



3855 NORTH OCOEE STREET, SUITE 200, CLEVELAND, TN. 37312  
(423) 336-4000 FAX (423) 336-4166

January 28, 2011

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

**Subject: Charles Gibson Site  
NYSDEC Registry No. 9-32-063  
Periodic Review Report - 2010**

Dear Mr. Sadowski:

As requested by NYSDEC I have attached one electronic version (in Adobe PDF format) of the subject report. This report summarizes the site conditions and activities performed during 2010 for the operation and maintenance of the containment remedy for the Charles Gibson site in Niagara Falls, N.Y.

The report is in the format requested by NYSDEC, and is submitted prior to January 31, 2011.

Please direct any comments to me at 423/336-4587. Thank you.

Sincerely,  
OLIN CORPORATION

Michael J. Bellotti  
Principal Environmental Specialist

cc: C. M. Richards  
Brian Vain – Olin Niagara Falls  
Mike Walker – Severson Environmental Services  
Matthew Forcucci – NYSDOH Buffalo  
Michael Hinton – NYSDEC Buffalo

**Olin Corporation**



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



<b>Site No.</b> 932063	<b>Site Details</b>	<b>Box 1</b>
<b>Site Name</b> Charles Gibson Site		
Site Address: N.E. Cnr. of Niagara Falls Blvd. & Tuscarora Rd.		Zip Code: 14304
City/Town: Niagara Falls		
County: Niagara		
Site Acreage: 2.0		
Reporting Period: December 31, 2009 to January 01, 2011		
		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?	<input checked="" type="checkbox"/> <input type="checkbox"/>
7. Are all ICs/ECs in place and functioning as designed?	<input checked="" type="checkbox"/> <input type="checkbox"/>

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

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

Michael J. Bellotto - Olin Corp.  
Signature of Owner, Remedial Party or Designated Representative

1/27/11  
Date

**Description of Institutional Controls**

<u>Parcel</u>	<u>Owner</u>	<u>Institutional Control</u>
161.05-3-7	OLIN CORPORATION	Monitoring Plan O&M Plan
161.05-5-12	OLIN CORPORATION	Monitoring Plan O&M Plan

**Description of Engineering Controls**

<u>Parcel</u>	<u>Engineering Control</u>
161.05-3-7	Cover System Fencing/Access Control Groundwater Containment Leachate Collection
161.05-5-12	Cover System Fencing/Access Control Groundwater Containment Leachate Collection

**Control Description for Site No. 932063****Parcel: 161.05-3-7**

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

**EC:**

- Realignment of Cayuga Creek
- Cap
- Double Membrane Liner
- Perimeter Leachate Collection System. Discharge to NFWWTP.
- Perimeter Fence
- Groundwater Quality Monitoring
- Leachate Monitoring
- Creek Sediment Monitoring

**Parcel: 161.05-5-12**

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

**EC:**

- Realignment of Cayuga Creek
- Cap
- Double Membrane Liner
- Perimeter Leachate Collection System. Discharge to NFWWTP.
- Perimeter Fence
- Groundwater Quality Monitoring
- Leachate Monitoring
- Creek Sediment Monitoring

# 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 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. 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

☒ ☒

(N/A)

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

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

Michael J. Bellotti - OCW Corp.  
Signature of Owner, Remedial Party or Designated Representative

1/27/11  
Date



IC CERTIFICATIONS  
SITE NO. 932063

Box 6

**SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE**

I certify that all information and statements in Boxes 2 and/or 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 Michael J. Bellozzi at 3885 N. Olcott St, Suite 200, Cleveland, TN 37312  
print name print business address

am certifying as REPRESENTING OWNER, OLIN CORP. (Owner or Remedial Party)

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

Michael J. Bellozzi  
Signature of Owner or Remedial Party Rendering Certification

1/27/11  
Date

IC/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 Michael J. Bellozzi at 3885 N. Olcott St, Suite 200, Cleveland, TN 37312  
print name print business address

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

Michael J. Bellozzi  
Signature of Qualified Environmental Professional, for  
the Owner or Remedial Party, Rendering Certification

\_\_\_\_\_  
Stamp  
(Required for PE)

1/27/11  
Date

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## I. INTRODUCTION

- A. **Brief summary, nature and extent, remedial history:** 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 ground water 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.
- B. **Effectiveness of remedial program:** Ground water monitoring indicates there are no increased concentrations of the Site compounds being monitored. Evaluation of the ground water 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 2003, concentrations of site compounds being monitored have been undetected or estimated at concentrations below the detection levels, in all monitor wells. The remedial program is achieving the objectives of containing groundwater flow and maintaining groundwater quality standards.
- 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:** 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.
- B. **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.

Olin Corporation will sustain adequate staff to administer the following post-remediation activities: post-remediation site inspections; maintenance; monitoring of the hydraulic gradient within the containment area; water level monitoring; inspection and maintenance of direct (leachate) discharge system;



and storage and updating of the facility post-remediation plans. Information concerning proposed changes or modifications to the plan will only be distributed to the State by Olin Corporation.

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

- A. The work performed for the Site during 2010 was reviewed and found to be in accordance with the approved O&M Manual (2000). Ground water monitoring indicates there are no increased concentrations of the Site compounds being monitored. Evaluation of the ground water data generated during the 2010 monitoring year 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. An evaluation of data from the piezometer pairs at the Site indicates that an inward hydraulic gradient is being maintained year round in two of the three piezometer pairs. The third pair (P1/P2) has an inward gradient during the second and third quarters. There was minimal difference in the outward gradient with the maximum outward gradient being 0.63 ft. **Attachment A** shows the most recent tables for piezometric data demonstrating that inward gradient. Olin will adjust the triggering level in the sump discharge pump to lower the interior groundwater level. This will help maintain inward gradients.

### IV. IC/EC Plan

#### A. 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

#### B. Certification

- Attached

### V. MONITORING PLAN COMPLIANCE REPORT

#### A. Components of Monitoring Plan:

Operation, maintenance, and monitoring activities to be performed by the Group include:

- Performance of a ground water 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 were 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

**B, C. Summary and comparison to 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 elevation data indicate that ground water within the capped area is consistent with historical data. Review of the ground water elevation data indicates that inward hydraulic gradients were observed between piezometers within the capped area and piezometers outside of the capped area with exception to two pair which has shown outward gradients during the four quarters. The (P1/P2) pair has shown inward gradients during the second and third quarters. The (P3/P4) pair has shown an outward gradient at only the third quarter.

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.

**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**

- 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. This O&M Plan will safeguard that remedy and provide for monitoring of the Gibson Site in compliance with the State/Olin Agreement.
- Inspections, on at least a quarterly basis, of the Gibson 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 State/Olin 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.
- **B. O&M Summary** The ground water 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 ground water collection system is found to be damaged or malfunctioning, it is repaired or replaced. Note that NYSDEC comment to this issue, and Olin's response to address it, are included in the Correspondence in Attachment E.

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 C**. 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.

The groundwater monitoring and sampling is performed on an annual basis, with 2010 results presented in **Attachment D**. Per NYSDEC request, future groundwater monitoring events will be done in rotating quarters to help assess seasonal variability.

Sample collection and analysis of creek sediments are performed annually during the second half of the calendar year. The 2010 data show a decrease in all sediment parameters, both upstream and downstream. Olin will continue to track this trend. Note that NYSDEC comment to this issue, and Olin's response to address it, are included in the Correspondence in Attachment E.



**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. The Operations and Maintenance Manual was updated in 2009, reflecting recent modifications to site protocols.

**VII. OVERALL PRR CONCLUSIONS AND RECOMMENDATIONS**

**A. 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.

**B. 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 ground water elevation data indicate that inward hydraulic gradients were observed between piezometers within the capped area and piezometers outside of the capped area. Fluctuations in ground water elevations create minor outward hydraulic gradients , but these typically revert back to inward gradients. .
- 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. This modification is based on analytical sediment data collected as part of the long-term monitoring program. HCB results are undetected (U) for all sampling events since 1993.

**C. Future submittals:**

Reporting will continue to be done on an annual schedule.

## **ATTACHMENT A**



TABLE 1  
CHARLES GIBSON SITE  
NIAGARA FALLS, NEW YORK

ANALYTICAL SUMMARY  
SEMI-ANNUAL GROUND WATER SAMPLING 2001-2010

MONITOR WELL: MW-A3

	2001		2002		2003		2004		2005		2006		2007		2008		2009		2010	
Parameter	April	October	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September
Alpha-BHC	.050U	.050U	.050U	.029J	.048U	.035J	.048U	.047U	.047U	.048U	.049U	.032J	.048U	.047U	.048U	.048U	0.049U	-	-	.034J
Beta-BHC	.050U	.050U	.050U	.016J	.048U	.059U	.048U	.047U	.047U	.048U	.049U	.014J	.048U	-	.048U	.048U	0.049U	-	-	.050U
Gamma-BHC	.050U	.050U	.050U	.050U	.048U	.059U	.048U	.047U	.047U	.048U	.049U	.048U	.048U	-	.048U	.048U	0.049U	-	-	.029J
Delta-BHC	.050U	.050U	.050U	.050U	.048U	.059U	.048U	.047U	.047U	.048U	.049U	.03J	.048U	-	.048U	.048U	0.049U	-	-	.050U
Hexachlorobenzene	10U	NR	NR	NR	NR	NR	10U	NR	NR	NR	NR	9J	NR	NR	5U	NR	NR	NR	NR	NR

MONITOR WELL: MW-1R

	2001		2002		2003		2004		2005		2006		2007		2008		2009		2010	
Parameter	April	October	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September
Alpha-BHC	.050U/.050U	.099/.060	.070/.061	.055/.030J	.014J/.015U	.052U	.049U/.049	.026J/.048U	.040J/.049U	.047U/.048U	.037J	.032J	.041J	.029J	.032J	.015J	0.049U	-	-	.038J
Beta-BHC	.12J/.050U	.19/.15	.10/.050U	.13/.095	.053/.052	.052U	.049U/.065	.090U/.024J	.050U/.049U	.047U/.048U	.036J	.022J	.035J	.024J	.049U	.05U	0.028J	-	-	.045J
Gamma-BHC	.050U/.050U	.063J/.058U	.050U/.050U	.055U	.049U	.052U	.049U/.049U	.048U/.048U	.036J/.049U	.047U/.048U	.050U	.048U	.048U	.048U	.023J	.05U	0.049U	-	-	.025J
Delta-BHC	.050U/.050U	.061U/.058U	.050U/.053	.055U	.049U	.052U	.049U/.049	.048U/.048U	.050U/.049U	.047U/.048U	.050U	.034J	.048U	.048U	.025J	.05U	0.049U	-	-	.048U
Hexachlorobenzene	10U/10U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	10U	NR	NR	5U	NR	NR	NR	NR	4.7U

MONITOR WELL: MW-2

	2001		2002		2003		2004		2005		2006		2007		2008		2009		2010	
Parameter	April	October	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September
Alpha-BHC	.050U	.054U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.048U	.048U	.047U	.038J	.047U	0.048U	-	-	.048U
Beta-BHC	.050U	.054U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.048U	.048U	.047U	.056U	.047U	0.048U	-	-	.048U
Gamma-BHC	.050U	.054U	.050U	.050U	.050U	.030J	.050U	.030J	.050U	.050U	.050U	.048U	.048U	.047U	.056U	.047U	0.048U	-	-	.048U
Delta-BHC	.050U	.054U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.030J	.048U	.047U	.034J	.047U	0.048U	-	-	.048U
Hexachlorobenzene	10U	NR	NR	NR	NR	NR	10U	NR	NR	NR	NR	10U	NR	NR	5U	NR	NR	NR	NR	NR

MONITOR WELL: MW-4

	2001		2002		2003		2004		2005		2006		2007		2008		2009		2010	
Parameter	April	October	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September
Alpha-BHC	.050U	.0069J	.050U	.050U	.049U	0.056	.048U	.048U	.047U	.047U	.049U	.041J	.042J	.025J	.03J	.048U	0.047U	NR	-	.49U
Beta-BHC	.050U	.047J	.041J	.033J	.049U	.026J	.048U	.037J	.047U	.036J	.022J	.044J	.033J	.047U	.037J	.048U	0.047U	NR	-	.49U
Gamma-BHC	.050U	.050U	.071J	.050U	.049U	.033J	.048U	.048U	.047U	.047U	.049U	.048U	.048U	.047U	.05U	.048U	0.047U	NR	-	.49U
Delta-BHC	.050U	.050U	.050U	.050U	.049U	.050U	.048U	.048U	.047U	.047U	.030J	.036J	.048U	.047U	.024J	.048U	0.047U	NR	-	.49U
Hexachlorobenzene	10U	NR	NR	NR	NR	NR	NR	9U	NR	NR	NR	10U	NR	NR	5U	NR	NR	NR	NR	4.9U

MONITOR WELL: MW-5

	2001		2002		2003		2004		2005		2006		2007		2008		2009		2010	
Parameter	April	October	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September	April	September
Alpha-BHC	.050U	.013J	.050U	.050U	.048U	.049U	.048U	.048U	.047U	.047UJ	.049U	.032J	.041J	.026J	.035J	.017J	0.048U	NR	-	.030J
Beta-BHC	.050U	.022J	.050U	.050U	.048U	.049U	.048U	.048U	.047U	.047UJ	.049U	.015J	.025J	.048U	.052U	.047U	0.048U	NR	-	.049U
Gamma-BHC	.050U	.055U	.050U	.050U	.048U	.049U	.048U	.048U	.047U	.047UJ	.049U	.048U	.047U	.048U	.027J	.018J	0.048U	NR	-	.025J
Delta-BHC	.050U	.055U	.050U	.050U	.048U	.049U	.048U	.048U	.047U	.047UJ	.049U	.030J	.047U	.048U	.031J	.0094J	0.048U	NR	-	.049U
Hexachlorobenzene	10U	NR	NR	NR	NR	NR	10U	NR	NR	NR	NR	NR	NR	NR	5U	NR	NR	NR	NR	4.7U

Notes: Concentration in ug/l  
- insufficient sample  
U Undetected  
J Estimated value  
NR Not required

**TABLE 2**  
**Charles Gibson Site**  
**Niagara Falls, New York**

**ANALYTICAL SUMMARY**

**Annual Cayuga Creek Sediment Sampling 2001 - 2010**

**UPSTREAM**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Parameter	October*	September	September	September	September	September	September	September	September	September
Alpha- BHC	55	19/90	28/22J	80U/86J	23J	13	40	77	240	94
Beta- BHC	49	37/76	48/30	20J/190	36	34	4.8	69	260	97
Gamma- BHC	24	31/26	12J/28	23J/56J	15J	13	4.6	17J	18J	33J
Delta- BHC	3.3J	5.8U/1.6U	1.9J/26U	80U/38J	26U	3.9J	3.7	26U	39J	52J

**DOWNSTREAM**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Parameter	October*	September	September	September	September	September	September	September	September	September
Alpha- BHC	55	19/90	28/22J	80U/86J	23J	8.3	NS	5200	210	53J
Beta- BHC	49	37/76	48/30	20J/190	36	22	NS	1000	73	62J
Gamma- BHC	24	31/26	12J/28	23J/56J	15J	11	NS	66J	60U	63U
Delta- BHC	3.3J	5.8U/1.6U	1.9J/26U	80U/38J	26U	3.7J	NS	82J	32	56J

**Notes:**

U Not Detected

J Estimated value

NS No sample in trap

\* Sediment traps installed April 2001



Table 3

## 2010 Quarterly Groundwater Elevations Summary

Piezometer Pair	3/3/2010	Inward gradient	4/14/2010	Inward gradient	9/17/2010	Inward gradient	11/11/2010	Inward gradient
P1 outside P2 inside	565.27 565.42	Outward	565.72 565.46	Inward	566.40 565.20	Inward	564.53 565.16	Outward
P3 outside P4 inside	566.18 565.22	Inward	567.05 565.19	Inward	564.91 565.07	Outward	565.57 565.02	Inward
P5 outside P6 inside	568.83 567.57	Inward	569.45 567.77	Inward	567.23 566.93	Inward	567.40 566.78	Inward
Manhole A Manhole B	563.77 563.84	Below 565 ft msl Yes Yes	564.02 564.09	Below 565 ft msl Yes Yes	564.20 563.68	Below 565 ft msl Yes Yes	563.82 563.88	Below 565 ft msl 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 4**  
**Olin Corp. Gibson Site**  
**Discharge Volumes**

**Summary of Yearly Discharge Volumes**

<b>Date</b>	<b>Volume (gallons)</b>
1991	104,120
1992	76,562
1993	77,797
1994	69,724
1995	56,940
1996	77,512
1997(*)	64,687
1998	51,070
1999	140,860
2000	67,236
2001	20,855
2002	0
2003 (1)	5230
2004	65,082
2005	51,115
2006	52,891
2007	22,958
2008	40,223
2009	40,187
<b>2010</b>	<b>28,118</b>
<b>TOTALS</b>	<b>1,072,980</b>

**Monthly Discharge Volumes**  
**2010**

<b>Month</b>	<b>Volume (gallons)</b>
Jan	5,023
Feb	4,118
Mar	5,801
Apr	6,859
May	0
Jun	2,633
Jul	0
Aug	1,970
Sep	0
Oct	0
Nov	0
Dec	1,714
<b>Total</b>	<b>28,118</b>

**Notes:**

(\*) Represents start of operation of direct discharge system

(1) Pumped during test of system on 4/13/2003



**Table 5**

**Annual Manhole B Sampling**

CHARLES GIBSON SITE  
NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY  
ANNUAL LEACHATE SAMPLING

September 15, 2010

	MANHOLE B (MHB)
PARAMETER	
alpha-BHC	0.97U
beta-BHC	0.97U
delta-BHC	0.97U
gamma-BHC	0.97U
Hexachlorobenzene	4.8U

Notes:

U Undetected

J Estimated value

NR Not Required

Concentration in ug/l

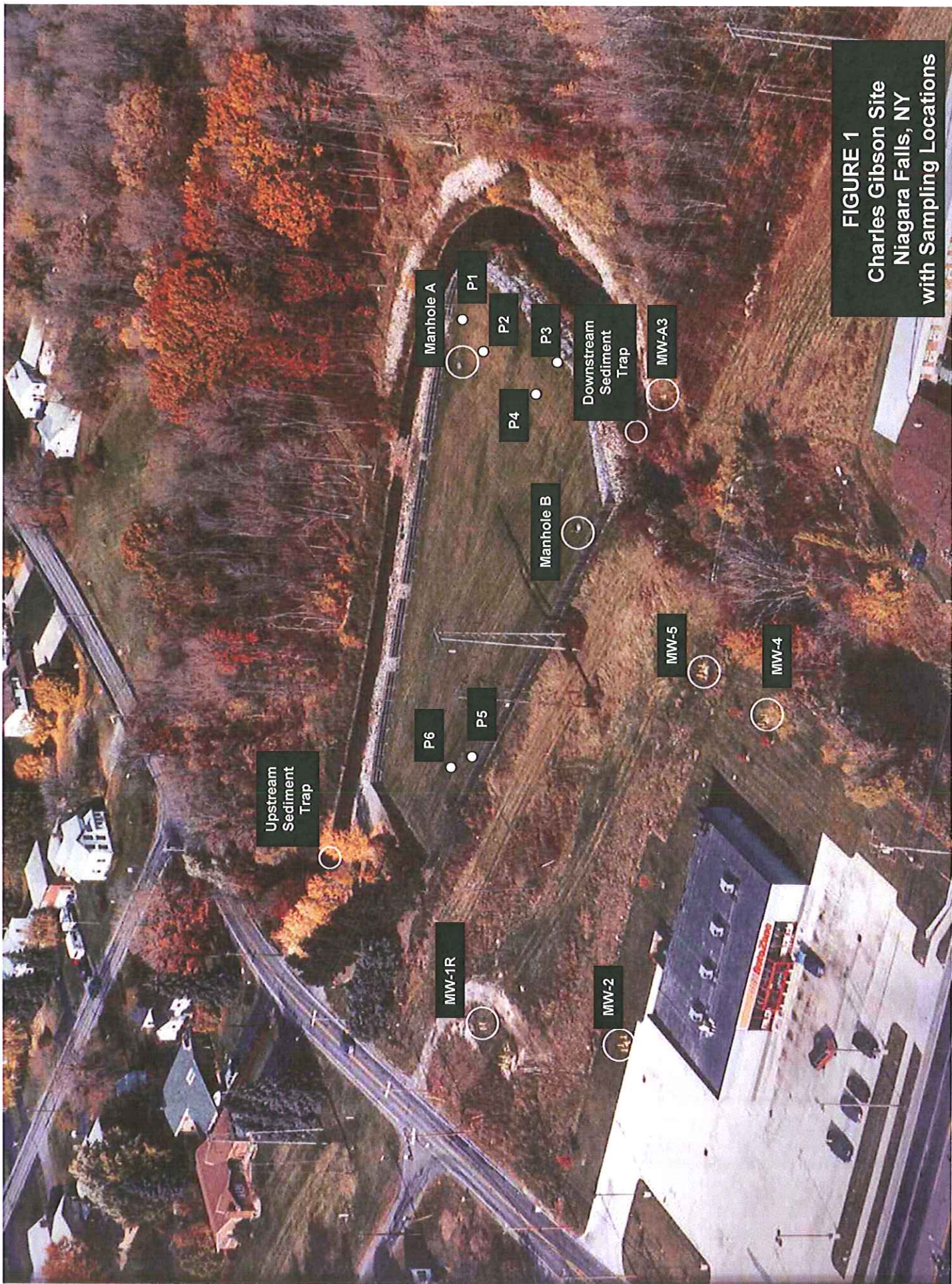
Field blank was non-detect for all parameters of interest.

Data has been validated and judged acceptable as qualified.

Next hexachlorobenzene (HCB) sampling scheduled for October 2011

## **Attachment B**





**FIGURE 1**  
**Charles Gibson Site**  
**Niagara Falls, NY**  
**with Sampling Locations**



## **Attachment C**



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

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

DATE: 3/3/2010 TIME: 1200

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Quarterly Inspection (1st quarter)

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

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

		COMMENTS
ACCESS ROAD	<u>A</u>	<u>Snow Covered</u>
COVER VEGETATION	<u>A</u>	<u>Snow Covered</u>
TREES	<u>A</u>	<u>good</u>
LITTER	<u>A</u>	<u>none</u>
EROSION (CAP)	<u>A</u>	<u>Snow Covered</u>
EROSION (BANK)	<u>A</u>	<u>Snow Covered</u>

SECURITY:

FENCE/LOCKS	<u>A</u>	<u>Secure</u>
PIEZOMETERS/LOCKS	<u>A</u>	<u>Secure</u>
MONITORING WELLS/LOCKS	<u>A</u>	<u>Secure</u>
MANHOLES/LIDS/LOCKS	<u>A</u>	<u>Secure</u>
ELECTRICAL PANEL	<u>A</u>	<u>Secure</u>

ADDITIONAL COMMENTS: Site looked good.

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

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

DATE: 4/14/2010 TIME: 800

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): 2nd quarter site inspection 2010

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

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

		COMMENTS
ACCESS ROAD	<u>A</u>	<u>OK</u>
COVER VEGETATION	<u>A</u>	<u>OK</u>
TREES	<u>A</u>	<u>OK</u>
LITTER	<u>A</u>	<u>OK</u>
EROSION (CAP)	<u>A</u>	<u>OK</u>
EROSION (BANK)	<u>A</u>	<u>OK</u>

SECURITY:

FENCE/LOCKS	<u>A</u>	<u>Secure</u>
PIEZOMETERS/LOCKS	<u>A</u>	<u>Secure</u>
MONITORING WELLS/LOCKS	<u>A</u>	<u>Secure</u>
MANHOLES/LIDS/LOCKS	<u>A</u>	<u>Secure</u>
ELECTRICAL PANEL	<u>A</u>	<u>Secure</u>

ADDITIONAL COMMENTS: I was met on Site by Brian Sydowski of the NYSDEC

for a site walk and inspection. He indicated that he was pleased with the condition of the site.

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

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

DATE: 6/21/2010 TIME: 800

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Replace Safety Signs

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

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

COMMENTS

ACCESS ROAD	<u>A</u>	<u></u>
COVER VEGETATION	<u>A</u>	<u></u>
TREES	<u>A</u>	<u></u>
LITTER	<u>A</u>	<u></u>
EROSION (CAP)	<u>A</u>	<u></u>
EROSION (BANK)	<u>A</u>	<u></u>

SECURITY:

FENCE/LOCKS	<u>A</u>	<u></u>
PIEZOMETERS/LOCKS	<u>A</u>	<u></u>
MONITORING WELLS/LOCKS	<u>A</u>	<u></u>
MANHOLES/LIDS/LOCKS	<u>A</u>	<u></u>
ELECTRICAL PANEL	<u>A</u>	<u></u>

ADDITIONAL COMMENTS: Walker was on site to replace the confined space warning signs

(Stickers) that are on the covers for Manhole A and Manhole B. The replacement of the signs was

recommended during the site safety audit by Mike Bellotti and Dick Fleming of Olin.



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

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

DATE: 7/26/2010 TIME: 830

INSPECTOR: Mike Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Install new monitoring device

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

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

COMMENTS

ACCESS ROAD	<u>A</u>	<u></u>
COVER VEGETATION	<u>A</u>	<u></u>
TREES	<u>A</u>	<u></u>
LITTER	<u>A</u>	<u></u>
EROSION (CAP)	<u>A</u>	<u></u>
EROSION (BANK)	<u>A</u>	<u></u>

SECURITY:

FENCE/LOCKS	<u>A</u>	<u></u>
PIEZOMETERS/LOCKS	<u>A</u>	<u></u>
MONITORING WELLS/LOCKS	<u>A</u>	<u></u>
MANHOLES/LIDS/LOCKS	<u>A</u>	<u></u>
ELECTRICAL PANEL	<u>A</u>	<u></u>

ADDITIONAL COMMENTS: Met on site with Carrier Controls reps to remove the autot dialer from

the control panel and install the new Alarm Agent unit. Then went online with the Alarm Agent rep

from RACO Manufacturing and configured the system and put it on line.

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

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

DATE: 9/21/2010 TIME: 900

INSPECTOR: Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Check out MW-A3 for recharge

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

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

COMMENTS

ACCESS ROAD	<u>A</u>	<u></u>
COVER VEGETATION	<u>A</u>	<u></u>
TREES	<u>A</u>	<u></u>
LITTER	<u>A</u>	<u></u>
EROSION (CAP)	<u>A</u>	<u></u>
EROSION (BANK)	<u>A</u>	<u></u>

SECURITY:

FENCE/LOCKS	<u>A</u>	<u></u>
PIEZOMETERS/LOCKS	<u>A</u>	<u></u>
MONITORING WELLS/LOCKS	<u>A</u>	<u></u>
MANHOLES/LIDS/LOCKS	<u>A</u>	<u></u>
ELECTRICAL PANEL	<u>A</u>	<u></u>

ADDITIONAL COMMENTS: Tried to get more ground water from the wel (MW-A3) for analysis.

Only recovered about 1 oz.

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

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

DATE: 10/12/2010 TIME: 1200

INSPECTOR: Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Hang signs on perimeter fence

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

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

		COMMENTS
ACCESS ROAD	<u>A</u>	
COVER VEGETATION	<u>A</u>	
TREES	<u>A</u>	
LITTER	<u>A</u>	
EROSION (CAP)	<u>A</u>	
EROSION (BANK)	<u>A</u>	
SECURITY:		
FENCE/LOCKS	<u>A</u>	
PIEZOMETERS/LOCKS	<u>A</u>	
MONITORING WELLS/LOCKS	<u>A</u>	
MANHOLES/LIDS/LOCKS	<u>A</u>	
ELECTRICAL PANEL	<u>A</u>	

ADDITIONAL COMMENTS: Walker was on site today to hang the new "Danger " signs on the  
perimeter fence, as part of the response to the 2010 site audit.



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

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

DATE: 11/30/2010 TIME: 8:00

INSPECTOR: Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Check Level in MW-A3

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

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

		COMMENTS
ACCESS ROAD	<u>A</u>	<u></u>
COVER VEGETATION	<u>A</u>	<u></u>
TREES	<u>A</u>	<u></u>
LITTER	<u>A</u>	<u></u>
EROSION (CAP)	<u>A</u>	<u></u>
EROSION (BANK)	<u>A</u>	<u></u>
SECURITY:		
FENCE/LOCKS	<u></u>	<u></u>
PIEZOMETERS/LOCKS	<u>A</u>	<u></u>
MONITORING WELLS/LOCKS	<u>A</u>	<u></u>
MANHOLES/LIDS/LOCKS	<u>A</u>	<u></u>
ELECTRICAL PANEL	<u>A</u>	<u></u>

ADDITIONAL COMMENTS: Onsite to check the ground water level in monitoring well

MW-A3. We are still waiting for the well to recharge so we can finish the ground water sampling at  
that location. The well is still dry, not even a trace of water in it.

## **Attachment D**

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

RECORDED BY: <u>Walker</u>	SAMPLE ID: <u>MW-1R-091510 &amp; MW-7-091510</u>
SAMPLED BY: <u>Jones</u>	SAMPLING EVENT/DATE: <u>9/15/10</u>
COMPANY: <u>Sevenson</u>	MONITORING WELL: <u>MW-1R</u>
	CONDITION: <u>good</u>

GROUNDWATER PURGE DATA	PURGE DATE: <u>9/15/10</u>	NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:
DEPTH TO BOTTOM FROM TOP OF RISER: <u>12.15 (FT.)</u>		
DEPTH TO WATER FROM TOP OF RISER: <u>7.51 (FT.)</u>		
WATER COLUMN: <u>4.64 (FT.)</u>		
2" DIA. WELL CONSTANT: <u>0.16</u>		MW-1R 12.10'
ONE WELL VOLUME= <u>0.74 (GALS)</u>		MW-2 12.13'
		MW-A3 11.95'
PURGE METHOD: <u>Purge 3x well volume then sample.</u>		MW-4 13.75'
BOTTOM OF WELL/SILT BUILDUP: <u>No</u>		MW-5 15.28'
PURGE START TIME: <u>1200</u>	STOP TIM <u>1215</u>	
PURGE OBSERVATIONS:		

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY (umhos/cm)	TEMP. Celsius	NOTES:
1	7.6	797	18	Clear/ No Odor
2	7.48	848	18.5	Clear/ No Odor
3	7.44	845	18.3	Clear/ No Odor
4	7.47	842	18	Clear/ No Odor
5				

TOTAL VOLUME PURGED: 2.2 gal.

GROUNDWATER OR SEDIMENT SAMPLING DATA:	SAMPLE DATE: <u>9/15/2010</u>
MEDIA: GROUNDWATER <u>X</u> CREEK SEDIMENT <u>          </u>	SAMPLE TIME: <u>1215</u>
LOCATION: <u>MW-1R, Near Tuscorora Rd.</u>	
SAMPLE METHOD: <u>sample using pump with dedicated tubing</u>	
SAMPLING OBSERVATIONS: <u>Purge 3x well volumes then sample with peristaltic pump and dedicated tubing.</u>	
QC SAMPLES TAKEN: <u>Duplicate samples taken and labeled MW-7, for lab QC purposes.</u>	
OTHER OBSERVATIONS/COMMENTS: <u>8 , 1 liter glass amber bottles filled.</u>	
Note: specific conductivity formula to 25 degrees Celcius: SC(25)= $\frac{SC \text{ measured}}{\{(T-25)(0.02)\}+1}$	



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

RECORDED BY: <u>Walker</u>		SAMPLE ID: <u>MW-2-091510</u>	
SAMPLED BY: <u>Jones</u>		SAMPLING EVENT/DATE: <u>9/15/10</u>	
COMPANY: <u>Sevenson</u>		MONITORING WELL: <u>MW-2</u>	
		CONDITION: <u>good</u>	

<b>GROUNDWATER PURGE DATA</b>		PURGE DATE: <u>9/15/10</u>	NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS: MW-1R 12.10' MW-2 12.13' MW-A3 11.95' MW-4 13.75' MW-5 15.28'	
DEPTH TO BOTTOM FROM TOP OF RISER: <u>12.13 (FT.)</u>				
DEPTH TO WATER FROM TOP OF RISER: <u>6.7 (FT.)</u>				
WATER COLUMN: <u>5.43 (FT.)</u>				
2" DIA. WELL CONSTANT: <u>0.16</u>				
ONE WELL VOLUME= <u>0.87 (GALS)</u>				
PURGE METHOD: <u>Purge 3x well volume then sample.</u>				
BOTTOM OF WELL/SILT BUILDUP: <u>No</u>				
PURGE START TIME: <u>930</u>		STOP TIM <u>940</u>		
PURGE OBSERVATIONS:				
FIELD PARAMETER MEASUREMENTS:				
WELL VOLUME	pH	SPECIFIC CONDUCTIVITY <u>umhos/cm</u>	TEMP. <u>Celsius</u>	NOTES:
<u>1</u>	<u>7.13</u>	<u>1004</u>	<u>17.8</u>	<u>Clear/ No Odor</u>
<u>2</u>	<u>7.07</u>	<u>996</u>	<u>18.1</u>	<u>Clear/ No Odor</u>
<u>3</u>	<u>7.03</u>	<u>981</u>	<u>18.2</u>	<u>Clear/ No Odor</u>
<u>4</u>				<u>Clear/ No Odor</u>
<u>5</u>				
TOTAL VOLUME PURGED: <u>3 gal.</u>				

<b>GROUNDWATER OR SEDIMENT SAMPLING DATA:</b>		SAMPLE DATE: <u>9/15/2010</u>
MEDIA: <u>GROUNDWATER</u>	<u>X</u>	SAMPLE TIME: <u>945</u>
<u>CREEK SEDIMENT</u>		
LOCATION: <u>MW-2, adjacent to the Auto Zone Parking lot</u>		
SAMPLE METHOD: <u>sample using pump with dedicated tubing</u>		
SAMPLING OBSERVATIONS: <u>Purge 3x well volumes then sample with peristaltic pump and dedicated tubing.</u>		
QC SAMPLES TAKEN: <u>MS/ MSD taken here.</u>		
OTHER OBSERVATIONS/COMMENTS: <u>12 , 1 liter glass amber bottles filled.</u>		
Note: specific conductivity formula to 25 degrees Celcius: $SC(25) = \frac{SC \text{ measured}}{\{(T-25)(0.02)\}+1}$		

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

RECORDED BY: <u>Walker</u>		SAMPLE ID: <u>MW-4-091510</u>	
SAMPLED BY: <u>Jones</u>		SAMPLING EVENT/DATE: <u>9/15/10</u>	
COMPANY: <u>Sevenson</u>		MONITORING WELL: <u>MW-4</u>	
		CONDITION: <u>good</u>	

<b>GROUNDWATER PURGE DATA</b>		PURGE DATE: <u>9/15/10</u>	NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS: MW-1R 12.10' MW-2 12.13' MW-A3 11.95' MW-4 13.75' MW-5 15.28'
DEPTH TO BOTTOM FROM TOP OF RISER: <u>13.8 (FT.)</u>			
DEPTH TO WATER FROM TOP OF RISER: <u>7.9 (FT.)</u>			
WATER COLUMN: <u>5.9 (FT.)</u>			
2" DIA. WELL CONSTANT: <u>0.16</u>			
ONE WELL VOLUME= <u>0.94 (GALS)</u>			
PURGE METHOD: <u>Purge 3x well volume then sample.</u>			
BOTTOM OF WELL/SILT BUILDUP: <u>No</u>			
PURGE START TIME: <u>1:15</u> STOP TIM <u>1:30P</u>			
PURGE OBSERVATIONS:			
FIELD PARAMETER MEASUREMENTS:			

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY <small>umhos/cm</small>	TEMP. <small>Celsius</small>	NOTES:
1	7.35	927	15.5	Black slug then clearing
2	7.14	999	16.4	Some solids
3	7.13	1024	16.9	Black slugs
4	7.15	973	17.1	black slugs
5				

TOTAL VOLUME PURGED: 3 gal.

<b>GROUNDWATER OR SEDIMENT SAMPLING DATA:</b>		SAMPLE DATE: <u>9/15/2010</u>
MEDIA: <u>GROUNDWATER</u> <u>X</u>	SAMPLE TIME: <u>1330</u>	
<u>CREEK SEDIMENT</u>		
LOCATION: <u>MW-4, Behind the Auto Zone store</u>		
SAMPLE METHOD: <u>sample using pump with dedicated tubing</u>		
SAMPLING OBSERVATIONS: <u>Purge 3x well volumes then sample with peristaltic pump and dedicated tubing. the well recovered very slowly after the purge.</u>		
QC SAMPLES TAKEN <u>No</u>		
OTHER OBSERVATIONS/COMMENTS: <u>4 Btls , 1 liter glass amber.</u>		
Note: specific conductivity formula to 25 degrees Celcius: $SC(25) = \frac{SC \text{ measured}}{\{(T-25)(0.02)\}+1}$		

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

RECORDED BY: <u>Walker</u>		SAMPLE ID: <u>MW-5-091510</u>	
SAMPLED BY: <u>Jones</u>		SAMPLING EVENT/DATE: <u>9/15/10</u>	
COMPANY: <u>Sevenson</u>		MONITORING WELL: <u>MW-5</u>	
		CONDITION: <u>good</u>	

<b>GROUNDWATER PURGE DATA</b>		PURGE DATE: <u>9/15/10</u>	NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN- LESS STEEL. WELL DEPTHS: MW-1R 12.10' MW-2 12.13' MW-A3 11.95' MW-4 13.75' MW-5 15.28'
DEPTH TO BOTTOM FROM TOP OF RISER: <u>15.35 (FT.)</u>			
DEPTH TO WATER FROM TOP OF RISER: <u>10.31 (FT.)</u>			
WATER COLUMN: <u>5.04 (FT.)</u>			
2" DIA. WELL CONSTANT: <u>0.16</u>			
ONE WELL VOLUME= <u>0.81 (GALS)</u>			
PURGE METHOD: <u>Purge 3x well volume then sample.</u>			
BOTTOM OF WELL/SILT BUILDUP: <u>No</u>			
PURGE START TIME: <u>1250</u>		STOP TIM <u>1300</u>	
PURGE OBSERVATIONS:			
FIELD PARAMETER MEASUREMENTS:			

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. Celsius	NOTES:
1	6.5	1260	14.9	silty
2	6.5	1235	16.2	clearing
3	6.5	1253	16.2	Clearing/Yellow
4	6.9	1248	16	Slight yellow tinge
5				

TOTAL VOLUME PURGED: <u>2.5 gallons</u>
---

<b>GROUNDWATER OR SEDIMENT SAMPLING DATA:</b>		SAMPLE DATE: <u>9/15/2010</u>
MEDIA: <u>GROUNDWATER</u> <u>X</u>	<u>CREEK SEDIMENT</u>	SAMPLE TIME: <u>1300</u>
LOCATION: <u>MW-5 behind Auto Zone near the pipe bridge.</u>		
SAMPLE METHOD: <u>sample using pump with dedicated tubing</u>		
SAMPLING OBSERVATIONS: <u>Purge 3x well volumes then sample with peristaltic pump and dedicated tubing.</u>		
QC SAMPLES TAKEN: <u>No</u>		
OTHER OBSERVATIONS/COMMENTS: <u>4 Btls , 1 liter glass amber.</u>		

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



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

RECORDED BY: <u>Walker</u>		SAMPLE ID: <u>MWA-3-091510</u>	
SAMPLED BY: <u>Jones</u>		SAMPLING EVENT/DATE: <u>9/15/10</u>	
COMPANY: <u>Sevenson</u>		MONITORING WELL: <u>MW-A3</u>	
		CONDITION: <u>good</u>	

<b>GROUNDWATER PURGE DATA</b>		PURGE DATE: <u>9/15/10</u>	NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:
DEPTH TO BOTTOM FROM TOP OF RISER: <u>12 (FT.)</u>			
DEPTH TO WATER FROM TOP OF RISER: <u>11.41 (FT.)</u>			
WATER COLUMN: <u>0.59 (FT.)</u>			
2" DIA. WELL CONSTANT: <u>0.16</u>			
ONE WELL VOLUME= <u>0.09 (GALS)</u>		MW-1R	12.10'
		MW-2	12.13'
		MW-A3	11.95'
		MW-4	13.75'
		MW-5	15.28'

PURGE METHOD: Purge 3x well volume then sample.

BOTTOM OF WELL/SILT BUILDUP: No

PURGE START TIME: 1025 STOP TIM 1027

PURGE OBSERVATIONS: Low water volume in the well, slow recharge

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY <u>umhos/cm</u>	TEMP. <u>Celsius</u>	NOTES:
<u>1</u>	<u>7.2</u>	<u>11.2</u>	<u>17.6</u>	<u>cloudy</u>
<u>2</u>				
<u>3</u>				
<u>4</u>				
<u>5</u>				

TOTAL VOLUME PURGED: 0.27 gal

<b>GROUNDWATER OR SEDIMENT SAMPLING DATA:</b>		SAMPLE DATE: <u>9/15/2010</u>
MEDIA: <u>GROUNDWATER</u>	<u>X</u>	SAMPLE TIME: <u>1030</u>
<u>CREEK SEDIMENT</u>		

LOCATION: MW-A3 , behind the Falls Motel on NFBlvd

SAMPLE METHOD: Grab sample after the purge process drained the well dry.

SAMPLING OBSERVATIONS: The well would not recharge after the first 1.5 liters. I have to return later to get more sample volume for the SVOA analysis.

QC SAMPLES TAKEN: NO

OTHER OBSERVATIONS/COMMENTS: 1 , 1 liter glass amber bottles filled.

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

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

RECORDED BY: <u>Walker</u>		SAMPLE ID: <u>DS-1-091510</u>	
SAMPLED BY: <u>Jones</u>		SAMPLING EVENT/DATE: <u>9/15/10</u>	
COMPANY: <u>Sevenson</u>		MONITORING WELL: _____	
CONDITION: _____			

<b>GROUNDWATER PURGE DATA</b>		PURGE DATE: _____		NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN- LESS STEEL. WELL DEPTHS:	
DEPTH TO BOTTOM FROM TOP OF RISER: _____		(FT.)			
DEPTH TO WATER FROM TOP OF RISER: _____		(FT.)			
WATER COLUMN: _____		(FT.)			
2" DIA. WELL CONSTANT: <u>0.16</u>					
ONE WELL VOLUME= _____		(GALS)		MW-1R	12.10'
PURGE METHOD:				MW-2	12.13'
BOTTOM OF WELL/SILT BUILDUP:				MW-A3	11.95'
PURGE START TIME:		STOP TIME:		MW-4	13.75'
PURGE OBSERVATIONS:				MW-5	15.28'
FIELD PARAMETER MEASUREMENTS:					
WELL VOLUME	pH	SPECIFIC CONDUCTIVITY <u>umhos/cm</u>	TEMP. <u>(C OR F)</u>	NOTES:	
1					
2					
3					
4					
5					
TOTAL VOLUME PURGED: _____					

<b>GROUNDWATER OR SEDIMENT SAMPLING DATA:</b>		SAMPLE DATE: <u>9/15/2010</u>	
MEDIA:	GROUNDWATER _____ CREEK SEDIMENT <u>X</u>	SAMPLE TIME: <u>12:00 AM</u>	
LOCATION:	<u>Downstream sediment sample, taken from sediment trap downstream of the landfill cap even with the fourth fence post. Middle of creek.</u>		
SAMPLE METHOD:	<u>Sediment trap composite.</u>		
SAMPLING OBSERVATIONS: _____			
QC SAMPLES TAKEN:	<u>No</u>		
OTHER OBSERVATIONS/COMMENTS: <u>1 , 4ounce glass jars filled.</u>			
Note: specific conductivity formula to 25 degrees Celcius: $SC(25) = \frac{SC \text{ measured}}{\{(T-25)(0.02)\}+1}$			

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

RECORDED BY: <u>Walker</u>		SAMPLE ID: <u>MHB-091510</u>	
SAMPLED BY: <u>Jones</u>		SAMPLING EVENT/DATE: <u>9/15/10</u>	
COMPANY: <u>Sevenson</u>		MONITORING WELL: <u>Manhole B</u>	
		CONDITION: <u>good</u>	

<b>GROUNDWATER PURGE DATA</b>		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: <u>0.16</u>				MW-1R	12.10'
ONE WELL VOLUME= _____		(GALS)		MW-2	12.13'
				MW-A3	11.95'
				MW-4	13.75'
				MW-5	15.28'
PURGE METHOD: _____		GRAB SAMPLE			
BOTTOM OF WELL/SILT BUILDUP: _____					
PURGE START TIME: _____		STOP TIME: _____			
PURGE OBSERVATIONS: _____					
FIELD PARAMETER MEASUREMENTS:					
WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:	
<u>1</u>	<u>7.59</u>	<u>707</u>	<u>12.8 c</u>		
<u>2</u>					
<u>3</u>					
<u>4</u>					
<u>5</u>					
TOTAL VOLUME PURGED: GRAB SAMPLE					

<b>GROUNDWATER OR SEDIMENT SAMPLING DATA:</b>		SAMPLE DATE: <u>9/15/2010</u>	
MEDIA: GROUNDWATER <u>X</u>	CREEK SEDIMENT _____	SAMPLE TIME: <u>915</u>	
LOCATION: <u>Manhole B on Cap</u>			
SAMPLE METHOD: <u>Grab sample using pump with dedicated tubing</u>			
SAMPLING OBSERVATIONS: _____			
QC SAMPLES TAKEN: _____ NO			
OTHER OBSERVATIONS/COMMENTS: <u>4 , 1 liter glass amber bottles filled.</u>			
<div style="text-align: right;">           SC measured            Note: specific conductivity formula to 25 degrees Celcius: <math>SC(25)= \frac{SC(T)}{1.04} + 1</math> </div>			



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

RECORDED BY: Walker SAMPLE ID: MS-1-091510 and US-1-091510  
SAMPLED BY: Jones SAMPLING EVENT/DATE: 9/15/10  
COMPANY: Severson MONITORING WELL: \_\_\_\_\_  
CONDITION: \_\_\_\_\_

GROUNDWATER PURGE DATA PURGE DATE: \_\_\_\_\_  
DEPTH TO BOTTOM FROM TOP OF RISER: (FT.) NOTE: ALL GIBSON SITE  
DEPTH TO WATER FROM TOP OF RISER: (FT.) MONITORING WELLS ARE  
WATER COLUMN: (FT.) 2-INCH DIAMETER STAIN-  
2" DIA. WELL CONSTANT: 0.16 LESS STEEL. WELL DEPTHS:  
ONE WELL VOLUME= (GALS) MW-1R 12.10'  
MW-2 12.13'  
MW-A3 11.95'  
MW-4 13.75'  
MW-5 15.28'  
PURGE METHOD:  
BOTTOM OF WELL/SILT BUILDUP:  
PURGE START TIME: STOP TIME:  
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

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

TOTAL VOLUME PURGED: \_\_\_\_\_

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/15/2010

MEDIA: GROUNDWATER \_\_\_\_\_ SAMPLE TIME: 11:15 AM  
CREEK SEDIMENT X

LOCATION: Upstream creek sediment sample from sediment trap upstream of the landfill cap.  
Middle of the creek, even with the steel gate posts.

SAMPLE METHOD: Sediment trap composite.

SAMPLING OBSERVATIONS: \_\_\_\_\_

QC SAMPLES TAKEN: A sample c

OTHER OBSERVATIONS/COMMENTS: 2, 4ounce glass jars filled.

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

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

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

DATE: 9/17/2010 TIME: 1050

INSPECTOR: Walker COMPANY: Sevenson Environmental Services

WEATHER: Cloudy 55 F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	<u>7.32</u>	<u>565.4</u>	
P-2	574.89	<u>9.69</u>	<u>565.2</u>	
P-3	574.16	<u>9.25</u>	<u>564.91</u>	
P-4	576.14	<u>11.07</u>	<u>565.07</u>	
P-5	575.05	<u>7.82</u>	<u>567.23</u>	
P-6	578.28	<u>11.35</u>	<u>566.93</u>	
MANHOLE A	575.22	<u>11.02</u>	<u>564.2</u>	
MANHOLE B	577.34	<u>13.66</u>	<u>563.68</u>	

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

ADDITIONAL COMMENTS/OBSERVATIONS: \_\_\_\_\_

## **Attachment E**

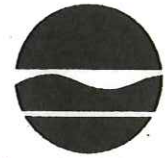


**New York State Department of Environmental Conservation  
Division of Environmental Remediation, Region 9**

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Alexander B. Grannis

Commissioner

Received

FEB 25 2010

Env. Remediation

February 19, 2010

Mr. Michael J. Bellotti, P.G.  
Principal Environmental Scientist  
Olin Corporation  
3855 Ocoee Street, Suite 200  
Cleveland, TN. 37312

Dear Mr. Bellotti,

**2009 Periodic Review Report  
Charles Gibson, Site No. 932063  
Niagara Falls (C), Niagara County, NY**

The New York State Department of Environmental Conservation (NYSDEC) is in receipt of the 2009 Periodic Review Report (PRR). It was received in our office on January 29, 2010. The NYSDEC has done a detailed review of the report and finds it acceptable. This letter, therefore, transmits formal approval of the report. We do however have a few minor comments.

The NYSDEC agrees with Olin on the sites remedial effectiveness, but differs slightly on the recommendation. For ease, our comments will follow Olin's reporting chronology.

1. Institutional and Engineering Certification Form (ICEC), Enclosure 1, Verification of Site Details, Box 2, question 4. Olin answered Y.

**Comment:** The NYSDEC is unaware of a Deed Restriction for the site. Please forward a copy if filed with the Niagara County Clerk.

2. Institutional and Engineering Certification Form (ICEC), Enclosure 1, Verification of Site Details, Box 2, questions 5 & 6. Olin answered N and Y respectively.

**Comment:** The Charles Gibson Site is not a non-significant threat Brownfield Cleanup Program Site. Therefore, the answers for these questions are N/A. The NYSDEC realizes

that the wording isn't clear and N/A boxes are not present. We are working with Albany to have this changed for the 2010 Periodic Review Report.

3. Periodic Review Report (PRR) Certification Statements. 2. (e). Olin answered Y; (part of group (a) thru (d), 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.

**Comment:** The NYSDEC is unaware of a financial assurance mechanism by Olin. Please forward or state reference in applicable document.

4. Section E. Recommendation for changes: "The groundwater monitoring program has shown consistent results throughout this monitoring period. It is requested that the groundwater sampling event be changed to every other year, from annually".

**Comment:** The ground water sampling event should remain on a annual basis at this time. In 2009, NYSDEC granted a request to reduce ground water sampling frequency from Semi-Annually to Annually with rotating spring/fall events.

5. Section VI, O&M Plan Compliance Report, B. O&M Summary, First Paragraph. Olin reports that "The ground water collection system is inspected semi-annually for the buildup of hard or soft scale-like deposits. The inspection is performed concurrently with the inspection of the capped area",

**Comment:** How is the inspection done?

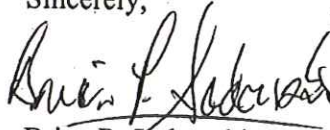
6. Section VI. O&M Plan Compliance Report, B. O&M Summary, Last Paragraph, Last sentence. Olin reports that "The 2009 data show a decrease in sediment BHC levels, both upstream and downstream. Olin will continue to track this trend".

**Comment:** Table 2, Analytical Summary, Annual Cayuga Creek Sediment Sampling 2001-2009 indicates that the BHC levels increased at the upstream location and decreased at the downstream location in 2009 compared to 2008. Please clarify.

Mr. Michael Bellotti  
February 19, 2010  
Page 3

The NYSDEC looks forward to your response on our comments. In addition, as a courtesy and notification the NYSDEC will be on site for the April 14, 2010; 2<sup>nd</sup> quarter inspection. Please notify us of the time the inspection will take place.

Sincerely,



Brian P. Sadowski  
Env. Engineering Technician III

BPS:dcg  
sadowski/bellotti-feb2.ltr

cc: Mr. Gregory P. Sutton, NYSDEC, Region 9  
Mr. Michael J. Hinton, NYSDEC, Region 9





3855 NORTH OCOEE STREET SUITE 200, CLEVELAND, TN 37312  
OFFICE: (423) 336-4000 FAX: (423) 336-4166

April 6, 2010

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

Subject: Charles Gibson Site  
NYSDEC Registry No. 9-32-063  
Periodic Review Report - 2009

Dear Mr. Sadowski:

Olin has received the letter from NYSDEC that further clarifies the 2009 Periodic Review Report (PRR) and provides the following responses. Olin will provide future annual reports with the following revisions:

1. The Charles Gibson Site does not have a deed restriction. The correct response for the ICEC, Enclosure 1, Verification of Site Details, Box 2, question 4, should have been marked "NO". Olin will correct this answer on future submittals of the ICEC.
2. The Charles Gibson Site is not a non-significant threat Brownfield Cleanup Program Site. Therefore, the response for the ICEC, Enclosure 1, Verification of Site Details, Box 2 questions 5 and 6 should be N/A.
3. There is not a financial assurance mechanism required by the oversight document for the Charles Gibson site. The correct response for the PRR certification Statement 2 should be "NO". Olin will correct this response on future submittals of the PRR Certification Statements.
4. Olin will continue with ground water sampling on an annual basis with rotating spring/fall events at this time.
5. During the four quarterly inspections at the Charles Gibson site in Niagara Falls, NY, a field technician checks the levels and the total depth of the piezometers and the 2 manholes that are within the fenced area of the site. The water levels are measured with an electronic water level meter. When the steel tipped sensor encounters a conductive liquid, such as water, the unit produces an audible beeping sound to let the operator know that the tape has reached the water level. The operator measures the depth relative to the top of the well casing and determines the depth to water. Using this same meter/tape, the operator continues to lower the sensor to the bottom of the well/manhole and determines the depth to the bottom to determine if there is any noticeable buildup of sludge or mud. Typically this would make the tip of the measuring tape feel "soft" or "mushy" against the bottom. A "hard" or "sharp" sensation that carries through the tape would indicate a clean, flat bottom to the well with no build up of solids.

6. Table 2, Analytical Summary, Annual Cayuga Creek Sediment Sampling 2001-2009 indicates that the sediment BHC levels have decreased downstream. Upstream samples continue to show elevated BHC levels over the past two years. Olin will continue to closely monitor this trend in future sampling events.

Sincerely,  
OLIN CORPORATION

  
Michael J. Bellotti  
Principal Environmental Specialist

ecc: C. M. Richards via e-mail  
Brian Vain – Olin Niagara Falls via e-mail  
Mike Walker – Severson Environmental Services via e-mail

cc: Matthew Forcucci – NYSDOH Buffalo  
Mr. Michael Hinton – NYSDEC Buffalo