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Superfund - HW
Spills - SP
ERP - E
VCP - V
BCP - C

Olin

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

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Mr. Michael J. Hinton, P.E.
Environmental Engineer II
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
Sixteenth Annual Report - 2008

Dear Mr. Hinton:

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 activities performed during 2008 for the operation and maintenance of the containment remedy for the site and for the ground water monitoring program outside of the containment area.

The following major activities occurred during 2008.

- Semi-annual groundwater sampling events were performed during April and September, 2008.
- Annual sediment sampling was performed in September.
- Annual sampling and analysis of leachate was completed in April.
- 40,223 gallons of leachate were discharged to the City of Niagara Falls Wastewater Treatment Facility.
- An improved automated level control was installed in the sump.
- Sump intake level was lowered by approximately one foot to enhance the site inward hydraulic gradient.

The Semi-Annual Ground Water Sampling Laboratory Report and Annual Sediment Sampling Laboratory Report - September 2008, are included as Appendix A to this report. The Data Evaluation Narrative is also included in Appendix A.

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 via e-mail
Brian Vain – Olin Niagara Falls via e-mail
Mike Walker – Sevenson Environmental Services via e-mail
Matthew Forcucci – NYSDOH Buffalo

SIXTEENTH ANNUAL REPORT

2008

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063

PREPARED BY OLIN CORPORATION

JANUARY - 2009

Introduction

This is the sixteenth Annual Report from Olin Corporation (Olin) for the Charles Gibson Site (Pine and Tuscarora Site), located in Niagara Falls, New York. This report summarizes activities performed during 2008 for the operations and maintenance of the containment remedy for the Site and the ground water monitoring program outside of the containment area. This year's data for the Semi-Annual Ground Water and Annual Sediment Sampling, collected during September 2008 has been incorporated as part of the Annual Report.

Background

The Charles Gibson Site (Site) is located approximately four miles east of downtown Niagara Falls, New York. The Site comprises an area of approximately two acres of land in Niagara County bordered on the south by private property, on the west by Tuscarora Road and on the north and east by Cayuga Creek. The Site is a fully remediated waste site currently surrounded by a fence.

Construction of the remedy on the 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 Site is classified as a commercial/small industrial/residential user (CSIRU) and does not require a permit.

Reports are submitted as appropriate to the New York State Department of Environmental Conservation (NYSDEC). Records of all environmental monitoring are maintained by Olin Corporation. These records are available for review and inspection by the State.

Discussion

The Stipulation and Consent Judgment, CIV 83-1400, and its modification, CIV 83-1400C, (the Agreement) listed the following elements to be included in the required remediation plan for the Site (Plan C):

1. Quarterly ground water monitoring for 30 years (revised in 1997 to semiannual);
2. Sample collection and analysis of creek water and of creek sediments annually for 30 years. During 1993 the creek water sampling was discontinued and sediment sampling was modified to collection during the low flow/dry season;
3. Establishment of an upward hydraulic gradient within the containment area, unless Olin can demonstrate by clear and convincing evidence the establishment of the same is unnecessary or inappropriate to the accomplishment of the goals set forth in paragraph 4(a) of the stipulation;
4. Acquisition by Olin of easements which would permit the required monitoring;
5. Provisions for protection of the Site from disturbance which might increase the threat of contamination migration, including regular inspection of the site;
6. Provisions for the design and implementation of a contingency plan in the event that migration of the contaminants occurs despite the implementation of the containment remediation plan;
7. Containment or removal of the contaminants deposited or caused to be deposited by Olin which have migrated off-Site consistent with the goals of paragraph 4(a);

8. Fiscal arrangements, guarantees, or the provision of financial assurances sufficient to ensure that Olin possess the financial ability to perform the containment remedial plan and monitoring. Olin's performance has been demonstrated and the financial assurance notification is no longer required.

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 of elements 1, 2, or 5 are no longer necessary to determine whether the remediation is effective, Olin may reduce the frequency and duration of such monitoring or inspections. Modifications are noted in the discussion above.

The approved Operation and Maintenance Manual (O&M Manual (June 2000)) provides details on the O&M of the containment remedy on the northern portion of the site and includes provisions for site control and environmental monitoring. The O&M Manual (June 2000) reflects current activities being performed for the operation and maintenance of the containment remedy for the Site and the ground water monitoring program outside the containment area. The yearly inspection and sampling schedule for the Site is included in ***Attachment 1***.

The O&M Manual (2000) addresses the required elements as set forth in the Agreement. Element 4, acquisition of easements, is a completed task. Element 6, a contingency plan, is addressed in the O&M Manual. Element 7, containment of the contaminants, has been achieved and is being monitored for effectiveness. Element 8, provision of financial assurance, is being met. This report discusses elements 1, 2, 3, and 5 of the Agreement.

Element 1) **Semi-annual ground water monitoring.** Monitor wells MW-A3, MW-1R, MW-2, MW-4, and MW-5 were sampled on April 03 and on September 11 for the site compounds alpha-BHC, beta-BHC, gamma-BHC, delta-BHC. Analyses were performed using SW-846 Method 8080. During 2008, sampling results for all BHC isomers in all wells were either undetected (U) or tentatively detected (J) at levels below 0.1 ug/l. Since 2000, monitor wells have been sampled for hexachlorobenzene (HCB) biennially. This sampling is done in even years, which is why it was sampled for in 2008. The next HCB sampling is scheduled for September 2010. . Monitoring locations are shown on ***Figure 1***.

A historic summary of semi-annual ground water monitoring data from 2000 through 2008 is provided in ***Table 1***. ***Table 1A*** shows groundwater monitoring data for 2008. Since 2003, concentrations of site compounds being monitored have been undetected or estimated at concentrations below the detection levels, in all monitor wells.

Element 2) **Annual creek sediment monitoring.** Annual sediment sampling was performed on September 11, 2008. A historic summary of annual sediment sampling results is presented in ***Table 2***. Sediment monitoring was modified in 2001 from collecting a grab sample to placement of sediment traps at the upstream and downstream locations. Sediment traps were installed for the first time during the April 2001 sampling event. All detections in 2008 are higher than detections since 2001, for both upstream and downstream samples. An investigation of the laboratory and field sampling QC does not indicate that the increased levels are attributable to laboratory or sampling error. In 2009, sampling duplicates will be taken to further check the validity of the 2008 results.

The Semi-Annual Ground Water Sampling Laboratory Report and Annual Sediment Sampling Laboratory Report - September 2008, are included as Appendix A to this report. The Data Evaluation Narrative is also included in Appendix A.

Element 3) **Establishment of an upward (inward) hydraulic gradient.** Quarterly ground water elevations were monitored at piezometer pairs P1/P2, P3/P4, and P5/P6 to document an inward hydraulic gradient in the containment area of the site. The data collected during each event are recorded on the Sampling Field Form. The ground water elevations from the first quarter were not taken during 2008. 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 last two quarters. We have adjusted pump intake levels down on Manhole B by 1.07 feet during 2008 to ensure the inward gradient. Water level elevations in Manhole A and Manhole B are monitored quarterly and are consistently below the 565 ft-msl level. The new level at which the pump turns on is at 563.40 feet. All data are shown in ***Table 3***.

There were 40,223 gallons of leachate discharged to the POTW during 2008. A summary of yearly discharge volumes for the Site is provided in ***Table 4***. Since 1992 a total of 1,044,862 gallons of leachate were removed from the Site. Annual leachate sampling and analysis for BHC isomers began in 2000 to replace the POTW sampling that was previously performed. HCB is monitored every five years (started in 2000). The sampling location is Manhole B. Analytical results for 2008 are provided in ***Table 5***. The next scheduled sampling is 2010.

Element 5) **Site protection.** Quarterly site inspections were conducted to identify any potential issues with the physical structures and to ensure that the remedial measure components are operating effectively. Routine site maintenance included fertilizing, mowing, weeding and mulching the site area.

Other non-routine repairs completed in 2008 include:

- Repairing wind damaged wooden fence facing Tuscarora Road.
- General site conditions and security status were noted on the Site Inspection Form and addressed as appropriate.

All inspection forms and field notes are included in ***Appendix B***.

Conclusions/Recommendations:

The work performed for the Site during 2008 was done 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 2008 monitoring year indicates that the containment remedy continues to be 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, due to lowering of the sump intake level. This gradient improvement (P1/P2 area) will be monitored and enhanced as necessary. Data from 2008 sediment trap monitoring showed increases at both upstream and downstream points relative to prior monitoring episodes. Duplicate sediment analyses will be performed in 2009 to monitor this trend.

Figure 1

Site Aerial and Monitoring Points

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

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

TABLES

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	
Parameter	April	October	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
Beta-BHC	.050U	.050U	.050U	.016J	.048U	.059U	.048U	.047U	.047U	.048U	.049U	.014J	.048U	-	.048U	.048U
Gamma-BHC	.050U	.050U	.050U	.050U	.048U	.059U	.048U	.047U	.047U	.048U	.049U	.048U	.048U	-	.048U	.048U
Delta-BHC	.050U	.050U	.050U	.050U	.048U	.059U	.048U	.047U	.047U	.048U	.049U	.03J	.048U	-	.048U	.048U
Hexachlorobenzene	10U	NR	NR	NR	NR	NR	10U	NR	NR	NR	NR	9J	NR	NR	5U	NR

MONITOR WELL: MW-1R

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

MONITOR WELL: MW-2

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

MONITOR WELL: MW-4

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

MONITOR WELL: MW-5

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

Notes: Concentration in ug/l

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

Table 1A
Olin Corp. Gibson Site
Groundwater Monitoring Data: 2008

Sample ID	Sample Date	CAS No	Parameter	Flags	Result	UM	Monitor Point
MW-1R-040308	4/3/2008	319-84-6	alpha-BHC	J	0.032	UG/L	Well
MW-1R-040308	4/3/2008	319-85-7	beta-BHC	U	0.049	UG/L	Well
MW-1R-040308	4/3/2008	319-86-8	delta-BHC	J	0.023	UG/L	Well
MW-1R-040308	4/3/2008	58-89-9	gamma-BHC	J	0.025	UG/L	Well
MW-1R-040308	4/3/2008	118-74-1	hexachlor	U	5	UG/L	Well
MW-1R-091108	9/11/2008	319-84-6	alpha-BHC	J	0.015	UG/L	Well
MW-1R-091108	9/11/2008	319-85-7	beta-BHC	U	0.05	UG/L	Well
MW-1R-091108	9/11/2008	319-86-8	delta-BHC	U	0.05	UG/L	Well
MW-1R-091108	9/11/2008	58-89-9	gamma-BHC	U	0.05	UG/L	Well
MW-2-040308	4/3/2008	319-84-6	alpha-BHC	J	0.038	UG/L	Well
MW-2-040308	4/3/2008	319-85-7	beta-BHC	U	0.056	UG/L	Well
MW-2-040308	4/3/2008	319-86-8	delta-BHC	U	0.056	UG/L	Well
MW-2-040308	4/3/2008	58-89-9	gamma-BHC	J	0.034	UG/L	Well
MW-2-040308	4/3/2008	118-74-1	hexachlor	U	5	UG/L	Well
MW-2-091108	9/11/2008	319-84-6	alpha-BHC	U	0.047	UG/L	Well
MW-2-091108	9/11/2008	319-85-7	beta-BHC	U	0.047	UG/L	Well
MW-2-091108	9/11/2008	319-86-8	delta-BHC	U	0.047	UG/L	Well
MW-2-091108	9/11/2008	58-89-9	gamma-BHC	U	0.047	UG/L	Well
MW-4-040308	4/3/2008	319-84-6	alpha-BHC	J	0.03	UG/L	Well
MW-4-040308	4/3/2008	319-85-7	beta-BHC	J	0.037	UG/L	Well
MW-4-040308	4/3/2008	319-86-8	delta-BHC	U	0.05	UG/L	Well
MW-4-040308	4/3/2008	58-89-9	gamma-BHC	J	0.024	UG/L	Well
MW-4-040308	4/3/2008	118-74-1	hexachlor	U	5	UG/L	Well
MW-4-091108	9/11/2008	319-84-6	alpha-BHC	U	0.048	UG/L	Well
MW-4-091108	9/11/2008	319-85-7	beta-BHC	U	0.048	UG/L	Well
MW-4-091108	9/11/2008	319-86-8	delta-BHC	U	0.048	UG/L	Well
MW-4-091108	9/11/2008	58-89-9	gamma-BHC	U	0.048	UG/L	Well
MW-5-040308	4/3/2008	319-84-6	alpha-BHC	J	0.035	UG/L	Well
MW-5-040308	4/3/2008	319-85-7	beta-BHC	U	0.052	UG/L	Well
MW-5-040308	4/3/2008	319-86-8	delta-BHC	J	0.027	UG/L	Well
MW-5-040308	4/3/2008	58-89-9	gamma-BHC	J	0.031	UG/L	Well
MW-5-040308	4/3/2008	118-74-1	hexachlor	U	5	UG/L	Well
MW-5-091108	9/11/2008	319-84-6	alpha-BHC	J	0.017	UG/L	Well
MW-5-091108	9/11/2008	319-85-7	beta-BHC	U	0.047	UG/L	Well
MW-5-091108	9/11/2008	319-86-8	delta-BHC	J	0.018	UG/L	Well
MW-5-091108	9/11/2008	58-89-9	gamma-BHC	J	0.0094	UG/L	Well
MW-7-040308	4/3/2008	319-84-6	alpha-BHC	J	0.029	UG/L	Well
MW-7-040308	4/3/2008	319-85-7	beta-BHC	U	0.052	UG/L	Well
MW-7-040308	4/3/2008	319-86-8	delta-BHC	U	0.052	UG/L	Well
MW-7-040308	4/3/2008	58-89-9	gamma-BHC	J	0.023	UG/L	Well
MW-7-040308	4/3/2008	118-74-1	hexachlor	U	5	UG/L	Well
MW-7-091108	9/11/2008	319-84-6	alpha-BHC	J	0.014	UG/L	Well
MW-7-091108	9/11/2008	319-85-7	beta-BHC	U	0.047	UG/L	Well
MW-7-091108	9/11/2008	319-86-8	delta-BHC	U	0.047	UG/L	Well
MW-7-091108	9/11/2008	58-89-9	gamma-BHC	U	0.047	UG/L	Well
MW-8-040308	4/3/2008	319-84-6	alpha-BHC	J	0.029	UG/L	Well
MW-8-040308	4/3/2008	319-85-7	beta-BHC	U	0.056	UG/L	Well
MW-8-040308	4/3/2008	319-86-8	delta-BHC	U	0.056	UG/L	Well
MW-8-040308	4/3/2008	58-89-9	gamma-BHC	U	0.056	UG/L	Well
MW-8-040308	4/3/2008	118-74-1	hexachlor	U	6	UG/L	Well
MW-3-040308	4/3/2008	319-84-6	alpha-BHC	U	0.048	UG/L	Well
MW-3-040308	4/3/2008	319-85-7	beta-BHC	U	0.048	UG/L	Well
MW-3-040308	4/3/2008	319-86-8	delta-BHC	U	0.048	UG/L	Well
MW-3-040308	4/3/2008	58-89-9	gamma-BHC	U	0.048	UG/L	Well
MW-3-040308	4/3/2008	118-74-1	hexachlor	U	5	UG/L	Well

TABLE 2
Charles Gibson Site
Niagara Falls, New York

ANALYTICAL SUMMARY

Annual Cayuga Creek Sediment Sampling 2001 - 2008

UPSTREAM

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

DOWNSTREAM

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

Notes:

U Not Detected

J Estimated value

NS No sample in trap

* Sediment traps installed April 2001

Table 3

2008 Quarterly Groundwater Elevations Summary

Piezometer Pair	2/13/2008	Inward gradient	4/03/2008	Inward gradient	9/11/2008	Inward gradient	11/05/2008	Inward gradient
P1 outside **P2 inside**	NA NA	NA	565.44 565.50	Level	566.13 565.28	Inward	565.46 565.24	Inward
P3 outside **P4 inside**	NA NA	NA	567.55 565.44	Inward	566.31 565.20	Inward	566.52 565.17	Inward
P5 outside **P6 inside**	NA NA	NA	569.84 567.99	Inward	568.37 567.39	Inward	568.76 567.43	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	564.13 564.17	Yes Yes	564.11 564.23	Yes Yes	563.81 563.89	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**
TOTALS	**1,044,862**

Monthly Discharge Volumes
2008

Month	Volume (gallons)
Jan	5,700
Feb	5,801
Mar	5,800
Apr	5,631
May	5,697
Jun	0
Jul	0
Aug	331
Sep	3,203
Oct	887
Nov	1,782
Dec	5,391
Total	**40,223**

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 03, 2008

PARAMETER	MANHOLE B (MHB)
alpha-BHC	.03J
beta-BHC	.066
delta-BHC	.072
gamma-BHC	.019J
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 1

INSPECTION AND SAMPLING SCHEDULE

CHARLES GIBSON SITE

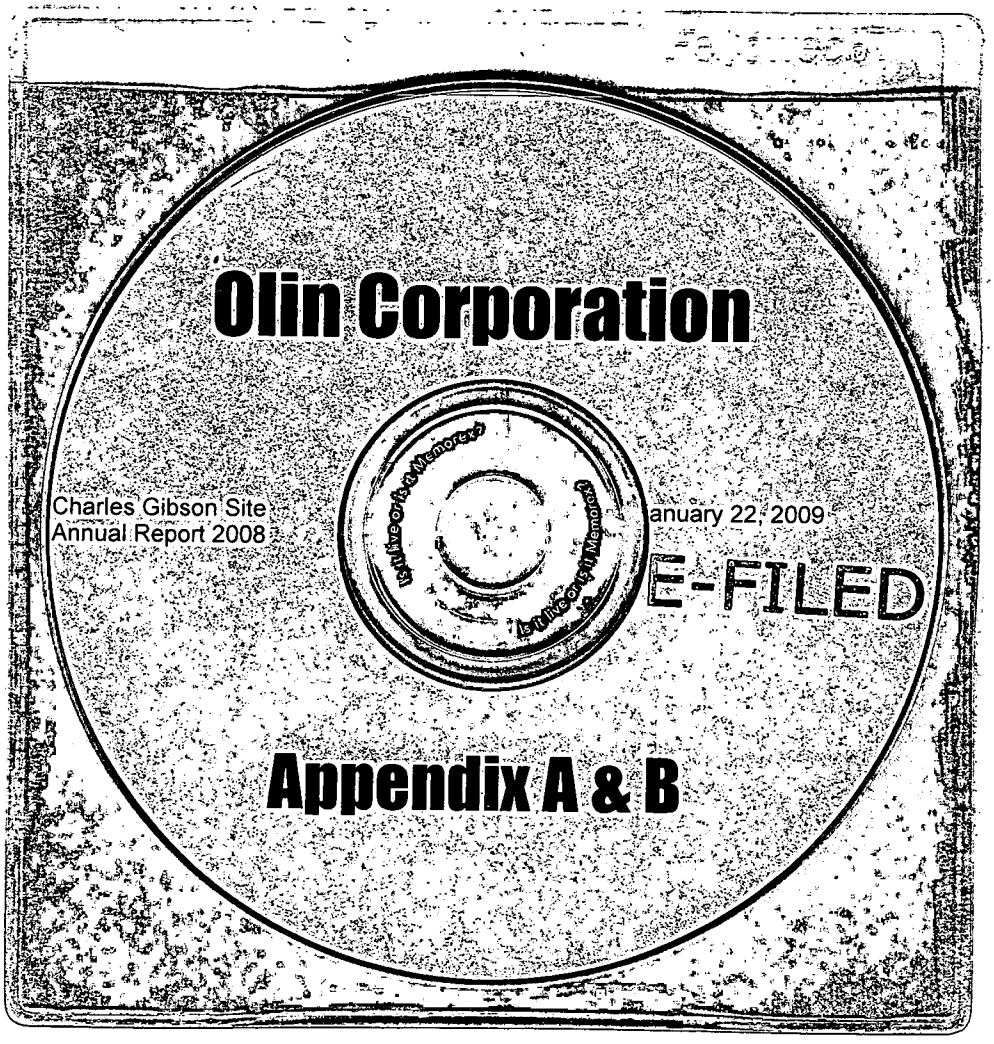
(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

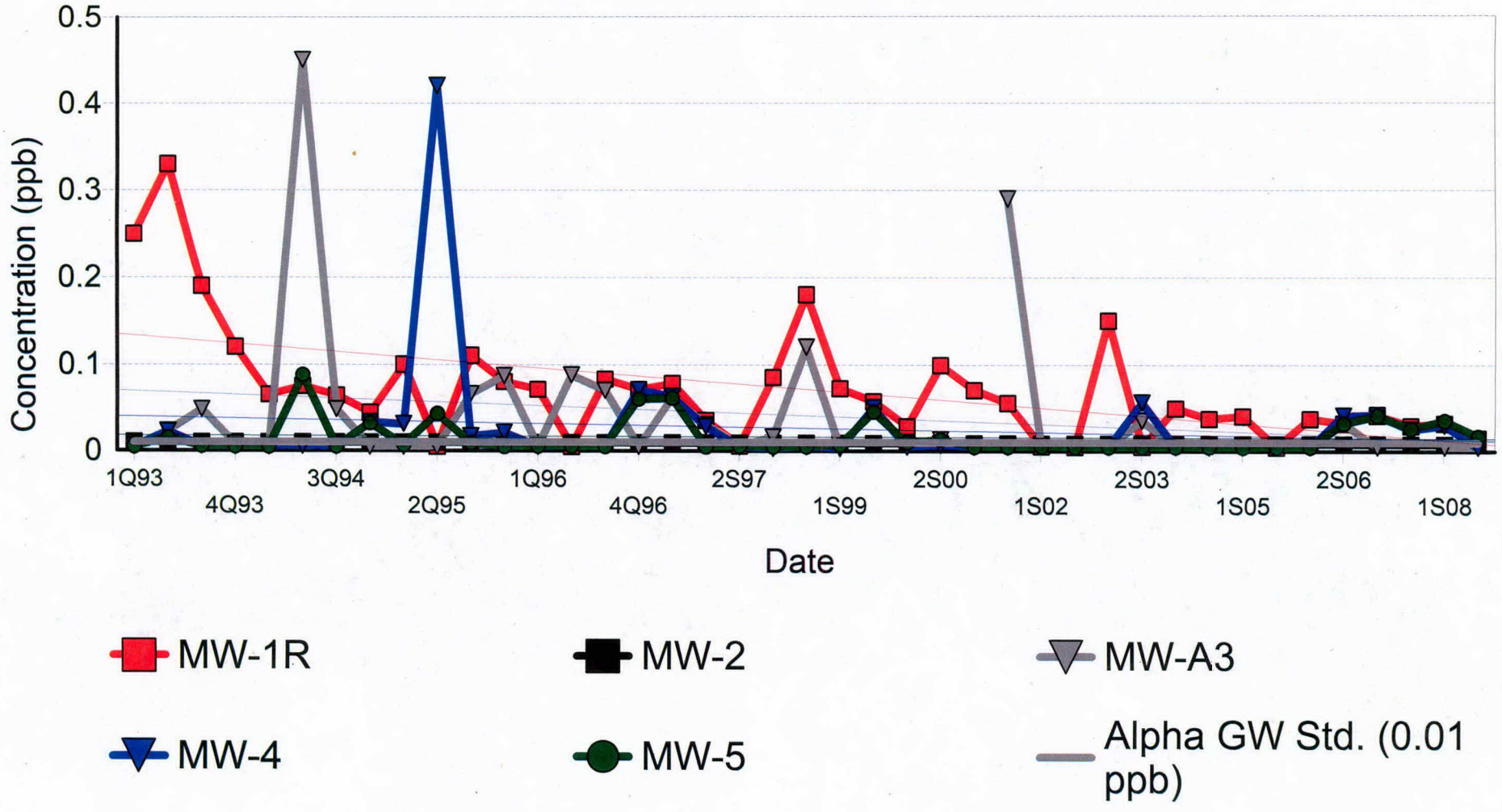
GIBSON SITE
NIAGARA FALLS, NEW YORK
2008 INSPECTION AND SAMPLING SCHEDULE

Quarterly	Site Inspection (including Site Cover/Cap, Site Fence, Creek Riprap, Site Structures, CPVC Drain/Sump System).
Quarterly	Piezometer and sump groundwater level elevation measurements.
Semi-Annually	Groundwater monitoring well sampling (April and September) for BHC isomers.
Annually	Cayuga Creek sediment sampling (September) for BHC isomers.
Annually	Leachate sample collection and analysis (Manhole B) for BHC isomers (starting in 2000).
Annually	Annual report to NYSDEC (1st Quarter).
Biennially	Groundwater monitoring well sampling (starting in April 2000) for HCB. The biennial sampling events following 2000 will alternate seasonally between April and September sampling. Next HCB sampling is September 2010.
Every Five Years	Leachate sample collection and analysis (Manhole B) (for HCB) (starting in 2000). Next leachate sampling for HCB is 2010.


Olin Corporation
Charles Gibson Site
Annual Report 2008
anuary 22, 2009
E-FILED
Appendix A & B

Gibson Site #932063

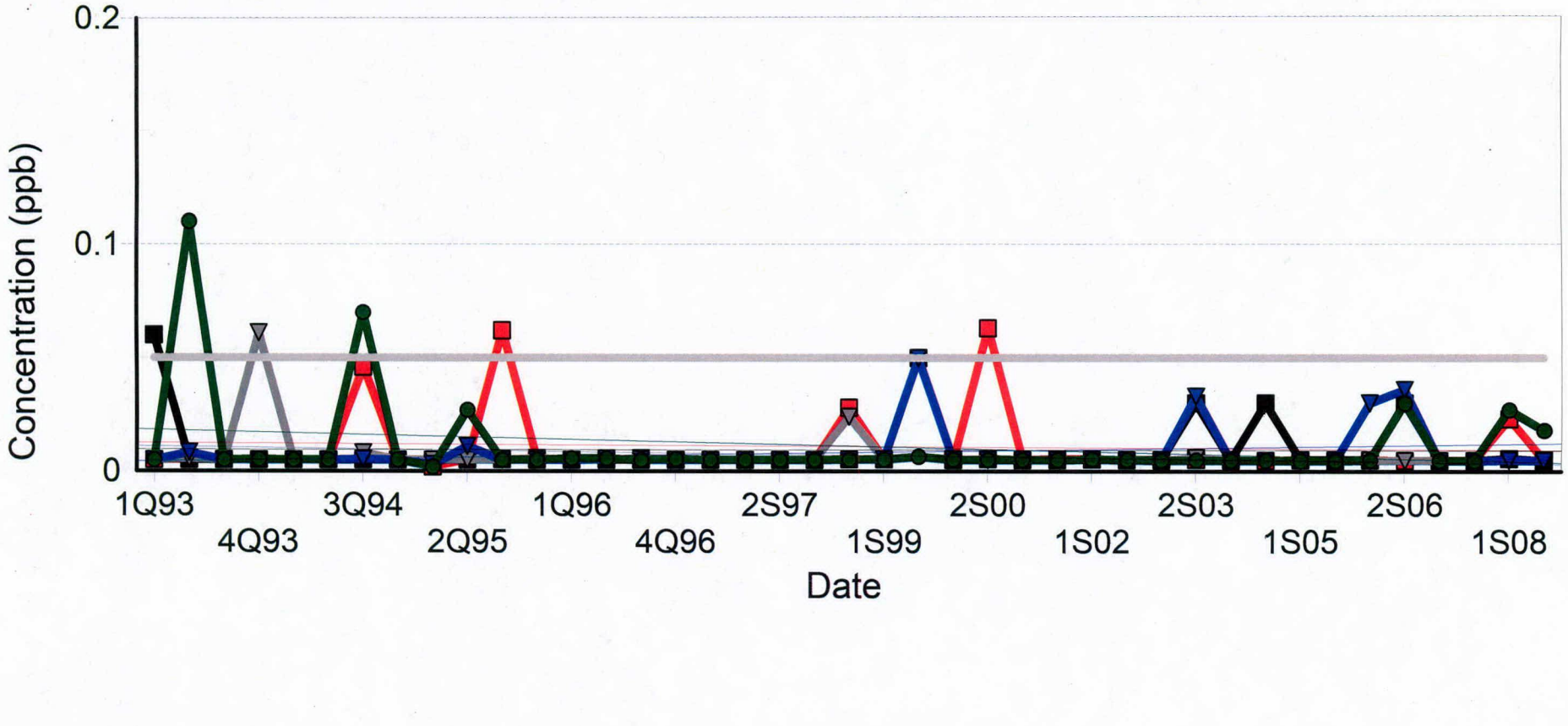
alpha - BHC



Non-detects plotted as 1/10th of detection limit

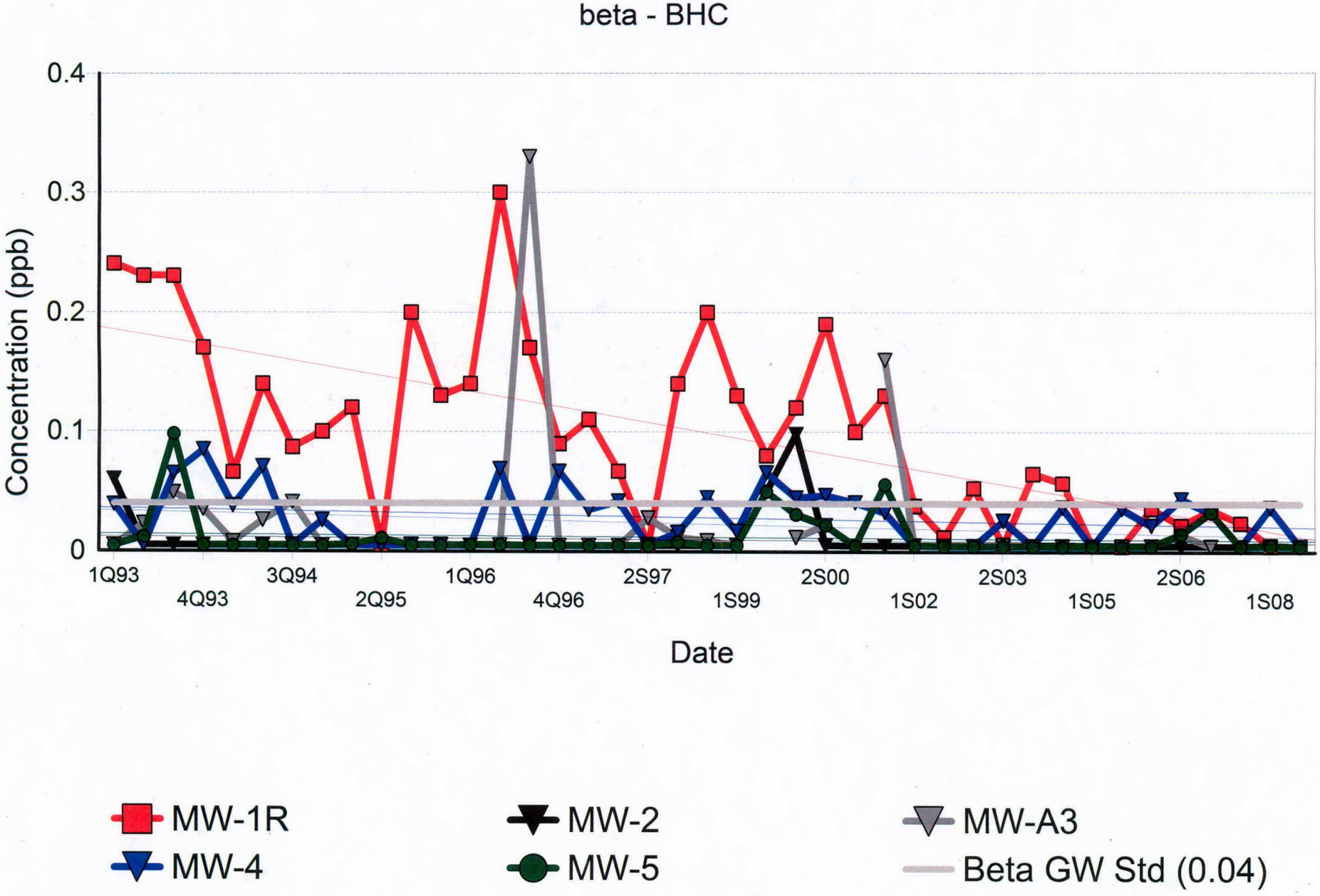
Gibson Site #932063

gamma - BHC



Non-detects plotted as 1/10th of detection limit

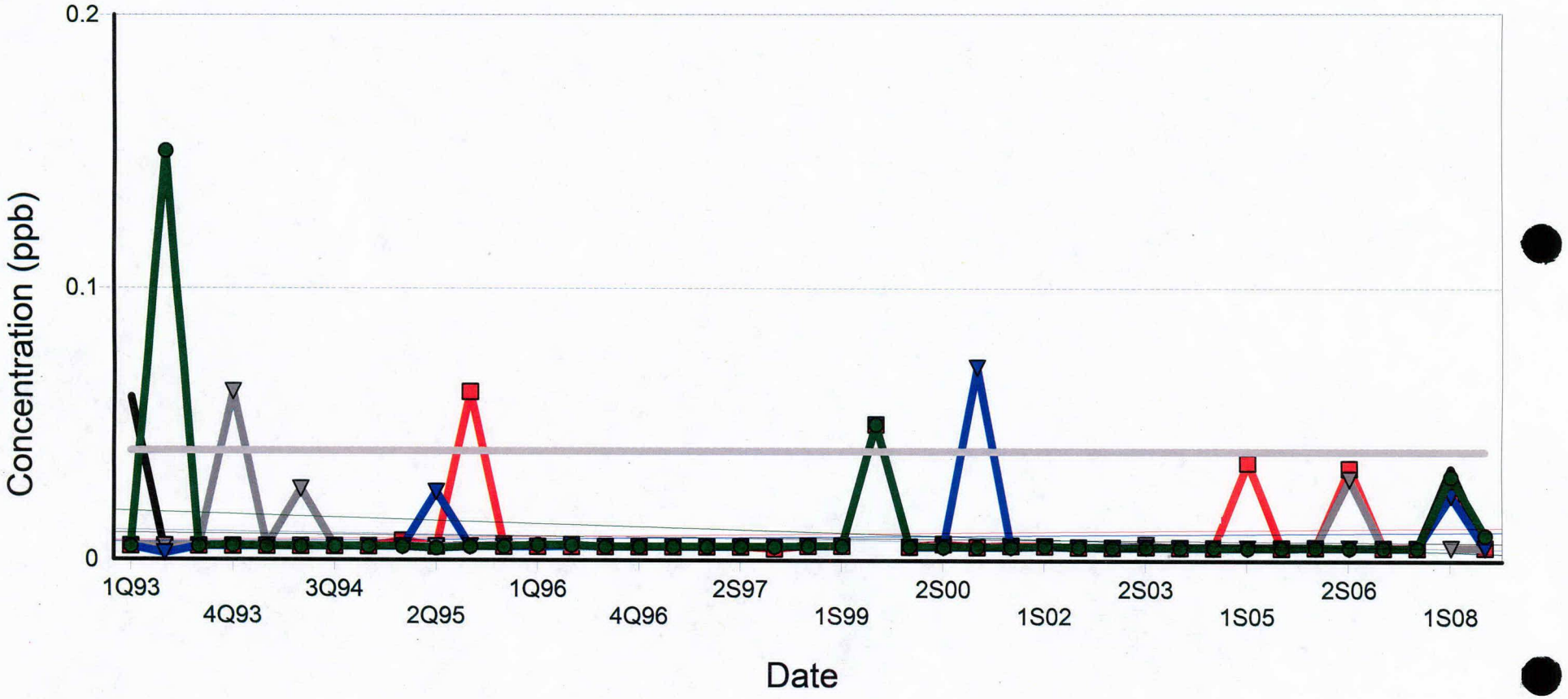
Gibson Site #932063



Non-detects plotted as 1/10th of detection limit

Gibson Site #932063

delta -BHC



Non-detects plotted as 1/10th of detection limit

932063
2007 GW Data

Olin

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

February 29, 2008

Mr. Michael J. Hinton, P.E.
Environmental Engineer II
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
Fifteenth Annual Report - 2007

Dear Mr. Hinton:

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 activities performed during 2007 for the operation and maintenance of the containment remedy for the site and the ground water monitoring program outside of the containment area.

The following is a summary of major activities that occurred during 2007.

- Semi-annual groundwater sampling events were performed during April and September 2007.
- Annual sediment sampling was performed in September.
- Annual sampling and analysis of leachate was completed in April.
- There were 22,958 gallons of leachate discharged to the City of Niagara Falls Wastewater Treatment Facility.

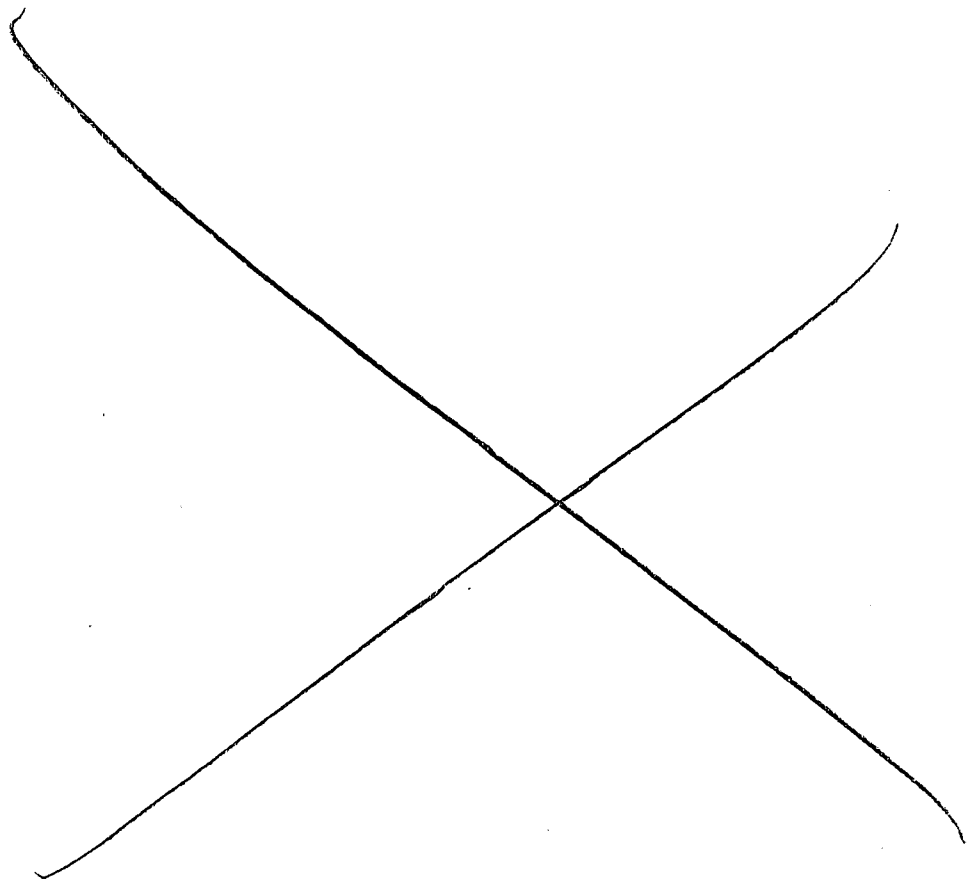
The Semi-Annual Ground Water Sampling and Annual Sediment Sampling Report - September 2007, is included as Appendix A to this report. The Data Evaluation Narrative is included in this report.

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 via e-mail
Brian Vain – Olin Niagara Falls via e-mail
Mike Walker – Sevenson Environmental Services via e-mail
Matthew Forcucci – NYSDOH Buffalo



D, alone

Please make a new
file for this
Charles Gibson Site #932063
2007 GW Groundwater data

Thanks
Mike

FIFTEENTH ANNUAL REPORT

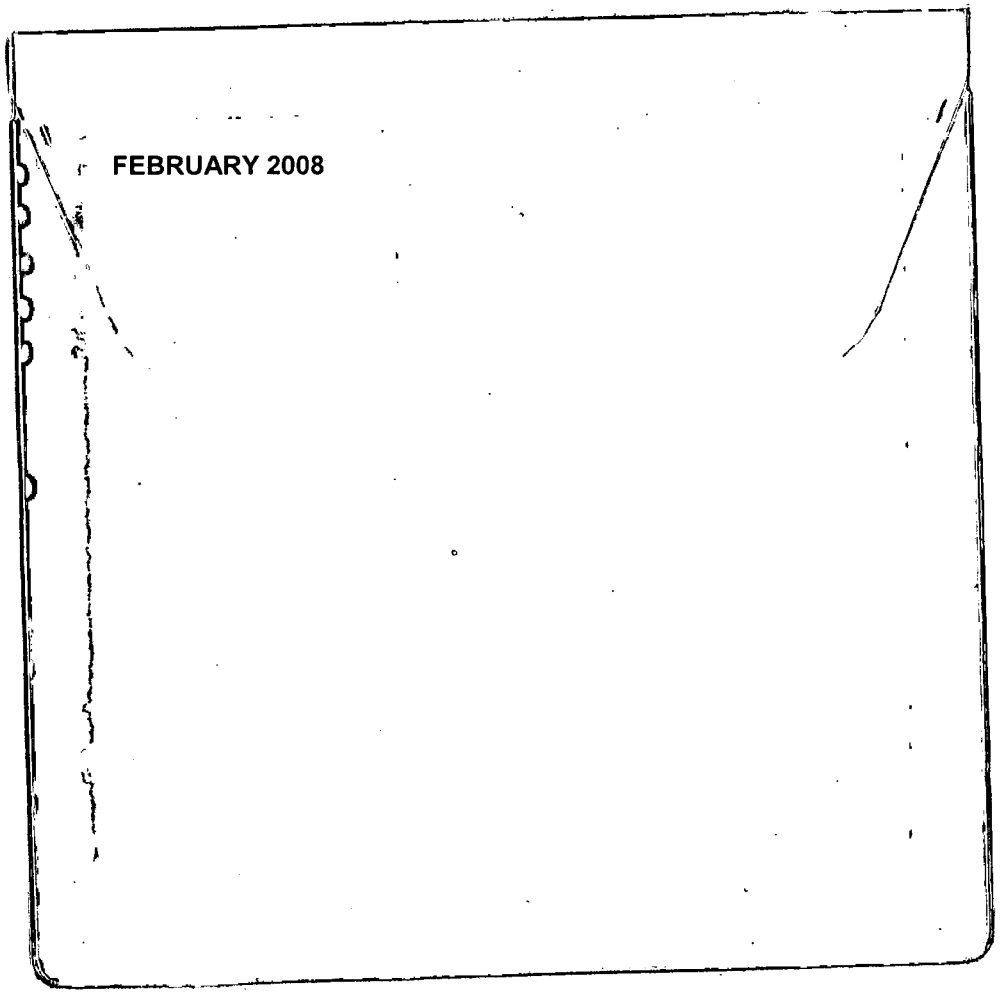
2007

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK
NYSDEC REGISTRY NO. 9-32-063

PREPARED BY OLIN CORPORATION



Introduction

This is the fifteenth Annual Report from Olin Corporation (Olin) for the Charles Gibson Site (Pine and Tuscarora Site), located in Niagara Falls, New York. This report summarizes activities performed during 2007 for the operations and maintenance of the containment remedy for the Site and the ground water monitoring program outside of the containment area. This year's data for the Semi-Annual Ground Water and Annual Sediment Sampling, collected during September 2007 has been incorporated as part of the Annual Report.

Background

The Charles Gibson Site (Site) is located approximately four miles east of downtown Niagara Falls, New York. The Site comprises an area of approximately two acres of land in Niagara County bordered on the south by private property, on the west by Tuscarora Road and on the north and east by Cayuga Creek. The Site is a fully remediated waste site currently surrounded by a fence.

Construction of the remedy on the 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 Site is classified as a commercial/small industrial/residential user (CSIRU) and does not require a permit.

Reports are submitted as appropriate to the New York State Department of Environmental Conservation (NYSDEC). Records of all environmental monitoring are maintained by Olin Corporation. These records are available for review and inspection by the State.

Discussion

The Stipulation and Consent Judgment, CIV 83-1400, and its modification, CIV 83-1400C, (the Agreement) listed the following elements to be included in the required remediation plan for the Site (Plan C):

1. Quarterly ground water monitoring for 30 years (revised in 1997 to semiannual);
2. Sample collection and analysis of creek water and of creek sediments annually for 30 years. During 1993 the creek water sampling was discontinued and sediment sampling was modified to collection during the low flow/dry season;
3. Establishment of an upward hydraulic gradient within the containment area, unless Olin can demonstrate by clear and convincing evidence the establishment of the same is unnecessary or inappropriate to the accomplishment of the goals set forth in paragraph 4(a) of the stipulation;
4. Acquisition by Olin of easements which would permit the required monitoring;
5. Provisions for protection of the Site from disturbance which might increase the threat of contamination migration, including regular inspection of the site;
6. Provisions for the design and implementation of a contingency plan in the event that migration of the contaminants occurs despite the implementation of the containment remediation plan;
7. Containment or removal of the contaminants deposited or caused to be deposited by Olin which have migrated off-Site consistent with the goals of paragraph 4(a);

8. Fiscal arrangements, guarantees, or the provision of financial assurances sufficient to ensure that Olin possess the financial ability to perform the containment remedial plan and monitoring. Olin's performance has been demonstrated and the financial assurance notification is no longer required.

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 of elements 1, 2, or 5 are no longer necessary to determine whether the remediation is effective, Olin may reduce the frequency and duration of such monitoring or inspections. Modifications are noted in the discussion above.

The approved Operation and Maintenance Manual (O&M Manual (June 2000)) provides details on the O&M of the containment remedy on the northern portion of the site and includes provisions for site control and environmental monitoring. The O&M Manual (June 2000) reflects current activities being performed for the operation and maintenance of the containment remedy for the Site and the ground water monitoring program outside the containment area. The yearly inspection and sampling schedule for the Site is included in ***Attachment 1***.

The O&M Manual (2000) addresses the required elements as set forth in the Agreement. Element 4, acquisition of easements, is a completed task. Element 6, a contingency plan, is addressed in the O&M Manual. Element 7, containment of the contaminants, has been achieved and is being monitored for effectiveness. Element 8, provision of financial assurance, is being met. This report discusses elements 1, 2, 3, and 5 of the Agreement.

Element 1) **Semi-annual ground water monitoring.** Monitor wells MW-A3, MW-1R, MW-2, MW-4, and MW-5 were sampled on April 17 and on September 13 for the site compounds alpha-BHC, beta-BHC, gamma-BHC, delta-BHC. Analyses were performed using SW-846 Method 8080. During 2007, sampling results for all BHC isomers in all wells were either undetected (U) or tentatively detected (J) at levels below 0.1 ug/l. Since 2000, monitor wells have been sampled for hexachlorobenzene (HCB) biennially. This sampling is done in even years, which is why it was not sampled for in 2007. The next HCB sampling is scheduled for September 2008. . Monitoring locations are shown on ***Figure 1***.

A historic summary of semi-annual ground water monitoring data from 2000 through 2007 is provided in ***Table 1***. ***Table 1A*** shows groundwater monitoring data for 2007. Since 2003, concentrations of site compounds being monitored have been undetected or estimated at concentrations below the detection levels, in all monitor wells.

Element 2) **Annual creek sediment monitoring.** Annual sediment sampling was performed on September 13, 2007. A historic summary of annual sediment sampling results is presented in ***Table 2***. Sediment monitoring was modified in 2001 from collecting a grab sample to placement of sediment traps at the upstream and downstream locations. Sediment traps were installed for the first time during the April 2001 sampling event. All detections are similar or slightly lower than detections since 2001, for both upstream and downstream samples.

No downstream samples were taken in 2007 because the sediment trap was in an inverted position. A high water fast current situation or debris is probably the cause for the positioning. Alternative sampling techniques will be looked into to alleviate inverted position.

Element 3) **Establishment of an upward (inward) hydraulic gradient.** Quarterly ground water elevations were monitored at piezometer pairs P1/P2, P3/P4, and P5/P6 to document an inward hydraulic gradient in the containment area of the site. The data collected during each event are recorded on the Sampling Field Form. 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

Add email text here

Michael Hinton - FW: 2007 Gibson site Report

From: "Bellotti, Mike CERG" <MJBellotti@olin.com>
To: "NYSDEC Hinton, Mike" <mjhinton@gw.dec.state.ny.us>, "NYSDEC Sadowski, Brian" <bpsadows@gw.dec.state.ny.us>
Date: 4/8/2008 4:06 PM
Subject: FW: 2007 Gibson site Report
CC: "Carringer, Adam" <abcarringer@olin.com>, "Bellotti, Mike" <MJBellotti@corp.olin.com>

Mike:
I went back and re-read the paragraph that was split between the pages. I have cut/pasted it below in its entirety for your reference. While it might look like it could have a gap in the verbiage when you view it in the report, it is one continuous paragraph. We went back to the original Word file and even consulted past reports. There is no additional verbiage to add or insert. Sorry if our page break caused any confusion. Pls give me a call or email with any other questions on the report. Thanks.

Mike Bellotti
Principal Scientist
Olin Corporation
Environmental Remediation Group
3855 North Ocoee Street
Suite 200
Cleveland, TN 37312
423/336-4587
MJBellotti@Olin.com

Element 3) **Establishment of an upward (inward) hydraulic gradient.** Quarterly ground water elevations were monitored at piezometer pairs P1/P2, P3/P4, and P5/P6 to document an inward hydraulic gradient in the containment area of the site. The data collected during each event are recorded on the Sampling Field Form. 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 and a roughly level gradient occurs in the third pair (P1/P2) in three of four quarters. We will adjust pump intake levels to attempt to re-establish the inward gradient. Water level elevations in Manhole A and Manhole B are monitored quarterly and are consistently below the 565 ft-msl level. All data are shown in ***Table 3***.

level elevations in Manhole A and Manhole B are monitored quarterly and are consistently below the 565 ft-msl level. All data are shown in ***Table 3***.

There were 22,958 gallons of leachate discharged to the POTW during 2007. A summary of yearly discharge volumes for the Site is provided in ***Table 4***. Since 1992 a total of 1,004,639 gallons of leachate were removed from the Site. Annual leachate sampling and analysis for BHC isomers began in 2000 to replace the POTW sampling that was previously performed. HCB is monitored every five years (started in 2000). The sampling location is Manhole B. Analytical results for 2007 are provided in ***Table 5***. The next scheduled sampling is 2010.

Element 5) **Site protection.** Quarterly site inspections were conducted to identify any potential issues with the physical structures and to ensure that the remedial measure components are operating effectively. Routine site maintenance included fertilizing, mowing, weeding and mulching the site area.

Other non-routine repairs completed in 2007 include:

- Rip rap stone had been removed from the stream bank and placed in Cayuga Creek as a footpath. This stone was replaced on the stream banks, and warning signs placed.
- General site conditions and security status were noted on the Site Inspection Form and addressed as appropriate.

All inspection forms and field notes are included in ***Attachment 2***.

Conclusions/Recommendations:

The work performed for the Site during 2007 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 2007 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 is being maintained in the containment area of the site, but will be monitored in one zone where the gradient is level (P1/P2 area) and enhanced as necessary. Data from 2007 sediment trap monitoring were similar to prior monitoring episodes.

Figure 1

Site Aerial and Monitoring Points

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

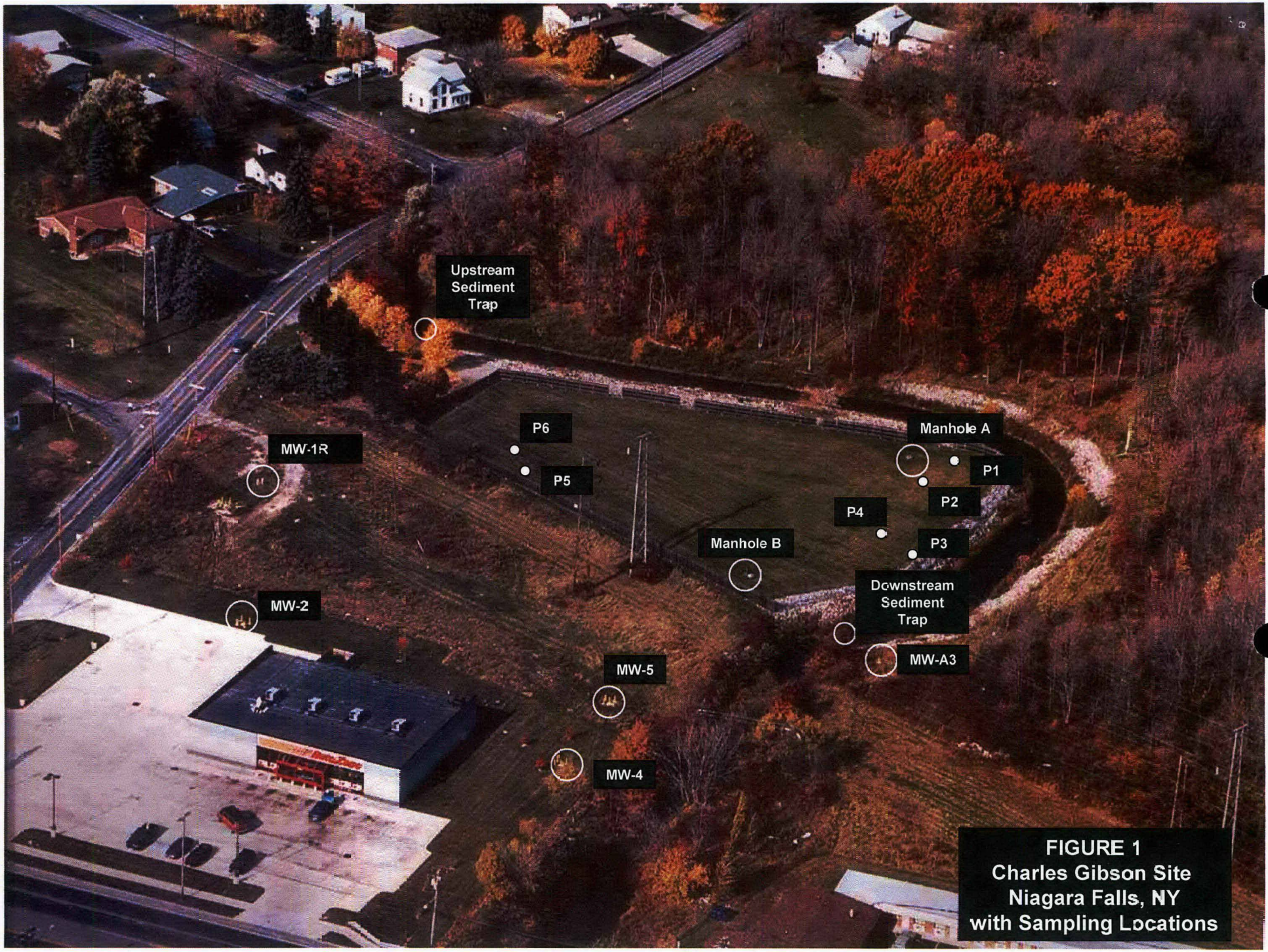


FIGURE 1
Charles Gibson Site
Niagara Falls, NY
with Sampling Locations

TABLES

TABLE 1
CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL SUMMARY
SEMI-ANNUAL GROUND WATER SAMPLING 2000-2007

ONITOR WELL: MW-A3

	2000		2001		2002		2003		2004		2005		2006		2007	
Parameter	May	October	April	October	April	September	April	September	April	September	April	September	April	September	April	September
Alpha-BHC	.050U	.054U	.050U	.050U	.050U	.029J	.048U	.035J	.048U	.047U	.047U	.048U	.049U	.032J	.048U	-
Beta-BHC	.012J	.054U	.050U	.050U	.050U	.016J	.048U	.059U	.048U	.047U	.047U	.048U	.049U	.014J	.048U	-
Gamma-BHC	.050U	.054U	.050U	.050U	.050U	.050U	.048U	.059U	.048U	.047U	.047U	.048U	.049U	.048U	.048U	-
Delta-BHC	.050U	.054U	.050U	.050U	.050U	.050U	.048U	.059U	.048U	.047U	.047U	.048U	.049U	.03J	.048U	-
Hexachlorobenzene	11U	NR	10U	NR	NR	NR	NR	NR	10U	NR	NR	NR	NR	9J	NR	NR

ONITOR WELL: MW-1R

	2000		2001		2002		2003		2004		2005		2006		2007	
Parameter	May	October	April	October	April	September	April	September	April	September	April	September	April	September	April	September
Alpha-BHC	.028J	.054U/.052U	.050U/.050U	.099/.060	.070/.061	.055/.030J	.014J/.015U	.052U	.049U/.049	.026J/.048U	.040J/.049U	.047U/.048U	.037J	.032J	.041J	.029J
Beta-BHC	0.12	.038J/.052U	.12J/.050U	.19/.15	.10/.050U	.13/.095	.053/.052	.052U	.049U/.065	.090U/.024J	.050U/.049U	.047U/.048U	.036J	.022J	.035J	.024J
Gamma-BHC	.051U	.054U/.052U	.050U/.050U	.063J/.058U	.050U/.050U	.055U	.049U	.052U	.049U/.049U	.048U/.048U	.036J/.049U	.047U/.048U	.050U	.048U	.048U	.048U
Delta-BHC	.051U	.054U/.052U	.050U/.050U	.061U/.058U	.050U/.053	.055U	.049U	.052U	.049U/.049	.048U/.048U	.050U/.049U	.047U/.048U	.050U	.034J	.048U	.048U
Hexachlorobenzene	10U	NR	10U/10U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	10U	NR	NR

IONITOR WELL: MW-2

	2000		2001		2002		2003		2004		2005		2006		2007	
Parameter	May	October	April	October	April	September	April	September	April	September	April	September	April	September	April	September
Alpha-BHC	.029J	.053U	.050U	.054U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.048U	.048U	.047U
Beta-BHC	0.098	.053U	.050U	.054U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.048U	.048U	.047U
Gamma-BHC	.052U	.053U	.050U	.054U	.050U	.050U	.050U	.030J	.050U	.030J	.050U	.050U	.050U	.048U	.048U	.047U
Delta-BHC	.052U	.053U	.050U	.054U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.050U	.030J	.048U	.047U
Hexachlorobenzene	10U	NR	10U	NR	NR	NR	NR	NR	10U	NR	NR	NR	NR	10U	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 2000-2007

MONITOR WELL: MW-4

	2000		2001		2002		2003		2004		2005		2006		2007	
Parameter	May	October	April	October	April	September	April	September	April	September	April	September	April	September	April	September
Alpha-BHC	.051U/.052U	.054U	.050U	.0069J	.050U	.050U	.049U	0.056	.048U	.048U	.047U	.047U	.049U	.041J	.042J	.025J
Beta-BHC	.045J/.062	.054U	.050U	.047J	.041J	.033J	.049U	.026J	.048U	.037J	.047U	.036J	.022J	.044J	.033J	.047U
Gamma-BHC	.051U/.052U	.054U	.050U	.050U	.071J	.050U	.049U	.033J	.048U	.048U	.047U	.047U	.049U	.048U	.048U	.047U
Delta-BHC	.051U/.052U	.054U	.050U	.050U	.050U	.050U	.049U	.050U	.048U	.048U	.047U	.047U	.030J	.036J	.048U	.047U
Hexachlorobenzene	10U	NR	10U	NR	NR	NR	NR	NR	NR	9U	NR	NR	NR	10U	NR	NR

MONITOR WELL: MW-5

	2000		2001		2002		2003		2004		2005		2006		2007	
Parameter	May	October	April	October	April	September	April	September	April	September	April	September	April	September	April	September
Alpha-BHC	.010J	.054U	.050U	.013J	.050U	.050U	.048U	.049U	.048U	.048U	.047U	.047UJ	.049U	.032J	.041J	.026J
Beta-BHC	.031J	.054U	.050U	.022J	.050U	.050U	.048U	.049U	.048U	.048U	.047U	.047UJ	.049U	.015J	.025J	.048U
Gamma-BHC	.052U	.054U	.050U	.055U	.050U	.050U	.048U	.049U	.048U	.048U	.047U	.047UJ	.049U	.048U	.047U	.048U
Delta-BHC	.052U	.054U	.050U	.055U	.050U	.050U	.048U	.049U	.048U	.048U	.047U	.047UJ	.049U	.030J	.047U	.048U
Hexachlorobenzene	10U	NR	10U	NR	NR	NR	NR	NR	10U	NR	NR	NR	NR	NR	NR	NR

Notes: Concentration in ug/l

- insufficient sample
U Undetected
J Estimated value
NR Not required

Table 1A
Olin Corp. Gibson Site
Groundwater Monitoring Data: 2007

Sample ID	Sample Date	CAS No	Parameter	Flags	Result	UM	Monitor Point
MW-1R-041707	4/17/2007	319-84-6	alpha-BHC	J	0.041	UG/L	Well
MW-1R-041707	4/17/2007	319-85-7	beta-BHC	J	0.035	UG/L	Well
MW-1R-041707	4/17/2007	319-86-8	delta-BHC	U	0.048	UG/L	Well
MW-1R-041707	4/17/2007	58-89-9	gamma-BHC	U	0.048	UG/L	Well
MW-1R-091307	9/13/2007	319-84-6	alpha-BHC	J	0.029	UG/L	Well
MW-1R-091307	9/13/2007	319-85-7	beta-BHC	J	0.024	UG/L	Well
MW-1R-091307	9/13/2007	319-86-8	delta-BHC	U	0.048	UG/L	Well
MW-1R-091307	9/13/2007	58-89-9	gamma-BHC	U	0.048	UG/L	Well
MW-2-041707	4/17/2007	319-84-6	alpha-BHC	U	0.048	UG/L	Well
MW-2-041707	4/17/2007	319-85-7	beta-BHC	U	0.048	UG/L	Well
MW-2-041707	4/17/2007	319-86-8	delta-BHC	U	0.048	UG/L	Well
MW-2-041707	4/17/2007	58-89-9	gamma-BHC	U	0.048	UG/L	Well
MW-2-091307	9/13/2007	319-84-6	alpha-BHC	U	0.047	UG/L	Well
MW-2-091307	9/13/2007	319-85-7	beta-BHC	U	0.047	UG/L	Well
MW-2-091307	9/13/2007	319-86-8	delta-BHC	U	0.047	UG/L	Well
MW-2-091307	9/13/2007	58-89-9	gamma-BHC	U	0.047	UG/L	Well
MW-4-041707	4/17/2007	319-84-6	alpha-BHC	J	0.042	UG/L	Well
MW-4-041707	4/17/2007	319-85-7	beta-BHC	J	0.033	UG/L	Well
MW-4-041707	4/17/2007	319-86-8	delta-BHC	U	0.048	UG/L	Well
MW-4-041707	4/17/2007	58-89-9	gamma-BHC	U	0.048	UG/L	Well
MW-4-091307	9/13/2007	319-84-6	alpha-BHC	J	0.025	UG/L	Well
MW-4-091307	9/13/2007	319-85-7	beta-BHC	U	0.047	UG/L	Well
MW-4-091307	9/13/2007	319-86-8	delta-BHC	U	0.047	UG/L	Well
MW-4-091307	9/13/2007	58-89-9	gamma-BHC	U	0.047	UG/L	Well
MW-5-041707	4/17/2007	319-84-6	alpha-BHC	J	0.041	UG/L	Well
MW-5-041707	4/17/2007	319-85-7	beta-BHC	J	0.025	UG/L	Well
MW-5-041707	4/17/2007	319-86-8	delta-BHC	U	0.047	UG/L	Well
MW-5-041707	4/17/2007	58-89-9	gamma-BHC	U	0.047	UG/L	Well
MW-5-091307	9/13/2007	319-84-6	alpha-BHC	J	0.026	UG/L	Well
MW-5-091307	9/13/2007	319-85-7	beta-BHC	U	0.048	UG/L	Well
MW-5-091307	9/13/2007	319-86-8	delta-BHC	U	0.048	UG/L	Well
MW-5-091307	9/13/2007	58-89-9	gamma-BHC	U	0.048	UG/L	Well
MW-7-041707	4/17/2007	319-84-6	alpha-BHC	J	0.041	UG/L	Well
MW-7-041707	4/17/2007	319-85-7	beta-BHC	J	0.035	UG/L	Well
MW-7-041707	4/17/2007	319-86-8	delta-BHC	U	0.048	UG/L	Well
MW-7-041707	4/17/2007	58-89-9	gamma-BHC	U	0.048	UG/L	Well
MW-7-091307	9/13/2007	319-84-6	alpha-BHC	J	0.027	UG/L	Well
MW-7-091307	9/13/2007	319-85-7	beta-BHC	U	0.049	UG/L	Well
MW-7-091307	9/13/2007	319-86-8	delta-BHC	U	0.049	UG/L	Well
MW-7-091307	9/13/2007	58-89-9	gamma-BHC	U	0.049	UG/L	Well
MW-8-041707	4/17/2007	319-84-6	alpha-BHC	U	0.048	UG/L	Well
MW-8-041707	4/17/2007	319-85-7	beta-BHC	U	0.048	UG/L	Well
MW-8-041707	4/17/2007	319-86-8	delta-BHC	U	0.048	UG/L	Well
MW-8-041707	4/17/2007	58-89-9	gamma-BHC	U	0.048	UG/L	Well
MW-3-041707	4/17/2007	319-84-6	alpha-BHC	U	0.048	UG/L	Well
MW-3-041707	4/17/2007	319-85-7	beta-BHC	U	0.048	UG/L	Well
MW-3-041707	4/17/2007	319-86-8	delta-BHC	U	0.048	UG/L	Well
MW-3-041707	4/17/2007	58-89-9	gamma-BHC	U	0.048	UG/L	Well

			Levels of Protection							
			Human Health Bioaccumulation		Benthic Aquatic Life Acute Toxicity		Benthic Aquatic Life Chronic Toxicity		Wildlife Bioaccumulation	
Contaminant	$LogK_{ow}$	Fresh-FW Salt -SW Both -FS	Water Qual Criteria µg/l	Sediment Criteria µg/gOC	Water Qual Criteria µg/l	Sediment Criteria µg/gOC	Water Qual Criteria µg/l	Sediment Criteria µg/gOC	Water Qual Criteria µg/l	Sediment Criteria µg/gOC
Hexachlorocyclohexanes	3.8	FW SW	0.009 (P) 0.009 (P)	0.06 0.06	2.0 0.16	12.6 1.0	0.01 0.004	0.06 0.03	0.23 (P) 0.23 (P)	1.5 1.5
Hexachlorocyclopentadiene	3.99	FW SW			4.5 0.7	44.0 6.8	0.45 0.07	4.4 0.7		
Isodecyldiphenyl phosphate	5.4	FW			22	5526	1.7	427		
Linear Alkyl Benzene Sulfonates	3.97	FW					40	373		
Malathion	2.2	FS					0.1	0.02		
Methoxychlor	4.3	FS					0.03	0.6		
Mirex	5.83	FS	0.0001 (P)	0.07			0.001	0.7	0.0055 (P)	3.7
Octachlorostyrene	≈6.0	FS							0.0005 (P)	0.5
Parathion and Methyl Parathion	2.5	FW			0.065 (E)	0.02	0.008	0.003		
Pentachlorophenol	5.0	FW			1.0	100	0.4	40		
Phenanthrene	4.45	FW SW						120 (E)[6] 160 (E)[1]		
Phenols, total chlorinated	2.75	FW					1.0	0.6		

[6]EPA proposed sediment quality criteria for the protection of benthic organisms.

Contaminant	$LogK_{ow}$	Fresh-FW Salt -SW Both -FS	Levels of Protection: Human Health Bioaccumulation Water Qual Criteria µg/l	Human Health Bioaccumulation Sediment Criteria µg/gOC	Benthic Aquatic Life Acute Toxicity Water Qual Criteria µg/l	Benthic Aquatic Life Acute Toxicity Sediment Criteria µg/gOC	Benthic Aquatic Life Chronic Toxicity Water Qual Criteria µg/l	Benthic Aquatic Life Chronic Toxicity Sediment Criteria µg/gOC	Wildlife Bioaccumulation Water Qual Criteria µg/l	Wildlife Bioaccumulation Sediment Criteria µg/gOC
Dieldrin	5.0	FW SW	0.001 0.001	0.1 0.1				9.0 (E)[5] 17.0 (E)		
Diphenylhydrazine	3.03	FS	0.54 (E)	0.58						
Endosulfan	3.55	FW SW			0.22 0.034	0.78 0.12	0.009 0.001	0.03 0.004		
Endrin	5.6	FW SW	0.002	0.8				4.0 (E)[1] 0.73 (E)[1]	0.0019 (P)	0.8
Fluoranthene	5.19	FW SW						1020 (E)[1] 1340 (E)[1]		
Heptachlor & Heptachlor Epoxide	4.4	FW SW	0.00003 (P) 0.00003 (P)	0.0008 0.0008	0.52 (E) 0.053 (E)	13.1 1.3	0.0038(E) 0.0036(E)	0.1 0.09	0.001	0.03
Hexachlorobenzene	6.18	FW	0.0001 (P)	0.15	6.0 (E)	9081	3.68 (E)	5570	0.008 (P)	12
Hexachlorobutadiene	3.74	FW SW	0.06 (P) 0.06 (P)	0.3 0.3	10.0 3.0	55.0 16.4	1.0 0.3	5.5 1.6	0.7 (P) 0.7 (P)	4 4

[5]EPA proposed sediment quality criteria for the protection of benthic organisms.

Contaminant	$LogK_{ow}$	Fresh-FW Salt-SW Both-FS	Levels of Protection: Human Health Bioaccumulation Water Qual Criteria µg/l	Human Health Bioaccumulation Sediment Criteria µg/gOC	Benthic Aquatic Life Acute Toxicity Water Qual Criteria µg/l	Benthic Aquatic Life Acute Toxicity Sediment Criteria µg/gOC	Benthic Aquatic Life Chronic Toxicity Water Qual Criteria µg/l	Benthic Aquatic Life Chronic Toxicity Sediment Criteria µg/gOC	Wildlife Bioaccumulation Water Qual Criteria µg/l	Wildlife Bioaccumulation Sediment Criteria µg/gOC
Phenols, total unchlorinated	2.0	FW					5.0	0.5		
PCB	6.14	FW SW	0.0000006 0.0000006	0.0008 0.0008	2.0 (E) 10.0 (E)	2760.8 13803.8	0.014 (E) 0.03 (E)	19.3 41.4	0.001 0.001	1.4 1.4
2,3,7,8-TCDD	7.0	FS	0.000001	0.01					$2x10^{-5}$ (P)	0.0002
1,1,2,2-Tetrachloroethane	2.56	FS	0.7 (P)	0.3						
Tetrachloroethylene	2.88	FS	1.0	0.8						
o-Toluidine	1.4	FS	18.0 (P)	0.5						
Toxaphene	3.3	FW SW	0.009 (P) 0.009 (P)	0.02 0.02	1.6 0.07	3.2 0.14	0.005 0.005	0.01 0.01		
Trichlorobenzenes	4.26	FS			50	910	5	91		
1,1,2-Trichloroethane	2.17	FS	4.0 (P)	0.6						
Trichloroethylene	2.29	FS	11.0	2.0						
Triphenyl phosphate	4.59	FW			40	1556	4	156		
Vinyl Chloride	0.6	FS	18.0 (P)	0.07						

			Levels of Protection							
			Human Health Bioaccumulation		Benthic Aquatic Life Acute Toxicity		Benthic Aquatic Life Chronic Toxicity		Wildlife Bioaccumulation	
Contaminant	$LogK_{ow}$	Fresh-FW Salt -SW Both -FS	Water Qual Criteria µg/l	Sediment Criteria µg/gOC	Water Qual Criteria µg/l	Sediment Criteria µg/gOC	Water Qual Criteria µg/l	Sediment Criteria µg/gOC	Water Qual Criteria µg/l	Sediment Criteria µg/gOC
Anthracene	4.45	FW			35	986	3.8	107		
Benz(a)anthracene	5.61	FW			0.23	94	0.03	12		
Benzene	2.13	FW SW			760 670	103 90	210 190	28 26		
Ethylbenzene	3.15	FW SW			150 41	212 58	17 4.5	24 6.4		
Fluorene	4.18	FW SW			4.8 23	73 348	0.54 2.5	8 38		
Isopropylbenzene (cumeme)	3.66	FW			23	105	2.6	12		
2-methylnaphthalene	3.86	FW SW			42 48	304 348	4.7 4.2	34 30		
Naphthalene	3.37	FW SW			110 140	258 328	13 16	30 38		
Pyrene	5.32	FW			42	8775	4.6	961		
Toluene	2.69	FW SW			480 430	235 211	100 92	49 45		
1,2,4-trimethylbenzene	3.75	FW SW			290 170	1631 956	33 19	186 107		
Xylene	3.15	FW SW			590 170	833 240	65 19	92 27		

Table 2. Sediment Criteria for Metals. Two levels of risk have been established for metals contamination in sediments. These are the Lowest Effect Level and the Severe Effect Level. The Lowest Effect Level for each metal is the lowest of either the Persaud et al. (1992) Lowest Effect Level or the Long and Morgan (1990) Effect Range-Low. Similarly, the Severe Effect Level for each metal is the lowest of either the Persaud et al. (1992) Severe Effect Level or the Long and Morgan (1990) Effect Range-Moderate. A sediment is considered contaminated if either criterion is exceeded. If both criteria are exceeded, the sediment is considered to be severely impacted. If only the Lowest Effect Level criterion is exceeded, the impact is considered moderate. The units are µg/g, or ppm, except for iron, which is listed as a percentage. An "L" following a criterion means that it was taken from Long and Morgan (1990); a "P" following a criterion indicates that it is from Persaud et al. (1992). Complete tables from both sources can be found in appendix 2.

Metal	Lowest Effect Level µg/g (ppm)	Severe Effect Level µg/g (ppm)
Antimony	2.0 (L)	25.0 (L)
Arsenic	6.0 (P)	33.0 (P)
Cadmium	0.6 (P)	9.0 (L)
Chromium	26.0 (P)	110.0 (P)
Copper	16.0 (P)	110.0 (P)
Iron (%)	2.0% (P)	4.0% (P)
Lead	31.0 (P)	110.0 (L)
Manganese	460.0 (P)	1100.0 (L)
Mercury	0.15 (L)	1.3 (L)
Nickel	16.0 (P)	50.0 (L)
Silver	1.0 (L)	2.2 (L)
Zinc	120.0 (P/L)	270.0 (L)

Contaminant	$LogK_{ow}$	Fresh-FW Salt -SW Both -FS	Levels of Protection: Human Health Bioaccumulation Water Qual Criteria µg/l	Human Health Bioaccumulation Sediment Criteria µg/gOC	Benthic Aquatic Life Acute Toxicity Water Qual Criteria µg/l	Benthic Aquatic Life Acute Toxicity Sediment Criteria µg/gOC	Benthic Aquatic Life Chronic Toxicity Water Qual Criteria µg/l	Benthic Aquatic Life Chronic Toxicity Sediment Criteria µg/gOC	Wildlife Bioaccumulation Water Qual Criteria µg/l	Wildlife Bioaccumulation Sediment Criteria µg/gOC
Benzidine	1.4	FW	0.1	0.003						
Bis(2-chloroethyl) ether	1.73	FS	0.5 (P)	0.03						
Bis(2-ethylhexyl) phthalate	5.3	FW					0.6	199.5		
Carbofuran	2.26	FW			10.0	1.82	1.0	0.2		
Carbon tetrachloride	2.64	FS	1.3 (P)	0.6						
Chlordane	2.78	FW SW	0.002 0.002	0.001 0.001	2.4 (E) 0.09 (E)	1.4 0.05	0.043 (E) 0.004 (E)	0.03 0.002	0.01 (P) 0.01 (P)	0.006 0.006
Chlorobenzene	2.84	FS			50.0	34.6	5.0	3.5		
Chloro-o-toluidine	≈2.0	FS	6.5 (P)	0.65						
Chlorpyrifos	5.11	FW SW			0.083 (E) 0.011 (E)	10.7 1.4	0.041 (E) 0.0056 (E)	5.3 0.72		
DDT, DDD, & DDE[4]	6.0	FW SW	0.00001 (P) 0.00001 (P)	0.01 0.01	1.1 (E) 0.13 (E)	1100 130	0.001 (E) 0.001 (E)	1.0 1.0	0.001 0.001	1.0 1.0
Diazinon	1.92	FW					0.08	0.007		
Dichlorobenzenes	3.38	FS			50.0	120.0	5.0	12.0		
1,2 Dichloroethane	1.48	FS	24.0 (P)	0.7						
1,1 Dichloroethylene	1.48	FS	0.8 (P)	0.02						

[4]Criteria for acute and chronic benthic toxicity apply to DDT only.

Table 1. Sediment criteria for non-polar organic contaminants. Water quality criteria used are taken from Togs 1.1.1. If a water quality criterion was not listed in TOGS 1.1.1., then an EPA criterion was used. These are annotated with the suffix (E). EPA criteria were extracted from the "Water Quality Criteria Summary" chart (EPA, 1991). EPA water quality criteria for the protection of human health (bioaccumulation) were taken from the "Recalculated Values - Organisms Only" column. Wildlife (bioaccumulation) and Human Health (bioaccumulation) protection criteria were derived in Appendix 1, unless TOGS 1.1.1. (bioaccumulation) criteria already existed. Although these criteria are only proposed, they are useful as guidance for estimating potential human health risks. These criteria are annotated with a suffix (P), for "Proposed criteria values".

			Levels of Protection							
			Human Health Bioaccumulation		Benthic Aquatic Life Acute Toxicity		Benthic Aquatic Life Chronic Toxicity		Wildlife Bioaccumulation	
Contaminant	$LogK_{ow}$	Fresh-FW Salt -SW Both -FS	Water Qual Criteria µg/l	Sediment Criteria µg/gOC	Water Qual Criteria µg/l	Sediment Criteria µg/gOC	Water Qual Criteria µg/l	Sediment Criteria µg/gOC	Water Qual Criteria µg/l	Sediment Criteria µg/gOC
Acenapthene	4.33	FW SW						140(E)[2] 240(E)[1]		
Aldrin & Dieldrin	5.0	FS	0.001	0.1					0.0077 (P)	0.77
Azinphosmethyl	2.4	FW SW					0.005 0.01	0.001 0.003		
Azobenzene	3.82	FS	0.16 (P)	1.0						
Benzene	2.0	FS	6.0	0.6						
Benzo(a)pyrene[3]	6.04	FW SW	0.0012 0.0006	1.3 0.7						

[2]EPA proposed sediment quality criterion for the protection of benthic organisms.

[3]These values also apply to benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene, and methylbenz(a)anthracene.

TABLE 2
Charles Gibson Site
Niagara Falls, New York

ANALYTICAL SUMMARY

Annual Cayuga Creek Sediment Sampling 2001 - 2007

UPSTREAM

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

DOWNSTREAM

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

Notes:

U Not Detected
J Estimated value
NS No sample in trap
***** Sediment traps installed April 2001

Table 3

2007 Quarterly Groundwater Elevations Summary

Piezometer Pair	2/27/2007	Inward gradient	4/17/2007	Inward gradient	9/13/2007	Inward gradient	12/03/2007	Inward gradient
P1 outside **P2 inside**	565.31 565.4	Level	565.76 565.48	Level	564.81 565.22	Level	564.14 565.19	Level
P3 outside **P4 inside**	566.48 565.28	Inward	567.46 565.34	Inward	564.86 565.11	Level	563.79 565.33	Level
P5 outside **P6 inside**	568.86 567.58	inward	569.45 567.83	Inward	566.99 566.83	Level	567.05 566.55	Inward
		Below 565 ft msl		Below 565 ft msl		Below 565 ft msl		Below 565 ft msl
Manhole A **Manhole B**	564.39 564.46	Yes Yes	564.12 564.18	Yes Yes	564.12 564.18	Yes Yes	564.4 564.48	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.

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**
TOTALS	**1,004,639**

Monthly Discharge Volumes

Month	Volume (gallons)
Jan	5,800
Feb	0
Mar	5,698
Apr	5,814
May	0
Jun	5,740
Jul	0
Aug	0
Sep	0
Oct	0
Nov	0
Dec	5,646
Total	**22,958**

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 17, 2007

PARAMETER	MANHOLE B (MHB)
alpha-BHC	.056
beta-BHC	.082
delta-BHC	.17
gamma-BHC	.039U
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 1

INSPECTION AND SAMPLING SCHEDULE

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

GIBSON SITE
NIAGARA FALLS, NEW YORK
2007 INSPECTION AND SAMPLING SCHEDULE

Quarterly	Site Inspection (including Site Cover/Cap, Site Fence, Creek Riprap, Site Structures, CPVC Drain/Sump System).
Quarterly	Piezometer and sump groundwater level elevation measurements.
Semi-Annually	Groundwater monitoring well sampling (April and September) for BHC isomers.
Annually	Cayuga Creek sediment sampling (September) for BHC isomers.
Annually	Leachate sample collection and analysis (Manhole B) for BHC isomers (starting in 2000).
Annually	Annual report to NYSDEC (1st Quarter).
Biennially	Groundwater monitoring well sampling (starting in April 2000) for HCB. The biennial sampling events following 2000 will alternate seasonally between April and September sampling. Next HCB sampling is September 2006.
Every Five Years	Leachate sample collection and analysis (Manhole B) (for HCB) (starting in 2000). Next leachate sampling for HCB is 2010.

APPENDIX A

Data Evaluation Narrative
April and September- 2007

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

Data Evaluation Narrative
Charles Gibson – April 2007 Groundwater Sampling Event
Matrix: Groundwater

SDG: A-07-3784 - Severn Trent Laboratories (STL), Amherst, NY

Deliverables

The data packages as submitted to Olin Corporation are complete as stipulated under the Quality Assurance Project Plan (QAPP) for United States Environmental Protection Agency (USEPA) Methods 8081A.

Sample Integrity

Samples within this sample delivery group (SDG) were submitted to the STL Laboratory in Amherst, NY (Buffalo) for chlorinated pesticide analyses. The sample cooler received at the laboratory measured 2.0°C which is within the required limit of 4°C ± 2°. The proper bottles and preservatives were used, the Chain of Custody was properly relinquished, and the correct analytical method was employed.

Sample Identification

This SDG contains the following water and quality control (QC) samples, collected on April 17, 2007:

SDG A-07-37847

Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
MHB	MW-1R	MW-2	MW-2 Dup	MW-4	MW-5
MW-7	MW-8	MW-3			

Chlorinated Pesticides (8081A)

The samples in this SDG were submitted for chlorinated pesticides by USEPA Method 8081A.

Holding Times

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

Practical Quantitation Limits

The practical quantitation limits (PQLs) as stipulated in the QAPP were met for the analysis of chlorinated pesticides by USEPA Method 8081A.

Calibration

The initial and continuing calibration data for this SDG indicates that the applicable initial calibration criteria were met for samples submitted for chlorinated pesticide analyses. However, several compounds exceeded the 15% difference requirement. The average of all of the analytes was within the 15% criteria and within laboratory QC protocols. Therefore, no additional qualification of the data was required.

Blank Summary

The analytical results of the laboratory method blanks indicate that chlorinated pesticides were not detected.

Laboratory Control Sample and Standard Reference Material Check

The laboratory control sample (LCS) (ongoing precision and recovery [OPR] sample) spike recoveries and the standard reference material (SRM) check are within the applicable QC advisory limits as specified in the QAPP.

Matrix Spike/Matrix Spike Duplicate

The results of the MS/MSD analyses were within acceptable QC limits as stipulated in the QAPP.

Sampling Accuracy

The data was within applicable QC advisory limits; therefore no qualification was required.

Laboratory Duplicate Samples

No samples were selected by the laboratory for duplicate analyses.

Field Duplicate Samples

Samples from MW-2/A7387404 and MW-2Dup/A7387405 were submitted to the laboratory for duplicate analyses. The relative percent difference for the field duplicate samples could not be assessed because no target compounds were detected in either sample. No additional qualifications were required.

Overall Site Evaluation and Professional Judgment Flagging Changes

The data within these SDG's were compared to site data and edits to the DQE flags were not required based on professional judgment.

Monitoring period completeness, which is the percentage of analytical results judged to be valid, including estimated values, was 100 percent for the April 2007 sampling event. Typically, project objectives are met when completeness is 90 percent or better.

Prepared by:_____ Date: _____

Data Evaluation Narrative
Charles Gibson – April 2007 Groundwater Sampling Event
Matrix: Groundwater & Soil

SDG: A-07-A337 – Test America Laboratories (STL), Amherst, NY

Deliverables

The data packages as submitted to Olin Corporation are complete as stipulated under the Quality Assurance Project Plan (QAPP) for United States Environmental Protection Agency (USEPA) Methods 8081A.

Sample Integrity

Samples within this sample delivery group (SDG) were submitted to the Test America laboratory in Amherst, NY (Buffalo) for chlorinated pesticide analyses. The sample cooler received at the laboratory measured 2.0°C which is within the required limit of 4°C ± 2°. The proper bottles and preservatives were used, the Chain of Custody was properly relinquished, and the correct analytical method was employed.

Sample Identification

This SDG contains the following water, soil and quality control (QC) samples, collected on April 17, 2007:

SDG A-07-A377

Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
MA-1-091307	MW-1R-091307	MW-2-091307	MW4-091307	MW-5-091307
MW-7-0913-07	US-1-0913-07			

Chlorinated Pesticides (8081A)

The samples in this SDG were submitted for chlorinated pesticides by USEPA Method 8081A.

Holding Times

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

Practical Quantitation Limits

The practical quantitation limits (PQLs) as stipulated in the QAPP were met for the analysis of chlorinated pesticides by USEPA Method 8081A.

Calibration

The initial and continuing calibration data for this SDG indicates that the applicable initial calibration criteria were met for samples submitted for chlorinated pesticide analyses. However, several compounds exceeded the 15% difference requirement. The average of all of the analytes was within the 15% criteria and within laboratory QC protocols. Therefore, no additional qualification of the data was required.

Blank Summary

The analytical results of the laboratory method blanks indicate that chlorinated pesticides were not detected.

Laboratory Control Sample and Standard Reference Material Check

The laboratory control sample (LCS) (ongoing precision and recovery [OPR] sample) spike recoveries and the standard reference material (SRM) check are within the applicable QC advisory limits as specified in the QAPP.

Matrix Spike/Matrix Spike Duplicate

The results of the MS/MSD analyses were within acceptable QC limits as stipulated in the QAPP.

Sampling Accuracy

The data was within applicable QC advisory limits; therefore no qualification was required.

Laboratory Duplicate Samples

No samples were selected by the laboratory for duplicate analyses.

Field Duplicate Samples

Samples from MW-2/A7387404 and MW-2Dup/A7387405 were submitted to the laboratory for duplicate analyses. The relative percent difference for the field duplicate samples could not be assessed because no target compounds were detected in either sample. No additional qualifications were required.

Overall Site Evaluation and Professional Judgment Flagging Changes

The data within these SDG's were compared to site data and edits to the DQE flags were not required based on professional judgment.

Monitoring period completeness, which is the percentage of analytical results judged to be valid, including estimated values, was 100 percent for the April 2007 sampling event. Typically, project objectives are met when completeness is 90 percent or better.

Prepared by:_____ Date: _____

Data Evaluation Narrative
Charles Gibson – September 2007 Groundwater Sampling Event
Matrix: Groundwater & Soil

SDG: A-07-A337 – Test America Laboratories (STL), Amherst, NY

Deliverables

The data packages as submitted to Olin Corporation are complete as stipulated under the Quality Assurance Project Plan (QAPP) for United States Environmental Protection Agency (USEPA) Methods 8081A.

Sample Integrity

Samples within this sample delivery group (SDG) were submitted to the Test America laboratory in Amherst, NY (Buffalo) for chlorinated pesticide analyses. The sample cooler received at the laboratory measured 2.0°C which is within the required limit of 4°C ± 2°. The proper bottles and preservatives were used, the Chain of Custody was properly relinquished, and the correct analytical method was employed.

Sample Identification

This SDG contains the following water, soil and quality control (QC) samples, collected in September 2007:

SDG A-07-A377

Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
MA-1-091307	MW-1R-091307	MW-2-091307	MW4-091307	MW-5-091307
MW-7-0913-07	US-1-0913-07			

Chlorinated Pesticides (8081A)

The samples in this SDG were submitted for chlorinated pesticides by USEPA Method 8081A.

Holding Times

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

Practical Quantitation Limits

The practical quantitation limits (PQLs) as stipulated in the QAPP were met for the analysis of chlorinated pesticides by USEPA Method 8081A.

Calibration

The initial and continuing calibration data for this SDG indicates that the applicable initial calibration criteria were met for samples submitted for chlorinated pesticide analyses. However, several compounds exceeded the 15% difference requirement. The average of all of the analytes was within the 15% criteria and within laboratory QC protocols. Therefore, no additional qualification of the data was required.

Blank Summary

The analytical results of the laboratory method blanks indicate that chlorinated pesticides were not detected.

Laboratory Control Sample and Standard Reference Material Check

The laboratory control sample (LCS) (ongoing precision and recovery [OPR] sample) spike recoveries and the standard reference material (SRM) check are within the applicable QC advisory limits as specified in the QAPP.

Matrix Spike/Matrix Spike Duplicate

The results of the MS/MSD analyses were within acceptable QC limits as stipulated in the QAPP.

Sampling Accuracy

The data was within applicable QC advisory limits; therefore no qualification was required.

Laboratory Duplicate Samples

No samples were selected by the laboratory for duplicate analyses.

Field Duplicate Samples

Samples from MW-2/A7387404 and MW-2Dup/A7387405 were submitted to the laboratory for duplicate analyses. The relative percent difference for the field duplicate samples could not be assessed because no target compounds were detected in either sample. No additional qualifications were required.

Overall Site Evaluation and Professional Judgment Flagging Changes

The data within these SDG's were compared to site data and edits to the DQE flags were not required based on professional judgment.

Monitoring period completeness, which is the percentage of analytical results judged to be valid, including estimated values, was 100 percent for the September 2007 sampling event. Typically, project objectives are met when completeness is 90 percent or better.

Prepared by:_____ Date: _____

APPENDIX A

CHAIN OF CUSTODY FORM

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
AMEC Corp	Mike Balliotti	4-17-07	325409
Address 1986 Lavista River Rd PO Box 248	Telephone Number (Area Code)/Fax Number 423 336 4587	Lab Number	Page 1 of 1
City Charleston / State TN / Zip Code 37310	Site Contact Mike Walker	Lab Contact B. Fisher	
Project Name and Location (State) Charles Gibson Site, Niagara Falls NY	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: BTEX	Special Instructions/ Conditions of Receipt
MHB-041707	4-17-07	1230		X			X						X	2-1 Litre amber
MW-1R-041707	4-17-07	1315		X			X						X	"
MW 2-041707 (MS, MSD)	"	1415		X			X						X	6 x 1 litre amber
MW 4-041707	"	1500		X			X						X	2 x 1 Litre Amber
MW 5-041707	"	1530		X			X						X	"
MW 7-041707	"	1100		X			X						X	"
MW-A3-041707	"	1200		X			X						X	"
MW-8-041707	"	1600		X			X						X	"

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal

☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☒ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other Standard

QC Requirements (Specify)

1. Relinquished By	Date	Time	1. Received By	Date	Time
	4-17-07	1645		4/17/07	1645
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

2.00°C

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

31/267

APPENDIX B

SUMMARY ANALYTICAL REPORT

SEVERN TRENT STL

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228

Tel: 716 691 2600 Fax: 716 691 7991
www.stl-inc.com

ANALYTICAL REPORT

Job#: A07-3874

STL Project#: NY3A9025
Site Name: OLIN CORPORATION
Task: Charles Gibson Site

Mr. Mike Bellotti
Olin Corporation
1186 Lower River Road
Charleston, TN 37310

CC: Mr. Michael Walker

STL Buffalo

Brian J. Fischer
Project Manager

Donna Besco
Analyst

5/7/07

STL Buffalo
Current Certifications

As of 9/28/2006

STATE	Program	Cert # / Lab ID
AFCEE	AFCEE	
Arkansas	SDWA, CWA, RCRA, SOIL	88-0686
California	NELAP CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida	NELAP CWA, RCRA	E87672
Georgia	SDWA,NELAP CWA, RCRA	956
Illinois	NELAP SDWA, CWA, RCRA	200003
Iowa	SW/CS	374
Kansas	NELAP SDWA, CWA, RCRA	E-10187
Kentucky	SDWA	90029
Kentucky UST	UST	30
Louisiana	NELAP CWA, RCRA	2031
Maine	SDWA, CWA	NY044
Maryland	SDWA	294
Massachusetts	SDWA, CWA	M-NY044
Michigan	SDWA	9937
Minnesota	SDWA,CWA, RCRA	036-999-337
New Hampshire	NELAP SDWA, CWA	233701
New Jersey	SDWA, CWA, RCRA, CLP	NY455
New York	NELAP, AIR, SDWA, CWA, RCRA,ASP	10026
Oklahoma	CWA, RCRA	9421
Pennsylvania	NELAP CWA,RCRA	68-00281
South Carolina	RCRA	91013
Tennessee	SDWA	02970
USDA	FOREIGN SOIL PERMIT	S-41579
USDOE	Department of Energy	DOECAP-STB
Virginia	SDWA	278
Washington	CWA,RCRA	C1677
West Virginia	CWA,RCRA	252
Wisconsin	CWA, RCRA	998310390

Sample Data Summary Package

SAMPLE SUMMARY

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	SAMPLED DATE	SAMPLED TIME	RECEIVED DATE	RECEIVED TIME
A7387401	MHB-041707	LEACH	04/17/2007	12:30	04/17/2007	16:45
A7387402	MW-1R-041707	GW	04/17/2007	13:15	04/17/2007	16:45
A7387403	MW-2-041707	GW	04/17/2007	14:15	04/17/2007	16:45
A7387404	MW-2-MS-041707	GW	04/17/2007	14:15	04/17/2007	16:45
A7387405	MW-2-SD-041707	GW	04/17/2007	14:15	04/17/2007	16:45
A7387406	MW-4-041707	GW	04/17/2007	15:00	04/17/2007	16:45
A7387407	MW-5-041707	GW	04/17/2007	15:30	04/17/2007	16:45
A7387408	MW-7-041707	GW	04/17/2007	11:00	04/17/2007	16:45
A7387409	MW-8-041707	GW	04/17/2007	16:00	04/17/2007	16:45
A7387410	MWA-3-041707	GW	04/17/2007	12:00	04/17/2007	16:45

METHODS SUMMARY

Job#: A07-3874

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

PARAMETER	ANALYTICAL METHOD
ASP 2000- METHOD 8081 BHC'S	ASP00 8081

References:

ASP00 "Analytical Services Protocol", New York State Department of Environmental Conservation, June 2000.

SDG NARRATIVE

Job#: A07-3874

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A07-3874
Sample Cooler(s) were received at the following temperature(s); 2.0 °C
All samples were received in good condition.

GC Extractable Data

For method 8081, several compounds exhibited a percent difference greater than 15% from the expected amount in the associated continuing calibrations. The average of all analytes is within 15% and the associated laboratory quality control recoveries are compliant. No corrective action was required.

For method 8081 pesticides, the extracts for all samples were acid treated to minimize matrix interferences. None of the target pesticide compounds reported for this job are effected by this cleanup.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data package and in the electronic data deliverables has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."

Brian J. Fischer
Project Manager

5-8-01
Date

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION
AND
ANALYTICAL REQUEST SUMMARY

LAB NAME: SEVERN TRENT LABORATORIES, INC.

CUSTOMER SAMPLE ID	LABORATORY SAMPLE ID	ANALYTICAL REQUIREMENTS						
		VOA GC/MS	BNA GC/MS	VOA GC	PEST PCB	METALS	TCLP HERB	WATER QUALITY
MHB-041707	A7387401	-	-	-	SW8463	-	-	-
MW-1R-041707	A7387402	-	-	-	SW8463	-	-	-
MW-2-041707	A7387403	-	-	-	SW8463	-	-	-
MW-2-MS-041707	A7387404	-	-	-	SW8463	-	-	-
MW-2-SD-041707	A7387405	-	-	-	SW8463	-	-	-
MW-4-041707	A7387406	-	-	-	SW8463	-	-	-
MW-5-041707	A7387407	-	-	-	SW8463	-	-	-
MW-7-041707	A7387408	-	-	-	SW8463	-	-	-
MW-8-041707	A7387409	-	-	-	SW8463	-	-	-
MWA-3-041707	A7387410	-	-	-	SW8463	-	-	-

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
PESTICIDE/PCB ANALYSIS

LAB NAME: SEVERN TRENT LABORATORIES, INC.

SAMPLE IDENTIFICATION	MATRIX	DATE COLLECTED	DATE RECEIVED AT LAB	DATE EXTRACTED	DATE ANALYZED
MHB-041707	LEACH	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MW-1R-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MW-2-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MW-2-MS-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MW-2-SD-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MW-4-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MW-5-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MW-7-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MW-8-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MWA-3-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
ORGANIC ANALYSIS

LAB NAME: SEVERN TRENT LABORATORIES, INC.

SAMPLE IDENTIFICATION	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILIARY CLEAN UP	DIL/CONC FACTOR
MHB-041707	LEACH	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MW-1R-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MW-2-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MW-2-MS-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MW-2-SD-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MW-4-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MW-5-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MW-7-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MW-8-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MWA-3-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED

STL

DATA QUALIFIER PAGE

These definitions are provided in the event the data in this report requires the use of one or more of the qualifiers. Not all qualifiers defined below are necessarily used in the accompanying data package.

ORGANIC DATA QUALIFIERS

ND or U	Indicates compound was analyzed for, but not detected.
J	Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the data indicates the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS.
B	This flag is used when the analyte is found in the associated blank, as well as in the sample.
E	This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at the secondary dilution factor.
N	Indicates presumptive evidence of a compound. This flag is used only for tentatively identified compounds, where the identification is based on the Mass Spectral library search. It is applied to all TIC results.
P	This flag is used for CLP methodology only. For Pesticide/Aroclor target analytes, when a difference for detected concentrations between the two GC columns is greater than 25%, the lower of the two values is reported on the data page and flagged with a "P".
A	This flag indicates that a TIC is a suspected aldol-condensation product.
1	Indicates coelution.
*	Indicates analysis is not within the quality control limits.

INORGANIC DATA QUALIFIERS

ND or U	Indicates element was analyzed for, but not detected. Report with the detection limit value.
J or B	Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.
N	Indicates spike sample recovery is not within the quality control limits.
S	Indicates value determined by the Method of Standard Addition.
E	Indicates a value estimated or not reported due to the presence of interferences.
H	Indicates analytical holding time exceedance. The value obtained should be considered an estimate.
G	Indicates a value greater than or equal to the project reporting limit but less than the laboratory quantitation limit
*	Indicates the spike or duplicate analysis is not within the quality control limits.
+	Indicates the correlation coefficient for the Method of Standard Addition is less than 0.995.

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MHB-041707

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7387401

Sample wt/vol: 1035.00 (g/mL) ML Lab File ID: 5A19193.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/17/2007 04/17/2007

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.056	
319-85-7	beta-BHC	0.082	
319-86-8	delta-BHC	0.17	
58-89-9	gamma-BHC (Lindane)	0.039	J

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-1R-041707

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7387402

Sample wt/vol: 1050.00 (g/mL) ML Lab File ID: 5A19194.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/17/2007 04/17/2007

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.041	J
319-85-7	beta-BHC	0.035	J
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-2-041707

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7387403

Sample wt/vol: 1035.00 (g/mL) ML Lab File ID: 5A19195.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/17/2007 04/17/2007

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-4-041707

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7387406

Sample wt/vol: 1030.00 (g/mL) ML Lab File ID: 5A19198.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/17/2007 04/17/2007

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.042	J
319-85-7	beta-BHC	0.033	J
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-5-041707

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7387407

Sample wt/vol: 1055.00 (g/mL) ML Lab File ID: 5A19199.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/17/2007 04/17/2007

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.041	J
319-85-7	beta-BHC	0.025	J
319-86-8	delta-BHC	0.047	U
58-89-9	gamma-BHC (Lindane)	0.047	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-7-041707

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7387408

Sample wt/vol: 1050.00 (g/mL) ML Lab File ID: 5A19200.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/17/2007 04/17/2007

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.041	J
319-85-7	beta-BHC	0.035	J
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-8-041707

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7387409

Sample wt/vol: 1045.00 (g/mL) ML Lab File ID: 5A19201.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/17/2007 04/17/2007

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 5.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MWA-3-041707

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7387410

Sample wt/vol: 1050.00 (g/mL) ML Lab File ID: 5A19202.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/17/2007 04/17/2007

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
WATER SURROGATE RECOVERY

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column(1): RTX-CLPI ID: 0.53 (mm)

	Client Sample ID	Lab Sample ID	DCBP %REC	#	TCMX %REC	#							TOT OUT
1	Matrix Spike Blank	A7B0558301	61		86								0
2	Matrix Spike Blk Dup	A7B0558302	69		85								0
3	Method Blank	A7B0558303	62		80								0
4	MHB-041707	A7387401	96		94								0
5	MW-1R-041707	A7387402	96		84								0
6	MW-2-041707	A7387403	99		89								0
7	MW-2-MS-041707	A7387404	98		84								0
8	MW-2-SD-041707	A7387405	96		90								0
9	MW-4-041707	A7387406	70		85								0
10	MW-5-041707	A7387407	65		90								0
11	MW-7-041707	A7387408	85		90								0
12	MW-8-041707	A7387409	72		92								0
13	MWA-3-041707	A7387410	86		86								0

QC LIMITS

(DCBP) = Decachlorobiphenyl (15-139)
(TCMX) = Tetrachloro-m-xylene (30-139)

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
WATER MATRIX SPIKE BLANK/MATRIX SPIKE BLANK DUPLICATE RECOVERY

Lab Name: STL Buffalo Contract: _____ Lab Samp ID: A7B0558303

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - Client Sample No.: Method Blank

COMPOUND	SPIKE ADDED UG/L	MSB CONCENTRATION UG/L	MSB % REC	#	QC LIMITS REC.	+ =
gamma-BHC (Lindane)	0.500	0.445	89		46 - 120	
alpha-BHC	0.500	0.434	87		39 - 121	
beta-BHC	0.500	0.482	96		39 - 138	
delta-BHC	0.500	0.459	92		40 - 121	

COMPOUND	SPIKE ADDED UG/L	MSBD CONCENTRATION UG/L	MSBD % REC	#	% RPD	#	QC LIMITS RPD	QC LIMITS REC.	+ =
gamma-BHC (Lindane)	0.500	0.441	88		1		50	46 - 120	
alpha-BHC	0.500	0.430	86		1		50	39 - 121	
beta-BHC	0.500	0.477	95		1		50	39 - 138	
delta-BHC	0.500	0.456	91		1		50	40 - 121	

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 4 outside limits
Spike recovery: 0 out of 8 outside limits

Comments: _____

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
METHOD BLANK SUMMARY

Client No.

Method Blank

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Lab Sample ID: A7B0558303 Lab File ID: 5A19187.TX0

Matrix: (soil/water) WATER Extraction: SEPF

Sulfur Cleanup: (Y/N): N Date Extracted: 04/18/2007

Date Analyzed (1): 04/19/2007 Date Analyzed (2): _____

Time Analyzed (1): 14:38 Time Analyzed (2): _____

Instrument ID (1): HP6890-5 Instrument ID (2): _____

GC Column (1): RTX-CLPI Dia: 0.53(mm) GC Column (2): _____ Dia: _____(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	Matrix Spike Blank	A7B0558301	04/19/2007	
2	Matrix Spike Blk Dup	A7B0558302	04/19/2007	
3	MHB-041707	A7387401	04/19/2007	
4	MW-1R-041707	A7387402	04/19/2007	
5	MW-2-041707	A7387403	04/19/2007	
6	MW-2-MS-041707	A7387404	04/19/2007	
7	MW-2-SD-041707	A7387405	04/19/2007	
8	MW-4-041707	A7387406	04/19/2007	
9	MW-5-041707	A7387407	04/19/2007	
10	MW-7-041707	A7387408	04/19/2007	
11	MW-8-041707	A7387409	04/19/2007	
12	MWA-3-041707	A7387410	04/19/2007	

Comments: _____

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

Method Blank

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7B0558303

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: 5A19187.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: _____ _____

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 5.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U

Sample Data Package

SDG Narrative

SEVERN TRENT STL

STL Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228

Tel: 716 691 2600 Fax: 716 691 7991
www.stl-inc.com

ANALYTICAL REPORT

Job#: A07-3874

STL Project#: NY3A9025
Site Name: OLIN CORPORATION
Task: Charles Gibson Site

Mr. Mike Bellotti
Olin Corporation
1186 Lower River Road
Charleston, TN 37310

CC: Mr. Michael Walker

STL Buffalo

Brian J. Fischer
Project Manager

Donna Besco
Analyst

5/7/07

STL Buffalo
Current Certifications

As of 9/28/2006

STATE	Program	Cert # / Lab ID
AFCEE	AFCEE	
Arkansas	SDWA, CWA, RCRA, SOIL	88-0686
California	NELAP CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida	NELAP CWA, RCRA	E87672
Georgia	SDWA,NELAP CWA, RCRA	956
Illinois	NELAP SDWA, CWA, RCRA	200003
Iowa	SW/CS	374
Kansas	NELAP SDWA, CWA, RCRA	E-10187
Kentucky	SDWA	90029
Kentucky UST	UST	30
Louisiana	NELAP CWA, RCRA	2031
Maine	SDWA, CWA	NY044
Maryland	SDWA	294
Massachusetts	SDWA, CWA	M-NY044
Michigan	SDWA	9937
Minnesota	SDWA,CWA, RCRA	036-999-337
New Hampshire	NELAP SDWA, CWA	233701
New Jersey	SDWA, CWA, RCRA, CLP	NY455
New York	NELAP, AIR, SDWA, CWA, RCRA,ASP	10026
Oklahoma	CWA, RCRA	9421
Pennsylvania	NELAP CWA,RCRA	68-00281
South Carolina	RCRA	91013
Tennessee	SDWA	02970
USDA	FOREIGN SOIL PERMIT	S-41579
USDOE	Department of Energy	DOECAP-STB
Virginia	SDWA	278
Washington	CWA,RCRA	C1677
West Virginia	CWA,RCRA	252
Wisconsin	CWA, RCRA	998310390

Sample Data Summary Package

SAMPLE SUMMARY

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	SAMPLED DATE	SAMPLED TIME	RECEIVED DATE	RECEIVED TIME
A7387401	MHB-041707	LEACH	04/17/2007	12:30	04/17/2007	16:45
A7387402	MW-1R-041707	GW	04/17/2007	13:15	04/17/2007	16:45
A7387403	MW-2-041707	GW	04/17/2007	14:15	04/17/2007	16:45
A7387404	MW-2-MS-041707	GW	04/17/2007	14:15	04/17/2007	16:45
A7387405	MW-2-SD-041707	GW	04/17/2007	14:15	04/17/2007	16:45
A7387406	MW-4-041707	GW	04/17/2007	15:00	04/17/2007	16:45
A7387407	MW-5-041707	GW	04/17/2007	15:30	04/17/2007	16:45
A7387408	MW-7-041707	GW	04/17/2007	11:00	04/17/2007	16:45
A7387409	MW-8-041707	GW	04/17/2007	16:00	04/17/2007	16:45
A7387410	MWA-3-041707	GW	04/17/2007	12:00	04/17/2007	16:45

METHODS SUMMARY

Job#: A07-3874

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

PARAMETER	ANALYTICAL METHOD
ASP 2000- METHOD 8081 BHC'S	ASP00 8081

References:

ASP00 "Analytical Services Protocol", New York State Department of Environmental Conservation, June 2000.

SDG NARRATIVE

Job#: A07-3874

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A07-3874
Sample Cooler(s) were received at the following temperature(s); 2.0 °C
All samples were received in good condition.

GC Extractable Data

For method 8081, several compounds exhibited a percent difference greater than 15% from the expected amount in the associated continuing calibrations. The average of all analytes is within 15% and the associated laboratory quality control recoveries are compliant. No corrective action was required.

For method 8081 pesticides, the extracts for all samples were acid treated to minimize matrix interferences. None of the target pesticide compounds reported for this job are effected by this cleanup.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data package and in the electronic data deliverables has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."

Brian J. Fischer
Project Manager

5-8-01
Date

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION
AND
ANALYTICAL REQUEST SUMMARY

LAB NAME: SEVERN TRENT LABORATORIES, INC.

CUSTOMER SAMPLE ID	LABORATORY SAMPLE ID	ANALYTICAL REQUIREMENTS						
		VOA GC/MS	BNA GC/MS	VOA GC	PEST PCB	METALS	TCLP HERB	WATER QUALITY
MHB-041707	A7387401	-	-	-	SW8463	-	-	-
MW-1R-041707	A7387402	-	-	-	SW8463	-	-	-
MW-2-041707	A7387403	-	-	-	SW8463	-	-	-
MW-2-MS-041707	A7387404	-	-	-	SW8463	-	-	-
MW-2-SD-041707	A7387405	-	-	-	SW8463	-	-	-
MW-4-041707	A7387406	-	-	-	SW8463	-	-	-
MW-5-041707	A7387407	-	-	-	SW8463	-	-	-
MW-7-041707	A7387408	-	-	-	SW8463	-	-	-
MW-8-041707	A7387409	-	-	-	SW8463	-	-	-
MWA-3-041707	A7387410	-	-	-	SW8463	-	-	-

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
PESTICIDE/PCB ANALYSIS

LAB NAME: SEVERN TRENT LABORATORIES, INC.

SAMPLE IDENTIFICATION	MATRIX	DATE COLLECTED	DATE RECEIVED AT LAB	DATE EXTRACTED	DATE ANALYZED
MHB-041707	LEACH	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MW-1R-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MW-2-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MW-2-MS-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MW-2-SD-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MW-4-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MW-5-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MW-7-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MW-8-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007
MWA-3-041707	GW	04/17/2007	04/17/2007	04/18/2007	04/19/2007

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
ORGANIC ANALYSIS

LAB NAME: SEVERN TRENT LABORATORIES, INC.

SAMPLE IDENTIFICATION	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILIARY CLEAN UP	DIL/CONC FACTOR
MHB-041707	LEACH	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MW-1R-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MW-2-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MW-2-MS-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MW-2-SD-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MW-4-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MW-5-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MW-7-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MW-8-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED
MWA-3-041707	GW	SW8463	SEPF	AS REQUIRED	AS REQUIRED

STL

DATA QUALIFIER PAGE

These definitions are provided in the event the data in this report requires the use of one or more of the qualifiers. Not all qualifiers defined below are necessarily used in the accompanying data package.

ORGANIC DATA QUALIFIERS

ND or U	Indicates compound was analyzed for, but not detected.
J	Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the data indicates the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS.
B	This flag is used when the analyte is found in the associated blank, as well as in the sample.
E	This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at the secondary dilution factor.
N	Indicates presumptive evidence of a compound. This flag is used only for tentatively identified compounds, where the identification is based on the Mass Spectral library search. It is applied to all TIC results.
P	This flag is used for CLP methodology only. For Pesticide/Aroclor target analytes, when a difference for detected concentrations between the two GC columns is greater than 25%, the lower of the two values is reported on the data page and flagged with a "P".
A	This flag indicates that a TIC is a suspected aldol-condensation product.
1	Indicates coelution.
*	Indicates analysis is not within the quality control limits.

INORGANIC DATA QUALIFIERS

ND or U	Indicates element was analyzed for, but not detected. Report with the detection limit value.
J or B	Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.
N	Indicates spike sample recovery is not within the quality control limits.
S	Indicates value determined by the Method of Standard Addition.
E	Indicates a value estimated or not reported due to the presence of interferences.
H	Indicates analytical holding time exceedance. The value obtained should be considered an estimate.
G	Indicates a value greater than or equal to the project reporting limit but less than the laboratory quantitation limit
*	Indicates the spike or duplicate analysis is not within the quality control limits.
+	Indicates the correlation coefficient for the Method of Standard Addition is less than 0.995.

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MHB-041707

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7387401

Sample wt/vol: 1035.00 (g/mL) ML Lab File ID: 5A19193.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/17/2007 04/17/2007

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.056	
319-85-7	beta-BHC	0.082	
319-86-8	delta-BHC	0.17	
58-89-9	gamma-BHC (Lindane)	0.039	J

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-1R-041707

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7387402

Sample wt/vol: 1050.00 (g/mL) ML Lab File ID: 5A19194.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/17/2007 04/17/2007

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.041	J
319-85-7	beta-BHC	0.035	J
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-2-041707

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7387403

Sample wt/vol: 1035.00 (g/mL) ML Lab File ID: 5A19195.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/17/2007 04/17/2007

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-4-041707

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7387406

Sample wt/vol: 1030.00 (g/mL) ML Lab File ID: 5A19198.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/17/2007 04/17/2007

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.042	J
319-85-7	beta-BHC	0.033	J
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-5-041707

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7387407

Sample wt/vol: 1055.00 (g/mL) ML Lab File ID: 5A19199.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/17/2007 04/17/2007

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.041	J
319-85-7	beta-BHC	0.025	J
319-86-8	delta-BHC	0.047	U
58-89-9	gamma-BHC (Lindane)	0.047	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-7-041707

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7387408

Sample wt/vol: 1050.00 (g/mL) ML Lab File ID: 5A19200.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/17/2007 04/17/2007

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.041	J
319-85-7	beta-BHC	0.035	J
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MW-8-041707

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7387409

Sample wt/vol: 1045.00 (g/mL) ML Lab File ID: 5A19201.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/17/2007 04/17/2007

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 5.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

MWA-3-041707

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7387410

Sample wt/vol: 1050.00 (g/mL) ML Lab File ID: 5A19202.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/17/2007 04/17/2007

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
WATER SURROGATE RECOVERY

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column(1): RTX-CLPI ID: 0.53 (mm)

	Client Sample ID	Lab Sample ID	DCBP %REC	#	TCMX %REC	#							TOT OUT
1	Matrix Spike Blank	A7B0558301	61		86								0
2	Matrix Spike Blk Dup	A7B0558302	69		85								0
3	Method Blank	A7B0558303	62		80								0
4	MHB-041707	A7387401	96		94								0
5	MW-1R-041707	A7387402	96		84								0
6	MW-2-041707	A7387403	99		89								0
7	MW-2-MS-041707	A7387404	98		84								0
8	MW-2-SD-041707	A7387405	96		90								0
9	MW-4-041707	A7387406	70		85								0
10	MW-5-041707	A7387407	65		90								0
11	MW-7-041707	A7387408	85		90								0
12	MW-8-041707	A7387409	72		92								0
13	MWA-3-041707	A7387410	86		86								0

QC LIMITS

(DCBP) = Decachlorobiphenyl (15-139)
(TCMX) = Tetrachloro-m-xylene (30-139)

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
WATER MATRIX SPIKE BLANK/MATRIX SPIKE BLANK DUPLICATE RECOVERY

Lab Name: STL Buffalo Contract: _____ Lab Samp ID: A7B0558303

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - Client Sample No.: Method Blank

COMPOUND	SPIKE ADDED UG/L	MSB CONCENTRATION UG/L	MSB % REC #	QC LIMITS REC.	+ =
gamma-BHC (Lindane)	0.500	0.445	89	46 - 120	
alpha-BHC	0.500	0.434	87	39 - 121	
beta-BHC	0.500	0.482	96	39 - 138	
delta-BHC	0.500	0.459	92	40 - 121	

COMPOUND	SPIKE ADDED UG/L	MSBD CONCENTRATION UG/L	MSBD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.	+ =
gamma-BHC (Lindane)	0.500	0.441	88	1	50	46 - 120	
alpha-BHC	0.500	0.430	86	1	50	39 - 121	
beta-BHC	0.500	0.477	95	1	50	39 - 138	
delta-BHC	0.500	0.456	91	1	50	40 - 121	

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 4 outside limits
Spike recovery: 0 out of 8 outside limits

Comments: _____

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
METHOD BLANK SUMMARY

Client No.

Method Blank

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Lab Sample ID: A7B0558303 Lab File ID: 5A19187.TX0

Matrix: (soil/water) WATER Extraction: SEPF

Sulfur Cleanup: (Y/N): N Date Extracted: 04/18/2007

Date Analyzed (1): 04/19/2007 Date Analyzed (2): _____

Time Analyzed (1): 14:38 Time Analyzed (2): _____

Instrument ID (1): HP6890-5 Instrument ID (2): _____

GC Column (1): RTX-CLPI Dia: 0.53(mm) GC Column (2): _____ Dia: _____(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	Matrix Spike Blank	A7B0558301	04/19/2007	
2	Matrix Spike Blk Dup	A7B0558302	04/19/2007	
3	MHB-041707	A7387401	04/19/2007	
4	MW-1R-041707	A7387402	04/19/2007	
5	MW-2-041707	A7387403	04/19/2007	
6	MW-2-MS-041707	A7387404	04/19/2007	
7	MW-2-SD-041707	A7387405	04/19/2007	
8	MW-4-041707	A7387406	04/19/2007	
9	MW-5-041707	A7387407	04/19/2007	
10	MW-7-041707	A7387408	04/19/2007	
11	MW-8-041707	A7387409	04/19/2007	
12	MWA-3-041707	A7387410	04/19/2007	

Comments: _____

OLIN CORPORATION
OLIN CORPORATION - CHARLES GIBSON SITE
ASP 2000- METHOD 8081 BHC'S
ANALYSIS DATA SHEET

Client No.

Method Blank

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: A7B0558303

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: 5A19187.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: _____ _____

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/18/2007

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/2007

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 5.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U

Sample Data Package

SDG Narrative

SAMPLE SUMMARY

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	SAMPLED DATE	SAMPLED TIME	RECEIVED DATE	RECEIVED TIME
A7387401	MHB-041707	LEACH	04/17/2007	12:30	04/17/2007	16:45
A7387402	MW-1R-041707	GW	04/17/2007	13:15	04/17/2007	16:45
A7387403	MW-2-041707	GW	04/17/2007	14:15	04/17/2007	16:45
A7387404	MW-2-MS-041707	GW	04/17/2007	14:15	04/17/2007	16:45
A7387405	MW-2-SD-041707	GW	04/17/2007	14:15	04/17/2007	16:45
A7387406	MW-4-041707	GW	04/17/2007	15:00	04/17/2007	16:45
A7387407	MW-5-041707	GW	04/17/2007	15:30	04/17/2007	16:45
A7387408	MW-7-041707	GW	04/17/2007	11:00	04/17/2007	16:45
A7387409	MW-8-041707	GW	04/17/2007	16:00	04/17/2007	16:45
A7387410	MWA-3-041707	GW	04/17/2007	12:00	04/17/2007	16:45

METHODS SUMMARY

Job#: A07-3874

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

PARAMETER	ANALYTICAL METHOD
ASP 2000- METHOD 8081 BHC'S	ASP00 8081

References:

ASP00 "Analytical Services Protocol", New York State Department of Environmental Conservation, June 2000.

SDG NARRATIVE

Job#: A07-3874

STL Project#: NY3A9025
Site Name: Olin Corporation - Charles Gibson site

General Comments

The enclosed data may or may not have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A07-3874
Sample Cooler(s) were received at the following temperature(s); 2.0 °C
All samples were received in good condition.

GC Extractable Data

For method 8081, several compounds exhibited a percent difference greater than 15% from the expected amount in the associated continuing calibrations. The average of all analytes is within 15% and the associated laboratory quality control recoveries are compliant. No corrective action was required.

For method 8081 pesticides, the extracts for all samples were acid treated to minimize matrix interferences. None of the target pesticide compounds reported for this job are effected by this cleanup.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data package and in the electronic data deliverables has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."

Brian J. Fischer
Project Manager

5-8-07
Date

APPENDIX B

Field Logs

Semiannual Groundwater Monitoring
and
Annual Sediment Sampling
and
Quarterly Inspections

2007

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

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: 2/27/2007 TIME: 1300

INSPECTOR: Walker COMPANY: Sevenson

WEATHER: 29 F, Snow

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	Covered in Snow
COVER VEGETATION	A	Covered in Snow
TREES	A	OK
LITTER	A	
EROSION (CAP)	A	Covered in Snow
EROSION (BANK)	A	Covered in Snow
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: 4/17/2007 TIME: 1000

INSPECTOR: M. Walker COMPANY: Sevenson Environmental Svc.

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Semi-Annual Inspection/GW Monitoring

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	2 dead pines, Probably from October ice storm.
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: 8/6/2007 TIME: 800

INSPECTOR: Walker COMPANY: Sevenson Environmental Services

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Creek bank repair, Hang 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 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: Onsite this morning with an excavator and operator to dig the large stones that form a bridge/dam across the creek, and replace them on the shore to prevent erosion. We will also post warning signs on the fence

Walker 8 hrs , site truck 8 hrs, excavator 8 hrs, operator 8 hrs, signs.

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: 9/13/2007 TIME: 800

INSPECTOR: M. Walker COMPANY: Sevenson Environmental Svc.

WEATHER: Sunny < clear 58

REASON FOR INSPECTION (QUARTERLY OR OTHER): Third Quarter Insp./ GW Monitoring

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	Vegitation growing through
COVER VEGETATION	A	
TREES	A	Cut down and removed 2 dead pines on berm.
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: 12/3/2007 TIME: 1230

INSPECTOR: Walker COMPANY: Sevenson

WEATHER: 32F, windy, cloudy, No Precip.

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:

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

RECORDED BY: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: MW-4-041707
SAMPLING EVENT/DATE: 4/17/2007
MONITORING WELL: MW-4
CONDITION: OK

GROUNDWATER PURGE DATA PURGE DATE: 4/17/2007

DEPTH TO BOTTOM FROM TOP OF RISER: 13.75 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 6.14 (FT.)
WATER COLUMN: 7.61 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.22 (GALS)

PURGE METHOD: 3 vol.
BOTTOM OF WELL/SILT BUILDUP: no
PURGE START TIME: 1430 STOP TIM 1500
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	7.7	1274	7.8	Black w/ Sulfur odor
2	7.6	1256	7.4	Orange / Lt. Orange
3	7.5	1243	7.3	Light Orange color
4				
5				

TOTAL VOLUME PURGED: 3.5 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/17/2007

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1500

LOCATION: MW-4

SAMPLE METHOD: Peristaltic pump using dedicated tubing

SAMPLING OBSERVATIONS: Light Orange color / No Odor.

QC SAMPLES TAKEN:

OTHER OBSERVATIONS/COMMENTS: Total of 2 / 1liter ambers taken for 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: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: MW-A3-041707
SAMPLING EVENT/DATE: 4/17/2007
MONITORING WELL: MW-A3
CONDITION: OK

GROUNDWATER PURGE DATA PURGE DATE: 4/17/2007

DEPTH TO BOTTOM FROM TOP OF RISER: 11.95 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 5.1 (FT.)
WATER COLUMN: 6.85 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.10 (GALS)

PURGE METHOD: 3 vol.
BOTTOM OF WELL/SILT BUILDUP: no
PURGE START TIME: 1130 STOP TIM 1200
PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAINLESS 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	7.5	565	6.5	clear
2	7.3	515	6.5	"
3	7.1	513	6.3	"
4				
5				

TOTAL VOLUME PURGED: 3.5 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/17/2007

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1200

LOCATION: MW-A3

SAMPLE METHOD: Peristaltic pump using dedicated tubing

SAMPLING OBSERVATIONS: Clear, no odor

QC SAMPLES TAKEN:

OTHER OBSERVATIONS/COMMENTS: Total of 2 / 1liter ambers taken for 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: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: MW-2- 041707
SAMPLING EVENT/DATE: 4/17/2007
MONITORING WELL: MW-2
CONDITION: OK

GROUNDWATER PURGE DATA PURGE DATE: 4/17/2007

DEPTH TO BOTTOM FROM TOP OF RISER: 12.13 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 3.49 (FT.)
WATER COLUMN: 8.64 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.38 (GALS)

PURGE METHOD: 3 vol.
BOTTOM OF WELL/SILT BUILDUP: no
PURGE START TIME: 1345 STOP TIM 1415
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	7.8	1001	7.6	clear
2	7.9	1003	7.1	"
3	7.8	1000	6.9	"
4				
5				

TOTAL VOLUME PURGED: 4.5 GALLONS

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/17/2007

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1415

LOCATION: MW-2

SAMPLE METHOD: Peristaltic pump using dedicated tubing

SAMPLING OBSERVATIONS: Clear, no odor

QC SAMPLES TAKEN: MS/MSD

OTHER OBSERVATIONS/COMMENTS: Total of 6/ 1liter gl. Ambers taken, for BHC only

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: Walker
SAMPLE ID: MW-1R-0417-7
SAMPLED BY: Walker
SAMPLING EVENT/DATE: 4/17/2007
COMPANY: Sevenson
MONITORING WELL: MW-1R
CONDITION: OK

GROUNDWATER PURGE DATA PURGE DATE: 4/17/2007

DEPTH TO BOTTOM FROM TOP OF RISER: 12.1 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 3.1 (FT.)
WATER COLUMN: 9 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.44 (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: 3 vol.
BOTTOM OF WELL/SILT BUILDUP: no
PURGE START TIME: 1250 STOP TIM 1315
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.34	603	7.5 C	clear
2	7.86	612	7.6C	"
3	7.95	610	7.5C	"
4				
5				

TOTAL VOLUME PURGED: 4.5 GALLONS

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/17/2007

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1315

LOCATION: MW-1R

SAMPLE METHOD: Peristaltic pump using dedicated tubing

SAMPLING OBSERVATIONS: Clear, no odor

QC SAMPLES TAKEN: Blind Duplicate samples taken, labeled "MW7-041707" 1100

OTHER OBSERVATIONS/COMMENTS: Total of 4/ 1liter gl. Ambers taken. (2 for MW-15 &2 for MW-7)

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: Walker **SAMPLE ID:** MHB-041707

SAMPLED BY: Walker SAMPLING EVENT/DATE: 4/17/2007

COMPANY: Sevenson MONITORING WELL: MHB

CONDITION: OK

GROUNDWATER PURGE DATA PURGE DATE: xxx

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

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

WATER COLUMN: xxx (FT.)

2" DIA. WELL CONSTANT: 0.16

ONE WELL VOLUME= xxx (GALS)

PURGE METHOD: xxx

BOTTOM OF WELL/SILT BUILDUP:

PURGE START TIME: xxx STOP TIM xxx

PURGE OBSERVATIONS: xxx

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	6.7	426	8.5 C	clear
2				
3				
4				
5				

TOTAL VOLUME PURGED: GRAB SAMPLE

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/17/2007

MEDIA: GROUNDWATER X, SAMPLE TIME: 1230

CREEK SEDIMENT

LOCATION: Man hole "B"

SAMPLE METHOD: Grab sample using a peristaltic pump with dedicated tubing.

SAMPLING OBSERVATIONS: Clear, slight odor

QC SAMPLES TAKEN: xxx

OTHER OBSERVATIONS/COMMENTS: 2/ 1 liter glass ambers taken for 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: Walker **SAMPLE ID:** MW-1R-091307

SAMPLED BY: Walker SAMPLING EVENT/DATE: 9/13/2007

COMPANY: Sevenson Environmental Services MONITORING WELL: MW-1R

CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 9/13/2007

DEPTH TO BOTTOM FROM TOP OF RISER: 12.1 (FT.)

DEPTH TO WATER FROM TOP OF RISER: 8.02 (FT.)

WATER COLUMN: 4.08 (FT.)

2" DIA. WELL CONSTANT: 0.16

ONE WELL VOLUME= 0.6528 (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: Purge 3x volume w/ peristaltic pump, then sample.

BOTTOM OF WELL/SILT BUILDUP: No

PURGE START TIME: 1000 STOP TIME: 1010

PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.34	1265	18.2	Clear
2	7.38	1151	18.2	clear
3	7.32	1219	18.4	clear
4	7.33	1215	19	clear
5				

TOTAL VOLUME PURGED: 2.25 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/13/2007

MEDIA: GROUNDWATER X SAMPLE TIME: 1010

CREEK SEDIMENT

LOCATION: MW-1R, Well is near Tuscarora rd. in front of the site.

SAMPLE METHOD: Purge 3x volume using peristaltic pump and dedicated tubing, Sample.

SAMPLING OBSERVATIONS: Clear water, no odor.

QC SAMPLES TAKEN: Blind duplicate samples taken and labeled MW-7@1420 on the Cof C.

OTHER OBSERVATIONS/COMMENTS: 4x 1 liter glass bottles taken.

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: Walker **SAMPLE ID:** MW-2-091307

SAMPLED BY: Walker SAMPLING EVENT/DATE: 9/13/2007

COMPANY: Sevenson Environmental Services MONITORING WELL: MW-2

CONDITION: Good Bee's nest under cap

GROUNDWATER PURGE DATA PURGE DATE: 9/13/2007

DEPTH TO BOTTOM FROM TOP OF RISER: 12.13 (FT.)

DEPTH TO WATER FROM TOP OF RISER: 5.8 (FT.)

WATER COLUMN: 6.33 (FT.)

2" DIA. WELL CONSTANT: 0.16

ONE WELL VOLUME= 1.0128 (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: Purge 3x volume w/ peristaltic pump, then sample.

BOTTOM OF WELL/SILT BUILDUP: No

PURGE START TIME: 1035 STOP TIME: 1058

PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.27	1769	17.8	clear/sulfur odor
2	6.86	1599	18.2	"
3	6.83	1539	19.1	"
4	6.92	1524	19.2	"
5				

TOTAL VOLUME PURGED: 3.25 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/13/2007

MEDIA: GROUNDWATER X SAMPLE TIME: 1050

CREEK SEDIMENT

LOCATION: MW-2 , the well near the Auto Zone store on the Tuscarora Rd. side.

SAMPLE METHOD: Purge 3x volume using peristaltic pump and dedicated tubing, Sample.

SAMPLING OBSERVATIONS: Clear wate r / slight sulfur smell.

QC SAMPLES TAKEN: No

OTHER OBSERVATIONS/COMMENTS: 2x 1 liter glass bottles taken.

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: Walker **SAMPLE ID:** MW-4-091307

SAMPLED BY: Walker SAMPLING EVENT/DATE: 9/13/2007

COMPANY: Sevenson Environmental Services MONITORING WELL: MW-4

CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 9/13/2007

DEPTH TO BOTTOM FROM TOP OF RISER: 13.75 (FT.)

DEPTH TO WATER FROM TOP OF RISER: 8.05 (FT.)

WATER COLUMN: 5.7 (FT.)

2" DIA. WELL CONSTANT: 0.16

ONE WELL VOLUME= 0.912 (GALS)

NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAINLESS 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: Purge 3x volume w/ peristaltic pump, then sample.

BOTTOM OF WELL/SILT BUILDUP: No

PURGE START TIME: 1100 STOP TIME: 1130

PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.17	2038	15.8	Black w/ organics
2	7.22	1989	16.7	"
3	6.95	2079	15.8	Grayish, clearing
4	6.96	2083	15.6	Gray water.
5				

TOTAL VOLUME PURGED: 3 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/13/2007

MEDIA: GROUNDWATER X SAMPLE TIME: 1130

CREEK SEDIMENT

LOCATION: MW-4, well is behind auto zone. Near small pine trees.

SAMPLE METHOD: Purge 3x volume using peristaltic pump and dedicated tubing, Sample.

SAMPLING OBSERVATIONS: Gray water

QC SAMPLES TAKEN: No

OTHER OBSERVATIONS/COMMENTS: 2x 1 liter glass bottles taken.

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: Walker **SAMPLE ID:** MW-5-091307

SAMPLED BY: Walker SAMPLING EVENT/DATE: 9/13/2007

COMPANY: Sevenson Environmental Services MONITORING WELL: MW-5

CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 9/13/2007

DEPTH TO BOTTOM FROM TOP OF RISER: 15.28 (FT.)

DEPTH TO WATER FROM TOP OF RISER: 10.55 (FT.)

WATER COLUMN: 4.73 (FT.)

2" DIA. WELL CONSTANT: 0.16

ONE WELL VOLUME= 0.7568 (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: Purge 3x volume w/ peristaltic pump, then sample.

BOTTOM OF WELL/SILT BUILDUP: No

PURGE START TIME: 1145 STOP TIME: 1155

PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	6.49	2.75	14.7	Orange tint
2	6.43	2.72	14.9	clear
3	6.46	2.7	15.4	clear
4	6.44	2.72	15.3	clear
5				

TOTAL VOLUME PURGED: 2.5 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/13/2007

MEDIA: GROUNDWATER X SAMPLE TIME: 1155

CREEK SEDIMENT

LOCATION: MW-5, well is behind Auto Zone in the field.

SAMPLE METHOD: Purge 3x volume using peristaltic pump and dedicated tubing, Sample.

SAMPLING OBSERVATIONS: clear

QC SAMPLES TAKEN: No

OTHER OBSERVATIONS/COMMENTS: 2x 1 liter glass bottles taken.

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: Walker **SAMPLE ID:** MW-A3091307

SAMPLED BY: Walker SAMPLING EVENT/DATE: 9/13/2007

COMPANY: Sevenson Environmental Service MONITORING WELL: MW-A3

CONDITION: protective c

GROUNDWATER PURGE DATA PURGE DATE: 9/13/2007

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

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

WATER COLUMN: 0 (FT.)

2" DIA. WELL CONSTANT: 0.16

ONE WELL VOLUME= 0 (GALS)

PURGE METHOD: No water in the well.

BOTTOM OF WELL/SILT BUILDUP: No

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	There was no water in the well, so I could not take a sample.			
2				
3				
4				
5				

TOTAL VOLUME PURGED:

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/13/2007

MEDIA: GROUNDWATER X SAMPLE TIME: No

CREEK SEDIMENT

LOCATION: MW-A3, located across the creek, behind the Motel.

SAMPLE METHOD: No sample was taken , the well was dry.

SAMPLING OBSERVATIONS:

QC SAMPLES TAKEN: No

OTHER OBSERVATIONS/COMMENTS: No sample taken.

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: Walker **SAMPLE ID:** US-1-091307

SAMPLED BY: Walker SAMPLING EVENT/DATE: 9/13/2007

COMPANY: Sevenson Environmental Services **SEDIMENT SAMPLE:** US-1

CONDITION:

GROUNDWATER PURGE DATA PURGE DATE:

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

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

WATER COLUMN: 0 (FT.)

2" DIA. WELL CONSTANT: 0.16

ONE WELL VOLUME= 0 (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 STAINLESS 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: 9/13/2007

MEDIA: GROUNDWATER
CREEK SEDIMENT X

SAMPLE TIME: 1300

LOCATION: Cayuga Creekbed, Upstream of the landfill cap, in line with the front gate posts.

SAMPLE METHOD: Composite sample from the sediment trap placed last September.

SAMPLING OBSERVATIONS: Black and l

QC SAMPLES TAKEN: Yes, Duplicate sample taken, and labeled MS-1 @1330 for lab QC.

OTHER OBSERVATIONS/COMMENTS: 2 x 4 oz. Glass jars taken.

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: Walker **SAMPLE ID:** DS-1-091307

SAMPLED BY: Walker SAMPLING EVENT/DATE: 9/13/2007

COMPANY: Sevenson Environmental Services **SEDIMENT SAMPLE:** DS-1

CONDITION:

GROUNDWATER PURGE DATA PURGE DATE:

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

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

WATER COLUMN: 0 (FT.)

2" DIA. WELL CONSTANT: 0.16

ONE WELL VOLUME= 0 (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 STAINLESS 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: 9/13/2007

MEDIA: GROUNDWATER ____ SAMPLE TIME: No

CREEK SEDIMENT X

LOCATION: Cayuga Creekbed, Downstream of the landfill cap, in line with the 2nd fence post from the corner.

SAMPLE METHOD: No sample

SAMPLING OBSERVATIONS: No Sample

QC SAMPLES TAKEN: No

OTHER OBSERVATIONS/COMMENTS: No Samples taken, because the sediment trap was in an inverted position. Probably due to a high water fast current situation, or flipped over by debris.

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

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

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

DATE: 2/27/2007 TIME: 1300

INSPECTOR: Walker COMPANY: Sevenson

WEATHER: Snowy 26 F, 10" on ground

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	7.41	565.31	
P-2	574.89	9.49	565.4	Could not find due to snow
P-3	574.16	7.68	566.48	
P-4	576.14	10.86	565.28	
P-5	575.05	6.19	568.86	
P-6	578.28	10.7	567.58	
MANHOLE A	575.22	10.83	564.39	
MANHOLE B	577.34	12.88	564.46	

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

ADDITIONAL COMMENTS/OBSERVATIONS:

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

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

DATE: 4/17/2007 TIME: 1000

INSPECTOR: M. Walker COMPANY: Sevenson Environmental Svc.

WEATHER: 39 F, Cloudy , Breezy

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	6.96	565.76	
P-2	574.89	9.41	565.48	
P-3	574.16	6.7	567.46	
P-4	576.14	10.8	565.34	
P-5	575.05	5.6	569.45	
P-6	578.28	10.45	567.83	
MANHOLE A	575.22	11.1	564.12	
MANHOLE B	577.34	13.16	564.18	

(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: Cap surface (grass) is saturated from 3 days of steady rain. Creek level is up about 2' from normal levels and muddy brown in color.

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: 9/13/2007 TIME: 800

INSPECTOR: M. Walker COMPANY: Sevenson Environmental Svc.

WEATHER: Sunny, clear 58 F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	7.91	564.81	
P-2	574.89	9.67	565.22	
P-3	574.16	9.3	564.86	
P-4	576.14	11.03	565.11	
P-5	575.05	8.06	566.99	
P-6	578.28	11.45	566.83	
MANHOLE A	575.22	11.1	564.12	
MANHOLE B	577.34	13.16	564.18	

(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 looks good.

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: 12/3/2007 TIME: 1230

INSPECTOR: Walker COMPANY: Sevenson

WEATHER: Windy, cold, 32F

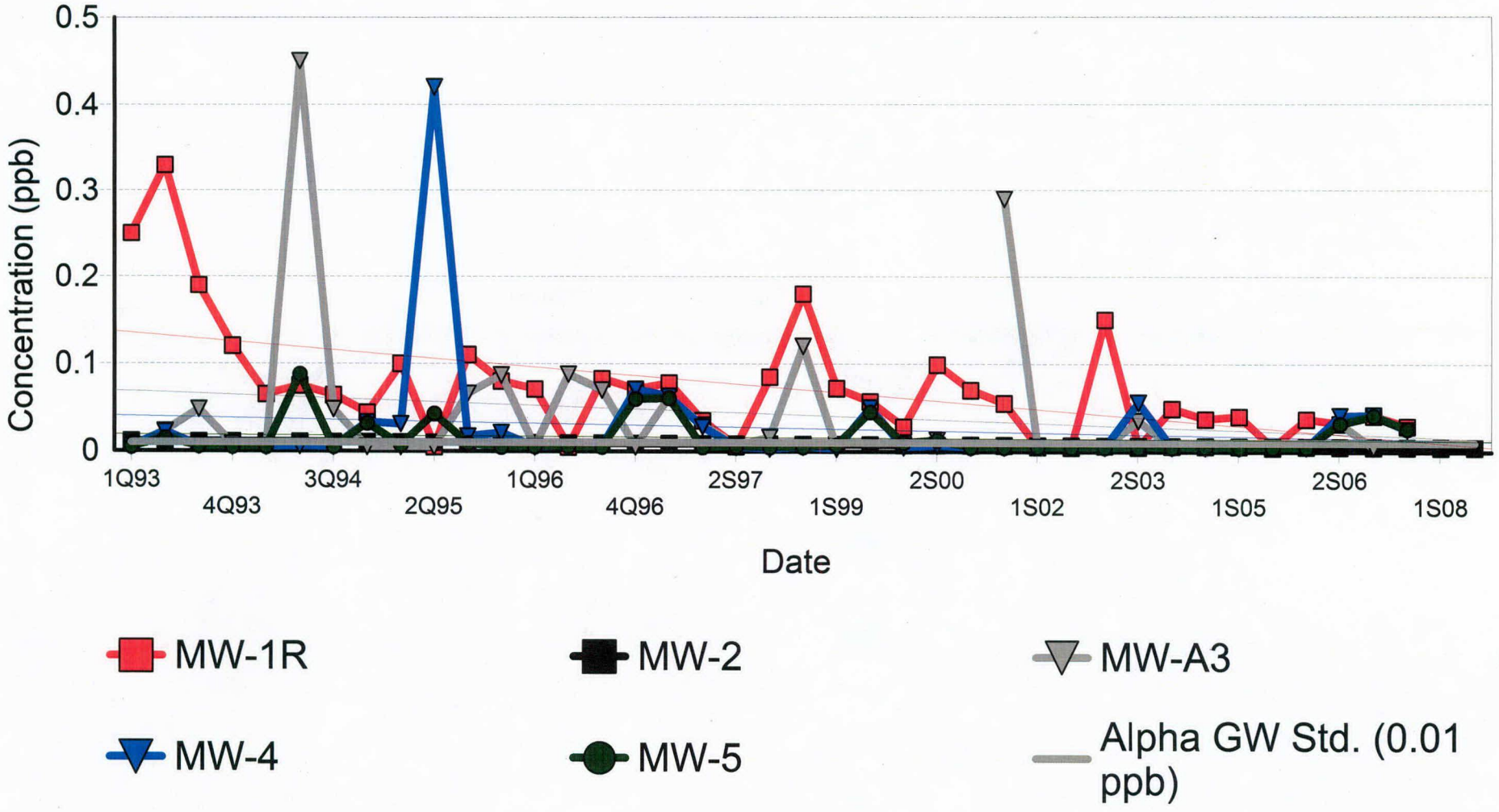
PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	8.58	564.14	
P-2	574.89	9.7	565.19	
P-3	574.16	10.37	563.79	
P-4	576.14	10.81	565.33	
P-5	575.05	8	567.05	
P-6	578.28	11.73	566.55	
MANHOLE A	575.22	10.82	564.4	
MANHOLE B	577.34	12.86	564.48	

(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:

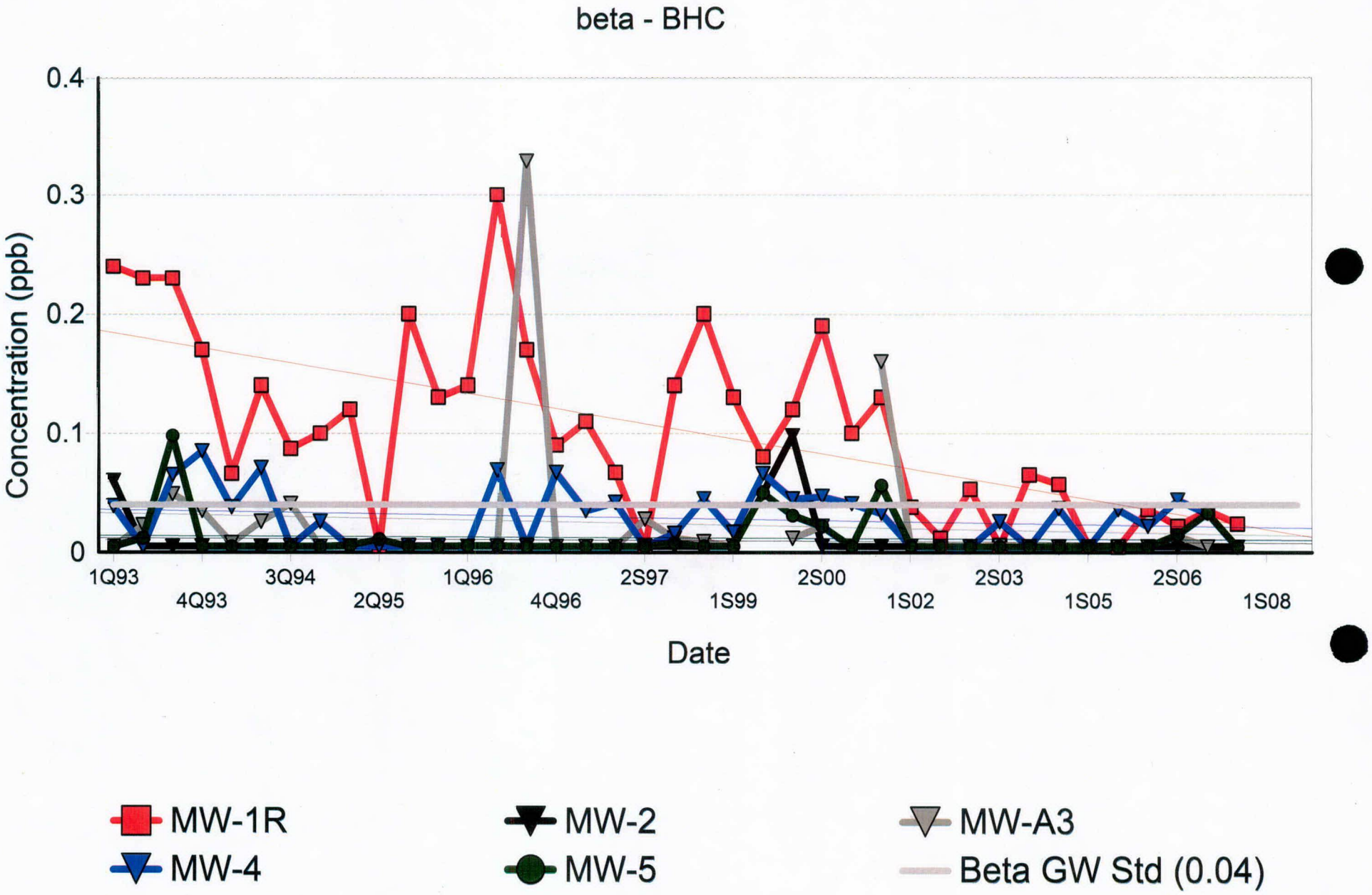
Gibson Site #932063

alpha - BHC



Non-detects plotted as 1/10th of detection limit

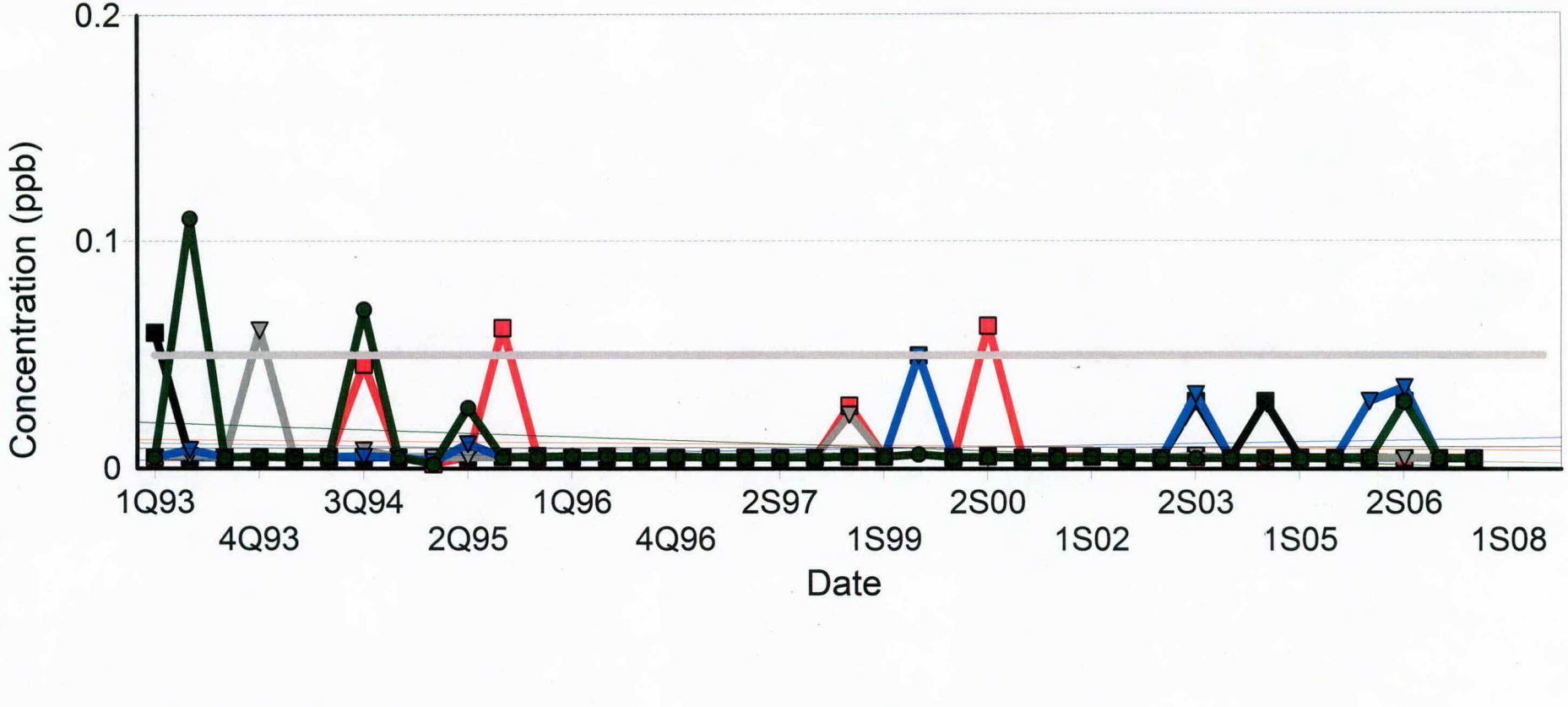
Gibson Site #932063



Non-detects plotted as 1/10th of detection limit

Gibson Site #932063

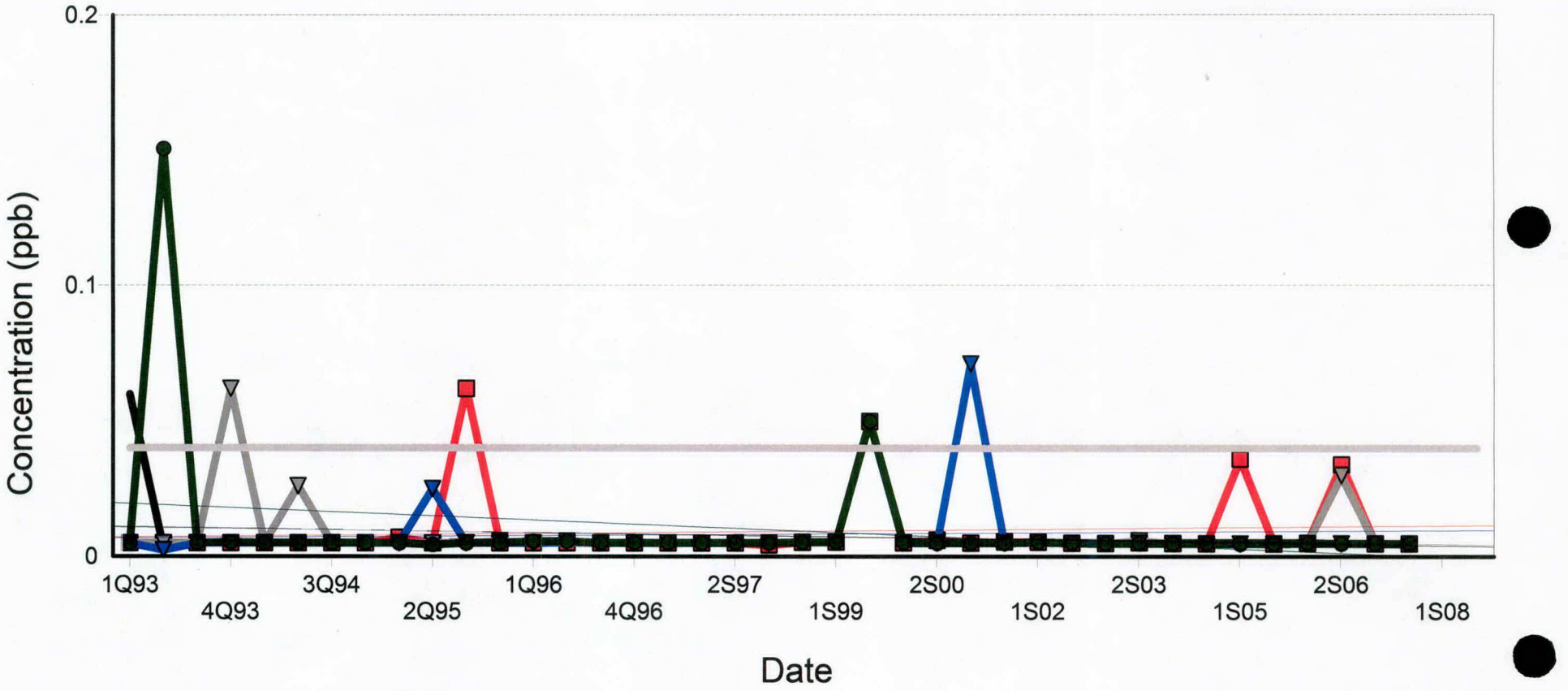
gamma - BHC



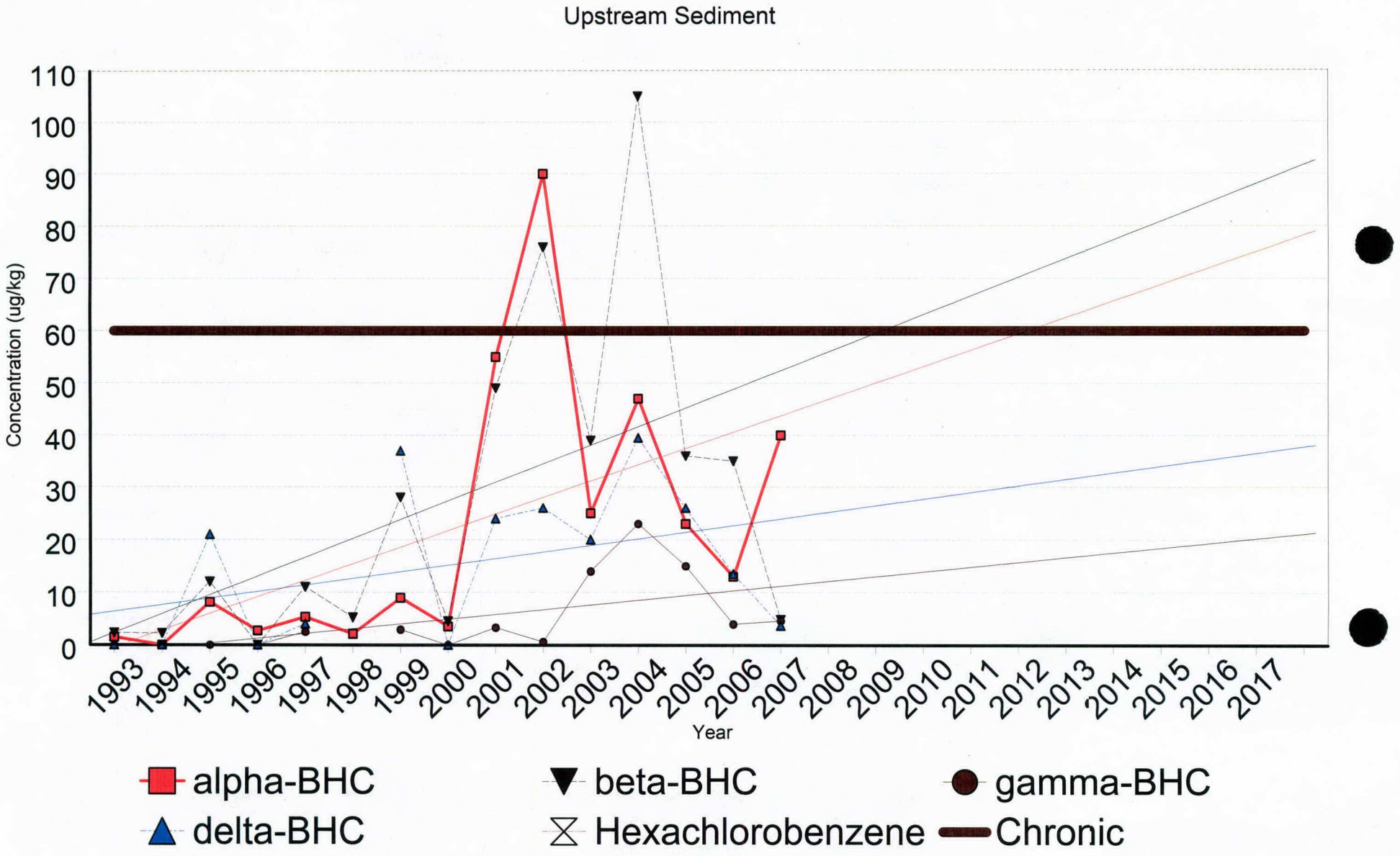
Non-detects plotted as 1/10th of detection limit

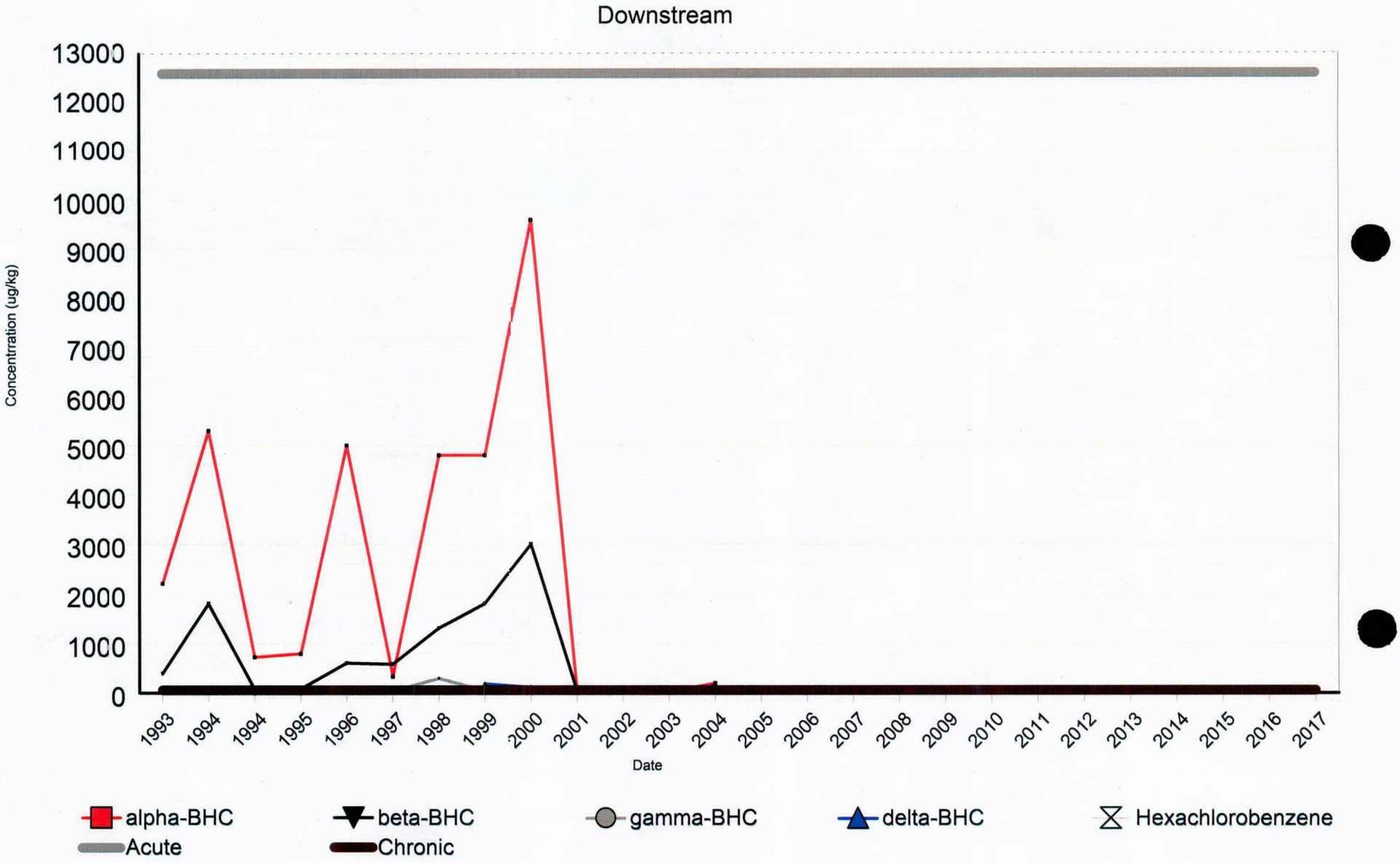
Gibson Site #932063

delta -BHC



Non-detects plotted as 1/10th of detection limit


Upstream Sediment
Concentration (ug/kg)
110
100
90
80
70
60
50
40
30
20
10
0
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
Year
alpha-BHC
beta-BHC
gamma-BHC
delta-BHC
Hexachlorobenzene
Chronic


Downstream
Concentrration (ug/kg)
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
1993
1994
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
Date
alpha-BHC
beta-BHC
gamma-BHC
delta-BHC
Hexachlorobenzene
Acute
Chronic