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

January 26, 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:

As requested by NYSDEC I have attached one hard copy and one electronic version (in Adobe PDF format) of the subject report. This report summarizes the site conditions and activities performed during 2009 for the monitoring, operation and maintenance of the containment remedy for the Charles Gibson site in Niagara Falls, NY.

The report is in the format requested by NYSDEC, and is submitted prior to January 31, 2010, as specified in the attached email documentation.

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

Sincerely,
OLIN CORPORATION

Michael J. Bellotti
Principal Environmental Specialist

ecc: C. M. Richards
Brian Vain – Olin Niagara Falls
Mike Walker – Sevenson Environmental Services

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

Bellotti, Mike J CERG

From: Michael Hinton [mjhinton@gw.dec.state.ny.us]
Sent: Friday, November 20, 2009 8:47 AM
To: Bellotti, Mike J CERG
Cc: Brian Sadowski
Subject: Re: Gibson site PRR

Mike,
Yes, Jan 31 will be the submittal date for the PRR.
Mike

>>> "Bellotti, Mike J CERG" <MJBellotti@olin.com> 11/20/2009 8:39 AM >>>
Brian and Mike:
I received your notice regarding the requirement for submittal of a Periodic Review Report (PRR) for the Charles Gibson site in Niagara Falls, NY by December 31, 2009. Olin will submit the PRR per the required format and schedule. This is to confirm that the PRR will replace the annual report for the Charles Gibson site, traditionally submitted on January 31 of each year. Please confirm that this is the case. Thanks.

Michael J. Bellotti, P.G.
Principal Scientist
Olin Corporation Environmental Remediation Group
3855 North Ocoee Street, Suite 200
Cleveland, TN 37312
423-336-4587
mjbellotti@olin.com

Enclosure 1

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

Site Details **Box 1**

Site No. 932063

Site Name Charles Gibson Site

Site Address: N.E. Cnr. of Niagara Falls Blvd. & Tuscarora Rd. Zip Code: 14304
City/Town: Niagara Falls
County: Niagara
Allowable Use(s) (if applicable, does not address local zoning):
Site Acreage: 2.0
Owner: OLIN CORPORATION
3855 North Ocoee St., Clevland, TN 37312

Reporting Period: March 02, 2009 to December 31, 2009

Verification of Site Details **Box 2**

		YES	NO
1.	Is the information in Box 1 correct?	☑	☐
	If NO, are changes handwritten above or included 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?	☐	☑
	If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	
3.	Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☑
	If YES, is documentation (or evidence that documentation has been previously submitted) included with this certification?	☐	
4.	If use of the site is restricted, is the current use of the site consistent with those restrictions?	☑	☐
	If NO, is an explanation included with this certification?	☐	
5.	For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?	☐	☑
	If YES, is the new information or evidence that new information has been previously submitted included with this Certification?	☐	
6.	For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), are the assumptions in the Qualitative Exposure Assessment still valid (must be certified every five years)?	☑	☐
	If NO, are changes in the assessment included with this certification?	☐	

SITE NO. 932063

Description of Institutional Controls

Parcel	Institutional Control
S_B_L Image: **161.05-3-7**	Monitoring Plan O&M Plan
S_B_L Image: **161.05-5-12**	Monitoring Plan O&M Plan

Description of Engineering Controls

Parcel	Engineering Control
S_B_L Image: **161.05-3-7**	Cover System Fencing/Access Control Groundwater Containment Leachate Collection
S_B_L Image: **161.05-5-12**	Cover System Fencing/Access Control Groundwater Containment Leachate Collection

Attach documentation if IC/ECs cannot be certified or why IC/ECs are no longer applicable. (See instructions)

Control Description for Site No. 932063

Parcel: 161.05-3-7

Consent Judgment 3/85 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 3/85 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

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
☑	☐

3. If this site has an Operation and Maintenance (O&M) Plan (or equivalent as required in the Decision Document);

   I certify by checking "YES" below that the O&M Plan Requirements (or equivalent as required in the Decision Document) are being met.

☑	☐

4. If this site has a Monitoring Plan (or equivalent as required in the remedy selection document);

   I certify by checking "YES" below that the requirements of the Monitoring Plan (or equivalent as required in the Decision Document) is being met.

YES	NO
☑	☐

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. Bellotti, at 3855 North Ocoee Street, Suite, 200, Cleveland, TN 37312 at _____.
print name print business address

am certifying as Representative of site Owner, Olin Corporation (Owner or Remedial Party)

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

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

1/25/2010
Date

IC/EC CERTIFICATIONS

Box 7

QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP) 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. Bellotti, at 3855 North Ocoee Street, Suite, 200, Cleveland, TN 37312

_____ _____
print name print business address

am certifying as a Qualified Environmental Professional for the site Owner, Olin Corporation

(Owner or Remedial Party) for the Site named in the Site Details Section of this form.

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

_____
Stamp (if Required)

1/25/2010
Date

TABLE OF CONTENTS

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 2009 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 2009 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. ***Attachment A*** shows the most recent tables for piezometric data demonstrating that inward gradient.

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 are 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.

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. It is requested that the groundwater sampling event be changed to every other year, from annually.

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.

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 2009 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. .For 2009, creek sediments were sampled in duplicate to monitor elevated sediment concentrations of BHC detected in 2008. The 2008 elevated levels were detected in both upstream and downstream samples. The 2009 data show a decrease in sediment BHC levels, both upstream and downstream. Olin will continue to track this trend.

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.

- 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 2001-2008

MONITOR WELL: MW-A3

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

MONITOR WELL: MW-1R

	2001		2002		2003		2004		2005		2006		2007		2008		2009	
Parameter	April	October	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	-
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	-
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	-
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	-
Hexachlorobenzene	10U/10U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	10U	NR	NR	5U	NR	NR	NR

MONITOR WELL: MW-2

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

Notes: Concentration in ug/l

- \- insufficient sample
- U Undetected
- J Estimated value
- NR Not required

TABLE 1
CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL SUMMARY
SEMI-ANNUAL GROUND WATER SAMPLING 2001-2009

MONITOR WELL: MW-4

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

MONITOR WELL: MW-5

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

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 - 2009

UPSTREAM

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

DOWNSTREAM

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

Notes:

U Not Detected

J Estimated value

NS No sample in trap

* Sediment traps installed April 2001

Table 3

2009 Quarterly Groundwater Elevations Summary

Piezometer Pair	2/13/2009	Inward gradient	4/02/2009	Inward gradient	9/17/2009	Inward gradient	11/23/2009	Inward gradient
P1 outside **P2 inside**	NA NA	NA	565.46 565.43	Inward	566.37 565.42	Inward	565.31 565.29	Inward
P3 outside **P4 inside**	NA NA	NA	566.81 565.34	Inward	566.51 565.29	Inward	566.41 565.24	Inward
P5 outside **P6 inside**	NA NA	NA	569.11 567.77	Inward	568.60 567.58	Inward	568.70 567.37	Inward
		Below 565 ft msl		Below 565 ft msl		Below 565 ft msl		Below 565 ft msl
Manhole A **Manhole B**	NA NA	NA NA	563.97 564.03	Yes Yes	563.67 563.74	Yes Yes	563.52 563.61	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

Date	Volume (gallons)
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**
TOTALS	**1,044,862**

Monthly Discharge Volumes
2009

Month	Volume (gallons)
Jan	5,672
Feb	5,111
Mar	5,503
Apr	5,206
May	4,651
Jun	2,851
Jul	1,269
Aug	951
Sep	2,099
Oct	1,862
Nov	2,132
Dec	2,880
Total	**40,187**

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

April 02, 2009

	MANHOLE B (MHB)
PARAMETER	
alpha-BHC	0.049
beta-BHC	0.040J
delta-BHC	0.17
gamma-BHC	0.048U
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 October 2010

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: 2/20/2009 TIME: 900

INSPECTOR: Michael Walker COMPANY: Sevenson Environmental Services

WEATHER: 19 F, Windy, 1" snow on the ground

REASON FOR INSPECTION (QUARTERLY OR OTHER): 1st Quarter Inspection 2009

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

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

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

SECURITY:

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

ADDITIONAL COMMENTS: The casing for PZ-5 was tilted. It looks like it may have heaved from the frozen ground. There is no apparent damage to the actual piezometer, I will check on it again after the ground thaws to see if it needs any repair. I met onsite with Mike Hinton and Brian Sydowski from the NYSDEC. We did a site walk and discussed the location of the sediment traps in the creek. Mike Hinton has also requested that we cut down any vegetation thicker than 1" diameter that is growing along the creek bank through the rip rap.

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: 4/2/909 TIME: 900

INSPECTOR: M. Walker COMPANY: Sevenson Environmental Services

WEATHER: sunny 55F

REASON FOR INSPECTION (QUARTERLY OR OTHER): 2nd quarter inspection and Spring sample event

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

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

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

ADDITIONAL COMMENTS: Brian Sydowski fromm the NYSDEC was also onsite to do the site walk and inspection. The 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: M. Walker TIME: 800

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Quarterly Insp./ Sample Sediment

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

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

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

SECURITY:

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

ADDITIONAL COMMENTS:

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: 11/23/2009 TIME: 930

INSPECTOR: M. Walker COMPANY: Sevenson Environmental Services

WEATHER: Sunny 42 F

REASON FOR INSPECTION (QUARTERLY OR OTHER): Quarterly inspection

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

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

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

SECURITY:

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

ADDITIONAL COMMENTS: Site looks good.

Attachment D

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

RECORDED BY: Jones
SAMPLED BY: Jones
COMPANY: Sevenson

SAMPLE ID: MW-1R0040209 & (MW-7-040209)
SAMPLING EVENT/DATE: 4/2/2009
MONITORING WELL: MW-1R
CONDITION: OK

GROUNDWATER PURGE DATA PURGE DATE: 4/2/2009

DEPTH TO BOTTOM FROM TOP OF RISER: 12.1 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 4.11 (FT.)
WATER COLUMN: 7.99 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.2784 (GALS)

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'

PURGE METHOD: Perastaltic pump w/ dedicated tubing
BOTTOM OF WELL/SILT BUILDUP: No
PURGE START TIME 1145 STOP TIME: 1210
PURGE OBSERVATIONS: Clear, No Odor

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
Initial	8.17	225	16.1	Clear
1	8.12	242	16.3	Clear
2	8.04	294	16.4	Clear
3	7.91	307	16.5	Clear
Sample	7.91	307	16.5	Clear

TOTAL VOLUME PURGED: 4 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/2/2009

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1215

LOCATION: MW-1R (tuscorora Rd)

SAMPLE METHOD: Purge 3 volumes , then Sample.

SAMPLING OBSERVATIONS: Clear , No Odor

QC SAMPLES TAKEN: Blind Duplicate sample taken for QC check. Labeled: MW-7-040209, 1420

OTHER OBSERVATIONS/COMMENTS: 4, 1 liter amber bottles taken (BHC)

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

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

RECORDED BY: Jones
SAMPLE ID: MW2-040209
SAMPLED BY: Jones
SAMPLING EVENT/DATE: 4/2/2009
COMPANY: Sevenson
MONITORING WELL: MW-2
CONDITION: OK

GROUNDWATER PURGE DATA PURGE DATE: 4/2/2009

DEPTH TO BOTTOM FROM TOP OF RISER: 12.13 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 4.55 (FT.)
WATER COLUMN: 7.58 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.2128 (GALS)

PURGE METHOD: Perastaltic pump w/ dedicated tubing
BOTTOM OF WELL/SILT BUILDUP: No
PURGE START TIME 1050 STOP TIME: 1120
PURGE OBSERVATIONS:

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'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
Initial	7.95	505	12.3	Init. Sediment Disch.
1	7.93	825	12.7	Clear
2	7.85	807	12.9	Clear
3	7.81	791	13.4	Clear
Sample	7.81	791	13.4	Clear

TOTAL VOLUME PURGED: 4 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/2/2009

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1125

LOCATION: MW-2

SAMPLE METHOD: Purge 3 volumes , then Sample.

SAMPLING OBSERVATIONS: Clear , No Odor

QC SAMPLES TAKEN: MS and MSD samples taken

OTHER OBSERVATIONS/COMMENTS: 6, 1 liter amber bottles taken (BHC)

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

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

RECORDED BY: Jones **SAMPLE ID:** MWA3-040209

SAMPLED BY: Jones SAMPLING EVENT/DATE: 4/2/2009

COMPANY: Sevenson MONITORING WELL: MWA-3

CONDITION: OK

GROUNDWATER PURGE DATA PURGE DATE: 4/2/2009

DEPTH TO BOTTOM FROM TOP OF RISER: 11.95 (FT.)

DEPTH TO WATER FROM TOP OF RISER: 5.94 (FT.)

WATER COLUMN: 6.01 (FT.)

2" DIA. WELL CONSTANT: 0.16

ONE WELL VOLUME= 0.9616 (GALS)

PURGE METHOD: Perastaltic pump w/ dedicated tubing

BOTTOM OF WELL/SILT BUILDUP: No

PURGE START TIME 1345 STOP TIME: 1400

PURGE OBSERVATIONS: Clear, No Odor

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'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
Initial	7.12	77.9	10.2	
1	7.18	198	10.1	Clear
2	7.25	207	10	Clear
3	7.22	241	9.6	Clear
Sample	7.22	241	9.6	Clear

TOTAL VOLUME PURGED: 3 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/2/2009

MEDIA: GROUNDWATER X SAMPLE TIME: 1400
CREEK SEDIMENT

LOCATION: MWA-3, behind the Niagara Motel on NF BLVD.

SAMPLE METHOD: Purge 3 volumes , then Sample.

SAMPLING OBSERVATIONS: Clear , No Odor

QC SAMPLES TAKEN: no

OTHER OBSERVATIONS/COMMENTS: 2, 1 liter amber bottles taken (BHC)

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

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

RECORDED BY: Jones
SAMPLED BY: Jones
COMPANY: Sevenson

SAMPLE ID: MW-4-040209
SAMPLING EVENT/DATE: 4/2/2009
MONITORING WELL: MW-4
CONDITION: OK

GROUNDWATER PURGE DATA PURGE DATE: 4/2/2009

DEPTH TO BOTTOM FROM TOP OF RISER: 13.75 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 6.77 (FT.)
WATER COLUMN: 6.98 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.1168 (GALS)

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'

PURGE METHOD: Perastaltic pump w/ dedicated tubing
BOTTOM OF WELL/SILT BUILDUP: No
PURGE START TIME 1310 STOP TIME: 1335
PURGE OBSERVATIONS: Clear, No Odor

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
Initial	8.03	296	10.1	
1	7.79	872	8.4	Clear
2	7.75	710	8.8	Clear
3	7.43	749	8.7	Clear
Sample	7.43	749	8.7	Clear

TOTAL VOLUME PURGED: 3.75

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/2/2009

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1335

LOCATION: MW-4

SAMPLE METHOD: Purge 3 volumes , then Sample.

SAMPLING OBSERVATIONS: Clear , No Odor

QC SAMPLES TAKEN: no

OTHER OBSERVATIONS/COMMENTS: 2, 1 liter amber bottles taken (BHC)

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

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

RECORDED BY: Jones
SAMPLED BY: Jones
COMPANY: Sevenson

SAMPLE ID: MW5-040209
SAMPLING EVENT/DATE: 4/2/2009
MONITORING WELL: MW-5
CONDITION: OK

GROUNDWATER PURGE DATA PURGE DATE: 4/2/2009

DEPTH TO BOTTOM FROM TOP OF RISER: 15.28 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 6.94 (FT.)
WATER COLUMN: 8.34 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.3344 (GALS)

PURGE METHOD: Perastaltic pump w/ dedicated tubing
BOTTOM OF WELL/SILT BUILDUP: No
PURGE START TIME 1230 STOP TIME: 1300
PURGE OBSERVATIONS: Clear, No Odor

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'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
Initial	6.65	1078	9.3	initial insect discharge
1	6.58	933	8.9	Clear
2	6.69	910	8.8	Clear
3	6.6	907	8.7	Clear
Sample	6.6	907	8.7	Clear

TOTAL VOLUME PURGED: 4 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/2/2009

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1305

LOCATION: MW-5

SAMPLE METHOD: Purge 3 volumes , then Sample.

SAMPLING OBSERVATIONS: Clear , No Odor

QC SAMPLES TAKEN: no

OTHER OBSERVATIONS/COMMENTS: 2, 1 liter amber bottles taken (BHC)

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

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

RECORDED BY: C. Jones
SAMPLED BY: C. Jones
COMPANY: Sevenson

SAMPLE ID: MW-8 (field blank)
SAMPLING EVENT/DATE: 040209, 1300
MONITORING WELL:
CONDITION:

GROUNDWATER PURGE DATA PURGE DATE:

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

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

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'

FIELD PARAMETER MEASUREMENTS:

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

TOTAL VOLUME PURGED:

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE:

MEDIA: GROUNDWATER _____ SAMPLE TIME:
CREEK SEDIMENT _____

LOCATION:

SAMPLE METHOD:

SAMPLING OBSERVATIONS:

QC SAMPLES TAKEN:

OTHER OBSERVATIONS/COMMENTS:

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

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

RECORDED BY: Jones
SAMPLED BY: Jones
COMPANY: Sevenson

SAMPLE ID: MHB-040209
SAMPLING EVENT/DATE: 4/2/2009
MONITORING WELL: manhole B
CONDITION: OK

GROUNDWATER PURGE DATA PURGE DATE:

DEPTH TO BOTTOM FROM TOP OF RISER: (FT.)
DEPTH TO WATER FROM TOP OF RISER: 13.31 (FT.)
WATER COLUMN: (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= (GALS)

PURGE METHOD:
BOTTOM OF WELL/SILT BUILDUP:
PURGE START TIME: STOP TIME:
PURGE OBSERVATIONS: Ran pump for 2 min. to flush tubing

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'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1				
2				
3				
4				
5	7.9	556	12.4	clear

TOTAL VOLUME PURGED:

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/2/2009

MEDIA: GROUNDWATER ____ CREEK SEDIMENT ____
SAMPLE TIME: 1015

LOCATION: Man Hole B

SAMPLE METHOD: Grab Sample W/ Perastaltic pump

SAMPLING OBSERVATIONS: Clear , No Odor

QC SAMPLES TAKEN: No

OTHER OBSERVATIONS/COMMENTS: 2, 1 liter amber bottles taken (BHC)

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

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

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

DATE: 4/2/2009 TIME: 900

INSPECTOR: Walker COMPANY: Sevenson

WEATHER: Sunny 55F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	7.26	565.46	
P-2	574.89	9.46	565.43	
P-3	574.16	7.35	566.81	
P-4	576.14	10.8	565.34	
P-5	575.05	5.94	569.11	
P-6	578.28	10.51	567.77	
MANHOLE A	575.22	11.25	563.97	
MANHOLE B	577.34	13.31	564.03	

(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: Built up topsoil around P-5 to give the well casing some support, as it was tilted a bit.

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

RECORDED BY: M. Walker **SAMPLE ID:** US-1-091709

SAMPLED BY: M. Walker SAMPLING EVENT/DATE: 9/17/2009

COMPANY: Sevenson Environmental Services MONITORING WELL: NO

CONDITION:

GROUNDWATER PURGE DATA PURGE DATE:

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

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

WATER COLUMN: (FT.)

2" DIA. WELL CONSTANT: 0.16

ONE WELL VOLUME= (GALS)

PURGE METHOD:

BOTTOM OF WELL/SILT BUILDUP:

PURGE START TIME: STOP TIME:

PURGE OBSERVATIONS:

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'

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: 9/17/2009

MEDIA: GROUNDWATER
CREEK SEDIMENT Yes

SAMPLE TIME: 1130

LOCATION: Center of creek bed, upstream of the cap, in line with the steel gate posts.

SAMPLE METHOD: Composite sample, using sediment from the sediment trap placed last year.

SAMPLING OBSERVATIONS: Not a lot of sediment in the trap this year,

QC SAMPLES TAKEN: Duplicate samples taken and labeled USD-1-091709, for QC purposes.

OTHER OBSERVATIONS/COMMENTS: Water level in the creek was low this summer,

This could have contributed to the lack of sediment in the trap.

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

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

RECORDED BY: M. Walker **SAMPLE ID:** CGS-DS-1-091709

SAMPLED BY: M. Walker SAMPLING EVENT/DATE: 9/17/2009

COMPANY: Sevenson Environmental Service MONITORING WELL: NO

CONDITION:

GROUNDWATER PURGE DATA PURGE DATE:

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

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

WATER COLUMN: (FT.)

2" DIA. WELL CONSTANT: 0.16

ONE WELL VOLUME= (GALS)

PURGE METHOD:

BOTTOM OF WELL/SILT BUILDUP:

PURGE START TIME: STOP TIME:

PURGE OBSERVATIONS:

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'

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: 9/17/2009

MEDIA: GROUNDWATER
CREEK SEDIMENT Yes

SAMPLE TIME: 1200

LOCATION: Creek bed, downstream of the cap, inline with the 3rd fence post from the corner .

SAMPLE METHOD: Composite sample, using sediment from the sediment trap placed last year.

SAMPLING OBSERVATIONS: Not a lot of sediment in the trap this year, similar to the US sample.

QC SAMPLES TAKEN: Duplicate samples taken and labeled CGS-DSD-1-091709, for QC purposes.

OTHER OBSERVATIONS/COMMENTS: Water level in the creek was low this summer, This could have contributed to the lack of sediment in the trap.

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

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: 91709 TIME: 800

INSPECTOR: Walker COMPANY: Sevenson

WEATHER: Sunny 48 F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	6.35	566.37	
P-2	574.89	9.47	565.42	
P-3	574.16	7.65	566.51	
P-4	576.14	10.85	565.29	
P-5	575.05	6.45	568.6	
P-6	578.28	10.7	567.58	
MANHOLE A	575.22	11.55	563.67	
MANHOLE B	577.34	13.6	563.74	

(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: site looked good.