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Date: October 4, 2023
Our Ref: 30147041
Subject: **Third Quarter 2023 Groundwater Monitoring Report**
General Electric Company and Parker-Hannifin Corporation
Old Erie Canal Site, Clyde, New York
NYSDEC Site No. 859015

Dear Mr. Klier,

On behalf of General Electric Company (GE) and Parker-Hannifin Corporation (P-H), this letter provides a summary of post-injection groundwater monitoring activities recently completed at the Old Erie Canal Site (Site) (New York State Department of Environmental Conservation [NYSDEC] Site No. 859015), located in the Village of Clyde, Town of Galen, Wayne County, New York (**Figure 1**). Specifically, this letter includes summaries of the third quarterly post-injection sampling event and development activities for bedrock monitoring well MW-14B conducted between July 17 and 28, 2023 by Arcadis of New York, Inc. (Arcadis) on behalf of GE and P-H. Additional details regarding those activities are provided below.

Activities Performed

Per the Enhanced Reductive Dechlorination (ERD) Injection Work Plan (Arcadis 2022) and recommendations included in the 2023 Periodic Review Report (PRR) submitted June 30, 2023, the third post-injection quarterly monitoring and sampling event was performed in July 2023. The scope of the quarterly monitoring and sampling event included the following:

- Measurement of groundwater elevations and depth to bottom at 12 source area monitoring wells (MW-1S, MW-4B, MW-4S, MW-6B, MW-6S, MW-7S, MW-13S, MW-14S, MW-15S, MW-17S, MW-18S, and MW-19S) and one perimeter monitoring well (MW-5B);
- Gauging and development of monitoring well MW-14B;
- Collection of groundwater samples via low-flow purging and sampling at the same source area and perimeter monitoring wells;
- Collection of two surface water grab samples from the New York State barge canal (canal): one upstream (Canal Upstream) and one downstream (Canal Downstream) of the Site wetland/storm water discharge point;
- Retrieval of Min-Trap® sampling devices previously deployed in monitoring wells MW-4B and MW-6B; and
- Annual site wide inspection of engineering controls.

Additional details regarding each of the above-listed activities are provided in the following sections.

Groundwater Gauging Activities

Arcadis personnel collected depth to water and depth to bottom measurements using surveyed measuring points at the 12 source area monitoring wells (MW-1S, MW-4B, MW-4S, MW-6B, MW-6S, MW-7S, MW-13S, MW-14S, MW-15S, MW-17S, MW-18S, and MW-19S) and one perimeter monitoring well (MW-5B) on July 17, 2023. These gauging data are presented in **Table 1**.

As noted in Section 1.2 of the June 2023 Periodic Review Report (PRR), non-aqueous phase liquid (NAPL) was observed in the soil cuttings and wash water during installation of monitoring well MW-14B on August 12, 2022. Based on that observation, MW-14B was gauged to determine the potential presence and thickness of NAPL during the July 2023 quarterly monitoring event. NAPL was not detected in a measurable amount in this monitoring well during this quarterly monitoring event; therefore, as proposed in Section 6 of the PRR, well development activities were performed at this monitoring well.

Monitoring Well MW-14B Development Activities

Arcadis personnel performed well development of monitoring well MW-14B on July 28, 2023. Due to the prior observation of NAPL during well installation, as conservative measures, an exclusion zone was established around the work area and workers donned level C personal protective equipment, implemented appropriate engineering controls, and performed workspace and community air monitoring. Per the Site Management Plan (SMP) and community air monitoring plan, upwind (ambient) and downwind air monitoring stations were established.

The initial plan for monitoring well development involved purging up to 10 well volumes while moving the pump intake up and down the screened interval (surging of the monitoring well was not performed due to concerns about the potential presence of NAPL). Initially, a stainless-steel bailer was used to remove any sediments that were present in the well. Next, a pump was lowered into the well and the pump intake was moved along the screened interval in 0.5-foot increments to remove fines. As planned, approximately 10 well volumes (42 gallons) of water were initially removed from the well. After removing the target volume, the purge water remained turbid and NAPL blebs were observed. Development of this monitoring well was continued to see if the turbidity could be reduced and an additional 10 well volumes were removed, for a total of approximately 20 well volumes removed from the well. Throughout the well development, the purge water was visibly turbid; therefore, field parameters (including turbidity) were not recorded. NAPL blebs were still observed in the purge water following removal of 20 well volumes; therefore, groundwater quality sampling was not performed. Going forward, it is recommended that this monitoring well continue to be gauged during monitoring events for the potential presence of measurable quantities of NAPL; however, it is recommended that groundwater quality sampling activities not be performed until no evidence of NAPL is documented in this well.

Groundwater and Surface Water Sampling Activities

Arcadis personnel performed low-flow groundwater purging and sampling activities at the 12 source area monitoring wells (MW-1S, MW-4B, MW-4S, MW-6B, MW-6S, MW-7S, MW-13S, MW-14S, MW-15S, MW-17S, MW-18S, and MW-19S) and one perimeter monitoring well (MW-5B) between July 17 and 28, 2023. The final field parameters collected at each sample location prior to sample collection (or the field parameters from immediately before a well went dry) are presented in **Tables 2 and 3**. The low-flow purging and sampling logs for this event are provided in **Attachment 1.** On July 19, 2023, two canal surface water samples were collected: one upstream (Canal Upstream), and one downstream (Canal Downstream) of the Site wetland/stormwater discharge point.

The collected groundwater and surface water samples (including appropriate quality assurance/quality control samples) were submitted to SGS North America Inc. of Dayton, NJ for laboratory analysis. Groundwater samples were submitted for the following analyses:

- VOCs;
- total and dissolved iron and manganese;
- general chemistry (total organic carbon, sulfide, and sulfate); and
- dissolved gasses (ethane, ethene, and methane).

Canal surface water samples were submitted for volatile organic compound (VOC) analysis only.

In accordance with the ERD Injection Work Plan, Min-Trap® devices were deployed in monitoring wells MW-4B and MW-6B during the second quarter 2023 groundwater monitoring event. These devices were retrieved during the July 2023 monitoring event and submitted to Microbial Insights, Inc. of Knoxville, TN for the following analyses:

- Aqueous and Mineralogical Intrinsic Bioremediation Assessment (AMIBA)
- QuantArray®-BGC

AMIBA is a collection of analyses performed to quantify iron and sulfide availability in various redox states to allow assessment of the microbial-mineral-contaminant interactions. AMIBA includes weak acid soluble ferrous and ferric iron, strong acid soluble ferrous and ferric iron, acid volatile sulfide, and chromium extractible sulfide. AMIBA analyses were performed by Prima Environmental, Inc. (El Dorado Hills, CA) under contract to Microbial Insights. QuantArray®-BGC is a proprietary polymerase chain reaction (PCR) quantification of the abundance of microbial groups and functional genes associated with biogeochemical processes.

Sampling Results

The analytical results associated with the collected groundwater samples are presented in **Tables 2** (July 2023 event) and **3** (2022 to 2023 monitoring data), which also include the NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Class GA (Class GA) groundwater quality standards/guidance values for comparison purposes. Surface water analytical results are presented in **Table 4**, which includes the NYSDEC Division of Water TOGS 1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Class C (Class C) surface water quality standards/guidance values for comparison purposes. The Min-Trap® analytical results are presented in **Tables 5A and 5B**. The data for trichloroethene (TCE), its reductive dechlorination products, and other indicators of anaerobic activity (i.e., ethane, ethene, and methane) are also presented on **Figure 2**. The laboratory analytical data reports associated with this monitoring event are provided as **Attachment 2**. A summary of the constituents of concern (chlorinated VOCs and other VOCs) that were detected at levels above the corresponding Class GA groundwater standards during the July 2023 quarterly sampling event is provided below (no constituents were detected at concentrations greater than the Class C surface water standards).

Chlorinated VOCs

- 1,1-dichloroethane was detected in three of 13 monitoring wells (MW-14S, MW-15S and MW-19S) at concentrations ranging from 1.1 micrograms per liter (µg/L) to 9.7 µg/L. However, this constituent was

detected in only one monitoring well (MW-19S) at a concentration greater than the Class GA groundwater standard of 5 µg/L.

- 1,1-dichloroethene was detected in two of 13 monitoring wells (MW-4B and MW-6B) at concentrations ranging from 88.4 J µg/L (the J flag indicates an estimated concentration) to 238 µg/L, which are both greater than the Class GA groundwater standard of 5 µg/L. The maximum detected concentration was reported in monitoring well MW-4B.
- Cis-1,2-dichloroethene was detected in 10 of 13 monitoring wells (including one sample duplicate) at concentrations ranging from 1.3 µg/L to 56,100 µg/L. Further, this constituent was detected in eight monitoring wells (MW-4B, MW-5B, MW-6B, MW-13S, MW-14S [and associated sample duplicate], MW-17S, MW-18S, and MW-19S) at concentrations greater than the Class GA groundwater standard of 5 µg/L (ranging from 61.6 µg/L to 56,100 µg/L). The maximum detected concentration was reported in monitoring well MW-4B.
- trans-1,2-dichloroethene was detected in seven of 13 monitoring wells at concentrations ranging from 0.63 J µg/L to 235 µg/L. Further, this constituent was detected in six monitoring wells (MW-1S, MW-4B, MW-6B, MW-13S, MW-17S, and MW-19S) at concentrations greater than the Class GA groundwater standard of 5 µg/L (ranging from 5.5 µg/L to 235 µg/L). The maximum detected concentration was reported in monitoring well MW-4B.
- TCE was detected in six of 13 monitoring wells at concentrations ranging from 0.97 J µg/L to 7,800 µg/L. Further, this constituent was detected in four monitoring wells (MW-4B, MW-5B, MW-17S, and MW-19S) at concentrations greater than the Class GA groundwater standard of 5 µg/L (ranging from 215 µg/L to 7,800 µg/L). The maximum detected concentration was reported in monitoring well MW-4B.
- Vinyl chloride was detected in 10 of 13 monitoring wells (including one sample duplicate) at concentrations ranging from 1.8 µg/L to 28,300 µg/L. Further, this constituent was detected in nine monitoring wells (MW-4B, MW-6B, MW-6S, MW-13S, MW-14S, MW-15S, MW-17S, MW-18S, and MW-19S) at concentrations greater than the Class GA groundwater standard of 2 µg/L (ranging from 2.6 µg/L to 28,300 µg/L). The maximum detected concentration was reported in monitoring well MW-4B.

Other VOCs

- Benzene was detected in three of 13 monitoring wells at concentrations ranging from 0.55 µg/L to 5.8 µg/L. However, this constituent was detected in only one monitoring well (MW-15S) at a concentration greater than the Class GA groundwater standard of 5 µg/L.
- Ethylbenzene was detected in four of 13 monitoring wells at concentrations ranging from 1.1 µg/L (with a sample duplicate of 1.2 µg/L) to 162 µg/L. Further, this constituent was detected in three monitoring wells (MW-4B, MW-6S, and MW-15S) at concentrations greater than the Class GA groundwater standard of 5 µg/L (ranging from 5.3 µg/L to 162 µg/L). The maximum detected concentration was reported in monitoring well MW-4B.

- Toluene was detected in six of 13 monitoring wells (including one sample duplicate) at concentrations ranging from 0.82 J µg/L to 2,680 µg/L. Further, this constituent was detected in five monitoring wells (MW-4B, MW-6B, MW-6S, MW-14S, and MW-15S.) at concentrations greater than the Class GA groundwater standard of 5 µg/L (ranging from 16.5 µg/L [with a sample duplicate of 16.0 µg/L] to 2,680 µg/L). The maximum detected concentration was reported in monitoring well MW-4B.
- Total Xylenes were detected in four of 13 monitoring wells (including one sample duplicate) at concentrations ranging from 4.1 µg/L (with a sample duplicate of 4.3 µg/L) to 493 µg/L, Further, this constituent was detected in three monitoring wells (MW-4B, MW-6S, and MW-15S) at concentrations greater than the Class GA groundwater standard of 5 µg/L (ranging from 31.8 µg/L to 493 µg/L). The maximum detected concentration was reported in monitoring well MW-4B.

Inorganics

- Iron was detected in 12 of 13 monitoring wells (including one sample duplicate) at concentrations ranging from 65.7 J µg/L to 122,000 µg/L. Further, this constituent was detected in 10 monitoring wells (including one sample duplicate) (MW-1S, MW-4S, MW-6B, MW-6S, MW-7S, MW-13S, MW-14S, MW-15S, MW-18S, and MW-19S) at concentrations greater than the Class GA groundwater standard of 300 µg/L (ranging from 344 µg/L to 122,000 µg/L). The maximum detected concentration was reported in monitoring well MW-6S.
- Iron (filtered) was detected in 10 of 13 monitoring wells (including one sample duplicate) at concentrations ranging from 60.9 J µg/L to 118,000 µg/L. Further, this constituent was detected in nine monitoring wells (including one sample duplicate) (MW-1S, MW-4S, MW-6B, MW-6S, MW-7S, MW-13S, MW-14S, MW-15S, and MW-18S) at concentrations greater than the Class GA groundwater standard of 300 µg/L (ranging from 343 µg/L to 118,000 µg/L). The maximum detected concentration was reported in monitoring well MW-6S.
- Manganese was detected in all 13 monitoring wells (including one sample duplicate) at concentrations ranging from 38.9 µg/L to 17,900 µg/L. Further, this constituent was detected in seven monitoring wells (including one sample duplicate) (MW-1S, MW-4S, MW-6S, MW-7S, MW-14S, MW-15S, and MW-18S) at concentrations greater than the Class GA groundwater standard of 300 µg/L (ranging from 365 µg/L [sample duplicate of 395 µg/L] to 17,900 µg/L). The maximum detected concentration was reported in monitoring well MW-1S.
- Manganese (filtered) was detected in 12 of 13 monitoring wells (including one sample duplicate) at concentrations ranging from 37.4 µg/L to 20,400 µg/L. Further, this constituent was detected in seven monitoring wells (including one sample duplicate) (MW-1S, MW-4S, MW-6S, MW-7S, MW-14S, MW-15S, MW-18S) at concentrations greater than the Class GA groundwater standard of 300 µg/L (ranging from 380 µg/L [sample duplicate of 418 µg/L] to 20,400 µg/L). The maximum detected concentration was reported in monitoring well MW-1S.

Iron and manganese are both soluble under the reducing conditions created by injection of organic carbon to facilitate the treatment of CVOCs in groundwater. Also, iron was included in the 2022 ERD injections to reduce sulfide concentrations and improve biogeochemical conditions for dechlorinating organisms (as described in the ERD Work Plan).

Min-Trap Results

The AMIBA analysis results (**Table 5A**) indicate that iron and sulfur were captured within the Min-Trap® samplers. The results indicate that iron is largely in the form of ferrous iron, which is expected based on the reducing geochemical conditions. The presence of acid volatile sulfide and chromium extractible sulfide, indicative of FeS and FeS_2, respectively, confirm the precipitation of iron sulfide minerals in situ as a result of organic carbon and iron injection.

The QuantArray®-BGC analysis results indicate the abundance of microbial groups of interest in the anaerobic geochemical conditions created via injection of organic carbon and ferrous iron (**Table 5B**). Monitoring wells MW-4B and MW-6B showed similar abundance of total bacteria, while MW-6B had a higher abundance of total archaea than MW-4B. Both showed the presence of fermenters, iron reducers, sulfate reducers, and methanogens, which is consistent with reducing geochemical conditions.

Future Activities and Schedule

As the monitoring program outlined in the ERD Injection Work Plan has concluded, the proposed groundwater monitoring program through the end of 2024 is outlined below.

The proposed monitoring network for each quarterly monitoring event is specified below:

- The monitoring network for the 4Q2023, 1Q2024, 3Q2024, 4Q2024 monitoring events will include the 12 source area monitoring wells (MW-1S, MW-4B, MW-4S, MW-6B, MW-6S, MW-7S, MW-13S, MW-14S, MW-15S, MW-17S, MW-18S, and MW-19S), as well as the perimeter monitoring well MW-5B.
- The monitoring network for the 2Q2024 monitoring event will include the 12 source area wells, perimeter monitoring well MW-15B, as well as the remaining 10 perimeter wells (EMW-2, EMW-4, MW-3B, MW-3S, MW-4C, MW-5S, MW-7B, MW-9S, MW-16B, and MW-16S), and three general wells (EMW-3, EMW-5, and MW-8S). General monitoring wells MW-2B and MW-2S no longer exist and will be removed from the monitoring program.
- Due to seasonally low water levels, surface water sampling within the canal will be conducted during the 2024 third quarter monitoring event.

The scope of the field activities for each event will be as follows:

- Depth to water and depth to bottom will be measured at each well subject to sampling during the monitoring event in question. In addition, monitoring well MW-14B will be gauged during each event to determine if a measurable quantity of NAPL is present in that well.
- In accordance with Arcadis' February 7, 2022, proposal to the NYSDEC (as discussed in Section 2.1 of the ERD Injection Work Plan) the following sample analyses will be performed during each monitoring event:
    - Groundwater samples collected from the 12 source area wells and monitoring well MW-5B will be submitted for analysis of:
        - VOCs
        - Dissolved gases (ethane, ethene, and methane)
        - Total organic carbon
        - total and dissolved iron and manganese
        - sulfate and sulfide.

  - Groundwater samples collected from the remaining 10 perimeter wells and three other wells (2Q2024 monitoring event only) will be submitted for analysis of VOCs only.
  - Surface water samples collected from the canal (3Q2024 monitoring event only) will be submitted for analysis of VOCs only.
- An annual site wide inspection of engineering controls will be conducted concurrently with the 2024 third quarter monitoring event.

Quarterly monitoring reports will be submitted approximately 30 days following receipt of the data collected during the 4Q2023, 1Q2024, 2Q2024, and 3Q2024 monitoring events. The next Periodic Review Report will be submitted during the first quarter of 2025. That report will provide summaries of the quarterly monitoring events performed subsequent to the June 2023 PRR (3Q2023 through 4Q2024), a comprehensive summary of data trends, a mass reduction evaluation as specified in Section 6.1 of the SMP, as well as recommendations and a schedule for future activities.

Please contact Mr. Tom Silverman of P-H or Mr. Lewis Streeter of GE with any questions or comments regarding this report.

Sincerely,
Arcadis of New York, Inc.

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CC.

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Enclosures:

Table 1 – Gauging Data
Table 2 – Groundwater Monitoring Event Data
Table 3 – Groundwater Analytical Results (2022 to 2023)
Table 4 – Surface Water Analytical Results
Table 5 – Min-Trap® Device Analytical Results
Figure 1 – Site Location Map
Figure 2 – Groundwater Analytical Map – July 2023
Attachment 1 – Groundwater Sampling Logs
Attachment 2 – Groundwater Laboratory Results

Tables

Table 1
Gauging Data
Third Quarter 2023 Groundwater Monitoring Report
Old Erie Canal - NYSDEC Site #859015
124 Columbia Street
Clyde, New York

Well ID	Measuring Point Elevation (ft amsl)	Screen Interval (ft bgs)	Date	Depth to Water (ft bmp)	Groundwater Elevation (ft amsl)	Depth to Bottom (ft bmp)
MW-1S	394.16	2.3 - 7.3	February 28, 2022	2.83	391.33	5.91
			January 17, 2023	2.72	391.44	6.88
			April 17, 2023	2.60	391.56	6.85
			July 17, 2023	2.82	391.34	6.79
MW-3S	393.64	1.3 - 11.3	February 28, 2022	2.95	390.69	9.28
			April 17, 2023	4.26	389.38	9.35
MW-3B	393.91	28.8 - 38.8	February 28, 2022	8.21	385.70	38.69
			April 17, 2023	9.70	384.21	39.00
MW-4S	393.02	10.3 - 20.3	February 28, 2022	4.57	388.45	19.31
			January 17, 2023	4.70	388.32	19.56
			April 17, 2023	4.66	388.36	19.65
			July 17, 2023	4.49	388.53	19.54
MW-4B	392.97	28.9 - 38.9	February 28, 2022	5.68	387.29	38.69
			January 17, 2023	6.16	386.81	--
			April 17, 2023	6.03	386.94	38.75
			July 17, 2023	5.07	387.90	38.75
MW-4C	392.81	38.7 - 48.7	February 28, 2022	0.20	392.61	48.35
			April 17, 2023	0.50	392.31	48.80
MW-5S	392.86	1.2 - 11.2	February 28, 2022	3.77	389.09	10.84
			April 17, 2023	4.05	388.81	10.90
MW-5B	392.85	29.3 - 39.3	February 28, 2022	5.85	387.00	38.90
			April 17, 2023	6.55	386.30	39.39
			July 17, 2023	5.51	387.34	38.91
MW-6S	394.25	5 - 15	February 28, 2022	3.70	390.55	14.32
			January 17, 2023	3.69	390.56	14.28
			April 17, 2023	3.75	390.50	14.30
			July 17, 2023	3.95	390.30	14.24
MW-6B	394.23	29.4 - 39.4	February 28, 2022	6.20	388.03	39.31
			January 17, 2023	6.11	388.12	39.16
			April 17, 2023	6.20	388.03	39.40
			July 17, 2023	6.46	387.77	39.18
MW-7S	396.92	6.5 - 16.5	February 28, 2022	8.45	388.47	18.28
			January 17, 2023	8.47	388.45	18.20
			April 17, 2023	8.43	388.49	18.15
			July 17, 2023	8.47	388.45	18.06
MW-7B	399.10	28.9 - 38.9	February 28, 2022	10.19	388.91	40.92
			April 17, 2023	11.01	388.09	40.89
MW-8S	389.91	12 - 22	February 28, 2022	0.68	389.23	21.38
			April 17, 2023	1.00	388.91	21.50
MW-9S	391.19	7.4 - 17.4	February 28, 2022	3.86	387.33	18.28
			April 17, 2023	4.65	386.54	18.30
MW-13S	391.53	16.4 - 21.4	February 28, 2022	2.37	389.16	18.78
			January 17, 2023	2.34	389.19	18.78
			April 17, 2023	2.56	388.97	18.70
			July 17, 2023	2.87	388.66	18.63
MW-14S	391.39	16.4 - 21.4	February 28, 2022	2.69	388.70	23.29
			January 17, 2023	2.72	388.67	23.47
			April 17, 2023	2.75	388.64	23.50
			July 17, 2023	2.82	388.57	23.38
MW-15S	390.12	7.7 - 12.7	February 28, 2022	1.66	388.46	14.24
			January 17, 2023	1.66	388.46	14.50
			April 17, 2023	1.62	388.50	15.50
			July 17, 2023	1.59	388.53	14.43

Table 1
Gauging Data
Third Quarter 2023 Groundwater Monitoring Report
Old Erie Canal - NYSDEC Site #859015
124 Columbia Street
Clyde, New York

Well ID	Measuring Point Elevation (ft amsl)	Screen Interval (ft bgs)	Date	Depth to Water (ft bmp)	Groundwater Elevation (ft amsl)	Depth to Bottom (ft bmp)
MW-16S	397.30	4.6 - 9.6	February 28, 2022	2.47	394.83	8.90
			April 17, 2023	2.56	394.74	8.90
MW-16B	397.69	33.6 - 43.6	February 28, 2022	3.12	394.57	42.88
			April 17, 2023	2.87	394.82	42.95
MW-17S	397.48	4.6 - 9.6	February 28, 2022	3.47	394.01	7.91
			January 17, 2023	3.58	393.90	8.06
			April 17, 2023	3.60	393.88	8.20
			July 17, 2023	3.60	393.88	8.13
MW-18S	397.63	3 - 8	February 28, 2022	3.21	394.42	7.25
			January 17, 2023	3.55	394.08	7.26
			April 17, 2023	3.27	394.36	7.30
			July 17, 2023	3.27	394.36	7.22
MW-19S	396.09	3.5 - 8.5	February 28, 2022	3.17	392.92	8.06
			January 17, 2023	3.31	392.78	8.07
			April 17, 2023	3.15	392.94	8.05
			July 17, 2023	3.18	392.91	7.96
EMW-2	394.32	6 - 11	February 28, 2022	1.85	392.47	9.83
			April 17, 2023	1.91	392.41	9.70
EMW-3	393.49	6 - 11	February 28, 2022	4.82	388.67	10.03
			April 17, 2023	4.45	389.04	10.30
EMW-4	392.22	6 - 11	February 28, 2022	--	--	.--
			April 17, 2023	3.95	388.27	10.85
EMW-5	393.33	6 - 11	February 28, 2022	--	--	--
			April 17, 2023	4.18	389.15	11.95

Notes:

1) ft bmp - feet below measuring point.
2) ft bgs - feet below ground surface.
3) ft amsl - feet above mean sea level.
4) Measuring point elevations from GHD Report Table 3 titled: Water Level Elevation Data November 28, 2006, and Arcadis December 2017 Survey.
5) March 2022 gauging performed to collect pre-injection baseline data.
6) 2023 Q1 gauging consisted of the 12 source area monitoring wells per the 2022 ERD Injection Work Plan (Arcadis 2022).
7) 2023 Q2 gauging consisted of the 12 source area, 11 perimeter, and three general area montoring wells.
8) 2023 Q3 gauging consisted of the 12 source area monitoring wells and 1 general area well (MW-5B). MW-5B was added to the source area monitoring program per the June 2023 Periodic Review Report.
9) "--" Indicates measurement not taken or not available. EMW-4 and EMW-5 were obstructed by snow banks on 2/28/2022. The water level meter probe was not able to be advanced to bottom at MW-4B on 1/17/2023. There is accumulating injection material residue on the inside of the riser acting as an obstruction.

Table 2
Groundwater Monitoring Event Data
Third Quarter 2023 Groundwater Monitoring Report
Old Erie Canal - SIte #859015
124 Columbia Street
Clyde, New York

Location ID: / Date Collected:	NYSDEC TOGS 1 1 1 (Class GA)	Units	MW-1S 7/17/2023	MW-4B 7/20/2023	MW-4S 7/20/2023	MW-5B 7/20/2023	MW-6B 7/20/2023	MW-6S 7/20/2023	MW-7S 7/20/2023	MW-13S 7/20/2023	MW-14S 7/17/2023	MW-15S 7/17/2023	MW-17S 7/17/2023	MW-18S 7/28/2023	MW-19S 7/18/2023
Volatile Organics															
1,1,1-Trichloroethane	5	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	3.4
1,1,2,2-Tetrachloroethane	5	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	5	µg/L	5.0 U	500 U	5.0 U	100 U	500 U	50 U	5.0 U	250 U	5.0 U [5.0 U]	5.0 U	1.9 J	5.0 U	5.0 U
1,1,2-Trichloroethane	1	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	5	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.1 [1.0 U]	2.7	1.0 U	1.0 U	**9.7**
1,1-Dichloroethene	5	µg/L	1.0 U	**238**	1.0 U	20 U	**88.4 J**	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0	1.0 U	1.0 U
1,2,3-Trichlorobenzene	5	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	5	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane	0.04	µg/L	2.0 U	200 U	2.0 U	40 U	200 U	20 U	2.0 U	100 U	2.0 U [2.0 U]	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromoethane	0.0006	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	3	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	0.6	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	3	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	3	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (MEK)	50	µg/L	13.1	1000 U	10 U	200 U	1000 U	100 U	10 U	500 U	10 U [10 U]	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	- -	µg/L	10.6	500 U	5.0 U	100 U	500 U	50 U	5.0 U	250 U	5.0 U [5.0 U]	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	50	µg/L	39.7	1000 U	10 U	200 U	1000 U	100 U	10 U	500 U	10 U [10 U]	10 U	10 U	3.8 J	10 U
Benzene	1	µg/L	0.50 U	50 U	0.55	10 U	50 U	4.7 J	0.50 U	25 U	0.50 U [0.50 U]	**5.8**	0.50 U	0.50 U	0.50 U
Bromochloromethane	5	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	50	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	50	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	5	µg/L	2.0 U	200 U	2.0 U	40 U	200 U	20 U	2.0 U	100 U	2.0 U [2.0 U]	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Disulfide	60	µg/L	2.0 U	200 U	2.0 U	40 U	200 U	20 U	2.0 U	100 U	2.0 U [2.0 U]	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Tetrachloride	5	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
CFC-11	5	µg/L	2.0 U	200 U	2.0 U	40 U	200 U	20 U	2.0 U	100 U	2.0 U [2.0 U]	2.0 U	2.0 U	2.0 U	2.0 U
CFC-12	5	µg/L	2.0 U	200 U	2.0 U	40 U	200 U	20 U	2.0 U	100 U	2.0 U [2.0 U]	2.0 U	2.0 U	2.0 U	2.0 U
Chlorobenzene	5	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
Chlorodibromomethane	50	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	5	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	7	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	5	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	5	µg/L	4.9	**56,100**	1.0 U	**896**	**33,300**	10 U	1.0 U	**8,010**	**124 [131]**	1.3	**1,070**	**61.6**	**417**
cis-1,3-Dichloropropene	0.4	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	- -	µg/L	5.0 U	500 U	5.0 U	100 U	500 U	50 U	5.0 U	250 U	5.0 U [5.0 U]	5.0 U	5.0 U	5.0 U	5.0 U
Dichloromethane	5	µg/L	2.0 U	200 U	2.0 U	40 U	200 U	20 U	2.0 U	100 U	2.0 U [2.0 U]	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	5	µg/L	1.0 U	**162**	1.0 U	20 U	100 U	**29.2**	1.0 U	50 U	1.2 [1.1]	**5.3**	1.0 U	1.0 U	1.0 U
Isopropylbenzene	5	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
m&p-Xylenes	5	µg/L	1.0 U	**392**	1.0 U	20 U	100 U	**203**	1.0 U	50 U	3.2 [3.3]	**22.6**	1.0 U	1.0 U	1.0 U
Methyl Acetate	- -	µg/L	5.0 U	500 U	5.0 U	100 U	500 U	50 U	5.0 U	250 U	5.0 U [5.0 U]	5.0 U	5.0 U	5.0 U	5.0 U
Methyl N-Butyl Ketone (2-Hexanone)	50	µg/L	5.0 U	500 U	5.0 U	100 U	500 U	50 U	5.0 U	250 U	5.0 U [5.0 U]	5.0 U	5.0 U	5.0 U	5.0 U
Methylcyclohexane	- -	µg/L	5.0 U	500 U	5.0 U	100 U	500 U	50 U	5.0 U	250 U	5.0 U [5.0 U]	5.0 U	5.0 U	5.0 U	5.0 U
Methyl-tert-butylether	10	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	5	µg/L	1.0 U	**101**	1.0 U	20 U	100 U	**37.2**	1.0 U	50 U	0.94 J [0.99 J]	**15.5**	1.0 U	1.0 U	1.0 U
Styrene (Monomer)	5	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	4.1
Toluene	5	µg/L	1.0 U	**2,680**	1.0 U	20 U	**74.8 J**	**1,640**	1.0 U	50 U	**16.5 [16.0]**	**478**	1.0 U	0.82 J	1.0 U
Total Xylenes	5	µg/L	1.0 U	**493**	1.0 U	20 U	100 U	**240**	1.0 U	50 U	4.1 [4.3]	**38.1**	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	5	µg/L	**6.5**	**235**	1.0 U	20 U	**158**	10 U	1.0 U	**40.6 J**	1.0 U [1.0 U]	1.0 U	**9.5**	0.63 J	**5.5**
trans-1,3-Dichloropropene	0.4	µg/L	1.0 U	100 U	1.0 U	20 U	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5	µg/L	0.97 J	**7,800**	1.0 U	**2,710**	100 U	10 U	1.0 U	50 U	1.0 U [1.0 U]	1.0 U	**249**	4.7	**215**
Vinyl chloride	2	µg/L	1.8	**28,300**	1.0 U	20 U	**11,300**	**36.5**	1.0 U	**3,920**	**257 [223]**	**6.0**	**133**	**2.6**	**4.1**

Table 2
Groundwater Monitoring Event Data
Third Quarter 2023 Groundwater Monitoring Report
Old Erie Canal - SIte #859015
124 Columbia Street
Clyde, New York

Location ID: / Date Collected:	NYSDEC TOGS 1 1 1 (Class GA)	Units	MW-1S 7/17/2023	MW-4B 7/20/2023	MW-4S 7/20/2023	MW-5B 7/20/2023	MW-6B 7/20/2023	MW-6S 7/20/2023	MW-7S 7/20/2023	MW-13S 7/20/2023	MW-14S 7/17/2023	MW-15S 7/17/2023	MW-17S 7/17/2023	MW-18S 7/28/2023	MW-19S 7/18/2023
Dissolved Gases															
Ethane	- -	µg/L	6.02	187	420	0.45	27.1	868	52.0	1.9	472 [386]	1,670	10.6	0.34	0.18
Ethene	- -	µg/L	2.5	1,410	7.78	0.31 U	174	1,230	0.31 U	515	158 [113]	6,220	7.04	0.39	0.31 U
Methane	- -	µg/L	6,520	5,510	4,890	0.28	2130	4,640	4,730	1,690	13,000 [10,200]	8,530	102	48.2	0.74
Metals															
Iron	300	µg/L	**62,800**	100 U	**19,500**	65.7 J	**1,130**	**122,000**	**18,900**	**334**	**5,410 [5,670]**	**45,200**	69.4 J	**2,540**	**1,040**
Manganese	300	µg/L	**17,900**	79.8	**1,990**	24.3	161	**3,570**	**2,370**	81.4	**365 [395]**	**1,890**	38.9	**862**	243
Metals-Filtered															
Iron	300	µg/L	**60,800**	100 U	**18,000**	100 U	**582**	**118,000**	**18,100**	**343**	**5,810 [5,300]**	**43,600**	60.9 J	**582**	100 U
Manganese	300	µg/L	**20,400**	80.7	**2,080**	15 U	155	**3,550**	**2,260**	83.8	**418 [380]**	**1,900**	37.4	**896**	92.0
General Chemistry															
Total Organic Carbon	- -	mg/L	276	97.6	5.3	1.3	3.9	155	3.0	33.4	6.4 [5.9]	140	2.0	15.7	7.7
Sulfate	- -	mg/L	2.0 U	248	8.7	1,950	1,170	1.9 J	202	711	16.9 [17.1]	2.0 U	48.1	68.0	22.4
Sulfide	- -	mg/L	2.0 U	178	2.0 U	2.0 U	9.7	2.0 U	2.0 U	13.2	2.0 U [2.0 U]	2.0 U	2.0 U	2.0 U	2.0 U
Field Parameters															
pH	- -	dimensionless	6.76	6.40	6.94	7.21	7.00	6.49	6.87	7.14	6.85	6.42	6.92	6.93	7.11
Conductivity	- -	mS/cm	4.931	3.722	3.772	3.035	3.45	6.97	1.732	1.91	2.41	5.437	1.64	3.733	2.55
Turbidity	- -	NTU	41.3	14.7	1.94	1.87	32.8	49.4	1.90	2.20	4.41	9.27	6.29	NA	15.8
Dissolved Oxygen	- -	mg/L	1.80	0.07	0.00	1.83	0.00	0.00	0.02	0.00	0.22	0.00	0.00	1.64	4.63
Temperature	- -	°C	20.3	13.1	13.7	14.4	21.3	21.6	11.8	14.6	19.1	15.1	20.7	24.8	20.3
Redox Potential	- -	mV	-92.4	-345.7	0.2	-40.2	-322.2	-122.9	4.5	-331.0	-53.9	-73.6	21.5	67.0	173.4

Notes:
1) New York State Department of Environmental Conservation, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations for Source of Drinking Water (GA).
2) Bold/Shading - Exceeds applicable TOGS 1.1.1 value.
3) Data in this table is not validated.
4) Abbreviations:
µg/L - micrograms per liter
mg/L - milligrams per liter
mS/cm - milli siemens per centimeter
NTU - Nephelometric Turbidity Units
°C - degrees Celsius
NA - Not Analyzed/Applicable/Available (Turbidity was not recorded at wells MW-18S due to field equipment error).
5) Monitoring Wells MW-18S and MW-19S went dry before stabilization of field parameters; therefore, samples were collected following recharge.
6) Lab Qualifiers:
J - Indicates an estimated value.
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
UJ - The compound was analyzed for but not detected. The associated value is the compound quantitation limit. Indicates an estimated value.

Table 3
Groundwater Analytical Results (2022 to 2023)
Third Quarter 2023 Groundwater Monitoring Report
Old Erie Canal - Site #859015
124 Columbia Street
Clyde, New York

Location ID:	NYSDEC TOGS 1 1 1	Units	EMW-2		EMW-4	MW-1S				MW-3B		MW-3S		MW-4B				MW-4C	
Date Collected:	(Class GA)		2/28/2022	4/20/2023	4/18/2023	3/2/2022	1/17/2023	4/17/2023	7/17/2023	3/1/2022	4/18/2023	3/1/2022	4/18/2023	3/2/2022	1/18/2023	4/20/2023	7/20/2023	3/2/2022	4/18/2023
Volatile Organics																			
1,1,1-Trichloroethane	5	µg/L	1.0 UJ	1.0 U	1.0 U	2.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	100 UJ	200 U	100 U	100 U	1.0 UJ	1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	5	µg/L	5.0 U	5.0 U	5.0 U	13 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	500 UJ	1,000 U	500 U	500 U	5.0 U	5.0 U
1,1-Dichloroethane	5	µg/L	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	100 UJ	200 U	100 U	100 U	1.0 U	1.0 U
1,1-Dichloroethene	5	µg/L	1.0 U	1.0 U	1.0 U	**5.1**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**303 J**	**212**	**288**	**238**	1.0 U	1.0 U
Benzene	1	µg/L	0.50 U	0.50 U	0.50 U	1.3 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	50 UJ	100 U	50 U	50 U	0.50 U	0.50 U
Carbon Disulfide	60	µg/L	2.0 U	2.0 U	2.0 U	5.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	200 UJ	400 U	**118 J**	200 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	5	µg/L	1.3	2.3	1.0 U	**988 D**	**50.1**	**21.7**	4.9	1.0 U	1.0 U	1.0 UJ	1.0 U	**52,200 DJ**	**48,200 D**	**55,800 D**	**56,100**	1.0 U	1.0 U
cis-1,3-Dichloropropene	0.4	µg/L	1.0 UJ	1.0 U	1.0 U	2.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	100 UJ	200 U	100 U	100 U	1.0 U	1.0 U
Cyclohexane	- -	µg/L	5.0 U	5.0 UJ	5.0 U	13 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	500 UJ	1,000 U	500 UJ	500 U	5.0 U	5.0 U
Dichloromethane	5	µg/L	2.0 U	2.0 U	2.0 U	5.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	200 UJ	400 U	200 U	200 U	2.0 U	2.0 U
Ethylbenzene	5	µg/L	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**179 J**	**178 J**	**103**	**162**	1.0 U	1.0 U
Isopropylbenzene	5	µg/L	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	100 UJ	200 U	100 U	100 U	1.0 U	1.0 U
m&p-Xylenes	5	µg/L	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**433 J**	**361**	**222**	**392**	1.0 U	1.0 U
o-Xylene	5	µg/L	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**109 J**	**120 J**	**62.4 J**	**101**	1.0 U	1.0 U
Tetrachloroethene	5	µg/L	1.0 U	1.0 U	1.0 U	**8.8**	0.69 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	100 UJ	200 U	100 U	100 U	1.0 U	1.0 U
Toluene	5	µg/L	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**3,100 J**	**1,880**	**1,990**	**2,680**	1.0 U	1.0 U
Total Xylenes	5	µg/L	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**542 J**	**481**	**284**	**493**	1.0 U	1.0 U
trans-1,2-Dichloroethene	5	µg/L	1.0 U	1.0 U	1.0 U	**38.2**	3.6	**5.0**	**6.5**	1.0 U	1.0 U	1.0 U	1.0 U	**282 J**	**289**	**247**	**235**	1.0 U	1.0 U
Trichloroethene	5	µg/L	1.0 U	2.0	1.0 U	**315**	**5.6**	4.0	0.97 J	1.0 U	1.0 U	1.0 U	1.0 U	**18,000 J**	**7,550**	**9,500**	**7,800**	1.0 U	1.0 U
Vinyl chloride	2	µg/L	**5.4**	**8.4**	1.0 U	**96.6**	**16.4**	**8.1**	1.8	1.0 U	1.0 U	1.0 UJ	1.0 U	**12,800 DJ**	**22,500**	**31,000 D**	**28,300**	1.0 U	1.0 U
Dissolved Gases																			
Ethane	- -	µg/L	NA	NA	NA	4.08	2.68	4.78	6.02	NA	NA	NA	NA	110 J	174 J	195 J	187	NA	NA
Ethene	- -	µg/L	NA	NA	NA	0.62	15.7	41.4	2.5	NA	NA	NA	NA	1,140 DJ	1,390 DJ	1,450 DJ	1,410	NA	NA
Methane	- -	µg/L	NA	NA	NA	27.2	362 D	5,110 D	6,520	NA	NA	NA	NA	6,400 DJ	5,910 DJ	6,990 DJ	5,510	NA	NA
Metals																			
Iron	300	µg/L	NA	NA	NA	**509**	**12,100**	**28,600**	**62,800**	NA	NA	NA	NA	41.5 J	500 U	100 U	100 U	NA	NA
Manganese	300	µg/L	NA	NA	NA	**1,300**	**49,600**	**22,700**	**17,900**	NA	NA	NA	NA	110	90.6	94.5	79.8	NA	NA
Metals-Filtered																			
Iron	300	µg/L	NA	NA	NA	100 U	**11,100**	**32,900**	**60,800**	NA	NA	NA	NA	100 U	500 U	100 U	100 U	NA	NA
Manganese	300	µg/L	NA	NA	NA	**1,320**	**50,000**	**25,400**	**20,400**	NA	NA	NA	NA	109	88.5	76.4	80.7	NA	NA

Table 3
Groundwater Analytical Results (2022 to 2023)
Third Quarter 2023 Groundwater Monitoring Report
Old Erie Canal - Site #859015
124 Columbia Street
Clyde, New York

Location ID:	NYSDEC TOGS 1 1 1	Units	MW-4S				MW-5B			MW-5S		MW-6B			
Date Collected:	(Class GA)		3/2/2022	1/18/2023	4/19/2023	7/20/2023	3/1/2022	4/17/2023	7/20/2023	3/1/2022	4/17/2023	3/3/2022	1/18/2023	4/18/2023	7/20/2023
Volatile Organics															
1,1,1-Trichloroethane	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	10 U	20 U	1.0 U	1.0 U [1.0 U]	250 U	200 U	100 U	100 U
1,1,2-trichloro-1,2,2-trifluoroethane	5	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	50 U	100 U	5.0 U	5.0 U [5.0 U]	1,300 U	1,000 U	500 U	500 U
1,1-Dichloroethane	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	10 U	20 U	1.0 U	1.0 U [1.0 U]	250 U	200 U	100 U	100 U
1,1-Dichloroethene	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	20 U	1.0 U	1.0 U [1.0 U]	250 U	200 U	**109**	**88.4 J**
Benzene	1	µg/L	0.50 U	0.50 U	0.50 U	0.55	0.50 U	5.0 U	10 U	0.50 U	0.50 U [0.50 U]	130 U	100 U	50 U	50 U
Carbon Disulfide	60	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	20 U	40 U	2.0 UJ	2.0 U [2.0 U]	500 U	400 U	200 U	200 U
cis-1,2-Dichloroethene	5	µg/L	0.73 J	1.0 U	1.0 U	1.0 U	**5.5**	**98.9**	**896**	1.0 UJ	1.0 U [1.0 U]	**36,400**	**43,200 D**	**42,500 D**	**33,300**
cis-1,3-Dichloropropene	0.4	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	10 U	20 U	1.0 U	1.0 U [1.0 U]	250 U	200 U	100 U	100 U
Cyclohexane	- -	µg/L	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 U	50 U	100 U	5.0 U	5.0 U [5.0 U]	1,300 U	1,000 U	500 U	500 U
Dichloromethane	5	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	20 U	40 U	2.0 UJ	2.0 U [2.0 U]	500 U	400 U	200 U	200 U
Ethylbenzene	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	20 U	1.0 U	1.0 U [1.0 U]	250 U	200 U	100 U	100 U
Isopropylbenzene	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	20 U	1.0 U	1.0 U [1.0 U]	250 U	200 U	100 U	100 U
m&p-Xylenes	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	20 U	1.0 U	1.0 U [1.0 U]	250 U	200 U	100 U	100 U
o-Xylene	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	20 U	1.0 U	1.0 U [1.0 U]	250 U	200 U	100 U	100 U
Tetrachloroethene	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	20 U	1.0 U	1.0 U [1.0 U]	250 U	200 U	100 U	100 U
Toluene	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	20 U	1.0 U	1.0 U [1.0 U]	250 U	**116 J**	**70.6 J**	**74.8 J**
Total Xylenes	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	20 U	1.0 U	1.0 U [1.0 U]	250 U	200 U	100 U	100 U
trans-1,2-Dichloroethene	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	20 U	1.0 U	1.0 U [1.0 U]	**194 J**	**230**	**234**	**158**
Trichloroethene	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	**491 D**	**2,150 D**	**2,710**	1.0 U	1.0 U [1.0 U]	250 U	200 U	100 U	100 U
Vinyl chloride	2	µg/L	**7.1**	1.0 U	1.0 U	1.0 U	1.0 U	10 U	20 U	1.0 UJ	1.0 U [1.0 U]	**6,510**	**7,350**	**8,800**	**11,300**
Dissolved Gases															
Ethane	- -	µg/L	41.2	325 D	410 D	420	NA	NA	0.45	NA	NA	13.6	21.5	23.4	27.1
Ethene	- -	µg/L	36.3	17.8	1.5	7.78	NA	NA	0.31 U	NA	NA	130	154	126	174
Methane	- -	µg/L	1,590 D	4,240 DJ	4,470 D	4,890	NA	NA	0.28	NA	NA	1,590 D	3,600 D	3,170 D	2,130
Metals															
Iron	300	µg/L	**6,280**	**18,100**	**25,400**	**19,500**	NA	NA	65.7 J	NA	NA	**1,580**	**1,630**	**730**	**1,130**
Manganese	300	µg/L	**2,490**	**2,330**	**2,560**	**1,990**	NA	NA	24.3	NA	NA	89.4	116	189	161
Metals-Filtered															
Iron	300	µg/L	**5,820**	**18,600**	**23,600**	**18,000**	NA	NA	100 U	NA	NA	**1,290**	**451**	**1,030**	**582**
Manganese	300	µg/L	**2,470**	**2,490**	**2,570**	**2,080**	NA	NA	15 U	NA	NA	91.3	106	157	155

Table 3
Groundwater Analytical Results (2022 to 2023)
Third Quarter 2023 Groundwater Monitoring Report
Old Erie Canal - Site #859015
124 Columbia Street
Clyde, New York

Location ID:	NYSDEC TOGS 1 1 1	Units	MW-6S				MW-7B		MW-7S				MW-9S	
Date Collected:	(Class GA)		3/3/2022	1/18/2023	4/18/2023	7/20/2023	3/1/2022	4/19/2023	3/1/2022	1/17/2023	4/19/2023	7/20/2023	3/1/2022	4/19/2023
Volatile Organics														
1,1,1-Trichloroethane	5	µg/L	10 U	20 U	10 U	10 U	1.0 U	1.0 U	1.0 UJ [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	5	µg/L	50 U	100 U	50 U	50 U	5.0 U	5.0 U	5.0 U [5.0 U]	5.0 U [5.0 U]	5.0 U [5.0 U]	5.0 U	5.0 U	5.0 U
1,1-Dichloroethane	5	µg/L	10 U	20 U	10 U	10 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	5	µg/L	10 UJ	20 U	10 U	10 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
Benzene	1	µg/L	**4.5 J**	10 U	5.0 U	4.7 J	0.50 U	0.50 U	0.50 U [0.50 U]	0.50 U [0.50 U]	0.50 U [0.50 U]	0.50 U	0.50 U	0.50 U
Carbon Disulfide	60	µg/L	20 UJ	40 U	20 U	20 U	2.0 UJ	2.0 U	2.0 U [2.0 UJ]	2.0 U [2.0 UJ]	2.0 U [2.0 U]	2.0 U	2.0 UJ	2.0 U
cis-1,2-Dichloroethene	5	µg/L	**1,580 J**	**451**	**54.2**	10 U	1.0 UJ	1.0 U	4.3 [3.4]	2.7 [2.9]	0.76 J [0.89 J]	1.0 U	1.0 UJ	1.0 U
cis-1,3-Dichloropropene	0.4	µg/L	10 U	20 U	10 U	10 U	1.0 U	1.0 U	1.0 UJ [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
Cyclohexane	- -	µg/L	50 UJ	100 U	50 U	50 U	5.0 U	5.0 UJ	5.0 U [5.0 U]	5.0 U [5.0 U]	5.0 UJ [5.0 UJ]	5.0 U	5.0 U	5.0 UJ
Dichloromethane	5	µg/L	20 UJ	40 U	20 U	20 U	2.0 UJ	2.0 U	2.0 U [2.0 U]	2.0 U [2.0 U]	2.0 U [2.0 U]	2.0 U	2.0 UJ	2.0 U
Ethylbenzene	5	µg/L	**16.3**	**67.2**	**32.5**	**29.2**	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
Isopropylbenzene	5	µg/L	10 U	20 U	10 U	10 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
m&p-Xylenes	5	µg/L	**110**	**410**	**203**	**203**	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
o-Xylene	5	µg/L	**20.9**	**70.0**	**39.0**	**37.2**	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5	µg/L	10 U	20 U	10 U	10 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
Toluene	5	µg/L	**1,540**	**4,130 D**	**1,820 J**	**1,640**	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
Total Xylenes	5	µg/L	**131**	**480**	**242**	**240**	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	5	µg/L	10 U	20 U	10 U	10 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
Trichloroethene	5	µg/L	10 U	20 U	10 U	10 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
Vinyl chloride	2	µg/L	**4,940 D**	**1,060**	**74.2**	**36.5**	1.0 UJ	1.0 U	**2.2 [2.2]**	**2.3 [2.3]**	0.67 J [0.65 J]	1.0 U	1.0 UJ	1.0 U
Dissolved Gases														
Ethane	- -	µg/L	3,870	2,100	1,330	868	NA	NA	5.81 J [11.7]	56.3 [41.7]	38.2 [33.9]	52.0	NA	NA
Ethene	- -	µg/L	3,240	2,530	1,860	1230	NA	NA	1.5 J [3.04]	8.34 J [5.68 J]	0.18 J [0.17 J]	0.31 U	NA	NA
Methane	- -	µg/L	9,530	7,100	3,170	4,640	NA	NA	3,400 DJ [5,110]	6,820 D [5,990]	6,210 DJ [6,110]	4,730	NA	NA
Metals														
Iron	300	µg/L	**89,000**	**134,000**	**100,000**	**122,000**	NA	NA	**7,120 [7,230]**	**8,590 [7,250 J]**	**10,900 [11,700]**	**18,900**	NA	NA
Manganese	300	µg/L	**2,680**	**3,330 J**	**2,530**	**3,570**	NA	NA	**3,760 [3,730]**	**3,750 [3,550]**	**3,560 [3,710]**	**2,370**	NA	NA
Metals-Filtered														
Iron	300	µg/L	**87,500**	**146,000**	**116,000**	**118,000**	NA	NA	**7,560 [7,590]**	**9,400 [9,340 J]**	**11,700 [11,200]**	**18,100**	NA	NA
Manganese	300	µg/L	**2,680**	**3,760 J**	**3,000**	**3,550**	NA	NA	**3,790 [3,630]**	**3,600 [3,660]**	**3,610 [3,540]**	**2,260**	NA	NA

Table 3
Groundwater Analytical Results (2022 to 2023)
Third Quarter 2023 Groundwater Monitoring Report
Old Erie Canal - Site #859015
124 Columbia Street
Clyde, New York

Location ID:	NYSDEC TOGS 1 1 1	Units	MW-13S				MW-14S				MW-15S				MW-16B		MW-16S	
Date Collected:	(Class GA)		3/2/2022	1/18/2023	4/19/2023	7/20/2023	3/3/2022	1/18/2023	4/18/2023	7/17/2023	3/3/2022	1/18/2023	4/19/2023	7/17/2023	3/1/2022	4/19/2023	3/1/2022	4/19/2023
Volatile Organics																		
1,1,1-Trichloroethane	5	µg/L	20 U	50 U	50 U	50 U	10 U	2.0 U	1.0 U	1.0 U [1.0 U]	10 U	1.0 U	20 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	5	µg/L	100 U	250 U	250 U	250 U	50 U	10 U	5.0 U	5.0 U [5.0 U]	50 U	5.0 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U [5.0 U]	5.0 U
1,1-Dichloroethane	5	µg/L	20 U	50 U	50 U	50 U	10 U	1.3 J	1.2	1.1 [1.0 U]	10 U	1.8	20 U	2.7	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U
1,1-Dichloroethene	5	µg/L	20 U	50 U	50 U	50 U	10 U	2.0 U	1.0 U	1.0 U [1.0 U]	10 U	1.0 U	20 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U
Benzene	1	µg/L	10 U	25 U	25 U	25 U	5.0 U	1.0 U	0.50 U	0.50 U [0.50 U]	**6.5**	**3.8**	10 U	**5.8**	0.50 U	0.50 U	0.50 U [0.50 U]	0.50 U
Carbon Disulfide	60	µg/L	40 U	100 U	100 U	100 U	20 U	4.0 UJ	2.0 U	2.0 U [2.0 U]	20 U	2.0 UJ	40 U	2.0 U	2.0 UJ	2.0 U	2.0 UJ [2.0 UJ]	2.0 U
cis-1,2-Dichloroethene	5	µg/L	**7,920 D**	**6,670**	**11,800 D**	**8,010**	**1,710**	**334**	**76.9**	**124 [131]**	**204**	2.9	**23.5**	1.3	1.0 UJ	1.0 U	1.0 UJ [1.0 UJ]	1.0 U
cis-1,3-Dichloropropene	0.4	µg/L	20 U	50 U	50 U	50 U	10 U	2.0 U	1.0 U	1.0 U [1.0 U]	10 U	1.0 U	20 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U
Cyclohexane	- -	µg/L	100 U	250 U	250 UJ	250 U	50 U	10 U	5.0 U	5.0 U [5.0 U]	50 U	5.0 U	100 UJ	5.0 U	5.0 U	5.0 UJ	5.0 U [5.0 U]	5.0 UJ
Dichloromethane	5	µg/L	40 U	100 U	100 U	100 U	20 U	4.0 U	2.0 U	2.0 U [2.0 U]	20 U	2.0 U	40 U	2.0 U	2.0 UJ	2.0 U	2.0 UJ [2.0 UJ]	2.0 U
Ethylbenzene	5	µg/L	20 U	50 U	50 U	50 U	**7.7 J**	2.6	1.0	1.2 [1.1]	10 U	3.6	20 U	**5.3**	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U
Isopropylbenzene	5	µg/L	20 U	50 U	50 U	50 U	10 U	2.0 U	1.0 U	1.0 U [1.0 U]	10 U	1.0 U	20 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U
m&p-Xylenes	5	µg/L	20 U	50 U	50 U	50 U	**29.5**	**9.6**	3.8	3.2 [3.3]	**9.8 J**	**14.9**	**18.4 J**	**22.6**	0.94 J	1.0 U	1.0 U [1.0 U]	1.0 U
o-Xylene	5	µg/L	20 U	50 U	50 U	50 U	10 U	2.2	0.94 J	0.94 J [0.99 J]	**7.1 J**	**10.9**	20 U	**15.5**	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U
Tetrachloroethene	5	µg/L	20 U	50 U	50 UJ	50 U	10 U	2.0 U	1.0 U	1.0 U [1.0 U]	10 U	1.0 U	20 UJ	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U
Toluene	5	µg/L	20 U	50 U	50 U	50 U	**460**	**93.2**	**9.5**	**16.5 [16.0]**	**158**	**307 D**	**555**	**478**	1.4 J	1.0 U	1.0 U [1.0 U]	1.0 U
Total Xylenes	5	µg/L	20 U	50 U	50 U	50 U	**29.5**	**11.8**	4.7	4.1 [4.3]	**16.9**	**25.8**	**18.4 J**	**38.1**	0.94 J	1.0 U	1.0 U [1.0 U]	1.0 U
trans-1,2-Dichloroethene	5	µg/L	**28.7**	**44.3 J**	**46.0 J**	**40.6 J**	**5.4 J**	1.1 J	1.0 U	1.0 U [1.0 U]	10 U	1.0 U	20 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U
Trichloroethene	5	µg/L	20 U	50 U	50 U	50 U	**64.5**	2.0 U	1.0 U	1.0 U [1.0 U]	10 U	1.0 U	20 U	1.0 U	1.0 U	1.0 U	1.2 J [1.1 J]	1.2
Vinyl chloride	2	µg/L	**1,090**	**1,830**	**2,740**	**3,920**	**1,460**	**817 D**	**128**	**257 [223]**	**4,310 D**	**86.6**	**2,880 D**	**6.0**	1.0 UJ	1.0 U	1.0 UJ [1.0 UJ]	1.0 U
Dissolved Gases																		
Ethane	- -	µg/L	4.00	3.65	1.7	1.9	188 J	184	208	472 [386]	1,440	1,250	2,030 J	1,670	NA	NA	NA	NA
Ethene	- -	µg/L	31.2	109	90.8	515	291 J	206	149	158 [113]	4,100	5,430	7,120 J	6,220	NA	NA	NA	NA
Methane	- -	µg/L	1,730 D	757 D	735 D	1,690	10,900 DJ	10,500 D	13,300	13,000 [10,200]	8,920	9,670	10,600 J	8,530	NA	NA	NA	NA
Metals																		
Iron	300	µg/L	**3,130**	**767**	**362**	**334**	**10,400**	**6,390**	**5,240**	**5,410 [5,670]**	**25,700**	**29,800**	**32,700**	**45,200**	NA	NA	NA	NA
Manganese	300	µg/L	274	149	104	81.4	**560**	**462**	**374**	**365 [395]**	**1,020**	**1,170**	**1,630**	**1,890**	NA	NA	NA	NA
Metals-Filtered																		
Iron	300	µg/L	**2,320**	**364**	**369**	**343**	**9,380**	**6,090**	**4,380**	**5,810 [5,300]**	**24,400**	**31,900**	**32,500**	**43,600**	NA	NA	NA	NA
Manganese	300	µg/L	276	152	91.1	83.8	**532**	**481**	**383**	**418 [380]**	**1,010**	**1,240**	**1,620**	**1,900**	NA	NA	NA	NA

Table 3
Groundwater Analytical Results (2022 to 2023)
Third Quarter 2023 Groundwater Monitoring Report
Old Erie Canal - Site #859015
124 Columbia Street
Clyde, New York

Location ID:	NYSDEC TOGS 1 1 1	Units	MW-17S				MW-18S				MW-19S			
Date Collected:	(Class GA)		3/2/2022	1/17/2023	4/18/2023	7/17/2023	3/2/2022	1/26/2023	4/28/2023	7/28/2023	3/2/2022	1/18/2023	4/17/2023	7/18/2023
Volatile Organics														
1,1,1-Trichloroethane	5	µg/L	1.0 U	5.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.6	1.6	**15.9**	3.4
1,1,2-trichloro-1,2,2-trifluoroethane	5	µg/L	**6.8**	25 U	**9.2 J**	1.9 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	5.0 U
1,1-Dichloroethane	5	µg/L	1.0 U	5.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**10.4**	**7.0**	**9.5**	**9.7**
1,1-Dichloroethene	5	µg/L	1.4	5.0 U	10 U	1.0	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U
Benzene	1	µg/L	0.50 U	2.5 U	5.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	0.50 U
Carbon Disulfide	60	µg/L	2.0 U	10 U	20 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	8.0 U	2.0 U
cis-1,2-Dichloroethene	5	µg/L	**810 D**	**1,080 D**	**1,920 D**	**1,070**	**30.9**	**31.5**	**44.3**	**61.6**	**432 D**	**293 D**	**479**	**417**
cis-1,3-Dichloropropene	0.4	µg/L	1.0 U	5.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U
Cyclohexane	- -	µg/L	5.0 U	25 U	50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	5.0 U
Dichloromethane	5	µg/L	2.0 U	10 U	20 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	8.0 U	2.0 U
Ethylbenzene	5	µg/L	1.0 U	5.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U
Isopropylbenzene	5	µg/L	1.0 U	5.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U
m&p-Xylenes	5	µg/L	1.0 U	5.0 U	10 U	1.0 U	1.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U
o-Xylene	5	µg/L	1.0 U	5.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U
Tetrachloroethene	5	µg/L	1.0 U	5.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**9.9**	2.7	**10.6**	4.1
Toluene	5	µg/L	1.7	5.0 U	10 U	1.0 U	2.3	1.0 U	0.54 J	0.82 J	1.0 U	1.0 U	4.0 U	1.0 U
Total Xylenes	5	µg/L	1.0 U	5.0 U	10 U	1.0 U	1.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U
trans-1,2-Dichloroethene	5	µg/L	3.2	**8.9**	**19.6**	**9.5**	1.0 U	0.69 J	0.78 J	0.63 J	**6.3**	3.4	**7.3**	**5.5**
Trichloroethene	5	µg/L	**66.1**	**137**	**727**	**249**	2.1	3.0	4.0	4.7	**199**	**104**	**512**	**215**
Vinyl chloride	2	µg/L	**423 D**	**140**	**264**	**133**	**13.5**	**4.1**	**5.3**	**2.6**	1.0 U	1.3	4.0 U	**4.1**
Dissolved Gases														
Ethane	- -	µg/L	9.97	18.1	14.3	10.6	0.46	0.23 U	1.1 J	0.34	0.23 U	0.23 U	0.16 J	0.18
Ethene	- -	µg/L	14.1	13.3	13.5	7.04	0.31 U	0.31 U	1.6 J	0.39	0.31 U	0.31 U	0.31 U	0.31 U
Methane	- -	µg/L	109	191 D	227	102	31.9	0.20	201 D	48.2	0.45	0.22	1.32	0.74
Metals														
Iron	300	µg/L	93.0 J	100 U	**405**	69.4 J	**1,710**	**1,510**	**432**	**2,540**	44.6 J	**3,660**	**4,770**	**1,040**
Manganese	300	µg/L	59.6	43.5	189	38.9	**375**	**308**	**392 J**	**862**	8.8 J	244	205	243
Metals-Filtered														
Iron	300	µg/L	**948**	100 U	100 U	60.9 J	100 U	100 U	**340**	**582**	100 U	100 U	100 U	100 U
Manganese	300	µg/L	**495**	40.2	46.3	37.4	**321**	195	**532 J**	**896**	6.2 J	28.2	15 U	92.0

Notes:
1) New York State Department of Environmental Conservation, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations for Source of Drinking Water (Class GA).

2) Bold/Shading - Exceeds applicable TOGS 1.1.1 value.
3) Data in this table is validated.
4) Abbreviations:
µg/L - micrograms per liter
NA - Not Analyzed/Applicable/Available (Turbidity was not recorded at wells MW-6B, MW-6S, MW-14S during the January 2023 and MW-18S during the July 2023 event due to field equipment error; however, all other parameters had stabilized).
5) Monitoring Wells MW-18S (all events) and MW19S (January and July 2023 event) went dry before stabilization of field parameters; therefore, samples were collected following recharge.
6) Only volatile organic constituents where concentration exceeds respective TOGS 1.1.1 value are shown.
7) Lab Qualifiers:
B - The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
D - Concentration is based on a diluted sample analysis.
J - Indicates an estimated value.
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
8) [ ] - duplicate sample analytical results.
9) Dissolved Organic Carbon was analyzed for during the March 2022 event and Total Organic Carbon was analyzed for during the January, April, and July 2023 events. As both these analyses produce almost identical results (dissolved = sample is filtered), these results are reported together in the same row 'Dissolved/Total Organic Carbon'.

Table 4
Surface Water Analytical Data
Third Quarter 2023 Groundwater Monitoring Report
Old Erie Canal - SIte #859015
124 Columbia Street
Clyde, New York

Location ID: Date Collected:	NYSDEC TOGS 1 1 1 H(WS) (Class C)	Units	CANAL DOWNSTREAM 7/19/2023	CANAL UPSTREAM 7/19/2023
Volatile Organics				
1,1,1-Trichloroethane	5	µg/L	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	0.2	µg/L	1.0 U	1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	5	µg/L	5.0 U	5.0 U
1,1,2-Trichloroethane	1	µg/L	1.0 U	1.0 U
1,1-Dichloroethane	5	µg/L	1.0 U	1.0 U
1,1-Dichloroethene	0.7	µg/L	1.0 U	1.0 U
1,2,3-Trichlorobenzene	5	µg/L	1.0 U	1.0 U
1,2,4-Trichlorobenzene	5	µg/L	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane	0.04	µg/L	2.0 U	2.0 U
1,2-Dibromoethane	--	µg/L	1.0 U	1.0 U
1,2-Dichlorobenzene	3	µg/L	1.0 U	1.0 U
1,2-Dichloroethane	0.6	µg/L	1.0 U	1.0 U
1,2-Dichloropropane	1	µg/L	1.0 U	1.0 U
1,3-Dichlorobenzene	3	µg/L	1.0 U	1.0 U
1,4-Dichlorobenzene	3	µg/L	1.0 U	1.0 U
2-Butanone (MEK)	50	µg/L	10 U	10 U
4-Methyl-2-Pentanone	- -	µg/L	5.0 U	5.0 U
Acetone	50	µg/L	10 U	10 U
Benzene	1	µg/L	0.50 U	0.50 U
Bromochloromethane	50	µg/L	1.0 U	1.0 U
Bromodichloromethane	50	µg/L	1.0 U	1.0 U
Bromoform	50	µg/L	1.0 U	1.0 U
Bromomethane	5	µg/L	2.0 U	2.0 U
Carbon Disulfide	--	µg/L	2.0 U	2.0 U
Carbon Tetrachloride	0.4	µg/L	1.0 U	1.0 U
CFC-11		µg/L	2.0 U	2.0 U
CFC-12		µg/L	2.0 U	2.0 U
Chlorobenzene	5	µg/L	1.0 U	1.0 U
Chlorodibromomethane		µg/L	1.0 U	1.0 U
Chloroethane	5	µg/L	1.0 U	1.0 U
Chloroform	7	µg/L	1.0 U	1.0 U
Chloromethane	--	µg/L	1.0 U	1.0 U
cis-1,2-Dichloroethene	5	µg/L	1.0 U	1.0 U
cis-1,3-Dichloropropene	0.4	µg/L	1.0 U	1.0 U
Cyclohexane	--	µg/L	5.0 U	5.0 U
Dichloromethane		µg/L	2.0 U	2.0 U
Ethylbenzene	5	µg/L	1.0 U	1.0 U
Isopropylbenzene	5	µg/L	1.0 U	1.0 U
m&p-Xylenes	5	µg/L	1.0 U	1.0 U
Methyl Acetate	- -	µg/L	5.0 U	5.0 U
Methyl N-Butyl Ketone (2-Hexanone)		µg/L	5.0 U	5.0 U
Methylcyclohexane	--	µg/L	5.0 U	5.0 U
Methyl-tert-butylether	--	µg/L	1.0 U	1.0 U
o-Xylene	5	µg/L	1.0 U	1.0 U
Styrene (Monomer)	5	µg/L	1.0 U	1.0 U
Tetrachloroethene	0.7	µg/L	1.0 U	1.0 U
Toluene	5	µg/L	1.0 U	1.0 U
Total Xylenes	5	µg/L	1.0 U	1.0 U
trans-1,2-Dichloroethene	5	µg/L	1.0 U	1.0 U
trans-1,3-Dichloropropene	0.4	µg/L	1.0 U	1.0 U
Trichloroethene	5	µg/L	1.0 U	1.0 U
Vinyl chloride	0.3	µg/L	1.0 U	1.0 U

Table 4
Surface Water Analytical Data
Third Quarter 2023 Groundwater Monitoring Report
Old Erie Canal - SIte #859015
124 Columbia Street
Clyde, New York

Notes:
1) New York State Department of Environmental Conservation, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations for Source of Drinking Water H(WS).
2)
3) Data in this table is not validated.
4) Abbreviations:
H(WS) = Source of Drinking Water (surface water)
µg/L - micrograms per liter
mg/L - milligrams per liter
mS/cm - milli siemens per centimeter
NTU - Nephelometric Turbidity Units
°C - degrees Celsius
NA - Not Analyzed/Applicable/Available (Turbidity was not recorded at wells MW-18S due to field equipment error).
5) Monitoring Wells MW-18S and MW19S went dry before stabilization of field parameters; therefore, samples were collected following recharge.
6) Only detected Volatile Organics are shown.
7) Lab Qualifiers:
J - Indicates an estimated value.
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
UJ - The compound was analyzed for but not detected. The associated value is the compound quantitation limit. Indicates an estimated value.

Table 5A
Min-Trap AMIBA Results
Third Quarter 2023 Groundwater Monitoring Report
Old Erie Canal - NYSDEC Site #859015
124 Columbia Street
Clyde, New York

Well ID	Weak Acid Soluble Iron (mg/kg)			Strong Acid Soluble Iron (mg/kg)			Acid Volatile Sulfide (mg/kg)	Chromium Extractible Sulfide (mg/kg)
	Ferrous Iron	Ferric Iron	Total Iron	Ferrous Iron	Ferric Iron	Total Iron		
MW-4B	22	6	27	40	5	40	9.7	57
MW-6B	25	3.8	29	30	20	50	12	51

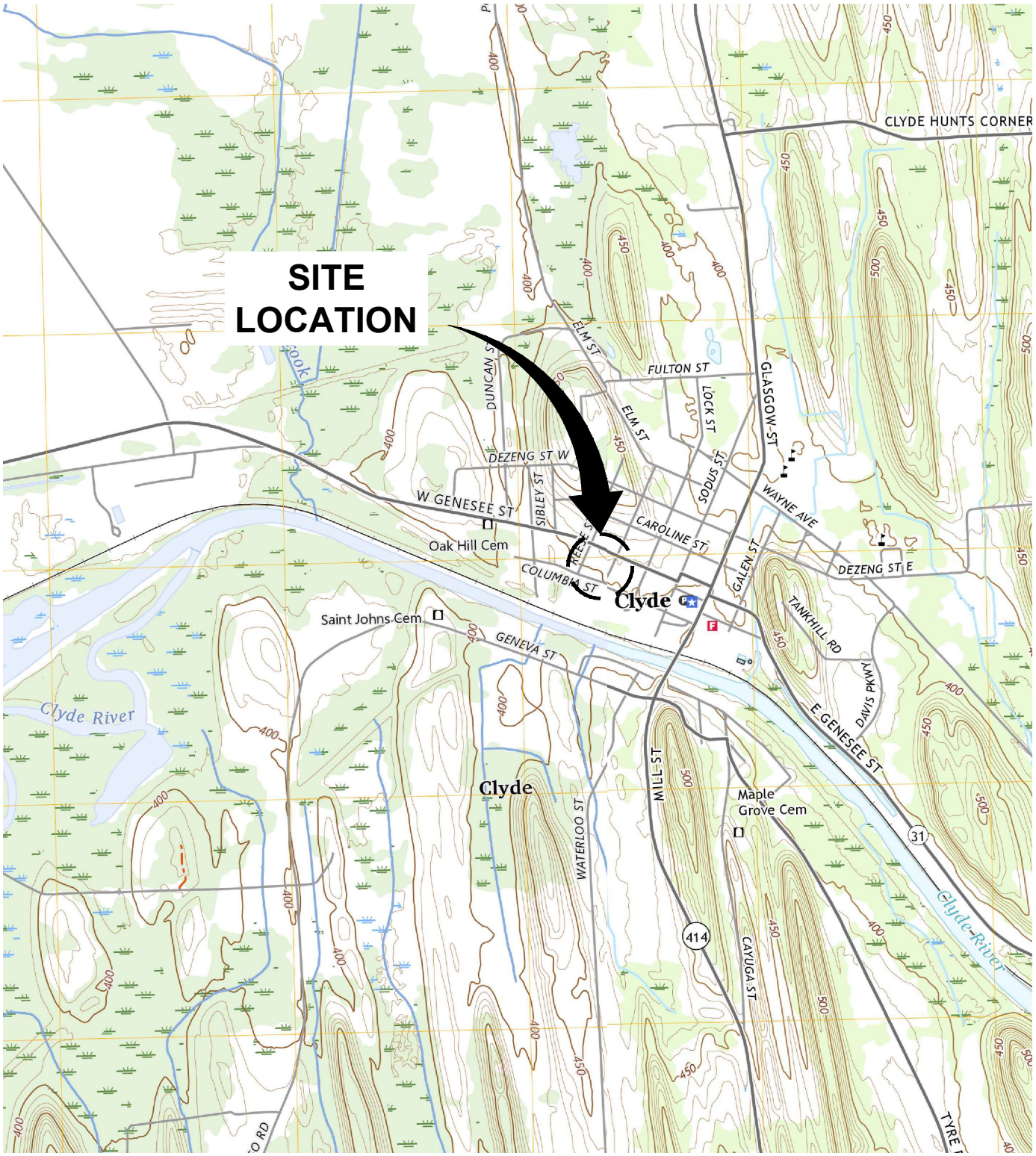
Notes:
1) mg/kg - milligrams per kilogram
2) AMIBA - Aqueous and Mineralogical Intrinsic Bioremediation Assessment

Table 5B
Min-Trap QuantArray-BGC Results
Third Quarter 2023 Groundwater Monitoring Report
Old Erie Canal - NYSDEC Site #859015
124 Columbia Street
Clyde, New York

Microbial Group	MW-4B	MW-6B
	cells/g	cells/g
Total Bacteria	$6.55x10^{8}$	$6.54x10^{8}$
Total Archaea	$3.95x10^{3}$ (J)	$3.27x10^{5}$
Sulfate Reducing Bacteria	$1.86x10^{6}$	$4.58x10^{7}$
Sulfate Reducing Archaea	$<1.00x10^{4}$	$<1.00x10^{4}$
Iron Reducing Archaea	$<1.00x10^{4}$	$<1.00x10^{4}$
Iron Reducing Bacteria - Other	$<1.00x10^{4}$	$4.20x10^{4}$
Iron Reducing *Geobacter*	$2.65x10^{6}$	$1.84x10^{3}$ (J)
Iron Reducing *Shewanella*	$<1.00x10^{4}$	$<1.00x10^{4}$
Iron Oxidizing Bacteria	$6.20x10^{4}$	$5.07x10^{3}$ (J)
Manganese Oxidizing Bacteria	$8.08x10^{3}$ (J)	$<1.00x10^{4}$
Sulfur Oxidizing Bacteria	$1.41x10^{5}$	$2.43x10^{5}$
Ammonia Oxidizing Bacteria	$<1.00x10^{4}$	$<1.00x10^{4}$
Ammonia Oxidizing Archaea	$1.11x10^{3}$ (J)	$<1.00x10^{4}$
Nitrite Oxidizing Bacteria	$<1.00x10^{4}$	$<1.00x10^{4}$
Anaerobic Ammonia Oxidizers AMXNIRK)	$<1.00x10^{4}$	$<1.00x10^{4}$
Anaerobic Ammonia Oxidizers AMXNIRS)	$<1.00x10^{4}$	$<1.00x10^{4}$
Nitrogen Fixering Bacteria	$<1.00x10^{4}$	$3.70x10^{5}$
Denitrifying Bacteria (nirK)	$<1.00x10^{4}$	$<1.00x10^{4}$
Denitrifying Bacteria (nirS)	$<1.00x10^{4}$	$<1.00x10^{4}$
Denitrifying Archaea (ANIRK)	$<1.00x10^{4}$	$<1.00x10^{4}$
Denitrifying Archaea (ANIRS)	$<1.00x10^{4}$	$<1.00x10^{4}$
Methanogens	$2.78x10^{3}$ (J)	$4.02x10^{4}$
Fermenters	$9.35x10^{7}$	$1.90x10^{7}$
Acetogens	$<1.00x10^{4}$	$<1.00x10^{4}$
Acetylene Degraders	$<1.00x10^{4}$	$<1.00x10^{4}$

Notes:
1) cells/g - cells per gram
2) J - Estimated gene copies below PCL but above LQL
3) < - Result not detected

Figures



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., LYONS AND SAVANNAH, NY, 2019.

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.

OLD ERIE CANAL - NYSDEC SITE #859015
124 COLUMBIA STREET- CLYDE, NEW YORK

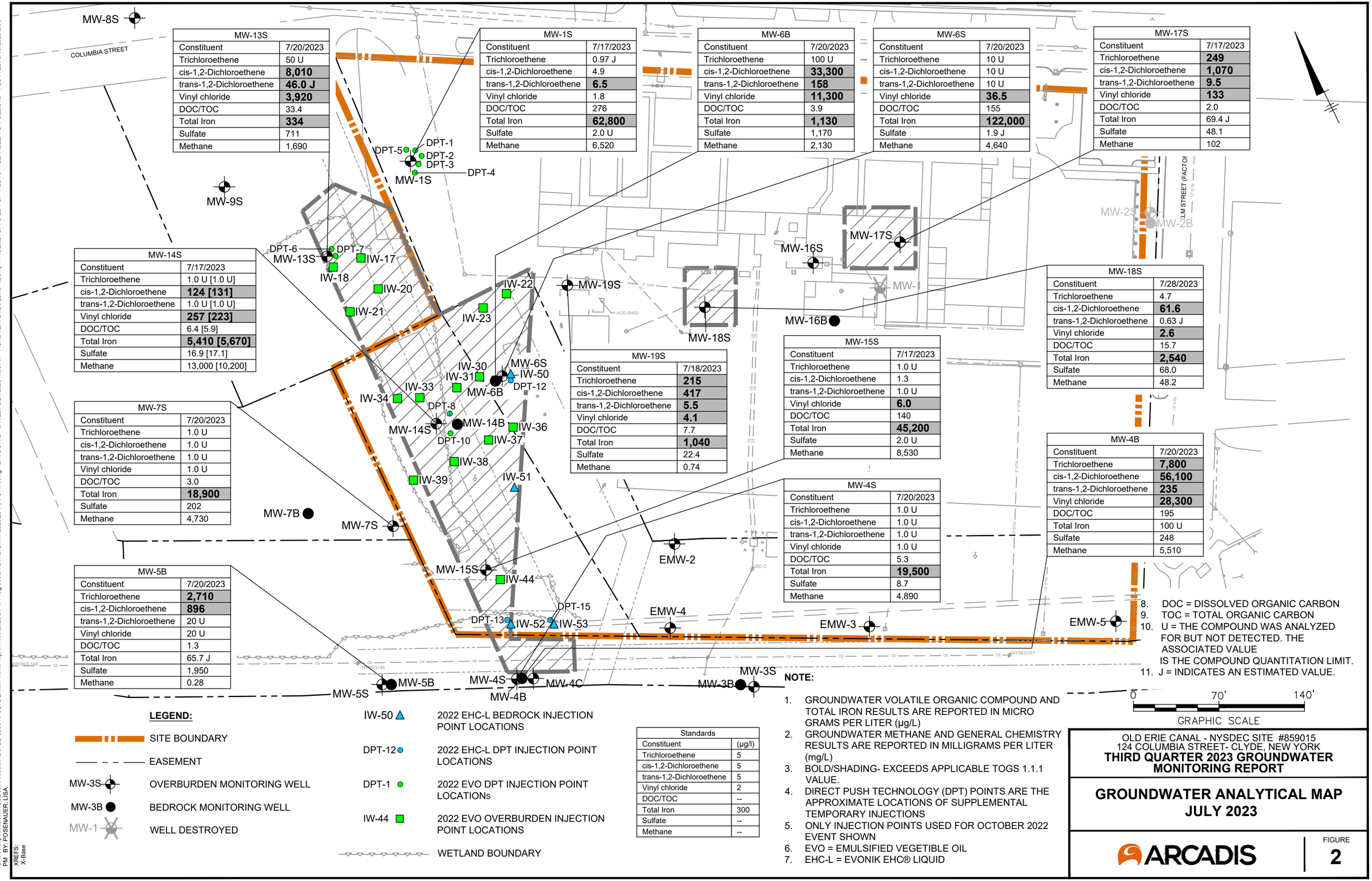
SITE LOCATION MAP

ARCADIS

FIGURE 1

XREFS: IMAGES: PROJECTNAME: ---
NY_Lyons_20230426_TM_geo.jpg
NY_Savannah_20190920_TM_geo-page-0.jpg

C:\Users\ymb2640\ACCDocs\Arcadis\AUS-GE-859015-CLYDE New York\Project Files\2023\01-In Progress\01-DWG\GEN-F01-SITE LOCATION MAP.dwg LAYOUT: 1 SAVED: 5/24/2023 1:05 PM ACADVER: 24.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 5/25/2023 7:02 PM BY: Y M. BABU



MW-13S	
Constituent	7/20/2023
Trichloroethene	50 U
cis-1,2-Dichloroethene	**8,010**
trans-1,2-Dichloroethene	**46.0 J**
Vinyl chloride	**3,920**
DOC/TOC	33.4
Total Iron	**334**
Sulfate	711
Methane	1,690

MW-1S	
Constituent	7/17/2023
Trichloroethene	0.97 J
cis-1,2-Dichloroethene	4.9
trans-1,2-Dichloroethene	**6.5**
Vinyl chloride	1.8
DOC/TOC	276
Total Iron	**62,800**
Sulfate	2.0 U
Methane	6,520

MW-6B	
Constituent	7/20/2023
Trichloroethene	100 U
cis-1,2-Dichloroethene	**33,300**
trans-1,2-Dichloroethene	**158**
Vinyl chloride	**11,300**
DOC/TOC	3.9
Total Iron	**1,130**
Sulfate	1,170
Methane	2,130

MW-6S	
Constituent	7/20/2023
Trichloroethene	10 U
cis-1,2-Dichloroethene	10 U
trans-1,2-Dichloroethene	10 U
Vinyl chloride	**36.5**
DOC/TOC	155
Total Iron	**122,000**
Sulfate	1.9 J
Methane	4,640

MW-17S	
Constituent	7/17/2023
Trichloroethene	**249**
cis-1,2-Dichloroethene	**1,070**
trans-1,2-Dichloroethene	**9.5**
Vinyl chloride	**133**
DOC/TOC	2.0
Total Iron	69.4 J
Sulfate	48.1
Methane	102

MW-14S	
Constituent	7/17/2023
Trichloroethene	1.0 U [1.0 U]
cis-1,2-Dichloroethene	**124 [131]**
trans-1,2-Dichloroethene	1.0 U [1.0 U]
Vinyl chloride	**257 [223]**
DOC/TOC	6.4 [5.9]
Total Iron	**5,410 [5,670]**
Sulfate	16.9 [17.1]
Methane	13,000 [10,200]

MW-19S	
Constituent	7/18/2023
Trichloroethene	**215**
cis-1,2-Dichloroethene	**417**
trans-1,2-Dichloroethene	**5.5**
Vinyl chloride	**4.1**
DOC/TOC	7.7
Total Iron	**1,040**
Sulfate	22.4
Methane	0.74

MW-15S	
Constituent	7/17/2023
Trichloroethene	1.0 U
cis-1,2-Dichloroethene	1.3
trans-1,2-Dichloroethene	1.0 U
Vinyl chloride	**6.0**
DOC/TOC	140
Total Iron	**45,200**
Sulfate	2.0 U
Methane	8,530

MW-18S	
Constituent	7/28/2023
Trichloroethene	4.7
cis-1,2-Dichloroethene	**61.6**
trans-1,2-Dichloroethene	0.63 J
Vinyl chloride	**2.6**
DOC/TOC	15.7
Total Iron	**2,540**
Sulfate	68.0
Methane	48.2

MW-7S	
Constituent	7/20/2023
Trichloroethene	1.0 U
cis-1,2-Dichloroethene	1.0 U
trans-1,2-Dichloroethene	1.0 U
Vinyl chloride	1.0 U
DOC/TOC	3.0
Total Iron	**18,900**
Sulfate	202
Methane	4,730

MW-4S	
Constituent	7/20/2023
Trichloroethene	1.0 U
cis-1,2-Dichloroethene	1.0 U
trans-1,2-Dichloroethene	1.0 U
Vinyl chloride	1.0 U
DOC/TOC	5.3
Total Iron	**19,500**
Sulfate	8.7
Methane	4,890

MW-4B	
Constituent	7/20/2023
Trichloroethene	**7,800**
cis-1,2-Dichloroethene	**56,100**
trans-1,2-Dichloroethene	**235**
Vinyl chloride	**28,300**
DOC/TOC	195
Total Iron	100 U
Sulfate	248
Methane	5,510

MW-5B	
Constituent	7/20/2023
Trichloroethene	**2,710**
cis-1,2-Dichloroethene	**896**
trans-1,2-Dichloroethene	20 U
Vinyl chloride	20 U
DOC/TOC	1.3
Total Iron	65.7 J
Sulfate	1,950
Methane	0.28

LEGEND:

- SITE BOUNDARY
- EASEMENT
- MW-3S — OVERBURDEN MONITORING WELL
- MW-3B — BEDROCK MONITORING WELL
- MW-1 — WELL DESTROYED
- IW-50 — 2022 EHC-L BEDROCK INJECTION POINT LOCATIONS
- DPT-12 — 2022 EHC-L DPT INJECTION POINT LOCATIONS
- DPT-1 — 2022 EVO DPT INJECTION POINT LOCATIONs
- IW-44 — 2022 EVO OVERBURDEN INJECTION POINT LOCATIONS
- WETLAND BOUNDARY

Standards	
Constituent	(µg/l)
Trichloroethene	5
cis-1,2-Dichloroethene	5
trans-1,2-Dichloroethene	5
Vinyl chloride	2
DOC/TOC	--
Total Iron	300
Sulfate	--
Methane	--

NOTE:

1. GROUNDWATER VOLATILE ORGANIC COMPOUND AND TOTAL IRON RESULTS ARE REPORTED IN MICRO GRAMS PER LITER (µg/L)
2. GROUNDWATER METHANE AND GENERAL CHEMISTRY RESULTS ARE REPORTED IN MILLIGRAMS PER LITER (mg/L)
3. BOLD/SHADING- EXCEEDS APPLICABLE TOGS 1.1.1 VALUE.
4. DIRECT PUSH TECHNOLOGY (DPT) POINTS ARE THE APPROXIMATE LOCATIONS OF SUPPLEMENTAL TEMPORARY INJECTIONS
5. ONLY INJECTION POINTS USED FOR OCTOBER 2022 EVENT SHOWN
6. EVO = EMULSIFIED VEGETIBLE OIL
7. EHC-L = EVONIK EHC® LIQUID
8. DOC = DISSOLVED ORGANIC CARBON
9. TOC = TOTAL ORGANIC CARBON
10. U = THE COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE ASSOCIATED VALUE IS THE COMPOUND QUANTITATION LIMIT.
11. J = INDICATES AN ESTIMATED VALUE.

0 70’ 140’

GRAPHIC SCALE

OLD ERIE CANAL - NYSDEC SITE #859015
124 COLUMBIA STREET- CLYDE, NEW YORK
THIRD QUARTER 2023 GROUNDWATER MONITORING REPORT

GROUNDWATER ANALYTICAL MAP JULY 2023

ARCADIS

FIGURE **2**

C:\Users\lposenauer\ACCDocs\Arcadis\AUS-GE-859015-CLYDE New York\Project Files\2023\01-In Progress\01-DWG\GWM-2023Q3-F01-GWA.dwg LAYOUT: 2 SAVED: 8/21/2023 4:38 AM ACADVER: 24.2S (LMS TECH) PAGESETUP: C-LB-PDF PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 9/19/2023 2:50
PM BY: POSENAUER, LISA
XREFS:
X-Base

Attachment 1

Groundwater Sampling Logs

ARCADIS

GROUNDWATER SAMPLING LOG

Page 1 of 1

Date 7/17/2023

Weather Partly cloudy, 85°

Project No 30147041 00004

Well ID MW-15

Well Material X PVC ___ SS

Project Name/Location Old Erie Canal Site / Clyde, NY

Measuring Pt. Description TOC

Screen Setting (ft-bmp) 2.3'-7.3'

Casing Diameter (in.) 2

Water Column/ Gallons in Well 3.97 / 0.64

Static Water Level (ft-bmp) 2.82

Total Depth (ft-bmp) 6.79

Purge Method: Low Flow / Centrifugal / Submersible / Other Peri Pump

Sample Method Peri Pump

MP Elevation NA

Pump Intake (ft-bmp) ~5.0

Pump On/Off 1235/1415

Volumes Purged 3.5

Sampled by KCF

Label Time: 1350

Start Filling: 1350

End Filling: 1410

Duplicate Y / (N)

MS/MSD Y / (N)

QA/QC Code: NA

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft. bmp)	Gallons Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	Redox (mV)	Appearance Color	Appearance Odor
1255	20	130	4.43	1.0	6.76	3.434	—	1.29	20.5	-82.5	black susp. sediment	Slight
1300	25	130	4.58		6.75	3.474	—	1.02	20.4	-85.8	"	"
1305	30	130	4.64		6.76	3.789	—	1.12	20.4	-85.1	clear	"
1310	35	130	4.68	1.70	6.76	4.056	—	1.28	20.6	-86.0	"	"
1315	40	130	4.92		6.77	4.267	—	1.65	20.1	-87.7	"	"
1320	45	130	5.08	2.0	6.79	4.618	—	1.67	20.3	-89.1	"	"
1325	50	130	5.08		6.77	4.817	—	1.76	20.2	-88.1	"	"
1330	60	130	5.08		6.80	4.808	—	1.83	20.3	-93.2	"	"
1335	65	130	5.08		6.79	4.887	38.6	1.95	20.3	-93.9	"	"
1340	70	130	5.08	3.0	6.77	4.940	39.0	1.89	20.4	-92.8	"	"
1345	75	130	5.08		6.76	4.931	41.3	1.80	20.3	-92.4	"	"
1350	80	130	SAMPLE									

Constituents Sampled	Container	Min Vol.	Number	Preservative
V8260TCL20 - VOCs	3 x 40 ml glass	full	3	HCL
VRSK175DGMEE - Dissolved Gasses	3 x 40 ml glass	full	3	HCL
TOT MET [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
SO4 - Sulfate	1 x 250 ml HDPE	250 ml	1	None
Sulfide	2 x 250 ml HDPE	200 ml/bottle	2	NaOH + ZnAc
DISS MET [FF] [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
TOC	1 x 60 ml glass	full	1	HCL

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

FF = Field Filtered

Well Information

Well Location: Gravel Parking area

Condition of Well: Fair

Well Completion: (Flush Mount) / Stick Up

Well Locked at Arrival: Yes / (No)

Well Locked at Departure: Yes / (No)

Key Number To Well: NA

* Turbidity meter not working; took 3 consecutive readings at the end to verify stabilization (field staff switching off using the one meter that works)

ARCADIS

GROUNDWATER SAMPLING LOG

Project No: 30147041 00004 | Well ID: MW-45 | Date: 7/20/2023

Project Name/Location: Old Erie Canal Site / Clyde, NY | Weather: Sunny, 75°

Measuring Pt Description: TOC | Screen Setting (ft-bmp): 10.3 - 20.3 | Casing Diameter (in.): 2 | Well Material: X PVC ___ SS

Static Water Level (ft-bmp): 4.49 | Total Depth (ft-bmp): 19.54 | Water Column/ Gallons in Well: 15.05 / 2.45

MP Elevation: NA | Pump Intake (ft-bmp): ~15' | Purge Method: Low Flow | Sample Method: Peri Pump

Pump On/Off: 1000 / 1105 | Volumes Purged: 3.0 | Centrifugal / Submersible / Other: Peri Pump

Label Time: 1050 | Duplicate Y / (N)

Start Filling: 1050 | MS/MSD Y / (N)

End Filling: 1100 | QA/QC Code: NA | Sampled by: KCF

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft bmp)	Gallons Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	Redox (mV)	Appearance	
											Color	Odor
1010	10	150	4.67	0.5	6.90	3.954	3.02	0.59	14.1	0.9	Clear	none
1015	15	150	4.67		6.93	3.931	2.78	0.19	14.1	-28.0	"	"
1020	20	150	4.67		6.95	3.919	2.65	0.09	13.8	-33.2	"	"
1025	25	150	4.67	1.30	6.96	3.882	2.45	0.04	13.8	-7.0	"	"
1030	30	150	4.67		6.94	3.841	2.32	0.01	13.6	-7.2	"	"
1035	35	150	4.67		6.95	3.822	3.32	0.00	13.8	-6.4	"	"
1040	40	150	4.67		6.95	3.785	4.16	0.00	13.7	-6.2	"	"
1045	45	150	4.67	2.70	6.94	3.772	1.94	0.00	13.7	0.2	"	"
1050	50	SAMPLE										

Constituents Sampled	Container	Min Vol.	Number	Preservative
V8260TCL20 - VOCs	3 x 40 ml glass	full	3	HCL
VRSK175DGMEE - Dissolved Gasses	3 x 40 ml glass	full	3	HCL
TOT MET [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
SO4 - Sulfate	1 x 250 ml HDPE	250 ml	1	None
Sulfide	2 x 250 ml HDPE	200 ml/bottle	2	NaOH + ZnAc
DISS MET [FF] [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
TOC	1 x 60 ml glass	full	1	HCL

Gallons/Foot: 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

FF = Field Filtered

Well Information

Well Location: Back grass area

Condition of Well: Fair

Well Completion: (Flush Mount) / Stick Up

Well Locked at Arrival: Yes / (No)

Well Locked at Departure: Yes / (No)

Key Number To Well: NA

ARCADIS

GROUNDWATER SAMPLING LOG

Project No. 30147041.00004 Well ID MW-4B Date 7/20/2023

Project Name/Location Old Erie Canal Site / Clyde, NY Weather Sunny, 80°

Measuring Pt. Description TOC Screen Setting (ft-bmp) 28.9-38.9 Casing Diameter (in.) 2 Well Material X PVC ___ SS

Static Water Level (ft-bmp) 5.07 Total Depth (ft-bmp) 38.75 Water Column/ Gallons in Well 33.68 / 5.48

MP Elevation NA Pump Intake (ft-bmp) ~ 33.9 Purge Method Low Flow / Centrifugal / Submersible / Other Peri Pump Sample Method Peri Pump

Pump On/Off 1130/1240 Volumes Purged 3.5

Label Time: 1225 Duplicate Y / (N)

Start Filling: 1225 MS/MSD Y / (N)

End Filling: 1235 QA/QC Code: NA Sampled by KCF

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft bmp)	Gallons Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	Redox (mV)	Appearance Color	Appearance Odor
~~1140~~ 1150	20	150	6.21	1.0	6.46	3.731	7.11	8.94	13.1	-301.2	clear	strong
1155	25	150	6.21		6.49	3.703	6.97	0.92	13.3	-314.6	"	"
1200	30	150	6.21		6.50	3.711	6.52	0.32	13.1	-329.6	"	"
1205	35	150	6.42		6.47	3.717	6.22	0.22	12.9	-340.8	"	"
1210	40	150	6.42		6.45	3.710	14.6	0.16	13.1	-346.4	"	"
1215	45	150	6.42		6.42	3.705	14.2	0.09	13.2	-346.5	"	"
1220	50	150	6.42		6.40	3.722	14.7	0.07	13.1	-345.7	"	"
1225	55	SAMPLE										

Constituents Sampled	Container	Min Vol.	Number	Preservative
V8260TCL20 - VOCs	3 x 40 ml glass	full	3	HCL
VRSK175DGMEE - Dissolved Gasses	3 x 40 ml glass	full	3	HCL
TOT MET [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
SO4 - Sulfate	1 x 250 ml HDPE	250 ml	1	None
Sulfide	2 x 250 ml HDPE	200 ml/bottle	2	NaOH + ZnAc
DISS MET [FF] [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
TOC	1 x 60 ml glass	full	1	HCL

Gallons/Foot 1" = 0.04 1.25" = 0.06 1.5" = 0.09 2" = 0.16 2.5" = 0.26 3" = 0.37 3.5" = 0.50 4" = 0.65 6" = 1.47

Well Information FF = Field Filtered

Well Location: Back grass area Well Locked at Arrival: Yes / (No)

Condition of Well: Fair Well Locked at Departure: Yes / (No)

Well Completion: (Flush Mount) / Stick Up Key Number To Well: NA

ARCADIS

GROUNDWATER SAMPLING LOG

Page 1 of 1

Project No: 30147041 00004 | Well ID: MW-5B | Date: 7/20/2023

Project Name/Location: Old Erie Canal Site / Clyde, NY | Weather: Sunny, 85°

Measuring Pt. Description: TOC | Screen Setting (ft-bmp): 29.3-39.3 | Casing Diameter (in.): 2 | Well Material: X PVC / ___ SS

Static Water Level (ft-bmp): 5.51 | Total Depth (ft-bmp): 38.91 | Water Column/ Gallons in Well: 33.40 / 5.44

MP Elevation: NA | Pump Intake (ft-bmp): ~30 | Purge Method: Low Flow / Centrifugal / Submersible / Other: Peri Pump | Sample Method: Peri Pump

Pump On/Off: 1340 / 1440 | Volumes Purged: 2.5

Label Time: 1425 | Duplicate Y / (N)

Start Filling: 1425 | MS/MSD Y / (N) | Sampled by: KCF

End Filling: 1435 | QA/QC Code: NA

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft bmp)	Gallons Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
1350	10	145	7.90	0.5	7.32	3,053	4.98	8.66	14.2	-23.9	clear	none
1355	15	145	10.11		7.32	3,050	2.02	2.49	13.7	-55.2	"	"
1400	20	145	11.75		7.31	3.053	2.22	1.85	13.7	-55.0	"	"
1405	25	145	12.82		7.29	3.050	2.15	1.82	14.0	-51.9	"	"
1410	30	145	14.05	1.5	7.29	3,041	2.04	1.81	14.3	-49.6	"	"
1415	35	145	15.35		7.24	3,036	2.02	1.87	14.3	-43.3	"	"
1420	40	145	16.29		7.21	3.035	1.87	1.83	14.4	-40.2		
1425	45	145	SAMPLE									

Constituents Sampled	Container	Min Vol.	Number	Preservative
V8260TCL20 - VOCs	3 x 40 ml glass	full	3	HCL
VRSK175DGMEE - Dissolved Gasses	3 x 40 ml glass	full	3	HCL
TOT MET [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
SO4 - Sulfate	1 x 250 ml HDPE	250 ml	1	None
Sulfide	2 x 250 ml HDPE	200 ml/bottle	2	NaOH + ZnAc
DISS MET [FF] [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
TOC	1 x 60 ml glass	full	1	HCL

Gallons/Foot: 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

FF = Field Filtered

Well Location: Back, grass area | Well Locked at Arrival: Yes / (No)

Condition of Well: Good | Well Locked at Departure: Yes / (No)

Well Completion: (Flush Mount) / Stick Up | Key Number To Well: NA

ARCADIS

GROUNDWATER SAMPLING LOG

Project No. 30147041 00004 | Well ID MW-6B | Date 7/20/2023

Project Name/Location Old Erie Canal Site / Clyde, NY | Weather 80°F, Sun

Measuring Pt. Description TOC | Screen Setting (ft-bmp) 29.4-39.4 | Casing Diameter (in.) 2" | Well Material X PVC ___ SS

Static Water Level (ft-bmp) 6.37' | Total Depth (ft-bmp) 39.18' | Water Column/ Gallons in Well 32.81' / 5.25 gal

MP Elevation — NA | Pump Intake (ft-bmp) ~37' | Purge Method Low Flow / Centrifugal / Submersible / Other Peri Pump | Sample Method Peri Pump

Pump On/Off 1150 / 1352 | Volumes Purged 3.5 gal

Label Time: 1330 | Duplicate Y / (N)

Start Filling: 1330 | MS/MSD Y / (N)

End Filling: 1352 | QA/QC Code: — NA | Sampled by BKW

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft. bmp)	Gallons Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance Color	Appearance Odor
1150	Pump on		6.37									
1200	10	170	6.91		7.21	16.16	107	0.35	20.8	-290.5	*	slight
1205	15	170	6.91	1.0	7.24	14.78	54.4	0.08	20.7	-329.7		
1210	20	170	6.95		7.23	13.76	37.1	0.05	19.3	-329.3		
1215	25	190	7.00		7.12	10.12	30.5	0.01	20.9	-340.1		
1220	30	170	6.91		7.10	8.44	28.0	0.02	20.7	-342.7		
1225	35	170	6.91	1.25	7.15	7.62	18.3	0.03	21.0	-343.9		
1230	40	170	6.93		7.12	6.54	16.4	0.06	20.7	-339.6	clear	
1235	45	170	6.99	1.5	7.07	5.28	13.8	0.08	20.8	-333.9		
1240	50	150	6.92		7.04	4.96	13.5	0.08	21.1	-330.8		
1245	55	150	6.92		7.05	4.78	18.3	0.08	20.8	-329.0		
1250	60	150	6.92	2.0	7.01	4.57	50.4	0.05	21.1	-327.5		
1255	65	150	6.92		7.00	4.47	77.8	0.03	20.7	-327.0		
1300	70	150	6.92		7.02	4.41	61.1	0.02	21.0	-327.1		
1305	75	150	6.94	2.5	6.99	3.63	49.6	0.00	21.1	-325.6		
1310	80	150	6.94		7.00	3.49	42.3	0.00	20.6	-325.1		

Constituents Sampled	Container	Min Vol.	Number	Preservative
V8260TCL20 - VOCs	3 x 40 ml glass	full	3	HCL
VRSK175DGMEE - Dissolved Gasses	3 x 40 ml glass	full	3	HCL
TOT MET [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
SO4 - Sulfate	1 x 250 ml HDPE	250 ml	1	None
Sulfide	2 x 250 ml HDPE	200 ml/bottle	2	NaOH + ZnAc
DISS MET [FF] [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
TOC	1 x 60 ml glass	full	1	HCL

Gallons/Foot: 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

FF = Field Filtered

Well Information

Well Location: Driveway | Well Locked at Arrival: Yes / (No)

Condition of Well: good | Well Locked at Departure: Yes / (No)

Well Completion: (Flush Mount) / Stick Up | Key Number To Well: n/a

* clear with black suspended particles

ARCADIS

GROUNDWATER SAMPLING LOG

Project No. 30147041.00004 Well ID MW-6B Date 7/20/2023

Project Name/Location Old Erie Canal Site / Clyde, NY Weather —

Measuring Pt Description — Screen Setting (ft-bmp) — Casing Diameter (in.) — Well Material — PVC — SS

Static Water Level (ft-bmp) — Total Depth (ft-bmp) — Water Column/ Gallons in Well —

MP Elevation — Pump Intake (ft-bmp) — Purge Method: Low Flow — Centrifugal — Submersible — Other Peri Pump — Sample Method Peri Pump

Pump On/Off — Volumes Purged —

Label Time: — Start Filling: — End Filling: — Duplicate Y / N — MS/MSD Y / N — QA/QC Code: — See Page1 Sampled by —

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft bmp)	Gallons Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	Redox (mV)	Appearance Color	Appearance Odor
1315	85	150	6.94	3.0	7.01	3.47	35.3	0.00	20.8	-324.3	clear	slight
1320	90	150	6.96		7.02	3.46	32.6	0.00	20.8	-323.2	↓	↓
1325	95	150	6.96	3.25	7.00	3.45	32.8	0.00	21.3	-322.2		
1330	SAMPLED											

Constituents Sampled	Container	Min Vol.	Number	Preservative
V8260TCL20 - VOCs	3 x 40 ml glass	full		HCL
VRSK175DGMEE - Dissolved Gasses	3 x 40 ml glass	full		HCL
TOT MET [Fe, Mn]	1 x 500 ml HDPE	150 ml		HNO3
SO4 - Sulfate	1 x 250 ml HDPE	250 ml		None
Sulfide	2 x 250 ml HDPE	200 ml/bottle		NaOH + ZnAc
DISS MET [FF] [Fe, Mn]	1 x 500 ml HDPE	150 ml		HNO3
TOC	1 x 60 ml glass	full		HCL

Gallons/Foot 1" = 0.04 1.25" = 0.06 1.5" = 0.09 2" = 0.16 2.5" = 0.26 3" = 0.37 3.5" = 0.50 4" = 0.65 6" = 1.47

FF = Field Filtered

Well Information

Well Location: — Well Locked at Arrival: Yes / No

Condition of Well: — Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up — Key Number To Well: —

See Page1

ARCADIS

GROUNDWATER SAMPLING LOG

Project No. 30147041.00004 Well ID MW-6S Date 7-10-20, 2023

Project Name/Location Old Erie Canal Site / Clyde, NY Weather 30°F, Sun

Measuring Pt. Description TOC Screen Setting (ft-bmp) 5-15' Casing Diameter (in.) 2" Well Material X PVC ___ SS

Static Water Level (ft-bmp) 4.15 Total Depth (ft-bmp) 14.24' Water Column/ Gallons in Well 10.09'/1.61 gal

MP Elevation — NA Pump Intake (ft-bmp) ~14' Purge Method: Low Flow Centrifugal ___ Submersible ___ Other Peri Pump Sample Method Peri Pump

Pump On/Off 0910/1059 Volumes Purged 2.75 gal

Label Time: 1035 Duplicate Y / (N)

Start Filling: 1035 MS/MSD Y / (N) Sampled by BKW

End Filling: 1059 QA/QC Code: — NA

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft. bmp)	Gallons Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance Color	Appearance Odor
0910	Pump on		4.15									
0920	10	130	5.09		6.35	5.81	41.2	0.23	21.3	-111.6	*	none
0925	15	130	5.47	0.5	6.35	5.89	40.3	0.16	21.7	-132.0	↓	↓
0930	20	130	5.75		6.39	5.90	46.6	0.02	21.8	-144.7		
0935	25	130	5.91	0.75	6.41	6.02	56.6	0.00	21.9	-147.2	↓	↓
0940	30	130	6.10		6.42	6.24	76.4	0.00	21.8	-144.6	cloudier	slight
0945	35	130	6.28	1.0	6.42	6.36	64.2	0.00	21.5	-141.0	*	↓
0950	40	130	6.45		6.46	6.55	68.4	0.00	21.6	-136.3	↓	
0955	45	130	6.55		6.42	6.63	65.0	0.00	21.6	-131.9		
1000	50	130	6.72	1.5	6.45	6.72	72.1	0.00	21.3	-131.0		
1005	55	130	6.80		6.49	6.75	62.2	0.00	21.7	-129.6		
1010	60	130	6.93		6.50	7.04	61.6	0.00	22.0	-126.9		
1015	65	130	7.02	2.0	6.50	7.04	56.4	0.00	21.8	-125.9		
1020	70	130	7.11		6.49	7.02	48.9	0.00	21.6	-124.2		
1025	75	130	7.24		6.50	6.99	47.8	0.00	21.6	-122.0		
1030	80	130	7.33	2.5	6.49	6.97	49.4	0.00	21.6	-122.9	↓	↓
1035	SAMPLED											

Constituents Sampled	Container	Min Vol.	Number	Preservative
V8260TCL20 - VOCs	3 x 40 ml glass	full	3	HCL
VRSK175DGMEE - Dissolved Gasses	3 x 40 ml glass	full	3	HCL
TOT MET [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
SO4 - Sulfate	1 x 250 ml HDPE	250 ml	1	None
Sulfide	2 x 250 ml HDPE	200 ml/bottle	2	NaOH + ZnAc
DISS MET [FF] [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
TOC	1 x 60 ml glass	full	1	HCL

Gallons/Foot 1" = 0.04 1.25" = 0.06 1.5" = 0.09 2" = 0.16 2.5" = 0.26 3" = 0.37 3.5" = 0.50 4" = 0.65 6" = 1.47

FF = Field Filtered

Well Information

Well Location: Driveway Well Locked at Arrival: Yes / (No)

Condition of Well: good Well Locked at Departure: Yes / (No)

Well Completion: (Flush Mount) / Stick Up Key Number To Well: —

* Clear with black suspended particles

ARCADIS

GROUNDWATER SAMPLING LOG

Page 1 of 1

Project No. 30147041.00004 | Well ID MW-75 | Date 7/20/2023

Project Name/Location Old Erie Canal Site / Clyde, NY | Weather Sunny, 70°

Measuring Pt. Description: TOC | Screen Setting (ft-bmp): 6.5-16.5 | Casing Diameter (in.): 2 | Well Material: X PVC / ___ SS

Static Water Level (ft-bmp): 8.52 | Total Depth (ft-bmp): 18.06 | Water Column/ Gallons in Well: 9.54 / 1.55

MP Elevation: NA | Pump Intake (ft-bmp): ~11' | Purge Method: Low Flow / Centrifugal / Submersible / Other Peri Pump | Sample Method: Peri Pump

Pump On/Off: 0749 / 0946 | Volumes Purged: 3.5

Label Time: 0835 | Duplicate Y / (N)

Start Filling: 0835 | MS/MSD (Y) / N | Sampled by: KCF

End Filling: 0935 | QA/QC Code: ms + msd

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft. bmp)	Gallons Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	Redox (mV)	Appearance	
											Color	Odor
0800	20	150	8.54	1.0	6.87	1.765	3.05	1.52	12.6	0.1	clear	none
0805	25	150	8.54		6.86	1.758	2.78	0.49	12.9	-1.1	"	"
0810	30	150	8.54		6.86	1.747	2.02	0.24	12.6	-0.4	"	"
0815	35	150	8.54	1.5	6.87	1.745	1.98	0.15	12.0	-6.4	"	"
0820	40	150	8.54		6.87	1.742	1.93	0.09	11.9	1.1	"	"
0825	45	150	8.54		6.87	1.739	1.92	0.04	11.8	3.6	"	"
0830	50	150	8.54		6.87	1.732	1.90	0.02	11.8	4.5	"	"
0835	55	SAMPLE										

Constituents Sampled	Container	Min Vol.	Number	Preservative
V8260TCL20 - VOCs	3 x 40 ml glass	full	9	HCL
VRSK175DGMEE - Dissolved Gasses	3 x 40 ml glass	full	9	HCL
TOT MET [Fe, Mn]	1 x 500 ml HDPE	150 ml	3	HNO3
SO4 - Sulfate	1 x 250 ml HDPE	250 ml	3	None
Sulfide	2 x 250 ml HDPE	200 ml/bottle	6	NaOH + ZnAc
DISS MET [FF] [Fe, Mn]	1 x 500 ml HDPE	150 ml	3	HNO3
TOC	1 x 60 ml glass	full	3	HCL

Gallons/Foot: 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

FF = Field Filtered

Well Location: Grass area

Condition of Well: Good

Well Completion: Flush Mount / (Stick Up)

Well Locked at Arrival: (Yes) / No

Well Locked at Departure: (Yes) / No

Key Number To Well: American key lock # 27676

ARCADIS

GROUNDWATER SAMPLING LOG

Page 1 of 1

Project No. 30147041.00004 | Well ID MW-135 | Date 7/20/23

Project Name/Location Old Erie Canal Site / Clyde, NY | Weather Sun, 70°F

Measuring Pt. Description TOC | Screen Setting (ft-bmp) 16.4-21.4' | Casing Diameter (in.) 2" | Well Material X PVC ___ SS

Static Water Level (ft-bmp) 2.96 | Total Depth (ft-bmp) 18.63 | Water Column/ Gallons in Well 15.67' / 2.51 gal

MP Elevation — NA | Pump Intake (ft-bmp) ~16.5 | Purge Method: Low Flow

Pump On/Off 0740/0848 | Volumes Purged 1.75 gal | Centrifugal ___ Submersible ___ Other Peri Pump | Sample Method Peri Pump

Label Time: 0825 | Duplicate Y / (N)

Start Filling: 0825 | MS/MSD Y / (N)

End Filling: 0848 | QA/QC Code: — NA | Sampled by BKW

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft. bmp)	Gallons Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	Redox (mV)	Appearance Color	Appearance Odor
0740	Pump on		2.96									
0750	10	130	3.33		6.85	1.91	44.9	0.31	14.8	-267.4	none	slight
0755	15	130	3.30	0.5	7.06	1.91	12.9	0.03	14.2	-339.5		
0800	20	150	3.30		7.18	1.95	11.3	0.00	14.2	-343.3		
0805	25	150	3.31	0.75	7.18	1.93	8.59	0.00	14.2	-338.5		
0810	30	150	3.31		7.18	1.94	1.46	0.00	14.4	-334.5		
0815	35	150	3.32	1.0	7.16	1.91	4.89	0.00	14.3	-332.5		
0820	40	150	3.32		7.14	1.91	2.20	0.00	14.6	-331.0		
0825	45	SAMPLED										

Constituents Sampled	Container	Min Vol.	Number	Preservative
V8260TCL20 - VOCs	3 x 40 ml glass	full	3	HCL
VRSK175DGMEE - Dissolved Gasses	3 x 40 ml glass	full	3	HCL
TOT MET [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
SO4 - Sulfate	1 x 250 ml HDPE	250 ml	1	None
Sulfide	2 x 250 ml HDPE	200 ml/bottle	2	NaOH + ZnAc
DISS MET [FF] [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
TOC	1 x 60 ml glass	full	1	HCL

Gallons/Foot: 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

FF = Field Filtered

Well Information

Well Location: Wetland area | Well Locked at Arrival: (Yes) / No

Condition of Well: Good | Well Locked at Departure: (Yes) / No

Well Completion: Flush Mount / (Stick Up) | Key Number To Well: American #27676

ARCADIS

GROUNDWATER SAMPLING LOG

Project No. 30147041.00004 | Well ID MW-14S | Date 7/17/23

Project Name/Location Old Erie Canal Site / Clyde, NY | Weather 85°F, Sun

Measuring Pt Description: TOC | Screen Setting (ft-bmp): 16.4-21.4' | Casing Diameter (in.): 2" | Well Material: X PVC / SS

Static Water Level (ft-bmp): 2.88' | Total Depth (ft-bmp): 23.38' | Water Column/Gallons in Well: 20.5'/3.28 gal

MP Elevation: NA | Pump Intake (ft-bmp): ~20' | Purge Method: Low Flow; Centrifugal; Submersible; Other: Peri Pump | Sample Method: Peri Pump

Pump On/Off: 1420/1612 | Volumes Purged: 2.25 gal

Label Time: 1520 | Duplicate (Y)/N

Start Filling: 1520 | MS/MSD Y/(N)

End Filling: 1612 | QA/QC Code: DUP-20230717 | Sampled by: BKW

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft bmp)	Gallons Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	Redox (mV)	Appearance Color	Appearance Odor
1420	Pump	on	2.88									
1425	5	150	3.29		6.97	2.81	7.72	0.17	20.2	-72.2	clear	none
1430	10	150	3.29		6.90	2.59	6.52	0.07	19.8	-66.5		
1435	15	150	3.30	0.5	6.90	2.68	4.98	0.04	19.7	-60.5		
1440	20	200	3.40		6.90	2.59	5.85	0.05	18.8	-57.1		
1445	25	200	3.44	1.0	6.88	2.49	6.73	0.02	18.6	-56.7		
1450	30	175	3.38		6.91	2.51	5.76	0.10	19.4	-56.7		
1455	35	175	3.38	1.25	6.89	2.51	5.99	0.08	19.1	-53.9		
1500	40	175	3.38	1.5	6.83	2.47	5.73	0.11	19.3	-54.8		
1505	45	175	3.38	1.75	6.87	2.42	4.16	0.27	18.9	-53.2		
1510	50	175	3.38	2.0	6.85	2.41	4.20	0.25	19.1	-54.9		
1515	55	175	3.38	2.25	6.85	2.41	4.41	0.22	19.1	-53.9		
1520	SAMPLED											

Constituents Sampled	Container	Min Vol.	Number	DUP	Preservative
V8260TCL20 - VOCs	3 x 40 ml glass	full	3	3	HCL
VRSK175DGMEE - Dissolved Gasses	3 x 40 ml glass	full	3	3	HCL
TOT MET [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	1	HNO3
SO4 - Sulfate	1 x 250 ml HDPE	250 ml	1	1	None
Sulfide	2 x 250 ml HDPE	200 ml/bottle	2	2	NaOH + ZnAc
DISS MET [FF] [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	1	HNO3
TOC	1 x 60 ml glass	full	1	1	HCL

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

FF = Field Filtered

Well Information

Well Location: Wetland | Well Locked at Arrival: (Yes) / No

Condition of Well: Good | Well Locked at Departure: (Yes) / No

Well Completion: Flush Mount / (Stick Up) | Key Number To Well: American #27676

ARCADIS

GROUNDWATER SAMPLING LOG

Project No: 30147041.00004 | Well ID: MW-155 | Date: 7/17/2023

Project Name/Location: Old Erie Canal Site / Clyde, NY | Weather: Partly cloudy, 85°

Measuring Pt. Description: TOC | Screen Setting (ft-bmp): 7.7'-12.7' | Casing Diameter (in.): 2 | Well Material: X PVC ___ SS

Static Water Level (ft-bmp): 1.59 | Total Depth (ft-bmp): 14.43 | Water Column/Gallons in Well: 12.84 / 2.09

MP Elevation: NA | Pump Intake (ft-bmp): ~10' | Purge Method: Low Flow; Centrifugal ___; Submersible ___; Other Peri Pump | Sample Method: Peri Pump

Pump On/Off: 1510 / 1610 | Volumes Purged: 3.0

Label Time: 1555 | Duplicate Y / (N)

Start Filling: 1555 | MS/MSD Y / (N)

End Filling: 1605 | QA/QC Code: NA | Sampled by: KCF

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft bmp)	Gallons Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	Redox (mV)	Appearance Color	Appearance Odor
1515	5	150	1.70	0.5	6.50	4.939	—	0.50	16.8	-75.8	clear	none
1520	10	150	1.70		6.51	5.226	—	0.19	16.8	-73.7	"	"
1525	15	150	1.70		6.47	5.377	—	0.10	15.5	-71.9	"	"
1530	20	150	1.70	1.0	6.46	5.401	—	0.04	15.9	-73.1	"	"
1535	25	150	1.70		6.45	5.435	—	0.01	15.6	-73.6	"	"
1540	30	150	1.70	1.7	6.43	5.421	9.96	0.00	15.2	-73.4	"	"
1545	35	150	1.70		6.42	5.425	9.59	0.00	15.3	-73.7	"	"
1550	40	150	1.70		6.42	5.437	9.27	0.00	15.1	-73.6	"	"
1555	45	150	SAMPLE									

Constituents Sampled	Container	Min Vol.	Number	Preservative
V8260TCL20 - VOCs	3 x 40 ml glass	full	3	HCL
VRSK175DGMEE - Dissolved Gasses	3 x 40 ml glass	full	3	HCL
TOT MET [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
SO4 - Sulfate	1 x 250 ml HDPE	250 ml	1	None
Sulfide	2 x 250 ml HDPE	200 ml/bottle	2	NaOH + ZnAc
DISS MET [FF] [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
TOC	1 x 60 ml glass	full	1	HCL

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information — FF = Field Filtered

Well Location:	Swamp	Well Locked at Arrival:	(Yes) / No
Condition of Well:	Good	Well Locked at Departure:	(Yes) / No
Well Completion:	Flush Mount / (Stick Up)	Key Number To Well:	American Key lock # 27676

* Turbidity meter not working; took 3 consecutive readings at the end to verify stabilization (field staff switching off using the one meter that works)

ARCADIS

GROUNDWATER SAMPLING LOG

Project No: 30147041 00004 | Well ID: MW-17S | Date: 7/17/23

Project Name/Location: Old Erie Canal Site / Clyde, NY | Weather: Sun, 80°F

Measuring Pt. Description: TOC | Screen Setting (ft-bmp): 4.6-9.6 | Casing Diameter (in.): 2" | Well Material: X PVC, SS

Static Water Level (ft-bmp): 3.60 | Total Depth (ft-bmp): 8.13 | Water Column/ Gallons in Well: 4.53 / 0.75

MP Elevation: — | Pump Intake (ft-bmp): ~8 | Purge Method: Low Flow, Centrifugal, Submersible, Other: Peri Pump | Sample Method: Peri Pump

Pump On/Off: 1115 / | Volumes Purged: 2.5 gal

Label Time: 1225 | Duplicate Y / (N)

Start Filling: 1225 | MS/MSD Y / (N)

End Filling: 1245 | QA/QC Code: —

Sampled by: BKW

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft. bmp)	Gallons Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	Redox (mV)	Appearance Color	Appearance Odor
1115	Pump ON		3.60	—								
1125	10	150	3.80		6.71	2.016	77.8	0.68	20.6	-18.3	cloudy	none
1130	15	150	3.68	0.5	6.85	1.80	196	0.16	20.7	-31.5	↓	↓
1135	20	150	3.65		6.89	1.70	89.7	0.13	20.7	-11.9		
1140	25	150	3.60	0.75	6.93	1.66	52.9	0.11	20.7	2.6		
1145	30	150	3.60		6.90	1.63	22.9	0.01	20.7	17.3	↓	
1150	35	150	3.60	1.0	6.91	1.64	16.7	0.00	20.6	21.4	clear	
1155	40	150	3.60		6.90	1.64	14.5	0.00	20.6	22.1	↓	
1200	45	150	3.60	1.25	6.91	1.63	10.9	0.00	20.6	20.8		
1205	50	150	3.60	1.5	6.91	1.65	10.0	0.00	20.7	18.8		
1210	55	150	3.60	1.75	6.92	1.64	6.49	0.00	20.7	16.6		
1215	60	175	3.60	2.0	6.92	1.64	6.50	0.00	20.7	18.3		
1220	65	175	3.60	2.25	6.92	1.64	6.29	0.00	20.7	21.5	↓	↓
1225	70	SAMPLED		—							—	

Constituents Sampled	Container	Min Vol.	Number	Preservative
V8260TCL20 - VOCs	3 x 40 ml glass	full	3	HCL
VRSK175DGMEE - Dissolved Gasses	3 x 40 ml glass	full	3	HCL
TOT MET [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
SO4 - Sulfate	1 x 250 ml HDPE	250 ml	1	None
Sulfide	2 x 250 ml HDPE	200 ml/bottle	2	NaOH + ZnAc
DISS MET [FF] [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
TOC	1 x 60 ml glass	full	1	HCL

Gallons/Foot: 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

FF = Field Filtered

Well Location: Inside building behind vending machines | Well Locked at Arrival: Yes / (No)

Condition of Well: Good | Well Locked at Departure: Yes / (No)

Well Completion: (Flush Mount) / Stick Up | Key Number To Well: —

ARCADIS

GROUNDWATER SAMPLING LOG

Project No: 30147041.00004 | Well ID: MW-18S | Date: 7/17/2023

Project Name/Location: Old Erie Canal Site / Clyde NY | Weather: Partly cloudy, 78°

Measuring Pt Description: TOC | Screen Setting (ft-bmp): 3' - 8' | Casing Diameter (in.): 2 | Well Material: X PVC / SS

Static Water Level (ft-bmp): 3.27 | Total Depth (ft-bmp): 7.22 | Water Column/ Gallons in Well: 3.95 / 0.64

MP Elevation: NA | Pump Intake (ft-bmp): ~7' | Purge Method: Low Flow / Centrifugal / Submersible / Other: Peri Pump | Sample Method: Peri Pump

Pump On/Off: 1115 / 1135 | Volumes Purged: DRY

Label Time: See notes | Start Filling: below | End Filling: — | Duplicate Y / (N) | MS/MSD Y / (N) | QA/QC Code: NA | Sampled by: KCF

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft bmp)	Gallons Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	Redox (mV)	Appearance Color	Appearance Odor
1120	5	100	5.11		6.86	3.815	—	0.37	24.7	133.6	clear	none
1125	10	100	6.31	0.7	6.89	3.711	—	0.29	25.5	144.7	"	"
1130	15	100	7.20		6.93	3.733	—	1.64	24.8	67.0	"	"
1135	20	100	DRY									
		Depth to water 4.98				=> 2.24 / 0.36						
*												
* Sampled at 1210 on 7/28/2023												

7/28/23

Constituents Sampled	Container	Min Vol.	Number	Preservative
V8260TCL20 - VOCs	3 x 40 ml glass	full	2	HCL
VRSK175DGMEE - Dissolved Gasses	3 x 40 ml glass	full	2	HCL
TOT MET [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
SO4 - Sulfate	1 x 250 ml HDPE	250 ml	1	None
Sulfide	2 x 250 ml HDPE	200 ml/bottle	2	NaOH + ZnAc
DISS MET [FF] [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
TOC	1 x 60 ml glass	full	1	HCL

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

FF = Field Filtered

Well Information

Well Location: Parking Lot

Condition of Well: Good

Well Completion: (Flush Mount) / Stick Up

Well Locked at Arrival: Yes / (No)

Well Locked at Departure: Yes / (No)

Key Number To Well: NA

* Turbidity meter not working; well went dry before I had the chance to replace/swap out

R

ARCADIS

GROUNDWATER SAMPLING LOG

Project No. 30147041 00004 | Well ID MW-19S | Date 7/17/23

Project Name/Location Old Erie Canal Site / Clyde, NY | Weather Sun, 85°F

Measuring Pt. Description TOC | Screen Setting (ft-bmp) 3.5-8.5' | Casing Diameter (in.) 2" | Well Material X PVC ___ SS

Static Water Level (ft-bmp) 3.26' | Total Depth (ft-bmp) 7.96' | Water Column/ Gallons in Well 4.70'/ 0.75

MP Elevation NA | Pump Intake (ft-bmp) ~7.5' | Purge Method Low Flow; Centrifugal; Submersible; Other Peri Pump | Sample Method Peri Pump

Pump On/Off 1315/1350 | Volumes Purged 1.5 gal

Label Time: 0850 | Duplicate Y / (N)

Start Filling: 0850 | MS/MSD Y / (N)

End Filling: 0915 | QA/QC Code: — NA | Sampled by BKW

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft bmp)	Gallons Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	Redox (mV)	Appearance Color	Appearance Odor
1315	Pump	On	3.26									
1320	5	240	5.00		6.87	3.91	10.9	0.00	19.9	150.1	clear	none
* 1325	10	~~150~~ BKW 170	5.38	0.5	6.92	3.87	19.3	0.13	21.0	51.9	↓	↓
1330	15	170	5.39		6.95	3.69	15.9	0.22	21.0	-3.0		
1335	20	170	6.85		6.96	3.55	10.3	0.23	20.5	4.1		
1340	25	170	7.30	1.25	7.09	3.11	+	1.54	20.0	30.6		
★ 1345	30	170	7.50	1.5	6.93	3.87	+	4.75	19.4	60.3		
1350	35	DRY										
7/18/23												
Depth to water 3.31					=7	4.65/	0.75					
Sample 7/18/2023 @ 0850												
Readings collected after sample:												
—	—	—	—	—	7.11	2.53	15.8	4.63	20.3	173.4	clear	none

Constituents Sampled	Container	Min Vol.	Number	Preservative
V8260TCL20 - VOCs	3 x 40 ml glass	full	3	HCL
VRSK175DGMEE - Dissolved Gasses	3 x 40 ml glass	full	3	HCL
TOT MET [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
SO4 - Sulfate	1 x 250 ml HDPE	250 ml	1	None
Sulfide	2 x 250 ml HDPE	200 ml/bottle	2	NaOH + ZnAc
DISS MET [FF] [Fe, Mn]	1 x 500 ml HDPE	150 ml	1	HNO3
TOC	1 x 60 ml glass	full	1	HCL

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

FF = Field Filtered

Well Information

Well Location: Parking Lot | Well Locked at Arrival: Yes / (No)

Condition of Well: Good | Well Locked at Departure: Yes / (No)

Well Completion: (Flush Mount) / Stick Up | Key Number To Well: —

* Slowest pump can go

★ Tubing lowered to bottom of well

+ Not ~~collect~~ measured due to turbidity meter malfunction

Attachment 2

Groundwater Laboratory Results

Sample Summary

Arcadis

Job No: JD69542

Old Erie Canal Site, 124 Columbia Street, Clyde, NY
Project No: 30147041

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD69542-1	07/17/23	12:25	BKW	07/19/23	AQ	Ground Water	MW-17S
JD69542-1F	07/17/23	12:25	BKW	07/19/23	AQ	Groundwater Filtered	MW-17S
JD69542-2	07/17/23	13:50	KF	07/19/23	AQ	Ground Water	MW-1S
JD69542-2F	07/17/23	13:50	KF	07/19/23	AQ	Groundwater Filtered	MW-1S
JD69542-3	07/17/23	15:55	KF	07/19/23	AQ	Ground Water	MW-15S
JD69542-3F	07/17/23	15:55	KF	07/19/23	AQ	Groundwater Filtered	MW-15S
JD69542-4	07/17/23	15:20	BKW	07/19/23	AQ	Ground Water	MW-14S
JD69542-4F	07/17/23	15:20	BKW	07/19/23	AQ	Groundwater Filtered	MW-14S
JD69542-5	07/17/23	00:00	BKW	07/19/23	AQ	Ground Water	DUP-20230717
JD69542-5F	07/17/23	00:00	BKW	07/19/23	AQ	Groundwater Filtered	DUP-20230717
JD69542-6	07/18/23	08:50	BKW	07/19/23	AQ	Ground Water	MW-19S

This report contains results reported as ND = Not detected. The following applies:
Organics ND = Not detected above the MDL
Metals ND = Not detected above the MDL
General Chemistry ND = Not detected above the MDL

Sample Summary
(continued)

Arcadis

Job No: JD69542

Old Erie Canal Site, 124 Columbia Street, Clyde, NY
Project No: 30147041

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD69542-6F	07/18/23	08:50	BKW	07/19/23	AQ	Groundwater Filtered	MW-19S
JD69542-7	07/18/23	08:50		07/19/23	AQ	Trip Blank Water	TB-01-20230718

Report of Analysis

Client Sample ID:	MW-17S		
Lab Sample ID:	JD69542-1	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1N3059.D	1	07/20/23 22:18	ED	n/a	n/a	V1N86
Run #2	1N3081.D	5	07/21/23 11:27	ED	n/a	n/a	V1N87
Run #3	1N3033.D	10	07/20/23 16:17	ED	n/a	n/a	V1N86

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml
Run #3	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
75-15-0	Carbon disulfide [b]	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	1.0	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	1070 [c]	10	5.1	ug/l	
156-60-5	trans-1,2-Dichloroethene	9.5	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-17S		
Lab Sample ID:	JD69542-1	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
76-13-1	Freon 113 [d]	1.9	5.0	0.58	ug/l	J
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	249 [e]	5.0	2.6	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	133	1.0	0.52	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Run# 3	Limits
1868-53-7	Dibromofluoromethane	101%	101%	100%	80-120%
17060-07-0	1,2-Dichloroethane-D4	110%	108%	105%	80-120%
2037-26-5	Toluene-D8	99%	100%	99%	80-120%
460-00-4	4-Bromofluorobenzene	98%	99%	99%	82-114%

(a) Associated CCV outside of control limits high, sample was ND.
(b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
(c) Result is from Run# 3
(d) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte.
(e) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-17S		
Lab Sample ID:	JD69542-1	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	RSK-175	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	AA102887.D	1	07/21/23 14:15	JL	n/a	n/a	GAA2847
Run #2							

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	102	0.11	0.080	ug/l	
74-84-0	Ethane	10.6	0.23	0.14	ug/l	
74-85-1	Ethene	7.04	0.31	0.16	ug/l	

(a) 3mm and 2x2mm diameter bubbles present in headspace.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-17S		
Lab Sample ID:	JD69542-1	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	69.4 J	100	32	ug/l	1	07/20/23	07/21/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	38.9	15	1.4	ug/l	1	07/20/23	07/21/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54491
(2) Prep QC Batch: MP40870

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-17S		
Lab Sample ID:	JD69542-1	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfate	48.1	2.0	0.89	mg/l	1	07/21/23 01:28	SS	EPA 300/SW846 9056A
Sulfide	ND	2.0	0.48	mg/l	1	07/23/23 15:30	MK	SM4500S2- F-11
Total Organic Carbon	2.0	1.0	0.10	mg/l	1	07/20/23 16:06	MB	SM5310 B-11/14

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-17S		
Lab Sample ID:	JD69542-1F	**Date Sampled:**	07/17/23
Matrix:	AQ - Groundwater Filtered	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	60.9 J	100	32	ug/l	1	07/20/23	07/21/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	37.4	15	1.4	ug/l	1	07/20/23	07/21/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54491
(2) Prep QC Batch: MP40870

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-1S		
Lab Sample ID:	JD69542-2	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1N3055.D	1	07/20/23 21:23	ED	n/a	n/a	V1N86
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [b]	39.7	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	13.1	10	2.7	ug/l	
75-15-0	Carbon disulfide [c]	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	4.9	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	6.5	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 [c]	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-1S		
Lab Sample ID:	JD69542-2	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	10.6	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	0.97	1.0	0.53	ug/l	J
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	1.8	1.0	0.52	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		80-120%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	100%		82-114%

(a) (pH = 4)Sample pH did not satisfy field preservation criteria.
(b) Associated CCV outside of control limits high.
(c) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-1S		
Lab Sample ID:	JD69542-2	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	RSK-175	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	AA102889.D	1	07/21/23 14:41	JL	n/a	n/a	GAA2847
Run #2 [a]	AA102890.D	100	07/21/23 15:24	JL	n/a	n/a	GAA2847

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	6520 [b]	11	8.0	ug/l	
74-84-0	Ethane	6.02	0.23	0.14	ug/l	
74-85-1	Ethene	2.5	0.31	0.16	ug/l	

(a) (pH = 3)Sample pH did not satisfy field preservation criteria.
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-1S		
Lab Sample ID:	JD69542-2	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	62800	100	32	ug/l	1	07/21/23	07/24/23	ND	SW846 6010D [1]	SW846 3010A [3]
Manganese	17900	75	7.0	ug/l	5	07/21/23	07/25/23	ND	SW846 6010D [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA54493
(2) Instrument QC Batch: MA54500
(3) Prep QC Batch: MP40881

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-1S		
Lab Sample ID:	JD69542-2	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfate	ND	2.0	0.89	mg/l	1	07/21/23 01:41	SS	EPA 300/SW846 9056A
Sulfide	ND	2.0	0.48	mg/l	1	07/23/23 15:30	MK	SM4500S2- F-11
Total Organic Carbon	276	20	2.0	mg/l	20	07/20/23 19:08	MB	SM5310 B-11/14

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-1S		
Lab Sample ID:	JD69542-2F	**Date Sampled:**	07/17/23
Matrix:	AQ - Groundwater Filtered	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	60800	100	32	ug/l	1	07/21/23	07/24/23	ND	SW846 6010D [1]	SW846 3010A [3]
Manganese	20400	75	7.0	ug/l	5	07/21/23	07/25/23	ND	SW846 6010D [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA54493
(2) Instrument QC Batch: MA54500
(3) Prep QC Batch: MP40881

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-15S		
Lab Sample ID:	JD69542-3	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2N3080.D	1	07/21/23 11:14	ED	n/a	n/a	V2N87
Run #2	2N3060.D	4	07/20/23 22:32	ED	n/a	n/a	V2N86

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	ND	10	3.1	ug/l	
71-43-2	Benzene	5.8	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane [a]	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	2.7	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	1.3	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	5.3	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-15S		
Lab Sample ID:	JD69542-3	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	478 [b]	4.0	2.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	6.0	1.0	0.52	ug/l	
	m,p-Xylene	22.6	1.0	0.78	ug/l	
95-47-6	o-Xylene	15.5	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	38.1	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%	97%	80-120%
17060-07-0	1,2-Dichloroethane-D4	104%	104%	80-120%
2037-26-5	Toluene-D8	102%	100%	80-120%
460-00-4	4-Bromofluorobenzene	99%	98%	82-114%

(a) Associated CCV outside of control limits high, sample was ND.
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-15S		
Lab Sample ID:	JD69542-3	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	RSK-175	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA102893.D	25	07/21/23 16:32	JL	n/a	n/a	GAA2847
Run #2	AA102892.D	200	07/21/23 16:19	JL	n/a	n/a	GAA2847

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	8530 [a]	22	16	ug/l	
74-84-0	Ethane	1670	5.8	3.5	ug/l	
74-85-1	Ethene	6220	7.8	4.0	ug/l	

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-15S		
Lab Sample ID:	JD69542-3	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	45200	100	32	ug/l	1	07/20/23	07/21/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	1890	15	1.4	ug/l	1	07/20/23	07/21/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54491
(2) Prep QC Batch: MP40870

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-15S		
Lab Sample ID:	JD69542-3	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfate	ND	2.0	0.89	mg/l	1	07/21/23 01:54	SS	EPA 300/SW846 9056A
Sulfide	ND	2.0	0.48	mg/l	1	07/23/23 15:30	MK	SM4500S2- F-11
Total Organic Carbon	140	5.0	0.50	mg/l	5	07/20/23 19:19	MB	SM5310 B-11/14

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-15S		
Lab Sample ID:	JD69542-3F	**Date Sampled:**	07/17/23
Matrix:	AQ - Groundwater Filtered	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	43600	100	32	ug/l	1	07/20/23	07/21/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	1900	15	1.4	ug/l	1	07/20/23	07/21/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54491
(2) Prep QC Batch: MP40870

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-14S		
Lab Sample ID:	JD69542-4	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2N3058.D	1	07/20/23 22:04	ED	n/a	n/a	V2N86
Run #2	2N3082.D	10	07/21/23 11:41	ED	n/a	n/a	V2N87

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
75-15-0	Carbon disulfide [a]	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	1.1	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	124	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	1.2	1.0	0.60	ug/l	
76-13-1	Freon 113 [a]	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-14S		
Lab Sample ID:	JD69542-4	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	16.5	1.0	0.49	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	257 [b]	10	5.2	ug/l	
	m,p-Xylene	3.2	1.0	0.78	ug/l	
95-47-6	o-Xylene	0.94	1.0	0.59	ug/l	J
1330-20-7	Xylene (total)	4.1	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%	98%	80-120%
17060-07-0	1,2-Dichloroethane-D4	105%	105%	80-120%
2037-26-5	Toluene-D8	100%	100%	80-120%
460-00-4	4-Bromofluorobenzene	99%	98%	82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-14S		
Lab Sample ID:	JD69542-4	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	RSK-175	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	AA102894.D	1	07/21/23 16:45	JL	n/a	n/a	GAA2847
Run #2 [a]	AA102896.D	5	07/21/23 17:25	JL	n/a	n/a	GAA2847
Run #3 [a]	AA102895.D	200	07/21/23 16:58	JL	n/a	n/a	GAA2847

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	13000 [b]	22	16	ug/l	
74-84-0	Ethane	472 [c]	1.2	0.70	ug/l	
74-85-1	Ethene	158	0.31	0.16	ug/l	

(a) 3mm diameter bubble present in headspace.
(b) Result is from Run# 3
(c) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-14S		
Lab Sample ID:	JD69542-4	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	5410	100	32	ug/l	1	07/21/23	07/24/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	365	15	1.4	ug/l	1	07/21/23	07/24/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54493
(2) Prep QC Batch: MP40881

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-14S		
Lab Sample ID:	JD69542-4	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfate	16.9	2.0	0.89	mg/l	1	07/21/23 02:07	SS	EPA 300/SW846 9056A
Sulfide	ND	2.0	0.48	mg/l	1	07/23/23 15:30	MK	SM4500S2- F-11
Total Organic Carbon	6.4	1.0	0.10	mg/l	1	07/20/23 16:59	MB	SM5310 B-11/14

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-14S		
Lab Sample ID:	JD69542-4F	**Date Sampled:**	07/17/23
Matrix:	AQ - Groundwater Filtered	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	5810	100	32	ug/l	1	07/21/23	07/24/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	418	15	1.4	ug/l	1	07/21/23	07/24/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54493
(2) Prep QC Batch: MP40881

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	DUP-20230717		
Lab Sample ID:	JD69542-5	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1N3057.D	1	07/20/23 21:51	ED	n/a	n/a	V1N86
Run #2	1N3085.D	10	07/21/23 12:23	ED	n/a	n/a	V1N87

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
75-15-0	Carbon disulfide [b]	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	131	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	1.1	1.0	0.60	ug/l	
76-13-1	Freon 113 [b]	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-20230717		
Lab Sample ID:	JD69542-5	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	16.0	1.0	0.49	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	223 [c]	10	5.2	ug/l	
	m,p-Xylene	3.3	1.0	0.78	ug/l	
95-47-6	o-Xylene	0.99	1.0	0.59	ug/l	J
1330-20-7	Xylene (total)	4.3	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%	99%	80-120%
17060-07-0	1,2-Dichloroethane-D4	108%	109%	80-120%
2037-26-5	Toluene-D8	100%	101%	80-120%
460-00-4	4-Bromofluorobenzene	98%	101%	82-114%

(a) Associated CCV outside of control limits high, sample was ND.
(b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
(c) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-20230717		
Lab Sample ID:	JD69542-5	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	RSK-175	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	AA102897.D	1	07/21/23 17:49	JL	n/a	n/a	GAA2847
Run #2 [a]	AA102899.D	5	07/21/23 18:23	JL	n/a	n/a	GAA2847
Run #3 [a]	AA102898.D	200	07/21/23 18:02	JL	n/a	n/a	GAA2847

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	10200 [b]	22	16	ug/l	
74-84-0	Ethane	386 [c]	1.2	0.70	ug/l	
74-85-1	Ethene	113	0.31	0.16	ug/l	

(a) 3mm diameter bubble present in headspace.
(b) Result is from Run# 3
(c) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-20230717		
Lab Sample ID:	JD69542-5	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	5670	100	32	ug/l	1	07/20/23	07/21/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	395	15	1.4	ug/l	1	07/20/23	07/21/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54491
(2) Prep QC Batch: MP40870

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	DUP-20230717		
Lab Sample ID:	JD69542-5	**Date Sampled:**	07/17/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfate	17.1	2.0	0.89	mg/l	1	07/21/23 02:20	SS	EPA 300/SW846 9056A
Sulfide	ND	2.0	0.48	mg/l	1	07/23/23 15:30	MK	SM4500S2- F-11
Total Organic Carbon	5.9	1.0	0.10	mg/l	1	07/20/23 17:34	MB	SM5310 B-11/14

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	DUP-20230717		
Lab Sample ID:	JD69542-5F	**Date Sampled:**	07/17/23
Matrix:	AQ - Groundwater Filtered	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	5300	100	32	ug/l	1	07/20/23	07/21/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	380	15	1.4	ug/l	1	07/20/23	07/21/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54491
(2) Prep QC Batch: MP40870

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-19S		
Lab Sample ID:	JD69542-6	**Date Sampled:**	07/18/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1N3083.D	1	07/21/23 11:55	ED	n/a	n/a	V1N87
Run #2	2N3056.D	10	07/20/23 21:37	ED	n/a	n/a	V2N86

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane [a]	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	9.7	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	417 [b]	10	5.1	ug/l	
156-60-5	trans-1,2-Dichloroethene	5.5	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-19S		
Lab Sample ID:	JD69542-6	**Date Sampled:**	07/18/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	4.1	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	3.4	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	215 [b]	10	5.3	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	4.1	1.0	0.52	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%	98%	80-120%
17060-07-0	1,2-Dichloroethane-D4	104%	107%	80-120%
2037-26-5	Toluene-D8	101%	101%	80-120%
460-00-4	4-Bromofluorobenzene	100%	97%	82-114%

(a) Associated CCV outside of control limits high, sample was ND.
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-19S		
Lab Sample ID:	JD69542-6	**Date Sampled:**	07/18/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
Method:	RSK-175	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA102900.D	1	07/21/23 18:49	JL	n/a	n/a	GAA2847
Run #2							

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	0.74	0.11	0.080	ug/l	
74-84-0	Ethane	0.18	0.23	0.14	ug/l	
74-85-1	Ethene	ND	0.31	0.16	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-19S		
Lab Sample ID:	JD69542-6	**Date Sampled:**	07/18/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	1040	100	32	ug/l	1	07/20/23	07/21/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	243	15	1.4	ug/l	1	07/20/23	07/21/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54491
(2) Prep QC Batch: MP40870

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-19S		
Lab Sample ID:	JD69542-6	**Date Sampled:**	07/18/23
Matrix:	AQ - Ground Water	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfate	22.4	2.0	0.89	mg/l	1	07/21/23 02:59	SS	EPA 300/SW846 9056A
Sulfide	ND	2.0	0.48	mg/l	1	07/23/23 15:30	MK	SM4500S2- F-11
Total Organic Carbon	7.7	1.0	0.10	mg/l	1	07/20/23 17:46	MB	SM5310 B-11/14

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-19S		
Lab Sample ID:	JD69542-6F	**Date Sampled:**	07/18/23
Matrix:	AQ - Groundwater Filtered	**Date Received:**	07/19/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	ND	100	32	ug/l	1	07/20/23	07/21/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	92.0	15	1.4	ug/l	1	07/20/23	07/21/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54491
(2) Prep QC Batch: MP40870

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	TB-01-20230718		
Lab Sample ID:	JD69542-7	**Date Sampled:**	07/18/23
Matrix:	AQ - Trip Blank Water	**Date Received:**	07/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2N3036.D	1	07/20/23 16:59	ED	n/a	n/a	V2N86
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
75-15-0	Carbon disulfide [a]	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113 [a]	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-01-20230718		
Lab Sample ID:	JD69542-7	**Date Sampled:**	07/18/23
Matrix:	AQ - Trip Blank Water	**Date Received:**	07/19/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.52	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	99%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

GW
TB

CHAIN OF CUSTODY

SGS

EHSA-QAC-0023-04-FORM-Standard COC

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

FED-EX Tracking #:

Bottle Order Control #: MM-071623-111

SGS Quote #: 2021 2663

SGS Job #: JD69542

Client / Reporting Information

Company Name: Arcadis

Street Address: 110 W. Fayette Street, Suite 300

City / State / Zip: Syracuse, NY 13202

Project Contact / E-mail: Chris Kassel chris.kassel@arcadis.com
cc: edward.mason@arcadis.com

Phone #: 315-671-9127

Sampler(s) Name(s): Kaitlyn Fleming and Bailey Kudla-Williams

Phone #: 619-727-1921

Project Information

Project Name: Old Erie Canal Site

Street: 24 Columbia Street

City / State: Clyde NY

Project #: 30147041

Client Purchase Order #:

Project Manager: Corey Averill

Billing Information (If different from Report to)

Company Name:

Street Address:

City / State / Zip:

Attention:

Requested Analysis

VOCs	Iron, Manganese	Dissolved Iron, Manganese (Field Filtered)	Dissolved Gasses (ethane, ethene, and methane)	Sulfate	Sulfide	Total Organic Carbon

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	LAB USE ONLY
1F	MW-17S		7/17/23	1225	BKW	G		GW	12	7	2	2		1				X X X X X X X	AHY
2F	MW-15		7/17/23	1350	KF	G		GW	12	7	2	2		1				X X X X X X X	C53
3F	MW-15S		7/17/23	1555	KF	G		GW	12	7	2	2		1				X X X X X X X	[illegible]
4F	MW-14S		7/17/23	1520	BKW	G		GW	12	7	2	2		1				X X X X X X X	V49
5F	DUP-20230717		7/17/23	—	BKW	G		GW	12	7	2	2		1				X X X X X X X	
6F	MW-19S		7/18/23	0850	BKW	G		GW	12	7	2	2		1				X X X X X X X	
7	TB-01-20230718		7/11/23	0730	—	G		GW	2	2								X	
						G		GW											
						G		GW											
						G		GW											
						G		GW											

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [x] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [x] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [x] EDD Format EQuIS-5 (4-file)
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Initial Assessment 3B HR

Label Verification - -

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:
1	Kaitlyn Fleming Arcadis	7/19/23 1600	1 Fedex
2	Fedex	7/19/23 1830	2 [illegible]
3			3
4			4
5			5

Custody Seal # ☐ Intact ☐ Not intact ☐ Absent

Therm ID: See Sample Receipt Summary

Cooler Temp: On Ice 1.9, 2.1

IR40

SGS Sample Receipt Summary

Job Number: JD69542 **Client:** ARCADIS U.S. **Project:** OLD ERIE CANAL SITE, 124 COLUMBIA S

Date / Time Received: 7/19/2023 10:30:00 AM **Delivery Method:** FED EX **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (1.9); Cooler 2: (2.7);

Cooler Temps (Corrected) °C: Cooler 1: (1.6); Cooler 2: (2.4);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun 40		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	2		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify)

Comments

SM089-03
Rev. Date 12/7/17

Sample Summary

Arcadis

Job No: JD69729

Old Erie Canal Site, 124 Columbia Street, Clyde, NY
Project No: ALL31778.6000.00008

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD69729-1	07/19/23	11:00	KCF	07/21/23	AQ	Ground Water	CANAL-UPSTREAM
JD69729-2	07/19/23	11:25	KCF	07/21/23	AQ	Ground Water	CANAL-DOWNSTREAM
JD69729-3	07/20/23	08:35	KCF	07/21/23	AQ	Ground Water	MW-7S
JD69729-3D	07/20/23	08:35	KCF	07/21/23	AQ	Water Dup/MSD	MW-7S (MSD)
JD69729-3DF	07/20/23	08:35	KCF	07/21/23	AQ	Water Dup/MSD	MW-7S (MSD)
JD69729-3F	07/20/23	08:35	KCF	07/21/23	AQ	Groundwater Filtered	MW-7S
JD69729-3S	07/20/23	08:35	KCF	07/21/23	AQ	Water Matrix Spike	MW-7S (MS)
JD69729-3SF	07/20/23	08:35	KCF	07/21/23	AQ	Water Matrix Spike	MW-7S (MS)
JD69729-4	07/20/23	08:25	BKW	07/21/23	AQ	Ground Water	MW-13S
JD69729-4F	07/20/23	08:25	BKW	07/21/23	AQ	Groundwater Filtered	MW-13S
JD69729-5	07/20/23	10:50	KCF	07/21/23	AQ	Ground Water	MW-4S

This report contains results reported as ND = Not detected. The following applies:
Organics ND = Not detected above the MDL
Metals ND = Not detected above the MDL
General Chemistry ND = Not detected above the MDL

Sample Summary
(continued)

Arcadis

Job No: JD69729

Old Erie Canal Site, 124 Columbia Street, Clyde, NY
Project No: ALL31778.6000.00008

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD69729-5F	07/20/23	10:50	KCF	07/21/23	AQ	Groundwater Filtered	MW-4S
JD69729-6	07/20/23	12:25	KCF	07/21/23	AQ	Ground Water	MW-4B
JD69729-6F	07/20/23	12:25	KCF	07/21/23	AQ	Groundwater Filtered	MW-4B
JD69729-7	07/20/23	10:35	BKW	07/21/23	AQ	Ground Water	MW-6S
JD69729-7F	07/20/23	10:35	BKW	07/21/23	AQ	Groundwater Filtered	MW-6S
JD69729-8	07/20/23	13:30	BKW	07/21/23	AQ	Ground Water	MW-6B
JD69729-8F	07/20/23	13:30	BKW	07/21/23	AQ	Groundwater Filtered	MW-6B
JD69729-9	07/20/23	14:25	KCF	07/21/23	AQ	Ground Water	MW-5B
JD69729-9F	07/20/23	14:25	KCF	07/21/23	AQ	Groundwater Filtered	MW-5B
JD69729-10	07/20/23	14:25		07/21/23	AQ	Trip Blank Water	TB-02-20230720

Report of Analysis

Client Sample ID:	CANAL-UPSTREAM		
Lab Sample ID:	JD69729-1	**Date Sampled:**	07/19/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1J4330.D	1	07/24/23 14:54	KD	n/a	n/a	V1J144
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane [b]	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane [a]	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane [a]	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CANAL-UPSTREAM		
Lab Sample ID:	JD69729-1	**Date Sampled:**	07/19/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.52	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		80-120%
17060-07-0	1,2-Dichloroethane-D4	91%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	98%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CANAL-DOWNSTREAM		
Lab Sample ID:	JD69729-2	**Date Sampled:**	07/19/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1J4331.D	1	07/24/23 15:19	KD	n/a	n/a	V1J144
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane [b]	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane [a]	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane [a]	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CANAL-DOWNSTREAM		
Lab Sample ID:	JD69729-2	**Date Sampled:**	07/19/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.52	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		80-120%
17060-07-0	1,2-Dichloroethane-D4	91%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	98%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-7S		
Lab Sample ID:	JD69729-3	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1J4329.D	1	07/24/23 14:29	KD	n/a	n/a	V1J144
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane [b]	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane [a]	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane [a]	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-7S		
Lab Sample ID:	JD69729-3	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.52	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		80-120%
17060-07-0	1,2-Dichloroethane-D4	91%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	97%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-7S		
Lab Sample ID:	JD69729-3	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	RSK-175	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA102911.D	1	07/25/23 08:19	WC	n/a	n/a	GAA2848
Run #2	AA102913.D	100	07/25/23 08:46	WC	n/a	n/a	GAA2848

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	4730 [a]	11	8.0	ug/l	
74-84-0	Ethane	52.0	0.23	0.14	ug/l	
74-85-1	Ethene	ND	0.31	0.16	ug/l	

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-7S		
Lab Sample ID:	JD69729-3	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	18900	100	32	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	2370	15	1.4	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54513
(2) Prep QC Batch: MP40928

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-7S		
Lab Sample ID:	JD69729-3	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfate	202	2.0	0.89	mg/l	1	07/25/23 03:15	SS	EPA 300/SW846 9056A
Sulfide	ND	2.0	0.48	mg/l	1	07/24/23 14:32	MP	SM4500S2- F-11
Total Organic Carbon	3.0	1.0	0.10	mg/l	1	07/24/23 19:19	MB	SM5310 B-11/14

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-7S		
Lab Sample ID:	JD69729-3F	**Date Sampled:**	07/20/23
Matrix:	AQ - Groundwater Filtered	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	18100	100	32	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	2260	15	1.4	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54513
(2) Prep QC Batch: MP40928

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-13S		
Lab Sample ID:	JD69729-4	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1J4339.D	50	07/24/23 18:37	KD	n/a	n/a	V1J144
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [b]	ND	500	150	ug/l	
71-43-2	Benzene	ND	25	21	ug/l	
74-97-5	Bromochloromethane	ND	50	24	ug/l	
75-27-4	Bromodichloromethane	ND	50	23	ug/l	
75-25-2	Bromoform	ND	50	32	ug/l	
74-83-9	Bromomethane [c]	ND	100	82	ug/l	
78-93-3	2-Butanone (MEK)	ND	500	140	ug/l	
75-15-0	Carbon disulfide	ND	100	90	ug/l	
56-23-5	Carbon tetrachloride	ND	50	28	ug/l	
108-90-7	Chlorobenzene	ND	50	28	ug/l	
75-00-3	Chloroethane [b]	ND	50	36	ug/l	
67-66-3	Chloroform	ND	50	25	ug/l	
74-87-3	Chloromethane [b]	ND	50	38	ug/l	
110-82-7	Cyclohexane	ND	250	39	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	100	26	ug/l	
124-48-1	Dibromochloromethane	ND	50	28	ug/l	
106-93-4	1,2-Dibromoethane	ND	50	24	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	50	27	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	50	27	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	50	25	ug/l	
75-71-8	Dichlorodifluoromethane	ND	100	28	ug/l	
75-34-3	1,1-Dichloroethane	ND	50	28	ug/l	
107-06-2	1,2-Dichloroethane	ND	50	30	ug/l	
75-35-4	1,1-Dichloroethene	ND	50	30	ug/l	
156-59-2	cis-1,2-Dichloroethene	8010	50	25	ug/l	
156-60-5	trans-1,2-Dichloroethene	40.6	50	27	ug/l	J
78-87-5	1,2-Dichloropropane	ND	50	25	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	50	24	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	50	22	ug/l	
100-41-4	Ethylbenzene	ND	50	30	ug/l	
76-13-1	Freon 113	ND	250	29	ug/l	
591-78-6	2-Hexanone	ND	250	240	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-13S		
Lab Sample ID:	JD69729-4	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	50	32	ug/l	
79-20-9	Methyl Acetate	ND	250	40	ug/l	
108-87-2	Methylcyclohexane	ND	250	30	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	50	25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	250	240	ug/l	
75-09-2	Methylene chloride	ND	100	50	ug/l	
100-42-5	Styrene	ND	50	24	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	33	ug/l	
127-18-4	Tetrachloroethene	ND	50	28	ug/l	
108-88-3	Toluene	ND	50	25	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	50	25	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	50	25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	50	27	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	50	27	ug/l	
79-01-6	Trichloroethene	ND	50	26	ug/l	
75-69-4	Trichlorofluoromethane	ND	100	20	ug/l	
75-01-4	Vinyl chloride	3920	50	26	ug/l	
	m,p-Xylene	ND	50	39	ug/l	
95-47-6	o-Xylene	ND	50	30	ug/l	
1330-20-7	Xylene (total)	ND	50	30	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		80-120%
17060-07-0	1,2-Dichloroethane-D4	90%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	100%		82-114%

(a) Dilution required due to high concentration of target compound.
(b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
(c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-13S		
Lab Sample ID:	JD69729-4	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	RSK-175	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA102914.D	1	07/25/23 08:59	WC	n/a	n/a	GAA2848
Run #2	AA102916.D	5	07/25/23 09:26	WC	n/a	n/a	GAA2848
Run #3	AA102915.D	25	07/25/23 09:13	WC	n/a	n/a	GAA2848

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	1690 [a]	2.8	2.0	ug/l	
74-84-0	Ethane	1.9	0.23	0.14	ug/l	
74-85-1	Ethene	515 [b]	1.6	0.80	ug/l	

(a) Result is from Run# 3
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-13S		
Lab Sample ID:	JD69729-4	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	334	100	32	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	81.4	15	1.4	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54513
(2) Prep QC Batch: MP40928

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-13S		
Lab Sample ID:	JD69729-4	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfate	711	6.0	2.7	mg/l	3	07/25/23 14:34	JD	EPA 300/SW846 9056A
Sulfide	13.2	2.0	0.48	mg/l	1	07/24/23 14:32	MP	SM4500S2- F-11
Total Organic Carbon	33.4	1.0	0.10	mg/l	1	07/24/23 19:54	MB	SM5310 B-11/14

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-13S		
Lab Sample ID:	JD69729-4F	**Date Sampled:**	07/20/23
Matrix:	AQ - Groundwater Filtered	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	343	100	32	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	83.8	15	1.4	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54513
(2) Prep QC Batch: MP40928

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-4S		
Lab Sample ID:	JD69729-5	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1J4340.D	1	07/24/23 19:02	KD	n/a	n/a	V1J144
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	ND	10	3.1	ug/l	
71-43-2	Benzene	0.55	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane [b]	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane [a]	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane [a]	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-4S		
Lab Sample ID:	JD69729-5	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.52	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		80-120%
17060-07-0	1,2-Dichloroethane-D4	89%		80-120%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	97%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-4S		
Lab Sample ID:	JD69729-5	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	RSK-175	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA102917.D	1	07/25/23 09:44	WC	n/a	n/a	GAA2848
Run #2	AA102918.D	5	07/25/23 09:58	WC	n/a	n/a	GAA2848
Run #3	AA102919.D	100	07/25/23 10:24	WC	n/a	n/a	GAA2848

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	4890 [a]	11	8.0	ug/l	
74-84-0	Ethane	420 [b]	1.2	0.70	ug/l	
74-85-1	Ethene	7.78	0.31	0.16	ug/l	

(a) Result is from Run# 3
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-4S		
Lab Sample ID:	JD69729-5	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	19500	100	32	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	1990	15	1.4	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54513
(2) Prep QC Batch: MP40928

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-4S		
Lab Sample ID:	JD69729-5	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfate	8.7	2.0	0.89	mg/l	1	07/25/23 03:41	SS	EPA 300/SW846 9056A
Sulfide	ND	2.0	0.48	mg/l	1	07/24/23 14:32	MP	SM4500S2- F-11
Total Organic Carbon	5.3	1.0	0.10	mg/l	1	07/24/23 20:05	MB	SM5310 B-11/14

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-4S		
Lab Sample ID:	JD69729-5F	**Date Sampled:**	07/20/23
Matrix:	AQ - Groundwater Filtered	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	18000	100	32	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	2080	15	1.4	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54513
(2) Prep QC Batch: MP40928

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-4B		
Lab Sample ID:	JD69729-6	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1J4341.D	100	07/24/23 19:27	KD	n/a	n/a	V1J144
Run #2	1J4394.D	1000	07/25/23 15:08	KD	n/a	n/a	V1J146

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [b]	ND	1000	310	ug/l	
71-43-2	Benzene	ND	50	43	ug/l	
74-97-5	Bromochloromethane	ND	100	48	ug/l	
75-27-4	Bromodichloromethane	ND	100	45	ug/l	
75-25-2	Bromoform	ND	100	63	ug/l	
74-83-9	Bromomethane [c]	ND	200	160	ug/l	
78-93-3	2-Butanone (MEK)	ND	1000	270	ug/l	
75-15-0	Carbon disulfide	ND	200	180	ug/l	
56-23-5	Carbon tetrachloride	ND	100	55	ug/l	
108-90-7	Chlorobenzene	ND	100	56	ug/l	
75-00-3	Chloroethane [b]	ND	100	73	ug/l	
67-66-3	Chloroform	ND	100	50	ug/l	
74-87-3	Chloromethane [b]	ND	100	76	ug/l	
110-82-7	Cyclohexane	ND	500	78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	200	53	ug/l	
124-48-1	Dibromochloromethane	ND	100	56	ug/l	
106-93-4	1,2-Dibromoethane	ND	100	48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	100	53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	100	54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	100	51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	200	56	ug/l	
75-34-3	1,1-Dichloroethane	ND	100	57	ug/l	
107-06-2	1,2-Dichloroethane	ND	100	60	ug/l	
75-35-4	1,1-Dichloroethene	238	100	59	ug/l	
156-59-2	cis-1,2-Dichloroethene	56100 [d]	1000	510	ug/l	
156-60-5	trans-1,2-Dichloroethene	235	100	54	ug/l	
78-87-5	1,2-Dichloropropane	ND	100	51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	100	47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	100	43	ug/l	
100-41-4	Ethylbenzene	162	100	60	ug/l	
76-13-1	Freon 113	ND	500	58	ug/l	
591-78-6	2-Hexanone	ND	500	480	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-4B		
Lab Sample ID:	JD69729-6	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	100	65	ug/l	
79-20-9	Methyl Acetate	ND	500	80	ug/l	
108-87-2	Methylcyclohexane	ND	500	60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	100	51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	500	490	ug/l	
75-09-2	Methylene chloride	ND	200	100	ug/l	
100-42-5	Styrene	ND	100	49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	100	65	ug/l	
127-18-4	Tetrachloroethene	ND	100	56	ug/l	
108-88-3	Toluene	2680	100	49	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	100	50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	100	50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	100	54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	100	53	ug/l	
79-01-6	Trichloroethene	7800	100	53	ug/l	
75-69-4	Trichlorofluoromethane	ND	200	40	ug/l	
75-01-4	Vinyl chloride	28300 [d]	1000	520	ug/l	
	m,p-Xylene	392	100	78	ug/l	
95-47-6	o-Xylene	101	100	59	ug/l	
1330-20-7	Xylene (total)	493	100	59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%	90%	80-120%
17060-07-0	1,2-Dichloroethane-D4	92%	92%	80-120%
2037-26-5	Toluene-D8	99%	99%	80-120%
460-00-4	4-Bromofluorobenzene	100%	98%	82-114%

(a) Dilution required due to high concentration of target compound.
(b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
(c) Associated CCV outside of control limits high, sample was ND.
(d) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-4B		
Lab Sample ID:	JD69729-6	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	RSK-175	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	AA102920.D	1	07/25/23 10:38	WC	n/a	n/a	GAA2848
Run #2 [a]	AA102921.D	10	07/25/23 11:05	WC	n/a	n/a	GAA2848
Run #3 [a]	AA102922.D	100	07/25/23 11:23	WC	n/a	n/a	GAA2848

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	5510 [b]	11	8.0	ug/l	
74-84-0	Ethane	187	0.23	0.14	ug/l	
74-85-1	Ethene	1410 [c]	3.1	1.6	ug/l	

(a) 5mm diameter bubble present in headspace.
(b) Result is from Run# 3
(c) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-4B		
Lab Sample ID:	JD69729-6	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	ND	100	32	ug/l	1	07/25/23	07/26/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	79.8	15	1.4	ug/l	1	07/25/23	07/26/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54508
(2) Prep QC Batch: MP40940

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-4B		
Lab Sample ID:	JD69729-6	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfate	248	2.0	0.89	mg/l	1	07/25/23 03:54	SS	EPA 300/SW846 9056A
Sulfide	178	2.0	0.48	mg/l	1	07/24/23 14:32	MP	SM4500S2- F-11
Total Organic Carbon	97.6	5.0	0.50	mg/l	5	07/25/23 22:07	MB	SM5310 B-11/14

RL = Reporting Limit
MDL = Method Detection Limit

ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-4B		
Lab Sample ID:	JD69729-6F	**Date Sampled:**	07/20/23
Matrix:	AQ - Groundwater Filtered	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	ND	100	32	ug/l	1	07/25/23	07/26/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	80.7	15	1.4	ug/l	1	07/25/23	07/26/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54508
(2) Prep QC Batch: MP40940

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-6S		
Lab Sample ID:	JD69729-7	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1J4342.D	10	07/24/23 19:52	KD	n/a	n/a	V1J144
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	ND	100	31	ug/l	
71-43-2	Benzene	4.7	5.0	4.3	ug/l	J
74-97-5	Bromochloromethane	ND	10	4.8	ug/l	
75-27-4	Bromodichloromethane	ND	10	4.5	ug/l	
75-25-2	Bromoform	ND	10	6.3	ug/l	
74-83-9	Bromomethane [b]	ND	20	16	ug/l	
78-93-3	2-Butanone (MEK)	ND	100	27	ug/l	
75-15-0	Carbon disulfide	ND	20	18	ug/l	
56-23-5	Carbon tetrachloride	ND	10	5.5	ug/l	
108-90-7	Chlorobenzene	ND	10	5.6	ug/l	
75-00-3	Chloroethane [a]	ND	10	7.3	ug/l	
67-66-3	Chloroform	ND	10	5.0	ug/l	
74-87-3	Chloromethane [a]	ND	10	7.6	ug/l	
110-82-7	Cyclohexane	ND	50	7.8	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	20	5.3	ug/l	
124-48-1	Dibromochloromethane	ND	10	5.6	ug/l	
106-93-4	1,2-Dibromoethane	ND	10	4.8	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	10	5.3	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	10	5.4	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	10	5.1	ug/l	
75-71-8	Dichlorodifluoromethane	ND	20	5.6	ug/l	
75-34-3	1,1-Dichloroethane	ND	10	5.7	ug/l	
107-06-2	1,2-Dichloroethane	ND	10	6.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	10	5.9	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	10	5.1	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	10	5.4	ug/l	
78-87-5	1,2-Dichloropropane	ND	10	5.1	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	10	4.7	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	10	4.3	ug/l	
100-41-4	Ethylbenzene	29.2	10	6.0	ug/l	
76-13-1	Freon 113	ND	50	5.8	ug/l	
591-78-6	2-Hexanone	ND	50	48	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-6S		
Lab Sample ID:	JD69729-7	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	10	6.5	ug/l	
79-20-9	Methyl Acetate	ND	50	8.0	ug/l	
108-87-2	Methylcyclohexane	ND	50	6.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	10	5.1	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	50	49	ug/l	
75-09-2	Methylene chloride	ND	20	10	ug/l	
100-42-5	Styrene	ND	10	4.9	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	6.5	ug/l	
127-18-4	Tetrachloroethene	ND	10	5.6	ug/l	
108-88-3	Toluene	1640	10	4.9	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	10	5.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	10	5.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	10	5.4	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	10	5.3	ug/l	
79-01-6	Trichloroethene	ND	10	5.3	ug/l	
75-69-4	Trichlorofluoromethane	ND	20	4.0	ug/l	
75-01-4	Vinyl chloride	36.5	10	5.2	ug/l	
	m,p-Xylene	203	10	7.8	ug/l	
95-47-6	o-Xylene	37.2	10	5.9	ug/l	
1330-20-7	Xylene (total)	240	10	5.9	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		80-120%
17060-07-0	1,2-Dichloroethane-D4	89%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	98%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-6S		
Lab Sample ID:	JD69729-7	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	RSK-175	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA102924.D	10	07/25/23 12:30	WC	n/a	n/a	GAA2848
Run #2	AA102925.D	100	07/25/23 12:45	WC	n/a	n/a	GAA2848

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	4640 [a]	11	8.0	ug/l	
74-84-0	Ethane	868	2.3	1.4	ug/l	
74-85-1	Ethene	1230	3.1	1.6	ug/l	

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-6S		
Lab Sample ID:	JD69729-7	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	122000	100	32	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	3570	15	1.4	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54513
(2) Prep QC Batch: MP40928

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-6S		
Lab Sample ID:	JD69729-7	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfate	1.9 J	2.0	0.89	mg/l	1	07/25/23 04:07	SS	EPA 300/SW846 9056A
Sulfide	ND	2.0	0.48	mg/l	1	07/24/23 14:32	MP	SM4500S2- F-11
Total Organic Carbon	155	10	1.0	mg/l	10	07/25/23 22:19	MB	SM5310 B-11/14

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-6S		
Lab Sample ID:	JD69729-7F	**Date Sampled:**	07/20/23
Matrix:	AQ - Groundwater Filtered	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	118000	100	32	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	3550	15	1.4	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54513
(2) Prep QC Batch: MP40928

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-6B		
Lab Sample ID:	JD69729-8	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1J4343.D	100	07/24/23 20:17	KD	n/a	n/a	V1J144
Run #2	1J4397.D	1000	07/25/23 16:23	KD	n/a	n/a	V1J146

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [b]	ND	1000	310	ug/l	
71-43-2	Benzene	ND	50	43	ug/l	
74-97-5	Bromochloromethane	ND	100	48	ug/l	
75-27-4	Bromodichloromethane	ND	100	45	ug/l	
75-25-2	Bromoform	ND	100	63	ug/l	
74-83-9	Bromomethane [c]	ND	200	160	ug/l	
78-93-3	2-Butanone (MEK)	ND	1000	270	ug/l	
75-15-0	Carbon disulfide	ND	200	180	ug/l	
56-23-5	Carbon tetrachloride	ND	100	55	ug/l	
108-90-7	Chlorobenzene	ND	100	56	ug/l	
75-00-3	Chloroethane [b]	ND	100	73	ug/l	
67-66-3	Chloroform	ND	100	50	ug/l	
74-87-3	Chloromethane [b]	ND	100	76	ug/l	
110-82-7	Cyclohexane	ND	500	78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	200	53	ug/l	
124-48-1	Dibromochloromethane	ND	100	56	ug/l	
106-93-4	1,2-Dibromoethane	ND	100	48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	100	53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	100	54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	100	51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	200	56	ug/l	
75-34-3	1,1-Dichloroethane	ND	100	57	ug/l	
107-06-2	1,2-Dichloroethane	ND	100	60	ug/l	
75-35-4	1,1-Dichloroethene	88.4	100	59	ug/l	J
156-59-2	cis-1,2-Dichloroethene	33300 [d]	1000	510	ug/l	
156-60-5	trans-1,2-Dichloroethene	158	100	54	ug/l	
78-87-5	1,2-Dichloropropane	ND	100	51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	100	47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	100	43	ug/l	
100-41-4	Ethylbenzene	ND	100	60	ug/l	
76-13-1	Freon 113	ND	500	58	ug/l	
591-78-6	2-Hexanone	ND	500	480	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-6B		
Lab Sample ID:	JD69729-8	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	100	65	ug/l	
79-20-9	Methyl Acetate	ND	500	80	ug/l	
108-87-2	Methylcyclohexane	ND	500	60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	100	51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	500	490	ug/l	
75-09-2	Methylene chloride	ND	200	100	ug/l	
100-42-5	Styrene	ND	100	49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	100	65	ug/l	
127-18-4	Tetrachloroethene	ND	100	56	ug/l	
108-88-3	Toluene	74.8	100	49	ug/l	J
87-61-6	1,2,3-Trichlorobenzene	ND	100	50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	100	50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	100	54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	100	53	ug/l	
79-01-6	Trichloroethene	ND	100	53	ug/l	
75-69-4	Trichlorofluoromethane	ND	200	40	ug/l	
75-01-4	Vinyl chloride	11300	100	52	ug/l	
	m,p-Xylene	ND	100	78	ug/l	
95-47-6	o-Xylene	ND	100	59	ug/l	
1330-20-7	Xylene (total)	ND	100	59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%	88%	80-120%
17060-07-0	1,2-Dichloroethane-D4	91%	91%	80-120%
2037-26-5	Toluene-D8	99%	98%	80-120%
460-00-4	4-Bromofluorobenzene	98%	96%	82-114%

(a) Dilution required due to high concentration of target compound.
(b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
(c) Associated CCV outside of control limits high, sample was ND.
(d) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-6B		
Lab Sample ID:	JD69729-8	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	RSK-175	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA102926.D	1	07/25/23 14:04	WC	n/a	n/a	GAA2848
Run #2	AA102927.D	50	07/25/23 14:18	WC	n/a	n/a	GAA2848

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	2130 [a]	5.5	4.0	ug/l	
74-84-0	Ethane	27.1	0.23	0.14	ug/l	
74-85-1	Ethene	174	0.31	0.16	ug/l	

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-6B		
Lab Sample ID:	JD69729-8	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	1130	100	32	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	161	15	1.4	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54513
(2) Prep QC Batch: MP40928

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-6B		
Lab Sample ID:	JD69729-8	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfate	1170	10	4.4	mg/l	5	07/25/23 14:51	JD	EPA 300/SW846 9056A
Sulfide	9.7	2.0	0.48	mg/l	1	07/24/23 14:32	MP	SM4500S2- F-11
Total Organic Carbon	3.9	1.0	0.10	mg/l	1	07/24/23 20:43	MB	SM5310 B-11/14

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-6B		
Lab Sample ID:	JD69729-8F	**Date Sampled:**	07/20/23
Matrix:	AQ - Groundwater Filtered	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	582	100	32	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	155	15	1.4	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54513
(2) Prep QC Batch: MP40928

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-5B		
Lab Sample ID:	JD69729-9	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1J4344.D	20	07/24/23 20:41	KD	n/a	n/a	V1J144
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [b]	ND	200	61	ug/l	
71-43-2	Benzene	ND	10	8.5	ug/l	
74-97-5	Bromochloromethane	ND	20	9.6	ug/l	
75-27-4	Bromodichloromethane	ND	20	9.0	ug/l	
75-25-2	Bromoform	ND	20	13	ug/l	
74-83-9	Bromomethane [c]	ND	40	33	ug/l	
78-93-3	2-Butanone (MEK)	ND	200	55	ug/l	
75-15-0	Carbon disulfide	ND	40	36	ug/l	
56-23-5	Carbon tetrachloride	ND	20	11	ug/l	
108-90-7	Chlorobenzene	ND	20	11	ug/l	
75-00-3	Chloroethane [b]	ND	20	15	ug/l	
67-66-3	Chloroform	ND	20	10	ug/l	
74-87-3	Chloromethane [b]	ND	20	15	ug/l	
110-82-7	Cyclohexane	ND	100	16	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	40	11	ug/l	
124-48-1	Dibromochloromethane	ND	20	11	ug/l	
106-93-4	1,2-Dibromoethane	ND	20	9.5	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	20	11	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	20	11	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	20	10	ug/l	
75-71-8	Dichlorodifluoromethane	ND	40	11	ug/l	
75-34-3	1,1-Dichloroethane	ND	20	11	ug/l	
107-06-2	1,2-Dichloroethane	ND	20	12	ug/l	
75-35-4	1,1-Dichloroethene	ND	20	12	ug/l	
156-59-2	cis-1,2-Dichloroethene	896	20	10	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	20	11	ug/l	
78-87-5	1,2-Dichloropropane	ND	20	10	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	20	9.4	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	20	8.6	ug/l	
100-41-4	Ethylbenzene	ND	20	12	ug/l	
76-13-1	Freon 113	ND	100	12	ug/l	
591-78-6	2-Hexanone	ND	100	96	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-5B		
Lab Sample ID:	JD69729-9	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	20	13	ug/l	
79-20-9	Methyl Acetate	ND	100	16	ug/l	
108-87-2	Methylcyclohexane	ND	100	12	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	20	10	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	100	97	ug/l	
75-09-2	Methylene chloride	ND	40	20	ug/l	
100-42-5	Styrene	ND	20	9.7	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	20	13	ug/l	
127-18-4	Tetrachloroethene	ND	20	11	ug/l	
108-88-3	Toluene	ND	20	9.8	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	20	10	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	20	10	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	20	11	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	20	11	ug/l	
79-01-6	Trichloroethene	2710	20	11	ug/l	
75-69-4	Trichlorofluoromethane	ND	40	8.0	ug/l	
75-01-4	Vinyl chloride	ND	20	10	ug/l	
	m,p-Xylene	ND	20	16	ug/l	
95-47-6	o-Xylene	ND	20	12	ug/l	
1330-20-7	Xylene (total)	ND	20	12	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		80-120%
17060-07-0	1,2-Dichloroethane-D4	92%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	96%		82-114%

(a) Dilution required due to high concentration of target compound.
(b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
(c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-5B		
Lab Sample ID:	JD69729-9	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
Method:	RSK-175	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA102928.D	1	07/25/23 14:36	WC	n/a	n/a	GAA2848
Run #2							

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	0.28	0.11	0.080	ug/l	
74-84-0	Ethane	0.45	0.23	0.14	ug/l	
74-85-1	Ethene	ND	0.31	0.16	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-5B		
Lab Sample ID:	JD69729-9	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	65.7 J	100	32	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	24.3	15	1.4	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54513
(2) Prep QC Batch: MP40928

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-5B		
Lab Sample ID:	JD69729-9	**Date Sampled:**	07/20/23
Matrix:	AQ - Ground Water	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfate	1950	16	7.1	mg/l	8	07/25/23 15:08	JD	EPA 300/SW846 9056A
Sulfide	ND	2.0	0.48	mg/l	1	07/24/23 14:32	MP	SM4500S2- F-11
Total Organic Carbon	1.3	1.0	0.10	mg/l	1	07/24/23 21:16	MB	SM5310 B-11/14

RL = Reporting Limit
MDL = Method Detection Limit

ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	MW-5B		
Lab Sample ID:	JD69729-9F	**Date Sampled:**	07/20/23
Matrix:	AQ - Groundwater Filtered	**Date Received:**	07/21/23
		Percent Solids:	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	ND	100	32	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]
Manganese	ND	15	1.4	ug/l	1	07/24/23	07/27/23	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA54513
(2) Prep QC Batch: MP40928

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	TB-02-20230720		
Lab Sample ID:	JD69729-10	**Date Sampled:**	07/20/23
Matrix:	AQ - Trip Blank Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1J4338.D	1	07/24/23 18:12	KD	n/a	n/a	V1J144
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane [b]	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.7	ug/l	
75-15-0	Carbon disulfide	ND	2.0	1.8	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane [a]	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane [a]	ND	1.0	0.76	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
76-13-1	Freon 113	ND	5.0	0.58	ug/l	
591-78-6	2-Hexanone	ND	5.0	4.8	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-02-20230720		
Lab Sample ID:	JD69729-10	**Date Sampled:**	07/20/23
Matrix:	AQ - Trip Blank Water	**Date Received:**	07/21/23
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Old Erie Canal Site, 124 Columbia Street, Clyde, NY		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
79-20-9	Methyl Acetate	ND	5.0	0.80	ug/l	
108-87-2	Methylcyclohexane	ND	5.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	4.9	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.56	ug/l	
108-88-3	Toluene	ND	1.0	0.49	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.52	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		80-120%
17060-07-0	1,2-Dichloroethane-D4	91%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	96%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

GW
TB

SGS

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

Page 1 of 1

E

EHSA-QAC-0023-04-FORM-Standard COC

FEDEX Tracking #:
Bottle Order Control #: MM-071023-111
SGS Quote #: 2021 2663
SGS Job #: JD69729

Client / Reporting Information

Company Name: Arcadis
Street Address: 110 W. Fayette Street, Suite 300
City / State / Zip: Syracuse, NY 13202
Project Contact / E-mail: Chris Kassel chris.kassel@arcadis.com cc: edward.mason@arcadis.com
Phone #: 315-671-9127
Sampler(s) Name(s) / Phone #: Kaitlyn Fleming and Bailey Kudla-Williams 619-727-1921

Project Information

Project Name: Old Erie Canal Site
Street: 24 Columbia Street
City / State: Clyde NY
Project #:
Client Purchase Order #:
Project Manager: Corey Averill

Billing Information (if different from Report to)

Company Name:
Street Address:
City / State / Zip:
Attention:

Requested Analysis

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) / Comp (C)	Source Code (if Ww)	Matrix	# of bottles	Preserved: HCl	Preserved: NaOH	Preserved: H2SO4	Preserved: NONE	Preserved: DI Water	Preserved: MeOH	Preserved: ENCORE	VOCs	Iron, Manganese	Dissolved Iron, Manganese (Field Filtered)	Dissolved Gasses (ethane, ethene, and methane)	Sulfate	Sulfide	Total Organic Carbon	pH Check (Lab Use Only)	LAB USE ONLY
1	Canal - upstream		7/19/23	1100	KCF	G		GW	3	3							X								V454
2	Canal - downstream		7/19/23	1125	KCF	G		GW	3	3							X								AB
3F	MW - 7S		7/20/23	0835	KCF	G		GW	36	21	6	6	3				X	X	X	X	X	X	X		633
4F	MW - 13S		7/20/23	0825	BKW	G		GW	12	7	2	2	1				X	X	X	X	X	X	X		S
5F	MW - 4S		7/20/23	1050	KCF	G		GW	12	7	2	2	1				X	X	X	X	X	X	X		1913
6F	MW - 4B		7/20/23	1225	KCF	G		GW	12	7	2	2	1				X	X	X	X	X	X	X		
7F	MW - 6S		7/20/23	1035	BKW	G		GW	12	7	2	2	1				X	X	X	X	X	X	X		
8F	MW - 6B		7/20/23	1330	BKW	G		GW	12	7	2	2	1				X	X	X	X	X	X	X		
9F	MW - 5B		7/20/23		KCF	G		GW	12	7	2	2	1				X	X	X	X	X	X	X		
10	TB - 02 - 20230720		7/11/23	0730	—	G		GW	2	2							X								
	~~MW-1~~ (GW)					G		GW																	

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [x] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink
* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [x] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [x] EDD Format EQuIS-5 (4-file)
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

MW-7S (ms/msd)

Initial Assessment: 4A-JCW

Label Verification:

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by	Date / Time	Received By	Relinquished By	Date / Time	Received By
1	Arcadis	7-20-23 1630	1 Fedex	2 Fedex	7/21/23 10:20	2
3			3	4		4
5			5	Custody Seal #	Intact / Not Intact / Absent	Therm ID: / See Sample Receipt Summary	On Ice: X	Cooler Temp °C: 4.1 / 4.3

Cont. #: [illegible]

SGS Sample Receipt Summary

Job Number: JD69729 **Client:** ARCADIS U.S. **Project:** OLD ERIE CANAL SITE, 124 COLUMBIA STR

Date / Time Received: 7/21/2023 10:20:00 AM **Delivery Method:** FEDEX **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (4.1); Cooler 2: (4.3);

Cooler Temps (Corrected) °C: Cooler 1: (3.8); Cooler 2: (4.0);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun 40		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	2		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify)

Comments -9 No collection time on COC. Please verify.

Responded to by: Kelly Ramos

Response Date: 7/24

The sample time for MW-5B is 14:25

10515 Research Drive
Knoxville, TN 37932
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Web: www.microbe.com

SITE LOGIC Report

Min-Trap Study

Contact: Chris Kassel
Address: Arcadis
110 West Fayette St, Suite 300
Syracuse, NY 13202

Phone: 315-671-9127

Email: chris.kassel@arcadis.com

MI Identifier: 052UG

Report Date: August 18, 2023

Project: Old Erie Canal Site, 30147041

Comments:

Sample IDs

MI ID	Sample Name
052UG-1	MW-6B
052UG-2	MW-4B

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Final Report

August 17, 2023

Dora Taggart and Sarah Keys
Microbial Insights
10515 Research Drive
Knoxville, TN 37931

RE: Report of Findings, Measurement of WAS-Fe, AVS, SAS-Fe, CrES
Client Project Name: 052UG 1-2
PRIMA ID: MI-AMIBA 072623

Dear Ms. Taggart and Ms. Keys:

This letter report describes the results of analyses conducted on two solids samples. Each sample was analyzed for total iron, weak acid soluble iron (WAS Fe), strong acid soluble iron (SAS), acid volatile sulfide (AVS), and chromium extractable sulfide (CrES). Procedures and results are reported herein.

Sample Receipt and Preparation

Two Min-Trap samples were received on July 26, 2023. Samples were stored in cold (about 4-7C) in a nitrogen atmosphere.

Procedures

WAS-Fe, AVS, SAS-Fe, and CrES were obtained via sequential extraction of sample based on methods provided by Microseeps, Inc. In order to minimize exposure of the sample or extraction fluid to oxygen, the samples were transferred to the extraction vessel while in a nitrogen-filled glove box and the extractions were carried out on the bench top under a flow of nitrogen. A brief description of the extraction procedure is provided below.

WAS-Fe. Approximately 10 g of sample is extracted with 1 N hydrochloric acid (HCl) for 30 minutes at room temperature (approximately 20° C), after which an aliquot of the HCl is withdrawn and analyzed for ferrous iron and total iron colorimetrically using a Hach DR2800 spectrophotometer and appropriate Hach test kit reagents. Dilutions are made as needed using deoxygenated, deionized (DO/DI) water.

AVS. Hydrogen sulfide generated during the WAS extraction step is collected in a trap filled with 1.25 N sodium hydroxide (NaOH). After collection of the WAS Fe sample, concentrated HCl is added to the soil and the mixture is heated for 30 minutes. The concentration of sulfide in trap is then measured using the methylene blue method via a Hach DR2800 spectrophotometer and appropriate Hach test kit reagents. Dilutions are made as needed using DO/DI water.

SAS-Fe. Upon completion of the AVS step, an aliquot of the HCl solution is withdrawn from the extraction flask and analyzed for ferrous iron and total iron in the same manner as for WAS-Fe.

CrES. After completion of the AVS step, the trap is cleaned and fresh solution added. After removal of an aliquot for SAS-Fe measurement, chromous chloride is added to the soil and the mixture is heated for 30 minutes. The concentration of sulfide in the trap is then measured in the same manner as for AVS.

Results

The amounts of WAS-Fe, SAS-Fe, AVS, and CrES are shown in **Table 1** (attached). QC results are given in **Table 2** (attached).

If you have any questions regarding these results, please give me a call at 916-939-7300. Thank you for the opportunity to be of service.

Sincerely,
PRIMA Environmental, Inc.

Cindy G. Schreier

Cindy G. Schreier, Ph.D.
President

Attachments

Table 1. WAS-Fe, SAS-Fe, AVS, and CrES Results.

Extraction Date	Sample	WAS Fe, mg/kg			SAS Fe, mg/kg			AVS, mg/kg	CrES, mg/kg
		Fe2+	Fe3+	total Fe	Fe2+	Fe3+	total Fe		
8/17/2023	052UG-1	25	3.8	29	30	20	50	12	51
8/17/2023	052UG-2	22	5.5	27	40	5	40	9.7	57

Notes

- SAS Fe includes WAS Fe

- Fe3+ is calcuated from the raw data - it is the difference between Total Fe and Fe2+. Discrepancies are due to rounding.

Table 2. QC Results for WAS-Fe, SAS-Fe, AVS, and CrES

Sample ID	Result	Units
Blank *		
WAS-Fe	< 4	mg/L
SAS-Fe	< 12	mg/L
AVS	< 0.025	mg/L
CrES	< 0.025	mg/L
FeS standard		
Fe concentration	635	g/kg
SAS-Fe	740	g/kg
% Recovered as SAS	117	%
Sulfide concentration	365	g/kg
AVS	380	g/kg
% Recovered as AVS	104	%

* A blank was run in the absence of a solid material. Therefore, values are concentrations in the extraction fluids or traps.

5070 Robert J Mathews Parkway, Suite 300
El Dorado Hills, CA 95762
916-939-7300
www.primaenvironmental.com

Sample Receipt Summary

Date/Time: July 26, 2023 1805

Client/Company: Microbial Insights

Project: 052UG 1-2 (MI-AMIBA 072623)

	Yes	No	N/A
Custody seals intact?	☐	☐	☒
Chain of custody Present?	☒	☐	☐
If no, list number of samples and Sample ID			
Ice present? ice packs, frozen	☐	☐	☐
If no, what is temperature? ____			
Samples in good condition?	☒	☐	☐
If no, explain:			
Do sample IDs on containers match IDs on COC?	☐	☐	☐
If no, explain:			

Other Comments:
store in N2 filled glass wide mouth reactor in fridge

MI-AMIBA-072623

REPORT TO:

Reports will be provided to the contact(s) listed below. Parties other than the contact(s) listed below will require prior approval.

Name:	Dora Taggart and Sarah Keys
Company:	Microbial Insights
Address:	10515 Research Dr.
	Knoxville, TN 37931
email:	Dtaggart@microbe.com; Data@microbe.com
Phone:	865-573-8188 ext. 107
Fax:	
Project Manager:	Dora Taggart and Sarah Keys
Project Name:	052UG 1-2
Project No.:	

INVOICE TO:

For Invoices **paid by a third party** it is imperative that contact information & corresponding reference No. be provided.

Name:	Rhonda Mullins
Company:	Microbial Insights
Address:	10515 Research Dr.
	Knoxville, TN 37931
email:	accounting@microbe.com
Phone:	865-573-8188 ext. 115
Fax:	
Purchase Order No.	23-8987
Subcontract No.	
Quote No.	

10515 Research Dr
Knoxville, TN 37932

865-573-8188
www.microbe.com

Please Check One:

☐ More samples to follow
☐ No Additional Samples

Saturday Delivery
Please see sampling protocol for instructions

Please contact us prior to submitting samples regarding questions about the analyses you are requesting at (865) 573-8188 (8:00 am to 4:00 pm M-F). After these hours please email customerservice@microbe.com.

Sample Information					Analysis																												
MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix		AMIBA (WAS-Fe + AVS + SAS-Fe + CrES)																										Other:	Other:	Other:
	052UG-1	7/19/2023	0:00	Sand		X																												
	052UG-2	7/19/2023	0:00	Sand		X																												

Relinquished by: Alexander Hessock 7/25/2023 1600 Received by: PRIMA Date 7/26/23 1805

In order for analysis to be completed correctly, it is vital that chain of custody is filled out correctly & that all relative information is provided. Failure to provide sufficient and/or correct information regarding reporting, invoicing & analyses requested information may result in delays for which MI will not be liable. *** additional cost and sample preservation are associated with RNA samples.**

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SITE LOGIC Report

QuantArray®-BGC Study

Contact: Chris Kassel
Phone: 315-671-9114

Address: Arcadis
110 West Fayette St
Suite 300
Syracuse, NY 13202

Email: Chris.Kassel@arcadis.com

MI Identifier: 052UG

Report Date: 08/08/2023

Project: Old Erie Canal Site, 30147041
Comments:

The QuantArray®-BGC Approach

Culture dependent methods like plate counts, MPNs, or Biological Activity Response Tests for heterotrophic bacteria and sulfate reducing bacteria are commonly performed to evaluate the potential for bioremediation . However, the overwhelming majority of microorganisms (>99%) cannot be grown in the laboratory. The biogeochemical profile consists of diverse microbial communities which carry out processes such as sulfate reduction, sulfur oxidation, iron reduction, metal oxidation, nitrification, denitrification, nitrogen fixation, fermentation, acetogenesis, methanogenesis, and various other processes. Thus, conventional techniques and practices may vastly underestimate and oversimplify the biogeochemical activity. The QuantArray®-BGC addresses both of these issues: (1) The QuantArray® is a molecular biological tool (MBT) based on analysis of DNA or RNA extracted directly from a field sample eliminating the biases of traditional approaches and (2) The QuantArray® platform provides simultaneous quantification of a broad spectrum of key microorganisms and functional genes for a much more accurate and comprehensive assessment of BGC activity.

The QuantArray®-BGC is used to quantify specific microorganisms and functional genes to evaluate the following:

Sulfate Reduction	Sulfate reducers are capable of utilizing sulfate as a terminal electron acceptor and reducing it to hydrogen sulfide utilizing hydrogen produced by other organisms as an electron donor.
Iron Reducing Bacteria	Iron reducing bacteria (IRB) are capable of reducing insoluble iron oxides to soluble ferrous iron byproducts. Some IRB can also reduce insoluble manganese oxides to soluble manganese by products. Many IRB also utilize hydrogen as an electron donor.
Metal Oxidizing Bacteria	Iron and manganese oxidizers oxidize soluble iron and manganese to form insoluble iron and manganese oxides.
Sulfur Oxidation	Sulfur oxidizing bacteria oxidize sulfide and elemental sulfur producing sulfuric acid.
Nitrogen Cycle	Nitrogen fixers convert N_2 from the atmosphere into a usable form, ammonia. Then ammonia and nitrite oxidizers carry out nitrification, the conversion of ammonia to nitrate. Denitrifiers then convert the nitrate back into N_2 . Anammox bacteria can also anaerobically convert nitrite and ammonia into N_2
Methanogens	Methanogens utilize fermentation products formed by other anaerobes as electron donors (H_2 , formate, and alcohols) and acceptors (CO_2, methanol, methylamines, and methylsulfides) to produce methane.
Fermenters	Designed to quantify a broad spectrum of fermenting bacteria, most notably of the class Clostridia. Fermenters produce H_2 during fermentation which can be utilized by other organisms such as acetogens, methanogens, sulfate reducers, Iron and manganese reducers, and nitrate reducers.

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Acetogens	Acetogens are anaerobic organisms that utilize the acetyl CoA pathway to synthesize acetate from H_2 and CO_2, CO, or formate. The acetate produced by acetogens can be utilized by acetoclastic methanogens for the formation of methane.
Acetylene Degraders	Targets the gene encoding the enzyme for acetylene hydratase which is responsible for the nonredox conversion of acetylene to acetaldehyde.

How do QuantArrays® work?

The QuantArray®-BGC in many respects is a hybrid technology combining the highly parallel detection of microarrays with the accurate and precise quantification provided by qPCR into a single platform. The key to highly parallel qPCR reactions is the nanoliter fluidics platform for low volume, solution phase qPCR reactions.

How are QuantArray® results reported?

One of the primary advantages of the QuantArray®-BGC is the simultaneous quantification of a broad spectrum of different microorganisms and key functional genes involved in a variety of microbial biogeochemical processes. However, highly parallel quantification combined with the various metabolic pathways and capabilities of different target organisms can complicate data presentation. Therefore, in addition to Summary Tables, QuantArray®-BGC results will be presented as Microbial Population Summary and Comparison Figures to aid in data interpretation and subsequent evaluation of O&M activities and facility management practices.

Types of Tables and Figures:

Microbial Population Summary	Figure representing the concentrations of QuantArray®-BGC target populations (e.g. sulfate reducing bacteria) and functional genes (e.g. nitrate reductase) relative to typically observed values.
Summary Tables	Tables of target population concentrations grouped by BGC activity.
Comparison Figures	Depending on the project, sample results can be presented to compare changes over time or examine differences in microbial populations through a facility.

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Results

Table 1: Summary of the QuantArray®-BGC results obtained for samples MW-6B and MW-4B.

Sample Name Sample Date	MW-6B 07/19/2023	MW-4B 07/19/2023
Biogeochemical	cells/g	cells/g
Total Bacteria (EBAC)	**6.54E+08**	**6.55E+08**
Total Archaea (ARC)	**3.27E+05**	**3.95E+03 (J)**
Sulfate Reducing Bacteria (APS)	**4.58E+07**	**1.86E+06**
Sulfate Reducing Archaea (SRA)	<1.00E+04	<1.00E+04
Iron Reducing Archaea (IRA)	<1.00E+04	<1.00E+04
Iron Reducing Bacteria - Other (IRB)	**4.20E+04**	<1.00E+04
Iron Reducing *Geobacter* (IRG)	**1.84E+03 (J)**	**2.65E+06**
Iron Reducing *Shewanella* (IRS)	<1.00E+04	<1.00E+04
Iron Oxidizing Bacteria (FeOB)	**5.07E+03 (J)**	**6.20E+04**
Manganese Oxidizing Bacteria (MnOB)	<1.00E+04	**8.08E+03 (J)**
Sulfur Oxidizing Bacteria (SOB)	**2.43E+05**	**1.41E+05**
Ammonia Oxidizing Bacteria (AMO)	<1.00E+04	<1.00E+04
Ammonia Oxidizing Archaea (AOA)	<1.00E+04	**1.11E+03 (J)**
Nitrite Oxidizing Bacteria (NOR)	<1.00E+04	<1.00E+04
Anaerobic Ammonia Oxidizers (AMXNIRK)	<1.00E+04	<1.00E+04
Anaerobic Ammonia Oxidizers (AMXNIRS)	<1.00E+04	<1.00E+04
Nitrogen Fixering Bacteria (NIF)	**3.70E+05**	<1.00E+04
Denitrifying Bacteria (nirK)	<1.00E+04	<1.00E+04
Denitrifying Bacteria (nirS)	<1.00E+04	<1.00E+04
Denitrifying Archaea (ANIRK)	<1.00E+04	<1.00E+04
Denitrifying Archaea (ANIRS)	<1.00E+04	<1.00E+04
Methanogens (MGN)	**4.02E+04**	**2.78E+03 (J)**
Fermenters (FER)	**1.90E+07**	**9.35E+07**
Acetogens (AGN)	<1.00E+04	<1.00E+04
Acetylene Degraders (AHY)	<1.00E+04	<1.00E+04

Legend:
NA = Not Analyzed
NS = Not Sampled
J = Estimated Gene Copies Below PQL but Above LQL
I = Inhibited
< = Result Not Detected

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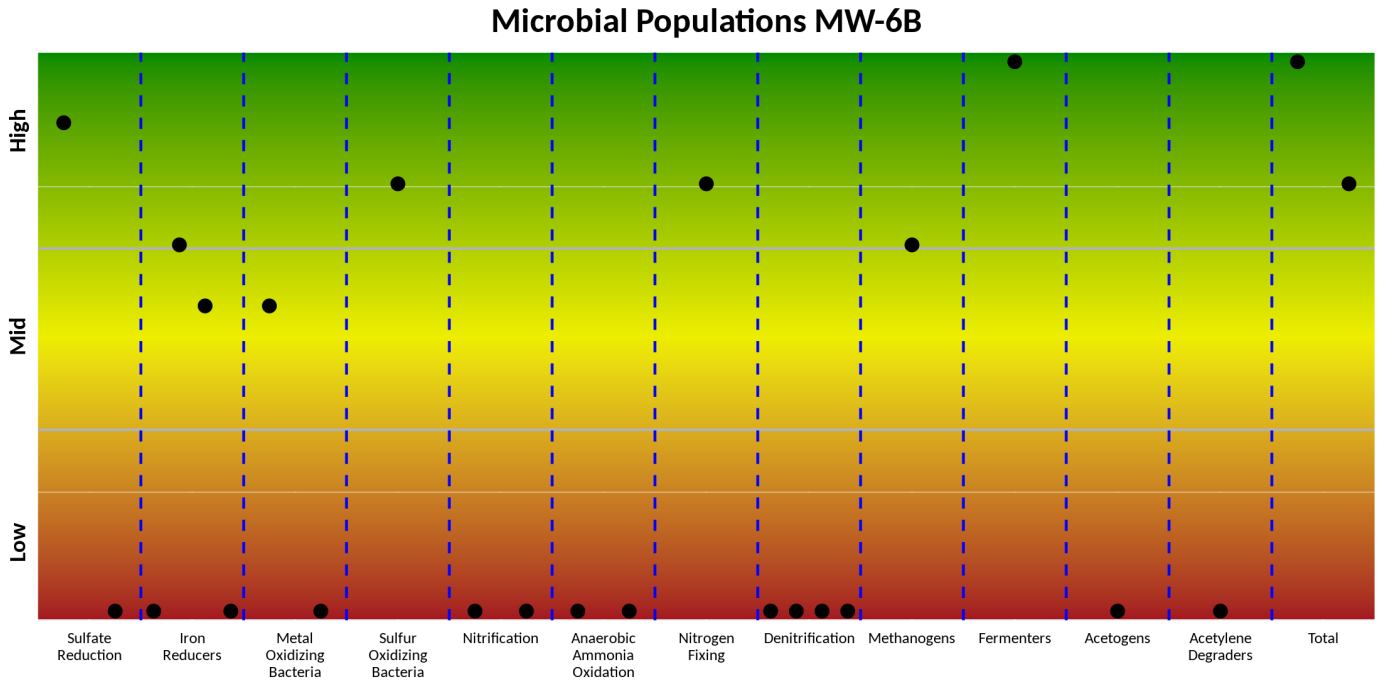

Figure 1: Microbial population summary to aid in understanding biogeochemical conditions.

Sulfate Reduction	APS, SRA	Denitrification	nirK, nirS, ANIRK, ANIRS
Iron Reducers	IRA, IRB, IRG, IRS	Methanogens	MGN
Metal Oxidizing Bacteria	FeOB, MnOB	Fermenters	FER
Sulfur Oxidizing Bacteria	SOB	Acetogens	AGN
Nitrification	AMO, NOR	Acetylene Degraders	AHY
Anaerobic Ammonia Oxidation	AMXNIRK, AMXNIRS	Total	EBAC, ARC
Nitrogen Fixing	NIF		

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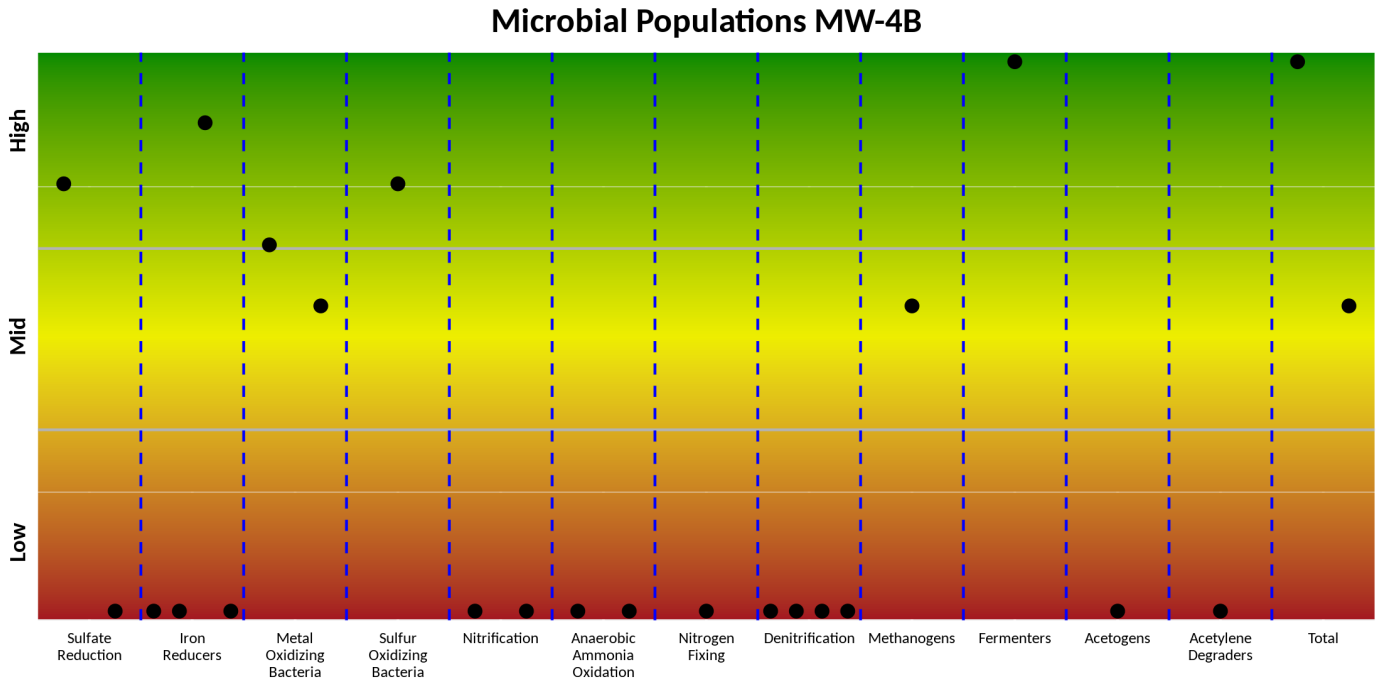

Figure 2: Microbial population summary to aid in understanding biogeochemical conditions.

Sulfate Reduction	APS, SRA	Denitrification	nirK, nirS, ANIRK, ANIRS
Iron Reducers	IRA, IRB, IRG, IRS	Methanogens	MGN
Metal Oxidizing Bacteria	FeOB, MnOB	Fermenters	FER
Sulfur Oxidizing Bacteria	SOB	Acetogens	AGN
Nitrification	AMO, NOR	Acetylene Degraders	AHY
Anaerobic Ammonia Oxidation	AMXNIRK, AMXNIRS	Total	EBAC, ARC
Nitrogen Fixing	NIF		

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Table 2: Summary of the QuantArray®-BGC results for samples MW-6B and MW-4B.

Sample Name Sample Date	MW-6B 07/19/2023	MW-4B 07/19/2023
	cells/g	cells/g
Sulfate Reducers (APS)	**4.58E+07**	**1.86E+06**
Sulfate Reducing Archaea (SRA)	<1.00E+04	<1.00E+04
Sulfur Oxidizing Bacteria (SOB)	**2.43E+05**	**1.41E+05**
Methanogens (MGN)	**4.02E+04**	**2.78E+03 (J)**
Fermenters (FER)	**1.90E+07**	**9.35E+07**
Acetogens (AGN)	<1.00E+04	<1.00E+04
Acetylene Degraders (AHY)	<1.00E+04	<1.00E+04

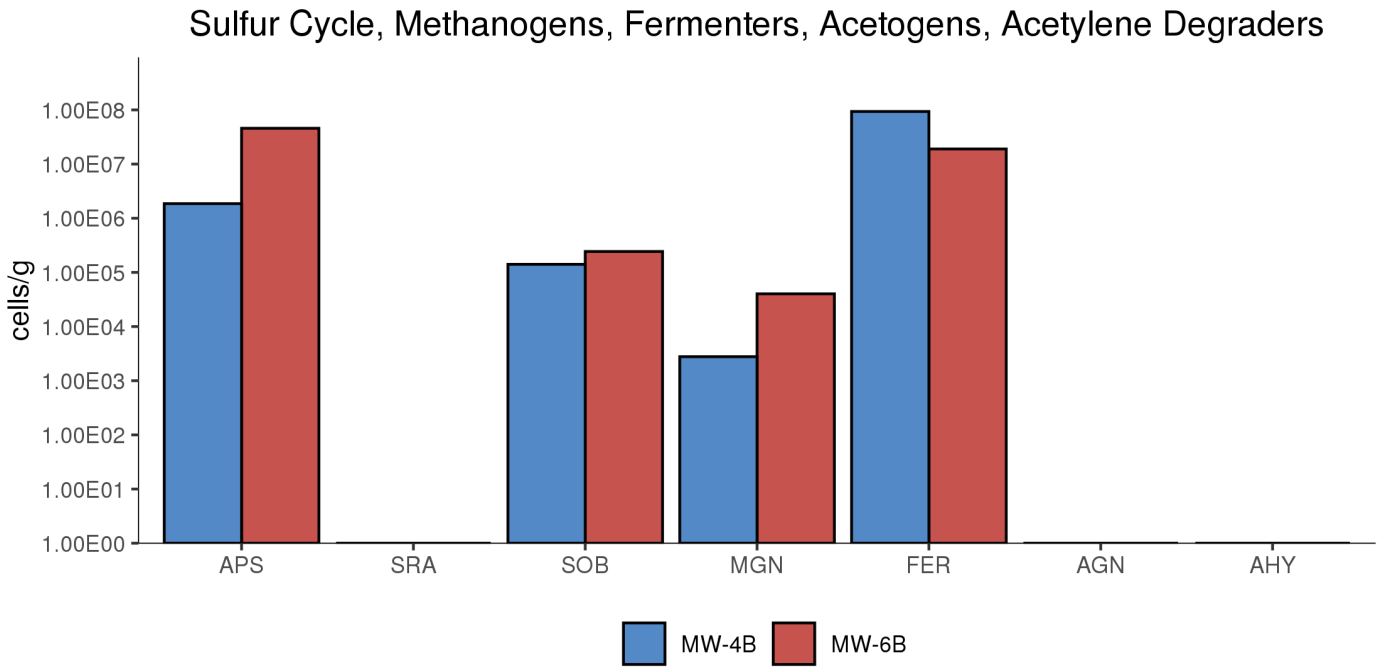

Figure 3: Comparison - Sulfur Cycle, Methanogens, Fermenters, Acetogens, Acetylene Degraders.

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Table 3: Summary of the QuantArray®-BGC results for samples MW-6B and MW-4B.

Sample Name Sample Date	MW-6B 07/19/2023	MW-4B 07/19/2023
	cells/g	cells/g
Iron Reducing Archaea (IRA)	<1.00E+04	<1.00E+04
Iron Reducing Bacteria (IRB)	**4.20E+04**	<1.00E+04
IRB *Geobacter* spp. (IRG)	**1.84E+03 (J)**	**2.65E+06**
IRB *Shewanella* spp. (IRS)	<1.00E+04	<1.00E+04
Iron Oxidizing Bacteria (FeOB)	**5.07E+03 (J)**	**6.20E+04**
Manganese Oxidizing Bacteria (MnOB)	<1.00E+04	**8.08E+03 (J)**

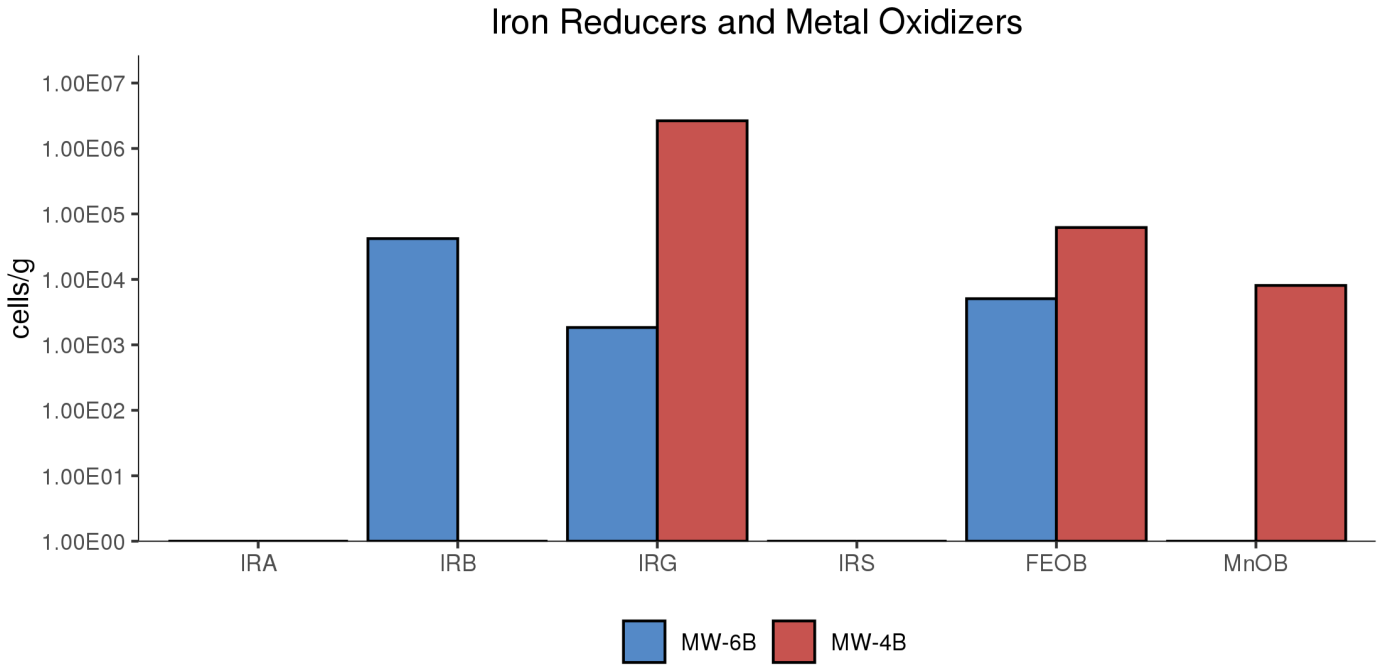

Figure 4: Comparison - Iron Reducers and Metal Oxidizers.

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Table 4: Summary of the QuantArray®-BGC results for samples MW-6B and MW-4B.

Sample Name Sample Date	MW-6B 07/19/2023	MW-4B 07/19/2023
	cells/g	cells/g
Ammonia Oxidizing Bacteria (AMO)	<1.00E+04	<1.00E+04
Ammonia Oxidizing Archaea (AOA)	<1.00E+04	**1.11E+03 (J)**
Nitrite Oxidizing Bacteria (NOR)	<1.00E+04	<1.00E+04
Anaerobic Ammonia Oxidizers (AMXNIRK)	<1.00E+04	<1.00E+04
Anaerobic Ammonia Oxidizers (AMXNIRS)	<1.00E+04	<1.00E+04
Nitrogen Fixing Bacteria (NIF)	**3.70E+05**	<1.00E+04
Denitrifying Bacteria (nirK)	<1.00E+04	<1.00E+04
Denitrifying Bacteria (nirS)	<1.00E+04	<1.00E+04
Denitrifying Archaea (ANIRK)	<1.00E+04	<1.00E+04
Denitrifying Archaea (ANIRS)	<1.00E+04	<1.00E+04

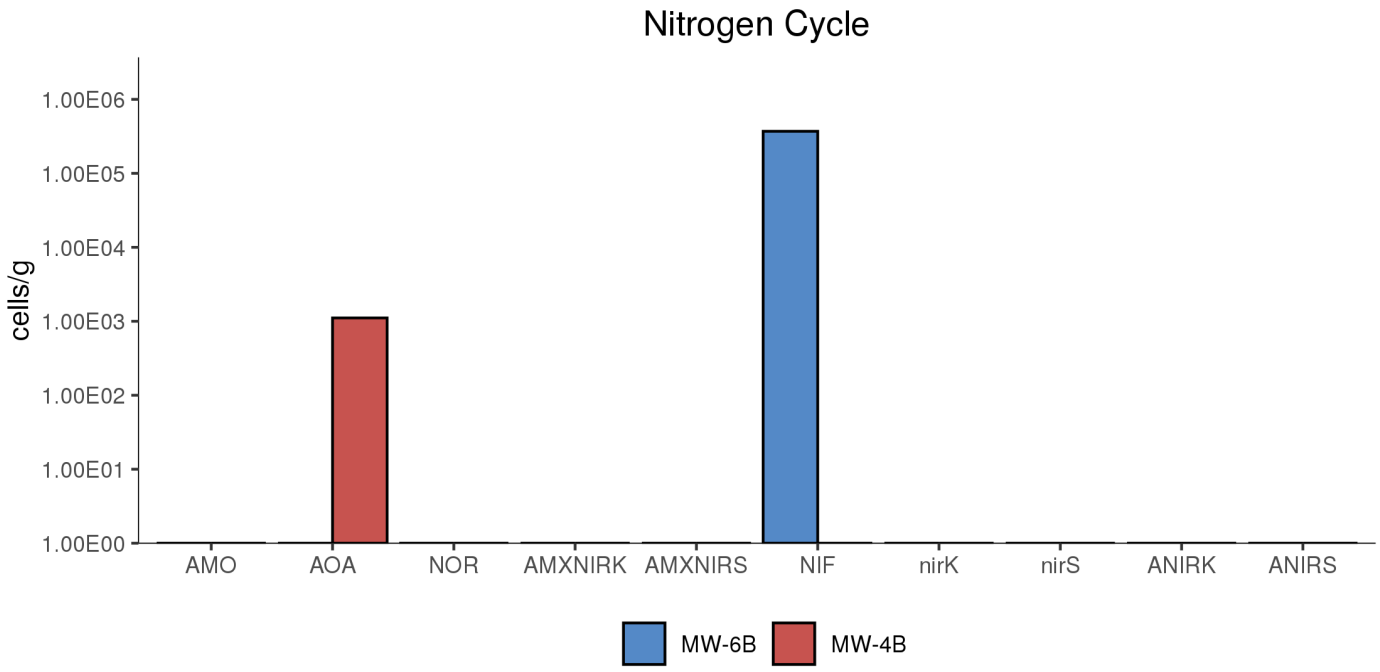

Figure 5: Comparison - Nitrogen Cycle.

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Interpretation

Total Bacteria: Biogeochemical processes are carried out by a wide array of bacteria. Monitoring total bacteria provides a general measure for evaluating the overall growth of bacteria at the site.

Total Archaea: Archaea are another domain of single-celled microorganisms which, like bacteria, can can play important roles in the biogeochemical processes. Depending upon types and environmental conditions, total archaea can outnumber total bacteria and be a more important factor in BGC processes.

Sulfate Reduction: Sulfate reducers can utilize sulfate as a terminal electron acceptor and reduce it to hydrogen sulfide utilizing hydrogen produced by other organisms as an electron donor.

Sulfate-Reducing Bacteria (APS): Sulfate reducing bacteria (SRB) utilize the APS gene to convert sulfate to hydrogen sulfide. In the absence of sulfate some SRB can switch to fermentative degradation of hydrocarbons which produces acetate and hydrogen that are utilized by methanogens [1, 2].

Sulfate-Reducing Archaea (SRA): Some genera of Archaea including *Archaeoglobus*, *Caldivirga*, and *Vulcanisaeta* spp. are capable of sulfate reduction. In addition, sulfate-reducing archaea will often reduce elemental sulfur and thiosulfate to hydrogen sulfide [3–5].

Iron-Reducing Bacteria (IRB): Iron-reducing bacteria can reduce insoluble iron oxides to soluble ferrous iron byproducts. Some IRB can also reduce insoluble manganese oxides to soluble manganese by products. Many IRB also utilize hydrogen as an electron donor. The IRB assay targets IRB including *Defferibacter*, *Geopsychrobacter*, *Geothrix*, and *Rhodoferax* [6–9].

IRB *Geobacter* spp. (IRG): Common genus of iron-reducing bacteria. In addition to utilizing hydrogen, some species are capable of utilizing acetate as an energy source and elemental sulfur as an electron acceptor, producing sulfide. Some *Geobacter* spp. can also reduce insoluble manganese oxides [10].

IRB *Shewanella* spp. (IRS): Another genus of common and metabolically versatile iron-reducing bacteria. *Shewanella* spp. can utilize hydrogen as an energy source reducing ferric iron to ferrous iron and elemental sulfur, sulfite, and thiosulfate to sulfide. Some *Shewanella* spp. can also reduce insoluble manganese oxides [11].

Metal-Oxidizing Bacteria: As the name suggests, metal-oxidizing bacteria oxidize reduced metal ions (FE^{2+} and Mn^{2+}) and form insoluble metal oxides.

Iron-Oxidizing Bacteria (FeOB): Microaerophilic iron-oxidizing bacteria gain energy from the oxidation of ferrous iron to ferric iron often resulting in the formation of dense tubercles or filamentous rusticles of iron oxides. The QuantArray®-BGC targets a variety of iron oxidizers including *Gallionella*, *Leptothrix*, *Sphaerotilus*, and *Mariprofundus* spp [12].

Manganese-Oxidizing Bacteria (MnOB): Although the physiological function of manganese oxidation remains unclear, functional genes encoding proteins related to multicopper oxidases have been linked to manganese oxidation. As with iron oxidation, manganese oxidation leads to the formation of insoluble manganese oxides [13].

Sulfur oxidizers: Sulfur oxidizing bacteria oxidize sulfide and elemental sulfur producing sulfuric acid. Some sulfur oxidizers can also oxidize thiosulfates. The SOB assay targets SOB including *Thiobacillus*, *Thiothrix*, *Thiomicrospira*, and *Macromonas* spp. among others [14–17].

Ammonia Oxidizing Bacteria (AMO): Ammonia oxidizing bacteria catalyze the conversion of ammonia to nitrite, the first step in the nitrification process. In AOB, ammonia is first converted to hydroxylamine by the ammonia monooxygenase enzyme, and then it is oxidized by hydroxylamine oxidoreductase to nitrite. Some ammonia oxidizers also possess genes for denitrification and can convert the nitrite to nitrogen gas. The AMO assay targets the ammonia monooxygenase gene that encodes the enzyme responsible for the initial oxidation of ammonia in the nitrification process [18].

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Ammonia Oxidizing Archaea (AOA): Ammonia oxidizing archaea catalyze the conversion of ammonia to nitrite, the first step in the nitrification process. In AOA the first step of this process is carried out by the ammonia ,monooxygenase enzyme, but the enzyme responsible for the second step has yet to be elucidated. AOA do not possess genes for hydroxylamine oxidoreductase which suggests that they do not utilize the same pathway as AOB to complete the conversion of ammonia to nitrite [18].

Nitrite Oxidizing Bacteria (NOR): Nitrite oxidizing bacteria catalyze the conversion of nitrite to nitrate, the last step in the nitrification process, utilizing the nitrite oxidoreductase enzyme. They can be found in terrestrial, marine, and freshwater environments where they have a major role in nitrogen cycling [18].

Anaerobic Ammonia Oxidizing Bacteria (ANAMMOX): Anammox bacteria are responsible for anaerobically converting nitrite and ammonia directly into nitrogen gas. In this process nitrite and ammonia are transported into the anammoxosome where the anammox nitrite reductase genes nirS and nirK reduce the nitrite to nitric oxide. The nitric oxide is then condensed with ammonia to form hydrazine by the enzyme hydrazine synthase (hzsA). The hydrazine is then oxidized to molecular nitrogen by the enzyme hydrazine dehydrogenase/hydrazine oxidoreductase (hdh/hzo). The assays target the genes encoding two types of nitrite reductase enzymes (nirS and nirK) for quantification of anammox bacteria [19, 20].

Nitrogen Fixing Bacteria (NIF): Nitrogen fixers take N_2 from the atmosphere and convert it to ammonia, a bioavailable form that can be assimilated by other organisms. The nitrogenase complex of nitrogen fixers is also capable of reducing acetylene and hydrogen cyanide as well as some other small molecules containing C, N or O multiple bonds [21]. This assay targets the nifD nitrogenase gene from nitrogen fixing bacteria.

Denitrifying Bacteria. (DNF): Denitrifying bacteria are responsible for converting nitrate from nitrification into nitrous oxide and nitrogen gas. The first step is the conversion of nitrate to nitrite utilizing the dissimiliatory nitrate reductase genes. Nitrite is then reduced to nitric oxide by the dissimilatory nitrite reductase enzymes (nirS and nirK) genes. The nitric oxide is converted to nitrous oxide by the nitric oxide reductase enzyme (norB). Finally, the nitrous oxide is converted to nitrogen gas by the nitrous oxide reductase enzyme (nosZ), and the nitrogen gas is released into the atmosphere. The assays target the genes encoding two types of nitrite reductase enzymes (nirS and nirK) for quantification of denitrifying bacteria [22].

Denitrifying Archaea (ANIRK and ANIRS): Targets the genes encoding two dissimilatory nitrite reductase genes (nirS and nirK) in archaea which are responsible for the conversion of nitrite to nitric oxide during denitrification [22].

Methanogens: Methanogens utilize fermentation products formed by other anaerobes as electron donors (H_2, formate, and alcohols) and acceptors (CO_2, methanol, methylamines, and methylsulfides) to produce methane. There are three main methanogenic pathways H_2 and CO_2 (hydrogenotrophic), acetate (acetoclastic), and methylated C_1 compounds (methylotrophic). Most of the methane produced by methanogens is through the acetoclastic pathway [23].

Acetogens (AGN): Acetogens are anaerobic organisms that utilize the acetyl-CoA pathway to synthesize acetate from H_2 and CO_2, CO, or formate. The acetate produced by acetogens can be utilized by acetoclastic methanogens for the formation of methane [24].

Fermenters (FER): Designed to quantify a broad spectrum of fermenting bacteria, most notably of the class Clostridia. Fermenters produce H2 during fermentation which can be utilized by other organisms such as acetogens, methanogens, sulfate reducers, Iron and manganese reducers, and nitrate reducers [25].

Acetylene Degraders (AHY): Targets the gene encoding the enzyme for acetylene hydratase which is responsible for the non-redox conversion of acetylene to acetaldehyde [26, 27].

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References

1. Muyzer, G. & Stams, A. The ecology and biotechnology of sulphate-reducing bacteria. *Nature Reviews Microbiology* **6,** 441–454 (2008).
2. Barton, L. & Faque, G. Biochemistry, physiology and biotechnology of sulfate-reducing bacteria. *Advances in Applied Microbiology* **68,** 41–98 (2009).
3. Gumerov, V. M. *et al.* Complete genome sequence of "*Vulcanisaeta moutnovskia*" strain 768-28, a novel member of the hyperthermophilic crenarchaeal genus Vulcanisaeta. *Journal of bacteriology* **193,** 2355–2356 (2011).
4. Itoh, T., Suzuki, K.-i., Sanchez, P. C. & Nakase, T. *Caldivirga maquilingensis* gen. nov., sp. nov., a new genus of rod-shaped crenarchaeote isolated from a hot spring in the Philippines. *International Journal of Systematic and Evolutionary Microbiology* **49,** 1157–1163 (1999).
5. Zellner, G. *et al.* Isolation and characterization of a thermophilic, sulfate reducing archaebacterium, *Archaeoglobus fulgidus* strain Z. *Systematic and applied microbiology* **11,** 151–160 (1989).
6. Slobodkina, T. G.B.and Kolganova, Chernyh, N., Querellou, J., Bonch-Osmolovskaya, E. & Slobodkin, A. *Deferribacter autotrophicus* sp. Nov., an iron(III)-reducing bacterium from a deep-sea hydrothermal vent. *International Journal of Systematic and Evolutionary Microbiology* **59(6),** 1508–1512 (2009).
7. Holmes, D., Nicoll, J., Bond, D. & Lovley, D. Potential Role of a Novel Psychrotolerant Member of the Family Geobacteraceae, *Geopsychrobacter electrodiphilus* gen. nov., sp. Nov., in Electricity Production by a Marine Sediment Fuel Cell. *Applied and Environmental Microbiology* **70(10),** 6023–6030 (2004).
8. Coates, J., Ellis, D., Gaw, C. & Lovley, D. *Geothrix fermentans* gen. nov., sp. Nov., a novel Fe(III)-reducing bacterium from a hydrocarbon-contaminated aquifer. *International Journal of Systematic and Evolutionary Microbiology* **49(4),** 1615–1622 (1999).
9. Finneran, K., Johnsen, C. & Lovley, D. *Rhodoferax ferrireducens* sp. Nov., a psychrotolerant, facultatively anaerobic bacterium that oxidizes acetate with the reduction of Fe(III). *International Journal of Systematic and Evolutionary Microbiology* **53(3),** 669–673 (2003).
10. Lovley, D. *et al. Geobacter metallireducens* gen. nov. sp. Nov., a microorganism capable of coupling the complete oxidation of organic compounds to the reduction of iron and other metals. *Archives of Microbiology* **159(4),** 336–344 (1993).
11. Dawood, Z. & Brözel, V. Corrosion-enhancing potential of *Shewanella putrefaciens* isolated from industrial cooling waters. *Journal of Applied Microbiology* **84,** 929–936 (1998).
12. Hedrich, S., Schlömann, M. & Barrie Johnson, D. The iron-oxidizing proteobacteria. *Microbiology* **157,** 1551–1564 (2011).
13. Tebo, B., Johnson, H., McCarthy, J. & Templeton, A. Geomicrobiology of manganese(II) oxidation. *TRENDS in Microbiology* **13(9),** 421–428 (2005).
14. Friedrich, C. Physiology and Genetics of Sulfur-oxidizing Bacteria. *Advances in Microbial Physiology* **39,** 235–289 (1997).
15. Yang, Z., Stoven, K., Haneklaus, S., Singh, B. & Schnug, E. Elemental Sulfur Oxidation by *Thiobacillus* spp. and Aerobic Heterotrophic Sulfur –Oxidizing Bacteria. *Pedosphere* **20(1),** 71–79 (2010).
16. Janasch, H., Wirsen, C., Nelson, D. & Robertson, L. *Thiomicrospira crunogena* sp. Nov., a Colorless, Sulfur-Oxidizing Bacterium from a Deep-Sea Hydrothermal Ven. *International Journal of Systematic and Evolutionary Microbiology* **35(4),** 422–424 (1985).
17. Berben, T., Overmars, L., Sorokin, D. & Muyzer, G. Diversity and Distribution of Sulfur Oxidation-Related Genes in *Thioalkalivibrio*, a Genus of Chemolithoautotrophic and Haloalkaliphilic Sulfur-Oxidizing Bacteria. *Frontiers in Microbiology* (2019).

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18. Ward, B. Chapter Thirteen – Measurement and Distribution of Nitrification Rates in the Oceans. *Methods in Enzymology* **486,** 307–323 (2011).
19. Strous, M. & Jetten, M. Anaerobic oxidation of methane and ammonium. *Annual Review of Microbiology* **58,** 99–117 (2004).
20. Karlsson, R., Karlsson, A., Bäckman, O., Johansson, B. & Hulth, S. Identification of key proteins involved in the anammox reaction. *FEMS Microbiology Letters* **297(1),** 87–94 (2009).
21. Jimenez Vicente, E. & Dean, D. Keeping the nitrogen-fixation dream alive. *PNAS* **114(12),** 3009–3011 (2017).
22. Philippot, L. Denitrifying genes in bacterial and Archaeal genomes. *Biochimica et Biophisica Acta* **1577(3),** 355–376 (2002).
23. Kurth, J., Op den Camp, H. & Welte, C. Several ways one goal-methanogenesis from unconventional substrates. *Applied Microbiology and Biotechnology* **104,** 6839–3854 (2020).
24. Bengelsdorf, F. *et al.* Chapter Four - Bacterial Anaerobic Synthesis Gas (Syngas) and CO2+H2 Fermentation. *Advances in Applied Microbiology* **103,** 143–221 (2018).
25. Cabrol, L. *et al.* Microbial ecology of fermentative hydrogen producing bioprocesses: useful insights for driving the ecosystem function. *FEMS Microbiology Reviews* **41(2),** 158–181 (2017).
26. Meckenstock, R. U., Krieger, R., Ensign, S., Kroneck, P. M. & Schink, B. Acetylene hydratase of Pelobacter acetylenicus. Molecular and spectroscopic properties of the tungsten iron-sulfur enzyme. *European Journal of Biochemistry* **264(1),** 176–182 (1999).
27. Kroneck, P. M. H. Acetylene hydratase: a non-redox enzyme with tungsten and iron-sulfur centers at the active site. *Journal of Biological Inorganic Chemistry* **21(1),** 29–38 (2016).

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