



Environmental Remediation Group

490 Stuart Road NE  
Cleveland, TN 37312  
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**SENT VIA OVERNIGHT CARRIER AND EMAIL**

May 31, 2021

Mr. Brian Sadowski  
New York State Department of Environmental Conservation  
270 Michigan Avenue  
Buffalo, NY 14203-2915

**RE: Industrial Welding Site  
NYSDEC Registry No. 9-32-050  
Periodic Review Report – August 20, 2020 – March 21, 2021**

Dear Mr. Sadowski:

As requested by NYSDEC, we have submitted this IWS PRR and certification via Olin's cloud-based service portal, BOX as well as via overnight carrier. This report summarizes the site conditions and activities performed from August 20, 2020 through March 21, 2021 for the monitoring, operation, and maintenance of the containment remedy for the Industrial Welding site in Niagara Falls, New York. This report is being submitted in accordance with the requirements and schedule listed in the notification letter dated March 22, 2021.

Should you have questions, please contact me at (423) 336-4057. Should you have technical difficulties with the download/BOX process, please contact Lisa Wildes at (423) 336-4587 or ldharper@olin.com.

Sincerely,  
OLIN CORPORATION

A handwritten signature in blue ink, appearing to read 'Adam B. Carringer', written over a white background.

Adam B. Carringer  
Senior Environmental Specialist



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.	932050	
<b>Site Name Olin Corporation-Industrial Welding</b>		
Site Address: Packard Road near 30th Street	City/Town: Niagara Falls	Zip Code: 14303
County: Niagara		
Site Acreage: 13.290		
Reporting Period: May 01, 2020 to May 01, 2021		
		YES    NO
1. Is the information above correct?		<input checked="" type="checkbox"/> <input type="checkbox"/>
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?		<input type="checkbox"/> <input checked="" type="checkbox"/>
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?		<input type="checkbox"/> <input checked="" type="checkbox"/>
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?		<input type="checkbox"/> <input checked="" type="checkbox"/>
<b>If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.</b>		
5. Is the site currently undergoing development?		<input type="checkbox"/> <input checked="" type="checkbox"/>
		<b>Box 2</b>
		YES    NO
6. Is the current site use consistent with the use(s) listed below? Closed Landfill		<input checked="" type="checkbox"/> <input type="checkbox"/>
7. Are all ICs in place and functioning as designed?		<input checked="" type="checkbox"/> <input type="checkbox"/>
<b>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.</b>		
<b>A Corrective Measures Work Plan must be submitted along with this form to address these issues.</b>		
_____ Signature of Owner, Remedial Party or Designated Representative		_____ Date

**Description of Institutional Controls**

<u>Parcel</u>	<u>Owner</u>	<u>Institutional Control</u>
159.12-1-10	Olin Corporation	Soil Management Plan Monitoring Plan O&M Plan

Record of Decision; November 3, 1994 for Operable Units one and two (OU1 and OU2).

Deed Restriction; December 7, 2001.

159.12-1-2.2	Olin Corporation	Monitoring Plan Soil Management Plan O&M Plan
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Record of Decision (ROD) November 3, 1994 for Operable Units 1 and 2 (OU1 and OU2.)

Deed Restriction; December 7, 2001.

159.12-1-7	Olin Corporation	Site Management Plan O&M Plan
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Operable Unit 3 (OU3) Packard Road Parcel.

Record of Decision (ROD) March 24, 2006.

Environmental Easement; June 24, 2010.

**Description of Engineering Controls**

<u>Parcel</u>	<u>Engineering Control</u>
159.12-1-10	Monitoring Wells Cover System Fencing/Access Control Groundwater Containment Leachate Collection

Southern Cover System (American Legion Post Parcel, 136 Packard Road):

Operable Unit Two (OU2) was constructed as a subgrade, aggregate base course, asphalt concrete pavement (binder and top course), storm drainage, catch basins, storm drain piping with landscaping and security fencing.

A leachate collection and recovery system is active and extends beneath both the northern (150 Packard) and southern (136 Packard) covers. An extraction well pump is under the southern asphalt cover and automatically activates at a pre-set leachate level. Leachate is discharged to the Niagara Falls sewer system by City Permit No. ICU-23. The status of pump operations are monitored remotely.

159.12-1-2.2

Parcel

Engineering Control

Monitoring Wells  
Cover System  
Groundwater Containment  
Leachate Collection  
Fencing/Access Control

The remediation consisted of the consolidation of sediments, soils and demolition debris from Gill Creek the American Legion Post and other excavated materials.

The North Cover System (150 Packard Road, IWS Parcel) was constructed as a leachate collection and recovery system, consisting of a trench, geotextile, coarse stone aggregate, collection piping, recovery well, leachate extraction pumping system with a force main and a clay barrier.

The cap details are a six inch clay buffer layer, 40-mil. geomembrane liner, eighteen inch protective/drainage soil layer and six inch vegetative soil layer and vegetative cover.

A leachate collection and recovery system is active and extends beneath both the northern (150 Packard) and southern (136 Packard) covers. A extraction well pump is under the southern asphalt cover and automatically activates at a pre-set leachate level. Leachate is discharged to the Niagara Falls sewer system by City Permit No. ICU-23. The status of pump operations are monitored remotely.

**159.12-1-7**

Monitoring Wells  
Cover System  
Fencing/Access Control

Operable Unit 3 (OU3) Packard Road Parcel: The remediation consists of an asphalt cover to the equivalent specifications as the cover system of south OU2.



**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 complete.

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. 932050

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 Carringer at 490 Stuart Rd NE  
Cleveland TN 37312  
print name print business address

am certifying as Owner's Representative (Owner or Remedial Party)

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

Adam B Carringer \_\_\_\_\_  
Signature of Owner, Remedial Party, or Designated Representative Date  
Rendering Certification

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 CARRIE A. HUNT at 490 STUART RD NE, CLEVELAND, TN 37312  
print name print business address

am certifying as a Qualified Environmental Professional for the OWNER'S REPRESENTATIVE  
(Owner or Remedial Party)

Carrie A. Hunt, CHMM 11148 5-25-2021  
Signature of Qualified Environmental Professional, for Stamp Date  
the Owner or Remedial Party, Rendering Certification (Required for PE)

**Enclosure 3**  
**Periodic Review Report (PRR) General Guidance**

- I. Executive Summary: (1/2-page or less)
  - A. Provide a brief summary of site, nature and extent of contamination, and remedial history.
  - B. Effectiveness of the Remedial Program - Provide overall conclusions regarding;
    1. progress made during the reporting period toward meeting the remedial objectives for the site
    2. the ultimate ability of the remedial program to achieve the remedial objectives for the site.
  - C. Compliance
    1. Identify any areas of non-compliance regarding the major elements of the Site Management Plan (SMP, i.e., the Institutional/Engineering Control (IC/EC) Plan, the Monitoring Plan, and the Operation & Maintenance (O&M) Plan).
    2. Propose steps to be taken and a schedule to correct any areas of non-compliance.
  - D. Recommendations
    1. recommend whether any changes to the SMP are needed
    2. recommend any changes to the frequency for submittal of PRRs (increase, decrease)
    3. recommend whether the requirements for discontinuing site management have been met.
  
- II. Site Overview (one page or less)
  - A. Describe the site location, boundaries (figure), significant features, surrounding area, and the nature and extent of contamination prior to site remediation.
  - B. Describe the chronology of the main features of the remedial program for the site, the components of the selected remedy, cleanup goals, site closure criteria, and any significant changes to the selected remedy that have been made since remedy selection.
  
- III. Evaluate Remedy Performance, Effectiveness, and Protectiveness  
Using tables, graphs, charts and bulleted text to the extent practicable, describe the effectiveness of the remedy in achieving the remedial goals for the site. Base findings, recommendations, and conclusions on objective data. Evaluations and should be presented simply and concisely.
  
- IV. IC/EC Plan Compliance Report (if applicable)
  - A. IC/EC Requirements and Compliance
    1. Describe each control, its objective, and how performance of the control is evaluated.
    2. Summarize the status of each goal (whether it is fully in place and its effectiveness).
    3. Corrective Measures: describe steps proposed to address any deficiencies in ICECs.
    4. Conclusions and recommendations for changes.
  - B. IC/EC Certification
    1. The certification must be complete (even if there are IC/EC deficiencies), and certified by the appropriate party as set forth in a Department-approved certification form(s).
  
- V. Monitoring Plan Compliance Report (if applicable)
  - A. Components of the Monitoring Plan (tabular presentations preferred) - Describe the requirements of the monitoring plan by media (i.e., soil, groundwater, sediment, etc.) and by any remedial technologies being used at the site.
  - B. Summary of Monitoring Completed During Reporting Period - Describe the monitoring tasks actually completed during this PRR reporting period. Tables and/or figures should be used to show all data.
  - C. Comparisons with Remedial Objectives - Compare the results of all monitoring with the remedial objectives for the site. Include trend analyses where possible.
  - D. Monitoring Deficiencies - Describe any ways in which monitoring did not fully comply with the monitoring plan.
  - E. Conclusions and Recommendations for Changes - Provide overall conclusions regarding the monitoring completed and the resulting evaluations regarding remedial effectiveness.
  
- VI. Operation & Maintenance (O&M) Plan Compliance Report (if applicable)
  - A. Components of O&M Plan - Describe the requirements of the O&M plan including required activities, frequencies, recordkeeping, etc.
  - B. Summary of O&M Completed During Reporting Period - Describe the O&M tasks actually completed during this PRR reporting period.
  - C. Evaluation of Remedial Systems - Based upon the results of the O&M activities completed, evaluated

the ability of each component of the remedy subject to O&M requirements to perform as designed/expected.

- D. O&M Deficiencies - Identify any deficiencies in complying with the O&M plan during this PRR reporting period.
- E. Conclusions and Recommendations for Improvements - Provide an overall conclusion regarding O&M for the site and identify any suggested improvements requiring changes in the O&M Plan.

#### VII. Overall PRR Conclusions and Recommendations

- A. Compliance with SMP - For each component of the SMP (i.e., IC/EC, monitoring, O&M), summarize;
  - 1. whether all requirements of each plan were met during the reporting period
  - 2. any requirements not met
  - 3. proposed plans and a schedule for coming into full compliance.
- B. Performance and Effectiveness of the Remedy - Based upon your evaluation of the components of the SMP, form conclusions about the performance of each component and the ability of the remedy to achieve the remedial objectives for the site.
- C. Future PRR Submittals
  - 1. Recommend, with supporting justification, whether the frequency of the submittal of PRRs should be changed (either increased or decreased).
  - 2. If the requirements for site closure have been achieved, contact the Departments Project Manager for the site to determine what, if any, additional documentation is needed to support a decision to discontinue site management.

#### VIII. Additional Guidance

Additional guidance regarding the preparation and submittal of an acceptable PRR can be obtained from the Departments Project Manager for the site.

**ANNUAL PERIODIC REVIEW REPORT  
INDUSTRIAL WELDING SITE  
NIAGARA FALLS, NEW YORK**

**Site Number: 932050**

**Prepared By:**



**OLIN CORPORATION**

**490 Stuart Road NE  
Cleveland, Tennessee 37312**

**May 31, 2021**

## TABLE OF CONTENTS

- I. **Executive Summary**
  - A. **Brief summary, nature and extent, remedial history**
  - B. **Effectiveness of Remedial Program**
  - C. **Compliance**
  - D. **Recommendations**
  
- II. **Site Overview**
  - A. **Site description and nature/extent prior to remediation**
  - B. **Remediation chronology**
  
- III. **Remedy Performance, Effectiveness, and Protectiveness**
  - A. **Effectiveness of remedial goals**
  
- IV. **IC/EC Plan (not applicable)**
  - A. **IC/EC requirements**
  
- V. **Monitoring Plan Compliance Report**
  - A. **Components of Monitoring Plan**
  - B. & C. **Summary and Comparisons to remedial objectives**
  - D. **Deficiencies**
  - E. **Recommendations for changes**
  
- VI. **Operation and Maintenance (O&M) Plan Compliance Report**
  - A. **Components of the O&M Plan**
  - B. **O&M Summary**
  - C. **Evaluation of remedial systems**
  - D. **O&M deficiencies**
  - E. **Conclusions**
  
- VII. **Overall PRR Conclusions and Recommendations**
  - A. **Compliance with SMP**
  - B. **Remedy Effectiveness**
  - C. **Future submittals**

### Attachments

**Attachment A – Site Features Map**

**Attachment B – Groundwater Monitoring Data**

**Attachment C – Discharge Monitoring Report**

**Attachment D – Calendar Year Flows**

**Attachment E – Site Activities Reports, Inspections, and Sampling Logs**

**Attachment F – Mercury Data**

## I. Executive Summary

- A. **Brief summary, nature and extent, remedial history:** The site is comprised of three parcels. The original Industrial Welding Site (IWS) and the subsequently added American Legion Post (ALP) property lie immediately west of Veterans Drive and approximately 0.2 miles north of Buffalo Avenue in the City of Niagara Falls, New York. The third parcel, formerly called the Packard Road Parcel, lies immediately south of the American Legion Post parcel. Gill Creek, the site of a remedial action in 1998, lies immediately to the east of Veterans Drive. A site location map is presented in Figure 1-1, **Attachment A**, of this report.

The ownership and usage of the IWS property have varied over the past 60 years. The High Energy Fuels (HEF) Division of the Olin Corporation (formerly Olin Mathieson Corporation) operated a research laboratory and pilot process plant at the property from 1952 until 1956. In 1956, the HEF Division was disbanded and the laboratory and plant buildings demolished. The eastern side of the property was filled with fly ash, concrete debris, rubble from a building possibly contaminated with hexachlorocyclohexane (commonly known as benzene hexachloride [BHC]) and salt dirt (brine muds).

In 1966, Olin conveyed the IWS property to Niagara County Community College. This property was subsequently transferred to Niagara County. The Cerebral Palsy Association of Niagara County leases a building on property owned by Niagara County. Olin reacquired the IWS from Niagara County in 1997. The ALP property has formerly been utilized as a meeting and event hall.

- B. **Effectiveness of remedial program:** The isolation of ground water within the capped area has been established and is being maintained by current operation and maintenance activities. The remedial program is achieving the objectives of containing groundwater flow and discharging to the local sewer authority via permitted discharge.
- C. **Compliance:** There are no areas of non-compliance.
- D. **Recommendations:** The Operation and Maintenance program has shown that the conditions at the site are stable and consistent.

## II. SITE OVERVIEW

- A. **Site description and nature/extent prior to remediation:** Maps showing the site features are included in **Attachment A**. The nature and extent of contamination were evaluated during the Remedial Investigation (RI) and Feasibility Study (FS), which was conducted by International Technology Corporation, Knoxville, Tennessee. The final RI/FS was submitted to NYSDEC in July 1993. An addendum to the final FS was issued in November 1993.

The RI was performed in two phases. RI activities consisted of the following:



- Collecting soil samples to delineate the horizontal and vertical extent of contamination as well as to determine the physical properties of the underlying soils
- Installing monitoring wells and piezometers to evaluate groundwater quality and determine the hydrogeologic properties of the IWS
- Hydraulic monitoring of groundwater at the IWS and Gill Creek water levels to determine the ground-water flow direction, relationship to Gill Creek, and off-site migration
- Collecting air samples to assess the existence of any airborne constituents
- Collecting and analyzing sediments from catch basins adjacent to the IWS

The data collected during the RI/FS were compared with NYSDEC Standards, Criteria, and Guidance (SCGs) for groundwater, drinking water, surface water, soils and site-specific, risk-based criteria. Mercury, BHCs, and polycyclic aromatic hydrocarbons (PAHs) were determined to be the contaminants of concern.

#### **Remediation chronology:**

Pre-design sampling and analysis was performed in 1997 and 1998. Additional soil sampling was conducted on the Packard Road Parcel and evaluated to determine the appropriate remedy.

The final cover system was installed over the main disposal area and served to minimize the potential for contaminant migration from Site soils and prevent direct human exposure. Except for the ALP property and the former Packard Road Parcel, which received asphalt concrete cover, impacted soils outside the boundaries of the Site was excavated and consolidated beneath the IWS final cover system. Sediments from the Gill Creek Excavation and Restoration Project completed in 1998 were also consolidated beneath the final cover system.

The selected remedy for the IWS as stated in the ROD consists of a multi-layer final cover system over an area of approximately 4 acres. The sediments currently present at the IWS under the temporary cover system were consolidated under the IWS final cover system. The height of the final cover system was no greater than eight feet. The modified multi-layer IWS final cover system consists of the following.

- Six (6) inches of a compacted soil layer or 20-mil PVC geomembrane
- 40-mil linear high-density polyethylene (HDPE) geomembrane liner

- Eighteen (18) inches of cover soil consisting of 6 inches of topsoil and 12 inches of compacted soil material with a top slope not less than 2 percent and side slopes not greater than 33 percent. The topsoil was seeded and mulched to establish vegetative cover.

Surface drainage from the IWS final cover system was captured by a perimeter drainage swale and was directed either to Gill Creek or through the existing combined storm sewer system located adjacent to the IWS.

Based on the results of the pre-design sampling and analysis, impacted soils from areas outside the IWS were excavated and consolidated under the IWS final cover system.

The remedial design of the IWS final cover system is based upon the estimated volume of soils and sediments that are to be consolidated. The material to be consolidated beneath the IWS cover system was approximately 2,900 cubic yards of impacted soils from the eastern perimeter and 6,900 cubic yards of sediments. The volume of sediments is based on a survey of the consolidated material placed on IWS in 1998. The limits of excavation are based on the RI/FS and the sampling and the results of the pre-design field activities. The American Legion Parcel and the Packard Road Parcel was asphalted subsequent to the IWS cap construction.

### III. **REMEDY PERFORMANCE, EFFECTIVENESS, AND PROTECTIVENESS**

The work performed for the Site during the reporting period was reviewed and found to be in accordance with the approved O&M Manual. The ground water and monitoring data for the August 2020, October 2020, and March 2021 monitoring events and the surface drainage data for the September 2020 and November 2020 monitoring events are presented in ***Attachment B***.

### IV. **IC/EC Plan (not applicable)**

#### **A. IC/EC requirements:**

- Fence is in place around the landfill, effectively restricting access
- Clean soil cover and asphalt cover is in place on the landfill, restricting infiltration and promoting runoff

#### **B. Certification:**

- Attached.

### V. **MONITORING PLAN COMPLIANCE REPORT**

**A. Components of Monitoring Plan:** Routine operation of the leachate control and recovery system (LCRS) consists of the extraction well pump automatically discharging leachate from the extraction well to the City of Niagara Falls sewer system, per city permit No. ICU-23. The pump is controlled by float switches in the extraction well. The status of pump operations is monitored remotely.

**B, C. Summary and comparison to remedial objectives:**

Groundwater monitoring is performed semi-annually. Monitoring includes:

1. Measurements of water levels in each of the piezometers installed in the swale during the remedial construction
2. Annual collection of groundwater samples from the LCRS recovery well for chemical analysis for mercury, BHC and PAH compounds and semiannual monitoring at two onsite monitoring wells

The isolation of ground water within the capped area has been established and is being maintained by current operation and maintenance activities.

**D. Deficiencies:** None

**E. Recommendations for changes:** The groundwater monitoring program has shown consistent results throughout this monitoring period.

**VI. O&M PLAN COMPLIANCE REPORT**

**A. Components of the O&M Plan:** Operation, maintenance, and monitoring activities to be performed include:

- Security fencing is inspected for evidence of vandalism, missing or deteriorated warning signs, fencing member failure or degradation, and soil erosion
- The cover is inspected for settlement, surface erosion, vegetation, and asphalt concrete conditions
- The surface water drainage and erosion control system is inspected for erosion, settlement, obstructions, and damage to:
  - Vegetative-lined swales
  - Drainage piping and inlets
- The LCRS is inspected for proper pump operation, condition of cleanouts and pipes, and presence of standing water and debris. The most recent annual Discharge Monitoring Report to the City POTW is included in ***Attachment C***.
- The site access ways are inspected for surface deterioration and erosion of shoulders
- Recordkeeping is maintained for site inspections and monitoring

**B. O&M Summary:** Groundwater samples are collected from the sampling port at the LCRS recovery well annually. The samples are submitted to the off-site laboratory for analysis of mercury, BHC, and semi-volatile compounds.

Calendar-year flows by day for 2020 and for 2021 through April are presented in **Attachment D**.

Inspection reports, sampling logs, and site activities reports are presented in **Attachment E**. Inspections are conducted per the items listed on the Site Activities Report format. Information entered on these forms includes the inspector's name, date, item inspected and any comments. The inspector indicates whether the condition of each item was acceptable or unacceptable per the requirements of this O&M Plan. 0

**C. Evaluation of remedial systems:** All components are performing as designed

**D. O&M deficiencies:** None

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

## **VII. OVERALL PRR CONCLUSIONS AND RECOMMENDATIONS**

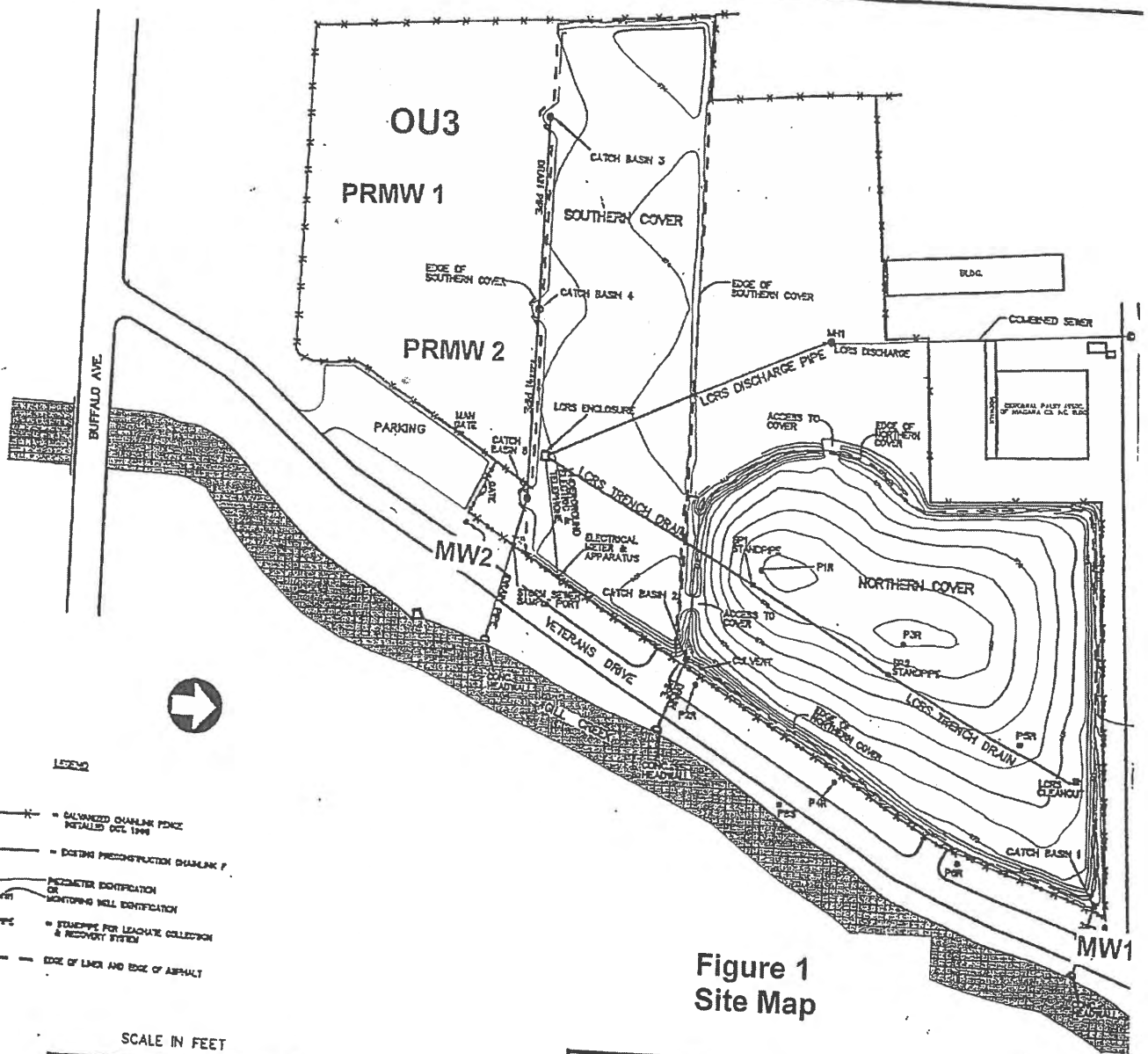
**A. Compliance with Site Monitoring Plan:** Based on the operations and maintenance documentation listed above, the system requirements are being met. There are no new exposure pathways. Additional plans and modifications are not necessary.

**B. Remedy Effectiveness:** Based on the data developed to date, the remedy has been effective in attaining the following remedial objectives:

- The isolation of ground water within the capped area has been established and is being maintained by current operation and maintenance activities.
- The ground water chemistry at the monitoring wells has been consistent across sampling events. Semi-volatile organics were generally undetected. No SVOCs were detected at concentrations above the New York State Class GA standards in the monitoring wells surrounding the capped area, providing evidence that contaminants are not migrating from beneath the cap.
- Overall, no appreciable difference in mercury concentrations were noted for MW-1 during this timeframe. The mercury concentrations reported for MW-2 indicated a result consistent with the overall trend. Historically, concentration spikes have been detected but fell back to historic levels in the following years. Over the past 17 years, the higher concentrations have occurred in the spring of the calendar years, with exception of the fall 2013 event. This trend was evident in the spring sampling of 2020. We resampled in August and sampled again in October and the results were significantly lower than the spring 2020 event. The spring 2021 concentrations were lower than that of the fall. We anticipate even lower concentrations of mercury in the upcoming fall event. The trends for mercury concentrations are illustrated by the graph and data included in **Attachment F**.

**C. Future submittals:** Future submittals of reports will be done on an annual basis in the appropriate Periodic Review Report format.

**ATTACHMENT A**



**Figure 1  
Site Map**

**OLIN CORPORATION  
INDUSTRIAL WELDING SITE  
NIAGARA FALLS, NEW YORK**

**ATTACHMENT B**



August 25, 2020

Service Request No:R2007319

Adam Carringer  
Olin Corporation  
3855 North Ocoee Street  
Suite 200  
Cleveland, TN 37312

**Laboratory Results for: Industrial Welding Site**

Dear Adam,

Enclosed are the results of the sample(s) submitted to our laboratory August 13, 2020  
For your reference, these analyses have been assigned our service request number **R2007319**.

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](mailto:Meghan.Pedro@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Meghan Pedro  
Project Manager

CC: Randy Morris





# 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](http://www.alsglobal.com)



**Client:** Olin Corporation  
**Project:** Industrial Welding Site  
**Sample Matrix:** Water

**Service Request:** R2007319  
**Date Received:** 08/13/2020

**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.

**Sample Receipt:**

Two water samples were received for analysis at ALS Environmental on 08/13/2020. 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.

**Metals:**

No significant anomalies were noted with this analysis.

Approved by \_\_\_\_\_

A handwritten signature in black ink that reads "Meghan Pedro".

Date \_\_\_\_\_

08/25/2020



## 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](http://www.alsglobal.com)

**Client:** Olin Corporation  
**Project:** Industrial Welding Site/1229

**Service Request:**R2007319

**SAMPLE CROSS-REFERENCE**

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R2007319-001	IWS-MW1-081220	8/12/2020	0855
R2007319-002	IWS-MW2-081220	8/12/2020	0905



# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

003391

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name <b>INDUSTRIAL WELDING SITE</b>		Project Number <b>1229</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)			
Project Manager <b>ADAM CARLINGER</b>		Report CC <b>ADAM CARLINGER</b>		PRESERVATIVE		PRESERVATIVE KEY	
Company/Address <b>OLIN CORP</b>		3855 NORTH OCOEE ST SUITE 200		NUMBER OF CONTAINERS		0. NONE 1. HCL 2. HNO3 3. H2SO4 4. NaOH 5. Zn Acetate 6. MeOH 7. NaHSO4 8. Other _____	
Cleveland TN 37312		Email <b>adcarlinger@olin.com</b>		METALS, TOTAL (List in comments below)		REMARKS/ALTERNATE DESCRIPTION	
Phone # <b>423 336 4987</b>		Sampler's Printed Name <b>OLIVUS JONES</b>		METALS, DISSOLVED (List in comments below)			
FOR OFFICE USE ONLY		DATE		SAMPLING TIME			
CLIENT SAMPLE ID	ONLY LAB ID	DATE	SAMPLING TIME	MATRIX			
1WS-MW1-081220		8/12/20	855	GW			
1WS-MW2-081220		8/12/20	905	GW			
TEMP BLANK							
SPECIAL INSTRUCTIONS/COMMENTS Metals <b>TOT MERCURY</b>		FOR OFFICE USE ONLY		SAMPLING TIME			
See CAPP <input type="checkbox"/>		STATE WHERE SAMPLES WERE COLLECTED <b>NY</b>		RECEIVED BY		RECEIVED BY	
RELINQUISHED BY		RELINQUISHED BY		SIGNATURE		RECEIVED BY	
Signature <i>CS</i>		Signature <i>UFRS</i>		Signature <i>Shirley Jones</i>		RECEIVED BY	
Printed Name <b>OLIVUS JONES</b>		Printed Name		Printed Name		RECEIVED BY	
Firm <b>SEVENSON</b>		Firm		Firm		RECEIVED BY	
Date/Time <b>8/17/20 1200</b>		Date/Time		Date/Time <b>8/17/20 0935</b>		RECEIVED BY	
TURNS/AROUNDS REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day ___ 2 day ___ 3 day ___ 4 day ___ 5 day ___ Standard (10 business days-No Surcharge) REQUESTED REPORT DATE _____		REPORT REQUIREMENTS I. Results Only II. Results + OC Summaries (LCS, DUP, MS/MSD as required) III. Results + OC and Calibration Summaries IV. Data Validation Report with Raw Data Edit# ___ Yes ___ No ___		TURNOVER REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day ___ 2 day ___ 3 day ___ 4 day ___ 5 day ___ Standard (10 business days-No Surcharge) REQUESTED REPORT DATE _____		INVOICE INFORMATION PO # BILL TO: <b>OLIN CORP</b>	
RELINQUISHED BY		RELINQUISHED BY		RELINQUISHED BY		RELINQUISHED BY	
Signature <i>CS</i>		Signature <i>UFRS</i>		Signature <i>Shirley Jones</i>		RELINQUISHED BY	
Printed Name <b>OLIVUS JONES</b>		Printed Name		Printed Name		RELINQUISHED BY	
Firm <b>SEVENSON</b>		Firm		Firm		RELINQUISHED BY	
Date/Time <b>8/17/20 1200</b>		Date/Time		Date/Time <b>8/17/20 0935</b>		RELINQUISHED BY	





# Cooler Receipt and Preservation Check Form

R2007319

5

Olin Corporation  
Industrial Welding Site



Project/Client Ohio Folder Number \_\_\_\_\_

Cooler received on 8/13/2020 by: AE

COURIER: ALS (JPS) FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	<input checked="" type="radio"/> Y <input type="radio"/> N
2	Custody papers properly completed (ink, signed)?	<input checked="" type="radio"/> Y <input type="radio"/> N
3	Did all bottles arrive in good condition (unbroken)?	<input checked="" type="radio"/> Y <input type="radio"/> N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	<input checked="" type="radio"/> Y <input type="radio"/> N

5a	Perchlorate samples have required headspace?	<input type="radio"/> Y <input type="radio"/> N <input checked="" type="radio"/> NA
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	<input type="radio"/> Y <input type="radio"/> N <input checked="" type="radio"/> NA
6	Where did the bottles originate?	<u>ALS/ROD</u> CLIENT
7	Soil VOA received as: Bulk Encore 5035set	<input checked="" type="radio"/> NA

8. Temperature Readings Date: 8/13/2020 Time: 0948 ID: IR#7 (IR#10) From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>4.7</u>						
Within 0-6°C?	<input checked="" type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
If <0°C, were samples frozen?	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> 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: R-002 by AE on 8/13/2020 at 0952  
5035 samples placed in storage location: \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_ within 48 hours of sampling?  Y  N

Cooler Breakdown/Preservation Check\*\*: Date: 8/13/2020 Time: 1955 by: DMW

- 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
- 13. Air Samples: Cassettes / Tubes Intact with MS? Canisters Pressurized Tedlar® Bags Inflated  N/A  N/A

pH	Lot of test paper	Reagent	Preserved?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
<u>2</u>	<u>223419</u>	HNO <sub>3</sub>	<input checked="" type="checkbox"/>		<u>1120021</u>					
<u>2</u>		H <sub>2</sub> SO <sub>4</sub>								
<4		NaHSO <sub>4</sub>								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (625, 608, CN), ascorbic (phenol).					
		Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>								
		ZnAcetate	-	-						
		HCl	**	**						

\*\*VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 20-07-17

Explain all Discrepancies/ Other Comments: \_\_\_\_\_

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: AE

PC Secondary Review: \_\_\_\_\_

\*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](http://www.alsglobal.com)

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> 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.</p> <p><b>J</b> 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 &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> 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.</p> <p><b>*</b> 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.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> 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).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|



### Rochester Lab ID # for State Certifications<sup>1</sup>

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

<sup>1</sup> 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 or go to <https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental>



# ALS Laboratory Group

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## 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.



## INORGANIC PREPARATION METHODS

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

### Water/Liquid Matrix

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

### Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 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.	



## 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](http://www.alsglobal.com)



## Metals

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1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623  
Phone (585) 288-5380 Fax (585) 288-8475  
[www.alsglobal.com](http://www.alsglobal.com)

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

IWS-MW1-081220

Contract: R2007319

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-MW1-0812

Matrix (soil/water): WATER Lab Sample ID: R2007319-001

Level (low/med): LOW Date Received: 8/13/2020

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.200	U		CV

Color Before: \_\_\_\_\_ Clarity Before: \_\_\_\_\_ Texture: \_\_\_\_\_

Color After: \_\_\_\_\_ Clarity After: \_\_\_\_\_ Artifacts: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**METALS**

-1-

**INORGANIC ANALYSIS DATA SHEET**

SAMPLE NO.

**IWS-MW2-081220**

Contract: R2007319

Lab Code: \_\_\_\_\_

Case No.: \_\_\_\_\_

SAS No.: \_\_\_\_\_

SDG NO.: IWS-MW1-0812

Matrix (soil/water): WATER

Lab Sample ID: R2007319-002

Level (low/med): LOW

Date Received: 8/13/2020

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	68.6			CV

Color Before: \_\_\_\_\_ Clarity Before: \_\_\_\_\_ Texture: \_\_\_\_\_

Color After: \_\_\_\_\_ Clarity After: \_\_\_\_\_ Artifacts: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## QC Summary Forms

**ALS Environmental—Rochester Laboratory**  
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623  
Phone (585) 288-5380 Fax (585) 288-8475  
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## Metals

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[www.alsglobal.com](http://www.alsglobal.com)



**METALS**

-3-

**BLANKS**

Contract: R2007319

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-MW1-0812

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	Continuing Calibration Blank ug/L						Preparation Blank	M
		1	2	3	4	5	6		
Mercury	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	CV	

Comments:

**METALS**

-3-

**BLANKS**

Contract: R2007319

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-MW1-0812

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	Continuing Calibration Blank ug/L						Preparation Blank	C	M
		1	C	2	C	3	C			
Mercury		0.200	U	0.200	U	0.200	U			CV

Comments:

**METALS**

-7-

**LABORATORY CONTROL SAMPLE**

Contract: R2007319

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-MW1-0812

Solid LCS Source: \_\_\_\_\_

Aqueous LCS Source: JT BAKER

Analyte	Aqueous (ug/L)			Solid (mg/K)				
	True	Found	%R	True	Found	C	Limits	%R
Mercury	1.000	1.010	101					

Comments: \_\_\_\_\_

**Industrial Welding Site  
Data Evaluation Narrative  
August 2020 Groundwater Resampling Event**

**SDG R2007319: ALS Environmental, Rochester, NY**

**Deliverables**

The data package as submitted to Olin Corporation is complete as stipulated under the Industrial Welding Site Quality Assurance Project Plan (QAPP) as approved by the New York State Department of Environmental Conservation. United States Environmental Protection Agency (USEPA) Method 7470A was utilized in the laboratory testing.

Samples submitted within this sample delivery group (SDG) were submitted to the ALS Environmental laboratory in Rochester, NY for analysis of total mercury. The laboratory subsequently applied login numbers to the SDG. The SDG number for this sampling event is R2007319. This evaluation narrative follows the listing of groundwater sample field identifications. The topics are ordered to first assess issues affecting the entire data set.

**Sample Integrity**

Information provided on the Chain of Custody and Cooler Receipt Form provided by the laboratory confirmed the samples arrived at the laboratory intact. The cooler temperature as received by the laboratory was within the temperature control limits of  $4.0^{\circ}\text{C} \pm 2.0^{\circ}\text{C}$ . The proper bottles and preservatives were used, the Chain of Custody was properly relinquished by the sampler, and the correct analytical method was employed.

**Sample Identification**

This SDG contains the following samples collected on August 12, 2020:

**SAMPLE**  
IWS-MW1-081220

**SAMPLE**  
IWS-MW2-081220

**Total Mercury Analyses (EPA Method 7470A)**

The samples in this SDG were submitted for total mercury analysis by USEPA Method 7470A.

**Holding Times:**

The extraction and analytical logs indicate that applicable holding times were met for samples submitted for total mercury analysis.

**Calibration:**

The initial and continuing calibration data for this SDG indicate that applicable calibration criteria were met for samples submitted for total mercury analysis. The low-level check standard recoveries were within QC advisory limits.

**Blank Summary:**

The analytical results of the initial and continuing laboratory method blanks indicated that total mercury was not detected.

**Laboratory Control Sample:**

The laboratory control sample (LCS) spike recovery was within the applicable QC advisory limits.

**Matrix Spike/Matrix Spike Duplicate (MS/MSD):**

No project MS/MSD samples were analyzed by the laboratory.

**Duplicate Samples:**

No samples were selected by the field or laboratory for duplicate analysis.

**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 August 2020 resampling event.

Prepared by: Randy T. Morris

Date: September 16, 2020

Sample	Date Collected	Date Analyzed	Analysis Method	Matrix	Units	Component	Dil. Factor	Rpt. Limit	Detection Limit	Result	Flag*
IWS-MW1-081220	8/12/2020	8/20/2020	7470A	Water	UG/L	Mercury, Total	1	0.2	0.2	0.2	U
IWS-MW2-081220	8/12/2020	8/20/2020	7470A	Water	UG/L	Mercury, Total	10	2	2	68.6	
*U = Non-detect; J = estimated concentration between Detection Limit and Reporting Limit											



November 02, 2020

Service Request No:R2009793

Mr. Dennis Turner  
Olin Corporation  
3855 North Ocoee St.  
Ste. 200  
Cleveland, TN 37312

**Laboratory Results for: Industrial Welding - Olin**

Dear Mr. Turner,

Enclosed are the results of the sample(s) submitted to our laboratory October 20, 2020  
For your reference, these analyses have been assigned our service request number **R2009793**.

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](mailto:Meghan.Pedro@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Meghan Pedro  
Project Manager

CC: Adam Carringer

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](http://www.alsglobal.com)





**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin  
**Sample Matrix:** Water

**Service Request:** R2009793  
**Date Received:** 10/20/2020

**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.

**Sample Receipt:**

Three water samples were received for analysis at ALS Environmental on 10/20/2020. 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. The sample extract(s) required cleanup with TBA (Tetrabutylammonium sulfate) to reduce analytical interference from sulfur. Endrin aldehyde is degraded by TBA cleanup, resulting in low LCS recoveries, and a likely low bias in the associated samples.

**Semivolatiles by GC/MS:**

No significant anomalies were noted with this analysis.

**Metals:**

No significant anomalies were noted with this analysis.

A handwritten signature in black ink that reads 'Meghan Pedco'.

Approved by \_\_\_\_\_

Date 11/02/2020



## 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](http://www.alsglobal.com)

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229

**Service Request:**R2009793

**SAMPLE CROSS-REFERENCE**

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R2009793-001	IWS-MW-2-101620	10/19/2020	0910
R2009793-002	IWS-MW-2-101920	10/19/2020	0830
R2009793-003	IWS-MW-1-101920	10/19/2020	0845





# Cooler Receipt and Preservation Check Form

**R2009793** **5**  
 Olin Corporation  
 Industrial Welding - Olin

Project/Client Olin Folder Number \_\_\_\_\_

Cooler received on 10/20/2020 by: [Signature]

COURIER: ALS UPS ~~FEDEX~~ VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
2	Custody papers properly completed (ink, signed)?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
3	Did all bottles arrive in good condition (unbroken)?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N

5a	Perchlorate samples have required headspace?	<input type="checkbox"/> Y	<input type="checkbox"/> N	<input checked="" type="checkbox"/> NA
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	<input type="checkbox"/> Y	<input type="checkbox"/> N	<input checked="" type="checkbox"/> NA
6	Where did the bottles originate?	<u>ALS/ROC</u>	CLIENT	
7	Soil VOA received as:	Bulk	Encore	5035set <input checked="" type="checkbox"/> NA

8. Temperature Readings Date: 10/20/2020 Time: 0946 ID: IR#7 R#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>1.2</u>						
Within 0-6°C?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N	<input type="checkbox"/> Y	<input type="checkbox"/> N	<input type="checkbox"/> Y	<input type="checkbox"/> N	<input type="checkbox"/> Y
If <0°C, were samples frozen?	<input type="checkbox"/> Y	<input type="checkbox"/> N	<input type="checkbox"/> Y	<input type="checkbox"/> N	<input type="checkbox"/> Y	<input type="checkbox"/> N	<input type="checkbox"/> Y

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: R-002 by [Signature] on 10/20/2020 at 0950  
 5035 samples placed in storage location: \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_ within 48 hours of sampling?  Y  N

Cooler Breakdown/Preservation Check\*\*: Date: 10/20/2020 Time: 1905 by: [Signature]

- 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
- 13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated NA

pH	Lot of test paper	Reagent	Preserved?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
<2	<u>22344</u>	HNO <sub>3</sub>	<input checked="" type="checkbox"/>		<u>20200434</u>					
<2		H <sub>2</sub> SO <sub>4</sub>								
<4		NaHSO <sub>4</sub>								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (625, 608, CN), ascorbic (phenol).					
		Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>								
		ZnAcetate	-	-						
		HCl	**	**						

\*\*VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 080520-13M, 20-09-09  
 Explain all Discrepancies/ Other Comments: \_\_\_\_\_

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: [Signature]  
 PC Secondary Review: \_\_\_\_\_

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





## Miscellaneous Forms

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## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> 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.</p> <p><b>J</b> 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 &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> 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.</p> <p><b>*</b> 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.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> 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).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|



### Rochester Lab ID # for State Certifications<sup>1</sup>

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

<sup>1</sup> 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 or go to <https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental>

## ALS Laboratory Group

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### 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.



**ALS Group USA, Corp.**

**dba ALS Environmental**

**Analyst Summary report**

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229

**Service Request:** R2009793

**Sample Name:** IWS-MW-2-101620  
**Lab Code:** R2009793-001  
**Sample Matrix:** Water

**Date Collected:** 10/19/20  
**Date Received:** 10/20/20

**Analysis Method**  
8270D

**Extracted/Digested By**  
KSERCU

**Analyzed By**  
JMISIUREWICZ

**Sample Name:** IWS-MW-2-101920  
**Lab Code:** R2009793-002  
**Sample Matrix:** Water

**Date Collected:** 10/19/20  
**Date Received:** 10/20/20

**Analysis Method**  
7470A

**Extracted/Digested By**  
AKONZEL

**Analyzed By**  
AKONZEL

**Sample Name:** IWS-MW-1-101920  
**Lab Code:** R2009793-003  
**Sample Matrix:** Water

**Date Collected:** 10/19/20  
**Date Received:** 10/20/20

**Analysis Method**  
7470A

**Extracted/Digested By**  
AKONZEL

**Analyzed By**  
AKONZEL



## INORGANIC PREPARATION METHODS

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

### Water/Liquid Matrix

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

### Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 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.	



## Sample Results

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## Semivolatile Organic Compounds by GC/MS

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ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229  
**Sample Matrix:** Water  
**Sample Name:** IWS-MW-2-101620  
**Lab Code:** R2009793-001

**Service Request:** R2009793  
**Date Collected:** 10/19/20 09:10  
**Date Received:** 10/20/20 09:35

**Units:** ug/L  
**Basis:** NA

Semivolatile Organic Compounds by GC/MS

**Analysis Method:** 8270D  
**Prep Method:** EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	11 U	11	1.5	1	10/27/20 23:39	10/22/20	
Acenaphthene	11 U	11	1.5	1	10/27/20 23:39	10/22/20	
Acenaphthylene	11 U	11	1.5	1	10/27/20 23:39	10/22/20	
Anthracene	11 U	11	1.4	1	10/27/20 23:39	10/22/20	
Benzo(a)anthracene	11 U	11	1.8	1	10/27/20 23:39	10/22/20	
Benzo(a)pyrene	11 U	11	1.3	1	10/27/20 23:39	10/22/20	
Benzo(b)fluoranthene	11 U	11	1.3	1	10/27/20 23:39	10/22/20	
Benzo(g,h,i)perylene	11 U	11	1.2	1	10/27/20 23:39	10/22/20	
Benzo(k)fluoranthene	11 U	11	1.4	1	10/27/20 23:39	10/22/20	
Chrysene	11 U	11	1.3	1	10/27/20 23:39	10/22/20	
Dibenz(a,h)anthracene	11 U	11	1.2	1	10/27/20 23:39	10/22/20	
Fluoranthene	11 U	11	1.7	1	10/27/20 23:39	10/22/20	
Fluorene	11 U	11	1.4	1	10/27/20 23:39	10/22/20	
Indeno(1,2,3-cd)pyrene	11 U	11	2.0	1	10/27/20 23:39	10/22/20	
Naphthalene	11 U	11	1.3	1	10/27/20 23:39	10/22/20	
Phenanthrene	11 U	11	1.5	1	10/27/20 23:39	10/22/20	
Pyrene	11 U	11	1.6	1	10/27/20 23:39	10/22/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	49	31 - 118	10/27/20 23:39	
Nitrobenzene-d5	48	31 - 110	10/27/20 23:39	
p-Terphenyl-d14	75	10 - 165	10/27/20 23:39	



## Metals

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**METALS**

**-1-  
INORGANIC ANALYSIS DATA SHEET**

**SAMPLE NO.**

**IWS-MW-2-101920**

**Contract:** R2009793

**Lab Code:** \_\_\_\_\_ **Case No.:** \_\_\_\_\_ **SAS No.:** \_\_\_\_\_

**SDG NO.:** IWS-MW-2-109

**Matrix (soil/water):** WATER

**Lab Sample ID:** R2009793-002

**Level (low/med):** LOW

**Date Received:** 10/20/2020

**Concentration Units (ug/L or mg/kg dry weight):** UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	65.6			CV

**Color Before:** \_\_\_\_\_ **Clarity Before:** \_\_\_\_\_ **Texture:** \_\_\_\_\_

**Color After:** \_\_\_\_\_ **Clarity After:** \_\_\_\_\_ **Artifacts:** \_\_\_\_\_

**Comments:**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

IWS-MW-1-101920

Contract: R2009793

Lab Code: \_\_\_\_\_

Case No.: \_\_\_\_\_

SAS No.: \_\_\_\_\_

SDG NO.: IWS-MW-2-109

Matrix (soil/water): WATER

Lab Sample ID: R2009793-003

Level (low/med): LOW

Date Received: 10/20/2020

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.200	U		CV

Color Before: \_\_\_\_\_ Clarity Before: \_\_\_\_\_ Texture: \_\_\_\_\_

Color After: \_\_\_\_\_ Clarity After: \_\_\_\_\_ Artifacts: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_





## QC Summary Forms

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## Semivolatile Organic Compounds by GC/MS

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[www.alsglobal.com](http://www.alsglobal.com)

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229  
**Sample Matrix:** Water

**Service Request:** R2009793

**SURROGATE RECOVERY SUMMARY**  
**Semivolatile Organic Compounds by GC/MS**

**Analysis Method:** 8270D  
**Extraction Method:** EPA 3510C

Sample Name	Lab Code	2-Fluorobiphenyl	Nitrobenzene-d5	p-Terphenyl-d14
		31-118	31-110	10-165
IWS-MW-2-101620	R2009793-001	49	48	75
Method Blank	RQ2012776-01	53	58	81
Lab Control Sample	RQ2012776-02	65	55	79
Duplicate Lab Control Sample	RQ2012776-03	75	72	81

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229  
**Sample Matrix:** Water  
**Sample Name:** Method Blank  
**Lab Code:** RQ2012776-01

**Service Request:** R2009793  
**Date Collected:** NA  
**Date Received:** NA

**Units:** ug/L  
**Basis:** NA

Semivolatile Organic Compounds by GC/MS

**Analysis Method:** 8270D  
**Prep Method:** EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	10 U	10	1.3	1	10/27/20 18:54	10/22/20	
Acenaphthene	10 U	10	1.4	1	10/27/20 18:54	10/22/20	
Acenaphthylene	10 U	10	1.4	1	10/27/20 18:54	10/22/20	
Anthracene	10 U	10	1.3	1	10/27/20 18:54	10/22/20	
Benz(a)anthracene	10 U	10	1.6	1	10/27/20 18:54	10/22/20	
Benzo(a)pyrene	10 U	10	1.2	1	10/27/20 18:54	10/22/20	
Benzo(b)fluoranthene	10 U	10	1.2	1	10/27/20 18:54	10/22/20	
Benzo(g,h,i)perylene	10 U	10	1.0	1	10/27/20 18:54	10/22/20	
Benzo(k)fluoranthene	10 U	10	1.3	1	10/27/20 18:54	10/22/20	
Chrysene	10 U	10	1.2	1	10/27/20 18:54	10/22/20	
Dibenz(a,h)anthracene	10 U	10	1.1	1	10/27/20 18:54	10/22/20	
Fluoranthene	10 U	10	1.5	1	10/27/20 18:54	10/22/20	
Fluorene	10 U	10	1.3	1	10/27/20 18:54	10/22/20	
Indeno(1,2,3-cd)pyrene	10 U	10	1.8	1	10/27/20 18:54	10/22/20	
Naphthalene	10 U	10	1.2	1	10/27/20 18:54	10/22/20	
Phenanthrene	10 U	10	1.4	1	10/27/20 18:54	10/22/20	
Pyrene	10 U	10	1.5	1	10/27/20 18:54	10/22/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	53	31 - 118	10/27/20 18:54	
Nitrobenzene-d5	58	31 - 110	10/27/20 18:54	
p-Terphenyl-d14	81	10 - 165	10/27/20 18:54	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229  
**Sample Matrix:** Water

**Service Request:** R2009793  
**Date Analyzed:** 10/27/20

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

**Units:**ug/L  
**Basis:**NA

**Lab Control Sample**                      **Duplicate Lab Control Sample**  
RQ2012776-02                                      RQ2012776-03

Analyte Name	Analytical		Spike		Spike		% Rec		RPD	RPD Limit
	Method	Result	Amount	% Rec	Amount	% Rec	Limits			
2-Methylnaphthalene	8270D	49.6	80.0	62	56.9	80.0	71	34-102	14	30
Acenaphthene	8270D	59.5	80.0	74	64.0	80.0	80	52-107	8	30
Acenaphthylene	8270D	62.8	80.0	79	69.7	80.0	87	55-109	10	30
Anthracene	8270D	73.6	80.0	92	75.8	80.0	95	55-116	3	30
Benz(a)anthracene	8270D	68.2	80.0	85	68.2	80.0	85	61-121	<1	30
Benzo(a)pyrene	8270D	82.8	80.0	103	86.3	80.0	108	44-114	5	30
Benzo(b)fluoranthene	8270D	68.8	80.0	86	70.2	80.0	88	62-115	2	30
Benzo(g,h,i)perylene	8270D	75.6	80.0	94	79.0	80.0	99	63-136	5	30
Benzo(k)fluoranthene	8270D	74.5	80.0	93	77.2	80.0	97	49-133	4	30
Chrysene	8270D	72.3	80.0	90	72.1	80.0	90	57-118	<1	30
Dibenz(a,h)anthracene	8270D	78.2	80.0	98	78.0	80.0	97	54-135	1	30
Fluoranthene	8270D	80.9	80.0	101	81.0	80.0	101	66-127	<1	30
Fluorene	8270D	67.7	80.0	85	69.6	80.0	87	54-106	2	30
Indeno(1,2,3-cd)pyrene	8270D	72.8	80.0	91	74.8	80.0	93	62-137	2	30
Naphthalene	8270D	44.7	80.0	56	53.5	80.0	67	38-99	18	30
Phenanthrene	8270D	69.8	80.0	87	72.6	80.0	91	58-118	4	30
Pyrene	8270D	73.6	80.0	92	73.0	80.0	91	61-122	1	30



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**METALS**

-3-

**BLANKS**

Contract: R2009793

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-MW-2-109

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	Continuing Calibration Blank ug/L						Preparation Blank	M
		1	2	3	4	5	6		
Mercury	0.200	0.200	0.200	0.200	0.200	0.200	0.200	CV	

Comments:

**METALS**

-3-

**BLANKS**

Contract: R2009793

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-MW-2-109

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	Continuing Calibration Blank ug/L						Preparation Blank	M
		1	2	3					
Mercury		0.200						CV	

Comments:



**METALS**

-7-

**LABORATORY CONTROL SAMPLE**

**Contract:** R2009793

**Lab Code:** \_\_\_\_\_ **Case No.:** \_\_\_\_\_ **SAS No.:** \_\_\_\_\_ **SDG NO.:** IWS-MW-2-109

**Solid LCS Source:** \_\_\_\_\_

**Aqueous LCS Source:** JT BAKER

Analyte	Aqueous (ug/L)			Solid (mg/K)				
	True	Found	%R	True	Found	C	Limits	%R
Mercury	1.000	1.030	103					

**Comments:** \_\_\_\_\_

**Industrial Welding Site**  
**Data Evaluation Narrative**  
**Fall 2020 Groundwater/Storm Drain Sampling Event**

**SDGs R2009115 & R2009793: ALS Environmental, Rochester, NY**

**Deliverables**

The data packages as submitted to Olin Corporation are complete as stipulated under the Industrial Welding Site Quality Assurance Project Plan (QAPP) as approved by the New York State Department of Environmental Conservation. United States Environmental Protection Agency (USEPA) Methods 8270D, 8081B, and 7470A were utilized in the laboratory testing.

Samples submitted within these sample delivery groups (SDGs) were submitted to the ALS Environmental laboratory in Rochester, NY for analysis of select semi-volatile organic compounds, organochlorine pesticides, and total mercury. The samples were collected on three different days due to drought conditions in Western NY. Even with sampling being conducted on three different days, insufficient water prevented some of the normal lab analyses from being completed. This evaluation narrative follows the listing of groundwater and storm drain sample field identifications. The topics are ordered to first assess issues affecting the entire data set.

**Sample Integrity**

Information provided on the Chains of Custody and Cooler Receipt Forms provided by the laboratory confirmed the samples arrived at the laboratory intact. Both cooler temperatures as received by the laboratory were within the proper temperature control limits. The proper bottles and preservatives were used, the Chains of Custody were properly relinquished by the sampler, and the correct analytical methods were employed.

**Sample Identification**

The following samples collected in Fall 2020 are included in the data evaluation:

<b>Field Sample ID</b>	<b>ALS ID</b>	<b>Sample Date</b>	<b>Lab Analyses</b>
IWS-SD1-093020	R2009115-001	9/30/2020	SVOCs, Pesticides, Hg
IWS-MW-2-101620	R2009793-001	10/16/2020	SVOCs
IWS-MW-2-101920	R2009793-002	10/19/2020	Hg
IWS-MW-1-101920	R2009793-003	10/19/2020	Hg

**Semi-Volatile Organic Compounds (EPA Method 8270D)**

Two samples in the data set were submitted for analysis of select semi-volatile organic compounds (SVOCs)—polyaromatic hydrocarbons (PAHs), by USEPA Method 8270D.

**Holding Times:**

The extraction and analytical logs indicate that applicable holding times were met for samples submitted for PAH analysis. The holding times of 7 days for extraction and 40 days for analysis were met.

**GC/MS Instrument Performance Check:**

The GC/MS tuning and mass calibration checks were performed with decafluorotriphenylphosphine (DFTPP) and met the performance criteria as established by the method.

**Calibration:**

The initial calibration and continuing calibration data indicate that applicable calibration criteria were met for samples submitted for PAH analysis. The RSDs for each calibration check were within the applicable criteria.

**Blank Summary:**

The analytical results of the laboratory method blanks indicated no PAHs were detected.

**Laboratory Control Sample (LCS)/LCS Duplicate (LCSD):**

The LCS/LCSD spike recoveries were within the applicable QC advisory limits, as were the relative percent differences (RPDs).

**Internal Standards and Surrogates:**

The internal standard area counts/retention times and the surrogate recoveries were within applicable QC advisory limits.

**Matrix Spike/Matrix Spike Duplicate:**

Sample IWS-SD1-093020 was submitted for matrix spike and matrix spike duplicate (MS/MSD) analysis. All recoveries were within control limits; the RPDs between the MS/MSD results were easily within lab QC guidelines.

**Duplicate Samples:**

No samples were selected by the field or laboratory for duplicate analysis.

**Organochlorine Pesticides (EPA Method 8081B)**

One sample in the data set was submitted for total HCCH (hexachlorocyclohexanes) analysis by USEPA Method 8081B.

**Holding Times:**

The extraction and analytical logs indicate that applicable holding times were met. The holding times of 7 days for extraction and 40 days for analysis were met.

**Calibration:**

The initial and continuing calibration data met method and QAPP criteria.

**Surrogates:**

The surrogate recoveries were within applicable QC advisory limits.

**Blank Summary:**

The analytical results of the laboratory method blank indicated no HCCHs were detected.

**Laboratory Control Sample (LCS)/LCS Duplicate (LCSD):**

The LCS/LCSD spike recoveries were within the applicable QC advisory limits as were the RPDs.

**Matrix Spike/Matrix Spike Duplicate:**

Sample IWS-SD1-093020 was submitted for MS/MSD analysis. The spike recoveries and RPDs were within QC guidelines.

**Duplicate Samples:**

No samples were selected by the field or laboratory for duplicate analysis.

**Total Mercury Analyses (EPA Method 7470A)**

Three samples were submitted for total mercury analysis by USEPA Method 7470A.

**Holding Times:**

The extraction and analytical logs indicate that applicable holding times were met for samples submitted for total mercury analysis.

**Calibration:**

The initial and continuing calibration data for the SDGs indicate that applicable calibration criteria were met for samples submitted for total mercury analysis. The low-level check standard recoveries were within QC advisory limits.

**Blank Summary:**

The analytical results of the initial and continuing laboratory method blanks indicated that total mercury was not detected.

**Laboratory Control Sample:**

The laboratory control sample (LCS) spike recoveries were within the applicable QC advisory limits.

**Matrix Spike/Matrix Spike Duplicate:**

Sample IWS-SD1-093020 was submitted to the laboratory for MS/MSD analysis. The percent recoveries and RPD were within control limits.

**Duplicate Samples:**

No samples were selected by the field or laboratory for duplicate analysis.

**Overall Site Evaluation and Professional Judgment Flagging Changes**

The data within the SDGs were compared to site data and edits to the DQE flags were not required. Monitoring period completeness, which is the percentage of analytical results judged valid, including estimated values, was 100 percent for the Fall 2020 sampling event.

Prepared by: Randy T. Morris

Date: November 30, 2020

Sample	Date Collected	Date Analyzed	Analysis Method	Matrix	Units	Component	Dil. Factor	Rpt. Limit	Detection Limit	Result	Flag
IWS-SD1-093020	9/30/2020	10/5/2020	7470A	Water	UG/L	Mercury, Total	1	0.2	0.08	0.2	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	2-Methylnaphthalene	1	10	1.4	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Acenaphthene	1	10	1.4	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Acenaphthylene	1	10	1.4	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Anthracene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benz(a)anthracene	1	10	1.7	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benzo(a)pyrene	1	10	1.2	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benzo(b)fluoranthene	1	10	1.2	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	10	1.1	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benzo(k)fluoranthene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Chrysene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	10	1.1	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Fluoranthene	1	10	1.6	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Fluorene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	10	1.9	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Naphthalene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Phenanthrene	1	10	1.4	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Pyrene	1	10	1.5	10	U
IWS-SD1-093020	9/30/2020	10/5/2020	8081B	Water	UG/L	alpha-BHC	1	0.057	0.023	0.057	U
IWS-SD1-093020	9/30/2020	10/5/2020	8081B	Water	UG/L	beta-BHC	1	0.057	0.023	0.057	U
IWS-SD1-093020	9/30/2020	10/5/2020	8081B	Water	UG/L	delta-BHC	1	0.057	0.023	0.057	U
IWS-SD1-093020	9/30/2020	10/5/2020	8081B	Water	UG/L	gamma-BHC (Lindane)	1	0.057	0.023	0.057	U
*U = Non-detect; J = estimated concentration between Detection Limit and Reporting Limit											

Sample	Date Collected	Date Analyzed	Analysis Method	Matrix	Units	Component	Dil. Factor	Rep. Limit	Detection Limit	Result	Flag
IWS-MW-2-101920	10/19/2020	10/23/2020	7470A	Water	UG/L	Mercury, Total	10	2	0.8	65.6	
IWS-MW-1-101920	10/19/2020	10/23/2020	7470A	Water	UG/L	Mercury, Total	1	0.2	0.08	0.2	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	2-Methylnaphthalene	1	11	1.5	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Acenaphthene	1	11	1.5	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Acenaphthylene	1	11	1.5	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Anthracene	1	11	1.4	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(a)anthracene	1	11	1.8	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(a)pyrene	1	11	1.3	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(b)fluoranthene	1	11	1.3	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	11	1.2	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(k)fluoranthene	1	11	1.4	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Chrysene	1	11	1.3	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	11	1.2	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Fluoranthene	1	11	1.7	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Fluorene	1	11	1.4	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	11	2	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Naphthalene	1	11	1.3	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Phenanthrene	1	11	1.5	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Pyrene	1	11	1.6	11	U
*U = Non-detect; J = estimated concentration between Detection Limit and Reporting Limit											



October 22, 2020

Service Request No:R2009115

Mr. Dennis Turner  
Olin Corporation  
3855 North Ocoee St.  
Ste. 200  
Cleveland, TN 37312

**Laboratory Results for: Industrial Welding - Olin**

Dear Mr. Turner,

Enclosed are the results of the sample(s) submitted to our laboratory October 01, 2020  
For your reference, these analyses have been assigned our service request number **R2009115**.

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](mailto:Meghan.Pedro@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Meghan Pedro  
Project Manager

CC: Adam Carringer





# 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](http://www.alsglobal.com)





**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin  
**Sample Matrix:** Water

**Service Request:** R2009115  
**Date Received:** 10/01/2020

**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.

**Sample Receipt:**

One water sample was received for analysis at ALS Environmental on 10/01/2020. 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.

**Semivolatile GC:**

Method 8081B, 10/05/2020: The control limit was exceeded for one or more surrogates in the Continuing Calibration Verification (CCV). The surrogates were within acceptance limits for the associated field samples. The data quality was not significantly affected and no further corrective action was taken.

Method 8081B, 10/06/2020: The control limit was exceeded for one or more surrogates in the Continuing Calibration Verification (CCV). The surrogates were within acceptance limits for the associated field samples. The data quality was not significantly affected and no further corrective action was taken.

**Metals:**

No significant anomalies were noted with this analysis.

Approved by \_\_\_\_\_

Date 10/22/2020



## 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](http://www.alsglobal.com)

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229

**Service Request:**R2009115

**SAMPLE CROSS-REFERENCE**

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R2009115-001	IWS-SD1-093020	9/30/2020	0900



# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

003748

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name <b>INDUSTRIAL WEDGING - QLN</b>		Project Number <b>1229</b>		
Client Manager <b>ADAM CARLINGTON</b>	Request OC <b>ADAM CARLINGTON</b>			
Company/Address <b>OLIN CORP</b>				
<b>3855 NORTH OGDEN RD</b>				
<b>CLEVELAND TN 37032</b>				
Phone # <b>423 336 4987</b>	Email <b>ADCarl@olin.com</b>			
Sampler's Name <b>CHAS JONES</b>				
Sampler's Signature 				
FOR OFFICE USE ONLY/LAB ID	DATE <b>9/20/20</b>	SAMPLING TIME <b>9:00</b>	MATRIX <b>GW</b>	
CLIENT SAMPLE ID <b>1W5-SD1-093020</b>				
<b>TEMP BURN</b>				
ANALYSIS REQUESTED (include Method Number and Container Preservative)				
PREPRESERVATIVE				
METALS (List in comments below)				
METALS TOTAL (List in comments below)				
PCBS (List in comments below)				
PESTICIDES (List in comments below)				
GC VOAs (List in comments below)				
GCMS VOAs (List in comments below)				
GCMS VOA (List in comments below)				
PRESERVATIVE				
NUMBER OF CONTAINERS				
PREPRESERVATIVE				
METALS (List in comments below)				
METALS TOTAL (List in comments below)				
PCBS (List in comments below)				
PESTICIDES (List in comments below)				
GC VOAs (List in comments below)				
GCMS VOAs (List in comments below)				
GCMS VOA (List in comments below)				
PRESERVATIVE KEY				
0. NONE				
1. HCL				
2. HNO3				
3. H2SO4				
4. NHOH				
5. Zn Acetate				
6. MeOH				
7. NaHSO4				
8. Other				
REMARKS/ALTERNATE DESCRIPTION <b>MISO volume *</b> <b>Flowlined by CAS</b>				

SPECIAL INSTRUCTIONS/COMMENTS <b>Metals TOT MERCURY</b> <b>SHIPPED IN 1 COOLER</b>	TURNAROUND REQUIREMENTS <small>RUSH (SURCHARGES APPLY)</small> 1 day ___ 2 day ___ 3 day ___ 4 day ___ 5 day ___ <input checked="" type="checkbox"/> Standard (10 business days-No Surcharge)	REPORT REQUIREMENTS i. Results Only ___ ii. Results + QC Summaries (ACS, DUP, MSMSD as required) <input checked="" type="checkbox"/> iii. Results + QC and Calibration Summaries ___ iv. Data Validation Report with Raw Data ___ Extra ___ Yes ___ No ___	INVOICE INFORMATION PO # BILL TO: <b>OLIN CORP</b>
See QAPP <input type="checkbox"/>	RECEIVED BY <b>UPS</b>	RECEIVED BY	RECEIVED BY
Signature <b>CHAS JONES</b>	Signature	Signature	Signature
Printed Name <b>CHAS JONES</b>	Printed Name	Printed Name	Printed Name
Firm <b>SES</b>	Firm	Firm	Firm
Date/Time <b>9/20/20 1500</b>	Date/Time	Date/Time	Date/Time

R2009115	5
Olin Corporation Industrial WEDGING - OLN	



# Cooler Receipt and Preservation Check Form

R2009115

5

Oil Corporation  
Industrial Welding - Oil

Project/Client Oil

Folder Number \_\_\_\_\_

Cooler received on 10/1/2020

by: AO

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y <input checked="" type="radio"/> N <input type="radio"/>
2	Custody papers properly completed (ink, signed)?	Y <input checked="" type="radio"/> N <input type="radio"/>
3	Did all bottles arrive in good condition (unbroken)?	Y <input checked="" type="radio"/> N <input type="radio"/>
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	Y <input checked="" type="radio"/> N <input type="radio"/>

5a	Perchlorate samples have required headspace?	Y N <input checked="" type="radio"/> NA
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y N <input checked="" type="radio"/> NA
6	Where did the bottles originate?	<u>ALS/ROC</u> CLIENT
7	Soil VOA received as: Bulk Encore 5035set	<input checked="" type="radio"/> NA

3. Temperature Readings Date: 10/1/2020 Time: 0937 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>3.1</u>						
Within 0-6°C?	Y <input checked="" type="radio"/> N <input type="radio"/>	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: R-002 by AO on 10/1/2020 at 0940

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

Cooler Breakdown/Preservation Check\*\*: Date: 10/1/2020 Time: 1540 by: AO

- 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. Air Samples: Cassettes / Tubes Intact with MS? Canisters Pressurized Tedlar® Bags Inflated N/A

pH	Lot of test paper	Reagent	Preserved?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
≤2	<u>MS22</u>	HNO <sub>3</sub>	<input checked="" type="checkbox"/>		<u>120021</u>					
≤2		H <sub>2</sub> SO <sub>4</sub>								
<4		NaHSO <sub>4</sub>								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (625, 608, CN), ascorbic (phenol).					
		Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>								
		ZnAcetate	-	-						
		HCl	**	**						

\*\*VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 080320-134C

Explain all Discrepancies/ Other Comments: \_\_\_\_\_

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: AO  
PC Secondary Review: AO

\*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](http://www.alsglobal.com)

RIGHT SOLUTIONS | RIGHT PARTNER

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> 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.</p> <p><b>J</b> 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 &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> 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.</p> <p><b>*</b> 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.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> 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).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|



### Rochester Lab ID # for State Certifications<sup>1</sup>

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

<sup>1</sup> 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 or go to <https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental>

## ALS Laboratory Group

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### 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.



**ALS Group USA, Corp.**  
dba ALS Environmental

Analyst Summary report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229

**Service Request:** R2009115

**Sample Name:** IWS-SD1-093020  
**Lab Code:** R2009115-001  
**Sample Matrix:** Water

**Date Collected:** 09/30/20  
**Date Received:** 10/1/20

**Analysis Method**

7470A  
8081B  
8270D

**Extracted/Digested By**

KMCLAEN  
KSERCU  
KSERCU

**Analyzed By**

AKONZEL  
JMISIUREWICZ  
JMISIUREWICZ



## INORGANIC PREPARATION METHODS

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

### Water/Liquid Matrix

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

### Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 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.	



## 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](http://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  
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Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229  
**Sample Matrix:** Water  
**Sample Name:** IWS-SD1-093020  
**Lab Code:** R2009115-001

**Service Request:** R2009115  
**Date Collected:** 09/30/20 09:00  
**Date Received:** 10/01/20 09:30

**Units:** ug/L  
**Basis:** NA

Semivolatile Organic Compounds by GC/MS

**Analysis Method:** 8270D  
**Prep Method:** EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	10 U	10	1.4	1	10/08/20 02:47	10/6/20	
Acenaphthene	10 U	10	1.4	1	10/08/20 02:47	10/6/20	
Acenaphthylene	10 U	10	1.4	1	10/08/20 02:47	10/6/20	
Anthracene	10 U	10	1.3	1	10/08/20 02:47	10/6/20	
Benz(a)anthracene	10 U	10	1.7	1	10/08/20 02:47	10/6/20	
Benzo(a)pyrene	10 U	10	1.2	1	10/08/20 02:47	10/6/20	
Benzo(b)fluoranthene	10 U	10	1.2	1	10/08/20 02:47	10/6/20	
Benzo(g,h,i)perylene	10 U	10	1.1	1	10/08/20 02:47	10/6/20	
Benzo(k)fluoranthene	10 U	10	1.3	1	10/08/20 02:47	10/6/20	
Chrysene	10 U	10	1.3	1	10/08/20 02:47	10/6/20	
Dibenz(a,h)anthracene	10 U	10	1.1	1	10/08/20 02:47	10/6/20	
Fluoranthene	10 U	10	1.6	1	10/08/20 02:47	10/6/20	
Fluorene	10 U	10	1.3	1	10/08/20 02:47	10/6/20	
Indeno(1,2,3-cd)pyrene	10 U	10	1.9	1	10/08/20 02:47	10/6/20	
Naphthalene	10 U	10	1.3	1	10/08/20 02:47	10/6/20	
Phenanthrene	10 U	10	1.4	1	10/08/20 02:47	10/6/20	
Pyrene	10 U	10	1.5	1	10/08/20 02:47	10/6/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	50	31 - 118	10/08/20 02:47	
Nitrobenzene-d5	51	31 - 110	10/08/20 02:47	
p-Terphenyl-d14	93	10 - 165	10/08/20 02:47	



## Semivolatile Organic Compounds by GC

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Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229  
**Sample Matrix:** Water  
**Sample Name:** IWS-SD1-093020  
**Lab Code:** R2009115-001

**Service Request:** R2009115  
**Date Collected:** 09/30/20 09:00  
**Date Received:** 10/01/20 09:30  
**Units:** ug/L  
**Basis:** NA

Organochlorine Pesticides by Gas Chromatography

**Analysis Method:** 8081B  
**Prep Method:** EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.057 U	0.057	1	10/05/20 21:23	10/2/20	
beta-BHC	0.057 U	0.057	1	10/05/20 21:23	10/2/20	
delta-BHC	0.057 U	0.057	1	10/05/20 21:23	10/2/20	
gamma-BHC (Lindane)	0.057 U	0.057	1	10/05/20 21:23	10/2/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	31	10 - 164	10/05/20 21:23	
Tetrachloro-m-xylene	62	10 - 147	10/05/20 21:23	



## Metals

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**METALS**

-1-

**INORGANIC ANALYSIS DATA SHEET**

SAMPLE NO.

**IWS-SD1-093020**

Contract: R2009115

Lab Code: \_\_\_\_\_

Case No.: \_\_\_\_\_

SAS No.: \_\_\_\_\_

SDG NO.: IWS-SDI-0930

Matrix (soil/water): WATER

Lab Sample ID: R2009115-001

Level (low/med): LOW

Date Received: 10/1/2020

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.200	U		CV

Color Before: Colorless      Clarity Before: Clear      Texture: \_\_\_\_\_

Color After: Colorless      Clarity After: Clear      Artifacts: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## QC Summary Forms

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## Semivolatile Organic Compounds by GC/MS

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QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229  
**Sample Matrix:** Water

**Service Request:** R2009115

**SURROGATE RECOVERY SUMMARY**  
**Semivolatile Organic Compounds by GC/MS**

**Analysis Method:** 8270D  
**Extraction Method:** EPA 3510C

Sample Name	Lab Code	2-Fluorobiphenyl	Nitrobenzene-d5	p-Terphenyl-d14
		31-118	31-110	10-165
IWS-SD1-093020	R2009115-001	50	51	93
Method Blank	RQ2011897-05	44	46	78
Lab Control Sample	RQ2011897-06	78	72	115
Duplicate Lab Control Sample	RQ2011897-07	75	67	108
IWS-SD1-093020 MS	RQ2011897-01	60	59	76
IWS-SD1-093020 DMS	RQ2011897-02	65	60	87

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QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229  
**Sample Matrix:** Water

**Service Request:** R2009115  
**Date Collected:** 09/30/20  
**Date Received:** 10/01/20  
**Date Analyzed:** 10/8/20  
**Date Extracted:** 10/6/20

**Duplicate Matrix Spike Summary**  
**Semivolatile Organic Compounds by GC/MS**

**Sample Name:** IWS-SD1-093020  
**Lab Code:** R2009115-001  
**Analysis Method:** 8270D  
**Prep Method:** EPA 3510C

**Units:** ug/L  
**Basis:** NA

Analyte Name	Sample Result	Matrix Spike RQ2011897-01			Duplicate Matrix Spike RQ2011897-02			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
2-Methylnaphthalene	10 U	46.0	83.3	55	46.5	83.3	56	34-102	2	30
Acenaphthene	10 U	52.4	83.3	63	55.2	83.3	66	43-117	5	30
Acenaphthylene	10 U	54.3	83.3	65	57.6	83.3	69	45-119	6	30
Anthracene	10 U	57.5	83.3	69	62.3	83.3	75	45-127	8	30
Benz(a)anthracene	10 U	57.0	83.3	68	60.6	83.3	73	46-126	7	30
Benzo(a)pyrene	10 U	58.6	83.3	70	63.4	83.3	76	44-114	8	30
Benzo(b)fluoranthene	10 U	56.2	83.3	67	61.9	83.3	74	41-127	10	30
Benzo(g,h,i)perylene	10 U	64.3	83.3	77	71.0	83.3	85	50-143	10	30
Benzo(k)fluoranthene	10 U	62.2	83.3	75	67.6	83.3	81	46-139	8	30
Chrysene	10 U	61.8	83.3	74	67.6	83.3	81	47-126	9	30
Dibenz(a,h)anthracene	10 U	61.5	83.3	74	68.7	83.3	82	43-136	10	30
Fluoranthene	10 U	66.5	83.3	80	70.8	83.3	85	43-135	6	30
Fluorene	10 U	55.7	83.3	67	57.7	83.3	69	43-113	3	30
Indeno(1,2,3-cd)pyrene	10 U	56.5	83.3	68	63.6	83.3	76	49-140	11	30
Naphthalene	10 U	45.2	83.3	54	45.4	83.3	54	37-108	<1	30
Phenanthrene	10 U	57.2	83.3	69	63.4	83.3	76	46-123	10	30
Pyrene	10 U	61.1	83.3	73	64.2	83.3	77	44-129	5	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.

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Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229  
**Sample Matrix:** Water

**Service Request:** R2009115  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Method Blank  
**Lab Code:** RQ2011897-05

**Units:** ug/L  
**Basis:** NA

Semivolatile Organic Compounds by GC/MS

**Analysis Method:** 8270D  
**Prep Method:** EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	10 U	10	1.3	1	10/07/20 16:31	10/6/20	
Acenaphthene	10 U	10	1.4	1	10/07/20 16:31	10/6/20	
Acenaphthylene	10 U	10	1.4	1	10/07/20 16:31	10/6/20	
Anthracene	10 U	10	1.3	1	10/07/20 16:31	10/6/20	
Benz(a)anthracene	10 U	10	1.6	1	10/07/20 16:31	10/6/20	
Benzo(a)pyrene	10 U	10	1.2	1	10/07/20 16:31	10/6/20	
Benzo(b)fluoranthene	10 U	10	1.2	1	10/07/20 16:31	10/6/20	
Benzo(g,h,i)perylene	10 U	10	1.0	1	10/07/20 16:31	10/6/20	
Benzo(k)fluoranthene	10 U	10	1.3	1	10/07/20 16:31	10/6/20	
Chrysene	10 U	10	1.2	1	10/07/20 16:31	10/6/20	
Dibenz(a,h)anthracene	10 U	10	1.1	1	10/07/20 16:31	10/6/20	
Fluoranthene	10 U	10	1.5	1	10/07/20 16:31	10/6/20	
Fluorene	10 U	10	1.3	1	10/07/20 16:31	10/6/20	
Indeno(1,2,3-cd)pyrene	10 U	10	1.8	1	10/07/20 16:31	10/6/20	
Naphthalene	10 U	10	1.2	1	10/07/20 16:31	10/6/20	
Phenanthrene	10 U	10	1.4	1	10/07/20 16:31	10/6/20	
Pyrene	10 U	10	1.5	1	10/07/20 16:31	10/6/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	44	31 - 118	10/07/20 16:31	
Nitrobenzene-d5	46	31 - 110	10/07/20 16:31	
p-Terphenyl-d14	78	10 - 165	10/07/20 16:31	

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QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229  
**Sample Matrix:** Water

**Service Request:** R2009115  
**Date Analyzed:** 10/07/20

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

**Units:**ug/L  
**Basis:**NA

**Lab Control Sample**                      **Duplicate Lab Control Sample**  
RQ2011897-06                                      RQ2011897-07

Analyte Name	Analytical Method	Result	Spike		Result	Spike		% Rec Limits	RPD	RPD Limit
			Amount	% Rec		Amount	% Rec			
2-Methylnaphthalene	8270D	49.8	80.0	62	47.9	80.0	60	34-102	3	30
Acenaphthene	8270D	57.9	80.0	72	55.3	80.0	69	52-107	4	30
Acenaphthylene	8270D	62.2	80.0	78	60.0	80.0	75	55-109	4	30
Anthracene	8270D	78.6	80.0	98	71.7	80.0	90	55-116	9	30
Benz(a)anthracene	8270D	73.9	80.0	92	68.4	80.0	86	61-121	7	30
Benzo(a)pyrene	8270D	76.3	80.0	95	71.3	80.0	89	44-114	7	30
Benzo(b)fluoranthene	8270D	74.7	80.0	93	69.5	80.0	87	62-115	7	30
Benzo(g,h,i)perylene	8270D	82.7	80.0	103	76.2	80.0	95	63-136	8	30
Benzo(k)fluoranthene	8270D	79.8	80.0	100	76.7	80.0	96	49-133	4	30
Chrysene	8270D	79.0	80.0	99	74.2	80.0	93	57-118	6	30
Dibenz(a,h)anthracene	8270D	80.0	80.0	100	72.3	80.0	90	54-135	11	30
Fluoranthene	8270D	85.8	80.0	107	80.6	80.0	101	66-127	6	30
Fluorene	8270D	66.4	80.0	83	61.5	80.0	77	54-106	8	30
Indeno(1,2,3-cd)pyrene	8270D	73.0	80.0	91	68.4	80.0	86	62-137	6	30
Naphthalene	8270D	49.5	80.0	62	46.4	80.0	58	38-99	7	30
Phenanthrene	8270D	74.4	80.0	93	69.5	80.0	87	58-118	7	30
Pyrene	8270D	76.9	80.0	96	72.5	80.0	91	61-122	5	30





## Semivolatile Organic Compounds by GC

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QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229  
**Sample Matrix:** Water

**Service Request:** R2009115

**SURROGATE RECOVERY SUMMARY**  
**Organochlorine Pesticides by Gas Chromatography**

**Analysis Method:** 8081B  
**Extraction Method:** EPA 3510C

Sample Name	Lab Code	Decachlorobiphenyl	Tetrachloro-m-xylene
		10-164	10-147
IWS-SD1-093020	R2009115-001	31	62
Method Blank	RQ2011738-05	64	59
Lab Control Sample	RQ2011738-06	61	58
Duplicate Lab Control Sample	RQ2011738-07	60	57
IWS-SD1-093020 MS	RQ2011738-03	27	60
IWS-SD1-093020 DMS	RQ2011738-04	24	63

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QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229  
**Sample Matrix:** Water

**Service Request:** R2009115  
**Date Collected:** 09/30/20  
**Date Received:** 10/01/20  
**Date Analyzed:** 10/5/20  
**Date Extracted:** 10/2/20

**Duplicate Matrix Spike Summary**  
**Organochlorine Pesticides by Gas Chromatography**

**Sample Name:** IWS-SD1-093020  
**Lab Code:** R2009115-001  
**Analysis Method:** 8081B  
**Prep Method:** EPA 3510C

**Units:** ug/L  
**Basis:** NA

Analyte Name	Sample Result	Result	Matrix Spike RQ2011738-03		Duplicate Matrix Spike RQ2011738-04		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
alpha-BHC	0.057 U	0.301	0.455	66	0.334	0.455	73	27-154	10	30
beta-BHC	0.057 U	0.314	0.455	69	0.351	0.455	77	32-184	11	30
delta-BHC	0.057 U	0.300	0.455	66	0.328	0.455	72	10-182	9	30
gamma-BHC (Lindane)	0.057 U	0.316	0.455	69	0.350	0.455	77	43-164	10	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.

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Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229  
**Sample Matrix:** Water  
**Sample Name:** Method Blank  
**Lab Code:** RQ2011738-05

**Service Request:** R2009115  
**Date Collected:** NA  
**Date Received:** NA

**Units:** ug/L  
**Basis:** NA

Organochlorine Pesticides by Gas Chromatography

**Analysis Method:** 8081B  
**Prep Method:** EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.050 U	0.050	1	10/05/20 18:49	10/2/20	
beta-BHC	0.050 U	0.050	1	10/05/20 18:49	10/2/20	
delta-BHC	0.050 U	0.050	1	10/05/20 18:49	10/2/20	
gamma-BHC (Lindane)	0.050 U	0.050	1	10/05/20 18:49	10/2/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	64	10 - 164	10/05/20 18:49	
Tetrachloro-m-xylene	59	10 - 147	10/05/20 18:49	

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QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/1229  
**Sample Matrix:** Water

**Service Request:** R2009115  
**Date Analyzed:** 10/05/20

**Duplicate Lab Control Sample Summary**  
**Organochlorine Pesticides by Gas Chromatography**

**Units:**ug/L  
**Basis:**NA

Analyte Name	Analytical Method	Result	Lab Control Sample		Duplicate Lab Control Sample		% Rec	% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec	Result	Spike Amount				
alpha-BHC	8081B	0.262	0.400	66	0.272	0.400	68	36-151	4	30
beta-BHC	8081B	0.287	0.400	72	0.301	0.400	75	55-149	5	30
delta-BHC	8081B	0.255	0.400	64	0.265	0.400	66	29-159	4	30
gamma-BHC (Lindane)	8081B	0.260	0.400	65	0.271	0.400	68	41-149	4	30



## Metals

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**METALS**

-3-

**BLANKS**

Contract: R2009115

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-SDI-0930

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	Continuing Calibration Blank ug/L						Preparation Blank	M
		1	2	3	4	5	6		
Mercury	0.200	0.200	0.200	0.200	0.200	0.200	0.200	CV	

Comments:

**METALS**

-3-

**BLANKS**

Contract: R2009115

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-SDI-0930

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	Continuing Calibration Blank ug/L						Preparation Blank	M
		1	2	3	C	C	C		
Mercury		0.200	0.200					CV	

Comments:

**METALS**

-5A-

**SPIKE SAMPLE RECOVERY**

SAMPLE NO.

IWS-SD1-093020S

Contract: R2009115

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-SDI-0930

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Mercury	75 - 125	0.988	0.200   U	1.00	99		CV

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**METALS**

-5A-

**SPIKE SAMPLE RECOVERY**

SAMPLE NO.

IWS-SD1-093020SD

Contract: R2009115

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-SDI-0930

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Mercury	75 - 125	1.010	0.200 U	1.00	101		CV

Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**METALS**  
**-6-**  
**DUPLICATES**

SAMPLE NO.

IWS-SD1-093020SD

Contract: R2009115

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-SDI-0930

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)		Duplicate (D)		RPD	Q	M
			C		C			
Mercury		0.988		1.010		2		CV

Comments: \_\_\_\_\_

**METALS**

-7-

**LABORATORY CONTROL SAMPLE**

**Contract:** R2009115

**Lab Code:** \_\_\_\_\_ **Case No.:** \_\_\_\_\_ **SAS No.:** \_\_\_\_\_ **SDG NO.:** IWS-SDI-0930

**Solid LCS Source:** \_\_\_\_\_

**Aqueous LCS Source:** JT BAKER

Analyte	Aqueous (ug/L)			Solid (mg/K)				
	True	Found	%R	True	Found	C	Limits	%R
Mercury	1.000	1.020	102					

**Comments:** \_\_\_\_\_

**Industrial Welding Site**  
**Data Evaluation Narrative**  
**Fall 2020 Groundwater/Storm Drain Sampling Event**

**SDGs R2009115 & R2009793: ALS Environmental, Rochester, NY**

**Deliverables**

The data packages as submitted to Olin Corporation are complete as stipulated under the Industrial Welding Site Quality Assurance Project Plan (QAPP) as approved by the New York State Department of Environmental Conservation. United States Environmental Protection Agency (USEPA) Methods 8270D, 8081B, and 7470A were utilized in the laboratory testing.

Samples submitted within these sample delivery groups (SDGs) were submitted to the ALS Environmental laboratory in Rochester, NY for analysis of select semi-volatile organic compounds, organochlorine pesticides, and total mercury. The samples were collected on three different days due to drought conditions in Western NY. Even with sampling being conducted on three different days, insufficient water prevented some of the normal lab analyses from being completed. This evaluation narrative follows the listing of groundwater and storm drain sample field identifications. The topics are ordered to first assess issues affecting the entire data set.

**Sample Integrity**

Information provided on the Chains of Custody and Cooler Receipt Forms provided by the laboratory confirmed the samples arrived at the laboratory intact. Both cooler temperatures as received by the laboratory were within the proper temperature control limits. The proper bottles and preservatives were used, the Chains of Custody were properly relinquished by the sampler, and the correct analytical methods were employed.

**Sample Identification**

The following samples collected in Fall 2020 are included in the data evaluation:

<b>Field Sample ID</b>	<b>ALS ID</b>	<b>Sample Date</b>	<b>Lab Analyses</b>
IWS-SD1-093020	R2009115-001	9/30/2020	SVOCs, Pesticides, Hg
IWS-MW-2-101620	R2009793-001	10/16/2020	SVOCs
IWS-MW-2-101920	R2009793-002	10/19/2020	Hg
IWS-MW-1-101920	R2009793-003	10/19/2020	Hg

**Semi-Volatile Organic Compounds (EPA Method 8270D)**

Two samples in the data set were submitted for analysis of select semi-volatile organic compounds (SVOCs)—polyaromatic hydrocarbons (PAHs), by USEPA Method 8270D.

**Holding Times:**

The extraction and analytical logs indicate that applicable holding times were met for samples submitted for PAH analysis. The holding times of 7 days for extraction and 40 days for analysis were met.

**GC/MS Instrument Performance Check:**

The GC/MS tuning and mass calibration checks were performed with decafluorotriphenylphosphine (DFTPP) and met the performance criteria as established by the method.

**Calibration:**

The initial calibration and continuing calibration data indicate that applicable calibration criteria were met for samples submitted for PAH analysis. The RSDs for each calibration check were within the applicable criteria.

**Blank Summary:**

The analytical results of the laboratory method blanks indicated no PAHs were detected.

**Laboratory Control Sample (LCS)/LCS Duplicate (LCSD):**

The LCS/LCSD spike recoveries were within the applicable QC advisory limits, as were the relative percent differences (RPDs).

**Internal Standards and Surrogates:**

The internal standard area counts/retention times and the surrogate recoveries were within applicable QC advisory limits.

**Matrix Spike/Matrix Spike Duplicate:**

Sample IWS-SD1-093020 was submitted for matrix spike and matrix spike duplicate (MS/MSD) analysis. All recoveries were within control limits; the RPDs between the MS/MSD results were easily within lab QC guidelines.

**Duplicate Samples:**

No samples were selected by the field or laboratory for duplicate analysis.

**Organochlorine Pesticides (EPA Method 8081B)**

One sample in the data set was submitted for total HCCH (hexachlorocyclohexanes) analysis by USEPA Method 8081B.

**Holding Times:**

The extraction and analytical logs indicate that applicable holding times were met. The holding times of 7 days for extraction and 40 days for analysis were met.

**Calibration:**

The initial and continuing calibration data met method and QAPP criteria.

**Surrogates:**

The surrogate recoveries were within applicable QC advisory limits.

**Blank Summary:**

The analytical results of the laboratory method blank indicated no HCCHs were detected.

**Laboratory Control Sample (LCS)/LCS Duplicate (LCSD):**

The LCS/LCSD spike recoveries were within the applicable QC advisory limits as were the RPDs.

**Matrix Spike/Matrix Spike Duplicate:**

Sample IWS-SD1-093020 was submitted for MS/MSD analysis. The spike recoveries and RPDs were within QC guidelines.

**Duplicate Samples:**

No samples were selected by the field or laboratory for duplicate analysis.

**Total Mercury Analyses (EPA Method 7470A)**

Three samples were submitted for total mercury analysis by USEPA Method 7470A.

**Holding Times:**

The extraction and analytical logs indicate that applicable holding times were met for samples submitted for total mercury analysis.

**Calibration:**

The initial and continuing calibration data for the SDGs indicate that applicable calibration criteria were met for samples submitted for total mercury analysis. The low-level check standard recoveries were within QC advisory limits.

**Blank Summary:**

The analytical results of the initial and continuing laboratory method blanks indicated that total mercury was not detected.

**Laboratory Control Sample:**

The laboratory control sample (LCS) spike recoveries were within the applicable QC advisory limits.

**Matrix Spike/Matrix Spike Duplicate:**

Sample IWS-SD1-093020 was submitted to the laboratory for MS/MSD analysis. The percent recoveries and RPD were within control limits.

**Duplicate Samples:**

No samples were selected by the field or laboratory for duplicate analysis.

**Overall Site Evaluation and Professional Judgment Flagging Changes**

The data within the SDGs were compared to site data and edits to the DQE flags were not required. Monitoring period completeness, which is the percentage of analytical results judged valid, including estimated values, was 100 percent for the Fall 2020 sampling event.

Prepared by: Randy T. Morris

Date: November 30, 2020

Sample	Date Collected	Date Analyzed	Analysis Method	Matrix	Units	Component	Dil. Factor	Rpt. Limit	Detection Limit	Result	Flag
IWS-SD1-093020	9/30/2020	10/5/2020	7470A	Water	UG/L	Mercury, Total	1	0.2	0.08	0.2	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	2-Methylnaphthalene	1	10	1.4	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Acenaphthene	1	10	1.4	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Acenaphthylene	1	10	1.4	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Anthracene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benz(a)anthracene	1	10	1.7	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benzo(a)pyrene	1	10	1.2	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benzo(b)fluoranthene	1	10	1.2	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	10	1.1	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Benzo(k)fluoranthene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Chrysene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	10	1.1	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Fluoranthene	1	10	1.6	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Fluorene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	10	1.9	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Naphthalene	1	10	1.3	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Phenanthrene	1	10	1.4	10	U
IWS-SD1-093020	9/30/2020	10/8/2020	8270D	Water	UG/L	Pyrene	1	10	1.5	10	U
IWS-SD1-093020	9/30/2020	10/5/2020	8081B	Water	UG/L	alpha-BHC	1	0.057	0.023	0.057	U
IWS-SD1-093020	9/30/2020	10/5/2020	8081B	Water	UG/L	beta-BHC	1	0.057	0.023	0.057	U
IWS-SD1-093020	9/30/2020	10/5/2020	8081B	Water	UG/L	delta-BHC	1	0.057	0.023	0.057	U
IWS-SD1-093020	9/30/2020	10/5/2020	8081B	Water	UG/L	gamma-BHC (Lindane)	1	0.057	0.023	0.057	U
*U = Non-detect; J = estimated concentration between Detection Limit and Reporting Limit											

Sample	Date Collected	Date Analyzed	Analysis Method	Matrix	Units	Component	Dil. Factor	Rep. Limit	Detection Limit	Result	Flag
IWS-MW-2-101920	10/19/2020	10/23/2020	7470A	Water	UG/L	Mercury, Total	10	2	0.8	65.6	
IWS-MW-1-101920	10/19/2020	10/23/2020	7470A	Water	UG/L	Mercury, Total	1	0.2	0.08	0.2	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	2-Methylnaphthalene	1	11	1.5	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Acenaphthene	1	11	1.5	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Acenaphthylene	1	11	1.5	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Anthracene	1	11	1.4	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(a)anthracene	1	11	1.8	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(a)pyrene	1	11	1.3	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(b)fluoranthene	1	11	1.3	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	11	1.2	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Benzo(k)fluoranthene	1	11	1.4	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Chrysene	1	11	1.3	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	11	1.2	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Fluoranthene	1	11	1.7	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Fluorene	1	11	1.4	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	11	2	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Naphthalene	1	11	1.3	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Phenanthrene	1	11	1.5	11	U
IWS-MW-2-101620	10/19/2020	10/27/2020	8270D	Water	UG/L	Pyrene	1	11	1.6	11	U
*U = Non-detect; J = estimated concentration between Detection Limit and Reporting Limit											





December 23, 2020

Service Request No:R2010748

Mr. Dennis Turner  
Olin Corporation  
3855 North Ocoee St.  
Ste. 200  
Cleveland, TN 37312

**Laboratory Results for: Industrial Welding - Olin**

Dear Mr. Turner,

Enclosed are the results of the sample(s) submitted to our laboratory November 12, 2020  
For your reference, these analyses have been assigned our service request number **R2010748**.

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](mailto:Meghan.Pedro@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Meghan Pedro  
Project Manager

CC: Adam Carringer



## 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](http://www.alsglobal.com)



**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin  
**Sample Matrix:** Water

**Service Request:** R2010748  
**Date Received:** 11/12/2020

**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.

**Sample Receipt:**

Two water samples were received for analysis at ALS Environmental on 11/12/2020. 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.

**Semivolatile GC:**

No significant anomalies were noted with this analysis.

**Metals:**

No significant anomalies were noted with this analysis.

**General Chemistry:**

Method SM 2540 D-1997(2011), R2010748-001 (and duplicate): The Method Reporting Limit (MRL) for was elevated due to less than optimal sample volume/mass available for analysis.

**Volatiles by GC/MS:**

No significant anomalies were noted with this analysis.

A handwritten signature in black ink, appearing to read "Meghan Pedro", is written over a horizontal line.

Approved by \_\_\_\_\_

Date 12/23/2020



## 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](http://www.alsglobal.com)

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845

**Service Request:**R2010748

**SAMPLE CROSS-REFERENCE**

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R2010748-001	IWS-MS1-111120	11/11/2020	0900
R2010748-002	Trip Blank	11/11/2020	0900





# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

001583

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

<b>Project Name</b> INDUSTRIAL WELDING - OLIN		<b>Project Number</b> 1229		ANALYSIS REQUESTED (include Method Number and Container Preservative)			
<b>Project Manager</b> ADAM CARMANER		<b>Report CC</b> ADAM CARMANER		<b>PRESERVATIVE</b> 0		Z 0 0	
<b>Company/Address</b> OLIN CORP 3855 NORTH OXDEE RD CLEVELAND TN 37312		<b>Email</b> adamcarm@olin.com <b>Sample's Printed Name</b> CHRIS JONES		<b>NUMBER OF CONTAINERS</b>		DOC TSS	
<b>Phone #</b> 423 336 4000		<b>FOR OFFICE USE ONLY LAB ID</b>		<b>SAMPLING DATE</b>		<b>TIME</b>	
<b>Signature</b> <i>[Signature]</i>		<b>CLIENT SAMPLE ID</b> MSL-11120 TRIP BLANK TEMP BLANK		<b>DATE</b> 11/11/20 -- --		<b>MATRIX</b> GW 28 9 -- 3 -- 1	
<b>SPECIAL INSTRUCTIONS/COMMENTS</b> Metals T Hs DOCS WERE FILTERED IN FIELD MSLMSO VOLUME							
<b>See OAPP</b> <input type="checkbox"/>		<b>STATE WHERE SAMPLES WERE COLLECTED</b> RELINQUISHED BY <i>[Signature]</i>		<b>TURNAROUND REQUIREMENTS</b> RUSH (SURCHARGES APPLY) <input type="checkbox"/> 1 day <input type="checkbox"/> 2 day <input type="checkbox"/> 3 day <input type="checkbox"/> 4 day <input type="checkbox"/> 5 day <input checked="" type="checkbox"/> Standard (10 business days-No Surcharge)		<b>REPORT REQUIREMENTS</b> <input type="checkbox"/> I. Results Only <input checked="" type="checkbox"/> II. Results + OC Summaries (ACS, DUP, MS/MSO as required) <input type="checkbox"/> III. Results + OC and Calibration Summaries <input type="checkbox"/> IV. Data Validation Report with Raw Data	
<b>RELINQUISHED BY</b> Signature: <i>[Signature]</i> Printed Name: CHRIS JONES Firm: SES		<b>RECEIVED BY</b> Signature: <i>[Signature]</i> Printed Name: GREGORY DESMET Firm: ALS		<b>RELINQUISHED BY</b> Signature: <i>[Signature]</i> Printed Name: GREGORY DESMET Firm: ALS		<b>RECEIVED BY</b> Signature: <i>[Signature]</i> Printed Name: GREGORY DESMET Firm: ALS	
<b>Date/Time</b> 11/11/20 12:00		<b>Date/Time</b> 11/11/20 12:00		<b>Date/Time</b> 11/11/20 10:15		<b>Date/Time</b> 11/11/20 10:15	
<b>INVOICE INFORMATION</b> PO # BILL TO: OLIN CORP				<b>INVOICE INFORMATION</b> RECEIVED BY R2010748 Olin Corporation Industrial Welding - Olin			



### Cooler Receipt and Preservation Check Form

Project/Client Olin Corp Folder Number \_\_\_\_\_

Cooler received on 11-12-2020 by: ME COURIER: ALS UPS FEDEX VELOCITY CLIENT

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

8. Temperature Readings Date: 11-12-2020 Time: 11/2 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>3.6</u>						
Within 0-6°C?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
If <0°C, were samples frozen?	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> 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: R-002 by ME on 11-20-20 at 1116  
5035 samples placed in storage location: \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check\*\*: Date: 11/13/2020 Time: 1139 by: ME

- 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
- 13. Air Samples: Cassettes / Tubes Intact Y/N with MS Y/N Canisters Pressurized Tedlar® Bags Inflated NA

pH	Lot of test paper	Reagent	Preserved?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
<u>2</u>	<u>223419</u>	HNO <sub>3</sub>	<input checked="" type="checkbox"/>		<u>1120081</u>					
<u>2</u>		H <sub>2</sub> SO <sub>4</sub>								
<4		NaHSO <sub>4</sub>								
5-9	<u>223419</u>	For 608pest	<input checked="" type="checkbox"/>		No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522	<input checked="" type="checkbox"/>		If +, contact PM to add Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (625, 608, CN), ascorbic (phenol).					
		Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>								
		ZnAcetate	-	-						
		HCl	**	**						

\*\*VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 20-10-02 0-132-001 073018-2002, 092120-18MC  
Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: ME  
PC Secondary Review: WT

\*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](http://www.alsglobal.com)



## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> 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.</p> <p><b>J</b> 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 &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> 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.</p> <p><b>*</b> 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.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> 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).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|



### Rochester Lab ID # for State Certifications<sup>1</sup>

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

<sup>1</sup> 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 or go to <https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental>

## ALS Laboratory Group

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### 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.

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Analyst Summary report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845

**Service Request:** R2010748

**Sample Name:** IWS-MS1-111120  
**Lab Code:** R2010748-001  
**Sample Matrix:** Water

**Date Collected:** 11/11/20  
**Date Received:** 11/12/20

**Analysis Method**

245.1  
608 Modified  
624  
SM 2540 D-1997(2011)  
SM 5310 C-2000(2011)

**Extracted/Digested By**

AKONZEL  
KSERCU

**Analyzed By**

AKONZEL  
BALLGEIER  
KRUEST  
KAWONG  
SMEDBURY

---

**Sample Name:** IWS-MS1-111120  
**Lab Code:** R2010748-001.R01  
**Sample Matrix:** Water

**Date Collected:** 11/11/20  
**Date Received:** 11/12/20

**Analysis Method**

608 Modified

**Extracted/Digested By**

KSERCU

**Analyzed By**

BALLGEIER

**Sample Name:** Trip Blank  
**Lab Code:** R2010748-002  
**Sample Matrix:** Water

**Date Collected:** 11/11/20  
**Date Received:** 11/12/20

**Analysis Method**

624

**Extracted/Digested By**

**Analyzed By**

KRUEST



## INORGANIC PREPARATION METHODS

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

### Water/Liquid Matrix

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

### Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 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.	



## Sample Results

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## Volatile Organic Compounds by GC/MS

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Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** IWS-MS1-111120  
**Lab Code:** R2010748-001

**Service Request:** R2010748  
**Date Collected:** 11/11/20 09:00  
**Date Received:** 11/12/20 10:15

**Units:** ug/L  
**Basis:** NA

Volatile Organic Compounds by GC/MS, Unpreserved

**Analysis Method:** 624.1  
**Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1-Dichloroethane (1,1-DCA)	1.00 U	1.00	0.200	1	11/16/20 16:21	
1,2-Dichloroethane	1.00 U	1.00	0.200	1	11/16/20 16:21	
Acetone	5.00 U	5.00	2.10	1	11/16/20 16:21	
Trichloroethene (TCE)	3.39	1.00	0.200	1	11/16/20 16:21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	94	73 - 125	11/16/20 16:21	
4-Bromofluorobenzene	94	85 - 122	11/16/20 16:21	
Toluene-d8	99	87 - 121	11/16/20 16:21	

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dba ALS Environmental

Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** Trip Blank  
**Lab Code:** R2010748-002

**Service Request:** R2010748  
**Date Collected:** 11/11/20 09:00  
**Date Received:** 11/12/20 10:15

**Units:** ug/L  
**Basis:** NA

Volatile Organic Compounds by GC/MS, Unpreserved

**Analysis Method:** 624.1  
**Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1-Dichloroethane (1,1-DCA)	1.00 U	1.00	0.200	1	11/16/20 15:59	
1,2-Dichloroethane	1.00 U	1.00	0.200	1	11/16/20 15:59	
Acetone	5.00 U	5.00	2.10	1	11/16/20 15:59	
Trichloroethene (TCE)	1.00 U	1.00	0.200	1	11/16/20 15:59	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	96	73 - 125	11/16/20 15:59	
4-Bromofluorobenzene	94	85 - 122	11/16/20 15:59	
Toluene-d8	98	87 - 121	11/16/20 15:59	





## Semivolatile Organic Compounds by GC

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Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** IWS-MS1-111120  
**Lab Code:** R2010748-001

**Service Request:** R2010748  
**Date Collected:** 11/11/20 09:00  
**Date Received:** 11/12/20 10:15

**Units:** ug/L  
**Basis:** NA

Organochlorine Pesticides by GC/ECD

**Analysis Method:** 608.3  
**Prep Method:** Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.0500 U	0.0500	0.0200	1	11/18/20 20:09	11/17/20	
beta-BHC	0.0500 U	0.0500	0.0200	1	11/18/20 20:09	11/17/20	
delta-BHC	0.0500 U	0.0500	0.0200	1	11/18/20 20:09	11/17/20	
gamma-BHC (Lindane)	0.0500 U	0.0500	0.0200	1	11/18/20 20:09	11/17/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tetrachloro-m-xylene	266 *	13 - 131	11/18/20 20:09	*
Decachlorobiphenyl	341 *	10 - 156	11/18/20 20:09	*



## Metals

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**METALS**

-1-

**INORGANIC ANALYSIS DATA SHEET**

SAMPLE NO.

IWS-MS1-111120

Contract: R2010748

Lab Code: \_\_\_\_\_

Case No.: \_\_\_\_\_

SAS No.: \_\_\_\_\_

SDG NO.: IWS-MS1-1111

Matrix (soil/water): WATER

Lab Sample ID: R2010748-001

Level (low/med): LOW

Date Received: 11/12/2020

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.200	U		CV

Color Before: \_\_\_\_\_ Clarity Before: \_\_\_\_\_ Texture: \_\_\_\_\_

Color After: \_\_\_\_\_ Clarity After: \_\_\_\_\_ Artifacts: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## General Chemistry

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Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** IWS-MS1-111120  
**Lab Code:** R2010748-001

**Service Request:** R2010748  
**Date Collected:** 11/11/20 09:00  
**Date Received:** 11/12/20 10:15

**Basis:** NA

Inorganic Parameters

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>Result</b>	<b>Units</b>	<b>MRL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
Carbon, Dissolved Organic (DOC)	SM 5310 C-2000(2011)	4.4	mg/L	1.0	1	11/19/20 16:01	
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	1.1 U	mg/L	1.1	1	11/18/20 09:50	



## QC Summary Forms

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## Volatile Organic Compounds by GC/MS

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QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water

**Service Request:** R2010748

**SURROGATE RECOVERY SUMMARY**  
**Volatile Organic Compounds by GC/MS, Unpreserved**

**Analysis Method:** 624.1  
**Extraction Method:** EPA 5030C

Sample Name	Lab Code	1,2-Dichloroethane-d4	4-Bromofluorobenzene	Toluene-d8
		73-125	85-122	87-121
IWS-MS1-111120	R2010748-001	94	94	99
Trip Blank	R2010748-002	96	94	98
Method Blank	RQ2014073-05	94	92	99
Lab Control Sample	RQ2014073-04	91	95	98
IWS-MS1-111120 MS	RQ2014073-07	94	99	100
IWS-MS1-111120 DMS	RQ2014073-08	95	97	99

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QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water

**Service Request:** R2010748  
**Date Collected:** 11/11/20  
**Date Received:** 11/12/20  
**Date Analyzed:** 11/16/20  
**Date Extracted:** NA

**Duplicate Matrix Spike Summary**  
**Volatile Organic Compounds by GC/MS, Unpreserved**

**Sample Name:** IWS-MS1-111120  
**Lab Code:** R2010748-001  
**Analysis Method:** 624.1  
**Prep Method:** EPA 5030C

**Units:** ug/L  
**Basis:** NA

Analyte Name	Sample Result	Matrix Spike RQ2014073-07			Duplicate Matrix Spike RQ2014073-08			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1-Dichloroethane (1,1-DCA)	1.00 U	48.5	50.0	97	50.1	50.0	100	59-155	3	40
1,2-Dichloroethane	1.00 U	43.2	50.0	86	46.4	50.0	93	49-155	7	49
Acetone	5.00 U	46.3	50.0	93	46.7	50.0	93	35-183	<1	30
Trichloroethene (TCE)	3.39	45.7	50.0	85	48.2	50.0	90	70-157	5	48

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.

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Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** Method Blank  
**Lab Code:** RQ2014073-05

**Service Request:** R2010748  
**Date Collected:** NA  
**Date Received:** NA

**Units:** ug/L  
**Basis:** NA

Volatile Organic Compounds by GC/MS, Unpreserved

**Analysis Method:** 624.1  
**Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1-Dichloroethane (1,1-DCA)	1.00 U	1.00	0.200	1	11/16/20 11:49	
1,2-Dichloroethane	1.00 U	1.00	0.200	1	11/16/20 11:49	
Acetone	5.00 U	5.00	2.10	1	11/16/20 11:49	
Trichloroethene (TCE)	1.00 U	1.00	0.200	1	11/16/20 11:49	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	94	73 - 125	11/16/20 11:49	
4-Bromofluorobenzene	92	85 - 122	11/16/20 11:49	
Toluene-d8	99	87 - 121	11/16/20 11:49	

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QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water

**Service Request:** R2010748  
**Date Analyzed:** 11/16/20

**Lab Control Sample Summary**  
**Volatile Organic Compounds by GC/MS, Unpreserved**

**Units:**ug/L  
**Basis:**NA

**Lab Control Sample**  
RQ2014073-04

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
1,1-Dichloroethane (1,1-DCA)	624.1	21.2	20.0	106	70-130
1,2-Dichloroethane	624.1	18.8	20.0	94	70-130
Acetone	624.1	20.3	20.0	102	40-161
Trichloroethene (TCE)	624.1	18.2	20.0	91	65-135



## Semivolatile Organic Compounds by GC

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QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water

**Service Request:** R2010748

**SURROGATE RECOVERY SUMMARY**  
**Organochlorine Pesticides by GC/ECD**

**Analysis Method:** 608.3  
**Extraction Method:** Method

Sample Name	Lab Code	Tetrachloro-m-xylene	Decachlorobiphenyl
		13-131	10-156
IWS-MS1-111120	R2010748-001	266*	341*
Method Blank	RQ2014111-03	68	66
Lab Control Sample	RQ2014111-04	64	60
Duplicate Lab Control Sample	RQ2014111-05	68	70
IWS-MS1-111120 MS	RQ2014111-01	379*	383*
IWS-MS1-111120 DMS	RQ2014111-02	354*	366*

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QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water

**Service Request:** R2010748  
**Date Collected:** 11/11/20  
**Date Received:** 11/12/20  
**Date Analyzed:** 11/18/20  
**Date Extracted:** 11/17/20

**Duplicate Matrix Spike Summary**  
**Organochlorine Pesticides by GC/ECD**

**Sample Name:** IWS-MS1-111120  
**Lab Code:** R2010748-001  
**Analysis Method:** 608.3  
**Prep Method:** Method

**Units:** ug/L  
**Basis:** NA

Analyte Name	Sample Result	Result	Matrix Spike RQ2014111-01		Duplicate Matrix Spike RQ2014111-02		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
alpha-BHC	0.0455 U	0.572	0.364	157 *	0.516	0.364	142 *	34-140	10	36
beta-BHC	0.0455 U	0.575	0.364	158 *	0.528	0.364	145	17-147	9	44
delta-BHC	0.0455 U	0.586	0.364	161 *	0.535	0.364	147 *	19-140	9	52
gamma-BHC (Lindane)	0.0455 U	0.562	0.364	155 *	0.514	0.364	141 *	32-140	9	39

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.

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Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** Method Blank  
**Lab Code:** RQ2014111-03

**Service Request:** R2010748  
**Date Collected:** NA  
**Date Received:** NA

**Units:** ug/L  
**Basis:** NA

Organochlorine Pesticides by GC/ECD

**Analysis Method:** 608.3  
**Prep Method:** Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.0500 U	0.0500	0.0200	1	11/18/20 18:33	11/17/20	
beta-BHC	0.0500 U	0.0500	0.0200	1	11/18/20 18:33	11/17/20	
delta-BHC	0.0500 U	0.0500	0.0200	1	11/18/20 18:33	11/17/20	
gamma-BHC (Lindane)	0.0500 U	0.0500	0.0200	1	11/18/20 18:33	11/17/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tetrachloro-m-xylene	68	13 - 131	11/18/20 18:33	
Decachlorobiphenyl	66	10 - 156	11/18/20 18:33	



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QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water

**Service Request:** R2010748  
**Date Analyzed:** 11/18/20

**Duplicate Lab Control Sample Summary**  
**Organochlorine Pesticides by GC/ECD**

**Units:**ug/L

**Basis:**NA

**Lab Control Sample**  
RQ2014111-04

**Duplicate Lab Control Sample**  
RQ2014111-05

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>	<b>RPD</b>	<b>RPD Limit</b>
alpha-BHC	608.3	0.107	0.400	27 *	0.116	0.400	29 *	37-140	8	36
beta-BHC	608.3	0.130	0.400	33	0.145	0.400	36	17-147	10	44
delta-BHC	608.3	0.119	0.400	30	0.129	0.400	32	19-140	8	52
gamma-BHC (Lindane)	608.3	0.109	0.400	27 *	0.118	0.400	30 *	32-140	8	39



## Metals

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**METALS**

-3-

**BLANKS**

Contract: R2010748

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-MS1-1111

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	Continuing Calibration Blank ug/L						Preparation Blank	C	M
		1	C	2	C	3	C			
Mercury	0.200   U	0.200   U		0.200   U		0.200   U		0.200   U		CV

Comments:

**METALS**

-3-

**BLANKS**

Contract: R2010748

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-MS1-1111

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	Continuing Calibration Blank ug/L						Preparation Blank	C	M
		1	C	2	C	3	C			
Mercury		0.200	U							CV

Comments:

METALS

-5A-

SPIKE SAMPLE RECOVERY

SAMPLE NO.

IWS-MS1-111120S

Contract: R2010748

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-MS1-1111

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 100.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Mercury	75 - 125	1.160	0.200 U	1.00	116		CV

Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**METALS**

-5A-

**SPIKE SAMPLE RECOVERY**

SAMPLE NO.

IWS-MS1-111120SD

Contract: R2010748

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-MS1-1111

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 100.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Mercury	75 - 125	1.150	0.200   U	1.00	115		CV

Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**METALS**  
**-6-**  
**DUPLICATES**

SAMPLE NO.

IWS-MS1-111120SD

Contract: R2010748

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-MS1-1111

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 100.0 % Solids for Duplicate: 100.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S) C	Duplicate (D) C	RPD	Q	M
Mercury		1.160	1.150	1		CV

Comments: \_\_\_\_\_

**METALS**

-7-

**LABORATORY CONTROL SAMPLE**

Contract: R2010748

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-MS1-1111

Solid LCS Source: \_\_\_\_\_

Aqueous LCS Source: JT BAKER

Analyte	Aqueous (ug/L)			Solid (mg/K)				
	True	Found	%R	True	Found	C	Limits	%R
Mercury	1.000	1.000	100					

Comments: \_\_\_\_\_





## General Chemistry

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dba ALS Environmental

Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** Method Blank  
**Lab Code:** R2010748-MB

**Service Request:** R2010748  
**Date Collected:** NA  
**Date Received:** NA  
**Basis:** NA

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Q</u>
Carbon, Dissolved Organic (DOC)	SM 5310 C-2000(2011)	1.0 U	mg/L	1.0	1	11/19/20 14:34	
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	1.0 U	mg/L	1.0	1	11/18/20 09:50	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water

**Service Request:** R2010748  
**Date Collected:** 11/11/20  
**Date Received:** 11/12/20  
**Date Analyzed:** 11/19/20

**Duplicate Matrix Spike Summary  
Carbon, Dissolved Organic (DOC)**

**Sample Name:** IWS-MS1-111120  
**Lab Code:** R2010748-001  
**Analysis Method:** SM 5310 C-2000(2011)

**Units:** mg/L  
**Basis:** NA

Analyte Name	Sample Result	Matrix Spike R2010748-001MS			Duplicate Matrix Spike R2010748-001DMS			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Carbon, Dissolved Organic (DOC)	4.4	13.6	10.0	93	13.2	10.0	88	48-135	3	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.

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.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water

**Service Request:** R2010748  
**Date Collected:** 11/11/20  
**Date Received:** 11/12/20  
**Date Analyzed:** 11/18/20

**Replicate Sample Summary**  
**General Chemistry Parameters**

**Sample Name:** IWS-MS1-111120  
**Lab Code:** R2010748-001

**Units:** mg/L  
**Basis:** NA

<b>Analyte Name</b>	<b>Analysis Method</b>	<b>MRL</b>	<b>Sample Result</b>	<b>Duplicate Sample R2010748-001DUP Result</b>	<b>Average</b>	<b>RPD</b>	<b>RPD Limit</b>
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	1.1	1.1 U	1.1 U	NC	NC	10

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.

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water

**Service Request:** R2010748  
**Date Analyzed:** 11/18/20 - 11/19/20

**Lab Control Sample Summary**  
**General Chemistry Parameters**

**Units:**mg/L

**Basis:**NA

**Lab Control Sample**  
R2010748-LCS

<b>Analyte Name</b>	<b>Analytical Method</b>	<b>Result</b>	<b>Spike Amount</b>	<b>% Rec</b>	<b>% Rec Limits</b>
Carbon, Dissolved Organic (DOC)	SM 5310 C-2000(2011)	9.5	10.0	95	80-121
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	217	214	101	80-120

**Industrial Welding Site  
Data Evaluation Narrative  
November 2020 Discharge Sampling Event**

**SDG R2010748: ALS Environmental, Rochester, NY**

**Deliverables**

The data package as submitted to Olin Corporation is complete as stipulated under the Industrial Welding Site Quality Assurance Project Plan (QAPP) as approved by the New York State Department of Environmental Protection. United States Environmental Protection Agency (USEPA) Methods 624, 608, 245.1, SM 2540D and SM 5310C were utilized in the laboratory testing.

Samples submitted within this sample delivery group (SDG) were submitted to the ALS Environmental laboratory in Rochester, NY for select volatile organic compounds and organochlorine pesticides, total mercury, total suspended solids, and soluble organic carbon analyses. The laboratory subsequently applied login numbers to the SDG. The SDG number for this sampling event is R2010748. This evaluation narrative for the SDG follows the listing of discharge sample field identifications. The topics of each narrative are ordered to first assess issues affecting the entire data set.

**Sample Integrity**

Information provided on the Chain of Custody and Login Sample Receipt Checklist provided by the laboratory confirmed that the samples arrived at the laboratory intact and within the recommended temperature limits. The proper bottles and preservatives were used, and the correct analytical methods were employed.

**Sample Identification**

This SDG contains the following water samples collected on November 11, 2020:

<u>SAMPLE ID</u>	<u>SAMPLE ID</u>
IWS-MS-1-111120	TRIP BLANK (Analyzed for VOCs only)

**Volatile Organic Compounds (EPA Method 624)**

The samples in this SDG were submitted for select volatile organic compounds (VOCs) by USEPA Method 624.

**Holding Times:**

The analytical logs indicate that applicable holding times were met.

**Practical Quantitation Limits:**

The practical quantitation limits (PQLs) were met for the analysis of VOCs by USEPA Method 624.

**GC/MS Instrument Performance Check:**

The GC/MS tuning and mass calibration checks were performed with bromofluorobenzene (BFB) and met the performance criteria as established by the method.

**Calibration:**

The initial calibration data for this SDG indicate that applicable criteria were met for samples submitted for VOC analysis. The RSDs for each calibration check were within the applicable criteria.

**Blank Summary:**

The analytical results of the laboratory method blank and the trip blank indicated no target VOCs were detected above the reporting limit (RL).

**Laboratory Control Sample (LCS):**

The LCS spike recoveries were within the applicable QC advisory limits.

**Surrogates:**

The surrogate recoveries were within applicable QC advisory limits.

**Matrix Spike/Matrix Spike Duplicate:**

Sample IWS-MS1-111120 was submitted for matrix spike and matrix spike duplicate (MS/MSD) analysis. The percent recoveries and relative percent differences (RPDs) were within applicable QC advisory limits.

**Duplicate Samples:**

No samples were selected by the laboratory or field for duplicate analysis.

**Organochlorine Pesticides (EPA Method 608)**

The sample in this SDG was submitted for HCCH (hexachlorocyclohexanes) analysis by USEPA Method 608.

**Holding Times:**

The extraction and analytical logs indicate that applicable holding times were met for HCCH analyses. 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 HCCHs by USEPA Method 608.

**Calibration:**

The initial calibration data for this SDG indicate that applicable calibration criteria were met. All continuing calibration verification samples (CCVs) associated with Site project and QC samples were also within applicable control criteria.

**Surrogates:**

The surrogate recoveries for the sample and MS/MSD samples were above the applicable control limits. However, the sample was non-detect (U) for all HCCHs; no data qualification was deemed necessary by professional judgment.

**Blank Summary:**

The analytical results of the laboratory method blank indicated no HCCHs were detected.

**Laboratory Control Sample (LCS) and LCS Duplicate (LCSD):**

The LCS/LCSD recoveries were below the lower laboratory control limit of 37 for alpha-BHC (27/29) and below the lower control limit of 32 for gamma-BHC (27/30). The sample was non-detect for both compounds; reporting limits were qualified as estimated (UJ) by professional judgment as indicated below.

**Sample ID**

IWS-MS1-111120

**Analytes**

alpha-BHC, gamma-BHC

**Data Flag**

UJ



**Matrix Spike/Matrix Spike Duplicate:**

Sample IWS-MS1-111120 was submitted for matrix spike and matrix spike duplicate (MS/MSD) analysis. The percent recoveries were above the upper laboratory control limits in the MS and/or MSD for all four BHC compounds. Since the sample was non-detect for all BHCs, no data qualification based on the potential for high bias was warranted by professional judgment.

**Duplicate Samples:**

No samples were selected by the laboratory or field for duplicate analysis.

**Total Mercury Analyses (EPA Method 245.1)**

The sample in this SDG was submitted for total mercury analysis by USEPA Method 245.1.

**Holding Times:**

The extraction and analytical logs indicate that applicable holding times were met.

**Practical Quantitation Limits:**

The practical quantitation limit (PQL) was met for the analysis of total mercury by USEPA Method 245.1.

**Calibration:**

The initial and continuing calibration data for this SDG indicate that applicable calibration criteria were met for the sample submitted. The low-level check standard recoveries were within QC advisory limits.

**Blank Summary:**

The analytical results of the method blank and the initial/continuing calibration blanks indicated that total mercury was not detected.

**Laboratory Control Sample:**

The laboratory control sample (LCS) spike recovery was within the applicable QC advisory limits.

**Matrix Spike/Matrix Spike Duplicate:**

Sample IWS-MS1-111120 was submitted for MS/MSD analysis. The percent recoveries and RPD were within laboratory control limits.

**Duplicate Samples:**

No samples were selected by the laboratory or field for duplicate analysis.

**Total Suspended Solids (SM 2540D)**

The sample in this SDG was submitted for total suspended solids (TSS) analysis by SM 2540D.

**Holding Times:**

The holding time of 7 days was met as the sample was analyzed within this holding period.

**Practical Quantitation Limits:**

The practical quantitation limit (PQL) was slightly elevated due to a less than optimal sample volume available for analysis.

**Blank Summary:**

The analytical results of the laboratory method blank indicated that no TSS were detected.



**Laboratory Control Sample:**

The laboratory control sample (LCS) recovery was within the applicable QC advisory limits.

**Duplicate Sample:**

The laboratory performed a duplicate analysis on IWS-MS1-111120. Both the sample and lab duplicate were non-detect for TSS.

**Soluble Organic Carbon (SM 5310C)**

The sample in this SDG was submitted for soluble (dissolved) organic carbon (DOC) analysis by SM 5310C.

**Holding Times:**

The holding time of 28 days was met.

**Practical Quantitation Limits:**

The practical quantitation limit (PQL) was met for the analysis of DOC.

**Calibration Summary:**

The initial and continuing calibration data for this SDG indicates that applicable calibration criteria were met.

**Blank Summary:**

The analytical results of the laboratory method blank and continuing calibration blanks (CCBs) indicated that no DOC was detected.

**Laboratory Control Sample:**

The laboratory control sample (LCS) recovery was within the applicable QC advisory limits.

**Matrix Spike/Matrix Spike Duplicate:**

Sample IWS-MS1-111120 was submitted for MS/MSD analysis. The percent recoveries and RPD were within applicable QC advisory limits.

**Duplicate Samples:**

No samples were selected by the laboratory or field for duplicate analysis.

**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 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 November 2020 sampling event. Typically, project objectives are met when completeness is 90 percent or better.

Prepared by: Randy T. Morris

Date: January 22, 2021



April 05, 2021

Service Request No:R2102423

Adam Carringer  
Olin Corporation  
3855 North Ocoee Street  
Suite 200  
Cleveland, TN 37312

**Laboratory Results for: Industrial Welding**

Dear Adam,

Enclosed are the results of the sample(s) submitted to our laboratory March 17, 2021  
For your reference, these analyses have been assigned our service request number **R2102423**.

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](mailto:Meghan.Pedro@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Meghan Pedro  
Project Manager

CC: Randy Morris



## 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](http://www.alsglobal.com)



**Client:** Olin Corporation  
**Project:** Industrial Welding  
**Sample Matrix:** Water

**Service Request:** R2102423  
**Date Received:** 03/17/2021

**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.

**Sample Receipt:**

Three water samples were received for analysis at ALS Environmental on 03/17/2021. 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.

**Semivolatile GC:**

No significant anomalies were noted with this analysis.

**Metals:**

No significant anomalies were noted with this analysis.

A handwritten signature in black ink that reads 'Meghan Pedro'.

Approved by \_\_\_\_\_

Date 04/05/2021



## 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](http://www.alsglobal.com)

**Client:** Olin Corporation  
**Project:** Industrial Welding/release order ERRE9845

**Service Request:**R2102423

**SAMPLE CROSS-REFERENCE**

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R2102423-001	IWS-SD1-031621	3/16/2021	0920
R2102423-002	IWS-MW2-031621	3/16/2021	1000
R2102423-003	IWS-MW1-031621	3/16/2021	1100





# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

004518

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 0F

Project Name <b>INDUSTRIAL WELDING</b>				ANALYSIS REQUESTED (Include Method Number and Container Preservative)										PRESERVATIVE		PRELIMINARY		REMARKS/ALTERNATE DESCRIPTION					
Project Manager <b>Kelvin Carringer</b>		Report CC <b>Nelson Carringer</b>		Project Number <b>1219</b>		Company/Address <b>Olin Corp 3855 North Olcott St. Suite 200 Clarkland TN 37312</b>		Phone # <b>423 336 4987</b>		Email <b>ABCarringer@Olin.com</b>		Sample's Printed Name <b>Mar Linton</b>		Sample's Signature <i>[Signature]</i>		Number of Containers		GCMS Vials • 8280 • 824 • CLR • 8270 • 825 GC Vials • 8021 • 801/802 PESTICIDES • 8081 • 808 PCBs • 8082 • 808 METALS, TOTAL (List in comments below)		METALS, DISSOLVED (List in comments below)		Preservative Key 0. NONE 1. HCL 2. HNO3 3. H2SO4 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO4 8. Other	
FOR OFFICE USE ONLY LAB ID		DATE		SAMPLING TIME		MATRIX																	
IWS-SD1-03/16/21		03/16/21		0920				4		4		3						MS/MSD					
IWS-MW2-03/18/21		03/18/21		0920		OR		2		2		1											
IWS-MW1-031621		03/16/21		1100				2		2		1											
Trump blank		03/16/21																					

SPECIAL INSTRUCTIONS/COMMENTS Metals <i>Top priority</i> <i>Shipped in 1 cooler</i>		TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day - 2 day - 3 day 4 day - 5 day <i>Standard (10 business days-No Surcharge)</i>		REPORT REQUIREMENTS I. Results Only II. Results + QC Summaries (ACS, DUP, MSASD as required) III. Results + OC and Calibration Summaries IV. Data Validation Report with Raw Data		INVOICE INFORMATION PO # BILL TO: <i>Olin Corp</i>	
See OAPP <input type="checkbox"/>		REQUESTED REPORT DATE <i>Standard</i>		ESTIMATE: Yes ___ No ___		RELINQUISHED BY	
STATE WHERE SAMPLES WERE COLLECTED		RECEIVED BY <b>UPS</b>		RECEIVED BY		RECEIVED BY	
Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature	
Printed Name <i>Mar Linton</i>		Printed Name <i>Mar Linton</i>		Printed Name <i>Mar Linton</i>		Printed Name	
Firm <b>SL5</b>		Firm		Firm		Firm	
Date/Time 03/18/21		Date/Time 03/16/21		Date/Time 03/16/21		Date/Time	

R2102423		5	
Olin Corporation		Industrial Welding	
Signature <i>[Signature]</i>		Signature <i>[Signature]</i>	
Printed Name <i>Mar Linton</i>		Printed Name <i>Mar Linton</i>	
Firm <b>SL5</b>		Firm	
Date/Time 03/18/21		Date/Time 03/16/21	



# Cooler Receipt and Preservation Check Form

R2102423

5

Olin Corporation  
Industrial Welding



Project/Client Olin Folder Number \_\_\_\_\_

Cooler received on 3/17/21 by: @

COURIER: ALS (UPS) FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	<input checked="" type="radio"/> Y <input type="radio"/> N
2	Custody papers properly completed (ink, signed)?	<input checked="" type="radio"/> Y <input type="radio"/> N
3	Did all bottles arrive in good condition (unbroken)?	<input checked="" type="radio"/> Y <input type="radio"/> N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	<input checked="" type="radio"/> Y <input type="radio"/> N

5a	Perchlorate samples have required headspace?	Y N <u>(NA)</u>
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y N <u>(NA)</u>
6	Where did the bottles originate?	<u>ALS/ROC</u> CLIENT
7	Soil VOA received as:	Bulk Encore 5035set <u>(NA)</u>

8. Temperature Readings Date: 3/17/21 Time: 1000 ID: IR#7 IR#11 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>3.5</u>						
Within 0-6°C?	<input checked="" type="radio"/> Y <input type="radio"/> 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: Room by @ on 3/17/21 at 1005  
5035 samples placed in storage location: \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check\*\*: Date: 3/17/21 Time: 1412 by: @

- 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
- 13. 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?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
<u>2</u>	<u>223419</u>	HNO <sub>3</sub>	<input checked="" type="checkbox"/>		<u>81120092</u>					
<u>2</u>		H <sub>2</sub> SO <sub>4</sub>								
<4		NaHSO <sub>4</sub>								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add Na <sub>2</sub> S <sub>2</sub> O <sub>7</sub> (625, 608, CN), ascorbic (phenol).					
		Na <sub>2</sub> S <sub>2</sub> O <sub>7</sub>								
		ZnAcetate	-	-						
		HCl	**	**						

\*\*VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 90121-03 21-40-21  
Explain all Discrepancies/ Other Comments: \_\_\_\_\_

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: @  
PC Secondary Review: W

\*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](http://www.alsglobal.com)

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> 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.</p> <p><b>J</b> 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 &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> 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.</p> <p><b>*</b> 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.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an “immediate” hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> 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).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|



### Rochester Lab ID # for State Certifications<sup>1</sup>

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

<sup>1</sup> 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 or go to <https://www.alsglobal.com/locations/americas/north-america/usa/ncw-york/rochester-environmental>

# ALS Laboratory Group

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## 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.

ALS Group USA, Corp.

dba ALS Environmental

Analyst Summary report

**Client:** Olin Corporation  
**Project:** Industrial Welding/release order ERRE9845

**Service Request:** R2102423

**Sample Name:** IWS-SD1-031621  
**Lab Code:** R2102423-001  
**Sample Matrix:** Water

**Date Collected:** 03/16/21  
**Date Received:** 03/17/21

**Analysis Method**

7470A  
8081B  
8270D

**Extracted/Digested By**

AKONZEL  
KSERCU  
KSERCU

**Analyzed By**

AKONZEL  
BALLGEIER  
JMISIUREWICZ

**Sample Name:** IWS-MW2-031621  
**Lab Code:** R2102423-002  
**Sample Matrix:** Water

**Date Collected:** 03/16/21  
**Date Received:** 03/17/21

**Analysis Method**

7470A  
8081B  
8270D

**Extracted/Digested By**

AKONZEL  
KSERCU  
KSERCU

**Analyzed By**

AKONZEL  
BALLGEIER  
JMISIUREWICZ

**Sample Name:** IWS-MW1-031621  
**Lab Code:** R2102423-003  
**Sample Matrix:** Water

**Date Collected:** 03/16/21  
**Date Received:** 03/17/21

**Analysis Method**

7470A  
8081B  
8270D

**Extracted/Digested By**

AKONZEL  
KSERCU  
KSERCU

**Analyzed By**

AKONZEL  
BALLGEIER  
JMISIUREWICZ



## INORGANIC PREPARATION METHODS

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

### Water/Liquid Matrix

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

### Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 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.	



## Sample Results

**ALS Environmental—Rochester Laboratory**  
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Phone (585) 288-5380 Fax (585) 288-8475  
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## Semivolatile Organic Compounds by GC/MS

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ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** IWS-SD1-031621  
**Lab Code:** R2102423-001

**Service Request:** R2102423  
**Date Collected:** 03/16/21 09:20  
**Date Received:** 03/17/21 09:50

**Units:** ug/L  
**Basis:** NA

Semivolatile Organic Compounds by GC/MS

**Analysis Method:** 8270D  
**Prep Method:** EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	9.6 U	9.6	1.3	1	03/24/21 18:49	3/23/21	
Acenaphthene	9.6 U	9.6	1.4	1	03/24/21 18:49	3/23/21	
Acenaphthylene	9.6 U	9.6	1.4	1	03/24/21 18:49	3/23/21	
Anthracene	9.6 U	9.6	1.3	1	03/24/21 18:49	3/23/21	
Benz(a)anthracene	9.6 U	9.6	1.6	1	03/24/21 18:49	3/23/21	
Benzo(a)pyrene	9.6 U	9.6	1.2	1	03/24/21 18:49	3/23/21	
Benzo(b)fluoranthene	1.9 J	9.6	1.2	1	03/24/21 18:49	3/23/21	
Benzo(g,h,i)perylene	1.3 J	9.6	1.0	1	03/24/21 18:49	3/23/21	
Benzo(k)fluoranthene	9.6 U	9.6	1.3	1	03/24/21 18:49	3/23/21	
Chrysene	1.3 J	9.6	1.2	1	03/24/21 18:49	3/23/21	
Dibenz(a,h)anthracene	9.6 U	9.6	1.1	1	03/24/21 18:49	3/23/21	
Fluoranthene	2.7 J	9.6	1.5	1	03/24/21 18:49	3/23/21	
Fluorene	9.6 U	9.6	1.3	1	03/24/21 18:49	3/23/21	
Indeno(1,2,3-cd)pyrene	9.6 U	9.6	1.8	1	03/24/21 18:49	3/23/21	
Naphthalene	9.6 U	9.6	1.2	1	03/24/21 18:49	3/23/21	
Phenanthrene	9.6 U	9.6	1.4	1	03/24/21 18:49	3/23/21	
Pyrene	1.6 J	9.6	1.5	1	03/24/21 18:49	3/23/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	52	31 - 118	03/24/21 18:49	
Nitrobenzene-d5	52	31 - 110	03/24/21 18:49	
p-Terphenyl-d14	82	10 - 165	03/24/21 18:49	



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Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** IWS-MW2-031621  
**Lab Code:** R2102423-002

**Service Request:** R2102423  
**Date Collected:** 03/16/21 10:00  
**Date Received:** 03/17/21 09:50

**Units:** ug/L  
**Basis:** NA

Semivolatile Organic Compounds by GC/MS

**Analysis Method:** 8270D  
**Prep Method:** EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	9.6 U	9.6	1.3	1	03/24/21 19:18	3/23/21	
Acenaphthene	9.6 U	9.6	1.4	1	03/24/21 19:18	3/23/21	
Acenaphthylene	9.6 U	9.6	1.4	1	03/24/21 19:18	3/23/21	
Anthracene	9.6 U	9.6	1.3	1	03/24/21 19:18	3/23/21	
Benz(a)anthracene	9.6 U	9.6	1.6	1	03/24/21 19:18	3/23/21	
Benzo(a)pyrene	9.6 U	9.6	1.2	1	03/24/21 19:18	3/23/21	
Benzo(b)fluoranthene	9.6 U	9.6	1.2	1	03/24/21 19:18	3/23/21	
Benzo(g,h,i)perylene	9.6 U	9.6	1.0	1	03/24/21 19:18	3/23/21	
Benzo(k)fluoranthene	9.6 U	9.6	1.3	1	03/24/21 19:18	3/23/21	
Chrysene	9.6 U	9.6	1.2	1	03/24/21 19:18	3/23/21	
Dibenz(a,h)anthracene	9.6 U	9.6	1.1	1	03/24/21 19:18	3/23/21	
Fluoranthene	9.6 U	9.6	1.5	1	03/24/21 19:18	3/23/21	
Fluorene	9.6 U	9.6	1.3	1	03/24/21 19:18	3/23/21	
Indeno(1,2,3-cd)pyrene	9.6 U	9.6	1.8	1	03/24/21 19:18	3/23/21	
Naphthalene	9.6 U	9.6	1.2	1	03/24/21 19:18	3/23/21	
Phenanthrene	9.6 U	9.6	1.4	1	03/24/21 19:18	3/23/21	
Pyrene	9.6 U	9.6	1.5	1	03/24/21 19:18	3/23/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	33	31 - 118	03/24/21 19:18	
Nitrobenzene-d5	34	31 - 110	03/24/21 19:18	
p-Terphenyl-d14	81	10 - 165	03/24/21 19:18	

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Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** IWS-MW1-031621  
**Lab Code:** R2102423-003

**Service Request:** R2102423  
**Date Collected:** 03/16/21 11:00  
**Date Received:** 03/17/21 09:50

**Units:** ug/L  
**Basis:** NA

Semivolatile Organic Compounds by GC/MS

**Analysis Method:** 8270D  
**Prep Method:** EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	10 U	10	1.4	1	03/24/21 19:47	3/23/21	
Acenaphthene	10 U	10	1.5	1	03/24/21 19:47	3/23/21	
Acenaphthylene	10 U	10	1.5	1	03/24/21 19:47	3/23/21	
Anthracene	10 U	10	1.4	1	03/24/21 19:47	3/23/21	
Benz(a)anthracene	10 U	10	1.7	1	03/24/21 19:47	3/23/21	
Benzo(a)pyrene	10 U	10	1.3	1	03/24/21 19:47	3/23/21	
Benzo(b)fluoranthene	10 U	10	1.3	1	03/24/21 19:47	3/23/21	
Benzo(g,h,i)perylene	10 U	10	1.1	1	03/24/21 19:47	3/23/21	
Benzo(k)fluoranthene	10 U	10	1.4	1	03/24/21 19:47	3/23/21	
Chrysene	10 U	10	1.3	1	03/24/21 19:47	3/23/21	
Dibenz(a,h)anthracene	10 U	10	1.2	1	03/24/21 19:47	3/23/21	
Fluoranthene	10 U	10	1.6	1	03/24/21 19:47	3/23/21	
Fluorene	10 U	10	1.4	1	03/24/21 19:47	3/23/21	
Indeno(1,2,3-cd)pyrene	10 U	10	1.9	1	03/24/21 19:47	3/23/21	
Naphthalene	10 U	10	1.3	1	03/24/21 19:47	3/23/21	
Phenanthrene	10 U	10	1.5	1	03/24/21 19:47	3/23/21	
Pyrene	10 U	10	1.6	1	03/24/21 19:47	3/23/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	39	31 - 118	03/24/21 19:47	
Nitrobenzene-d5	40	31 - 110	03/24/21 19:47	
p-Terphenyl-d14	75	10 - 165	03/24/21 19:47	



## Semivolatile Organic Compounds by GC

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ALS Group USA, Corp.  
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Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** IWS-SD1-031621  
**Lab Code:** R2102423-001

**Service Request:** R2102423  
**Date Collected:** 03/16/21 09:20  
**Date Received:** 03/17/21 09:50

**Units:** ug/L  
**Basis:** NA

Organochlorine Pesticides by Gas Chromatography

**Analysis Method:** 8081B  
**Prep Method:** EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.045 U	0.045	1	03/19/21 20:21	3/18/21	
beta-BHC	0.045 U	0.045	1	03/19/21 20:21	3/18/21	
delta-BHC	0.045 U	0.045	1	03/19/21 20:21	3/18/21	
gamma-BHC (Lindane)	0.045 U	0.045	1	03/19/21 20:21	3/18/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	25	10 - 164	03/19/21 20:21	
Tetrachloro-m-xylene	50	10 - 147	03/19/21 20:21	

ALS Group USA, Corp.  
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Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** IWS-MW2-031621  
**Lab Code:** R2102423-002

**Service Request:** R2102423  
**Date Collected:** 03/16/21 10:00  
**Date Received:** 03/17/21 09:50

**Units:** ug/L  
**Basis:** NA

Organochlorine Pesticides by Gas Chromatography

**Analysis Method:** 8081B  
**Prep Method:** EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.050 U	0.050	1	03/19/21 20:40	3/18/21	
beta-BHC	0.050 U	0.050	1	03/19/21 20:40	3/18/21	
delta-BHC	0.050 U	0.050	1	03/19/21 20:40	3/18/21	
gamma-BHC (Lindane)	0.050 U	0.050	1	03/19/21 20:40	3/18/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	40	10 - 164	03/19/21 20:40	
Tetrachloro-m-xylene	52	10 - 147	03/19/21 20:40	

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Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** IWS-MW1-031621  
**Lab Code:** R2102423-003

**Service Request:** R2102423  
**Date Collected:** 03/16/21 11:00  
**Date Received:** 03/17/21 09:50

**Units:** ug/L  
**Basis:** NA

Organochlorine Pesticides by Gas Chromatography

**Analysis Method:** 8081B  
**Prep Method:** EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.052 U	0.052	1	03/19/21 20:59	3/18/21	
beta-BHC	0.052 U	0.052	1	03/19/21 20:59	3/18/21	
delta-BHC	0.052 U	0.052	1	03/19/21 20:59	3/18/21	
gamma-BHC (Lindane)	0.052 U	0.052	1	03/19/21 20:59	3/18/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	52	10 - 164	03/19/21 20:59	
Tetrachloro-m-xylene	53	10 - 147	03/19/21 20:59	



## Metals

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METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

IWS-SD1-031621

Contract: R2102423

Lab Code: \_\_\_\_\_

Case No.: \_\_\_\_\_

SAS No.: \_\_\_\_\_

SDG NO.: IWS-SD1-0316

Matrix (soil/water): WATER

Lab Sample ID: R2102423-001

Level (low/med): LOW

Date Received: 3/17/2021

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.200	U		CV

Color Before: \_\_\_\_\_ Clarity Before: \_\_\_\_\_ Texture: \_\_\_\_\_

Color After: \_\_\_\_\_ Clarity After: \_\_\_\_\_ Artifacts: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**METALS**  
**-1-**  
**INORGANIC ANALYSIS DATA SHEET**

SAMPLE NO.

**IWS-MW2-031621**

Contract: R2102423

Lab Code: \_\_\_\_\_

Case No.: \_\_\_\_\_

SAS No.: \_\_\_\_\_

SDG NO.: IWS-SD1-0316

Matrix (soil/water): WATER

Lab Sample ID: R2102423-002

Level (low/med): LOW

Date Received: 3/17/2021

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	13.3			CV

Color Before: \_\_\_\_\_ Clarity Before: \_\_\_\_\_ Texture: \_\_\_\_\_

Color After: \_\_\_\_\_ Clarity After: \_\_\_\_\_ Artifacts: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**METALS**  
**-1-**  
**INORGANIC ANALYSIS DATA SHEET**

SAMPLE NO.

**IWS-MW1-031621**

Contract: R2102423

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_

SDG NO.: IWS-SD1-0316

Matrix (soil/water): WATER

Lab Sample ID: R2102423-003

Level (low/med): LOW

Date Received: 3/17/2021

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.200	U		CV

Color Before: \_\_\_\_\_ Clarity Before: \_\_\_\_\_ Texture: \_\_\_\_\_

Color After: \_\_\_\_\_ Clarity After: \_\_\_\_\_ Artifacts: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## QC Summary Forms

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## Semivolatile Organic Compounds by GC/MS

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Phone (585) 288-5380 Fax (585) 288-8475  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding/release order ERRE9845  
**Sample Matrix:** Water

**Service Request:** R2102423

**SURROGATE RECOVERY SUMMARY**  
**Semivolatile Organic Compounds by GC/MS**

**Analysis Method:** 8270D  
**Extraction Method:** EPA 3510C

Sample Name	Lab Code	2-Fluorobiphenyl	Nitrobenzene-d5	p-Terphenyl-d14
		31-118	31-110	10-165
IWS-SD1-031621	R2102423-001	52	52	82
IWS-MW2-031621	R2102423-002	33	34	81
IWS-MW1-031621	R2102423-003	39	40	75
Method Blank	RQ2102949-03	48	52	103
Lab Control Sample	RQ2102949-04	56	61	86
Duplicate Lab Control Sample	RQ2102949-05	64	66	91

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Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** Method Blank  
**Lab Code:** RQ2102949-03

**Service Request:** R2102423  
**Date Collected:** NA  
**Date Received:** NA

**Units:** ug/L  
**Basis:** NA

**Semivolatile Organic Compounds by GC/MS**

**Analysis Method:** 8270D  
**Prep Method:** EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2-Methylnaphthalene	10 U	10	1.3	1	03/24/21 17:23	3/23/21	
Acenaphthene	10 U	10	1.4	1	03/24/21 17:23	3/23/21	
Acenaphthylene	10 U	10	1.4	1	03/24/21 17:23	3/23/21	
Anthracene	10 U	10	1.3	1	03/24/21 17:23	3/23/21	
Benz(a)anthracene	10 U	10	1.6	1	03/24/21 17:23	3/23/21	
Benzo(a)pyrene	10 U	10	1.2	1	03/24/21 17:23	3/23/21	
Benzo(b)fluoranthene	10 U	10	1.2	1	03/24/21 17:23	3/23/21	
Benzo(g,h,i)perylene	10 U	10	1.0	1	03/24/21 17:23	3/23/21	
Benzo(k)fluoranthene	10 U	10	1.3	1	03/24/21 17:23	3/23/21	
Chrysene	10 U	10	1.2	1	03/24/21 17:23	3/23/21	
Dibenz(a,h)anthracene	10 U	10	1.1	1	03/24/21 17:23	3/23/21	
Fluoranthene	10 U	10	1.5	1	03/24/21 17:23	3/23/21	
Fluorene	10 U	10	1.3	1	03/24/21 17:23	3/23/21	
Indeno(1,2,3-cd)pyrene	10 U	10	1.8	1	03/24/21 17:23	3/23/21	
Naphthalene	10 U	10	1.2	1	03/24/21 17:23	3/23/21	
Phenanthrene	10 U	10	1.4	1	03/24/21 17:23	3/23/21	
Pyrene	10 U	10	1.5	1	03/24/21 17:23	3/23/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	48	31 - 118	03/24/21 17:23	
Nitrobenzene-d5	52	31 - 110	03/24/21 17:23	
p-Terphenyl-d14	103	10 - 165	03/24/21 17:23	



ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding/release order ERRE9845  
**Sample Matrix:** Water

**Service Request:** R2102423  
**Date Analyzed:** 03/24/21

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

**Units:**ug/L  
**Basis:**NA

**Lab Control Sample**                      **Duplicate Lab Control Sample**  
RQ2102949-04                                      RQ2102949-05

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
2-Methylnaphthalene	8270D	48.3	80.0	60	52.2	80.0	65	34-102	8	30
Acenaphthene	8270D	52.3	80.0	65	57.7	80.0	72	52-107	10	30
Acenaphthylene	8270D	56.5	80.0	71	63.3	80.0	79	55-109	11	30
Anthracene	8270D	63.6	80.0	79	66.8	80.0	83	55-116	5	30
Benz(a)anthracene	8270D	57.9	80.0	72	59.9	80.0	75	61-121	4	30
Benzo(a)pyrene	8270D	61.7	80.0	77	65.4	80.0	82	44-114	6	30
Benzo(b)fluoranthene	8270D	55.1	80.0	69	56.9	80.0	71	62-115	3	30
Benzo(g,h,i)perylene	8270D	67.3	80.0	84	70.1	80.0	88	63-136	5	30
Benzo(k)fluoranthene	8270D	59.9	80.0	75	63.9	80.0	80	49-133	6	30
Chrysene	8270D	60.7	80.0	76	62.6	80.0	78	57-118	3	30
Dibenz(a,h)anthracene	8270D	61.6	80.0	77	61.4	80.0	77	54-135	<1	30
Fluoranthene	8270D	68.3	80.0	85	71.8	80.0	90	66-127	6	30
Fluorene	8270D	58.3	80.0	73	63.8	80.0	80	54-106	9	30
Indeno(1,2,3-cd)pyrene	8270D	55.4	80.0	69	57.8	80.0	72	62-137	4	30
Naphthalene	8270D	48.1	80.0	60	51.8	80.0	65	38-99	8	30
Phenanthrene	8270D	61.5	80.0	77	64.6	80.0	81	58-118	5	30
Pyrene	8270D	60.3	80.0	75	63.4	80.0	79	61-122	5	30



## Semivolatile Organic Compounds by GC

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ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding/release order ERRE9845  
**Sample Matrix:** Water

**Service Request:** R2102423

**SURROGATE RECOVERY SUMMARY**  
**Organochlorine Pesticides by Gas Chromatography**

**Analysis Method:** 8081B  
**Extraction Method:** EPA 3510C

Sample Name	Lab Code	Decachlorobiphenyl	Tetrachloro-m-xylene
		10-164	10-147
IWS-SD1-031621	R2102423-001	25	50
IWS-MW2-031621	R2102423-002	40	52
IWS-MW1-031621	R2102423-003	52	53
Method Blank	RQ2102805-01	56	52
Lab Control Sample	RQ2102805-02	59	59
Duplicate Lab Control Sample	RQ2102805-03	57	62

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** Method Blank  
**Lab Code:** RQ2102805-01

**Service Request:** R2102423  
**Date Collected:** NA  
**Date Received:** NA  
**Units:** ug/L  
**Basis:** NA

Organochlorine Pesticides by Gas Chromatography

**Analysis Method:** 8081B  
**Prep Method:** EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.050 U	0.050	1	03/19/21 19:25	3/18/21	
beta-BHC	0.050 U	0.050	1	03/19/21 19:25	3/18/21	
delta-BHC	0.050 U	0.050	1	03/19/21 19:25	3/18/21	
gamma-BHC (Lindane)	0.050 U	0.050	1	03/19/21 19:25	3/18/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	56	10 - 164	03/19/21 19:25	
Tetrachloro-m-xylene	52	10 - 147	03/19/21 19:25	

ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** Olin Corporation  
**Project:** Industrial Welding/release order ERRE9845  
**Sample Matrix:** Water

**Service Request:** R2102423  
**Date Analyzed:** 03/19/21

**Duplicate Lab Control Sample Summary**  
**Organochlorine Pesticides by Gas Chromatography**

**Units:**ug/L  
**Basis:**NA

Analyte Name	Lab Control Sample RQ2102805-02					Duplicate Lab Control Sample RQ2102805-03				
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
alpha-BHC	8081B	0.289	0.400	72	0.282	0.400	70	36-151	3	30
beta-BHC	8081B	0.300	0.400	75	0.291	0.400	73	55-149	3	30
delta-BHC	8081B	0.333	0.400	83	0.307	0.400	77	29-159	8	30
gamma-BHC (Lindane)	8081B	0.291	0.400	73	0.282	0.400	71	41-149	3	30



## Metals

**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](http://www.alsglobal.com)

**METALS**

-3-

**BLANKS**

Contract: R2102423

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-SD1-0316

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	Continuing Calibration Blank ug/L						Preparation Blank	M
		1	2	3	4	5	6		
Mercury	0.200   U	0.200   U	0.200   U	0.200   U	0.200   U	0.200   U	0.200   U	CV	

Comments:

**METALS**

-3-

**BLANKS**

Contract: R2102423

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-SD1-0316

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L C	Continuing Calibration Blank ug/L						Preparation Blank C	M
		1	C	2	C	3	C		
Mercury		0.200	U						CV

Comments:



**METALS**

-5A-

**SPIKE SAMPLE RECOVERY**

SAMPLE NO.

IWS-SD1-031621S

Contract: R2102423

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-SD1-0316

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 100.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Mercury	75 - 125	1.060	0.200   U	1.00	106		CV

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**METALS**

-5A-

**SPIKE SAMPLE RECOVERY**

SAMPLE NO.

IWS-SD1-031621SD

Contract: R2102423

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-SD1-0316

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 100.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Mercury	75 - 125	1.070	0.200 U	1.00	107		CV

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**METALS**  
**-6-**  
**DUPLICATES**

SAMPLE NO.

**IWS-SD1-031621SD**

Contract: R2102423

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-SD1-0316

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 100.0 % Solids for Duplicate: 100.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Mercury		1.060		1.070		1		CV

Comments: \_\_\_\_\_

**METALS**

-7-

**LABORATORY CONTROL SAMPLE**

Contract: **R2102423**

Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: **IWS-SD1-0316**

Solid LCS Source: \_\_\_\_\_

Aqueous LCS Source: **JT BAKER**

Analyte	Aqueous (ug/L)			Solid (mg/K)				
	True	Found	%R	True	Found	C	Limits	%R
Mercury	1.000	0.996	100					

Comments: \_\_\_\_\_

**Industrial Welding Site**  
**Data Evaluation Narrative**  
**March 2021 Groundwater/Storm Drain Sampling Event**

**SDG R2102423: ALS Environmental, Rochester, NY**

**Deliverables**

The data package as submitted to Olin Corporation is complete as stipulated under the Industrial Welding Site Quality Assurance Project Plan (QAPP) as approved by the New York State Department of Environmental Conservation. United States Environmental Protection Agency (USEPA) Methods 8270D, 8081B, and 7470A were utilized in the laboratory testing.

Samples submitted within this sample delivery group (SDG) were submitted to the ALS Environmental laboratory in Rochester, NY for analysis of select semi-volatile organic compounds, organochlorine pesticides, and total mercury. The laboratory subsequently applied login numbers to the SDG. The SDG number for this sampling event is R2102423. This evaluation narrative follows the listing of groundwater and storm drain sample field identifications. The topics are ordered to first assess issues affecting the entire data set.

**Sample Integrity**

Information provided on the Chain of Custody and Cooler Receipt Form provided by the laboratory confirmed the samples arrived at the laboratory intact. The cooler temperature as received by the laboratory was within the temperature control limits of  $4.0^{\circ}\text{C} \pm 2.0^{\circ}\text{C}$ . The proper bottles and preservatives were used, and the correct analytical methods were employed. The sampler failed to denote the time he relinquished the samples on the Chain of Custody; the contractor was notified and reminded of the proper protocols.

**Sample Identification**

This SDG contains the following samples collected on March 16, 2021:

**SAMPLE**  
IWS-SD1-031621

**SAMPLE**  
IWS-MW2-031621

**SAMPLE**  
IWS-MW1-031621

**Semi-Volatile Organic Compounds (EPA Method 8270D)**

The samples in this SDG were submitted for analysis of select semi-volatile organic compounds—polyaromatic hydrocarbons (PAHs), by USEPA Method 8270D.

**Holding Times:**

The extraction and analytical logs indicate that applicable holding times were met for samples submitted for PAH analysis. The holding times of 7 days for extraction and 40 days for analysis were met.

**GC/MS Instrument Performance Check:**

The GC/MS tuning and mass calibration checks were performed with decafluorotriphenylphosphine (DFTPP) and met the performance criteria as established by the method.

**Calibration:**

The initial calibration and continuing calibration data (ICV and CCV respectively) indicate that applicable calibration criteria were met for samples submitted for PAH analysis. The RSDs for each calibration check were within the applicable criteria.

**Blank Summary:**

The analytical results of the laboratory method blank indicated no PAHs were detected.

**Laboratory Control Sample (LCS)/LCS Duplicate (LCSD):**

The LCS/LCSD spike recoveries were within the applicable QC advisory limits, as were the relative percent differences (RPDs).

**Internal Standards and Surrogates:**

The internal standard area counts/retention times and the surrogate recoveries were within applicable QC advisory limits.

**Duplicate Samples:**

No samples were selected by the field or laboratory for duplicate analysis.

**Reporting Limits:**

Sample IWS-SD1-031621 had five detections of PAH compounds between the method detection limit and the reporting limit. The laboratory qualified these detections as estimated concentrations (J).

**Organochlorine Pesticides (EPA Method 8081B)**

The samples in this SDG were submitted for total HCCH (hexachlorocyclohexanes) analysis by USEPA Method 8081B.

**Holding Times:**

The extraction and analytical logs indicate that applicable holding times were met for samples submitted for HCCH analyses. The holding times of 7 days for extraction and 40 days for analysis were met.

**Calibration:**

The initial and continuing calibration data met method and QAPP criteria. The injection port inertness checks (column breakdown) for DDT and Endrin were within QC limits each day that samples associated with this SDG were analyzed.

**Surrogates:**

The surrogate recoveries were within applicable QC advisory limits.

**Blank Summary:**

The analytical results of the laboratory method blank indicated no HCCHs were detected.

**Laboratory Control Sample (LCS)/LCS Duplicate (LCSD):**

The LCS/LCSD spike recoveries were within the applicable QC advisory limits as were the RPDs.

**Duplicate Samples:**

No samples were selected by the field or laboratory for duplicate analysis.

**Total Mercury Analyses (EPA Method 7470A)**

The samples in this SDG were submitted for total mercury analysis by USEPA Method 7470A.

**Holding Times:**

The extraction and analytical logs indicate that applicable holding times were met for samples submitted for total mercury analysis.

**Calibration:**

The initial and continuing calibration data for this SDG indicate that applicable calibration criteria were met for samples submitted for total mercury analysis. The low-level check standard recoveries were within QC advisory limits.

**Blank Summary:**

The analytical results of the initial and continuing laboratory method blanks indicated that total mercury was not detected.

**Laboratory Control Sample:**

The laboratory control sample (LCS) spike recovery was within the applicable QC advisory limits.

**Matrix Spike/Matrix Spike Duplicate:**

Sample IWS-SD1-031621 was submitted to the laboratory for MS/MSD analysis. The percent recoveries and RPD were within control limits.

**Duplicate Samples:**

No samples were selected by the field or laboratory for duplicate analysis.

**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 March 2021 sampling event.

Prepared by: Randy T. Morris

Date: April 15, 2021

Sample	Date Collected	Date Analyzed	Analysis Method	Matrix	Units	Component	Dil. Factor	Rpt. Limit	Detection	Result	Flag
IWS-SD1-031621	3/16/2021	3/19/2021	7470A	Water	UG/L	Mercury, Total	1	0.2	0.08	0.2	U
IWS-MW2-031621	3/16/2021	3/19/2021	7470A	Water	UG/L	Mercury, Total	5	1	0.4	13.3	
IWS-MW1-031621	3/16/2021	3/19/2021	7470A	Water	UG/L	Mercury, Total	1	0.2	0.08	0.2	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	2-Methylnaphthalene	1	9.6	1.3	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Acenaphthene	1	9.6	1.4	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Acenaphthylene	1	9.6	1.4	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Anthracene	1	9.6	1.3	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benz(a)anthracene	1	9.6	1.6	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(a)pyrene	1	9.6	1.2	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(b)fluoranthene	1	9.6	1.2	1.9	J
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	9.6	1	1.3	J
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(k)fluoranthene	1	9.6	1.3	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Chrysene	1	9.6	1.2	1.3	J
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	9.6	1.1	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Fluoranthene	1	9.6	1.5	2.7	J
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Fluorene	1	9.6	1.3	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	9.6	1.8	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Naphthalene	1	9.6	1.2	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Phenanthrene	1	9.6	1.4	9.6	U
IWS-SD1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Pyrene	1	9.6	1.5	1.6	J
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	2-Methylnaphthalene	1	9.6	1.3	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Acenaphthene	1	9.6	1.4	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Acenaphthylene	1	9.6	1.4	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Anthracene	1	9.6	1.3	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benz(a)anthracene	1	9.6	1.6	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(a)pyrene	1	9.6	1.2	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(b)fluoranthene	1	9.6	1.2	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(g,h,i)perylene	1	9.6	1	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Benzo(k)fluoranthene	1	9.6	1.3	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Chrysene	1	9.6	1.2	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Dibenz(a,h)anthracene	1	9.6	1.1	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Fluoranthene	1	9.6	1.5	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Fluorene	1	9.6	1.3	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Indeno(1,2,3-cd)pyrene	1	9.6	1.8	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Naphthalene	1	9.6	1.2	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Phenanthrene	1	9.6	1.4	9.6	U
IWS-MW2-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	Pyrene	1	9.6	1.5	9.6	U
IWS-MW1-031621	3/16/2021	3/24/2021	8270D	Water	UG/L	2-Methylnaphthalene	1	10	1.4	10	U





**ATTACHMENT C**



**Environmental Remediation Group**

3855 North Ocoee Street, Suite 200  
Cleveland, TN. 37312  
(423) 336-4057  
FAX (423) 336-4166  
abcarringer@olin.com

**SENT VIA OVERNIGHT COURIER AND FILE TRANSFER PORTAL**

February 13, 2021

Industrial Monitoring Coordinator  
City of Niagara Falls  
Department of Wastewater Facilities  
Enforcement Division  
1200 Buffalo Avenue  
PO Box 69  
Niagara Falls, NY 14302-0069

**Re: Olin Industrial Welding Site – No Violations  
Niagara Falls, New York  
Wastewater Discharge Permit No. ICU-23  
Periodic Self-Monitoring Report**

Dear Industrial Monitoring Coordinator:

Please find enclosed the annual Periodic Self-Monitoring Report in accordance with the reporting requirements of the Wastewater Discharge Permit for the Olin Industrial Welding Site. The site is in compliance for all monitored parameters; there are no violations.

Discharge during this monitoring period (January-2020 through December-2020) totaled 80,540 gallons. Daily flow documentation is included in Attachment 1. The annual monitoring samples were taken on November 11, 2020. The laboratory analytical report for compliance monitoring is included on CD, along with a printed summary sheet, in Attachment 2. The analytical results and loading data are tabulated in Part I of the report. There were no exceedances.

Please direct any questions or comments to me at 423/336-4057.

Sincerely,  
**OLIN CORPORATION**

A handwritten signature in black ink, appearing to read "Adam B. Carringer", written over a horizontal line.

Adam Carringer  
Senior Environmental Specialist

Attachments

## PERIODIC SELF MONITORING REPORT INDUSTRIAL COMMERCIAL USER

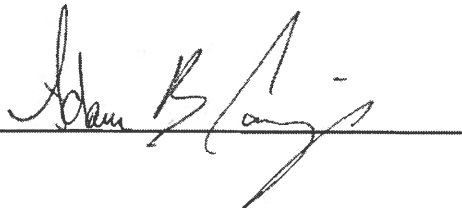
PART II of the report is the Compliance Monitoring section. The user is obligated to determine if the analysis results indicate compliance or noncompliance. All violations noted should be brought to the City's attention immediately upon noting and should also be reported in this section. The analysis result should be compared against all applicable federal, state and local standards and limitations. If no violations are noted then "NO VIOLATIONS" should appear on the report.

Pursuant to 40 CFR Part 403.12 g of the federal standards, all violations noted must be followed up by a sample recollect/analysis and the results submitted to the City within thirty (30) days of first becoming aware of the violation.

Pursuant to 40 CFR Part 403.12 g, all Periodic self Monitoring Reports must be signed by a 'responsible company official' certifying the following statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed: \_\_\_\_\_



Date: \_\_\_\_\_

02/13/2021

**PART 1  
ANALYTICAL RESULTS**

**ICU PERMIT NAME** Olin Corporation - Industrial Welding Site  
**ICU PERMIT NUMBER** ICU - 23  
**SAMPLE LOCATION** MS#1  
**DATE SAMPLED** 11/11/2020  
**ANALYSIS DATES** Nov 16-19, 2020  
**ANALYTICAL LABORATORY** ALS Environmental

Parameter	Method	Results (mg/l)	Results (lb/day)	Daily Max Discharge Limits (lb/day)
Total Suspended Solids	EPA 160.2	1.1	0.003	15
Soluble Organic Carbon	EPA 415.1	4.4	0.013	10
Acetone	EPA 624	0.005	0.000014	0.01
Dichloroethanes	EPA 624	0.002	0.000006	0.01
Trichloroethylenes	EPA 624	0.00339	0.000010	0.01
BHCs total	EPA 608	0.0002	0.0000006	0.001
Mercury	EPA 245.1	0.0002	0.0000006	0.008

Parameter	Value
Avg. Daily Flow (gal/day) for 2019	347
Avg. Daily Flow (Mgal/day) for 2019	0.000347
Discharge Limitations (Annual Avg. MGD)	0.005
Discharge Limitations (Daily Max MGD)	0.008

**Note:**

Results (lb/day) = Results (mg/l) X Flow (Gal/Day) X .00000834

Flows calculated based on avg daily flow for year rather than for sampling month, due to flow variability and sampling month dry weather conditions.



---

**ATTACHMENT 1**

---

**Industrial Welding Site - Discharge Flows: 2020**

<b>Month</b>	<b>Monthly Flow (gal)</b>	<b>gal/day</b>
Jan	23,510	758
Feb	11,459	395
Mar	19,734	637
Apr	11,282	376
May	5,941	192
Jun	670	22
Jul	0	0
Aug	0	0
Sep	0	0
Oct	0	0
Nov	1,623	54
Dec	6,321	204
<b>Total</b>	<b>80,540</b>	
<b>MONTHLY AVERAGE</b>	<b>6,712</b>	
daily average	221	
daily avg Mgal	0.000221	

**Daily Avg. Limit = 0.005 Mgal**



Industrial Welding Site Flows  
Jan-20

**RTU NAME: Olin Industrial Welding**  
**CUMULATEVE VALUES**

**Discharge Flow Meter** **23,510**

Date	Time	Hours	Gallons
1/1/2020	0:57:31	24	572
1/2/2020	0:57:30	24	641
1/3/2020	0:57:31	24	595
1/4/2020	0:57:29	24	595
1/5/2020	0:57:30	24	310
1/6/2020	0:57:32	24	556
1/7/2020	0:57:50	24	455
1/8/2020	0:57:31	24	103
1/9/2020	0:57:33	24	49
1/10/2020	0:57:32	24	48
1/11/2020	0:57:27	24	1,105
1/12/2020	0:57:30	24	1,798
1/13/2020	0:57:31	24	1,605
1/14/2020	0:57:33	24	1,477
1/15/2020	0:57:30	24	1,072
1/16/2020	0:57:31	24	909
1/17/2020	0:57:29	24	689
1/18/2020	0:57:31	24	614
1/19/2020	0:57:27	24	599
1/20/2020	0:57:29	24	53
1/21/2020	0:57:30	24	612
1/22/2020	0:57:32	24	238
1/23/2020	0:57:30	24	143
1/24/2020	0:57:28	15	380
1/25/2020	0:57:32	24	1,987
1/26/2020	0:57:30	24	1,142
1/27/2020	0:57:30	24	1,408
1/28/2020	0:57:30	24	1,239
1/29/2020	0:57:30	24	1,005
1/30/2020	0:57:29	24	859
1/31/2020	0:57:31	24	652

**January Total Discharge** **735** **23,510**

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows  
Feb-20

**RTU NAME: Olin Industrial Welding**  
**CUMULATIVE VALUES**

<b>Discharge Flow Meter</b>			<b>11,459</b>	
	<b>Date</b>	<b>Time</b>	<b>Hours</b>	<b>Gallons</b>
	2/1/2020	0:57:28	24	531
	2/2/2020	0:57:29	24	580
	2/3/2020	0:57:30	24	658
	2/4/2020	0:57:31	12.1	264
	2/5/2020	0:57:29	0	0
	2/6/2020	0:57:28	6.8	865
	2/7/2020	0:57:30	5.6	92
	2/8/2020	0:57:30	0	0
	2/9/2020	0:57:32	0	0
	2/10/2020	0:57:31	11.3	1,788
	2/11/2020	0:57:32	24	1,048
	2/12/2020	0:57:33	24	607
	2/13/2020	0:57:29	24	642
	2/14/2020	0:57:30	24	476
	2/15/2020	0:57:32	24	305
	2/16/2020	0:57:31	24	135
	2/17/2020	0:57:18	24	52
	2/18/2020	0:57:34	24	651
	2/19/2020	0:57:28	24	401
	2/20/2020	0:57:33	24	166
	2/21/2020	0:57:31	24	186
	2/22/2020	0:57:31	24	126
	2/23/2020	0:57:28	24	30
	2/24/2020	0:57:28	24	46
	2/25/2020	0:57:33	24	177
	2/26/2020	0:57:30	24	354
	2/27/2020	0:57:27	24	899
	2/28/2020	0:57:28	24	335
	2/29/2020	0:57:30	24	45
	<b>February Total Discharge</b>		<b>563.8</b>	<b>11,459</b>

**Daily Discharge Limits: Max = 8,000 gal.**

Industrial Welding Site Flows  
Mar-20

**RTU NAME: Olin Industrial Welding**  
**CUMULATIVE VALUES**

**Discharge Flow Meter** **19,734**

Date	Time	Hours	Gallons
3/1/2020	0:57:28	24	337
3/2/2020	0:57:29	24	978
3/3/2020	0:57:30	24	1,341
3/4/2020	0:57:30	24	1,341
3/5/2020	0:57:31	24	1,379
3/6/2020	0:57:28	24	1,375
3/7/2020	0:57:31	24	1,314
3/8/2020	0:57:32	23	931
3/9/2020	1:57:18	23.9	777
3/10/2020	0:57:27	24	923
3/11/2020	0:57:30	24	691
3/12/2020	0:57:28	24	608
3/13/2020	0:57:31	24	796
3/14/2020	0:57:29	24	550
3/15/2020	0:57:31	24	438
3/16/2020	0:57:30	14	371
3/17/2020	0:57:33	0	0
3/18/2020	0:57:30	2	620
3/19/2020	0:57:29	0.3	100
3/20/2020	0:57:32	2.4	731
3/21/2020	0:57:28	0	0
3/22/2020	0:57:29	2.3	649
3/23/2020	0:57:40	0	0
3/24/2020	0:57:30	2.3	676
3/25/2020	0:57:33	0	0
3/26/2020	0:57:33	2.3	651
3/27/2020	0:57:31	0	0
3/28/2020	0:57:32	3.1	920
3/29/2020	0:57:31	1	318
3/30/2020	0:57:28	1.2	378
3/31/2020	0:57:30	1.8	541

**March Total Discharge** **392** **19,734**

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows  
Apr-20

**RTU NAME: Olin Industrial Welding**  
**CUMULATEVE VALUES**

**Discharge Flow Meter** **11,282**

Date	Time	Hours	Gallons
4/1/2020	0:57:31	0.5	156
4/2/2020	0:57:32	0	0
4/3/2020	0:57:29	2.3	680
4/4/2020	0:57:30	0	0
4/5/2020	0:57:33	1.9	534
4/6/2020	0:57:31	0.3	105
4/7/2020	0:57:31	0	0
4/8/2020	0:57:30	2.1	706
4/9/2020	0:57:30	2.5	710
4/10/2020	0:57:29	0	0
4/11/2020	0:57:29	2.3	644
4/12/2020	0:57:28	0	0
4/13/2020	0:57:32	2.5	771
4/14/2020	0:57:29	2.3	671
4/15/2020	0:57:30	0	0
4/16/2020	0:57:27	2.3	640
4/17/2020	0:57:29	1	267
4/18/2020	0:57:29	1.3	355
4/19/2020	0:57:28	2.5	697
4/20/2020	0:57:33	0	0
4/21/2020	0:57:28	2.3	702
4/22/2020	0:57:31	0	0
4/23/2020	0:57:32	2.3	688
4/24/2020	0:57:31	0	0
4/25/2020	0:57:31	0	0
4/26/2020	0:57:29	3.2	982
4/27/2020	0:57:30	1.8	573
4/28/2020	0:57:33	2.3	657
4/29/2020	0:57:28	0	0
4/30/2020	0:57:31	2.5	744
<b>April Total Discharge</b>		<b>38.2</b>	<b>11,282</b>

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows  
May-20

**RTU NAME: Olin Industrial Welding**  
**CUMULATIVE VALUES**

<b>Discharge Flow Meter</b>		<b>5,941</b>	
<b>Date</b>	<b>Time</b>	<b>Hours</b>	<b>Gallons</b>
5/1/2020	0:57:30	2.3	676
5/2/2020	0:57:32	0	0
5/3/2020	0:57:29	2.3	658
5/4/2020	0:57:29	0	0
5/5/2020	0:57:31	2.3	657
5/6/2020	0:57:28	0	0
5/7/2020	0:57:31	2.3	654
5/8/2020	0:57:26	0	0
5/9/2020	0:57:31	0	0
5/10/2020	0:57:32	0.3	93
5/11/2020	0:57:30	1.9	532
5/12/2020	0:57:29	0	0
5/13/2020	0:57:31	0	0
5/14/2020	0:57:30	2.2	633
5/15/2020	0:57:31	0	0
5/16/2020	0:57:29	0	0
5/17/2020	0:57:32	0	0
5/18/2020	0:57:31	2.3	700
5/19/2020	0:57:33	0	0
5/20/2020	0:57:30	0	0
5/21/2020	0:57:31	0	0
5/22/2020	0:57:30	2.2	693
5/23/2020	0:57:30	0	0
5/24/2020	0:57:30	0	0
5/25/2020	0:57:33	0	0
5/26/2020	0:57:30	0	0
5/27/2020	0:57:29	0	0
5/28/2020	0:57:31	0	0
5/29/2020	0:57:18	1.2	333
5/30/2020	0:57:31	1.1	312
5/31/2020	0:57:32	0	0
<b>May Total Discharge</b>		<b>20.4</b>	<b>5,941</b>

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows  
Jun-20

**RTU NAME: Olin Industrial Welding**  
**CUMULATIVE VALUES**

Discharge Flow Meter		670	
Date	Time	Hours	Gallons
6/1/2020	0:57:30	0	0
6/2/2020	0:57:33	0	0
6/3/2020	0:57:32	0	0
6/4/2020	0:57:28	0	0
6/5/2020	0:57:28	0	0
6/6/2020	0:57:29	0	0
6/7/2020	0:57:30	0	0
6/8/2020	0:57:28	0	0
6/9/2020	0:57:27	0	0
6/10/2020	0:57:31	0	0
6/11/2020	0:57:30	2.3	670
6/12/2020	0:57:31	0	0
6/13/2020	0:57:29	0	0
6/14/2020	0:57:32	0	0
6/15/2020	0:57:30	0	0
6/16/2020	0:57:29	0	0
6/17/2020	0:57:29	0	0
6/18/2020	0:57:31	0	0
6/19/2020	0:57:30	0	0
6/20/2020	0:57:30	0	0
6/21/2020	0:57:31	0	0
6/22/2020	0:57:27	0	0
6/23/2020	0:57:30	0	0
6/24/2020	0:57:32	0	0
6/25/2020	0:57:28	0	0
6/26/2020	0:57:29	0	0
6/27/2020	0:57:30	0	0
6/28/2020	0:57:31	0	0
6/29/2020	0:57:30	0	0
6/30/2020	0:57:32	0	0
<b>June Total Discharge</b>		<b>2.3</b>	<b>670</b>

**Daily Discharge Limits: Max = 8,000 gal.**

Industrial Welding Site Flows  
Jul-20

**RTU NAME: Olin Industrial Welding**  
CUMULATIVE VALUES

<b>Discharge Flow Meter</b>			<b>0</b>	
	<b>Date</b>	<b>Time</b>	<b>Hours</b>	<b>Gallons</b>
	7/1/2020	0:57:19	0	0
	7/2/2020	0:57:30	0	0
	7/3/2020	0:57:30	0	0
	7/4/2020	0:57:28	0	0
	7/5/2020	0:57:27	0	0
	7/6/2020	0:57:30	0	0
	7/7/2020	0:57:32	0	0
	7/8/2020	0:57:29	0	0
	7/9/2020	0:57:28	0	0
	7/10/2020	0:57:30	0	0
	7/11/2020	0:57:32	0	0
	7/12/2020	0:57:28	0	0
	7/13/2020	0:57:33	0	0
	7/14/2020	0:57:27	0	0
	7/15/2020	0:57:31	0	0
	7/16/2020	0:57:30	0	0
	7/17/2020	0:57:31	0	0
	7/18/2020	0:57:36	0	0
	7/19/2020	0:57:27	0	0
	7/20/2020	0:57:31	0	0
	7/21/2020	0:57:28	0	0
	7/22/2020	0:57:32	0	0
	7/23/2020	0:57:32	0	0
	7/24/2020	0:57:31	0	0
	7/25/2020	0:57:29	0	0
	7/26/2020	0:57:18	0	0
	7/27/2020	0:57:30	0	0
	7/28/2020	0:57:31	0	0
	7/29/2020	0:57:30	0	0
	7/30/2020	0:57:27	0	0
	7/31/2020	0:57:29	0	0
<b>July Total Discharge</b>			<b>0</b>	<b>0</b>
<b>Daily Discharge Limits:</b>	<b>Max = 8,000 gal.</b>			

Industrial Welding Site Flows  
Aug-20

**RTU NAME: Olin Industrial Welding**  
**CUMULATIVE VALUES**

<b>Discharge Flow Meter</b>		<b>0</b>		
	<b>Date</b>	<b>Time</b>	<b>Hours</b>	<b>Gallons</b>
	8/1/2020	0:57:28	0	0
	8/2/2020	0:57:28	0	0
	8/3/2020	0:57:31	0	0
	8/4/2020	0:57:32	0	0
	8/5/2020	0:57:31	0	0
	8/6/2020	0:57:30	0	0
	8/7/2020	0:57:27	0	0
	8/8/2020	0:57:28	0	0
	8/9/2020	0:57:30	0	0
	8/10/2020	0:57:28	0	0
	8/11/2020	0:57:31	0	0
	8/12/2020	0:57:31	0	0
	8/13/2020	0:57:33	0	0
	8/14/2020	0:57:29	0	0
	8/15/2020	0:57:29	0	0
	8/16/2020	0:57:27	0	0
	8/17/2020	0:57:29	0	0
	8/18/2020	0:57:18	0	0
	8/19/2020	0:57:27	0	0
	8/20/2020	0:57:31	0	0
	8/21/2020	0:57:28	0	0
	8/22/2020	0:57:28	0	0
	8/23/2020	0:57:31	0	0
	8/24/2020	0:57:31	0	0
	8/25/2020	0:57:31	0	0
	8/26/2020	0:57:30	0	0
	8/27/2020	0:57:32	0	0
	8/28/2020	0:57:30	0	0
	8/29/2020	0:57:31	0	0
	8/30/2020	0:57:29	0	0
	8/31/2020	0:57:31	0	0
<b>August Total Discharge</b>			<b>0</b>	<b>0</b>

**Daily Discharge Limits: Max = 8,000 gal.**



Industrial Welding Site Flows  
Sep-20

**RTU NAME: Olin Industrial Welding**  
**CUMULATIVE VALUES**

<b>Discharge Flow Meter</b>			<b>0</b>	
	<b>Date</b>	<b>Time</b>	<b>Hours</b>	<b>Gallons</b>
	9/1/2020	0:57:30	0	0
	9/2/2020	0:57:30	0	0
	9/3/2020	0:57:30	0	0
	9/4/2020	0:57:32	0	0
	9/5/2020	0:57:29	0	0
	9/6/2020	0:57:28	0	0
	9/7/2020	0:57:31	0	0
	9/8/2020	0:57:29	0	0
	9/9/2020	0:57:29	0	0
	9/10/2020	0:57:31	0	0
	9/11/2020	0:57:29	0	0
	9/12/2020	0:57:31	0	0
	9/13/2020	0:57:29	0	0
	9/14/2020	0:57:30	0	0
	9/15/2020	0:57:30	0	0
	9/16/2020	0:57:30	0	0
	9/17/2020	0:57:32	0	0
	9/18/2020	0:57:28	0	0
	9/19/2020	0:57:31	0	0
	9/20/2020	0:57:28	0	0
	9/21/2020	0:57:32	0	0
	9/22/2020	0:57:27	0	0
	9/23/2020	0:57:29	0	0
	9/24/2020	0:57:34	0	0
	9/25/2020	0:57:31	0	0
	9/26/2020	0:57:28	0	0
	9/27/2020	0:57:31	0	0
	9/28/2020	0:57:32	0	0
	9/29/2020	0:57:28	0	0
	9/30/2020	0:57:28	0.1	0
<b>September Total Discharge</b>			<b>0.1</b>	<b>0</b>

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows  
Oct-20

**RTU NAME: Olin Industrial Welding**  
**CUMULATEVE VALUES**

<b>Discharge Flow Meter</b>		<b>0</b>		
	<b>Date</b>	<b>Time</b>	<b>Hours</b>	<b>Gallons</b>
	10/1/2020	0:57:31	0	0
	10/2/2020	0:57:31	0	0
	10/3/2020	0:57:31	0	0
	10/4/2020	0:57:29	0	0
	10/5/2020	0:57:29	0	0
	10/6/2020	0:57:31	0	0
	10/7/2020	0:57:31	0	0
	10/8/2020	0:57:28	0	0
	10/9/2020	0:57:30	0	0
	10/10/2020	0:57:32	0	0
	10/11/2020	0:57:29	0	0
	10/12/2020	0:57:31	0	0
	10/13/2020	0:57:30	0	0
	10/14/2020	0:57:32	0	0
	10/15/2020	0:57:32	0	0
	10/16/2020	0:57:31	0	0
	10/17/2020	0:57:30	0	0
	10/18/2020	0:57:29	0	0
	10/19/2020	0:57:29	0	0
	10/20/2020	0:57:28	0	0
	10/21/2020	0:57:28	0	0
	10/22/2020	0:57:32	0	0
	10/23/2020	0:57:31	0	0
	10/24/2020	0:57:33	0	0
	10/25/2020	0:57:28	0	0
	10/26/2020	0:57:29	0	0
	10/27/2020	0:57:28	0	0
	10/28/2020	0:57:32	0	0
	10/29/2020	0:57:27	0	0
	10/30/2020	0:57:31	0	0
	10/31/2020	0:57:27	0	0
<b>October Total Discharge</b>			<b>0</b>	<b>0</b>

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows  
Nov-20

**RTU NAME: Olin Industrial Welding**  
**CUMULATEVE VALUES**

**Discharge Flow Meter** **1,623**

Date	Time	Hours	Gallons
11/1/2020	0:57:40	0	0
11/2/2020	0:57:18	0	0
11/3/2020	0:57:30	0	0
11/4/2020	0:57:29	0	0
11/5/2020	0:57:28	0	0
11/6/2020	0:57:33	0	0
11/7/2020	0:57:27	0	0
11/8/2020	0:57:29	0	0
11/9/2020	0:57:31	0	0
11/10/2020	0:57:28	0	0
11/11/2020	0:57:29	0.2	67
11/12/2020	0:57:32	0.1	7
11/13/2020	0:57:28	0	0
11/14/2020	0:57:28	0	0
11/15/2020	0:57:32	0	0
11/16/2020	0:57:30	0	0
11/17/2020	0:57:26	0	0
11/18/2020	0:57:18	0	0
11/19/2020	0:57:30	0	0
11/20/2020	0:57:29	0	0
11/21/2020	0:57:29	0	0
11/22/2020	0:57:30	0	0
11/23/2020	0:57:30	2.5	772
11/24/2020	0:57:30	0	0
11/25/2020	0:57:31	0	0
11/26/2020	0:57:28	0	0
11/27/2020	0:57:28	0	0
11/28/2020	0:57:31	0	0
11/29/2020	0:57:33	0	0
11/30/2020	0:57:32	2.5	777

**November Total Discharge** **5.3** **1,623**

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows  
Dec-20

**RTU NAME: Olin Industrial Welding**  
**CUMULATEVE VALUES**

**Discharge Flow Meter** **6,321**

Date	Time	Hours	Gallons
12/1/2020	0:57:30	0	0
12/2/2020	0:57:30	2.4	731
12/3/2020	0:57:32	0	0
12/4/2020	0:57:33	0	0
12/5/2020	0:57:32	0	0
12/6/2020	0:57:30	0	0
12/7/2020	0:57:32	0	0
12/8/2020	0:57:29	0	0
12/9/2020	0:57:31	0	0
12/10/2020	0:57:32	0	0
12/11/2020	0:57:32	0	0
12/12/2020	0:57:28	2.3	701
12/13/2020	0:57:28	0	0
12/14/2020	0:57:32	0	0
12/15/2020	0:57:31	0	0
12/16/2020	0:57:30	0	0
12/17/2020	0:57:33	0	0
12/18/2020	0:57:32	0	0
12/19/2020	0:57:29	0	0
12/20/2020	0:57:33	0	0
12/21/2020	0:57:31	0.9	275
12/22/2020	1.4:57:29	1.4	430
12/23/2020	0:57:29	0	0
12/24/2020	0:57:31	0	0
12/25/2020	0:57:33	2.4	756
12/26/2020	0:57:25	0	0
12/27/2020	0:57:28	0	0
12/28/2020	0:57:31	4.6	1,450
12/29/2020	1.7:57:30	1.7	528
12/30/2020	0:57:31	2.3	712
12/31/2020	0:57:30	2.4	738

**December Total Discharge** **20.4** **6,321**

**Daily Discharge Limits: Max = 8,000 gal**

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**ATTACHMENT 2**

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# Olin Corporation Industrial Welding Site

November-20

SDG-R2010748

Sample	Date Collected	Date Received	Date Analyzed	Component	MRL	Result	Flag	Units
IWS-MS-110719	11/11/2020	11/12/2020	11/19/2020	Carbon, Dissolved Organic (DOC)	1.0	4.4		mg/L
IWS-MS-110719	11/11/2020	11/12/2020	11/18/2020	Solids, Total Suspended (TSS)	1.1	1.1	U	mg/L
IWS-MS-110719	11/11/2020	11/12/2020	11/18/2020	Mercury, Total	0.2	0.2	U	ug/L
IWS-MS-110719	11/11/2020	11/12/2020	11/16/2020	Acetone	1.0	1.0	U	ug/L
IWS-MS-110719	11/11/2020	11/12/2020	11/16/2020	1,1-Dichloroethane (1,1-DCA)	5.0	5.0	U	ug/L
IWS-MS-110719	11/11/2020	11/12/2020	11/16/2020	1,2-Dichloroethane	1.0	1.0	U	ug/L
IWS-MS-110719	11/11/2020	11/12/2020	11/16/2020	Trichloroethene (TCE)	1.0	<b>3.39</b>		ug/L
IWS-MS-110719	11/11/2020	11/12/2020	11/18/2020	alpha-BHC	0.0500	0.0500	UJ	ug/L
IWS-MS-110719	11/11/2020	11/12/2020	11/18/2020	beta-BHC	0.0500	0.0500	U	ug/L
IWS-MS-110719	11/11/2020	11/12/2020	11/18/2020	delta-BHC	0.0500	0.0500	U	ug/L
IWS-MS-110719	11/11/2020	11/12/2020	11/18/2020	gamma-BHC (Lindane)	0.0500	0.0500	UJ	ug/L

Notes:

U = Analyte was analyzed for but not detected

J = Estimated value

MRL = Method Reporting Limit

Values in the "Results" column that are in **bold** font represent values above the MRL



December 23, 2020

Service Request No:R2010748

Mr. Adam Carringer  
Olin Corporation  
3855 North Ocoee St.  
Ste. 200  
Cleveland, TN 37312

**Laboratory Results for: Industrial Welding - Olin**

Dear Mr.Carringer,

Enclosed are the results of the sample(s) submitted to our laboratory November 12, 2020  
For your reference, these analyses have been assigned our service request number **R2010748**.

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](mailto:Meghan.Pedro@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**

Meghan Pedro  
Project Manager

CC: Adam Carringer

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## Table of Contents

CoverLetter	1
Table of Contents	2
Narrative Documents	6
Case Narrative	7
Sample Receipt Information	8
Sample Cross-Reference	9
Chain Of Custody	10
Internal Chain of Custody	12
Miscellaneous Forms	16
Qualifiers	17
Acronyms	18
Analyst Summary	19
Prep Method Inorganic	20
Sample Results	21
Volatile Organic Compounds by GCMS	22
624.1 - Volatile Organic Compounds by GC/MS, Unpreserved	
IWS-MS1-111120 - VOA GCMS	23
Trip Blank - VOA GCMS	24
Semivolatile Organic Compounds by GC	25
608.3 - Organochlorine Pesticides by GC/ECD	
IWS-MS1-111120 - Semivoa GC	26
Metals	27



## Table of Contents (continued)

Sample Results	28
General Chemistry	29
IWS-MS1-111120 - GenChem	30
QC Summary Forms	31
Volatile Organic Compounds by GCMS	32
624.1 - Volatile Organic Compounds by GC/MS, Unpreserved	
VOA GCMS Surrogate Summary	33
RQ2014073-08 IWS-MS1-111120 - DMS VOA GCMS	34
MB Summary VOA GCMS	35
Method Blank - VOA GCMS	36
LCS Summary VOA GCMS	37
RQ2014073-04 - LCS VOA GCMS	38
Tune Summary 624.1	39
Semivolatile Organic Compounds by GC	40
608.3 - Organochlorine Pesticides by GC/ECD	
Semivola GC Surrogate Summary	41
RQ2014111-02 IWS-MS1-111120 - DMS Semivola GC	42
MB Summary Semivola GC	43
Method Blank - Semivola GC	45
LCS Summary Semivola GC	46
RQ2014111-05 - DLCS Semivola GC	48
Dual Column Confirmation	49
Metals	54
Initial and Continuing Calibration Verification	55
CRDL Standard for AA & ICP	57
Blank Summary	59
Matrix Spike Summary	61
Duplicate Spike Summary	63
Laboratory Control Sample Summary	64
Method Detection Limits	65
Analysis Run Log	66
General Chemistry	68

## Table of Contents (continued)

Method Blank - GenChem	69
R2010748-001DMS IWS-MS1-111120 - DMS GenChem	70
R2010748-001DUP	71
R2010748-LCS - LCS GenChem	72
DOC - CCB GenChem	73
DOC - CCV GenChem	74
Raw Data	75
Volatile Organic Compounds by GCMS	76
624.1 - VOC_UNP	
Form 1s	
IWS-MS1-111120 - VOA GCMS	77
Trip Blank - VOA GCMS	78
Raw Data	79
ICAL Summary	276
ICV Summary	279
Run Log	280
Run Log Sheets	282
Semivolatile Organic Compounds by GC	283
608.3 - PEST_OC	
Form 1s	
IWS-MS1-111120 - Semivoa GC	284
Raw Data	285
ICAL Summary	436
ICAL Summary	439
ICV Summary	442
ICV Summary	443
RQ2014756-06 - CCV Semivoa GC	444
RQ2014756-07 - CCV Semivoa GC	446
Run Log	448
Run Log Sheets	449
Prep Summary Semivoa GC	450
Prep Sheets	451

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## Table of Contents (continued)

Metals	453
Sample Results	454
704029	455
Initial and Continuing Calibration Verification	484
Blank Summary	486
Analysis Run Log	488
Sample Preparation Summary	490
General Chemistry	491
IWS-MS1-111120 - GenChem	492
SM 5310 C-2000(2011) - DOC - 704298	493
SM 2540 D-1997(2011) - TSS - 703968	516



## Narrative Documents

**ALS Environmental—Rochester Laboratory**  
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**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin  
**Sample Matrix:** Water

**Service Request:** R2010748  
**Date Received:** 11/12/2020

**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.

**Sample Receipt:**

Two water samples were received for analysis at ALS Environmental on 11/12/2020. 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.

**Semivolatile GC:**

No significant anomalies were noted with this analysis.

**Metals:**

No significant anomalies were noted with this analysis.

**General Chemistry:**

Method SM 2540 D-1997(2011), R2010748-001 (and duplicate): The Method Reporting Limit (MRL) for was elevated due to less than optimal sample volume/mass available for analysis.

**Volatiles by GC/MS:**

No significant anomalies were noted with this analysis.

Approved by \_\_\_\_\_

A handwritten signature in black ink, appearing to read 'Meghan Pedro'.

Date \_\_\_\_\_

12/23/2020



## 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](http://www.alsglobal.com)

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845

**Service Request:**R2010748

**SAMPLE CROSS-REFERENCE**

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R2010748-001	IWS-MS1-111120	11/11/2020	0900
R2010748-002	Trip Blank	11/11/2020	0900



# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM 001583

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name <b>INDUSTRIAL WELDING - OLIN</b>		Project Number <b>1229</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)											
Project Manager <b>ADAM CALANCA</b>		Report CC <b>ADAM CALANCA</b>		PRESERVATIVE 0		0		Z		0		0		0	
Company/Address <b>OLIN CORP</b> 3855 NORTH OGDEN RD CLEVELAND TN 37312				Email <b>Adam.Calanca@Olin.com</b>				NUMBER OF CONTAINERS				PRESERVATIVE KEY 0. NONE 1. HCL 2. HNO3 3. H2SO4 4. NaOH 5. Zn Acetate 6. MeOH 7. NaHSO4 8. Other _____			
Phone # <b>423 336 4000</b>				Sender's Signature <i>Adam Calanca</i>				Sender's Printed Name <b>ADAM CALANCA</b>				REMARKS/ ALTERNATE DESCRIPTION			
FOR OFFICE USE ONLY		LAB ID		DATE		SAMPLING TIME		MATRIX							
CLIENT SAMPLE ID		111120		900		GW		289							
LWS - MSL-11120		---		---		---		---							
TRIP BLANK		---		---		---		---							
TEMP BLANK		---		---		---		---							
SPECIAL INSTRUCTIONS/COMMENTS		Metals		T H3		DOCS WERE FILTERED IN FIELD		misinso volume							
See OAPP <input type="checkbox"/>		STATE WHERE SAMPLES WERE COLLECTED		RECEIVED BY <b>UPS</b>		RECEIVED BY		RECEIVED BY		TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day _____ 2 day _____ 3 day _____ 4 day _____ 5 day _____ <input checked="" type="checkbox"/> Standard (90 business days-No Surcharge)		REPORT REQUIREMENTS I. Results Only _____ II. Results + OC Summaries (LCS, DUP, MS/MSD as required) <input checked="" type="checkbox"/> III. Results + OC and Calibration Summaries _____ IV. Data Validation Report with Raw Data _____		INVOICE INFORMATION PO # _____ BILL TO: <b>OLIN CORP</b>	
Signature <i>Adam Calanca</i>				Signature <i>Gregory O'Smetan</i>				Signature <i>[Signature]</i>				RECEIVED BY			
Printed Name <b>ADAM CALANCA</b>				Printed Name <b>Gregory O'Smetan</b>				Printed Name <b>[Name]</b>				R2010748			
Firm <b>SES</b>				Firm <b>ALS</b>				Firm <b>[Firm]</b>				Olin Corporation Industrial Welding - Olin			
Date/Time <b>11/11/20 1200</b>				Date/Time <b>11/11/20 1015</b>				Date/Time <b>11/11/20 1015</b>				5			





### Cooler Receipt and Preservation Check Form

R2010748

5

Olin Corporation  
Industrial Welding - Olin



Project/Client Olin Corp Folder Number \_\_\_\_\_

Cooler received on 11-12-2020 by: JE COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	<u>Y</u>	N
2	Custody papers properly completed (ink, signed)?	<u>Y</u>	N
3	Did all bottles arrive in good condition (unbroken)?	<u>Y</u>	N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	<u>Y</u>	N

5a	Perchlorate samples have required headspace?	Y	N	<u>NA</u>
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y	N	<u>NA</u>
6	Where did the bottles originate?	<u>ALS/ROC</u>	CLIENT	
7	Soil VOA received as:	Bulk	Encore	5035set <u>NA</u>

8. Temperature Readings Date: 11-12-2020 Time: 1112 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>3.6</u>							
Within 0-6°C?	<u>Y</u>	N	Y	N	Y	N	Y	N
If <0°C, were samples frozen?	<u>Y</u>	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: R-002 by JE on 11-20-20 at 1116  
5035 samples placed in storage location: \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check\*\*: Date: 11/13/2020 Time: 1139 by: RD

- 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
- 13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Fedlar® Bags Inflated N/A

pH	Lot of test paper	Reagent	Preserved?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
>12		NaOH								
<u>2</u>	<u>223419</u>	HNO <sub>3</sub>	<u>✓</u>	<u>1120081</u>						
<u>2</u>		H <sub>2</sub> SO <sub>4</sub>								
<4		NaHSO <sub>4</sub>								
5-9	<u>223419</u>	For 608pest	<u>✓</u>	No-Notify for 3day						
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522	<u>✓</u>	If +, contact PM to add Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (625, 608, CN), ascorbic (phenol).						
		Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>								
		ZnAcetate	-	-						
		HCl	**	**						

\*\*VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 20-10-02, 0-132-001, 073018-2792, 092120-18MC  
Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: RD  
PC Secondary Review: WJ

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

ALS Group USA, Corp.  
dba ALS Environmental

Internal Chain of Custody Report

Client: Olin Corporation  
Project: Industrial Welding - Olin/release order ERRE9845

Service Request: R2010748

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
<b>R2010748-001.01</b>					
	624				
		11/13/2020	1142	SMO / GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	
		11/16/2020	1221	In Lab / KRUEST	
<b>R2010748-001.02</b>					
		11/13/2020	1142	SMO / GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	
<b>R2010748-001.03</b>					
		11/13/2020	1142	SMO / GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	
<b>R2010748-001.04</b>					
	SM 5310 C-2000(2011)				
		11/13/2020	1142	SMO / GESMERIAN	
		11/14/2020	1122	RT000136 / GLAFORCE	
		11/14/2020	1124	R-017 / GLAFORCE	
		12/7/2020	1139	R-002 / GLAFORCE	
<b>R2010748-001.05</b>					
	608 Modified				
		11/13/2020	1142	SMO / GESMERIAN	
		11/13/2020	1142	R-002 / GESMERIAN	
		11/17/2020	0808	In Lab / VSTAUFFER	
<b>R2010748-001.06</b>					
	608 Modified				
		11/13/2020	1142	SMO / GESMERIAN	
		11/13/2020	1142	R-002 / GESMERIAN	
		12/1/2020	0823	In Lab / VSTAUFFER	
<b>R2010748-001.07</b>					
	SM 2540 D-1997(2011)				
		11/13/2020	1142	SMO / GESMERIAN	
		11/20/2020	1259	R-Dumpster / KAWONG	
<b>R2010748-001.08</b>					
	245.1				
		11/13/2020	1142	SMO / GESMERIAN	
		11/13/2020	1142	R-002 / GESMERIAN	
<b>R2010748-001.09</b>					
		11/13/2020	1141	SMO / GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	

ALS Group USA, Corp.  
dba ALS Environmental

Internal Chain of Custody Report

Client: Olin Corporation  
Project: Industrial Welding - Olin/release order ERRE9845

Service Request: R2010748

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
<b>R2010748-001.10</b>					
		11/13/2020	1141	SMO / GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	
<b>R2010748-001.11</b>					
		11/13/2020	1141	SMO / GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	
<b>R2010748-001.12</b>					
		11/13/2020	1141	SMO / GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	
<b>R2010748-001.13</b>					
		11/13/2020	1141	SMO / GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	
<b>R2010748-001.14</b>					
		11/13/2020	1141	SMO / GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	
<b>R2010748-001.15</b>					
		11/13/2020	1141	SMO / GESMERIAN	
		11/14/2020	1122	RT000136 / GLAFORCE	
		11/14/2020	1124	R-017 / GLAFORCE	
		12/7/2020	1139	R-002 / GLAFORCE	
<b>R2010748-001.16</b>					
		11/13/2020	1141	SMO / GESMERIAN	
		11/14/2020	1122	RT000136 / GLAFORCE	
		11/14/2020	1124	R-017 / GLAFORCE	
		12/7/2020	1139	R-002 / GLAFORCE	
<b>R2010748-001.17</b>					
		11/13/2020	1141	SMO / GESMERIAN	
		11/14/2020	1122	RT000136 / GLAFORCE	
		11/14/2020	1124	R-017 / GLAFORCE	
		12/7/2020	1139	R-002 / GLAFORCE	
<b>R2010748-001.18</b>					

ALS Group USA, Corp.  
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Internal Chain of Custody Report

Client: Olin Corporation  
Project: Industrial Welding - Olin/release order ERRE9845

Service Request: R2010748

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
		11/13/2020	1141	SMO / GESMERIAN	
		11/14/2020	1122	RT000136 / GLAFORCE	
		11/14/2020	1124	R-017 / GLAFORCE	
		12/7/2020	1139	R-002 / GLAFORCE	
<hr/>					
R2010748-001.19					
		11/13/2020	1141	SMO / GESMERIAN	
		11/14/2020	1122	RT000136 / GLAFORCE	
		11/14/2020	1124	R-017 / GLAFORCE	
		12/7/2020	1139	R-002 / GLAFORCE	
<hr/>					
R2010748-001.20					
		11/13/2020	1141	SMO / GESMERIAN	
		11/14/2020	1122	RT000136 / GLAFORCE	
		11/14/2020	1124	R-017 / GLAFORCE	
		12/7/2020	1139	R-002 / GLAFORCE	
<hr/>					
R2010748-001.21					
		11/13/2020	1141	SMO / GESMERIAN	
		11/14/2020	1122	RT000136 / GLAFORCE	
		11/14/2020	1124	R-017 / GLAFORCE	
		12/7/2020	1139	R-002 / GLAFORCE	
<hr/>					
R2010748-001.22					
		11/13/2020	1141	SMO / GESMERIAN	
		11/14/2020	1122	RT000136 / GLAFORCE	
		11/14/2020	1124	R-017 / GLAFORCE	
		12/7/2020	1139	R-002 / GLAFORCE	
<hr/>					
R2010748-001.23					
		11/13/2020	1141	SMO / GESMERIAN	
		11/13/2020	1142	R-002 / GESMERIAN	
		11/17/2020	0808	In Lab / VSTAUFFER	
<hr/>					
R2010748-001.24					
		11/13/2020	1141	SMO / GESMERIAN	
		11/13/2020	1142	R-002 / GESMERIAN	
		11/17/2020	0808	In Lab / VSTAUFFER	
<hr/>					
R2010748-001.25					

ALS Group USA, Corp.  
dba ALS Environmental

Internal Chain of Custody Report

Client: Olin Corporation  
Project: Industrial Welding - Olin/release order ERRE9845

Service Request: R2010748

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
		11/13/2020	1141	SMO / GESMERIAN	
		11/20/2020	1259	R-Dumpster / KAWONG	
<hr/>					
R2010748-001.26					
		11/13/2020	1142	SMO / GESMERIAN	
		11/13/2020	1142	R-002 / GESMERIAN	
<hr/>					
R2010748-002.01					
	624				
		11/13/2020	1142	SMO / GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	
		11/16/2020	1221	In Lab / KRUEST	
<hr/>					
R2010748-002.02					
		11/13/2020	1142	SMO / GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	
<hr/>					
R2010748-002.03					
		11/13/2020	1142	SMO / GESMERIAN	
		11/13/2020	1142	R-001 / GESMERIAN	
<hr/>					



## Miscellaneous Forms

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## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> 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.</p> <p><b>J</b> 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 &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> 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.</p> <p><b>*</b> 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.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> 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).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|



### Rochester Lab ID # for State Certifications<sup>1</sup>

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

<sup>1</sup> 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 or go to <https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental>

## 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.



ALS Group USA, Corp.  
dba ALS Environmental  
Analyst Summary report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin release order ERRE9845

**Service Request:** R2010748

**Sample Name:** IWS-MS1-111120  
**Lab Code:** R2010748-001  
**Sample Matrix:** Water

**Date Collected:** 11/11/20  
**Date Received:** 11/12/20

**Analysis Method**

245.1  
608 Modified  
624  
SM 2540 D-1997(2011)  
SM 5310 C-2000(2011)

**Extracted/Digested By**

AKONZEL  
KSERCUC

**Analyzed By**

AKONZEL  
BALLGEIER  
KRUEST  
KAWONG  
SMEDBURY

---

**Sample Name:** IWS-MS1-111120  
**Lab Code:** R2010748-001.R01  
**Sample Matrix:** Water

**Date Collected:** 11/11/20  
**Date Received:** 11/12/20

**Analysis Method**

608 Modified

**Extracted/Digested By**

KSERCUC

**Analyzed By**

BALLGEIER

**Sample Name:** Trip Blank  
**Lab Code:** R2010748-002  
**Sample Matrix:** Water

**Date Collected:** 11/11/20  
**Date Received:** 11/12/20

**Analysis Method**

624

**Extracted/Digested By**

**Analyzed By**

KRUEST



## INORGANIC PREPARATION METHODS

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

### Water/Liquid Matrix

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

### Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 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.	

RIGHT SOLUTIONS | RIGHT PARTNER



## 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](http://www.alsglobal.com)



## Volatile 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](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** IWS-MS1-111120  
**Lab Code:** R2010748-001

**Service Request:** R2010748  
**Date Collected:** 11/11/20 09:00  
**Date Received:** 11/12/20 10:15

**Units:** ug/L  
**Basis:** NA

Volatile Organic Compounds by GC/MS, Unpreserved

**Analysis Method:** 624.1  
**Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1-Dichloroethane (1,1-DCA)	1.00 U	1.00	0.200	1	11/16/20 16:21	
1,2-Dichloroethane	1.00 U	1.00	0.200	1	11/16/20 16:21	
Acetone	5.00 U	5.00	2.10	1	11/16/20 16:21	
Trichloroethene (TCE)	3.39	1.00	0.200	1	11/16/20 16:21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	94	73 - 125	11/16/20 16:21	
4-Bromofluorobenzene	94	85 - 122	11/16/20 16:21	
Toluene-d8	99	87 - 121	11/16/20 16:21	

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** Trip Blank  
**Lab Code:** R2010748-002

**Service Request:** R2010748  
**Date Collected:** 11/11/20 09:00  
**Date Received:** 11/12/20 10:15

**Units:** ug/L  
**Basis:** NA

Volatile Organic Compounds by GC/MS, Unpreserved

**Analysis Method:** 624.1  
**Prep Method:** EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1-Dichloroethane (1,1-DCA)	1.00 U	1.00	0.200	1	11/16/20 15:59	
1,2-Dichloroethane	1.00 U	1.00	0.200	1	11/16/20 15:59	
Acetone	5.00 U	5.00	2.10	1	11/16/20 15:59	
Trichloroethene (TCE)	1.00 U	1.00	0.200	1	11/16/20 15:59	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	96	73 - 125	11/16/20 15:59	
4-Bromofluorobenzene	94	85 - 122	11/16/20 15:59	
Toluene-d8	98	87 - 121	11/16/20 15:59	



## Semivolatile Organic Compounds by GC

**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](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** IWS-MS1-111120  
**Lab Code:** R2010748-001

**Service Request:** R2010748  
**Date Collected:** 11/11/20 09:00  
**Date Received:** 11/12/20 10:15

**Units:** ug/L  
**Basis:** NA

Organochlorine Pesticides by GC/ECD

**Analysis Method:** 608.3  
**Prep Method:** Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
alpha-BHC	0.0500 U	0.0500	0.0200	1	11/18/20 20:09	11/17/20	
beta-BHC	0.0500 U	0.0500	0.0200	1	11/18/20 20:09	11/17/20	
delta-BHC	0.0500 U	0.0500	0.0200	1	11/18/20 20:09	11/17/20	
gamma-BHC (Lindane)	0.0500 U	0.0500	0.0200	1	11/18/20 20:09	11/17/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tetrachloro-m-xylene	266 *	13 - 131	11/18/20 20:09	*
Decachlorobiphenyl	341 *	10 - 156	11/18/20 20:09	*





## Metals

**ALS Environmental—Rochester Laboratory**  
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623  
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METALS  
-1-  
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.  
IWS-MS1-111120

Contract: R2010748  
Lab Code: \_\_\_\_\_ Case No.: \_\_\_\_\_ SAS No.: \_\_\_\_\_ SDG NO.: IWS-MS1-1111  
Matrix (soil/water): WATER Lab Sample ID: R2010748-001  
Level (low/med): LOW Date Received: 11/12/2020

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.200	U		CV

Color Before: \_\_\_\_\_ Clarity Before: \_\_\_\_\_ Texture: \_\_\_\_\_  
Color After: \_\_\_\_\_ Clarity After: \_\_\_\_\_ Artifacts: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## General Chemistry

**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](http://www.alsglobal.com)

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Olin Corporation  
**Project:** Industrial Welding - Olin/release order ERRE9845  
**Sample Matrix:** Water  
**Sample Name:** IWS-MS1-111120  
**Lab Code:** R2010748-001

**Service Request:** R2010748  
**Date Collected:** 11/11/20 09:00  
**Date Received:** 11/12/20 10:15

**Basis:** NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Carbon, Dissolved Organic (DOC)	SM 5310 C-2000(2011)	4.4	mg L	1.0	1	11/19/20 16:01	
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	1.1 U	mg/L	1.1	1	11/18/20 09:50	

**Industrial Welding Site  
Data Evaluation Narrative  
November 2020 Discharge Sampling Event**

**SDG R2010748: ALS Environmental, Rochester, NY**

**Deliverables**

The data package as submitted to Olin Corporation is complete as stipulated under the Industrial Welding Site Quality Assurance Project Plan (QAPP) as approved by the New York State Department of Environmental Protection. United States Environmental Protection Agency (USEPA) Methods 624, 608, 245.1, SM 2540D and SM 5310C were utilized in the laboratory testing.

Samples submitted within this sample delivery group (SDG) were submitted to the ALS Environmental laboratory in Rochester, NY for select volatile organic compounds and organochlorine pesticides, total mercury, total suspended solids, and soluble organic carbon analyses. The laboratory subsequently applied login numbers to the SDG. The SDG number for this sampling event is R2010748. This evaluation narrative for the SDG follows the listing of discharge sample field identifications. The topics of each narrative are ordered to first assess issues affecting the entire data set.

**Sample Integrity**

Information provided on the Chain of Custody and Login Sample Receipt Checklist provided by the laboratory confirmed that the samples arrived at the laboratory intact and within the recommended temperature limits. The proper bottles and preservatives were used, and the correct analytical methods were employed.

**Sample Identification**

This SDG contains the following water samples collected on November 11, 2020:

<u>SAMPLE ID</u>	<u>SAMPLE ID</u>
IWS-MS-1-111120	TRIP BLANK (Analyzed for VOCs only)

**Volatile Organic Compounds (EPA Method 624)**

The samples in this SDG were submitted for select volatile organic compounds (VOCs) by USEPA Method 624.

**Holding Times:**

The analytical logs indicate that applicable holding times were met.

**Practical Quantitation Limits:**

The practical quantitation limits (PQLs) were met for the analysis of VOCs by USEPA Method 624.

**GC/MS Instrument Performance Check:**

The GC/MS tuning and mass calibration checks were performed with bromofluorobenzene (BFB) and met the performance criteria as established by the method.

**Calibration:**

The initial calibration data for this SDG indicate that applicable criteria were met for samples submitted for VOC analysis. The RSDs for each calibration check were within the applicable criteria.

**Blank Summary:**

The analytical results of the laboratory method blank and the trip blank indicated no target VOCs were detected above the reporting limit (RL).

**Laboratory Control Sample (LCS):**

The LCS spike recoveries were within the applicable QC advisory limits.

**Surrogates:**

The surrogate recoveries were within applicable QC advisory limits.

**Matrix Spike/Matrix Spike Duplicate:**

Sample IWS-MS1-111120 was submitted for matrix spike and matrix spike duplicate (MS/MSD) analysis. The percent recoveries and relative percent differences (RPDs) were within applicable QC advisory limits.

**Duplicate Samples:**

No samples were selected by the laboratory or field for duplicate analysis.

**Organochlorine Pesticides (EPA Method 608)**

The sample in this SDG was submitted for HCCH (hexachlorocyclohexanes) analysis by USEPA Method 608.

**Holding Times:**

The extraction and analytical logs indicate that applicable holding times were met for HCCH analyses. 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 HCCHs by USEPA Method 608.

**Calibration:**

The initial calibration data for this SDG indicate that applicable calibration criteria were met. All continuing calibration verification samples (CCVs) associated with Site project and QC samples were also within applicable control criteria.

**Surrogates:**

The surrogate recoveries for the sample and MS/MSD samples were above the applicable control limits. However, the sample was non-detect (U) for all HCCHs; no data qualification was deemed necessary by professional judgment.

**Blank Summary:**

The analytical results of the laboratory method blank indicated no HCCHs were detected.

**Laboratory Control Sample (LCS) and LCS Duplicate (LCSD):**

The LCS/LCSD recoveries were below the lower laboratory control limit of 37 for alpha-BHC (27/29) and below the lower control limit of 32 for gamma-BHC (27/30). The sample was non-detect for both compounds; reporting limits were qualified as estimated (U) by professional judgment as indicated below.

Sample ID  
IWS-MS1-111120

Analytes  
alpha-BHC, gamma-BHC

Data Flag  
UJ

**Matrix Spike/Matrix Spike Duplicate:**

Sample IWS-MS1-111120 was submitted for matrix spike and matrix spike duplicate (MS/MSD) analysis. The percent recoveries were above the upper laboratory control limits in the MS and/or MSD for all four BHC compounds. Since the sample was non-detect for all BHCs, no data qualification based on the potential for high bias was warranted by professional judgment.

**Duplicate Samples:**

No samples were selected by the laboratory or field for duplicate analysis.

**Total Mercury Analyses (EPA Method 245.1)**

The sample in this SDG was submitted for total mercury analysis by USEPA Method 245.1.

**Holding Times:**

The extraction and analytical logs indicate that applicable holding times were met.

**Practical Quantitation Limits:**

The practical quantitation limit (PQL) was met for the analysis of total mercury by USEPA Method 245.1.

**Calibration:**

The initial and continuing calibration data for this SDG indicate that applicable calibration criteria were met for the sample submitted. The low-level check standard recoveries were within QC advisory limits.

**Blank Summary:**

The analytical results of the method blank and the initial/continuing calibration blanks indicated that total mercury was not detected.

**Laboratory Control Sample:**

The laboratory control sample (LCS) spike recovery was within the applicable QC advisory limits.

**Matrix Spike/Matrix Spike Duplicate:**

Sample IWS-MS1-111120 was submitted for MS/MSD analysis. The percent recoveries and RPD were within laboratory control limits.

**Duplicate Samples:**

No samples were selected by the laboratory or field for duplicate analysis.

**Total Suspended Solids (SM 2540D)**

The sample in this SDG was submitted for total suspended solids (TSS) analysis by SM 2540D.

**Holding Times:**

The holding time of 7 days was met as the sample was analyzed within this holding period.

**Practical Quantitation Limits:**

The practical quantitation limit (PQL) was slightly elevated due to a less than optimal sample volume available for analysis.

**Blank Summary:**

The analytical results of the laboratory method blank indicated that no TSS were detected.

**Laboratory Control Sample:**

The laboratory control sample (LCS) recovery was within the applicable QC advisory limits.

**Duplicate Sample:**

The laboratory performed a duplicate analysis on IWS-MS1-111120. Both the sample and lab duplicate were non-detect for TSS.

**Soluble Organic Carbon (SM 5310C)**

The sample in this SDG was submitted for soluble (dissolved) organic carbon (DOC) analysis by SM 5310C.

**Holding Times:**

The holding time of 28 days was met.

**Practical Quantitation Limits:**

The practical quantitation limit (PQL) was met for the analysis of DOC.

**Calibration Summary:**

The initial and continuing calibration data for this SDG indicates that applicable calibration criteria were met.

**Blank Summary:**

The analytical results of the laboratory method blank and continuing calibration blanks (CCBs) indicated that no DOC was detected.

**Laboratory Control Sample:**

The laboratory control sample (LCS) recovery was within the applicable QC advisory limits.

**Matrix Spike/Matrix Spike Duplicate:**

Sample IWS-MS1-111120 was submitted for MS/MSD analysis. The percent recoveries and RPD were within applicable QC advisory limits.

**Duplicate Samples:**

No samples were selected by the laboratory or field for duplicate analysis.

**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 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 November 2020 sampling event. Typically, project objectives are met when completeness is 90 percent or better.

Prepared by: Randy T. Morris

Date: January 22, 2021



**ATTACHMENT D**

Industrial Welding Site Flows  
Jan-20

**RTU NAME: Olin Industrial Welding**  
CUMULATEVE VALUES

**Discharge Flow Meter** **23,510**

Date	Time	Hours	Gallons
1/1/2020	0:57:31	24	572
1/2/2020	0:57:30	24	641
1/3/2020	0:57:31	24	595
1/4/2020	0:57:29	24	595
1/5/2020	0:57:30	24	310
1/6/2020	0:57:32	24	556
1/7/2020	0:57:50	24	455
1/8/2020	0:57:31	24	103
1/9/2020	0:57:33	24	49
1/10/2020	0:57:32	24	48
1/11/2020	0:57:27	24	1,105
1/12/2020	0:57:30	24	1,798
1/13/2020	0:57:31	24	1,605
1/14/2020	0:57:33	24	1,477
1/15/2020	0:57:30	24	1,072
1/16/2020	0:57:31	24	909
1/17/2020	0:57:29	24	689
1/18/2020	0:57:31	24	614
1/19/2020	0:57:27	24	599
1/20/2020	0:57:29	24	53
1/21/2020	0:57:30	24	612
1/22/2020	0:57:32	24	238
1/23/2020	0:57:30	24	143
1/24/2020	0:57:28	15	380
1/25/2020	0:57:32	24	1,987
1/26/2020	0:57:30	24	1,142
1/27/2020	0:57:30	24	1,408
1/28/2020	0:57:30	24	1,239
1/29/2020	0:57:30	24	1,005
1/30/2020	0:57:29	24	859
1/31/2020	0:57:31	24	652

**January Total Discharge** 735 **23,510**

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows  
Feb-20

**RTU NAME: Olin Industrial Welding**  
CUMULATIVE VALUES

**Discharge Flow Meter** **11,459**

Date	Time	Hours	Gallons
2/1/2020	0:57:28	24	531
2/2/2020	0:57:29	24	580
2/3/2020	0:57:30	24	658
2/4/2020	0:57:31	12.1	264
2/5/2020	0:57:29	0	0
2/6/2020	0:57:28	6.8	865
2/7/2020	0:57:30	5.6	92
2/8/2020	0:57:30	0	0
2/9/2020	0:57:32	0	0
2/10/2020	0:57:31	11.3	1,788
2/11/2020	0:57:32	24	1,048
2/12/2020	0:57:33	24	607
2/13/2020	0:57:29	24	642
2/14/2020	0:57:30	24	476
2/15/2020	0:57:32	24	305
2/16/2020	0:57:31	24	135
2/17/2020	0:57:18	24	52
2/18/2020	0:57:34	24	651
2/19/2020	0:57:28	24	401
2/20/2020	0:57:33	24	166
2/21/2020	0:57:31	24	186
2/22/2020	0:57:31	24	126
2/23/2020	0:57:28	24	30
2/24/2020	0:57:28	24	46
2/25/2020	0:57:33	24	177
2/26/2020	0:57:30	24	354
2/27/2020	0:57:27	24	899
2/28/2020	0:57:28	24	335
2/29/2020	0:57:30	24	45

**February Total Discharge** 563.8 **11,459**

**Daily Discharge Limits: Max = 8,000 gal.**

Industrial Welding Site Flows  
Mar-20

**RTU NAME: Olin Industrial Welding**  
CUMULATIVE VALUES

**Discharge Flow Meter** **19,734**

Date	Time	Hours	Gallons
3/1/2020	0:57:28	24	337
3/2/2020	0:57:29	24	978
3/3/2020	0:57:30	24	1,341
3/4/2020	0:57:30	24	1,341
3/5/2020	0:57:31	24	1,379
3/6/2020	0:57:28	24	1,375
3/7/2020	0:57:31	24	1,314
3/8/2020	0:57:32	23	931
3/9/2020	1:57:18	23.9	777
3/10/2020	0:57:27	24	923
3/11/2020	0:57:30	24	691
3/12/2020	0:57:28	24	608
3/13/2020	0:57:31	24	796
3/14/2020	0:57:29	24	550
3/15/2020	0:57:31	24	438
3/16/2020	0:57:30	14	371
3/17/2020	0:57:33	0	0
3/18/2020	0:57:30	2	620
3/19/2020	0:57:29	0.3	100
3/20/2020	0:57:32	2.4	731
3/21/2020	0:57:28	0	0
3/22/2020	0:57:29	2.3	649
3/23/2020	0:57:40	0	0
3/24/2020	0:57:30	2.3	676
3/25/2020	0:57:33	0	0
3/26/2020	0:57:33	2.3	651
3/27/2020	0:57:31	0	0
3/28/2020	0:57:32	3.1	920
3/29/2020	0:57:31	1	318
3/30/2020	0:57:28	1.2	378
3/31/2020	0:57:30	1.8	541

**March Total Discharge** **392** **19,734**

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows  
Apr-20

**RTU NAME: Olin Industrial Welding**  
CUMULATEVE VALUES

**Discharge Flow Meter** **11,282**

Date	Time	Hours	Gallons
4/1/2020	0:57:31	0.5	156
4/2/2020	0:57:32	0	0
4/3/2020	0:57:29	2.3	680
4/4/2020	0:57:30	0	0
4/5/2020	0:57:33	1.9	534
4/6/2020	0:57:31	0.3	105
4/7/2020	0:57:31	0	0
4/8/2020	0:57:30	2.1	706
4/9/2020	0:57:30	2.5	710
4/10/2020	0:57:29	0	0
4/11/2020	0:57:29	2.3	644
4/12/2020	0:57:28	0	0
4/13/2020	0:57:32	2.5	771
4/14/2020	0:57:29	2.3	671
4/15/2020	0:57:30	0	0
4/16/2020	0:57:27	2.3	640
4/17/2020	0:57:29	1	267
4/18/2020	0:57:29	1.3	355
4/19/2020	0:57:28	2.5	697
4/20/2020	0:57:33	0	0
4/21/2020	0:57:28	2.3	702
4/22/2020	0:57:31	0	0
4/23/2020	0:57:32	2.3	688
4/24/2020	0:57:31	0	0
4/25/2020	0:57:31	0	0
4/26/2020	0:57:29	3.2	982
4/27/2020	0:57:30	1.8	573
4/28/2020	0:57:33	2.3	657
4/29/2020	0:57:28	0	0
4/30/2020	0:57:31	2.5	744

**April Total Discharge** **38.2** **11,282**

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows  
May-20

**RTU NAME: Olin Industrial Welding**  
CUMULATEVE VALUES

<b>Discharge Flow Meter</b>		<b>5,941</b>	
Date	Time	Hours	Gallons
5/1/2020	0:57:30	2.3	676
5/2/2020	0:57:32	0	0
5/3/2020	0:57:29	2.3	658
5/4/2020	0:57:29	0	0
5/5/2020	0:57:31	2.3	657
5/6/2020	0:57:28	0	0
5/7/2020	0:57:31	2.3	654
5/8/2020	0:57:26	0	0
5/9/2020	0:57:31	0	0
5/10/2020	0:57:32	0.3	93
5/11/2020	0:57:30	1.9	532
5/12/2020	0:57:29	0	0
5/13/2020	0:57:31	0	0
5/14/2020	0:57:30	2.2	633
5/15/2020	0:57:31	0	0
5/16/2020	0:57:29	0	0
5/17/2020	0:57:32	0	0
5/18/2020	0:57:31	2.3	700
5/19/2020	0:57:33	0	0
5/20/2020	0:57:30	0	0
5/21/2020	0:57:31	0	0
5/22/2020	0:57:30	2.2	693
5/23/2020	0:57:30	0	0
5/24/2020	0:57:30	0	0
5/25/2020	0:57:33	0	0
5/26/2020	0:57:30	0	0
5/27/2020	0:57:29	0	0
5/28/2020	0:57:31	0	0
5/29/2020	0:57:18	1.2	333
5/30/2020	0:57:31	1.1	312
5/31/2020	0:57:32	0	0
<b>May Total Discharge</b>		<b>20.4</b>	<b>5,941</b>

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows  
Jun-20

**RTU NAME: Olin Industrial Welding**  
CUMULATIVE VALUES

<b>Discharge Flow Meter</b>		<b>670</b>	
Date	Time	Hours	Gallons
6/1/2020	0:57:30	0	0
6/2/2020	0:57:33	0	0
6/3/2020	0:57:32	0	0
6/4/2020	0:57:28	0	0
6/5/2020	0:57:28	0	0
6/6/2020	0:57:29	0	0
6/7/2020	0:57:30	0	0
6/8/2020	0:57:28	0	0
6/9/2020	0:57:27	0	0
6/10/2020	0:57:31	0	0
6/11/2020	0:57:30	2.3	670
6/12/2020	0:57:31	0	0
6/13/2020	0:57:29	0	0
6/14/2020	0:57:32	0	0
6/15/2020	0:57:30	0	0
6/16/2020	0:57:29	0	0
6/17/2020	0:57:29	0	0
6/18/2020	0:57:31	0	0
6/19/2020	0:57:30	0	0
6/20/2020	0:57:30	0	0
6/21/2020	0:57:31	0	0
6/22/2020	0:57:27	0	0
6/23/2020	0:57:30	0	0
6/24/2020	0:57:32	0	0
6/25/2020	0:57:28	0	0
6/26/2020	0:57:29	0	0
6/27/2020	0:57:30	0	0
6/28/2020	0:57:31	0	0
6/29/2020	0:57:30	0	0
6/30/2020	0:57:32	0	0
<b>June Total Discharge</b>		<b>2.3</b>	<b>670</b>

**Daily Discharge Limits: Max = 8,000 gal.**

Industrial Welding Site Flows  
Jul-20

**RTU NAME: Olin Industrial Welding**  
CUMULATIVE VALUES

<b>Discharge Flow Meter</b>		<b>0</b>	
Date	Time	Hours	Gallons
7/1/2020	0:57:19	0	0
7/2/2020	0:57:30	0	0
7/3/2020	0:57:30	0	0
7/4/2020	0:57:28	0	0
7/5/2020	0:57:27	0	0
7/6/2020	0:57:30	0	0
7/7/2020	0:57:32	0	0
7/8/2020	0:57:29	0	0
7/9/2020	0:57:28	0	0
7/10/2020	0:57:30	0	0
7/11/2020	0:57:32	0	0
7/12/2020	0:57:28	0	0
7/13/2020	0:57:33	0	0
7/14/2020	0:57:27	0	0
7/15/2020	0:57:31	0	0
7/16/2020	0:57:30	0	0
7/17/2020	0:57:31	0	0
7/18/2020	0:57:36	0	0
7/19/2020	0:57:27	0	0
7/20/2020	0:57:31	0	0
7/21/2020	0:57:28	0	0
7/22/2020	0:57:32	0	0
7/23/2020	0:57:32	0	0
7/24/2020	0:57:31	0	0
7/25/2020	0:57:29	0	0
7/26/2020	0:57:18	0	0
7/27/2020	0:57:30	0	0
7/28/2020	0:57:31	0	0
7/29/2020	0:57:30	0	0
7/30/2020	0:57:27	0	0
7/31/2020	0:57:29	0	0
<b>July Total Discharge</b>		<b>0</b>	<b>0</b>

**Daily Discharge Limits: Max = 8,000 gal.**



Industrial Welding Site Flows  
Aug-20

**RTU NAME: Olin Industrial Welding**

**CUMULATIVE VALUES**

<b>Discharge Flow Meter</b>	<b>0</b>		
Date	Time	Hours	Gallons
8/1/2020	0:57:28	0	0
8/2/2020	0:57:28	0	0
8/3/2020	0:57:31	0	0
8/4/2020	0:57:32	0	0
8/5/2020	0:57:31	0	0
8/6/2020	0:57:30	0	0
8/7/2020	0:57:27	0	0
8/8/2020	0:57:28	0	0
8/9/2020	0:57:30	0	0
8/10/2020	0:57:28	0	0
8/11/2020	0:57:31	0	0
8/12/2020	0:57:31	0	0
8/13/2020	0:57:33	0	0
8/14/2020	0:57:29	0	0
8/15/2020	0:57:29	0	0
8/16/2020	0:57:27	0	0
8/17/2020	0:57:29	0	0
8/18/2020	0:57:18	0	0
8/19/2020	0:57:27	0	0
8/20/2020	0:57:31	0	0
8/21/2020	0:57:28	0	0
8/22/2020	0:57:28	0	0
8/23/2020	0:57:31	0	0
8/24/2020	0:57:31	0	0
8/25/2020	0:57:31	0	0
8/26/2020	0:57:30	0	0
8/27/2020	0:57:32	0	0
8/28/2020	0:57:30	0	0
8/29/2020	0:57:31	0	0
8/30/2020	0:57:29	0	0
8/31/2020	0:57:31	0	0
<b>August Total Discharge</b>		<b>0</b>	<b>0</b>

**Daily Discharge Limits: Max = 8,000 gal.**

Industrial Welding Site Flows  
Sep-20

**RTU NAME: Olin Industrial Welding**

**CUMULATIVE VALUES**

<b>Discharge Flow Meter</b>	<b>0</b>		
Date	Time	Hours	Gallons
9/1/2020	0:57:30	0	0
9/2/2020	0:57:30	0	0
9/3/2020	0:57:30	0	0
9/4/2020	0:57:32	0	0
9/5/2020	0:57:29	0	0
9/6/2020	0:57:28	0	0
9/7/2020	0:57:31	0	0
9/8/2020	0:57:29	0	0
9/9/2020	0:57:29	0	0
9/10/2020	0:57:31	0	0
9/11/2020	0:57:29	0	0
9/12/2020	0:57:31	0	0
9/13/2020	0:57:29	0	0
9/14/2020	0:57:30	0	0
9/15/2020	0:57:30	0	0
9/16/2020	0:57:30	0	0
9/17/2020	0:57:32	0	0
9/18/2020	0:57:28	0	0
9/19/2020	0:57:31	0	0
9/20/2020	0:57:28	0	0
9/21/2020	0:57:32	0	0
9/22/2020	0:57:27	0	0
9/23/2020	0:57:29	0	0
9/24/2020	0:57:34	0	0
9/25/2020	0:57:31	0	0
9/26/2020	0:57:28	0	0
9/27/2020	0:57:31	0	0
9/28/2020	0:57:32	0	0
9/29/2020	0:57:28	0	0
9/30/2020	0:57:28	0.1	0
<b>September Total Discharge</b>		<b>0.1</b>	<b>0</b>

**Daily Discharge Limits:           Max = 8,000 gal**

Industrial Welding Site Flows  
Oct-20

**RTU NAME: Olin Industrial Welding**  
CUMULATEVE VALUES

<b>Discharge Flow Meter</b>		<b>0</b>		
	Date	Time	Hours	Gallons
	10/1/2020	0:57:31	0	0
	10/2/2020	0:57:31	0	0
	10/3/2020	0:57:31	0	0
	10/4/2020	0:57:29	0	0
	10/5/2020	0:57:29	0	0
	10/6/2020	0:57:31	0	0
	10/7/2020	0:57:31	0	0
	10/8/2020	0:57:28	0	0
	10/9/2020	0:57:30	0	0
	10/10/2020	0:57:32	0	0
	10/11/2020	0:57:29	0	0
	10/12/2020	0:57:31	0	0
	10/13/2020	0:57:30	0	0
	10/14/2020	0:57:32	0	0
	10/15/2020	0:57:32	0	0
	10/16/2020	0:57:31	0	0
	10/17/2020	0:57:30	0	0
	10/18/2020	0:57:29	0	0
	10/19/2020	0:57:29	0	0
	10/20/2020	0:57:28	0	0
	10/21/2020	0:57:28	0	0
	10/22/2020	0:57:32	0	0
	10/23/2020	0:57:31	0	0
	10/24/2020	0:57:33	0	0
	10/25/2020	0:57:28	0	0
	10/26/2020	0:57:29	0	0
	10/27/2020	0:57:28	0	0
	10/28/2020	0:57:32	0	0
	10/29/2020	0:57:27	0	0
	10/30/2020	0:57:31	0	0
	10/31/2020	0:57:27	0	0
<b>October Total Discharge</b>			<b>0</b>	<b>0</b>

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows  
Nov-20

**RTU NAME: Olin Industrial Welding**  
CUMULATEVE VALUES

<b>Discharge Flow Meter</b>		<b>1,623</b>		
	Date	Time	Hours	Gallons
	11/1/2020	0:57:40	0	0
	11/2/2020	0:57:18	0	0
	11/3/2020	0:57:30	0	0
	11/4/2020	0:57:29	0	0
	11/5/2020	0:57:28	0	0
	11/6/2020	0:57:33	0	0
	11/7/2020	0:57:27	0	0
	11/8/2020	0:57:29	0	0
	11/9/2020	0:57:31	0	0
	11/10/2020	0:57:28	0	0
	11/11/2020	0:57:29	0.2	67
	11/12/2020	0:57:32	0.1	7
	11/13/2020	0:57:28	0	0
	11/14/2020	0:57:28	0	0
	11/15/2020	0:57:32	0	0
	11/16/2020	0:57:30	0	0
	11/17/2020	0:57:26	0	0
	11/18/2020	0:57:18	0	0
	11/19/2020	0:57:30	0	0
	11/20/2020	0:57:29	0	0
	11/21/2020	0:57:29	0	0
	11/22/2020	0:57:30	0	0
	11/23/2020	0:57:30	2.5	772
	11/24/2020	0:57:30	0	0
	11/25/2020	0:57:31	0	0
	11/26/2020	0:57:28	0	0
	11/27/2020	0:57:28	0	0
	11/28/2020	0:57:31	0	0
	11/29/2020	0:57:33	0	0
	11/30/2020	0:57:32	2.5	777
<b>November Total Discharge</b>			<b>5.3</b>	<b>1,623</b>

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows  
Dec-20

**RTU NAME: Olin Industrial Welding**  
CUMULATEVE VALUES

**Discharge Flow Meter** **6,321**

Date	Time	Hours	Gallons
12/1/2020	0:57:30	0	0
12/2/2020	0:57:30	2.4	731
12/3/2020	0:57:32	0	0
12/4/2020	0:57:33	0	0
12/5/2020	0:57:32	0	0
12/6/2020	0:57:30	0	0
12/7/2020	0:57:32	0	0
12/8/2020	0:57:29	0	0
12/9/2020	0:57:31	0	0
12/10/2020	0:57:32	0	0
12/11/2020	0:57:32	0	0
12/12/2020	0:57:28	2.3	701
12/13/2020	0:57:28	0	0
12/14/2020	0:57:32	0	0
12/15/2020	0:57:31	0	0
12/16/2020	0:57:30	0	0
12/17/2020	0:57:33	0	0
12/18/2020	0:57:32	0	0
12/19/2020	0:57:29	0	0
12/20/2020	0:57:33	0	0
12/21/2020	0:57:31	0.9	275
12/22/2020	1.4:57:29	1.4	430
12/23/2020	0:57:29	0	0
12/24/2020	0:57:31	0	0
12/25/2020	0:57:33	2.4	756
12/26/2020	0:57:25	0	0
12/27/2020	0:57:28	0	0
12/28/2020	0:57:31	4.6	1,450
12/29/2020	1.7:57:30	1.7	528
12/30/2020	0:57:31	2.3	712
12/31/2020	0:57:30	2.4	738

**December Total Discharge** **20.4** **6,321**

**Daily Discharge Limits: Max = 8,000 gal**

## Industrial Welding Site - Discharge Flows: 2020

Month	Monthly Flow (gal)	gal/day
Jan	23,510	758
Feb	11,459	395
Mar	19,734	637
Apr	11,282	376
May	5,941	192
Jun	670	22
Jul	0	0
Aug	0	0
Sep	0	0
Oct	0	0
Nov	1,623	54
Dec	6,321	204
<b>Total</b>	<b>80,540</b>	
MONTHLY AVERAGE	6,712	
daily average	221	
daily avg Mgal	0.000221	

**Daily Avg. Limit = 0.005 Mgal**

Industrial Welding Site Flows  
Jan-21

**RTU NAME: Olin Industrial Welding**  
**CUMULATEVE VALUES**

<b>Discharge Flow Meter</b>		<b>5,686</b>	
Date	Time	Hours	Gallons
1/1/2021	0:57:30	0	0
1/2/2021	0:57:28	7	2151
1/3/2021	0:57:28	2.4	747
1/4/2021	0:57:29	0	0
1/5/2021	0:57:28	2.3	718
1/6/2021	0:57:31	0	0
1/7/2021	0:57:29	2.3	707
1/8/2021	0:57:33	0	0
1/9/2021	0:57:31	0	0
1/10/2021	0:57:33	2.2	690
1/11/2021	0:57:31	0	0
1/12/2021	0:57:30	0	0
1/13/2021	0:57:32	0	0
1/14/2021	0:57:31	2.2	673
1/15/2021	0:57:31	0	0
1/16/2021	0:57:28	0	0
1/17/2021	0:57:31	0	0
1/18/2021	0:58:58	0	0
1/19/2021	0:57:30	0	0
1/20/2021	0:57:31	0	0
1/21/2021	0:57:29	0	0
1/22/2021	0:57:34	0	0
1/23/2021	0:57:29	0	0
1/24/2021	0:57:30	0	0
1/25/2021	0:57:27	0	0
1/26/2021	0:57:29	0	0
1/27/2021	0:57:34	0	0
1/28/2021	0:57:32	0	0
1/29/2021	0:57:26	0	0
1/30/2021	0:57:32	0	0
1/31/2021	0:57:28	0	0
<b>January Total Discharge</b>		<b>18.4</b>	<b>5686</b>

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows  
Feb-21

**RTU NAME: Olin Industrial Welding**  
**CUMULATEVE VALUES**

<b>Discharge Flow Meter</b>		<b>4,823</b>	
Date	Time	Hours	Gallons
2/1/2021	0:57:31	0	0
2/2/2021	0:57:29	0	0
2/3/2021	0:57:30	0	0
2/4/2021	0:57:29	0	0
2/5/2021	0:57:30	0	0
2/6/2021	0:57:29	0	0
2/7/2021	0:57:28	0	0
2/8/2021	0:57:29	0	0
2/9/2021	0:57:29	0	0
2/10/2021	0:57:29	0	0
2/11/2021	0:57:32	0	0
2/12/2021	0:57:30	0	0
2/13/2021	0:57:29	0	0
2/14/2021	0:57:31	0	0
2/15/2021	0:57:32	0	0
2/16/2021	0:57:29	0	0
2/17/2021	0:57:33	0	0
2/18/2021	0:57:29	0	0
2/19/2021	0:57:27	0	0
2/20/2021	0:57:31	0	0
2/21/2021	0:57:27	0	0
2/22/2021	0:57:30	0	0
2/23/2021	0:57:29	0	0
2/24/2021	0:57:31	1.8	521
2/25/2021	0:57:29	7.2	2148
2/26/2021	0:57:30	0	0
2/27/2021	0:57:32	7.3	2154
2/28/2021	0:57:32	0	0
<b>February Total Discharge</b>		<b>16.3</b>	<b>4823</b>

**Daily Discharge Limits: Max = 8,000 gal**



Industrial Welding Site Flows

Mar-21

**RTU NAME: Olin Industrial Welding**

**CUMULATEVE VALUES**

**Discharge Flow Meter**

**7,297**

Date	Time	Hours	Gallons
3/1/2021	0:57:32	2.4	731
3/2/2021	0:57:30	0	0
3/3/2021	0:57:28	2.4	758
3/4/2021	0:57:31	2.4	730
3/5/2021	0:57:26	2.4	735
3/6/2021	0:57:28	2.4	722
3/7/2021	0:57:30	0	0
3/8/2021	0:57:32	2.3	702
3/9/2021	0:57:31	0	0
3/10/2021	0:57:32	2.3	676
3/11/2021	0:57:18	0	0
3/12/2021	0:57:30	0	0
3/13/2021	0:57:29	0.1	21
3/14/2021	0:57:31	2.2	681
3/15/2021	1:57:18	0	0
3/16/2021	0:57:30	0	0
3/17/2021	0:57:32	0	0
3/18/2021	0:57:27	0	0
3/19/2021	0:57:30	0	0
3/20/2021	0:57:30	0	0
3/21/2021	0:57:32	0	0
3/22/2021	0:57:30	0	0
3/23/2021	0:57:28	0	0
3/24/2021	0:57:29	0	0
3/25/2021	0:57:31	0	0
3/26/2021	0:57:28	2.7	823
3/27/2021	0:57:31	0	0
3/28/2021	0:57:28	0	0
3/29/2021	0:57:31	0	0
3/30/2021	0:57:30	0	0
3/31/2021	0:57:28	2.3	718

**March Total Discharge**

**23.9**

**7297**

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows  
Jan-21

**RTU NAME: Olin Industrial Welding**  
CUMULATEVE VALUES

<b>Discharge Flow Meter</b>		<b>5,686</b>	
Date	Time	Hours	Gallons
1/1/2021	0:57:30	0	0
1/2/2021	0:57:28	7	2151
1/3/2021	0:57:28	2.4	747
1/4/2021	0:57:29	0	0
1/5/2021	0:57:28	2.3	718
1/6/2021	0:57:31	0	0
1/7/2021	0:57:29	2.3	707
1/8/2021	0:57:33	0	0
1/9/2021	0:57:31	0	0
1/10/2021	0:57:33	2.2	690
1/11/2021	0:57:31	0	0
1/12/2021	0:57:30	0	0
1/13/2021	0:57:32	0	0
1/14/2021	0:57:31	2.2	673
1/15/2021	0:57:31	0	0
1/16/2021	0:57:28	0	0
1/17/2021	0:57:31	0	0
1/18/2021	0:58:58	0	0
1/19/2021	0:57:30	0	0
1/20/2021	0:57:31	0	0
1/21/2021	0:57:29	0	0
1/22/2021	0:57:34	0	0
1/23/2021	0:57:29	0	0
1/24/2021	0:57:30	0	0
1/25/2021	0:57:27	0	0
1/26/2021	0:57:29	0	0
1/27/2021	0:57:34	0	0
1/28/2021	0:57:32	0	0
1/29/2021	0:57:26	0	0
1/30/2021	0:57:32	0	0
1/31/2021	0:57:28	0	0
<b>January Total Discharge</b>		<b>18.4</b>	<b>5686</b>

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows  
Feb-21

**RTU NAME: Olin Industrial Welding**  
CUMULATIVE VALUES

<b>Discharge Flow Meter</b>		<b>4,823</b>	
Date	Time	Hours	Gallons
2/1/2021	0:57:31	0	0
2/2/2021	0:57:29	0	0
2/3/2021	0:57:30	0	0
2/4/2021	0:57:29	0	0
2/5/2021	0:57:30	0	0
2/6/2021	0:57:29	0	0
2/7/2021	0:57:28	0	0
2/8/2021	0:57:29	0	0
2/9/2021	0:57:29	0	0
2/10/2021	0:57:29	0	0
2/11/2021	0:57:32	0	0
2/12/2021	0:57:30	0	0
2/13/2021	0:57:29	0	0
2/14/2021	0:57:31	0	0
2/15/2021	0:57:32	0	0
2/16/2021	0:57:29	0	0
2/17/2021	0:57:33	0	0
2/18/2021	0:57:29	0	0
2/19/2021	0:57:27	0	0
2/20/2021	0:57:31	0	0
2/21/2021	0:57:27	0	0
2/22/2021	0:57:30	0	0
2/23/2021	0:57:29	0	0
2/24/2021	0:57:31	1.8	521
2/25/2021	0:57:29	7.2	2148
2/26/2021	0:57:30	0	0
2/27/2021	0:57:32	7.3	2154
2/28/2021	0:57:32	0	0
<b>February Total Discharge</b>		<b>16.3</b>	<b>4823</b>

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows

Mar-21

**RTU NAME: Olin Industrial Welding**

CUMULATIVE VALUES

**Discharge Flow Meter**

**7,297**

Date	Time	Hours	Gallons
3/1/2021	0:57:32	2.4	731
3/2/2021	0:57:30	0	0
3/3/2021	0:57:28	2.4	758
3/4/2021	0:57:31	2.4	730
3/5/2021	0:57:26	2.4	735
3/6/2021	0:57:28	2.4	722
3/7/2021	0:57:30	0	0
3/8/2021	0:57:32	2.3	702
3/9/2021	0:57:31	0	0
3/10/2021	0:57:32	2.3	676
3/11/2021	0:57:18	0	0
3/12/2021	0:57:30	0	0
3/13/2021	0:57:29	0.1	21
3/14/2021	0:57:31	2.2	681
3/15/2021	1:57:18	0	0
3/16/2021	0:57:30	0	0
3/17/2021	0:57:32	0	0
3/18/2021	0:57:27	0	0
3/19/2021	0:57:30	0	0
3/20/2021	0:57:30	0	0
3/21/2021	0:57:32	0	0
3/22/2021	0:57:30	0	0
3/23/2021	0:57:28	0	0
3/24/2021	0:57:29	0	0
3/25/2021	0:57:31	0	0
3/26/2021	0:57:28	2.7	823
3/27/2021	0:57:31	0	0
3/28/2021	0:57:28	0	0
3/29/2021	0:57:31	0	0
3/30/2021	0:57:30	0	0
3/31/2021	0:57:28	2.3	718

**March Total Discharge**

**23.9**

**7297**

**Daily Discharge Limits: Max = 8,000 gal**

Industrial Welding Site Flows

Apr-21

**Discharge Flow Meter**

Pumping Hours

**Discharge Flow Meter**

**8,778**

Date	Time	Hours	Gallons
4/1/2021	0:57:31	0	0
4/2/2021	0:57:32	0	0
4/3/2021	0:57:30	0	0
4/4/2021	0:57:30	0	0
4/5/2021	0:57:29	0	0
4/6/2021	0:57:28	0	0
4/7/2021	0:57:31	0	0
4/8/2021	1:03:30	0	0
4/9/2021	0:57:30	0	0
4/10/2021	0:57:32	2.3	682
4/11/2021	0:57:31	0	0
4/12/2021	0:57:29	0	0
4/13/2021	0:57:32	2.3	676
4/14/2021	0:57:33	0	0
4/15/2021	0:57:50	0	0
4/16/2021	0:57:31	2.4	722
4/17/2021	0:57:52	0	0
4/18/2021	0:57:32	0	0
4/19/2021	0:57:28	2.3	697
4/20/2021	0:57:31	0	0
4/21/2021	0:57:29	5.5	1676
4/22/2021	0:57:42	2.4	755
4/23/2021	0:57:32	0	0
4/24/2021	0:57:28	2.4	730
4/25/2021	0:57:31	2.3	711
4/26/2021	0:57:29	0	0
4/27/2021	0:57:29	2.4	715
4/28/2021	0:57:28	0	0
4/29/2021	0:57:28	2.3	697
4/30/2021	0:57:28	2.4	717

**April Total Discharge**

**29**

**8778**

**Daily Discharge Limits: Max = 8,000 gal**

**ATTACHMENT E**

# Site Activities Report

Sevenson Environmental Services, Inc.  
Niagara Falls, New York

REPORT NO.	Sevenson Job No. 1229, div.1	DATE: 9/50/20
PROJECT TITLE	OLIN CORPORATION, INDUSTRIAL WELDING SITE	
LOCATION OF WORK	VETERANS DRIVE, NIAGARA FALLS, NEW YORK	
DESCRIPTION	O & M OF REMEDIATION SITE	
WEATHER: SB Cloudy	RAINFALL INCHES: N/A	TEMP (Deg F) Min: 58° Max: 60°

## 1. Work performed today by Prime Contractor (Include Labor Breakdown):

SEMI-ANNUAL SITE INSPECTION  
SEMI-ANNUAL GROUND WATER SAMPLING

## 2. Work Performed Today By Subcontractors (Include Labor Breakdown):

N/A

## 3. Materials and/Or Equipment Delivered To Site (Include Equipment Demobilization)

SAMPLING EQUIPMENT

## 4. Type And Results Of Inspection:

9/30/20 - SEVENSON SAMPLED THE STORM DRAIN (IWS-SD1-093020)  
SHIPPED SAMPLE TO ALS ROCHESTER.  
MW1 & MW2 WERE DRY. SES WILL RETURN IN A FEW DAYS TO CHECK AGAIN  
- PERFORMED A SEMI-ANNUAL INSPECTION

10/05/20 - SEVENSON RETURNED TO CHECK MW1 AND MW-2. BOTH WERE DRY  
NO SAMPLES TAKEN.



# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

003743

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name <b>INDUSTRIAL WELDING - OLN</b>		Project Number <b>1229</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)	
Project Manager <b>ADAM CARLINGER</b>		Report CC <b>ADAM CARLINGER</b>		PRESERVATIVE <b>0 0 0 Z</b>	
Company/Address <b>OLIN CORP</b>		Company/Address <b>3855 NORTH OXLEE RD</b>		METALS TOTAL (List in comments below)	
City/State/Zip <b>CLEVELAND TN 37032</b>		City/State/Zip <b>CLEVELAND TN 37032</b>		METALS DISCLOSED (List in comments below)	
Phone # <b>423 336 4987</b>		Email <b>adcarlinger@olin.com</b>		PCBS # 8081 / 808	
Sample's Signature <i>[Signature]</i>		Sample's Printed Name <b>CHAS JONES</b>		PESTICIDES # 8021 / 801/802	
FOR OFFICE USE ONLY		DATE		SAMPLING TIME	
CLIENT SAMPLE ID	LAB ID	DATE	TIME	MATRIX	
<b>1WS-SD1-093020</b>		<b>9/30/20</b>	<b>900</b>	<b>GW</b>	<b>3</b>
<b>TEMP BLANK</b>					<b>1</b>
SPECIAL INSTRUCTIONS/COMMENTS <b>Metals</b> <b>TOT MERCURY</b> <b>SHIPPED IN 1 COOLER</b>		TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) <input type="checkbox"/> 1 day <input type="checkbox"/> 2 day <input type="checkbox"/> 3 day <input type="checkbox"/> 4 day <input type="checkbox"/> 5 day <input checked="" type="checkbox"/> Standard (10 business days-No Surcharge)		REPORT REQUIREMENTS <input type="checkbox"/> I. Results Only <input checked="" type="checkbox"/> II. Results + OC Summaries (LCS, DUP, MS/MSD as required) <input type="checkbox"/> III. Results + OC and Calibration Summaries <input type="checkbox"/> IV. Data Validation Report with Raw Data	
RECEIVED BY <b>UPS</b>		RECEIVED BY		RECEIVED BY	
Signature <i>[Signature]</i>	Signature	Signature	Signature	Signature	Signature
Printed Name <b>CHAS JONES</b>	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Firm <b>SES</b>	Firm	Firm	Firm	Firm	Firm
Date/Time <b>9/30/20 1500</b>	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time
See OAPP <input type="checkbox"/>		REQUESTED REPORT DATE <b>STANDARD</b>		EDATA <input type="checkbox"/> Yes <input type="checkbox"/> No	
INVOICE INFORMATION		BILL TO: <b>OLIN CORP</b>		INVOICE INFORMATION	



## SEMI-ANNUAL INSPECTION REPORT FORM

DATE: 9/30/20

REPORT NO.:

QUESTIONS	RESPONSE		COMMENTS AND RECOMMENDATIONS
	YES	NO	
<b>1. Security Fence</b>			
Is damage evident? If Yes, describe the type of damage(s), and indicate the location(s) the attached map.		X	
Are warning signs missing or damaged? If Yes, describe the type of damage and indicate the location(s) on the attached map.		X	
Is erosion evident under chain-link sections or around posts? If Yes, describe the type of erosion (rills, gullies, valleys, washouts), record approximate dimensions (length, width, depth) and indicate location(s) on the attached map.		X	
Has failure of any fencing members occurred? If Yes, describe the failure(s) and indicate location(s) on attached map.		X	
<b>2. Vegetative Soil Cover</b>			
Is settlement or standing water evident? If Yes, describe the degree of settlement(s) (slight, moderate, significant), record approximate dimensions, and indicate the location(s) on the attached map.		X	
Is erosion evident? If Yes, describe the type of erosion (rills, gullies, valleys, washouts, slope failure), record approximate dimensions (length, width, depth) and indicate location(s) on the attached map.		X	
Is vegetation distressed or are bare areas evident? If Yes, describe the type of disorder (distressed, sparsely vegetated, bare), record approximate dimensions and indicate location(s) on the attached map.		X	
Is any other damage evident? If Yes, describe the type of damage(s) and indicate the location(s) on the attached map.		X	
Are obstruction(s) (brush, debris, timber, leaves, sediment) interfering with the proper functioning of swales? Outlets from swales? If Yes, describe the type(s) of obstruction(s) and indicate the location(s) on the map attached. Is sediment deposited ins wales impending drainage? If Yes, record approximate dimensions and indicate location(s) on the attached map.		X	

QUESTIONS	RESPONSE		COMMENTS AND RECOMMENDATIONS
	YES	NO	
<b>3. Surface Water Drainage System</b>			
Are catch basin(s) damaged? If Yes, describe the catch basin inspected, conditions observed (spalling, cracking, exposed reinforcement, joint separation) and indicate location(s) of damaged catch basin(s) on the attached map.		X	
Are obstruction(s) (brush, debris, leaves, sediment) interfering with the proper functioning of the catch basin(s)? If Yes, describe the type(s) of obstruction(s) and indicated the location(s) on the attached map.		X	
Is erosion evident? If Yes, describe the drainage structure inspected (swale, outfall) the type of erosion (rills, gullies, valley, washouts, slope failure), record approximate dimensions (length, width, depth) and indicate location(s) on the attached map.		X	
Is sediment deposited in drainage pipe(s) deeper than 1/4 of the pipe diameter (shown on the contract drawings)? If Yes, record approximate dimension and indicate locations on the attached map.		X	
Is structural damage to headwalls evident? If Yes, describe the type of damage (upheaval, cracking, undermined, overturned, fractured, broken) and indicate damaged structures on the map.		X	
Have stones been dislodged at rip-rapped drainage outlet aprons? If Yes, record approximate dimensions and indicate location(s) on the attached map.		X	
<b>4. Asphalt Concrete Cover System</b>			
Is pavement distress evident? If Yes, describe (cracking, pothole(s), upheaval, failed patch), record the approximate dimensions (length, width, and depth) and indicate location(s) on the attached map.		X	
Is settlement or standing surface water evident? If Yes, describe the degree of settlement(s) (slight, moderate, significant), record approximate dimensions and indicate the location(s) on the attached map.		X	
Are obstructions present in the catch basins? If Yes, describe the obstacle(s) (leaves, brush, sediment) and indicate the location(s) on the map attached.		X	
Is sediment deposited in swale(s) impeding drainage? If Yes, record approximate dimensions and indicate location(s) on the map attached.		X	

QUESTIONS	RESPONSE		COMMENTS AND RECOMMENDATIONS
	YES	NO	
<b>5. Leachate Collection and Recovery System</b>			
Is standing water present at the LCRS cleanout? If Yes, describe the depth of the standing water.		X	
Is there evidence of any pipes or valves leaking at the recovery well? If Yes, describe the magnitude of the leak (drip, steady discharge, single overflow) and tag location(s) of leak(s).		X	
Is leachate extraction well pump operating properly based on visual inspection? If No, describe the condition.	X		
Is damage or degradation evident at the extraction well or stand pipe(s)? If Yes, describe the type of damage (vent/well riser cover missing, vent/well riser cracked, overturned, leaning, broken) and indicate damaged vent/well riser(s) on the map attached.		X	
Is damage or degradation evident at these system components? Extraction well pump and associated piping? Leachate collection pipe cleanout?		X	A NEW SPACE HEATER WAS INSTALLED

Date: 9/30/20

INSPECTOR:

CHRIS JONES

**FIELD DATA LOG FOR GROUNDWATER SAMPLING**  
**Industrial Welding Site, Niagara Falls, New York**

Well ID: MW-1 Date: 8/10/20

Sampler(s): C JONES

Weather: 80° Sunny

Calibration of Field Equipment:

pH Meter: Date: 8/10/20 Time 0815

Spec. Conduct. Meter: Date: 8/10/20 Time 0815

Turbidity Meter: Date: 8/10/20 Time 0815

Purging Method/Sampling Method: PERISTALTIC PUMP / NEW TUBING

Sample ID: IWS-MW-1-081020

**Well Purging Data:**

Time	Water Level (Feet Below Top of Riser)	Volume Purged (Liters)	pH (Std. Units)	mS/cm		
				Specific Conductivity ( $\Phi$ mhos/cm)	Tem (EC)	Turbidity (NTUs)
910	8.55	0	6.06	1.14	18.01	18.4
915	DRY	<hr/>				

**COMMENTS:**

8/10/20 - WELL WENT DRY AFTER 5 min OF PURGING  
 8/12/20 - SAMPLED AT 855 ~~ADD~~ IWS-MW-1-081220

**FIELD DATA LOG FOR GROUNDWATER SAMPLING**  
**Industrial Welding Site, Niagara Falls, New York**

Well ID: MW-2 Date: 8/10/20

Sampler(s): E JONES

Weather: 80° SUNNY

Calibration of Field Equipment:

pH Meter:	Date:	<u>8/10/20</u>	Time	<u>0815</u>
Spec. Conduct. Meter:	Date:	<u>8/10/20</u>	Time	<u>0815</u>
Turbidity Meter:	Date:	<u>8/10/20</u>	Time	<u>0815</u>

Purging Method/Sampling Method: PERISTALTIC PUMP / NEW TUBING

Sample ID: IWS-MW2-081020

**Well Purging Data:**

Time	Water Level (Feet Below Top of Riser)	Volume Purged (Liters)	pH (Std. Units)	Specific Conductivity ( $\mu$ mhos/cm)	Tem (EC)	Turbidity (NTUs)
942	7.62	0	7.07	1.19	19.06	36.4
947	DRY	<del>_____</del>				

**COMMENTS:**

8/10/20 - WELL WENT DRY AFTER 5 MINUTES OF PURGING  
 8/12/20 - SAMPLED AT 905 IWS-MW-2-081220

**FIELD DATA LOG FOR GROUNDWATER SAMPLING**  
**Industrial Welding Site, Niagara Falls, New York**

Well ID:     MW-2     Date:     9/30/20    

Sampler(s):     C JONES    

Weather:     58° cloudy    

Calibration of Field Equipment:

pH Meter:                      Date:     9/30/20     Time     800      
 Spec. Conduct. Meter:        Date:     9/30/20     Time     800      
 Turbidity Meter:              Date:     9/30/20     Time     800    

Purging Method/Sampling Method:     PERISTALTIC PUMP / DEDICATED TUBING    

Sample ID:     IWS-MW-2' 093020    

**Well Purging Data:**

Time	Water Level (Feet Below Top of Riser)	Volume Purged (Liters)	pH (Std. Units)	Specific Conductivity ( $\mu$ mhos/cm)	Tem ( $^{\circ}$ C)	Turbidity (NTUs)
835	7.03	1.5	7.36	143	16.45	44.3
840	DRY					

**COMMENTS:**

9/30/20 WELL WENT DRY WITHIN 5 MINUTES  
 10/05/20 NO WATER IN WELL NO SAMPLE

**FIELD DATA LOG FOR GROUNDWATER SAMPLING**  
**Industrial Welding Site, Niagara Falls, New York**

Well ID: MW -1 Date: 9/30/20

Sampler(s): C JONES

Weather: 58° cloudy

Calibration of Field Equipment:

pH Meter: Date: 9/30/20 Time 800

Spec. Conduct. Meter: Date: 9/30/20 Time 800

Turbidity Meter: Date: 9/30/20 Time 800

Purging Method/Sampling Method: PERISTALTIC PUMP / DEDICATED TUBING

Sample ID: WS-MW-1-093020

**Well Purging Data:**

Time	Water Level (Feet Below Top of Riser)	Volume Purged (Liters)	pH (Std. Units)	Specific Conductivity (Ohms/cm)	Tem (EC)	Turbidity (NTUs)
900	Dry					

**COMMENTS:**

9/30/20 Dry NO SAMPLE

10/05/20 NO SAMPLE

**FIELD DATA LOG FOR STORM WATER SAMPLING**  
**Industrial Welding Site, Niagara Falls, New York**

Location Description: Storm Drain Sample Point East of Catch Basin

Sampler(s): C JONES

Weather: 58° Cloudy

Date: 9/30/20 Time: 900

Sample ID: IWS-SD1-093020

Sampling Method: ~~PENETS~~ PERISTALTIC PUMP

Pipe Invert Elevation at Sample Point Riser (ft msl)	Measured Depth of Water Sample Point (ft)	Calculated Water Elevation - Sample Point (ft)	Outfall Invert Elevation (ft msl)	Measured Depth of Water Outfall Pipe (ft)	Calculated Outfall Water Elevation (ft msl)

**COMMENTS:**

ph 7.41  
 COND 1.43 mc/cm  
 TURB 4.2  
 TEMP 15.03

SAMPLED AT 900 on 9/30/20 MS/MSD TAKEN HERE



**FIELD DATA LOG FOR WATER ELEVATION MEASUREMENTS**  
**Industrial Welding Site, Niagara Falls, New York**

Name of Sampler: MAX LITTON

Organization: BEVENSON

Weather: 58° cloudy

Water Level Indicator Make: SOLINST Model: 101 Serial No.: 267360

Location	Location ID	Date/Time Measured	Top of Riser Elevation (ft msl)	Measured Depth to Water (Feet Below Top of Riser)	Water Elevation (ft msl)
LCRS Stand Pipe	SP1	9/30/20		dry at 16.75	
		0820			
LCRS Stand Pipe	SP2	9/30/20		dry at 14.30	
		0800			
LCRS Recovery Well	LCRS1	9/30/20	573.43	9.07	
		0900			
Cover Area Piezometer	PIR	9/30/20	582.10	dry at 17.44	
		0820			
East Easement Piezometer	P2R	9/30/20	572.17	dry at 9.37	
		0800			
Cover Area Piezometer	P3R	9/30/20	581.90	dry at 17.78	
		0820			
East Easement Piezometer	P4R	9/30/20	571.09	dry at 9.36	
		0800			
Cover Area Piezometer	P5R	9/30/20	578.46	dry at 14.35	
		0820			
East Easement Piezometer	P6R	9/30/20	570.91	dry at 9.35	
		0800			
NE Easement Monitoring Well	MW1	9/30/20	570.87	dry at 9.51	
		0810			
SE Easement Monitoring Well	MW2	9/30/20	572.76	9.03	
		0800			

**COMMENTS:**

Industrial Welding Site

Piezometer and Monitoring Well

**INSPECTION FORM**

Inspection of Well/Piezometer No.: SP-1

Date: 9/30/20

INSPECTOR: JONES

YES	NO	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the wellhead clearly labeled?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is there a lock on the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the concrete pad around the well in good condition
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Has there been physical damage to the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the wellhead protected from standing water?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is there evidence of frost heave on the protective casing?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is there settlement around the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the well depth consistent with the installed depth?

COMMENTS:

Industrial Welding Site

Piezometer and Monitoring Well

**INSPECTION FORM**

Inspection of Well/Piezometer No.: SP-2

Date: 9/30/20

INSPECTOR: JONES

YES	NO
X	
X	
X	
	X
X	
	X
	X
X	

**Is the wellhead clearly labeled?**

**Is there a lock on the well?**

**Is the concrete pad around the well in good condition**

**Has there been physical damage to the well?**

**Is the wellhead protected from standing water?**

**Is there evidence of frost heave on the protective casing?**

**Is there settlement around the well?**

**Is the well depth consistent with the installed depth?**

**COMMENTS:**

Industrial Welding Site

Piezometer and Monitoring Well

**INSPECTION FORM**

Inspection of Well/Piezometer No.: P1R

Date: 9/30/20

INSPECTOR: JONES

YES	NO
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Is the wellhead clearly labeled?**

**Is there a lock on the well?**

**Is the concrete pad around the well in good condition**

**Has there been physical damage to the well?**

**Is the wellhead protected from standing water?**

**Is there evidence of frost heave on the protective casing?**

**Is there settlement around the well?**

**Is the well depth consistent with the installed depth?**

**COMMENTS:**

Industrial Welding Site

Piezometer and Monitoring Well

**INSPECTION FORM**

Inspection of Well/Piezometer No.: P2R

Date: 9/30/20

INSPECTOR: Jones

YES	NO
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Is the wellhead clearly labeled?**

**Is there a lock on the well?**

**Is the concrete pad around the well in good condition**

**Has there been physical damage to the well?**

**Is the wellhead protected from standing water?**

**Is there evidence of frost heave on the protective casing?**

**Is there settlement around the well?**

**Is the well depth consistent with the installed depth?**

**COMMENTS:**

Industrial Welding Site

Piezometer and Monitoring Well

**INSPECTION FORM**

Inspection of Well/Piezometer No.: P3R

Date: 9/30/20

INSPECTOR: JONES

YES	NO	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the wellhead clearly labeled?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is there a lock on the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the concrete pad around the well in good condition
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Has there been physical damage to the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the wellhead protected from standing water?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is there evidence of frost heave on the protective casing?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is there settlement around the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the well depth consistent with the installed depth?

COMMENTS:

Industrial Welding Site

Piezometer and Monitoring Well

**INSPECTION FORM**

Inspection of Well/Piezometer No.: P4R

Date: 9/30/20

INSPECTOR: JONES

YES	NO	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the wellhead clearly labeled?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is there a lock on the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the concrete pad around the well in good condition
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Has there been physical damage to the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the wellhead protected from standing water?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is there evidence of frost heave on the protective casing?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is there settlement around the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the well depth consistent with the installed depth?

COMMENTS:

Industrial Welding Site

Piezometer and Monitoring Well

**INSPECTION FORM**

Inspection of Well/Piezometer No.: P5R

Date: 9/30/20

INSPECTOR: JONES

YES	NO	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the wellhead clearly labeled?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is there a lock on the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the concrete pad around the well in good condition
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Has there been physical damage to the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the wellhead protected from standing water?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is there evidence of frost heave on the protective casing?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is there settlement around the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the well depth consistent with the installed depth?

COMMENTS:



Industrial Welding Site

Piezometer and Monitoring Well

**INSPECTION FORM**

Inspection of Well/Piezometer No.: P6R

Date: 9/30/20

INSPECTOR: JONES

YES	NO	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the wellhead clearly labeled?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is there a lock on the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the concrete pad around the well in good condition
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Has there been physical damage to the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the wellhead protected from standing water?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is there evidence of frost heave on the protective casing?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is there settlement around the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the well depth consistent with the installed depth?

COMMENTS:

Industrial Welding Site

Piezometer and Monitoring Well

**INSPECTION FORM**

Inspection of Well/Piezometer No.: MW-1

Date: 9/30/20

INSPECTOR: JONES

YES	NO	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the wellhead clearly labeled?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is there a lock on the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the concrete pad around the well in good condition
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Has there been physical damage to the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the wellhead protected from standing water?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is there evidence of frost heave on the protective casing?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is there settlement around the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the well depth consistent with the installed depth?

COMMENTS:

Industrial Welding Site  
Piezometer and Monitoring Well

**INSPECTION FORM**

Inspection of Well/Piezometer No.: MW-2

Date: 9/30/20

INSPECTOR: JONES

YES	NO	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the wellhead clearly labeled?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is there a lock on the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the concrete pad around the well in good condition
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Has there been physical damage to the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the wellhead protected from standing water?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is there evidence of frost heave on the protective casing?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is there settlement around the well?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is the well depth consistent with the installed depth?

**COMMENTS:**

# Site Activities Report

Sevenson Environmental Services, Inc.  
Niagara Falls, New York

<b>REPORT NO.</b>	<u>Sevenson Job No. 1259, div.1</u>	DATE: <u>3/16/21</u>		
<b>PROJECT TITLE</b>	OLIN CORPORATION, INDUSTRIAL WELDING SITE			
<b>LOCATION OF WORK</b>	VETERANS DRIVE, NIAGARA FALLS, NEW YORK			
<b>DESCRIPTION</b>	O & M OF REMEDIATION SITE			
<b>WEATHER:</b> <u>cloudy</u>	<b>RAINFALL INCHES:</b> <u>0</u>	<b>TEMP (Deg F)</b>	<b>Min:</b> <u>40</u>	<b>Max:</b> <u>50</u>

**1. Work performed today by Prime Contractor (Include Labor Breakdown):**

Water levels taken and recorded at SP1, SP2, LCRS1, P1R, P2R, P3R, P4R, P5R, P6R, MW1 and MW2. Samples for SVOA, pesticides, and total mercury taken at MW1, MW2, and SP1. MS/ASP performed at SP1.  
Semi annual site inspection performed.

**2. Work Performed Today By Subcontractors (Include Labor Breakdown):**

\_\_\_\_\_

**3. Materials and/Or Equipment Delivered To Site (Include Equipment Demobilization)**

\_\_\_\_\_

**4. Type And Results Of Inspection:**

Semi annual site inspection of security fence, vegetative soil cover, surface water drainage system, asphalt concrete cover system, leachate collection and recovery system.  
Breach in NW corner of security fence reported. REPAIRS SCHEDULED FOR 3/22/21



# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 0F 004518

Project Name				Project Number			ANALYSIS REQUESTED (Include Method Number and Container Preservative)									
Project Manager				Report OC			PRESERVATIVE	METALS (List in comments below)	METALS DISSOLVED (List in comments below)	METALS TOTAL (List in comments below)	PCBs ° 8082 ° 808	PESTICIDES ° 8081 ° 808	GC VOAs ° 8021 ° 801/602	GCMS SVOAs ° 8270 ° 825	GCMS VOAs ° 8260 ° 824 ° CLP	REMARKS/ ALTERNATE DESCRIPTION
Company/Address				Sampler's Printed Name			NUMBER OF CONTAINERS	GCMS VOAs ° 8260 ° 824 ° CLP	GCMS SVOAs ° 8270 ° 825	GC VOAs ° 8021 ° 801/602	PESTICIDES ° 8081 ° 808	PCBs ° 8082 ° 808	METALS TOTAL (List in comments below)	METALS DISSOLVED (List in comments below)	Preservative Key 0. NONE 1. HCL 2. HNO3 3. H2SO4 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO4 8. Other	
Client Sample ID				FOR OFFICE USE ONLY LAB ID	DATE	SAMPLING TIME	MATRIX	PRESERVATIVE								
1WS-3010-11-27-01					11/27/01	1430	W									
1WS-3010-11-27-02					11/27/01	0815	W									
1WS-3010-11-27-03					11/27/01	0815	W									
TRIP blank					11/27/01											
SPECIAL INSTRUCTIONS/COMMENTS																
Metals																
See OAPP <input type="checkbox"/>																
STATE WHERE SAMPLES WERE COLLECTED																
RELINQUISHED BY				RECEIVED BY				RELINQUISHED BY				RECEIVED BY				
Signature				Signature				Signature				Signature				
Printed Name				Printed Name				Printed Name				Printed Name				
Firm				Firm				Firm				Firm				
Date/Time				Date/Time				Date/Time				Date/Time				
				UFS												
TURNAROUND REQUIREMENTS						REPORT REQUIREMENTS						INVOICE INFORMATION				
RUSH (SURCHARGES APPLY)						I. Results Only						PO #				
1 day 2 day 3 day						II. Results + QC Summaries (LCS, DUP, MS/MSD as required)						BILL TO				
4 day 5 day Standard (10 business days-No Surcharge)						III. Results + QC and Calibration Summaries										
REQUESTED REPORT DATE						IV. Data Validation Report with Raw Data										
						Edata Yes No										

## SEMI-ANNUAL INSPECTION REPORT FORM

DATE: 03/16/21

REPORT NO.:

QUESTIONS	RESPONSE		COMMENTS AND RECOMMENDATIONS
	YES	NO	
<b>1. Security Fence</b>			
Is damage evident? If Yes, describe the type of damage(s), and indicate the location(s) the attached map.	✓		breach in fence at NW corner
Are warning signs missing or damaged? If Yes, describe the type of damage and indicate the location(s) on the attached map.		✓	
Is erosion evident under chain-link sections or around posts? If Yes, describe the type of erosion (rills, gullies, valleys, washouts), record approximate dimensions (length, width, depth) and indicate location(s) on the attached map.		✓	
Has failure of any fencing members occurred? If Yes, describe the failure(s) and indicate location(s) on attached map.		✓	
<b>2. Vegetative Soil Cover</b>			
Is settlement or standing water evident? If Yes, describe the degree of settlement(s) (slight, moderate, significant), record approximate dimensions, and indicate the location(s) on the attached map.		✓	
Is erosion evident? If Yes, describe the type of erosion (rills, gullies, valleys, washouts, slope failure), record approximate dimensions (length, width, depth) and indicate location(s) on the attached map.		✓	
Is vegetation distressed or are bare areas evident? If Yes, describe the type of disorder (distressed, sparsely vegetated, bare), record approximate dimensions and indicate location(s) on the attached map.		✓	
Is any other damage evident? If Yes, describe the type of damage(s) and indicate the location(s) on the attached map.		✓	
Are obstruction(s) (brush, debris, timber, leaves, sediment) interfering with the proper functioning of swales? Outlets from swales? If Yes, describe the type(s) of obstruction(s) and indicate the location(s) on the map attached. Is sediment deposited ins wales impending drainage? If Yes, record approximate dimensions and indicate location(s) on the attached map.		✓	

QUESTIONS	RESPONSE		COMMENTS AND RECOMMENDATIONS
	YES	NO	
<b>3. Surface Water Drainage System</b>			
Are catch basin(s) damaged? If Yes, describe the catch basin inspected, conditions observed (spalling, cracking, exposed reinforcement, joint separation) and indicate location(s) of damaged catch basin(s) on the attached map.		✓	
Are obstruction(s) (brush, debris, leaves, sediment) interfering with the proper functioning of the catch basin(s)? If Yes, describe the type(s) of obstruction(s) and indicated the location(s) on the attached map.		✓	
Is erosion evident? If Yes, describe the drainage structure inspected (swale, outfall) the type of erosion (rills, gullies, valley, washouts, slope failure), record approximate dimensions (length, width, depth) and indicate location(s) on the attached map.		✓	
Is sediment deposited in drainage pipe(s) deeper than 1/4 of the pipe diameter (shown on the contract drawings)? If Yes, record approximate dimension and indicate locations on the attached map.		✓	
Is structural damage to headwalls evident? If Yes, describe the type of damage (upheaval, cracking, undermined, overturned, fractured, broken) and indicate damaged structures on the map.		✓	
Have stones been dislodged at rip-rapped drainage outlet aprons? If Yes, record approximate dimensions and indicate location(s) on the attached map.		✓	
<b>4. Asphalt Concrete Cover System</b>			
Is pavement distress evident? If Yes, describe (cracking, pothole(s), upheaval, failed patch), record the approximate dimensions (length, width, and depth) and indicate location(s) on the attached map.		✓	
Is settlement or standing surface water evident? If Yes, describe the degree of settlement(s) (slight, moderate, significant), record approximate dimensions and indicate the location(s) on the attached map.		✓	
Are obstructions present in the catch basins? If Yes, describe the obstacle(s) (leaves, brush, sediment) and indicate the location(s) on the map attached.		✓	
Is sediment deposited in swale(s) impeding drainage? If Yes, record approximate dimensions and indicate location(s) on the map attached.		✓	

QUESTIONS	RESPONSE		COMMENTS AND RECOMMENDATIONS
	YES	NO	
<b>5. Leachate Collection and Recovery System</b>			
Is standing water present at the LCRS cleanout? If Yes, describe the depth of the standing water.		✓	
Is there evidence of any pipes or valves leaking at the recovery well? If Yes, describe the magnitude of the leak (drip, steady discharge, single overflow) and tag location(s) of leak(s).		✓	
Is leachate extraction well pump operating properly based on visual inspection? If No, describe the condition.		✓	
Is damage or degradation evident at the extraction well or stand pipe(s)? If Yes, describe the type of damage (vent/well riser cover missing, vent/well riser cracked, overturned, leaning, broken) and indicate damaged vent/well riser(s) on the map attached.		✓	
Is damage or degradation evident at these system components? Extraction well pump and associated piping? Leachate collection pipe cleanout?		✓	

Date: 03/16/21

INSPECTOR: Mary Liffiton



**FIELD DATA LOG FOR GROUNDWATER SAMPLING**  
**Industrial Welding Site, Niagara Falls, New York**

Well ID: MW1 Date: 03/16/21

Sampler(s): Mat Littton

Weather: cloudy

Calibration of Field Equipment:

pH Meter: Date: 03/16/21 Time 9:20 AM

Spec. Conduct. Meter: Date: 03/16/21 Time 9:20 AM

Turbidity Meter: Date: 03/16/21 Time 9:20 AM

Purging Method/Sampling Method: dedicated tubing-peristaltic pump

Sample ID: 1WS-MW1-031621

**Well Purging Data:**

Time	Water Level (Feet Below Top of Riser)	Volume Purged (Liters)	pH (Std. Units)	Specific Conductivity ( $\Omega$ mhos/cm)	Tem (EC)	Turbidity (NTUs)
10:55	6.92	0	7.31	0.75	447	4.5
10:57	7.41	1/2 gal	7.33	0.67	448	4.3
11:00	7.5	1 gal	7.36	0.64	447	4.1

**COMMENTS:**

*sampled at 11 AM*

**FIELD DATA LOG FOR GROUNDWATER SAMPLING**  
**Industrial Welding Site, Niagara Falls, New York**

Well ID: MW-2 Date: 03/16/21

Sampler(s): Max Litter

Weather: cloudy

Calibration of Field Equipment:

pH Meter: Date: 03/16/21 Time 9:20 AM

Spec. Conduct. Meter: Date: 03/16/21 Time 9:20 AM

Turbidity Meter: Date: 03/16/21 Time 9:20 AM

Purging Method/Sampling Method: dedicated tubing + portable pump

Sample ID: 1WS-MW2-031621

**Well Purging Data:**

Time	Water Level (Feet Below Top of Riser)	Volume Purged (Liters)	pH (Std. Units)	Specific Conductivity (µmhos/cm)	Tem (EC)	Turbidity (NTUs)
9:15	6.00	0	6.25	0.82	572	9.9
9:17	7.15	1/2 gal	7.14	0.79	507	4.9
9:19	7.70	3 gal	7.29	0.78	44	5.4

**COMMENTS:**

*sampled at 10:00 AM*

**FIELD DATA LOG FOR WATER ELEVATION MEASUREMENTS**  
**Industrial Welding Site, Niagara Falls, New York**

Name of Sampler: Kyle EYDT

Organization: SES

Weather: cloudy 31°f

Water Level Indicator Make: Saint Model: 101 Serial No.: 005531

Location	Location ID	Date/Time Measured	Top of Riser Elevation (ft msl)	Measured Depth to Water (Feet Below Top of Riser)	Water Elevation (ft msl)
LCRS Stand Pipe	SP1	3/16/21 0900		16.7 DRY	DRY 16.7
LCRS Stand Pipe	SP2	3/16/21 0905		14.3 DRY	
LCRS Recovery Well	LCRS1	3/16/21 0915	573.43	9.02	564.41
Cover Area Piezometer	P1R	3/16/21 0915	582.10	DRY 17.4	
East Easement Piezometer	P2R	3/16/21 0930	572.17	6.30	565.87
Cover Area Piezometer	P3R	3/16/21 0940	581.90	DRY 17.8	
East Easement Piezometer	P4R	3/16/21 0930	571.09	4.29	566.80
Cover Area Piezometer	P5R	3/16/21 0930	578.46	DRY 14.3	
East Easement Piezometer	P6R	3/16/21 0940	570.91	4.58	566.33
NE Easement Monitoring Well	MW1	3/16/21 10:50	570.87	7.2	563.67
SE Easement Monitoring Well	MW2	3/16/21 09:00	572.76	6.00	566.76

**COMMENTS:**

Industrial Welding Site

Piezometer and Monitoring Well

**INSPECTION FORM**

Inspection of Well/Piezometer No.: MW-1

Date: 03/16/21

INSPECTOR: Max Littleton

YES	NO	
✓		Is the wellhead clearly labeled?
✓		Is there a lock on the well?
✓		Is the concrete pad around the well in good condition
	✓	Has there been physical damage to the well?
✓		Is the wellhead protected from standing water?
	✓	Is there evidence of frost heave on the protective casing?
	✓	Is there settlement around the well?
✓		Is the well depth consistent with the installed depth?

COMMENTS:

Industrial Welding Site

Piezometer and Monitoring Well

**INSPECTION FORM**

Inspection of Well/Piezometer No.: MW-2

Date: 3/16/21

INSPECTOR: Max Liffitor

YES	NO
✓	
✓	
✓	
	✓
✓	
	✓
	✓
✓	

Is the wellhead clearly labeled?

Is there a lock on the well?

Is the concrete pad around the well in good condition

Has there been physical damage to the well?

Is the wellhead protected from standing water?

Is there evidence of frost heave on the protective casing?

Is there settlement around the well?

Is the well depth consistent with the installed depth?

**COMMENTS:**

Industrial Welding Site

Piezometer and Monitoring Well

**INSPECTION FORM**

Inspection of Well/Piezometer No.: SP-1

Date: 3/16/21

INSPECTOR: Max Liffitor

YES	NO	
✓		Is the wellhead clearly labeled?
✓		Is there a lock on the well?
✓		Is the concrete pad around the well in good condition
	✓	Has there been physical damage to the well?
✓		Is the wellhead protected from standing water?
	✓	Is there evidence of frost heave on the protective casing?
	✓	Is there settlement around the well?
✓		Is the well depth consistent with the installed depth?

COMMENTS:

Industrial Welding Site

Piezometer and Monitoring Well

**INSPECTION FORM**

Inspection of Well/Piezometer No.: SP-2

Date: 3/16/21

INSPECTOR: Max Liffiton

YES	NO	
✓		Is the wellhead clearly labeled?
✓		Is there a lock on the well?
	✓	Is the concrete pad around the well in good condition
	✓	Has there been physical damage to the well?
✓		Is the wellhead protected from standing water?
	✓	Is there evidence of frost heave on the protective casing?
	✓	Is there settlement around the well?
✓		Is the well depth consistent with the installed depth?

**COMMENTS:**

Concrete pad needs sealant.

Industrial Welding Site

Piezometer and Monitoring Well

**INSPECTION FORM**

Inspection of Well/Piezometer No.: P1R

Date: 3/16/21

INSPECTOR: Max Liffiton

YES	NO	
✓		Is the wellhead clearly labeled?
✓		Is there a lock on the well?
✓		Is the concrete pad around the well in good condition
	✓	Has there been physical damage to the well?
✓		Is the wellhead protected from standing water?
	✓	Is there evidence of frost heave on the protective casing?
	✓	Is there settlement around the well?
✓		Is the well depth consistent with the installed depth?

COMMENTS:



Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P2R

Date: 3/16/21

INSPECTOR: Max Liffiton

YES	NO	
✓		Is the wellhead clearly labeled?
✓		Is there a lock on the well?
✓		Is the concrete pad around the well in good condition
	✓	Has there been physical damage to the well?
✓		Is the wellhead protected from standing water?
	✓	Is there evidence of frost heave on the protective casing?
	✓	Is there settlement around the well?
✓		Is the well depth consistent with the installed depth?

COMMENTS:

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P3R

Date: 3/16/21

INSPECTOR: Maxwell Liffton

YES	NO	
✓		Is the wellhead clearly labeled?
✓		Is there a lock on the well?
✓		Is the concrete pad around the well in good condition
	✓	Has there been physical damage to the well?
✓		Is the wellhead protected from standing water?
	✓	Is there evidence of frost heave on the protective casing?
	✓	Is there settlement around the well?
✓		Is the well depth consistent with the installed depth?

COMMENTS:

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P4R

Date: 03/16/21

INSPECTOR: Max Liff, Jan

YES	NO	
✓		Is the wellhead clearly labeled?
✓		Is there a lock on the well?
✓		Is the concrete pad around the well in good condition
	✓	Has there been physical damage to the well?
✓		Is the wellhead protected from standing water?
	✓	Is there evidence of frost heave on the protective casing?
	✓	Is there settlement around the well?
✓		Is the well depth consistent with the installed depth?

COMMENTS:

Industrial Welding Site

Piezometer and Monitoring Well

INSPECTION FORM

Inspection of Well/Piezometer No.: P5R

Date: 3/16/21

INSPECTOR: Max Liffitor

YES	NO	
✓		Is the wellhead clearly labeled?
✓		Is there a lock on the well?
✓		Is the concrete pad around the well in good condition
	✓	Has there been physical damage to the well?
✓		Is the wellhead protected from standing water?
	✓	Is there evidence of frost heave on the protective casing?
	✓	Is there settlement around the well?
✓		Is the well depth consistent with the installed depth?

COMMENTS:

A rusty hinge makes the well difficult to open/close.  
The hinge should be loosened/replaced.

Industrial Welding Site

Piezometer and Monitoring Well

**INSPECTION FORM**

Inspection of Well/Piezometer No.: P6R

Date: 3/16/21

INSPECTOR: Max Liffman

YES	NO	
✓		Is the wellhead clearly labeled?
✓		Is there a lock on the well?
✓		Is the concrete pad around the well in good condition
	✓	Has there been physical damage to the well?
✓		Is the wellhead protected from standing water?
	✓	Is there evidence of frost heave on the protective casing?
	✓	Is there settlement around the well?
✓		Is the well depth consistent with the installed depth?

COMMENTS:

**ATTACHMENT F**

**IW GROUNDWATER MONITORING  
ANALYTICAL RESULTS FOR Hg MONITORING WELL BY PERIOD  
SUMMARY SPRING 2002 - SPRING 2021**

Sampling Period	MW1 (ug/L)	MW2 (ug/L)	Rptg. Limit (ug/L)
Spring 02	0.2	24	0.2
Fall 02	0.5	67	0.2
Spring 03	0.2	77	0.2
Fall 03	2.2	9.3	0.2
Spring 04	0.2	37	0.2
Fall 04	0.2	6.6	0.2
Spring 05	0.2	27.8	0.2
Fall 05	0.2	3.7	0.2
Spring 06	0.2	23.7	0.2
Fall 06	0.2	4.7	0.2
Spring 07	0.2	8.2	0.2
Fall 07	0.2	7.3	0.2
Spring08	0.2	20.7	0.2
Fall08	0.2	3.7	0.2
Spring09	0.2	0.2	0.2
Fall09	0.2	6.1	0.2
Spring10	0.2	5.8	0.2
Fall10	0.2	10.6	0.2
Spring11	0.2	7.2	0.2
Fall 11	0.2	5.3	0.2
Spring 12	0.2	14.4	0.2
Fall 12	0.2	5.3	0.2
Spring 13	0.2	2.5	0.2
Fall 13	0.2	18.7	0.2
Spring 14	0.2	4.5	0.2
Fall 14	0.2	5.4	0.2
Spring 15	0.2	3.2	0.2
Fall 15	0.2	5.9	0.2
Spring 16	0.2	5.2	0.2
Fall 16	NA	9.1	0.2
Spring 17	0.2	97.2	0.2
Fall 17	0.2	14.4	0.2
Spring 18	0.2	7.5	0.2
*Fall 18	NT	NT	0.2
Spring 19	0.2	52.5	0.2
Fall 19	0.2	11.9	0.2
Spring 20	0.7	425	0.2
**Fall 20	0.2	65.6	0.2
Fall 20		68.6	0.2
Spring 21	0.2	13.3	0.2

= Detected value

\*MW1 & MW2 were dry, no analysis available

\*\*Resampled due to anomalous values from spring sampling event

NT = Not Tested

# Industrial Welding Mercury Concentrations in Groundwater Over Time

