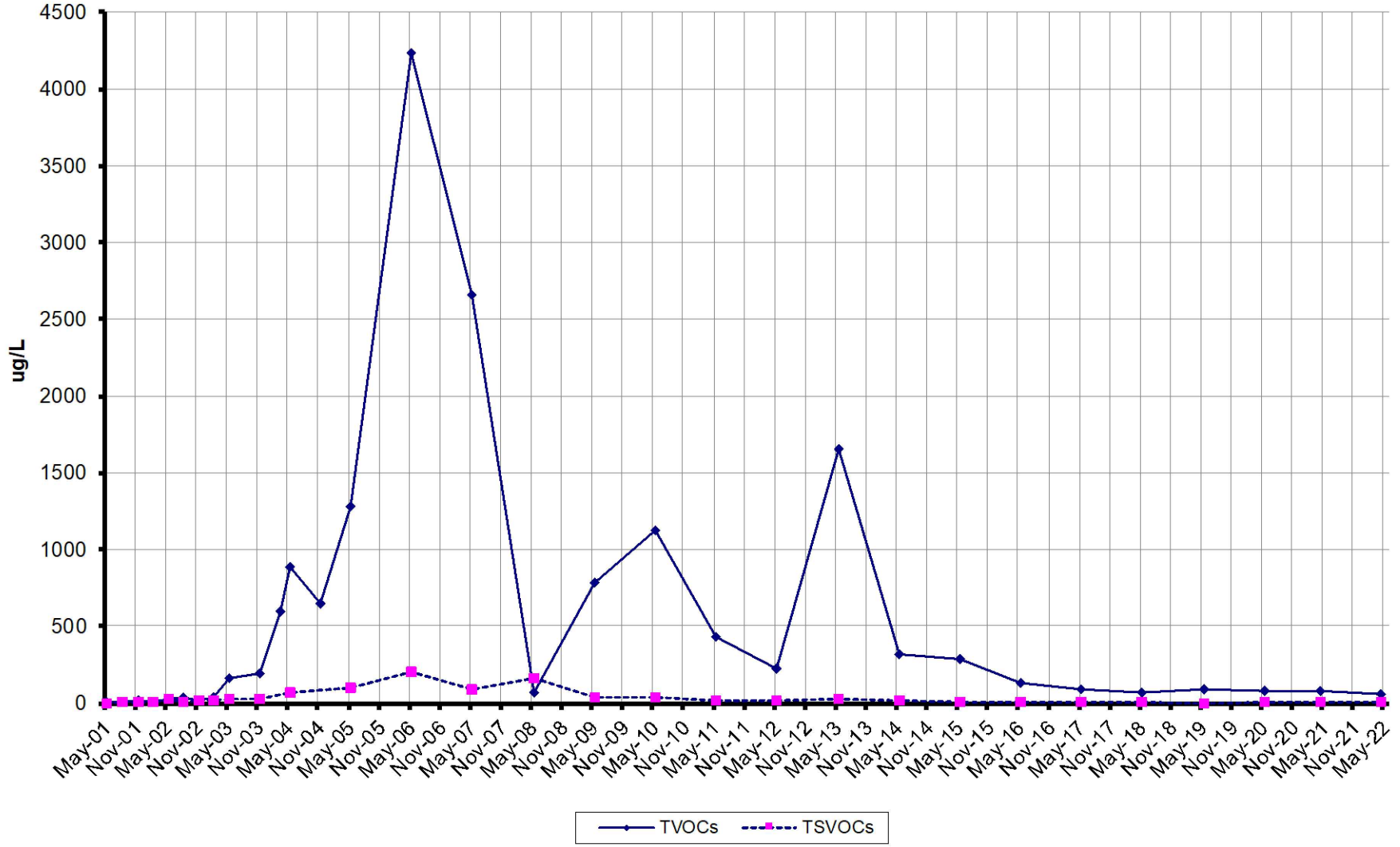

figure 2.11

OGC-6 TVOC AND TSVOC CONCENTRATIONS
GRATWICK-RIVERSIDE PARK SITE
North Tonawanda, New York

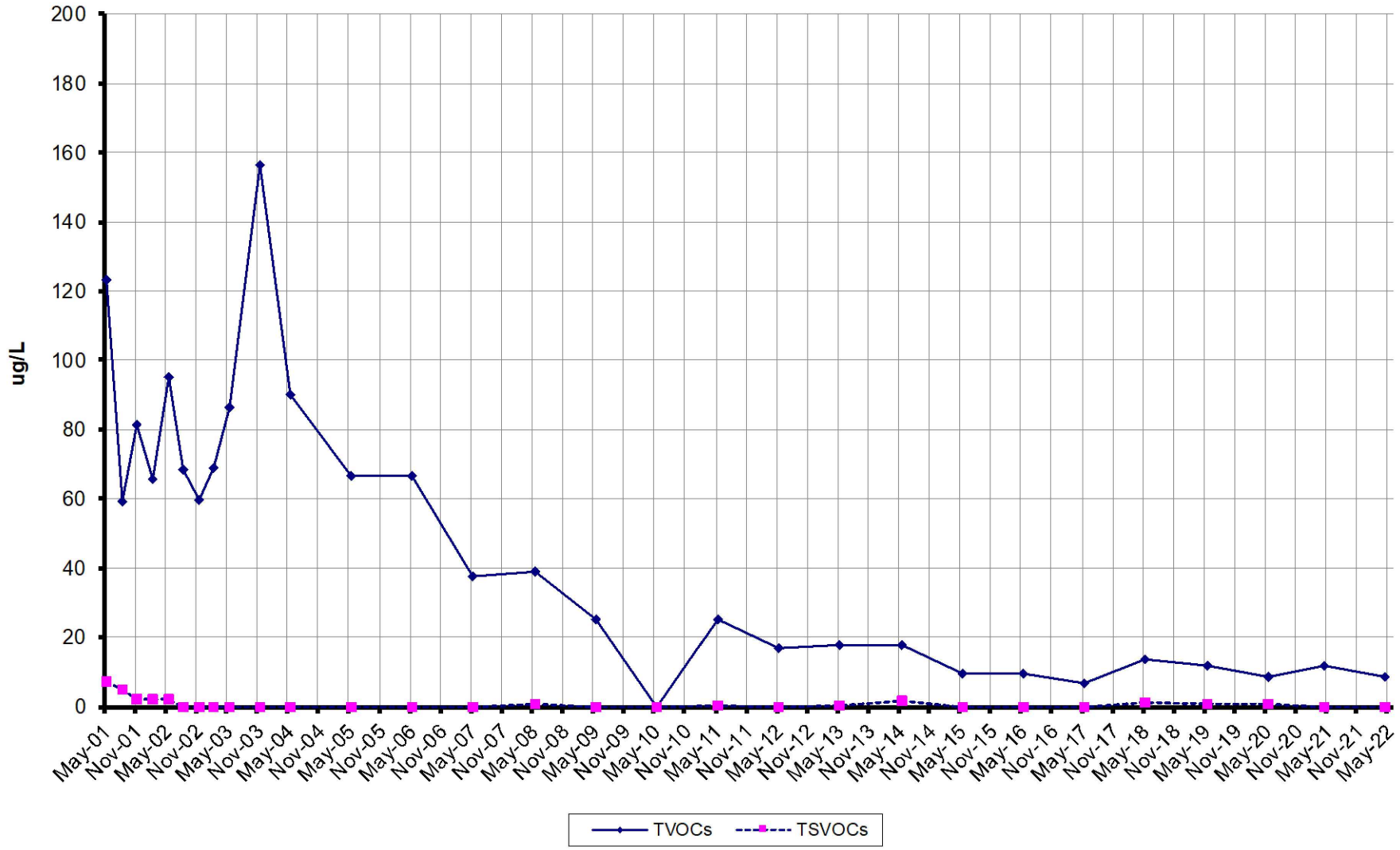

figure 2.12

OGC-7 TVOC AND TSVOC CONCENTRATIONS
GRATWICK-RIVERSIDE PARK SITE
North Tonawanda, New York

GHD

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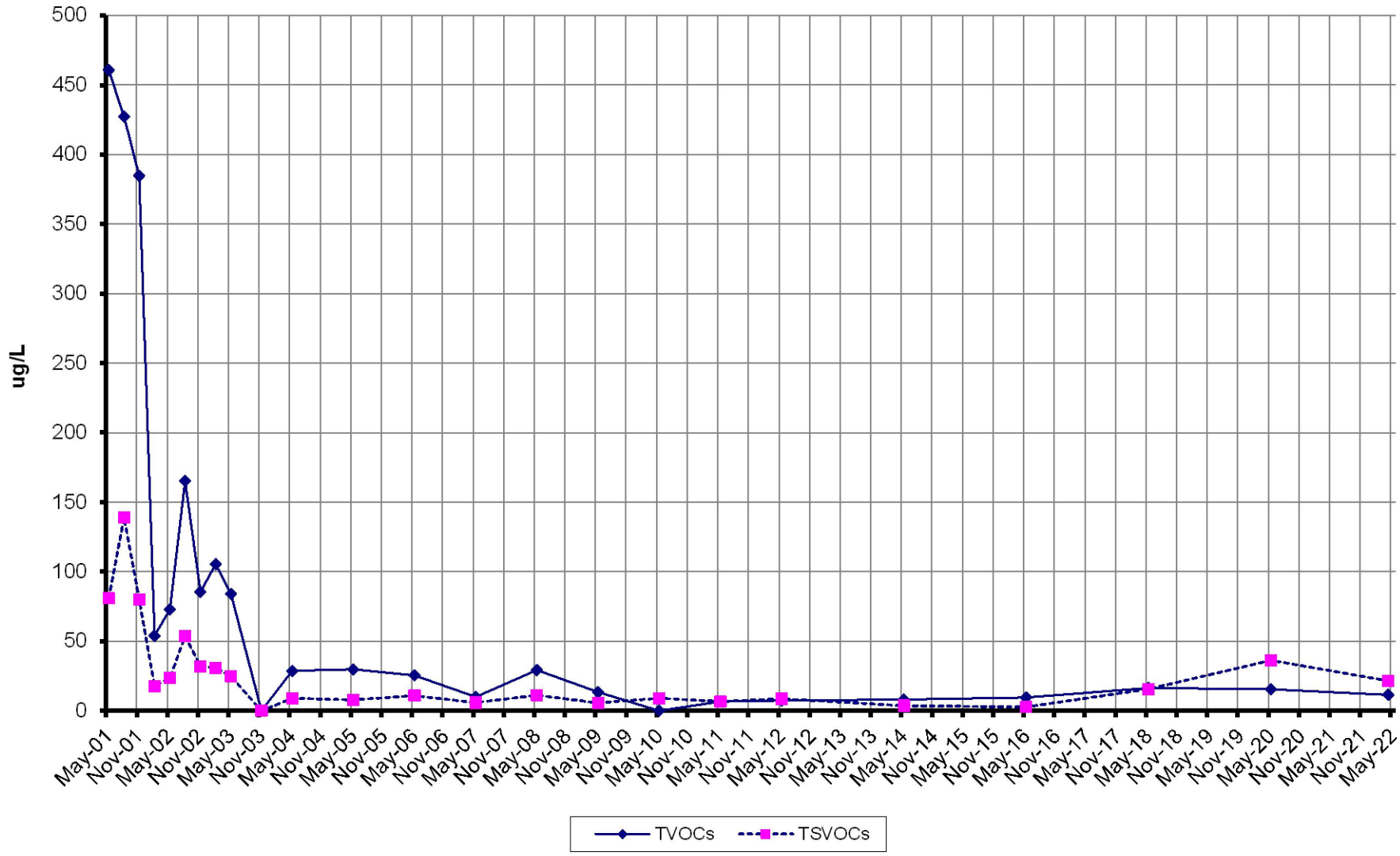

figure 2.13

OGC-8 TVOC AND TSVOC CONCENTRATIONS
GRATWICK-RIVERSIDE PARK SITE
North Tonawanda, New York

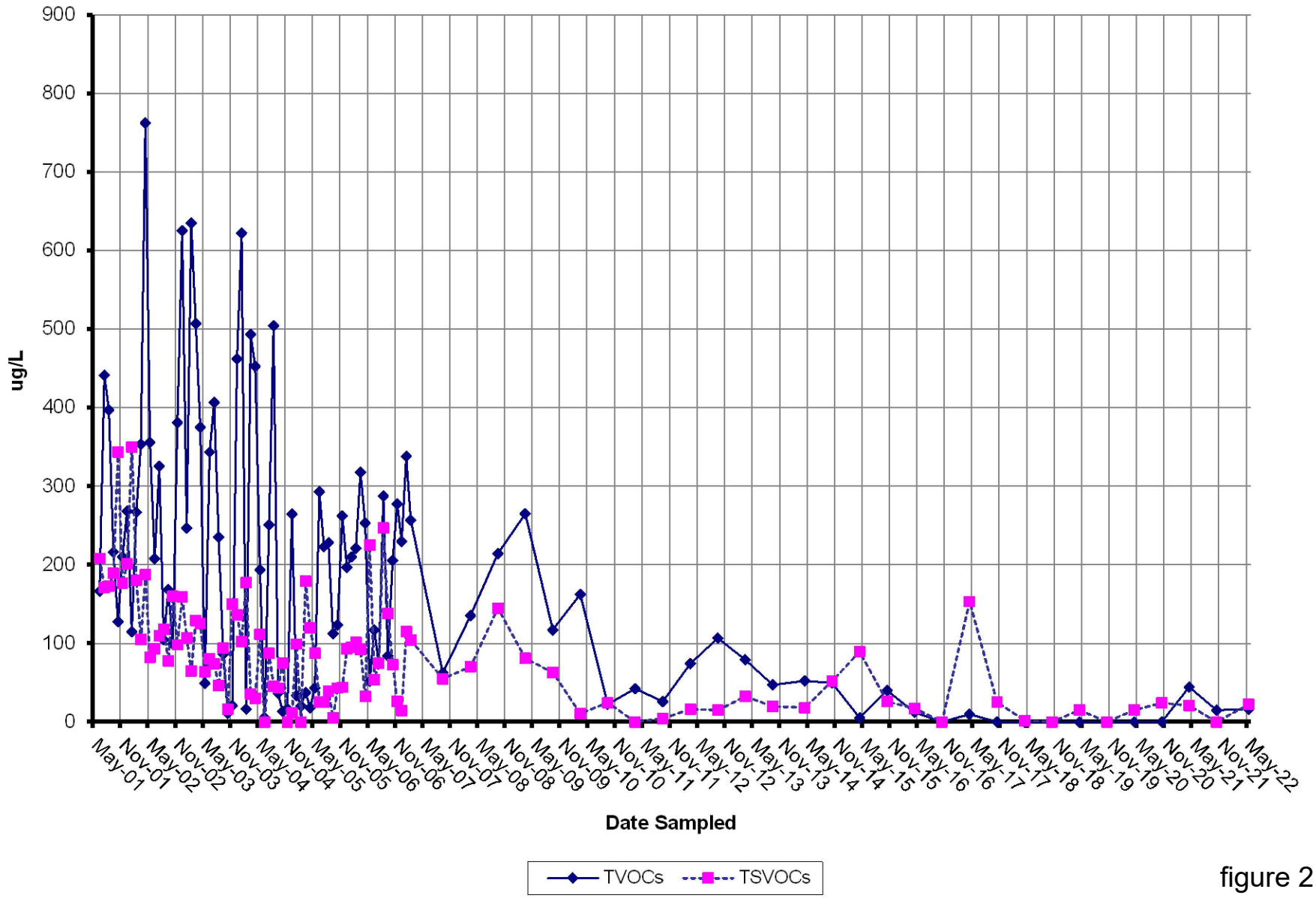

figure 2.14

EFFLUENT TVOCs AND TSVOCs vs. TIME
GRATWICK-RIVERSIDE PARK SITE
North Tonawanda, New York

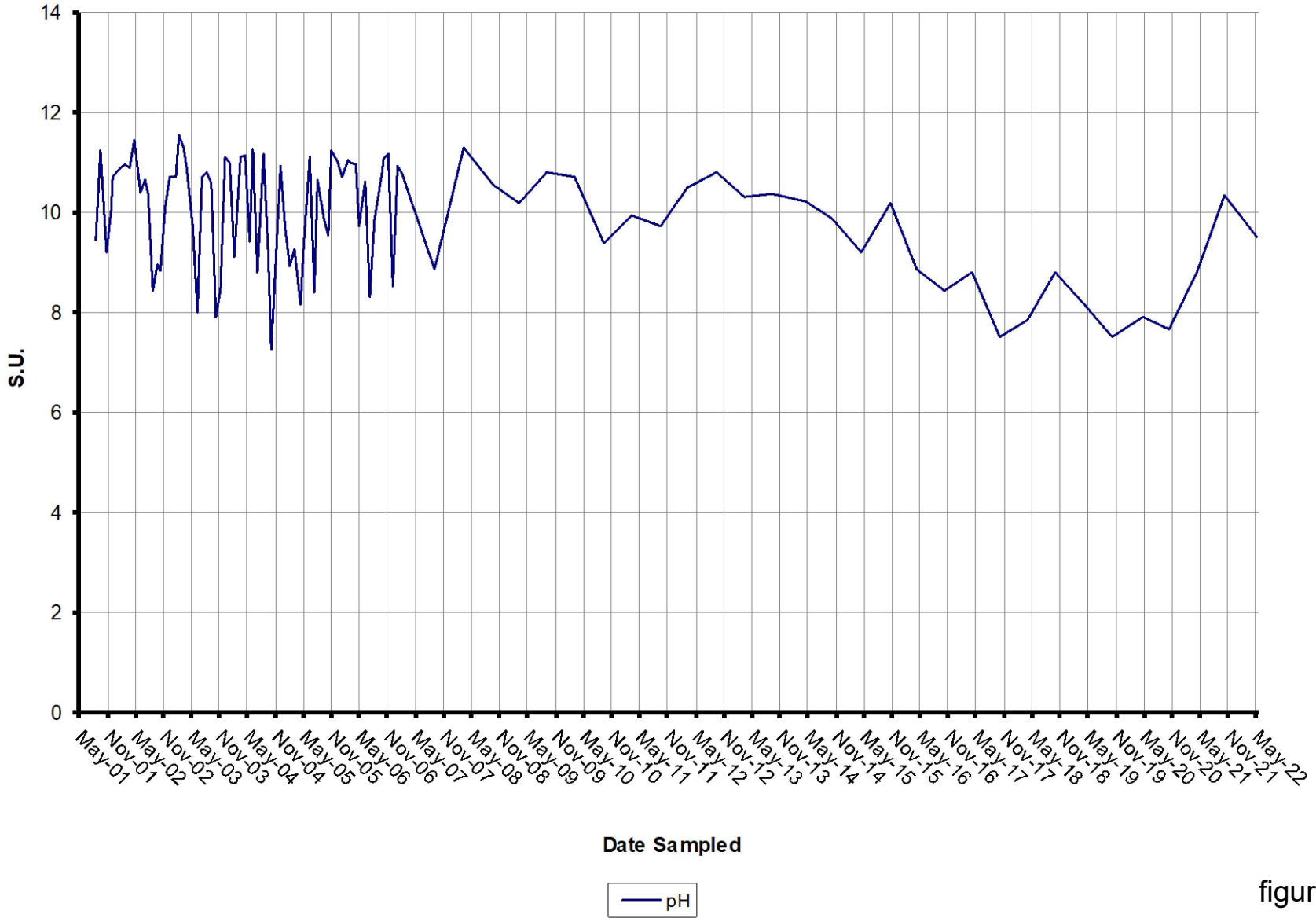

figure 2.15

EFFLUENT pH vs. TIME
GRATWICK-RIVERSIDE PARK SITE
North Tonawanda, New York

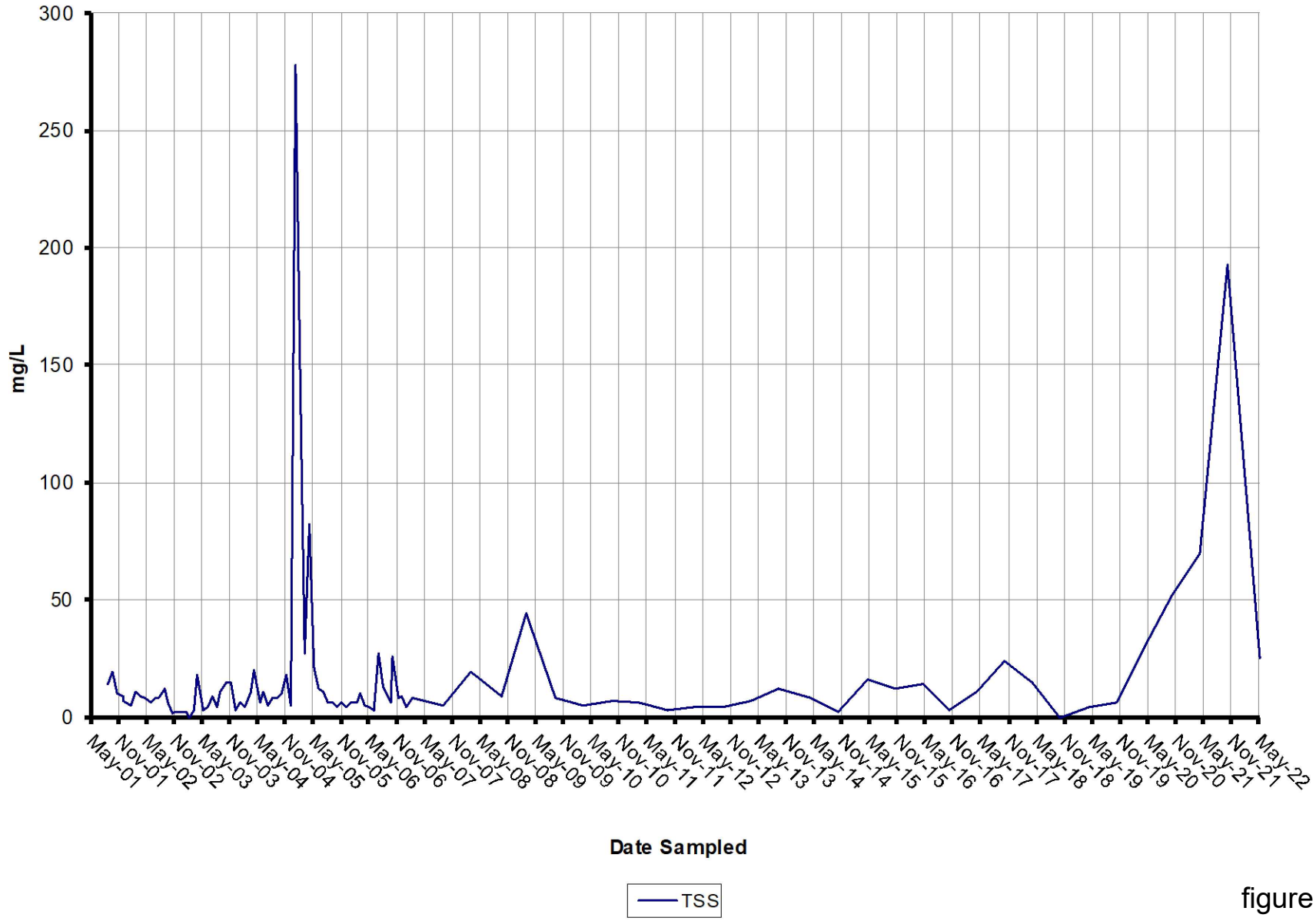

figure 2.16

EFFLUENT TOTAL SUSPENDED SOLIDS vs. TIME
GRATWICK-RIVERSIDE PARK SITE
North Tonawanda, New York

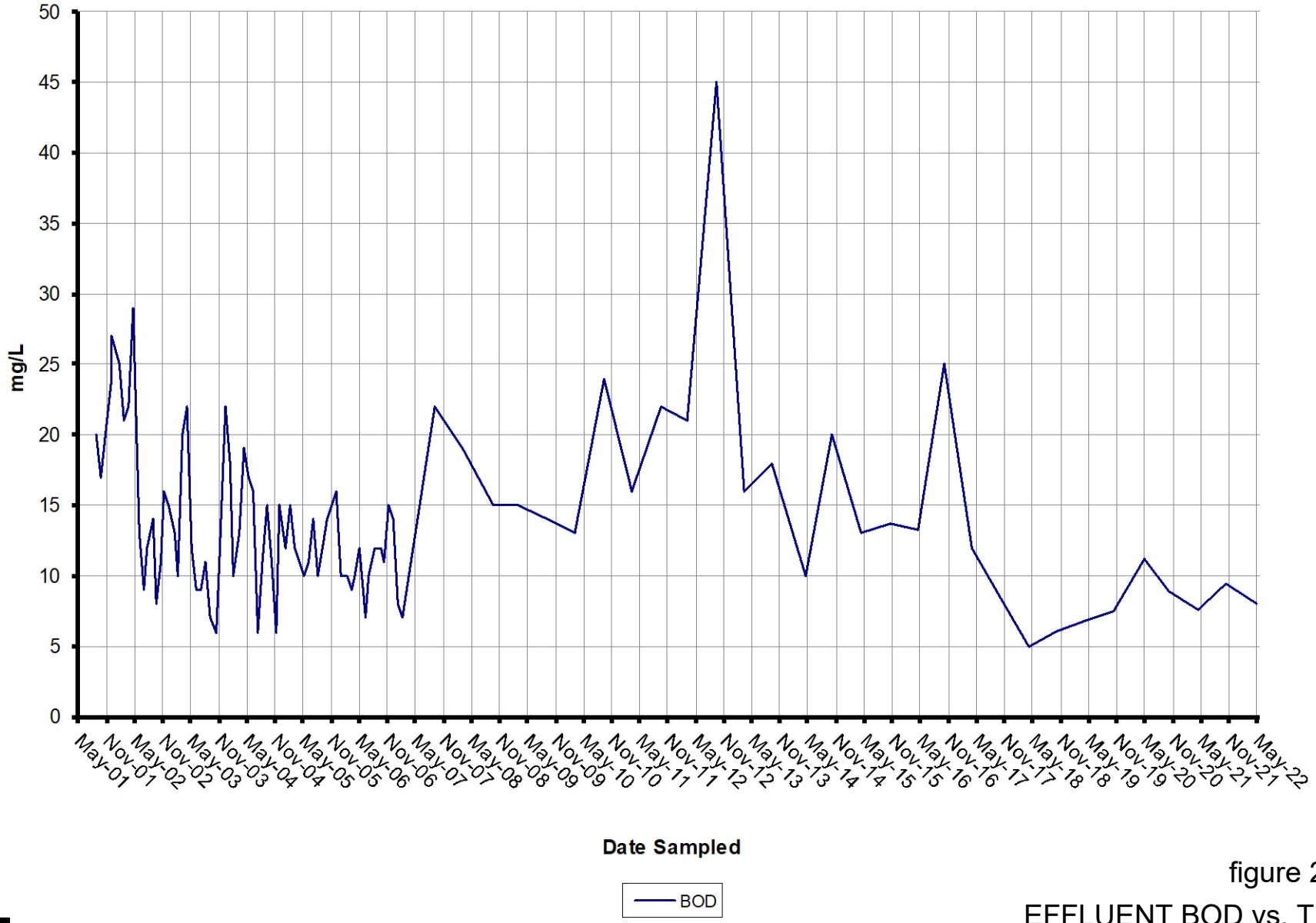

figure 2.17

EFFLUENT BOD vs. TIME
GRATWICK-RIVERSIDE PARK SITE
North Tonawanda, New York

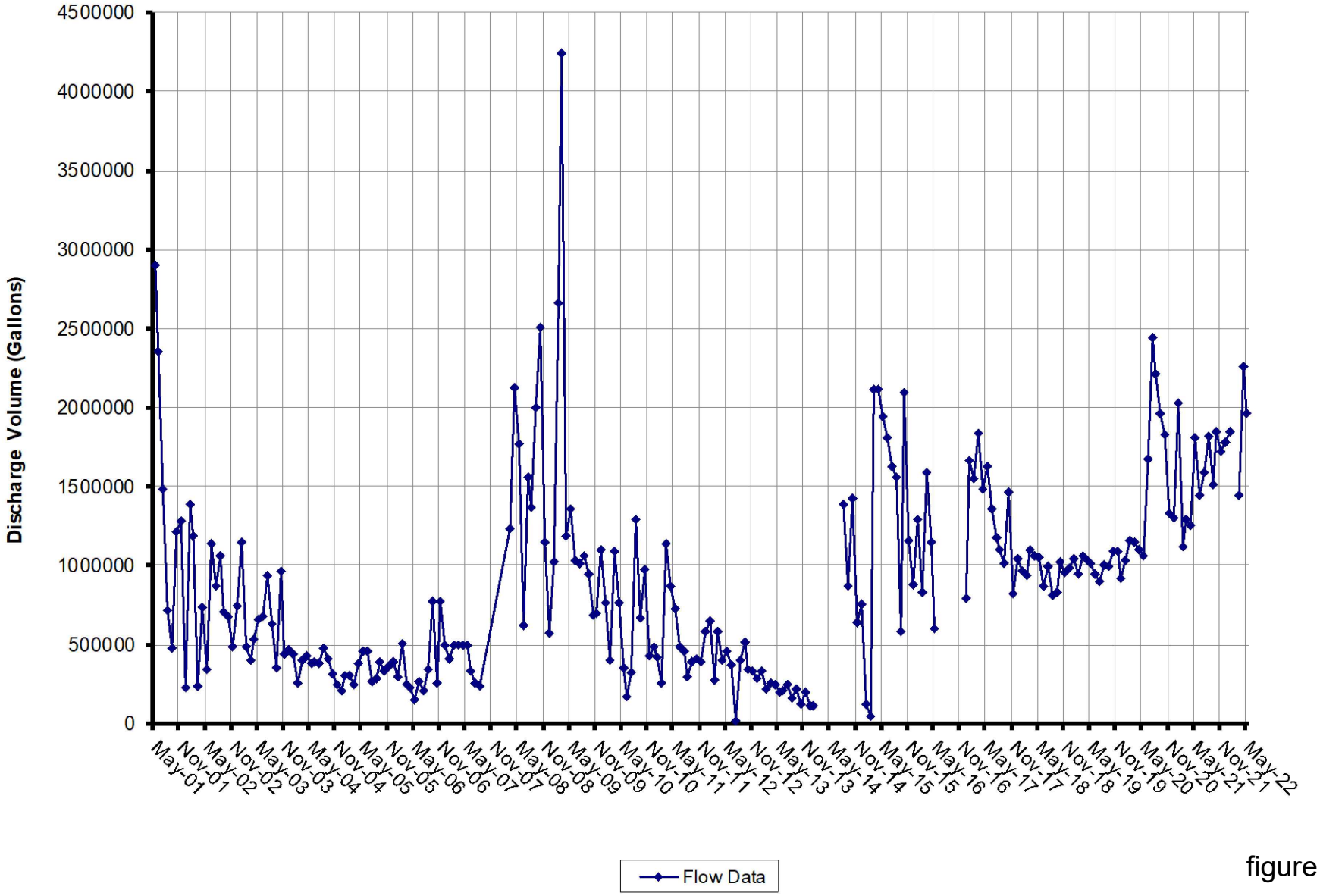

figure 2.18

EFFLUENT VOLUME vs. TIME
GRATWICK-RIVERSIDE PARK SITE
North Tonawanda, New York

See notes 6 and 8 on Table 2.10 for discontinuous flow line in 2014 and 2016

Table 2.1

Groundwater Hydraulic Monitoring Locations
Operation and Maintenance
Gratwick-Riverside Park Site
North Tonawanda, New York

Inward Hydraulic Gradient Monitoring Locations

Inner [1]	Outer
MH2	Niagara River North (Downstream)
MH6	Niagara River North (Downstream)
MH8	Niagara River Middle
MH12	Niagara River South (Upstream)

Upward Hydraulic Gradient Monitoring Locations

Upper [1]	Lower
MH3	MW-6
MH8	MW-7
MH11	MW-8
MH14/MH15 [2]	MW-9

Frequency

- Weekly following GWS startup until six consecutive inward gradients are achieved.
- Monthly thereafter for the remainder of the initial 2-year period (review after 2 years).
- 2-Year and 5-Year reviews indicated that the monitoring frequency remain monthly.

Notes:

(1) These manholes will be monitored twice daily by POTW staff during a wet weather bypass event pursuant to Section 5.0 of the O&M Manual.

(2) Distance weighted averages of water levels used (MH14 - two thirds and MH15 - one third).

Table 2.2

Water Levels (FT AMSL)
Gratwick-Riverside Park Site
North Tonawanda, New York

Date	MH2	MH3	MH6	OGC-1	MW-6	OGC-5	River North	OGC-6	MH8	MW-7	OGC-2	River Middle	OGC-7
RIM Elevation	**573.28**	**573.81**	**572.03**						**572.37**				
TOC Elevation (ft amsl)				**575.01**	**575.40**	**573.82**	**566.80**	**576.65**		**575.57**	**574.08**	**566.48**	**572.49**
June 27, 2013	564.37	559.69	557.96	564.70	564.59	564.78	564.23	564.57	562.69	562.86	564.78	564.58	564.89
July 24, 2013	564.38	560.60	558.10	565.22	564.52	565.11	565.11	566.04	562.93	563.28	565.25	564.95	565.28
August 22, 2013	564.18	560.40	557.71	565.02	564.24	565.10	565.02	564.93	562.41	562.46	565.05	564.95	565.25
September 30, 2013	564.17	560.68	557.72	564.88	564.28	564.98	564.87	564.76	564.40	562.48	564.97	564.74	565.11
October 30, 2013	564.47	560.63	558.05	564.81	564.64	564.57	(1)	564.53	562.79	562.98	564.76	564.30	564.69
November 27, 2013	564.44	560.33	557.69	564.44	564.52	564.14	(1)	564.24	562.35	562.40	564.43	563.63	564.29
December 31, 2013	564.41	561.39	558.11	564.64	564.74	564.41	(1)	564.33	562.86	563.09	564.45	564.43	564.56
January 30, 2014	564.13	559.88	557.64	565.03	564.14	564.90	564.80	564.87	562.41	562.40	565.09	(2)	565.07
February 26, 2014	567.53	570.48	558.01	564.44	565.29	564.32	(1)	564.20	562.81	562.78	564.44	563.98	564.45
March 28, 2014	564.10	559.36	557.62	564.26	564.01	564.09	564.96	564.13	562.21	562.01	564.29	564.39	564.21
April 25, 2014	564.42	560.21	558.36	564.81	564.74	564.50	(1)	564.44	563.03	562.95	564.67	564.28	564.63
May 29, 2014	564.46	559.12	558.41	564.92	564.71	564.57	(1)	564.70	563.20	563.21	564.91	564.60	564.88
June 25, 2014	564.38	560.62	558.14	564.88	564.46	564.93	564.80	564.87	562.88	562.94	565.08	564.67	565.13
July 29, 2014	564.24	560.42	557.93	565.04	564.28	564.96	(1)	564.81	562.72	562.84	565.11	564.78	565.10
August 26, 2014	564.26	561.12	557.84	564.80	564.26	564.91	564.91	564.69	562.58	562.49	564.90	564.77	565.08
September 30, 2014	564.01	560.65	557.82	564.63	564.07	564.65	564.67	564.50	562.51	562.36	564.70	564.54	564.78
October 29, 2014	564.06	559.77	557.82	564.73	564.09	564.83	564.81	564.63	562.54	562.35	564.77	564.65	565.00
November 25, 2014	563.88	560.70	557.44	565.39	563.89	565.64	565.41	564.96	562.09	561.92	565.13	NM	565.71
December 30, 2014	567.26	571.05	557.71	564.58	564.53	564.29	(1)	564.33	562.31	562.20	564.40	563.90	564.45
January 28, 2015	565.60	565.06	559.07	564.59	564.82	564.91	564.85	564.46	563.96	564.72	564.55	564.78	564.98
February 24, 2015	565.75	565.39	559.45	564.37	565.18	564.55	(2)	564.21	(2)	565.17	564.62	(2)	564.66
March 25, 2015	564.69	560.93	558.97	564.50	565.07	564.04	(1)	564.16	563.76	564.14	564.36	563.63	564.21
April 23, 2015	565.70	560.48	559.94	565.13	565.89	565.03	564.82	564.93	564.85	565.34	565.03	564.60	565.17
May 29, 2015	564.77	561.40	558.47	564.74	564.58	564.70	564.78	564.70	563.26	563.59	564.93	564.65	564.95
June 24, 2015	564.80	560.99	558.20	565.15	564.62	565.20	565.15	565.07	562.96	563.10	565.23	565.07	565.28
July 28, 2015	564.79	559.51	557.84	565.31	564.53	565.40	565.27	565.25	562.60	562.76	565.41	565.16	565.53
August 27, 2015	564.62	559.38	557.71	565.23	564.29	565.30	565.13	565.14	562.46	562.41	565.36	565.06	565.45
September 25, 2015	564.70	559.57	557.81	564.99	564.47	565.06	565.01	564.92	562.53	562.55	565.07	564.91	565.23
October 30, 2015	564.69	560.63	557.51	565.76	564.31	565.06	564.71	566.07	562.24	562.34	565.42	564.49	565.41
November 30, 2015	564.59	560.10	557.23	564.35	564.23	564.12	(1)	564.16	561.85	561.80	564.42	563.83	564.23
December 30, 2015	564.50	560.89	557.26	565.32	564.18	564.57	(1)	564.33	561.94	562.35	564.75	564.18	564.88
January 28, 2016	564.77	560.05	557.42	564.79	564.48	564.60	(1)	564.56	562.05	561.98	564.68	564.15	564.76
February 23, 2016	564.86	560.75	558.15	564.81	564.69	564.19	(1)	564.29	562.94	563.51	564.46	563.48	564.38
March 31, 2016	565.66	560.53	559.61	565.28	565.97	564.83	(1)	564.84	564.43	564.91	565.01	564.20	565.03
April 28, 2016	566.56	561.19	560.20	565.22	566.08	564.91	564.76	564.89	565.05	565.69	565.20	564.55	565.05
May 26, 2016	566.95	559.81	560.61	565.10	566.38	564.96	564.82	564.97	565.45	566.20	565.38	564.64	565.10

Table 2.2

Water Levels (FT AMSL)
Gratwick-Riverside Park Site
North Tonawanda, New York

Date	MH2	MH3	MH6	OGC-1	MW-6	OGC-5	River North	OGC-6	MH8	MW-7	OGC-2	River Middle	OGC-7
RIM Elevation	**573.28**	**573.81**	**572.03**						**572.37**				
TOC Elevation (ft amsl)				**575.01**	**575.40**	**573.82**	**566.80**	**576.65**		**575.57**	**574.08**	**566.48**	**572.49**
June 30, 2016	567.09	561.03	560.81	565.18	566.51	565.21	565.21	565.13	565.65	566.94	565.49	565.09	565.30
July 28, 2016	567.28	559.17	561.01	565.29	566.67	565.24	565.18	565.17	565.79	566.61	565.59	565.05	565.45
August 24, 2016	567.40	559.53	561.12	565.32	566.81	565.23	565.22	565.26	565.96	566.77	565.68	565.12	565.47
September 27, 2016	567.56	561.19	561.30	565.33	566.98	565.58	565.48	565.33	566.15	566.94	565.56	565.38	565.77
October 25, 2016	567.57	565.12	561.25	565.19	566.97	565.02	564.76	564.94	566.08	566.84	565.32	564.60	565.26
November 30, 2016	567.37	561.33	561.11	564.39	566.79	564.22	(1)	564.29	565.95	566.75	564.76	563.86	564.36
December 28, 2016	567.41	561.39	560.85	565.09	566.82	564.51	(1)	564.58	565.60	566.37	564.98	563.88	564.69
January 31, 2017	567.41	560.44	560.72	564.73	566.67	564.41	(1)	564.53	565.46	566.18	564.86	563.66	564.49
February 28, 2017	567.06	560.62	560.36	564.98	566.44	564.56	(1)	564.67	565.23	565.88	564.89	564.08	564.69
March 31, 2017	567.37	559.48	561.11	565.45	566.78	564.53	(1)	564.52	565.58	566.36	564.90	564.23	564.83
April 27, 2017	568.05	560.59	561.53	565.32	567.45	565.15	564.91	565.14	566.36	567.14	565.41	564.76	565.25
May 31, 2017	568.17	559.79	561.73	565.54	567.57	565.55	565.56	565.54	566.53	567.34	565.75	565.29	565.66
June 27, 2017	567.87	559.53	561.47	565.73	567.28	565.70	565.62	565.65	566.29	567.03	565.91	565.50	565.80
July 26, 2017	567.85	561.04	561.34	565.58	567.25	565.54	565.42	565.54	566.19	566.96	565.91	565.23	565.67
August 29, 2017	567.98	559.69	561.52	565.30	567.37	565.34	565.19	565.26	566.44	567.21	565.67	565.04	565.50
September 25, 2017	567.81	560.63	561.50	565.21	567.24	565.34	565.22	565.16	566.37	567.21	565.54	565.06	565.50
October 24, 2017	567.89	560.12	561.49	565.15	567.32	565.53	563.37	565.13	566.35	567.12	565.44	565.25	565.51
November 27, 2017	567.95	560.69	561.59	565.09	567.37	564.88	564.55	564.87	566.45	567.17	565.30	564.40	565.05
December 21, 2017	567.87	560.98	561.45	564.98	567.27	564.60	(1)	564.67	566.32	567.08	565.15	564.09	564.73
January 31, 2018	568.03	559.93	561.64	564.83	567.48	564.97	565.09	564.75	566.48	567.36	565.00	564.59	565.18
February 26, 2018	568.36	560.72	561.98	565.58	567.73	565.09	564.86	565.00	566.85	567.65	565.32	564.69	565.27
March 23, 2018	568.25	561.20	561.85	565.12	567.61	565.04	564.86	564.96	566.70	567.48	565.21	564.62	565.17
April 27, 2018	568.56	559.09	562.20	565.64	567.92	565.46	565.30	565.52	567.09	567.86	565.68	565.09	565.58
May 23, 2018	568.28	560.61	561.92	565.69	567.68	565.59	565.41	565.52	566.76	567.57	565.87	565.19	565.76
June 11, 2018	568.21	555.80	561.91	565.48	567.61	565.43	565.29	565.43	566.69	567.18	565.79	565.13	565.60
July 25, 2018	568.14	558.78	561.85	565.73	567.57	565.59	565.51	565.44	566.55	567.09	565.95	565.40	565.85
August 27, 2018	568.16	560.13	561.78	565.40	567.55	565.37	565.25	565.36	566.63	567.10	565.68	565.08	565.60
September 21, 2018	568.06	559.41	561.71	565.22	565.08	565.37	565.30	565.24	566.54	566.97	565.56	565.13	565.53
October 31, 2018	567.93	559.80	561.45	565.24	567.30	565.14	565.20	565.13	566.26	566.75	565.46	564.99	565.40
November 21, 2018	568.10	559.70	561.72	565.37	567.48	565.80	565.52	565.27	566.55	567.06	565.43	(2)	565.80
December 20, 2018	568.35	559.91	561.99	564.93	567.71	564.80	(1)	564.82	566.86	567.38	565.19	564.29	564.93
January 28, 2019	568.38	560.20	562.06	565.87	567.80	565.80	565.30	565.73	566.89	567.44	565.90	(2)	565.91
February 28, 2019	568.33	559.05	561.94	565.27	567.68	565.06	(2)	565.06	566.76	567.40	565.52	(2)	565.26
March 26, 2019	568.15	560.19	561.77	565.10	567.53	565.04	564.95	564.94	566.58	567.22	565.18	564.72	565.18
April 26, 2019	568.56	558.73	562.30	565.72	567.96	565.56	565.71	565.54	566.96	567.80	565.64	565.48	565.67
May 29, 2019	568.71	559.20	562.49	565.74	568.13	565.72	565.42	565.70	567.30	568.02	566.05	565.20	565.86
June 26, 2019	568.68	558.83	562.39	566.33	568.04	566.24	566.11	566.22	567.16	567.93	566.47	565.89	566.40
July 24, 2019	568.45	560.45	562.12	565.70	567.82	565.70	565.58	565.69	566.89	567.69	566.15	565.38	565.83
August 28, 2019	568.32	558.55	561.99	565.66	567.73	565.60	565.44	565.56	566.76	567.55	565.98	565.28	565.77

Table 2.2

Water Levels (FT AMSL)
Gratwick-Riverside Park Site
North Tonawanda, New York

Date	MH2	MH3	MH6	OGC-1	MW-6	OGC-5	River North	OGC-6	MH8	MW-7	OGC-2	River Middle	OGC-7
RIM Elevation	**573.28**	**573.81**	**572.03**						**572.37**				
TOC Elevation (ft amsl)				**575.01**	**575.40**	**573.82**	**566.80**	**576.65**		**575.57**	**574.08**	**566.48**	**572.49**
September 25, 2019	568.31	558.86	561.93	565.61	567.69	565.49	565.47	565.48	566.68	567.48	565.87	565.27	565.72
October 30, 2019	568.37	559.29	561.96	565.48	567.74	565.26	565.04	565.33	566.74	567.52	565.71	564.79	565.45
November 26, 2019	568.32	558.13	562.00	565.19	567.71	565.13	564.82	565.11	566.81	567.64	565.41	564.58	565.27
December 23, 2019	568.54	559.53	562.27	565.18	567.94	565.12	564.94	565.06	567.10	567.92	565.36	564.59	565.23
January 29, 2020	568.86	558.60	562.54	565.60	568.23	565.24	565.04	565.45	567.38	568.20	565.69	564.72	565.47
February 26, 2020	568.75	560.28	562.42	565.27	568.13	565.05	564.65	565.19	567.26	568.06	565.57	(2)	565.20
March 26, 2020	568.84	559.19	562.51	565.24	568.22	565.32	565.27	565.39	567.37	568.20	565.67	564.85	565.46
May 11, 2020	568.70	558.53	562.44	565.78	567.97	565.73	565.60	565.73	566.97	568.08	566.06	565.29	565.95
May 26, 2020	568.73	560.23	562.41	565.92	568.08	565.89	565.82	565.77	567.19	567.66	566.06	565.60	566.00
June 29, 2020	566.65	565.40	561.64	565.79	566.97	565.78	565.60	565.70	567.17	567.73	566.12	565.37	565.92
July 28, 2020	560.96	560.07	560.30	565.88	564.84	565.90	565.61	565.77	566.76	567.28	566.21	565.37	565.97
August 26, 2020	559.81	558.13	559.61	565.61	564.12	565.58	565.62	565.43	565.98	566.68	565.93	565.39	565.81
September 29, 2020	561.02	560.12	558.84	565.53	563.42	565.59	565.51	565.40	564.51	565.46	565.70	565.25	565.77
October 28, 2020	560.82	559.89	557.44	565.43	563.16	565.29	565.31	565.25	562.54	563.49	565.49	564.99	565.55
November 30, 2020	561.12	560.29	556.31	565.04	562.94	564.83	564.60	564.90	559.28	561.28	565.08	564.24	564.97
December 22, 2020	560.67	559.88	556.45	565.10	562.91	565.00	564.79	564.89	558.79	561.40	564.96	564.37	565.22
January 28, 2021	561.30	560.37	557.71	565.01	562.88	564.83	564.71	564.73	560.33	561.27	564.82	564.28	565.00
February 24, 2021	561.39	560.52	556.37	564.99	562.68	564.80	DRY	564.78	559.05	561.14	564.99	564.00	564.86
March 31, 2021	560.70	559.82	556.77	565.19	562.76	565.00	564.79	564.96	559.45	561.65	564.97	564.42	564.73
April 28, 2021	561.00	560.02	557.14	565.22	562.81	565.18	565.04	565.06	559.19	561.28	565.09	564.71	564.66
May 25, 2021	561.41	560.48	557.34	565.29	562.77	565.48	565.22	565.17	559.75	561.29	565.20	564.86	565.44
June 30, 2021	560.10	558.04	557.25	565.33	565.59	565.29	565.31	565.21	559.28	560.85	565.26	565.00	565.50
July 28, 2021	561.36	560.32	557.54	565.63	562.69	565.54	565.44	565.47	561.37	562.42	565.60	565.13	565.74
August 30, 2021	561.36	560.46	557.37	565.45	562.59	565.54	565.17	565.39	560.38	560.95	565.51	564.97	565.67
September 30, 2021	559.82	557.91	557.51	565.30	562.72	565.16	565.12	565.17	560.13	561.50	565.33	564.77	565.37
October 25, 2021	561.37	560.41	557.20	565.38	562.76	565.01	NM	565.10	560.38	561.86	565.29	564.64	565.28
November 30, 2021	559.97	558.52	557.30	565.08	562.84	564.94	564.72	564.93	560.71	562.08	564.99	564.27	565.03
December 22, 2021	560.62	559.65	557.34	565.40	562.96	565.89	565.38	565.34	561.85	562.69	565.17	NM	565.80
January 28, 2022	559.92	558.80	557.02	564.91	562.82	565.30	NM	564.92	559.84	561.45	565.16	NM	565.08
February 28, 2022	560.15	558.56	558.16	565.19	563.36	565.04	564.68	565.04	563.86	564.68	565.01	564.35	565.18
March 30, 2022	559.99	558.43	558.37	565.02	563.44	564.82	564.54	564.88	564.14	565.05	565.00	564.30	564.89
April 29, 2022	561.34	560.41	558.01	565.24	563.22	564.94	564.70	565.07	563.09	563.78	564.38	564.38	565.12
May 23, 2022	561.30	560.32	558.23	565.28	563.10	565.13	564.79	565.07	563.25	563.99	565.34	564.38	565.29

Table 2.2

Water Levels (FT AMSL)
Gratwick-Riverside Park Site
North Tonawanda, New York

Date	MH9	OGC-3	MH11	MW-8	River South	MH12	OGC-8	OGC-4	MW-9	MH14	MH15	MH16
RIM Elevation			**572.11**			**572.37**				**574.30**	**575.84**	**574.82**
TOC Elevation (ft amsl)	**572.55**	**573.35**		**574.37**	**568.46**		**574.01**	**574.66**	**576.23**			
June 27, 2013		562.02	563.08	563.61	565.00	561.50	565.08	564.99	565.66	565.68	564.63	565.69
July 24, 2013		565.36	563.04	563.56	565.37	561.40	565.42	565.30	565.47	565.40	564.27	565.44
August 22, 2013		565.37	562.87	563.37	565.37	561.17	565.38	565.29	565.19	565.16	564.08	565.18
September 30, 2013		565.17	563.73	563.25	565.15	561.03	565.24	565.15	565.05	565.06	564.01	565.03
October 30, 2013		564.73	562.96	563.53	564.74	561.35	564.83	564.73	565.50	565.48	564.45	565.54
November 27, 2013		564.33	563.08	563.58	564.30	561.39	564.39	564.38	565.47	565.53	564.52	565.35
December 31, 2013		564.72	563.53	564.06	564.87	561.78	564.89	564.63	565.76	565.78	564.71	565.86
January 30, 2014		565.14	563.40	563.95	565.63	561.65	565.20	565.17	565.52	565.51	564.51	565.61
February 26, 2014		564.55	563.28	563.83	564.55	561.48	564.65	564.59	565.46	565.57	564.51	565.55
March 28, 2014	560.87	564.24	563.58	564.10	564.38	561.78	564.40	564.26	565.93	565.98	564.88	565.97
April 25, 2014	559.42	564.72	563.90	564.44	564.70	562.08	564.77	564.73	566.12	566.22	565.18	566.24
May 29, 2014	561.05	564.99	564.01	564.37	564.92	562.06	564.98	564.88	565.77	566.07	565.00	566.07
June 25, 2014	561.27	565.14	563.53	564.03	565.11	561.68	565.84	565.21	565.60	565.69	564.62	565.64
July 29, 2014	560.93	565.18	563.41	563.75	565.15	561.37	565.25	565.14	565.21	565.30	564.23	565.14
August 26, 2014	560.63	565.18	563.11	563.61	565.15	561.25	565.28	565.11	565.20	565.28	564.16	565.20
September 30, 2014	559.52	564.92	562.89	563.31	564.96	560.97	565.01	564.89	564.89	565.04	563.92	564.96
October 29, 2014	560.59	565.14	562.78	563.23	565.15	560.87	565.18	565.14	564.77	564.91	563.80	564.81
November 25, 2014	561.55	565.76	562.71	563.18	565.56	560.85	565.80	565.89	564.76	564.92	563.85	564.79
December 30, 2014	560.91	564.52	562.98	563.43	564.45	561.15	564.59	564.62	565.13	565.22	564.15	565.16
January 28, 2015	564.64	565.19	564.19	564.70	565.24	562.14	565.28	565.18	564.26	565.39	564.31	565.33
February 24, 2015	565.12	564.74	(2)	565.15	564.60	562.51	564.80	564.78	565.41	(2)	564.44	565.44
March 25, 2015	559.25	564.22	563.88	564.44	563.86	561.78	564.22	563.24	566.11	(2)	565.10	566.13
April 23, 2015	560.40	565.22	564.86	565.41	565.04	562.69	565.25	565.26	566.41	566.53	565.26	566.54
May 29, 2015	561.88	565.01	563.36	563.93	565.05	561.28	565.13	564.99	565.56	565.67	564.57	565.61
June 24, 2015	560.38	565.67	563.33	563.87	565.44	561.25	565.47	565.45	565.54	565.62	564.54	565.57
July 28, 2015	560.55	565.59	563.27	563.84	565.50	561.16	565.63	565.64	565.38	565.49	564.43	565.43
August 27, 2015	559.82	565.53	563.09	563.60	565.47	560.96	565.59	565.60	565.14	565.23	564.11	565.17
September 25, 2015	559.75	565.35	563.20	563.58	565.31	560.91	565.39	565.30	565.16	565.30	564.14	565.21
October 30, 2015	561.54	565.24	562.82	563.34	565.00	560.69	565.23	565.45	564.25	562.52	560.35	564.33
November 30, 2015	559.78	564.52	562.52	563.03	564.19	560.35	564.40	564.39	563.61	562.72	561.17	563.69
December 30, 2015	560.97	564.93	562.22	562.79	564.73	560.14	565.00	565.03	563.10	562.57	561.16	563.39
January 28, 2016	561.19	564.77	562.68	563.18	564.64	560.48	564.83	564.84	563.44	562.49	561.02	563.60
February 23, 2016	560.92	564.39	563.03	563.54	564.16	560.88	564.41	564.48	563.55	562.69	561.63	563.71
March 31, 2016	560.12	564.96	564.19	564.76	564.60	562.06	565.01	565.05	564.54	562.28	559.76	564.54
April 28, 2016	564.63	565.12	564.97	564.49	565.04	562.79	565.18	565.15	565.27	563.07	561.01	565.34
May 26, 2016	565.53	565.22	565.42	565.93	565.14	563.25	565.25	565.27	565.61	562.95	559.66	565.63

Table 2.2

Water Levels (FT AMSL)
Gratwick-Riverside Park Site
North Tonawanda, New York

Date	MH9	OGC-3	MH11	MW-8	River South	MH12	OGC-8	OGC-4	MW-9	MH14	MH15	MH16
RIM Elevation			**572.11**			**572.37**				**574.30**	**575.84**	**574.82**
TOC Elevation (ft amsl)	**572.55**	**573.35**		**574.37**	**568.46**		**574.01**	**574.66**	**576.23**			
June 30, 2016	566.03	565.49	565.77	566.30	565.49	563.62	565.55	565.47	566.36	566.12	567.30	566.37
July 28, 2016	565.62	565.53	565.99	566.55	565.48	563.83	565.58	565.54	566.62	568.64	567.51	566.60
August 24, 2016	565.82	565.60	566.09	566.62	565.57	563.92	565.63	565.56	566.64	568.77	568.01	566.69
September 27, 2016	566.36	565.92	566.33	566.84	565.84	564.14	565.95	565.88	566.87	568.70	567.96	566.89
October 25, 2016	565.73	565.30	566.29	566.85	565.19	564.13	565.29	565.33	566.86	566.97	567.43	566.92
November 30, 2016	566.27	564.42	566.23	566.74	564.34	564.07	564.44	564.48	566.88	568.17	567.36	566.93
December 28, 2016	559.75	564.62	565.75	566.35	564.45	563.68	564.71	564.80	566.50	562.67	559.88	566.60
January 31, 2017	559.53	564.46	565.58	566.09	564.24	563.44	564.58	564.58	566.22	562.34	560.72	566.31
February 28, 2017	564.92	564.68	565.32	565.85	564.57	563.15	564.76	564.83	565.92	562.03	559.68	565.99
March 31, 2017	559.97	565.07	565.82	566.35	564.96	563.68	565.28	565.16	566.47	562.88	560.73	566.53
April 27, 2017	560.70	565.33	566.59	567.14	565.24	564.40	565.33	565.40	567.26	563.07	560.81	567.30
May 31, 2017	559.08	565.73	566.88	567.27	565.66	564.57	565.79	565.78	567.40	564.63	560.33	567.42
June 27, 2017	560.71	565.93	566.39	566.94	565.93	564.25	566.00	565.97	567.02	564.81	561.46	567.03
July 26, 2017	560.08	565.79	566.38	566.90	565.69	564.24	565.79	565.77	567.05	564.68	560.20	567.04
August 29, 2017	560.82	565.56	566.58	567.12	565.49	564.42	565.62	565.64	567.23	565.13	561.12	567.21
September 25, 2017	567.06	565.56	566.53	567.06	565.50	564.37	565.59	564.64	567.05	565.26	561.12	567.02
October 24, 2017	560.13	565.79	566.51	567.08	565.73	564.37	565.80	565.75	567.12	565.34	559.74	567.09
November 27, 2017	561.26	565.22	566.77	567.34	564.91	564.62	565.03	565.17	567.41	565.82	560.74	567.43
December 21, 2017	559.16	564.76	566.62	567.19	564.63	564.47	564.79	564.87	567.30	565.99	561.15	567.33
January 31, 2018	559.55	565.33	566.82	567.46	565.27	564.66	565.34	565.27	567.60	566.31	560.74	567.57
February 26, 2018	559.05	565.26	567.13	567.71	565.14	564.04	565.31	565.37	567.81	566.78	561.32	567.83
March 23, 2018	560.88	565.28	567.11	567.63	565.12	563.95	565.30	565.35	567.79	566.88	561.55	567.85
April 27, 2018	560.34	565.68	567.49	568.00	565.57	565.35	565.69	565.74	568.21	567.33	559.65	567.24
May 23, 2018	559.05	565.83	567.09	567.66	565.61	564.98	565.89	565.75	567.95	567.12	559.65	567.89
June 11, 2018	559.45	565.69	567.05	567.56	565.58	564.88	562.69	565.73	567.72	567.28	559.55	567.73
July 25, 2018	559.46	565.93	566.87	567.39	565.85	564.7	562.97	565.89	567.46	567.32	560.76	567.16
August 27, 2018	560.97	565.64	566.85	567.37	565.56	564.68	562.69	565.68	567.53	567.37	560.8	567.48
September 21, 2018	559.62	566.23	566.8	567.34	565.65	564.63	562.73	565.67	567.41	567.41	560.06	567.43
October 31, 2018	560.27	565.59	566.63	567.19	565.54	564.48	562.63	565.47	567.34	567.33	562.2	567.34
November 21, 2018	560.59	566.02	566.98	567.55	565.98	564.83	563.1	566.05	567.69	567.69	563.46	567.7
December 20, 2018	560.36	564.94	567.3	567.84	564.82	565.16	561.95	565.14	567.96	568.12	567.07	568.05
January 28, 2019	559.32	565.93	567.32	567.95	565.31 (3)	565.17	562.9	566.05	568.07	568.16	567.15	568.11
February 28, 2019	561.46	565.25	567.29	567.85	(2)	565.15	562.33	565.38	568.05	568.19	567.22	568.18
March 26, 2019	559.16	565.33	567.08	567.63	565.08	564.95	562.4	565.4	567.81	567.97	566.94	567.94
April 26, 2019	560.44	565.97	567.62	568.15	566.06	565.48	563.05	565.75	568.31	568.43	567.39	568.37
May 29, 2019	560.75	565.88	567.78	568.3	565.73	565.58	562.91	565.95	568.48	568.51	567.48	568.47
June 26, 2019	560.32	566.52	567.58	568.09	566.44	565.41	563.53	566.56	568.28	568.37	567.32	568.31
July 24, 2019	560.5	565.95	567.3	567.82	565.82	565.16	563	566.03	567.95	568.08	567.06	568.01
August 28, 2019	559.82	565.87	567.13	567.66	565.78	564.98	562.88	565.93	567.73	567.87	566.22	567.81

Table 2.2

Water Levels (FT AMSL)
Gratwick-Riverside Park Site
North Tonawanda, New York

Date	MH9	OGC-3	MH11	MW-8	River South	MH12	OGC-8	OGC-4	MW-9	MH14	MH15	MH16
RIM Elevation			**572.11**			**572.37**				**574.30**	**575.84**	**574.82**
TOC Elevation (ft amsl)	**572.55**	**573.35**		**574.37**	**568.46**		**574.01**	**574.66**	**576.23**			
September 25, 2019	559.65	565.86	567.05	567.56	565.78	564.91	562.89	565.8	567.63	567.64	560.23	567.74
October 30, 2019	559.31	565.49	567.09	567.61	565.37	564.94	562.5	565.53	567.71	567.63	559.85	567.74
November 26, 2019	559.24	565.36	567.28	567.8	565.25	565.15	562.39	565.45	567.93	567.97	559.82	568
December 23, 2019	560.27	565.3	567.6	568.09	565.23	565.46	562.37	565.37	568.25	568.31	560.45	568.31
January 29, 2020	560.56	565.49	567.92	568.43	565.35	565.8	565.49	565.6	568.58	568.63	559.35	568.65
February 26, 2020	559.09	565.24	567.83	568.36	565.1	565.68	562.29	565.33	568.5	568.61	561.07	568.59
March 26, 2020	558.86	565.56	567.97	568.45	565.43	565.79	562.59	565.62	568.65	568.71	559.03	568.7
May 11, 2020	558.9	566.12	567.82	568.32	566.01	565.69	563.19	566.18	568.52	568.26	560.72	568.56
May 26, 2020	558.87	566.18	567.84	568.16	566.1	565.56	563.23	566.18	568.37	568.46	559.46	568.43
June 29, 2020	567.96	565.96	567.6	568.13	565.88	565.44	563.03	566.05	568.21	568.32	560.22	568.25
July 28, 2020	567.49	566.01	567.3	567.8	565.87	565.15	563.01	566.09	567.99	568.03	561.31	568.03
August 26, 2020	566.73	565.96	566.68	567.19	565.94	564.48	563.02	565.9	567.4	567.49	560.51	567.49
September 29, 2020	565.23	565.87	565.9	566.33	565.87	563.77	562.95	565.93	566.66	566.72	560.19	566.83
October 28, 2020	563.23	565.69	565.34	565.88	565.57	563.19	562.62	565.66	566.12	566.26	561.35	566.31
November 30, 2020	559.92	565.02	564.79	565.3	564.9	562.68	562.09	565.13	565.74	565.72	559.75	565.84
December 22, 2020	559.47	565.24	564.95	565.45	565.08	562.79	562.31	565.4	565.84	565.88	559.25	565.99
January 28, 2021	561.04	565.03	565.25	565.78	NM	563.14	562.1	565.18	566.19	566.24	559.28	566.4
February 24, 2021	559.75	564.79	564.82	565.33	NM	562.68	561.83	565	565.74	565.74	559.55	565.92
March 31, 2021	560.13	565.19	564.97	565.54	565.01	562.88	562.23	565.3	565.92	565.98	560.15	566.06
April 28, 2021	559.92	565.36	564.9	565.48	564.94	562.8	562.4	565.43	565.86	565.91	561.23	566
May 25, 2021	560.49	565.62	564.77	565.71	565.51	562.68	562.63	565.63	565.75	565.81	559.73	565.98
June 30, 2021	559.99	565.67	564.35	564.89	565.62	562.26	562.72	565.63	565.4	565.4	559.16	565.5
July 28, 2021	562.06	565.83	565.02	565.46	565.72	562.75	562.89	565.82	565.88	565.89	559.34	568.9
August 30, 2021	561.13	565.72	564.56	565.08	565.59	562.44	562.77	565.87	565.54	565.59	560.49	565.69
September 30, 2021	560.87	565.46	564.72	565.28	565.36	562.55	562.48	565.47	565.71	565.74	559.43	565.81
October 25, 2021	561.06	565.36	564.98	565.59	565.27	562.96	562.38	565.26	566.02	566.06	568.3	567.56
November 30, 2021	561.16	565.1	565.53	566.15	564.86	563.42	562.12	565.19	566.55	566.58	560.58	566.63
December 22, 2021	562.56	566.11	565.63	566.15	NM	563.49	563.15	566.14	566.57	566.62	560.08	566.7
January 28, 2022	560.66	564.99	565.32	565.83	NM	563.19	562.04	565.18	566.24	566.29	561.75	566.4
February 28, 2022	564.66	565.13	565.93	566.51	565	563.79	562.24	565.32	566.93	567.02	561.56	567.07
March 30, 2022	564.83	564.99	566.02	566.52	564.86	564.88	562.03	565.17	567	567.08	560.13	567.1
April 29, 2022	563.86	565.12	565.86	566.38	564.92	563.7	562.18	565.22	566.84	566.84	560.56	566.91
May 23, 2022	563.95	565.18	565.65	566.37	565.44	563.49	562.35	565.65	566.6	566.64	560.54	566.78

Notes:

(1) River level too low to obtain a measurement at the measuring location.
(2) Unable to access.
(3) Top of ice
NM Not measured

Table 2.3

Summary of Horizontal Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		06/27/2013		07/24/2013		08/22/2013		09/30/2013		10/30/2013		11/27/2013	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	564.75	Inward	565.11 [2]	Inward	565.10	Inward	564.87	Inward	564.49 [2]	Inward	564.05 [2]	Inward
Inner	MH2	564.37		564.38		564.18		564.17		564.47		564.94	
Outer	River North	564.75	Inward	565.11 [2]	Inward	565.10 [1]	Inward	564.87	Inward	564.49 [2]	Inward	564.05 [2]	Inward
Inner	MH6	557.96		558.10		557.71		557.72		558.05		557.69	
Outer	River Middle	564.58	Inward	564.95	Inward	564.95	Inward	564.74	Inward	564.30	Inward	563.63	Inward
Inner	MH8	562.69		562.93		562.41		562.48		562.79		562.35	
Outer	River South	565.00	Inward	565.37	Inward	565.37	Inward	565.15	Inward	564.74	Inward	564.30	Inward
Inner	MH12	561.50		561.40		561.17		561.03		561.35		561.39	

Monitoring Location		12/31/2013		01/30/2014		2/26/2014		3/28/2014		4/25/2014		5/29/2014	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	564.62 [2]	Inward	564.80	Inward	564.30 [2]	Outward	564.96	Inward	564.45 [2]	Inward	564.67 [2]	Inward
Inner	MH2	564.41		564.13		567.53		564.10		564.42		564.46	
Outer	River North	564.62 [2]	Inward	564.80	Inward	564.30 [2]	Inward	564.96	Inward	564.45 [2]	Inward	564.67 [2]	Inward
Inner	MH6	558.11		557.64		558.01		557.62		558.36		558.41	
Outer	River Middle	564.93 [1]	Inward	565.50 [1]	Inward	563.98	Inward	564.39	Inward	564.28	Inward	564.60	Inward
Inner	MH8	562.86		562.41		562.81		562.21		563.03		563.20	
Outer	River South	564.87 [3]	Inward	565.63	Inward	564.55	Inward	564.38	Inward	564.70	Inward	564.92	Inward
Inner	MH12	561.78		561.65		561.48		561.78		562.08		562.06	

Table 2.3

Summary of Horizontal Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		06/25/2014		07/29/2014		08/26/2014		09/30/2014		10/29/2014		11/25/2014	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	564.80	Inward	564.90 [2]	Inward	564.91	Inward	564.67	Inward	564.81	Inward	565.41	Inward
Inner	MH2	564.38		564.24		564.26		564.01		564.06		563.88	
Outer	River North	564.80	Inward	564.90 [2]	Inward	564.91 [1]	Inward	564.67	Inward	564.81	Inward	565.41	Inward
Inner	MH6	558.14		557.93		557.84		557.82		557.82		557.44	
Outer	River Middle	564.67	Inward	564.78	Inward	564.77	Inward	564.54	Inward	564.65	Inward	565.43 [1]	Inward
Inner	MH8	562.94		562.84		562.58		562.51		562.54		562.09	
Outer	River South	565.11	Inward	565.15	Inward	565.15	Inward	564.96	Inward	565.15	Inward	565.56	Inward
Inner	MH12	561.68		561.37		561.25		560.97		560.87		560.85	

Monitoring Location		12/30/2014		01/28/2015		02/24/2015		03/25/2015		04/23/2015		05/29/2015	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	564.20 [2]	Outward	564.85	Outward	564.35 [2]	Outward	563.61 [2]	Outward	564.82	Outward	564.78	Inward
Inner	MH2	567.26		565.50		565.75		564.69		565.70		564.77	
Outer	River North	564.20 [2]	Inward	564.85	Inward	564.35 [2]	Inward	563.61 [2]	Inward	564.82	Inward	564.78	Inward
Inner	MH6	557.71		559.07		559.45		558.97		559.94		558.47	
Outer	River Middle	563.90	Inward	564.78	Inward	564.47 [1]	NC	563.63	Outward	564.60	Outward	564.65	Inward
Inner	MH8	562.20		563.96		NM		563.76		564.85		563.26	
Outer	River South	564.45	Inward	565.24	Inward	564.80	Inward	563.86	Inward	565.04	Inward	565.05	Inward
Inner	MH12	561.15		562.14		562.51		561.78		562.69		561.28	

Table 2.3

Summary of Horizontal Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		06/24/2015		07/28/2015		08/27/2015		09/25/2015		10/30/2015		11/25/2015	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	565.15	Inward	565.27	Inward	565.13	Inward	565.01	Inward	564.71	Inward	563.94 (2)	Outward
Inner	MH2	564.80		564.79		564.62		564.70		564.69		564.59	
Outer	River North	565.15	Inward	565.27	Inward	565.13	Inward	565.01	Inward	564.71	Inward	563.94 (2)	Inward
Inner	MH6	558.20		557.84		557.71		557.81		557.51		557.23	
Outer	River Middle	565.07	Inward	565.16	Inward	565.06	Inward	564.91	Inward	564.49	Inward	563.83	Inward
Inner	MH8	562.96		562.60		562.46		562.53		562.24		561.85	
Outer	River South	565.44	Inward	565.50	Inward	565.47	Inward	565.31	Inward	565.00	Inward	564.19	Inward
Inner	MH12	561.25		561.16		560.96		560.91		560.69		560.35	

Monitoring Location		12/30/2015		01/28/2016		02/23/2016		03/31/2016		04/28/2016		05/26/2016	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	564.48 (2)	Outward	564.39 (2)	Outward	563.91 (2)	Outward	564.35 (2)	Outward	564.76	Outward	564.82	Outward
Inner	MH2	564.50		564.77		564.86		565.66		566.56		566.95	
Outer	River North	564.48 (2)	Inward	564.39 (2)	Inward	563.91 (2)	Inward	564.35 (2)	Inward	564.76	Inward	564.82	Inward
Inner	MH6	557.26		557.42		558.15		559.61		560.20		560.61	
Outer	River Middle	564.18	Inward	564.15	Inward	563.48	Inward	564.20	Outward	564.55	Outward	564.64	Outward
Inner	MH8	561.94		562.05		562.94		564.43		565.05		565.45	
Outer	River South	564.73	Inward	564.64	Inward	564.16	Inward	564.60	Inward	565.04	Inward	565.14	Inward
Inner	MH12	560.14		560.48		560.88		562.06		562.79		563.25	

Table 2.3

Summary of Horizontal Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		6/30/2016		07/28/2016		08/24/2016		09/27/2016		10/25/2016		11/30/2016	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	565.21	Outward	565.24	Outward	565.22	Outward	565.48	Outward	564.76	Outward	563.73 [1]	Outward
Inner	MH2	567.09		567.28		567.40		567.56		567.57		567.37	
Outer	River North	565.21	Inward	565.24	Inward	565.22	Inward	565.48	Inward	564.76	Inward	563.73 [1]	Inward
Inner	MH6	561.03		561.01		561.12		561.30		561.25		561.11	
Outer	River Middle	565.09	Outward	565.05	Outward	565.12	Outward	565.38	Outward	564.60	Outward	563.86	Outward
Inner	MH8	565.65		565.79		566.77		566.15		566.08		565.95	
Outer	River South	565.49	Inward	565.48	Inward	565.57	Inward	565.84	Inward	565.19	Inward	564.34	Inward
Inner	MH12	563.62		563.83		563.95		564.14		564.13		564.07	

Monitoring Location		12/28/2016		01/31/2017		02/28/2017		03/31/2017		04/27/2017		05/31/2017	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	563.75 [1]	Outward	563.53 [1]	Outward	563.95 [1]	Outward	564.10 [1]	Outward	564.91	Outward	565.56	Outward
Inner	MH2	567.41		567.41		567.06		567.37		568.05		568.17	
Outer	River North	563.75 [1]	Inward	563.53 [1]	Inward	563.95 [1]	Inward	564.10 [1]	Inward	564.91	Inward	565.56	Inward
Inner	MH6	560.85		560.72		560.36		561.11		561.53		561.73	
Outer	River Middle	563.88	Outward	563.66	Outward	564.08	Outward	564.23	Outward	564.76	Outward	565.29	Outward
Inner	MH8	565.60		565.46		565.23		565.58		566.36		566.53	
Outer	River South	564.45	Inward	564.24	Inward	564.57	Inward	564.96	Inward	565.24	Inward	565.66	Inward
Inner	MH12	563.68		563.44		563.15		563.68		564.40		564.57	

Table 2.3

Summary of Horizontal Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		06/27/2017		07/26/2017		08/29/2017		09/25/2017		10/24/2017		11/27/2017	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	565.62	Outward	565.42	Outward	565.19	Outward	565.22	Outward	565.37	Outward	564.55	Outward
Inner	MH2	567.87		567.85		567.98		567.81		567.89		567.95	
Outer	River North	565.62	Inward	565.42	Inward	565.19	Inward	565.22	Inward	565.37	Inward	564.55	Inward
Inner	MH6	561.47		561.34		561.52		561.50		561.49		561.59	
Outer	River Middle	565.50	Outward	565.23	Outward	565.04	Outward	565.06	Outward	565.25	Outward	564.40	Outward
Inner	MH8	566.29		566.19		566.44		566.37		566.35		566.45	
Outer	River South	565.93	Inward	565.69	Inward	565.49	Inward	565.50	Inward	565.73	Inward	564.91	Inward
Inner	MH12	564.25		564.24		564.42		564.37		564.37		564.62	

Monitoring Location		12/21/2017		01/31/2018		02/26/2018		03/23/2018		04/27/2018		05/23/2018	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	563.96 [1]	Outward	565.09	Outward	564.86	Outward	564.86	Outward	565.30	Outward	565.41	Outward
Inner	MH2	567.87		568.03		568.36		568.25		568.56		568.28	
Outer	River North	563.96 [1]	Inward	565.09	Inward	564.86	Inward	564.86	Inward	565.30	Inward	565.41	Inward
Inner	MH6	561.45		561.64		561.98		561.11		562.20		561.92	
Outer	River Middle	564.09	Outward	564.59	Outward	564.69	Outward	564.62	Outward	565.09	Outward	565.19	Outward
Inner	MH8	566.32		566.48		566.85		566.70		567.09		566.76	
Outer	River South	564.63	Inward	565.27	Inward	565.14	Inward	565.12	Inward	565.57	Inward	565.61	Inward
Inner	MH12	564.47		564.61		564.04		563.95		565.35		564.98	

Table 2.3

Summary of Horizontal Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		06/21/2018		07/25/2018		08/27/2018		09/21/2018		10/31/2018		11/21/2018	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	565.29	Outward	565.51	Outward	565.25	Outward	565.30	Outward	565.20	Outward	565.52	Outward
Inner	MH2	568.21		568.14		568.16		568.06		567.93		568.10	
Outer	River North	565.29	Inward	565.51	Inward	565.25	Inward	565.30	Inward	565.20	Inward	565.52	Inward
Inner	MH6	561.91		561.85		561.78		561.71		561.45		561.72	
Outer	River Middle	565.13	Outward	565.40	Outward	565.08	Outward	565.13	Outward	564.99	Outward	565.73 [2]	Outward
Inner	MH8	566.69		566.55		566.63		566.54		566.26		566.55	
Outer	River South	565.58	Inward	565.85	Inward	565.56	Inward	565.65	Inward	565.54	Inward	565.98	Inward
Inner	MH12	564.88		564.70		564.68		564.63		564.48		564.83	

Monitoring Location		12/20/2018		01/28/2019		02/28/2019		03/26/2019		04/26/2019		05/29/2019	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	564.16 [1]	Outward	565.30	Outward	NM	NC	564.95	Outward	565.71	Outward	565.42	Outward
Inner	MH2	568.35		568.38		568.33		568.15		568.56		568.71	
Outer	River North	564.03 [1]	Inward	565.30	Inward	NM	NC	564.95	Inward	565.71	Inward	565.42	Inward
Inner	MH6	561.99		562.06		561.94		561.77		562.30		562.49	
Outer	River Middle	564.29	Outward	565.06 [2]	Outward	NM	NC	564.72	Outward	565.48	Outward	565.20	Outward
Inner	MH8	566.86		566.89		566.76		566.58		566.96		567.30	
Outer	River South	564.82	Outward	565.31	Inward	NM	NC	565.08	Inward	566.06	Inward	565.73	Inward
Inner	MH12	565.16		565.17		565.15		564.95		565.48		565.58	

Table 2.3

Summary of Horizontal Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		6/26/2019		7/24/2019		8/28/2019		9/25/2019		10/30/2019		11/26/2019	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	566.11	Outward	565.58	Outward	565.44	Outward	565.47	Outward	565.04	Outward	564.82	Outward
Inner	MH2	568.68		568.45		568.32		568.31		568.37		568.32	
Outer	River North	566.11	Inward	565.58	Inward	565.44	Inward	565.47	Inward	565.04	Inward	564.82	Inward
Inner	MH6	562.39		562.12		561.99		561.93		561.96		562.00	
Outer	River Middle	565.89	Outward	565.38	Outward	565.28	Outward	565.27	Outward	564.79	Outward	564.58	Outward
Inner	MH8	567.16		566.89		566.76		566.68		566.74		566.81	
Outer	River South	566.44	Inward	565.82	Inward	565.78	Inward	565.78	Inward	565.37	Inward	565.25	Inward
Inner	MH12	565.41		565.16		564.98		564.91		564.94		565.15	

Monitoring Location		12/23/2019		1/29/2020		2/26/2020		3/25/2020		5/11/2020		5/26/2020	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	564.94	Outward	565.04	Outward	564.65	Outward	565.27	Outward	565.60	Outward	565.82	Outward
Inner	MH2	568.54		568.86		568.75		568.84		568.70		568.73	
Outer	River North	564.94	Inward	565.04	Inward	564.65	Inward	565.27	Inward	565.60	Inward	565.82	Inward
Inner	MH6	562.27		562.54		562.42		562.51		562.44		562.41	
Outer	River Middle	564.59	Outward	564.72	Outward	564.85 [(2)]	Outward	564.85	Outward	565.29	Outward	565.60	Outward
Inner	MH8	567.10		567.38		567.26		567.37		566.97		567.19	
Outer	River South	565.23	Outward	565.35	Outward	565.10	Outward	565.43	Outward	566.01	Inward	566.10	Inward
Inner	MH12	565.46		565.80		565.68		565.79		565.69		565.56	

Table 2.3

Summary of Horizontal Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		6/29/2020		7/28/2020		8/26/2020		9/29/2020		10/28/20		11/26/2020	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	565.60	Outward	565.61	Inward	565.62	Inward	565.51	Inward	565.31	Inward	564.60	Inward
Inner	MH2	566.65		560.96		559.81		561.02		560.82		561.12	
Outer	River North	565.60	Inward	565.61	Inward	565.62	Inward	565.51	Inward	565.31	Inward	564.60	Inward
Inner	MH6	561.64		560.30		559.61		558.84		557.44		556.31	
Outer	River Middle	565.37	Outward	565.37	Outward	565.39	Outward	565.25	Inward	564.99	Inward	564.24	Inward
Inner	MH8	567.17		566.76		565.98		564.51		562.54		559.28	
Outer	River South	565.88	Inward	565.87	Inward	565.94	Inward	565.87	Inward	565.57	Inward	564.90	Inward
Inner	MH12	565.44		565.15		564.48		563.77		563.19		562.68	

Monitoring Location		12/22/20		1/28/2021		2/24/2021		3/31/2021		4/28/2021		5/25/2021	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	564.79	Inward	564.71	Inward	563.87 [1]	Inward	564.79	Inward	565.04	Inward	565.22	Inward
Inner	MH2	560.67		561.30		561.39		560.70		561.00		561.41	
Outer	River North	564.79	Inward	564.71	Inward	563.87 [1]	Inward	564.79	Inward	565.04	Inward	565.22	Inward
Inner	MH6	556.45		557.71		556.37		556.77		557.14		557.34	
Outer	River Middle	564.37	Inward	564.28	Inward	564.00	Inward	564.42	Inward	564.71	Inward	564.86	Inward
Inner	MH8	558.79		560.33		559.05		559.45		559.19		559.75	
Outer	River South	565.08	Inward	564.53 [4]	Inward	564.25 [4]	Inward	565.01	Inward	564.94	Inward	565.51	Inward
Inner	MH12	562.79		563.14		562.68		562.88		562.80		562.68	

Table 2.3

Summary of Horizontal Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		6/30/2021		7/28/2021		8/30/2021		9/30/2021		10/25/21		11/30/21	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	565.31	Inward	565.44	Inward	565.17	Inward	565.12	Inward	564.51(1)	Inward	564.72	Inward
Inner	MH2	560.10		561.36		561.36		559.82		561.37		559.97	
Outer	River North	565.31	Inward	565.44	Inward	565.17	Inward	565.12	Inward	564.51(1)	Inward	564.72	Inward
Inner	MH6	557.25		557.54		557.37		557.51		557.20		557.30	
Outer	River Middle	565.00	Inward	565.13	Inward	564.97	Inward	564.77	Inward	564.64	Inward	564.27	Inward
Inner	MH8	559.28		561.37		560.38		560.13		560.38		560.71	
Outer	River South	565.62	Inward	565.72	Inward	565.59	Inward	565.36	Inward	565.27	Inward	564.86	Inward
Inner	MH12	562.26		562.75		562.44		562.55		562.96		563.42	

Monitoring Location		12/22/21		1/28/2022		2/28/2022		3/30/2022		4/29/2022		5/23/2022	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Outer	River North	565.38	Inward	(5)	(5)	564.68	Inward	564.54	Inward	564.70	Inward	564.79	Inward
Inner	MH2	560.62		559.92		560.15		559.99		561.34		561.30	
Outer	River North	565.38	Inward	(5)	(5)	564.68	Inward	564.54	Inward	564.70	Inward	564.79	Inward
Inner	MH6	557.34		557.02		558.16		558.37		558.01		558.23	
Outer	River Middle	(5)	(5)	(5)	(5)	564.35	Inward	564.30	Inward	564.38	Inward	564.38	Inward
Inner	MH8	561.85		559.84		563.86		564.14		563.09		563.25	
Outer	River South	(5)	(5)	(5) (3)	(5)	565.00	Inward	564.86	Outward	564.92	Inward	565.44	Inward
Inner	MH12	563.49		563.19		563.79		564.88		563.70		563.49	

Notes:

(1) River level too low to obtain a measurement. Water level shown is River Middle water level minus 0.13 feet.
(2) River level too low to obtain a measurement. Water level shown is River South Water level minus 0.25 feet.
(3) River level too low to obtain a measurement. Lowest recorded level (i.e., 563.92) since start of system operation used.
(4) River level too low to obtain a measurement. Water level shown is River Middle water level plus 0.25 feet.
(5) River levels not measured due to ice building up
NM - Not Measured
NC - Not Calculated

Table 2.4

Summary of Vertical Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		06/27/2013		07/24/2013		08/22/2013		09/30/2013		10/30/2013		11/27/2013	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	559.69	Upward	560.60	Upward	560.40	Upward	560.68	Upward	560.63	Upward	560.33	Upward
Lower	MW-6	564.59		564.52		564.24		564.28		564.64		564.52	
Upper	MH8	562.69	Upward	562.95	Upward	562.41	Upward	562.40	Upward	562.79	Upward	562.35	Upward
Lower	MW-7	562.86		563.28		562.46		562.48		562.98		562.40	
Upper	MH11	563.08	Upward	563.04	Upward	562.87	Upward	562.73	Upward	561.96	Upward	563.08	Upward
Lower	MW-8	563.61		563.56		563.37		563.23		563.53		563.58	
Average [1]		565.33	Upward	565.06	Upward	564.80	Upward	564.71	Upward	565.14	Upward	565.19	Upward
Lower	MW-9	565.66		565.47		565.19		565.05		565.50		565.47	

Monitoring Location		12/31/2013		01/30/2014		2/26/2014		3/28/2014		4/25/2014		5/29/2014	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	561.39	Upward	559.88	Upward	570.48	Downward	559.36	Upward	560.21	Upward	559.12	Upward
Lower	MW-6	564.74		564.14		565.29		564.01		564.74		564.71	
Upper	MH8	562.86	Upward	562.41	Downward	562.81	Downward	562.21	Downward	563.03	Downward	563.20	Upward
Lower	MW-7	563.09		562.40		562.78		562.01		562.95		563.21	
Upper	MH11	563.53	Upward	563.40	Upward	563.28	Upward	563.58	Upward	563.90	Upward	564.01	Upward
Lower	MW-8	564.06		563.95		563.83		564.10		564.44		564.37	
Average [1]		565.42	Upward	565.18	Upward	565.22	Upward	565.61	Upward	565.87	Upward	565.71	Upward
Lower	MW-9	565.76		565.52		565.46		565.93		566.12		565.77	

Table 2.4

Summary of Vertical Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		06/25/2014		07/29/2014		08/26/2014		09/30/2014		10/29/2014		11/25/2014	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	560.62	Upward	560.42	Upward	561.12	Upward	560.65	Upward	559.77	Upward	560.70	Upward
Lower	MW-6	564.46		564.28		564.26		564.07		564.09		563.89	
Upper	MH8	562.88	Upward	562.72	Upward	562.58	Downward	562.51	Downward	562.54	Downward	562.09	Downward
Lower	MW-7	562.94		562.84		562.49		562.36		562.35		561.92	
Upper	MH11	563.53	Upward	563.41	Upward	563.11	Upward	562.89	Upward	562.78	Upward	562.71	Upward
Lower	MW-8	564.03		563.75		563.61		563.31		563.23		563.18	
Average [1]		565.33	Upward	564.94	Upward	564.91	Upward	564.67	Upward	564.54	Upward	564.56	Upward
Lower	MW-9	565.60		565.21		565.20		564.89		564.77		564.76	

Monitoring Location		12/30/2014		01/28/2015		2/24/2015		3/25/2015		4/23/2015		5/29/2015	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	571.05	Downward	565.06	Downward	565.39	Downward	560.93	Upward	560.48	Upward	561.40	Upward
Lower	MW-6	564.53		564.82		565.18		565.07		565.89		564.58	
Upper	MH8	562.31	Downward	563.96	Upward	NM	NA	563.76	Upward	564.85	Upward	563.26	Upward
Lower	MW-7	562.20		564.72		565.17		564.14		565.34		563.59	
Upper	MH11	562.98	Upward	564.19	Upward	NM	NA	563.88	Upward	564.86	Upward	563.36	Upward
Lower	MW-8	563.43		564.70		565.15		564.44		565.41		563.93	
Average [1]		564.86	Upward	565.03	Downward	NM	NA	NM	NA	566.11	Upward	565.30	Upward
Lower	MW-9	565.13		564.26		565.41		566.11		566.41		565.56	

Table 2.4

Summary of Vertical Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		06/24/2015		07/28/2015		08/28/2015		09/25/2015		10/30/2015		11/30/2015	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	560.99	Upward	559.51	Upward	559.38	Upward	559.57	Upward	560.63	Upward	560.10	Upward
Lower	MW-6	564.62		564.53		564.29		564.47		564.31		564.23	
Upper	MH8	562.96	Upward	562.60	Upward	562.46	Downward	562.53	Upward	562.24	Upward	561.85	Downward
Lower	MW-7	563.10		562.76		562.41		562.55		562.34		561.80	
Upper	MH11	563.33	Upward	563.27	Upward	563.09	Upward	563.20	Upward	562.82	Upward	562.52	Upward
Lower	MW-8	563.87		563.84		563.60		563.58		563.34		563.03	
Average [1]		565.26	Upward	565.14	Upward	564.86	Upward	564.91	Upward	563.80	Upward	562.20	Upward
Lower	MW-9	565.54		565.38		565.14		565.16		564.25		563.61	

Monitoring Location		12/30/2015		01/28/2016		2/23/2016		3/31/2016		4/28/2016		5/26/2016	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	560.89	Upward	560.05	Upward	560.75	Upward	560.53	Upward	561.19	Upward	559.81	Upward
Lower	MW-6	564.18		564.48		564.69		565.97		566.08		566.38	
Upper	MH8	561.94	Upward	562.05	Downward	562.94	Upward	564.43	Upward	565.05	Upward	565.45	Upward
Lower	MW-7	562.35		561.98		563.51		564.91		565.69		566.20	
Upper	MH11	562.22	Upward	562.68	Upward	563.03	Upward	564.19	Upward	564.97	Downward	565.42	Downward
Lower	MW-8	562.79		563.18		563.54		564.76		564.49		565.14	
Average [1]		562.10	Upward	562.00	Upward	562.34	Upward	561.44	Upward	562.38	Upward	561.85	Upward
Lower	MW-9	563.10		563.44		563.55		564.54		565.27		565.61	

Table 2.4

Summary of Vertical Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		06/30/2016		07/28/2016		08/24/2016		09/27/2016		10/25/2016		11/30/2016	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	561.03	Upward	559.17	Upward	559.53	Upward	561.19	Upward	565.12	Upward	561.33	Upward
Lower	MW-6	565.18		566.67		566.81		566.98		566.97		564.39	
Upper	MH8	565.13	Upward	565.79	Upward	565.96	Upward	566.15	Upward	566.08	Upward	565.95	Upward
Lower	MW-7	566.44		566.61		566.67		566.94		566.84		566.75	
Upper	MH11	565.77	Upward	565.99	Upward	566.09	Upward	566.33	Upward	566.29	Upward	566.23	Upward
Lower	MW-8	566.30		566.55		566.62		566.84		566.85		566.74	
Average [1]		567.85	Downward	568.26	Downward	568.52	Downward	568.45	Downward	567.12	Downward	567.90	Downward
Lower	MW-9	566.36		566.62		566.64		566.87		566.86		566.88	

Monitoring Location		12/28/2016		01/31/2017		02/28/2017		03/31/2017		04/27/2017		05/31/2017	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	561.39	Upward	560.44	Upward	560.62	Upward	559.48	Upward	560.59	Upward	559.79	Upward
Lower	MW-6	566.82		566.67		566.44		566.78		567.45		567.57	
Upper	MH8	565.60	Upward	565.46	Upward	565.23	Upward	565.58	Upward	566.36	Upward	566.53	Upward
Lower	MW-7	566.37		566.18		565.88		566.36		567.14		567.34	
Upper	MH11	565.75	Upward	565.58	Upward	565.32	Upward	565.82	Upward	566.59	Upward	566.88	Upward
Lower	MW-8	566.35		566.09		565.85		566.35		567.14		567.27	
Average [1]		561.74	Upward	561.80	Upward	561.25	Upward	562.16	Upward	562.85	Upward	563.20	Upward
Lower	MW-9	566.50		566.22		565.92		566.47		567.26		567.40	

Table 2.4

Summary of Vertical Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		06/27/2017		07/26/2017		08/29/2017		09/25/2017		10/24/2017		11/27/2017	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	559.53	Upward	561.04	Upward	559.69	Upward	560.63	Upward	560.12	Upward	560.69	Upward
Lower	MW-6	567.28		567.25		567.37		567.24		567.32		567.37	
Upper	MH8	566.29	Upward	566.19	Upward	566.44	Upward	566.37	Upward	566.35	Upward	566.45	Upward
Lower	MW-7	567.03		566.96		567.21		567.21		567.12		567.17	
Upper	MH11	565.39	Upward	566.38	Upward	566.58	Upward	566.53	Upward	566.51	Upward	566.77	Upward
Lower	MW-8	566.94		566.90		567.12		567.06		567.08		567.34	
Average [1]		563.69	Upward	563.19	Upward	563.79	Upward	563.88	Upward	563.47	Upward	564.13	Upward
Lower	MW-9	567.02		567.05		567.23		567.05		567.12		567.41	

Monitoring Location		12/21/2017		01/31/2018		02/26/2018		03/23/2018		04/27/2018		05/23/2018	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	560.98	Upward	559.93	Upward	560.72	Upward	561.20	Upward	559.09	Upward	560.61	Upward
Lower	MW-6	567.27		567.48		567.73		567.61		567.92		567.68	
Upper	MH8	566.32	Upward	566.48	Upward	566.85	Upward	566.70	Upward	567.09	Upward	566.76	Upward
Lower	MW-7	567.08		567.36		567.65		567.48		567.86		567.57	
Upper	MH11	566.62	Upward	566.82	Upward	567.13	Upward	567.11	Upward	567.49	Upward	567.09	Upward
Lower	MW-8	567.19		567.46		567.71		567.63		568.00		567.66	
Average [1]		564.38	Upward	564.45	Upward	564.96	Upward	565.10	Upward	564.77	Upward	564.63	Upward
Lower	MW-9	567.30		567.60		567.81		567.79		568.21		567.95	

Table 2.4

Summary of Vertical Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		06/11/2018		07/25/2018		08/27/2018		09/21/2018		10/31/2018		11/21/2018	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	555.80	Upward	558.78	Upward	560.13	Upward	559.41	Upward	559.80	Upward	559.70	Upward
Lower	MW-6	567.61		567.57		567.55		565.08		567.30		567.48	
Upper	MH8	566.69	Upward	566.55	Upward	566.63	Upward	566.54	Upward	566.26	Upward	566.55	Upward
Lower	MW-7	567.18		567.09		567.10		566.97		566.75		567.06	
Upper	MH11	567.05	Upward	566.87	Upward	566.85	Upward	566.80	Upward	566.63	Upward	566.98	Upward
Lower	MW-8	567.56		567.39		567.37		567.34		567.19		567.55	
Average [1]		564.70	Upward	565.13	Upward	565.18	Upward	564.96	Upward	565.62	Upward	566.28	Upward
Lower	MW-9	567.72		567.46		567.53		567.41		567.34		567.69	

Monitoring Location		12/20/2018		01/28/2019		02/28/2019		03/26/2019		04/26/2019		05/29/2019	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	559.91	Upward	560.2	Upward	559.05	Upward	560.19	Upward	558.73	Upward	559.20	Upward
Lower	MW-6	567.71		567.8		567.68		567.53		567.96		568.13	
Upper	MH8	566.86	Upward	566.89	Upward	566.76	Upward	566.58	Upward	566.96	Upward	567.30	Upward
Lower	MW-7	567.38		567.44		567.40		567.22		567.80		568.02	
Upper	MH11	567.30	Upward	567.32	Upward	567.29	Upward	567.08	Upward	567.62	Upward	567.78	Upward
Lower	MW-8	567.84		567.95		567.85		567.63		568.15		568.30	
Average [1]		567.77	Upward	567.82	Upward	567.87	Upward	567.63	Upward	568.08	Upward	568.17	Upward
Lower	MW-9	567.96		568.07		568.05		567.81		568.31		568.48	

Table 2.4

Summary of Vertical Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		6/26/2019		7/24/2019		8/28/2019		9/25/2019		10/30/2019		11/26/2019	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	558.83	Upward	560.45	Upward	558.55	Upward	558.86	Upward	559.29	Upward	558.13	Upward
Lower	MW-6	568.04		567.82		567.73		567.69		567.74		567.71	
Upper	MH8	567.16	Upward	566.89	Upward	566.76	Upward	566.68	Upward	566.74	Upward	566.81	Upward
Lower	MW-7	567.93		567.69		567.55		567.48		567.52		567.64	
Upper	MH11	567.58	Upward	567.30	Upward	567.13	Upward	567.05	Upward	567.09	Upward	567.28	Upward
Lower	MW-8	568.09		567.82		567.66		567.56		567.61		567.80	
Average [1]		568.02	Upward	567.74	Upward	567.32	Upward	565.17	Upward	565.04	Upward	565.25	Upward
Lower	MW-9	568.28		567.95		567.73		567.63		567.71		567.93	

Monitoring Location		12/23/2019		1/29/2020		2/26/2020		3/25/2020		5/11/2020		5/26/2020	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	559.53	Upward	558.6	Upward	560.28	Upward	559.19	Upward	558.53	Upward	560.23	Upward
Lower	MW-6	567.94		568.23		568.13		568.22		567.97		568.08	
Upper	MH8	567.10	Upward	567.38	Upward	567.26	Upward	567.37	Upward	566.97	Upward	567.19	Upward
Lower	MW-7	567.92		568.2		568.06		568.20		568.08		567.66	
Upper	MH11	567.60	Upward	567.92	Upward	567.83	Upward	567.97	Upward	567.82	Upward	567.84	Upward
Lower	MW-8	568.09		568.43		568.36		568.45		568.32		568.16	
Average [1]		565.69	Upward	565.54	Upward	566.10	Upward	565.48	Upward	565.75	Upward	565.46	Upward
Lower	MW-9	568.25		568.58		568.50		568.65		568.52		568.37	

Table 2.4

Summary of Vertical Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		6/29/2020		7/28/2020		8/26/2020		9/29/2020		10/28/2020		11/30/2020	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	565.40	Upward	560.07	Upward	558.13	Upward	560.12	Upward	559.89	Upward	560.29	Upward
Lower	MW-6	566.97		564.84		564.12		563.42		563.16		562.94	
Upper	MH8	567.17	Upward	566.76	Upward	565.98	Upward	564.51	Upward	562.54	Upward	559.28	Upward
Lower	MW-7	567.73		567.28		566.68		565.46		563.49		561.28	
Upper	MH11	567.60	Upward	567.30	Upward	566.68	Upward	565.90	Upward	565.34	Upward	564.79	Upward
Lower	MW-8	568.13		567.80		567.19		566.33		565.88		565.30	
Average [1]		565.62	Upward	565.79	Upward	565.16	Upward	564.54	Upward	564.62	Upward	563.73	Upward
Lower	MW-9	568.21		567.99		567.40		566.66		566.12		565.74	

Monitoring Location		12/22/2020		1/28/2021		2/24/2021		3/31/2021		4/28/2021		5/25/2021	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	559.88	Upward	560.37	Upward	560.52	Upward	559.82	Upward	560.02	Upward	560.48	Upward
Lower	MW-6	562.91		562.88		562.68		562.76		562.81		562.77	
Upper	MH8	558.79	Upward	560.33	Upward	559.05	Upward	559.45	Upward	559.19	Upward	559.75	Upward
Lower	MW-7	561.40		561.27		561.14		561.65		561.28		561.29	
Upper	MH11	564.95	Upward	565.25	Upward	564.82	Upward	564.97	Upward	564.90	Upward	564.77	Upward
Lower	MW-8	565.45		565.78		565.33		565.54		565.48		565.71	
Average [1]		563.67	Upward	563.92	Upward	563.68	Upward	564.04	Upward	564.35	Upward	563.78	Upward
Lower	MW-9	565.84		566.19		565.74		565.92		565.86		565.75	

Table 2.4

Summary of Vertical Gradients
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location		6/30/2021		7/28/2021		8/30/2021		9/30/2021		10/25/21		11/30/21	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	558.04	Upward	560.32	Upward	560.46	Upward	557.91	Upward	560.41	Upward	558.52	Upward
Lower	MW-6	565.59		562.69		562.59		562.72		562.76		562.84	
Upper	MH8	559.28	Upward	561.37	Upward	560.38	Upward	560.13	Upward	560.38	Upward	560.71	Upward
Lower	MW-7	560.85		562.42		560.95		561.50		561.86		562.08	
Upper	MH11	564.35	Upward	565.02	Upward	564.56	Upward	564.72	Upward	564.98	Upward	565.53	Upward
Lower	MW-8	564.89		565.46		565.08		565.28		565.59		566.15	
Average [1]		563.32	Upward	563.71	Upward	563.89	Upward	563.64	Upward	566.81	Downward	564.58	Upward
Lower	MW-9	565.40		565.88		565.54		565.71		566.02		566.55	

Monitoring Location		12/22/21		1/28/2022		2/28/2022		3/30/2022		4/29/2022		5/23/2022	
		Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction	Water Level (ft amsl)	Gradient Direction
Upper	MH3	559.65	Upward	558.8	Upward	558.56	Upward	558.43	Upward	560.41	Upward	560.32	Upward
Lower	MW-6	562.96		562.82		563.36		563.44		563.22		563.10	
Upper	MH8	561.85	Upward	559.84	Upward	563.86	Upward	564.14	Upward	563.09	Upward	563.25	Upward
Lower	MW-7	562.69		561.45		564.68		565.05		563.78		563.99	
Upper	MH11	565.63	Upward	565.32	Upward	565.93	Upward	566.02	Upward	565.86	Upward	565.65	Upward
Lower	MW-8	566.15		565.83		566.51		566.52		566.38		566.37	
Average [1]		564.44	Upward	564.78	Upward	565.20	Upward	564.76	Upward	564.75	Upward	564.61	Upward
Lower	MW-9	566.57		566.24		566.93		567.00		566.84		566.60	

Notes:

NA - Not Applicable.
NM - Not monitored.
(1) - Distance weighted for MH14 (two thirds) and MH15 (one third).
(2) - Buried with snow.
(3) - Not Monitored - MH14 was buried with snow and could not be accessed.

Table 2.5

Groundwater Sampling Summary
Operation and Maintenance Manual
Gratwick-Riverside Park Site
North Tonawanda, New York

LOCATIONS

OGC1	MW-6
OGC2	MW-7
OGC3	MW-8
OGC4	MW-9
OGC5	OGC6
OGC7	OGC8

FREQUENCY

- quarterly for 2 years following GWS startup.
- semi-annually for Year 3 except for OGC-4 (quarterly for SVOCs) and OGC-6 (quarterly for VOCs).
- annually for Years 4 through 7 (until May 2008).

SAMPLING PROGRAM (MAY 2009 THROUGH MAY 2012)

Annual	Once Every 2 Years (2010 and 2012)
MW-8	MW-6
MW-9	MW-7
OGC-3	OGC-1
OGC-4	OGC-2
OGC-6	OGC-5
OGC-7	
OGC-8	

SAMPLING PROGRAM (MAY 2013 THROUGH MAY 2018)

Annual	Once Every 2 Years (Even Years)
MW-8	MW-6
MW-9	MW-7
OGC-3	OGC-1
OGC-6	OGC-2
OGC-7	OGC-4
	OGC-5
	OGC-8

SAMPLING PROGRAM (MAY 2019 THROUGH MAY 2022)

Annual	Once Every 2 Years (Even Years)
MW-6	MW-7
MW-8	OGC-1
MW-9	OGC-2
OGC-3	OGC-4
OGC-6	OGC-5
OGC-7	OGC-8

Table 2.5

Groundwater Sampling Summary
Operation and Maintenance Manual
Gratwick-Riverside Park Site
North Tonawanda, New York

PARAMETERS

Volatiles

Acetone
Benzene
2-Butanone
Chlorobenzene
1,1-Dichloroethane
trans-1,2-Dichloroethene
Ethylbenzene
Methylene Chloride
Tetrachloroethene
Toluene
Trichloroethene
Vinyl Chloride
Xylenes (Total)

Semi-Volatiles

1,2-Dichlorobenzene
1,4-Dichlorobenzene
2,4-Dimethylphenol
2-Methylphenol
4-Methylphenol
Naphthalene
Di-n-octylphthalate
Phenol

Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		MW-6											
Date	**Class GA Level**	**05/18/01**	**08/21/01**	**11/27/01**	**02/11/02**	**05/21/02**	**08/06/02**	**11/22/02**	**02/25/03**	**05/08/03**	**11/04/03**	**05/14/04**	**05/27/05**
Volatiles (µg/L)													
Acetone	50						4.4J			44		6.7	13
Benzene	1		0.64J			0.65J	0.59J	0.56J		0.57J			
2-Butanone	50												
Chlorobenzene	5		1.5J	1.3J		0.65J		0.54J		0.81J		0.37J	
trans-1,2-Dichloroethene	5		1.1J			0.37J	0.32J	0.34J		1.4		0.52J	
Ethylbenzene	5		0.21J										
Methylene Chloride	5				1.8J								2.1
Tetrachloroethene	5		0.44J							0.67J		0.25J	
Toluene	5		2.2J	0.29J		1.3	0.91J	1.1		2.1	3.6	0.92J	
Trichloroethene	5		2.0J		1.2J		1.1	1.5	3.2	14	12	3.7	1.5
Vinyl Chloride	2					0.29J	0.24J	0.22J		0.52J			
Total Xylenes	5		0.90J	0.44J		0.36J	0.27J						
Total VOCs		**0**	**8.99**	**2.03**	**3**	**3.62**	**7.83**	**4.26**	**3.2**	**64.1**	**15.6**	**12.46**	**29.6**
Semi-Volatiles (µg/L)													
1,2-Dichlorobenzene	3												
1,4-Dichlorobenzene	3	1J		0.7J	2J						2J		
2,4-Dimethylphenol	50	5J	5J	3J	2J	1J	0.9J	9J			6J		
2-Methylphenol	NL	5J	6J	2J	2J	2J	1J	0.9J			5J		
4-Methylphenol	NL	15	13	5J	4J	3J	2J	2J			12		
Naphthalene	10	67	69		1J		14	13			76		5J
Di-n-octyl phthalate	50				2J								
Phenol	1	14	4J	2J	0.8J						250		
Total SVOCs		**107**	**97**	**12.7**	**13.8**	**6**	**17.9**	**24.9**	**0**	**0**	**351**	**0**	**5**

Notes:

NL - Not listed
[ ] - Exceeds Class GA Level
NS - Not Sampled
J - Estimated
Blank = Non-Detect

Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		MW-6											
Date	**Class GA Level**	**05/30/06**	**05/24/07**	**05/29/08**	**05/26/10**	**05/30/12**	**05/29/14**	**05/27/16**	**5/23/2018**	**5/29/2019**	**5/11/2020**	**08/16/21**	**04/28/22**
Volatiles (µg/L)													
Acetone	50	31							8.6J	11			
Benzene	1								1.7	1.8			
2-Butanone	50												
Chlorobenzene	5								7.5	10	17 J	0.77 J	
trans-1,2-Dichloroethene	5								8.8	11			
Ethylbenzene	5								0.54J				
Methylene Chloride	5												
Tetrachloroethene	5				0.55J				3.4	6.3	11 J		
Toluene	5				0.73J				16	22	32	0.75 J	
Trichloroethene	5	1.2	0.97J		2.3J	0.66J	1.0		20	28	44	0.78 J	
Vinyl Chloride	2									1.5			
Total Xylenes	5								1.6J	1.7 J			
Total VOCs		**32.2**	**0.0**	**0.0**	**3.6**	**0.66**	**1**	**0**	**68.14**	**93.3**	**104**	**2.3**	**0**
Semi-Volatiles (µg/L)													
1,2-Dichlorobenzene	3				0.66J						8.1 J	0.46 J	
1,4-Dichlorobenzene	3		0.8J	0.6J	4.2J	2.9J	2.9J	1.5J	28J	73 J	140	6.4 J	
2,4-Dimethylphenol	50				1.4J	1.4J	1.0J	0.87J	36J	59 J	92	2.7 J	
2-Methylphenol	NL		0.5J	0.3J	1.8J	0.71J	1.1J	0.47J	31J	46 J	66	2.0 J	
4-Methylphenol	NL	1J	1J		2.5J	1.3J	1.0J		93	120 J	200	3.9 J	
Naphthalene	10		2J	1J	7.8J	3.9J		2.0J					
Di-n-octyl phthalate	50												
Phenol	1	2J	0.6J	0.4J	1.9J		4.4J		2300	2900	4700		
Total SVOCs		**3**	**0**	**2.3**	**20.3**	**10.2**	**10.4**	**4.9**	**2488**	**3198**	**5206.1**	**15.5**	**0**

Notes:

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NS - Not Sampled
J - Estimated
Blank = Non-Detect

Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		MW-7												
Date	**Class GA Level**	**05/18/01**	**08/20/01**	**11/27/01**	**02/11/02**	**05/21/02**	**08/06/02**	**11/22/02**	**02/25/03**	**05/08/03**	**11/04/03**	**05/14/04**	**05/27/05**	**05/31/06**
Volatiles (µg/L)														
Acetone	50	5.7J		6.5J		4.3J	5.4			4.8			4.3J	3.0J
Benzene	1		1.9	2.0		2.0	1.3	1.8		0.90			0.58J	
2-Butanone	50													
Chlorobenzene	5													
trans-1,2-Dichloroethene	5		0.82J	1.1J		0.98J	0.89J	1					0.36J	
Ethylbenzene	5		0.85J	0.81J		1.0	0.61J	0.75J					0.32J	
Methylene Chloride	5				1.6J									
Tetrachloroethene	5			0.27J										
Toluene	5		3.5J	3.6J		3.3	1.9	3		1.1	2.8		0.93J	
Trichloroethene	5		0.55J	0.63J		0.43J	0.45J	0.36J						
Vinyl Chloride	2		1.6J	2.0	3.8J	2.9	1.7	2.2		1.3			0.80J	
Total Xylenes	5		2.1J	2.1J		2.7J	1.5J	1.9J		0.76J				
Total VOCs		**5.7**	**11.32**	**19.01**	**5.4**	**17.61**	**13.75**	**11.01**	**0**	**8.9**	**2.8**	**0**	**7.3**	**3.0**
Semi-Volatiles (µg/L)														
1,2-Dichlorobenzene	3													
1,4-Dichlorobenzene	3													
2,4-Dimethylphenol	50			2J	2J	3J	0.7J	2J						
2-Methylphenol	NL		3J	2J	4J	6J	1J	2J			2J			
4-Methylphenol	NL		3J	2J	4J	6J	1J	2J			1J			
Naphthalene	10													
Di-n-octyl phthalate	50				0.6J									
Phenol	1		24	7J	10	26	2J	6J		5J	2J		1J	
Total SVOCs		**0**	**30**	**13**	**20.6**	**41**	**4.7**	**12**	**0**	**5**	**5**	**0**	**1**	**0**

Notes:

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NS - Not Sampled
J - Estimated
Blank = Non-Detect

Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		MW-7								
Date	**Class GA Level**	**05/24/07**	**05/29/08**	**05/26/10**	**05/30/12**	**05/29/14**	**05/26/16**	**5/23/2018**	**5/11/2020**	**4/28/2022**
Volatiles (µg/L)										
Acetone	50	3.9J	3.3J/3.4J					ND/6.7J		
Benzene	1									
2-Butanone	50									
Chlorobenzene	5									
trans-1,2-Dichloroethene	5									
Ethylbenzene	5									
Methylene Chloride	5									
Tetrachloroethene	5									
Toluene	5									
Trichloroethene	5									
Vinyl Chloride	2		0.64J/0.61J							
Total Xylenes	5									
Total VOCs		**0.0**	**4.0**	**0.0**	**0**	**0**	**0**	**3.35**	**0**	**0**
Semi-Volatiles (µg/L)										
1,2-Dichlorobenzene	3									
1,4-Dichlorobenzene	3									
2,4-Dimethylphenol	50									
2-Methylphenol	NL		0.4J/0.5J				5.7J/6.1J	0.42J/1.6J	0.48J	
4-Methylphenol	NL	0.3J	0.5J/0.6J			0.65J				
Naphthalene	10									
Di-n-octyl phthalate	50									
Phenol	1									
Total SVOCs		**0**	**1**	**0**	**0**	**0.65**	**5.9**	**1.01**	**0.48**	**0**

Notes:

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		MW-8											
Date	**Class GA Level**	**05/18/01**	**08/20/01**	**11/27/01**	**02/11/02**	**05/21/02**	**08/06/02**	**11/22/02**	**02/25/03**	**05/08/03**	**11/04/03**	**05/14/04**	**05/27/05**
Volatiles (µg/L)													
Acetone	50	52	12J	11J	75J	67	20			73		28/33	26
Benzene	1	6.5	4.3	4.1		8.6	12	12	8.1	12	23/24	10/12	4.2
2-Butanone	50												
Chlorobenzene	5	1.8J	1.0J	1.0J		3.2	4.9	4.4	3.6	6.2	6.0/6.4	2.7/3.3	2.4
trans-1,2-Dichloroethene	5	2.2J	1.8J	2.9J	4.8J	7.3	11	16	12	13	10/12	7.3/9.4	7.4
Ethylbenzene	5	5.7	3.7J	4.4J	8.2J	12	18	18	15	23	30/32	20/24	4.6
Methylene Chloride	5	1.1J	0.58J	0.66J	4.4J	1.2	1.4	1.6		1.3	2.2/2.2	7.3/9.2	1.7
Tetrachloroethene	5	21	12	9.8	23J	32	61	58	54	80	91/100	120/130	62
Toluene	5	75	36	31	80	100	140	160	100	120	240/240	97/120	30
Trichloroethene	5	82	40	35	110	180	320	280	210	320	460/460	380/390	180
Vinyl Chloride	2	5.2	1.6J	3.3	23	12	18	14	12	18	21/21	13/16	5.8
Total Xylenes	5	22	13	16	30J	40	68	69	58	93	120/120	92/110	32
Total VOCs		**274.5**	**126.0**	**119.2**	**358.4**	**463.3**	**674.3**	**633**	**472.7**	**759.5**	**1003.2**	**777.3**	**356.1**
Semi-Volatiles (µg/L)													
1,2-Dichlorobenzene	3				2J	2J		2J		4J	3J/3J		
1,4-Dichlorobenzene	3			0.6J	2J	1J	1J	2J		4J	3J/3J	19U/2J	4J
2,4-Dimethylphenol	50	1J	11	16	19	18	15	27	20	27	37/38	15J/14	7J
2-Methylphenol	NL	33	55	41	48	44	38	56	37	35	45/46	18J/18	18J
4-Methylphenol	NL	10	32	34	55	60	59	83	64	75	130/130	34/31	
Naphthalene	10				0.7J	0.8J	0.8J	1J			2J/2J		
Di-n-octyl phthalate	50												
Phenol	1	43	130	140	85	110	91	110	140	78	80/80	28/28	11J
Total SVOCs		**87**	**228**	**231.6**	**211.7**	**235.8**	**204.8**	**281**	**261**	**223**	**300**	**114**	**40**

Notes:

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		MW-8											
Date	**Class GA Level**	**05/30/06**	**05/24/07**	**05/29/08**	**05/29/09**	**05/26/10**	**05/26/11**	**05/30/12**	**05/24/13**	**05/29/14**	**05/29/15**	**05/26/16**	**05/31/17**
Volatiles (µg/L)													
Acetone	50	16	6.6/7.5	23	2.6J		3.1J						
Benzene	1	4.4	1.6/1.5	1.5	2.7		2.7	2.1	2.5	3.5	2.8J/2.9J		
2-Butanone	50			4.4J									
Chlorobenzene	5	2.4	0.84J/0.82J	0.54J	0.99J		3.8	3.4	3.4	7.0	4.6J/4.8J		
trans-1,2-Dichloroethene	5	5.3	4.4/3.9	3.6	6.8		3.5	3.4	3.4	6.5	5.3/6.1		
Ethylbenzene	5	5.8	2.5/2.2	1.8	4.2		5.2	4.4	4.4	6.2	3.9J/3.9J		
Methylene Chloride	5	0.64J											
Tetrachloroethene	5	71	16/14	9.5	12		12	7.7	5.3	3.5	2.9J/2.8J		
Toluene	5	33	12/11	10	26		18	6.5	6.5	4.9	4.0J/4.1J		
Trichloroethene	5	150	40/36	29	68		34	22	21	22	17/17	15	7.9J
Vinyl Chloride	2	5.1					3.0						
Total Xylenes	5	25	9.8/9.1	6.7	19		22	16	12	11	5.4J/5.0J		
Total VOCs		**318.6**	**89.1**	**90.0**	**142.3**	**0**	**107**	**65.4**	**58.5**	**64.6**	**46.3**	**15**	**7.9**
Semi-Volatiles (µg/L)													
1,2-Dichlorobenzene	3			0.4J		1.5J	1.2J	1.3J	0.87J	1.7J	1.2J/0.91J	1.4J	
1,4-Dichlorobenzene	3	5J	0.5J/0.4J	0.5J		2.1J	3.3J	6.9J	7.1J	21	12/11	17	11J
2,4-Dimethylphenol	50	6J	0.8J/0.6J	14	14	13	14	16	17	19	18/16	20	16J
2-Methylphenol	NL	16	7/7	26	32	22	16	20	16	23	21/19	29	36J
4-Methylphenol	NL		18/16	31	29	38	41J	30	25	1.0J	27/24	28	28J
Naphthalene	10		22/22	1J								0.98J	
Di-n-octyl phthalate	50												
Phenol	1	4J	20/21	32	15	13	3.4J	4.0J	2.5J	4.5J	3.3J/2.7J	6.5J	
Total SVOCs		**31**	**66.5**	**104.9**	**117**	**89.6**	**78.9**	**78.2**	**68.5**	**70.2**	**78.1**	**103**	**91**

Notes:

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		MW-8				
Date	Class GA Level	5/23/2018	5/29/2019	5/11/2020	4/28/2021	428/22
Volatiles (µg/L)						
Acetone	50		7.0J			
Benzene	1	2.6	1.5		2.8	
2-Butanone	50					
Chlorobenzene	5	3.1	3.4		6.1	7.1
trans-1,2-Dichloroethene	5	5.4				4
Ethylbenzene	5	2.9	1.7J		3.9	
Methylene Chloride	5					
Tetrachloroethene	5	1.7	0.74J			
Toluene	5	3.7	1.8J		1	
Trichloroethene	5	9.8	3.6	4J	2.2	
Vinyl Chloride	2		2.3		3.7	
Total Xylenes	5	5.1	1.7J		1.8J	
Total VOCs		**34.3**	**23.7**	**4**	**21.5**	**11.1**
Semi-Volatiles (µg/L)						
1,2-Dichlorobenzene	3		0.83J	0.91J	1.5J	
1,4-Dichlorobenzene	3	8.8J	12	19	74	61
2,4-Dimethylphenol	50	11J	8.4J	4.5J	13	12J
2-Methylphenol	NL	30J	23	18	15	11J
4-Methylphenol	NL	18J	12	7.9J	16	13J
Naphthalene	10					
Di-n-octyl phthalate	50					
Phenol	1	12J	11	4.8J	1.9J	
Total SVOCs		**79.8**	**67.2**	**55.1**	**121.4**	**97**

Notes:

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Blank = Non-Detect

Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		MW-9											
Date	**Class GA Level**	**05/18/01**	**08/20/01**	**11/27/01**	**02/11/02**	**05/21/02**	**08/06/02**	**11/22/02**	**02/25/03**	**05/08/03**	**11/04/03**	**05/14/04**	**05/27/05**
Volatiles (µg/L)													
Acetone	50	9.4J	4.3J	7.3J/6.7J		4.2J	7.0/7.2			13/12			17
Benzene	1		0.24J	0.39J/0.35J		0.44J	0.29J/0.30J	0.29J/0.29J		0.40J/ND0.70			
2-Butanone	50												
Chlorobenzene	5		0.50J	0.86J/0.85J		1.3		1.0/1.1		0.91J/0.87J		1.1	1.7
trans-1,2-Dichloroethene	5			0.22J/ND		0.31J	0.24J/0.24J	0.22J/0.20J					
Ethylbenzene	5		0.30J	0.46J/0.42J		0.73J	0.44J/0.42J	0.46J/0.46J		0.40J/0.38J			
Methylene Chloride	5		0.34J	0.33J/ND	4.0J	0.53J						7.2	1.6
Tetrachloroethene	5	1.6J	1.1J	1.0J/0.92J		1.6	0.92J/0.80J	0.77J/0.74J		0.67J/0.71J			
Toluene	5		1.6J	3.0J/2.5J	2.8J	2.7	2.1/2.0	2.7/2.7	2.0	2.0/1.9	4.6	3.2	2.6
Trichloroethene	5	2.2J	1.8J	2.4J/2.2J	3.0J	4.4	2.0/2.0	2.2/2.3		1.8/1.8	9.5	4.9	3.0
Vinyl Chloride	2									1.7/1.7			3.6
Total Xylenes	5		1.0J	1.5J/1.5J		2.5J	1.3J/1.3J	1.4J/1.4J		0.98J/1.0J	3.0		
Total VOCs		**13.2**	**11.2**	**16.7**	**9.8**	**18.7**	**14.3**	**9.1**	**2**	**21.3**	**17.1**	**16.4**	**10.8**
Semi-Volatiles (µg/L)													
1,2-Dichlorobenzene	3				0.6J								
1,4-Dichlorobenzene	3												2J
2,4-Dimethylphenol	50	12	12	18/17	38		20/22	30/34	30	35/36	36	42	50
2-Methylphenol	NL	1J	3J	3J/3J	7J		4J/4J	6J/6J	6J	6J/6J	6J	5J	8J
4-Methylphenol	NL	69	110	97/92	230		100/110	190/230	150	130/130	160	190	260
Naphthalene	10												
Di-n-octyl phthalate	50												
Phenol	1	3J	34	28/22	24		38/41	34/35	42	46/46	180	30	27
Total SVOCs		**85**	**159**	**140**	**275.6**	**0**	**169.5**	**282.5**	**228**	**217.5**	**382**	**267**	**347**

Notes:

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		MW-9											
Date	**Class GA Level**	**05/30/06**	**05/25/07**	**05/29/08**	**05/27/09**	**05/26/10**	**05/26/11**	**05/30/12**	**05/24/13**	**05/29/14**	**05/29/15**	**05/26/16**	**05/31/17**
Volatiles (µg/L)													
Acetone	50	17		5.7	4.8J	5.9	4.3J			6.2		15J	5.8
Benzene	1	0.54J			0.76		0.53J	0.44J	0.62J	0.57J			0.62J
2-Butanone	50	2.6J											
Chlorobenzene	5	1.5	2.8	1.4	5.3	2.5	2.4	2.3	2.5	3.1			3.1
trans-1,2-Dichloroethene	5	0.42J		0.55J	0.74J								
Ethylbenzene	5	0.83J			1.2	0.82J	1.1	0.74J	1.0	0.97J			1.1
Methylene Chloride	5												
Tetrachloroethene	5	0.57J			0.82J	0.57J	0.66J	0.54J		0.66J			0.43J
Toluene	5		3.1	2.4	3.8	3.8	4.3	3.5	4.4	4.6	5.3J	4.4J	
Trichloroethene	5	1.8	2.9	1.7	4.7	2.6	2.7	2.3	3.0	3		2.6J	4.8
Vinyl Chloride	2	4.0			4.2		1.4						2.9
Total Xylenes	5	2.0J			3.3	2.2J	2.7	1.5J	2.7	2.6			3.1
Total VOCs		**28.7**	**8.8**	**11.8**	**29.6**	**18.4**	**19.3**	**11.3**	**14.2**	**21.8**	**5.3**	**22**	**18.8**
Semi-Volatiles (µg/L)													
1,2-Dichlorobenzene	3		0.9J	0.7J		1.4J	1.0J	1.1J	0.98J	1.6J	1.2J	1.5J	
1,4-Dichlorobenzene	3		3J	1J	2.3J	1.7J	1.6J	1.8J	0.87J	2.3J	0.48J	2.6J	
2,4-Dimethylphenol	50	58	46	31	110	41	43	47	82 J	76 J	62J	130J	140
2-Methylphenol	NL	8J	6	6	12	9.9J	11	11	12	13J	13	16	20J
4-Methylphenol	NL	190	170	96	300	180	230	230	280	0.75J	200	340	340
Naphthalene	10		0.2J	0.5J								1.2J	
Di-n-octyl phthalate	50												
Phenol	1	49	11	13	20	20	17	9.3 J	16	26	16	26	37J
Total SVOCs		**305**	**233**	**148.2**	**444.3**	**254**	**305.5**	**300.2**	**392.5**	**120**	**292.7**	**517**	**537**

Notes:

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		MW-9				
Date	**Class GA Level**	**5/23/2018**	**5/29/2019**	**5/12/2020**	**4/28/2021**	**4/28/2022**
Volatiles (µg/L)						
Acetone	50		12		11	
Benzene	1	0.87J	0.84		0.78	
2-Butanone	50					
Chlorobenzene	5	4.1	4.6	6.9J / 7.3J	6.1	6.4
trans-1,2-Dichloroethene	5	0.99J	1.1			
Ethylbenzene	5	1.4	1.5		1.3	
Methylene Chloride	5					
Tetrachloroethene	5	0.47J	0.82J		0.50 J	
Toluene	5	6.3	7.1	9.4 / 9.0	4.4	3.9J
Trichloroethene	5	3.4	3.5	4.6 J / 4.9 J	2.3	1.9J
Vinyl Chloride	2	2.3	2.6		1.7	
Total Xylenes	5	3.7	4.0		3.6	
Total VOCs		**23.5**	**38.1**	**21.1**	**31.7**	**12.2**
Semi-Volatiles (µg/L)						
1,2-Dichlorobenzene	3	1.8J	1.8J	1.7J / 2.1J	1.9 J	1.2J
1,4-Dichlorobenzene	3	2.1J	1.9J	2.1J / 2.3J	3.8 J	2.9J
2,4-Dimethylphenol	50	220	210	200 / 240	120	56
2-Methylphenol	NL	24	24	21 / 24	14	9.5J
4-Methylphenol	NL	640	570	520 / 600	260	170
Naphthalene	10			ND / 0.77J		
Di-n-octyl phthalate	50					
Phenol	1	38	40	22 / 26	26	20
Total SVOCs		**925.9**	**847.7**	**831.0**	**425.7**	**259.6**

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-1											
Date	**Class GA Level**	**05/18/01**	**05/25/07**	**8/21/2001**	**11/27/01**	**02/11/02**	**05/21/02**	**08/06/02**	**11/22/02**	**02/25/03**	**05/08/03**	**11/04/03**	**05/14/04**
Volatiles (µg/L)													
Acetone	50	20J			11J			4.8J					
Benzene	1			0.64J	0.55J				0.26J				
2-Butanone	50	1.1J											
Chlorobenzene	5	2.2J	2.8	2.0J	1.7J		0.24J		0.78J		0.91J		
trans-1,2-Dichloroethene	5	5.6		3.7J	4.6J	1.8J	0.48J	0.58J	2.7		2.8	0.85J	
Ethylbenzene	5			0.52J	0.43J				0.21J				
Methylene Chloride	5					1.6J							
Tetrachloroethene	5			0.78J	0.54J		0.42J	0.53J	0.30J			0.29J	
Toluene	5	5.2	3.1	5.4	4.2J		0.48J	0.43J	1.9	1.7	2.6	0.59J	
Trichloroethene	5	15	2.9	16	11	4.5J	2.2	2.7	6.1	5.1	8.4	2.2	0.47J
Vinyl Chloride	2	1.3J		0.51J	0.72J				0.42J		0.64J		
Total Xylenes	5			2.1J	1.6J				0.49J		0.86J		
Total VOCs		**50.4**	**31.65**	**36.34**	**7.9**	**3.82**	**9.04**	**13.16**	**6.8**	**16.2**	**3.93**	**0.47**	**3**
Semi-Volatiles (µg/L)													
1,2-Dichlorobenzene	3		0.9J										
1,4-Dichlorobenzene	3	1J	3J	3J	2J	1J			1J				
2,4-Dimethylphenol	50	9J	46	16	8J	3J		0.6J	9J		4J		
2-Methylphenol	NL	6J	6	12	5J	2J			2J		3J		
4-Methylphenol	NL	20	170	35	15J	5J		1J	5J	6J	8J		
Naphthalene	10	71	0.2J	130		21		7J	18		25	3J	
Di-n-octyl phthalate	50												
Phenol	1	150	11	290	57	15	1J	8J	4J		19		
Total SVOCs		**257**	**486**	**87**	**47**	**1**	**16.6**	**39**	**6**	**59**	**3**	**0**	**0**

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Blank = Non-Detect

Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-1										
Date	**Class GA Level**	**05/27/05**	**05/31/06**	**05/24/07**	**05/29/08**	**05/26/10**	**05/30/12**	**05/29/14**	**05/27/16**	**5/23/2018**	**5/11/2020**	**4/28/2022**
Volatiles (µg/L)												
Acetone	50									7.4J		
Benzene	1											
2-Butanone	50											
Chlorobenzene	5											
trans-1,2-Dichloroethene	5		0.55J									
Ethylbenzene	5											
Methylene Chloride	5	1.8										
Tetrachloroethene	5											
Toluene	5											
Trichloroethene	5	1.2	1.9	0.53J	4.2							
Vinyl Chloride	2											
Total Xylenes	5											
Total VOCs		**2.5**	**0.0**	**4.2**	**0**	**0**	**0**	**0**	**0**	**7.4**	**0**	**0**
Semi-Volatiles (µg/L)												
1,2-Dichlorobenzene	3											
1,4-Dichlorobenzene	3											
2,4-Dimethylphenol	50											
2-Methylphenol	NL											
4-Methylphenol	NL		2J		0.4J		0.46J					
Naphthalene	10				0.5J							
Di-n-octyl phthalate	50											
Phenol	1						0.97J		0.43J		0.39J	
Total SVOCs		**2**	**0**	**0.9**	**0**	**0**	**0.46**	**0**	**0.43**	**0**	**0.39**	**0**

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-2											
Date	**Class GA Level**	**05/18/01**	**08/20/01**	**11/27/01**	**02/11/02**	**05/21/02**	**08/06/02**	**11/22/02**	**02/25/03**	**05/08/03**	**11/04/03**	**05/14/04**	**05/27/05**
Volatiles (µg/L)													
Acetone	50			11J			3.0J					4.5J	3.1
Benzene	1												
2-Butanone	50												
Chlorobenzene	5												
trans-1,2-Dichloroethene	5												
Ethylbenzene	5												
Methylene Chloride	5				1.7J								
Tetrachloroethene	5												
Toluene	5										0.37J		
Trichloroethene	5		0.39J										
Vinyl Chloride	2			0.26J		0.25J	0.26J						
Total Xylenes	5												
Total VOCs		**0**	**0.4**	**11.3**	**1.7**	**0.25**	**3.3**	**0**	**0**	**0**	**0.37**	**4.5**	**3.1**
Semi-Volatiles (µg/L)													
1,2-Dichlorobenzene	3												
1,4-Dichlorobenzene	3												
2,4-Dimethylphenol	50												
2-Methylphenol	NL												
4-Methylphenol	NL												
Naphthalene	10												
Di-n-octyl phthalate	50												
Phenol	1												
Total SVOCs		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-2									
Date	**Class GA Level**	**05/30/06**	**05/25/07**	**05/29/08**	**05/26/10**	**05/30/12**	**05/29/14**	**05/26/16**	**5/23/2018**	**5/11/2020**	**4/28/2022**
Volatiles (µg/L)											
Acetone	50										
Benzene	1										
2-Butanone	50										
Chlorobenzene	5										
trans-1,2-Dichloroethene	5										
Ethylbenzene	5										
Methylene Chloride	5										
Tetrachloroethene	5										
Toluene	5										
Trichloroethene	5										
Vinyl Chloride	2										
Total Xylenes	5										
Total VOCs		**0**	**0**	**0**		**0**	**0**	**0**	**0**	**0**	**0**
Semi-Volatiles (µg/L)											
1,2-Dichlorobenzene	3										
1,4-Dichlorobenzene	3										
2,4-Dimethylphenol	50										
2-Methylphenol	NL										
4-Methylphenol	NL						0.79J				
Naphthalene	10										
Di-n-octyl phthalate	50										
Phenol	1										
Total SVOCs		**0**	**0**	**0**	**0**	**0**	**0.8**	**0**	**0**	**0**	**0**

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-3											
Date	**Class GA Level**	**05/18/01**	**08/20/01**	**11/27/01**	**02/11/02**	**05/21/02**	**08/06/02**	**11/22/02**	**02/25/03**	**05/08/03**	**11/04/03**	**05/14/04**	**05/27/05**
Volatiles (µg/L)													
Acetone	50	13J/19J	3.8J	15J		7.1	6.7			5.6			10/8.4
Benzene	1	1.6J/1.6J	1.6	1.8		1.8	1.2	1.5		1.6	1.4		1.2/1.1
2-Butanone	50												
Chlorobenzene	5		0.24J	0.28J		0.28J		0.22J					
trans-1,2-Dichloroethene	5	1.6J/1.6J	1.0J	1.4J	1.1J	1.1	0.98J	0.44J		1.0			
Ethylbenzene	5	1.6J/1.5J	2.0J	2.3J	1.5J	2.4	1.7	1.8		2.0			1.4/1.3
Methylene Chloride	5				1.9J							6.3	1.2/1.0
Tetrachloroethene	5	2.4J/2.2J	3.0J	2.2J	1.7J	2.2	1.8	1.8		1.5			0.71J/0.63J
Toluene	5	5.7/5.1	5.9	5.3		5.1	3.7	4.6	4.0	4.3	3.6	2.6	2.6/2.4
Trichloroethene	5	20/20	18	19	14J	17	14	13	12	14	9.8	7.7	6.4/6.1
Vinyl Chloride	2		0.4	0.72						0.62J			
Total Xylenes	5	5.6J/5.4J	7.5	8.7	4.8J	7.8	5.8	5.8	5.0	6.6	3.9		3.3/3.0
Total VOCs		**54.95**	**43.44**	**56.7**	**25**	**44.78**	**35.88**	**29.16**	**21**	**37.2**	**18.7**	**16.6**	**26.8**
Semi-Volatiles (µg/L)													
1,2-Dichlorobenzene	3				1J								
1,4-Dichlorobenzene	3				0.7J		0.5J						
2,4-Dimethylphenol	50	5J/5J	9	8J	11	11	7J	8J	11	12	10	9J	8J/4J
2-Methylphenol	NL	98/96	120	87	160	140	100	100	120	140	150	110	83/73
4-Methylphenol	NL	13/13	21	17	28	23	14	15	22	23	20	17	14/12
Naphthalene	10												
Di-n-octyl phthalate	50												
Phenol	1	120/110	140	130J	210	140	85	92	110	120	120	90	78/74
Total SVOCs		**230**	**290**	**242**	**410.7**	**314**	**206.5**	**215**	**263**	**295**	**300**	**226**	**183**

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-3											
Date	**Class GA Level**	**05/30/06**	**05/24/07**	**05/29/08**	**05/27/09**	**05/26/10**	**05/26/11**	**05/30/12**	**05/24/13**	**05/29/14**	**05/29/15**	**05/26/16**	**05/31/17**
Volatiles (µg/L)													
Acetone	50	2.8J	0.76	6.0	2.9J/2.6J		3.7J			3.1J		3.3J	
Benzene	1	0.93J		0.93	0.75/0.78		0.67J	0.45J	0.64J/0.71	5.3J		0.62J	0.50J
2-Butanone	50												
Chlorobenzene	5												
trans-1,2-Dichloroethene	5												
Ethylbenzene	5	1.1	0.85J	0.92J	0.69J/0.73J		0.75J						
Methylene Chloride	5												
Tetrachloroethene	5	0.61J	0.56J										
Toluene	5		1.7	1.8	1.4/1.4		1.2	0.88J	1.2/1.3	1.2J		0.95J	0.70J
Trichloroethene	5	5.6	4.3	4.9	3.3/3.5		2.5	0.87J	2.6/2.5	0.48J		1.6	1.4
Vinyl Chloride	2									62J			
Total Xylenes	5	2.9J	2.1J	2.3J	1.7J/1.7J		1.0J	0.71J	0.81J/0.77J	13			
Total VOCs		**13.94**	**6.76**	**16.85**	**10.73**	**0**	**9.8**	**3.84**	**5.25**	**4.6**	**0**	**6.5**	**2.6**
										200			
Semi-Volatiles (µg/L)													
1,2-Dichlorobenzene	3		0.6J	0.7J		0.86J	0.40J	0.61J	0.46J/0.49J	16	0.47J	0.52J	
1,4-Dichlorobenzene	3			0.6J		0.58J							
2,4-Dimethylphenol	50	6J		6	6.2/5.9	4.3J	3.7J	5.8J	4.8J/4.8J	4.8J	4.1J	4.9J	4.5J
2-Methylphenol	NL	64	47	45	44/43	36	33	35	31/32	34	23	24	23J
4-Methylphenol	NL	13	10	11	11/11	9.9	10	11	9.1J/9.5J	0.91J	7.6J	9.6	9.4J
Naphthalene	10			0.8J									
Di-n-octyl phthalate	50												
Phenol	1	75	60	65	60/57	50	48	53	58/57	52	44J	43	62
Total SVOCs		**158**	**123**	**129.1**	**119.1**	**101.6**	**95.1**	**105.4**	**103.6**	**92.3**	**79.2**	**82**	**99**

Notes:

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-3				
Date	**Class GA Level**	**05/23/18**	**05/29/19**	**05/11/20**	**4/28/2021**	**4/28/2022**
Volatiles (µg/L)						
Acetone	50	18J	9.1			
Benzene	1	0.87J	0.54J	0.47J	0.47J/0.45J	
2-Butanone	50					
Chlorobenzene	5					
trans-1,2-Dichloroethene	5	0.22J				
Ethylbenzene	5	0.38J				
Methylene Chloride	5					
Tetrachloroethene	5					
Toluene	5	1.3	0.79J	0.61J	0.59J/0.57J	0.58J
Trichloroethene	5	1.6	1.1	1.1	1.2/1.1	0.84J
Vinyl Chloride	2					
Total Xylenes	5	1.1J				
Total VOCs		**23.47**	**11.53**	**2.2**	**2.19**	**1.42**
Semi-Volatiles (µg/L)						
1,2-Dichlorobenzene	3					
1,4-Dichlorobenzene	3					
2,4-Dimethylphenol	50		5.8J	5.9J	4.7J/4.4J	
2-Methylphenol	NL	20J	21	20	17/16	12J
4-Methylphenol	NL	9.3J	12	12	9.7J/8.9J	6.3J
Naphthalene	10					
Di-n-octyl phthalate	50					
Phenol	1	50J	42	58	39/36	30J
Total SVOCs		**79.3**	**80.8**	**95.9**	**67.85**	**48.3**

Notes:

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NS - Not Sampled
J - Estimated
Blank = Non-Detect

Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-4											
Date	**Class GA Level**	**05/18/01**	**08/20/01**	**11/27/01**	**02/11/02**	**05/21/02**	**08/06/02**	**11/22/02**	**02/25/03**	**05/08/03**	**11/04/03**	**05/14/04**	**11/23/04**
Volatiles (µg/L)													
Acetone	50			7.9J			4.0J						
Benzene	1		0.21J	0.2J									
2-Butanone	50												
Chlorobenzene	5		0.49J	0.66J		0.83J/0.79J		0.46J		0.83J			
trans-1,2-Dichloroethene	5			0.22J									
Ethylbenzene	5		0.41J	0.39J		0.54J/0.53J	0.48J	0.39J		0.77J			
Methylene Chloride	5				5.1J/4.9J							4.6	
Tetrachloroethene	5	1.0J	1.2J	0.87J		0.86J/0.84J	1.1	0.78J		0.77J			
Toluene	5			1.0J		1.0/0.98J	1.4	0.72J		1.2			
Trichloroethene	5	1.6J	1.4J	1.5J		1.5/1.4	1.7	0.96J		1.5			
Vinyl Chloride	2												
Total Xylenes	5		1.0J	0.94J		0.84J/0.82J	1.1J			0.95J			
Total VOCs		**2.6**	**4.71**	**13.68**	**5**	**5.47**	**9.78**	**3.31**	**0**	**6**	**0**	**4.6**	**0**
Semi-Volatiles (µg/L)													
1,2-Dichlorobenzene	3												
1,4-Dichlorobenzene	3												
2,4-Dimethylphenol	50	8J	12	6J	8J/6J	7J/7J	8J		7J/7J	8J	4J		4J
2-Methylphenol	NL	0.9J	2J	35	2J/ND	1J/2J	2J			3J			2J
4-Methylphenol	NL	64	86	40	58/55	61/67	68		69/68	73	32		31
Naphthalene	10												
Di-n-octyl phthalate	50												
Phenol	1	310	560	400	420/460	710/1100	1100	1100	2400/2300	1800	1600	2400	1500
Total SVOCs		**382.9**	**660**	**481**	**505.5**	**977.5**	**1178**	**1100**	**2425.5**	**1884**	**1636**	**2400**	**1537**

Notes:

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J - Estimated
Blank = Non-Detect

Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-4												
Date	**Class GA Level**	**05/27/05**	**05/30/06**	**05/25/07**	**05/29/08**	**05/27/09**	**05/26/10**	**05/26/11**	**05/30/12**	**05/29/14**	**05/26/16**	**05/23/18**	**05/12/20**	**4/28/2022**
Volatiles (µg/L)														
Acetone	50					1.6J					3.6J			
Benzene	1													
2-Butanone	50													
Chlorobenzene	5													
trans-1,2-Dichloroethene	5													
Ethylbenzene	5		0.44J											
Methylene Chloride	5	2.0												
Tetrachloroethene	5													
Toluene	5													
Trichloroethene	5		0.53J											
Vinyl Chloride	2													
Total Xylenes	5													
Total VOCs		**2.0**	**1.02**	**0.0**	**0.0**	**1.6**	**0**	**0**	**0**	**0**	**3.6**	**0**	**0**	**0**
Semi-Volatiles (µg/L)														
1,2-Dichlorobenzene	3													
1,4-Dichlorobenzene	3													
2,4-Dimethylphenol	50				0.9J		0.51J/ND							
2-Methylphenol	NL				0.5J	2.7J								
4-Methylphenol	NL	14	15	3J	6				2.8J	0.87J				
Naphthalene	10				0.5J		3.4J/3.4J							
Di-n-octyl phthalate	50													
Phenol	1	850	510	84	66	25	15/15	5.5	0.97J	0.68J	0.43J			
Total SVOCs		**864**	**525**	**87**	**73.4**	**27.7**	**18.9**	**5.5**	**3.77**	**1.6**	**0.43**	**0**	**0**	**0**

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-5											
Date	**Class GA Level**	**05/20/01**	**08/21/01**	**11/27/01**	**02/11/02**	**05/21/02**	**08/06/02**	**11/22/02**	**02/25/03**	**05/08/03**	**11/04/03**	**05/14/04**	**05/27/05**
Volatiles (µg/L)													
Acetone	50	38J		11J			6.4			4.9J		0.61J	
Benzene	1		1.5	1.4		0.87	0.92	0.87		0.77			
2-Butanone	50												
Chlorobenzene	5												
trans-1,2-Dichloroethene	5		0.65J	0.76J		0.42J	0.57J	0.52J				0.34J	
Ethylbenzene	5		0.21J	0.23J									
Methylene Chloride	5				3.4J								2.4
Tetrachloroethene	5		0.38J	0.27J									
Toluene	5		2.5J	2.2J		0.99J	0.87J	1.2		0.80J		0.80J	
Trichloroethene	5		0.87J	0.66J		0.36J	0.41J	0.40J				0.28J	
Vinyl Chloride	2		1.6J	1.2J		1.1	1.5	1.2		1.1		1.4	
Total Xylenes	5		1.0J	1.0J		0.67J	0.37J	0.40J				1.0J	
Total VOCs		**38**	**8.71**	**18.72**	**3.4**	**4.41**	**11.04**	**4.59**	**0**	**7.6**	**0**	**4.43**	**2.4**
Semi-Volatiles (µg/L)													
1,2-Dichlorobenzene	3												
1,4-Dichlorobenzene	3												
2,4-Dimethylphenol	50		8J	6J	5J		1J	6J					
2-Methylphenol	NL		1J	1J	1J								
4-Methylphenol	NL		2J	5J	4J			2J					
Naphthalene	10		1J	1J			0.5J	1J					
Di-n-octyl phthalate	50			1J	0.8J								
Phenol	1		0.9J										
Total SVOCs		**0**	**12.9**	**14**	**10.8**	**0**	**1.5**	**9**	**0**	**0**	**0**	**0**	**0**

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-5									
Date	**Class GA Level**	**05/30/06**	**05/24/07**	**05/29/08**	**05/26/10**	**05/30/12**	**05/29/14**	**05/26/16**	**05/23/18**	**05/11/20**	**4/28/2022**
Volatiles (µg/L)											
Acetone	50	3.0J		3.5J					5.3J		
Benzene	1	0.67J	0.54J	0.69J		0.58J	1.1	1.4	2.1	1.4	1.2
2-Butanone	50										
Chlorobenzene	5										
trans-1,2-Dichloroethene	5								0.29J		
Ethylbenzene	5										
Methylene Chloride	5										
Tetrachloroethene	5										
Toluene	5								0.38J		
Trichloroethene	5							0.70J			
Vinyl Chloride	2	1.2	0.95J	1.4				1.1J	1		
Total Xylenes	5										
Total VOCs		**4.9**	**0**	**5.59**	**0**	**0.58**	**1.1**	**3.2**	**9.07**	**1.4**	**1.2**
Semi-Volatiles (µg/L)											
1,2-Dichlorobenzene	3										
1,4-Dichlorobenzene	3										
2,4-Dimethylphenol	50										
2-Methylphenol	NL		0.5J	0.3J							
4-Methylphenol	NL		0.9J	0.4J			0.66J				
Naphthalene	10		2J	0.5J	1.6J	0.85J	1.1J	2.3J	1.2J	0.95J	
Di-n-octyl phthalate	50										
Phenol	1										
Total SVOCs		**0**	**0**	**1.2**	**1.6**	**0.85**	**1.8**	**2.3**	**1.2**	**0.95**	**0**

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-6											
Date	**Class GA Level**	**05/18/01**	**08/20/01**	**11/27/01**	**02/11/02**	**05/21/02**	**08/06/02**	**11/22/02**	**02/25/03**	**05/08/03**	**11/04/03**	**03/04/04**	**05/14/04**
Volatiles (µg/L)													
Acetone	50			6.6J			5.0			3.7J			
Benzene	1									0.71	0.87	1.4	
2-Butanone	50												
Chlorobenzene	5												
trans-1,2-Dichloroethene	5			0.23J	0.23J	0.37J	0.45J	0.55J		1.4	2.0	2.1	
Ethylbenzene	5					0.31J				0.85J	1.1	2.0	3.3
Methylene Chloride	5				2.1J								4.4
Tetrachloroethene	5		1.4J	0.73J		6.6	7.4	5	12	49	51	230	300
Toluene	5			0.55J		2.0	1.6	1.5	2.4	9.3	12	27	40
Trichloroethene	5	3.0J	4.7J	3.1J	5.9	16	19	13	26	95	120	330	530
Vinyl Chloride	2					0.22J	0.25J			0.45J			
Total Xylenes	5		0.22J	0.53J	0.26J	1.7J	1.2J	1.0J		4.1	4.7	8.6	13
Total VOCs		**3**	**6.32**	**11.74**	**8.49**	**27.2**	**34.9**	**21.05**	**40.4**	**164.5**	**191.67**	**601.1**	**890.7**
Semi-Volatiles (µg/L)												NA	
1,2-Dichlorobenzene	3												
2,4-Dimethylphenol	50							1J					
2-Methylphenol	NL		2J	2J	32	11	8J	9J	13	22	27		63
4-Methylphenol	NL			1J	0.02J	10							1J
Naphthalene	10												
Di-n-octyl phthalate	50												
Phenol	1		7J	2J	4J	5J	3J	2J		5J	3J		9J
Total SVOCs		**0**	**9**	**5**	**9.02**	**26**	**11**	**12**	**13**	**27**	**30**		**73**

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-6											
Date	**Class GA Level**	**11/23/04**	**05/27/05**	**05/31/06**	**05/24/07**	**05/29/08**	**05/27/09**	**05/26/10**	**05/26/11**	**05/30/12**	**05/24/13**	**05/29/14**	**05/29/15**
Volatiles (µg/L)													
Acetone	50			8.6/8.7			1.6J						
Benzene	1	2.5	5.2	12/12	7.2		3.2	3.6	1.8	1.9	4.7	1.3/1.4	
2-Butanone	50												
Chlorobenzene	5												
trans-1,2-Dichloroethene	5	3.6	5.3	11/12	7.1		4.4	8.2	7.6	4.8	7.3	4.5/4.6	
Ethylbenzene	5	3.1	7.4	20/20	12		4.8	5.2	2.4	2.0	4.8	1.2/1.2	
Methylene Chloride	5	2.5	2.2										
Tetrachloroethene	5	260	550	2000/2100	1400	34	400	640	220	100	1100	190/190	180
Toluene	5	35	72	240/260	97	2.9	34	38	14	16	57	10/10	8.1J
Trichloroethene	5	330	610	1800/1800	1100	31	320	410	180	92	460	100/110	99
Vinyl Chloride	2			2.9/2.8	1.5			1.2					
Total Xylenes	5	12	28	79/76	46		18	20	9.1	8.9	21	5.1/5.1	
Total VOCs		**648.7**	**1280.1**	**4232.5**	**2656.5**	**68**	**786**	**1126**	**435**	**225.6**	**1650**	**318**	**287**
Semi-Volatiles (µg/L)		NA											
1,2-Dichlorobenzene	3												
2,4-Dimethylphenol	50					0.9J						0.54J/0.59J	
2-Methylphenol	NL	85	89/110	76	76	32	32	15	16	23	9.4J/9.3	4.8J	
4-Methylphenol	NL	2J	84/100	2J	70	1.1J	1.4J	1.2J	1.1J	1.1J		0.88J	
Naphthalene	10		1J/2J	2J	2J	1.2J	1.4J	1.1J	1.1J	1.2J	1.1J/1.1J	0.89J	
Di-n-octyl phthalate	50												
Phenol	1	8J	13/16	8	8				1.5J	57	1.2J/1.2J	0.71J	
Total SVOCs		**95**	**207.5**	**84**	**156.9**	**34.3**	**34.8**	**17.3**	**19.7**	**29.7**	**12.2**	**7.3**	

Notes:

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OWG-6						
Date	**Class GA Level**	**05/26/16**	**05/31/17**	**05/23/18**	**05/29/19**	**05/11/20**	**4/28/2021**	**4/28/2022**
Volatiles (µg/L)								
Acetone	50				4.4J			
Benzene	1		0.83	0.81J	0.81	0.76		
2-Butanone	50							
Chlorobenzene	5			0.29J				
trans-1,2-Dichloroethene	5		11	17	19	27	11	11
Ethylbenzene	5			0.5J				
Methylene Chloride	5							
Tetrachloroethene	5	71	29	16	18	17	28	14
Toluene	5	4.0J	2.7	3.2	3.5	2	2.6J	2.1
Trichloroethene	5	60	41	28	39	34	40	28
Vinyl Chloride	2		1.3	1.4	1.3	1.7		
Total Xylenes	5		1.3J	2.1	2.4	1.1J		
Total VOCs		**135**	**87**	**69.3**	**88.41**	**83.56**	**81.6**	**55.1**
Semi-Volatiles (µg/L)								
1,2-Dichlorobenzene	3							
2,4-Dimethylphenol	50			0.51J				
2-Methylphenol	NL	3.6J	2.4J	2J		1.1J	1.6J	1.5J
4-Methylphenol	NL			1.7J		0.78J	0.80J	0.83J
Naphthalene	10	0.97J		1.2J			0.94J	1J
Di-n-octyl phthalate	50							
Phenol	1			0.81J				
Total SVOCs		**4.6**	**2.4**	**6.22**	**0**	**1.88**	**3.34**	**3.33**

Notes:

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-7											
Date	**Class GA Level**	**05/18/01**	**08/20/01**	**11/27/01**	**02/11/02**	**05/21/02**	**08/06/02**	**11/22/02**	**02/25/03**	**05/08/03**	**11/04/03**	**05/14/04**	**05/27/05**
Volatiles (µg/L)													
Acetone	50	21J	0.25J	8.2J			3.6J						
Benzene	1			0.30J		0.28J	0.20J	0.26J				0.34J	0.34J
2-Butanone	50												
Chlorobenzene	5												
trans-1,2-Dichloroethene	5	6.3	3.1J	5.4	4.9J	4.8J	4.2	4.7	4.0	5.4	5.0	5.9	4.9
Ethylbenzene	5	1.1J	0.80J	1.0J		1.3	0.84J	0.91J		1.4	0.93J	1.5	1.4
Methylene Chloride	5												
Tetrachloroethene	5	4.3J	3.6J	3.4J	2.9J	4.0	3.4	2.7	2.8	4.1	2.2	4.1	2.9
Toluene	5	12	5.8	6.7	5.7J	6.9	5.2	6.0	6.7	8.6	5.8	9.3	8.3
Trichloroethene	5	70	40	48	45	68	44	38	50	56	38	56	37J
Vinyl Chloride	2	2.6J	0.84	1.7J	3.5J	2.2	1.8	1.8		2.3	2	2.9	3.0
Total Xylenes	5	6.0J	4.8J	6.5	3.9J	7.6	5.3	5.3	5.5	8.7	5.4	10	8.6
Total VOCs		**123.3**	**59.19**	**81.2**	**65.9**	**95.08**	**68.54**	**59.67**	**69**	**86.5**	**59.33**	**90**	**66.44**
Semi-Volatiles (µg/L)													
1,2-Dichlorobenzene	3												
1,4-Dichlorobenzene	3												
2,4-Dimethylphenol	50		2J										
2-Methylphenol	NL	3J	2J	1.0J	0.8J	1J							
4-Methylphenol	NL			0.9J	0.7J	1J							
Naphthalene	10												
Di-n-octyl phthalate	50				0.6J								
Phenol	1	4J	0.7J										
Total SVOCs		**7**	**4.7**	**1.9**	**2.1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Notes:

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-7											
Date	**Class GA Level**	**05/30/06**	**05/24/07**	**05/27/09**	**05/26/10**	**05/26/11**	**05/30/12**	**05/24/13**	**05/29/14**	**05/29/15**	**05/26/16**	**05/31/17**	**05/23/18**
Volatiles (µg/L)													
Acetone	50												
Benzene	1												0.13J
2-Butanone	50												
Chlorobenzene	5												
trans-1,2-Dichloroethene	5	5.8	3.8		2.7	2.7	2.0	2.0	1.7		0.95J		1.5J
Ethylbenzene	5	1.3	0.87J	0.84J	0.62J								0.51J
Methylene Chloride	5												
Tetrachloroethene	5	2.8	1.7	1.2J	0.80J	0.72J	0.69J	0.43J	0.50J	0.38J			
Toluene	5	8.6	5.0	4.9J	3.3	3.4	2.4	2.6	2.5	1.9	1.6	1.4/1.3	2.6J
Trichloroethene	5	37	22	21J	14	12	7.7	9.7	8.5	5.1	4.9	4.6/4.2	6.2
Vinyl Chloride	2	2.9		2.6J		2.4	1.6		1.7	0.94J			
Total Xylenes	5	8.2	5.3	5.0J	3.6	4.0	2.8	2.9	2.8	0.95J	1.9J	0.93J/0.86J	2.8
Total VOCs		**66.6**	**37.8**	**25**	**0**	**25.2**	**16.8**	**17.6**	**17.7**	**9.3**	**9.4**	**6.7**	**13.74**
Semi-Volatiles (µg/L)													
1,2-Dichlorobenzene	3									0.43J			
1,4-Dichlorobenzene	3												
2,4-Dimethylphenol	50												
2-Methylphenol	NL		0.6J	0.5J		0.45J		0.38J	0.52J				0.63J
4-Methylphenol	NL		0.6J	0.4J					1.1J				0.65J
Naphthalene	10												
Di-n-octyl phthalate	50												
Phenol	1												
Total SVOCs		**0**	**1.2**	**0.9**	**0**	**0.45**	**0**	**0.4**	**1.6**	**0**	**0**	**0**	**1.28**

Notes:

NL - Not listed
[ ] - Exceeds Class GA Level
NS - Not Sampled
J - Estimated
Blank = Non-Detect

Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-7			
Date	**Class GA Level**	**05/29/19**	**05/11/20**	**4/28/2021**	**4/28/2022**
Volatiles (µg/L)					
Acetone	50	3.9J/4.3J			
Benzene	1				
2-Butanone	50				
Chlorobenzene	5				
trans-1,2-Dichloroethene	5	1.0/1.2	1.2	1.2	1.2
Ethylbenzene	5				
Methylene Chloride	5				
Tetrachloroethene	5	0.40J/0.45J			
Toluene	5	1.1/1.3	1.1	1.2	1.2
Trichloroethene	5	4.3/4.5	2.9	3	2.9
Vinyl Chloride	2		2.7	5.5	2.6
Total Xylenes	5	0.89J/0.85J	0.71J	1.0J	0.81J
Total VOCs		**12.01**	**8.61**	**11.9**	**8.71**
Semi-Volatiles (µg/L)					
1,2-Dichlorobenzene	3				
1,4-Dichlorobenzene	3				
2,4-Dimethylphenol	50				
2-Methylphenol	NL		0.43J		
4-Methylphenol	NL	0.59J	0.47J		
Naphthalene	10				
Di-n-octyl phthalate	50				
Phenol	1				
Total SVOCs		**0.59**	**0.9**	**0**	**0**

Notes:

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Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-8											
Date	**Class GA Level**	**05/18/01**	**08/20/01**	**11/27/01**	**02/11/02**	**05/21/02**	**08/06/02**	**11/22/02**	**02/25/03**	**05/08/03**	**05/08/03**	**05/14/04**	**05/27/05**
Volatiles (µg/L)													
Acetone	50	78	31/29	19J		4.7J	3.6J				6.2	5.8	4.7J
Benzene	1	11	14/14	14		2.6	5.3	3.3	3.6	3.1	1.8	1.2	1.1
2-Butanone	50	4.0J											
Chlorobenzene	5	3.7J	4.1J/4.1J	4.0J		0.87J	1.7	1.1		1.1	0.65J	0.48J	0.43J
trans-1,2-Dichloroethene	5	4.3J	3.2J/3.1J	4.0J		0.76J	1.5	0.88J		1.0	0.50J	0.41J	1.0
Ethylbenzene	5	13	16/16	15	1.6J	2.8	5.8	3.1	3.9	3.1	1.8	1.2	
Methylene Chloride	5		0.52J/0.48J	0.62J	1.8J								
Tetrachloroethene	5	40	51/52	59	7.7J	9.9	22	12	14	11	7.0	5.0	3.8
Toluene	5	140	140/140	110	17J	21	53	28	38	27	16	11	8.1
Trichloroethene	5	120	110/110	110	20J	22	53	27	35	27	17		7.7
Vinyl Chloride	2	3.7J	3.4/3.6	3.1	1.1J		1.4	0.70J		0.78J			
Total Xylenes	5	43	55/54	46	4.8J	8.3	18	9.5	11	9.9	5.4	3.7	3.0
Total VOCs		**460.7**	**427.25**	**384.72**	**54**	**72.93**	**165.3**	**85.58**	**105.5**	**84**	**0**	**28.8**	**29.8**
Semi-Volatiles (µg/L)													
1,2-Dichlorobenzene	3												
1,4-Dichlorobenzene	3												
2,4-Dimethylphenol	50	2J	4J/2J	4J	0.8J	0.8J	3J	1J					
2-Methylphenol	NL	18	30/25	16	4J	5J	13	7J	11	7J	4J	2J	2J
4-Methylphenol	NL	30	51/45	28	8J	10	26	14	20	14J	9	5J	6J
Naphthalene	10	1J	3J/25	1J			0.9J						
Di-n-octyl phthalate	50		0.1J/ND										
Phenol	1	30	49/44	31	5J	8J	11	10		4J	6J	2J	
Total SVOCs		**81**	**139.1**	**80**	**17.8**	**23.8**	**53.9**	**32**	**31**	**25**	**0**	**9**	**8**

Notes:

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J - Estimated
Blank = Non-Detect

Table 2.6

Summary of Detected Compounds
Site Groundwater
Gratwick-Riverside Park
North Tonawanda, New York

Location		OGC-8											
Date	**Class GA Level**	**05/30/06**	**05/24/07**	**05/29/08**	**05/27/09**	**05/26/10**	**05/26/11**	**05/30/12**	**05/29/14**	**05/26/16**	**5/23/2018**	**5/12/2020**	**04/28/22**
Volatiles (µg/L)													
Acetone	50			9.9	1.5J								
Benzene	1	0.92	0.54J	0.84	0.58J				0.50J	0.47J	0.87J	0.83	
2-Butanone	50												
Chlorobenzene	5	0.44J									0.42J		
trans-1,2-Dichloroethene	5										0.39J		
Ethylbenzene	5	0.99J	0.53J	0.84J	0.50J						0.82J	0.96J	0.81J / ND
Methylene Chloride	5												
Tetrachloroethene	5	4.0	2.0	2.3	1.6		0.94J	1.3	0.91J	1.0	1.6	1.3	1.1 / 0.87J
Toluene	5	8.3	4.0	6.4	3.7		2.4	2.6	2.8	3.3	4.6	3.8	4.2 / 4.2
Trichloroethene	5	7.6	4.0	6.5	4.0		2.4	2.7	3.1	3.9	5.2	5.2	4.3 / 4.1
Vinyl Chloride	2												
Total Xylenes	5	3.2	1.1J	2.5J	1.5J		0.82J	0.86J	0.78J	1.0J	2.6	3.4	1.6J / 1.6J
Total VOCs		**25.5**	**10**	**29.28**	**13.4**	**0**	**6.6**	**7.46**	**8.1**	**9.7**	**16.5**	**15.49**	**11.39**
Semi-Volatiles (µg/L)													
1,2-Dichlorobenzene	3												
1,4-Dichlorobenzene	3			0.2J									
2,4-Dimethylphenol	50			1J		0.73J		0.52J	1.1J	0.86	1.4J	3.8J	2.1J / 2.3J
2-Methylphenol	NL	3J	2J	2J		2.2J	1.5J	2.0J	2.6J	1.9J	3.3J	7.5J	3.8J / 4.1J
4-Methylphenol	NL	8J	6	8	5.7	6.5J	5.3J	6.2J			11	25	15 / 16
Naphthalene	10												
Di-n-octyl phthalate	50												
Phenol	1												
Total SVOCs		**11**	**6**	**11.2**	**5.7**	**9.1**	**6.8**	**8.72**	**3.7**	**2.8**	**15.7**	**36.3**	**21.65**

Notes:

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NS - Not Sampled
J - Estimated
Blank = Non-Detect

Table 2.7

PH Readings
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location	MH2	MH3	MW-6	OGC-1	OGC-5	MH6	OGC-6	MW-7	MH8	OGC-2	MH9
Date											
06/27/13	8.49	8.74	9.89	8.39	8.63	9.55	10.75	8.66	8.84	9.16	
07/24/13	8.02	8.59	9.75	9.16	8.13	8.73	10.82	9.68	8.43	8.80	
08/22/13	8.99	9.07	10.08	8.83	8.32	8.84	10.58	9.25	8.53	9.26	
09/30/13	8.45	9.48	9.17	8.46	8.20	8.95	10.52	9.24	8.17	9.00	
10/30/13	8.45	10.00	9.68	8.24	8.09	8.83	10.13	8.77	8.05	8.77	
11/27/13	8.70	10.06	10.01	7.99	8.04	8.62	10.38	8.89	8.29	8.90	
12/31/13	9.10	7.45	10.07	8.63	8.23	7.62	10.14	9.52	8.51	9.17	
01/30/14	8.98	8.56	9.97	9.06	8.17	8.52	10.44	9.45	8.89	9.26	
02/26/14	10.35	10.21	10.46	9.12	8.60	9.33	10.34	9.41	8.95	9.24	
03/28/14	8.97	8.54	10.15	9.24	8.43	8.61	10.37	9.24	8.63	9.06	10.33
04/25/14	8.68	8.29	10.19	8.24	8.43	8.68	10.52	8.94	8.57	9.04	10.36
05/29/14	8.81	8.42	10.74	8.76	8.57	9.34	11.23	9.88	9.04	9.81	11.01
06/25/14	8.91	9.25	10.32	8.63	8.62	9.39	10.96	9.52	9.30	9.33	10.99
07/29/14	8.51	8.59	8.75	8.26	7.99	8.35	10.34	9.37	8.18	9.25	10.39
08/26/14	8.27	8.69	8.77	8.64	7.95	8.65	10.35	8.56	8.04	8.94	10.56
09/30/14	8.43	9.64	8.94	8.39	8.26	8.70	10.34	9.22	8.15	9.05	10.66
10/29/14	8.12	9.66	9.80	8.83	8.16	8.87	10.22	9.11	8.29	8.94	10.42
11/25/14	9.11	10.59	9.72	9.19	8.44	8.90	10.84	9.25	8.60	8.80	10.74
12/30/14	10.84	10.75	10.55	9.17	8.83	9.13	10.60	9.69	8.88	9.51	10.98
01/28/15	9.25	7.51	10.18	9.01	8.40	8.65	10.33	9.11	8.63	8.94	5.97
02/24/15	9.28	9.08	10.49	9.63	8.90	9.14	9.93	9.08	NM	9.12	8.14
03/25/15	8.34	8.26	10.59	8.19	8.31	8.70	10.38	9.65	7.63	9.20	9.46
04/23/15	7.87	8.63	8.29	8.46	8.59	8.67	8.11	7.74	7.88	7.69	8.09
05/29/15	7.94	8.01	10.73	8.75	8.10	8.57	10.54	9.24	7.63	9.36	11.11
06/24/15	8.47	8.56	10.48	9.47	8.29	9.32	10.88	9.15	8.51	9.29	10.83
07/28/15	8.49	8.75	9.47	8.42	8.19	8.73	10.92	9.33	8.35	9.27	10.58
08/27/15	8.75	9.37	9.83	8.71	8.42	8.41	10.32	NM	9.30	9.58	10.53
09/25/15	8.40	10.02	9.57	8.86	8.41	9.13	10.83	9.72	8.26	9.38	10.79
10/30/15	8.24	9.60	9.50	9.42	8.65	9.43	11.08	9.49	8.35	9.38	10.81
11/30/15	9.11	10.58	9.18	8.92	8.51	9.16	9.96	9.70	8.68	9.62	11.05
12/30/15	9.17	10.26	10.32	8.63	8.77	9.53	10.34	10.00	9.02	9.57	11.28
01/28/16	9.24	10.55	9.76	9.09	8.59	8.99	10.66	9.68	8.68	9.37	10.95
02/23/16	7.85	9.87	10.36	8.65	8.75	8.67	11.03	9.98	8.63	9.56	9.55
03/31/16	9.05	9.49	10.49	8.74	8.44	8.96	10.88	9.49	8.50	9.39	9.56
04/28/16	7.72	7.71	10.43	8.12	8.44	8.53	10.84	9.39	8.41	9.49	8.97
05/26/16	8.30	8.17	10.55	8.52	8.10	9.02	10.59	8.95	7.93	9.39	9.48

Table 2.7

PH Readings
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location	MH2	MH3	MW-6	OGC-1	OGC-5	MH6	OGC-6	MW-7	MH8	OGC-2	MH9
Date											
06/30/16	8.48	8.53	10.96	9.59	8.51	9.06	10.89	9.24	8.10	9.40	9.99
07/28/16	8.42	8.39	10.68	9.40	8.24	8.88	10.67	9.47	8.31	9.34	9.89
08/24/16	8.76	9.32	9.16	8.94	8.74	9.47	9.07	9.37	9.70	9.59	10.25
09/27/16	8.35	8.57	10.41	8.99	8.10	8.84	10.93	10.38	8.22	9.31	9.84
10/25/16	8.73	9.04	8.37	8.34	8.62	9.01	9.13	9.25	9.51	9.20	9.53
11/30/16	8.23	8.34	10.26	9.49	8.17	8.79	9.65	9.39	8.25	9.32	10.76
12/28/16	8.25	8.41	10.81	8.87	8.55	9.02	10.07	9.49	8.43	9.40	9.65
01/31/17	7.51	7.60	10.40	7.89	8.44	8.52	9.25	9.21	8.16	9.34	9.20
02/28/17	8.07	8.38	10.38	8.88	7.95	8.36	8.84	8.14	6.39	8.88	2.65(1)
03/31/17	7.76	7.23	10.42	7.65	8.49	8.64	9.28	9.44	8.19	9.58	9.71
04/28/17	8.37	8.60	10.58	9.08	8.29	9.11	9.50	9.45	8.37	9.55	10.10
05/31/17	8.26	8.37	10.53	10.08	8.47	8.99	9.98	9.91	8.60	9.79	10.19
06/27/17	8.19	8.18	10.67	9.88	8.36	9.09	10.92	9.37	8.38	9.60	9.84
07/26/17	7.95	8.04	10.79	8.15	8.32	9.03	10.84	9.46	8.50	9.44	9.35
08/29/17	7.82	8.06	11.04	8.60	8.13	8.79	10.13	9.13	8.30	9.36	9.47
09/25/17	7.82	8.17	10.43	9.18	8.08	8.70	9.65	9.29	8.44	9.34	9.46
10/24/17	7.99	8.23	11.28	9.33	8.36	9.11	10.28	10.21	8.68	9.64	9.71
11/27/17	7.96	8.05	10.52	9.09	8.09	8.78	9.80	9.40	8.32	9.46	9.30
12/21/17	8.39	8.40	10.74	8.64	8.26	8.98	9.63	9.52	8.68	9.56	9.53
01/31/18	8.48	8.48	10.49	9.46	8.35	8.75	9.08	9.75	8.89	9.73	9.69
02/26/18	8.22	8.36	10.74	9.00	8.19	8.87	9.23	9.64	8.89	9.57	9.21
03/23/18	8.40	8.33	11.08	9.78	8.38	9.05	9.43	9.45	8.70	9.81	9.14
04/27/18	8.39	8.38	10.84	9.00	8.31	8.83	9.04	9.30	8.47	9.49	8.92
05/23/18	7.80	7.82	11.02	8.20	7.84	8.39	9.65	8.89	8.18	9.05	8.26
06/11/18	8.19	8.23	11.04	8.80	8.23	8.93	9.19	9.18	8.73	9.24	9.51
07/25/18	8.20	8.29	10.95	8.88	7.87	8.69	8.89	9.01	8.72	9.18	9.62
08/27/18	8.20	8.23	10.83	9.10	8.22	9.20	10.18	9.38	8.84	9.56	9.86
09/21/18	8.34	8.53	10.86	9.76	8.21	9.01	9.73	9.41	8.83	9.73	9.79
10/31/18	8.06	8.38	10.18	9.60	7.87	8.74	8.92	8.80	8.62	9.05	8.82
11/21/18	8.56	8.72	11.06	9.32	8.48	9.24	10.51	9.38	8.87	9.43	9.15
12/20/18	8.12	7.81	10.91	8.77	7.89	8.36	9.19	9.59	8.17	9.24	8.53
01/28/19	8.69	9.18	11.71	9.26	8.48	9.05	9.48	9.98	8.97	9.80	9.43
02/28/19	8.15	8.25	11.10	8.39	7.89	8.19	8.83	9.65	9.42	9.39	8.68
03/26/19	8.62	8.87	10.84	9.47	8.40	8.90	8.92	9.45	9.23	9.68	9.09
04/26/19	8.14	8.23	11.18	8.82	8.05	8.55	8.86	9.09	8.62	9.29	8.59
05/29/19	8.12	8.24	11.24	9.67	8.03	8.29	8.88	9.67	8.51	9.49	8.90
06/26/19	8.01	8.36	11.27	11.07	8.07	8.82	10.90	9.82	9.98	9.77	9.28
07/24/19	8.06	8.16	11.02	8.08	8.07	8.64	9.05	9.45	9.51	9.36	9.30
08/28/19	8.10	8.14	11.04	9.45	7.96	8.65	9.07	9.27	8.88	9.16	9.57
09/25/19	8.14	8.20	10.94	8.24	7.92	8.71	8.88	9.38	9.01	9.28	9.45
10/30/19	8.06	8.38	11.12	9.11	8.03	8.77	9.17	9.43	8.60	9.21	9.48

Table 2.7

PH Readings
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location	MH2	MH3	MW-6	OGC-1	OGC-5	MH6	OGC-6	MW-7	MH8	OGC-2	MH9
Date											
11/26/19	8.17	8.16	11.19	8.97	8.04	8.66	9.16	9.43	8.56	9.33	8.88
12/23/19	8.19	8.40	11.26	9.11	8.02	8.74	9.29	9.55	8.65	9.52	8.82
01/29/20	8.42	8.80	11.31	8.37	8.14	8.65	9.09	9.54	8.60	9.57	8.63
02/26/20	8.34	8.51	11.18	8.57	8.18	8.35	8.51	9.24	8.39	9.48	8.42
03/25/20	8.33	8.31	11.35	9.02	8.15	8.50	8.84	9.45	8.80	9.59	8.57
05/11/20	7.85	7.86	11.39	8.93	8.29	8.43	8.42	9.27	8.43	9.42	9.12
05/26/20	7.70	7.91	10.47	8.83	7.76	8.22	8.44	8.89	8.30	8.80	8.51
06/29/20	8.28	8.03	11.08	8.20	7.96	8.27	8.75	9.25	8.95	9.29	7.85
07/28/20	8.44	8.31	10.78	9.92	7.74	7.92	9.46	8.85	8.15	8.90	8.34
08/26/20	8.63	8.71	10.32	8.85	7.92	8.50	8.90	9.19	8.44	9.13	8.67
09/29/20	9.33	9.44	11.00	8.71	7.65	8.57	9.63	9.45	8.29	9.25	8.88
10/28/20	9.35	9.29	10.67	9.04	7.92	9.05	9.08	9.56	9.17	9.17	10.13
11/30/20	10.13	9.38	10.87	9.48	7.80	8.29	8.99	9.28	9.50	9.25	11.22
12/22/20	9.88	9.62	10.41	9.57	8.35	9.22	9.55	9.93	10.45	9.59	11.35
01/28/21	9.48	9.02	10.72	9.33	8.36	9.45	9.84	9.25	9.17	9.20	11.48
02/24/21	10.97	9.69	10.62	9.63	8.36	10.45	9.74	10.02	10.49	9.50	11.45
03/31/21	11.06	9.45	10.74	9.28	8.16	9.82	10.06	9.74	10.20	9.36	11.40
04/28/21	10.17	9.48	10.53	9.72	8.18	8.81	10.31	9.08	8.88	9.19	11.36
05/25/21	8.70	8.91	10.57	9.26	8.09	8.53	10.47	8.96	8.91	9.28	11.46
06/30/21	10.51	8.99	10.69	9.32	7.85	8.70	10.38	8.93	8.85	9.32	11.42
07/30/21	8.84	8.93	10.47	10.28	8.21	9.42	10.62	10.83	9.19	10.02	11.19
08/30/21	9.29	9.32	10.94	9.25	8.31	9.52	10.30	8.78	9.34	9.26	11.45
09/30/21	10.33	8.91	10.69	9.92	8.09	9.15	10.10	8.60	9.40	9.15	11.48
10/25/21	9.86	9.29	10.80	9.97	8.30	9.46	10.10	11.56	9.74	10.12	11.54
11/30/21	9.49	9.02	10.78	9.60	8.08	9.20	9.94	11.44	9.08	9.87	11.39
12/22/21	11.25	9.42	10.53	9.70	8.17	9.09	10.18	10.62	9.80	9.78	11.28
01/28/22	11.47	9.38	10.63	9.29	8.05	8.49	10.37	9.07	8.34	9.29	11.53
02/28/22	11.47	8.50	9.81	9.17	8.13	9.11	10.66	9.38	8.92	9.40	9.92
03/30/22	11.34	9.05	10.52	9.21	8.51	10.55	10.17	9.27	9.31	9.43	9.81
04/29/22	11.08	9.01	10.76	9.51	8.24	10.04	10.68	8.99	8.94	8.87	10.41
05/23/22	11.62	9.12	10.98	9.65	8.27	10.05	10.65	9.47	9.20	9.43	11.32

Table 2.7

PH Readings
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location	OGC-7	MH11	MW-8	OGC-3	MH12	OGC-8	MH14	MW-9	OGC-4	MH15	MH16
Date											
06/27/13	10.27	10.61	10.48	10.86	8.78	8.69	8.82	11.25	11.25	9.05	9.07
07/24/13	10.96	8.54	11.17	11.30	8.70	10.60	8.10	10.62	10.54	8.71	8.94
08/22/13	11.26	8.63	11.37	11.66	9.01	11.16	8.41	11.23	11.16	7.51	7.56
09/30/13	10.97	8.81	11.10	11.39	8.87	11.00	8.25	10.95	10.98	7.54	7.42
10/30/13	10.71	8.62	10.83	11.08	8.66	10.47	8.25	10.57	10.46	7.18	6.85
11/27/13	10.91	8.97	11.05	11.31	8.88	10.21	8.02	10.65	10.80	6.83	6.34
12/31/13	11.07	9.11	11.27	11.58	7.60	11.15	8.55	11.08	11.32	7.11	6.39
01/30/14	11.06	9.14	11.37	11.53	9.24	11.37	9.15	11.14	11.47	7.56	7.83
02/26/14	10.94	9.22	11.37	11.48	9.39	11.09	9.41	10.93	11.27	8.04	7.84
03/28/14	10.90	9.41	11.16	11.40	9.15	11.11	8.48	11.09	11.18	8.07	8.43
04/25/14	10.89	8.75	10.97	11.43	9.38	11.18	8.18	11.02	10.80	7.54	7.47
05/29/14	11.55	8.88	11.97	12.18	8.54	11.90	8.72	11.73	11.10	8.46	8.65
06/25/14	11.25	7.62	11.52	11.90	9.94	11.68	9.38	11.45	11.14	8.50	8.97
07/29/14	10.83	8.51	11.10	11.43	8.65	11.05	8.71	10.94	10.51	7.09	7.75
08/26/14	10.82	8.16	11.12	11.39	8.63	10.87	8.25	10.99	10.58	6.52	6.41
09/30/14	11.07	8.53	11.35	11.53	8.90	11.04	8.41	11.02	11.16	7.54	7.60
10/29/14	10.85	8.32	11.01	11.25	8.94	10.80	8.18	10.68	10.65	7.66	7.40
11/25/14	11.05	8.92	11.27	11.55	9.22	11.03	8.63	10.87	11.36	7.73	7.46
12/30/14	11.49	9.67	11.83	12.01	9.47	11.51	8.47	11.34	11.71	8.25	8.11
01/28/15	10.85	8.87	11.08	11.36	8.92	11.09	8.27	10.93	11.12	6.55	7.25
02/24/15	10.86	NM	10.85	11.00	8.57	10.88	NM	11.56	11.72	7.63	7.22
03/25/15	9.92	9.53	6.27	5.96	6.15	8.66	NM	8.97	8.96	8.99	8.89
04/23/15	8.46	8.33	8.05	8.73	9.36	8.99	9.26	11.26	11.26	8.38	8.21
05/29/15	11.49	8.35	11.58	11.95	8.77	11.92	9.32	11.54	11.40	8.21	7.51
06/24/15	11.35	7.78	11.73	11.93	9.60	11.82	8.85	11.57	11.22	7.91	8.03
07/28/15	11.09	9.33	11.57	11.69	8.54	11.20	8.37	11.08	10.91	8.05	8.12
08/27/15	11.35	9.75	11.75	11.76	10.18	11.50	9.32	11.39	10.98	7.50	7.79
09/25/15	11.37	8.35	11.55	11.94	9.05	11.44	8.63	11.41	10.93	7.97	7.77
10/30/15	11.48	8.79	11.71	12.03	9.55	11.51	11.34	11.02	11.49	10.46	7.80
11/30/15	11.26	8.82	11.63	11.93	9.52	11.36	11.52	11.10	11.45	11.16	7.98
12/30/15	11.62	9.71	11.85	12.19	9.33	11.68	11.76	11.27	11.92	11.46	8.04
01/28/16	11.36	8.77	11.62	11.86	9.37	11.75	11.42	11.09	11.62	11.01	8.08
02/23/16	11.65	9.57	11.90	12.26	9.46	11.94	11.46	11.27	11.76	10.93	8.51
03/31/16	11.43	8.72	11.69	11.99	9.20	11.77	10.02	10.95	11.40	9.09	7.81
04/28/16	11.52	8.81	11.77	12.08	9.20	11.95	10.16	11.61	11.60	9.74	7.63
05/26/16	11.60	8.72	11.69	12.02	8.90	11.94	10.10	11.53	11.49	9.74	8.41
06/30/16	11.47	8.40	11.69	12.07	9.04	11.87	10.19	11.73	11.20	9.98	9.13
07/28/16	11.30	8.20	11.56	11.93	8.90	11.78	9.96	11.57	11.18	10.34	9.44
08/24/16	10.26	10.40	11.72	11.39	10.89	11.91	10.53	11.55	11.80	8.97	7.11
09/27/16	11.38	8.09	11.46	11.95	9.03	11.62	9.91	11.44	11.37	10.80	8.33
10/25/16	9.31	8.77	10.35	10.22	10.00	10.47	10.18	10.66	9.02	8.06	7.47
11/30/16	11.20	8.60	11.53	11.87	9.14	11.54	10.43	11.45	11.48	9.94	7.45

Table 2.7

PH Readings
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location	OGC-7	MH11	MW-8	OGC-3	MH12	OGC-8	MH14	MW-9	OGC-4	MH15	MH16
Date											
12/28/16	11.32	8.65	11.49	11.67	8.65	11.29	8.47	11.18	11.19	7.61	7.47
01/31/17	11.51	8.78	11.89	12.03	8.91	11.89	9.19	11.66	11.49	8.92	8.05
02/28/17	11.46	8.68	11.73	11.97	8.89	11.78	9.38	11.58	11.15	8.01	7.29
03/31/17	11.58	8.92	11.90	12.17	9.08	11.87	9.71	11.80	11.59	9.37	8.11
04/28/17	11.52	9.15	11.85	12.13	9.06	11.90	9.43	11.72	11.40	8.21	7.84
05/31/17	11.54	9.20	11.87	12.04	9.49	11.75	9.12	11.67	10.89	7.85	7.48
06/27/17	11.50	8.84	11.94	12.22	9.16	11.94	9.09	11.84	11.48	7.59	7.59
07/26/17	11.37	8.54	11.76	12.08	8.76	11.79	8.43	11.69	11.48	7.59	7.48
08/29/17	11.27	8.76	11.62	11.94	8.87	11.54	8.52	11.55	10.69	7.70	7.44
09/25/17	11.34	8.77	11.62	11.87	9.05	11.51	9.00	11.59	10.84	7.66	7.47
10/24/17	11.76	8.79	11.80	12.06	9.18	11.43	8.72	11.71	11.19	7.81	7.97
11/27/17	11.28	8.56	11.56	11.91	8.87	11.33	9.13	11.56	11.17	7.38	6.97
12/21/17	11.46	8.78	11.84	12.07	9.28	11.64	9.16	11.74	11.41	7.37	7.39
01/31/18	11.43	9.85	11.86	12.05	9.59	11.75	9.44	11.79	11.64	7.45	7.57
02/26/18	11.61	8.92	11.89	12.08	8.54	11.82	8.89	11.78	11.68	7.53	7.53
03/23/18	11.98	9.00	12.41	12.63	8.89	12.38	8.90	12.29	12.08	7.42	7.58
04/27/18	11.35	8.97	11.79	11.78	9.17	11.63	9.08	11.56	11.39	7.12	7.22
05/23/18	11.00	8.24	11.44	11.51	8.07	11.44	7.96	11.40	10.99	7.35	7.45
06/11/18	11.46	9.06	11.93	12.01	9.00	11.98	8.57	11.89	11.14	7.37	7.60
07/25/18	11.17	8.69	11.64	11.83	9.02	11.69	8.65	11.25	11.58	6.95	7.22
08/27/18	11.39	8.49	11.84	12.05	9.23	11.74	8.81	11.84	11.14	7.41	7.48
09/21/18	11.36	8.58	11.87	12.12	9.00	11.78	8.59	11.90	11.06	7.56	7.63
10/31/18	10.64	8.42	11.17	11.26	8.87	10.93	8.67	11.08	10.88	6.89	6.63
11/21/18	11.38	8.84	11.87	12.06	8.95	11.52	8.68	11.70	11.59	7.04	7.25
12/20/18	11.46	7.99	11.94	12.05	8.70	11.72	8.27	11.88	11.49	7.59	7.41
01/28/19	12.40	9.59	12.81	12.92	9.41	12.74	8.58	13.22	12.99	7.74	7.91
02/28/19	11.54	8.15	11.86	12.03	8.19	11.88	8.29	11.94	11.75	7.19	7.36
03/26/19	11.65	9.12	11.99	12.19	8.93	11.99	8.79	11.91	11.58	7.15	7.11
04/26/19	11.51	8.42	12.01	12.03	8.39	11.97	8.01	11.89	11.37	7.48	7.61
05/29/19	11.55	8.13	11.98	12.00	8.46	11.93	7.69	11.47	10.79	6.92	7.57
06/26/19	11.65	8.70	12.03	12.10	8.86	11.92	8.53	11.90	11.31	7.41	7.53
07/24/19	11.30	8.55	11.80	11.90	8.69	11.81	8.19	11.80	11.11	7.44	7.53
08/28/19	11.35	8.34	11.79	11.93	8.96	11.80	8.40	11.76	11.19	7.38	7.45
09/25/19	11.19	9.02	11.73	11.78	8.54	11.63	8.44	11.68	11.12	7.18	7.49
10/30/19	11.42	8.19	11.89	12.05	8.82	11.73	7.88	11.82	11.19	7.26	7.53
11/26/19	11.45	8.23	11.93	12.04	8.61	11.68	8.34	11.80	11.38	7.17	7.53
12/23/19	11.76	8.62	12.26	12.29	8.57	11.92	8.52	12.13	11.65	7.24	7.48

Table 2.7

PH Readings
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location / Date	OGC-7	MH11	MW-8	OGC-3	MH12	OGC-8	MH14	MW-9	OGC-4	MH15	MH16
01/29/20	11.77	8.68	12.20	12.18	8.42	12.12	8.47	12.01	11.54	7.19	7.32
02/26/20	11.57	8.62	11.97	12.07	8.43	11.95	8.26	11.91	11.31	7.14	7.34
03/25/20	11.73	8.43	12.21	12.37	8.49	12.17	8.23	12.10	11.79	7.40	7.41
05/11/20	11.98	8.07	12.57	12.61	8.97	12.58	8.47	12.49	12.09	7.56	8.17
05/26/20	10.97	8.06	11.40	11.55	8.02	11.45	7.97	11.34	10.54	6.97	6.88
06/29/20	11.35	8.00	11.82	11.91	8.25	11.82	8.10	11.76	11.19	7.34	7.34
07/28/20	11.06	7.90	11.61	11.72	8.07	11.44	7.97	11.53	10.94	7.41	7.40
08/26/20	11.16	8.15	11.68	11.72	8.06	11.54	7.80	11.58	8.76	7.25	7.70
09/29/20	11.28	8.00	11.75	11.94	8.05	11.62	7.94	11.68	10.86	7.57	7.56
10/28/20	11.13	8.25	11.70	11.86	8.71	11.48	8.27	11.60	11.42	7.83	8.04
11/30/20	11.49	8.28	11.88	11.93	8.81	11.61	8.26	11.69	11.35	7.77	7.89
12/22/20	11.42	8.73	11.88	11.95	8.56	11.62	8.50	11.71	11.48	7.53	8.19
01/28/21	11.34	8.79	11.86	11.97	8.66	11.85	8.49	11.76	11.27	7.74	7.67
02/24/21	11.46	8.85	11.87	11.97	8.76	11.93	8.96	11.73	11.72	7.55	7.61
03/31/21	11.45	8.86	11.92	11.90	8.82	11.88	8.51	11.75	11.38	7.63	7.56
04/28/21	11.40	8.79	11.86	11.96	8.84	11.87	8.45	11.63	11.53	7.71	7.45
05/25/21	11.43	8.54	11.90	11.97	9.16	11.81	8.36	11.62	11.34	7.63	7.34
06/30/21	11.22	8.19	11.77	11.87	9.43	11.87	8.51	11.54	11.30	7.63	7.40
07/30/21	11.24	8.74	11.71	11.84	9.44	11.70	9.28	11.58	11.09	7.31	6.79
08/30/21	11.46	8.73	11.93	12.12	9.49	11.86	9.14	11.78	11.74	7.85	7.80
09/30/21	11.37	7.87	11.85	12.00	9.05	11.71	8.66	11.66	10.87	7.69	7.70
10/25/21	11.44	8.92	11.91	11.99	9.37	11.68	8.85	11.74	10.59	7.54	7.26
11/30/21	11.49	8.98	12.04	12.18	9.36	11.62	8.49	11.73	11.52	7.61	7.82
12/22/21	11.49	8.88	12.05	12.17	8.86	11.67	8.76	11.70	11.87	7.63	7.85
01/28/22	11.42	8.84	12.01	12.20	8.90	12.09	8.55	11.78	11.91	7.68	7.79
02/28/22	11.54	9.00	12.04	12.14	8.65	11.88	8.79	11.84	11.82	7.98	7.78
03/30/22	11.44	8.90	11.81	11.96	8.88	11.80	8.59	11.67	11.56	7.86	7.79
04/29/22	11.01	8.37	11.66	11.73	8.67	11.58	8.17	11.65	11.19	7.88	7.84
05/23/22	11.64	9.42	12.21	12.27	9.13	12.17	8.66	12.07	11.92	7.73	7.71

Table 2.7

PH Readings
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location	City MH1	City MH2	City MH3
Date			
06/27/13	9.55	9.05	9.34
07/24/13	6.49	6.99	7.03
08/22/13	8.09	7.96	7.92
09/30/13	8.74	7.75	7.57
10/30/13	8.88	7.48	7.30
11/27/13	NM	NM	NM
12/31/13	NM	NM	NM
01/30/14	10.87	8.86	7.57
02/26/14	8.59	7.91	7.70
03/28/14	9.61	8.79	9.06
04/25/14	8.70	8.57	8.76
05/29/14	10.66	9.69	9.53
06/25/14	10.42	10.05	9.84
07/29/14	9.78	9.01	8.80
08/26/14	10.04	9.26	8.83
09/30/14	10.09	9.44	8.96
10/29/14	10.05	9.63	9.29
11/25/14	10.46	8.21	8.41
12/30/14	10.62	8.82	9.02
01/28/15	7.50	6.75	6.28
02/24/15	6.17	6.61	6.22
03/25/15	7.61	7.49	7.73
04/23/15	8.63	8.46	8.30
05/29/15	10.46	9.80	8.98
06/24/15	9.36	8.99	8.82
07/28/15	6.86	6.84	7.30
08/27/15	9.49	8.85	9.08
09/25/15	10.13	9.50	9.24
10/30/15	10.00	8.96	8.98
11/30/15	10.71	9.79	9.29
12/30/15	10.66	9.25	9.22
01/28/16	10.72	9.90	9.43
02/23/16	6.78	6.90	6.96
03/31/16	8.48	8.39	8.25
04/28/16	8.16	7.96	7.69
05/26/16	8.49	7.94	7.10
06/30/16	7.92	7.49	7.22
07/28/16	7.82	Dry	7.33
08/24/16	7.27	7.50	7.51
09/27/16	7.30	7.49	7.51
10/25/16	7.20	7.23	7.47

Table 2.7

PH Readings
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location	City MH1	City MH2	City MH3
Date			
11/30/16	7.04	7.51	7.47
12/28/16	7.83	7.74	7.69
01/31/17	7.96	7.85	7.52
02/28/17	7.61	6.92	7.23
03/31/17	8.48	7.75	7.84
04/28/17	8.44	8.26	8.07
05/31/17	8.5	8.27	8.06
06/27/17	8.70	8.34	8.17
07/26/17	7.63	7.56	7.25
08/29/17	7.66	7.46	7.39
09/25/17	7.22	7.11	7.05
10/24/17	8.06	7.37	7.46
11/27/17	7.59	7.41	7.01
12/21/17	7.62	7.51	7.50
01/31/18	8.41	8.11	7.29
02/26/18	7.92	7.71	7.65
03/23/18	8.02	7.73	7.70
04/27/18	7.45	7.42	7.37
05/23/18	7.60	7.57	7.46
06/11/18	7.76	7.47	7.46
07/25/18	7.28	7.17	7.13
08/27/18	7.81	7.54	7.5
09/21/18	7.95	7.67	7.68
10/31/18	6.07	6.23	6.35
11/21/18	7.04	7.22	7.12
12/20/18	8.11	7.82	7.47
01/28/19	8.32	8.21	8.2
02/28/19	NM	NM	NM
03/26/19	6.64	6.82	6.85
04/26/19	7.61	7.62	7.61
05/29/19	8.51	8.12	7.94
06/26/19	7.35	7.38	7.4
07/24/19	7.74	7.57	7.5
08/28/19	7.45	7.34	7.38
09/25/19	6.91	7.19	7.4
10/30/19	7.87	7.67	7.65
11/26/19	7.65	7.68	7.62
12/23/19	7.64	7.82	7.77
01/29/20	7.73	7.71	7.69
02/26/20	7.88	7.83	7.78
03/25/20	7.75	7.81	7.8
05/11/20	7.95	7.69	7.78

Table 2.7

PH Readings
Gratwick-Riverside Park Site
North Tonawanda, New York

Monitoring Location	City MH1	City MH2	City MH3
Date			
05/26/20	7.33	7.39	7.37
06/29/20	7.9	7.8	7.75
07/28/20	8.15	7.85	7.63
08/26/20	8.39	8.15	8.02
09/29/20	8.62	8.08	7.9
10/28/20	9.78	9.42	9.36
11/30/20	NM	NM	NM
12/22/20	11.12	10.41	10.39
01/28/21	9.27	8.66	8.48
02/24/21	11.17	11.03	11
03/31/21	11.09	10.09	10.06
04/28/21	NM	NM	NM
05/25/21	NM	NM	NM
06/30/21	NM	NM	NM
07/30/21	NM	NM	NM
08/30/21	NM	NM	NM
09/30/21	NM	NM	NM
10/25/21	NM	NM	NM
11/30/21	NM	NM	NM
12/22/21	NM	NM	NM
01/28/22	NM	NM	NM
02/28/22	NM	NM	NM
03/30/22	NM	NM	NM
04/29/22	NM	NM	NM
05/23/22	NM	NM	NM

Notes:

(1) - Affected by muriatic acid addition.
NM - Not Measured due to Unsafe Road Conditions or Inaccessible due to Snow Cover.

Table 2.8

Effluent Sampling Summary
Subsequent to February 2007
Gratwick-Riverside Park Site
North Tonawanda, New York

LOCATIONS

Effluent monitoring station at Site discharge point

FREQUENCY

Semi-Annual (Spring and Fall as dictated by the City of North Tonawanda
Monthly (Flow and pH)
Industrial Wastewater Discharge Permit dated March 1, 2022)

PARAMETERS

Volatiles

Acetone
Benzene
2-Butanone
Chlorobenzene
1,1-Dichloroethane
1,2-Dichloroethane
trans-1,2-Dichloroethene
Ethylbenzene
Methylene Chloride
Styrene
Tetrachloroethene
Toluene
1,1,1-Trichloroethane
Trichloroethene
Vinyl Chloride
Xylenes (Total)

Semi-Volatiles

1,4-Dichlorobenzene
1,2-Dichlorobenzene
2,4-Dimethylphenol
2-Methylphenol
4-Methylphenol
Naphthalene
Di-n-octylphthalate
Phenols (4AAP)

Inorganics

Mercury

Wet Chemistry

Chloride
Cyanide
NH3
NO3
Phosphorous
Sulfate
Sulfide

Table 2.9

Analytical Results Summary
Site Effluent
Gratwick-Riverside Park Site

Sample ID:														
Sample Date:		**09/13/12**	**03/14/13**	**09/12/13**	**04/16/14**	**10/07/14**	**04/16/15**	**10/8/15**	**04/14/16**	**10/04/16**	**04/06/17**	**10/05/17**	**04/05/18**	**10/04/18**
Parameter	**Unit**													
Volatiles														
1,1,1-Trichloroethane	µg/L	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
1,1-Dichloroethane	µg/L	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
1,2-Dichloroethane	µg/L	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
2-Butanone	µg/L	25U	25U	25U	25U	25U	25U	25U	25U	25U	25U	NA	25U	25 U
Acetone	µg/L	25U	25U	25U	25U	25U	25U	25U	25U	25U	25U	NA	25U	25 U
Benzene	µg/L	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
Chlorobenzene	µg/L	5.0U	5.0U	5.0U	5.0U	5.1	5.0U	5.0U	5.0U	5.0U	9.5	5.0U	5.0U	5.0 U
Ethylbenzene	µg/L	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
Methylene chloride	µg/L	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
Styrene	µg/L	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
Tetrachloroethene	µg/L	6.3	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
Toluene	µg/L	27	16	13	14	13	5.0U	12	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
trans-1,2-Dichloroethene	µg/L	5.0U	5.0U	5.0U	5.0U	5.4	5.0U	5.1	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
Trichloroethene	µg/L	50	45	34	38	26	5.0	23	12	5.0U	5.0U	5.0U	5.0U	5.0 U
Vinyl chloride	µg/L	5.3	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
Xylene (total)	µg/L	18	18	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	10 U
Semi-Volatiles														
1,2-Dichlorobenzene	µg/L	0.68	1.2	6.2	0.92	4.8U	4.8U	4.7U	4.7U	4.8U	4.8U	5.0U	5.0U	4.8 U
1,4-Dichlorobenzene	µg/L	3.6	7.7	5.7	6.4	9.4	7.0	9.2	4.7U	5.9U	26	20	5.6U	5.4 U
2,4-Dimethylphenol	µg/L	5.5	7.3	6.5	10	7.8J	13	5.0	5.9	1.3U	53	5.2	1.7	1.3 UJ
2-Methylphenol	µg/L	0.62	3.4	0.22U	0.44	5.3	6.2	4.9	2.7	0.77U	7.7	0.81U	0.81U	0.77 UJ
4-Methylphenol	µg/L	3.0	6.7	1.3	0.62	7.4	59	3.7	8.5	0.75U	62	0.79U	0.79U	0.75 UJ
Di-n-octyl phthalate	µg/L	4.6U	4.6U	4.6U	4.6U	4.6U	4.6U	4.6U	4.6U	4.6U	4.6U	4.6U	4.6U	4.6 U
Naphthalene	µg/L	1.4	0.53	0.080U	0.47	0.82U	0.97	0.81U	0.81U	0.82U	1.3	0.86U	0.86U	0.82 U
Phenol	µg/L	0.12U	5.5	0.12U	0.12U	22	4.0	3.0	0.33U	0.33U	3.0	0.35U	0.35U	0.33 UJ
Metals														
Aluminum	mg/L	0.20U	0.20U	0.20U	0.20U	0.20U	0.20U	0.20U	0.67	0.20U	0.20U	0.20U	0.20U	0.20 U
Antimony	mg/L	0.020U	0.020U	0.020U	0.020U	0.020U	0.020U	0.020U	0.020U	0.020U	0.020U	0.020U	0.020U	0.020 U
Arsenic	mg/L	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.015U	0.015U	0.015U	0.015U	0.015U	0.015 U
Barium	mg/L	0.068	0.085	0.064	0.096	0.067	0.092	0.068	0.096	0.130	0.081	0.076	0.092	0.044
Beryllium	mg/L	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020 U
Cadmium	mg/L	0.0010U	0.0010U	0.0010U	0.0010U	0.0010U	0.0010U	0.0010U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020 U
Chromium	mg/L	0.0040U	0.0040U	0.0040U	0.0040U	0.0040U	0.0040U	0.0040U	0.0040U	0.0040U	0.0040U	0.0040U	0.0040U	0.0040 U
Copper	mg/L	0.013	0.050	0.013	0.010U	0.014	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010 U
Iron	mg/L	0.050U	0.050U	0.050U	0.40	0.050U	0.17	0.050U	0.18	0.30	1.0	1.7	1.1	0.097
Lead	mg/L	0.0067	0.0050U	0.0050U	0.0050U	0.0050U	0.0050U	0.0050U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010 U
Magnesium	mg/L	0.99	2.9	0.78	5.5	1.1	6.5	1.4	15.2	45.2	9.6	8.3	11	3.2
Manganese	mg/L	0.0030U	0.0030U	0.0030U	0.010	0.0030U	0.018	0.0030U	0.26	0.062	0.053	0.099	0.068	0.0070
Mercury	mg/L	0.00020U	0.00020U	0.00020U	0.00020U	0.00020U	0.00020U	0.00020U	0.00020U	0.00020U	0.00020U	0.00020U	0.00020U	0.00020 U
Nickel	mg/L	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.014	0.010U	0.010U	0.010 U
Selenium	mg/L	0.015U	0.015U	0.015U	0.015U	0.015U	0.015U	0.015U	0.025U	0.025U	0.025U	0.025U	0.025U	0.025 U
Silver	mg/L	0.0030U	0.0030U	0.0030U	0.0030U	0.0030U	0.0030U	0.0030U	0.0060U	0.0060U	0.0060U	0.0060U	0.0060U	0.0060 U
Sodium	mg/L	238	353	206	359	233	361	245	351	258	319	227	260	123
Zinc	mg/L	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.017	0.028	0.010U	0.010 U

Table 2.9

Analytical Results Summary
Site Effluent
Gratwick-Riverside Park Site

Sample ID:														
Sample Date:		**09/13/12**	**03/14/13**	**09/12/13**	**04/16/14**	**10/07/14**	**04/16/15**	**10/8/15**	**04/14/16**	**10/04/16**	**04/06/17**	**10/05/17**	**04/05/18**	**10/04/18**
Parameter	**Unit**													
General Chemistry														
pH	S.U.	10.82	10.32	10.38	10.22	9.90	9.20	10.21	8.86	8.43	8.80	7.51	7.86	8.82
Hardness	mg/L	176	250	192	252	180	340	192	332	352	276	244	316	188
Total Dissolved Solids (TDS)	mg/L	911	1170	823	1360	872	1430	977	1450	1180	1280	995	1160	605
Total Suspended Solids (TSS)	mg/L	4	7	12	8	2	16	12	14	3	11	24	15	4.0 U
Chloride	mg/L	326	398	333	633	386	662	409	648	421	576	408	411	195
BOD	mg/L	45	16	18	10.3	20	13.3	13.7	13.3	25	12	8.3	4.95	6.04
COD	mg/L	70	37	21	17	75	5.0U	50U	25U	125	67	186	127	79
Oil and Grease	mg/L	0.10U	0.2	0.10U	0.10U	0.10U	0.10U	0.10U	0.001	0.10U	0.20	NA	0.10U	0.10 U
Organic Carbon	mg/L	8.2	8.0	7.6	6.6	13.4	5.0U	5.5	6.1	11	8.7	NA	12.7	8.37
Alkalinity, Total (As CaCO3)	mg/L	44.6	48.9	47.2	29	47.3	40.0	43.5	75.3	381	94	116	115	44.6
Bicarbonate (as CaCO3)	mg/L	5.0U	5.0U	5.0U	21	5.0U	40.0	5.0U	38.2	349	94	116	115	37.9
Ammonia	mg/L	2.52	2.52	0.84	1.1	1.12	0.84	1.40	1.12	1.12	1.12	NA	0.84	0.56
Nitrate (as N)	mg/L	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U	0.15	0.050U	0.050U	0.050U	0.13UJ	0.050 U
TKN	mg/L	4.48	3.08	1.12	1.68	1.68	1.12	2.24	1.68	1.68	1.12	NA	1.12	1.68
Sulfate	mg/L	159	118	166	183	136	216	127	237	65.4	159	160	218	157
Sulfide	mg/L	3.0	4.4	3.6	3.2	3.6	2.0	3.6	1.6	30.2	6.2	1.6	1.0U	1.0 U
Phenol	mg/L	0.008U	0.012U	0.011U	0.009U	0.011U	0.085U	0.11U	0.10U	0.095U	0.10U	0.10U	0.100U	0.100 U
Phosphorous	mg/L	0.15	0.12	0.16	0.16	0.17	0.10	0.10U	0.10U	1.30	0.10U	0.14	0.10U	0.10 U
Cyanide	mg/L	0.005U	0.005U	0.005U	0.005U	0.005U	0.005U	0.005	0.005U	0.3	0.005U	NA	0.005U	0.010 U

Notes:

U - Non-detect at associated value
NA - Not Analyzed
ND - Not detected. No associated reporting limit
J - Estimated
NL - Not Listed
SL - Sample Lost
R - Rejected
5.1 - Concentration exceeds Surface Water Standard
(1) - Lowest Standard/Guidance Value shown
(2) - Guidance Value
(3) - Calculated using a hardness of 300 ppm
(4) - Applies to dissolved form
(5) - TOC analyzer malfunction prevented analysis of this compound
(6) - Hardness >75 mg/L

Table 2.9

Analytical Results Summary
Site Effluent
Gratwick-Riverside Park Site

Sample ID:										
Sample Date:		**4/11/2019**	**10/18/2019**	**4/23/2020**	**10/8/2020**	**4/14/2021**	**10/6/2021**	**5/3/2022**	**Surface Water Standard**	(1)
Parameter	**Unit**									
Volatiles										
1,1,1-Trichloroethane	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5	
1,1-Dichloroethane	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5	
1,2-Dichloroethane	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	0.6	
2-Butanone	µg/L	25 U	25 U	25 U	25 U	25 U	25 U	25 U	50	
Acetone	µg/L	25 U	25 U	25 U	25 U	25 U	25 U	25 U	50	
Benzene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1	
Chlorobenzene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	7.3	5.0 U	5.1	5	
Ethylbenzene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5	
Methylene chloride	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5	
Styrene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5	
Tetrachloroethene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	0.7	(2)
Toluene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	10	6.7	5.6	5	
trans-1,2-Dichloroethene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5	
Trichloroethene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	12	8	13	5	
Vinyl chloride	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.5 J	0.3	(2)
Xylene (total)	µg/L	10 U	10 U	10 U	10 U	15	10 U	5.0 U	5	each
Semi-Volatiles										
1,2-Dichlorobenzene	µg/L	4.8 U	10 U	10 U	10 U	25 U	10 U	10 U	3	
1,4-Dichlorobenzene	µg/L	15	10 U	13	24	28 U	10 U	22	3	
2,4-Dimethylphenol	µg/L	1.3 U	5.0 U	5.0 U	5.0 U	7.0 U	7.0 U	5.0 U	50	(2)
2-Methylphenol	µg/L	0.77 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NL	
4-Methylphenol	µg/L	0.75 U	5.0 U	5.0 U	5.0 U	14	5.0 U	5.0 U	NL	
Di-n-octyl phthalate	µg/L	4.6 U	5.0 U	5.0 U	5.0 U	6.0 U	6.0 U	5.0 U	50	(2)
Naphthalene	µg/L	0.82 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10	
Phenol	µg/L	0.33 U	5.0 U	5.0 U	5.0 U	6.8	5.0 U	5.0 U	1	
Metals										
Aluminum	mg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.1	
Antimony	mg/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.003	
Arsenic	mg/L	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.050	
Barium	mg/L	0.091	0.08	0.11	0.061	0.110	0.076	0.066	1.0	
Beryllium	mg/L	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	1.1	(6)
Cadmium	mg/L	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.005	
Chromium	mg/L	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.050	
Copper	mg/L	0.010 U	0.010 U	0.010 U	0.010 U	0.015	0.02	0.01 U	0.023	(3)
Iron	mg/L	0.073	3	0.65	0.050 U	1.6	0.38	0.05 U	0.30	
Lead	mg/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.012	(3)
Magnesium	mg/L	12.3	7.4	15.3	4.9	8.6	1	3.1	35	
Manganese	mg/L	0.056	0.17	0.11	0.02	0.14	0.013	0.0069	0.30	
Mercury	mg/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	7E-07	(4)
Nickel	mg/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.10	
Selenium	mg/L	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.0046	(4)
Silver	mg/L	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.050	
Sodium	mg/L	266	170	225	258	289	194	258	NL	
Zinc	mg/L	0.010 U	0.024	0.010 U	0.010 U	0.18	0.021	0.01 U	2.0	(2)

Table 2.9

Analytical Results Summary
Site Effluent
Gratwick-Riverside Park Site

Sample ID: / Sample Date: / Parameter	Unit	4/11/2019	10/18/2019	4/23/2020	10/8/2020	4/14/2021	10/6/2021	5/3/2022	Surface Water Standard (1)	
General Chemistry										
pH	S.U.	8.16	7.52	7.91	7.66	8.82	10.36	9.53	NL	
Hardness	mg/L	276	204	364	220	372	268	176	NL	
Total Dissolved Solids (TDS)	mg/L	1120	1020	1040	1140	1140	827	207	NL	
Total Suspended Solids (TSS)	mg/L	4	6.3	31	52	70	193	25	NL	
Chloride	mg/L	405	229	338	384	470	283	397	250	
BOD	mg/L	6.84	7.45	11.23	8.87	7.6	9.42	8.05	NL	
COD	mg/L	50 U	136	62	165	50	NA	NA	NL	
Oil and Grease	mg/L	0.2	0.1	0.2	0.2	0.3	0.4	4.9	NL	
Organic Carbon	mg/L	11.76	10.58	18.33	15.89	10.44	NA	NA	NL	
Alkalinity, Total (As CaCO3)	mg/L	103	101	183	50.2	188	78.5	32.1	NL	
Bicarbonate (as CaCO3)	mg/L	103.0	101.0	183.0	50.2	188.0	78.5	32.1	NL	
Ammonia	mg/L	1.12	1.4	1.68	1.4	1.12	1.12	U	2.0	
Nitrate (as N)	mg/L	0.050 U	0.050 U	0.074	0.050 U	0.050 U	0.050 U	0.050 U	10	
TKN	mg/L	3.00 U	3.00 U	2.24	3.0 U	6.5	5.3	4.9	NL	
Sulfate	mg/L	206	131	218	200	154	158	203	250	
Sulfide	mg/L	16	2	1.0 U	1.2	2	5.6	4.8	0.05	(2)
Phenol	mg/L	ND	ND	ND	ND	6.8	U	6.8	0.001	
Phosphorous	mg/L	0.16	0.29	0.23	0.61	0.22	0.1	0.016	0.020	(2)
Cyanide	mg/L	ND	ND	0.014	0.010 U	R	0.019	0.010 UJ	0.0052	

Notes:

U - Non-detect at associated value
NA - Not Analyzed
ND - Not detected. No associated reporting limi
J - Estimated
NL - Not Listed
SL - Sample Lost
R - Rejected
5.1 - Concentration exceeds Surface Water Sta
(1) - Lowest Standard/Guidance Value shown
(2) - Guidance Value
(3) - Calculated using a hardness of 300 ppm
(4) - Applies to dissolved form
(5) - TOC analyzer malfunction prevented analy
(6) - Hardness >75 mg/L

Table 2.10

Groundwater Volumes Discharged
to North Tonawanda POTW
Gratwick-Riverside Park Site
North Tonawanda, New York

Month	Volumes (gallons) Monthly	Total
May 2001	2,900,000	2,900,000
June 2001	2,353,800	5,253,800
July 2001	1,488,500	6,742,300
August 2001	712,800	7,455,100
September 2001	473,100	7,928,200
October 2001	1,213,100	9,141,300
November 2001	1,281,100	10,422,400
December 2001	231,700 (1)	10,654,100
January 2002	1,383,200 (2)	12,037,300
February 2002	1,186,000	13,223,300
March 2002	233,600	13,456,900
April 2002	736,000	14,192,900
May 2002	348,200	14,541,100
June 2002	1,137,200	15,678,300
July 2002	869,300	16,547,600
August 2002	1,060,800	17,608,400
September 2002	707,000	18,315,400
October 2002	679,800	18,995,100
November 2002	489,500	19,484,700
December 2002	743,500	20,228,200
January 2003	1,150,700	21,378,900
February 2003	483,300	21,862,200
March 2003	402,300	22,264,500
April 2003	531,900	22,796,400
May 2003	655,600	23,452,000
June 2003	682,100	24,134,000
July 2003	942,000	25,076,100
August 2003	627,500	25,703,600
September 2003	349,600	26,053,200
October 2003	966,500	27,019,700
November 2003	442,200	27,461,900
December 2003	463,900	27,925,800
January 2004	443,900	28,369,700
February 2004	253,700	28,623,400
March 2004	403,700	29,027,100
April 2004	433,600	29,460,700
May 2004	377,400	29,838,100
June 2004	395,000	30,233,100
July 2004	384,300	30,617,400
August 2004	479,700	31,097,100
September 2004	413,900	31,511,000
October 2004	319,400	31,902,400
November 2004	249,200	32,151,600
December 2004	209,900	32,361,500

Table 2.10

Groundwater Volumes Discharged
to North Tonawanda POTW
Gratwick-Riverside Park Site
North Tonawanda, New York

Month	Volumes (gallons) Monthly	Total
January 2005	310,100	32,671,600
February 2005	301,100	32,972,700
March 2005	250,200	33,222,900
April 2005	378,400	33,601,300
May 2005	458,800	34,060,100
June 2005	455,900	34,516,000
July 2005	270,200	34,786,200
August 2005	285,100	35,071,300
September 2005	395,600	35,466,900
October 2005	333,200	35,800,100
November 2005	360,200	36,160,300
December 2005	395,300	36,555,600
January 2006	297,500	36,853,100
February 2006	508,300	37,361,400
March 2006	244,700	37,606,100
April 2006	224,400	37,830,500
May 2006	153,300	37,983,800
June 2006	262,300	38,246,100
July 2006	212,900	38,459,000
August 2006	357,500	38,816,500
September 2006	777,000	39,593,500
October 2006	254,700	39,848,200
November 2006	778,700	40,626,900
December 2006	496,600	41,123,500
January 2007	410,500	41,534,000
February 2007	494,600	42,028,600
March, April & May 2007	1,489,200[3]	43,517,800
June 2007	334,300	43,852,100
July 2007	258,600	44,110,700
August 2007	239,000	44,349,700
September 2007	59,500[4]	44,409,200
October 2007 through January 2008	50,600[4]	44,459,800
February 2008	23,800[4]	44,483,600
March 2008	1,238,300	45,721,900
April 2008	2,126,700	47,848,600
May 2008	1,771,100	49,619,700
June 2008	618,000	50,237,700
July 2008	1,559,200	51,796,900
August 2008	1,365,900	53,162,800
September 2008	1,998,000	55,160,800
October 2008	2,511,100	57,671,900
November 2008	1,151,600	58,823,500
December 2008	572,700	59,396,200

Table 2.10

Groundwater Volumes Discharged
to North Tonawanda POTW
Gratwick-Riverside Park Site
North Tonawanda, New York

Month	Volumes (gallons)	
	Monthly	Total
January 2009	1,021,700	60,417,900
February 2009	2,661,400	63,079,300
March 2009	4,239,300	67,318,600
April 2009	1,189,900	68,508,500
May 2009	1,362,500	69,871,000
June 2009	1,035,200	70,906,200
July 2009	1,010,100	71,916,300
August 2009	1,058,000	72,974,400
September 2009	947,000	73,921,400
October 2009	690,800	74,612,200
November 2009	697,500	75,309,700
December 2009	1,100,900	76,410,600
January 2010	767,100	77,177,700
February 2010	398,600	77,576,300
March 2010	1,094,500	78,670,800
April 2010	761,000	79,431,800
May 2010	354,700	79,786,500
June 2010	170,300	79,956,800
July 2010	323,600	80,280,400
August 2010	1,292,400	81,572,800
September 2010	672,800	82,245,600
October 2010	972,800	83,218,400
November 2010	433,500	83,651,900
December 2010	483,900	84,135,800
January 2011	420,300	84,556,100
February 2011	257,000	84,813,100
March 2011	1,136,700	85,949,800
April 2011	875,300	86,825,100
May 2011	727,500	87,552,600
June 2011	489,500	88,042,100
July 2011	459,300	88,501,400
August 2011	296,900	88,798,300
September 2011	390,300	89,188,600
October 2011	414,800	89,603,400
November 2011	393,100	89,996,500
December 2011	583,300	90,579,800
January 2012	651,800	91,231,600
February 2012	276,900	91,508,500
March 2012	586,600	92,095,100
April 2012	400,600	92,495,700
May 2012	458,800	92,954,500
June 2012	369,300	93,323,800
July 2012	15,600[(5)]	93,339,400
August 2012	399,400	93,738,800
September 2012	513,500	94,252,300

Table 2.10

Groundwater Volumes Discharged
to North Tonawanda POTW
Gratwick-Riverside Park Site
North Tonawanda, New York

Month	Volumes (gallons) Monthly	Total
October 2012	344,500	94,596,800
November 2012	336,600	94,933,400
December 2012	286,800	95,220,200
January 2013	329,800	95,550,000
February 2013	217,400	95,767,400
March 2013	260,200	96,027,600
April 2013	249,900	96,277,500
May 2013	200,500	96,478,000
June 2013	211,300	96,689,300
July 2013	245,600	96,934,900
August 2013	165,100	97,100,000
September 2013	216,500	97,316,500
October 2013	118,600	97,435,100
November 2013	203,800	97,638,900
December 2013	117,400	97,756,300
January 2014	111,700	97,868,000
February 2014 (6)	66,700	97,934,700
March 2014 (6)	5,800	97,940,500
April 2014 (6)	5,000	97,945,500
May 2014 (6)	8,600	97,954,100
June 2014 (6)	8,500	97,962,600
July 2014 (6)	15,400	97,978,000
August 2014	1,385,800	99,363,800
September 2014	869,700	100,233,500
October 2014	1,426,200	101,659,700
November 2014	638,400	102,298,100
December 2014	753,200	103,051,300
January 2015 (7)	126,600	103,177,900
February 2015 (7)	43,200	103,221,100
March 2015	2,115,700	105,336,800
April 2015	2,113,500	107,450,300
May 2015	1,939,200	109,389,500
June 2015	1,808,100	111,197,600
July 2015	1,625,600	112,823,200
August 2015	1,557,900	114,381,100
September 2015	586,800	114,967,900
October 2015	2,094,300	117,062,200
November 2015	1,153,700	118,159,900
December 2015	884,000	119,099,900
January 2016	1,293,500	120,393,400
February 2016	834,800	121,228,200
March 2016	1,589,500	122,817,700
April 2016	1,144,200	123,961,900
May 2016	601,200	124,563,100

Table 2.10

Groundwater Volumes Discharged to North Tonawanda POTW Gratwick-Riverside Park Site North Tonawanda, New York

Month	Volumes (gallons) Monthly	Total
June 2016	(8)	124,563,100
July 2016	(8)	124,563,100
August 2016	(8)	124,563,100
September 2016	(8)	124,563,100
October 2016	(8)	124,563,100
November 2016	(8)	124,563,100
December 2016	796,500	125,359,600
January 2017	1,662,500	127,022,100
February 2017	1,549,600	128,571,700
March 2017	1,840,700	130,412,400
April 2017	1,486,100	131,898,500
May 2017	1,625,700	133,524,200
June 2017	1,355,300	134,879,500
July 2017	1,181,800	136,061,300
August 2017	1,102,300	137,163,600
September 2017	1,014,200	138,177,800
October 2017	1,469,000	139,646,800
November 2017	822,400	140,469,200
December 2017	1,045,800	141,515,000
January 2018	962,100	142,477,100
February 2018	936,100	143,413,200
March 2018	1,102,800	144,516,000
April 2018	1,063,300	145,579,300
May 2018	1,049,300	146,628,600
June 2018	867,200	147,495,800
July 2018	994,300	148,490,100
August 2018	813,200	149,303,300
September 2018	828,800	150,132,100
October 2018	1,022,700	151,154,800
November 2018	960,684	152,115,484
December 2018	986,000	153,101,484
January 2019	1,045,300	154,146,784
February 2019	951,000	155,097,784
March 2019	1,059,600	156,157,384
April 2019	1,031,825	157,189,209
May 2019	1,016,178	158,205,387
June 2019	944,848	159,150,235
July 2019	900,583	160,050,818
August 2019	1,005,082	161,055,900
September 2019	997,105	162,053,005
October 2019	1,090,791	163,143,796
November 2019	1,086,832	164,230,628
December 2019	921,808	165,152,436
January 2020	1,035,110	166,187,546
February 2020	1,153,588	167,341,134
March 2020	1,148,433	168,489,567
April 2020	1,097,696	169,587,263
May 2020	1,063,511	170,650,774
June 2020	1,677,330	172,328,104
July 2020	2,439,355	174,767,459
August 2020	2,212,693	176,980,152

Table 2.10

Groundwater Volumes Discharged
to North Tonawanda POTW
Gratwick-Riverside Park Site
North Tonawanda, New York

Month	Volumes (gallons) Monthly	Total
September 2020	1,958,133	178,938,285
October 2020	1,830,730	180,769,015
November 2020	1,326,108	182,095,123
December 2020	1,303,594	183,398,717
January 2021	2,028,667	185,427,384
February 2021	1,121,751	186,549,135
March 2021	1,291,206	187,840,341
April 2021	1,252,338	189,092,679
May 2021	1,811,369	190,904,048
June 2021	1,449,513	192,353,561
July 2021	1,590,501	193,944,062
August 2021	1,815,985	195,760,047
September 2021	1,513,162	197,273,209
October 2021	1,849,744	199,122,953
Novemeber 2021	1,727,892	200,850,845
December 2021	1,777,069	202,627,914
February 2022	1,850,983	204,478,897
March 2022	1,442,524	205,921,421
April 2022	2,255,228	208,176,649
May 2022	1,963,978	210,140,627

Notes:

(1) To December 7, 2001.
(2) From December 8, 2001.
(3) Plotted as 496,400 gallons on Figure 2.18 for each of March, April, and May 2007.
(4) Flow Meter malfunctioned due to tar-like material buildup inside meter. Meter was cleaned on March 14, 2008. Volumes not plotted on Figure 2.18 as volumes are not representative of actual volume removed.
(5) Flow low due to pump failure. Two pumps replaced.
(6) Flow meter malfunctioning. Cleaned and repaired on August 8, 2014. Volumes not plotted on Figure 2.18.
(7) PS#1, PS#2 and PS#3 not operational as of January 28, 2015. PS#1 operational on March 2, 2015. PS#2 operational on March 17, 2015.
(8) Flow meter malfunctioning.

Appendices

Appendix A

City of North Tonawanda Industrial Wastewater Discharge Permit

CITY OF NORTH TONAWANDA
INDUSTRIAL WASTEWATER DISCHARGE PERMIT

Permit Number: 2628011

In accordance with the provisions of the Clean Water Act as amended, all terms and conditions set forth in this permit, the City of North Tonawanda Local Sewer Use Ordinance and any applicable Federal, State or local laws or regulations, authorization is hereby granted to:

City of North Tonawanda
830 River Road
North Tonawanda, New York 14120

Site: **Gratwick Riverside Park**
River Road
North Tonawanda, New York 14120

Classified by S.I.C. Number(s): N/A

for the discharge of remedial action ground water into the City of North Tonawanda Sewerage System.

This permit is granted in accordance with an application filed on 05/01/96 in the offices of the Wastewater Treatment Plant Superintendent located at 830 River Road, and in conformity with specifications and other required data submitted in support of the above named application, all of which are filed with and considered part of this permit. This permit is also granted in accordance with discharge limitations and requirements, monitoring and reporting requirements, and all other conditions set forth in Parts I and II hereof.

Effective this 1st day of March, 2022

To expire the 28th day of February, 2025

_____

Jason Koepsell, Water Works Superintendent
Signed this 1st day of March, 2022

PART I. SPECIFIC CONDITIONS

A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning the effective date of this permit and lasting until the expiration date, discharge from the permitted facility outfall(s) shall be limited and monitored by the permittee as specified below (Refer to attached map for sampling and monitoring sites).

Sample Point	Parameter	Discharge Limitations mg/l except pH Daily Max.	Sampling Period	Sampling Type
001	Total Flow		1 Sampling Day Monthly	continuous
	pH	Monitor Only	1 Sampling Day Monthly	grab
	Vinyl Chloride	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	Acetone	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	Methylene Chloride	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	1,1,1-Trichloroethane	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	1,1-Dichloroethane	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	1,2-Dichloroethane (total)	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	2-Butanone	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	Trichlorethene	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	Benzene	Monitor Only	1 Sampling Day semi-annual	24 hr comp.

Sample Point	Parameter	Discharge Limitations mg/l except pH Daily Max. Monthly Avg.	Sampling Period	Sampling Type
001	Tetrachloroethene	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	Toluene	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	Chlorobenzene	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	Ethylbenzene	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	Styrene	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	Xylenes (total)	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	Phenol (4AAP)	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	trans-1,2-Dichloroethene	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	1,4-Dichlorobenzene	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	1,2-Dichlorobenzene	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	2-Methylephenol	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	4-Methylephenol	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	2,4-Dimethylphenol	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	Di-n-octylphthalate	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	Napthalene	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	Cyanide	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	NH3	Monitor Only	1 Sampling Day semi-annual	grab
	Chloride	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
001	NO3	Monitor Only	1 Sampling Day semi-annual	24 hr comp.

Sample Point	Parameter	Discharge Limitations mg/l except pH Daily Max. Monthly Avg.	Sampling Period	Sampling Type
	Phosphorous	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	Sulfate	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	Sulfide	Monitor Only	1 Sampling Day semi-annual	24 hr comp.
	Mercury EPA 245.1	Monitor Only	1 Sampling Day semi-annual	grab

*/- See Special requirements page for sub-note requirements.

DISCHARGE MONITORING AND REPORTING REQUIREMENTS

During the period beginning the effective date of this permit and lasting until the expiration date, discharge monitoring results shall be summarized and reported by the permittee no later than the days specified below.

Sample Point	Parameter	Initial Monitoring Report	Subsequent Monitoring Reports
001	Vinyl Chloride	January 31, 2007	Semi-annual for all
	Acetone	January 31, 2007	
	Carbon Disulfide	January 31, 2007	
	1,1-Dichloroethene	January 31, 2007	
	1,1-Dichloroethane	January 31, 2007	
	1,2-Dichloroethane (total)	January 31, 2007	
	2-Butanone	January 31, 2007	
	Trichlorethene	January 31, 2007	
	Benzene	January 31, 2007	
	Tetrachloroethene	January 31, 2007	
	Toluene	January 31, 2007	
	Chlorobenzene	January 31, 2007	
	Ethylbenzene	January 31, 2007	
	Styrene	January 31, 2007	
	Xylenes (total)	January 31, 2007	
001	Phenol	January 31, 2007	Semi-annual for all

Sample Point	Parameter	Initial Monitoring Report	Subsequent Monitoring Reports
	1,3-Dichlorobenzene	January 31, 2007	
	1,4-Dichlorobenzene	January 31, 2007	
	1,2-Dichlorobenzene	January 31, 2007	
	2-Methylephenol	January 31, 2007	
	4-Methylephenol	January 31, 2007	
	2,4-Dimethylphenol	January 31, 2007	
	1,2,4-Trichlorobenzene	January 31, 2007	
	Napthalene	January 31, 2007	
	2-Methylnaphthalene	January 31, 2007	
	n-Nitrosodidiphenylamine	January 31, 2007	
	Di-n-butylphthalate	January 31, 2007	

1) This permit is written for a duration of three (3) years. Upon renewal of this permit, all parameters will be re-evaluated to develop a parameter list based on chemical concentrations present in the extracted groundwater.

2) Fequency of monitoring is to be re-evaluated after each year. Sampling to be done semi-annual (Spring – Fall).

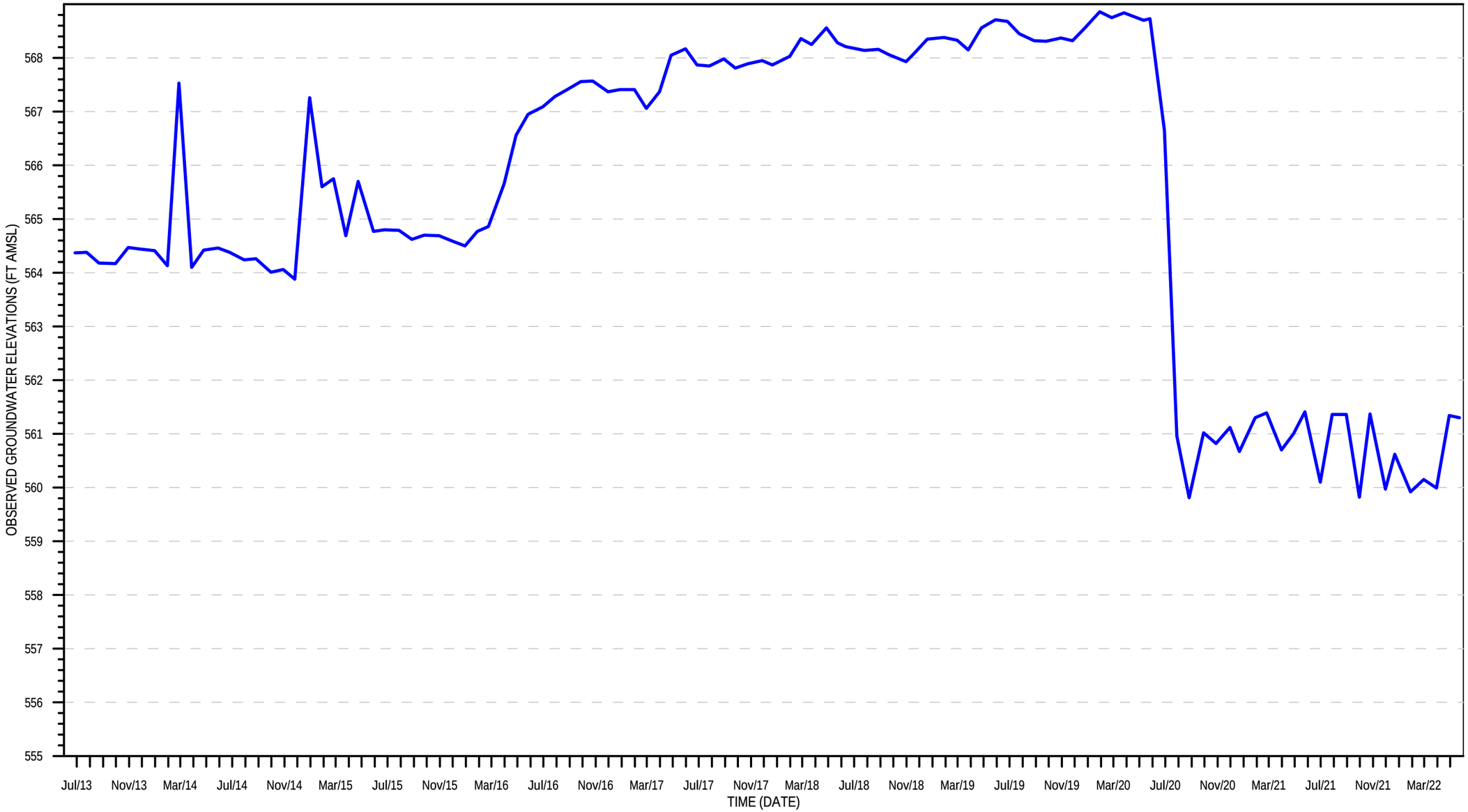
3) All monitoring reports (initial and subsequent), are to be received by the Superintendent, no later than thirty (30) days after receipt of validated data.

4) It is required that the Permittee have a Site Operations Manual available at all times. All emergency phone numbers must be listed in an appropriate place for easy access by operations personnel. All pumping operations shall be accomplished under no-bypass conditions. The Permittee is required to cease all pumping operations upon verbal request of the North Tonawanda Water/Wastewater Superintendent or his designee. Pumping operations shall not recommence until approval by the North Tonawanda Water/Wastewater Superintendent or his designee.

5) Analysts are required to use GC/MS method detection limits for most organics (if GC/MS is appropriate); GC/ECD for PCB's/Pesticides and GF method detection limits for metals (where GF is appropriate), as contained in attachment 5 of the NYSDEC TOGs 1.3.8 – New Discharges to Publicly Owned Treatment Works – dated 10/26/94.

Appendix B

Hydrographs



LEGEND

MH2

Gratwick Riverside Park
North Tonawanda, New York

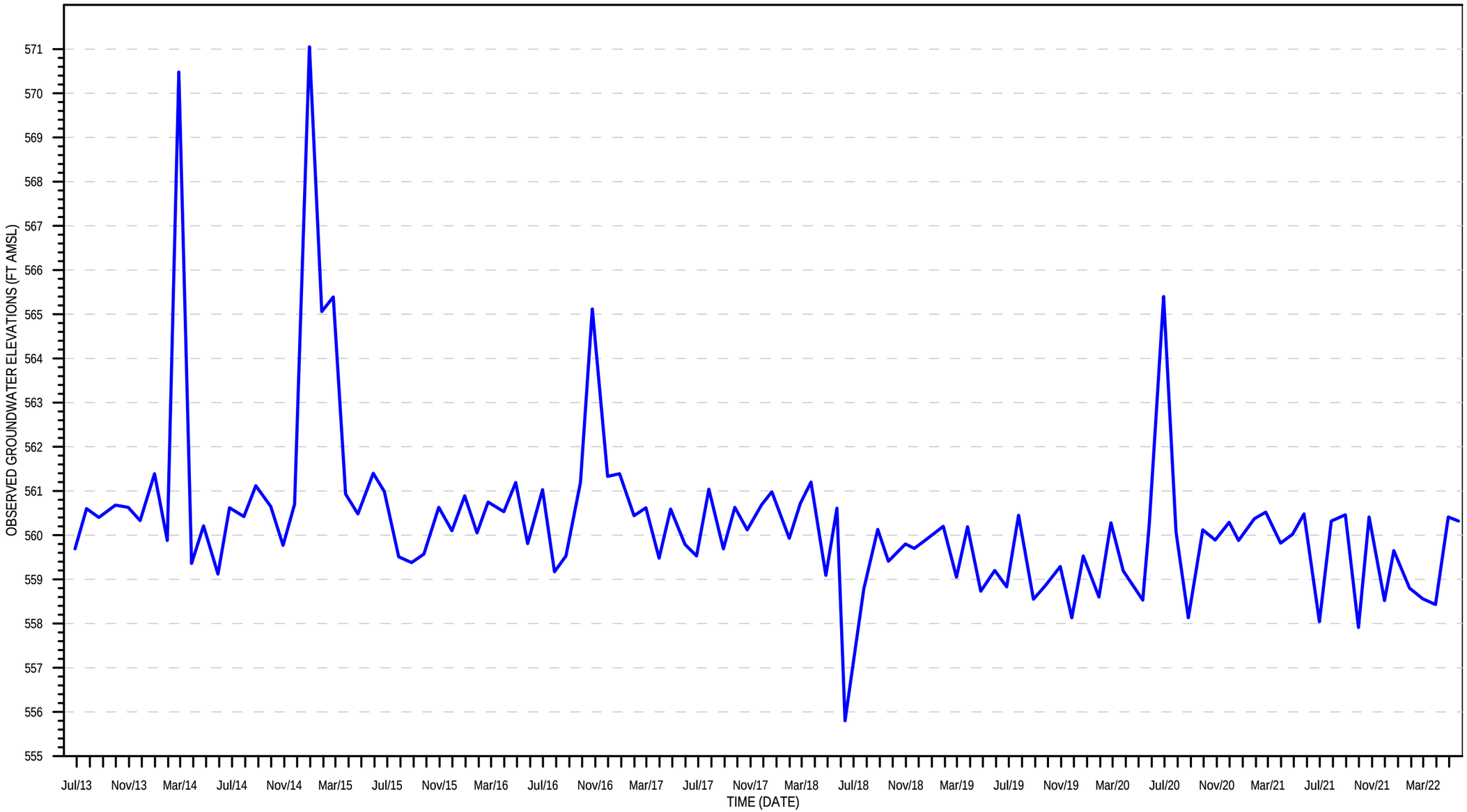
OBSERVED GROUNWATER ELEVATIONS VS TIME AT MH2

Project No. 007987
Date June 2022

FIGURE B.1

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.1-Groundwater Elevation Over Time at MH2.grf
Plot Date: June 29 2022 12:06 PM

Data Source



LEGEND

MH3

GHD

Gratwick Riverside Park
North Tonawanda, New York

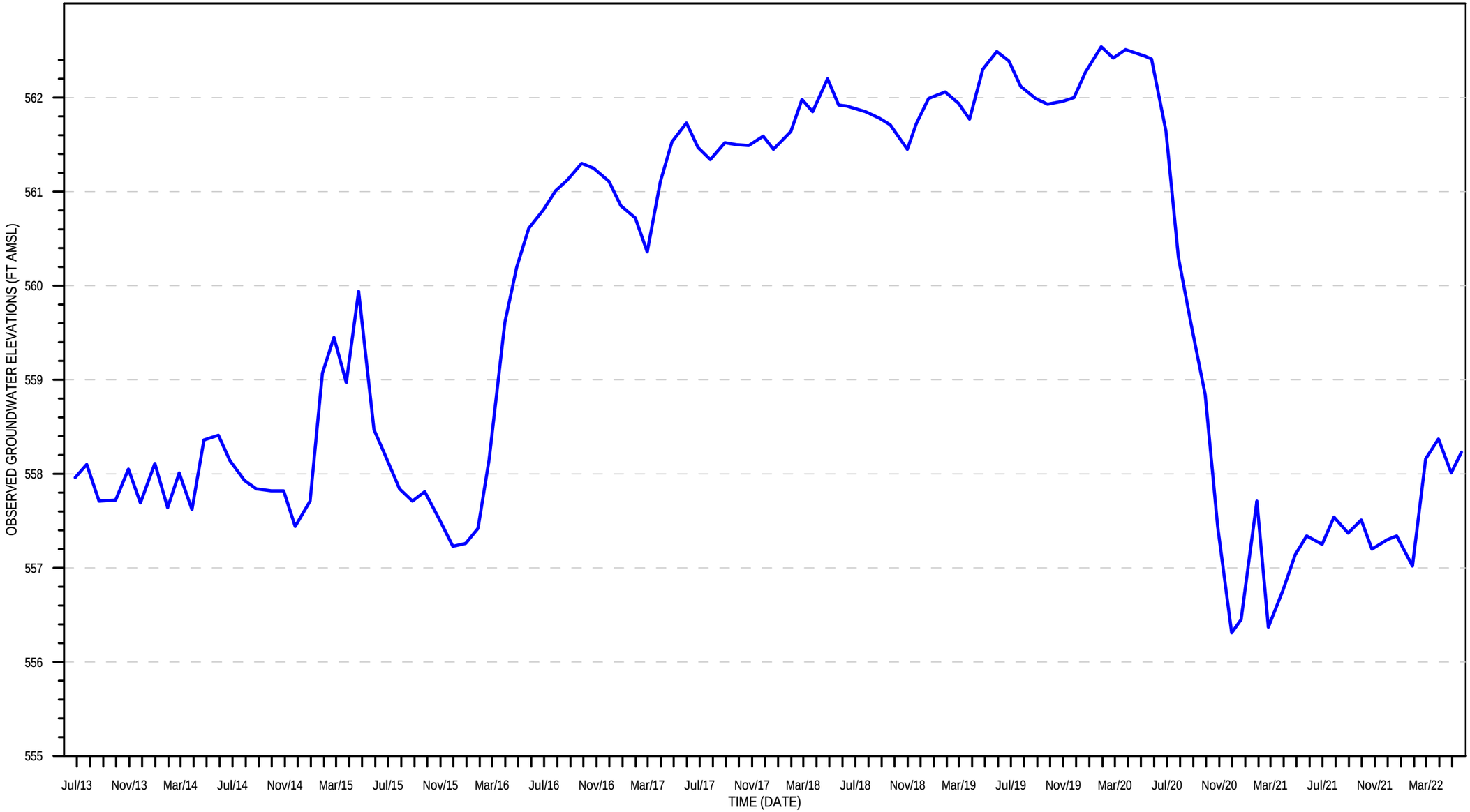
OBSERVED GROUNWATER
ELEVATIONS VS TIME AT MH3

Project No. 007987
Date June 2022

FIGURE B.2

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.2-Groundwater Elevation Over Time at MH3.grf
Plot Date: June 29 2022 12:06 PM

Data Source



LEGEND

MH6

GHD

Gratwick Riverside Park
North Tonawanda, New York

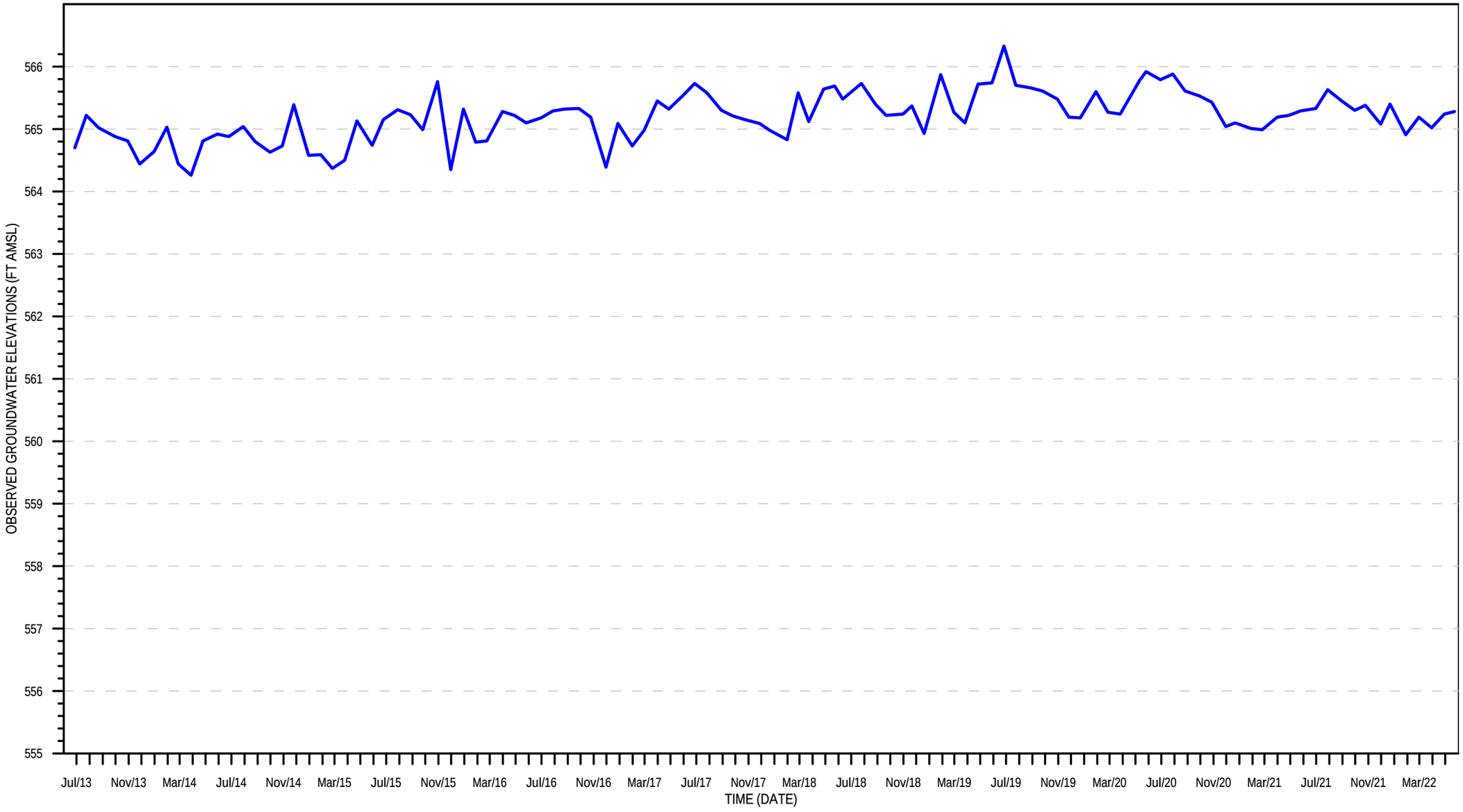
OBSERVED GROUNWATER
ELEVATIONS VS TIME AT MH6

Project No. 007987
Date June 2022

FIGURE B.3

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.3-Groundwater Elevation Over Time at MH6.grf
Plot Date: June 29 2022 12:06 PM

Data Source



LEGEND

OGC-1

Gratwick Riverside Park
North Tonawanda, New York

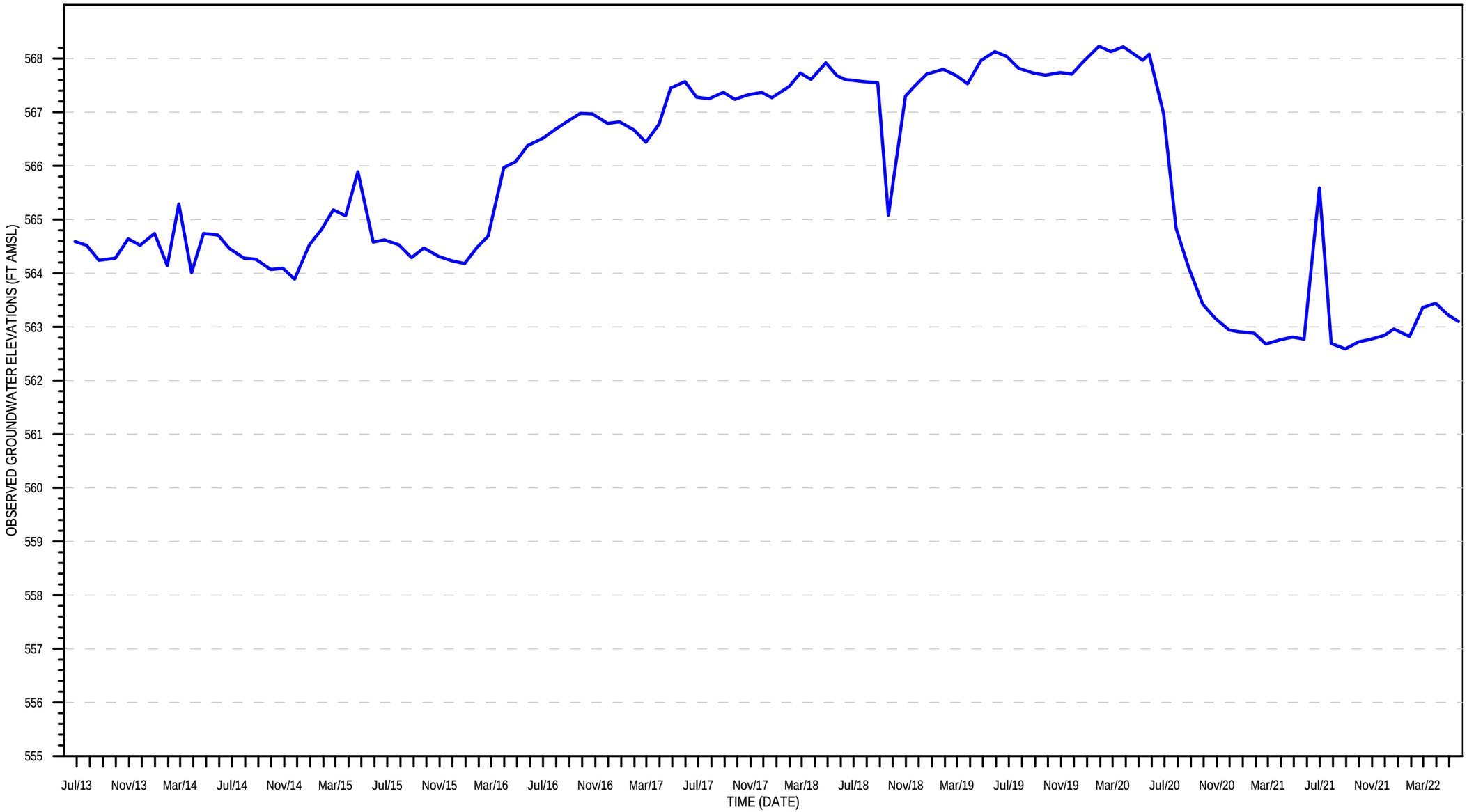
OBSERVED GROUNWATER
ELEVATIONS VS TIME AT OGC-1

Project No. 007987
Date June 2022

FIGURE B.4

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.4-Groundwater Elevation Over Time at OGC-1.grf
Plot Date: June 29 2022 12:06 PM

Data Source



LEGEND

MW-6

Gratwick Riverside Park
North Tonawanda, New York

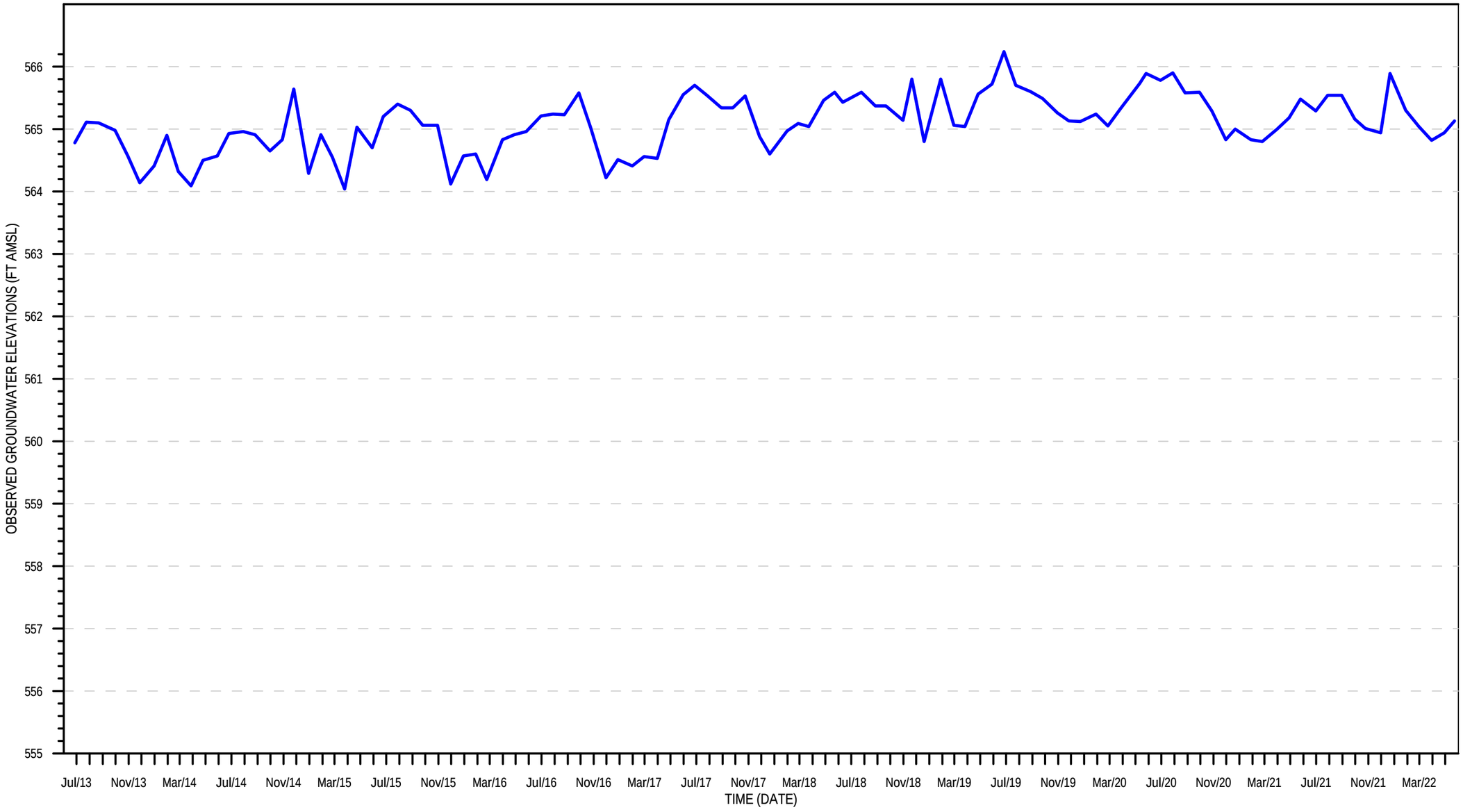
OBSERVED GROUNWATER
ELEVATIONS VS TIME AT MW-6

Project No. 007987
Date June 2022

FIGURE B.5

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.5-Groundwater Elevation Over Time at MW-6.grf
Plot Date: June 29 2022 12:06 PM

Data Source



LEGEND

OGC-5

Gratwick Riverside Park
North Tonawanda, New York

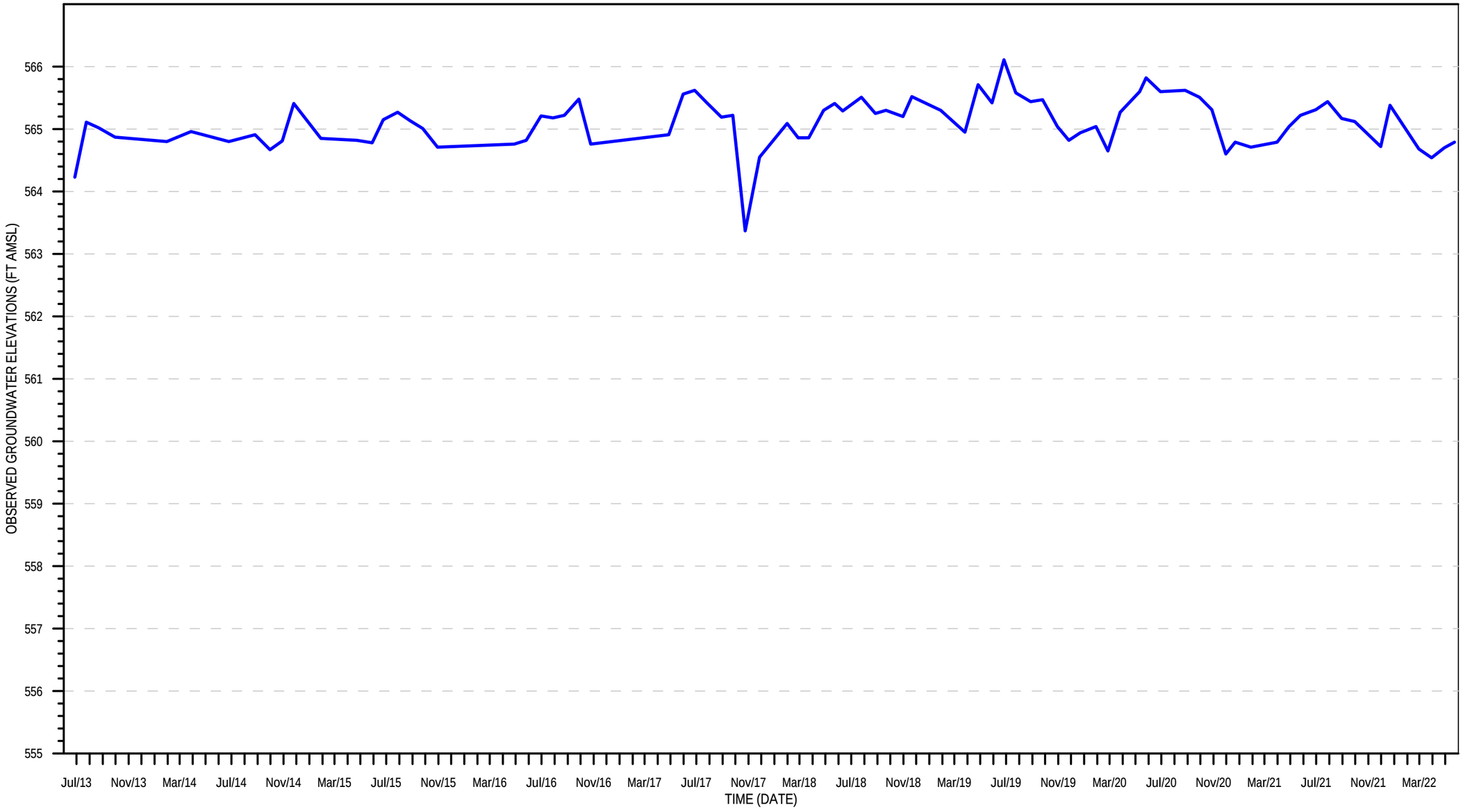
OBSERVED GROUNWATER
ELEVATIONS VS TIME AT OGC-5

Project No. 007987
Date June 2022

FIGURE B.6

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.6-Groundwater Elevation Over Time at OGC-5.grf
Plot Date: June 29 2022 12:06 PM

Data Source



LEGEND

RIVER NORTH

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT RIVER NORTH

Project No. 007987
Date June 2022

FIGURE B.7

File: N:\CA\Waterloo\Legacy\GTGROUP\07000\s\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.7-Groundwater Elevation Over Time at RIVER NORTH.grf
Plot Date: June 29 2022 12:06 PM

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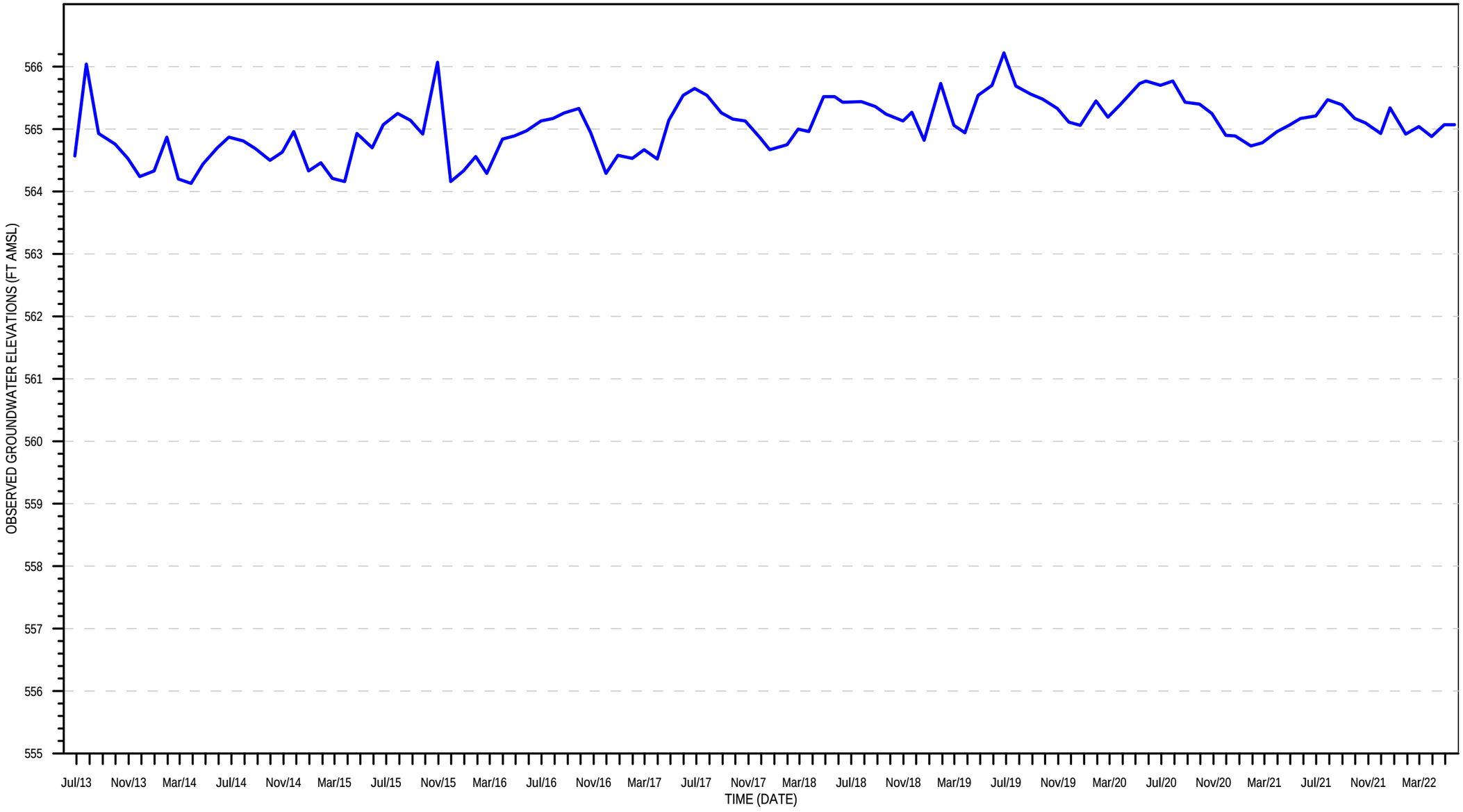

LEGEND

OGC-6

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT OGC-6

Project No. 007987
Date June 2022

FIGURE B.8

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.8-Groundwater Elevation Over Time at OGC-6.grf
Plot Date: June 29 2022 12:06 PM

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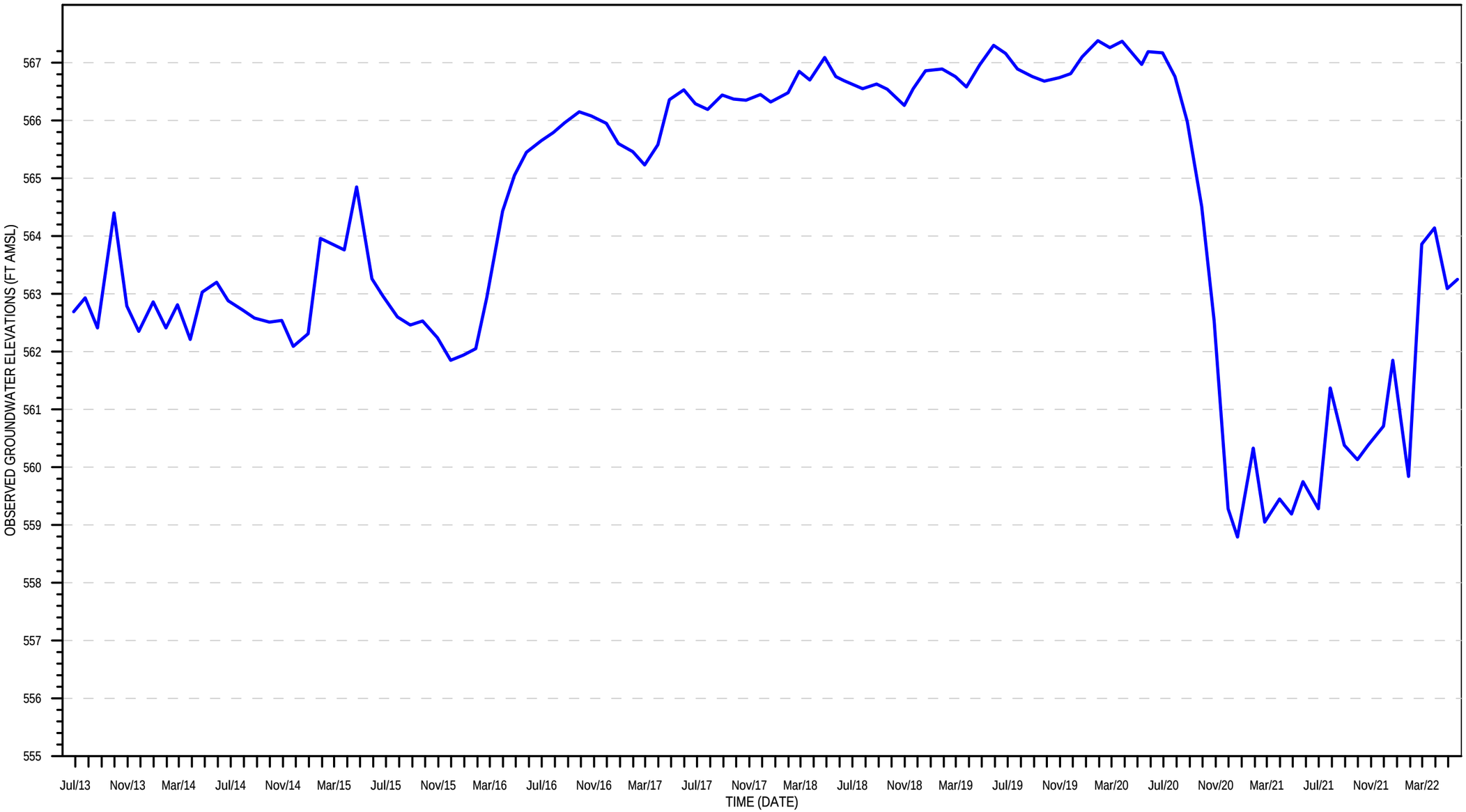

LEGEND

MH8

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT MH8

Project No. 007987
Date June 2022

FIGURE B.9

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.9-Groundwater Elevation Over Time at MH8.grf
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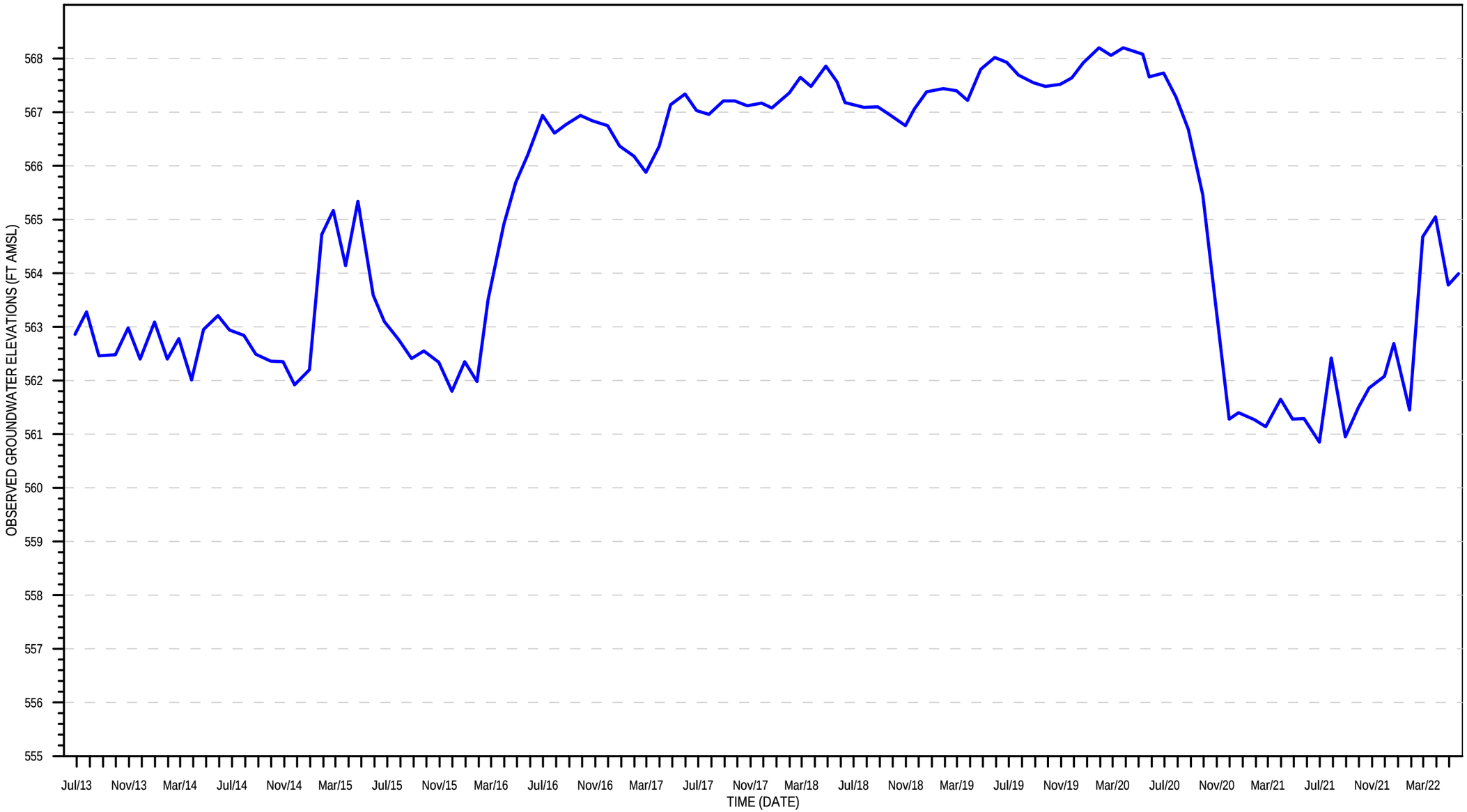

LEGEND

MW-7

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT MW-7

Project No. 007987
Date June 2022

FIGURE B.10

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.10-Groundwater Elevation Over Time at MW-7.grf
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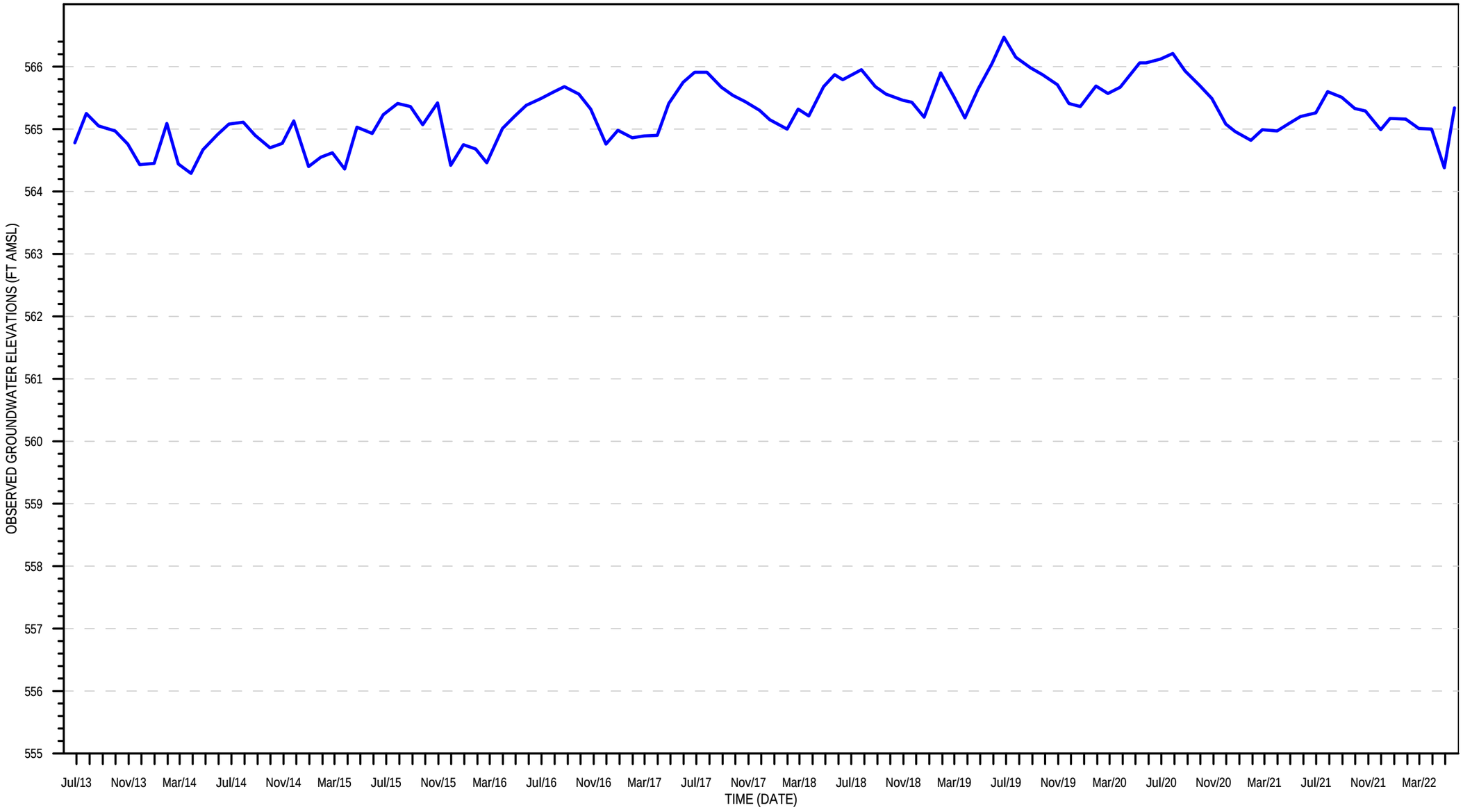

LEGEND

OGC-2

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT OGC-2

Project No. 007987
Date June 2022

FIGURE B.11

File: N:\CA\Waterloo\Legacy\GTGROUP\07000\s\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.11-Groundwater Elevation Over Time at OGC-2.grf
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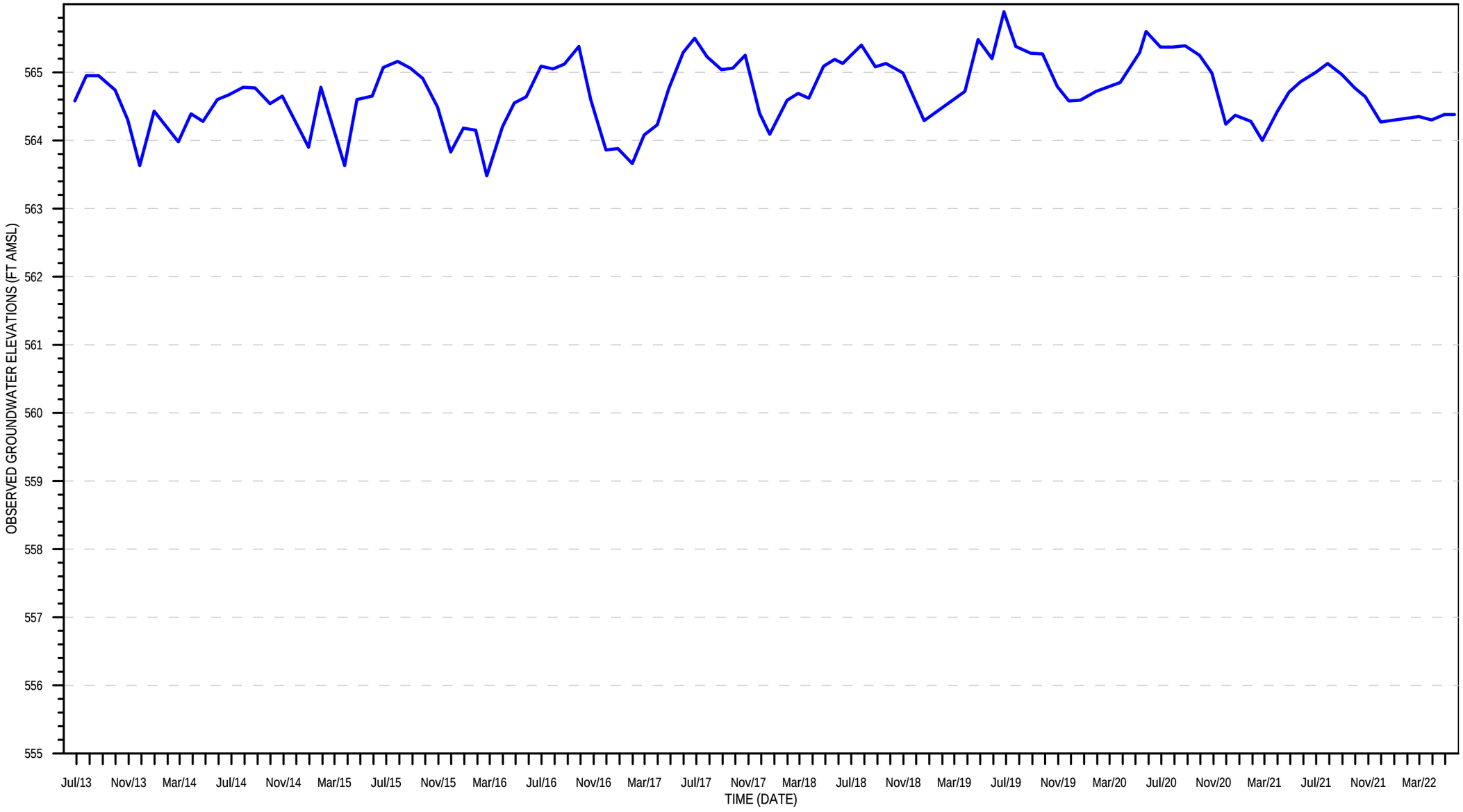

LEGEND

RIVER MIDDLE

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT RIVER MIDDLE

Project No. 007987
Date June 2022

FIGURE B.12

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.12-Groundwater Elevation Over Time at RIVER MIDDLE.grf
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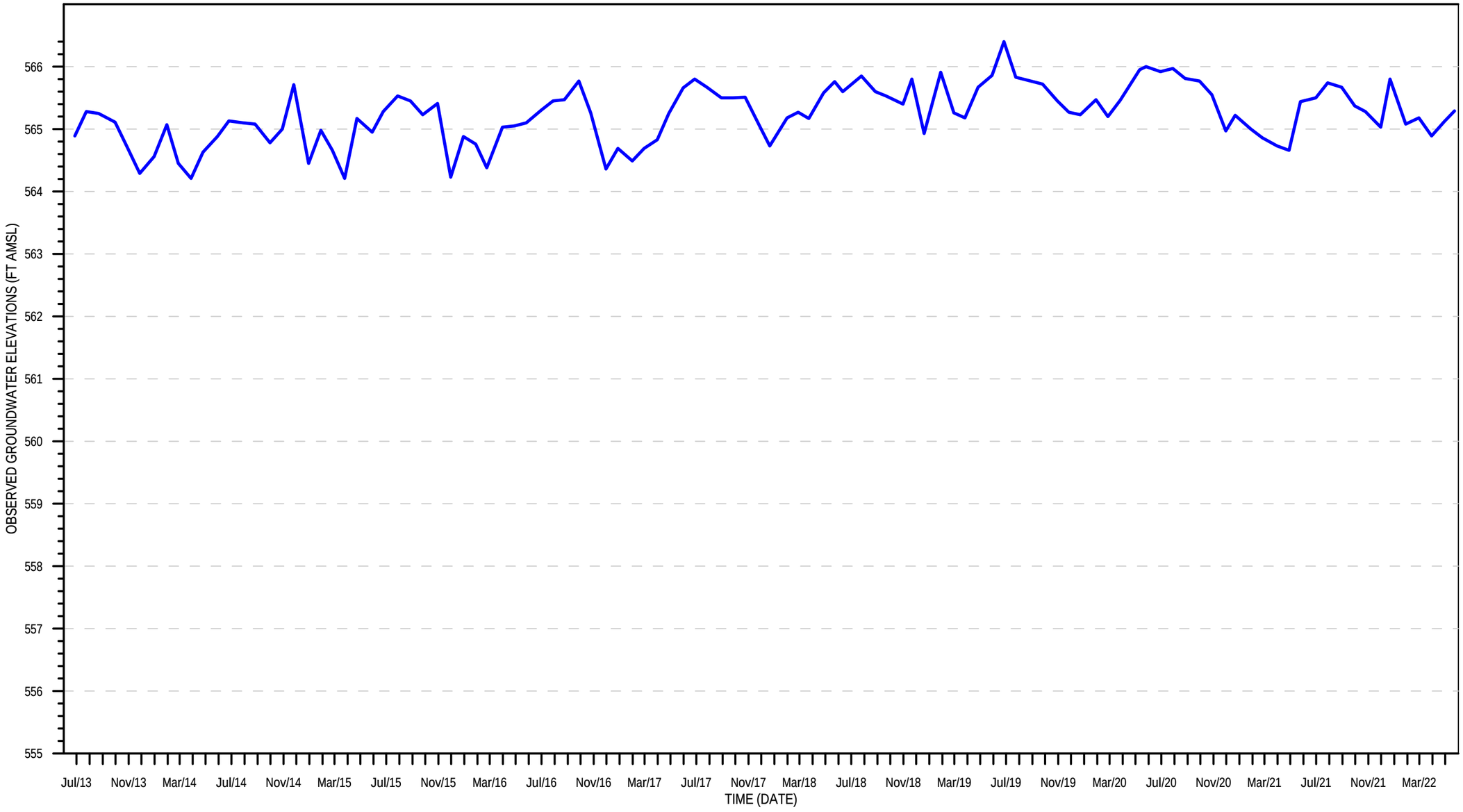

LEGEND

OGC-7

GHD

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT OGC-7

Project No. 007987
Date June 2022

FIGURE B.13

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.13-Groundwater Elevation Over Time at OGC-7.grf
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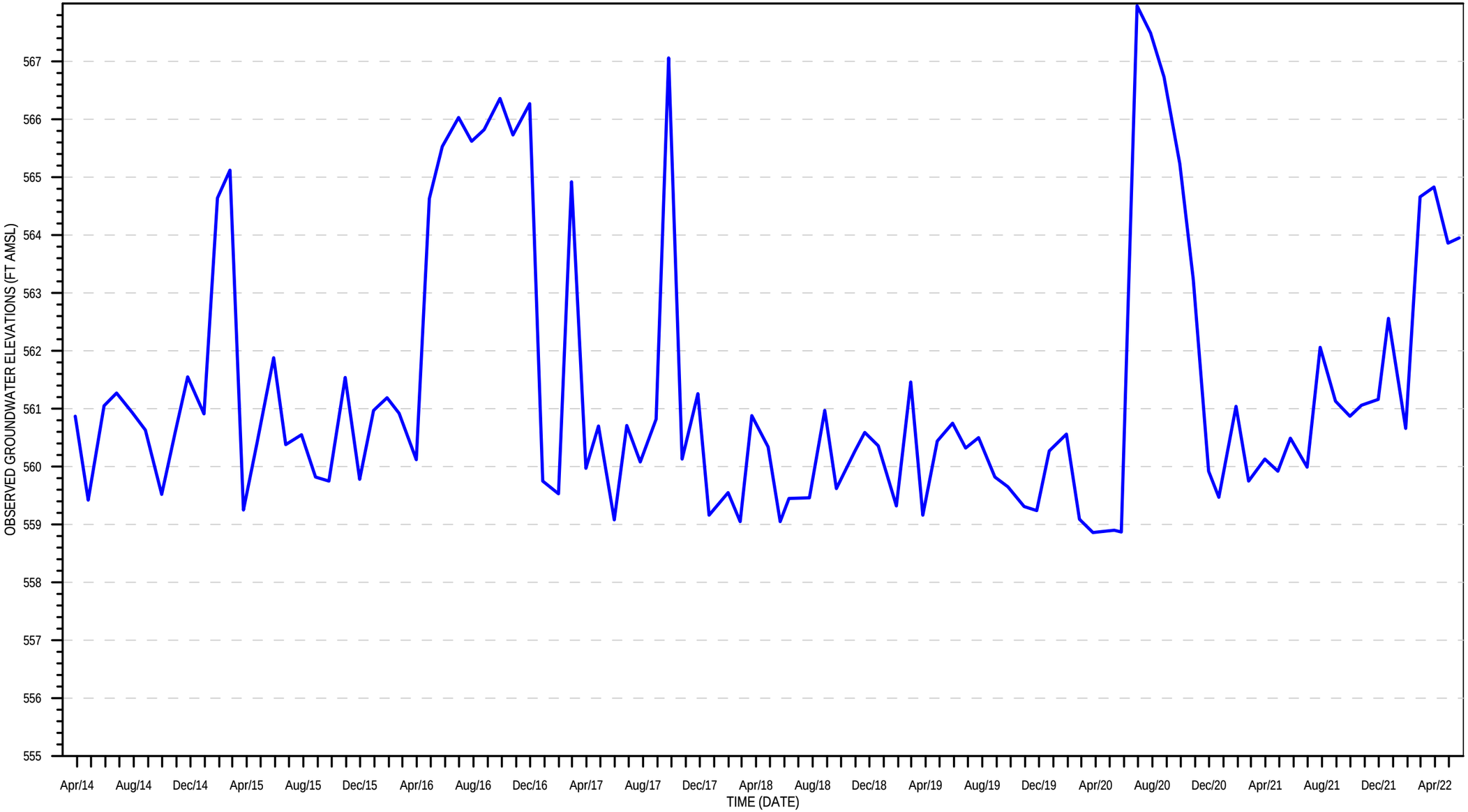

LEGEND

MH9

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER ELEVATIONS VS TIME AT MH9

Project No. 007987
Date June 2022

FIGURE B.14

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.14-Groundwater Elevation Over Time at MH9.grf
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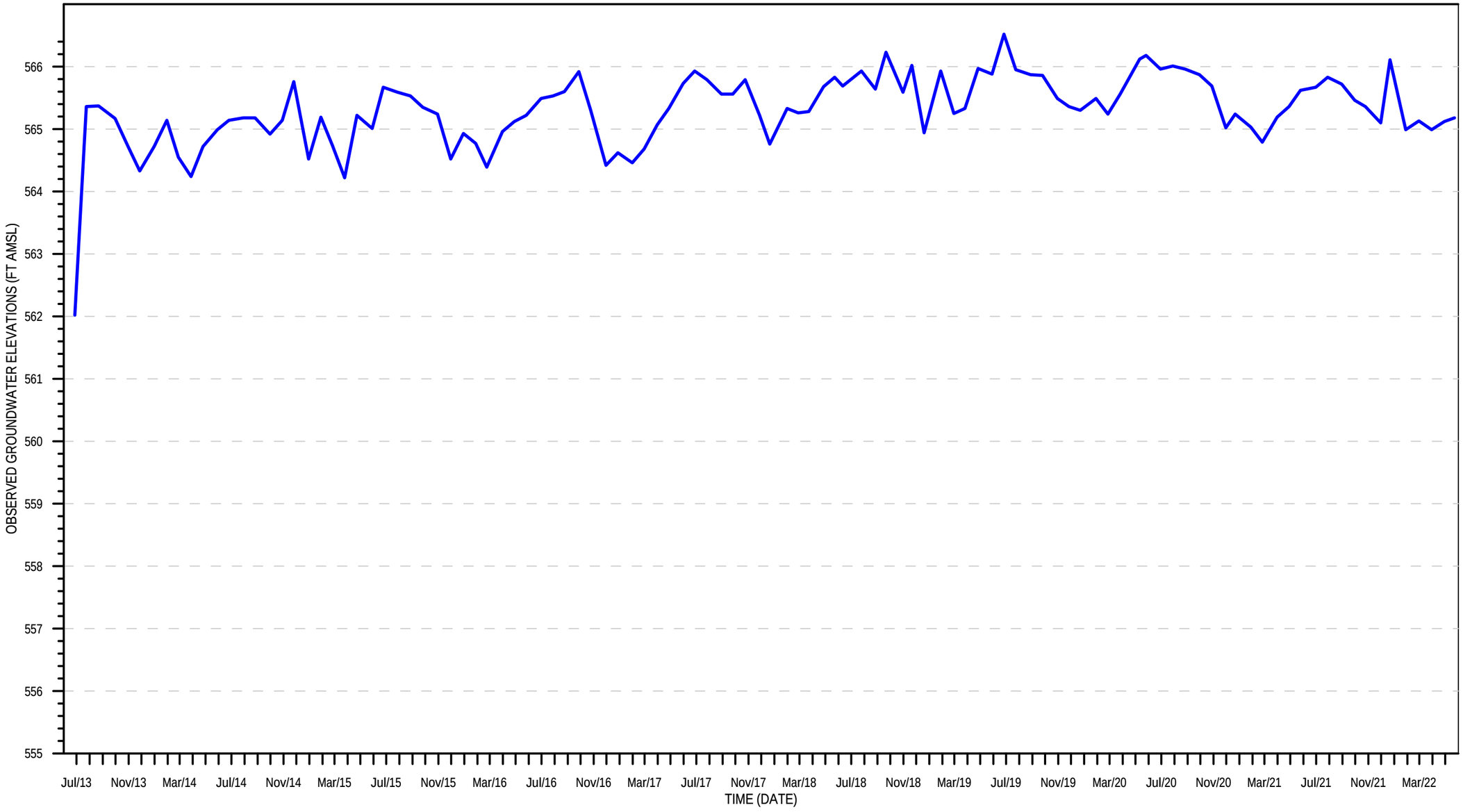
Data Source



LEGEND

OGC-3

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT OGC-3

Project No. 007987
Date June 2022

FIGURE B.15

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.15-Groundwater Elevation Over Time at OGC-3.grf
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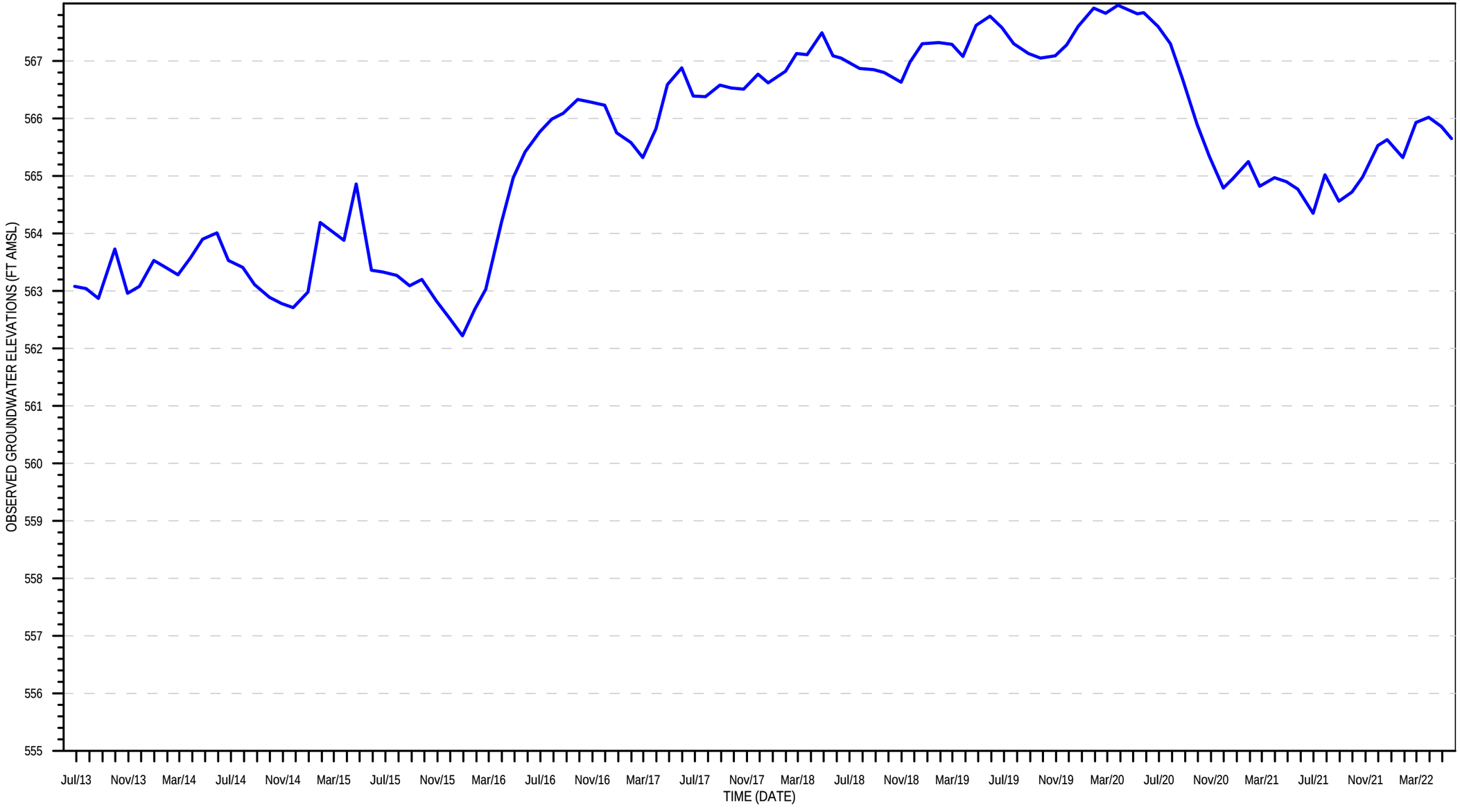

LEGEND

MH11

GHD

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT MH11

Project No. 007987
Date June 2022

FIGURE B.16

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.16-Groundwater Elevation Over Time at MH11.grf
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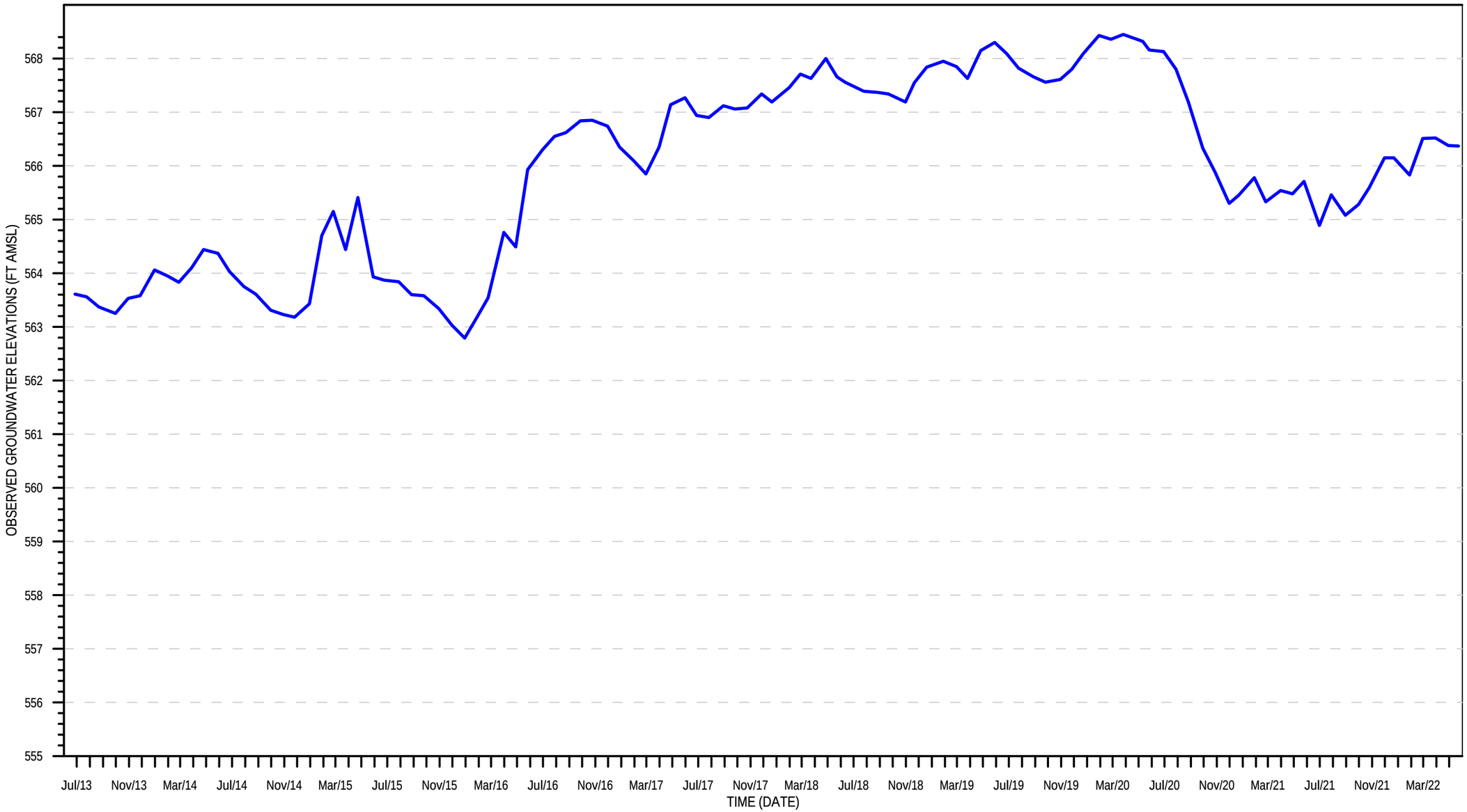

LEGEND

MW-8

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT MW-8

Project No. 007987
Date June 2022

FIGURE B.17

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.17-Groundwater Elevation Over Time at MW-8.grf
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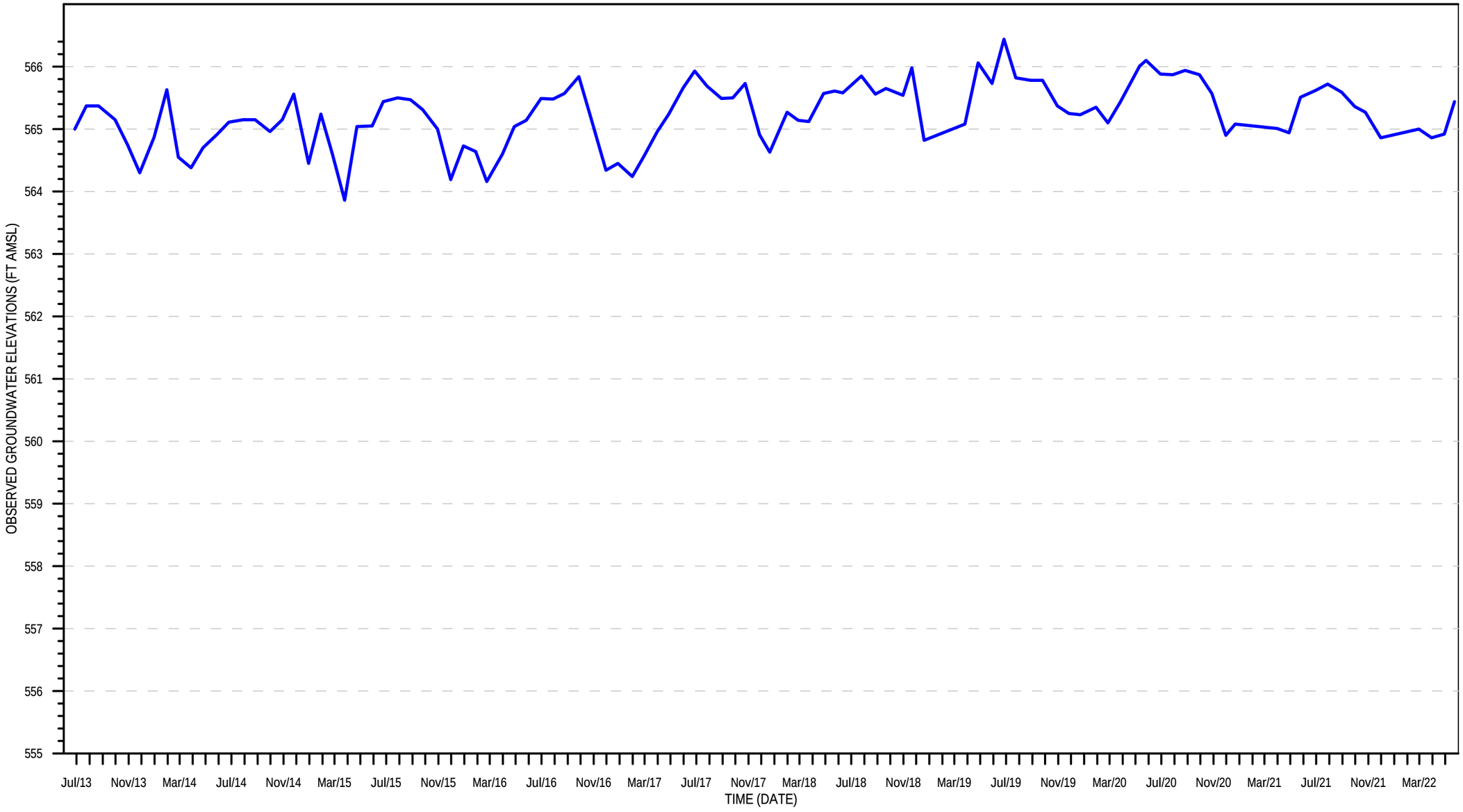

LEGEND

RIVER SOUTH

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT RIVER SOUTH

Project No. 007987
Date June 2022

FIGURE B.18

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.18-Groundwater Elevation Over Time at RIVER SOUTH.grf
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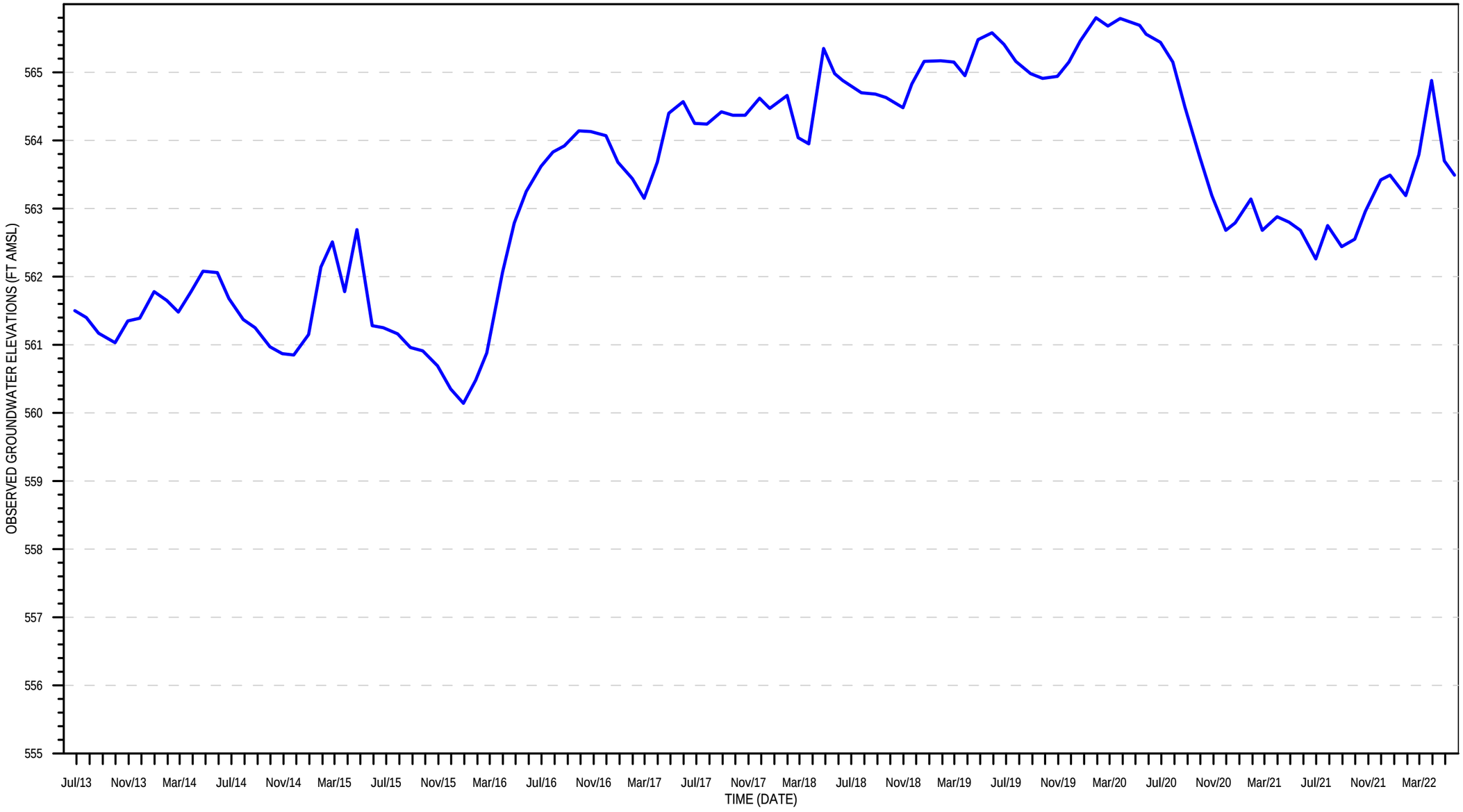

LEGEND

MH12

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT MH12

Project No. 007987
Date June 2022

FIGURE B.19

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.19-Groundwater Elevation Over Time at MH12.grf
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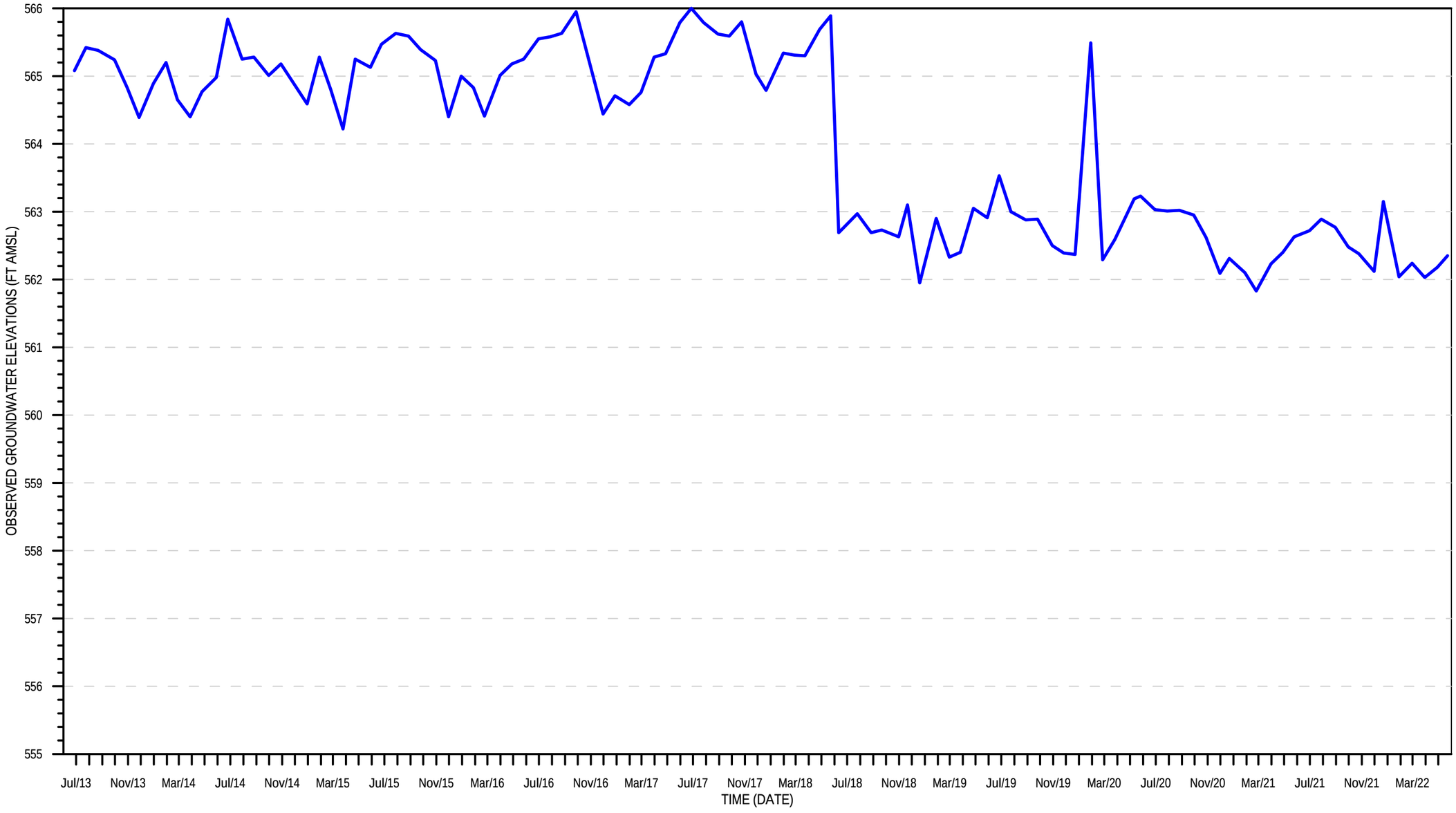

LEGEND

OGC-8

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT OGC-8

Project No. 007987
Date June 2022

FIGURE B.20

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.20-Groundwater Elevation Over Time at OGC-8.grf
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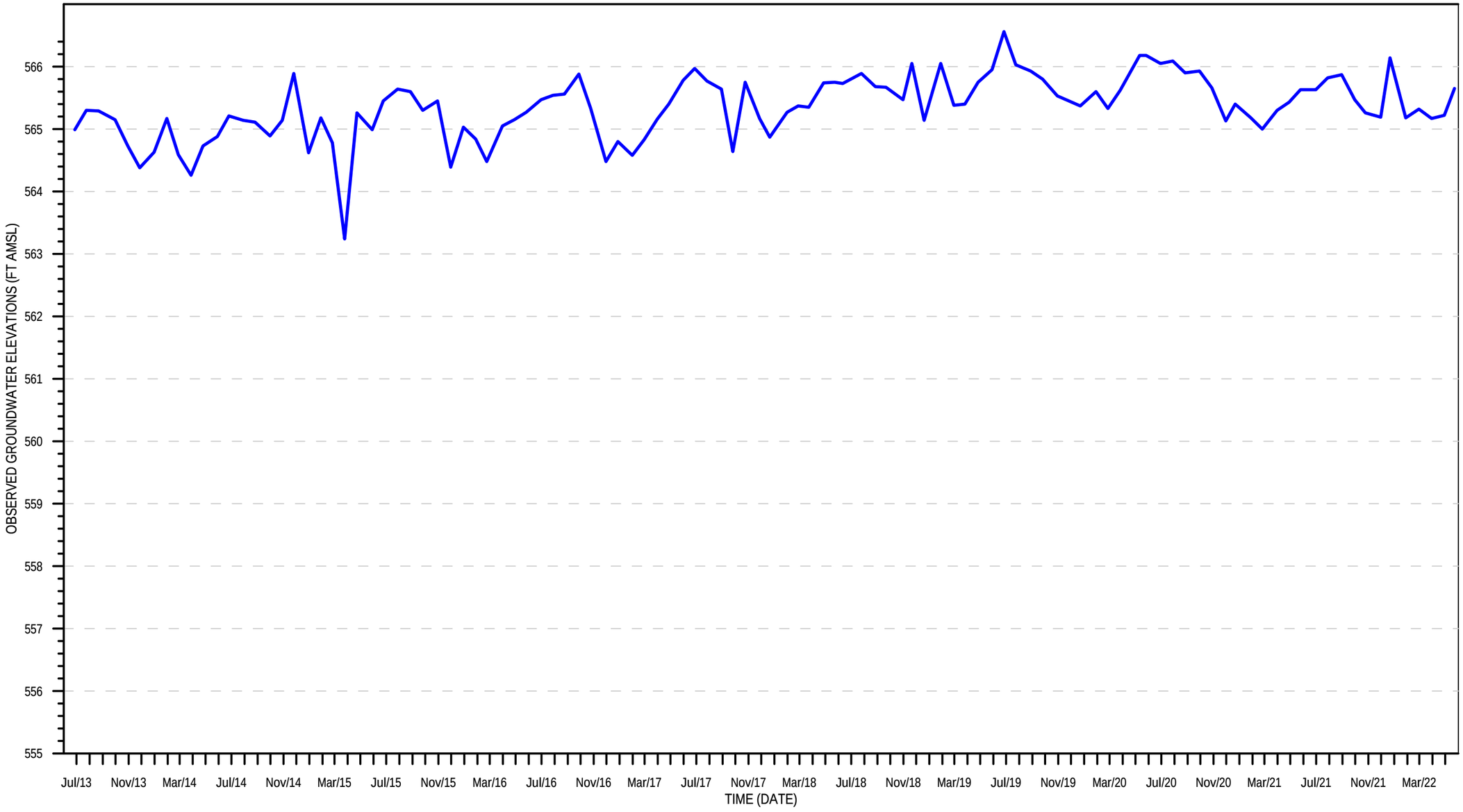

LEGEND

OGC-4

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT OGC-4

Project No. 007987
Date June 2022

FIGURE B.21

File: N:\CA\Waterloo\Legacy\GTGROUP\07000\s\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.21-Groundwater Elevation Over Time at OGC-4.grf
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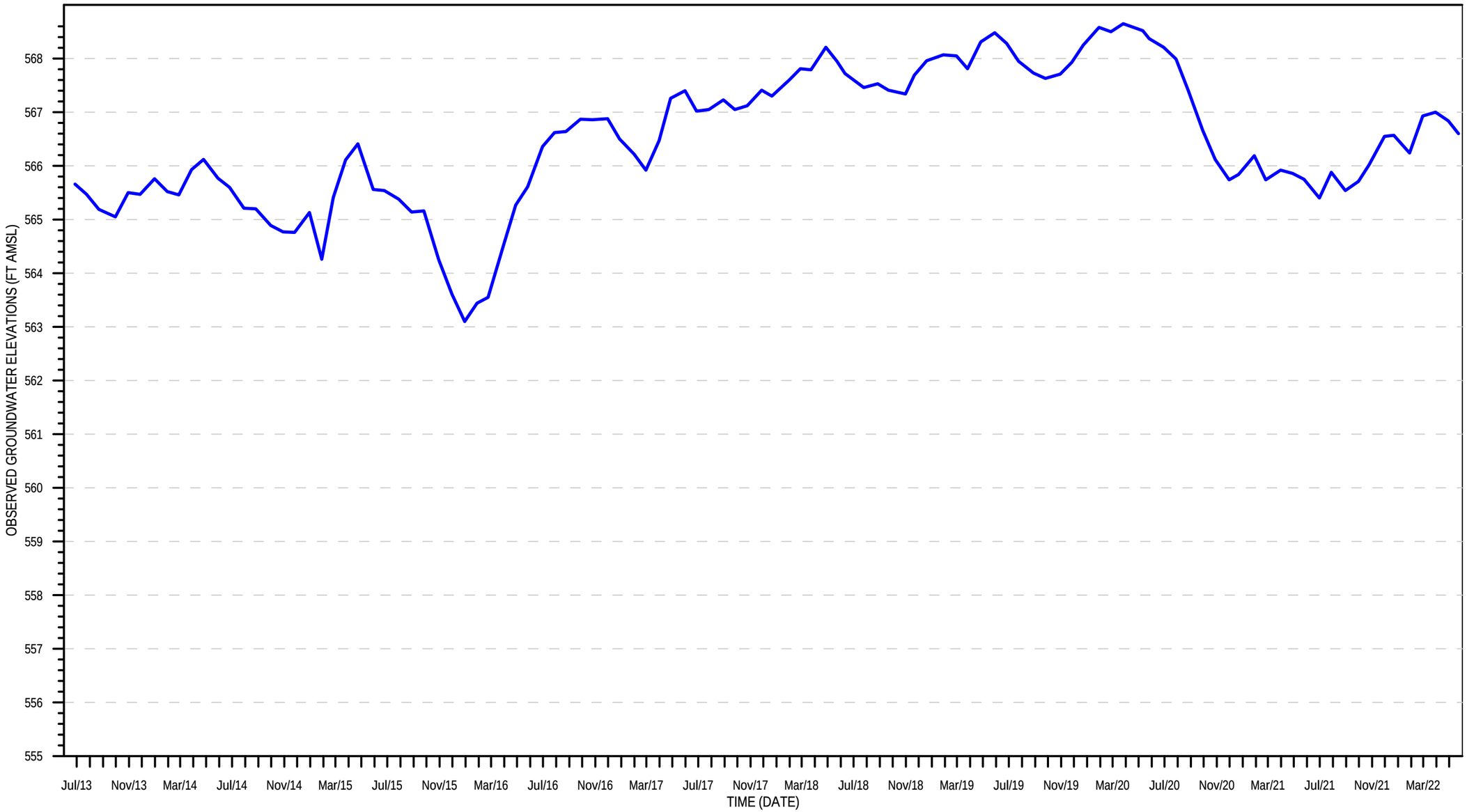

LEGEND

MW-9

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT MW-9

Project No. 007987
Date June 2022

FIGURE B.22

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.22-Groundwater Elevation Over Time at MW-9.grf
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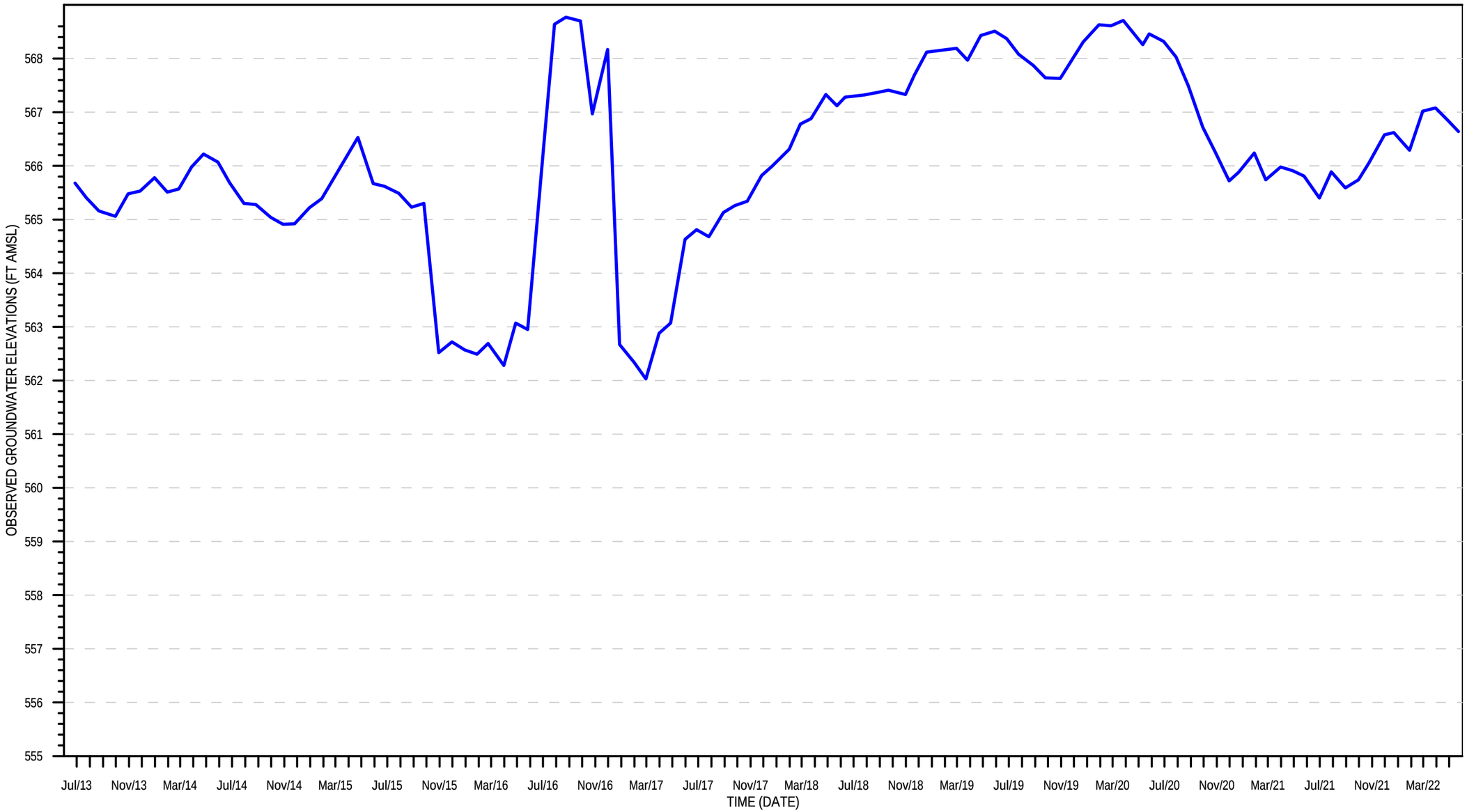

LEGEND

MH14

GHD

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT MH14

Project No. 007987
Date June 2022

FIGURE B.23

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.23-Groundwater Elevation Over Time at MH14.grf
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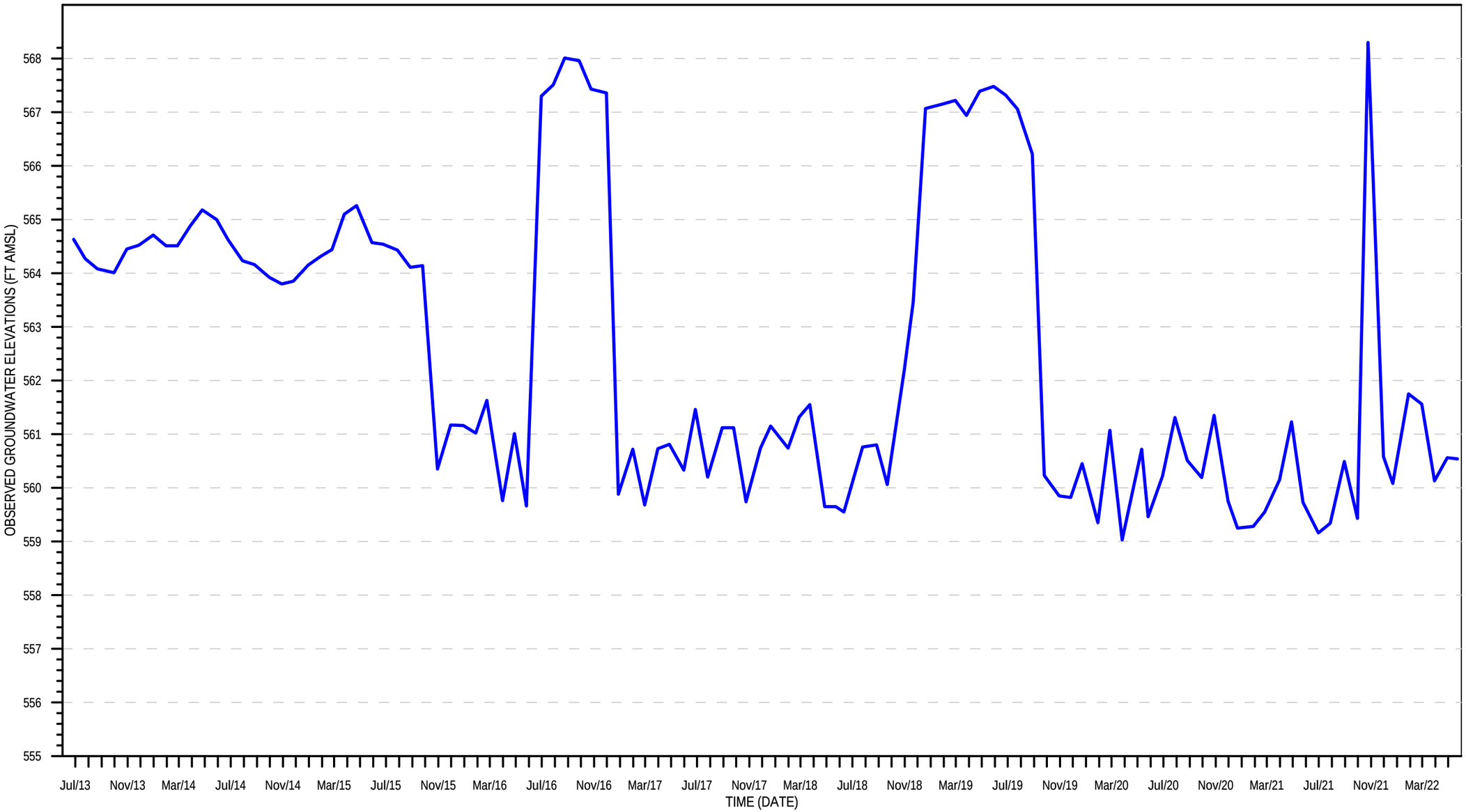

LEGEND

MH15

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT MH15

Project No. 007987
Date June 2022

FIGURE B.24

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.24-Groundwater Elevation Over Time at MH15.grf
Plot Date: June 29 2022 1:06 PM

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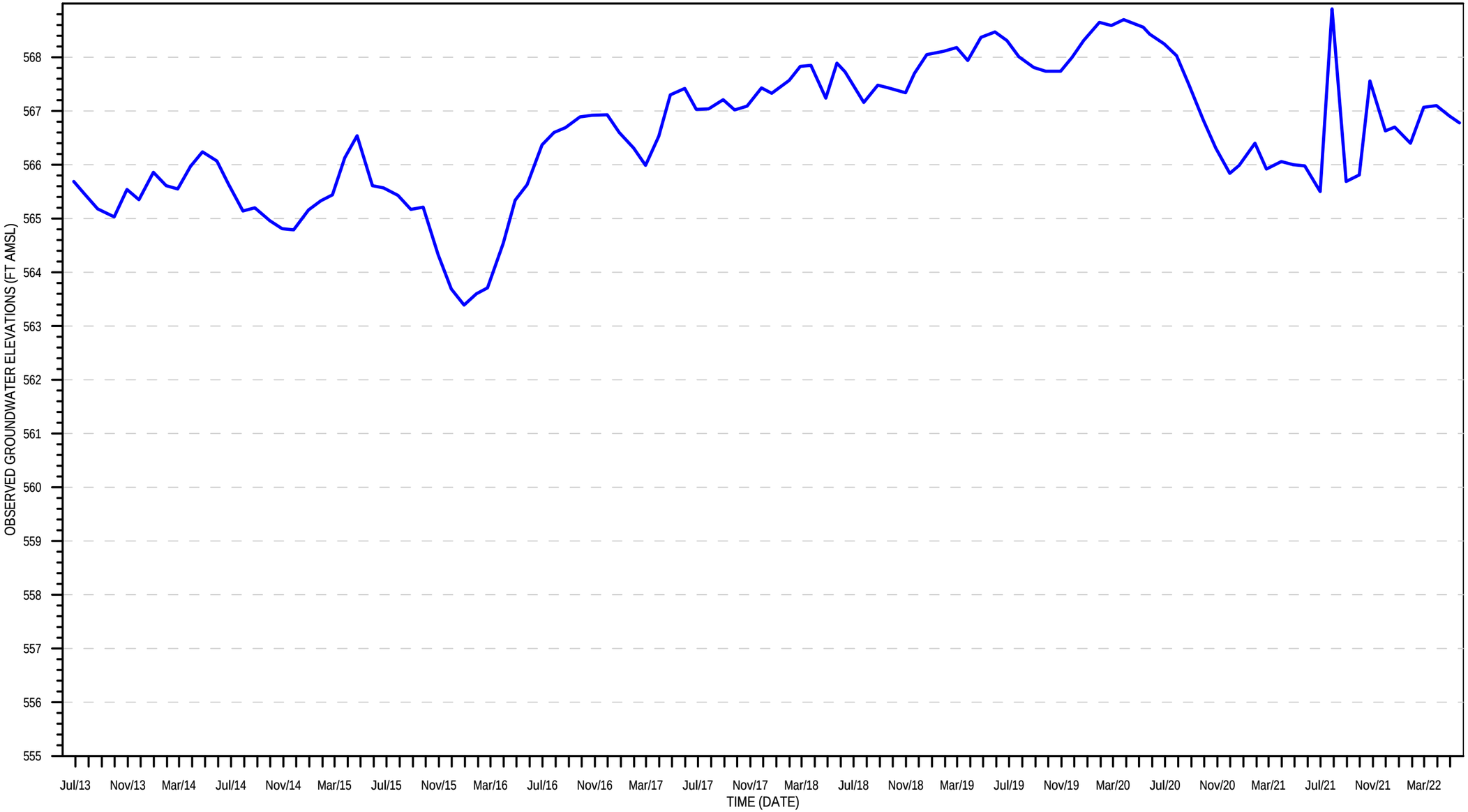


LEGEND

MH16

GHD

Gratwick Riverside Park
North Tonawanda, New York

OBSERVED GROUNWATER
ELEVATIONS VS TIME AT MH16

Project No. 007987
Date June 2022

FIGURE B.25

Data Source

File: N:\CA\Waterloo\Legacy\GTGROUP\07000's\7987\Annual Report 2022\Figures Appendix B\007987-RPT-51-Figure B.25-Groundwater Elevation Over Time at MH16.grf
Plot Date: June 29 2022 1:06 PM

Appendix C

Laboratory Reports

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-197311-1
Client Project/Site: 7987, Gratwick Riverside Park

For:
GHD Services Inc.
2055 Niagara Falls Blvd., Suite 3
Niagara Falls, New York 14304

Attn: Ms. Sue Scrocchi

Denise D Heckler

Authorized for release by:
5/11/2022 1:51:22 PM

Denise Heckler, Project Manager II
(330)966-9477
Denise.Heckler@et.eurofinsus.com

Table of Contents

Definitions/Glossary

Client: GHD Services Inc.
Job ID: 480-197311-1
Project/Site: 7987, Gratwick Riverside Park

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 480-197311-1

Laboratory: Eurofins Buffalo

Narrative

Job Narrative
480-197311-1

Comments
No additional comments.

Receipt
The samples were received on 4/28/2022 3:30 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.7º C and 2.9º C.

GC/MS VOA
Method 8260C: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: WG-7987-042822-SG-001 (480-197311-1), WG-7987-042822-SG-005 (480-197311-5), WG-7987-042822-SG-005 (480-197311-5[MS]), WG-7987-042822-SG-005 (480-197311-5[MSD]), WG-7987-042822-SG-010 (480-197311-10) and WG-7987-042822-SG-012 (480-197311-12). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 8270D: The following samples were diluted to bring the concentration of target analytes within the calibration range: WG-7987-042822-SG-005 (480-197311-5), WG-7987-042822-SG-005 (480-197311-5[MS]) and WG-7987-042822-SG-005 (480-197311-5[MSD]). Elevated reporting limits (RLs) are provided.

Method 8270D: The following samples were diluted due to the abundance of non-target analytes: WG-7987-042822-SG-011 (480-197311-11) and WG-7987-042822-SG-012 (480-197311-12). Elevated reporting limits (RLs) are provided.

Method 8270D: The following sample was diluted due to the nature of the sample matrix: WG-7987-042822-SG-006 (480-197311-6). Elevated reporting limits (RLs) are provided.

Method 8270D: The following samples required a dilution due to non target analyte(s): WG-7987-042822-SG-011 (480-197311-11) and WG-7987-042822-SG-012 (480-197311-12). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method 8270D: The following sample was diluted to bring the concentration of target analytes within the calibration range: WG-7987-042822-SG-001 (480-197311-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: GHD Services Inc.
Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-197311-1

Client Sample ID: WG-7987-042822-SG-001 — Lab Sample ID: 480-197311-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	6.4		4.0	3.0	ug/L	4		8260C	Total/NA
Toluene	3.9	J	4.0	2.0	ug/L	4		8260C	Total/NA
Trichloroethene	1.9	J	4.0	1.8	ug/L	4		8260C	Total/NA
1,2-Dichlorobenzene	1.2	J	10	0.40	ug/L	1		8270D	Total/NA
1,4-Dichlorobenzene	2.9	J	10	0.46	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol	56		10	0.50	ug/L	1		8270D	Total/NA
2-Methylphenol	9.5	J	10	0.40	ug/L	1		8270D	Total/NA
4-Methylphenol	140	E	10	0.36	ug/L	1		8270D	Total/NA
Phenol	20		10	0.39	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol - DL	59	J	100	5.0	ug/L	10		8270D	Total/NA
2-Methylphenol - DL	9.6	J	100	4.0	ug/L	10		8270D	Total/NA
4-Methylphenol - DL	170		100	3.6	ug/L	10		8270D	Total/NA
Phenol - DL	22	J	100	3.9	ug/L	10		8270D	Total/NA

Client Sample ID: WG-7987-042822-SG-002 — Lab Sample ID: 480-197311-2

No Detections.

Client Sample ID: WG-7987-042822-SG-003 — Lab Sample ID: 480-197311-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.81	J	1.0	0.74	ug/L	1		8260C	Total/NA
Tetrachloroethene	1.1		1.0	0.36	ug/L	1		8260C	Total/NA
Toluene	4.2		1.0	0.51	ug/L	1		8260C	Total/NA
Trichloroethene	4.3		1.0	0.46	ug/L	1		8260C	Total/NA
Xylenes, Total	1.6	J	2.0	0.66	ug/L	1		8260C	Total/NA
2,4-Dimethylphenol	2.1	J	10	0.50	ug/L	1		8270D	Total/NA
2-Methylphenol	3.8	J	10	0.40	ug/L	1		8270D	Total/NA
4-Methylphenol	15		10	0.36	ug/L	1		8270D	Total/NA

Client Sample ID: WG-7987-042822-SG-004 — Lab Sample ID: 480-197311-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	0.87	J	1.0	0.36	ug/L	1		8260C	Total/NA
Toluene	4.2		1.0	0.51	ug/L	1		8260C	Total/NA
Trichloroethene	4.1		1.0	0.46	ug/L	1		8260C	Total/NA
Xylenes, Total	1.6	J	2.0	0.66	ug/L	1		8260C	Total/NA
2,4-Dimethylphenol	2.3	J	10	0.50	ug/L	1		8270D	Total/NA
2-Methylphenol	4.1	J	10	0.40	ug/L	1		8270D	Total/NA
4-Methylphenol	16		10	0.36	ug/L	1		8270D	Total/NA

Client Sample ID: WG-7987-042822-SG-005 — Lab Sample ID: 480-197311-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	7.1		4.0	3.0	ug/L	4		8260C	Total/NA
Ethylbenzene	4.0		4.0	3.0	ug/L	4		8260C	Total/NA
1,4-Dichlorobenzene	61		50	2.3	ug/L	5		8270D	Total/NA
2,4-Dimethylphenol	12	J	50	2.5	ug/L	5		8270D	Total/NA
2-Methylphenol	11	J	50	2.0	ug/L	5		8270D	Total/NA
4-Methylphenol	13	J	50	1.8	ug/L	5		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Buffalo

Detection Summary

Client: GHD Services Inc.
Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-197311-1

Client Sample ID: WG-7987-042822-SG-006 — Lab Sample ID: 480-197311-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.58	J	1.0	0.51	ug/L	1		8260C	Total/NA
Trichloroethene	0.84	J	1.0	0.46	ug/L	1		8260C	Total/NA
2-Methylphenol	12	J	100	4.0	ug/L	10		8270D	Total/NA
4-Methylphenol	6.3	J	100	3.6	ug/L	10		8270D	Total/NA
Phenol	30	J	100	3.9	ug/L	10		8270D	Total/NA

Client Sample ID: WG-7987-042822-SG-007 — Lab Sample ID: 480-197311-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	1.2		1.0	0.51	ug/L	1		8260C	Total/NA
trans-1,2-Dichloroethene	1.2		1.0	0.90	ug/L	1		8260C	Total/NA
Trichloroethene	2.9		1.0	0.46	ug/L	1		8260C	Total/NA
Vinyl chloride	2.6		1.0	0.90	ug/L	1		8260C	Total/NA
Xylenes, Total	0.81	J	2.0	0.66	ug/L	1		8260C	Total/NA

Client Sample ID: WG-7987-042822-SG-008 — Lab Sample ID: 480-197311-8

No Detections.

Client Sample ID: WG-7987-042822-SG-009 — Lab Sample ID: 480-197311-9

No Detections.

Client Sample ID: WG-7987-042822-SG-010 — Lab Sample ID: 480-197311-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	14		2.0	0.72	ug/L	2		8260C	Total/NA
Toluene	2.1		2.0	1.0	ug/L	2		8260C	Total/NA
trans-1,2-Dichloroethene	11		2.0	1.8	ug/L	2		8260C	Total/NA
Trichloroethene	28		2.0	0.92	ug/L	2		8260C	Total/NA
2-Methylphenol	1.5	J	10	0.40	ug/L	1		8270D	Total/NA
4-Methylphenol	0.83	J	10	0.36	ug/L	1		8270D	Total/NA
Naphthalene	1.0	J	10	0.76	ug/L	1		8270D	Total/NA

Client Sample ID: WG-7987-042822-SG-011 — Lab Sample ID: 480-197311-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.2		0.70	0.41	ug/L	1		8260C	Total/NA

Client Sample ID: WG-7987-042822-SG-012 — Lab Sample ID: 480-197311-12

No Detections.

Client Sample ID: WG-7987-042822-SG-013 — Lab Sample ID: 480-197311-13

No Detections.

Client Sample ID: TB-7987-042822-SG — Lab Sample ID: 480-197311-14

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Buffalo

Client: GHD Services Inc.
Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-197311-1

Client Sample ID: WG-7987-042822-SG-001

Date Collected: 04/28/22 08:10
Date Received: 04/28/22 15:30

Lab Sample ID: 480-197311-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		20	5.3	ug/L			05/04/22 02:20	4
Acetone	ND		20	12	ug/L			05/04/22 02:20	4
Benzene	ND		2.8	1.6	ug/L			05/04/22 02:20	4
Chlorobenzene	**6.4**		4.0	3.0	ug/L			05/04/22 02:20	4
Ethylbenzene	ND		4.0	3.0	ug/L			05/04/22 02:20	4
Methylene Chloride	ND		4.0	1.8	ug/L			05/04/22 02:20	4
Tetrachloroethene	ND		4.0	1.4	ug/L			05/04/22 02:20	4
Toluene	**3.9**	**J**	4.0	2.0	ug/L			05/04/22 02:20	4
1,1-Dichloroethane	ND		4.0	1.5	ug/L			05/04/22 02:20	4
trans-1,2-Dichloroethene	ND		4.0	3.6	ug/L			05/04/22 02:20	4
Trichloroethene	**1.9**	**J**	4.0	1.8	ug/L			05/04/22 02:20	4
Vinyl chloride	ND		4.0	3.6	ug/L			05/04/22 02:20	4
Xylenes, Total	ND		8.0	2.6	ug/L			05/04/22 02:20	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*77 - 120*		*05/04/22 02:20*	*4*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*05/04/22 02:20*	*4*
Toluene-d8 (Surr)	*97*		*80 - 120*		*05/04/22 02:20*	*4*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	**1.2**	**J**	10	0.40	ug/L		04/30/22 08:36	05/02/22 17:35	1
1,4-Dichlorobenzene	**2.9**	**J**	10	0.46	ug/L		04/30/22 08:36	05/02/22 17:35	1
2,4-Dimethylphenol	**56**		10	0.50	ug/L		04/30/22 08:36	05/02/22 17:35	1
2-Methylphenol	**9.5**	**J**	10	0.40	ug/L		04/30/22 08:36	05/02/22 17:35	1
4-Methylphenol	**140**	**E**	10	0.36	ug/L		04/30/22 08:36	05/02/22 17:35	1
Di-n-octyl phthalate	ND		10	0.47	ug/L		04/30/22 08:36	05/02/22 17:35	1
Naphthalene	ND		10	0.76	ug/L		04/30/22 08:36	05/02/22 17:35	1
Phenol	**20**		10	0.39	ug/L		04/30/22 08:36	05/02/22 17:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*67*		*46 - 120*	*04/30/22 08:36*	*05/02/22 17:35*	*1*
2-Fluorobiphenyl	*86*		*48 - 120*	*04/30/22 08:36*	*05/02/22 17:35*	*1*
p-Terphenyl-d14	*106*		*60 - 148*	*04/30/22 08:36*	*05/02/22 17:35*	*1*
Phenol-d5	*41*		*22 - 120*	*04/30/22 08:36*	*05/02/22 17:35*	*1*
2-Fluorophenol	*57*		*35 - 120*	*04/30/22 08:36*	*05/02/22 17:35*	*1*
2,4,6-Tribromophenol	*98*		*41 - 120*	*04/30/22 08:36*	*05/02/22 17:35*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		100	4.0	ug/L		04/30/22 08:36	05/03/22 15:42	10
1,4-Dichlorobenzene	ND		100	4.6	ug/L		04/30/22 08:36	05/03/22 15:42	10
2,4-Dimethylphenol	**59**	**J**	100	5.0	ug/L		04/30/22 08:36	05/03/22 15:42	10
2-Methylphenol	**9.6**	**J**	100	4.0	ug/L		04/30/22 08:36	05/03/22 15:42	10
4-Methylphenol	**170**		100	3.6	ug/L		04/30/22 08:36	05/03/22 15:42	10
Di-n-octyl phthalate	ND		100	4.7	ug/L		04/30/22 08:36	05/03/22 15:42	10
Naphthalene	ND		100	7.6	ug/L		04/30/22 08:36	05/03/22 15:42	10
Phenol	**22**	**J**	100	3.9	ug/L		04/30/22 08:36	05/03/22 15:42	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*68*		*46 - 120*	*04/30/22 08:36*	*05/03/22 15:42*	*10*

Client Sample ID: WG-7987-042822-SG-001

Lab Sample ID: 480-197311-1
Date Collected: 04/28/22 08:10
Matrix: Water
Date Received: 04/28/22 15:30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*89*		*48 - 120*	*04/30/22 08:36*	*05/03/22 15:42*	*10*
p-Terphenyl-d14	*110*		*60 - 148*	*04/30/22 08:36*	*05/03/22 15:42*	*10*
Phenol-d5	*43*		*22 - 120*	*04/30/22 08:36*	*05/03/22 15:42*	*10*
2-Fluorophenol	*55*		*35 - 120*	*04/30/22 08:36*	*05/03/22 15:42*	*10*
2,4,6-Tribromophenol	*71*		*41 - 120*	*04/30/22 08:36*	*05/03/22 15:42*	*10*

Client Sample ID: WG-7987-042822-SG-002

Lab Sample ID: 480-197311-2
Date Collected: 04/28/22 09:55
Matrix: Water
Date Received: 04/28/22 15:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	1.3	ug/L			05/04/22 02:43	1
Acetone	ND		5.0	3.0	ug/L			05/04/22 02:43	1
Benzene	ND		0.70	0.41	ug/L			05/04/22 02:43	1
Chlorobenzene	ND		1.0	0.75	ug/L			05/04/22 02:43	1
Ethylbenzene	ND		1.0	0.74	ug/L			05/04/22 02:43	1
Methylene Chloride	ND		1.0	0.44	ug/L			05/04/22 02:43	1
Tetrachloroethene	ND		1.0	0.36	ug/L			05/04/22 02:43	1
Toluene	ND		1.0	0.51	ug/L			05/04/22 02:43	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			05/04/22 02:43	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			05/04/22 02:43	1
Trichloroethene	ND		1.0	0.46	ug/L			05/04/22 02:43	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/04/22 02:43	1
Xylenes, Total	ND		2.0	0.66	ug/L			05/04/22 02:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*77 - 120*		*05/04/22 02:43*	*1*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*05/04/22 02:43*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*05/04/22 02:43*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		10	0.40	ug/L		04/30/22 08:36	05/02/22 18:02	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		04/30/22 08:36	05/02/22 18:02	1
2,4-Dimethylphenol	ND		10	0.50	ug/L		04/30/22 08:36	05/02/22 18:02	1
2-Methylphenol	ND		10	0.40	ug/L		04/30/22 08:36	05/02/22 18:02	1
4-Methylphenol	ND		10	0.36	ug/L		04/30/22 08:36	05/02/22 18:02	1
Di-n-octyl phthalate	ND		10	0.47	ug/L		04/30/22 08:36	05/02/22 18:02	1
Naphthalene	ND		10	0.76	ug/L		04/30/22 08:36	05/02/22 18:02	1
Phenol	ND		10	0.39	ug/L		04/30/22 08:36	05/02/22 18:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*56*		*46 - 120*	*04/30/22 08:36*	*05/02/22 18:02*	*1*
2-Fluorobiphenyl	*69*		*48 - 120*	*04/30/22 08:36*	*05/02/22 18:02*	*1*
p-Terphenyl-d14	*91*		*60 - 148*	*04/30/22 08:36*	*05/02/22 18:02*	*1*
Phenol-d5	*35*		*22 - 120*	*04/30/22 08:36*	*05/02/22 18:02*	*1*
2-Fluorophenol	*50*		*35 - 120*	*04/30/22 08:36*	*05/02/22 18:02*	*1*
2,4,6-Tribromophenol	*66*		*41 - 120*	*04/30/22 08:36*	*05/02/22 18:02*	*1*

Client Sample ID: WG-7987-042822-SG-003

Lab Sample ID: 480-197311-3

Date Collected: 04/28/22 10:40

Matrix: Water

Date Received: 04/28/22 15:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	1.3	ug/L			05/04/22 03:06	1
Acetone	ND		5.0	3.0	ug/L			05/04/22 03:06	1
Benzene	ND		0.70	0.41	ug/L			05/04/22 03:06	1
Chlorobenzene	ND		1.0	0.75	ug/L			05/04/22 03:06	1
Ethylbenzene	**0.81**	**J**	1.0	0.74	ug/L			05/04/22 03:06	1
Methylene Chloride	ND		1.0	0.44	ug/L			05/04/22 03:06	1
Tetrachloroethene	**1.1**		1.0	0.36	ug/L			05/04/22 03:06	1
Toluene	**4.2**		1.0	0.51	ug/L			05/04/22 03:06	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			05/04/22 03:06	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			05/04/22 03:06	1
Trichloroethene	**4.3**		1.0	0.46	ug/L			05/04/22 03:06	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/04/22 03:06	1
Xylenes, Total	**1.6**	**J**	2.0	0.66	ug/L			05/04/22 03:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*77 - 120*		*05/04/22 03:06*	*1*
4-Bromofluorobenzene (Surr)	*104*		*73 - 120*		*05/04/22 03:06*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/04/22 03:06*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		10	0.40	ug/L		04/30/22 08:36	05/02/22 18:30	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		04/30/22 08:36	05/02/22 18:30	1
2,4-Dimethylphenol	**2.1**	**J**	10	0.50	ug/L		04/30/22 08:36	05/02/22 18:30	1
2-Methylphenol	**3.8**	**J**	10	0.40	ug/L		04/30/22 08:36	05/02/22 18:30	1
4-Methylphenol	**15**		10	0.36	ug/L		04/30/22 08:36	05/02/22 18:30	1
Di-n-octyl phthalate	ND		10	0.47	ug/L		04/30/22 08:36	05/02/22 18:30	1
Naphthalene	ND		10	0.76	ug/L		04/30/22 08:36	05/02/22 18:30	1
Phenol	ND		10	0.39	ug/L		04/30/22 08:36	05/02/22 18:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*61*		*46 - 120*	*04/30/22 08:36*	*05/02/22 18:30*	*1*
2-Fluorobiphenyl	*78*		*48 - 120*	*04/30/22 08:36*	*05/02/22 18:30*	*1*
p-Terphenyl-d14	*102*		*60 - 148*	*04/30/22 08:36*	*05/02/22 18:30*	*1*
Phenol-d5	*38*		*22 - 120*	*04/30/22 08:36*	*05/02/22 18:30*	*1*
2-Fluorophenol	*52*		*35 - 120*	*04/30/22 08:36*	*05/02/22 18:30*	*1*
2,4,6-Tribromophenol	*82*		*41 - 120*	*04/30/22 08:36*	*05/02/22 18:30*	*1*

Client Sample ID: WG-7987-042822-SG-004

Lab Sample ID: 480-197311-4

Date Collected: 04/28/22 10:40

Matrix: Water

Date Received: 04/28/22 15:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	1.3	ug/L			05/04/22 03:30	1
Acetone	ND		5.0	3.0	ug/L			05/04/22 03:30	1
Benzene	ND		0.70	0.41	ug/L			05/04/22 03:30	1
Chlorobenzene	ND		1.0	0.75	ug/L			05/04/22 03:30	1
Ethylbenzene	ND		1.0	0.74	ug/L			05/04/22 03:30	1
Methylene Chloride	ND		1.0	0.44	ug/L			05/04/22 03:30	1
Tetrachloroethene	**0.87**	**J**	1.0	0.36	ug/L			05/04/22 03:30	1

Client Sample ID: WG-7987-042822-SG-004
Lab Sample ID: 480-197311-4
Date Collected: 04/28/22 10:40
Matrix: Water
Date Received: 04/28/22 15:30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**4.2**		1.0	0.51	ug/L			05/04/22 03:30	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			05/04/22 03:30	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			05/04/22 03:30	1
Trichloroethene	**4.1**		1.0	0.46	ug/L			05/04/22 03:30	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/04/22 03:30	1
Xylenes, Total	**1.6**	**J**	2.0	0.66	ug/L			05/04/22 03:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*77 - 120*		*05/04/22 03:30*	*1*
4-Bromofluorobenzene (Surr)	*101*		*73 - 120*		*05/04/22 03:30*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*05/04/22 03:30*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		10	0.40	ug/L		04/30/22 08:36	05/02/22 18:57	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		04/30/22 08:36	05/02/22 18:57	1
2,4-Dimethylphenol	**2.3**	**J**	10	0.50	ug/L		04/30/22 08:36	05/02/22 18:57	1
2-Methylphenol	**4.1**	**J**	10	0.40	ug/L		04/30/22 08:36	05/02/22 18:57	1
4-Methylphenol	**16**		10	0.36	ug/L		04/30/22 08:36	05/02/22 18:57	1
Di-n-octyl phthalate	ND		10	0.47	ug/L		04/30/22 08:36	05/02/22 18:57	1
Naphthalene	ND		10	0.76	ug/L		04/30/22 08:36	05/02/22 18:57	1
Phenol	ND		10	0.39	ug/L		04/30/22 08:36	05/02/22 18:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*67*		*46 - 120*	*04/30/22 08:36*	*05/02/22 18:57*	*1*
2-Fluorobiphenyl	*81*		*48 - 120*	*04/30/22 08:36*	*05/02/22 18:57*	*1*
p-Terphenyl-d14	*110*		*60 - 148*	*04/30/22 08:36*	*05/02/22 18:57*	*1*
Phenol-d5	*39*		*22 - 120*	*04/30/22 08:36*	*05/02/22 18:57*	*1*
2-Fluorophenol	*55*		*35 - 120*	*04/30/22 08:36*	*05/02/22 18:57*	*1*
2,4,6-Tribromophenol	*76*		*41 - 120*	*04/30/22 08:36*	*05/02/22 18:57*	*1*

Client Sample ID: WG-7987-042822-SG-005
Lab Sample ID: 480-197311-5
Date Collected: 04/28/22 11:40
Matrix: Water
Date Received: 04/28/22 15:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		20	5.3	ug/L			05/04/22 03:53	4
Acetone	ND		20	12	ug/L			05/04/22 03:53	4
Benzene	ND		2.8	1.6	ug/L			05/04/22 03:53	4
Chlorobenzene	**7.1**		4.0	3.0	ug/L			05/04/22 03:53	4
Ethylbenzene	**4.0**		4.0	3.0	ug/L			05/04/22 03:53	4
Methylene Chloride	ND		4.0	1.8	ug/L			05/04/22 03:53	4
Tetrachloroethene	ND		4.0	1.4	ug/L			05/04/22 03:53	4
Toluene	ND		4.0	2.0	ug/L			05/04/22 03:53	4
1,1-Dichloroethane	ND		4.0	1.5	ug/L			05/04/22 03:53	4
trans-1,2-Dichloroethene	ND		4.0	3.6	ug/L			05/04/22 03:53	4
Trichloroethene	ND		4.0	1.8	ug/L			05/04/22 03:53	4
Vinyl chloride	ND		4.0	3.6	ug/L			05/04/22 03:53	4
Xylenes, Total	ND		8.0	2.6	ug/L			05/04/22 03:53	4

Client Sample ID: WG-7987-042822-SG-005

Lab Sample ID: 480-197311-5

Date Collected: 04/28/22 11:40

Matrix: Water

Date Received: 04/28/22 15:30

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*107*		*77 - 120*		*05/04/22 03:53*	*4*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*05/04/22 03:53*	*4*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/04/22 03:53*	*4*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		50	2.0	ug/L		04/30/22 08:36	05/02/22 16:40	5
1,4-Dichlorobenzene	**61**		50	2.3	ug/L		04/30/22 08:36	05/02/22 16:40	5
2,4-Dimethylphenol	**12**	**J**	50	2.5	ug/L		04/30/22 08:36	05/02/22 16:40	5
2-Methylphenol	**11**	**J**	50	2.0	ug/L		04/30/22 08:36	05/02/22 16:40	5
4-Methylphenol	**13**	**J**	50	1.8	ug/L		04/30/22 08:36	05/02/22 16:40	5
Di-n-octyl phthalate	ND		50	2.4	ug/L		04/30/22 08:36	05/02/22 16:40	5
Naphthalene	ND		50	3.8	ug/L		04/30/22 08:36	05/02/22 16:40	5
Phenol	ND		50	2.0	ug/L		04/30/22 08:36	05/02/22 16:40	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	*55*		*46 - 120*	*04/30/22 08:36*	*05/02/22 16:40*	*5*
2-Fluorobiphenyl	*78*		*48 - 120*	*04/30/22 08:36*	*05/02/22 16:40*	*5*
p-Terphenyl-d14	*95*		*60 - 148*	*04/30/22 08:36*	*05/02/22 16:40*	*5*
Phenol-d5	*33*		*22 - 120*	*04/30/22 08:36*	*05/02/22 16:40*	*5*
2-Fluorophenol	*48*		*35 - 120*	*04/30/22 08:36*	*05/02/22 16:40*	*5*
2,4,6-Tribromophenol	*72*		*41 - 120*	*04/30/22 08:36*	*05/02/22 16:40*	*5*

Client Sample ID: WG-7987-042822-SG-006

Lab Sample ID: 480-197311-6

Date Collected: 04/28/22 12:15

Matrix: Water

Date Received: 04/28/22 15:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	1.3	ug/L			05/04/22 04:16	1
Acetone	ND		5.0	3.0	ug/L			05/04/22 04:16	1
Benzene	ND		0.70	0.41	ug/L			05/04/22 04:16	1
Chlorobenzene	ND		1.0	0.75	ug/L			05/04/22 04:16	1
Ethylbenzene	ND		1.0	0.74	ug/L			05/04/22 04:16	1
Methylene Chloride	ND		1.0	0.44	ug/L			05/04/22 04:16	1
Tetrachloroethene	ND		1.0	0.36	ug/L			05/04/22 04:16	1
Toluene	**0.58**	**J**	1.0	0.51	ug/L			05/04/22 04:16	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			05/04/22 04:16	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			05/04/22 04:16	1
Trichloroethene	**0.84**	**J**	1.0	0.46	ug/L			05/04/22 04:16	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/04/22 04:16	1
Xylenes, Total	ND		2.0	0.66	ug/L			05/04/22 04:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*96*		*77 - 120*		*05/04/22 04:16*	*1*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*		*05/04/22 04:16*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/04/22 04:16*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		100	4.0	ug/L		04/30/22 08:36	05/02/22 19:25	10

Client Sample ID: WG-7987-042822-SG-006

Lab Sample ID: 480-197311-6

Date Collected: 04/28/22 12:15

Matrix: Water

Date Received: 04/28/22 15:30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		100	4.6	ug/L		04/30/22 08:36	05/02/22 19:25	10
2,4-Dimethylphenol	ND		100	5.0	ug/L		04/30/22 08:36	05/02/22 19:25	10
2-Methylphenol	**12**	**J**	100	4.0	ug/L		04/30/22 08:36	05/02/22 19:25	10
4-Methylphenol	**6.3**	**J**	100	3.6	ug/L		04/30/22 08:36	05/02/22 19:25	10
Di-n-octyl phthalate	ND		100	4.7	ug/L		04/30/22 08:36	05/02/22 19:25	10
Naphthalene	ND		100	7.6	ug/L		04/30/22 08:36	05/02/22 19:25	10
Phenol	**30**	**J**	100	3.9	ug/L		04/30/22 08:36	05/02/22 19:25	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*75*		*46 - 120*	*04/30/22 08:36*	*05/02/22 19:25*	*10*
2-Fluorobiphenyl	*101*		*48 - 120*	*04/30/22 08:36*	*05/02/22 19:25*	*10*
p-Terphenyl-d14	*103*		*60 - 148*	*04/30/22 08:36*	*05/02/22 19:25*	*10*
Phenol-d5	*47*		*22 - 120*	*04/30/22 08:36*	*05/02/22 19:25*	*10*
2-Fluorophenol	*66*		*35 - 120*	*04/30/22 08:36*	*05/02/22 19:25*	*10*
2,4,6-Tribromophenol	*56*		*41 - 120*	*04/30/22 08:36*	*05/02/22 19:25*	*10*

Client Sample ID: WG-7987-042822-SG-007

Lab Sample ID: 480-197311-7

Date Collected: 04/28/22 12:40

Matrix: Water

Date Received: 04/28/22 15:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	1.3	ug/L			05/04/22 04:39	1
Acetone	ND		5.0	3.0	ug/L			05/04/22 04:39	1
Benzene	ND		0.70	0.41	ug/L			05/04/22 04:39	1
Chlorobenzene	ND		1.0	0.75	ug/L			05/04/22 04:39	1
Ethylbenzene	ND		1.0	0.74	ug/L			05/04/22 04:39	1
Methylene Chloride	ND		1.0	0.44	ug/L			05/04/22 04:39	1
Tetrachloroethene	ND		1.0	0.36	ug/L			05/04/22 04:39	1
Toluene	**1.2**		1.0	0.51	ug/L			05/04/22 04:39	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			05/04/22 04:39	1
trans-1,2-Dichloroethene	**1.2**		1.0	0.90	ug/L			05/04/22 04:39	1
Trichloroethene	**2.9**		1.0	0.46	ug/L			05/04/22 04:39	1
Vinyl chloride	**2.6**		1.0	0.90	ug/L			05/04/22 04:39	1
Xylenes, Total	**0.81**	**J**	2.0	0.66	ug/L			05/04/22 04:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*77 - 120*		*05/04/22 04:39*	*1*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*		*05/04/22 04:39*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/04/22 04:39*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		10	0.40	ug/L		04/30/22 08:36	05/02/22 19:53	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		04/30/22 08:36	05/02/22 19:53	1
2,4-Dimethylphenol	ND		10	0.50	ug/L		04/30/22 08:36	05/02/22 19:53	1
2-Methylphenol	ND		10	0.40	ug/L		04/30/22 08:36	05/02/22 19:53	1
4-Methylphenol	ND		10	0.36	ug/L		04/30/22 08:36	05/02/22 19:53	1
Di-n-octyl phthalate	ND		10	0.47	ug/L		04/30/22 08:36	05/02/22 19:53	1
Naphthalene	ND		10	0.76	ug/L		04/30/22 08:36	05/02/22 19:53	1
Phenol	ND		10	0.39	ug/L		04/30/22 08:36	05/02/22 19:53	1

Client Sample ID: WG-7987-042822-SG-007

Lab Sample ID: 480-197311-7

Date Collected: 04/28/22 12:40

Matrix: Water

Date Received: 04/28/22 15:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*79*		*46 - 120*	*04/30/22 08:36*	*05/02/22 19:53*	*1*
2-Fluorobiphenyl	*94*		*48 - 120*	*04/30/22 08:36*	*05/02/22 19:53*	*1*
p-Terphenyl-d14	*106*		*60 - 148*	*04/30/22 08:36*	*05/02/22 19:53*	*1*
Phenol-d5	*49*		*22 - 120*	*04/30/22 08:36*	*05/02/22 19:53*	*1*
2-Fluorophenol	*68*		*35 - 120*	*04/30/22 08:36*	*05/02/22 19:53*	*1*
2,4,6-Tribromophenol	*75*		*41 - 120*	*04/30/22 08:36*	*05/02/22 19:53*	*1*

Client Sample ID: WG-7987-042822-SG-008

Lab Sample ID: 480-197311-8

Date Collected: 04/28/22 12:55

Matrix: Water

Date Received: 04/28/22 15:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	1.3	ug/L			05/04/22 05:02	1
Acetone	ND		5.0	3.0	ug/L			05/04/22 05:02	1
Benzene	ND		0.70	0.41	ug/L			05/04/22 05:02	1
Chlorobenzene	ND		1.0	0.75	ug/L			05/04/22 05:02	1
Ethylbenzene	ND		1.0	0.74	ug/L			05/04/22 05:02	1
Methylene Chloride	ND		1.0	0.44	ug/L			05/04/22 05:02	1
Tetrachloroethene	ND		1.0	0.36	ug/L			05/04/22 05:02	1
Toluene	ND		1.0	0.51	ug/L			05/04/22 05:02	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			05/04/22 05:02	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			05/04/22 05:02	1
Trichloroethene	ND		1.0	0.46	ug/L			05/04/22 05:02	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/04/22 05:02	1
Xylenes, Total	ND		2.0	0.66	ug/L			05/04/22 05:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*77 - 120*		*05/04/22 05:02*	*1*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*		*05/04/22 05:02*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/04/22 05:02*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		10	0.40	ug/L		04/30/22 08:36	05/02/22 20:20	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		04/30/22 08:36	05/02/22 20:20	1
2,4-Dimethylphenol	ND		10	0.50	ug/L		04/30/22 08:36	05/02/22 20:20	1
2-Methylphenol	ND		10	0.40	ug/L		04/30/22 08:36	05/02/22 20:20	1
4-Methylphenol	ND		10	0.36	ug/L		04/30/22 08:36	05/02/22 20:20	1
Di-n-octyl phthalate	ND		10	0.47	ug/L		04/30/22 08:36	05/02/22 20:20	1
Naphthalene	ND		10	0.76	ug/L		04/30/22 08:36	05/02/22 20:20	1
Phenol	ND		10	0.39	ug/L		04/30/22 08:36	05/02/22 20:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*80*		*46 - 120*	*04/30/22 08:36*	*05/02/22 20:20*	*1*
2-Fluorobiphenyl	*97*		*48 - 120*	*04/30/22 08:36*	*05/02/22 20:20*	*1*
p-Terphenyl-d14	*108*		*60 - 148*	*04/30/22 08:36*	*05/02/22 20:20*	*1*
Phenol-d5	*46*		*22 - 120*	*04/30/22 08:36*	*05/02/22 20:20*	*1*
2-Fluorophenol	*66*		*35 - 120*	*04/30/22 08:36*	*05/02/22 20:20*	*1*
2,4,6-Tribromophenol	*77*		*41 - 120*	*04/30/22 08:36*	*05/02/22 20:20*	*1*

Client Sample ID: WG-7987-042822-SG-009

Lab Sample ID: 480-197311-9

Date Collected: 04/28/22 13:05

Matrix: Water

Date Received: 04/28/22 15:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	1.3	ug/L			05/04/22 05:25	1
Acetone	ND		5.0	3.0	ug/L			05/04/22 05:25	1
Benzene	ND		0.70	0.41	ug/L			05/04/22 05:25	1
Chlorobenzene	ND		1.0	0.75	ug/L			05/04/22 05:25	1
Ethylbenzene	ND		1.0	0.74	ug/L			05/04/22 05:25	1
Methylene Chloride	ND		1.0	0.44	ug/L			05/04/22 05:25	1
Tetrachloroethene	ND		1.0	0.36	ug/L			05/04/22 05:25	1
Toluene	ND		1.0	0.51	ug/L			05/04/22 05:25	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			05/04/22 05:25	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			05/04/22 05:25	1
Trichloroethene	ND		1.0	0.46	ug/L			05/04/22 05:25	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/04/22 05:25	1
Xylenes, Total	ND		2.0	0.66	ug/L			05/04/22 05:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*77 - 120*		*05/04/22 05:25*	*1*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*05/04/22 05:25*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/04/22 05:25*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		10	0.40	ug/L		04/30/22 08:36	05/02/22 20:48	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		04/30/22 08:36	05/02/22 20:48	1
2,4-Dimethylphenol	ND		10	0.50	ug/L		04/30/22 08:36	05/02/22 20:48	1
2-Methylphenol	ND		10	0.40	ug/L		04/30/22 08:36	05/02/22 20:48	1
4-Methylphenol	ND		10	0.36	ug/L		04/30/22 08:36	05/02/22 20:48	1
Di-n-octyl phthalate	ND		10	0.47	ug/L		04/30/22 08:36	05/02/22 20:48	1
Naphthalene	ND		10	0.76	ug/L		04/30/22 08:36	05/02/22 20:48	1
Phenol	ND		10	0.39	ug/L		04/30/22 08:36	05/02/22 20:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*76*		*46 - 120*	*04/30/22 08:36*	*05/02/22 20:48*	*1*
2-Fluorobiphenyl	*90*		*48 - 120*	*04/30/22 08:36*	*05/02/22 20:48*	*1*
p-Terphenyl-d14	*105*		*60 - 148*	*04/30/22 08:36*	*05/02/22 20:48*	*1*
Phenol-d5	*45*		*22 - 120*	*04/30/22 08:36*	*05/02/22 20:48*	*1*
2-Fluorophenol	*64*		*35 - 120*	*04/30/22 08:36*	*05/02/22 20:48*	*1*
2,4,6-Tribromophenol	*70*		*41 - 120*	*04/30/22 08:36*	*05/02/22 20:48*	*1*

Client Sample ID: WG-7987-042822-SG-010

Lab Sample ID: 480-197311-10

Date Collected: 04/28/22 13:40

Matrix: Water

Date Received: 04/28/22 15:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		10	2.6	ug/L			05/04/22 05:48	2
Acetone	ND		10	6.0	ug/L			05/04/22 05:48	2
Benzene	ND		1.4	0.82	ug/L			05/04/22 05:48	2
Chlorobenzene	ND		2.0	1.5	ug/L			05/04/22 05:48	2
Ethylbenzene	ND		2.0	1.5	ug/L			05/04/22 05:48	2
Methylene Chloride	ND		2.0	0.88	ug/L			05/04/22 05:48	2
Tetrachloroethene	**14**		2.0	0.72	ug/L			05/04/22 05:48	2

Client Sample ID: WG-7987-042822-SG-010
Lab Sample ID: 480-197311-10
Date Collected: 04/28/22 13:40
Matrix: Water
Date Received: 04/28/22 15:30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**2.1**		2.0	1.0	ug/L			05/04/22 05:48	2
1,1-Dichloroethane	ND		2.0	0.76	ug/L			05/04/22 05:48	2
trans-1,2-Dichloroethene	**11**		2.0	1.8	ug/L			05/04/22 05:48	2
Trichloroethene	**28**		2.0	0.92	ug/L			05/04/22 05:48	2
Vinyl chloride	ND		2.0	1.8	ug/L			05/04/22 05:48	2
Xylenes, Total	ND		4.0	1.3	ug/L			05/04/22 05:48	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*77 - 120*		*05/04/22 05:48*	*2*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*05/04/22 05:48*	*2*
Toluene-d8 (Surr)	*96*		*80 - 120*		*05/04/22 05:48*	*2*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		10	0.40	ug/L		04/30/22 08:36	05/02/22 21:15	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		04/30/22 08:36	05/02/22 21:15	1
2,4-Dimethylphenol	ND		10	0.50	ug/L		04/30/22 08:36	05/02/22 21:15	1
2-Methylphenol	**1.5**	**J**	10	0.40	ug/L		04/30/22 08:36	05/02/22 21:15	1
4-Methylphenol	**0.83**	**J**	10	0.36	ug/L		04/30/22 08:36	05/02/22 21:15	1
Di-n-octyl phthalate	ND		10	0.47	ug/L		04/30/22 08:36	05/02/22 21:15	1
Naphthalene	**1.0**	**J**	10	0.76	ug/L		04/30/22 08:36	05/02/22 21:15	1
Phenol	ND		10	0.39	ug/L		04/30/22 08:36	05/02/22 21:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*77*		*46 - 120*	*04/30/22 08:36*	*05/02/22 21:15*	*1*
2-Fluorobiphenyl	*92*		*48 - 120*	*04/30/22 08:36*	*05/02/22 21:15*	*1*
p-Terphenyl-d14	*107*		*60 - 148*	*04/30/22 08:36*	*05/02/22 21:15*	*1*
Phenol-d5	*46*		*22 - 120*	*04/30/22 08:36*	*05/02/22 21:15*	*1*
2-Fluorophenol	*64*		*35 - 120*	*04/30/22 08:36*	*05/02/22 21:15*	*1*
2,4,6-Tribromophenol	*89*		*41 - 120*	*04/30/22 08:36*	*05/02/22 21:15*	*1*

Client Sample ID: WG-7987-042822-SG-011
Lab Sample ID: 480-197311-11
Date Collected: 04/28/22 13:55
Matrix: Water
Date Received: 04/28/22 15:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	1.3	ug/L			05/04/22 06:11	1
Acetone	ND		5.0	3.0	ug/L			05/04/22 06:11	1
Benzene	**1.2**		0.70	0.41	ug/L			05/04/22 06:11	1
Chlorobenzene	ND		1.0	0.75	ug/L			05/04/22 06:11	1
Ethylbenzene	ND		1.0	0.74	ug/L			05/04/22 06:11	1
Methylene Chloride	ND		1.0	0.44	ug/L			05/04/22 06:11	1
Tetrachloroethene	ND		1.0	0.36	ug/L			05/04/22 06:11	1
Toluene	ND		1.0	0.51	ug/L			05/04/22 06:11	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			05/04/22 06:11	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			05/04/22 06:11	1
Trichloroethene	ND		1.0	0.46	ug/L			05/04/22 06:11	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/04/22 06:11	1
Xylenes, Total	ND		2.0	0.66	ug/L			05/04/22 06:11	1

Client Sample ID: WG-7987-042822-SG-011

Lab Sample ID: 480-197311-11

Date Collected: 04/28/22 13:55

Matrix: Water

Date Received: 04/28/22 15:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*77 - 120*		*05/04/22 06:11*	*1*
4-Bromofluorobenzene (Surr)	*105*		*73 - 120*		*05/04/22 06:11*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/04/22 06:11*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		200	8.0	ug/L		04/30/22 08:36	05/02/22 21:43	20
1,4-Dichlorobenzene	ND		200	9.2	ug/L		04/30/22 08:36	05/02/22 21:43	20
2,4-Dimethylphenol	ND		200	10	ug/L		04/30/22 08:36	05/02/22 21:43	20
2-Methylphenol	ND		200	8.0	ug/L		04/30/22 08:36	05/02/22 21:43	20
4-Methylphenol	ND		200	7.2	ug/L		04/30/22 08:36	05/02/22 21:43	20
Di-n-octyl phthalate	ND		200	9.4	ug/L		04/30/22 08:36	05/02/22 21:43	20
Naphthalene	ND		200	15	ug/L		04/30/22 08:36	05/02/22 21:43	20
Phenol	ND		200	7.8	ug/L		04/30/22 08:36	05/02/22 21:43	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*66*		*46 - 120*	*04/30/22 08:36*	*05/02/22 21:43*	*20*
2-Fluorobiphenyl	*92*		*48 - 120*	*04/30/22 08:36*	*05/02/22 21:43*	*20*
p-Terphenyl-d14	*100*		*60 - 148*	*04/30/22 08:36*	*05/02/22 21:43*	*20*
Phenol-d5	*41*		*22 - 120*	*04/30/22 08:36*	*05/02/22 21:43*	*20*
2-Fluorophenol	*55*		*35 - 120*	*04/30/22 08:36*	*05/02/22 21:43*	*20*
2,4,6-Tribromophenol	*52*		*41 - 120*	*04/30/22 08:36*	*05/02/22 21:43*	*20*

Client Sample ID: WG-7987-042822-SG-012

Lab Sample ID: 480-197311-12

Date Collected: 04/28/22 14:25

Matrix: Water

Date Received: 04/28/22 15:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		10	2.6	ug/L			05/04/22 06:34	2
Acetone	ND		10	6.0	ug/L			05/04/22 06:34	2
Benzene	ND		1.4	0.82	ug/L			05/04/22 06:34	2
Chlorobenzene	ND		2.0	1.5	ug/L			05/04/22 06:34	2
Ethylbenzene	ND		2.0	1.5	ug/L			05/04/22 06:34	2
Methylene Chloride	ND		2.0	0.88	ug/L			05/04/22 06:34	2
Tetrachloroethene	ND		2.0	0.72	ug/L			05/04/22 06:34	2
Toluene	ND		2.0	1.0	ug/L			05/04/22 06:34	2
1,1-Dichloroethane	ND		2.0	0.76	ug/L			05/04/22 06:34	2
trans-1,2-Dichloroethene	ND		2.0	1.8	ug/L			05/04/22 06:34	2
Trichloroethene	ND		2.0	0.92	ug/L			05/04/22 06:34	2
Vinyl chloride	ND		2.0	1.8	ug/L			05/04/22 06:34	2
Xylenes, Total	ND		4.0	1.3	ug/L			05/04/22 06:34	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*77 - 120*		*05/04/22 06:34*	*2*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*05/04/22 06:34*	*2*
Toluene-d8 (Surr)	*101*		*80 - 120*		*05/04/22 06:34*	*2*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		200	8.0	ug/L		04/30/22 08:36	05/02/22 22:11	20

Client Sample ID: WG-7987-042822-SG-012

Lab Sample ID: 480-197311-12

Date Collected: 04/28/22 14:25

Matrix: Water

Date Received: 04/28/22 15:30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		200	9.2	ug/L		04/30/22 08:36	05/02/22 22:11	20
2,4-Dimethylphenol	ND		200	10	ug/L		04/30/22 08:36	05/02/22 22:11	20
2-Methylphenol	ND		200	8.0	ug/L		04/30/22 08:36	05/02/22 22:11	20
4-Methylphenol	ND		200	7.2	ug/L		04/30/22 08:36	05/02/22 22:11	20
Di-n-octyl phthalate	ND		200	9.4	ug/L		04/30/22 08:36	05/02/22 22:11	20
Naphthalene	ND		200	15	ug/L		04/30/22 08:36	05/02/22 22:11	20
Phenol	ND		200	7.8	ug/L		04/30/22 08:36	05/02/22 22:11	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*67*		*46 - 120*	*04/30/22 08:36*	*05/02/22 22:11*	*20*
2-Fluorobiphenyl	*97*		*48 - 120*	*04/30/22 08:36*	*05/02/22 22:11*	*20*
p-Terphenyl-d14	*103*		*60 - 148*	*04/30/22 08:36*	*05/02/22 22:11*	*20*
Phenol-d5	*39*		*22 - 120*	*04/30/22 08:36*	*05/02/22 22:11*	*20*
2-Fluorophenol	*63*		*35 - 120*	*04/30/22 08:36*	*05/02/22 22:11*	*20*
2,4,6-Tribromophenol	*57*		*41 - 120*	*04/30/22 08:36*	*05/02/22 22:11*	*20*

Client Sample ID: WG-7987-042822-SG-013

Lab Sample ID: 480-197311-13

Date Collected: 04/28/22 14:45

Matrix: Water

Date Received: 04/28/22 15:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	1.3	ug/L			05/04/22 06:57	1
Acetone	ND		5.0	3.0	ug/L			05/04/22 06:57	1
Benzene	ND		0.70	0.41	ug/L			05/04/22 06:57	1
Chlorobenzene	ND		1.0	0.75	ug/L			05/04/22 06:57	1
Ethylbenzene	ND		1.0	0.74	ug/L			05/04/22 06:57	1
Methylene Chloride	ND		1.0	0.44	ug/L			05/04/22 06:57	1
Tetrachloroethene	ND		1.0	0.36	ug/L			05/04/22 06:57	1
Toluene	ND		1.0	0.51	ug/L			05/04/22 06:57	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			05/04/22 06:57	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			05/04/22 06:57	1
Trichloroethene	ND		1.0	0.46	ug/L			05/04/22 06:57	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/04/22 06:57	1
Xylenes, Total	ND		2.0	0.66	ug/L			05/04/22 06:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*77 - 120*		*05/04/22 06:57*	*1*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*05/04/22 06:57*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/04/22 06:57*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		10	0.40	ug/L		04/30/22 08:36	05/02/22 22:39	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		04/30/22 08:36	05/02/22 22:39	1
2,4-Dimethylphenol	ND		10	0.50	ug/L		04/30/22 08:36	05/02/22 22:39	1
2-Methylphenol	ND		10	0.40	ug/L		04/30/22 08:36	05/02/22 22:39	1
4-Methylphenol	ND		10	0.36	ug/L		04/30/22 08:36	05/02/22 22:39	1
Di-n-octyl phthalate	ND		10	0.47	ug/L		04/30/22 08:36	05/02/22 22:39	1
Naphthalene	ND		10	0.76	ug/L		04/30/22 08:36	05/02/22 22:39	1
Phenol	ND		10	0.39	ug/L		04/30/22 08:36	05/02/22 22:39	1

Client Sample ID: WG-7987-042822-SG-013

Lab Sample ID: 480-197311-13

Date Collected: 04/28/22 14:45

Matrix: Water

Date Received: 04/28/22 15:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*80*		*46 - 120*	*04/30/22 08:36*	*05/02/22 22:39*	*1*
2-Fluorobiphenyl	*93*		*48 - 120*	*04/30/22 08:36*	*05/02/22 22:39*	*1*
p-Terphenyl-d14	*108*		*60 - 148*	*04/30/22 08:36*	*05/02/22 22:39*	*1*
Phenol-d5	*49*		*22 - 120*	*04/30/22 08:36*	*05/02/22 22:39*	*1*
2-Fluorophenol	*68*		*35 - 120*	*04/30/22 08:36*	*05/02/22 22:39*	*1*
2,4,6-Tribromophenol	*74*		*41 - 120*	*04/30/22 08:36*	*05/02/22 22:39*	*1*

Client Sample ID: TB-7987-042822-SG

Lab Sample ID: 480-197311-14

Date Collected: 04/28/22 00:00

Matrix: Water

Date Received: 04/28/22 15:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	1.3	ug/L			05/04/22 07:21	1
Acetone	ND		5.0	3.0	ug/L			05/04/22 07:21	1
Benzene	ND		0.70	0.41	ug/L			05/04/22 07:21	1
Chlorobenzene	ND		1.0	0.75	ug/L			05/04/22 07:21	1
Ethylbenzene	ND		1.0	0.74	ug/L			05/04/22 07:21	1
Methylene Chloride	ND		1.0	0.44	ug/L			05/04/22 07:21	1
Tetrachloroethene	ND		1.0	0.36	ug/L			05/04/22 07:21	1
Toluene	ND		1.0	0.51	ug/L			05/04/22 07:21	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			05/04/22 07:21	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			05/04/22 07:21	1
Trichloroethene	ND		1.0	0.46	ug/L			05/04/22 07:21	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/04/22 07:21	1
Xylenes, Total	ND		2.0	0.66	ug/L			05/04/22 07:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*77 - 120*		*05/04/22 07:21*	*1*
4-Bromofluorobenzene (Surr)	*104*		*73 - 120*		*05/04/22 07:21*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/04/22 07:21*	*1*

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-197311-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DCA	BFB	TOL
Lab Sample ID	Client Sample ID	(77-120)	(73-120)	(80-120)
480-197311-1	WG-7987-042822-SG-001	101	99	97
480-197311-2	WG-7987-042822-SG-002	101	97	101
480-197311-3	WG-7987-042822-SG-003	101	104	99
480-197311-4	WG-7987-042822-SG-004	98	101	97
480-197311-5	WG-7987-042822-SG-005	107	102	99
480-197311-5 MS	WG-7987-042822-SG-005	101	104	101
480-197311-5 MSD	WG-7987-042822-SG-005	103	103	101
480-197311-6	WG-7987-042822-SG-006	96	98	99
480-197311-7	WG-7987-042822-SG-007	103	103	98
480-197311-8	WG-7987-042822-SG-008	105	103	100
480-197311-9	WG-7987-042822-SG-009	101	99	98
480-197311-10	WG-7987-042822-SG-010	101	97	96
480-197311-11	WG-7987-042822-SG-011	103	105	100
480-197311-12	WG-7987-042822-SG-012	103	102	101
480-197311-13	WG-7987-042822-SG-013	105	102	98
480-197311-14	TB-7987-042822-SG	100	104	99
LCS 480-624351/6	Lab Control Sample	102	104	101
MB 480-624351/8	Method Blank	99	103	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		NBZ	FBP	TPHd14	PHL	2FP	TBP
Lab Sample ID	Client Sample ID	(46-120)	(48-120)	(60-148)	(22-120)	(35-120)	(41-120)
480-197311-1	WG-7987-042822-SG-001	67	86	106	41	57	98
480-197311-1 - DL	WG-7987-042822-SG-001	68	89	110	43	55	71
480-197311-2	WG-7987-042822-SG-002	56	69	91	35	50	66
480-197311-3	WG-7987-042822-SG-003	61	78	102	38	52	82
480-197311-4	WG-7987-042822-SG-004	67	81	110	39	55	76
480-197311-5	WG-7987-042822-SG-005	55	78	95	33	48	72
480-197311-5 MS	WG-7987-042822-SG-005	65	84	103	38	53	95
480-197311-5 MSD	WG-7987-042822-SG-005	75	93	108	44	60	95
480-197311-6	WG-7987-042822-SG-006	75	101	103	47	66	56
480-197311-7	WG-7987-042822-SG-007	79	94	106	49	68	75
480-197311-8	WG-7987-042822-SG-008	80	97	108	46	66	77
480-197311-9	WG-7987-042822-SG-009	76	90	105	45	64	70
480-197311-10	WG-7987-042822-SG-010	77	92	107	46	64	89
480-197311-11	WG-7987-042822-SG-011	66	92	100	41	55	52
480-197311-12	WG-7987-042822-SG-012	67	97	103	39	63	57
480-197311-13	WG-7987-042822-SG-013	80	93	108	49	68	74
LCS 480-623953/2-A	Lab Control Sample	66	81	103	43	60	86
MB 480-623953/1-A	Method Blank	72	86	101	43	59	70

Surrogate Legend

NBZ = Nitrobenzene-d5

Surrogate Summary

Client: GHD Services Inc.
Job ID: 480-197311-1
Project/Site: 7987, Gratwick Riverside Park

FBP = 2-Fluorobiphenyl
TPHd14 = p-Terphenyl-d14
PHL = Phenol-d5
2FP = 2-Fluorophenol
TBP = 2,4,6-Tribromophenol

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-624351/8
Matrix: Water
Analysis Batch: 624351

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	1.3	ug/L			05/03/22 23:38	1
Acetone	ND		5.0	3.0	ug/L			05/03/22 23:38	1
Benzene	ND		0.70	0.41	ug/L			05/03/22 23:38	1
Chlorobenzene	ND		1.0	0.75	ug/L			05/03/22 23:38	1
Ethylbenzene	ND		1.0	0.74	ug/L			05/03/22 23:38	1
Methylene Chloride	ND		1.0	0.44	ug/L			05/03/22 23:38	1
Tetrachloroethene	ND		1.0	0.36	ug/L			05/03/22 23:38	1
Toluene	ND		1.0	0.51	ug/L			05/03/22 23:38	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			05/03/22 23:38	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			05/03/22 23:38	1
Trichloroethene	ND		1.0	0.46	ug/L			05/03/22 23:38	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/03/22 23:38	1
Xylenes, Total	ND		2.0	0.66	ug/L			05/03/22 23:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*77 - 120*		*05/03/22 23:38*	*1*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*		*05/03/22 23:38*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*05/03/22 23:38*	*1*

Lab Sample ID: LCS 480-624351/6
Matrix: Water
Analysis Batch: 624351

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Butanone (MEK)	125	113		ug/L		90	57 - 140
Acetone	125	113		ug/L		90	56 - 142
Benzene	25.0	23.1		ug/L		92	71 - 124
Chlorobenzene	25.0	22.3		ug/L		89	80 - 120
Ethylbenzene	25.0	23.1		ug/L		92	77 - 123
Methylene Chloride	25.0	22.2		ug/L		89	75 - 124
Tetrachloroethene	25.0	21.8		ug/L		87	74 - 122
Toluene	25.0	23.1		ug/L		92	80 - 122
1,1-Dichloroethane	25.0	23.0		ug/L		92	77 - 120
trans-1,2-Dichloroethene	25.0	23.7		ug/L		95	73 - 127
Trichloroethene	25.0	22.7		ug/L		91	74 - 123
Vinyl chloride	25.0	24.1		ug/L		96	65 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*77 - 120*
4-Bromofluorobenzene (Surr)	*104*		*73 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: 480-197311-5 MS
Matrix: Water
Analysis Batch: 624351

Client Sample ID: WG-7987-042822-SG-005
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2-Butanone (MEK)	ND		500	466		ug/L		93	57 - 140

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 480-197311-5 MS
Matrix: Water
Analysis Batch: 624351

Client Sample ID: WG-7987-042822-SG-005
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	ND		500	412		ug/L		82	56 - 142
Benzene	ND		100	98.3		ug/L		98	71 - 124
Chlorobenzene	7.1		100	101		ug/L		94	80 - 120
Ethylbenzene	4.0		100	102		ug/L		98	77 - 123
Methylene Chloride	ND		100	95.9		ug/L		96	75 - 124
Tetrachloroethene	ND		100	95.9		ug/L		96	74 - 122
Toluene	ND		100	95.5		ug/L		96	80 - 122
1,1-Dichloroethane	ND		100	98.1		ug/L		98	77 - 120
trans-1,2-Dichloroethene	ND		100	101		ug/L		101	73 - 127
Trichloroethene	ND		100	98.1		ug/L		98	74 - 123
Vinyl chloride	ND		100	104		ug/L		104	65 - 133

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*77 - 120*
4-Bromofluorobenzene (Surr)	*104*		*73 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: 480-197311-5 MSD
Matrix: Water
Analysis Batch: 624351

Client Sample ID: WG-7987-042822-SG-005
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Butanone (MEK)	ND		500	459		ug/L		92	57 - 140	1	20
Acetone	ND		500	422		ug/L		84	56 - 142	2	15
Benzene	ND		100	93.4		ug/L		93	71 - 124	5	13
Chlorobenzene	7.1		100	98.2		ug/L		91	80 - 120	3	25
Ethylbenzene	4.0		100	95.1		ug/L		91	77 - 123	7	15
Methylene Chloride	ND		100	89.9		ug/L		90	75 - 124	6	15
Tetrachloroethene	ND		100	93.3		ug/L		93	74 - 122	3	20
Toluene	ND		100	91.4		ug/L		91	80 - 122	4	15
1,1-Dichloroethane	ND		100	91.3		ug/L		91	77 - 120	7	20
trans-1,2-Dichloroethene	ND		100	97.7		ug/L		98	73 - 127	3	20
Trichloroethene	ND		100	91.5		ug/L		92	74 - 123	7	16
Vinyl chloride	ND		100	100		ug/L		100	65 - 133	3	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*77 - 120*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-623953/1-A
Matrix: Water
Analysis Batch: 624152

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 623953

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		10	0.40	ug/L		04/30/22 08:36	05/02/22 14:49	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 480-623953/1-A
Matrix: Water
Analysis Batch: 624152

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 623953

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		10	0.46	ug/L		04/30/22 08:36	05/02/22 14:49	1
2,4-Dimethylphenol	ND		10	0.50	ug/L		04/30/22 08:36	05/02/22 14:49	1
2-Methylphenol	ND		10	0.40	ug/L		04/30/22 08:36	05/02/22 14:49	1
4-Methylphenol	ND		10	0.36	ug/L		04/30/22 08:36	05/02/22 14:49	1
Di-n-octyl phthalate	ND		10	0.47	ug/L		04/30/22 08:36	05/02/22 14:49	1
Naphthalene	ND		10	0.76	ug/L		04/30/22 08:36	05/02/22 14:49	1
Phenol	ND		10	0.39	ug/L		04/30/22 08:36	05/02/22 14:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*72*		*46 - 120*	*04/30/22 08:36*	*05/02/22 14:49*	*1*
2-Fluorobiphenyl	*86*		*48 - 120*	*04/30/22 08:36*	*05/02/22 14:49*	*1*
p-Terphenyl-d14	*101*		*60 - 148*	*04/30/22 08:36*	*05/02/22 14:49*	*1*
Phenol-d5	*43*		*22 - 120*	*04/30/22 08:36*	*05/02/22 14:49*	*1*
2-Fluorophenol	*59*		*35 - 120*	*04/30/22 08:36*	*05/02/22 14:49*	*1*
2,4,6-Tribromophenol	*70*		*41 - 120*	*04/30/22 08:36*	*05/02/22 14:49*	*1*

Lab Sample ID: LCS 480-623953/2-A
Matrix: Water
Analysis Batch: 624152

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 623953

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichlorobenzene	32.0	22.4		ug/L		70	49 - 120
1,4-Dichlorobenzene	32.0	22.1		ug/L		69	51 - 120
2,4-Dimethylphenol	32.0	23.6		ug/L		74	47 - 120
2-Methylphenol	32.0	22.6		ug/L		71	39 - 120
4-Methylphenol	32.0	22.4		ug/L		70	29 - 131
Di-n-octyl phthalate	32.0	27.2		ug/L		85	63 - 140
Naphthalene	32.0	24.3		ug/L		76	57 - 120
Phenol	32.0	16.4		ug/L		51	17 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5	*66*		*46 - 120*
2-Fluorobiphenyl	*81*		*48 - 120*
p-Terphenyl-d14	*103*		*60 - 148*
Phenol-d5	*43*		*22 - 120*
2-Fluorophenol	*60*		*35 - 120*
2,4,6-Tribromophenol	*86*		*41 - 120*

Lab Sample ID: 480-197311-5 MS
Matrix: Water
Analysis Batch: 624152

Client Sample ID: WG-7987-042822-SG-005
Prep Type: Total/NA
Prep Batch: 623953

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichlorobenzene	ND		32.0	23.0	J	ug/L		72	48 - 120
1,4-Dichlorobenzene	61		32.0	89.3		ug/L		87	32 - 150
2,4-Dimethylphenol	12	J	32.0	37.5	J	ug/L		79	39 - 130
2-Methylphenol	11	J	32.0	33.8	J	ug/L		73	46 - 120
4-Methylphenol	13	J	32.0	36.1	J	ug/L		71	36 - 120

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 480-197311-5 MS
Matrix: Water
Analysis Batch: 624152

Client Sample ID: WG-7987-042822-SG-005
Prep Type: Total/NA
Prep Batch: 623953

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Di-n-octyl phthalate	ND		32.0	27.8	J	ug/L		87	16 - 150
Naphthalene	ND		32.0	25.6	J	ug/L		80	45 - 120
Phenol	ND		32.0	16.5	J	ug/L		52	16 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Nitrobenzene-d5	*65*		*46 - 120*
2-Fluorobiphenyl	*84*		*48 - 120*
p-Terphenyl-d14	*103*		*60 - 148*
Phenol-d5	*38*		*22 - 120*
2-Fluorophenol	*53*		*35 - 120*
2,4,6-Tribromophenol	*95*		*41 - 120*

Lab Sample ID: 480-197311-5 MSD
Matrix: Water
Analysis Batch: 624152

Client Sample ID: WG-7987-042822-SG-005
Prep Type: Total/NA
Prep Batch: 623953

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichlorobenzene	ND		32.0	27.5	J	ug/L		86	48 - 120	18	29
1,4-Dichlorobenzene	61		32.0	106		ug/L		139	32 - 150	17	36
2,4-Dimethylphenol	12	J	32.0	44.7	J	ug/L		102	39 - 130	18	42
2-Methylphenol	11	J	32.0	37.6	J	ug/L		85	46 - 120	11	27
4-Methylphenol	13	J	32.0	41.3	J	ug/L		88	36 - 120	13	24
Di-n-octyl phthalate	ND		32.0	28.8	J	ug/L		90	16 - 150	4	16
Naphthalene	ND		32.0	30.2	J	ug/L		94	45 - 120	17	29
Phenol	ND		32.0	18.8	J	ug/L		59	16 - 120	13	34

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Nitrobenzene-d5	*75*		*46 - 120*
2-Fluorobiphenyl	*93*		*48 - 120*
p-Terphenyl-d14	*108*		*60 - 148*
Phenol-d5	*44*		*22 - 120*
2-Fluorophenol	*60*		*35 - 120*
2,4,6-Tribromophenol	*95*		*41 - 120*

QC Association Summary

Client: GHD Services Inc.
Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-197311-1

GC/MS VOA

Analysis Batch: 624351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197311-1	WG-7987-042822-SG-001	Total/NA	Water	8260C	
480-197311-2	WG-7987-042822-SG-002	Total/NA	Water	8260C	
480-197311-3	WG-7987-042822-SG-003	Total/NA	Water	8260C	
480-197311-4	WG-7987-042822-SG-004	Total/NA	Water	8260C	
480-197311-5	WG-7987-042822-SG-005	Total/NA	Water	8260C	
480-197311-6	WG-7987-042822-SG-006	Total/NA	Water	8260C	
480-197311-7	WG-7987-042822-SG-007	Total/NA	Water	8260C	
480-197311-8	WG-7987-042822-SG-008	Total/NA	Water	8260C	
480-197311-9	WG-7987-042822-SG-009	Total/NA	Water	8260C	
480-197311-10	WG-7987-042822-SG-010	Total/NA	Water	8260C	
480-197311-11	WG-7987-042822-SG-011	Total/NA	Water	8260C	
480-197311-12	WG-7987-042822-SG-012	Total/NA	Water	8260C	
480-197311-13	WG-7987-042822-SG-013	Total/NA	Water	8260C	
480-197311-14	TB-7987-042822-SG	Total/NA	Water	8260C	
MB 480-624351/8	Method Blank	Total/NA	Water	8260C	
LCS 480-624351/6	Lab Control Sample	Total/NA	Water	8260C	
480-197311-5 MS	WG-7987-042822-SG-005	Total/NA	Water	8260C	
480-197311-5 MSD	WG-7987-042822-SG-005	Total/NA	Water	8260C	

GC/MS Semi VOA

Prep Batch: 623953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197311-1	WG-7987-042822-SG-001	Total/NA	Water	3510C	
480-197311-1 - DL	WG-7987-042822-SG-001	Total/NA	Water	3510C	
480-197311-2	WG-7987-042822-SG-002	Total/NA	Water	3510C	
480-197311-3	WG-7987-042822-SG-003	Total/NA	Water	3510C	
480-197311-4	WG-7987-042822-SG-004	Total/NA	Water	3510C	
480-197311-5	WG-7987-042822-SG-005	Total/NA	Water	3510C	
480-197311-6	WG-7987-042822-SG-006	Total/NA	Water	3510C	
480-197311-7	WG-7987-042822-SG-007	Total/NA	Water	3510C	
480-197311-8	WG-7987-042822-SG-008	Total/NA	Water	3510C	
480-197311-9	WG-7987-042822-SG-009	Total/NA	Water	3510C	
480-197311-10	WG-7987-042822-SG-010	Total/NA	Water	3510C	
480-197311-11	WG-7987-042822-SG-011	Total/NA	Water	3510C	
480-197311-12	WG-7987-042822-SG-012	Total/NA	Water	3510C	
480-197311-13	WG-7987-042822-SG-013	Total/NA	Water	3510C	
MB 480-623953/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-623953/2-A	Lab Control Sample	Total/NA	Water	3510C	
480-197311-5 MS	WG-7987-042822-SG-005	Total/NA	Water	3510C	
480-197311-5 MSD	WG-7987-042822-SG-005	Total/NA	Water	3510C	

Analysis Batch: 624152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197311-1	WG-7987-042822-SG-001	Total/NA	Water	8270D	623953
480-197311-2	WG-7987-042822-SG-002	Total/NA	Water	8270D	623953
480-197311-3	WG-7987-042822-SG-003	Total/NA	Water	8270D	623953
480-197311-4	WG-7987-042822-SG-004	Total/NA	Water	8270D	623953
480-197311-5	WG-7987-042822-SG-005	Total/NA	Water	8270D	623953
480-197311-6	WG-7987-042822-SG-006	Total/NA	Water	8270D	623953
480-197311-7	WG-7987-042822-SG-007	Total/NA	Water	8270D	623953

GC/MS Semi VOA (Continued)

Analysis Batch: 624152 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197311-8	WG-7987-042822-SG-008	Total/NA	Water	8270D	623953
480-197311-9	WG-7987-042822-SG-009	Total/NA	Water	8270D	623953
480-197311-10	WG-7987-042822-SG-010	Total/NA	Water	8270D	623953
480-197311-11	WG-7987-042822-SG-011	Total/NA	Water	8270D	623953
480-197311-12	WG-7987-042822-SG-012	Total/NA	Water	8270D	623953
480-197311-13	WG-7987-042822-SG-013	Total/NA	Water	8270D	623953
MB 480-623953/1-A	Method Blank	Total/NA	Water	8270D	623953
LCS 480-623953/2-A	Lab Control Sample	Total/NA	Water	8270D	623953
480-197311-5 MS	WG-7987-042822-SG-005	Total/NA	Water	8270D	623953
480-197311-5 MSD	WG-7987-042822-SG-005	Total/NA	Water	8270D	623953

Analysis Batch: 624344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197311-1 - DL	WG-7987-042822-SG-001	Total/NA	Water	8270D	623953

Lab Chronicle

Client: GHD Services Inc.
Job ID: 480-197311-1
Project/Site: 7987, Gratwick Riverside Park

Client Sample ID: WG-7987-042822-SG-001
Lab Sample ID: 480-197311-1
Date Collected: 04/28/22 08:10
Matrix: Water
Date Received: 04/28/22 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		4	624351	05/04/22 02:20	CR	TAL BUF
Total/NA	Prep	3510C			623953	04/30/22 08:36	CMC	TAL BUF
Total/NA	Analysis	8270D		1	624152	05/02/22 17:35	PJQ	TAL BUF
Total/NA	Prep	3510C	DL		623953	04/30/22 08:36	CMC	TAL BUF
Total/NA	Analysis	8270D	DL	10	624344	05/03/22 15:42	PJQ	TAL BUF

Client Sample ID: WG-7987-042822-SG-002
Lab Sample ID: 480-197311-2
Date Collected: 04/28/22 09:55
Matrix: Water
Date Received: 04/28/22 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	624351	05/04/22 02:43	CR	TAL BUF
Total/NA	Prep	3510C			623953	04/30/22 08:36	CMC	TAL BUF
Total/NA	Analysis	8270D		1	624152	05/02/22 18:02	PJQ	TAL BUF

Client Sample ID: WG-7987-042822-SG-003
Lab Sample ID: 480-197311-3
Date Collected: 04/28/22 10:40
Matrix: Water
Date Received: 04/28/22 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	624351	05/04/22 03:06	CR	TAL BUF
Total/NA	Prep	3510C			623953	04/30/22 08:36	CMC	TAL BUF
Total/NA	Analysis	8270D		1	624152	05/02/22 18:30	PJQ	TAL BUF

Client Sample ID: WG-7987-042822-SG-004
Lab Sample ID: 480-197311-4
Date Collected: 04/28/22 10:40
Matrix: Water
Date Received: 04/28/22 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	624351	05/04/22 03:30	CR	TAL BUF
Total/NA	Prep	3510C			623953	04/30/22 08:36	CMC	TAL BUF
Total/NA	Analysis	8270D		1	624152	05/02/22 18:57	PJQ	TAL BUF

Client Sample ID: WG-7987-042822-SG-005
Lab Sample ID: 480-197311-5
Date Collected: 04/28/22 11:40
Matrix: Water
Date Received: 04/28/22 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		4	624351	05/04/22 03:53	CR	TAL BUF
Total/NA	Prep	3510C			623953	04/30/22 08:36	CMC	TAL BUF
Total/NA	Analysis	8270D		5	624152	05/02/22 16:40	PJQ	TAL BUF

Client Sample ID: WG-7987-042822-SG-006
Lab Sample ID: 480-197311-6
Date Collected: 04/28/22 12:15
Matrix: Water
Date Received: 04/28/22 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	624351	05/04/22 04:16	CR	TAL BUF
Total/NA	Prep	3510C			623953	04/30/22 08:36	CMC	TAL BUF
Total/NA	Analysis	8270D		10	624152	05/02/22 19:25	PJQ	TAL BUF

Client Sample ID: WG-7987-042822-SG-007
Lab Sample ID: 480-197311-7
Date Collected: 04/28/22 12:40
Matrix: Water
Date Received: 04/28/22 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	624351	05/04/22 04:39	CR	TAL BUF
Total/NA	Prep	3510C			623953	04/30/22 08:36	CMC	TAL BUF
Total/NA	Analysis	8270D		1	624152	05/02/22 19:53	PJQ	TAL BUF

Client Sample ID: WG-7987-042822-SG-008
Lab Sample ID: 480-197311-8
Date Collected: 04/28/22 12:55
Matrix: Water
Date Received: 04/28/22 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	624351	05/04/22 05:02	CR	TAL BUF
Total/NA	Prep	3510C			623953	04/30/22 08:36	CMC	TAL BUF
Total/NA	Analysis	8270D		1	624152	05/02/22 20:20	PJQ	TAL BUF

Client Sample ID: WG-7987-042822-SG-009
Lab Sample ID: 480-197311-9
Date Collected: 04/28/22 13:05
Matrix: Water
Date Received: 04/28/22 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	624351	05/04/22 05:25	CR	TAL BUF
Total/NA	Prep	3510C			623953	04/30/22 08:36	CMC	TAL BUF
Total/NA	Analysis	8270D		1	624152	05/02/22 20:48	PJQ	TAL BUF

Client Sample ID: WG-7987-042822-SG-010
Lab Sample ID: 480-197311-10
Date Collected: 04/28/22 13:40
Matrix: Water
Date Received: 04/28/22 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		2	624351	05/04/22 05:48	CR	TAL BUF
Total/NA	Prep	3510C			623953	04/30/22 08:36	CMC	TAL BUF
Total/NA	Analysis	8270D		1	624152	05/02/22 21:15	PJQ	TAL BUF

Client Sample ID: WG-7987-042822-SG-011
Lab Sample ID: 480-197311-11
Date Collected: 04/28/22 13:55
Matrix: Water
Date Received: 04/28/22 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	624351	05/04/22 06:11	CR	TAL BUF

Lab Chronicle

Client: GHD Services Inc.
Job ID: 480-197311-1
Project/Site: 7987, Gratwick Riverside Park

Client Sample ID: WG-7987-042822-SG-011
Lab Sample ID: 480-197311-11
Date Collected: 04/28/22 13:55
Matrix: Water
Date Received: 04/28/22 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			623953	04/30/22 08:36	CMC	TAL BUF
Total/NA	Analysis	8270D		20	624152	05/02/22 21:43	PJQ	TAL BUF

Client Sample ID: WG-7987-042822-SG-012
Lab Sample ID: 480-197311-12
Date Collected: 04/28/22 14:25
Matrix: Water
Date Received: 04/28/22 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		2	624351	05/04/22 06:34	CR	TAL BUF
Total/NA	Prep	3510C			623953	04/30/22 08:36	CMC	TAL BUF
Total/NA	Analysis	8270D		20	624152	05/02/22 22:11	PJQ	TAL BUF

Client Sample ID: WG-7987-042822-SG-013
Lab Sample ID: 480-197311-13
Date Collected: 04/28/22 14:45
Matrix: Water
Date Received: 04/28/22 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	624351	05/04/22 06:57	CR	TAL BUF
Total/NA	Prep	3510C			623953	04/30/22 08:36	CMC	TAL BUF
Total/NA	Analysis	8270D		1	624152	05/02/22 22:39	PJQ	TAL BUF

Client Sample ID: TB-7987-042822-SG
Lab Sample ID: 480-197311-14
Date Collected: 04/28/22 00:00
Matrix: Water
Date Received: 04/28/22 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	624351	05/04/22 07:21	CR	TAL BUF

Laboratory References:

TAL BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: GHD Services Inc.
Job ID: 480-197311-1
Project/Site: 7987, Gratwick Riverside Park

Laboratory: Eurofins Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-23

Method Summary

Client: GHD Services Inc.
Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-197311-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL BUF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF
5030C	Purge and Trap	SW846	TAL BUF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: GHD Services Inc.
Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-197311-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-197311-1	WG-7987-042822-SG-001	Water	04/28/22 08:10	04/28/22 15:30
480-197311-2	WG-7987-042822-SG-002	Water	04/28/22 09:55	04/28/22 15:30
480-197311-3	WG-7987-042822-SG-003	Water	04/28/22 10:40	04/28/22 15:30
480-197311-4	WG-7987-042822-SG-004	Water	04/28/22 10:40	04/28/22 15:30
480-197311-5	WG-7987-042822-SG-005	Water	04/28/22 11:40	04/28/22 15:30
480-197311-6	WG-7987-042822-SG-006	Water	04/28/22 12:15	04/28/22 15:30
480-197311-7	WG-7987-042822-SG-007	Water	04/28/22 12:40	04/28/22 15:30
480-197311-8	WG-7987-042822-SG-008	Water	04/28/22 12:55	04/28/22 15:30
480-197311-9	WG-7987-042822-SG-009	Water	04/28/22 13:05	04/28/22 15:30
480-197311-10	WG-7987-042822-SG-010	Water	04/28/22 13:40	04/28/22 15:30
480-197311-11	WG-7987-042822-SG-011	Water	04/28/22 13:55	04/28/22 15:30
480-197311-12	WG-7987-042822-SG-012	Water	04/28/22 14:25	04/28/22 15:30
480-197311-13	WG-7987-042822-SG-013	Water	04/28/22 14:45	04/28/22 15:30
480-197311-14	TB-7987-042822-SG	Water	04/28/22 00:00	04/28/22 15:30

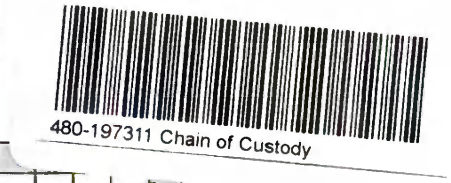
Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: S GARDNER, D TYRAN	Lab PM: Heckler, Denise D	Carrier Tracking No(s):	COC No: 480-172879-37391.1
Client Contact: Ms. Sue Scrocchi	Phone:	E-Mail: Denise.Heckler@et.eurofinsus.com	State of Origin: NY	Page: Page 1 of 2
Company: GHD Services Inc.	PWSID:	Analysis Requested		Job #: 7987
Address: 2055 Niagara Falls Blvd., Suite 3	Due Date Requested:			Preservation Codes:
City: Niagara Falls	TAT Requested (days): 10			A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitnc Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)
State, Zip: NY, 14304	Compliance Project: Δ Yes Δ No			
Phone: 716-206-0202(Tel) 716-206-0201(Fax)	PO #: Purchase Order Requested			
Email: sue.scrocchi@ghd.com	WO #: 7987			
Project Name: 7987, Gratwick Riverside Park	Project #: 48011970			
Site: GRATWICK PARK	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270D - Selected SVOAs	8260C - Selected VOAs	Total Containers
			Preservation Code:				N	A	
WG-7987-042822-SG-001	4/28/22	0810	G	Water	N	N	X	X	5
WG-7987-042822-SG-002	4/28/22	0955	G	Water	N	N	X	X	5
WG-7987-042822-SG-003	4/28/22	1040	G	Water	N	N	X	X	5
WG-7987-042822-SG-004	4/28/22	1040	G	Water	N	N	X	X	5
WG-7987-042822-SG-005	4/28/22	1140	G	Water	N	Y	X	X	15
WG-7987-042822-SG-006	4/28/22	1215	G	Water	N	N	X	X	5
WG-7987-042822-SG-007	4/28/22	1240	G	Water	N	N	X	X	5
WG-7987-042822-SG-008	4/28/22	1255	G	Water	N	N	X	X	5
WG-7987-042822-SG-009	4/28/22	1305	G	Water	N	N	X	X	5
WG-7987-042822-SG-010	4/28/22	1340	G	Water	N	N	X	X	5
WG-7987-042822-SG-011	4/28/22	1355	G	Water	N	N	X	X	5



Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
S Gardner	4/28/22 1530	GHD		4-28-22 15:30	TAB
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.7 2.9 ICE

Ver: 06/08/2021

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: S GARDNER, D TYRAN	Lab PM: Heckler, Denise D	Carrier Tracking No(s):	COC No: 480-172879-37391.2
Client Contact: Ms. Sue Scrocchi	Phone:	E-Mail: Denise.Heckler@et.eurofinsus.com	State of Origin: NY	Page: Page 2 of 2
Company: GHD Services Inc	PWSID:			Job #: 7987

Address: 2055 Niagara Falls Blvd., Suite 3	Due Date Requested:	
City: Niagara Falls	TAT Requested (days): 10	
State, Zip: NY, 14304	Compliance Project: Δ Yes Δ No	
Phone: 716-206-0202(Tel) 716-206-0201(Fax)	PO #: Purchase Order Requested	
Email: sue.scrocchi@ghd.com	WO #: 7987	
Project Name: 7987, Gratwick Riverside Park	Project #: 48011970	
Site: GRATWICK PARK	SSOW#:	

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270D - Selected SVOAs	8260C - Selected VOAs	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	A		
WG-7987-042822-SG-012	4/28/22	1425	G	Water	N	N	X	X	5	
WG-7987-042822-SG-013	4/28/22	1445	G	Water	N	N	X	X	5	
TB-7987-042822-SG	4/28/22		G	Water	N	N		X	2	
				Water						
				Water						
				Water						
				Water						

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4/28/22 1530	GHD	[signature]		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 480-197311-1

Login Number: 197311
List Number: 1
Creator: Yeager, Brian A

List Source: Eurofins Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GHD
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

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ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-190529-1
Client Project/Site: North Tonawanda - WWTP (GRP)

For:
N Tonawanda Water Works
830 River Road
North Tonawanda, New York 14120

Attn: Michael W Gibbons

Authorized for release by:
10/19/2021 3:49:21 PM
Wyatt Watson, Project Management Assistant I
Wyatt.Watson@Eurofinset.com

Designee for

Steve Hartmann, Project Manager I
(413)572-4000
Steve.Hartmann@Eurofinset.com

Table of Contents

Definitions/Glossary

Client: N Tonawanda Water Works
Job ID: 480-190529-1
Project/Site: North Tonawanda - WWTP (GRP)

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.

General Chemistry

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: N Tonawanda Water Works
Job ID: 480-190529-1
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-190529-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-190529-1

Comments
No additional comments.

Receipt
The samples were received on 10/6/2021 10:21 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.3º C.

GC/MS VOA
Method 624.1: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: GRP GRAB (480-190529-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 625.1: The following sample was diluted due to color and appearance: GRP COMP (480-190529-1). Elevated reporting limits (RL) are provided.

Method 625.1: The following sample required a dilution due to color and appearance: GRP COMP (480-190529-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method 625.1: The following sample required a dilution due to color and appearance: GRP COMP (480-190529-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 300.0: The following sample was diluted to bring the concentration of target analytes within the calibration range: GRP COMP (480-190529-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: N Tonawanda Water Works
Job ID: 480-190529-1
Project/Site: North Tonawanda - WWTP (GRP)

Client Sample ID: GRP COMP
Lab Sample ID: 480-190529-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.076		0.0020		mg/L	1		200.7 Rev 4.4	Total/NA
Copper	0.020		0.010		mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.38		0.050		mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	1.0		0.20		mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.013		0.0030		mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	194		1.0		mg/L	1		200.7 Rev 4.4	Total/NA
Zinc	0.021		0.010		mg/L	1		200.7 Rev 4.4	Total/NA
Chloride	283		1.4		mg/L	5		300.0	Total/NA
Sulfate	158		2.0		mg/L	5		300.0	Total/NA
Alkalinity, Total	78.5		5.0		mg/L	1		SM 2320B	Total/NA
Hardness as calcium carbonate	268		2.0		mg/L	1		SM 2340C	Total/NA
Total Dissolved Solids	827		10.0		mg/L	1		SM 2540C	Total/NA
Sulfide	5.6		1.0		mg/L	1		SM 4500 S2 F	Total/NA

Client Sample ID: GRP GRAB
Lab Sample ID: 480-190529-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	6.7		5.0		ug/L	4		624.1	Total/NA
Trichloroethene	8.0		5.0		ug/L	4		624.1	Total/NA
Cyanide, Total	0.019		0.010		mg/L	1		335.4	Total/NA
Total Kjeldahl Nitrogen	5.3		0.37		mg/L	2		351.2	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: GRP COMP
Date Collected: 10/06/21 08:00
Date Received: 10/06/21 10:21

Lab Sample ID: 480-190529-1
Matrix: Water

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		10		ug/L		10/07/21 14:55	10/12/21 19:26	20
1,4-Dichlorobenzene	ND		10		ug/L		10/07/21 14:55	10/12/21 19:26	20
2,4-Dimethylphenol	ND		7.0		ug/L		10/07/21 14:55	10/12/21 19:26	20
2-Methylphenol	ND		5.0		ug/L		10/07/21 14:55	10/12/21 19:26	20
4-Methylphenol	ND		5.0		ug/L		10/07/21 14:55	10/12/21 19:26	20
Di-n-octyl phthalate	ND		6.0		ug/L		10/07/21 14:55	10/12/21 19:26	20
Naphthalene	ND		5.0		ug/L		10/07/21 14:55	10/12/21 19:26	20
Phenol	ND		5.0		ug/L		10/07/21 14:55	10/12/21 19:26	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*0*	*S1-*	*52 - 151*	*10/07/21 14:55*	*10/12/21 19:26*	*20*
2-Fluorobiphenyl	*90*		*44 - 120*	*10/07/21 14:55*	*10/12/21 19:26*	*20*
2-Fluorophenol	*0*	*S1-*	*17 - 120*	*10/07/21 14:55*	*10/12/21 19:26*	*20*
Nitrobenzene-d5	*0*	*S1-*	*15 - 314*	*10/07/21 14:55*	*10/12/21 19:26*	*20*
p-Terphenyl-d14	*84*		*22 - 125*	*10/07/21 14:55*	*10/12/21 19:26*	*20*
Phenol-d5	*0*	*S1-*	*8 - 424*	*10/07/21 14:55*	*10/12/21 19:26*	*20*

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20		mg/L		10/08/21 09:25	10/08/21 16:22	1
Antimony	ND		0.020		mg/L		10/08/21 09:25	10/08/21 16:22	1
Arsenic	ND		0.015		mg/L		10/08/21 09:25	10/08/21 16:22	1
Barium	**0.076**		0.0020		mg/L		10/08/21 09:25	10/08/21 16:22	1
Beryllium	ND		0.0020		mg/L		10/08/21 09:25	10/08/21 16:22	1
Cadmium	ND		0.0020		mg/L		10/08/21 09:25	10/08/21 16:22	1
Chromium	ND		0.0040		mg/L		10/08/21 09:25	10/08/21 16:22	1
Copper	**0.020**		0.010		mg/L		10/08/21 09:25	10/08/21 16:22	1
Iron	**0.38**		0.050		mg/L		10/08/21 09:25	10/08/21 16:22	1
Lead	ND		0.010		mg/L		10/08/21 09:25	10/08/21 16:22	1
Magnesium	**1.0**		0.20		mg/L		10/08/21 09:25	10/08/21 16:22	1
Manganese	**0.013**		0.0030		mg/L		10/08/21 09:25	10/08/21 16:22	1
Nickel	ND		0.010		mg/L		10/08/21 09:25	10/08/21 16:22	1
Selenium	ND		0.025		mg/L		10/08/21 09:25	10/08/21 16:22	1
Silver	ND		0.0060		mg/L		10/08/21 09:25	10/08/21 16:22	1
Sodium	**194**		1.0		mg/L		10/08/21 09:25	10/08/21 16:22	1
Zinc	**0.021**		0.010		mg/L		10/08/21 09:25	10/08/21 16:22	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		10/08/21 14:00	10/08/21 17:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**283**		1.4		mg/L			10/12/21 18:46	5
Sulfate	**158**		2.0		mg/L			10/12/21 18:46	5
Nitrate as N	ND		0.050		mg/L			10/06/21 19:24	1
Alkalinity, Total	**78.5**		5.0		mg/L			10/07/21 13:57	1
Alkalinity, Bicarbonate	ND		5.0		mg/L			10/07/21 13:57	1
Hardness as calcium carbonate	**268**		2.0		mg/L			10/12/21 19:00	1
Total Dissolved Solids	**827**		10.0		mg/L			10/08/21 15:07	1

Client Sample ID: GRP COMP
Lab Sample ID: 480-190529-1
Date Collected: 10/06/21 08:00
Matrix: Water
Date Received: 10/06/21 10:21

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**5.6**		1.0		mg/L			10/11/21 17:30	1

Client Sample ID: GRP GRAB
Lab Sample ID: 480-190529-2
Date Collected: 10/06/21 08:07
Matrix: Water
Date Received: 10/06/21 10:21

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0		ug/L			10/06/21 19:32	4
1,1-Dichloroethane	ND		5.0		ug/L			10/06/21 19:32	4
1,2-Dichloroethane	ND		5.0		ug/L			10/06/21 19:32	4
2-Butanone (MEK)	ND		25		ug/L			10/06/21 19:32	4
Acetone	ND		25		ug/L			10/06/21 19:32	4
Benzene	ND		5.0		ug/L			10/06/21 19:32	4
Chlorobenzene	ND		5.0		ug/L			10/06/21 19:32	4
Ethylbenzene	ND		5.0		ug/L			10/06/21 19:32	4
Methylene Chloride	ND		5.0		ug/L			10/06/21 19:32	4
Styrene	ND		5.0		ug/L			10/06/21 19:32	4
Tetrachloroethene	ND		5.0		ug/L			10/06/21 19:32	4
Toluene	**6.7**		5.0		ug/L			10/06/21 19:32	4
trans-1,2-Dichloroethene	ND		5.0		ug/L			10/06/21 19:32	4
Trichloroethene	**8.0**		5.0		ug/L			10/06/21 19:32	4
Vinyl chloride	ND		5.0		ug/L			10/06/21 19:32	4
Xylenes, Total	ND		10		ug/L			10/06/21 19:32	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*68 - 130*		*10/06/21 19:32*	*4*
4-Bromofluorobenzene (Surr)	*100*		*76 - 123*		*10/06/21 19:32*	*4*
Dibromofluoromethane (Surr)	*100*		*75 - 123*		*10/06/21 19:32*	*4*
Toluene-d8 (Surr)	*103*		*77 - 120*		*10/06/21 19:32*	*4*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**0.019**		0.010		mg/L		10/07/21 10:29	10/07/21 14:00	1
Total Kjeldahl Nitrogen	**5.3**		0.37		mg/L		10/07/21 10:55	10/08/21 08:00	2

Surrogate Summary

Client: N Tonawanda Water Works
Job ID: 480-190529-1
Project/Site: North Tonawanda - WWTP (GRP)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(68-130)	(76-123)	(75-123)	(77-120)
480-190529-2	GRP GRAB	99	100	100	103
LCS 480-599192/5	Lab Control Sample	102	99	103	103
MB 480-599192/7	Method Blank	103	99	104	103

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	TPHd14	PHL
Lab Sample ID	Client Sample ID	(52-151)	(44-120)	(17-120)	(15-314)	(22-125)	(8-424)
480-190529-1	GRP COMP	0 S1-	90	0 S1-	0 S1-	84	0 S1-
LCS 480-599507/2-A	Lab Control Sample	102	92	45	89	98	31
LCSD 480-599507/3-A	Lab Control Sample Dup	99	93	47	90	101	33
MB 480-599507/1-A	Method Blank	84	104	50	104	114	34

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
TPHd14 = p-Terphenyl-d14
PHL = Phenol-d5

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-599192/7
Matrix: Water
Analysis Batch: 599192

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0		ug/L			10/06/21 12:12	1
1,1-Dichloroethane	ND		5.0		ug/L			10/06/21 12:12	1
1,2-Dichloroethane	ND		5.0		ug/L			10/06/21 12:12	1
2-Butanone (MEK)	ND		25		ug/L			10/06/21 12:12	1
Acetone	ND		25		ug/L			10/06/21 12:12	1
Benzene	ND		5.0		ug/L			10/06/21 12:12	1
Chlorobenzene	ND		5.0		ug/L			10/06/21 12:12	1
Ethylbenzene	ND		5.0		ug/L			10/06/21 12:12	1
Methylene Chloride	ND		5.0		ug/L			10/06/21 12:12	1
Styrene	ND		5.0		ug/L			10/06/21 12:12	1
Tetrachloroethene	ND		5.0		ug/L			10/06/21 12:12	1
Toluene	ND		5.0		ug/L			10/06/21 12:12	1
trans-1,2-Dichloroethene	ND		5.0		ug/L			10/06/21 12:12	1
Trichloroethene	ND		5.0		ug/L			10/06/21 12:12	1
Vinyl chloride	ND		5.0		ug/L			10/06/21 12:12	1
Xylenes, Total	ND		10		ug/L			10/06/21 12:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*68 - 130*		*10/06/21 12:12*	*1*
4-Bromofluorobenzene (Surr)	*99*		*76 - 123*		*10/06/21 12:12*	*1*
Dibromofluoromethane (Surr)	*104*		*75 - 123*		*10/06/21 12:12*	*1*
Toluene-d8 (Surr)	*103*		*77 - 120*		*10/06/21 12:12*	*1*

Lab Sample ID: LCS 480-599192/5
Matrix: Water
Analysis Batch: 599192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	21.9		ug/L		110	52 - 162
1,1-Dichloroethane	20.0	23.0		ug/L		115	59 - 155
1,2-Dichloroethane	20.0	20.4		ug/L		102	49 - 155
Benzene	20.0	21.9		ug/L		109	37 - 151
Chlorobenzene	20.0	21.0		ug/L		105	37 - 160
Ethylbenzene	20.0	21.7		ug/L		109	37 - 162
Methylene Chloride	20.0	23.7		ug/L		118	1 - 221
Tetrachloroethene	20.0	20.1		ug/L		101	64 - 148
Toluene	20.0	21.5		ug/L		107	47 - 150
trans-1,2-Dichloroethene	20.0	22.6		ug/L		113	54 - 156
Trichloroethene	20.0	20.3		ug/L		102	71 - 157
Vinyl chloride	20.0	19.2		ug/L		96	1 - 251

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*68 - 130*
4-Bromofluorobenzene (Surr)	*99*		*76 - 123*
Dibromofluoromethane (Surr)	*103*		*75 - 123*
Toluene-d8 (Surr)	*103*		*77 - 120*

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-599507/1-A
Matrix: Water
Analysis Batch: 600064

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 599507

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		10		ug/L		10/07/21 14:55	10/12/21 18:15	1
1,4-Dichlorobenzene	ND		10		ug/L		10/07/21 14:55	10/12/21 18:15	1
2,4-Dimethylphenol	ND		5.0		ug/L		10/07/21 14:55	10/12/21 18:15	1
2-Methylphenol	ND		5.0		ug/L		10/07/21 14:55	10/12/21 18:15	1
4-Methylphenol	ND		5.0		ug/L		10/07/21 14:55	10/12/21 18:15	1
Di-n-octyl phthalate	ND		5.0		ug/L		10/07/21 14:55	10/12/21 18:15	1
Naphthalene	ND		5.0		ug/L		10/07/21 14:55	10/12/21 18:15	1
Phenol	ND		5.0		ug/L		10/07/21 14:55	10/12/21 18:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*84*		*52 - 151*	*10/07/21 14:55*	*10/12/21 18:15*	*1*
2-Fluorobiphenyl	*104*		*44 - 120*	*10/07/21 14:55*	*10/12/21 18:15*	*1*
2-Fluorophenol	*50*		*17 - 120*	*10/07/21 14:55*	*10/12/21 18:15*	*1*
Nitrobenzene-d5	*104*		*15 - 314*	*10/07/21 14:55*	*10/12/21 18:15*	*1*
p-Terphenyl-d14	*114*		*22 - 125*	*10/07/21 14:55*	*10/12/21 18:15*	*1*
Phenol-d5	*34*		*8 - 424*	*10/07/21 14:55*	*10/12/21 18:15*	*1*

Lab Sample ID: LCS 480-599507/2-A
Matrix: Water
Analysis Batch: 600064

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 599507

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dichlorobenzene			50.0	39.5		ug/L		79	32 - 129		
1,4-Dichlorobenzene			50.0	37.7		ug/L		75	20 - 124		
2,4-Dimethylphenol			50.0	48.9		ug/L		98	32 - 120		
2-Methylphenol			50.0	38.4		ug/L		77	45 - 120		
4-Methylphenol			50.0	36.4		ug/L		73	48 - 120		
Di-n-octyl phthalate			50.0	53.8		ug/L		108	4 - 146		
Naphthalene			50.0	45.0		ug/L		90	21 - 133		
Phenol			50.0	15.9		ug/L		32	5 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*102*		*52 - 151*
2-Fluorobiphenyl	*92*		*44 - 120*
2-Fluorophenol	*45*		*17 - 120*
Nitrobenzene-d5	*89*		*15 - 314*
p-Terphenyl-d14	*98*		*22 - 125*
Phenol-d5	*31*		*8 - 424*

Lab Sample ID: LCSD 480-599507/3-A
Matrix: Water
Analysis Batch: 600064

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 599507

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichlorobenzene			50.0	38.1		ug/L		76	32 - 129	4	38
1,4-Dichlorobenzene			50.0	37.2		ug/L		74	20 - 124	1	40
2,4-Dimethylphenol			50.0	48.9		ug/L		98	32 - 120	0	18
2-Methylphenol			50.0	38.8		ug/L		78	45 - 120	1	30

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 480-599507/3-A
Matrix: Water
Analysis Batch: 600064

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 599507

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Methylphenol			50.0	34.7		ug/L		69	48 - 120	5	30
Di-n-octyl phthalate			50.0	55.3		ug/L		111	4 - 146	3	15
Naphthalene			50.0	44.7		ug/L		89	21 - 133	1	31
Phenol			50.0	16.2		ug/L		32	5 - 120	2	36

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol	*99*		*52 - 151*
2-Fluorobiphenyl	*93*		*44 - 120*
2-Fluorophenol	*47*		*17 - 120*
Nitrobenzene-d5	*90*		*15 - 314*
p-Terphenyl-d14	*101*		*22 - 125*
Phenol-d5	*33*		*8 - 424*

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 480-599485/1-A
Matrix: Water
Analysis Batch: 599835

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 599485

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20		mg/L		10/08/21 09:25	10/08/21 15:15	1
Antimony	ND		0.020		mg/L		10/08/21 09:25	10/08/21 15:15	1
Arsenic	ND		0.015		mg/L		10/08/21 09:25	10/08/21 15:15	1
Barium	ND		0.0020		mg/L		10/08/21 09:25	10/08/21 15:15	1
Beryllium	ND		0.0020		mg/L		10/08/21 09:25	10/08/21 15:15	1
Cadmium	ND		0.0020		mg/L		10/08/21 09:25	10/08/21 15:15	1
Chromium	ND		0.0040		mg/L		10/08/21 09:25	10/08/21 15:15	1
Copper	ND		0.010		mg/L		10/08/21 09:25	10/08/21 15:15	1
Lead	ND		0.010		mg/L		10/08/21 09:25	10/08/21 15:15	1
Magnesium	ND		0.20		mg/L		10/08/21 09:25	10/08/21 15:15	1
Manganese	ND		0.0030		mg/L		10/08/21 09:25	10/08/21 15:15	1
Nickel	ND		0.010		mg/L		10/08/21 09:25	10/08/21 15:15	1
Selenium	ND		0.025		mg/L		10/08/21 09:25	10/08/21 15:15	1
Silver	ND		0.0060		mg/L		10/08/21 09:25	10/08/21 15:15	1
Sodium	ND		1.0		mg/L		10/08/21 09:25	10/08/21 15:15	1
Zinc	ND		0.010		mg/L		10/08/21 09:25	10/08/21 15:15	1

Lab Sample ID: MB 480-599485/1-A
Matrix: Water
Analysis Batch: 600027

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 599485

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.050		mg/L		10/08/21 09:25	10/11/21 15:51	1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 480-599485/2-A
Matrix: Water
Analysis Batch: 599835

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 599485

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	10.0	10.40		mg/L		104	85 - 115
Antimony	0.200	0.212		mg/L		106	85 - 115
Arsenic	0.200	0.209		mg/L		104	85 - 115
Barium	0.200	0.221		mg/L		110	85 - 115
Beryllium	0.200	0.221		mg/L		110	85 - 115
Cadmium	0.200	0.202		mg/L		101	85 - 115
Chromium	0.200	0.202		mg/L		101	85 - 115
Copper	0.200	0.205		mg/L		102	85 - 115
Lead	0.200	0.203		mg/L		102	85 - 115
Magnesium	10.0	10.05		mg/L		101	85 - 115
Manganese	0.200	0.205		mg/L		103	85 - 115
Nickel	0.200	0.198		mg/L		99	85 - 115
Selenium	0.200	0.200		mg/L		100	85 - 115
Silver	0.0500	0.0493		mg/L		99	85 - 115
Sodium	10.0	10.39		mg/L		104	85 - 115
Zinc	0.200	0.211		mg/L		106	85 - 115

Lab Sample ID: LCS 480-599485/2-A
Matrix: Water
Analysis Batch: 600027

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 599485

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	10.0	10.55		mg/L		105	85 - 115

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 480-599650/1-A
Matrix: Water
Analysis Batch: 599691

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 599650

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		10/08/21 14:00	10/08/21 16:38	1

Lab Sample ID: LCS 480-599650/2-A
Matrix: Water
Analysis Batch: 599691

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 599650

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00667	0.00697		mg/L		104	85 - 115

Lab Sample ID: LCSD 480-599650/3-A
Matrix: Water
Analysis Batch: 599691

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 599650

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.00667	0.00692		mg/L		104	85 - 115	1	20

QC Sample Results

Client: N Tonawanda Water Works
Job ID: 480-190529-1
Project/Site: North Tonawanda - WWTP (GRP)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 480-600050/4
Matrix: Water
Analysis Batch: 600050

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			10/12/21 13:13	1
Sulfate	ND		2.0		mg/L			10/12/21 13:13	1

Lab Sample ID: LCS 480-600050/3
Matrix: Water
Analysis Batch: 600050

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.75		mg/L		101	90 - 110
Sulfate	50.0	50.88		mg/L		102	90 - 110

Method: 335.4 - Cyanide, Total

Lab Sample ID: MB 480-599427/1-A
Matrix: Water
Analysis Batch: 599488

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 599427

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.010		mg/L		10/07/21 10:29	10/07/21 13:26	1

Lab Sample ID: LCS 480-599427/2-A
Matrix: Water
Analysis Batch: 599488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 599427

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.400	0.410		mg/L		103	90 - 110

Lab Sample ID: LCS 480-599427/3-A
Matrix: Water
Analysis Batch: 599488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 599427

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.250	0.262		mg/L		105	90 - 110

Lab Sample ID: 480-190529-2 MS
Matrix: Water
Analysis Batch: 599488

Client Sample ID: GRP GRAB
Prep Type: Total/NA
Prep Batch: 599427

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.019		0.100	0.110		mg/L		91	90 - 110

Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 480-599439/1-A
Matrix: Water
Analysis Batch: 599580

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 599439

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	ND		0.20		mg/L		10/07/21 10:55	10/08/21 07:14	1

Method: 351.2 - Nitrogen, Total Kjeldahl (Continued)

Lab Sample ID: LCS 480-599439/2-A
Matrix: Water
Analysis Batch: 599580

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 599439

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	2.50	2.55		mg/L		102	90 - 110

Lab Sample ID: 480-190529-2 MS
Matrix: Water
Analysis Batch: 599580

Client Sample ID: GRP GRAB
Prep Type: Total/NA
Prep Batch: 599439

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	5.3		1.00	6.15	4	mg/L		90	90 - 110

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 480-599500/3
Matrix: Water
Analysis Batch: 599500

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	ND		5.0		mg/L			10/07/21 11:40	1
Alkalinity, Bicarbonate	ND		5.0		mg/L			10/07/21 11:40	1

Lab Sample ID: LCS 480-599500/4
Matrix: Water
Analysis Batch: 599500

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	100	95.28		mg/L		95	90 - 110

Method: SM 2340C - Hardness, Total (mg/l as CaC03)

Lab Sample ID: MB 480-600172/3
Matrix: Water
Analysis Batch: 600172

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	ND		2.0		mg/L			10/12/21 19:00	1

Lab Sample ID: LCS 480-600172/4
Matrix: Water
Analysis Batch: 600172

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hardness as calcium carbonate	193	196.0		mg/L		102	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-599678/1
Matrix: Water
Analysis Batch: 599678

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			10/08/21 15:07	1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 480-599678/2
Matrix: Water
Analysis Batch: 599678

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			502	506.0		mg/L		101	85 - 115		

Method: SM 4500 S2 F - Sulfide, Total

Lab Sample ID: MB 480-599942/3
Matrix: Water
Analysis Batch: 599942

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		1.0		mg/L			10/11/21 17:30	1

Lab Sample ID: LCS 480-599942/4
Matrix: Water
Analysis Batch: 599942

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide			8.20	8.00		mg/L		98	90 - 110		

QC Association Summary

Client: N Tonawanda Water Works
Job ID: 480-190529-1
Project/Site: North Tonawanda - WWTP (GRP)

GC/MS VOA

Analysis Batch: 599192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-190529-2	GRP GRAB	Total/NA	Water	624.1	
MB 480-599192/7	Method Blank	Total/NA	Water	624.1	
LCS 480-599192/5	Lab Control Sample	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 599507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-190529-1	GRP COMP	Total/NA	Water	625	
MB 480-599507/1-A	Method Blank	Total/NA	Water	625	
LCS 480-599507/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 480-599507/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 600064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-190529-1	GRP COMP	Total/NA	Water	625.1	599507
MB 480-599507/1-A	Method Blank	Total/NA	Water	625.1	599507
LCS 480-599507/2-A	Lab Control Sample	Total/NA	Water	625.1	599507
LCSD 480-599507/3-A	Lab Control Sample Dup	Total/NA	Water	625.1	599507

Metals

Prep Batch: 599485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-190529-1	GRP COMP	Total/NA	Water	200.7	
MB 480-599485/1-A	Method Blank	Total/NA	Water	200.7	
LCS 480-599485/2-A	Lab Control Sample	Total/NA	Water	200.7	

Prep Batch: 599650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-190529-1	GRP COMP	Total/NA	Water	245.1	
MB 480-599650/1-A	Method Blank	Total/NA	Water	245.1	
LCS 480-599650/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 480-599650/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	

Analysis Batch: 599691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-190529-1	GRP COMP	Total/NA	Water	245.1	599650
MB 480-599650/1-A	Method Blank	Total/NA	Water	245.1	599650
LCS 480-599650/2-A	Lab Control Sample	Total/NA	Water	245.1	599650
LCSD 480-599650/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	599650

Analysis Batch: 599835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-190529-1	GRP COMP	Total/NA	Water	200.7 Rev 4.4	599485
MB 480-599485/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	599485
LCS 480-599485/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	599485

Analysis Batch: 600027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-599485/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	599485
LCS 480-599485/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	599485

QC Association Summary

Client: N Tonawanda Water Works
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-190529-1

General Chemistry

Analysis Batch: 599351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-190529-1	GRP COMP	Total/NA	Water	353.2	

Prep Batch: 599427

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-190529-2	GRP GRAB	Total/NA	Water	Distill/CN	
MB 480-599427/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 480-599427/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
LCS 480-599427/3-A	Lab Control Sample	Total/NA	Water	Distill/CN	
480-190529-2 MS	GRP GRAB	Total/NA	Water	Distill/CN	

Prep Batch: 599439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-190529-2	GRP GRAB	Total/NA	Water	351.2	
MB 480-599439/1-A	Method Blank	Total/NA	Water	351.2	
LCS 480-599439/2-A	Lab Control Sample	Total/NA	Water	351.2	
480-190529-2 MS	GRP GRAB	Total/NA	Water	351.2	

Analysis Batch: 599488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-190529-2	GRP GRAB	Total/NA	Water	335.4	599427
MB 480-599427/1-A	Method Blank	Total/NA	Water	335.4	599427
LCS 480-599427/2-A	Lab Control Sample	Total/NA	Water	335.4	599427
LCS 480-599427/3-A	Lab Control Sample	Total/NA	Water	335.4	599427
480-190529-2 MS	GRP GRAB	Total/NA	Water	335.4	599427

Analysis Batch: 599500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-190529-1	GRP COMP	Total/NA	Water	SM 2320B	
MB 480-599500/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-599500/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 599580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-190529-2	GRP GRAB	Total/NA	Water	351.2	599439
MB 480-599439/1-A	Method Blank	Total/NA	Water	351.2	599439
LCS 480-599439/2-A	Lab Control Sample	Total/NA	Water	351.2	599439
480-190529-2 MS	GRP GRAB	Total/NA	Water	351.2	599439

Analysis Batch: 599678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-190529-1	GRP COMP	Total/NA	Water	SM 2540C	
MB 480-599678/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-599678/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 599942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-190529-1	GRP COMP	Total/NA	Water	SM 4500 S2 F	
MB 480-599942/3	Method Blank	Total/NA	Water	SM 4500 S2 F	
LCS 480-599942/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 F	

QC Association Summary

Client: N Tonawanda Water Works
Job ID: 480-190529-1
Project/Site: North Tonawanda - WWTP (GRP)

General Chemistry

Analysis Batch: 600050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-190529-1	GRP COMP	Total/NA	Water	300.0	
MB 480-600050/4	Method Blank	Total/NA	Water	300.0	
LCS 480-600050/3	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 600172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-190529-1	GRP COMP	Total/NA	Water	SM 2340C	
MB 480-600172/3	Method Blank	Total/NA	Water	SM 2340C	
LCS 480-600172/4	Lab Control Sample	Total/NA	Water	SM 2340C	

Lab Chronicle

Client: N Tonawanda Water Works
Job ID: 480-190529-1
Project/Site: North Tonawanda - WWTP (GRP)

Client Sample ID: GRP COMP
Lab Sample ID: 480-190529-1
Date Collected: 10/06/21 08:00
Matrix: Water
Date Received: 10/06/21 10:21

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			599507	10/07/21 14:55	CMC	TAL BUF
Total/NA	Analysis	625.1		20	600064	10/12/21 19:26	PJQ	TAL BUF
Total/NA	Prep	200.7			599485	10/08/21 09:25	KMP	TAL BUF
Total/NA	Analysis	200.7 Rev 4.4		1	599835	10/08/21 16:22	AMH	TAL BUF
Total/NA	Prep	245.1			599650	10/08/21 14:00	BMB	TAL BUF
Total/NA	Analysis	245.1		1	599691	10/08/21 17:13	BMB	TAL BUF
Total/NA	Analysis	300.0		5	600050	10/12/21 18:46	IMZ	TAL BUF
Total/NA	Analysis	353.2		1	599351	10/06/21 19:24	SRA	TAL BUF
Total/NA	Analysis	SM 2320B		1	599500	10/07/21 13:57	KEB	TAL BUF
Total/NA	Analysis	SM 2340C		1	600172	10/12/21 19:00	MJB	TAL BUF
Total/NA	Analysis	SM 2540C		1	599678	10/08/21 15:07	CSS	TAL BUF
Total/NA	Analysis	SM 4500 S2 F		1	599942	10/11/21 17:30	MJB	TAL BUF

Client Sample ID: GRP GRAB
Lab Sample ID: 480-190529-2
Date Collected: 10/06/21 08:07
Matrix: Water
Date Received: 10/06/21 10:21

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		4	599192	10/06/21 19:32	ATG	TAL BUF
Total/NA	Prep	Distill/CN			599427	10/07/21 10:29	JGO	TAL BUF
Total/NA	Analysis	335.4		1	599488	10/07/21 14:00	SRA	TAL BUF
Total/NA	Prep	351.2			599439	10/07/21 10:55	KEB	TAL BUF
Total/NA	Analysis	351.2		2	599580	10/08/21 08:00	CLT	TAL BUF

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: N Tonawanda Water Works
Job ID: 480-190529-1
Project/Site: North Tonawanda - WWTP (GRP)

Laboratory: Eurofins TestAmerica, Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	04-01-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
624.1		Water	2-Butanone (MEK)
625.1	625	Water	1,2-Dichlorobenzene
625.1	625	Water	1,4-Dichlorobenzene
625.1	625	Water	2-Methylphenol

Method Summary

Client: N Tonawanda Water Works
Job ID: 480-190529-1
Project/Site: North Tonawanda - WWTP (GRP)

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL BUF
625.1	Semivolatile Organic Compounds (GC/MS)	40CFR136A	TAL BUF
200.7 Rev 4.4	Metals (ICP)	EPA	TAL BUF
245.1	Mercury (CVAA)	EPA	TAL BUF
300.0	Anions, Ion Chromatography	MCAWW	TAL BUF
335.4	Cyanide, Total	MCAWW	TAL BUF
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL BUF
353.2	Nitrate	EPA	TAL BUF
SM 2320B	Alkalinity	SM	TAL BUF
SM 2340C	Hardness, Total (mg/l as CaC03)	SM	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
SM 4500 S2 F	Sulfide, Total	SM	TAL BUF
200.7	Preparation, Total Metals	EPA	TAL BUF
245.1	Preparation, Mercury	EPA	TAL BUF
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL BUF
625	Liquid-Liquid Extraction	40CFR136A	TAL BUF
Distill/CN	Distillation, Cyanide	None	TAL BUF

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
EPA = US Environmental Protection Agency
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: N Tonawanda Water Works
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-190529-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-190529-1	GRP COMP	Water	10/06/21 08:00	10/06/21 10:21
480-190529-2	GRP GRAB	Water	10/06/21 08:07	10/06/21 10:21

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler	Lab PM: Hartmann, Steve	Carrier Tracking No(s):	COC No: 480-166062-36377.1
Client Contact: Michael Gibbons	Phone:	E-Mail: Steve.Hartmann@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: N Tonawanda Water Works	PWSID:			Job #:

Address: 830 River Road	Due Date Requested:
City: North Tonawanda	TAT Requested (days):
State, Zip: NY, 14120	Compliance Project: Δ Yes Δ No
Phone: 716-695-8560(Tel)	PO #: Purchase Order not required
Email: mwg208@live.com	WO #:
Project Name: WWTP - GRP	Project #: 48002903
Site:	SSOW#:

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	200.7, 245.1	2340C - Hardness as calcium carbonate	2540C_Calcd - Total Dissolved Solids	SM4500_S2_F - Sulfide	353.2, 353.2_Nitrite, Nitrate_Calc	2320B - Alkalinity	624.1_PREC - VOAs	625.1_PREC - SVOAs	300.0_28D - Cl, SO4	335.4 - Cyanide	351.2 - TKN			Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	CB	N	N	A	N	N	B	S				
GRP	10/5 + 10/6	8AM - 8AM	C	Water			X														
Path 22806			C	Water				X													
			C						X												
			C							X											
			C								X										
			C									X									
	10/6/21	8:07AM	G										X								
	10/5 + 10/6	8AM - 8AM	C											X							
			C												X						
	10/6/21	8:01AM	G													X					
			G														X				

480-190529 Chain of Custody

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
	Relinquished by	10/6/21 10:21		Received by	10-6-21 10:21	TAB
	Relinquished by	Date/Time:	Company	Received by:	Date/Time	Company
	Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.3 #1 ICE

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: N Tonawanda Water Works

Job Number: 480-190529-1

Login Number: 190529
List Number: 1
Creator: Sabuda, Brendan D

List Source: Eurofins TestAmerica, Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3 #1 ICe
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	True	

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ANALYTICAL REPORT

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-197456-1
Client Project/Site: North Tonawanda - WWTP (GRP)

For:
N Tonawanda Water Works
830 River Road
North Tonawanda, New York 14120

Attn: Michael W Gibbons

Authorized for release by:
5/17/2022 12:47:57 PM

Steve Hartmann, Project Manager
(413)572-4000
Steve.Hartmann@et.eurofinsus.com

Table of Contents

Definitions/Glossary

Client: N Tonawanda Water Works
Job ID: 480-197456-1
Project/Site: North Tonawanda - WWTP (GRP)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: N Tonawanda Water Works
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-197456-1

Job ID: 480-197456-1

Laboratory: Eurofins Buffalo

Narrative

Job Narrative
480-197456-1

Comments
No additional comments.

Receipt
The samples were received on 5/3/2022 11:37 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.1° C.

GC/MS VOA
Method 624.1: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: GRP GRAB (480-197456-2), (480-197456-C-2 MS) and (480-197456-C-2 MSD). Elevated reporting limits (RLs) are provided.

Method 624.1: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 480-624486 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 625.1: The following sample was diluted due to color, appearance, and viscosity: GRP COMP (480-197456-1). Elevated reporting limits (RL) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 300.0: The following sample was diluted to bring the concentration of target analytes within the calibration range: GRP COMP (480-197456-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: N Tonawanda Water Works
Job ID: 480-197456-1
Project/Site: North Tonawanda - WWTP (GRP)

Client Sample ID: GRP COMP — Lab Sample ID: 480-197456-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	22		10		ug/L	5		625.1	Total/NA
Barium	0.066		0.0020		mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	3.1		0.20		mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.0069		0.0030		mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	258		1.0		mg/L	1		200.7 Rev 4.4	Total/NA
Chloride	397		1.4		mg/L	5		300.0	Total/NA
Sulfate	203		2.0		mg/L	5		300.0	Total/NA
Alkalinity, Total	32.1		5.0		mg/L	1		SM 2320B	Total/NA
Alkalinity, Bicarbonate	32.1		5.0		mg/L	1		SM 2320B	Total/NA
Hardness as calcium carbonate	176		2.0		mg/L	1		SM 2340C	Total/NA
Total Dissolved Solids	207		10.0		mg/L	1		SM 2540C	Total/NA
Sulfide	4.8		1.0		mg/L	1		SM 4500 S2 F	Total/NA

Client Sample ID: GRP GRAB — Lab Sample ID: 480-197456-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	5.1		5.0		ug/L	4		624.1	Total/NA
Toluene	5.6		5.0		ug/L	4		624.1	Total/NA
Trichloroethene	13		5.0		ug/L	4		624.1	Total/NA
Vinyl chloride	5.5	F2	5.0		ug/L	4		624.1	Total/NA
Total Kjeldahl Nitrogen	4.9		0.37		mg/L	2		351.2	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Buffalo

Client: N Tonawanda Water Works
Job ID: 480-197456-1
Project/Site: North Tonawanda - WWTP (GRP)

Client Sample ID: GRP COMP
Lab Sample ID: 480-197456-1
Date Collected: 05/03/22 08:30
Matrix: Water
Date Received: 05/03/22 11:37

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		10		ug/L		05/05/22 09:36	05/06/22 16:16	5
1,4-Dichlorobenzene	**22**		10		ug/L		05/05/22 09:36	05/06/22 16:16	5
2,4-Dimethylphenol	ND		5.0		ug/L		05/05/22 09:36	05/06/22 16:16	5
2-Methylphenol	ND		5.0		ug/L		05/05/22 09:36	05/06/22 16:16	5
4-Methylphenol	ND		5.0		ug/L		05/05/22 09:36	05/06/22 16:16	5
Di-n-octyl phthalate	ND		5.0		ug/L		05/05/22 09:36	05/06/22 16:16	5
Naphthalene	ND		5.0		ug/L		05/05/22 09:36	05/06/22 16:16	5
Phenol	ND		5.0		ug/L		05/05/22 09:36	05/06/22 16:16	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*85*		*52 - 151*	*05/05/22 09:36*	*05/06/22 16:16*	*5*
2-Fluorobiphenyl	*94*		*44 - 120*	*05/05/22 09:36*	*05/06/22 16:16*	*5*
2-Fluorophenol	*43*		*17 - 120*	*05/05/22 09:36*	*05/06/22 16:16*	*5*
Nitrobenzene-d5	*85*		*15 - 314*	*05/05/22 09:36*	*05/06/22 16:16*	*5*
p-Terphenyl-d14	*81*		*22 - 125*	*05/05/22 09:36*	*05/06/22 16:16*	*5*
Phenol-d5	*32*		*8 - 424*	*05/05/22 09:36*	*05/06/22 16:16*	*5*

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20		mg/L		05/05/22 09:24	05/11/22 02:36	1
Antimony	ND		0.020		mg/L		05/05/22 09:24	05/11/22 02:36	1
Arsenic	ND		0.015		mg/L		05/05/22 09:24	05/11/22 02:36	1
Barium	**0.066**		0.0020		mg/L		05/05/22 09:24	05/11/22 02:36	1
Beryllium	ND		0.0020		mg/L		05/05/22 09:24	05/11/22 02:36	1
Cadmium	ND		0.0020		mg/L		05/05/22 09:24	05/11/22 02:36	1
Chromium	ND		0.0040		mg/L		05/05/22 09:24	05/11/22 02:36	1
Copper	ND		0.010		mg/L		05/05/22 09:24	05/11/22 02:36	1
Iron	ND		0.050		mg/L		05/05/22 09:24	05/11/22 02:36	1
Lead	ND		0.010		mg/L		05/05/22 09:24	05/11/22 02:36	1
Magnesium	**3.1**		0.20		mg/L		05/05/22 09:24	05/11/22 02:36	1
Manganese	**0.0069**		0.0030		mg/L		05/05/22 09:24	05/11/22 02:36	1
Nickel	ND		0.010		mg/L		05/05/22 09:24	05/11/22 02:36	1
Selenium	ND		0.025		mg/L		05/05/22 09:24	05/11/22 02:36	1
Silver	ND		0.0060		mg/L		05/05/22 09:24	05/11/22 02:36	1
Sodium	**258**		1.0		mg/L		05/05/22 09:24	05/11/22 02:36	1
Zinc	ND		0.010		mg/L		05/05/22 09:24	05/11/22 02:36	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		05/06/22 10:16	05/06/22 13:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**397**		1.4		mg/L			05/10/22 21:18	5
Sulfate	**203**		2.0		mg/L			05/10/22 21:18	5
Nitrate as N	ND		0.050		mg/L			05/04/22 18:57	1
Alkalinity, Total	**32.1**		5.0		mg/L			05/11/22 02:59	1
Alkalinity, Bicarbonate	**32.1**		5.0		mg/L			05/11/22 02:59	1
Hardness as calcium carbonate	**176**		2.0		mg/L			05/08/22 14:10	1
Total Dissolved Solids	**207**		10.0		mg/L			05/09/22 08:51	1

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Client Sample ID: GRP COMP

Lab Sample ID: 480-197456-1

Date Collected: 05/03/22 08:30

Matrix: Water

Date Received: 05/03/22 11:37

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**4.8**		1.0		mg/L			05/05/22 16:31	1

Client Sample ID: GRP GRAB

Lab Sample ID: 480-197456-2

Date Collected: 05/03/22 08:40

Matrix: Water

Date Received: 05/03/22 11:37

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0		ug/L			05/04/22 13:49	4
1,1-Dichloroethane	ND		5.0		ug/L			05/04/22 13:49	4
1,2-Dichloroethane	ND		5.0		ug/L			05/04/22 13:49	4
2-Butanone (MEK)	ND	F1	25		ug/L			05/04/22 13:49	4
Acetone	ND		25		ug/L			05/04/22 13:49	4
Benzene	ND		5.0		ug/L			05/04/22 13:49	4
Chlorobenzene	**5.1**		5.0		ug/L			05/04/22 13:49	4
Ethylbenzene	ND		5.0		ug/L			05/04/22 13:49	4
Methylene Chloride	ND		5.0		ug/L			05/04/22 13:49	4
Styrene	ND		5.0		ug/L			05/04/22 13:49	4
Tetrachloroethene	ND		5.0		ug/L			05/04/22 13:49	4
Toluene	**5.6**		5.0		ug/L			05/04/22 13:49	4
trans-1,2-Dichloroethene	ND		5.0		ug/L			05/04/22 13:49	4
Trichloroethene	**13**		5.0		ug/L			05/04/22 13:49	4
Vinyl chloride	**5.5**	**F2**	5.0		ug/L			05/04/22 13:49	4
Xylenes, Total	ND		10		ug/L			05/04/22 13:49	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*81*		*68 - 130*		*05/04/22 13:49*	*4*
4-Bromofluorobenzene (Surr)	*95*		*76 - 123*		*05/04/22 13:49*	*4*
Dibromofluoromethane (Surr)	*91*		*75 - 123*		*05/04/22 13:49*	*4*
Toluene-d8 (Surr)	*93*		*77 - 120*		*05/04/22 13:49*	*4*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND	F1	0.010		mg/L		05/06/22 09:44	05/06/22 12:40	1
Total Kjeldahl Nitrogen	**4.9**		0.37		mg/L		05/08/22 13:50	05/09/22 12:06	2

Surrogate Summary

Client: N Tonawanda Water Works
Job ID: 480-197456-1
Project/Site: North Tonawanda - WWTP (GRP)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(68-130)	(76-123)	(75-123)	(77-120)
480-197456-2	GRP GRAB	81	95	91	93
480-197456-2 MS	GRP GRAB	87	91	87	94
480-197456-2 MSD	GRP GRAB	84	90	85	93
LCS 480-624486/6	Lab Control Sample	94	92	98	98
MB 480-624486/8	Method Blank	90	93	94	95

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	TPHd14	PHL
Lab Sample ID	Client Sample ID	(52-151)	(44-120)	(17-120)	(15-314)	(22-125)	(8-424)
480-197456-1	GRP COMP	85	94	43	85	81	32
LCS 480-624677/2-A	Lab Control Sample	92	88	46	84	105	35
MB 480-624677/1-A	Method Blank	65	81	46	81	101	34

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
TPHd14 = p-Terphenyl-d14
PHL = Phenol-d5

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-624486/8
Matrix: Water
Analysis Batch: 624486

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0		ug/L			05/04/22 12:47	1
1,1-Dichloroethane	ND		5.0		ug/L			05/04/22 12:47	1
1,2-Dichloroethane	ND		5.0		ug/L			05/04/22 12:47	1
2-Butanone (MEK)	ND		25		ug/L			05/04/22 12:47	1
Acetone	ND		25		ug/L			05/04/22 12:47	1
Benzene	ND		5.0		ug/L			05/04/22 12:47	1
Chlorobenzene	ND		5.0		ug/L			05/04/22 12:47	1
Ethylbenzene	ND		5.0		ug/L			05/04/22 12:47	1
Methylene Chloride	ND		5.0		ug/L			05/04/22 12:47	1
Styrene	ND		5.0		ug/L			05/04/22 12:47	1
Tetrachloroethene	ND		5.0		ug/L			05/04/22 12:47	1
Toluene	ND		5.0		ug/L			05/04/22 12:47	1
trans-1,2-Dichloroethene	ND		5.0		ug/L			05/04/22 12:47	1
Trichloroethene	ND		5.0		ug/L			05/04/22 12:47	1
Vinyl chloride	ND		5.0		ug/L			05/04/22 12:47	1
Xylenes, Total	ND		10		ug/L			05/04/22 12:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*68 - 130*		*05/04/22 12:47*	*1*
4-Bromofluorobenzene (Surr)	*93*		*76 - 123*		*05/04/22 12:47*	*1*
Dibromofluoromethane (Surr)	*94*		*75 - 123*		*05/04/22 12:47*	*1*
Toluene-d8 (Surr)	*95*		*77 - 120*		*05/04/22 12:47*	*1*

Lab Sample ID: LCS 480-624486/6
Matrix: Water
Analysis Batch: 624486

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	20.0	17.4		ug/L		87	52 - 162
1,1-Dichloroethane	20.0	19.4		ug/L		97	59 - 155
1,2-Dichloroethane	20.0	21.0		ug/L		105	49 - 155
Benzene	20.0	22.7		ug/L		114	37 - 151
Chlorobenzene	20.0	21.8		ug/L		109	37 - 160
Ethylbenzene	20.0	21.9		ug/L		110	37 - 162
Methylene Chloride	20.0	19.1		ug/L		95	1 - 221
Tetrachloroethene	20.0	22.4		ug/L		112	64 - 148
Toluene	20.0	22.8		ug/L		114	47 - 150
trans-1,2-Dichloroethene	20.0	19.3		ug/L		96	54 - 156
Trichloroethene	20.0	22.7		ug/L		114	71 - 157
Vinyl chloride	20.0	23.4		ug/L		117	1 - 251

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*68 - 130*
4-Bromofluorobenzene (Surr)	*92*		*76 - 123*
Dibromofluoromethane (Surr)	*98*		*75 - 123*
Toluene-d8 (Surr)	*98*		*77 - 120*

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 480-197456-2 MS
Matrix: Water
Analysis Batch: 624486

Client Sample ID: GRP GRAB
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	ND		80.0	79.8		ug/L		100	52 - 162
1,1-Dichloroethane	ND		80.0	83.7		ug/L		105	59 - 155
1,2-Dichloroethane	ND		80.0	77.3		ug/L		97	49 - 155
Benzene	ND		80.0	89.2		ug/L		112	37 - 151
Chlorobenzene	5.1		80.0	93.4		ug/L		110	37 - 160
Ethylbenzene	ND		80.0	92.7		ug/L		111	37 - 162
Methylene Chloride	ND		80.0	71.3		ug/L		89	1 - 221
Tetrachloroethene	ND		80.0	93.3		ug/L		114	64 - 148
Toluene	5.6		80.0	97.0		ug/L		114	47 - 150
trans-1,2-Dichloroethene	ND		80.0	82.9		ug/L		104	54 - 156
Trichloroethene	13		80.0	94.8		ug/L		102	71 - 157
Vinyl chloride	5.5	F2	80.0	96.8		ug/L		114	1 - 251

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*87*		*68 - 130*
4-Bromofluorobenzene (Surr)	*91*		*76 - 123*
Dibromofluoromethane (Surr)	*87*		*75 - 123*
Toluene-d8 (Surr)	*94*		*77 - 120*

Lab Sample ID: 480-197456-2 MSD
Matrix: Water
Analysis Batch: 624486

Client Sample ID: GRP GRAB
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		80.0	72.8		ug/L		91	52 - 162	9	15
1,1-Dichloroethane	ND		80.0	83.3		ug/L		104	59 - 155	0	15
1,2-Dichloroethane	ND		80.0	77.5		ug/L		97	49 - 155	0	15
Benzene	ND		80.0	87.7		ug/L		110	37 - 151	2	15
Chlorobenzene	5.1		80.0	90.4		ug/L		107	37 - 160	3	15
Ethylbenzene	ND		80.0	92.4		ug/L		111	37 - 162	0	15
Methylene Chloride	ND		80.0	66.5		ug/L		83	1 - 221	7	15
Tetrachloroethene	ND		80.0	93.2		ug/L		114	64 - 148	0	15
Toluene	5.6		80.0	94.9		ug/L		112	47 - 150	2	15
trans-1,2-Dichloroethene	ND		80.0	82.9		ug/L		104	54 - 156	0	15
Trichloroethene	13		80.0	98.3		ug/L		107	71 - 157	4	15
Vinyl chloride	5.5	F2	80.0	119	F2	ug/L		141	1 - 251	20	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*84*		*68 - 130*
4-Bromofluorobenzene (Surr)	*90*		*76 - 123*
Dibromofluoromethane (Surr)	*85*		*75 - 123*
Toluene-d8 (Surr)	*93*		*77 - 120*

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-624677/1-A
Matrix: Water
Analysis Batch: 624827

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 624677

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		10		ug/L		05/05/22 09:36	05/06/22 12:36	1
1,4-Dichlorobenzene	ND		10		ug/L		05/05/22 09:36	05/06/22 12:36	1
2,4-Dimethylphenol	ND		5.0		ug/L		05/05/22 09:36	05/06/22 12:36	1
2-Methylphenol	ND		5.0		ug/L		05/05/22 09:36	05/06/22 12:36	1
4-Methylphenol	ND		5.0		ug/L		05/05/22 09:36	05/06/22 12:36	1
Di-n-octyl phthalate	ND		5.0		ug/L		05/05/22 09:36	05/06/22 12:36	1
Naphthalene	ND		5.0		ug/L		05/05/22 09:36	05/06/22 12:36	1
Phenol	ND		5.0		ug/L		05/05/22 09:36	05/06/22 12:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*65*		*52 - 151*	*05/05/22 09:36*	*05/06/22 12:36*	*1*
2-Fluorobiphenyl	*81*		*44 - 120*	*05/05/22 09:36*	*05/06/22 12:36*	*1*
2-Fluorophenol	*46*		*17 - 120*	*05/05/22 09:36*	*05/06/22 12:36*	*1*
Nitrobenzene-d5	*81*		*15 - 314*	*05/05/22 09:36*	*05/06/22 12:36*	*1*
p-Terphenyl-d14	*101*		*22 - 125*	*05/05/22 09:36*	*05/06/22 12:36*	*1*
Phenol-d5	*34*		*8 - 424*	*05/05/22 09:36*	*05/06/22 12:36*	*1*

Lab Sample ID: LCS 480-624677/2-A
Matrix: Water
Analysis Batch: 624827

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 624677

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichlorobenzene	50.0	36.4		ug/L		73	32 - 129
1,4-Dichlorobenzene	50.0	35.5		ug/L		71	20 - 124
2,4-Dimethylphenol	50.0	46.7		ug/L		93	32 - 120
2-Methylphenol	50.0	41.6		ug/L		83	45 - 120
4-Methylphenol	50.0	38.2		ug/L		76	48 - 120
Di-n-octyl phthalate	50.0	55.8		ug/L		112	4 - 146
Naphthalene	50.0	42.9		ug/L		86	21 - 133
Phenol	50.0	21.3		ug/L		43	5 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*92*		*52 - 151*
2-Fluorobiphenyl	*88*		*44 - 120*
2-Fluorophenol	*46*		*17 - 120*
Nitrobenzene-d5	*84*		*15 - 314*
p-Terphenyl-d14	*105*		*22 - 125*
Phenol-d5	*35*		*8 - 424*

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 480-624581/1-A
Matrix: Water
Analysis Batch: 625532

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 624581

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20		mg/L		05/05/22 09:24	05/11/22 02:20	1
Antimony	ND		0.020		mg/L		05/05/22 09:24	05/11/22 02:20	1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: MB 480-624581/1-A
Matrix: Water
Analysis Batch: 625532

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 624581

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015		mg/L		05/05/22 09:24	05/11/22 02:20	1
Barium	ND		0.0020		mg/L		05/05/22 09:24	05/11/22 02:20	1
Beryllium	ND		0.0020		mg/L		05/05/22 09:24	05/11/22 02:20	1
Cadmium	ND		0.0020		mg/L		05/05/22 09:24	05/11/22 02:20	1
Chromium	ND		0.0040		mg/L		05/05/22 09:24	05/11/22 02:20	1
Copper	ND		0.010		mg/L		05/05/22 09:24	05/11/22 02:20	1
Iron	ND		0.050		mg/L		05/05/22 09:24	05/11/22 02:20	1
Lead	ND		0.010		mg/L		05/05/22 09:24	05/11/22 02:20	1
Magnesium	ND		0.20		mg/L		05/05/22 09:24	05/11/22 02:20	1
Manganese	ND		0.0030		mg/L		05/05/22 09:24	05/11/22 02:20	1
Nickel	ND		0.010		mg/L		05/05/22 09:24	05/11/22 02:20	1
Selenium	ND		0.025		mg/L		05/05/22 09:24	05/11/22 02:20	1
Silver	ND		0.0060		mg/L		05/05/22 09:24	05/11/22 02:20	1
Sodium	ND		1.0		mg/L		05/05/22 09:24	05/11/22 02:20	1
Zinc	ND		0.010		mg/L		05/05/22 09:24	05/11/22 02:20	1

Lab Sample ID: LCS 480-624581/2-A
Matrix: Water
Analysis Batch: 625532

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 624581

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	10.0	10.41		mg/L		104	85 - 115
Antimony	0.200	0.210		mg/L		105	85 - 115
Arsenic	0.200	0.205		mg/L		103	85 - 115
Barium	0.200	0.212		mg/L		106	85 - 115
Beryllium	0.200	0.224		mg/L		112	85 - 115
Cadmium	0.200	0.202		mg/L		101	85 - 115
Chromium	0.200	0.194		mg/L		97	85 - 115
Copper	0.200	0.206		mg/L		103	85 - 115
Iron	10.0	10.05		mg/L		100	85 - 115
Lead	0.200	0.193		mg/L		96	85 - 115
Magnesium	10.0	10.78		mg/L		108	85 - 115
Manganese	0.200	0.225		mg/L		113	85 - 115
Nickel	0.200	0.197		mg/L		98	85 - 115
Selenium	0.200	0.182		mg/L		91	85 - 115
Silver	0.0500	0.0516		mg/L		103	85 - 115
Sodium	10.0	10.78		mg/L		108	85 - 115
Zinc	0.200	0.195		mg/L		97	85 - 115

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 480-624839/1-A
Matrix: Water
Analysis Batch: 624973

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 624839

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		05/06/22 10:16	05/06/22 13:28	1

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 480-624839/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 624973 — **Prep Batch: 624839**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00667	0.00677		mg/L		101	85 - 115

Lab Sample ID: LCSD 480-624839/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 624973 — **Prep Batch: 624839**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00667	0.00667		mg/L		100	85 - 115	1	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 480-625346/28 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 625346

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			05/10/22 17:46	1
Sulfate	ND		2.0		mg/L			05/10/22 17:46	1

Lab Sample ID: LCS 480-625346/29 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 625346

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.1	50.30		mg/L		100	90 - 110
Sulfate	50.0	50.15		mg/L		100	90 - 110

Method: 335.4 - Cyanide, Total

Lab Sample ID: MB 480-624861/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 624922 — **Prep Batch: 624861**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.010		mg/L		05/06/22 09:44	05/06/22 12:09	1

Lab Sample ID: LCS 480-624861/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 624922 — **Prep Batch: 624861**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.400	0.393		mg/L		98	90 - 110

Lab Sample ID: LCS 480-624861/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 624922 — **Prep Batch: 624861**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.250	0.238		mg/L		95	90 - 110

Method: 335.4 - Cyanide, Total (Continued)

Lab Sample ID: 480-197456-2 MS — **Client Sample ID: GRP GRAB**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 624922 — **Prep Batch: 624861**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	ND	F1	0.100	0.0861	F1	mg/L		80	90 - 110

Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 480-625081/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 625203 — **Prep Batch: 625081**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	ND		0.20		mg/L		05/08/22 13:50	05/09/22 11:01	1

Lab Sample ID: LCS 480-625081/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 625203 — **Prep Batch: 625081**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Kjeldahl Nitrogen	2.50	2.50		mg/L		100	90 - 110

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 480-625645/30 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 625645

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	ND		5.0		mg/L			05/11/22 02:17	1
Alkalinity, Bicarbonate	ND		5.0		mg/L			05/11/22 02:17	1

Lab Sample ID: LCS 480-625645/31 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 625645

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity, Total	100	94.46		mg/L		94	90 - 110

Method: SM 2340C - Hardness, Total (mg/l as CaC03)

Lab Sample ID: MB 480-625082/27 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 625082

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	ND		2.0		mg/L			05/08/22 14:10	1

Lab Sample ID: MB 480-625082/50 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 625082

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	ND		2.0		mg/L			05/08/22 14:10	1

Method: SM 2340C - Hardness, Total (mg/l as CaC03) (Continued)

Lab Sample ID: LCS 480-625082/28
Matrix: Water
Analysis Batch: 625082

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hardness as calcium carbonate	193	208.0		mg/L		108	90 - 110

Lab Sample ID: LCS 480-625082/51
Matrix: Water
Analysis Batch: 625082

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hardness as calcium carbonate	193	208.0		mg/L		108	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-625112/1
Matrix: Water
Analysis Batch: 625112

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			05/09/22 08:51	1

Lab Sample ID: LCS 480-625112/2
Matrix: Water
Analysis Batch: 625112

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	526	496.0		mg/L		94	85 - 115

Method: SM 4500 S2 F - Sulfide, Total

Lab Sample ID: MB 480-624795/27
Matrix: Water
Analysis Batch: 624795

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		1.0		mg/L			05/05/22 16:31	1

Lab Sample ID: MB 480-624795/3
Matrix: Water
Analysis Batch: 624795

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		1.0		mg/L			05/05/22 16:31	1

Lab Sample ID: LCS 480-624795/28
Matrix: Water
Analysis Batch: 624795

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	6.00	5.60		mg/L		93	90 - 110

Method: SM 4500 S2 F - Sulfide, Total (Continued)

Lab Sample ID: LCS 480-624795/4
Matrix: Water
Analysis Batch: 624795

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfide			6.00	6.00		mg/L		100	90 - 110		

Lab Sample ID: 480-197456-1 DU
Matrix: Water
Analysis Batch: 624795

Client Sample ID: GRP COMP
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Sulfide	4.8			4.80		mg/L				0	20

QC Association Summary

Client: N Tonawanda Water Works
Job ID: 480-197456-1
Project/Site: North Tonawanda - WWTP (GRP)

GC/MS VOA

Analysis Batch: 624486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197456-2	GRP GRAB	Total/NA	Water	624.1	
MB 480-624486/8	Method Blank	Total/NA	Water	624.1	
LCS 480-624486/6	Lab Control Sample	Total/NA	Water	624.1	
480-197456-2 MS	GRP GRAB	Total/NA	Water	624.1	
480-197456-2 MSD	GRP GRAB	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 624677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197456-1	GRP COMP	Total/NA	Water	625	
MB 480-624677/1-A	Method Blank	Total/NA	Water	625	
LCS 480-624677/2-A	Lab Control Sample	Total/NA	Water	625	

Analysis Batch: 624827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197456-1	GRP COMP	Total/NA	Water	625.1	624677
MB 480-624677/1-A	Method Blank	Total/NA	Water	625.1	624677
LCS 480-624677/2-A	Lab Control Sample	Total/NA	Water	625.1	624677

Metals

Prep Batch: 624581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197456-1	GRP COMP	Total/NA	Water	200.7	
MB 480-624581/1-A	Method Blank	Total/NA	Water	200.7	
LCS 480-624581/2-A	Lab Control Sample	Total/NA	Water	200.7	

Prep Batch: 624839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197456-1	GRP COMP	Total/NA	Water	245.1	
MB 480-624839/1-A	Method Blank	Total/NA	Water	245.1	
LCS 480-624839/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 480-624839/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	

Analysis Batch: 624973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197456-1	GRP COMP	Total/NA	Water	245.1	624839
MB 480-624839/1-A	Method Blank	Total/NA	Water	245.1	624839
LCS 480-624839/2-A	Lab Control Sample	Total/NA	Water	245.1	624839
LCSD 480-624839/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	624839

Analysis Batch: 625532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197456-1	GRP COMP	Total/NA	Water	200.7 Rev 4.4	624581
MB 480-624581/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	624581
LCS 480-624581/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	624581

General Chemistry

Analysis Batch: 624617

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197456-1	GRP COMP	Total/NA	Water	353.2	

Analysis Batch: 624795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197456-1	GRP COMP	Total/NA	Water	SM 4500 S2 F	
MB 480-624795/27	Method Blank	Total/NA	Water	SM 4500 S2 F	
MB 480-624795/3	Method Blank	Total/NA	Water	SM 4500 S2 F	
LCS 480-624795/28	Lab Control Sample	Total/NA	Water	SM 4500 S2 F	
LCS 480-624795/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 F	
480-197456-1 DU	GRP COMP	Total/NA	Water	SM 4500 S2 F	

Prep Batch: 624861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197456-2	GRP GRAB	Total/NA	Water	Distill/CN	
MB 480-624861/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 480-624861/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
LCS 480-624861/3-A	Lab Control Sample	Total/NA	Water	Distill/CN	
480-197456-2 MS	GRP GRAB	Total/NA	Water	Distill/CN	

Analysis Batch: 624922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197456-2	GRP GRAB	Total/NA	Water	335.4	624861
MB 480-624861/1-A	Method Blank	Total/NA	Water	335.4	624861
LCS 480-624861/2-A	Lab Control Sample	Total/NA	Water	335.4	624861
LCS 480-624861/3-A	Lab Control Sample	Total/NA	Water	335.4	624861
480-197456-2 MS	GRP GRAB	Total/NA	Water	335.4	624861

Prep Batch: 625081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197456-2	GRP GRAB	Total/NA	Water	351.2	
MB 480-625081/1-A	Method Blank	Total/NA	Water	351.2	
LCS 480-625081/2-A	Lab Control Sample	Total/NA	Water	351.2	

Analysis Batch: 625082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197456-1	GRP COMP	Total/NA	Water	SM 2340C	
MB 480-625082/27	Method Blank	Total/NA	Water	SM 2340C	
MB 480-625082/50	Method Blank	Total/NA	Water	SM 2340C	
LCS 480-625082/28	Lab Control Sample	Total/NA	Water	SM 2340C	
LCS 480-625082/51	Lab Control Sample	Total/NA	Water	SM 2340C	

Analysis Batch: 625112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197456-1	GRP COMP	Total/NA	Water	SM 2540C	
MB 480-625112/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-625112/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 625203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197456-2	GRP GRAB	Total/NA	Water	351.2	625081
MB 480-625081/1-A	Method Blank	Total/NA	Water	351.2	625081

General Chemistry (Continued)

Analysis Batch: 625203 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-625081/2-A	Lab Control Sample	Total/NA	Water	351.2	625081

Analysis Batch: 625346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197456-1	GRP COMP	Total/NA	Water	300.0	
MB 480-625346/28	Method Blank	Total/NA	Water	300.0	
LCS 480-625346/29	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 625645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-197456-1	GRP COMP	Total/NA	Water	SM 2320B	
MB 480-625645/30	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-625645/31	Lab Control Sample	Total/NA	Water	SM 2320B	

Lab Chronicle

Client: N Tonawanda Water Works
Job ID: 480-197456-1
Project/Site: North Tonawanda - WWTP (GRP)

Client Sample ID: GRP COMP
Lab Sample ID: 480-197456-1
Date Collected: 05/03/22 08:30
Matrix: Water
Date Received: 05/03/22 11:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			624677	05/05/22 09:36	JMP	TAL BUF
Total/NA	Analysis	625.1		5	624827	05/06/22 16:16	JMM	TAL BUF
Total/NA	Prep	200.7			624581	05/05/22 09:24	NBS	TAL BUF
Total/NA	Analysis	200.7 Rev 4.4		1	625532	05/11/22 02:36	LMH	TAL BUF
Total/NA	Prep	245.1			624839	05/06/22 10:16	NVK	TAL BUF
Total/NA	Analysis	245.1		1	624973	05/06/22 13:49	NVK	TAL BUF
Total/NA	Analysis	300.0		5	625346	05/10/22 21:18	IMZ	TAL BUF
Total/NA	Analysis	353.2		1	624617	05/04/22 18:57	CSS	TAL BUF
Total/NA	Analysis	SM 2320B		1	625645	05/11/22 02:59	RDA	TAL BUF
Total/NA	Analysis	SM 2340C		1	625082	05/08/22 14:10	JJK	TAL BUF
Total/NA	Analysis	SM 2540C		1	625112	05/09/22 08:51	SAK	TAL BUF
Total/NA	Analysis	SM 4500 S2 F		1	624795	05/05/22 16:31	JGO	TAL BUF

Client Sample ID: GRP GRAB
Lab Sample ID: 480-197456-2
Date Collected: 05/03/22 08:40
Matrix: Water
Date Received: 05/03/22 11:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		4	624486	05/04/22 13:49	ATG	TAL BUF
Total/NA	Prep	Distill/CN			624861	05/06/22 09:44	NLK	TAL BUF
Total/NA	Analysis	335.4		1	624922	05/06/22 12:40	JGO	TAL BUF
Total/NA	Prep	351.2			625081	05/08/22 13:50	KEB	TAL BUF
Total/NA	Analysis	351.2		2	625203	05/09/22 12:06	KEB	TAL BUF

Laboratory References:

TAL BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: N Tonawanda Water Works
Job ID: 480-197456-1
Project/Site: North Tonawanda - WWTP (GRP)

Laboratory: Eurofins Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
624.1		Water	2-Butanone (MEK)
625.1	625	Water	1,2-Dichlorobenzene
625.1	625	Water	1,4-Dichlorobenzene
625.1	625	Water	2-Methylphenol

Method Summary

Client: N Tonawanda Water Works
Job ID: 480-197456-1
Project/Site: North Tonawanda - WWTP (GRP)

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL BUF
625.1	Semivolatile Organic Compounds (GC/MS)	40CFR136A	TAL BUF
200.7 Rev 4.4	Metals (ICP)	EPA	TAL BUF
245.1	Mercury (CVAA)	EPA	TAL BUF
300.0	Anions, Ion Chromatography	MCAWW	TAL BUF
335.4	Cyanide, Total	MCAWW	TAL BUF
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL BUF
353.2	Nitrate	EPA	TAL BUF
SM 2320B	Alkalinity	SM	TAL BUF
SM 2340C	Hardness, Total (mg/l as CaC03)	SM	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
SM 4500 S2 F	Sulfide, Total	SM	TAL BUF
200.7	Preparation, Total Metals	EPA	TAL BUF
245.1	Preparation, Mercury	EPA	TAL BUF
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL BUF
625	Liquid-Liquid Extraction	40CFR136A	TAL BUF
Distill/CN	Distillation, Cyanide	None	TAL BUF

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater ", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
EPA = US Environmental Protection Agency
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: N Tonawanda Water Works
Job ID: 480-197456-1
Project/Site: North Tonawanda - WWTP (GRP)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-197456-1	GRP COMP	Water	05/03/22 08:30	05/03/22 11:37
480-197456-2	GRP GRAB	Water	05/03/22 08:40	05/03/22 11:37

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler:	Lab PM: Hartmann, Steve	Carrier Tracking No(s):	COC No: 480-173210-36377.1
Client Contact: Michael Gibbons	Phone:	E-Mail: Steve.Hartmann@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: N Tonawanda Water Works	PWSID:			Job #:
Address: 830 River Road	Due Date Requested:			
City: North Tonawanda	TAT Requested (days):			
State, Zip: NY, 14120	Compliance Project: Δ Yes Δ No			
Phone: 716-695-8560(Tel)	PO #: Purchase Order not required			
Email: mwg208@live.com	WO #:			
Project Name: WWTP - GRP	Project #: 48002903			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	200.7, 245.1	2340C - Hardness as calcium carbonate	2540C_Calcd - Total Dissolved Solids	SM4500_S2_F - Sulfide	353.2, 353.2_Nitrite, Nitrate_Calc	2320B - Alkalinity	624.1_PREC - VOAs	625.1_PREC - SVOAs	300.0_28D - Cl, SO4	335.4 - Cyanide	351.2 - TKN			Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	CB	N	N	A	N	N	B	S				
GRP	5/2 + 5/3	8:30-8:30	C	Water			X														
			C	Water				X													
PO#			C						X												
			C							X											
			C								X										
26127			C									X									
	5/3/22	8:40AM	G										X								
	5/2 + 5/3	8:30-8:30	C											X							
			C												X						
	5/3/22	8:40AM	G													X					
			G														X				

480-197456 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	MC W BK	5/3/22 11:37				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 5/3/22 1137	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 3.1 # IR

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: N Tonawanda Water Works

Job Number: 480-197456-1

Login Number: 197456

List Source: Eurofins Buffalo

List Number: 1

Creator: Yeager, Brian A

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	n tonawanda water works
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Appendix D

QA/QC Reviews and Data Usability Summary

Technical Memorandum

May 26, 2022

To	John Pentilchuk	**Tel**	513-285-1102
Copy to	Susan Scrocchi	**Email**	Angela.Bown@ghd.com
From	Angela Bown/cs/41-NF	**Ref. No.**	007987
Subject	**Analytical Results and Full Validation Annual Groundwater Monitoring Gratwick-Riverside Park North Tonawanda, New York April 2022**		

1. Introduction

This document details a full validation of analytical results for groundwater samples collected in support of the Annual Groundwater Monitoring program at the North Tonawanda Gratwick – Riverside Park site during April 2022. Samples were submitted to Eurofins Environment Testing America located in Amherst, New York. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Full Contract Laboratory Program (CLP) equivalent raw data deliverables were provided by the laboratory. Evaluation of the data was based on information obtained from the finished data sheets, raw data, chain of custody forms, calibration data, blank data, recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spike (MS) samples and field quality assurance/quality control (QA/QC) samples. The assessment of analytical and in house data included checks for: data consistency (by observing comparability of duplicate analyses), adherence to accuracy and precision criteria, and transmittal errors.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the document entitled: "National Functional Guidelines for Organic Superfund Methods Data Review", USEPA 540-R-20-005, November 2020.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical report were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Gas Chromatography/Mass Spectrometer (GC/MS)– Tuning and Mass Calibration (Instrument Performance Check)

3.1 Organic Analyses

Prior to volatile organic compound (VOC) and semi-volatile organic compound (SVOC) analysis, GC/MS instrumentation is tuned to ensure optimization over the mass range of interest. To evaluate instrument tuning, methods require the analysis of specific tuning compounds bromofluorobenzene (BFB) and decafluorotriphenylphosphine (DFTPP), respectively. The resulting spectra must meet the criteria cited in the methods before analysis is initiated. Analysis of the tuning compound must then be repeated every 12 hours throughout sample analysis to ensure the continued optimization of the instrument.

Tuning compounds were analyzed at the required frequency throughout VOC and SVOC analysis periods. All tuning criteria were met indicating that proper optimization of the instrumentation was achieved.

4. Initial Calibration

4.1 GC/MS

To quantify VOCs and SVOCs of interest in samples, calibration of the GC/MS over a specific concentration range must be performed. Initially, a five-point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each analyte over a specific concentration range. Linearity of the calibration curve and instrument sensitivity are evaluated against the following criteria:

1) All relative response factors (RRFs) must be greater than or equal to the method acceptance criteria.
2) The percent relative standard deviation (%RSD) values must not exceed 20.0 percent or a minimum coefficient of determination (R^2) of 0.99 if linear and quadratic regression calibration curves are used.

The initial calibration data for VOCs and SVOCs were reviewed. All compounds met the above criteria for sensitivity and linearity.

5. Continuing Calibration

5.1 GC/MS

To ensure that instrument calibration for VOC and SVOC analyses is acceptable throughout the sample analysis period, continuing calibration standards must be analyzed and compared to the initial calibration curve every 12 hours.

The following criteria were employed to evaluate continuing calibration data:

1) All RRF values must be greater than or equal to the method acceptance criteria.
2) Percent difference (%D) or %Drift values must not exceed 20.0 percent

Calibration standards were analyzed at the required frequency, and the results met the above criteria for instrument sensitivity and stability.

6. Laboratory Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

7. Surrogate Spike Recoveries

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for VOC and SVOC determinations were spiked with the appropriate number of surrogate compounds prior to sample extraction and/or analysis.

Each individual surrogate compound is expected to meet the laboratory control limits with the exception of SVOC analyses. GHD professional judgment for SVOC analyses determined that up to one outlying surrogate in the base/neutral or acid fractions is acceptable as long as the recovery is at least 10 percent.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries were within the laboratory criteria.

8. Internal Standards (IS) Analyses

IS data were evaluated for all VOC and SVOC sample analyses.

To ensure that changes in the GC/MS sensitivity and response do not affect sample analysis results, IS compounds are added to each sample prior to analysis. All results are then calculated as a ratio of the IS responses.

The sample IS results were evaluated against the following criteria:

1) The retention time of the IS must not vary more than ±30 seconds (±10 seconds for VOCs) from the associated calibration standard.
2) IS area counts must not vary by more than a factor of two (-50 percent to +100 percent) from the associated calibration standard.

All organic IS recoveries and retention times met the above criteria.

9. Laboratory Control Sample Analyses

LCS are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, LCS were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

The LCS contained all compounds of interest. All LCS recoveries were within the laboratory control limits, demonstrating acceptable analytical accuracy.

10. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The relative percent difference (RPD) between the MS and MSD is used to assess analytical precision.

MS/MSD analyses were performed as specified in Table 1.

The MS/MSD samples were spiked with all compounds of interest. All percent recoveries and RPD values were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

11. Field QA/QC Samples

The field QA/QC consisted of one trip blank sample and one field duplicate sample set.

11.1 Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, one trip blank was submitted to the laboratory for VOC analysis. All results were non-detect for the compounds of interest.

11.2 Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, one field duplicate sample set was collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criterion is one times the RL value.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

12. Analyte Reporting

The laboratory reported detected results down to the laboratory's sample-specific method detection limit (MDL) for each analyte. Positive analyte detections less than the RL but greater than the sample-specific MDL were qualified as estimated (J) in Table 2 unless qualified otherwise in this memorandum.

Non-detect results were presented as non-detect at the RL in Table 2.

13. Target Compound Identification

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra were evaluated according to the identification criteria established by the methods. The samples identified in Table 1 were reviewed. The organic compounds reported adhered to the specified identification criteria.

14. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable without qualification.

Regards,

Angela Bown
Data Management Team Lead-Data Validator

Table 1

Sample Collection and Analysis Summary
Annual Groundwater Monitoring
Gratwick-Riverside Park
North Tonawanda, New York
April 2022

					Analysis/Parameters		
Sample Identification	**Location**	**Matrix**	**Collection Date (mm/dd/yyyy)**	**Collection Time (hr:min)**	**Select VOCs**	**Select SVOCs**	**Comments**
WG-7987-042822-SG-001	MW9	Water	04/28/2022	08:10	X	X	
WG-7987-042822-SG-002	OGC4	Water	04/28/2022	09:55	X	X	
WG-7987-042822-SG-003	OGC8	Water	04/28/2022	10:40	X	X	
WG-7987-042822-SG-004	OGC8	Water	04/28/2022	10:40	X	X	FD(WG-7987-042822-SG-003)
WG-7987-042822-SG-005	MW8	Water	04/28/2022	11:40	X	X	MS/MSD
WG-7987-042822-SG-006	OGC3	Water	04/28/2022	12:15	X	X	
WG-7987-042822-SG-007	OGC7	Water	04/28/2022	12:40	X	X	
WG-7987-042822-SG-008	MW7	Water	04/28/2022	12:55	X	X	
WG-7987-042822-SG-009	OGC2	Water	04/28/2022	13:05	X	X	
WG-7987-042822-SG-010	OGC6	Water	04/28/2022	13:40	X	X	
WG-7987-042822-SG-011	OGC5	Water	04/28/2022	13:55	X	X	
WG-7987-042822-SG-012	MW6	Water	04/28/2022	14:25	X	X	
WG-7987-042822-SG-013	OGC1	Water	04/28/2022	14:45	X	X	
TB-7987-042822-SG	-	Water	04/28/2022	-	X		Trip Blank

Notes:

- - Not applicable
VOCs - Volatile Organic Compounds
SVOCs - Semivolatile Organic Compounds
MS/MSD - Matrix Spike/Matrix Sprike Duplicate
FD() - Field Duplicate of Sample in Parentheses

Table 2

Analytical Results Summary
Annual Groundwater Monitoring
Gratwick-Riverside Park
North Tonawanda, New York
April 2022

Location ID:		MW6	MW7	MW8	MW9	OGC1
Sample Name:		WG-7987-042822-SG-012	WG-7987-042822-SG-008	WG-7987-042822-SG-005	WG-7987-042822-SG-001	WG-7987-042822-SG-013
Sample Date:		04/28/2022	04/28/2022	04/28/2022	04/28/2022	04/28/2022
Parameters	**Unit**					
Volatile Organic Compounds						
1,1-Dichloroethane	µg/L	2.0 U	1.0 U	4.0 U	4.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	10 U	5.0 U	20 U	20 U	5.0 U
Acetone	µg/L	10 U	5.0 U	20 U	20 U	5.0 U
Benzene	µg/L	1.4 U	0.70 U	2.8 U	2.8 U	0.70 U
Chlorobenzene	µg/L	2.0 U	1.0 U	7.1	6.4	1.0 U
Ethylbenzene	µg/L	2.0 U	1.0 U	4.0	4.0 U	1.0 U
Methylene chloride	µg/L	2.0 U	1.0 U	4.0 U	4.0 U	1.0 U
Tetrachloroethene	µg/L	2.0 U	1.0 U	4.0 U	4.0 U	1.0 U
Toluene	µg/L	2.0 U	1.0 U	4.0 U	3.9 J	1.0 U
trans-1,2-Dichloroethene	µg/L	2.0 U	1.0 U	4.0 U	4.0 U	1.0 U
Trichloroethene	µg/L	2.0 U	1.0 U	4.0 U	1.9 J	1.0 U
Vinyl chloride	µg/L	2.0 U	1.0 U	4.0 U	4.0 U	1.0 U
Xylenes (total)	µg/L	4.0 U	2.0 U	8.0 U	8.0 U	2.0 U
Semivolatile Organic Compounds						
1,2-Dichlorobenzene	µg/L	200 U	10 U	50 U	1.2 J	10 U
1,4-Dichlorobenzene	µg/L	200 U	10 U	61	2.9 J	10 U
2,4-Dimethylphenol	µg/L	200 U	10 U	12 J	56	10 U
2-Methylphenol	µg/L	200 U	10 U	11 J	9.5 J	10 U
4-Methylphenol	µg/L	200 U	10 U	13 J	170	10 U
Di-n-octyl phthalate (DnOP)	µg/L	200 U	10 U	50 U	10 U	10 U
Naphthalene	µg/L	200 U	10 U	50 U	10 U	10 U
Phenol	µg/L	200 U	10 U	50 U	20	10 U

Notes:

U - Not detected at the associated reporting limit

J - Estimated concentration

-- - Not applicable

Table 2

Analytical Results Summary
Annual Groundwater Monitoring
Gratwick-Riverside Park
North Tonawanda, New York
April 2022

Location ID:		OGC2	OGC3	OGC4	OGC5	OGC6
Sample Name:		WG-7987-042822-SG-009	WG-7987-042822-SG-006	WG-7987-042822-SG-002	WG-7987-042822-SG-011	WG-7987-042822-SG-010
Sample Date:		04/28/2022	04/28/2022	04/28/2022	04/28/2022	04/28/2022
Parameters	**Unit**					
Volatile Organic Compounds						
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	10 U
Acetone	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	10 U
Benzene	µg/L	0.70 U	0.70 U	0.70 U	1.2	1.4 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
Methylene chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	14
Toluene	µg/L	1.0 U	0.58 J	1.0 U	1.0 U	2.1
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	11
Trichloroethene	µg/L	1.0 U	0.84 J	1.0 U	1.0 U	28
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
Xylenes (total)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U
Semivolatile Organic Compounds						
1,2-Dichlorobenzene	µg/L	10 U	100 U	10 U	200 U	10 U
1,4-Dichlorobenzene	µg/L	10 U	100 U	10 U	200 U	10 U
2,4-Dimethylphenol	µg/L	10 U	100 U	10 U	200 U	10 U
2-Methylphenol	µg/L	10 U	12 J	10 U	200 U	1.5 J
4-Methylphenol	µg/L	10 U	6.3 J	10 U	200 U	0.83 J
Di-n-octyl phthalate (DnOP)	µg/L	10 U	100 U	10 U	200 U	10 U
Naphthalene	µg/L	10 U	100 U	10 U	200 U	1.0 J
Phenol	µg/L	10 U	30 J	10 U	200 U	10 U

Notes:

U - Not detected at the associated reporting limit

J - Estimated concentration

-- - Not applicable

Table 2

Analytical Results Summary
Annual Groundwater Monitoring
Gratwick-Riverside Park
North Tonawanda, New York
April 2022

Location ID:		OGC7	OGC8	OGC8	Trip Blank
Sample Name:		WG-7987-042822-SG-007	WG-7987-042822-SG-003	WG-7987-042822-SG-004	TB-7987-042822-SG
Sample Date:		04/28/2022	04/28/2022	04/28/2022 Duplicate	04/28/2022
Parameters	**Unit**				
Volatile Organic Compounds					
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	µg/L	0.70 U	0.70 U	0.70 U	0.70 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	0.81 J	1.0 U	1.0 U
Methylene chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.1	0.87 J	1.0 U
Toluene	µg/L	1.2	4.2	4.2	1.0 U
trans-1,2-Dichloroethene	µg/L	1.2	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	2.9	4.3	4.1	1.0 U
Vinyl chloride	µg/L	2.6	1.0 U	1.0 U	1.0 U
Xylenes (total)	µg/L	0.81 J	1.6 J	1.6 J	2.0 U
Semivolatile Organic Compounds					
1,2-Dichlorobenzene	µg/L	10 U	10 U	10 U	--
1,4-Dichlorobenzene	µg/L	10 U	10 U	10 U	--
2,4-Dimethylphenol	µg/L	10 U	2.1 J	2.3 J	--
2-Methylphenol	µg/L	10 U	3.8 J	4.1 J	--
4-Methylphenol	µg/L	10 U	15	16	--
Di-n-octyl phthalate (DnOP)	µg/L	10 U	10 U	10 U	--
Naphthalene	µg/L	10 U	10 U	10 U	--
Phenol	µg/L	10 U	10 U	10 U	--

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
-- - Not applicable

Table 3

Analytical Methods
Annual Groundwater Monitoring
Gratwick-Riverside Park
North Tonawanda, New York
April 2022

Parameter	Method	Matrix	Holding Time	
			Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
Select VOCs	SW-846 8260	Water	-	14
Select SVOCs	SW-846 8270	Water	7	40

Notes:

- - Not applicable
VOCs - Volatile Organic Compounds
SVOCs - Semivolatile Organic Compounds

Method References:
SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

Technical Memorandum

29 June 2022

To	John Pentilchuk	**Tel**	716-297-6150
From	Susan Scrocchi/eew/42	**Ref. No.**	11219563-A1007
Subject	Analytical Results and Reduced Validation Site Effluent-Semiannual Monitoring Gratwick-Riverside Park North Tonawanda, New York October 2021		

1. Introduction

This document details a reduced validation of analytical results for one effluent sample collected in support of the semiannual monitoring program at the North Tonawanda Waste Water Treatment Plant during October 2021. Samples were submitted to Eurofins TestAmerica Laboratory located in Amherst, New York. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3. Some analytical parameters were performed at the Waste Water Treatment Plant lab. The results are presented in Table 2. No assessment of these parameters was performed.

Standard Level II report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody form, finished report forms, method blank data, and recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spikes (MS) quality assurance/quality control (QA/QC) samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

i) "USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review", United-States Environmental Protection Agency (USEPA) 540-R-20-006, November 2020

ii) "USEPA National Functional Guidelines for Superfund Organic Methods Data Review", USEPA-540-R-20-005, November 2020

Items 1 and 2 will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.

All samples were properly delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

4. Surrogate Spike Recoveries - Organic Analyses

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for volatile and semi-volatile determinations were spiked with the appropriate number of surrogate compounds prior to sample extraction and/or analysis.

Each individual surrogate compound is expected to meet the laboratory control limits with the exception of semi-volatile organic compound (SVOC) analyses. According to the "Guidelines" for SVOC analyses, up to one outlying surrogate in the base/neutral or acid fractions is acceptable as long as the recovery is at least 10 percent.

Surrogate recoveries were assessed against laboratory control limits. All volatile surrogate recoveries were within the laboratory control limits. Due to a necessary dilution, the SVOC recoveries were not assessed.

5. Laboratory Control Sample Analyses

LCS and/or LCS/laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The relative percent difference (RPD) of the LCS/LCSD recoveries is used to evaluate analytical precision.

For this study, LCS/LCSD were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Organic Analyses

The LCS/LCSD contained all compounds of interest. All LCS recoveries and RPDs were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

Inorganic Analyses

The LCS/LCSD contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS recoveries and RPDs were within the control limits, demonstrating acceptable analytical accuracy and precision.

6. Field QA/QC Samples

No field QA/QC samples were submitted with these effluent samples.

7. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. No positive analyte detections less than the RL but greater than the MDL were reported. Non-detect results were presented as non-detect at the RL in Table 2.

8. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable without qualification.

Regards

Sue Scrocchi
Data Management Team Leader

Table 1

Sample Collection and Analysis Summary
Site Effluent-Semiannual Monitoring
Gratwick-Riverside Park
North Tonawanda, New York
October 2021

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters											
					VOCs	SVOCs	Metals	Mercury	Sulfate, Chloride	Nitrate	Cyanide	Alkalinity	Hardness	Total Dissolved Solids	Total Kjeldahl Nitrogen	Sulfide
GRP-COMP	Effluent	Water	10/05-06/2021	08:00		X	X	X	X	X		X	X	X		X
GRP-GRAB	Effluent	Water	10/06/2021	08:01	X						X				X	

Notes:

VOCs - Volatile Organic Compounds
SVOCs - Semi-volatile Organic Compounds

Table 2

Analytical Results Summary
Site Effluent-Semiannual Monitoring
Gratwick-Riverside Park
North Tonawanda, New York
October 2021

	Location ID:	Effluent	Effluent
	Sample Name:	GRP COMP	GRP GRAB
	Sample Date:	10/06/2021	10/06/2021
Parameters	**Unit**		
Volatile Organic Compounds			
1,1,1-Trichloroethane	µg/L	--	5.0 U
1,1-Dichloroethane	µg/L	--	5.0 U
1,2-Dichloroethane	µg/L	--	5.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	--	25 U
Acetone	µg/L	--	25 U
Benzene	µg/L	--	5.0 U
Chlorobenzene	µg/L	--	5.0 U
Ethylbenzene	µg/L	--	5.0 U
Methylene chloride	µg/L	--	5.0 U
Styrene	µg/L	--	5.0 U
Tetrachloroethene	µg/L	--	5.0 U
Toluene	µg/L	--	6.7
trans-1,2-Dichloroethene	µg/L	--	5.0 U
Trichloroethene	µg/L	--	8
Vinyl chloride	µg/L	--	5.0 U
Xylenes (total)	µg/L	--	10 U
Semi-volatile Organic Compounds			
1,2-Dichlorobenzene	µg/L	10 U	--
1,4-Dichlorobenzene	µg/L	10 U	--
2,4-Dimethylphenol	µg/L	7.0 U	--
2-Methylphenol	µg/L	5.0 U	--
4-Methylphenol	µg/L	5.0 U	--
Di-n-octyl phthalate (DnOP)	µg/L	6.0 U	--
Naphthalene	µg/L	5.0 U	--
Phenol	µg/L	5.0 U	--
Metals			
Aluminum	mg/L	0.20 U	--
Antimony	mg/L	0.020 U	--
Arsenic	mg/L	0.015 U	--
Barium	mg/L	0.076	--
Beryllium	mg/L	0.0020 U	--
Cadmium	mg/L	0.0020 U	--
Chromium	mg/L	0.0040 U	--
Copper	mg/L	0.020	--
Iron	mg/L	0.38	--
Lead	mg/L	0.010 U	--
Magnesium	mg/L	1.0	--

Table 2

Analytical Results Summary
Site Effluent-Semiannual Monitoring
Gratwick-Riverside Park
North Tonawanda, New York
October 2021

	Location ID:	Effluent	Effluent
	Sample Name:	GRP COMP	GRP GRAB
	Sample Date:	10/06/2021	10/06/2021
Parameters	**Unit**		
Metals (Continued)			
Manganese	mg/L	0.013	--
Mercury	mg/L	0.00020 U	--
Nickel	mg/L	0.010 U	--
Selenium	mg/L	0.025 U	--
Silver	mg/L	0.0060 U	--
Sodium	mg/L	194	--
Zinc	mg/L	0.021	--
General Chemistry			
Alkalinity, bicarbonate	mg/L	5.0 U	--
Alkalinity, carbonate	mg/L	78.5	--
Alkalinity, total (as CaCO3)	mg/L	78.5	--
Ammonia-N	mg/L	1.12	--
Biochemical oxygen demand (BOD)	mg/L	9.42	--
Chloride	mg/L	283	--
Cyanide (total)	mg/L	--	0.019 / 0.019
Hardness	mg/L	268	--
Nitrate (as N)	mg/L	0.050 U	--
Oil and grease	mg/L	0.40	--
Phenolics (total)	mg/L	U	--
Phosphate phosporus	mg/L	0.10	--
Sulfate	mg/L	158	--
Sulfide	mg/L	5.6	--
Total dissolved solids (TDS)	mg/L	827	--
Total kjeldahl nitrogen (TKN)	mg/L	--	5.3
Total suspended solids (TSS)	mg/L	193	--
pH (water)	s.u.	10.36	--

Notes:

"--" - Not analyzed
U - Not detected at the associated reporting limit

Table 3

Analytical Methods
Site Effluent-Semiannual Monitoring
Gratwick-Riverside Park
North Tonawanda, New York
October 2021

Parameter	Method	Matrix	Holding Time	
			Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
Volatile Organic Compounds	EPA 624.1[1]	Water	-	14
Semi-volatile Organic Compounds	EPA 625.1[1]	Water	7	40
Target Analyte List Metals	EPA 200.7[1]	Water	-	180
Mercury	EPA 245.1[1]	Water	-	28
Chloride/Sulfate	EPA 300.0[1]	Water	-	28
Cyanide	EPA 335.4[1]	Water	-	14
Nitrogen, Total Kjeldahl (TKN)	EPA 351.2[1]	Water	-	28
Nitrate	EPA 353.2[1]	Water	-	48 hours
Hardness	SM 2340[2]	Water	-	180
Alkalinity	SM2320B[2]	Water	-	14
Total Dissolved Solids	SM2540C[2]	Water	-	7
Sulfide	SM4500-S2-F[2]	Water	-	7

Notes:

"-" - Not applicable

Method References:

[1] - "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, with subsequent revisions

[2] - "Methods for Chemical Analysis of Water and Wastes", USEPA-600/4-79-020, March 1983, with subsequent revisions

USEPA - United States Environmental Protection Agency

Technical Memorandum

30 June 2022

To	John Pentilchuk	**Tel**	716-297-6150
From	Susan Scrocchi/eew/43	**Ref. No.**	11219563-A1007
Subject	Analytical Results and Reduced Validation Site Effluent-Semiannual Monitoring Gratwick-Riverside Park North Tonawanda, New York May 2022		

1. Introduction

This document details a reduced validation of analytical results for one effluent sample collected in support of the semiannual monitoring program at the North Tonawanda Waste Water Treatment Plant during May 2022. Samples were submitted to Eurofins TestAmerica Laboratory located in Amherst, New York. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3. Some analytical parameters were performed at the Waste Water Treatment Plant lab. The results are presented in Table 2. No assessment of these parameters was performed.

Standard Level II report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody form, finished report forms, method blank data, and recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spikes (MS) quality assurance/quality control (QA/QC) samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

i) "USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review", United-States Environmental Protection Agency (USEPA) 540-R-20-006, November 2020

ii) "USEPA National Functional Guidelines for Superfund Organic Methods Data Review", USEPA-540-R-20-005, November 2020

Items 1 and 2 will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.

All samples were properly delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

4. Surrogate Spike Recoveries - Organic Analyses

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for volatile and semi-volatile determinations were spiked with the appropriate number of surrogate compounds prior to sample extraction and/or analysis.

Each individual surrogate compound is expected to meet the laboratory control limits with the exception of semi-volatile organic compound (SVOC) analyses. According to the "Guidelines" for SVOC analyses, up to one outlying surrogate in the base/neutral or acid fractions is acceptable as long as the recovery is at least 10 percent.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries were within the laboratory control limits.

5. Laboratory Control Sample Analyses

LCS and/or LCS/laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The relative percent difference (RPD) of the LCS/LCSD recoveries is used to evaluate analytical precision.

For this study, LCS/LCSD were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Organic Analyses

The LCS/LCSD contained all compounds of interest. All LCS recoveries and RPDs were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

Inorganic Analyses

The LCS/LCSD contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS recoveries and RPDs were within the control limits, demonstrating acceptable analytical accuracy and precision.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision. If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed. If only the MS or MSD recovery was outside of control limits, no qualification of the data was performed based on the acceptable recovery of the companion spike and the acceptable RPD.

MS/MSD analyses were performed for volatile and cyanide analyses.

Organic Analyses

The MS/MSD samples were spiked with all compounds of interest. All percent recoveries and RPD values were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision with the exception of variability between vinyl chloride recoveries. The associated result was qualified as estimated (see Table 4).

Inorganic Analyses

The MS sample was spiked with the analyte of interest, and the results were evaluated using the laboratory criteria. The cyanide MS recovered below the criteria and the associated result was qualified as estimated with a possible low bias (see Table 4).

7. Field QA/QC Samples

No field QA/QC samples were submitted with these effluent samples.

8. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. No positive analyte detections less than the RL but greater than the MDL were reported. Non-detect results were presented as non-detect at the RL in Table 2.

9. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable with the qualifications noted here in.

Regards

Sue Scrocchi
Data Management Team Leader

Table 1

Sample Collection and Analysis Summary
Site Effluent-Semiannual Monitoring
Gratwick-Riverside Park
North Tonawanda, New York
May 2022

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters											
					VOCs	SVOCs	Metals	Mercury	Sulfate, Chloride	Nitrate	Cyanide	Alkalinity	Hardness	Total Dissolved Solids	Total Kjeldahl Nitrogen	Sulfide
GRP-COMP	Effluent	Water	05/02-03/2022	08:00		X	X	X	X	X		X	X	X		X
GRP-GRAB	Effluent	Water	05/03/2022	08:01	X						X				X	

Notes:

VOCs - Volatile Organic Compounds
SVOCs - Semi-volatile Organic Compounds

Table 2

Analytical Results Summary
Site Effluent-Semiannual Monitoring
Gratwick-Riverside Park
North Tonawanda, New York
May 2022

Location ID:		**Effluent**	**Effluent**
Sample Name:		**GRP COMP**	**GRP GRAB**
Sample Date:		**05/03/2022**	**05/03/2022**
Parameters	**Unit**		
Volatile Organic Compounds			
1,1,1-Trichloroethane	µg/L	--	5.0 U
1,1-Dichloroethane	µg/L	--	5.0 U
1,2-Dichloroethane	µg/L	--	5.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	--	25 U
Acetone	µg/L	--	25 U
Benzene	µg/L	--	5.0 U
Chlorobenzene	µg/L	--	5.10
Ethylbenzene	µg/L	--	5.0 U
Methylene chloride	µg/L	--	5.0 U
Styrene	µg/L	--	5.0 U
Tetrachloroethene	µg/L	--	5.0 U
Toluene	µg/L	--	5.6
trans-1,2-Dichloroethene	µg/L	--	5.0 U
Trichloroethene	µg/L	--	13
Vinyl chloride	µg/L	--	5.5 J
Xylenes (total)	µg/L	--	10 U
Semi-volatile Organic Compounds			
1,2-Dichlorobenzene	µg/L	10 U	--
1,4-Dichlorobenzene	µg/L	22	--
2,4-Dimethylphenol	µg/L	5.0 U	--
2-Methylphenol	µg/L	5.0 U	--
4-Methylphenol	µg/L	5.0 U	--
Di-n-octyl phthalate (DnOP)	µg/L	5.0 U	--
Naphthalene	µg/L	5.0 U	--
Phenol	µg/L	5.0 U	--

Table 2

Analytical Results Summary
Site Effluent-Semiannual Monitoring
Gratwick-Riverside Park
North Tonawanda, New York
May 2022

Location ID:		**Effluent**	**Effluent**
Sample Name:		**GRP COMP**	**GRP GRAB**
Sample Date:		**05/03/2022**	**05/03/2022**
Parameters	**Unit**		
Metals			
Aluminum	mg/L	0.20 U	--
Antimony	mg/L	0.020 U	--
Arsenic	mg/L	0.015 U	--
Barium	mg/L	0.066	--
Beryllium	mg/L	0.0020 U	--
Cadmium	mg/L	0.0020 U	--
Chromium	mg/L	0.0040 U	--
Copper	mg/L	0.010 U	--
Iron	mg/L	0.050 U	--
Lead	mg/L	0.010 U	--
Magnesium	mg/L	3.1	--
Manganese	mg/L	0.0069	--
Mercury	mg/L	0.00020 U	--
Nickel	mg/L	0.010 U	--
Selenium	mg/L	0.025 U	--
Silver	mg/L	0.0060 U	--
Sodium	mg/L	258	--
Zinc	mg/L	0.010 U	--
General Chemistry			
Alkalinity, bicarbonate	mg/L	32.1	--
Alkalinity, carbonate	mg/L	32.1	--
Alkalinity, total (as CaCO3)	mg/L	32.1	--
Ammonia-N	mg/L	U	--
Biochemical oxygen demand (BOD)	mg/L	8.05	--
Chloride	mg/L	397	--
Cyanide (total)	mg/L	--	0.010 UJ-
Hardness	mg/L	176	--
Nitrate (as N)	mg/L	0.050 U	--

Table 2

Analytical Results Summary
Site Effluent-Semiannual Monitoring
Gratwick-Riverside Park
North Tonawanda, New York
May 2022

Location ID:		**Effluent**	**Effluent**
Sample Name:		**GRP COMP**	**GRP GRAB**
Sample Date:		**05/03/2022**	**05/03/2022**
Parameters	**Unit**		
General Chemistry (Continued)			
Oil and grease	mg/L	4.90	--
Phosphate phosporus	mg/L	0.016	--
Sulfate	mg/L	203	--
Sulfide	mg/L	4.8	--
Total dissolved solids (TDS)	mg/L	207	--
Total kjeldahl nitrogen (TKN)	mg/L	--	4.9
Total suspended solids (TSS)	mg/L	25	--
pH (water)	s.u.	9.53	--

Notes:

"--" - Not analyzed

U - Not detected at the associated reporting limit

J - Estimated concentration

UJ- - Not detected; associated reporting limit is estimated, biased low

Table 3

Analytical Methods
Site Effluent-Semiannual Monitoring
Gratwick-Riverside Park
North Tonawanda, New York
May 2022

			Holding Time	
Parameter	**Method**	**Matrix**	**Collection to Extraction (Days)**	**Collection or Extraction to Analysis (Days)**
Volatile Organic Compounds	EPA 624.1[1]	Water	-	14
Semi-volatile Organic Compounds	EPA 625.1[1]	Water	7	40
Target Analyte List Metals	EPA 200.7[1]	Water	-	180
Mercury	EPA 245.1[1]	Water	-	28
Chloride/Sulfate	EPA 300.0[1]	Water	-	28
Cyanide	EPA 335.4[1]	Water	-	14
Nitrogen, Total Kjeldahl (TKN)	EPA 351.2[1]	Water	-	28
Nitrate	EPA 353.2[1]	Water	-	48 hours
Hardness	SM 2340[2]	Water	-	180
Alkalinity	SM2320B[2]	Water	-	14
Total Dissolved Solids	SM2540C[2]	Water	-	7
Sulfide	SM4500-S2-F[2]	Water	-	7

Notes:

"-" - Not applicable

Method References:

[1] - "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, with subsequent revisions

[2] - "Methods for Chemical Analysis of Water and Wastes", USEPA-600/4-79-020, March 1983, with subsequent revisions

USEPA - United States Environmental Protection Agency

Table 4

Qualified Sample Results Due to Outlying MS/MSD Results
Site Effluent-Semiannual Monitoring
Gratwick-Riverside Park
North Tonawanda, New York
May 2022

Parameter	Sample ID	Analyte	MS % Recovery	MSD % Recovery	RPD (percent)	Control Limits % Recovery	Control Limits RPD	Qualified Result	Units
General Chemistry	GRP GRAB	Cyanide (total)	80	-	-	90-110	-	0.010 UJ-	mg/L
Volatile Organic Compounds	GRP GRAB	Vinyl chloride	114	141	20	1-251	15	5.5 J	µg/L

Notes:

MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference
J - Estimated concentration
UJ- - Not detected; associated reporting limit is estimated biased low

Appendix E

Monthly Inspection Logs
(June 2021 to May 2022)

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 06/30/11 (MM DD YY)

INSPECTOR(S): D. Tyran / S. Gardner

	Item	*Inspect For*	*Action Required*	*Comments*
1.	**Perimeter Collection System/Off-Site Forcemain**			
X	Manholes	- cover on securely	None	
X		- condition of cover		
X		- condition of inside of manhole		
X		- flow conditions		
X	Wet Wells	- cover on securely		
X		- condition of cover		
X		- condition of inside of wet well		
2.	**Landfill Cap**			
X	Vegetated Soil Cover	- erosion	50' Either side of River Middle is a 8 to 10 ft. Wide strip of sod and vegetation washed away by wave action. More wire mesh is exposed	
X		- bare areas		
X		- washouts		
X		- leachate seeps		
X		- length of vegetation		
X		- dead/dying vegetation		

FORM 17

CRA 7987 (24)

Daniel J Tyran

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 06/30/21 (MM DD YY)

INSPECTOR(S): D. Tyran / S. Gardner

	Item	*Inspect For*	*Action Required*	*Comments*
2.	Landfill Cap (continued)			
X	Access Roads	- bare areas, dead/dying veg.	None	
X		- erosion		
X		- potholes or puddles		
X		- obstruction		
3.	Wetlands (Area "F")	- dead/dying vegetation		
X		- change in water budget		
X		- general condition of wetlands		
4.	Other Site Systems			
	Perimeter Fence	- integrity of fence	N/A	
		- integrity of gates		
		- integrity of locks		
		- placement and condition of signs		

FORM 17

CRA 7987 (24)

Dan J Tyran

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 06/30/11 (MM DD YY)

INSPECTOR(S): D. Tyran / S. Gardner

	Item	*Inspect For*	*Action Required*	*Comments*
4.	**Other Site Systems (continued)**			
X	Drainage Ditches/ Swale Outlets	- sediment build-up	None	
X		- erosion		
X		- condition of erosion protection		
X		- flow obstructions		
X		- dead/dying vegetation		
X		- cable concrete/gabion mats and riprap		
X	Culverts	- sediment build-up		
X		- erosion		
X		- condition of erosion protection		
X		- flow obstructions		
	Gas Vents	- intact / damage		
X	Wells	- locks secure		
X	Shoreline Stabilization	- condition of gabion mats and riprap	Gabion mats exposed at various points along the shoreline	

FORM 17

CRA 7987 (24)

David J Tyran

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 07/28/21 (MM DD YY)

INSPECTOR(S): S GARDNER, J ADAMS

Item	*Inspect For*	*Action Required*	*Comments*
1. **Perimeter Collection System/Off-Site Forcemain**			
☒ Manholes	- cover on securely	NONE	
☒	- condition of cover		
☒	- condition of inside of manhole		
☒	- flow conditions		
☒ Wet Wells	- cover on securely		
☒	- condition of cover		
☒	- condition of inside of wet well		
2. **Landfill Cap**			
☒ Vegetated Soil Cover	- erosion	50' EITHER SIDE OF RIVER MIDDLE OUTFALL IS A 8' TO 10' WIDE STRIP OF SOD AND VEGETATION WASHED AWAY BY WAVE ACTION. MORE WIRE MESH IS EXPOSED	
☒	- bare areas		
☒	- washouts		
☒	- leachate seeps		
☒	- length of vegetation		
☒	- dead/dying vegetation		

FORM 17

Shawn Gardner

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 0 7 2 8 2 1 (MM DD YY)

INSPECTOR(S): S GARDNER, J. ADAMS

	Item	*Inspect For*	*Action Required*	*Comments*
2.	**Landfill Cap (continued)**			
☒	Access Roads	- bare areas, dead/dying veg.	NONE	
☒		- erosion		
☒		- potholes or puddles		
☒		- obstruction		
3.	Wetlands (Area "F")	- dead/dying vegetation		
☒		- change in water budget		
		- general condition of wetlands		
4.	**Other Site Systems**			
☐	Perimeter Fence	- integrity of fence	NA	
☐		- integrity of gates		
☐		- integrity of locks		
☐		- placement and condition of signs		

FORM 17

Shawn Gardner

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 07/28/21 (MM DD YY)

INSPECTOR(S): S GARDNER, J. ADAMS

Item	Inspect For	Action Required	Comments
4. Other Site Systems (continued)			
☒ Drainage Ditches/ Swale Outlets	- sediment build-up	NONE	
	- erosion		
	- condition of erosion protection		
	- flow obstructions		
	- dead/dying vegetation		
	- cable concrete/gabion mats and riprap		
☒ Culverts	- sediment build-up		
	- erosion		
	- condition of erosion protection		
	- flow obstructions		
☐ Gas Vents	- intact / damage	GABION MATS EXPOSED AT VARIOUS POINTS ALONG THE SHORELINE	
☒ Wells	- locks secure		
☒ Shoreline Stabilization	- condition of gabion mats and riprap		

FORM 17

Shawn Gardner

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 10/30/11 (MM DD YY)

INSPECTOR(S): D. Tyran

	Item	Inspect For	Action Required	Comments
1.	**Perimeter Collection System/Off-Site Forcemain**			
X	Manholes	- cover on securely	None	
X		- condition of cover		
X		- condition of inside of manhole		
X		- flow conditions		
X	Wet Wells	- cover on securely		
X		- condition of cover		
X		- condition of inside of wet well		
2.	**Landfill Cap**			
X	Vegetated Soil Cover	- erosion	50' Either side of River Middle outfall is a 8' to 10' wide strip of sod and vegetation washed away by wave action. Mote wire mesh is exposed	
X		- bare areas		
X		- washouts		
X		- leachate seeps		
X		- length of vegetation		
X		- dead/dying vegetation		

FORM 17

CRA 7987 (24)

David J Tyran

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 08/30/11 (MM DD YY)

INSPECTOR(S): D. Tyran

	Item	*Inspect For*	*Action Required*	*Comments*
2.	Landfill Cap (continued)			
X	Access Roads	- bare areas, dead/dying veg.	None	
X		- erosion		
X		- potholes or puddles		
X		- obstruction		
	3. Wetlands (Area "F")	- dead/dying vegetation		
X		- change in water budget		
X		- general condition of wetlands		
4.	Other Site Systems			
	Perimeter Fence	- integrity of fence	NA	
		- integrity of gates		
		- integrity of locks		
		- placement and condition of signs		

FORM 17

CRA 7987 (24)

Dave J Tyran

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 08 30 21 (MM DD YY)

INSPECTOR(S): D. Tyran

	Item	Inspect For	Action Required	Comments
4.	Other Site Systems (continued)			
X	Drainage Ditches/ Swale Outlets	- sediment build-up	None	
X		- erosion		
X		- condition of erosion protection		
X		- flow obstructions		
X		- dead/dying vegetation		
X		- cable concrete/ gabion mats and riprap		
X	Culverts	- sediment build-up		
X		- erosion		
X		- condition of erosion protection		
X		- flow obstructions		
	Gas Vents	- intact / damage	Gabion mats exposed at various points along the shoreline	
X	Wells	- locks secure		
X	Shoreline Stabilization	- condition of gabion mats and riprap		

FORM 17

CRA 7987 (24)

David J Tyran

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 10/30/11 (MM DD YY)

INSPECTOR(S): D. Tyran/S. Gardner

	Item	*Inspect For*	*Action Required*	*Comments*
1.	Perimeter Collection System/Off-Site Forcemain			
X	Manholes	- cover on securely	None	
X		- condition of cover		
X		- condition of inside of manhole		
X		- flow conditions		
X	Wet Wells	- cover on securely		
X		- condition of cover		
X		- condition of inside of wet well		
2.	Landfill Cap			
X	Vegetated Soil Cover	- erosion	50' Either side of River Middle outfall is a 8' to 10' wide strip of sod and vegetation washed away by wave action. More wire mesh is exposed	
X		- bare areas		
X		- washouts		
X		- leachate seeps		
X		- length of vegetation		
X		- dead/dying vegetation		

FORM 17

CRA 7987 (24)

Dave Tyran

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 09/30/21 (MM DD YY)

INSPECTOR(S): D. Tyran / S. Gardner

	Item	*Inspect For*	*Action Required*	*Comments*
2.	Landfill Cap (continued)			
X	Access Roads	- bare areas, dead/dying veg.	None	
X		- erosion		
X		- potholes or puddles		
X		- obstruction		
3.	Wetlands (Area "F")			
X		- dead/dying vegetation		
X		- change in water budget		
X		- general condition of wetlands		
4.	Other Site Systems			
	Perimeter Fence	- integrity of fence	N/A	
		- integrity of gates		
		- integrity of locks		
		- placement and condition of signs		

FORM 17

CRA 7987 (24)

Dave J. Tyran

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 10 / 30 / 2011 (MM DD YY)

INSPECTOR(S): D. Tyran / S. Gardner

	Item	Inspect For	Action Required	Comments
4.	Other Site Systems (continued)			
X	Drainage Ditches/ Swale Outlets	- sediment build-up	None	
X		- erosion		
X		- condition of erosion protection		
X		- flow obstructions		
X		- dead/dying vegetation		
X		- cable concrete/gabion mats and riprap		
X	Culverts	- sediment build-up		
X		- erosion		
X		- condition of erosion protection		
X		- flow obstructions		
	Gas Vents	- intact / damage	Gabion mats exposed at various points along the Shoreline	
X	Wells	- locks secure		
X	Shoreline Stabilization	- condition of gabion mats and riprap		

FORM 17

CRA 7987 (24)

David J. Tyran

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 10/25/21 (MM DD YY)

INSPECTOR(S): S GARDNER

Item	Inspect For	Action Required	Comments
1. **Perimeter Collection System/Off-Site Forcemain**			
Manholes	- cover on securely	NONE	
	- condition of cover		
	- condition of inside of manhole		
	- flow conditions		
Wet Wells	- cover on securely		
	- condition of cover		
	- condition of inside of wet well		
2. **Landfill Cap**			
Vegetated Soil Cover	- erosion	50' EITHER SIDE OF RIVER MIDDLE OUTFALL IS A 8' TO 10' WIDE STRIP OF SOD AND VEGETATION WASHED AWAY BY WAVE ACTION. MORE WIRE MESH IS EXPOSED	
	- bare areas		
	- washouts		
	- leachate seeps		
	- length of vegetation		
	- dead/dying vegetation		

FORM 17

Sharon Gardner

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 10/25/21 (MM DD YY)

INSPECTOR(S): S GARDNER

	Item	*Inspect For*	*Action Required*	*Comments*
2.	**Landfill Cap (continued)**			
X	Access Roads	- bare areas, dead/dying veg.	NONE	
X		- erosion		
X		- potholes or puddles		
X		- obstruction		
3.	**Wetlands (Area "F")**			
X		- dead/dying vegetation		
X		- change in water budget		
X		- general condition of wetlands		
4.	**Other Site Systems**			
	Perimeter Fence	- integrity of fence	NA	
		- integrity of gates		
		- integrity of locks		
		- placement and condition of signs		

FORM 17

Shawn Gardner

CRA 7987 (24)

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 1 0 2 5 2 1 (MM DD YY)

INSPECTOR(S): S GARDNER

	Item	*Inspect For*	*Action Required*	*Comments*
4.	**Other Site Systems (continued)**			
☒	Drainage Ditches/ Swale Outlets	- sediment build-up	NONE	
		- erosion		
		- condition of erosion protection		
		- flow obstructions		
		- dead/dying vegetation		
		- cable concrete/gabion mats and riprap		
☒	Culverts	- sediment build-up		
		- erosion		
		- condition of erosion protection		
		- flow obstructions		
☐	Gas Vents	- intact / damage	GABION MATS EXPOSED AT VARIOUS POINTS ALONG THE SHORELINE	
☒	Wells	- locks secure		
	Shoreline Stabilization	- condition of gabion mats and riprap		

FORM 17

Shawn Gardner

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 11/30/21 (MM DD YY)

INSPECTOR(S): S GARDNER

	Item	*Inspect For*	*Action Required*	*Comments*
1.	**Perimeter Collection System/Off-Site Forcemain**			
☒	Manholes	- cover on securely	NONE	
		- condition of cover		
		- condition of inside of manhole		
		- flow conditions		
☒	Wet Wells	- cover on securely		
		- condition of cover		
		- condition of inside of wet well		
2.	**Landfill Cap**			
☒	Vegetated Soil Cover	- erosion	50' EITHER SIDE OF RIVER MIDDLE OUTFALL IS A 8' TO 10' WIDE STRIP OF SOD AND VEGETATION WASHED AWAY BY WAVE ACTION MORE WIRE MESH EXPOSED	
		- bare areas		
		- washouts		
		- leachate seeps		
		- length of vegetation	VEGETATION IS DORMANT FOR THE SEASON	
		- dead/dying vegetation		

FORM 17

Shayne Gardner

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 11/30/21 (MM DD YY)

INSPECTOR(S): S GARDNER

	Item	*Inspect For*	*Action Required*	*Comments*
2.	**Landfill Cap (continued)**			
X	Access Roads	- bare areas, dead/dying veg.		
X		- erosion		
X		- potholes or puddles	SNOW COVERED ROADWAYS	
X		- obstruction	NONE	
3.	**Wetlands (Area "F")**	- dead/dying vegetation	VEGETATION DORMANT FOR THE SEASON	
X		- change in water budget		
X		- general condition of wetlands		
4.	**Other Site Systems**			
	Perimeter Fence	- integrity of fence	NA	
		- integrity of gates		
		- integrity of locks		
		- placement and condition of signs		

FORM 17

Shawn Gardner

CRA 7987 (24)

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 11/30/21 (MM DD YY)

INSPECTOR(S): S GARDNER

	Item	*Inspect For*	*Action Required*	*Comments*
4.	Other Site Systems (continued)			
X	Drainage Ditches/ Swale Outlets	- sediment build-up	NONE	
X		- erosion		
X		- condition of erosion protection		
X		- flow obstructions		
X		- dead/dying vegetation		
X		- cable concrete/gabion mats and riprap		
X	Culverts	- sediment build-up		
X		- erosion		
X		- condition of erosion protection		
X		- flow obstructions		
	Gas Vents	- intact / damage	GABION MATS EXPOSED AT VARIOUS POINTS ALONG SHORELINE	
X	Wells	- locks secure		
X	Shoreline Stabilization	- condition of gabion mats and riprap		

FORM 17

Shawn Gardner

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 12/2/2/2/ (MM DD YY)

INSPECTOR(S): S GARDNER, D TYRAN

Item	Inspect For	Action Required	Comments
1. **Perimeter Collection System/Off-Site Forcemain**			
☒ Manholes	- cover on securely	NONE	
	- condition of cover		
	- condition of inside of manhole		
	- flow conditions		
☒ Wet Wells	- cover on securely		
	- condition of cover		
	- condition of inside of wet well		
2. **Landfill Cap**			
☒ Vegetated Soil Cover	- erosion	50' EITHER SIDE OF RIVER MIDDLE OUTFALL IS A 8' TO 10' WIDE STRIP OF SOD AND VEGITATION WASHED AWAY. MAJOR WIND STORM LAST WEEK CAUSED MORE BANK EROSION AROUND RIVER NORTH, MORE WIRE MESH EXPOSED	
	- bare areas		
	- washouts		
	- leachate seeps		
	- length of vegetation		
	- dead/dying vegetation	VEGETATION IS DORMANT FOR THE SEASON	

FORM 17

Shawn Gardner

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 1 2 2 2 2 1 (MM DD YY)

INSPECTOR(S): S GARDNER, D TYRAN

	Item	*Inspect For*	*Action Required*	*Comments*
2.	**Landfill Cap (continued)**			
X	Access Roads	- bare areas, dead/dying veg.	NONE	
X		- erosion		
X		- potholes or puddles		
X		- obstruction		
	3. Wetlands (Area "F")	- dead/dying vegetation	VEGETATION DORMANT FOR THE SEASON	
X		- change in water budget		
X		- general condition of wetlands		
	4. **Other Site Systems**			
	Perimeter Fence	- integrity of fence	NA	
		- integrity of gates		
		- integrity of locks		
		- placement and condition of signs		

FORM 17

Sharon Gardner

CRA 7987 (24)

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 11/22/21 (MM DD YY)

INSPECTOR(S): S GARDNER, D TYRAN

	Item	*Inspect For*	*Action Required*	*Comments*
4.	Other Site Systems (continued)			
☒	Drainage Ditches/ Swale Outlets	- sediment build-up	NONE	
☒		- erosion		
☒		- condition of erosion protection		
☒		- flow obstructions		
☒		- dead/dying vegetation		
☒		- cable concrete/ gabion mats and riprap		
☒	Culverts	- sediment build-up		
☒		- erosion		
☒		- condition of erosion protection		
☒		- flow obstructions		
☐	Gas Vents	- intact / damage	GABION MATS EXPOSED AT VARIOUS POINTS ALONG SHORELINE, MORE SO AFTER MAJOR WIND STORM LAST WEEK	
☒	Wells	- locks secure		
☒	Shoreline Stabilization	- condition of gabion mats and riprap		

FORM 17

Shawn Gardner

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 11/28/12 (MM DD YY)

INSPECTOR(S): D. Tyran / S. Gardner

	Item	Inspect For	Action Required	Comments
1.	Perimeter Collection System/Off-Site Forcemain			
X	Manholes	- cover on securely	None	
X		- condition of cover		
X		- condition of inside of manhole		
X		- flow conditions		
X	Wet Wells	- cover on securely		
X		- condition of cover		
X		- condition of inside of wet well		
2.	Landfill Cap			
X	Vegetated Soil Cover	- erosion	50' Either side of River	Middle outfall is a
X		- bare areas	8 to 10' wide strip of sod and vegetation	
X		- washouts	washed away. Major wind storm last month	
X		- leachate seeps	caused more bank erosion around River North	
X		- length of vegetation	more wire mesh exposed.	
X		- dead/dying vegetation	Vegetation is Dormant for the Season	

FORM 17

CRA 7987 (24)

Dave J Tyran

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 01/28/22 (MM DD YY)

INSPECTOR(S): D Tyran / S. Gardner

	Item	*Inspect For*	*Action Required*	*Comments*
2.	Landfill Cap (continued)			
X	Access Roads	- bare areas, dead/dying veg.	None	
X		- erosion	↓	
X		- potholes or puddles		
X		- obstruction		
3.	Wetlands (Area "F")	- dead/dying vegetation	Vegetation is Dormant for the season	
X		- change in water budget		
X		- general condition of wetlands		
4.	Other Site Systems			
	Perimeter Fence	- integrity of fence	NA	
		- integrity of gates	↓	
		- integrity of locks		
		- placement and condition of signs		

FORM 17

CRA 7987 (24)

Dave J Tyran

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 01/28/22 (MM DD YY)

INSPECTOR(S): D Tyson/S. Gardner

	Item	*Inspect For*	*Action Required*	*Comments*
4.	Other Site Systems (continued)			
X	Drainage Ditches/ Swale Outlets	- sediment build-up	None	
X		- erosion		
X		- condition of erosion protection		
X		- flow obstructions		
X		- dead/dying vegetation		
X		- cable concrete/gabion mats and riprap		
X	Culverts	- sediment build-up		
X		- erosion		
X		- condition of erosion protection		
X		- flow obstructions		
	Gas Vents	- intact / damage		
X	Wells	- locks secure		
X	Shoreline Stabilization	- condition of gabion mats and riprap	Gabion mats exposed at various points along shoreline more so after major wind storm last month	

FORM 17

Dave J Tyson

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 10/28/22 (MM DD YY)

INSPECTOR(S): D. Tyran / S. Gardner

	Item	Inspect For	Action Required	Comments
1.	Perimeter Collection System/Off-Site Forcemain			
X	Manholes	- cover on securely	None	
X		- condition of cover		
X		- condition of inside of manhole		
X		- flow conditions		
X	Wet Wells	- cover on securely		
X		- condition of cover		
X		- condition of inside of wet well		
2.	Landfill Cap			
X	Vegetated Soil Cover	- erosion	50' Either side of River Middle outfall is a 8' to 10' wide strip of sod and vegetation washed away. Several major wind storms this winter have caused more erosion around River North. More wire mesh is exposed	
X		- bare areas		
X		- washouts		
X		- leachate seeps		
X		- length of vegetation	Vegetation is dormant for the season	
X		- dead/dying vegetation		

FORM 17

CRA 7987 (24)

Dan J Tyran

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 06/28/22 (MM DD YY)

INSPECTOR(S): D. Tyran / S. Gardner

	Item	*Inspect For*	*Action Required*	*Comments*
2.	Landfill Cap (continued)			
✓	Access Roads	- bare areas, dead/dying veg.	None	
X		- erosion	↓	
X		- potholes or puddles		
X		- obstruction		
3.	Wetlands (Area "F")			
X		- dead/dying vegetation	Vegetation is dormant for the season	
X		- change in water budget		
X		- general condition of wetlands		
4.	Other Site Systems			
	Perimeter Fence	- integrity of fence	NA	
		- integrity of gates	↓	
		- integrity of locks		
		- placement and condition of signs		

FORM 17

CRA 7987 (24)

David J Tyran

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 10/22/08/22 (MM DD YY)

INSPECTOR(S): D. Tyran / S. Gardner

	Item	*Inspect For*	*Action Required*	*Comments*
4.	Other Site Systems (continued)			
X	Drainage Ditches/ Swale Outlets	- sediment build-up	None	
X		- erosion		
X		- condition of erosion protection		
X		- flow obstructions		
X		- dead/dying vegetation		
X		- cable concrete/ gabion mats and riprap		
X	Culverts	- sediment build-up		
X		- erosion		
X		- condition of erosion protection		
X		- flow obstructions		
X	Gas Vents	- intact / damage	Gabion mats exposed at various points along Shoreline. More so after several wind storms this winter.	
X	Wells	- locks secure		
X	Shoreline Stabilization	- condition of gabion mats and riprap		

FORM 17

CRA 7987 (24)

David J. Tyran

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 10 | 3 | 3 | 0 | 2 | 2 (MM DD YY)

INSPECTOR(S): D TYRAN, S GARDNER

	Item	*Inspect For*	*Action Required*	*Comments*
1.	**Perimeter Collection System/Off-Site Forcemain**			
X	Manholes	- cover on securely	NONE	
X		- condition of cover		
X		- condition of inside of manhole		
X		- flow conditions		
X	Wet Wells	- cover on securely		
X		- condition of cover		
X		- condition of inside of wet well		
2.	**Landfill Cap**			
X	Vegetated Soil Cover	- erosion	50' EITHER SIDE OF RIVER MIDDLE OUTFALL IS A 8' TO	
X		- bare areas	10' WIDE STRIP OF SOD AND VEGITATION WASHED AWAY.	
X		- washouts	SEVERAL MAJOR WIND STORMS THIS WINTER HAS CAUSED	
X		- leachate seeps	MORE EROSION AROUND RIVER NORTH. MORE WIRE	
X		- length of vegetation	MESH EXPOSED	
X		- dead/dying vegetation	VEGITATION DOMANT FOR SEASON	

FORM 17

CRA 7987 (24)

Shawn Gardner

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 03/30/22 (MM DD YY)

INSPECTOR(S): D TYRAN, S GARDNER

Item	Inspect For	Action Required	Comments
2. Landfill Cap (continued)			
X Access Roads	- bare areas, dead/dying veg.	NONE	
X	- erosion		
X	- potholes or puddles		
X	- obstruction		
3. Wetlands (Area "F")	- dead/dying vegetation	VEGETATION DORMANT FOR SEASON	
X	- change in water budget		
X	- general condition of wetlands		
4. Other Site Systems			
Perimeter Fence	- integrity of fence	NA	
	- integrity of gates		
	- integrity of locks		
	- placement and condition of signs		

FORM 17

Shawn Hardman

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 03/30/22 (MM DD YY)

INSPECTOR(S): D TYRAN, S. GARDNER

	Item	*Inspect For*	*Action Required*	*Comments*
	4. **Other Site Systems (continued)**			
X	Drainage Ditches/ Swale Outlets	- sediment build-up	NONE	
X		- erosion		
X		- condition of erosion protection		
X		- flow obstructions		
X		- dead/dying vegetation		
X		- cable concrete/gabion mats and riprap		
X	Culverts	- sediment build-up		
X		- erosion		
X		- condition of erosion protection		
X		- flow obstructions		
	Gas Vents	- intact / damage	GABION MATS EXPOSED AT VARIOUS POINTS ALONG SHORELINE A LOT OF DRIFTWOOD ALL ALONG SHORELINE	
X	Wells	- locks secure		
X	Shoreline Stabilization	- condition of gabion mats and riprap		

FORM 17

Shawn Hardman

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 04/29/22 (MM DD YY)

INSPECTOR(S): D TYRAN, S GARDNER

Item	Inspect For	Action Required	Comments
1.	**Perimeter Collection System/Off-Site Forcemain**		
X	Manholes - cover on securely	NONE	
X	Manholes - condition of cover		
X	Manholes - condition of inside of manhole		
X	Manholes - flow conditions		
X	Wet Wells - cover on securely		
X	Wet Wells - condition of cover		
X	Wet Wells - condition of inside of wet well		
2.	**Landfill Cap**		
X	Vegetated Soil Cover - erosion	50' EITHER SIDE OF RIVER, MIDDLE OUTFALL IS A 8' TO 10' WIDE STRIP OF SOD AND VEGITATION WASHED AWAY SEVERAL MAJOR WIND STORMS THIS WINTER HAS CAUSED MORE EROSION AROUND RIVER NORTH, MORE WIRE MESH EXPOSED.	
X	Vegetated Soil Cover - bare areas		
X	Vegetated Soil Cover - washouts		
X	Vegetated Soil Cover - leachate seeps		
X	Vegetated Soil Cover - length of vegetation		
X	Vegetated Soil Cover - dead/dying vegetation		

FORM 17

Sharon Gardner

CRA 7987 (24)

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 04/28/22 (MM DD YY)

INSPECTOR(S): D TYRAN, S GARDNER

Item	*Inspect For*	*Action Required*	*Comments*
2. Landfill Cap (continued)			
X Access Roads	- bare areas, dead/dying veg.	NONE	
X	- erosion		
X	- potholes or puddles		
X	- obstruction		
3. Wetlands (Area "F")	- dead/dying vegetation		
X	- change in water budget		
X	- general condition of wetlands		
4. Other Site Systems			
Perimeter Fence	- integrity of fence	NA	
	- integrity of gates		
	- integrity of locks		
	- placement and condition of signs		

FORM 17

Sharon Gardner

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 04/28/22 (MM DD YY)

INSPECTOR(S): D. TYRAN, S GARDNER

Item	*Inspect For*	*Action Required*	*Comments*
4. Other Site Systems (continued)			
Drainage Ditches/ Swale Outlets	- sediment build-up	NONE	
	- erosion		
	- condition of erosion protection		
	- flow obstructions	CLEARED DEBRIS AND DRIFT WOOD IN FRONT OF	
	- dead/dying vegetation	RIVER NORTH OUTFALL BLOCKING FLOW	
	- cable concrete/ gabion mats and riprap		
Culverts	- sediment build-up		
	- erosion		
	- condition of erosion protection		
	- flow obstructions		
Gas Vents	- intact / damage	GABION MATS EXPOSED AT VARIOUS POINTS ALONG	
Wells	- locks secure	SHORELINE, A LOT OF DRIFT WOOD ALL	
Shoreline Stabilization	- condition of gabion mats and riprap	ALONG SHORELINE	

FORM 17

Sharon Gardner

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 05/23/22 (MM DD YY)

INSPECTOR(S): D. Tyran / J. Harlach

	Item	*Inspect For*	*Action Required*	*Comments*
1.	Perimeter Collection System/Off-Site Forcemain			
X	Manholes	- cover on securely	None	
X		- condition of cover		
X		- condition of inside of manhole		
X		- flow conditions		
X	Wet Wells	- cover on securely		
X		- condition of cover		
X		- condition of inside of wet well		
2.	Landfill Cap			
	Vegetated Soil Cover	- erosion	50' Either side of River Middle outfall is an 8' to 10' wide strip of sod and vegetation washed away by wave action. Several major wind storms this past winter have caused more erosion around River North, more wire mesh is exposed	
		- bare areas		
		- washouts		
		- leachate seeps		
		- length of vegetation		
		- dead/dying vegetation		

FORM 17

David J Tyran

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 05/23/22 (MM DD YY)

INSPECTOR(S): D. Tyran / J. Harlach

Item	Inspect For	Action Required	Comments
2. Landfill Cap (continued)			
[X] Access Roads	- bare areas, dead/dying veg.	None	
[X]	- erosion		
[X]	- potholes or puddles		
[X]	- obstruction		
3. Wetlands (Area "F")	- dead/dying vegetation		
[X]	- change in water budget		
[X]	- general condition of wetlands		
4. Other Site Systems			
[ ] Perimeter Fence	- integrity of fence	N/A	
[ ]	- integrity of gates		
[ ]	- integrity of locks		
[ ]	- placement and condition of signs		

FORM 17

CRA 7987 (24)

D. Tyran

GRATWICK-RIVERSIDE PARK SITE
MONTHLY INSPECTION LOG

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 05/23/22 (MM DD YY)

INSPECTOR(S): D. Tyson / J. Harkach

	Item	*Inspect For*	*Action Required*	*Comments*
4.	Other Site Systems (continued)			
X	Drainage Ditches/ Swale Outlets	- sediment build-up	None	
X		- erosion		
X		- condition of erosion protection		
X		- flow obstructions		
X		- dead/dying vegetation		
X		- cable concrete/gabion mats and riprap		
X	Culverts	- sediment build-up		
X		- erosion		
X		- condition of erosion protection		
X		- flow obstructions		
	Gas Vents	- intact / damage		
X	Wells	- locks secure		
X	Shoreline Stabilization	- condition of gabion mats and riprap	Gabion Mats Exposed at various points along Shoreline. Alot of driftwood all along the Shoreline	

FORM 17

CRA 7987 (24)

Dave Tyson