Environmental Remediation Group

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SENT VIA OVERNIGHT COURIER

Originally Submitted: February 28, 2025
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Taylor Monnin
Division of Environmental Remediation
New York State Department of Environmental Conservation
700 Delaware Avenue, Buffalo, NY 14209

Re: Charles Gibson Site, Niagara Falls, New York
Site No. 932063
Annual Periodic Review Report – 2024
Post Closure Operation, Maintenance, and Monitoring Activities

Dear Taylor Monnin:

Olin hereby submits the 2024 Annual Periodic Review Report on the Post-Closure Operation, Maintenance, and Monitoring activities for the Charles Gibson Site. The annual certification is included as part of the attached report.

Please direct any questions or comments to me at (423) 508-2768 or by email at abcarringer@olin.com.

Sincerely,
OLIN CORPORATION

Adam Carringer, CHMM
Sr. Environmental Specialist

Charles Gibson Site
Site No. 932063
2024 Periodic Review Report

Revision 1
February 26, 2025

Prepared for:

New York State Department of Environmental Conservation
Division of Environmental Remediation
700 Delaware Avenue
Buffalo, NY 14209

Prepared by:

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On behalf of:

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1 Introduction

This Periodic Review Report (PRR) presents an assessment of Remedial Action Objectives (RAOs) for the Charles Gibson Site (the Site) in Niagara Falls, New York. New York State Department of Environmental Conservation (NYSDEC) reduced the status of the Site in the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites in 1993 from 2 (poses significant threat to the public health- action required) to 4 (Site property closed- requires continued management) due to the successful lining and capping of the Site and the beginning of the Long-Term Monitoring Program (LTMP). The implementation of the LTMP is required under this site designation. In accordance with the Site Management Plan (SMP), a PRR is provided annually to assure that the RAOs are maintained and that the Site Institutional Controls/Engineering Controls (IC/ECs) remain effective in protecting the public health and environment. **Table 1-1** outlines the sampling and analysis plan agreed upon with NYSDEC to satisfy the LTMP. This PRR will discuss the protections in place and their effectiveness over the 2024 Certifying Period.

1.1 Site Description

The Site incorporates approximately two acres bounded to the east and north by Cayuga Creek, to the west is Tuscarora Road and to the south the Niagara Mohawk Power Corporation right-of-way and the Auto Zone Incorporated auto parts store and parking lot. The Site is a capped landfill that is slightly mounded with the center of the capped area essentially flat. The capped area is enclosed by a chain link fence. A wooden privacy fence is immediately next to and outside of the chain link fence on portions of the perimeter. **Figures 1-1** and **1-2** show an overview the Site and the IC/ECs.

As written in the SMP, the eastern portion of the Site was originally low-lying marsh land; the western portion contained a residence that is no longer present. In 1957, the Site was filled with chemical wastes from manufacturing, soil, and building debris. The chemical wastes consisted of two main sources: approximately 400 metal drums containing hexachlorobenzene (HCB), used as a fungicidal by-product from related chemical syntheses, and approximately 100 tons of hexachlorocyclohexane (BHC) residue in the form of alpha-beta cake. A 1981 test indicated levels of contamination up to 7.7% in soil samples from the Site; analyses of surface water and sediment from the on-site portion of Cayuga Creek did not reveal contamination at that time. However, after a Remedial Investigation (RI) was completed in 1989, it was determined that Site soil and groundwater were

impacted by the Site contaminants. A Feasibility Study (FS) was completed in 1988 which concluded that the most significant risk of exposure to Site contaminants was via shallow groundwater discharge to Cayuga Creek.

1.2 Remediation Chronology

Construction of the remedy on the Site concluded in 1990. A summary of remedial measures implemented at the Site in 1989 and 1990 included:

- Excavation of a new creek channel on the eastern portion of the Site, stabilization of the new channel using geotextile, and construction of new stream banks with riprap.
- Stabilization of the former creek bed with shot rock, pieces of concrete, excavated soil from on-site trenching, and structural fill.
- Installation of a leachate collection system consisting of a 6-inch chlorinated polyvinyl chloride (CPVC) drain pipe in a 4-foot trench along the southern through western banks of the creek and lined with stabilizing geotextile and coarse drainage aggregate stone, two manholes on the northeastern and southeastern corners of the Site with related pipe connections.
- Installation of a fully circumscribing soil-bentonite slurry barrier wall from the original site grade into the underlying red-brown clay layer to serve as a physical deterrent to infiltration of Site groundwater into the Cayuga Creek.
- Capping of the landfill with compacted clay, two 40-millimeter layers of flexible membrane lining (FML) with welded seams, 110-millimeter geotextile, 40-millimeter geotextile to prevent infiltration of precipitation through the waste.
- Placement of topsoil and seeding the capped area.
- Installation of a perimeter chain-link fence and wood privacy fence along portions of the Site readily visible to the public.
- Implementation of a long-term monitoring program (LTMP).

In 1990 following the remedial construction, a Closure Certification Report was issued. NYSDEC approved an Operations and Maintenance (O&M) Manual, and a Release of Liability was issued for the Site in 1992, stating field investigation and remediation implementation were complete, but requiring Olin to continue to monitor the effectiveness of the remedy into the future.

The first year of O&M of the containment remedy for the Site and the groundwater monitoring program was 1993. In 1997, a direct discharge line was installed, routing collected leachate to the local sanitary sewer system. Waters collected in the Site perimeter collection drain system were managed by direct discharge to the Niagara Falls Wastewater Treatment Facility (WWTF). Until 1999, the Site held a

City discharge permit; the Site was later reclassified as a commercial/small industrial/residential user (CSIRU) and does not require a permit.

Further details pertaining to the remedial actions on the Site can be found in the SMP.

2 Remedy Performance, Effectiveness, and Protectiveness

The work performed for the Site during 2024 was reviewed and found to be in accordance with the approved O&M Manual (Revised 2019), and the SMP approved by NYSDEC on July 17, 2020. Groundwater monitoring indicates there are no increased concentrations of the Site compounds being monitored. Evaluation of the groundwater elevation data generated during the 2024 monitoring year indicates that the containment remedy is effective. Drawdown in both manholes was effectively maintained. Based on these observations, the Site IC/ECs appear to be effective in protecting human health and the surrounding environment. The IC/EC Certification Form for this Certifying Period is included in **Appendix A**.

3 IC/EC Plan

Since remaining contamination exists at the Site, IC/ECs are required to protect human health and the environment. Below is a brief summary of the IC/EC Plan, which describes the procedures for the implementation and management of all IC/ECs at the Site. Details of the IC/EC Plan can also be found in the SMP.

3.1 IC/EC Requirements

A series of ICs is required by the SMP to: (1) maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination; and, (3) limit the use and development of the Site to existing uses only. Details of ICs are outlined in the SMP.

IC/ECs include the following:

- Landfill Cover System that is comprised of a landfill cap, slurry wall barrier, and leachate/groundwater collection system.
- Excavation Work Plan (EWP) to be implemented in the event the cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed.
- Groundwater sampling activities to monitor Site water quality.
- Groundwater elevation monitoring to verify Landfill Cover System maintains inward gradients.
- A chain link fence to secure the Site from unauthorized access.

Details on the operation and maintenance of the ECs are provided in O&M Plan included with the SMP.

3.2 Assessment of IC/EC

Based on quarterly inspections, the Landfill Cover System remains active and intact. Quarterly inspection documentation can be reviewed in **Appendix B.** All ECs are of acceptable condition however, the following was observed during inspections:

- On March 12, 2024, evidence of a small fire was observed beneath the trees outside the fence line. The age and cause of the fire is unknown. Old clothing

and other litter were observed next to the ashes and were cleaned up by the field team. No further action was required.

Verification of the effectiveness of the Landfill Cover System is performed through the quarterly site inspections and measurement of groundwater elevations of piezometers (P-1 through P-6) and Manhole A and B during the quarterly inspections. Groundwater elevations demonstrate that the hydraulic control system remains in place, effectively controlling groundwater flow direction (see **Figures 3-1a, 3-1b, 3-1c** and **3-1d**). Piezometers P-1, P-3, and P-5 are located outside of the slurry wall that runs along the perimeter of the Site. Piezometers P-2, P-4, and P-6 are inside the slurry wall and paired opposite the three piezometers outside the slurry wall. Leachate collected along the inside perimeter of the slurry wall is routed to Manhole A then Manhole B. A submersible sump pump, installed at the bottom of Manhole B, is set to turn on when groundwater reaches 563.32 feet above mean sea level (msl), and turn off when groundwater falls to 560.34 feet above msl. The depth to water for Manholes A and B are measured to see that they are less than or equal to 14.07 feet and 17.07 feet, respectively, indicating that the automatic sump pump is functioning.

Water level elevations are measured by means of an acoustical sounder or electronic water level probe. The sounder or probe is lowered into the manhole or piezometer until it makes contact with the free water surface. The depth from the top of the piezometer riser pipe or manhole rim to the water surface is measured to an accuracy of 0.01 ft. Depth to water measurements is converted into mean sea level elevations by referring to the surveyed elevation of the top of the piezometer riser pipe or manhole rim provided on the Groundwater Elevation Form. A summary of 2024 and historical groundwater elevations are shown in **Tables 3-1** and **3-2** and are visualized in graphs shown in the **Figure** series **3-2a-c, 3-3a-c, 3-4a-c** and **3-5**. The slurry wall elevation is also depicted on these figures for reference. Because the slurry wall elevation varies slightly depending on location, the elevation in the area near the applicable piezometer pair is used in each figure. For Figure 3-5, the slurry wall elevation depicted is the average of the elevations near Manhole A and Manhole B. The data presented in the forementioned Tables and Figures verify that groundwater elevations in MHB never exceeded 563.32 feet above msl during the Certifying Period and therefore the pump system is working correctly. In addition, elevation data shows fluctuations consistent with historical data.

Currently there are no outstanding maintenance items to be addressed. No excavations, change of use, or groundwater use occurred during the Certifying Period.

3.3 Certification

IC/EC certification is included in **Appendix A.**

4 Monitoring and Sampling Plan Compliance Report

4.1 Components of Monitoring and Sampling Plan

Operation, maintenance, and monitoring activities to be performed are presented in **Table 1-1** and include:

- Sitewide inspection of IC/ECs (See Section 4)
- Monitoring of the Landfill Cover System (See Section 4)
- Maintaining the current groundwater level monitoring system for the Site consisting of six piezometers (P-1 through P-6) and two manholes (A and B) to verify the inward hydraulic gradient within the capped area (See Section 4)
- Collecting sediment samples annually during "low water" periods from sediment traps located upstream and downstream of the Site. This includes an additional sample adjacent to a remediated portion of the Cayuga Creek bed.
- Remedial system sampling – routinely collecting water samples from Manhole B.
- Annual monitoring well sampling of upgradient and downgradient wells in accordance with the SMP to monitor groundwater quality at the Site.

4.2 Summary and Comparison to Remedial Objectives

The isolation of groundwater within the capped area has been established and is being maintained by current operation and maintenance activities. The groundwater monitoring and sampling is performed on an annual basis in rotating quarters to help assess seasonal variability with groundwater sampling field parameters presented in **Appendix B**.

Tables 4-1 through 4-2 present analytical results for monitoring wells, manholes, and sediment sampling locations. Groundwater results are screened against the Class GA groundwater effluent limitations as established by 6CRR-NY 703.6 and sediment results are compared to guidance values for Class A freshwater sediments as established by NYSDEC *Screening and Assessment of Contaminated Sediment*,

Table 5.[1] Non-detect results are reported as less than the laboratory reporting limits (RLs), which for certain parameters are higher thanscreening criteria values. Data usability issues may be present in the instance where the non-detect values RLs are greater than the screening criteria. Future laboratory analysis will be performed to method detection limits (MDLs) below the allowable limits wherever possible.

4.2.1 Groundwater Results

Groundwater samples are taken from three locations offsite to verify that Site contaminants is not migrating. Collection intervals are taken on alternating seasons annually, this reporting period was during the Fall. Monitoring well MW-A3 had insufficient water volume and was therefore not sampled. Samples were initially collected in September 2024, but were resampled in October, due to missed sampling for BHC analysis in MHB. Required results for HCB are reflected in the September analysis, and results for BHC are reflected in the October analysis for this Certifying Period. Samples are collected after purging three well casing volumes using a peristaltic pump with dedicated tubing.

The Fall 2024 data show no detections in any of the groundwater monitoring locations offsite except for the sample collected in September at MW-4 which was reported 0.001 µg/L above the RL and flagged as qualified. **(See Table 4-1**). Further information about the September MW-4 sample qualifier can be found in the Data Evaluation Narrative. (Appendix C).

An additional sample is taken from Manhole B to verify that the system is capturing contaminants within the capped area and to monitor concentrations over time. HCB in Manhole B is only required to be analyzed every 5 years and is anticipated to be sampled in 2026.

During this Certifying Period, delta-BHC was the only detection with a concentration of 1.8 µg/L. This is a decrease from the last sampling event in the spring of 2023. Fall 2024 results for Manhole B are presented in **Table 4-1.**

4.2.2 Sediment Results

Currently two sediment locations are sampled: one immediately upstream of the Site and one downstream. These locations are sampled once per year, in the Fall or 'low water' period. Beginning with the October 2000 sample event, annual creek sediment samples have been analyzed for BHC isomers only. The downstream sample was collected in September 2024, however there was insufficient volume to run the analysis; therefore, no results are provided.

The Fall 2024 data from the upstream sediment sample showed no detections, which is consistent with historical results (See **Table 4-2**).

[1] NYSDEC (New York Department of Environmental Conservation). 2014. *Screening and Assessment of Contaminated Sediment*. Division of Fish, Wildlife and Marine Resources Bureau of Habitat. June 14, 2014. Accessed February 27, 2025. https://extapps.dec.ny.gov/docs/fish_marine_pdf/screenasssedfin.pdf.

4.2.3 Groundwater Elevations

Water elevation data collected from the piezometers and manholes were used to determine whether an inward hydraulic gradient exists. Gradient direction was evaluated by comparing water level elevation measurements within the slurry wall. The groundwater elevation data indicates that groundwater within the slurry wall is consistent with historical data and remains at lower elevation of the slurry wall through the four quarters.

The elevation data collected in September for P-2 was considered anomalous and was considerably higher than the seasonal average elevation. It is assumed that there is an error in the measurement considering the abnormal nature of the value. Therefore, the seasonal average elevation value from 2008 through 2023 for September was used at this location to generate contouring in Figure 3-1c and reflected in Tables 3-1 and Table 3-2a.

An evaluation of data from the piezometer pairs at the Site indicates that historically an inward gradient toward the leachate capture system exists during all seasons and groundwater elevations never exceed above the top of the slurry wall. An evaluation of the seasonal trends from 2008 through 2024 shows that the spring elevations have remained consistent with all piezometers (**Table 3-2**). Piezometers P-1 and P-2 observe an outward gradient historically during both seasons; however, neither elevation observed reached above the slurry wall elevation. Furthermore, the nearby Manhole A groundwater elevation would indicate that an inward gradient toward the leachate collection system is still maintained. The fall data has shown elevations within the slurry wall have remained consistent and remained below the slurry wall elevation during the Certifying Period. This is further evidence that the remedy has remained effective. Potentiometric maps shown in **Figures 3-1a-d** support effective remedy of continued inward capped area gradient toward the leachate collect system. Groundwater elevations from piezometers outside the slurry wall did not exceed the top of the slurry wall elevation during the Certifying Period; therefore, no groundwater from outside the capped area was captured.

Historical and 2024 elevation data are presented in **Tables 3-1** and **3-2** and are visualized in graphs, including the slurry wall elevations, shown in the **Figure series 3-2a-c, 3-3a-c, 3-4a-c** and **3-5**.

4.3 Deficiencies

None

4.4 Recommendations for Changes

No recommendations. Conditions at the Site are stable.

5 Operation & Monitoring (O&M) Plan Compliance Report

5.1 Components of the O&M Plan

Site remediation requirements have been met by Olin through rerouting of Cayuga Creek around and away from the waste, by constructing a fully circumscribing soil/bentonite slurry wall barrier, and through installing a double flexible membrane liner cap as part of the final cover with a perimeter collection drain system. The O&M Plan safeguards that remedy and provides for monitoring of the Site in compliance with the Settlement Agreement.

Quarterly inspections of the Site are conducted to identify potential problems with physical deterioration of structures, identify possible malfunctions of the slurry wall or of the perforated chlorinated polyvinyl chloride (CPVC) drain system, and to check that all Site remedial measures components are operating effectively, in accordance with the Settlement Agreement.

The Environmental Inspector conducts the inspections to confirm that the remedial measures at the Site remain operative. Additionally, the inspections address the safeguards to control, minimize or eliminate threats to human health and the environment. Operation, maintenance, and monitoring activities are conducted to identify proposed changes to the O&M Manual or Site procedures that may provide a safer and/or more efficient and cost-effective operation.

Recordkeeping is conducted for each Site visit and inspection which can be found in **Appendix B.**

5.2 O&M Summary

The groundwater collection system is inspected for the buildup of hard or soft scale-like deposits. The inspection is performed concurrently with inspection of the capped area. No components of the groundwater collection system werefound to be damaged or malfunctioning; therefore, no need for repairs or replacement were identified.

The capped area is mowed on a regular basis to prevent establishment of woody vegetation. The capped area functions as designed and complies with the O&M Plan.

Inspections are conducted using the items listed on the Site Inspection Form presented in **Appendix B**. Information to be entered on these forms includes the inspector's name, date, time of inspection, item inspected, and comments. The inspector indicates on the forms whether the condition of each item was acceptable or unacceptable to confirm that the requirements of the O&M Plan are fulfilled. The scheduled Site monitoring inspections are performed by a qualified individual assigned to inspect the items and systems noted on the Site Inspection Form. The completed Site Inspection Forms are maintained at Olin Environmental Remediation offices in Cleveland, TN. Inspections are performed, at a minimum, on a quarterly basis.

5.3 Evaluation of Remedial Systems

All components are performing as designed. Manhole B sump was online for the entire Certifying Period.

5.4 O&M deficiencies

None. There are no outstanding maintenance items.

5.5 Conclusions

The O&M system is being run and maintained properly and does not require additions or modifications at this time.

6 Overall PRR Conclusions and Recommendations

6.1 Compliance with SMP

Based on information provided in Sections 3, 4 and 5 Olin has adhered to the requirements outlined in the SMP. There is no new exposure pathways present at the Site, and additional plans/modifications are not necessary.

6.2 Remedy Effectiveness

The groundwater elevation data indicates that groundwater within the capped area is consistent with historical data and is being maintained by current operation and maintenance activities.

Review of the groundwater elevation data also indicates that inward hydraulic gradients were observed between piezometers within the capped area and piezometers outside of the capped area with previously noted exceptions. Fluctuations of groundwater elevations indicate that minor outward hydraulic gradients historically occur but do not exceed the slurry wall elevations and fluctuations remain relatively stable in comparison to those outside the slurry wall.

There are no observations indicating impact to the adjacent Cayuga Creek bed, as the sediment sample results indicate non-detections in samples collected historically.

Based on the data developed to date, the remedy has been effective in attaining the remedial objectives.

6.3 Recommendations

Historically, O&M activities, inspections and sampling activities yield expected results which ultimately conclude that remedial measures remain effective over a long-term monitoring program. In addition, the Site has historically improved since the implementation of Site remedies, as evidenced by the allowance of directly discharging Site wastewater to the Niagara Falls WWTP and the downgrading of the Site to a NYSDEC Registry of Inactive Hazardous Waste Disposal Sites Level 4. The Site does not pose an immediate threat to human health or the environment with the current remedy in place.

Hydraulic control continues to be maintained on Site, and recent groundwater and sediment data are generally non-detect or below guidance values, a reduction in sampling locations, parameters, and/or frequency may be warranted. Olin will perform an evaluation of historical groundwater and sediment data and prepare a Monitoring Optimization Request for NYSDEC approval, with a goal of establishing a reduced LTMP.

6.4 Future Submittals

Future submittals of this report will continue to be submitted annually, typically on or around March 1 of each year, as dictated by NYSDEC.

Tables

TABLE 1-1
CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

SAMPLING AND ANALYSIS PLAN

Requirement	Element	Frequency
Inspections	Fencing, gates, and Site access	Quarterly
	Monitoring well integrity	
	Landfill Cover System	
Monitoring	Hydraulic Monitoring	Quarterly
	Manhole B water samples	Annual (BHC Isomers) Every 5 Years (HBC)
	Monitoring wells MW-A3, MW-4, MW-5	Annual (BHC Isomers) Biennial (HBC)
Maintenance	Pump maintenance	As needed
	Landfill cover mowing	Annual
Reporting	Periodic Review Report	Annual

Notes:
BHC = hexachlorocyclohexane
HCB = hexachlorobenzene

TABLE 3-1
CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

GROUND WATER ELEVATIONS
ELEVATION MEASUREMENTS 2008-2024

Groundwater Elevations (Feet Above Mean Sea Level)

	PIEZOMETER							
DATE	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**MHA**	**MHB**
MP	**572.86**	**575**	**574.18**	**576.4**	**575.09**	**578.34**	**575.27**	**577.41**
2/13/2008	NA	NA	NA	NA	NA	NA	NA	NA
4/3/2008	565.44	565.50	567.55	565.44	569.84	567.99	564.13	564.17
9/11/2008	566.13	565.28	566.31	565.20	568.37	567.39	564.11	564.23
11/5/2008	565.46	565.24	566.52	565.17	568.76	567.43	563.81	563.89
2/13/2009	NA	NA	NA	NA	NA	NA	NA	NA
4/2/2009	565.46	565.43	566.81	565.34	569.11	567.77	563.97	564.03
9/17/2009	566.37	565.42	566.51	565.29	568.60	567.58	563.67	563.74
11/23/2009	565.31	565.29	566.41	565.24	568.70	567.37	563.52	563.61
3/3/2010	565.27	565.42	566.18	565.22	568.83	567.57	563.77	563.84
4/14/2010	565.72	565.46	567.05	565.19	569.45	567.77	564.02	564.09
9/17/2010	566.40	565.20	564.91	565.07	567.23	566.93	564.20	563.68
11/11/2010	564.53	565.16	565.57	565.02	567.40	566.78	563.82	563.88
3/9/2011	565.05	565.49	568.11	565.42	569.75	567.88	563.94	564.03
4/19/2011	565.50	565.48	567.74	565.26	569.46	567.77	564.01	564.15
9/22/2011	565.54	565.28	565.11	565.18	567.27	567.09	563.42	563.46
11/8/2011	565.33	565.41	567.41	565.28	568.77	567.53	563.32	563.40
3/15/2012	565.36	565.54	568.25	565.34	569.23	567.75	564.21	567.27
5/22/2012	566.01	565.50	567.40	565.46	569.01	567.75	563.40	563.49
9/17/2012	564.50	565.26	564.37	565.16	566.77	566.80	563.47	563.53
11/9/2012	564.51	565.38	568.28	565.22	568.40	567.25	563.62	563.99
3/6/2013	565.32	565.54	569.56	565.34	569.35	567.83	563.92	564.09
5/13/2013	565.63	565.43	567.74	565.24	568.75	567.63	563.67	563.73
9/18/2013	565.62	565.33	566.04	565.26	567.79	567.24	563.29	563.33
11/6/2013	565.35	565.51	569.11	566.09	569.17	567.70	563.36	563.42
3/18/2014	565.34	565.49	569.24	565.19	569.35	567.76	563.86	563.89
5/9/2014	565.50	565.50	568.44	565.35	569.36	567.82	563.83	563.91
9/18/2014	565.54	566.88	565.37	568.55	567.76	567.17	563.27	563.32
12/8/2014	566.65	565.08	568.15	565.15	568.14	566.86	563.50	563.56
3/11/2015	565.15	564.68	567.45	565.15	568.39	567.07	568.80	563.89
5/27/2015	565.84	565.53	566.71	565.44	568.46	567.49	563.84	563.83
9/1/2015	565.16	565.41	565.17	565.49	567.46	577.07	563.51	563.54
11/10/2015	564.97	565.40	566.11	565.34	568.92	567.07	563.67	563.76
3/8/2016	565.08	565.67	570.39	565.46	569.34	567.67	563.51	563.59
5/27/2016	565.87	565.56	567.24	565.50	568.60	567.88	563.94	563.48
9/8/2016	564.27	565.37	563.95	565.33	566.18	566.53	563.32	563.49
11/11/2016	563.28	565.11	565.17	565.17	565.44	566.13	563.36	563.39
3/7/2017	565.22	565.58	570.75	565.37	568.68	567.07	563.64	563.74
5/30/2017	566.00	566.31	568.71	565.43	569.09	567.63	563.57	563.63
9/6/2017	565.12	565.48	565.88	565.49	566.60	567.33	563.40	563.49

Key at end of table.

Groundwater Elevations (Feet Above Mean Sea Level)

PIEZOMETER								
DATE	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**MHA**	**MHB**
MP	**572.86**	**575**	**574.18**	**576.4**	**575.09**	**578.34**	**575.27**	**577.41**
11/21/2017	565.01	565.51	569.92	565.43	569.24	567.60	563.52	563.60
3/13/2018	565.64	565.54	568.64	565.49	568.26	567.77	563.77	563.79
5/24/2018	565.90	565.53	567.21	565.35	568.70	567.57	563.24	563.31
9/25/2018	564.33	565.34	563.86	569.13	566.20	567.12	563.10	563.14
11/18/2018	563.33	565.19	568.91	568.16	568.85	566.57	563.21	563.25
3/7/2019	565.52	565.58	567.96	567.75	569.08	567.67	563.90	563.99
5/21/2019	566.11	565.58	568.87	565.46	569.43	567.88	563.63	563.69
9/24/2019	564.91	565.35	564.71	565.22	567.90	567.17	562.94	563.03
11/6/2019	564.74	565.40	567.51	565.19	568.85	567.36	563.08	563.14
3/19/2020	565.57	566.69	568.44	566.59	569.24	567.78	566.53	566.62
5/18/2020	566.49	565.55	567.55	565.51	568.85	567.58	560.67	560.72
9/22/2020	563.89	565.36	563.63	565.19	566.49	566.62	561.88	561.98
11/12/2020	563.02	565.17	562.54	564.89	565.75	566.16	562.03	562.09
3/17/2021	563.99	570.51	567.72	565.28	568.79	567.12	562.61	562.66
5/12/2021	565.47	565.44	568.11	565.18	568.62	567.15	562.87	562.94
9/20/2021	564.73	565.48	564.28	565.78	567.75	567.13	562.81	562.90
11/8/2021	565.18	565.54	567.7	565.49	569.17	567.68	562.81	562.90
3/16/2022	565.39	565.57	570	565.53	569.34	567.66	563.04	563.14
5/18/2022	565.85	565.58	567.36	565.46	568.85	567.58	563.02	563.09
9/20/2022	564.37	565.39	563.76	565.3	566.73	566.68	563.18	563.25
11/17/2022	564.45	565.31	567.26	565.49	568.01	566.99	563.01	563.06
3/15/2023	565.36	565.57	568.43	565.79	569.54	567.79	562.97	563.3
5/18/2023	565.86	565.59	567.17	565.77	568.76	567.54	563.06	563.12
8/22/2023	565.41	565.4	565.38	565.31	567.54	566.95	562.78	563.04
11/15/2023	563.92	565.28	563.63	565.21	567.29	566.7	563.16	563.24
3/12/2024	565.16	565.21	567.96	565.74	568.85	567.55	563.07	563.13
5/14/2024	565.7	565.54	566.7	565.49	568.75	567.6	563.11	563.14
9/4/2024	566.02	***565.45***	567.98	565.4	568.07	567.17	563.1	563.16
11/15/2024	563.56	565.34	562.86	565.31	567.09	566.67	563.1	563.17

Notes:

MP - Measuring Point

NA - Not Available

2024 Certifying Period

The seasonal average groundwater elevation from 2008 – 2023 was used due to an anomalous reading during September. The measurement taken in the field was 568.5

TABLE 3-2
CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

SEASONAL GROUND WATER ELEVATIONS
ELEVATION MEASUREMENTS 2008-2024

Seasonal Groundwater Elevations (Feet Above Mean Sea Level)

PIEZOMETER - Spring								
DATE	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**MHA**	**MHB**
2/13/2008	NA	NA	NA	NA	NA	NA	NA	NA
4/3/2008	565.44	565.50	567.55	565.44	569.84	567.99	564.13	564.17
2/13/2009	NA	NA	NA	NA	NA	NA	NA	NA
4/2/2009	565.46	565.43	566.81	565.34	569.11	567.77	563.97	564.03
3/3/2010	565.27	565.42	566.18	565.22	568.83	567.57	563.77	563.84
4/14/2010	565.72	565.46	567.05	565.19	569.45	567.77	564.02	564.09
3/9/2011	565.05	565.49	568.11	565.42	569.75	567.88	563.94	564.03
4/19/2011	565.50	565.48	567.74	565.26	569.46	567.77	564.01	564.15
3/15/2012	565.36	565.54	568.25	565.34	569.23	567.75	564.21	567.27
5/22/2012	566.01	565.50	567.40	565.46	569.01	567.75	563.40	563.49
3/6/2013	565.32	565.54	569.56	565.34	569.35	567.83	563.92	564.09
5/13/2013	565.63	565.43	567.74	565.24	568.75	567.63	563.67	563.73
3/18/2014	565.34	565.49	569.24	565.19	569.35	567.76	563.86	563.89
5/9/2014	565.50	565.50	568.44	565.35	569.36	567.82	563.83	563.91
3/11/2015	565.15	564.68	567.45	565.15	568.39	567.07	568.80	563.89
5/27/2015	565.84	565.53	566.71	565.44	568.46	567.49	563.84	563.83
3/8/2016	565.08	565.67	570.39	565.46	569.34	567.67	563.51	563.59
5/27/2016	565.87	565.56	567.24	565.50	568.60	567.88	563.94	563.48
3/7/2017	565.22	565.58	570.75	565.37	568.68	567.07	563.64	563.74
5/30/2017	566.00	566.31	568.71	565.43	569.09	567.63	563.57	563.63
3/13/2018	565.64	565.54	568.64	565.49	568.26	567.77	563.77	563.79
5/24/2018	565.90	565.53	567.21	565.35	568.70	567.57	563.24	563.31
3/7/2019	565.52	565.58	567.96	567.75	569.08	567.67	563.90	563.99
5/21/2019	566.11	565.58	568.87	565.46	569.43	567.88	563.63	563.69
3/19/2020	565.57	566.69	568.44	566.59	569.24	567.78	566.53	566.62
5/18/2020	566.49	565.55	567.55	565.51	568.85	567.58	560.67	560.72
3/17/2021	563.99	570.51	567.72	565.28	568.79	567.12	562.61	562.66
5/12/2021	565.47	565.44	568.11	565.18	568.62	567.15	562.87	562.94
3/16/2022	565.39	565.57	570	565.53	569.34	567.66	563.04	563.14
5/18/2022	565.85	565.58	567.36	565.46	568.85	567.58	563.02	563.09
3/15/2023	565.36	565.57	568.43	565.79	569.54	567.79	562.97	563.3
5/18/2023	565.86	565.59	567.17	565.77	568.76	567.54	563.06	563.12
3/12/2024	565.16	565.21	567.96	565.74	568.85	567.55	563.07	563.13
5/14/2024	565.7	565.54	566.7	565.49	568.75	567.6	563.11	563.14

Notes:

NA-Not Available

2024 Certifying Period

TABLE 3-2
CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

SEASONAL GROUND WATER ELEVATIONS
ELEVATION MEASUREMENTS 2008-2024

Seasonal Groundwater Elevations (Feet Above Mean Sea Level)

PIEZOMETER - Fall								
DATE	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**MHA**	**MHB**
9/11/2008	566.13	565.28	566.31	565.20	568.37	567.39	564.11	564.23
11/5/2008	565.46	565.24	566.52	565.17	568.76	567.43	563.81	563.89
9/17/2009	566.37	565.42	566.51	565.29	568.60	567.58	563.67	563.74
11/23/2009	565.31	565.29	566.41	565.24	568.70	567.37	563.52	563.61
9/17/2010	566.40	565.20	564.91	565.07	567.23	566.93	564.20	563.68
11/11/2010	564.53	565.16	565.57	565.02	567.40	566.78	563.82	563.88
9/22/2011	565.54	565.28	565.11	565.18	567.27	567.09	563.42	563.46
11/8/2011	565.33	565.41	567.41	565.28	568.77	567.53	563.32	563.40
9/17/2012	564.50	565.26	564.37	565.16	566.77	566.80	563.47	563.53
11/9/2012	564.51	565.38	568.28	565.22	568.40	567.25	563.62	563.99
9/18/2013	565.62	565.33	566.04	565.26	567.79	567.24	563.29	563.33
11/6/2013	565.35	565.51	569.11	566.09	569.17	567.70	563.36	563.42
9/18/2014	565.54	566.88	565.37	568.55	567.76	567.17	563.27	563.32
12/8/2014	566.65	565.08	568.15	565.15	568.14	566.86	563.50	563.56
9/1/2015	565.16	565.41	565.17	565.49	567.46	577.07	563.51	563.54
11/10/2015	564.97	565.40	566.11	565.34	568.92	567.07	563.67	563.76
9/8/2016	564.27	565.37	563.95	565.33	566.18	566.53	563.32	563.49
11/11/2016	563.28	565.11	565.17	565.17	565.44	566.13	563.36	563.39
9/6/2017	565.12	565.48	565.88	565.49	566.60	567.33	563.40	563.49
11/21/2017	565.01	565.51	569.92	565.43	569.24	567.60	563.52	563.60
9/25/2018	564.33	565.34	563.86	569.13	566.20	567.12	563.10	563.14
11/18/2018	563.33	565.19	568.91	568.16	568.85	566.57	563.21	563.25
9/24/2019	564.91	565.35	564.71	565.22	567.90	567.17	562.94	563.03
11/6/2019	564.74	565.40	567.51	565.19	568.85	567.36	563.08	563.14
9/22/2020	563.89	565.36	563.63	565.19	566.49	566.62	561.88	561.98
11/12/2020	563.02	565.17	562.54	564.89	565.75	566.16	562.03	562.09
9/20/2021	564.73	565.48	564.28	565.78	567.75	567.13	562.81	562.90
11/8/2021	565.18	565.54	567.7	565.49	569.17	567.68	562.81	562.90
9/20/2022	564.37	565.39	563.76	565.3	566.73	566.68	563.18	563.25
11/17/2022	564.45	565.31	567.26	565.49	568.01	566.99	563.01	563.06
8/22/2023	565.41	565.4	565.38	565.31	567.54	566.95	562.78	563.04
11/15/2023	563.92	565.28	563.63	565.21	567.29	566.7	563.16	563.24
9/4/2024	566.02	***565.45***	567.98	565.4	568.07	567.17	563.1	563.16
11/15/2024	563.56	565.34	562.86	565.31	567.09	566.67	563.1	563.17

Notes:

NA - Not Available

2024 Certifying Period

The seasonal average groundwater elevation from 2008 – 2023 was used due to an anomalous reading during September. The measurement taken in the field was 568.5

TABLE 4-1
CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL SUMMARY
GROUNDWATER SAMPLING 2008-2024

		GV	2008		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
	Parameter		April		April	September	April	September	May	September	May	September	May	September	May	September	March	September	March	September	October
MANHOLE B	Alpha-BHC	0.01	0.03 J		0.049	0.13 U	20.4 U	0.047 U	0.047 U	0.050 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.057 U	0.054 U	0.044 U	0.046 U	NS	0.049 U
	Beta-BHC	0.04	0.066		0.04 J	0.048 U	20.4 U	0.047 U	0.047 U	0.050 U	0.047 U	0.047 U	0.047 U	0.062	0.047 U	0.25	0.13 J	0.074	0.1	NS	0.049 U
	Delta-BHC	0.04	0.072		0.17	0.20 U	1.1 J	0.047 U	0.047 U	0.053 J	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	20.2	0.054 U	0.15 J	10.1	NS	1.8
	Gamma-BHC	0.05	0.019 J		0.048 U	0.12 U	20.4 U	0.047 U	0.047 U	0.050 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.057 U	0.054 U	0.044 U	0.046 U	NS	0.049 U
	Hexachlorobenzene	0.04	NR		NR	0.49 U	NR	90.4 U	NR	NR	90.4 U	NR	NR	NR	NR	10 U	NR	90.3 U	NR	NS	NR
		GV	2008		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
	Parameter		April	September	April	September	April	September	May	September	May	September	May	September	May	September	March	September	March	September	October
MW-A3	Alpha-BHC	0.01	0.048 U	0.048 U	0.049 U	0.034 J	0.053 U	0.050 U	0.047 U	0.054	0.047 U	NS	0.047 U	NS	NS	NS	0.049 U	NS	0.046 U	NS	NS
	Beta-BHC	0.04	0.56 U	0.048 U	0.049 U	0.025 U	0.053 U	0.050 U	0.047 U	0.047 U	0.047 U	NS	0.047 U	NS	NS	NS	0.049 U	NS	0.046 U	NS	NS
	Delta-BHC	0.04	0.056 U	0.048 U	0.049 U	0.01 U	0.053 U	0.050 U	0.047 U	0.047 U	0.047 U	NS	0.047 U	NS	NS	NS	0.049 U	NS	0.046 U	NS	NS
	Gamma-BHC	0.05	0.056 U	0.048 U	0.049 U	0.029 J	0.053 U	0.050 U	0.047 U	0.047 U	0.047 U	NS	0.047 U	NS	NS	NS	0.049 U	NS	0.046 U	NS	NS
	Hexachlorobenzene	0.04	6 U	NR	NR	NS	NR	20 U	NR	90.4 U	NR	NS	NR	NS	NR	NS	NR	NS	0.046 U	NS	NS
		GV	2008		2009	2010	2011	2012													
	Parameter		April	September	April	September	April	September													
MW-1R	Alpha-BHC	0.01	0.032 J	0.015 J	0.049 U	0.038 J	0.13	0.047 U													
	Beta-BHC	0.04	0.049 U	0.05 U	0.028 J	0.045 J	0.048 U	0.047 U													
	Delta-BHC	0.04	0.025 J	0.05 U	0.049 U	0.048 U	0.048 U	0.047 U													
	Gamma-BHC	0.05	0.023 J	0.05 U	0.049 U	0.025 J	0.072	0.047 U													
	Hexachlorobenzene	0.04	5 U	NR	NR	40.7 U	NR	90.4 U													
		GV	2008		2009	2010	2011	2012													
	Parameter		April	September	April	September	April	September													
MW-2	Alpha-BHC	0.01	0.038 J	0.047 U	0.048 U	0.048 U	0.071	0.047 U													
	Beta-BHC	0.04	0.056 U	0.047 U	0.048 U	0.048 U	0.049 U	0.047 U													
	Delta-BHC	0.04	0.034 J	0.047 U	0.048 U	0.048 U	0.049 U	0.047 U													
	Gamma-BHC	0.05	0.056 U	0.047 U	0.048 U	0.048 U	0.031 J	0.047 U													
	Hexachlorobenzene	0.04	5 U	NR	NR	NS	NR	90.4 U													
		GV	2008		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
	Parameter		April	September	April	September	April	September	May	September	May	September	May	September	May	September	March	September	March	September	October
MW-4	Alpha-BHC	0.01	0.03 J	0.048 U	0.047 U	0.065 U	0.076	0.047 U	0.047 U	0.047 U	0.047 U	0.056 U	0.047 U	0.047 U	0.13	0.054 U	0.045 U	0.046 U	0.045 U	0.049 J	0.049 U
	Beta-BHC	0.04	0.037 J	0.048 U	0.047 U	0.24 U	0.048 U	0.047 U	0.047 U	0.047 U	0.047 U	0.056 U	0.047 U	0.047 U	0.047 U	0.054 U	0.045 U	0.046 U	0.045 U	0.048 U	0.049 U
	Delta-BHC	0.04	0.056 U	0.048 U	0.047 U	0.099 U	0.048 U	0.047 U	0.047 U	0.049 U	0.047 U	0.056 U	0.047 U	0.047 U	0.18	0.054 U	0.045 U	0.046 U	0.045 U	0.048 U	0.049 U
	Gamma-BHC	0.05	0.024 J	0.048 U	0.047 U	0.059 U	0.024 J	0.047 U	0.047 U	0.047 U	0.047 U	0.056 U	0.047 U	0.047 U	0.48	0.054 U	0.045 U	0.046 U	0.045 U	0.048 U	0.049 U
	Hexachlorobenzene	0.04	6 U	NR	NR	0.50 U	NR	90.4 U	NR	90.4 U	NR	10 U	NR	90.4 U	NR	11 U	NR	80.8 U	NR	9.6 U	NR
		GV	2008		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
	Parameter		April	September	April	September	April	September	May	September	May	September	May	September	May	September	March	September	March	September	October
MW-5	Alpha-BHC	0.01	0.035 J	0.017 J	0.048 U	0.030 J	0.047 U	0.047 U	0.047 U	0.050 U	0.047 U	0.056 U	0.047 U	0.047 U	0.15	0.050 U	0.050 U	0.044 U	0.046 U	0.05 U	0.049 U/0.049 U
	Beta-BHC	0.04	0.052 U	0.047 U	0.048 U	0.024 U	0.047 U	0.047 U	0.047 U	0.050 U	0.047 U	0.056 U	0.047 U	0.047 U	0.047 U	0.050 U	0.050 U	0.044 U	0.046 U	0.05 U	0.049 U/0.049 U
	Delta-BHC	0.04	0.027 J	0.018 J	0.048 U	0.031 J	0.047 U	0.047 U	0.047 U	0.050 U	0.047 U	0.056 U	0.047 U	0.047 U	0.34	0.050 U	0.050 U	0.044 U	0.045 U	0.05 U	0.049 U/0.049 U
	Gamma-BHC	0.05	0.031 J	0.0094 J	0.048 U	0.025 J	0.017 J	0.047 U	0.047 U	0.050 U	0.047 U	0.056 U	0.047 U	0.047 U	0.58	0.050 U	0.050 U	0.044 U	0.046 U	0.05 U	0.049 U/0.049 U
	Hexachlorobenzene	0.04	6 U	NR	NR	0.48 U	NR	90.4 U	NR	90.4 U	NR	10 U	NR	90.4 U	NR	11 U	NR	80.8 U	NR	9.6 U	NR

No longer required sampling per the Site Management Plan

Notes:
All values are reported in µg/L (micrograms per liter)
GV = Guidance value for Class GA groundwater effluent limitations as established by 6CRR-NY 703.6
Next Hexachlorobenzene (HCB) sampling at Manhole B(5-years) and all monitoring wells (biannually) is scheduled for 2025

Data Qualifier Definitions:
J = Estimated value
U = Not detected at reported quantitation limit
NR = Not Required
NS = Not Sampled, insufficient volume/inadvertenly not sampled
/ = sample/field duplicate
Bold value indicates estimated or detected value
Shaded value indicates exceedance of GV value

TABLE 4-2
CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

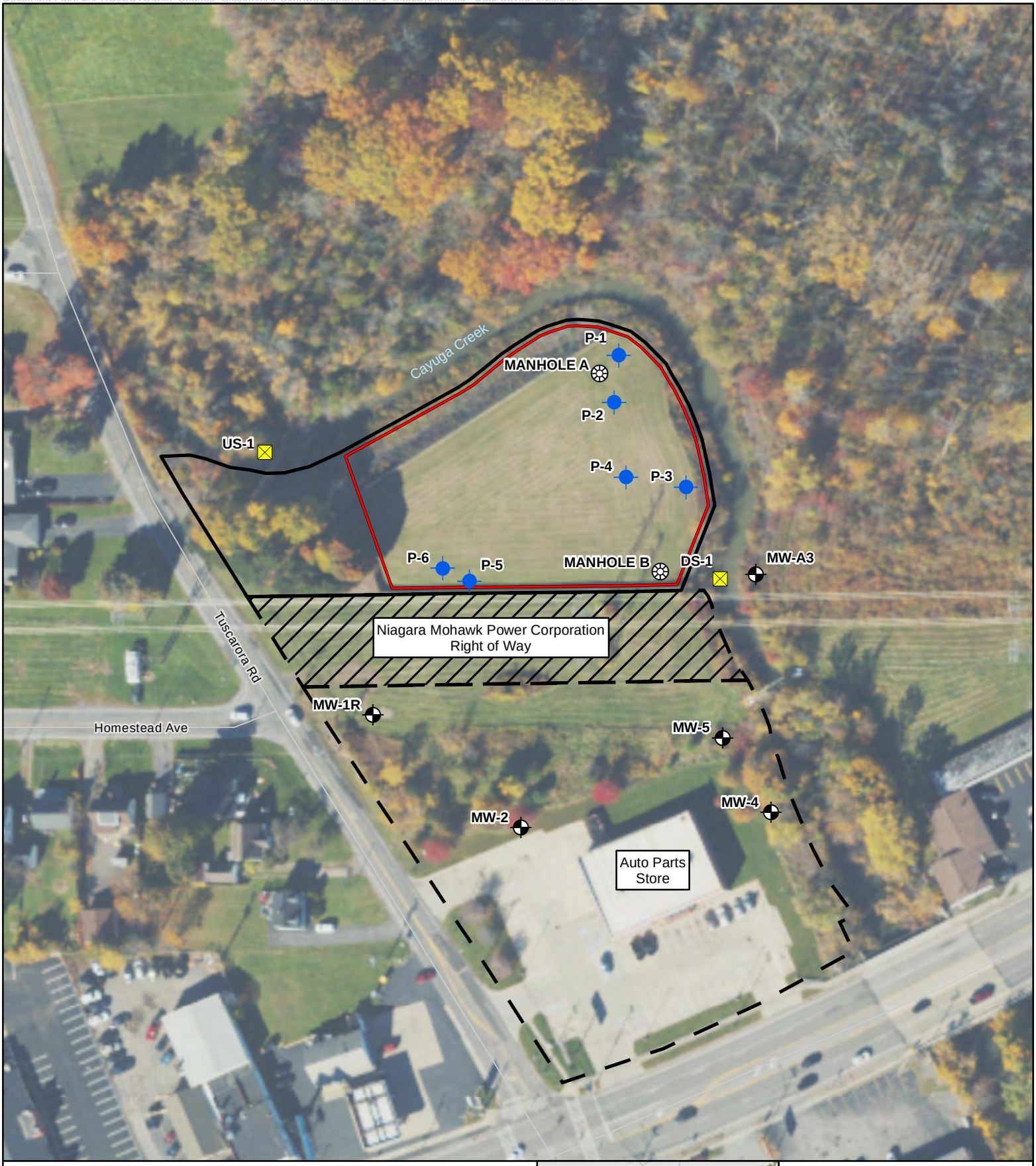
ANALYTICAL SUMMARY
ANNUAL CAYUGA CREEK SEDIMENT SAMPLING RESULTS 2010-2024

UPSTREAM		**Class A GV**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**		**2021**	**2022**	**2023**	**2024**
	Parameter		**September**	**September**	**September**	**September**	**September**	**September**	**September**	**September**	**September**	**September**	**May**	**September**	**September**	**September**	**September**	**September**
	Alpha-BHC	NA	**94/2400**	**200 J+/280**	**17 J/33 J**	**170 J/29 J**	120/54 U	NS	**9.7/8.8**	**200**	29 U/30 U	**3200**	**270 J/130 J**	32 U	150 U/160 U	66 UJ	22 U/23 U	53 U
	Beta-BHC	NA	**97/160**	**120 J+/130 J+**	**48/56**	**190 J/110 J**	**280/110**	NS	**25/21**	**190**	29 U/30 U	**1100**	**350 J/180 J**	32 U	150 U/160 U	66 U	22 U/23 U	53 U
	Delta-BHC	NA	**52 J/50 J**	**140 J+/150 J+**	**23/28**	28 U/27 U	49 U/54 U	NS	**19/16**	51 U	29 U/30 U	510 U	59 U/**54**	32 U	150 U/160 U	66 U	22 U/23 U	53 U
	Gamma-BHC	47	**33 J/52 J**	260 U/260 U	5.5 U/5.1 U	28 U/27 U	49 U/54 U	NS	5.6 U/4.9 U	51 U	29 U/30 U	510 U	59 U/47 U	32 U	150 U/160 U	66 UJ	22 U/23 U	53 U
DOWNSTREAM		**Class A GV**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**		**2021**	**2022**	**2023**	**2024**
	Parameter		**September**	**September**	**September**	**September**	**September**	**September**	**September**	**September**	**September**	**September**	**May**	**September**	**September**	**September**	**September**	**September**
	Alpha-BHC	NA	**53 J**	**230 J**	**9.8**	29 U	**55**	52 U	**7**	69 U/97 UJ	31 U	NS	73 U	40 U	NS	81 UJ/81 UJ	29 U	NS
	Beta-BHC	NA	**62 J**	**130 J**	**37**	**89**	**100**	**76**	**18**	**87 J/190 J**	31 U	NS	**110**	40 U	NS	81 U/81 U	29 U	NS
	Delta-BHC	NA	**56 J**	**170 J**	**18**	29 U	52 U	52 U	**15**	69 U/97 UJ	31 U	NS	73 U	40 U	NS	81 U/81 U	29 U	NS
	Gamma-BHC	47	11 U	310 U	5.9 U	29 U	52 U	52 U	4.9 U	69 U/97 UJ	31 U	NS	73 U	40 U	NS	81 UJ/81 UJ	29 U	NS

Notes:
All values are reported in µg/kg (micrograms per kilogram)
Class A GV = Guidance value for Class A freshwater sediments as established by NYSDEC *Screening and Assessment of Contaminated Sediment* , Table 5.
NA = Not Applicable

Data Qualifier Definitions:
J = Estimated value
J+ = Estimated value, possibly biased high
U = Not detected at reported quantitation limit
NS = Not Sampled, insufficient volume
/ = sample/field duplicate
Bold value indicates estimated or detected value
Shaded value indicates exceedance of Class A GV value

Figures



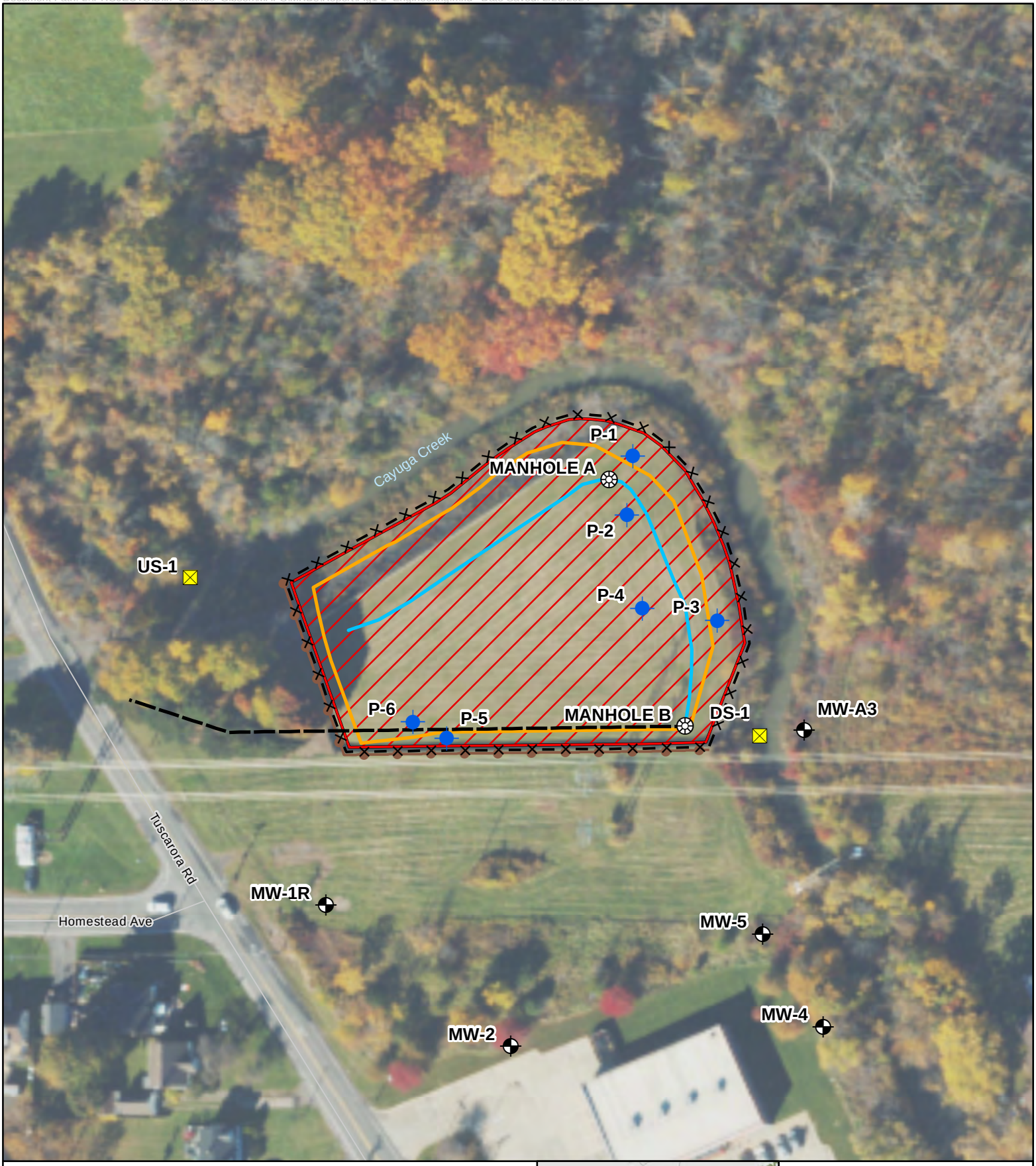
Street
Site Boundary
Former Property Boundary
Former Property Boundary (ROW)
Current Property Boundary

Monitoring Well
Piezometer
Manhole
Sediment Trap

0 75 150 Feet

Figure 1-1
Site Layout
2024 Periodic Review Report
Olin Charles Gibson

Niagara Falls, New York



- Chain Link Fence
- Direct Discharge Line to Niagara Falls Waste Water Treatment Facility
- Wooden Pickett Fence
- Drain Pipe
- Slurry Wall
- Landfill Cap
- Monitoring Well
- Piezometer
- Manhole
- Sediment Trap

0 50 100 Feet

Figure 1-2
Engineering and Institutional Control Boundaries
2024 Periodic Review Report
Olin Charles Gibson

Niagara Falls, New York

Source: WSP 2023; ESRI 2021; NYS Office of Information Technology Services GIS Program Office (GPO) 2020; USDA NAIP 2021

Groundwater Contour
Flow Direction
Direct Discharge Line to Niagara Falls Waste Water Treatment Facility
Drain Pipe
Slurry Wall
Site Boundary
Piezometer
Manhole

0 50 100 Feet

Figure 3-1a
Q1 March 12, 2024
Groundwater Potentiometric Map of Piezometer/Manhole Elevations
2024 Periodic Review Report
Olin Charles Gibson
Niagara Falls, New York

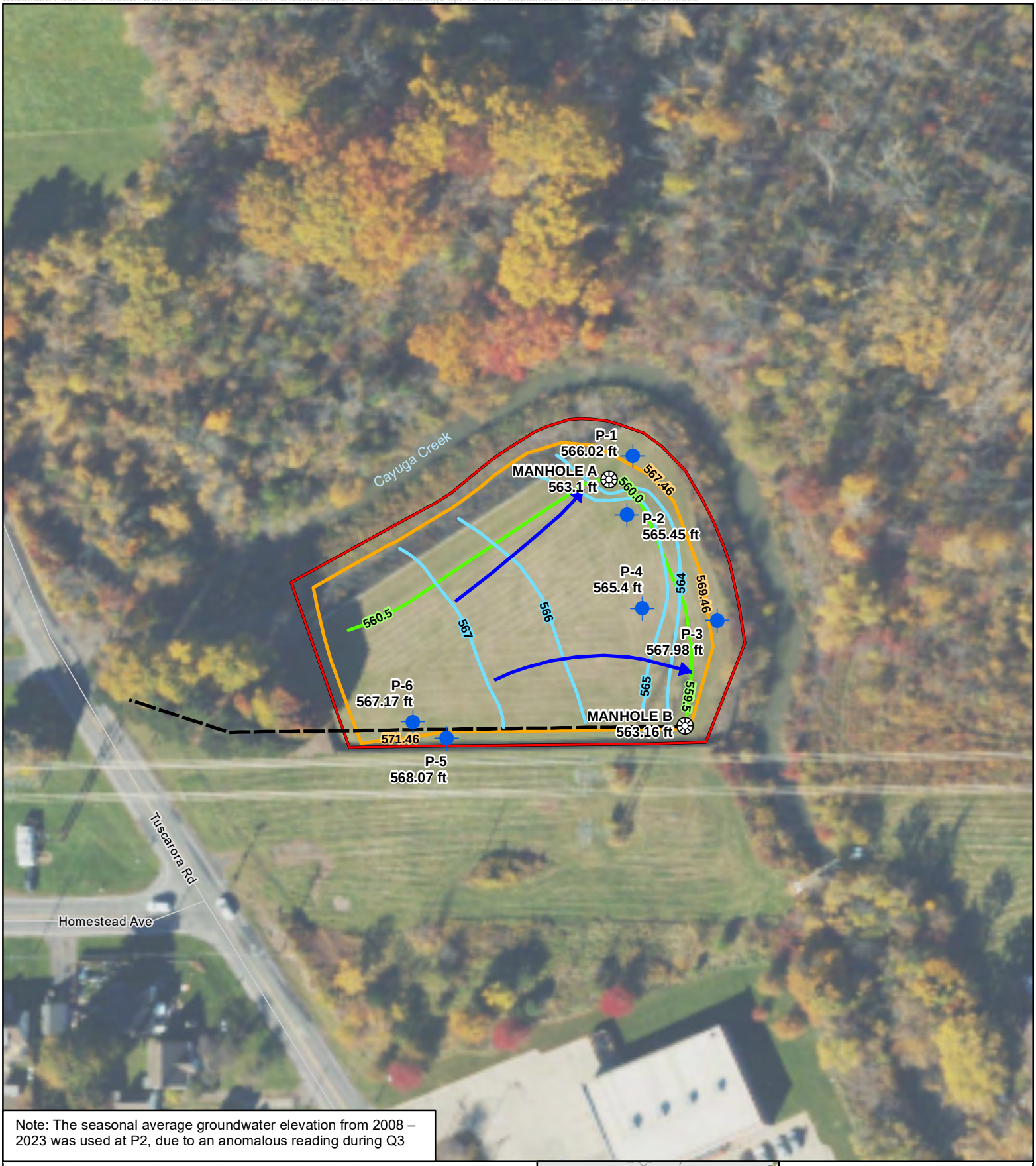
Source: WSP 2023; ESRI 2021; NYS Office of Information Technology Services GIS Program Office (GPO) 2020; USDA NAIP 2021

Groundwater Contour
Flow Direction
Direct Discharge Line to Niagara Falls Waste Water Treatment Facility
Drain Pipe
Slurry Wall
Site Boundary
Piezometer
Manhole

0 50 100 Feet

Figure 3-1b
Q2 May 14, 2024 Groundwater Potentiometric Map of Piezometer/Manhole Elevations
2024 Periodic Review Report
Olin Charles Gibson
Niagara Falls, New York

Source: WSP 2023; ESRI 2021; NYS Office of Information Technology Services GIS Program Office (GPO) 2020; USDA NAIP 2021



Note: The seasonal average groundwater elevation from 2008 – 2023 was used at P2, due to an anomalous reading during Q3

- Groundwater Contour
- Flow Direction
- Direct Discharge Line to Niagara Falls Waste Water Treatment Facility
- Drain Pipe
- Slurry Wall
- Site Boundary
- Piezometer
- Manhole

0 50 100 Feet

Figure 3-1c
Q3 September 4, 2024 Groundwater Potentiometric Map of Piezometer/Manhole Elevations
2024 Periodic Review Report
Olin Charles Gibson
Niagara Falls, New York

Source: WSP 2023; ESRI 2021; NYS Office of Information Technology Services GIS Program Office (GPO) 2020; USDA NAIP 2021

Groundwater Contour
Flow Direction
Direct Discharge Line to Niagara Falls Waste Water Treatment Facility
Drain Pipe
Slurry Wall
Site Boundary
Piezometer
Manhole

0 50 100 Feet

Figure 3-1d
Q4 November 15, 2024 Groundwater Potentiometric Map of Piezometer/Manhole Elevations
2024 Periodic Review Report
Olin Charles Gibson
Niagara Falls, New York

Source: WSP 2023; ESRI 2021; NYS Office of Information Technology Services GIS Program Office (GPO) 2020; USDA NAIP 2021

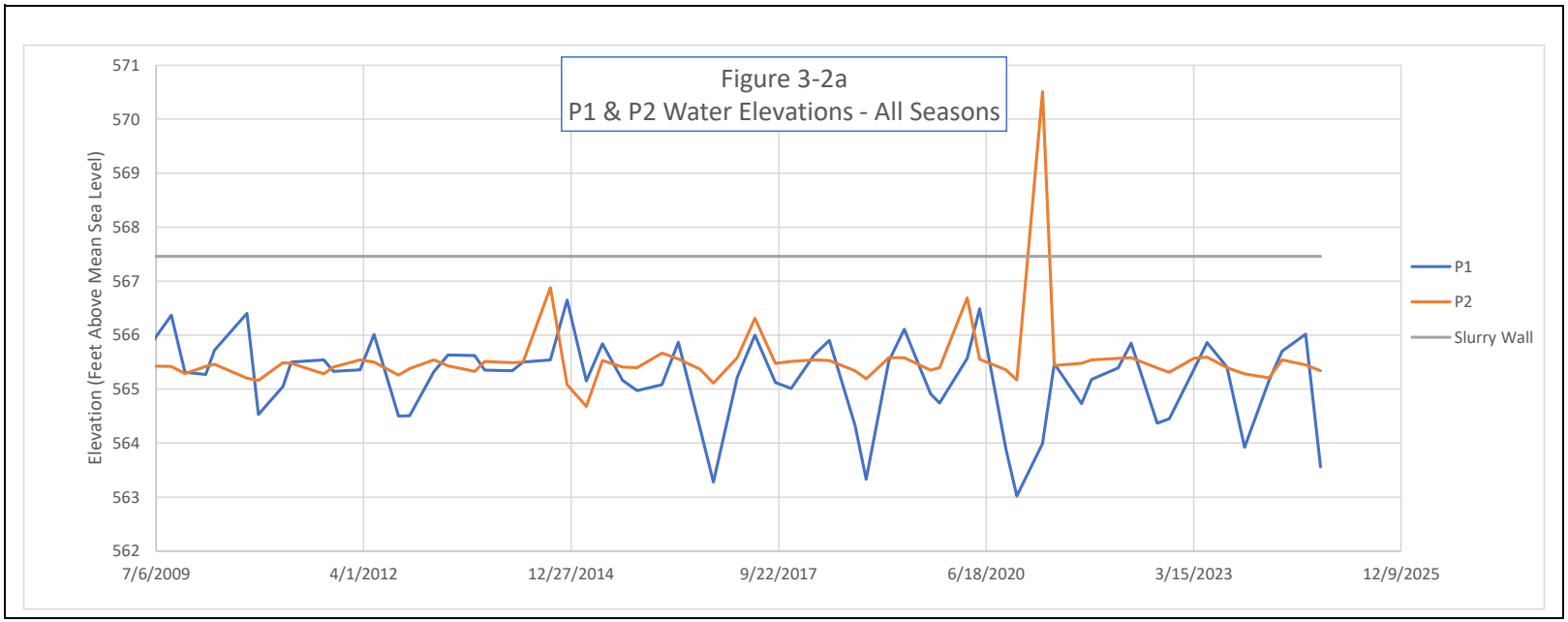


Figure 3-2a
P1 & P2 Water Elevations - All Seasons
Elevation (Feet Above Mean Sea Level)
571
570
569
568
567
566
565
564
563
562
7/6/2009
4/1/2012
12/27/2014
9/22/2017
6/18/2020
3/15/2023
12/9/2025
P1
P2
Slurry Wall

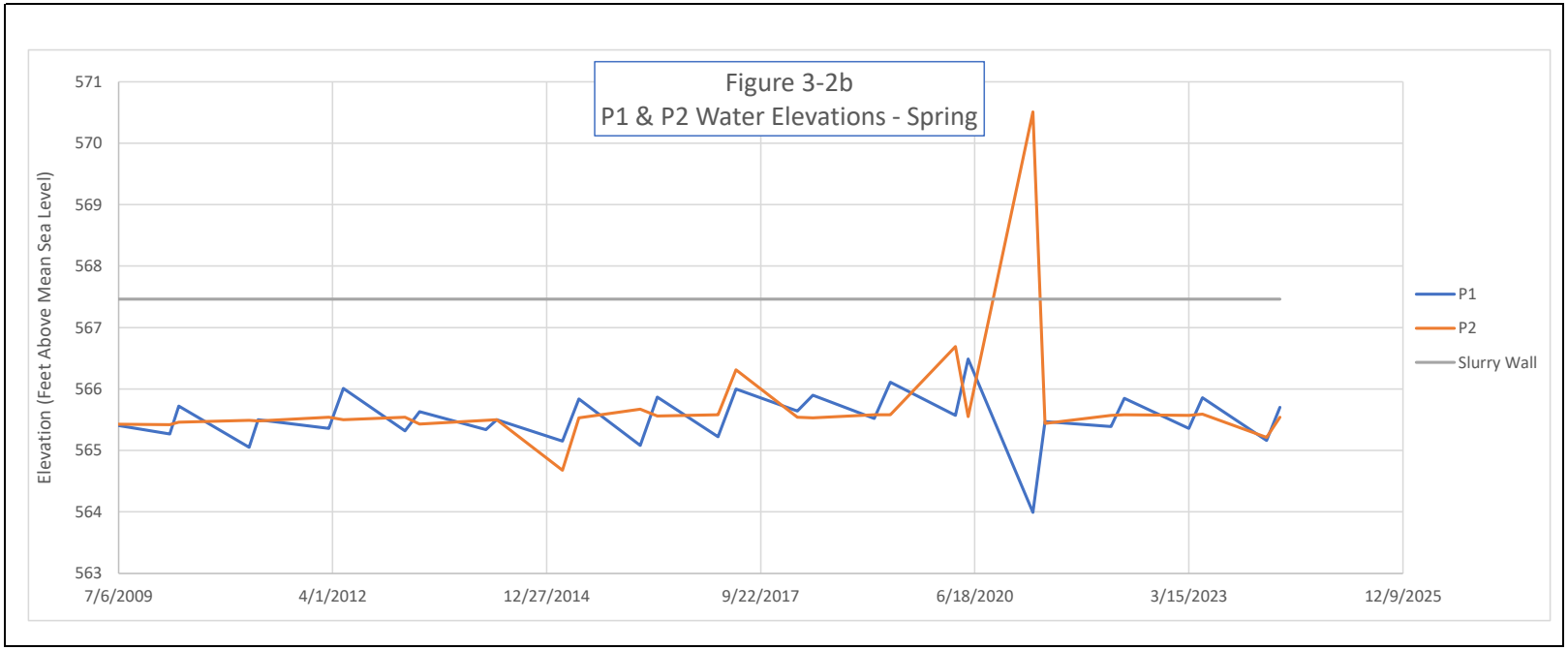


Figure 3-2b
P1 & P2 Water Elevations - Spring
Elevation (Feet Above Mean Sea Level)
571
570
569
568
567
566
565
564
563
7/6/2009
4/1/2012
12/27/2014
9/22/2017
6/18/2020
3/15/2023
12/9/2025
P1
P2
Slurry Wall

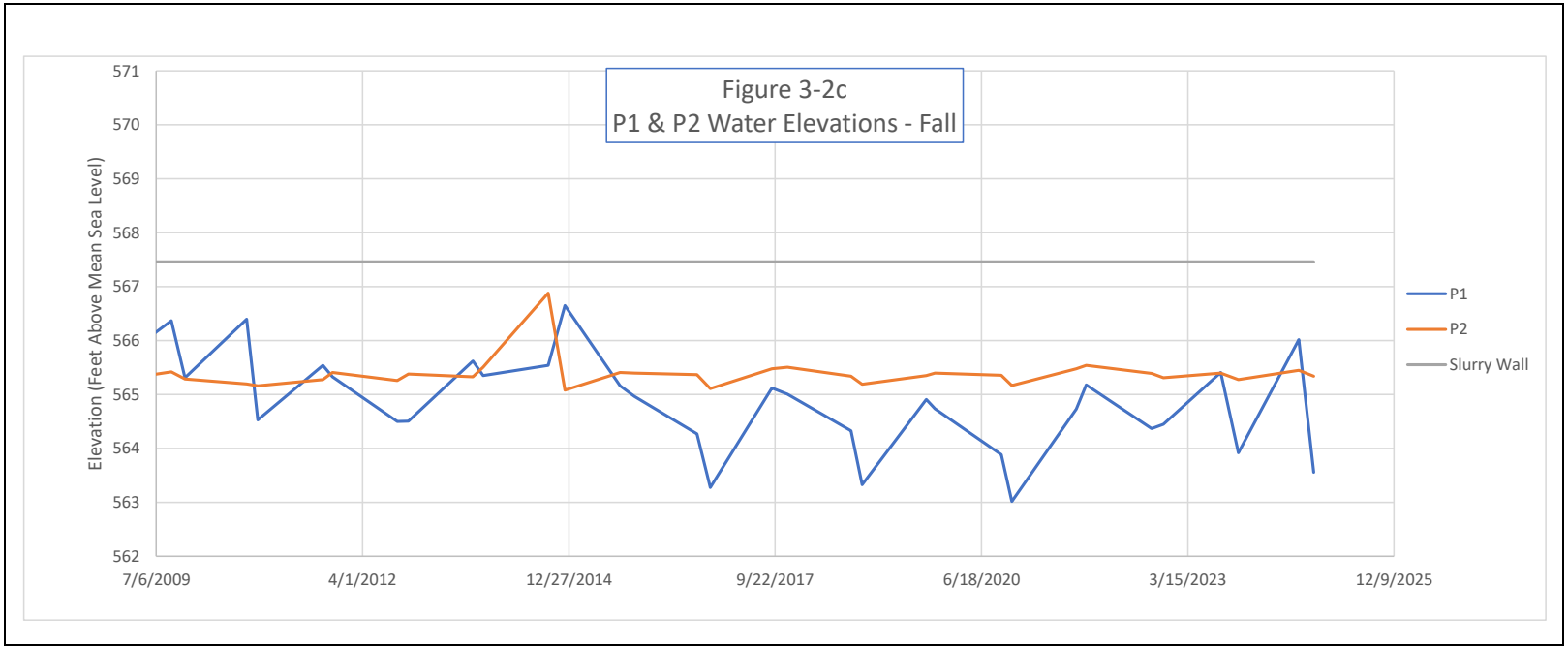


Figure 3-2c
P1 & P2 Water Elevations - Fall
Elevation (Feet Above Mean Sea Level)
571
570
569
568
567
566
565
564
563
562
7/6/2009
4/1/2012
12/27/2014
9/22/2017
6/18/2020
3/15/2023
12/9/2025
P1
P2
Slurry Wall

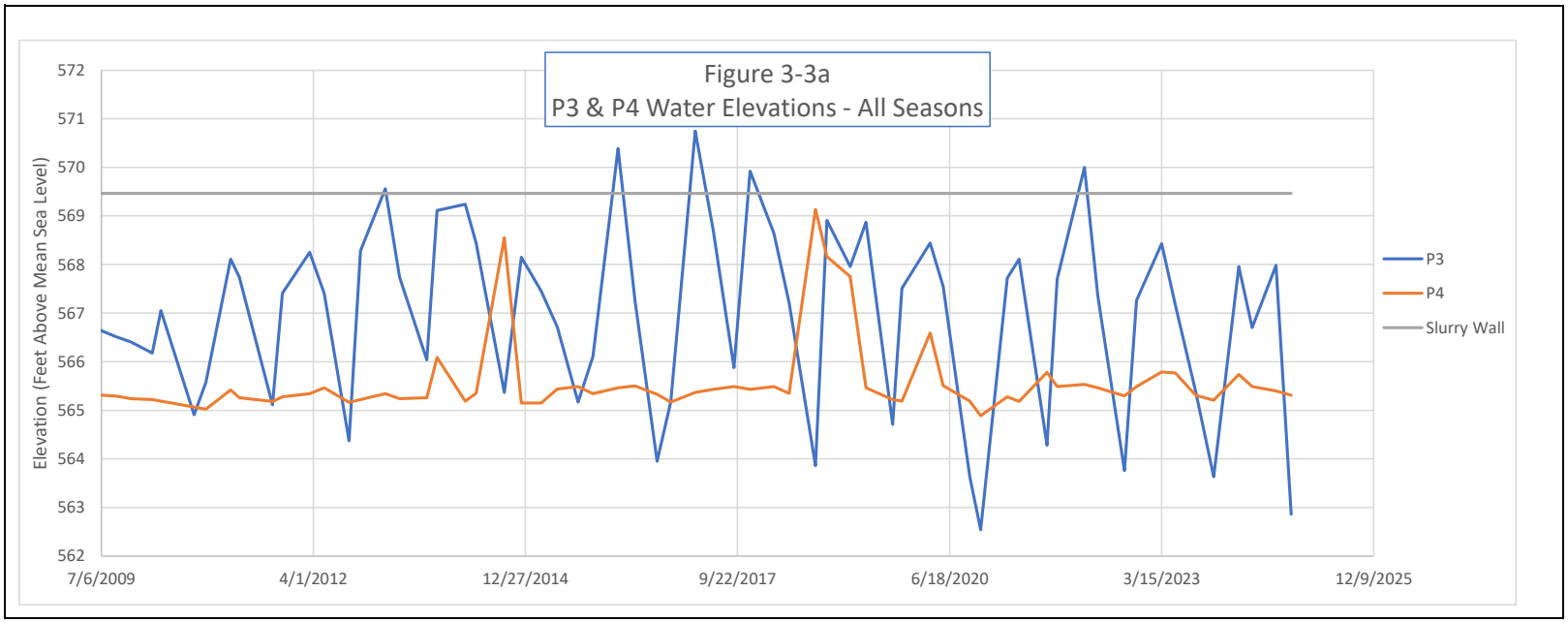


Figure 3-3a
P3 & P4 Water Elevations - All Seasons
Elevation (Feet Above Mean Sea Level)
572
571
570
569
568
567
566
565
564
563
562
7/6/2009
4/1/2012
12/27/2014
9/22/2017
6/18/2020
3/15/2023
12/9/2025
P3
P4
Slurry Wall

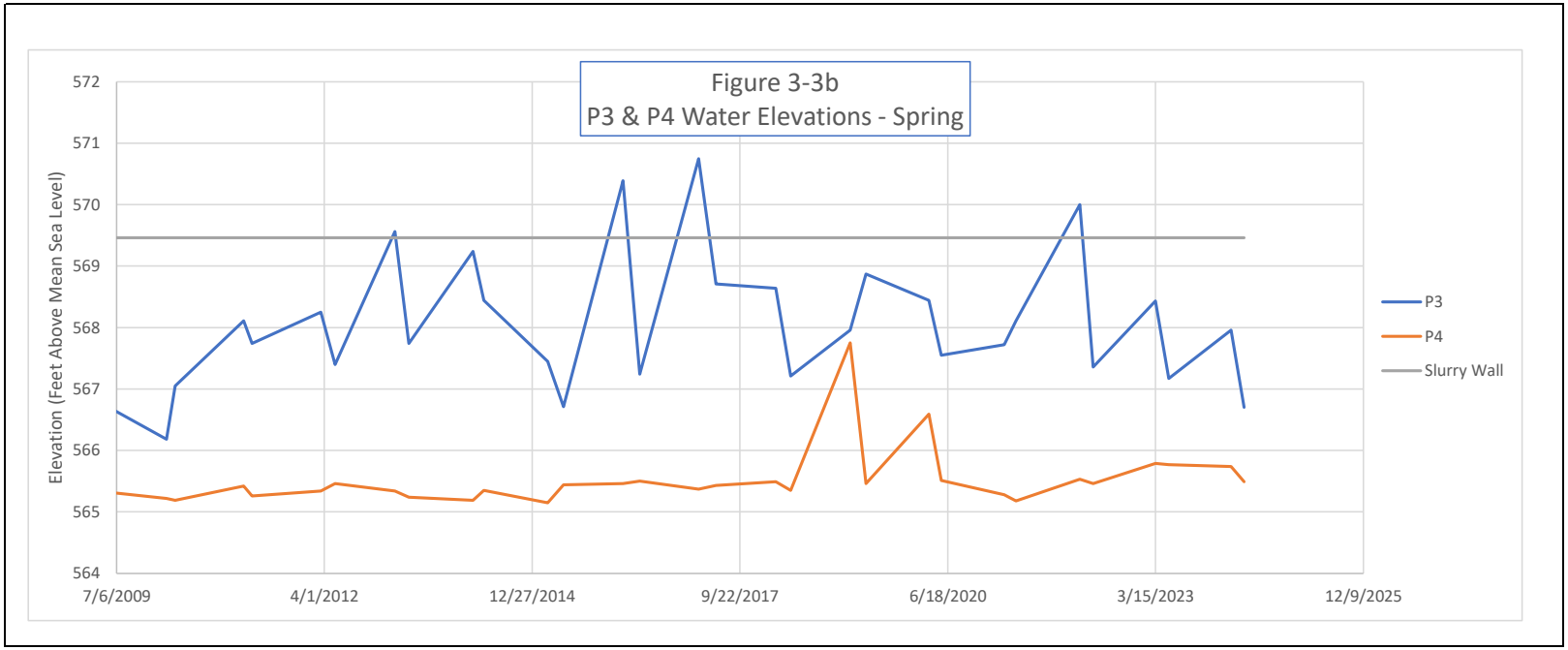


Figure 3-3b
P3 & P4 Water Elevations - Spring
Elevation (Feet Above Mean Sea Level)
572
571
570
569
568
567
566
565
564
7/6/2009
4/1/2012
12/27/2014
9/22/2017
6/18/2020
3/15/2023
12/9/2025
P3
P4
Slurry Wall

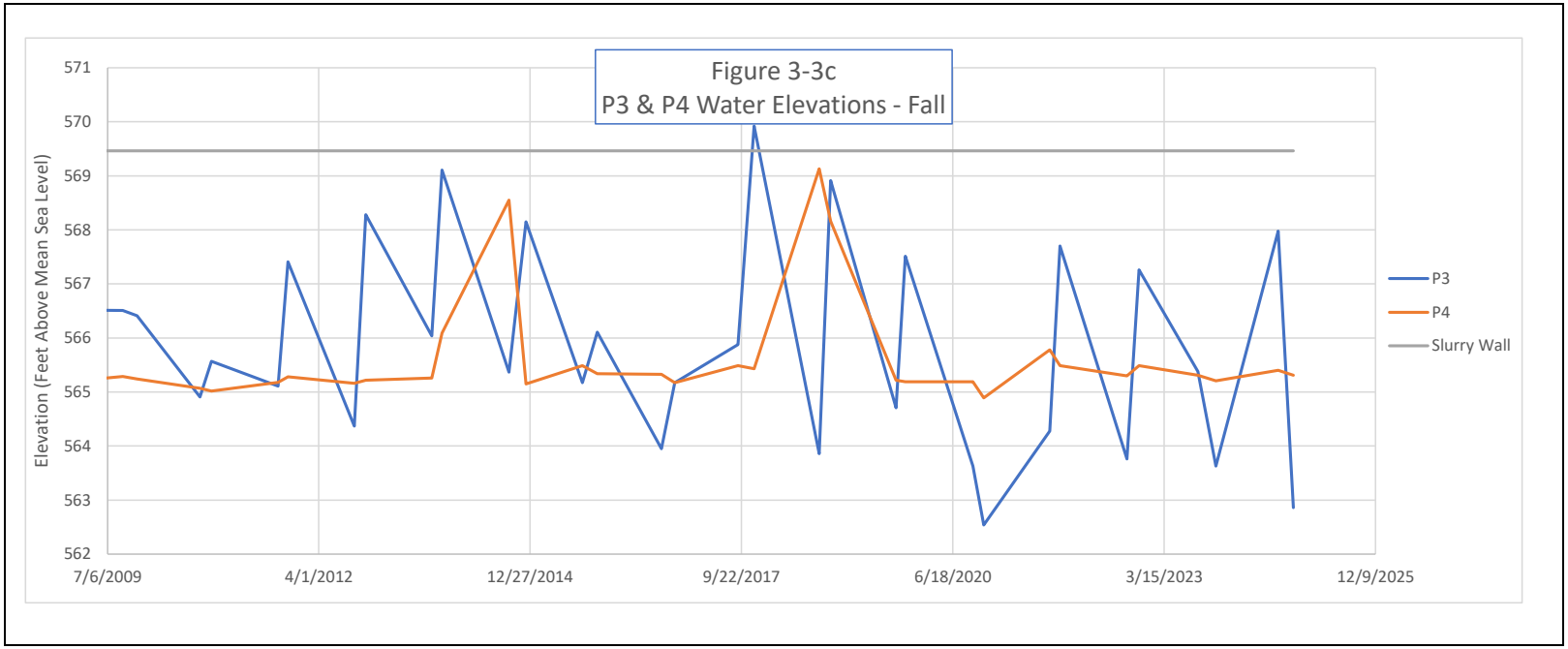


Figure 3-3c
P3 & P4 Water Elevations - Fall
Elevation (Feet Above Mean Sea Level)
571
570
569
568
567
566
565
564
563
562
7/6/2009
4/1/2012
12/27/2014
9/22/2017
6/18/2020
3/15/2023
12/9/2025
P3
P4
Slurry Wall

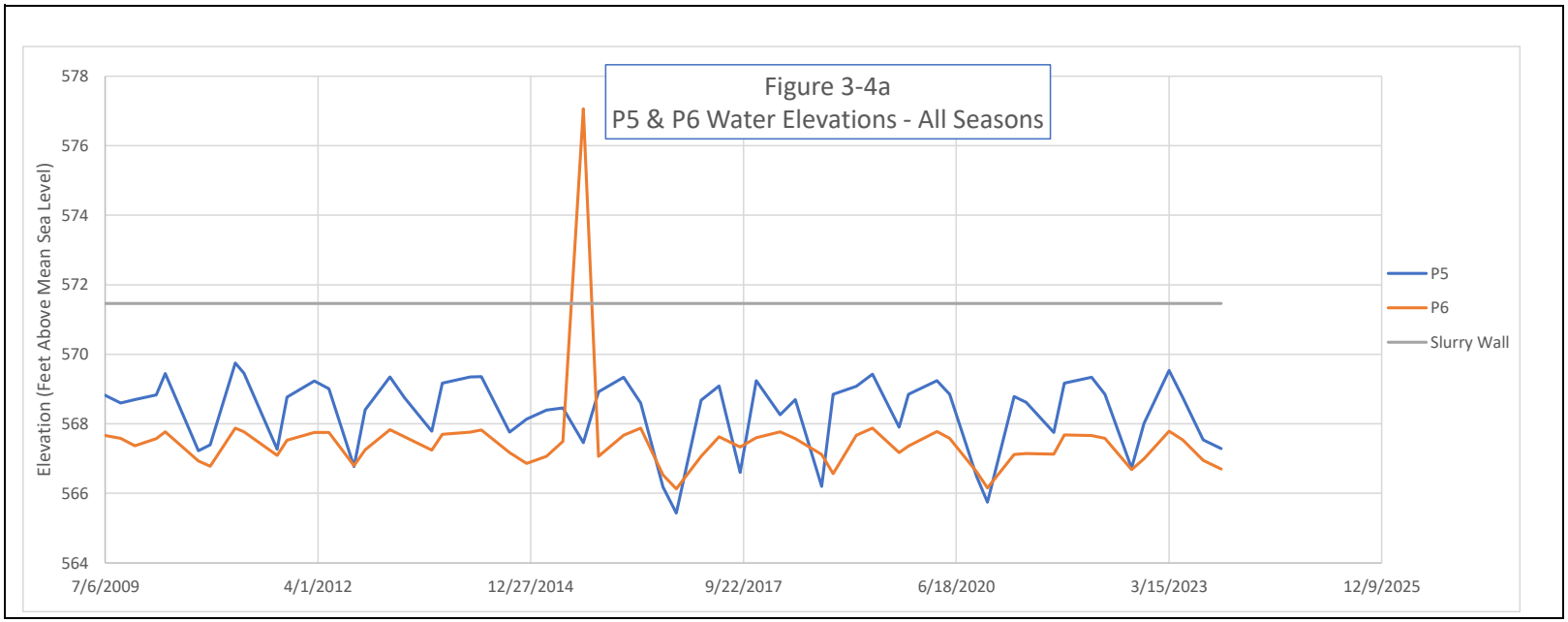


Figure 3-4a
P5 & P6 Water Elevations - All Seasons
Elevation (Feet Above Mean Sea Level)
578
576
574
572
570
568
566
564
7/6/2009
4/1/2012
12/27/2014
9/22/2017
6/18/2020
3/15/2023
12/9/2025
P5
P6
Slurry Wall

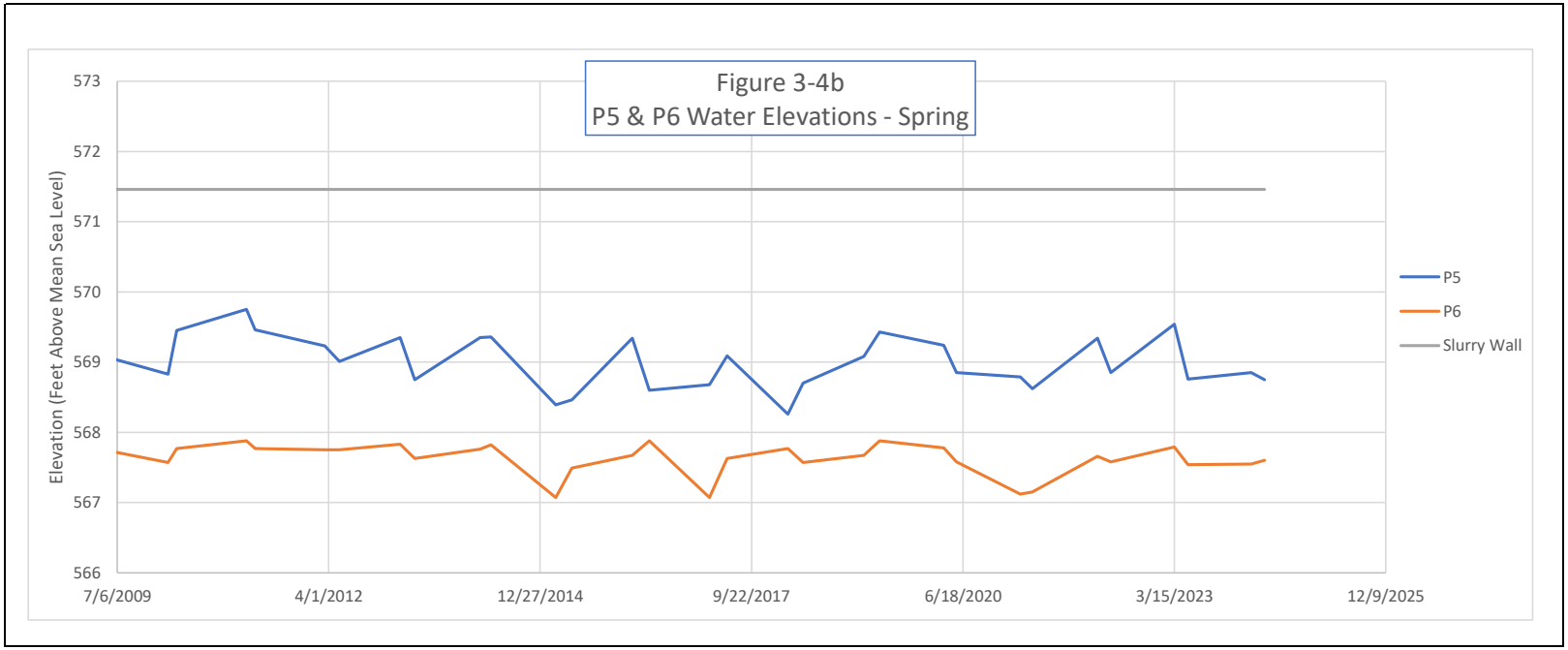


Figure 3-4b
P5 & P6 Water Elevations - Spring
Elevation (Feet Above Mean Sea Level)
573
572
571
570
569
568
567
566
7/6/2009
4/1/2012
12/27/2014
9/22/2017
6/18/2020
3/15/2023
12/9/2025
P5
P6
Slurry Wall

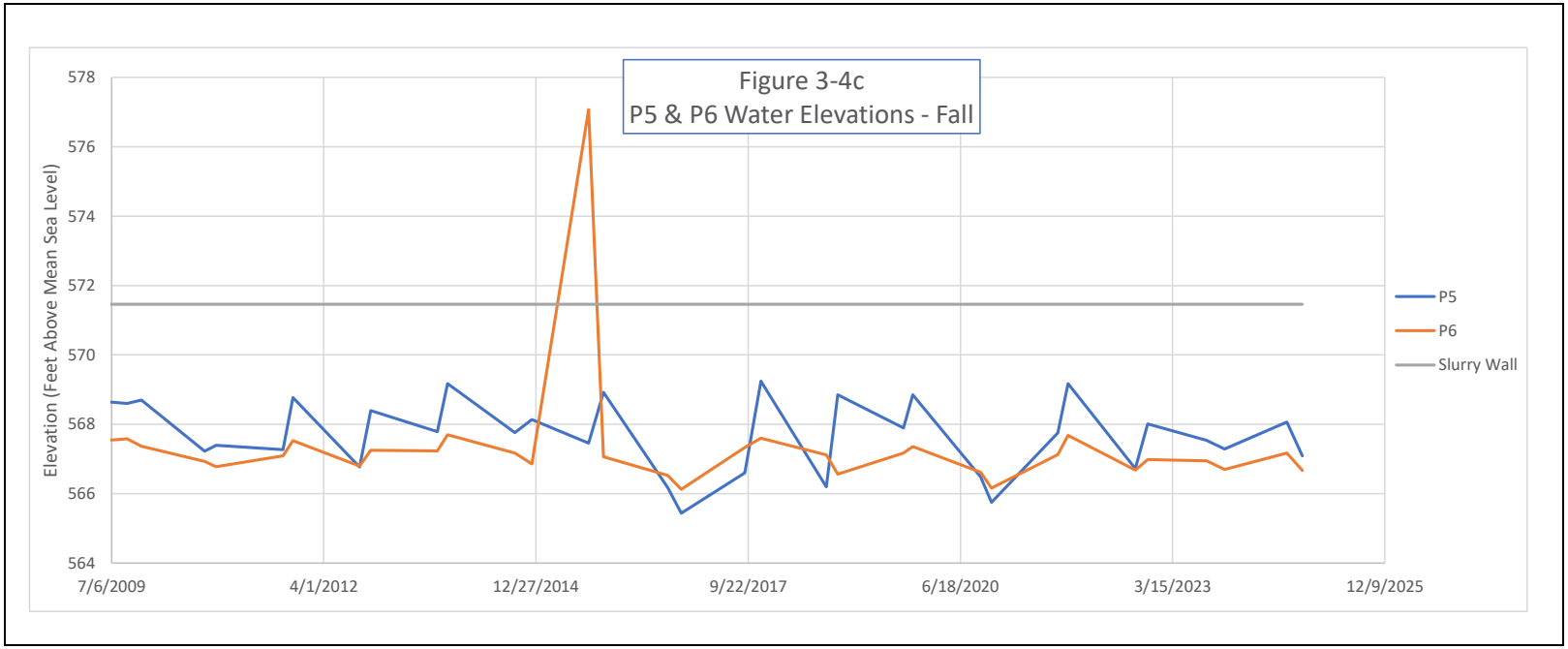


Figure 3-4c
P5 & P6 Water Elevations - Fall
Elevation (Feet Above Mean Sea Level)
578
576
574
572
570
568
566
564
7/6/2009
4/1/2012
12/27/2014
9/22/2017
6/18/2020
3/15/2023
12/9/2025
P5
P6
Slurry Wall

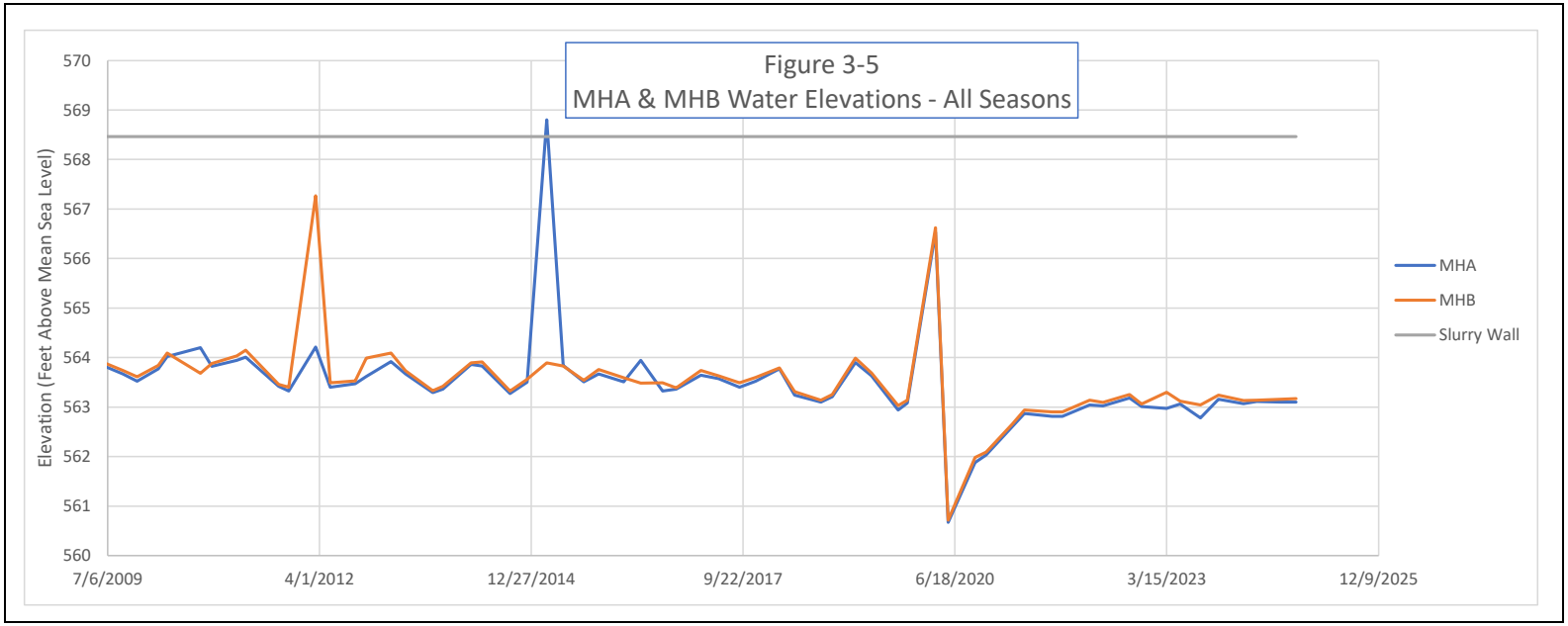


Figure 3-5
MHA & MHB Water Elevations - All Seasons
Elevation (Feet Above Mean Sea Level)
570
569
568
567
566
565
564
563
562
561
560
7/6/2009
4/1/2012
12/27/2014
9/22/2017
6/18/2020
3/15/2023
12/9/2025
MHA
MHB
Slurry Wall

A Institutional & Engineering Certification Form

Enclosure 2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. 932063

Site Name Charles Gibson Site

Site Address: N.E. Cnr. of Niagara Falls Blvd. & Tuscarora Rd. Zip Code: 14304
City/Town: Niagara Falls
County: Niagara
Site Acreage: 2.000

Reporting Period: January 31, ~~2021~~ 2024 to January 31, ~~2022~~ 2025

	YES	NO
1. Is the information above correct?	☑	☐
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☑
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☑
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☑
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	☑

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Closed Landfill	☑	☐
7. Are all ICs in place and functioning as designed?	☑	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative _____ Date _____

SITE NO. 932063

Box 3

Description of Institutional Controls

Parcel	Owner	Institutional Control
161.05-3-7	OLIN CORPORATION	Monitoring Plan O&M Plan

Consent Judgement 3/12/85 including IC stipulations p. 23 Permits and Easements, sections 11-24.
Operation and Maintenance Manual; September 30, 2009.
- Groundwater Quality Monitoring.
- Leachate Monitoring.
- Creek Sediment Monitoring.

161.05-5-12	OLIN CORPORATION	Monitoring Plan O&M Plan

Consent Judgment 3/12/85 including IC stipulations p. 23 Permits and Easements, sections 11-24.

- Groundwater Quality Monitoring.
- Leachate Monitoring.
- Creek Sediment Monitoring.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
161.05-3-7	Cover System Groundwater Containment Leachate Collection Fencing/Access Control

- Realignment of Cayuga Creek from the waste.
- Fully circumscribed soil-bentonite slurry wall barrier.
- Double flexible membrane liner cap.
- Perimeter Leachate Collection System with discharge to NFWWTP.
- Final cover soil cap.
- Perimeter chain link and portions of wooden privacy fencing with locked gates.

161.05-5-12	Cover System Groundwater Containment Leachate Collection Fencing/Access Control

- Realignment of Cayuga Creek away from the waste.
- Fully circumscribed soil-bentonite slurry barrier wall.
- Double flexible membrane liner cap.
- Perimeter leachate collection system with discharge to the NFWWTP.
- Final soil cover cap.
- Perimeter chain link with portions of wooden privacy fencing with locked gates.

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the Engineering Control certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☑	☐

2. For each Engineering control listed in Box 4, I certify by checking "YES" below that all of the following statements are true:

   (a) The Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☑	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. 932063

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Adam B. Carringer at 490 Stuart Rd SE Cleveland, TN 37312
print name print business address

am certifying as Olin Corporation (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Adam B [illegible] 2-28-2025
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification Date

EC CERTIFICATIONS

Box 7

Qualified Environmental Professional Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Adam B. Carringer (print name) at 490 Stuart Rd SE, Cleveland, TN 37312 (print business address)

am certifying as a Qualified Environmental Professional for the Olin Corporation (Owner or Remedial Party)

Adam B Carringer CHMM, 32670 — Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification

Stamp (Required for PE)

2-28-2025 — Date

B Field Forms (Inspections, Sampling and Elevations) and Photo Log

1st Quarter **Inspection**

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER ELEVATION FORM

THIS FORM TO BE USED FOR ALL QUARTERLY PIEZOMETER AND MANHOLE GROUND-WATER ELEVATION MEASURING EVENTS

DATE: 3/12/24 TIME: 1000

INSPECTOR: Greg Einst COMPANY: Stearns

WEATHER: Sunny, 46°F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	7.56	565.16	N/A
P-2	574.89	9.38	565.51	N/A
P-3	574.16	6.20	567.96	N/A
P-4	576.14	10.42	565.74	N/A
P-5	575.05	6.20	568.85	N/A
P-6	578.28	10.73	567.55	N/A
MANHOLE A	575.22	12.15	563.07	N/A
MANHOLE B	577.34	14.21	563.13	N/A

(Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevations in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth to water distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A.
(Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)

ADDITIONAL COMMENTS/OBSERVATIONS:

Each piezometer & manhole was measured 3 times over the course of an hour & water levels did not change.

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 3/12/24 TIME: 1000

INSPECTOR: Greg Ernst COMPANY: Stevenson

WEATHER: Sunny, 46°F

REASON FOR INSPECTION (QUARTERLY OR OTHER): Quarterly

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	N/A
COVER VEGETATION	A	N/A
TREES	A	N/A
LITTER	A	clean duplitter, some evidence of a small fire unsure how old it was
EROSION (CAP)	A	N/A
EROSION (BANK)	A	N/A
SECURITY:		
FENCE/LOCKS	A	N/A
PIEZOMETERS/LOCKS	A	N/A
MONITORING WELLS/LOCKS	A	N/A
MANHOLES/LIDS/LOCKS	A	N/A
ELECTRICAL PANEL	A	N/A

ADDITIONAL COMMENTS: none

2nd Quarter **Inspection**

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER ELEVATION FORM

THIS FORM TO BE USED FOR ALL QUARTERLY PIEZOMETER AND MANHOLE GROUND-WATER ELEVATION MEASURING EVENTS

DATE: 5/14/2024 TIME: 800

INSPECTOR: M. Walker COMPANY: Sevenson Environmental Services

WEATHER: Sunny 64F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	7.02	565.7	
P-2	574.89	9.35	565.54	
P-3	574.16	7.46	566.7	
P-4	576.14	10.65	565.49	
P-5	575.05	6.3	568.75	
P-6	578.28	10.68	567.6	
MANHOLE A	575.22	12.11	563.11	
MANHOLE B	577.34	14.2	563.14	

(Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevations in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth to water distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A.
(Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)

ADDITIONAL COMMENTS/OBSERVATIONS:

All wells looked good, locks secure. Lots of ants in all well casings.

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 5/14/2024 TIME: 800

INSPECTOR: M. Walker COMPANY: Sevenson Environmental Services

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): 2nd Quarter Site Inspection 2024

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS: The site looked good, all gates and well caps were locked and secure

Driveway was in good shape. Mulched area under pine trees has some weed growth evident.

3rd Quarter Sampling **and Inspection Documentation**

3rd Quarter **Inspection**

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER ELEVATION FORM

THIS FORM TO BE USED FOR ALL QUARTERLY PIEZOMETER AND MANHOLE GROUND-WATER ELEVATION MEASURING EVENTS

DATE: 9-4-24 TIME: 1250

INSPECTOR: S. Walsh COMPANY: OLIN

WEATHER: Clear

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	6.70	566.02	
P-2	574.89	6.39	568.5	
P-3	574.16	6.18	567.98	
P-4	576.14	10.74	565.4	
P-5	575.05	6.98	568.07	
P-6	578.28	11.11	567.17	
MANHOLE A	575.22	12.12	563.1	
MANHOLE B	577.34	14.18	563.16	

(Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevations in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth to water distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A.
(Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)

ADDITIONAL COMMENTS/OBSERVATIONS:

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 9-4-24 TIME: 1230

INSPECTOR: Steve Walsh COMPANY: OLIN

WEATHER: Clear

REASON FOR INSPECTION (QUARTERLY OR OTHER): Quarterly

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	OK	
COVER VEGETATION	OK	
TREES	OK	
LITTER	NO	
EROSION (CAP)	NO	
EROSION (BANK)	NO	
SECURITY:		
FENCE/LOCKS	Yes	
PIEZOMETERS/LOCKS	Yes	
MONITORING WELLS/LOCKS	Yes	
MANHOLES/LIDS/LOCKS	Yes	
ELECTRICAL PANEL	Yes	

ADDITIONAL COMMENTS:

3rd Quarter

September Sampling Field Forms

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER SAMPLING FIELD PARAMETERS
FIELD INSTRUMENTATION CALIBRATION FORM

DATE: 9-4-24 SAMPLING EVENT: Sept. 2024

PERSON CALIBRATING METER: Steve Walsh

INSTRUMENT USED:

MANUFACTURER: YSI

MODEL NUMBER: PRO DSS

HGS NUMBER: _____

DATE OF MANUFACTURE: _____

CALIBRATION STANDARDS USED:

STANDARD 7.00 METER READ: 6.98-7.00

STANDARD 4.00 METER READ: 3.98 - 4.00

STANDARD 10.00 METER READ: 9.97-10.0

CALIBRATION SOLUTION EXPIRATION DATE: 6-26

	PRE CALIBRATION READINGS	POST CALIBRATION READINGS
TEMPERATURE (°F or °C):	26.7	26.7
pH:	6.98, 3.98, 9.97	7.0, 4.0, 10.0
pHmv:	98.6	99.1
OX-RED POT (ORPmv):	N/A	N/A
CONDUCTIVITY (ms/cm):	1.416	1.413
TURBIDITY (NTU):	0, 9.97	0, 10.0
mg/L DO:	9	9.8
% DO:	98	100

OTHER CALIBRATION COMMENTS: _____

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: S. Walsh
SAMPLED BY: C. Haynes
COMPANY: OLIN

SAMPLE ID: MW-4
SAMPLING EVENT/DATE: 9-4-24
MONITORING WELL: MW-4
CONDITION: OK

GROUNDWATER PURGE DATA

PURGE DATE:

DEPTH TO BOTTOM FROM TOP OF RISER: (FT.)
DEPTH TO WATER FROM TOP OF RISER: 8.48 (FT.)
WATER COLUMN: (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: peristaltic
BOTTOM OF WELL/SILT BUILDUP: yes
PURGE START TIME: 1335 STOP TIME:
PURGE OBSERVATIONS: very turbid at 1ST

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	6.88	1.630	15.6	
2	6.92	1.627	16.0	
3	7.00	1.659	16.5	
4				
5				

TOTAL VOLUME PURGED: 2.4 gal

GROUNDWATER OR SEDIMENT SAMPLING DATA:

SAMPLE DATE: 9-4-24

MEDIA: GROUNDWATER ✓
CREEK SEDIMENT

SAMPLE TIME: 1400

LOCATION: MW-4

SAMPLE METHOD: peristaltic

SAMPLING OBSERVATIONS:

QC SAMPLES TAKEN: NO

OTHER OBSERVATIONS/COMMENTS: pumped dry only caught 2 bottles

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: S. Waltz
SAMPLED BY: C. Haynes
COMPANY: OLIN

SAMPLE ID: MW-5
SAMPLING EVENT/DATE: 9-4-24
MONITORING WELL: MW-5
CONDITION: Windy

GROUNDWATER PURGE DATA

PURGE DATE:

DEPTH TO BOTTOM FROM TOP OF RISER: (FT.)
DEPTH TO WATER FROM TOP OF RISER: 8.53 (FT.)
WATER COLUMN: (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: peristaltic
BOTTOM OF WELL/SILT BUILDUP:
PURGE START TIME: 1420 STOP TIME: 1527
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	6.68	1.661	16.1	
2	6.61	1.514	16.3	
3	6.61	1.523	16.2	
4				
5				

TOTAL VOLUME PURGED:

GROUNDWATER OR SEDIMENT SAMPLING DATA:

SAMPLE DATE: 9-4-24

MEDIA: GROUNDWATER ✓
CREEK SEDIMENT

SAMPLE TIME: 1440

LOCATION: MW-5

SAMPLE METHOD: peristaltic

SAMPLING OBSERVATIONS:

QC SAMPLES TAKEN: NO

OTHER OBSERVATIONS/COMMENTS:

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: S. Walsh
SAMPLED BY: —
COMPANY: OLIN

SAMPLE ID: MW-A3
SAMPLING EVENT/DATE: 9-4-24
MONITORING WELL:
CONDITION:

GROUNDWATER PURGE DATA PURGE DATE:

DEPTH TO BOTTOM FROM TOP OF RISER: 11.9 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 10.93 (FT.)
WATER COLUMN: (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD:
BOTTOM OF WELL/SILT BUILDUP:
PURGE START TIME: STOP TIME:
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1				
2				
3				
4				
5				

TOTAL VOLUME PURGED:

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE:

MEDIA: GROUNDWATER ____ SAMPLE TIME:
CREEK SEDIMENT ____

LOCATION:

SAMPLE METHOD:

SAMPLING OBSERVATIONS:

QC SAMPLES TAKEN:

OTHER OBSERVATIONS/COMMENTS: NOT ENOUGH H_2O TO sample

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: S. Walsh
SAMPLED BY: Corey Hughes
COMPANY: OLIN

SAMPLE ID: manhole B
SAMPLING EVENT/DATE: 9-4-24
MONITORING WELL: MHB-090424
CONDITION:

GROUNDWATER PURGE DATA PURGE DATE:

DEPTH TO BOTTOM FROM TOP OF RISER: (FT.)
DEPTH TO WATER FROM TOP OF RISER: 14.18 (FT.)
WATER COLUMN: (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: peristaltic
BOTTOM OF WELL/SILT BUILDUP:
PURGE START TIME: STOP TIME:
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.87	0.539	13.8	
2				
3				
4				
5				

TOTAL VOLUME PURGED:

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9-4-24

MEDIA: GROUNDWATER ✓
CREEK SEDIMENT

SAMPLE TIME: 1515

LOCATION: manhole B
SAMPLE METHOD: peristaltic
SAMPLING OBSERVATIONS:
QC SAMPLES TAKEN: yes dup MS/MSD
OTHER OBSERVATIONS/COMMENTS:

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: _____ **SAMPLE ID:** US-1-090424

SAMPLED BY: _____ SAMPLING EVENT/DATE: _____

COMPANY: _____ MONITORING WELL: _____

CONDITION:

GROUNDWATER PURGE DATA PURGE DATE:

DEPTH TO BOTTOM FROM TOP OF RISER: (FT.)

DEPTH TO WATER FROM TOP OF RISER: (FT.)

WATER COLUMN: (FT.)

2" DIA. WELL CONSTANT: 0.16

ONE WELL VOLUME= (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD:
BOTTOM OF WELL/SILT BUILDUP:
PURGE START TIME: STOP TIME:
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1				
2				
3				
4				
5				

TOTAL VOLUME PURGED:

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE:

MEDIA: GROUNDWATER _____ SAMPLE TIME:
CREEK SEDIMENT √

Times sampled
US-1 1540
MS-1 1555
DS-1 1610

LOCATION: Gibson

SAMPLE METHOD:

SAMPLING OBSERVATIONS:

QC SAMPLES TAKEN:

OTHER OBSERVATIONS/COMMENTS:

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= $\frac{\text{SC measured}}{\{(T-25)(0.02)\}+1}$

Chain of Custody / Analytical Request Form

74635

SR#:

1565 Jefferson Road, Building 300, Suite 360 ● Rochester, NY 14623 ● +1 585 288 5380 ● alsglobal.com

Page of

Report To:	ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER
Company: Olin Corp	Project Name: Charles Gibson
Contact: Adam Carringer	Project Number:
Email: abcarringer@olin.com	ALS Quote #:
Phone: 423-336-4057	Sampler's Signature: R. Hicks C. Haynes S. Walsh
Address: 490 Stuart Rd NE	Email CC:
Cleveland, TN 37312	Email CC:
	State Samples Collected (Circle or Write): NY, MA, PA, CT, Other:

Preservative: D D

Lab ID (ALS)	Sample ID:	Date	Time	Matrix (GW WW SW DW S L NA)	Number of Containers	MS/MSD?	GC/MS VOA - 8260●624●524●TCLP	GC/MS SVOA - 8270 ● 625 ● TCLP	Pesticides - 8081 ● 608 ● TCLP	PCBs - 8082 ● 608	Herbicides - 8151 ● TCLP	Metals, Total - Select Below	Metals, Dissolved - Field / In-Lab Filter	Notes:
-	MW-4-090424	9-4-24	1400	GW	4½	N		21	21		JRH	9-4-24		
-	MW-5-090424	9-4-24	1440	GW	4	N		2	2					
-	MH-B-090424	9-4-24	1515	GW	3	Y		3						MS/MSD
=	MH-B-DUP-090424	9-4-24	1515	GW	1	N	JRH 9-4-24	1						
	US-1-090424	9-4-24	1540	SED	2	N		1	2					
	MS-1-090424	9-4-24	1555	SED	2	N		x	2					
	DS-1-090424	9-4-24	1610	SED	2	N		x	2					
	FB-090424	9-4-24	1600	GW	1	N		1	1					
	FB2-090424	9-4-24	1605	GW	1	N		1	1					

0. None
1. HCl
2. HNO3
3. H2SO4
4. NAOH
5. Zn Acet.
6. MeOH
7. NaHSO4
8. Other

Special Instructions / Comments:

8270 - HCB
8081 - BHC

Turnaround Requirements

____Rush (Surcharges Apply)
Subject to Availability
Please Check with your PM
X Standard (10 Business Days)
Date Required:

Report Requirements

____Tier II/Cat A -Results/QC
____Tier IV/Cat B - Data Validation Report w/. Data
EDD: ____Yes ____No
EDD Type:

Metals: RCRA 8●PP 13●TAL 23●TCLP●Other (List)

VOA/SVOA Report List: TCL ● BTEX ● TCLP ● CP-51/Stars ●THM ● Other: _____

Invoice To: (□ Same as Report To)

PO #:
Company:
Contact:
Email:
Phone:
Address:

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Rick Hicks					
Printed Name	Rick Hicks					
Company	OLIN					
Date/Time	9-4-24 / 1610					

Distribution: White - Lab Copy; Yellow - Return to Originator

3rd Quarter

October Sampling Field Forms

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

10/15/24

RECORDED BY: Greg Ernst
SAMPLED BY: Greg Ernst
COMPANY: Sevinsin

SAMPLE ID: MW-4-101624
SAMPLING EVENT/DATE: 10/15/24 & 10/16/24 return for recharge
MONITORING WELL: MW-4
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE:

DEPTH TO BOTTOM FROM TOP OF RISER: 13.75 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 8.27 (FT.)
WATER COLUMN: 5.48 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 0.88 (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: Peri pump w/ dedicated tubing
BOTTOM OF WELL/SILT BUILDUP:
PURGE START TIME: 09 34 STOP TIME: 0954
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME		pH	SPECIFIC CONDUCTIVITY ~~umhos~~/cm) mS	TEMP. (C OR F)	Turb NOTES:	Water level
0	1	6.77	2.12	15.81	24.6	8.27
1	2	6.93	1.90	15.88	34.5	12.17
2	3	7.14	1.87	15.47	20.0	13.46
3	4	dry at 0953 at depth 13.72				
	5					
10/16		recharge sample data 6.59	2.12	17.65	28.9	9.01

TOTAL VOLUME PURGED: ~2.0 gal

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 10/16/24

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1132

LOCATION: MW-4
SAMPLE METHOD: peri pump w/ dedicated tubing
SAMPLING OBSERVATIONS:
QC SAMPLES TAKEN: NONE
OTHER OBSERVATIONS/COMMENTS: Sample MW-4-101624 taken at 1132 on 10/16/24 from well recharge after going dry while purging on 10/15/24

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Greg Ernst
SAMPLED BY: Greg Ernst
COMPANY: Stevinson

SAMPLE ID: MW-5-101524
SAMPLING EVENT/DATE: 10/15/24
MONITORING WELL: MW-5
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE:

DEPTH TO BOTTOM FROM TOP OF RISER: 15.28 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 10.50 (FT.)
WATER COLUMN: 4.78 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 0.76 (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD: Peri pump w/ded
BOTTOM OF WELL/SILT BUILDUP:
PURGE START TIME: 1005 STOP TIME: 1023
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME		pH	SPECIFIC CONDUCTIVITY ~~umhos~~/cm) mS	TEMP. (C OR F)	Turb NOTES:	Depth to W
0	1	6.99	1.86	14.30	67.2 NTU	10.5
1	2	6.91	1.78	14.52	39.0	11.6
2	3	6.92	1.77	14.39	23.0	12.0
3	4	6.93	1.77	14.32	11.9	
	5					

TOTAL VOLUME PURGED: 2.5

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 10/15/24

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1025

LOCATION: MW/5
SAMPLE METHOD: Peri pump w/ dedicated tubing
SAMPLING OBSERVATIONS:
QC SAMPLES TAKEN: Blind Dup taken here at MW-7-101524
OTHER OBSERVATIONS/COMMENTS: Reported time of dup at 1200
Sampling ended at 1033

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Greg Ernst
SAMPLED BY: Greg Ernst
COMPANY: Sevenson

SAMPLE ID: MH-B - 101524
SAMPLING EVENT/DATE: 10/15/24
MONITORING WELL: MH-B
CONDITION: good

GROUNDWATER PURGE DATA PURGE DATE:

DEPTH TO BOTTOM FROM TOP OF RISER: (FT.)

DEPTH TO WATER FROM TOP OF RISER: ______ (FT.)

WATER COLUMN: (FT.)

2" DIA. WELL CONSTANT: 0.16

ONE WELL VOLUME= (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAINLESS STEEL. WELL DEPTHS:

MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD:
BOTTOM OF WELL/SILT BUILDUP:
PURGE START TIME: STOP TIME:
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

	WELL VOLUME	pH	SPECIFIC CONDUCTIVITY ~~umhos/cm)~~ mS	TEMP. (C OR F)	NOTES: Turb	depth to water
Start	0 1	7.95	0.673	12.99	16.3	14.20
End of sample	2	8.20	0.581	12.88	2.9	14.20
	3					
	4					
	5					

TOTAL VOLUME PURGED: 0

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 10/15/24

MEDIA: GROUNDWATER X
CREEK SEDIMENT ______

SAMPLE TIME: 1110

LOCATION: MH-B

SAMPLE METHOD: peri pump w/ dedicated tubing

SAMPLING OBSERVATIONS: none

QC SAMPLES TAKEN: MS/MSD taken here

OTHER OBSERVATIONS/COMMENTS: none

Sampling ended 1115

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= $\frac{\text{SC measured}}{\{(T-25)(0.02)\}+1}$

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Greg First
SAMPLED BY: Greg First
COMPANY: Sevens.n

SAMPLE ID: Field Blank - 101524
SAMPLING EVENT/DATE: 10/15/24
MONITORING WELL: —
CONDITION: —

GROUNDWATER PURGE DATA PURGE DATE:

DEPTH TO BOTTOM FROM TOP OF RISER: (FT.)
DEPTH TO WATER FROM TOP OF RISER: (FT.)
WATER COLUMN: (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:

MW-A3	11.95'
MW-4	13.75'
MW-5	15.28'

PURGE METHOD:
BOTTOM OF WELL/SILT BUILDUP:
PURGE START TIME: STOP TIME:
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1				
2				
3				
4				
5				

TOTAL VOLUME PURGED:

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 10/15/24

MEDIA: GROUNDWATER NA X DI H2O SAMPLE TIME: 1125
CREEK SEDIMENT NA

LOCATION: —

SAMPLE METHOD: DI H2O provided by lab

SAMPLING OBSERVATIONS: —

QC SAMPLES TAKEN: —

OTHER OBSERVATIONS/COMMENTS: Field Blank - 101524

Note: specific conductivity formula to 25 degrees Celcius: SC(25)= SC measured / {{T-25)(0.02)}+1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER SAMPLING FIELD PARAMETERS
FIELD INSTRUMENTATION CALIBRATION FORM

DATE: 10/15/24 SAMPLING EVENT: Gibson Resample

PERSON CALIBRATING METER: U-52

INSTRUMENT USED:

MANUFACTURER: Horiba

MODEL NUMBER: R7B34NXU

HGS NUMBER: U-52

DATE OF MANUFACTURE: April 2017

CALIBRATION STANDARDS USED:

STANDARD 7.00 METER READ: _____

STANDARD 4.00 METER READ: X

STANDARD 10.00 METER READ: _____

CALIBRATION SOLUTION EXPIRATION DATE: 4/27/25

	PRE CALIBRATION READINGS	POST CALIBRATION READINGS
TEMPERATURE (°F or °C):	20.53	20.55
pH:	3.39	3.98
pHmv:	181	187
OX-RED POT (ORPmv):	321	340
CONDUCTIVITY (ms/cm):	4.21	4.50
TURBIDITY (NTU):	0.0	0.0
mg/L DO:	9.32	9.38
% DO:	—	—

OTHER CALIBRATION COMMENTS: _____

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER SAMPLING FIELD PARAMETERS
FIELD INSTRUMENTATION CALIBRATION FORM

DATE: 10/16/24 SAMPLING EVENT: Gibson - Olin Re Sample

PERSON CALIBRATING METER: Greg Engt

INSTRUMENT USED:

MANUFACTURER: Horiba

MODEL NUMBER: U-52

HGS NUMBER: R2B34NXM

DATE OF MANUFACTURE: April 2017

CALIBRATION STANDARDS USED:

STANDARD 7.00 METER READ: _____

STANDARD 4.00 METER READ: X

STANDARD 10.00 METER READ: _____

CALIBRATION SOLUTION EXPIRATION DATE: 4/27/25

	PRE CALIBRATION READINGS	POST CALIBRATION READINGS
TEMPERATURE (°F or °C):	20.39	20.42
pH:	4.81	3.99
pHmv:	138	142
OX-RED POT (ORPmv):	292	298
CONDUCTIVITY (ms/cm):	4.39	4.51
TURBIDITY (NTU):	0.0	0.0
mg/L DO:	9.77	9.30
% DO:	—	—

OTHER CALIBRATION COMMENTS: _____

Chain of Custody / Analytical Request Form

078454

SR#:

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 • +1 585 288 5380 • alsglobal.com

Page 1 of 1

Report To:	ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER
Company: Olin Corporation	Project Name: Charles Gibson - Olin
Contact: Adam Carringer	Project Number: 133211
Email: ABCarringer@Olin.com	ALS Quote #:
Phone: 423-336-4057	Sampler's Signature:
Address: 490 Stuart Rd	Email CC: ABCarringer@Olin.com
Cleveland, TN 37312	Email CC:
	State Samples Collected (Circle or Write): (NY) MA, PA, CT, Other:

Preservative: 0

Lab ID (ALS)	Sample Collection Information: Sample ID:	Date	Time	Matrix (GW / WW / SW / DW / S / L / NA)	Number of Containers	MS/MSD?	GC/MS VOA - 8260•624•524•TCLP	GC/MS SVOA - 8270 • 625 • TCLP	Pesticides (8081) • 608 • TCLP	PCBs - 8082 • 608	Herbicides - 8151 • TCLP	Metals, Total - Select Below	Metals, Dissolved - Field / In-Lab Filter	Notes:
	MW-5-101524	10/15/24	1025	GW	2	N			X					
	MH-B-101524	10/15/24	1110	GW	6	Y			X					
	Field Blank-101524	10/15/24	1125	GW	2	N			X					DI water provided by lab
	MW-7-101524	10/15/24	1200	GW	2	N			X					
	MW-4-101624	10/16/24	1132	GW	2	N			X					

0. None
1. HCl
2. HNO3
3. H2SO4
4. NAOH
5. Zn Acet.
6. MeOH
7. NaHSO4
8. Other

Special Instructions / Comments:
Samples are for Analysis 8081-BHC

Turnaround Requirements
- X Rush (Surcharges Apply)
Subject to Availability
Please Check with your PM
- ____ Standard (10 Business Days)
Date Required:

Report Requirements
- X Tier II/Cat A -Results/QC
- ____ Tier IV/Cat B - Data Validation Report w/. Data
EDD: ____Yes ____No
EDD Type:

Metals: RCRA 8•PP 13•TAL 23•TCLP•Other (List)

VOA/SVOA Report List: TCL • BTEX • TCLP • CP-51/Stars •THM • Other: _____

Invoice To: (X Same as Report To)
PO #:
Company:
Contact:
Email:
Phone:
Address:

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature						
Printed Name	Greg Ernst					
Company	Stevens					
Date/Time	10/16/24 1400					

Gibson Fall Ground Water Monitoring and Sampling Narrative

10/15/24
All samples taken were for resampling due to issues with the samples taken in early September 2024. These samples will only be for analysis 8081-BHC.

Well MW-A3 was not sampled as it had been dry during the September 2024 sampling event, so there was no need to resample it. Monitoring well MW-4 was pumped dry during purging before sample collection. Well MW-5 was sampled at 1025 (MW-5-101524). MH-B was sampled at 1110, with MS/MSD volumes taken here (MH-B-101524). Field Blank was taken at 1125 using the DI Water provided by ALS. MW-7 was sampled at 1200 (MH-7-101524).

10/16/24
Sevenson returned to site to sample recharge at well MW-4 at 1132 (MW-4-101624).

This narrative will be sent to ALS along with the sample COCs.

Gibson Fall Ground Water Monitoring and Sampling Narrative

10/15/24
All samples taken were for resampling due to issues with the samples taken in early September 2024. These samples will only be for analysis 8081-BHC.

Well MW-A3 was not sampled as it had been dry during the September 2024 sampling event, so there was no need to resample it. Monitoring well MW-4 was pumped dry during purging before sample collection. Well MW-5 was sampled at 1025 (MW-5-101524), with a blind dup taken here called MH-7-101524 with a time listed at 1200. MH-B was sampled at 1110, with MS/MSD volumes taken here (MH-B-101524). Field Blank was taken at 1125 using the DI Water provided by ALS.

10/16/24
Sevenson returned to site to sample recharge at well MW-4 at 1132 (MW-4-101624).

This narrative will be sent to internally but not to ALS, to keep the identity of the blind dupe secret from the lab.

4th Quarter **Inspection**

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
GROUNDWATER ELEVATION FORM

FORM TO BE USED FOR ALL QUARTERLY PIEZOMETER AND MANHOLE GROUNDWATER ELEVATION MEASURING EVENTS

DATE: 11/15/24 TIME: 1000

INSPECTOR: Greg Eiast COMPANY: Sevenson

WEATHER: Overcast, 40's °F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	9.16	563.56	
P-2	574.89	9.55	565.34	
P-3	574.16	11.30	562.86	
P-4	576.14	10.83	565.31	
P-5	575.05	7.96	567.09	
P-6	578.28	11.61	566.67	
MANHOLE A	575.22	12.12	563.10	
MANHOLE B	577.34	14.17	563.17	

(Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevations in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth to water distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A.
(Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)

ADDITIONAL COMMENTS/OBSERVATIONS: Observed water levels over the course of 1 hour, no changes occured

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063
SITE INSPECTION FORM

THIS FORM TO BE USED FOR QUARTERLY AND ALL OTHER SITE INSPECTIONS

DATE: 11/15/24 TIME: 10:00

INSPECTOR: Greg Ernst COMPANY: Evens

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): 4th Quarterly

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

(Note: For general site conditions note existence of bare areas (number,size), cracks, subsidence (sinking), ponded water, stressed vegetation, soil discoloration or seeps, and rodent burrows. For site security, note absence of locks, gates open or damaged, missing signs or evidence of vandalism. Note any other unusual occurences.)

		COMMENTS
ACCESS ROAD	A	
COVER VEGETATION	A	
TREES	A	
LITTER	A	
EROSION (CAP)	A	
EROSION (BANK)	A	

SECURITY:

FENCE/LOCKS	A	
PIEZOMETERS/LOCKS	A	
MONITORING WELLS/LOCKS	A	
MANHOLES/LIDS/LOCKS	A	
ELECTRICAL PANEL	A	

ADDITIONAL COMMENTS:

Photo Log

PHOTOGRAPHIC LOG		
Olin Corp.	**Charles Gibson** **Niagara Falls, NY**	**PRR 2024**

Photo No.	**Date**
1	March 12th, 2024

Quarterly Inspection

Evidence of small fire beneath trees outside fence line.

C Lab Packages

Data Evaluation Narrative
Charles Gibson – September 2024 Sediment and Groundwater Sampling Event

SDG: R2408641 – ALS Environmental, Rochester, NY

Deliverables

The data package as submitted to Olin Corporation is complete as stipulated under the Quality Assurance Project Plan (QAPP) for the site. United States Environmental Protection Agency (USEPA) Methods 8081B and 8270E were utilized in laboratory testing of samples. The ALS Standard Operating Procedure (SOP) was utilized to obtain percent solids of the sediment sample to report results on a dry weight basis.

Sample Integrity

Samples within this sample delivery group (SDG) were submitted to the ALS Environmental Laboratory in Rochester, NY for one or more of the following analyses: site-specific chlorinated pesticides, hexachlorobenzene, and percent solids. The sample cooler temperature measured within the specified temperature limits upon arrival at the laboratory. The proper containers were used, the Chain of Custody was properly relinquished, and the correct analytical methods were employed.

Sample Identification

The following samples collected on September 4, 2024, are included in the data evaluation:

Field Sample ID	Matrix	ALS ID	Analyte(s)
MW-4-090424	Groundwater	HS2408641-001	Hexachlorobenzene, BHCs
MW-5-090424	Groundwater	HS2408641-002	Hexachlorobenzene, BHCs
US-1-090424	Sediment	HS2408641-003	BHCs, % Solids
FB-090424	Water	HS2408641-004	Hexachlorobenzene
FB2-090424	Water	HS2408641-005	BHCs

Chlorinated Pesticides (8081B)

Four samples in this SDG were submitted for site-specific chlorinated pesticides analysis (BHCs) by USEPA Method 8081B.

Holding Times:

The extraction and analytical logs indicate that initial applicable holding times were met for samples submitted for chlorinated pesticide analysis.

Calibration:

The initial and continuing calibration data for this SDG indicates that the applicable calibration criteria were met for samples submitted for chlorinated pesticide analysis. The column breakdowns for Endrin and DDT were assessed, and the percent degradation was within QC limits each day that samples were analyzed.

Surrogate Recoveries:

The surrogate recoveries were within laboratory QC guidelines.

September 24, 2024 Service Request No:R2408641

Adam Carringer
Olin Corporation
490 Stuart Road
Cleveland, TN 37312

Laboratory Results for: Charles Gibson

Dear Adam,

Enclosed are the results of the sample(s) submitted to our laboratory September 05, 2024
For your reference, these analyses have been assigned our service request number **R2408641.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7475. You may also contact me via email at Meghan.Pedro@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro
Project Manager

CC: Randy Morris

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Olin Corporation
Project: Charles Gibson
Sample Matrix: Soil, Water

Service Request: R2408641
Date Received: 09/05/2024

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.
Manual Integrations may have been used in the quantitation of the results in this report. Manual Integrations are readily identified in the raw data on the Quantitation Reports (Organics) by the automatic placement of an “m” next to the sample result. For Ion Chromatography, the manual integrations are identified by the automatic placement of “manipulated” or "manually integrated" in the upper left corner of the chromatogram (Hexavalent Chromium) or “M” by the result in the “Type” column (anions). The reason for the manual integration is noted on the “after” chromatogram, which is found with the original chromatogram and quantitation report. All integrations follow the lab SOP ADM-INT “Manual Integration.”

Sample Receipt:

Seven soil, water samples were received for analysis at ALS Environmental on 09/05/2024. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivolatiles by GC/MS:

No significant anomalies were noted with this analysis.

Semivoa GC:

Method 8081B, 09/10/2024: The matrix spike recovery of one or more of the spiked analytes was outside of control limits because of sample heterogeneity. The sample contained a background concentration of the analyte such that sample heterogeneity significantly affected the spike recovery calculation. No further corrective action was required.

Method 8081B, Sample -005: The Method Reporting Limit (MRL) was elevated due to less than optimal sample mass (15g) used in the microwave preparation process. The nature of the sample necessitated using less mass of sample to avoid overheating. Overheating causes the extraction solvent to vent out of the vessel and may cause damage to the microwave vessels.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by _____ Date 09/24/2024

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Olin Corporation **Service Request:**R2408641
Project: Charles Gibson

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2408641-001	MW-4-090424	9/4/2024	1400
R2408641-002	MW-5-090424	9/4/2024	1440
R2408641-005	US-1-090424	9/4/2024	1540
R2408641-006	FB-090424	9/4/2024	1600
R2408641-007	FB2-090424	9/4/2024	1605

Chain of Custody / Analytical Request Form

74635

SR#:

Page of

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 • +1 585 288 5380 • alsglobal.com

Report To:	ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER
Company: Olin Corp	Project Name: Charles Gibson
Contact: Adam Carringer	Project Number:
Email: abcarringer@olin.com	ALS Quote #:
Phone: 423-336-4057	Sampler's Signature: Rick Hicks CHARLES GIBSON
Address: 490 Stuart Rd NE	Email CC:
Cleveland, TN 37312	Email CC:
	State Samples Collected (Circle or Write): NY, MA, PA, CT, Other:

Preservative: D D

Lab ID (ALS)	Sample Collection Information: Sample ID:	Date	Time	Matrix (GW WW SW DW S L NA)	Number of Containers	MS/MSD?	GC/MS VOA - 8260•624•524•TCLP	GC/MS SVOA - 8270 • 625 • TCLP	Pesticides - 8081 • 608 • TCLP	PCBs - 8082 • 608	Herbicides - 8151 • TCLP	Metals, Total - Select Below	Metals, Dissolved - Field / In-Lab Filter	Notes:
-	MW-4-090424	9-4-24	1400	GW	4 1/2	N		21	21		JRH	9-4-24		
-	MW-5-090424	9-4-24	1440	GW	4	N		2	2					
-	MH-B-090424	9-4-24	1515	GW	3	Y		3						MS/MSD
-	MH-B-DUP-090424	9-4-24	1515	GW	1	N		1						
	US-1-090424	9-4-24	1540	SED	2	N	9-4-25	x	2					
	MS-1-090424	9-4-24	1555	SED	2	N		x	2					
	DS-1-090424	9-4-24	1610	SED	2	N	RH	x	2					
	FB-090424	9-4-24	1600	GW	1	N		1	1					
	FB2-090424	9-4-24	1605	GW	1	N		1	1					

0. None
1. HCl
2. HNO3
3. H2SO4
4. NAOH
5. Zn Acet.
6. MeOH
7. NaHSO4
8. Other

Special Instructions / Comments:

8270 - HCB
8081 - BHC

Turnaround Requirements

____Rush (Surcharges Apply)
Subject to Availability
Please Check with your PM
X Standard (10 Business Days)
Date Required:

Report Requirements

____Tier II/Cat A -Results/QC
____Tier IV/Cat B - Data Validation Report w/. Data
EDD: ____Yes ____No
EDD Type:

Metals: RCRA 8•PP 13•TAL 23•TCLP•Other (List)

VOA/SVOA Report List: TCL • BTEX • TCLP • CP-51/Stars •THM • Other: _____

Invoice To: (□ Same as Report To)

PO #:

Company:

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Rick Hicks	Gregory O. Emerson				
Printed Name	Rick Hicks	Gregory O. Emerson				
Company	OLIN	ALS				
Date/Time	9-4-24 1610	9/5/24 1035				

R2408641 5
Olin Corporation
Charles Gibson

Distribution: White - Lab Copy; Yellow - Return to Originator

R2408641
Olin Corporation
Charles Gibson
5

Cooler Receipt and Preservation Check Form

Project/Client Olin Corp Folder Number

Cooler received on 9/5/24 by: KK

COURIER: ALS UPS (FEDEX) VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	(Y) N		5a	Did **VOA** vials have sig* **bubbles?**	Y N (NA)	
2	**Custody papers** properly completed (ink, signed)?	(Y) N		5b	Sig* bubbles: **Alk?**	Y N (NA)	**Sulfide?** Y N (NA)
3	Did all bottles arrive in good **condition** (unbroken)?	Y (N)*		6	Where did the bottles originate?	(ALS/ROC)	(CLIENT)
4	Circle: (**Wet Ice**) **Dry Ice** **Gel packs** present?	(Y) N		7	Soil VOA received as: Bulk Encore 5035set		(NA)

8. Temperature Readings Date: 9/5/24 Time: 11:31 ID: (IR#12) IR#11 From: Temp Blank (Sample Bottle)

Temp (°C)	2.4	0.8					
Within 0-6°C?	(Y) N	(Y) N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: SMO by KK on 9/5/24 at 11:38

5035 samples placed in storage location: _____ by _____ on _____ at _____ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 9/5/24 Time: 1834 by: RDH

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
10. Did all bottle labels and tags agree with custody papers? (YES) NO
11. Were correct containers used for the tests indicated? (YES) NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO (N/A)
13. Were dissolved metals filtered in the field? YES NO (N/A)
14. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated (N/A)

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2		HNO_3								
≤2		H_2SO_4								
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-			**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).			
		HCl	**	**						

Bottle lot numbers: OS1324-165

Explain all Discrepancies/ Other Comments:

* MW-5-090424 : 1 of 4 Ambers had a cracked cap. The cap was replaced

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: RDH

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Accreditations[1]

NELAP States
Florida ID # E87674
New Hampshire ID # 2941
New York ID # 10145
Pennsylvania ID# 68-786
Virginia #460167

Non-NELAP States
Connecticut ID #PH0556
Delaware Approved
Maine ID #NY01587
North Carolina #36701
North Carolina #676
Rhode Island LAO00333

[1] Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory. To verify NH accredited analytes, go to https://www4.des.state.nh.us/CertifiedLabs/Certified-Method.aspx.

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Olin Corporation **Service Request:** R2408641
Project: Charles Gibson

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method	Matrix	Analyte
ALS SOP	Soil	Total Solids

Client: Olin Corporation **Service Request:** R2408641
Project: Charles Gibson/

Sample Name: MW-4-090424 **Date Collected:** 09/4/24
Lab Code: R2408641-001 **Date Received:** 09/5/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8081B	JVANHEYNINGEN	AFELSER
8270E	JVANHEYNINGEN	EDEGRAY

Sample Name: MW-5-090424 **Date Collected:** 09/4/24
Lab Code: R2408641-002 **Date Received:** 09/5/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8081B	JVANHEYNINGEN	AFELSER
8270E	JVANHEYNINGEN	EDEGRAY

Sample Name: MH-B-090424 **Date Collected:** 09/4/24
Lab Code: R2408641-003 **Date Received:** 09/5/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8270E	JVANHEYNINGEN	EDEGRAY

Sample Name: MH-B-DUP-090424 **Date Collected:** 09/4/24
Lab Code: R2408641-004 **Date Received:** 09/5/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8270E	JVANHEYNINGEN	EDEGRAY

Client: Olin Corporation
Project: Charles Gibson/
Service Request: R2408641

Sample Name: US-1-090424
Lab Code: R2408641-005
Sample Matrix: Soil
Date Collected: 09/4/24
Date Received: 09/5/24

Analysis Method	Extracted/Digested By	Analyzed By
8081B	JVANHEYNINGEN	AFELSER
ALS SOP		HCASTROVINCI

Sample Name: FB-090424
Lab Code: R2408641-006
Sample Matrix: Water
Date Collected: 09/4/24
Date Received: 09/5/24

Analysis Method	Extracted/Digested By	Analyzed By
8270E	JVANHEYNINGEN	EDEGRAY

Sample Name: FB2-090424
Lab Code: R2408641-007
Sample Matrix: Water
Date Collected: 09/4/24
Date Received: 09/5/24

Analysis Method	Extracted/Digested By	Analyzed By
8081B	JVANHEYNINGEN	AFELSER

PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

INORGANIC

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C or 6010D	3005A/3010A
6020A or 6020B	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-N-2016 Amenable and Residual Cyanide	SM 4500-CN-G and SM 4500-CN-B,C-2016
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C or 6010D	3050B
6020A or 6020B	3050B
6010C or 6010D TCLP (1311) extract	3005A/3010A
6010C or 6010D SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	

ORGANIC

Preparation Methods for Organic methods are listed in the header of the Results pages.

Regarding "Bulk/5035A":
For soil/solid samples submitted in soil jars for Volatiles analysis, the prep method is listed as "Bulk/5035A". The lab follows the closed-system EPA 5035A protocols once the sample is transferred to a sealed vial, but collection in bulk in soil jars does not follow the collection protocols listed in EPA 5035A. In accordance with the NYSDOH technical notice of October 2012, all results or reporting limits <200 ug/kg are to be considered estimated due to potential low bias.

Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2408641
Project:	Charles Gibson	**Date Collected:**	09/04/24 14:00
Sample Matrix:	Water	**Date Received:**	09/05/24 10:35
Sample Name:	MW-4-090424	**Units:**	ug/L
Lab Code:	R2408641-001	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Hexachlorobenzene	ND U	9.6	1.6	1	09/12/24 00:22	9/9/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	81	31 - 133	09/12/24 00:22	
2-Fluorobiphenyl	67	25 - 99	09/12/24 00:22	
2-Fluorophenol	44	15 - 72	09/12/24 00:22	
Nitrobenzene-d5	65	22 - 104	09/12/24 00:22	
Phenol-d6	32	10 - 55	09/12/24 00:22	
p-Terphenyl-d14	65	10 - 143	09/12/24 00:22	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2408641
Project:	Charles Gibson	**Date Collected:**	09/04/24 14:40
Sample Matrix:	Water	**Date Received:**	09/05/24 10:35
Sample Name:	MW-5-090424	**Units:**	ug/L
Lab Code:	R2408641-002	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Hexachlorobenzene	ND U	9.6	1.6	1	09/12/24 00:46	9/9/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	67	31 - 133	09/12/24 00:46	
2-Fluorobiphenyl	60	25 - 99	09/12/24 00:46	
2-Fluorophenol	41	15 - 72	09/12/24 00:46	
Nitrobenzene-d5	62	22 - 104	09/12/24 00:46	
Phenol-d6	28	10 - 55	09/12/24 00:46	
p-Terphenyl-d14	43	10 - 143	09/12/24 00:46	

Client:	Olin Corporation	**Service Request:**	R2408641
Project:	Charles Gibson	**Date Collected:**	09/04/24 16:00
Sample Matrix:	Water	**Date Received:**	09/05/24 10:35
Sample Name:	FB-090424	**Units:**	ug/L
Lab Code:	R2408641-006	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Hexachlorobenzene	ND U	10	1.6	1	09/12/24 02:46	9/9/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	81	31 - 133	09/12/24 02:46	
2-Fluorobiphenyl	70	25 - 99	09/12/24 02:46	
2-Fluorophenol	47	15 - 72	09/12/24 02:46	
Nitrobenzene-d5	70	22 - 104	09/12/24 02:46	
Phenol-d6	32	10 - 55	09/12/24 02:46	
p-Terphenyl-d14	78	10 - 143	09/12/24 02:46	

Semivolatile Organic Compounds by GC

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Client:	Olin Corporation	**Service Request:**	R2408641
Project:	Charles Gibson	**Date Collected:**	09/04/24 14:00
Sample Matrix:	Water	**Date Received:**	09/05/24 10:35
Sample Name:	MW-4-090424	**Units:**	ug/L
Lab Code:	R2408641-001	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	**0.049**	**P**	0.048	0.020	1	09/17/24 20:37	9/10/24	
beta-BHC	ND	U	0.048	0.020	1	09/17/24 20:37	9/10/24	
delta-BHC	ND	U	0.048	0.020	1	09/17/24 20:37	9/10/24	
gamma-BHC (Lindane)	ND	U	0.048	0.020	1	09/17/24 20:37	9/10/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	11	10 - 111	09/17/24 20:37	
Tetrachloro-m-xylene	33	10 - 101	09/17/24 20:37	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2408641
Project:	Charles Gibson	**Date Collected:**	09/04/24 14:40
Sample Matrix:	Water	**Date Received:**	09/05/24 10:35
Sample Name:	MW-5-090424	**Units:**	ug/L
Lab Code:	R2408641-002	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	ND U	0.050	0.020	1	09/17/24 20:55	9/10/24	
beta-BHC	ND U	0.050	0.020	1	09/17/24 20:55	9/10/24	
delta-BHC	ND U	0.050	0.020	1	09/17/24 20:55	9/10/24	
gamma-BHC (Lindane)	ND U	0.050	0.020	1	09/17/24 20:55	9/10/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	37	10 - 111	09/17/24 20:55	
Tetrachloro-m-xylene	68	10 - 101	09/17/24 20:55	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2408641
Project:	Charles Gibson	**Date Collected:**	09/04/24 16:05
Sample Matrix:	Water	**Date Received:**	09/05/24 10:35
Sample Name:	FB2-090424	**Units:**	ug/L
Lab Code:	R2408641-007	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	ND U	0.048	0.020	1	09/17/24 21:12	9/10/24	
beta-BHC	ND U	0.048	0.020	1	09/17/24 21:12	9/10/24	
delta-BHC	ND U	0.048	0.020	1	09/17/24 21:12	9/10/24	
gamma-BHC (Lindane)	ND U	0.048	0.020	1	09/17/24 21:12	9/10/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	47	10 - 111	09/17/24 21:12	
Tetrachloro-m-xylene	59	10 - 101	09/17/24 21:12	

Client:	Olin Corporation	**Service Request:**	R2408641
Project:	Charles Gibson	**Date Collected:**	09/04/24 15:40
Sample Matrix:	Soil	**Date Received:**	09/05/24 10:35
Sample Name:	US-1-090424	**Units:**	ug/Kg
Lab Code:	R2408641-005	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography using Microwave Extraction

Analysis Method: 8081B
Prep Method: EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	ND U	53	27	1	09/10/24 19:44	9/6/24	
beta-BHC	ND U	53	27	1	09/10/24 19:44	9/6/24	
delta-BHC	ND U	53	27	1	09/10/24 19:44	9/6/24	
gamma-BHC (Lindane)	ND U	53	27	1	09/10/24 19:44	9/6/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	103	10 - 159	09/10/24 19:44	
Tetrachloro-m-xylene	78	10 - 132	09/10/24 19:44	

General Chemistry

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Analytical Report

Client:	Olin Corporation	**Service Request:**	R2408641
Project:	Charles Gibson	**Date Collected:**	09/04/24 15:40
Sample Matrix:	Soil	**Date Received:**	09/05/24 10:35
Sample Name:	US-1-090424	**Basis:**	As Received
Lab Code:	R2408641-005		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Total Solids	ALS SOP	**23.8**	Percent	-	1	09/12/24 09:45	

QC Summary Forms

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Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
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Client: Olin Corporation **Service Request:** R2408641
Project: Charles Gibson
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270E
Extraction Method: EPA 3510C

Sample Name	Lab Code	2,4,6-Tribromophenol 31 - 133	2-Fluorobiphenyl 25 - 99	2-Fluorophenol 15 - 72
MW-4-090424	R2408641-001	81	67	44
MW-5-090424	R2408641-002	67	60	41
FB-090424	R2408641-006	81	70	47
Method Blank	RQ2411182-01	67	58	42
Lab Control Sample	RQ2411182-02	84	72	50
Duplicate Lab Control Sample	RQ2411182-03	89	73	52

Client: Olin Corporation **Service Request:** R2408641
Project: Charles Gibson
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270E
Extraction Method: EPA 3510C

Sample Name	Lab Code	Nitrobenzene-d5 22 - 104	Phenol-d6 10 - 55	p-Terphenyl-d14 10 - 143
MW-4-090424	R2408641-001	65	32	65
MW-5-090424	R2408641-002	62	28	43
FB-090424	R2408641-006	70	32	78
Method Blank	RQ2411182-01	60	30	66
Lab Control Sample	RQ2411182-02	69	38	74
Duplicate Lab Control Sample	RQ2411182-03	73	40	78

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2408641
Project:	Charles Gibson	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2411182-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270E
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Hexachlorobenzene	ND U	10	1.6	1	09/11/24 20:19	9/9/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	67	31 - 133	09/11/24 20:19	
2-Fluorobiphenyl	58	25 - 99	09/11/24 20:19	
2-Fluorophenol	42	15 - 72	09/11/24 20:19	
Nitrobenzene-d5	60	22 - 104	09/11/24 20:19	
Phenol-d6	30	10 - 55	09/11/24 20:19	
p-Terphenyl-d14	66	10 - 143	09/11/24 20:19	

Client: Olin Corporation
Project: Charles Gibson
Sample Matrix: Water

Service Request: R2408641
Date Analyzed: 09/11/24

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2411182-02			RQ2411182-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Hexachlorobenzene	8270E	74.9	80.0	94	78.4	80.0	98	54-122	5	30

Semivolatile Organic Compounds by GC

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Client: Olin Corporation **Service Request:** R2408641
Project: Charles Gibson
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Extraction Method: EPA 3510C

Sample Name	Lab Code	Decachlorobiphenyl 10 - 111	Tetrachloro-m-xylene 10 - 101
MW-4-090424	R2408641-001	11 P	33
MW-5-090424	R2408641-002	37	68
FB2-090424	R2408641-007	47	59
Method Blank	RQ2411244-01	24	60
Lab Control Sample	RQ2411244-02	79	67
Duplicate Lab Control Sample	RQ2411244-03	62	66

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2408641
Project:	Charles Gibson	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2411244-01	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	ND U	0.050	0.020	1	09/17/24 19:09	9/10/24	
beta-BHC	ND U	0.050	0.020	1	09/17/24 19:09	9/10/24	
delta-BHC	ND U	0.050	0.020	1	09/17/24 19:09	9/10/24	
gamma-BHC (Lindane)	ND U	0.050	0.020	1	09/17/24 19:09	9/10/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	24	10 - 111	09/17/24 19:09	
Tetrachloro-m-xylene	60	10 - 101	09/17/24 19:09	

Client: Olin Corporation
Project: Charles Gibson
Sample Matrix: Water

Service Request: R2408641
Date Analyzed: 09/17/24

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Units:ug/L
Basis:NA

			Lab Control Sample			Duplicate Lab Control Sample				
			RQ2411244-02			RQ2411244-03				
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	8081B	0.307	0.400	77	0.306	0.400	77	39-107	<1	30
beta-BHC	8081B	0.310	0.400	78	0.311	0.400	78	47-110	<1	30
delta-BHC	8081B	0.308	0.400	77	0.307	0.400	77	43-109	<1	30
gamma-BHC (Lindane)	8081B	0.319	0.400	80	0.318	0.400	79	41-105	<1	30

Client: Olin Corporation **Service Request:** R2408641
Project: Charles Gibson
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY

Organochlorine Pesticides by Gas Chromatography using Microwave Extraction

Analysis Method: 8081B
Extraction Method: EPA 3546

Sample Name	Lab Code	Decachlorobiphenyl 10 - 159	Tetrachloro-m-xylene 10 - 132
US-1-090424	R2408641-005	103	78
Method Blank	RQ2411066-01	93	78
Lab Control Sample	RQ2411066-02	92	78
Duplicate Lab Control Sample	RQ2411066-03	97	77
US-1-090424 MS	RQ2411066-06	89	87
US-1-090424 DMS	RQ2411066-07	99	93

Client:	Olin Corporation	**Service Request:**	R2408641
Project:	Charles Gibson	**Date Collected:**	09/04/24
Sample Matrix:	Soil	**Date Received:**	09/05/24
		Date Analyzed:	09/10/24
		Date Extracted:	09/6/24

Duplicate Matrix Spike Summary
Organochlorine Pesticides by Gas Chromatography using Microwave Extraction

Sample Name:	US-1-090424	**Units:**	ug/Kg
Lab Code:	R2408641-005	**Basis:**	Dry
Analysis Method:	8081B		
Prep Method:	EPA 3546		

		Matrix Spike			Duplicate Matrix Spike					
		RQ2411066-06			RQ2411066-07					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	ND U	53.7	209	26	229	202	113	10-149	124*	30
beta-BHC	ND U	140	209	67	456	202	226 *	10-162	106*	30
delta-BHC	ND U	38.5 J	209	18	136	202	67	10-157	112*	30
gamma-BHC (Lindane)	ND U	27.4 J	209	13	179	202	88	10-170	147*	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2408641
Project:	Charles Gibson	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	RQ2411066-01	**Basis:**	Dry

Organochlorine Pesticides by Gas Chromatography using Microwave Extraction

Analysis Method: 8081B
Prep Method: EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	ND U	1.7	0.84	1	09/10/24 18:52	9/6/24	
beta-BHC	ND U	1.7	0.84	1	09/10/24 18:52	9/6/24	
delta-BHC	ND U	1.7	0.84	1	09/10/24 18:52	9/6/24	
gamma-BHC (Lindane)	ND U	1.7	0.84	1	09/10/24 18:52	9/6/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	93	10 - 159	09/10/24 18:52	
Tetrachloro-m-xylene	78	10 - 132	09/10/24 18:52	

Client: Olin Corporation
Project: Charles Gibson
Sample Matrix: Soil

Service Request: R2408641
Date Analyzed: 09/10/24

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography using Microwave Extraction

Units:ug/Kg
Basis: Dry

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2411066-02			RQ2411066-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	8081B	5.31	6.61	80	5.08	6.64	77	44-109	4	30
beta-BHC	8081B	5.95	6.61	90	5.05	6.64	76	49-119	16	30
delta-BHC	8081B	5.44	6.61	82	5.33	6.64	80	49-113	2	30
gamma-BHC (Lindane)	8081B	5.19	6.61	79	4.71	6.64	71	43-112	10	30

General Chemistry

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Phone (585) 288-5380 Fax (585) 288-8475
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ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Olin Corporation	**Service Request:**	R2408641
Project	Charles Gibson	**Date Collected:**	09/04/24
Sample Matrix:	Soil	**Date Received:**	09/05/24
		Date Analyzed:	09/12/24

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	US-1-090424	**Units:**	Percent
Lab Code:	R2408641-005	**Basis:**	As Received

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample R2408641-005DUP Result	Average	RPD	RPD Limit
Total Solids	ALS SOP	-	23.8	23.4	23.6	2	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Blank Summary:
The analytical results of the laboratory method blanks and field blank indicated that chlorinated pesticides were not detected.

Laboratory Control Sample (LCS) and LCS Duplicate (LCSD):
The LCS and LCSD spike recoveries and relative percent differences (RPDs) were with laboratory control limits.

Second Column Confirmation:
The laboratory utilized a second column confirmation for the analysis of chlorinated pesticides. The confirmation results were within QC guidelines for the LCS/LCSD and performance evaluation mixture (PEM) samples. For project sample MW-4-090424, the result for alpha-BHC had a RPD (49) greater than 40%. In accordance with laboratory QC guidelines as well as those found in EPA Method 8000, the result from the lower result was reported since there was no evidence of chromatographic issues. The alpha-BHC result is qualified as an estimated concentration (J) due to the high RPD by professional judgment as seen below.

Sample ID	Analyte	Data Flag
MW-4-090424	alpha-BHC	J

Duplicate Sample:
No field duplicates were collected by the samplers.

Reporting Limits:
No sample dilutions were necessary; lab reporting limits were thus the standard reporting limits for the groundwater and sediment matrices.

Matrix Spike/Matrix Spike Duplicate (MS/MSD):
MS/MSD analyses were performed for sample US-1-090424. All percent recoveries were within lab control guidelines except for the MSD recovery of beta-BHC which was elevated. All RPDs between MS and MSD recoveries were also elevated. Since all BHCs were non-detect for the parent sample, no data qualification was deemed necessary by professional judgment.

Percent Total Solids
The sediment sample was analyzed for Percent Total Solids by the ALS SOP to report the results on a dry weight basis. The relative percent difference (RPD) between a lab duplicate and parent sample was 1.7.

Semi-Volatile Organic Compounds (EPA Method 8270E)
Two groundwater samples and a field blank in this SDG were submitted for Semi-Volatile Organic Compounds (SVOC) analysis of hexachlorobenzene (HCB) by USEPA Method 8270E.

Holding Times:
The extraction and analytical logs indicate that applicable holding times were met for samples submitted for semi-volatiles analysis. The holding times of 7 days for extraction and 40 days for analysis were met.

Practical Quantitation Limits:
The practical quantitation limits (PQLs) were met for the analysis of HCB by USEPA Method 8270E.

Calibration:
The initial and continuing calibration data indicate that applicable initial and continuing calibration criteria were met.

GC/MS Instrument Performance Check:
The GC/MS tuning and mass calibration checks passed the criteria as established by the method.

Blank Summary:
The analytical results of the laboratory method blank and field blank indicated no HCB was detected.

Laboratory Control Sample (LCS) and LCS Duplicate (LCSD):
The LCS and LCSD spike recoveries and RPDs were within applicable QC advisory limits.

Internal Standards and Surrogates:
The internal standard area counts/retention times and surrogate recoveries were within applicable QC advisory limits.

Matrix Spike/Matrix Spike Duplicate (MS/MSD):
No MS/MSD analyses were performed on project samples.

Field Duplicate:
No field duplicates were collected by the samplers.

Overall Site Evaluation and Professional Judgment Flagging Changes
The data within this SDG were compared to site data and one DQE flag was assigned based on professional judgment as detailed above. Monitoring period completeness, which is the percentage of analytical results judged valid, including estimated values, was 100 percent for the September 2024 sampling event. Typically, project objectives are met when completeness is 90 percent or better.

Prepared by: *Randy T. Morris* Date: *January 6, 2025*

Data Evaluation Narrative
Charles Gibson – October 2024 Groundwater and Leachate Sampling Event

SDG: R2410462 – ALS Environmental, Rochester, NY

Deliverables
The data package as submitted to Olin Corporation is complete as stipulated under the Quality Assurance Project Plan (QAPP) for the site. United States Environmental Protection Agency (USEPA) Method 8081B was utilized in laboratory testing of samples.

Sample Integrity
Samples within this sample delivery group (SDG) were submitted to the ALS Environmental Laboratory in Rochester, NY for chlorinated pesticides analysis. The sample cooler temperature measured 1.7°C upon arrival at the laboratory which is within control guidelines. The proper bottles were used, the Chain of Custody was properly relinquished, and the correct analytical method was employed.

Sample Identification
This SDG contains the following water and quality control (QC) samples collected October 15-16, 2024, 2024:

SDG R2410462:

Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
MW-5-101524	MH-B-101524	Field Blank-101524	MW-7-101524*	MW-4-101624

* Blind Field Duplicate of MW-5-101524.

Chlorinated Pesticides (8081B)
The samples in this SDG were submitted for site-specific chlorinated pesticides (BHCs) analysis by USEPA Method 8081B.

Holding Times:
The extraction and analytical logs indicate that applicable holding times were met for samples submitted for chlorinated pesticide analysis.

Practical Quantitation Limits:
The practical quantitation limits (PQLs) were met for all samples submitted for chlorinated pesticide analysis by USEPA Method 8081B.

Calibration:
The initial and continuing calibration data for this SDG indicates that the applicable calibration criteria were met. The column breakdowns were assessed, and the percent degradation was within QC limits.

Surrogates:
The surrogate recoveries were within applicable QC advisory limits for all samples submitted for chlorinated pesticide analysis except for the surrogate DCB which was slightly elevated for one project sample and one QC sample. No data qualification was deemed necessary by professional judgment.

Blank Summary:
The analytical results of the laboratory method blank and field blank indicate that chlorinated pesticides were not detected.

Laboratory Control Sample (LCS) and LCS Duplicate (LCSD):
The LCS/LCSD spike recoveries and relative percent differences (RPDs) were within applicable QC advisory limits.

Second Column Confirmation:
The laboratory utilized a second column confirmation for the analysis of chlorinated pesticides. The RPDs were within guidelines for the LCS/LCSD and performance evaluation mixture (PEM) samples as well as the one delta-BHC detection in a project sample.

Field Duplicate Sample:
According to the sampler, MW-7-101524 was a blind field duplicate of MW-5-101524. The sample and field duplicate were non-detect for all BHC compounds.

Matrix Spike/Matrix Spike Duplicate (MS/MSD):
MS/MSD analyses were performed on sample MH-B-101524. All MS/MSD percent recoveries were within laboratory QC guidelines except for delta-BHC and the MSD of gamma-BHC. For delta-BHC, the sample concentration was more than 4x the spike level; therefore, no data qualification is required for the low recoveries. For gamma-BHC the MSD recovery is elevated; since the bias is high and the parent sample is non-detect for the compound, no data qualification is warranted.

Overall Site Evaluation and Professional Judgment Flagging Changes
The data within this SDG were compared to site data and edits to the DQE flags were not required based on professional judgment. Monitoring period completeness, which is the percentage of analytical results judged valid, including estimated values, was 100 percent for the October 2024 sampling event. Typically, project objectives are met when completeness is 90 percent or better.

Prepared by: *Randy T. Morris* Date: *January 6, 2025*

October 28, 2024 Service Request No:R2410462

Adam Carringer
Olin Corporation
490 Stuart Road
Cleveland, TN 37312

Laboratory Results for: Chrales Gibson-olin

Dear Adam,

Enclosed are the results of the sample(s) submitted to our laboratory October 17, 2024
For your reference, these analyses have been assigned our service request number **R2410462.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7475. You may also contact me via email at Meghan.Pedro@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro
Project Manager

CC: Randy Morris

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

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1565 Jefferson Rd, Building 300, Rochester, NY 14623 | 585-288-5380 | www.alsglobal.com

Client: Olin Corporation
Project: Chrales Gibson-olin
Sample Matrix: Water

Service Request: R2410462
Date Received: 10/17/2024

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.
Manual Integrations may have been used in the quantitation of the results in this report. Manual Integrations are readily identified in the raw data on the Quantitation Reports (Organics) by the automatic placement of an “m” next to the sample result. For Ion Chromatography, the manual integrations are identified by the automatic placement of “manipulated” or "manually integrated" in the upper left corner of the chromatogram (Hexavalent Chromium) or “M” by the result in the “Type” column (anions). The reason for the manual integration is noted on the “after” chromatogram, which is found with the original chromatogram and quantitation report. All integrations follow the lab SOP ADM-INT “Manual Integration.”

Sample Receipt:

Five water samples were received for analysis at ALS Environmental on 10/17/2024. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivoa GC:

Method 8081B: The upper control limit was exceeded for one or more surrogates in one or more samples in this report. The elevated recovery equates to a high bias. Evaluation of the standard demonstrated a standard mismatch for surrogate PCB 209 concentration. Surrogate TCMX recoveries were acceptable. No further corrective action was appropriate.

Method 8081B, 10/23/2024: The matrix spike recovery of one or more of the spiked analytes was outside of control limits because of sample heterogeneity. The sample contained a background concentration of the analyte such that sample heterogeneity significantly affected the spike recovery calculation. No further corrective action was required.

Approved by  Date 10/28/2024

Sample Receipt Information

ALS Environmental—Rochester Laboratory
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Client: Olin Corporation **Service Request:**R2410462

Project: Chrales Gibson-olin/133211

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R2410462-001	MW-5-101524	10/15/2024	1025
R2410462-002	MH-B-101524	10/15/2024	1110
R2410462-003	Field Blank-101524	10/15/2024	1125
R2410462-004	MW-7-101524	10/15/2024	1200
R2410462-005	MW-4-101624	10/16/2024	1132

Chain of Custody / Analytical Request Form

078454

SR#:

Page of

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Report To:	ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER
Company: Olin Corporation	Project Name: Charles Gibson - Olin
Contact: Adam Carringer	Project Number: 133211
Email: ABCarringer@Olin.com	ALS Quote #:
Phone: 423-336-4057	Sampler's Signature:
Address: 490 Stuart Rd	Email CC: ABCarringer@Olin.com
Cleveland, TN 37312	Email CC:
	State Samples Collected (Circle or Write): (NY) MA, PA, CT, Other:

Preservative: 0 = None; 1 = HCl; 2 = HNO3; 3 = H2SO4; 4 = NAOH; 5 = Zn Acet.; 6 = MeOH; 7 = NaHSO4; 8 = Other

Lab ID (ALS)	Sample ID:	Date	Time	Matrix (GW / WW / SW / DW / S / L / NA)	Number of Containers	MS/MSD?	GC/MS VOA - 8260•624•524•TCLP	GC/MS SVOA - 8270 • 625 • TCLP	Pesticides (8081) • 608 • TCLP	PCBs - 8082 • 608	Herbicides - 8151 • TCLP	Metals, Total - Select Below	Metals, Dissolved - Field / In-Lab Filter	Notes:
	MW-5-101524	10/15/24	1025	GW	2	N			X					
	MH-B-101524	10/15/24	1110	GW	6	Y			X					
	Field Blank-101524	10/15/24	1125	GW	2	N			X					DI water provided by lab
	MW-7-101524	10/15/24	1200	GW	2	N			X					
	MW-4-101624	10/16/24	1132	GW	2	N			X					

Special Instructions / Comments:
Samples are for Analysis 8081-BHC

Turnaround Requirements
- X Rush (Surcharges Apply)
- *Subject to Availability*
- *Please Check with your PM*
- ____ Standard (10 Business Days)
- Date Required:

Report Requirements
- X Tier II/Cat A -Results/QC
- ____ Tier IV/Cat B - Data Validation Report w/. Data
- EDD: ____Yes ____No
- EDD Type:

Metals: RCRA 8•PP 13•TAL 23•TCLP•Other (List)

VOA/SVOA Report List: TCL • BTEX • TCLP • CP-51/Stars •THM • Other: _____

Invoice To: (X Same as Report To)

PO #:

Company:

Contact:

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature						
Printed Name	Grey Ernst	Sarah S				
Company	Stevens	ALS				
Date/Time	10/16/24 1400	10/17/24 935				

R2410462 5
Olin Corporation
Charles Gibson-olin

Distribution: White - Lab Copy; Yellow - Return to Originator

R2410462 5
Olin Corporation
Charles Gibson-olin

Cooler Receipt and Preservation Check Form

Project/Client Stevenson Folder Number

Cooler received on 10/17/24 by: SES COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y N	5a	Did **VOA** vials have sig* **bubbles?**	Y N NA
2	**Custody papers** properly completed (ink, signed)?	Y N	5b	Sig* bubbles: **Alk?** Y N NA **Sulfide?**	Y N NA
3	Did all bottles arrive in good **condition** (unbroken)?	Y N	6	Where did the bottles originate?	ALS/ROC CLIENT
4	Circle: **Wet Ice** **Dry Ice** **Gel packs** present?	Y N	7	Soil VOA received as: Bulk Encore 5035set	NA

8. Temperature Readings Date: 10/17/24 Time: 1031 ID: IR#12 IR#11 From: Temp Blank Sample Bottle

Temp (°C)	1.7						
Within 0-6°C?	Y N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: SMO by SES on 10/17/24 at 1032
5035 samples placed in storage location: _____ by _____ on _____ at _____ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 10/17/24 Time: 1732 by: RDA

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? YES NO
10. Did all bottle labels and tags agree with custody papers? YES NO
11. Were correct containers used for the tests indicated? YES NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO N/A
13. Were dissolved metals filtered in the field? YES NO N/A
14. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated N/A

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2		HNO_3								
≤2		H_2SO_4								
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-			**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).			
		HCl	**	**						

Bottle lot numbers: 071524-165

Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: RDA *significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

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REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Accreditations[1]

NELAP States
Florida ID # E87674
New Hampshire ID # 2941
New York ID # 10145
Pennsylvania ID# 68-786
Texas ID#T104704581
Virginia #460167

Non-NELAP States
Connecticut ID #PH0556
Delaware Approved
Maine ID #NY01587
North Carolina #36701
North Carolina #676
Rhode Island LAO00333

[1] Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory. To verify NH accredited analytes, go to https://www4.des.state.nh.us/CertifiedLabs/Certified-Method.aspx.

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Olin Corporation **Service Request:** R2410462
Project: Chrales Gibson-olin/133211

Sample Name: MW-5-101524 **Date Collected:** 10/15/24
Lab Code: R2410462-001 **Date Received:** 10/17/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8081B	JVANHEYNINGEN	AFELSER

Sample Name: MH-B-101524 **Date Collected:** 10/15/24
Lab Code: R2410462-002 **Date Received:** 10/17/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8081B	JVANHEYNINGEN	AFELSER

Sample Name: Field Blank-101524 **Date Collected:** 10/15/24
Lab Code: R2410462-003 **Date Received:** 10/17/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8081B	JVANHEYNINGEN	AFELSER

Sample Name: MW-7-101524 **Date Collected:** 10/15/24
Lab Code: R2410462-004 **Date Received:** 10/17/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8081B	JVANHEYNINGEN	AFELSER

Sample Name: MW-4-101624 **Date Collected:** 10/16/24
Lab Code: R2410462-005 **Date Received:** 10/17/24
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8081B	JVANHEYNINGEN	AFELSER

PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

INORGANIC

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C or 6010D	3005A/3010A
6020A or 6020B	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-N-2016 Amenable and Residual Cyanide	SM 4500-CN-G and SM 4500-CN-B,C-2016
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C or 6010D	3050B
6020A or 6020B	3050B
6010C or 6010D TCLP (1311) extract	3005A/3010A
6010C or 6010D SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	

ORGANIC

Preparation Methods for Organic methods are listed in the header of the Results pages.

Regarding "Bulk/5035A":
For soil/solid samples submitted in soil jars for Volatiles analysis, the prep method is listed as "Bulk/5035A". The lab follows the closed-system EPA 5035A protocols once the sample is transferred to a sealed vial, but collection in bulk in soil jars does not follow the collection protocols listed in EPA 5035A. In accordance with the NYSDOH technical notice of October 2012, all results or reporting limits <200 ug/kg are to be considered estimated due to potential low bias.

Sample Results

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Semivolatile Organic Compounds by GC

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www.alsglobal.com

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2410462
Project:	Chrales Gibson-olin/133211	**Date Collected:**	10/15/24 10:25
Sample Matrix:	Water	**Date Received:**	10/17/24 09:35
Sample Name:	MW-5-101524	**Units:**	ug/L
Lab Code:	R2410462-001	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	ND U	0.049	0.020	1	10/23/24 21:49	10/22/24	
beta-BHC	ND U	0.049	0.020	1	10/23/24 21:49	10/22/24	
delta-BHC	ND U	0.049	0.020	1	10/23/24 21:49	10/22/24	
gamma-BHC (Lindane)	ND U	0.049	0.020	1	10/23/24 21:49	10/22/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	62	10 - 111	10/23/24 21:49	
Tetrachloro-m-xylene	71	10 - 101	10/23/24 21:49	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2410462
Project:	Chrales Gibson-olin/133211	**Date Collected:**	10/15/24 11:10
Sample Matrix:	Water	**Date Received:**	10/17/24 09:35
Sample Name:	MH-B-101524	**Units:**	ug/L
Lab Code:	R2410462-002	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	ND U	0.049	0.020	1	10/23/24 22:06	10/22/24	
beta-BHC	ND U	0.049	0.020	1	10/23/24 22:06	10/22/24	
delta-BHC	**1.8**	0.049	0.020	1	10/23/24 22:06	10/22/24	
gamma-BHC (Lindane)	ND U	0.049	0.020	1	10/23/24 22:06	10/22/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	113 *	10 - 111	10/23/24 22:06	*
Tetrachloro-m-xylene	67	10 - 101	10/23/24 22:06	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2410462
Project:	Chrales Gibson-olin/133211	**Date Collected:**	10/15/24 11:25
Sample Matrix:	Water	**Date Received:**	10/17/24 09:35
Sample Name:	Field Blank-101524	**Units:**	ug/L
Lab Code:	R2410462-003	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	ND U	0.049	0.020	1	10/23/24 22:59	10/22/24	
beta-BHC	ND U	0.049	0.020	1	10/23/24 22:59	10/22/24	
delta-BHC	ND U	0.049	0.020	1	10/23/24 22:59	10/22/24	
gamma-BHC (Lindane)	ND U	0.049	0.020	1	10/23/24 22:59	10/22/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	56	10 - 111	10/23/24 22:59	
Tetrachloro-m-xylene	62	10 - 101	10/23/24 22:59	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2410462
Project:	Chrales Gibson-olin/133211	**Date Collected:**	10/15/24 12:00
Sample Matrix:	Water	**Date Received:**	10/17/24 09:35
Sample Name:	MW-7-101524	**Units:**	ug/L
Lab Code:	R2410462-004	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	ND U	0.049	0.020	1	10/23/24 23:17	10/22/24	
beta-BHC	ND U	0.049	0.020	1	10/23/24 23:17	10/22/24	
delta-BHC	ND U	0.049	0.020	1	10/23/24 23:17	10/22/24	
gamma-BHC (Lindane)	ND U	0.049	0.020	1	10/23/24 23:17	10/22/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	69	10 - 111	10/23/24 23:17	
Tetrachloro-m-xylene	61	10 - 101	10/23/24 23:17	

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2410462
Project:	Chrales Gibson-olin/133211	**Date Collected:**	10/16/24 11:32
Sample Matrix:	Water	**Date Received:**	10/17/24 09:35
Sample Name:	MW-4-101624	**Units:**	ug/L
Lab Code:	R2410462-005	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	ND U	0.049	0.020	1	10/23/24 23:34	10/22/24	
beta-BHC	ND U	0.049	0.020	1	10/23/24 23:34	10/22/24	
delta-BHC	ND U	0.049	0.020	1	10/23/24 23:34	10/22/24	
gamma-BHC (Lindane)	ND U	0.049	0.020	1	10/23/24 23:34	10/22/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	51	10 - 111	10/23/24 23:34	
Tetrachloro-m-xylene	68	10 - 101	10/23/24 23:34	

QC Summary Forms

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Semivolatile Organic Compounds by GC

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Client: Olin Corporation **Service Request:** R2410462
Project: Chrales Gibson-olin/133211
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Extraction Method: EPA 3510C

Sample Name	Lab Code	Decachlorobiphenyl 10 - 111	Tetrachloro-m-xylene 10 - 101
MW-5-101524	R2410462-001	62	71
MH-B-101524	R2410462-002	113 *	67
Field Blank-101524	R2410462-003	56	62
MW-7-101524	R2410462-004	69	61
MW-4-101624	R2410462-005	51	68
Method Blank	RQ2413402-01	105	75
Lab Control Sample	RQ2413402-02	89	73
Duplicate Lab Control Sample	RQ2413402-03	70	73
MH-B-101524 MS	RQ2413402-04	107	68
MH-B-101524 DMS	RQ2413402-05	125 *	70

Client:	Olin Corporation	**Service Request:**	R2410462
Project:	Chrales Gibson-olin/133211	**Date Collected:**	10/15/24
Sample Matrix:	Water	**Date Received:**	10/17/24
		Date Analyzed:	10/23/24
		Date Extracted:	10/22/24

Duplicate Matrix Spike Summary
Organochlorine Pesticides by Gas Chromatography

Sample Name:	MH-B-101524	**Units:**	ug/L
Lab Code:	R2410462-002	**Basis:**	NA
Analysis Method:	8081B		
Prep Method:	EPA 3510C		

		Matrix Spike			Duplicate Matrix Spike					
		RQ2413402-04			RQ2413402-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	ND U	0.345	0.392	88	0.370	0.392	94	27-154	7	30
beta-BHC	ND U	0.445	0.392	113	0.361	0.392	92	32-184	21	30
delta-BHC	1.8	0.424	0.392	-354 #	0.388	0.392	-364 #	10-182	9	30
gamma-BHC (Lindane)	ND U	0.329	0.392	84	1.13	0.392	289 *	43-164	110*	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Analytical Report

Client:	Olin Corporation	**Service Request:**	R2410462
Project:	Chrales Gibson-olin/133211	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ2413402-01	**Basis:**	NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	ND U	0.050	0.020	1	10/23/24 18:36	10/22/24	
beta-BHC	ND U	0.050	0.020	1	10/23/24 18:36	10/22/24	
delta-BHC	ND U	0.050	0.020	1	10/23/24 18:36	10/22/24	
gamma-BHC (Lindane)	ND U	0.050	0.020	1	10/23/24 18:36	10/22/24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	105	10 - 111	10/23/24 18:36	
Tetrachloro-m-xylene	75	10 - 101	10/23/24 18:36	

Client: Olin Corporation
Project: Chrales Gibson-olin/133211
Sample Matrix: Water

Service Request: R2410462
Date Analyzed: 10/23/24

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ2413402-02			RQ2413402-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	8081B	0.359	0.400	90	0.344	0.400	86	39-107	4	30
beta-BHC	8081B	0.359	0.400	90	0.355	0.400	89	47-110	1	30
delta-BHC	8081B	0.380	0.400	95	0.379	0.400	95	43-109	<1	30
gamma-BHC (Lindane)	8081B	0.366	0.400	92	0.360	0.400	90	41-105	2	30