

Environmental Remediation Group

Olin Corporation

3855 North Ocoee Street, Suite 200 Cleveland, TN 37312 (423) 336-4540 FAX (423) 339-5625 dmshare@olin.com

SENT VIA OVERNIGHT COURIER

March 09, 2017

Mr. Brian Sadowski
Division of Environmental Remediation
New York State Department of Environmental Conversation
270 Michigan Avenue
Buffalo, New York 14203-2999

Subject:

Charles Gibson Site, Niagara Falls, New York

Site No. 932063

Annual Periodic Review Report (revision) - 2017

Post Closure Operation, Maintenance, and Monitoring Activities

Dear Mr. Sadowski,

We received your written request dated March 2, 2017 for the addition of groundwater contour maps to be placed within the Periodic Review Report. We have placed the contour maps within the original Periodic Review Report that was submitted on February 27, 2017. We are submitting a CD containing a PDF of the revised 2016 Annual Period Review Report on the Post-Closure Operation, Maintenance, and Monitoring activities for the Charles Gibson Site. The annual certification is attached as hard copy and as part of the PDF.

Please contact me with any questions at 423-336-4540 or by email at cmrichards@olin.com.

Sincerely,

OLIN CORPORATION

David M. Share

Director, Environmental Remediation



Environmental Remediation Group

Olin Corporation

3855 North Ocoee Street, Suite 200 Cleveland, TN 37312 (423) 336-4540 FAX (423) 339-5625 dmshare@olin.com

SENT VIA OVERNIGHT COURIER

February 27, 2017

Mr. Brian Sadowski Division of Environmental Remediation New York State Department of Environmental Conversation 270 Michigan Avenue Buffalo, New York 14203-2999

Subject:

Charles Gibson Site, Niagara Falls, New York

Site No. 932063

Annual Periodic Review Report - 2017

Post Closure Operation, Maintenance, and Monitoring Activities

Dear Mr. Sadowski,

Olin hereby submits a CD containing a PDF of the 2016 Annual Period Review Report on the Post-Closure Operation, Maintenance, and Monitoring activities for the Charles Gibson Site. The annual certification is attached as hard copy and as part of the PDF.

Please contact me with any questions at 423-336-4540 or by email at dmshare@olin.com.

Sincerely,

OLIN CORPORATION

David M. Share

Director, Environmental Remediation

Archived: Tuesday, February 28, 2017 11:11:21 AM

From: UPS Quantum View

Sent: Tuesday, February 28, 2017 9:33:29 AM

To: Baltimore, Beth A CERG

Subject: UPS Delivery Notification, Tracking Number 1Z92F6661398577397

Importance: Normal

Original mail: UPS Delivery Notification, Tracking Number 1Z92F6661398577397.msg;



Your package has been delivered.

Delivery Date: Tuesday, 02/28/2017

Delivery Time: 09:29 AM

At the request of OLIN CORP, this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:

1Z92F6661398577397

Brian Sadowski

New York State Dept of Env

270 MICHIGAN AVE BUFFALO, NY 14203

US

UPS Service:

Ship To:

UPS NEXT DAY AIR SAVER

Number of Packages:

1

Shipment Type:

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REYOLDS

Reference Number 1:

Charles Gibson PRR 2017



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Charles Gibson Site
Site No. 932063
Periodic Review Report

February 27, 2017

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I. INTRODUCTION

Brief Summary, Nature and Extent, Remedial History:

The Stipulation and Consent Judgment Approving Settlement Agreement was signed in 1985. Construction of the remedy on the Charles Gibson Site concluded in 1990. The remedy consisted of rerouting Cayuga Creek around and away from the waste, installation of a fully circumscribed soil-bentonite slurry wall barrier and installation of a double flexible membrane liner cap with a perimeter collection drain system. The first year of operations and maintenance (O&M) of the containment remedy for the site and the groundwater monitoring program began in 1993. Waters collected in the site perimeter collection drain system are managed by direct discharge to the City of Niagara Falls Wastewater Treatment Facility. The Charles Gibson site is classified as a commercial/small industrial/residential user (CSIRU) and does not require a permit.

Effectiveness of Remedial Program:

Groundwater monitoring indicates there are no increased concentrations of the Site compounds being monitored. Evaluation of the groundwater indicates that the containment remedy is effective. An evaluation of data from the piezometer pairs at the Site indicates that an inward hydraulic gradient has been established in the containment area of the site. Since 2000, concentrations of site compounds being monitored have been undetected or estimated at concentrations below the detection levels in all monitor wells with the exception of one parameter from MW-4 in 2011. The remedial program is achieving the objectives of containing groundwater flow and maintaining groundwater quality standards.

Compliance:

There are no areas of non-compliance.

Recommendations:

The Operation and Maintenance program has shown that the conditions at the site are stable and consistent.

II. SITE OVERVIEW

Site Description and Nature/Extent Prior to Remediation:

The Site as now defined incorporates approximately two acres bounded to the east and north by Cayuga Creek, to the west by Tuscarora Road and to the south by Niagara Mohawk Power Corporation right-of-way and the Auto Zone Incorporated auto parts store and parking lot. The Site cap is slightly mounded with the center of the capped area essentially flat. The capped area is enclosed by a chain link fence. A wooden privacy fence is immediately next to and outside of the chain link fence on portions of the perimeter.

Remediation Chronology:

The Agreement includes a provision in the event that after seven years following the delivery of a Release of Liability (issued December 15, 1992), Olin demonstrates that conditions at the Site are such that the stated frequency or duration of the requirements are no longer necessary to determine whether the remediation is effective, Olin may reduce the

frequency and duration of such monitoring or inspections. Olin has submitted annual reports and has conducted the required monitoring for the duration of the remediation.

III. REMEDY PERFORMANCE, EFFECTIVENESS, AND PROTECTIVENESS

The work performed for the Site during 2015 was reviewed and found to be in accordance with the approved O&M Manual (Revised 2009) as well as the NYSDEC approved reduction in annual sampling dated April 25, 2013. Groundwater monitoring indicates there are no increased concentrations of the Site compounds being monitored. Evaluation of the groundwater data generated during the 2016 monitoring year indicates that the containment remedy is effective. Drawdown in both manholes was effectively maintained at specified levels throughout the year.

IV. IC/EC PLAN

IC/EC Requirements:

Fence is in place around the landfill, effectively restricting access

Clean soil cover is in place on the landfill, restricting infiltration and promoting runoff

A hydraulic control system is in place, effectively controlling groundwater flow direction

Certification:

Attachment A

V. MONITORING PLAN COMPLIANCE REPORT

Components of Site Monitoring Plan:

The operation, maintenance, and monitoring (OM&M) activities to be performed include:

- Performance of a groundwater monitoring program to monitor ground water quality at the Site and to verify the inward hydraulic gradient within the capped area.
- The current groundwater level monitoring system for the Site consists of six piezometers (P-1 through P-6) and two manholes (A and B). Piezometers P-1, P-2 and Manhole A are located in the northeast section of the Site; P-3, P-4, and Manhole B are located in the southeast section; and P-5 and P-6 are located toward the southwest (see Attachment B). All piezometers are constructed of Schedule 80 PVC and are 2 inches in diameter. Each piezometer has been constructed with 5 feet of screen and was screened at the water table.
- The construction of the piezometer screens at the water table allows for continued monitoring of the water table elevation inside and outside of the containment area during periods of water level fluctuations. Piezometers P-1, P-3, and P-5 are located outside of the slurry wall that runs along the perimeter of the Site. Piezometers P-2, P-4, and P-6 are inside the slurry wall and paired opposite the three piezometers inside the slurry wall.
- Water level elevations will be measured quarterly at the Site. Manholes A and B and piezometers P-1 through P-6 will be measured. Water level elevations are measured by

means of an acoustical sounder or electronic water level probe. The sounder or probe is lowered into the manhole or piezometer until it makes contact with the free water surface. The depth from the top of the piezometer riser pipe or manhole rim to the water surface is measured to an accuracy of 0.01 ft. Depth to water measurements are converted into mean sea level elevations by referring to the surveyed elevation of the top of the piezometer riser pipe or manhole rim provided on the Groundwater Elevation Form. The depth to water measurements for Manholes A and B are checked to see that they are not greater than 10.27 feet and 12.41 feet, respectively to ensure that the automatic sump pump is functioning.

Summary and Comparison to Remedial Objectives:

The isolation of groundwater within the capped area has been established and is being maintained by current operation and maintenance activities. Since 2000, concentrations of site compounds being monitored have been undetected or estimated at concentrations below the detection levels in all monitor wells and Manhole B (Table 1 & Table 2) with the one exception mentioned above. The groundwater monitoring and sampling is performed on an annual basis in rotating quarters to help assess seasonal variability with Groundwater Sampling Field Parameters presented in Attachment C.

Currently two locations, immediately upstream and downstream of the Site and the adjacent remediated portion of the Cayuga Creek bed, are sampled once per year, in the Fall or 'low water' period. Beginning with the October 2000 sample event, annual creek sediment samples have been analyzed for BHC isomers only. HCB results are undetected (U) for all sampling events since 1993. Sample collection and analysis of creek sediments are performed annually during the second half of the calendar year. The 2016 data show a decrease in all sediment parameters, both upstream and downstream (Table 3).

The water elevation data collected from the piezometers and ground water wells was used to determine whether an inward hydraulic gradient exists was made by comparing water level measurements within the capped area to those measured outside the capped area. The groundwater elevation data indicate that ground water within the capped area is consistent with historical data. An evaluation of data from the piezometer pairs at the Site indicates that in piezometer pairs P3/P4 and P5/P6, slight outward gradients occurred in the third quarter but returned back to even and inward gradients by the fourth quarter. The third piezometer pair P1/P2 had outward gradients during the third and fourth quarters. Drawdown in both manholes was effectively maintained at specified levels throughout the year with exception of Manhole A during the first quarter. *Table 4* shows the most recent tables for piezometric data demonstrating that inward gradient.

Deficiencies:

None

Recommendations for Changes:

The Operation and Maintenance program has shown that the conditions at the site are stable and consistent.

VI. O&M PLAN COMPLIANCE REPORT

Components of the O&M Plan:

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

Inspections, on at least a quarterly basis, of the Site are conducted to identify any potential problems with physical deterioration of structures, possible malfunctions of the slurry wall or of the perforated CPVC drain system, and to ensure that all site remedial measures components are operating effectively, in accordance with the Settlement Agreement.

The Environmental Inspector conducts the inspections to ensure that the remedial measures at the Site will remain operative in a manner that will minimize the need for extra maintenance. Additionally, the inspections address the safeguards to control, minimize or eliminate threats to human health and the environment. The potential post-remediation threats include the release of HCB, BHC, or contaminated leachate to the groundwater, and/or the creek.

Operation, maintenance, and monitoring activities are conducted to identify proposed changes to the O&M Manual or site procedures which would provide a safer and/or more efficient and cost-effective operation.

Recordkeeping is conducted for each site visit and inspection.

Operation & Monitoring (O&M) Summary:

The groundwater collection system is inspected semi-annually for the buildup of hard or soft scale-like deposits. The inspection is performed concurrently with inspection of the capped area. If a component of the groundwater collection system is found to be damaged or malfunctioning, it is repaired or replaced.

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

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

Evaluation of Remedial Systems:

All components are performing as designed.

O&M deficiencies:

None

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

Compliance with SMP:

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.

Remedy Effectiveness:

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

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

Review of the groundwater elevation data indicate that inward hydraulic gradients were observed between piezometers within the capped area and piezometers outside of the capped area with one previously noted exception. Fluctuations of groundwater elevations indicate that minor outward hydraulic gradients occur, but typically revert back to inward gradients by the next quarter.

Currently two locations, immediately upstream and downstream of the Site and the adjacent remediated portion of the Cayuga Creek bed, are sampled once per year, in the Fall or 'low water' period. A sample is collected downstream of the Site to monitor changes in levels of contaminants in creek sediments, if any. The other sample, immediately upstream of the Site is used to monitor potential upstream contaminant sources or potential 'backwash' effects caused by the changing level of the Niagara River. Beginning with the October 2000 sample event, annual creek sediment samples have been analyzed for BHC isomers only. HCB results are undetected (U) for all sampling events since 1993.

Future Submittals:

Future submittals of this report will be done on an annual basis.

Attachment A

Institutional & Engineering Certification Form



Enclosure 2



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

		Site Details	Box 1	
Sit	te No.	932063	MAYON A	
Sit	e Name Ch	narles Gibson Site		
Cit	e Address: i y/Town: Nia unty: Niagan e Acreage: 1	agara Falls a	ode: 14304	
Re	porting Perio	od: January 31, 2016 to January 31, 2017		
			YES NO	
1.	Is the infor	mation above correct?		
	If NO, inclu	ude handwritten above or on a separate sheet.		
2.	Has some tax map an	or all of the site property been sold, subdivided, merged, or unendment during this Reporting Period?	andergone a	300
3.		been any change of use at the site during this Reporting Period CRR 375-1.11(d))?	od 🗆 🗹	
4.		federal, state, and/or local permits (e.g., building, discharge) t e property during this Reporting Period?	been issued	
		wered YES to questions 2 thru 4, include documentation mentation has been previously submitted with this certifi		-
5.	that docum			
5.	that docum	mentation has been previously submitted with this certifi	cation form.	
5.	that docum	mentation has been previously submitted with this certificurrently undergoing development?	cation form.	
13 (14 (14 (14 (14 (14 (14 (14 (14 (14 (14	that docur	mentation has been previously submitted with this certificurrently undergoing development? ent site use consistent with the use(s) listed below?	cation form.	
6.	Is the site of	mentation has been previously submitted with this certificurrently undergoing development? ent site use consistent with the use(s) listed below?	Box 2 YES NO	
6.	Is the curre Closed Lan	mentation has been previously submitted with this certificurrently undergoing development? ent site use consistent with the use(s) listed below?	Box 2 YES NO	
6.	Is the curre Closed Lan Are all ICs/	mentation has been previously submitted with this certificurrently undergoing development? ent site use consistent with the use(s) listed below? Indfill IECs in place and functioning as designed? HE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and	Box 2 YES NO	
6. 7.	Is the curre Closed Lan Are all ICs/	mentation has been previously submitted with this certificurrently undergoing development? ent site use consistent with the use(s) listed below? Indfill IECs in place and functioning as designed? HE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise	Box 2 YES NO	

SITE NO. 932063

Description of Institutional Controls

<u>Parcel</u>

Owner

161.05-3-7

OLIN CORPORATION

Institutional Control

Monitoring Plan
O&M Plan

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

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

161.05-5-12

OLIN CORPORATION

Monitoring Plan O&M Plan

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

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

Box 4

Box 3

Description of Engineering Controls

<u>Parcel</u>

Engineering Control

161.05-3-7

Cover System

Groundwater Containment Leachate Collection Fencing/Access Control

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

161.05-5-12

Cover System

Groundwater Containment Leachate Collection Fencing/Access Control

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

10	OX	gran.
	LIA.	4.2

Periodic Review Report (PRR) Certification Statements
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 certification;
b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.
YES NO
If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:
 (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;
(b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;
 (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;
 (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and
(e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.
YES NO
IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.
A Corrective Measures Work Plan must be submitted along with this form to address these issues.
Signature of Owner, Remedial Party or Designated Representative Date

*

IC CERTIFICATIONS SITE NO. 932063

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

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

David M. Share print name	at 3855 N. Occes	
The second section of the second seco	erperation	(Owner or Remedial Party)
		N.
for the Site named in the Site Details S	Section of this form.	

IC/EC CERTIFICATIONS

Box 7

Professional Engineer 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.

print name at 3855 N. Ocos St. Cleveland TN 378/2
print business address

am certifying as a Professional Engineer for the Olin Corporation

(Owner or Remedial Party)

Of NEW OF NEW OF SSION

Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification

Stamp

Date (Required for PE)

<u>Attachment B</u>

Site Features Map Figure 1



<u>Attachment C</u>

Field Sampling Forms

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

DATE: 9/8/16	SEMI-ANNUAL SAMPLING EVENT: 319 STANGER
PERSON CALIBRATING METER	S: CHRUS JONES
pH METER USED: MANUFAC MODEL:	TURER: oakton pH tester 3
IDENTIFIC	ATION/CONTROL NUMBER: 1220148
CALIBRAT	ION STANDARDS USED:
	STANDARD 7.00 METER READ: 7.02
	STANDARD 4.00 METER READ: 4.00
METER CALIBRATIO	STANDARD 10.00 METER READ: 10,03
SPECIFIC CONDUCTIVITY METI MANUFAC	TURER:
	35607-10 ATION/CONTROL NUMBER: WD 35607-10 (E-700)
CALIBRAT	ION STANDARDS USED:
	STANDARD 0 READ: O (STANDARD 0 USED: AIR, WATER) STANDARD 8974
METER CALIBRATION	STANDARD 4 1413 1414 N COMMENTS:
THERMOMETER USED:	TYPE: Digital
	MANUFACTURER: Fischer
	IDENTIFICATION/CONTROL NUMBER: 08791
	S: (DOES THERMOMETER TEMPERATURE AGREE WITH SPECIFIC CONDUCTIVITY METER TEMPERATURE?)
	MANUFACTURER: IDENTIFICATION/CONTROL NUMBER:
CALIBRAT	IONS PERFORMED:
OTHER CALIBRATION COMMEN	TTS:

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	CONDITIO	ON: 💪 🌣	
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WATER COLUMN:		(FT.)	LESS STEEL. WELL DEPTHS:
2" DIA. WELL CONST			MW-1R 12.10'
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FIELD PARAMETER MEASUREMENTS.	SPECIFIC		
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3 3 751	799	155	¥
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MEDIA: GROUNDWATER < CREEK SEDIMENT	2 4 •	SAMPLE	TIME: 1025
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OTHER OBSERVATIONS/COMMENTS:	SAMPLED AT 6	25 UN "	3 K/1c
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FIELD PARAMETER MEASUREMENTS:			_	The second second second	
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3					
4				VIT-1110-111	
5					
TOTAL VOLUME PURGED:					
GROUNDWATER OR SEDIMENT SAMPLI	NG DATA:		SAMPLE	DATE:	
MEDIA: GROUNDWATER CREEK SEDIMENT	MATON.		SAMPLE	T <u>IME:</u>	
LOCATION:					Oleman Control of the
SAMPLE METHOD:	alica de la composition della	and the second s	angenera sy venin avi evincial alternay man		
SAMPLING OBSERVATIONS:	MATERIAL PROPERTY AND	/		-	
QC SAMPLES TAKEN: TREEK NOT	MW 4	(LA	hated Afr	I'WII	
OTHER OBSERVATIONS/COMMENTS:	<u> </u>	A.M.			
Note: specific conductivity formula to 25 deg	rees Celcius	: SC(25)=	SC measo {{T-25}(0.		

RECORDED BY: (July)	SAMPLEID: MIL-R . 090816
SAMPLED BY: C Joves	SAMPLING EVENT/DATE:
COMPANY: 563	MONITORING WELL: MANHOLE B
	CONDITION: ()>D
GROUNDWATER PURGE DATA PURGE	DATE: NOTE: ALL GIBSON SITE
DEPTH TO BOTTOM FROM TOP OF RISER:	(FT.) MONITORING WELLS ARE
DEPTH TO WATER FROM TOP OF RISER:	(FT.) 2-INCH DIAMETER STAIN-
WATER COLUMN:	(FT.) LESS STEEL WELL DEPTHS:
2" DIA, WELL CONSTANT:	0.16 MW-1R 12.10'
ONE WELL VOLUME= PURGE METHOD: BOTTOM OF WELL/SILT BUILDUP: PURGE START TIME: STOP T	(GALS) MW-2 12.13' MW-A3 11.95' MW-4 13.75' MW-5 15.28'
PURGE OBSERVATIONS:	
FIELD PARAMETER MEASUREMENTS:	
VOLUME pH umhos/o	CTIVITY TEMP.
	and the state of t
2 3	and the same of th
4	——————————————————————————————————————
5	
TOTAL VOLUME PURGED:	
GROUNDWATER OR SEDIMENT SAMPLING DATA	SAMPLE DATE: 9/8/16
MEDIA: GROUNDWATER	SAMPLE TIME: 1200
LOCATION: MANHOLE B	
SAMPLE METHOD: DEDICTED JUBING/ RE	NUTACTIC PLANT
SAMPLING OBSERVATIONS: CLEAR	
QC SAMPLES TAKEN: SAUGIS FOR BH	Costy. (PEST)
OTHER OBSERVATIONS/COMMENTS: 50000	ED AT 1200 ON 7/8/16
Note: specific conductivity formula to 25 degrees Celci	SC measured us: SC(25)= {{T-25)(0.02)}+1

RECORDED BY: C JUNES	SAN	IPLE ID: FIELD	BLANK - U90816
SAMPLED BY: C . JOHES	SAN	IPLING EVENT/DA	TE: 9/8/16
COMPANY: 5ES	, MOI	NITORING WELL:	
Reserved and the second and the seco	CON	NDITION:	
GROUNDWATER PURGE DAT	A PURGE DATE:		7
`		-	NOTE: ALL GIBSON SITE
DEPTH TO BOTTOM FROM TO	OP OF RISER:	(FT.)	MONITORING WELLS ARE
DEPTH TO WATER FROM TO	P OF RISER:	(FT.)	2-INCH DIAMETER STAIN-
WATER	COLUMN:	(FT.) I	ESS STEEL. WELL DEPTHS:
2" DIA. V	VELL CONSTANT;	0.16 I	VW-1R 12.10'
ONE WE	ELL VOLUME=	(GALS) I	VW-2 12.13'
	•	J	VIW-A3 11.95'
PURGE METHOD:	DUD.		WW-4 13.75' WW-5 15.28'
BOTTOM OF WELL/SILT BUILI PURGE START TIME:	STOP TIME:		15.20
PURGE OBSERVATIONS:		CF	HELD BLANK
	TAMEAUTO.		
FIELD PARAMETER MEASURE			The season of th
WELL	SPECIFIC CONDUCTIVITY	Y TEMP.	
VOLUME pH	umhos/cm)	(C OR F)	NOTES:
1			
2			
3	7		and the company of the CA Market is year CO Annual to State Co. The CA STATE OF THE CASE CO.
4 /			
5			accusations and account of the contract of the
TOTAL VOLUME PURGED:			
			- Olelin
GROUNDWATER OR SEDIMEI	VI SAMPLING DATA:	SAMPLE D	ATE: 1300 9/8/16
MEDIA: GROUNDWATER		SAMPLE TI	ME: 1300
CREEK SEDIMENT	plant and the second se		
LOCATION:			The second secon
SAMPLE METHOD:			many mangan mangan pangangan ganggap di panggap di panggap di panggap da pang
SAMPLING OBSERVATIONS:	- Andrews		
QC SAMPLES TAKEN:			
OTHER OBSERVATIONS/COM	MENTS: Pounto DI	WHER PLAVIDED	By LAS 10TO JAKE
OTHER OBSERVATIONS/OUN	IVIImit V I V	ALLO THE AUTO	William Commission of the Comm
			anticum anticu
Note: specific conductivity formu	la to 25 degrees Celcius: SCC	SC measure 25)= {{T-25}(0.02	
			,,

RECORDED BY: C JONES	SAMPLE ID: US-1-090816
SAMPLED BY: (Janes	SAMPLING EVENT/DATE: Namery 9/8/17
COMPANY: SEVENSON	MONITORING WELL:
(CONDITION:
GROUNDWATER PURGE DATA PUR	RGE DATE: NOTE: ALL GIBSON SITE
DEPTH TO BOTTOM FROM TOP OF RISER:	(FT.) MONITORING WELLS ARE
DEPTH TO WATER FROM TOP OF RISER:	(FT.) 2-INCH DIAMETER STAIN-
WATER COLUMN:	(FT.) LESS STEEL. WELL DEPTHS:
2º DIA. WELL CONSTANT	
ONE WELL VOLUME= PURGE METHOD: BOTTOM OF WELL/SILT BUILDUP:	(GALS) MW-2 12.13' MW-A3 11.95' MW-4 13.75' MW-5 15.28'
PURGE START TIME: STO PURGE OBSERVATIONS:	
FIELD PARAMETER MEASUREMENTS: SPE	ECIFIC
WEIL	NDUCTIVITY TEMP. (C OR F) NOTES:
1	- I was a second
2	
3	
5	
TOTAL VOLUME PURGED:	
GROUNDWATER OR SEDIMENT SAMPLING D	DATA: SAMPLE DATE: 9/8/16
MEDIA: GROUNDWATER CREEK SEDIMENT	SAMPLE TIME: 1330
LOCATION: UPSTREAM OF ORP	
SAMPLE METHOD: Comp From set	TRAP
	DAME SILT
GC SAIVI LEG TAKES	15-1-0916) TRUEN HERE (1345)
OTHER OBSERVATIONS/COMMENTS:	
	SC measured (T-25)(0.02))+1
Note: specific conductivity formula to 25 degrees	Ociolas, 20(20) [[1 20/(0.02)] 1

114001022211	DS-1-090818
SAMPLED BY: CJONES SAMPLING	EVENT/DATE: QWANTY
COMPANY: SEVENSON MONITORI	NG WELL:
CONDITIO	N:
GROUNDWATER PURGE DATA PURGE DATE:	NOTE: ALL GIBSON SITE
DEPTH O BOTTOM TO	(FT.) MONITORING WELLS ARE
DEPTH TO WATER FROM TOP OF RISER:	(FT.) 2-INCH DIAMETER STAIN-
1411121100	(FT.) LESS STEEL. WELL DEPTHS:
2" DIA. WELL CONSTANT: 0.16	
ONE WELL VOLUME=	(GALS) MW-2 12.13' MW-A3 11.95' MW-4 13.75'
PURGE METHOD: BOTTOM OF WELL/SILT BUILDUP: PURGE START TIME: PURGE OBSERVATIONS:	MW-5 15.28'
FIELD PARAMETER MEASUREMENTS: SPECIFIC	
WELL CONDUCTIVITY Umhos/cm	TEMP. (C OR F) NOTES:
1	
2	
3	
5	
5	
TOTAL VOLUME PURGED:	
GROUNDWATER OR SEDIMENT SAMPLING DATA:	SAMPLE DATE: 9 8 16
MEDIA: GROUNDWATERCREEK SEDIMENT	SAMPLETIME: 1400
LOCATION: DOWNSTREAM OF CAP	
Of that 1-2 total total	
SAMPLING OBSERVATIONS: Brow : POLICE SIET	
QC SAMPLES TAKEN:	
OTHER OBSERVATIONS/COMMENTS:	
	SC measured



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

40018

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE / Project Humber 1 48 17 Project Name ANALYSIS REQUESTED (Include Method Number and Container Preservative) CHANGES GIBSON-OLIN Dayo sapre PRESERVATIVE DINSHARE OD DIN, GOM Company/Address Preservative Key 0. NONE 1. HCL DUN CORP NUMBER OF CONTAINERS 2. HNO₃ 3. H₂SO₄ 4. NaOH 3855 NONTA OCOEE ST SUITE 200 . 5. Zn. Acelate 6. MeOH CLEVELAND 37312 . 6. MeOH 7. NaHSO4 423 336 4989 DMSHARE & OUN.COM 8. Other_ Sampler's Printed Name

CHUIS JONES Samplera Stonespre REMARKS/ ALTERNATE DESCRIPTION SAMPLING FOR OFFICE USE ONLY LAB ID CLIENT SAMPLE ID DATE XISTAM L MINS - 090816 GW Li 920 Malman Valunt 1075 4 9180 60 - Man 2 2. MW7. 090816 4. 7 2 0.111 7 1200 2 Mr. B - 090816 11. 7 2 FIEUBLANK 090816 1300: 115-1-290816 1330 1 1 SED Ms-1-090616: 1345 8 W D5-1-070816 1400 1. AND PERSONS . SPECIAL INSTRUCTIONS/COMMENTS TURNAROUND REQUIREMENTS REPORT REQUIREMENTS INVOICE INFORMATION Metals THUEH (SURCHARGES APPLY) I. Results Only Colecci tot A. II. Results + QC Sunensiles 1 day ____ 2 day ____ 3 day REIL, 0003 (LCS, DUP, MS/ASD as required) _ 4 day ____ 5 day NIG EL Results + OC suct Calibration STAVONED Summarlea REQUESTED REPORT DATE IV. Data Validation Report with Raw Data See CAPP STATE WHERE SAMPLES WERE COLLECTED A . 1 . 1 . 1 . 2 Edeta _____ Yee ____ No RECEIVED BY RELINQUISHED BY RELINQUISHED BY. RECEIVED BY RELINQUISHED BY RECEIVED BY Signature Signature Signatora Skyratuse O Printed Harpe S Jones Printed Name In S JUES : Printed Name Printed Name Printed Name Fam JES SE 5: 1400 Dale/Time 19 19 16 800 Date/Time Date/Time Date/Time 5/2/16 9/8/16 16/20

RECORDED BY: (Jones	SAMPLE	D: MM	-A3-090816
SAMPLED BY: C いっとら	ione .	G EVENT/	
COMPANY: SEVENSON	MONITOR	RING WELL	: MW-A3
	CONDITIO	ON: C	Dear
GROUNDWATER PURGE DATA	PURGE DATE:		NOTE: ALL GIBSON SITE
DEPTH TO BOTTOM FROM TOP OF RISE	D.	(FT.)	MONITORING WELLS ARE
			2-INCH DIAMETER STAIN-
DEPTH TO WATER FROM TOP OF RISER		_(FT.)	LESS STEEL. WELL DEPTHS:
WATER COLUMN:	TANET. 0.46	(FT.)	MW-1R 12.10
2" DIA. WELL CONS			Table (1.3%) Michigante
ONE WELL VOLUME PURGE METHOD: BOTTOM OF WELL/SILT BUILDUP: PURGE START TIME: PURGE OBSERVATIONS:	STOP TIME:	(GALS)	MW-A3 11.95' MW-4 13.75' MW-5 15.28'
4.	nstaw on	~	
FIELD PARAMETER MEASUREMENTS:			
WELL VOLUME pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1			
-2	and the second s	MIN CONTRACTOR OF THE PARTY OF	
3			
4		/	
5		1	
TOTAL VOLUME PURGED:			
GROUNDWATER OR SEDIMENT SAMPLI	NG DATA:	SAMPLE	DATE:
MEDIA: GROUNDWATER	_ / \	SAMPLE	TIME:
CREEK SEDIMENT	_/		
LOCATION:			
SAMPLE METHOD:	The Mary and the Control of the Cont		
SAMPLING OBSERVATIONS:			
QC SAMPLES TAKEN:			
OTHER OBSERVATIONS/COMMENTS:	Day no	SAM	RE
Note: specific conductivity formula to 25 deg	rees Celcius: SC(25)=	SC meas {{T-25)(0	

Attachment D

Site Inspection Forms

THIS FORM TO BE USED FOR QUAR	RTERLY AND ALL OTHER SITE INSPECTIONS
DATE: 3/8/16 TIM	
	COMPANY: SEVENSON
INSPECTOR: Jov€3	COMPANY. JEVE-SIN
WEATHER: 50 PARTLY CLOW	PY
REASON FOR INSPECTION (QUART	ERLY OR OTHER): Chartery
	,
OCALDITIONS	U=UNACCEPTABLE A=ACCEPTABLE
GENERAL SITE CONDITIONS: (Note: For general site con-	ditions note existence of bare areas (number,size), cracks,
subsidence (sinking), pond	ed water, stressed vegetation, soil discoloration or seeps, te security, note absence of locks, gates open or damaged,
and rodent burrows. For si missing signs or evidence	of vandalism. Note any other unusual occurences.)
	COMMENTS
ACCESS ROAD	A
COVER VEGETATION	9
TREES	4
LITTER	A ACKED UP SOME DEBIUS
EROSION (CAP)	A
EROSION (BANK)	4
SECURITY:	
FENCE/LOCKS	9
PIEZOMETERS/LOCKS	A
MONITORING WELLS/LOCKS	A
MANHOLES/LIDS/LOCKS	<u> </u>
ELECTRICAL PANEL	A
ADDITIONAL COMMENTS:	
FAST SIDE OF CIAP VER	MOST.
3	
THE RESERVE OF THE RE	

DATE: <u>4/19/2</u>	016	_TIME:	1100	
INSPECTOR:	Walker		COMPANY:	Sevenson
WEATHER:				
REASON FOR IN	ISPECTION (C	UARTERL	Y OR OTHER):	Annual NYSDEC Inspection
				DUE A ACCEPTABLE
GENERAL SITE (Note:	For general si	te condition:	s note existence o	ABLE A=ACCEPTABLE of bare areas (number,size), cracks,
subsic	lence (sinking)	, ponded wa	ater, stressed vege	etation, soil discoloration or seeps, ce of locks, gates open or damaged,
missin	ig signs or evid	ence of var	idalism. Note any	other unusual occurences.)
			COM	MENTS
ACCESS ROAD		<u>A</u>	_	
COVER VEGETA	ATION	<u>A</u>	_	
TREES		A		
LITTER		<u>A</u>		
EROSION (CAP) EROSION (BANK		A	_	
	V)			
SECURITY:				
FENCE/LOCKS		<u>A</u>		
PIEZOMETERS/	LOCKS	<u>A</u>		
MONITORING W	/ELLS/LOCKS	<u>A</u>	<u> </u>	
MANHOLES/LID		<u>A</u>	_	
ELECTRICAL PA	ANEL	<u>A</u>	-	9,944
ADDITIONAL CC	MMENTS:	M. Walke	met on site with I	Brian Sydowski of the NYSDEC
for his annual site	e inspection. W	e walked th	e site and he took	a few pictures. He commented
that the site looke	ed great.			
	and the same of th			

THIS FORM TO BE USED FOR QU	JARTERLY AND ALL OTHER SITE INSPECTIONS
DATE: <u>5-27-16</u> T	TIME: 10 m
INSPECTOR: M. WALKER	COMPANY: SEVENSON THYROTHER MENTAL
WEATHER: SJUNY 78°	F
REASON FOR INSPECTION (QUA	ARTERLY OR OTHER): 2016 Qualter wages from 2016
subsidence (sinking), po and rodent burrows. Fo	U=UNACCEPTABLE A=ACCEPTABLE conditions note existence of bare areas (number,size), cracks, onded water, stressed vegetation, soil discoloration or seeps, or site security, note absence of locks, gates open or damaged, ce of vandalism. Note any other unusual occurences.)
	COMMENTS
ACCESS ROAD	A
COVER VEGETATION	Λ
TREES	A
EROSION (CAP)	<u> </u>
EROSION (BANK)	<u> </u>
SECURITY:	
FENCE/LOCKS	A
PIEZOMETERS/LOCKS	A
MONITORING WELLS/LOCKS	<u>A</u>
MANHOLES/LIDS/LOCKS	
ELECTRICAL PANEL _	
ADDITIONAL COMMENTS: _	51th Looks Good Secure upon
ARRIVAL	
A STATE OF THE STA	
9	

THIS FORM TO BE USED FOR C	JUARTERL	Y AND ALL OT	THER SITE INSPECTIONS	
DATE: 1816	TIME:	0800	hashed and consider a summary.	
INSPECTOR: CLIONES	Type to the second of the seco	COMPANY:	SEVENSON	8
WEATHER: 70° CLOUDY				
REASON FOR INSPECTION (QL	JARTERLY	OR OTHER):	Qhartery	·
subsidence (sinking),	ponded wat For site secu	note existence er, stressed ve irity, note abse	TABLE A=ACCEPTABLE of bare areas (number,size), cracks, getation, soll discoloration or seeps, nce of locks, gates open or damaged, y other unusual occurences.)	
		CC	OMMENTS	
ACCESS ROAD COVER VEGETATION	A			
TREES	<u>A</u>	•		•
LITTER	<u>A</u>	-		·
EROSION (CAP)	A			•
EROSION (BANK)	A			•
SECURITY:				
FENCE/LOCKS	A			en.
PIEZOMETERS/LOCKS	A			<u>.</u>
MONITORING WELLS/LOCKS	Α			••
MANHOLES/LIDS/LOCKS	A	_		
ELECTRICAL PANEL	A			<u>.</u>
ADDITIONAL COMMENTS:				
				-
	L among the second			one .
				<u> </u>
	s Bornell Room			
				-

THIS FORM TO BE USED FOR			THER SITE INSPECTIONS
DATE: 11/11/16	_TIME:	<u> 93</u> 3	
INSPECTOR: C GNEC		_COMPANY:_	SEVENSON
WEATHER: 45 JUNEY			
REASON FOR INSPECTION (Q	JARTERLY	OR OTHER <u>):</u>	Quantency 4th
subsidence (sinking), and rodent burrows.	ponded wa For site sea	s note existence ater, stressed ve curity, note abse	PTABLE A=ACCEPTABLE of bare areas (number,size), cracks, egetation, soil discoloration or seeps, ence of locks, gates open or damaged, ny other unusual occurences.)
		C	OMMENTS
ACCESS ROAD COVER VEGETATION TREES LITTER EROSION (CAP) EROSION (BANK) SECURITY: FENCE/LOCKS PIEZOMETERS/LOCKS MONITORING WELLS/LOCKS MANHOLES/LIDS/LOCKS	A A A A A		
ELECTRICAL PANEL	A	200404	
ADDITIONAL COMMENTS:	11		
- PIENED UP MINIMAL TR	nsH		
- TOOK DOWN A CHIPLE	DEAD TRE	e Limbs	
	Market Control of the	was and the same of the same o	
	ži.		
,			

TABLE 1 CHARLES GIBSON SITE NIAGARA FALLS, NEW YORK

ANALYTICAL SUMMARY GROUND WATER SAMPLING 2010-2016

MONITOR WELL: MW-A3

		2010	2	011		2012	2	013		2014	2	015		2016
Parameter	April	September	April	September	April	September	May	September	April	September	May	September	May	September
Alpha-BHC	NR	.034J	.053U	NR I	NR	0.050U	0.047U	NR	NR	0.047U	0.047U	NR	NR	-
Beta-BHC	NR	.050U	.053U	NR I	NR	0.050U	0.047U	NR	NR	0.047U	0.047U	NR	NR	-
	NR	.029J	.053U	NR	NR	0.050U	0.047U	NR	NR	0.047U	0.047U	NR	NR	
Gamma-BHC					1100000					0.047U	0.047U	NR	NR	
Delta-BHC	NR	.050U	.053U	NR	NR	0.050U	0.047U	NR	NR					
Hexachlorobenzene	NR	NR	NR	NR	NR	20U	NR	NR	NR	9.4U	NR	NR	NR	-

MONITOR WELL: MW-4

	1	2010	2	2011		2012	2	013	- 2	2014	2	015		2016
Parameter	April	September	April	September	April	September	May	September	April	September	May	September	May	September
Alpha-BHC	NR	.49U	0.076	NR	NR	0.047U	0.047U	NR	NR	0.047U	0.047U	NR	NR	.056U
Beta-BHC	NR	.49U	.048U	NR	NR	0.047U	0.047U	NR I	NR	0.047U	0.047U	NR	NR	.056U
Gamma-BHC	NR	.49U	.0247J	NR	NR	0.047U	0.047U	NR	NR	0.047U	0.047U	NR	NR	.056U
Delta-BHC	NR	.49U	.048U	NR	NR	0.047U	0.047U	NR	NR	0.047U	0.047U	NR	NR	.056U
Hexachlorobenzene	NR	4.9U	NR	NR	NR	9.4U	NR	NR	NR	9.4U	NR	NR	NR	10U

MONITOR WELL: MW-5

		2010	2	2011		2012	2	013	2	2014	2	015		2016
Parameter	April	September	April	September	April	September	May	September	April	September	May	September	May	September
Alpha-BHC	NR	.030J	.047U	NR NR	NR	0.047U	0.047U	NR	NR	0.050U	0.047U	NR	NR	.056U
Beta-BHC	NR	.049U	.047U	NR	NR	0.047U	0.047U	NR	NR	0.050U	0.047U	NR	NR	.056U
Gamma-BHC	NR	.025J	.017J	NR	NR	0.047U	0.047U	NR	NR	0.050U	0.047U	NR	NR	.056U
Delta-BHC	NR	.049U	.047U	NR	NR	0.047U	0.047U	NR	NR	0.050U	0.047U	NR	NR	.056U
Hexachlorobenzene	NR	4.7U	NR	NR	NR	9.4U	NR	NR	NR	9.4U	NR	NR NR	NR	10U

Notes: Concentration in ug/l

- insufficient sample

U Undetected

J Estimated value

NR Not required

Table 2 **Annual Manhole B Sampling**

CHARLES GIBSON SITE NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY ANNUAL LEACHATE SAMPLING

September 09, 2016

	MANHOLE B (MHB)
PARAMETER	
alpha-BHC	0.047U
beta-BHC	0.047U
delta-BHC	0.047U
gamma-BHC	0.047U
Hexachlorobenzene .	NR

Notes:

U

Undetected

J

Estimated value

NR

Not Required

Concentration in ug/l

Field blank was non-detect for all parameters of interest. Data has been validated and judged acceptable as qualified.

Next hexachlorobenzene (HCB) sampling scheduled for fall 2020

TABLE 3 Charles Gibson Site Niagara Falls, New York

ANALYTICAL SUMMARY

Annual Cayuga Creek Sediment Sampling 2006 - 2016

UPSTREAM

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Parameter	September										
Alpha- BHC	13	40	77	240	94	200J	17	170J	120	NS	9.7
Beta- BHC	34	4.8	69	260	97	120J	48	190J	280	NS	25
Gamma- BHC	13	4.6	17J	18J	33J	190U	5.5U	28U	49U	NS	5.6U
Delta- BHC	3.9J	3.7	26U	39J	52J	140J	23	28U	49U	NS	19

DOWNSTREAM

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Parameter	September										
Alpha- BHC	8.3	NS	5200	210	53J	230J	9.8	29U	55	52U	7
Beta- BHC	22	NS	1000	73	62J	130J	37	89	100	76	18
Gamma- BHC	11	NS	66J	60U	63U	220U	5.9U	29U	52U	52U	4.9U
Delta- BHC	3.7J	NS	82J	32	56J	170J	18	29U	52U	52U	15

Notes:

Concentration in microgram per kilogram (ug/kg)

U Not Detected

J Estimated value

NS No sample in trap

Table 4 2016 Quarterly Groundwater Elevations Summary

Piezometer Pair	3/08/2016	Inward gradient	5/27/2016	Inward gradient	9/8/2016	Inward gradient	11/11/2016	Inward gradient
P1 outside P2 inside	565.08 565.67	Outward	565.87 565.56	Inward	564.27 565.37	Outward	563.28 565.11	Outward
P3 outside P4 inside	570.39 565.46	Inward	567.24 565.60	Inward	563.95 565.33	Outward	565.17 565.17	Even
P5 outside P6 inside	569.34 567.67	Inward	568.60 567.88	Inward	566.18 566.53	Outward	565.44 566.13	Inward
		Below 565 ft msl		Below 565 ft msl		Below 565 ft msl		Below 565 ft msl
Manhole A Manhole B	563.51 563.59	Yes Yes	563.94 563.48	Yes Yes	563.32 563.49	Yes Yes	563.36 563.39	Yes Yes

Notes: Measurement units are in feet above MSL.

Piezometers P1, P3, P5 are outside the slurry wall.
Piezometers P2, P4, P6 are located within the containment area.

NA - Not Available

Manhole monitoring:

Maintain water level below 565 feet to prevent hydrostatic pressure buildup under concrete slab.

• Pump Manhole B as required to maintain an inward gradient.

Table 5 Olin Corp. Gibson Site Discharge Volumes

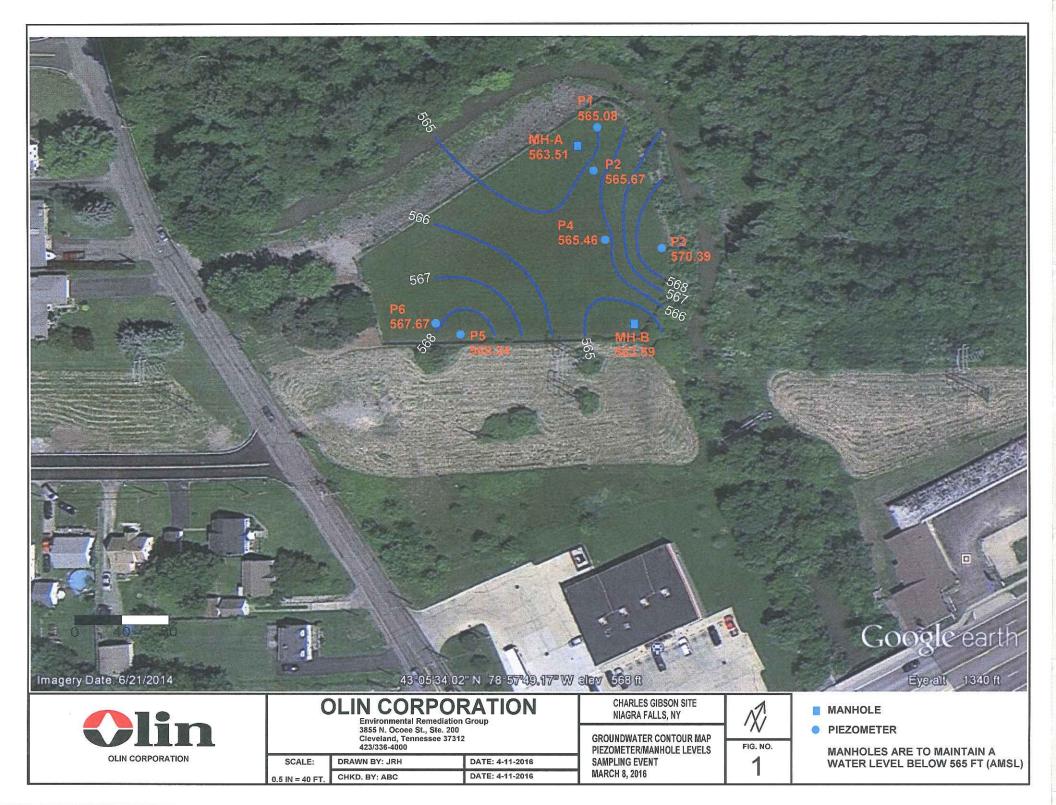
Summary of Yearly Discharge Volumes

Date	Volume (gallons)
2006	52,891
2007	22,958
2008	40,223
2009	40,187
2010	28,118
2011	40,625
2012	29,623
2013	46,766
2014	33,564
2015	18,537
2016	28,172
TOTALS	381,664

Monthly Discharge Volumes 2016

Month	Volume (gallons)
Jan	0
Feb	2,895
Mar	8,154
Apr	6,231
May	6,435
Jun	3,134
Jul	0
Aug	0
Sep	0
Oct	1,323
Nov .	0
Dec	0
Total	28,172

RISER ELEVATION DEPTH TO WATER WATER ELEVATION	DATE: 38	116	_TIME:	0800	and a figure of the same and a same and a same as	
RISER ELEVATION (INSIDE CASING) (FT.) P-1 572.72 T.64 565.08 P-2 574.89 P-3 574.16 P-4 576.14 P-5 575.05 P-6 578.28 MANHOLE A 575.22 MANHOLE B 577.34 MANHOLE B 577.	INSPECTOR: Jon	15.3	COMPANY	Seve	NSON	was a distribution of the state
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P-4 576.14 10.68 565.46 P-5 575.05 5.71 569.34 P-6 578.28 10.61 367.67 MANHOLE A 575.22 11.71 563.59 (Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevation in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth twater distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A. (Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)	P-2	574.89	9.22		545.67	
P-6 578.28 10.61 367.67 MANHOLE A 575.22 11.71 563.59 (Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevation in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth to water distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A. (Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)	P-3	574.16	3.17		570.39	-
P-6 578.28 10.61 367.67 MANHOLE A 575.22 11.71 563.59 MANHOLE B 577.34 13.75 563.59 (Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevation in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth twater distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A. (Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)	P-4	576.14	83.61		565.46	
MANHOLE A 575.22 11.71 563.59 MANHOLE B 577.34 13.75 563.59 (Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevation in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth twater distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A. (Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)	P-5	575.05	5.71		569.34	and the second s
(Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevation in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth twater distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A. (Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)	P-6	578.28	10.61		367.67	Control Control Control
(Note: Manhole A empties into Manhole B by gravity feed and Manhole B is pumped automatically to the Town of Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevation in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth t water distance from the manhole rim should not be <u>less</u> than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A. (Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)		F7F 00	12 7		F1 7 5ml	
Niagara Tuscarora Road sanitary sewer line by a float controlled sump pump which maintains groundwater elevation in Manhole B (and by extension Manhole A) below an elevation of 565 ft. above mean sea level. Therefore, Depth t water distance from the manhole rim should not be less than 12.41 ft. at Manhole B and 10.22 ft. at Manhole A. (Note: riser elevations (re)surveyed September, 1999 by Wendel Surveyors)	MANHOLE A	575.22			362.31	Annual and the forest annual and the second
	MANHOLE B	577.34	13.75	and the second	563 59	
	MANHOLE B (Note: Manhole A en Niagara Tuscarora R in Manhole B (and by water distance from (Note: riser elevation	577.34 Inpties into Manhole B by Road sanitary sewer line y extension Manhole A) the manhole rim should is (re)surveyed Septeml	y gravity feed by a float col below an ele- not be <u>less</u> ther, 1999 by	ntrolled su vation of 5 nan 12.41	nole B is pumped amp pump which notes ft. above mean ft. at Manhole B a	naintains groundwater elevatio n sea level. Therefore, Depth t
	MANHOLE B (Note: Manhole A en Niagara Tuscarora R in Manhole B (and by water distance from (Note: riser elevation	577.34 Inpties into Manhole B by Road sanitary sewer line y extension Manhole A) the manhole rim should is (re)surveyed Septeml	y gravity feed by a float col below an ele- not be <u>less</u> ther, 1999 by	ntrolled su vation of 5 nan 12.41	nole B is pumped amp pump which notes ft. above mean ft. at Manhole B a	naintains groundwater elevatio n sea level. Therefore, Depth t
	MANHOLE B (Note: Manhole A en Niagara Tuscarora R in Manhole B (and by water distance from (Note: riser elevation	577.34 Inpties into Manhole B by Road sanitary sewer line y extension Manhole A) the manhole rim should is (re)surveyed Septeml	y gravity feed by a float col below an ele- not be <u>less</u> ther, 1999 by	ntrolled su vation of 5 nan 12.41	nole B is pumped amp pump which notes ft. above mean ft. at Manhole B a	naintains groundwater elevatio n sea level. Therefore, Depth t
	MANHOLE B (Note: Manhole A en Niagara Tuscarora R in Manhole B (and by water distance from (Note: riser elevation	577.34 Inpties into Manhole B by Road sanitary sewer line y extension Manhole A) the manhole rim should is (re)surveyed Septeml	y gravity feed by a float col below an ele- not be <u>less</u> ther, 1999 by	ntrolled su vation of 5 nan 12.41	nole B is pumped amp pump which notes ft. above mean ft. at Manhole B a	naintains groundwater elevatio n sea level. Therefore, Depth t



THIS FORM TO WATER ELEVAT	BE USED FOR ALL QUARTION MEASURING EVENT	TERLY PIEZO S	OMETER	AND MANHOLE	GROUND-	
DATE:5	-27-16	_TIME: _	0 - Am			
INSPECTOR: 🖊	1 WALKER	_COMPANY:	Sevi	ENSON		
WEATHER: 5	JULY 78°F					
PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO (FT.)	WATER	WATER ELEVATION	COMMENTS	
P-1	572.72	6.85		565.87	OK	
P-2	574.89	9.33		565.56	G/C	
P-3	574.16	6.92		567.24	ok	
P-4	576.14	1054		565.60	ok	
P-5	575.05	6.45		568.60	ok	
P-6	578.28	10.40		567.88	-ok	
MANHOLE A	575.22	11.82		563.94	ok	
MANHOLE B	577.34	13.86		563.48	ok	
Niagara Tuscard in Manhole B (ar water distance fr	A empties into Manhole B by ora Road sanitary sewer line nd by extension Manhole A) rom the manhole rim should ations (re)surveyed Septem	by a float cor below an elev not be <u>less</u> th	ntrolled su vation of 5 nan 12.41	mp pump which 65 ft. above mea ft. at Manhole B	maintains groundwat an sea level. Therefo	er elevations ore, Depth to
ADDITIONAL CO	OMMENTS/OBSERVATION	is: Jits	Looke	gard.	All were caps	
		DAVA GED		· ·		
Gress o	no CAP (court) is	12-15	high	tomus	looks good.	
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		Management (All India and All	at a control of the c		- CONTINUE AND ADDRESS OF THE PARTY OF THE P	
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DATE:	ON MEASURING EVENTS		008	
	HIMS YOWES	_COMPANY:	SEVENSON	
WEATHER:	10° CLOUBY	A CONTRACTOR ASSESSMENT ASSESSMEN		
PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WA	ATER WATER ELEVATION	COMMENTS
P-1	572.72	8.45	56427	
2-2	574.89	9.52	565.37	
P-3	574.16	10.21	563.95	Mary San
D-4	576.14	18.01	565.33	programme in the contract of
- 5	575.05	8.87	566.18	had a state of the
P-6	578.28	11.75	566,53	-
MANHOLE A	575.22	11.90	563.32	
MANHOLE B	577.34	13.85	563.49	
Niagara Tuscarora in Manhole B (and	a Road sanitary sewer line by extension Manhole A) m the manhole rim should ons (re)surveyed Septem	by a float contro below an elevati not be <u>less</u> than ber, 1999 by We	on of 565 ft. above mean 12.41 ft. at Manhole B a	nutomatically to the Town of aintains groundwater elevations sea level. Therefore, Depth to and 10.22 ft. at Manhole A.
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ADDITIONAL COI	VIIVIENTS/ODSEITVATION			
ADDITIONAL COI	VINIENTS/ODSERVATION			
ADDITIONAL COI	VIIVIENTS/ODSERVATION			



DATE:	116	TIME:	0930		
		COMPANY:	SE	ENSEN	
	JONE S				
WEATHER: 45	ZUNY	ALL STATE OF THE S			A CONTRACTOR OF THE CONTRACTOR
PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO W (FT.)	ATER	WATER ELEVATION	COMMENTS
P-1	572.72	9.44		563.28	George Constitution
P-2	574.89	9.78		565.11	
P-3	574.16	8.79		565.17	and the state of t
P-4	576.14	10.97		565.17	-
P-5	575.05	9.61		565.44	
P-6	578.28	12.15		566.13	
	575.22	11.86		563.36	
MANHOLE A	313.22	11.40		363.30	
MANHOLE B	577.34	13,95		563.39	
MANHOLE B (Note: Manhole A e Niagara Tuscarora in Manhole B (and I water distance from (Note: riser elevatio	577.34 Empties into Manhole B b Road sanitary sewer line	by gravity feed are by a float control below an eleval not be less that her, 1999 by We	tion of t n 12.41	hole B is pumped imp pump which it 655 ft. above mea ft. at Manhole B	automatically to the Town of maintains groundwater elevation sea level. Therefore, Depthand 10.22 ft. at Manhole A.
MANHOLE B (Note: Manhole A e Niagara Tuscarora in Manhole B (and I water distance from (Note: riser elevation	577.34 Empties into Manhole B b Road sanitary sewer line by extension Manhole A) In the manhole rim should ons (re)surveyed Septem	by gravity feed are by a float control below an eleval not be less that her, 1999 by We	tion of t n 12.41	hole B is pumped imp pump which it 655 ft. above mea ft. at Manhole B	n sea level. Therefore, Depth
MANHOLE B (Note: Manhole A e Niagara Tuscarora in Manhole B (and I water distance from (Note: riser elevation	577.34 Empties into Manhole B b Road sanitary sewer line by extension Manhole A) In the manhole rim should ons (re)surveyed Septem	by gravity feed are by a float control below an eleval not be less that her, 1999 by We	tion of t n 12.41	hole B is pumped imp pump which it 655 ft. above mea ft. at Manhole B	n sea level. Therefore, Depth
MANHOLE B (Note: Manhole A e Niagara Tuscarora in Manhole B (and I water distance from (Note: riser elevation	577.34 Empties into Manhole B b Road sanitary sewer line by extension Manhole A) In the manhole rim should ons (re)surveyed Septem	by gravity feed are by a float control below an eleval not be less that her, 1999 by We	tion of t n 12.41	hole B is pumped imp pump which it 655 ft. above mea ft. at Manhole B	n sea level. Therefore, Depth
MANHOLE B (Note: Manhole A e Niagara Tuscarora in Manhole B (and I water distance from (Note: riser elevation	577.34 Empties into Manhole B b Road sanitary sewer line by extension Manhole A) In the manhole rim should ons (re)surveyed Septem	by gravity feed are by a float control below an eleval not be less that her, 1999 by We	tion of t n 12.41	hole B is pumped imp pump which it 655 ft. above mea ft. at Manhole B	n sea level. Therefore, Depth
MANHOLE B (Note: Manhole A e Niagara Tuscarora in Manhole B (and I water distance from (Note: riser elevation	577.34 Empties into Manhole B b Road sanitary sewer line by extension Manhole A) In the manhole rim should ons (re)surveyed Septem	by gravity feed are by a float control below an eleval not be less that her, 1999 by We	tion of t n 12.41	hole B is pumped imp pump which it 655 ft. above mea ft. at Manhole B	n sea level. Therefore, Depth





Service Request No:R1609580

Mr. Dave Share Olin Corporation 3855 North Ocoee Street Suite 200 Cleveland, TN 37312

Laboratory Results for: Gibson Niagara Falls

Dear Mr. Share.

Enclosed are the results of the sample(s) submitted to our laboratory September 09, 2016 For your reference, these analyses have been assigned our service request number R1609580.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, 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) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

Janansag

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger **Project Manager**

CC: Curt Richards



ALS Environmental ALS Group USA, Corp 1565 Jefferson Road, Building 300, Suite 360 Rochester, NY 14623

T: +1 585 288 5380 F: +1 585 288 8475 www.alsglobal.com

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



Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Sample Matrix: Soil

Service Request:R1609580 Date Received:9/9/16

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV, validation deliverables including all summary forms and associated raw data. Analytical procedures performed by the lab are validated in accordance with NELAC standards. Any parameters that are not included in the lab's NELAC accreditation are identified on a "Non-Certified Analytes" report in the Miscellaneous Forms Section of this report. Individual analytical results requiring further explanation are flagged with qualifiers and/or discussed below. The flags are explained in the Report Qualifiers and Definitions page in the Miscellaneous Forms section of this report.

Sample Receipt

Five water and three soil samples were received for analysis at ALS Environmental on 09/09/2016. Any discrepancies noted upon initial sample inspection are noted on the cooler receipt and preservation form included in this data package. The samples were received in good condition and consistent with the accompanying chain of custody form. Samples are refrigerated at ≤6°C upon receipt at the lab except for aqueous samples designated for metals analyses, which are stored at room temperature.

Semi-Volatile Organic Analyses:

Method 8081, 09/26/16: 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.

General Chemistry Analyses:

No significant anomalies were noted with this analysis.

Janansty

Date 2/20/2017



SAMPLE DETECTION SUMMARY

CLIENT ID: US-1-090816	Lab ID: R1609580-006						
Analyte	Results	Flag	MDL	PQL	Units	Method	
Total Solids	30.4				Percent	ALS SOP	
alpha-BHC	9.7		2.8	5.6	ug/Kg	8081B	
beta-BHC	25		2.8	5.6	ug/Kg	8081B	
delta-BHC	19		2.8	5.6	ug/Kg	8081B	
CLIENT ID: MS-1-090816	Lab ID: R1	609580-	007				
Analyte	Results	Flag	MDL	PQL	Units	Method	
Total Solids	35.0	******			Percent	ALS SOP	
alpha-BHC	8.8		2.4	4.9	ug/Kg	8081B	
beta-BHC	21		2.4	4.9	ug/Kg	8081B	
delta-BHC	16		2.4	4.9	ug/Kg	8081B	
CLIENT ID: DS-1-090816	Lab ID: R	609580	-008				
Analyte	Results	Flag	MDL	PQL	Units	Method	
Total Solids	34.7				Percent	ALS SOP	
alpha-BHC	7.0		2.5	4.9	ug/Kg	8081B	
beta-BHC	18		2.5	4.9	ug/Kg	8081B	
delta-BHC	15		2.5	4.9	ug/Kg	8081B	



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

SA PARAMETER | BODE PRAFFICH

Service Request:R1609580

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

SAMPLE CROSS-REFERENCE

SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
R1609580-001	MW5-090816	9/8/2016	0920
R1609580-002	MW4-090816	9/8/2016	1025
R1609580-003	MW7-090816	9/8/2016	1110
R1609580-004	MH-B-090816	9/8/2016	1200
R1609580-005	FIELDBLANK-090816	9/8/2016	1300
R1609580-006	US-1-090816	9/8/2016	1330
R1609580-007	MS-1-090816	9/8/2016	1345
R1609580-008	DS-1-090816	9/8/2016	1400



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) PA

Project Name	Project Nurr	19817		9			1	NALYS	IS RE	QUES'	TED (nclude	Metho	od Nui	nbor a
CHANLES GIBSON-OLIN Project Manager	Report CC				PRES	SERVATIV	VE					***************************************			T
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Company/Address OUN CORP					ERS		//	/ /							/
3855 NONTH OC	PEE '	ST SU	HE ZOT	>	NUMBER OF CONTAINERS	/	/ /		, PCB, 600R		/ 500			/ ,	Ι,
CLEVELAVO TR	373				OF CC	\$50,000 \$100	00 P	/ &/	/ /	/ /	Parts be	Comments below	' /		
Phone # 423 336 4989	Email Dry	SHANE E	OPIN CO	~	JMBER	10 50 50 50 50 50 50 50 50 50 50 50 50 50	10° 8270° 50' 50' 50' 50' 50' 50' 50' 50' 50' 50'	8021 801/602 PESTICION		7415	In com	Com			
Sampler's Signature	Sampler's	Printed Name	enes		ž	\8.8.\	ઉજ્જે\છ	8 4	100	E ST	I SE	_			
	OFFICE USE NLY LAB ID	SAMF DATE	LING TIME	MATRIX											
MW5-090816		9/8/16	92.0	GW	8	(4	4							
MN4-090816			1055		14		2	2							
MW7-090816			1110		1		2	2						0.1	
MK-B-090816	***************************************		1500		3			2							
FIEDBLANK- OFTOBIO			1300	W	4		2	2	<u> </u>	_					
15-1-09886			1330	SED	1			1		ļ					
ms-1-292816			1345					1							
DS-1-090816		W_	1400	V	4			1				-			
	112, 112 11				_					_					-
					1			-		-	-	-			
		1									1	<u></u>			
SPECIAL INSTRUCTIONS/COMMENTS							TURN	INUORA	REQU	JIREM	ENTS		REP	ORT R	EQUIRE
Metals							R	JSH (SUF	CHARG	ES APPL	LY)	-	I. Res	ults Only	1
3 COLEKS TO	T						1	day	.2 day _	3 da	ay	22			C Sunima S/MSE as
							4	day	.5 day				Approvace.		
Œ.							Si	AND	NIT	>		-	III. Re Sumn		QC and Ca
							REQUES"	TED REP	ORT D	ATE			IV. Da	ta Valida	ation Rapo
									-						
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STATE WHERE SAMPLES WERE COLLECT			1 0	INOUIGUE) BV		7	BEC	PIVĘĆ E	BY A		+		- American	UISHED
RELINQUISHED BY	RECEIV	ED BY	, and	ELINQUISHED	, 61		A)-{	M	1					
Signature Signatu	ear		Signature -	\searrow	MINISTER 21		Signature	DIM	7	Whi	6		ature	_ 0	R16
Printed Name	Name of	NES	Printed Name	ing In	ES		Printed Nar	5				Prin	led Name	. II	Ibson Via
Firm	JES		COMMUNICATION FOR TARREST PAGE	- S			Firm Q/	7.0	14	w		Firm	1		
Date/Time O P V 11 35 Date/Time	le hard		Date/Tirne <	19/16	1	a	Date/Time	-	-			lo.	/Time		

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

Page 11 of 687

Cooler Receipt and Preservation Check Fori

R1609580

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ration gara Falls

Project/Clien	t_Seven	Son/C	OLIN			lumber_			11.55-41.55-41.454.6			
Cooler received	on_ 9/9/11	Ü	1	py:_Dlin_	C				FEDEX VE			33 32-3
	ody seals on o		of cooler	? & 1	1 5				ave required h			N MAD
2 Custody p	apers properly	comp	leted (ink	k, signed)? (T)	V S	b Did	VOA via	ls, Alk,or	Sulfide have:	and the second second		N QAD
				unbroken)? Y;]		Whe	re did the	e bottles o	originate?	ALS7R		IENT
And the self-filter control of the second				present? 🌣 1		Soil	VOA rec	ceived as:	Bulk	Encore	5035set	MA
			99/1			ID	· 1045	- IR#6	From	: Temp E	Blank Sa	m ple Böttle
8. Temperature		Date				In Chapman				1		
Observed Ten			4.36	3:4.		3:5 <u>1 </u>	-71	170				
Correction Fa			-Z10'	3:4'	+	115		וני				
Corrected Ter				Ø N	7	V N		N	Y N	Y	N	YN
Within 0-6°C If<0°C, were			N Y N	YN		N	Y	N	YN	Y	N	YN
				e condition:		A company of the control of			y Packed	Sam	e Day Rul	е
If out of I c	emperature, i	n San	urjec.	Standing	Approv	al Clien	nt aware	at drop-o	off Client no	otified by:		
					by s	-(on (9/1/14	at ;	434		
Ail samples l	neld in storage	locati	on:		by S	, No.	- on -	17 1 10	at			
5035 sample	s placed in sto	rage ic	oalion,							v stated 13 lister 12 list		PATRICULAR PARTIES DE LA COMPANSION DE L
ENERGHANGE.	POTENTIAL PERSONAL PROPERTY OF THE PERSONAL PR	SECOND (O IO III a	Ti 7	140	1	y:_ฮใน	J		Annual Miles and Colored		
Cooler Bre	akdown: Date	e tole o	omplate (Time: Z		etc.)?	y	וא	ES NO			
	d all bottle lal	aucis c	d tags agr	ee with custody p	apers?	,/.			ES NO			
3 V	ere correct co	ntainer	s used for	the tests indicate	d?				ÉS NO		MT	2
4. V	ere 5035 vials	accept	table (no	extra labels, not le	aking)	1			ES NO		M	
5. A	ir Samples: C	assettes	/ Tubes	Intact	Cani	sters Press	urized	1	edlar® Bags l	miated	ŒVI2	rs.
	y discrepanci		No L	ot Received ·	Exp	Sample	ID T	Vol.	Lot Added	Fir	**************************************	es=All
pΗ	Reagent	Yes	NO L	of Received	LAP	Dampie		Added		pΗ	sa	mples OK
≥12	NaOH										N	=Samples
≤2	HNO₃											ere
≤2	H ₂ SO ₄											eserved at
<4	NaHSO ₄				-							ne lab as
Residual	For CN			+, contact PM to dd Na ₂ S ₂ O ₃ (CN),							30808	sted
Chlorine	Phenol			scorbic (phenol).	1							S // 28
(-)	and 522		<u> </u>	Scototo (prisitor).	-						Pl	M OK to
	Na ₂ S ₂ O ₃	7	-			**Not to	he test	ed before	e analysis – pl	I tested at	nd A	djust:
	ZnAcetate	**	**			recorded	by VO	As on a	separate work	sheet		
	HCl .	F-4		~ 	1	1 1000.00						
Dottle lot	numbers: ()(13ib.	- IBIT, C	196-1305								
Other Cor	nments:			2 1 1 7 1 1 1 1 1 1 1 1 1 1			X HUH					
Onto Co.	111101115.					£					CLRES	BULK
											DO	FLDT
												1
							Q.				HPROD	HGFB
							¥					LL3541
							ů.				HPROD HTR PH	

PC Secondary Review: My 9/11/1/
P:\INTRANET\QAQC\Forms Controlled\Cooler Receipt r12.doc

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

8/11/16

REV

ALS

ALS Group USA, Corp. dba ALS Environmental

Internal Chain of Custody Report

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Service Request: R1609580

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
R1609580-001.01	1114011000	A CONTRACTOR OF THE PARTY OF TH			
		0/0/0016	2142	SMO / GLAFORCE	
and the second s	and the second s	9/9/2016	2142	SWO / GLAT ORCL	
R1609580-001.02					
		9/9/2016	2142	SMO / GLAFORCE	1/16/2017
		9/12/2016	1259	In Lab / MPEDRO	1/16/2017
R1609580-001.03	WILLIAM TO THE TAXABLE PARTY OF	And and a state of the state of	personal section of the section of t		
		9/9/2016	2142	SMO / GLAFORCE	
R1609580-001.04		The second secon			
		9/9/2016	2142	SMO / GLAFORCE	1/16/2017
		9/12/2016	1259	In Lab / MPEDRO	1/16/2017
R1609580-001.05					
		9/9/2016	2142	SMO / GLAFORCE	
R1609580-001.06			and the state of t		
		9/9/2016	2142	SMO / GLAFORCE	
R1609580-001.07					
	8270D	9/9/2016	2142	SMO / GLAFORCE	1 1 4 -1 11
R1609580-001.08	MANAGE TO SERVICE THE SERVICE				22021 2 0011
	8081B	9/9/2016	2142	SMO / GLAFORCE	
R1609580-002.01	Asidian'	allowards and			The state of the s
	8081B	9/9/2016	2142	SMO / GLAFORCE	
R1609580-002.02					
		9/9/2016	2142	SMO / GLAFORCE	1/16/2017
		9/12/2016	1300	In Lab / MPEDRO	1/16/2017
R1609580-002.03		- Andrew - 12			A AMAZON MARION
www.comensensensensensensensensensensensensense	8270D	01010017	2142	SMO / GLAFORCE	
- Control - Cont		9/9/2016	2142	SIMO / GDATORCE	
R1609580-002.04					
		9/9/2016	2142	SMO / GLAFORCE	

ALS Group USA, Corp. dba ALS Environmental

Internal Chain of Custody Report

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Service Request: R1609580

ottle ID	Methods	Date	Time	Sample Location / User	Disposed On
100980		9/9/2016	2142	SMO / GLAFORCE	
1 (00=00 003 03		7/7/2010	2112		
11609580-003.02					
		9/9/2016	2142	SMO / GLAFORCE	1/16/2017
		9/12/2016	1300	In Lab / MPEDRO	1/16/2017
R1609580-003.03	AND THE RESERVE OF THE PERSON				
	8081B	01010016	2142	SMO / GLAFORCE	
2 20		9/9/2016	2142	SMO / GLAPORCE	
R1609580-003.04	00500				
	8270D	9/9/2016	2142	SMO / GLAFORCE	
R1609580-004.01	- According to the second seco				NO AND
X10UYJQU-UU4.U1					
		9/9/2016	2142	SMO / GLAFORCE	
R1609580-004.02	all was specified to the same of the same	AKRIV.			
	8081B		2212	CMO / CL AFORCE	
		9/9/2016	2142	SMO / GLAFORCE	
R1609580-005.01					
		9/9/2016	2142	SMO / GLAFORCE	
		9/9/2010	2172		executive Management of the Control
R1609580-005.02					
		9/9/2016	2142	SMO/GLAFORCE	
R1609580-005.03		a de la composition della comp	SANTAN SANTAN		ANALY TO A TOTAL OF THE STATE O
K1009380-003.03	8270D				
		9/9/2016	2142	SMO / GLAFORCE	
R1609580-005.04	MASSACHUS AND			and the same of th	
	8081B	V17/2-930/94/2-2-932	0.1.75	CMO / CLAFOD CE	
		9/9/2016	2142	SMO / GLAFORCE	and the second s
R1609580-006.01					
	8081B,ALS SOP	9/9/2016	2142	SMO / GLAFORCE	1/16/2017
		9/12/2016	1139	In Lab / KWONG	1/16/2017
		9/12/2016	1355	R-002 / KWONG	1/16/2017
		9/22/2016	1239	In Lab / MROGERSON	1/16/2017
R1609580-006.02	100				and the same terms
11107000 00000				0.40 / 61 / 505 65	
		9/9/2016	2143	SMO / GLAFORCE	-II 24

ALS Group USA, Corp. dba ALS Environmental

Internal Chain of Custody Report

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Service Request: R1609580

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
godina 12	8081B,ALS SOP	and the second s			
	308 F 4	9/9/2016	2142	SMO/GLAFORCE	
		9/12/2016	1139	In Lab / KWONG	
		9/12/2016	1355	R-002 / KWONG	
R1609580-007.02		vianad/m/no/-			
		9/9/2016	2143	SMO / GLAFORCE	1/16/2017
		9/22/2016	1240	In Lab / MROGERSON	1/16/2017
R1609580-008.01		Marie Control			
	8081B,ALS SOP				
		9/9/2016	2142	SMO / GLAFORCE	
		9/12/2016	1139	In Lab / KWONG	
		9/12/2016	1355	R-002 / KWONG	
R1609580-008.02	and the second s				
		9/9/2016	2143	SMO / GLAFORCE	1/16/2017
		9/22/2016	1239	In Lab / MROGERSON	1/16/2017



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

apçını Siteriti dayi Mateli tarifmet



REPORT QUALIFIERS AND DEFINITIONS

- U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
- J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
- B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
- E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
- E Organics- Concentration has exceeded the calibration range for that specific analysis.
- D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
- * Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
- H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
- # Spike was diluted out.

- + Correlation coefficient for MSA is <0.995.
- N Inorganics- Matrix spike recovery was outside laboratory limits.
- N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
- S Concentration has been determined using Method of Standard Additions (MSA).
- W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
- P Concentration >40% (25% for CLP) difference between the two GC columns.
- C Confirmed by GC/MS
- Q DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
- X See Case Narrative for discussion.
- MRL Method Reporting Limit. Also known as:
- LOQ Limit of Quantitation (LOQ)

 The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
- MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
- LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.
- ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.



Rochester Lab ID # for State Certifications1

Connecticut ID # PH0556	Maine ID #NY0032	New Hampshire ID #
Delaware Accredited	Nebraska Accredited	294100 A/B
DoD ELAP #65817	New Jersey ID # NY004	Pennsylvania ID# 68-786
Florida ID # E87674	New York ID # 10145	Rhode Island ID # 158
Illinois ID #200047	North Carolina #676	Virginia #460167

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 http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads/North-America-Downloads

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

POL 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

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Service Request: R1609580

Non-Certified Analytes

Certifying Agency:

New York Department of Health

MethodMatrixAnalyteALS SOPSoilTotal Solids

ALS Group USA, Corp. dba ALS Environmental

Analyst Summary report

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Service Request: R1609580

Sample Name:

MW5-090816 R1609580-001

Lab Code: Sample Matrix:

Water

Date Collected: 09/8/16

Date Received: 09/9/16

Analysis Method

8081B

8270D

Extracted/Digested By

DMURPHY

DMURPHY

Analyzed By

MPEDRO

JMISIUREWICZ

Sample Name:

Lab Code:

MW4-090816 R1609580-002

Sample Matrix:

Water

Date Collected: 09/8/16 Date Received: 09/9/16

Analysis Method

8081B 8270D

MW7-090816

Sample Matrix:

Extracted/Digested By

DMURPHY DMURPHY

Analyzed By

MPEDRO

JMISIUREWICZ

Sample Name:

Lab Code:

R1609580-003

Water

Date Collected: 09/8/16

Date Received: 09/9/16

Analysis Method

8081B 8270D Extracted/Digested By

DMURPHY DMURPHY Analyzed By

MPEDRO

JMISIUREWICZ

Sample Name:

Lab Code:

MH-B-090816 R1609580-004

Sample Matrix:

Water

Date Collected: 09/8/16

Date Received: 09/9/16

Analysis Method

8081B

Extracted/Digested By

DMURPHY

Analyzed By

MPEDRO

ALS Group USA, Corp. dba ALS Environmental

Analyst Summary report

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Service Request: R1609580

Sample Name:

FIELDBLANK-090816

Lab Code:

R1609580-005

Sample Matrix:

Water

Date Collected: 09/8/16

Date Received: 09/9/16

Analysis Method

8081B

8270D

Extracted/Digested By

DMURPHY

DMURPHY

Analyzed By

MPEDRO

JMISIUREWICZ

Sample Name:

Sample Matrix:

L-L-Code

US-1-090816

Lab Code:

R1609580-006

Soil

Date Collected: 09/8/16

Date Received: 09/9/16

Analysis Method

8081B

ALS SOP

Extracted/Digested By

MROGERSON

Analyzed By

MPEDRO

KWONG

Sample Name:

Lab Code:

MS-1-090816 R1609580-007

Sample Matrix:

Soil

Date Collected: 09/8/16

Date Received: 09/9/16

Analysis Method

8081B

ALS SOP

Sample Name:

Lab Code:

DS-1-090816 R1609580-008

Sample Matrix:

Soil

Extracted/Digested By

MROGERSON

Analyzed By

MPEDRO

KWONG

Date Collected: 09/8/16

Date Received: 09/9/16

Analysis Method

8081B

ALS SOP

Extracted/Digested By

MROGERSON

Analyzed By

MPEDRO

KWONG



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	
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2	
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2	
9034 Sulfide Acid	9030B	
Soluble		
9056A Bomb (Halogens)	5050A	
9066 Manual Distillation	9065	
SM 4500-CN-E Residual	SM 4500-CN-G	
Cyanide SM 4500-CN-E WAD	SM 4500-CN-I	
Cyanide	JIN 1300 CIVI	

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311)	3005A/3010A
extract	
6010 SPLP (1312) extract	3005A/3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
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

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Semivolatile Organic Compounds by GC/MS

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

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Analytical Report

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Sample Matrix:

Water

- -----

Sample Name: Lab Code:

R1609580-001

MW5-090816

Service Request: R1609580

Date Collected: 09/08/16 09:20

Date Received: 09/09/16 14:10

Units: ug/L

Basis: NA

Semivolatile Organic Compounds by GC/MS

Analysis Method:

8270D

Prep Method:

Amalasta Nama	Result	MRL DII. Date Alialyz		Date Analyzeu	Date Extracted	
Analyte Name Hexachlorobenzene	ND U	10	1	09/15/16 08:52	9/12/16	

Carried Name	% Rec	Control Limits	Date Analyzed	Q
Surrogate Name	91	35 - 141	09/15/16 08:52	
2,4,6-Tribromophenol	67	31 - 118	09/15/16 08:52	
2-Fluorobiphenyl	40	10 - 105	09/15/16 08:52	
2-Fluorophenol	68	31 - 110	09/15/16 08:52	
Nitrobenzene-d5	30	10 - 107	09/15/16 08:52	
Phenol-d6	77	30 - 133	09/15/16 08:52	
p-Terphenyl-d14	7.1	50 150		

Analytical Report

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Sample Matrix:

Sample Name:

Water

MW4-090816

Lab Code:

R1609580-002

Service Request: R1609580

Date Collected: 09/08/16 10:25

Date Received: 09/09/16 14:10

Units: ug/L

Basis: NA

Semivolatile Organic Compounds by GC/MS

Analysis Method:

8270D

Prep Method:

Analyte Name	Result	MRL	Dil.	Date Analy	zed Da	ate Extra	icted	<u>V</u>
Hexachlorobenzene	ND U	10	1 09/14/1		/14/16 18:30 9/12		5	
Surrogate Name		% Rec	Control	The state of the s	Date Analy	AND DESCRIPTION OF THE PERSON	Q	
Surregue runne	TAXABAY TO THE TAXABAY TO THE TAXABAY TAXABAY TO THE TAXABAY T	101	35 -	141	09/14/16 18	3:30		

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
	101	35 - 141	09/14/16 18:30	
2,4,6-Tribromophenol	73	31 - 118	09/14/16 18:30	
-Fluorobiphenyl	36	10 - 105	09/14/16 18:30	
-Fluorophenol	70	31 - 110	09/14/16 18:30	
Vitrobenzene-d5	27	10 - 107	09/14/16 18:30	
Phenol-d6		30 - 133	09/14/16 18:30	
p-Terphenyl-d14	90	30 - 133	03/11/10 10:50	

Analytical Report

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Sample Matrix:

Sample Name:

Water

Lab Code:

R1609580-003

MW7-090816

Service Request: R1609580

Date Collected: 09/08/16 11:10

Date Received: 09/09/16 14:10

Units: ug/L

Basis: NA

09/15/16 10:15

Semivolatile Organic Compounds by GC/MS

Analysis Method:

8270D

Prep Method:

p-Terphenyl-d14

EPA 3510C

Analyte Name	Result	MRL	Dil. Date A		nalyzed Date Extr		racted	Q
Hexachlorobenzene	ND U	10	1	09/15/16 10:15		9/12/16		
Surrogate Name		% Rec	Contro	l Limits	THE RESERVE THE PERSON NAMED IN COLUMN 2 I	nalyzed	Q	ASSA STATE OF THE
2,4,6-Tribromophenol		88	35	- 141	09/15/	16 10:15		
2-Fluorobiphenyl		68	31	- 118	09/15/	16 10:15		
		34	10	- 105	09/15/	16 10:15		
2-Fluorophenol		67	31	- 110	09/15/	16 10:15		
Nitrobenzene-d5		25	10	- 107	09/15/	16 10:15		
Phenol-d6		70	30	. 133	09/15/	16 10:15		

78

30 - 133

Analytical Report

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Sample Matrix:

Water

Service Request: R1609580

Date Collected: 09/08/16 13:00

Date Received: 09/09/16 14:10

Units: ug/L

Basis: NA

Sample Name:

FIELDBLANK-090816

Lab Code:

R1609580-005

Semivolatile Organic Compounds by GC/MS

Analysis Method:

8270D

Prep Method:

Analyte Name	Result	MRL	Dil.	Date A	nalyzed	Date Ext	racted	Q
Hexachlorobenzene	ND U	9.4	1	09/15/1	6 10:43	9/12/	16	
Surrogate Name		% Rec	Contro	ol Limits	Date A	nalyzed	Q	
2,4,6-Tribromophenol		84	35	- 141		16 10:43		
2-Fluorobiphenyl		68	31	- 118	09/15/	16 10:43		
2-Fluorophenol		38	10	- 105	09/15/	16 10:43		
		66	31	- 110	09/15/	16 10:43		
Nitrobenzene-d5		27	10	- 107	09/15/	16 10:43		
Phenol-d6 p-Terphenyl-d14	Walter Control of the	98	30	- 133	09/15/	16 10:43		



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

DIET VARIATIA (BEST REC'HE

Analytical Report

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Sample Matrix:

Water

Sample Name:

MW5-090816

Lab Code:

R1609580-001

Service Request: R1609580

Date Collected: 09/08/16 09:20

Date Received: 09/09/16 14:10

Units: ug/L

Basis: NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

Analysta Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Analyte Name	ND U	0.056	1	09/16/16 08:53	9/13/16	
alpha-BHC	ND U	0.056	-1	09/16/16 08:53	9/13/16	
beta-BHC	ND U	0.056	1	09/16/16 08:53	9/13/16	
delta-BHC (Lindane)	ND U	0.056	1	09/16/16 08:53	9/13/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
	30	10 - 164	09/16/16 08:53		
Decachlorobiphenyl Tetrachloro-m-xylene	67	10 - 147	09/16/16 08:53		

Analytical Report

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Sample Matrix:

Water

MW4-090816

Sample Name: Lab Code:

R1609580-002

Un

Units: ug/L Basis: NA

Date Collected: 09/08/16 10:25

Date Received: 09/09/16 14:10

Service Request: R1609580

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

Analysta Nama	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Analyte Name	ND U	0.056	1	09/16/16 09:49	9/13/16	
alpha-BHC	ND U	0.056	i	09/16/16 09:49	9/13/16	
beta-BHC	ND U	0.056	ī	09/16/16 09:49	9/13/16	
delta-BHC	ND U	0.056	1	09/16/16 09:49	9/13/16	
gamma-BHC (Lindane)	ND U	0.000				

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
	39	10 - 164	09/16/16 09:49		
Decachlorobiphenyl Tetrachloro-m-xylene	54	10 - 147	09/16/16 09:49		

Analytical Report

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Sample Matrix:

Water

Sample Name: Lab Code:

MW7-090816 R1609580-003

Service Request: R1609580

Date Collected: 09/08/16 11:10

Date Received: 09/09/16 14:10

Units: ug/L

Basis: NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

A T A BI	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Analyte Name	ND U	0.056	1	09/16/16 10:07	9/13/16	
alpha-BHC	ND U	0.056	1	09/16/16 10:07	9/13/16	
beta-BHC	ND U	0.056	1	09/16/16 10:07	9/13/16	
delta-BHC	ND U	0.056	1	09/16/16 10:07	9/13/16	
gamma-BHC (Lindane)	1,00					

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
	41	10 - 164	09/16/16 10:07	
Decachlorobiphenyl Tetrachloro-m-xylene	61	10 - 147	09/16/16 10:07	

Analytical Report

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Sample Matrix:

Sample Name:

Water

MH-B-090816

Lab Code:

R1609580-004

Service Request: R1609580

Date Collected: 09/08/16 12:00

Date Received: 09/09/16 14:10

Units: ug/L

Basis: NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
No. of the last of	ND U	0.047	1	09/16/16 10:26	9/13/16	
alpha-BHC	ND U	0.047	1	09/16/16 10:26	9/13/16	
beta-BHC	ND U	0.047	1	09/16/16 10:26	9/13/16	
delta-BHC gamma-BHC (Lindane)	ND U	0.047	1	09/16/16 10:26	9/13/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
Decachlorobiphenyl Tetrachloro-m-xylene	66 59	10 - 164 10 - 147	09/16/16 10:26 09/16/16 10:26		

Analytical Report

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Sample Matrix:

Sample Name:

Water

Service Request: R1609580 Date Collected: 09/08/16 13:00

Date Received: 09/09/16 14:10

FIELDBLANK-090816

Lab Code:

R1609580-005

Units: ug/L

Basis: NA

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
	ND U	0.047	1	09/16/16 10:45	9/13/16	
alpha-BHC	ND U	0.047	1	09/16/16 10:45	9/13/16	
beta-BHC	ND U	0.047	1	09/16/16 10:45	9/13/16	
delta-BHC (Lindane)	ND U	0.047	1	09/16/16 10:45	9/13/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
	36	10 - 164	09/16/16 10:45	
Decachlorobiphenyl Tetrachloro-m-xylene	62	10 - 147	09/16/16 10:45	

Analytical Report

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Sample Matrix:

Soil

Sample Name:

US-1-090816

Lab Code:

R1609580-006

Service Request: R1609580

Date Collected: 09/08/16 13:30

Date Received: 09/09/16 14:10

Units: ug/Kg

Basis: Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
	9.7	5.6	1	09/26/16 12:16	9/22/16	
alpha-BHC	25	5.6	1	09/26/16 12:16	9/22/16	
beta-BHC	19	5.6	1	09/26/16 12:16	9/22/16	
delta-BHC gamma-BHC (Lindane)	ND U	5.6	1	09/26/16 12:16	9/22/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
	51	10 - 122	09/26/16 12:16	
Decachlorobiphenyl Tetrachloro-m-xylene	57	10 - 123	09/26/16 12:16	

Analytical Report

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Sample Matrix:

Soil

Sample Name:

MS-1-090816

Lab Code:

R1609580-007

Service Request: R1609580

Date Collected: 09/08/16 13:45

Date Received: 09/09/16 14:10

Units: ug/Kg

Basis: Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

EPA 3541

A BI - BI	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Analyte Name	8.8	4.9	1	09/26/16 13:12	9/22/16	
alpha-BHC	0.0	4.9	i	09/26/16 13:12	9/22/16	
beta-BHC	16	4.9	1	09/26/16 13:12	9/22/16	
delta-BHC	ND U	4.9	i	09/26/16 13:12	9/22/16	
gamma-BHC (Lindane)	ND U	7.7		••••		

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
C CONTRACTOR CONTRACTO	51	10 - 122	09/26/16 13:12	
Decachlorobiphenyl Tetrachloro-m-xylene	58	10 - 123	09/26/16 13:12	

Analytical Report

Client:

Olin Corporation

Project:

Gibson Niagara Falls/114811

Sample Matrix:

Sample Name:

Soil

Lab Code:

R1609580-008

DS-1-090816

Service Request: R1609580

Date Collected: 09/08/16 14:00

Date Received: 09/09/16 14:10

Units: ug/Kg

Basis: Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method:

8081B

Prep Method:

EPA 3541

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
	7.0	4.9	1	09/26/16 13:30	9/22/16	
alpha-BHC	18	4.9	1	09/26/16 13:30	9/22/16	
beta-BHC	15	4.9	1	09/26/16 13:30	9/22/16	
delta-BHC gamma-BHC (Lindane)	ND U	4.9	1	09/26/16 13:30	9/22/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q	
	50	10 - 122	09/26/16 13:30		
Decachlorobiphenyl Tetrachloro-m-xylene	61	10 - 123	09/26/16 13:30		