The electronic version of this file/report should have the file name:

Type of document . Site Number . Year-Month . File *Year-Year* or Report name . pdf

_____.pdf

example: *letter . Year-Month . File Year-Year . pdf*

report.HW.932063.2004-01-01.Groundwater data - 2004 etc.pdf

example: *report . Site Number . Year-Month . Report Name . pdf*

Project Site numbers will be proceeded by the following:

Municipal Brownfields - B
Superfund - HW
Spills - SP
ERP - E
VCP - V
BCP - C

932063
2004 Sampling Data

Olin

P. O. BOX 248, 1186 LOWER RIVER ROAD, NW, CHARLESTON, TN 37310-0248

(423) 336-4000 FAX: (423) 336-4166

MJH

February 3, 2005

Mr. Michael J. Hinton, P.E.
Environmental Engineer II
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

RECEIVED

FEB 0 8 2005

NYSDEC REG 9
FOIL
Y REL ___UNREL

Subject: **Charles Gibson Site**
NYSDEC Registry No. 9-32-063
Twelfth Annual Report - 2004

Dear Mr. Hinton:

Enclosed are three copies of the Twelfth Annual Report - 2004 for the referenced site. This report summarizes the activities performed during 2004 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 2004.

- Semi-annual ground water sampling events were performed during April and September 2004.
- Annual sediment sampling was performed in September.
- Annual sampling and analysis of leachate was completed in September. There were 65, 082 gallons of leachate discharged to the City of Niagara Falls Wastewater Treatment Facility during 2004.
- NYSDEC conducted a site inspection on April 6, 2004.

The Semi-Annual Ground Water Sampling and Annual Sediment Sampling Report - September 2004, is included as Appendix A to this report.

At this time, Olin requests NYSDEC discontinue the requirement for hexachorobenzene (HCB) monitoring in ground water wells. This request is based on the Site never having any detections of this compound in the ground water.

Please call me at 423/336-4381 to discuss any information concerning this report.

Sincerely,
OLIN CORPORATION

Lorraine M. Miller

Lorraine M. Miller
Principal Environmental Specialist

cc: C. M. Richards via e-mail
Tom Tirabassi via e-mail
Mike Walker via e-mail

dm:sites/P&T(Gibson)/ENV4060/O&M/Twelfth Annual Report 2004

TWELFTH ANNUAL REPORT

2004

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

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

PREPARED BY OLIN CORPORATION

FEBRUARY 2005

Introduction

This is the Twelfth 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 2004 for the operations and maintenance of the containment remedy for the Site and the ground water monitoring program outside of the containment area.

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 upon reasonable notice.

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;
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.

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. Additionally, if after seven years following the Release of Liability, Olin is able to demonstrate that element 8 is no longer necessary to ensure performance, Olin may alter the fiscal arrangements appropriately.

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 attached for reference (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 for the site compounds alpha-BHC, beta-BHC, gamma-BHC, delta-BHC on April 6 and on September 20, 2004. Analyses were performed using SW-846 Method 8080. Sampling results indicate that concentrations of site compounds being monitored are similar to previous results. Monitor wells are sampled for hexachlorobenzene (HCB) every other year. The monitor wells were sampled for HCB in September 2004. HCB was not detected in any of the ground water wells. HCB has not been detected in any ground water samples. The next HCB sampling is scheduled for September 2006. The semi-annual ground water monitoring data summary from 1997 through 2004 is provided in Table 1. The 1997 time period represents the start of the semi-annual events.

Element 2) **Annual creek sediment monitoring.** Annual sediment sampling was performed on September 20, 2004. Upstream data were similar to the 2003 sampling event for the alpha, beta, delta and gamma BHC isomers. Concentrations were typically below or slightly above the lab detection limits resulting in estimated concentrations. Downstream data were slightly above 2003 results for the alpha and beta BHC compounds while delta and gamma BHC results were lower than 2003 data. Annual upstream and downstream sediment sampling results for the project-to-date are summarized in Tables 2 and 3 respectively. 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. Evaluating results from sediment trap monitoring will require collecting additional data over the next few monitoring events.

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 maintain an inward hydraulic gradient in the containment area of the site. The data collected during each event is 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 in the containment area of the site (Table 4). Water level elevations in Manhole A and Manhole B are monitored quarterly (Table 5).

There were 65,082 gallons of leachate discharged to the POTW during 2004. A summary of yearly discharge volumes for the Site is provided in Table 6. Between 1991 and 2004, a total of 877,675 gallons of leachate were removed from the Site. Annual leachate sampling and analysis

for BHC's began in 2000 to replace the POTW sampling that was previously performed. HCB is monitored every five years (started in 2000). The next scheduled sampling is 2005. The sampling location is Manhole B. Analytical results for 2004 are provided in Table 7.

Element 5) **Site protection.** Quarterly site inspections were conducted to identify any potential problems 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 2004 include: repairing a seventy foot section of the stockade perimeter fence along the northeast side of fence that was knocked over by high winds in April; removing and repairing the readout on the flow meter, and testing the pumping system in October. General site conditions and security status were noted on the Site Inspection Form and addressed as appropriate.

Conclusions/Recommendations:

The work performed for the Site during 2004 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 2004 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. Data from 2004 sediment trap monitoring were similar to the 2003 monitoring.

Olin requests NYSDEC to discontinue the requirement for hexachorobenzene (HCB) monitoring in ground water wells. This request is based on the Site never having any detections of this compound in the ground water.

Table 1

Semi-Annual Ground Water Summary

Monitor Well: MW-A3

	1997	1998		1999		2000		2001		2002		2003		2004	
Parameter	September (*)	April	October	April	October	May	October	April	October	April	September	April	September	April	September
Alpha-BHC	.059	.016J	.12	.0043J	-	.050U	.054U	.050U	.050U	.050U	.029J	.048U	.035J	.048U	.047U
Beta-BHC	.028J	.012J	.0092J	.053U	-	.012J	.054U	.050U	.050U	.050U	.016J	.048U	.059U	.048U	.047U
Gamma-BHC	.050U	.050U	.024J	.053U	-	.050U	.054U	.050U	.050U	.050U	.050U	.048U	.059U	.048U	.047U
Delta-BHC	.050U	.050U	.053U	.053U	-	.050U	.054U	.050U	.050U	.050U	.050U	.048U	.059U	.048U	.047U
Hexachlorobenzene	10U	10U	-	11U	-	11U	NR	10U	NR	NR	NR	NR	NR	10U	NR

Monitor Well: MW-1R

	1997	1998		1999		2000		2001		2002		2003		2004	
Parameter	September (*)	April	October	April	October	May	October	April	October	April	September	April	September	April	September
Alpha-BHC	.058	.085	.18	.072	.057	.028J	.054U/.052U	.050U/.050U	.099/.060	.070/.061	.055/.030J	.014J/.015U	.052U	.049U/.049	.026J/.048U
Beta-BHC	.053	.14	.20	.13	.080	.12	.038J/.052U	.012J/.050U	.19/.15	.10/.050U	.13/.035	.053/.052	.052U	.049U/.065	.090/.024J
Gamma-BHC	.050U	.050U	.028J	.053U	.050UJ	.051U	.054U/.052U	.050U/.050U	.063J/.058U	.050U/.050U	.055U	.049U	.052U	.049U/.049U	.048U/.048
Delta-BHC	.050U	.0042J	.053U	.0054J	.050U	.051U	.054U/.052U	.050U/.050U	.061U/.058U	.050U/.053	.055U	.049U	.052U	.049U/.049U	.048U/.048U
Hexachlorobenzene	10U	10U	11U	11U	10U	10U	NR	10U/10U	NR	NR	NR	NR	NR	10U	NR

Monitor Well: MW-2

	1997	1998		1999		2000		2001		2002		2003		2004	
Parameter	September (*)	April	October	April	October	May	October	April	October	April	October	April	September	April	September
Alpha-BHC	.050U	.050U	.053U	.053U	.050U	.029J	.053U	.050U	.054U	.050U	.050U	.050U	.050U	.050U	.050U
Beta-BHC	.050U	.050U	.053U	.053U	.050U	.098	.053U	.050U	.054U	.050U	.050U	.050U	.050U	.050U	.050U
Gamma-BHC	.050U	.050U	.053U	.053U	.050UJ	.052U	.053U	.050U	.054U	.050U	.050U	.050U	.030J	.050U	.030J
Delta-BHC	.050U	.050U	.053U	.053U	.050U	.052U	.053U	.050U	.054U	.050U	.050U	.050U	.050U	.050U	.050U
Hexachlorobenzene	10UJ	10U	11U	10U	10U	10U	NR	10U	NR	NR	NR	NR	NR	10U	NR

Notes: Concentrations in ug/L
(*) Start of semi annual monitoring program
U Not detected
J Estimated value
/ Field Duplicates
- Not enough sample for analysis
NR Not required
Data has been validated

dm:sites/P&T(Gibson)/ENV4060/O&M/Twelfth Annual Report 2004

Table 1 (cont.)

Semi-Annual Ground Water Summary

Monitor Well: MW- 4

	1997	1998		1999		2000		2001		2002		2003		2004	
Parameter	September (*)	April	October	April	October	May	October	April	October	April	September	April	September	April	September
Alpha-BHC	.050/.060	.0030J	.053U	.0031J	.050U	.051U/.052U	.054U	.050U	.0069J	.050U	.050U	.049U	.056	.048U	.048U
Beta-BHC	.055/.069	.016J	.045J	.017J	.066/.068	.045J/.062	.054U	.050U	.047J	.041J	.033J	.049U	.026J	.048U	.037J
Gamma-BHC	.050U	.050U	.053U	.053U	.050U	.051U/.052U	.054U	.050U	.050U	.071J	.050U	.049U	.033J	.048U	.048U
Delta-BHC	.050U	.050U	.053U	.053U	.050U	.051U/.052U	.054U	.050U	.050U	.050U	.050U	.049U	.050U	.048U	.048U
Hexachlorobenzene	10U	10U	10U	10U	10U	10U	NR	10U	NR	NR	NR	NR	NR	9U	NR

Monitor Well: MW-5

	1997	1998		1999		2000		2001		2002		2003		2004	
Parameter	September (*)	April	October	April	October	May	October	April	October	April	September	April	September	April	September
Alpha-BHC	.059	.050U/.0066J	.053U	.0071J	.045J	.010J	.054U	.050U	.013J	.050U	.050U	.048U	.049U	.048U	.048U
Beta-BHC	.050U	.0080J/.0084J	.053U	.053U	.050	.031J	.054U	.050U	.022J	.050U	.050U	.048U	.049U	.048U	.048U
Gamma-BHC	.050U	.050U	.053U	.053U	.0065J	.052U	.054U	.050U	.055U	.050U	.050U	.048U	.049U	.048U	.048U
Delta-BHC	.050U	.050U	.053U	.053U	.050U	.052U	.054U	.050U	.055U	.050U	.050U	.048U	.049U	.048U	.048U
Hexachlorobenzene	10U	10U	11U	11U/11U	10U	10U	NR	10U	NR	NR	NR	NR	NR	10U	NR

Notes: Concentrations in ug/l
- (*) Start of semi annual monitoring program
- U Not detected
- J Estimated value
- / Field Duplicates
- - Not enough sample for analysis
- NR Not required

Data has been validated

Table 2
Analytical Summary
Cayuga Creek
Annual Upstream Sediment Sampling

Parameter	1993 September	1994 June	1994 September	1995 August	1996 September	1997 September	1998 October	1999 October	2000 October	2001* October	2002 September	2003 September	2004 September
alpha-BHC	1.5 J	NS	6.1 U	8.1J	2.7J	5.3J	2.1J	8.9/7.4	3.5	55	19/90	28/22J	80U/86J
beta-BHC	2.3 J	NS	2.2 J	12	6.1U	11	5.2	28/19	4.5J	49	37/76	48/30	20J/190
delta-BHC	6.0 U	NS	6.1 U	21	6.1U	4.0J	5.5	37/31	2.3U	24	31/26	12J/28	23J/56J
gamma-BHC	6.0 U	NS	6.1 U	12 U	6.1U	2.5J	.31UJ	2.9J/.42J	2.3U	3.3J	5.8U/1.6U	1.9J/26U	80U/38J
HCB	500 U	NS	510 U	480 U	500U	330U	470U	480U	NR	NR	NR	NR	NR

Notes:
Concentration in microgram/kilogram (ug/kg)
BHC = Hexachlorocyclohexane
HCB = Hexachlorobenzene
J = Estimated value
U = Undetected at the concentration level specified
NS = Not sampled
NR = No longer required for this event
* Sediment Traps Installed April 2001
Data has been validated

Table 3
Analytical Summary
Cayuga Creek
Annual Downstream Sediment Sampling

Parameter	1993 September	1994 June	1994 September	1995 August	1996 September	1997 September	1998 October	1999 October	2000 October	2001* October	2002 September	2003 September	2004 September
alpha-BHC	2,200	5,300	720	790	5000	330	4800J/80000J	4800J	9600/13000	16	26	26J	200
beta-BHC	390	1,800	82	83 J	600	580	1300J/12000J	1800	3000J/2700J	52	34	45	140
delta-BHC	27 J	80 J	67 U	250 U	41J	60J	53J/5500UJ	190J	1200U/1400U	65	20	97	12J
gamma-BHC	40 U	690	67 U	250 U	35J	44J	300UJ/690J	52J	1200U/1400U	1.4J	6.0U	31U	7.4J
HCB	800 U	570 UR	550 U	420 U	330U	330U	520U/550U	510U	NR	NR	NR	NR	NR

Notes:
Concentration in microgram/kilogram (ug/kg)
BHC = Hexachlorocyclohexane
HCB = Hexachlorobenzene
J = Estimated value.
U = Undetected at the concentration level specified
R = Sample result rejected due to low surrogate recoveries caused by matrix interference
NR = No longer required for this event
* Sediment Traps Installed April 2001
Data has been validated

Table 4

2004 Quarterly Groundwater Elevations Summary

Piezometer Pair	2/18/2004	4/6/2004	9/20/2004	11/23/2004
P1	565.14	565.70	566.30	565.17
P2	565.47	568.54	565.49	565.31
P3	567.04	567.91	566.32	565.66
P4	565.39	565.38	565.43	565.28
P5	569.21	569.88	569.05	568.55
P6	567.88	568.23	567.89	567.48

Note: Measurement units are in feet.
Piezometers P1, P3, P5 are outside the slurry wall.
Piezometers P2, P4, P6 are located within the containment area.
Discharge system pumped 65, 082 gallons during a 2004.

Table 5

Manhole Monitoring
2004 Water Elevations
(ft.)

Date	Manhole A	Manhole B	Comments
2/18/2004	564.50	564.54	Quarterly inspection
4/6/2004	564.01	564.08	Semi Annual ground water sampling; NYSDEC visit.
9/20/2004	564.22	564.27	Semi Annual ground water sampling
11/23/2004	563.82	563.89	Quarterly inspection

Notes:

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. (This pumping requirement is addressed by the operation of the direct discharge system which became operational in March 1997.)

Table 6

Summary of Yearly Discharge Volumes (gallons)

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**
TOTALS	**877,675**

Notes:
(*) Represents start of operation of direct discharge system
(1) Pumped during test of system on 4/13/2003
Discharge system pumped during February, March, April, May, July, and December of 2004.

Table 7

Annual Manhole B Sampling

September 20, 2004

Parameter	Concentration (ug/l)
alpha – BHC	.12J
beta - BHC	.18J
delta - BHC	.20J
gamma - BHC	.048U
Hexachlorobenzene	NR

Notes:
U Undetected at associated value
NR Not required for this event
Field blank was non-detect for all parameters of interest
Data has been validated and judged acceptable as qualified.
Next sampling for hexachlorobenzene is scheduled for October 2005.

ATTACHMENT 1

INSPECTION AND SAMPLING SCHEDULE

GIBSON SITE

GIBSON SITE
NIAGARA FALLS, NEW YORK
2005 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 2005.

APPENDIX A

CHARLES GIBSON SITE
(PINE AND TUSCARORA SITE)

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

SEMI-ANNUAL GROUND WATER AND ANNUAL SEDIMENT SAMPLING REPORT

SEPTEMBER 2004

PREPARED BY OLIN CORPORATION

In accordance with the approved sampling plan for the above referenced Site, this report presents a summary of data for the Semi-Annual Ground Water and Annual Sediment Sampling, collected during September 2004.

The analytical data summary for ground water is listed in Table 1. Analytical results for the annual sediment sampling are listed in Table 2. The laboratory data summary package (Appendix 1), and the field logs (Appendix 2) for this sampling event are also attached. The Quarterly Site Inspection Forms and the Quarterly Ground Water Elevation Forms are included in Appendices 3 and 4 respectively. The analytical data has been validated and found to be acceptable.

TABLE 1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY
SEMI-ANNUAL GROUND WATER SAMPLING

September 20, 2004

	MW-1R	MW-1R (DUP)	MW-2	MW-4	MW-5	MW-A3
PARAMETER						
alpha-BHC	.026J	.048U	.050U	.048U	.048U	.047U
beta-BHC	.090	.024J	.050U	.037J	.048U	.047U
delta-BHC	.048U	.048U	.050U	.048U	.048U	.047U
gamma-BHC	.048U	.048U	.050U	.048U	.048U	.047U
Hexachlorobenzene	NR	NR	NR	NR	NR	NR

Notes:

Concentration in ug/l
U Undetected at associated value
J Estimated value
Field blank was non-detect for all parameters of interest.
Data has been validated and judged acceptable as qualified.
NR Not required for this event.
Next biennial sampling for hexachlorobenzene is scheduled for September 2006.

TABLE 2

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY
ANNUAL SEDIMENT SAMPLING

September 20, 2004

	UPSTREAM	DOWNSTREAM
PARAMETER		
alpha-BHC	80U/86J	200
beta-BHC	20J/190	140
delta-BHC	23J/56J	12J
gamma-BHC	80U/38J	7.4J

Notes:
Concentration in ug/kg
Data has been validated and judged acceptable as qualified.
U Compound was analyzed but not detected
J Compound was analyzed and determined to be present in sample. The concentration listed is an estimated value which is less than the specified minimum detection level but greater than zero

APPENDIX 1

LABORATORY DATA SUMMARY PACKAGE

SEMI-ANNUAL GROUND WATER SAMPLING

AND

ANNUAL SEDIMENT SAMPLING

September 2004

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

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#: A04-2982

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

Ms. Lorraine Miller
Olin Corporation
1186 Lower River Road
Charleston, TN 37310

CC: Mr. Michael Walker

STL Buffalo

Brian J. Fischer
Project Manager

Mary Ann Neary
Analyst

10/6/2004

STL Buffalo
Current Certifications

STATE	Program	Cert # / Lab ID
Arkansas	SDWA, CWA, RCRA, SOIL	03-054-D/88-0686
California	NELAP SDWA, CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida	NELAP RCRA	E87672
Georgia	SDWA	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	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	10026
North Carolina	CWA	411
North Dakota	SDWA, CWA, RCRA	R-176
Oklahoma	CWA, RCRA	9421
Pennsylvania	Env. Lab Reg.	68-281
South Carolina	RCRA	91013
USDA	FOREIGN SOIL PERMIT	S-41579
Virginia	SDWA	278
Washington	CWA	C254
West Virginia	CWA	252
Wisconsin	CWA	998310390

SAMPLE DATA SUMMARY PACKAGE

SAMPLE SUMMARY

LAB SAMPLE ID	CLIENT SAMPLE ID	SAMPLED DATE	SAMPLED TIME	RECEIVED DATE	RECEIVED TIME
A4906409	DS-1	09/20/2004	16:30	09/20/2004	17:05
A4906407	FIELD BLANK X-1	09/20/2004	15:30	09/20/2004	17:05
A4906408	MANHOLE B	09/20/2004	15:20	09/20/2004	17:05
A4906410	MS-1	09/20/2004	16:00	09/20/2004	17:05
A4906401	MW-1R	09/20/2004	12:00	09/20/2004	17:05
A4906403	MW-2	09/20/2004	12:50	09/20/2004	17:05
A4906404	MW-4	09/20/2004	13:25	09/20/2004	17:05
A4906405	MW-5	09/20/2004	14:00	09/20/2004	17:05
A4906402	MW-7	09/20/2004	09:00	09/20/2004	17:05
A4906406	MW-A3	09/20/2004	14:50	09/20/2004	17:05
A4906411	~~VS-1~~ US-1	09/20/2004	15:50	09/20/2004	17:05

VCL
12/21/04

METHODS SUMMARY

Job#: A04-9064

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

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

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

NON-CONFORMANCE SUMMARY

Job#: A04-9064

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

General Comments

The enclosed data 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 and Dissolved Oxygen 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

A04-9064
Sample Cooler(s) were received at the following temperature(s); 3.2 °C
All samples were received in good condition.

GC Extractable Data

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

All extracts required treatment with Copper prior to analysis due to the presence of elemental Sulfur.

****

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

"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 hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Brian J. Fischer
Project Manager

10-6-04
Date

Date: 10/04/2004
Time: 12:16:19

Dilution Log w/Code Information
For Job A04-9064

Client Sample ID	Lab Sample ID	Parameter (Inorganic)/Method (Organic)	Dilution	Code
DS-1	A4906409	8081	2.00	008
MS-1	A4906410	8081	4.00	008
~~VS-1~~ US-1	A4906411	8081	4.00	002

JD 12/21/04

Dilution Code Definition:

002 - sample matrix effects
003 - excessive foaming
004 - high levels of non-target compounds
005 - sample matrix resulted in method non-compliance for an Internal Standard
006 - sample matrix resulted in method non-compliance for Surrogate
007 - nature of the TCLP matrix
008 - high concentration of target analyte(s)
009 - sample turbidity
010 - sample color
011 - insufficient volume for lower dilution
012 - sample viscosity
013 - other

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
DS-1	A4906409	-	-	-	ASP00	-	-	-
FIELD BLANK X-1	A4906407	-	-	-	ASP00	-	-	-
MANHOLE B	A4906408	-	-	-	ASP00	-	-	-
MS-1	A4906410	-	-	-	ASP00	-	-	-
MW-1R	A4906401	-	-	-	ASP00	-	-	-
MW-2	A4906403	-	-	-	ASP00	-	-	-
MW-4	A4906404	-	-	-	ASP00	-	-	-
MW-5	A4906405	-	-	-	ASP00	-	-	-
MW-7	A4906402	-	-	-	ASP00	-	-	-
MW-A3	A4906406	-	-	-	ASP00	-	-	-
~~VS-1~~ US-1	A4906411	-	-	-	ASP00	-	-	-

JAS
12/21/04

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
DS-1	SOIL	09/20/2004	09/20/2004	9/27/2004	9/30/2004
FIELD BLANK X-1	WATER	09/20/2004	09/20/2004	9/23/2004	9/27/2004
MANHOLE B	WATER	09/20/2004	09/20/2004	9/23/2004	09/27/2004
MS-1	SOIL	09/20/2004	09/20/2004	9/27/2004	9/30/2004
MW-1R	WATER	09/20/2004	09/20/2004	9/23/2004	9/26/2004
MW-2	WATER	09/20/2004	09/20/2004	9/23/2004	9/26/2004
MW-4	WATER	09/20/2004	09/20/2004	9/23/2004	9/26/2004
MW-5	WATER	09/20/2004	09/20/2004	9/23/2004	9/26/2004
MW-7	WATER	09/20/2004	09/20/2004	9/23/2004	9/26/2004
MW-A3	WATER	09/20/2004	09/20/2004	9/23/2004	9/26/2004
US-1 ~~VS-1~~	SOIL	09/20/2004	09/20/2004	9/27/2004	09/30/2004

JDJ
12/21/04

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
DS-1	SOIL	ASP00	SONC	AS REQUIRED	AS REQUIRED
FIELD BLANK X-1	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MANHOLE B	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MS-1	SOIL	ASP00	SONC	AS REQUIRED	AS REQUIRED
MW-1R	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-2	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-4	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-5	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-7	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-A3	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
~~VS-1~~ US-1	SOIL	ASP00	SONC	AS REQUIRED	AS REQUIRED

VAJ
12/21/04

DATA COMMENT PAGE

ORGANIC DATA QUALIFIERS

ND or U	Indicates compound was analyzed for, but not detected at or above the reporting limit.
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 a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. 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 at or above the reporting limit.
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.
K	Indicates the post digestion spike recovery is not within the quality control limits.
S	Indicates value determined by the Method of Standard Addition.
M	Indicates duplicate injection results exceeded quality control limits.
W	Post digestion spike for Furnace AA analysis is out of quality control limits (85-115%) while sample absorbance is less than 50% of spike absorbance.
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.
*	Indicates 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.: DS-1

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) SOIL Lab Sample ID: A4906409

Sample wt/vol: 30.23 (g/mL) G Lab File ID: 18B26154.TX0

% Moisture: 57.0 decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SONC Date Extracted: 09/27/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/30/2004

Injection Volume: 1.00 (uL) Dilution Factor: 2.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	200	
319-85-7	beta-BHC	140	
319-86-8	delta-BHC	12	J
58-89-9	gamma-BHC (Lindane)	7.4	J

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

Client No.

FIELD BLANK X-1

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) WATER Lab Sample ID: A4906407

Sample wt/vol: 1045.00 (g/mL) ML Lab File ID: 18B26069.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/23/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/27/2004

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.

MANHOLE B

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) WATER Lab Sample ID: A4906408

Sample wt/vol: 1045.00 (g/mL) ML Lab File ID: 18B26070.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/23/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/27/2004

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	0.12	J
319-85-7	beta-BHC	0.18	J
319-86-8	delta-BHC	0.20	J
58-89-9	gamma-BHC (Lindane)	0.048	U

JDS 12/21/04

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

Client No.: MS-1

Lab Name: SIL Buffalo Contract: _____

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

Matrix: (soil/water) SOIL Lab Sample ID: A4906410

Sample wt/vol: 30.24 (g/mL) G Lab File ID: 18B26155.TX0

% Moisture: 75.3 decanted: (Y/N) Y Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SONC Date Extracted: 09/27/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/30/2004

Injection Volume: 1.00 (uL) Dilution Factor: 4.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	86	J
319-85-7	beta-BHC	190	
319-86-8	delta-BHC	56	J
58-89-9	gamma-BHC (Lindane)	38	J

OLIN CORPORATION

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

Client No.

MW-1R

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) WATER Lab Sample ID: A4906401

Sample wt/vol: 1030.00 (g/mL) ML Lab File ID: 18B26059.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/23/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/26/2004

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.026	J
319-85-7	beta-BHC	0.090	
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

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) WATER Lab Sample ID: A4906403

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: 18B26061.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/23/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/26/2004

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 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

OLIN CORPORATION

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

Client No.

MW-4

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) WATER Lab Sample ID: A4906404

Sample wt/vol: 1045.00 (g/mL) ML Lab File ID: 18B26064.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/23/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/26/2004

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 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	0.037	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

Lab Name: SIL Buffalo Contract: _____

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

Matrix: (soil/water) WATER Lab Sample ID: A4906405

Sample wt/vol: 1045.00 (g/mL) ML Lab File ID: 18B26065.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/23/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/26/2004

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 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-7

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) WATER Lab Sample ID: A4906402

Sample wt/vol: 1040.00 (g/mL) ML Lab File ID: 18B26060.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/23/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/26/2004

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	0.024	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-A3

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) WATER Lab Sample ID: A4906406

Sample wt/vol: 1055.00 (g/mL) ML Lab File ID: 18B26066.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/23/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/26/2004

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.047	U
319-85-7	beta-BHC	0.047	U
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.

~~VS-1~~ US-1

JAJ 12/21/04

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) SOIL Lab Sample ID: A4906411

Sample wt/vol: 30.36 (g/mL) G Lab File ID: 18B26156.TX0

% Moisture: 60.6 decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SONC Date Extracted: 09/27/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/30/2004

Injection Volume: 1.00 (uL) Dilution Factor: 4.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	80	U
319-85-7	beta-BHC	20	J
319-86-8	delta-BHC	23	J
58-89-9	gamma-BHC (Lindane)	80	U

Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client: OHM CORP.	Project Manager: LORRAINE Miller	Date: 9-20-04	Chain of Custody Number: 134349
Address: PO Box 248, 1186 Lower River Rd	Telephone Number (Area Code)/Fax Number: 423 336-4381 / 423 336 4166	Lab Number:	Page 1 of 1
City: Charleston, TN	State: TN	Zip Code: 37310	Site Contact: Mike Walker	Lab Contact: Brian Fisher
Project Name and Location (State): Charles Gibson Site, Niagara Falls, NY	Carrier/Waybill Number:
Contract/Purchase Order/Quote No.	

Analysis (Attach list if more space is needed): BHC ISOMERS

Special Instructions/ Conditions of Receipt

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	BHC ISOMERS	Special Instructions
MW-1R	9-20-04	1200		X			X						X	2x 1 Liter GLASS
MW-7	9-20-04	0900		X			X						X	2x 1 Liter GLASS
MW-2	9-20-04	1250		X			X						X	2x 1L GLASS
MW-4	9-20-04	1325		X			X						X	2x 1L GLASS
MW-5	9-20-04	1400		X			X						X	"
MW-AB	9-20-04	1450		X			X						X	"
Field Blank X-1	9-20-04	1530		X			X						X	"
MANHOLE "B"	9-20-04	1520		X			X						X	
DS-1	9-20-04	1630			X		X						X	4 oz GLASS
MS-1	9-20-04	1600			X		X						X	"
US-1	9-20-04	1550			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)

	Date	Time		Date	Time
1. Relinquished By	9-20-04	1705	1. Received By: Jan L. Rudzi	9/20/04	1705
2. Relinquished By			2. Received By: 3.2°C		
3. Relinquished By			3. Received By		

Comments: Copy to Mike Walker @ Severn Environmental, 2749 Lockport Rd, Niagara Falls, NY 14302 ph# 716 2840431 Fax # 716 2854201

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

10/1/04

APPENDIX 2

FIELD LOGS

SEMI-ANNUAL GROUND WATER SAMPLING
AND
ANNUAL SEDIMENT SAMPLING

September 2004

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
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Walker
SAMPLE ID: MW-1R + MW-7

SAMPLED BY: Walker
SAMPLING EVENT/DATE: 9/20/2004

COMPANY: Sevenson
MONITORING WELL: MW-1R + M

CONDITION: good

GROUNDWATER PURGE DATA
PURGE DATE: 9/20/2004

DEPTH TO BOTTOM FROM TOP OF RISER: 12.1 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 5.3 (FT.)
WATER COLUMN: 6.8 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.09 (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: Parastaltic Pump w/ dedicated hose
BOTTOM OF WELL/SILT BUILDUP: None
PURGE START TIME: 1130 STOP TIME 1200
PURGE OBSERVATIONS: Clear

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	6.7	912	67.3	Clear
2	7.6	926	69.3	Clear
3	7.7	1023	65.5	Clear
4				
5				

TOTAL VOLUME PURGED: 3.0 Gal.

GROUNDWATER OR SEDIMENT SAMPLING DATA:
SAMPLE DATE: 9/20/2004

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1200

LOCATION: MW-1R + MW-7

SAMPLE METHOD: Purge 3 volumes and then sample

SAMPLING OBSERVATIONS: Water clear

QC SAMPLES TAKEN: Duplicate samples taken and labeled MW-7 Sampled at "10:00 am"

OTHER OBSERVATIONS/COMMENTS: Collected 4 , 1 liter glass amber jars for BHC analysis.

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
SAMPLED BY: Walker
SAMPLING EVENT/DATE: 9/20/2004
COMPANY: Sevenson
MONITORING WELL: MW-2
CONDITION: good

GROUNDWATER PURGE DATA PURGE DATE: 9/20/2004

DEPTH TO BOTTOM FROM TOP OF RISER: 12.13 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 5.75 (FT.)
WATER COLUMN: 6.38 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.02 (GALS)

PURGE METHOD: Parastaltic Pump w/ dedicated hose
BOTTOM OF WELL/SILT BUILDUP: None
PURGE START TIME: 1235 STOP TIME 1250
PURGE OBSERVATIONS: Clear water with black specs.

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	8	1493	65.7	Clear/black specs
2	7.4	1266	65.8	Clear
3	7.4	1281	65.5	Clear
4	7.4	1279	63.8	clear
5				

TOTAL VOLUME PURGED: 3.0 Gal.

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/20/2004

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1250

LOCATION: MW-2
SAMPLE METHOD: Purge 3 volumes and then sample
SAMPLING OBSERVATIONS: Water clear
QC SAMPLES TAKEN:
OTHER OBSERVATIONS/COMMENTS: Collected 2 , 1 liter glass amber jars for BHC analysis.

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

SAMPLED BY: Walker
SAMPLING EVENT/DATE: 9/20/2004

COMPANY: Sevenson
MONITORING WELL: MW-4

CONDITION: good

GROUNDWATER PURGE DATA
PURGE DATE: 9/20/2004

DEPTH TO BOTTOM FROM TOP OF RISER: 13.75 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 6.62 (FT.)
WATER COLUMN: 7.13 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.14 (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: Parastaltic Pump w/ dedicated hose
BOTTOM OF WELL/SILT BUILDUP: None
PURGE START TIME: 1310 STOP TIME 1325
PURGE OBSERVATIONS: Clear water with black specs. Sulfer smell

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.9	1874	63.8	Clear/black specs
2	7.8	1680	63.2	Cloudy /sulfer odor
3	7.7	1999	63.3	cloudy/no odor
4	7.7	2370	62.7	cloudy
5				

TOTAL VOLUME PURGED: 3.5 gallon

GROUNDWATER OR SEDIMENT SAMPLING DATA:
SAMPLE DATE: 9/20/2004

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1325

LOCATION: MW-4
SAMPLE METHOD: Purge 3 volumes and then sample
SAMPLING OBSERVATIONS: Cloudy water no smell
QC SAMPLES TAKEN:
OTHER OBSERVATIONS/COMMENTS: Collected 2 , 1 liter glass amber jars for BHC analysis.

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-5
SAMPLING EVENT/DATE: 9/20/2004
MONITORING WELL: MW-5
CONDITION: good

GROUNDWATER PURGE DATA PURGE DATE: 9/20/2004

DEPTH TO BOTTOM FROM TOP OF RISER: 15.28 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 7.35 (FT.)
WATER COLUMN: 7.93 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.27 (GALS)

PURGE METHOD: Parastaltic Pump w/ dedicated hose
BOTTOM OF WELL/SILT BUILDUP: None
PURGE START TIME: 1340 STOP TIME 1400
PURGE OBSERVATIONS: Cloudy water turning clear

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	7.1	1386	65	orange/cloudy
2	6.9	2150	62.5	cloudy
3	6.9	2180	62.6	Clear
4	6.9	2150	62	Clear
5				

TOTAL VOLUME PURGED: 3.75 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/20/2004

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1400

LOCATION: MW-5
SAMPLE METHOD: Purge 3 volumes and then sample
SAMPLING OBSERVATIONS: Water clear
QC SAMPLES TAKEN: no
OTHER OBSERVATIONS/COMMENTS: Collected 2 , 1 liter glass amber jars for BHC analysis.

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-A3

SAMPLED BY: Walker
SAMPLING EVENT/DATE: 9/20/2004

COMPANY: Sevenson
MONITORING WELL: MW-A3

CONDITION: good

GROUNDWATER PURGE DATA
PURGE DATE: 9/20/2004

DEPTH TO BOTTOM FROM TOP OF RISER: 11.95 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 8.4 (FT.)
WATER COLUMN: 3.55 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 0.57 (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: Parastaltic Pump w/ dedicated hose
BOTTOM OF WELL/SILT BUILDUP: None
PURGE START TIME: 1435 STOP TIME 1450
PURGE OBSERVATIONS: Clear

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.6	884	61.8	Clear
2	7.6	660	60.6	Clear
3	7.5	623	61	Clear
4	7.5	615	61.4	Clear
5				

TOTAL VOLUME PURGED: 1.5 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA:
SAMPLE DATE: 9/20/2004

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1450

LOCATION: MW-A3
SAMPLE METHOD: Purge 3 volumes and then sample
SAMPLING OBSERVATIONS: Water clear
QC SAMPLES TAKEN: no
OTHER OBSERVATIONS/COMMENTS: Collected 2 , 1 liter glass amber jars for BHC analysis.

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

RECORDED BY: Walker
SAMPLE ID: Manhole B
SAMPLED BY: Walker
SAMPLING EVENT/DATE: 9/20/2004
COMPANY: Sevenson
MONITORING WELL: Manhole B
CONDITION: good

GROUNDWATER PURGE DATA PURGE DATE: 9/20/2004

DEPTH TO BOTTOM FROM TOP OF RISER: (FT.)
DEPTH TO WATER FROM TOP OF RISER: (FT.)
WATER COLUMN: (FT.)
2" DIA. WELL CONSTANT:
ONE WELL VOLUME= (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: Parastaltic Pump w/ dedicated hose
BOTTOM OF WELL/SILT BUILDUP:
PURGE START TIME: STOP TIMI
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

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

TOTAL VOLUME PURGED:

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/20/2004

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1520

LOCATION: Manhole B
SAMPLE METHOD: Parastaltic Pump w/ dedicated hose
SAMPLING OBSERVATIONS: Water clear
QC SAMPLES TAKEN: no
OTHER OBSERVATIONS/COMMENTS: Collected 2 , 1 liter glass amber jars for BHC analysis.

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: DS-1
SAMPLING EVENT/DATE: 9/20/2004
MONITORING WELL: DS-1
CONDITION:

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: 9/20/2004
SAMPLE TIME: 1630

MEDIA: GROUNDWATER
CREEK SEDIMENT X

LOCATION: Creek bed down stream of the landfill cap

SAMPLE METHOD: Sediment trap composite

SAMPLING OBSERVATIONS:

QC SAMPLES TAKEN:

OTHER OBSERVATIONS/COMMENTS:

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

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

RECORDED BY: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: US-1
SAMPLING EVENT/DATE: 9/20/2004
MONITORING WELL: US-1
CONDITION: good

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: 9/20/2004

MEDIA: GROUNDWATER
CREEK SEDIMENT X

SAMPLE TIME: 1550

LOCATION: Creek bed upstream of the landfill cap

SAMPLE METHOD: Sediment trap composite

SAMPLING OBSERVATIONS:

QC SAMPLES TAKEN: Duplicate sample taken and labeled "MS-1" and timed 1600.

OTHER OBSERVATIONS/COMMENTS:

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

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

DATE: 9/20/2004 SEMI-ANNUAL SAMPLING EVENT: Fall 2004

PERSON CALIBRATING METERS: M. Walker

pH METER USED: MANUFACTURER: Oakton
MODEL: pH Tester 2 , Double Junction
IDENTIFICATION/CONTROL NUMBER: E-780

CALIBRATION STANDARDS USED:

STANDARD 7.00 METER READ: 7.1
STANDARD 4.00 METER READ: 4.1
STANDARD 10.00 METER READ:

METER CALIBRATION COMMENTS:

SPECIFIC CONDUCTIVITY METER USED:
MANUFACTURER: Oakton
MODEL:
IDENTIFICATION/CONTROL NUMBER: E-780

CALIBRATION STANDARDS USED:

STANDARD 0 READ:
(STANDARD 0 USED: AIR, WATER)
STANDAR
STANDARD 447 450

METER CALIBRATION COMMENTS:

THERMOMETER USED: TYPE: Digital
MANUFACTURER: Fischer Scientific
IDENTIFICATION/CONTROL NUMBER: 14-648-12

COMMENTS: (DOES THERMOMETER TEMPERATURE AGREE WITH SPECIFIC CONDUCTIVITY METER TEMPERATURE ?) no

OTHER:

OTHER INSTRUMENTS USED: TYPE:
MANUFACTURER:
IDENTIFICATION/CONTROL NUMBER:

CALIBRATIONS PERFORMED:

OTHER CALIBRATION COMMENTS:

APPENDIX 3

QUARTERLY SITE INSPECTION FORMS

July - December 2004

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: 8/6/2004 TIME: 4:00 PM

INSPECTOR: Walker COMPANY: Sevenson

WEATHER: Sunny

REASON FOR INSPECTION (QUARTERLY OR OTHER): check on system, no fax report sent

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	Trees along the property line have been cut
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: Checked the auto dialer because no faxes have been sent. Found that the electrical fault light was lit. Shut down the dialer to reboot the unit

Locked the panel and left the site.

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

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

DATE: 9/17/2004 TIME: 1100

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Equipment repair

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: Met onsite with Steve from Carrier Controlss to continue troublshooting the Flow meter. After numerous phone conversations with the manufacturers tech line, it was determined that unit would have to be removed and sent in to be repaired at the factory. Apparently whatever fried the auto dialer has also fried the meter. Steve said he will call me when he gets a quote on repair or replacement of the unit.

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: 9/20/2004 TIME: 900

INSPECTOR: Mike Walker COMPANY: Sevenson

WEATHER: Sunny 70F

REASON FOR INSPECTION (QUARTERLY OR OTHER): Semi annual Sampling, Monthly Insp.

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: Some one had built a "bridge" made of rocks across the creek and it was acting as a dam. I removed a portion of the rocks and let the water flow through so the water would return to its intended level. (about 5" lower that it was).

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

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

DATE: 10/13/2004 TIME: 830

INSPECTOR: Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Install flow meter parts

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: Met onsite with David Carrier of Carrier Controls to install the repaired flow meter. Also rebooted the flow program and reset the parameters of the meter to original specs.

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

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

DATE: 10/27/2004 TIME: 900

INSPECTOR: Walker COMPANY: Sevenson

WEATHER: Sunny 70 F

REASON FOR INSPECTION (QUARTERLY OR OTHER): Adjust calibration on flowmeter/auto dialer

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: Met onsite with Steve Franks of Carrier Controls to find out why the Flow meter and the auto dialer where not communicating with each other. We corrected the problem and Steve installed a set of switches, to make testing the pumping system manually, safer and easier. We then ran the system for 77 gallons to see if the count would show up on the faxes for the following day, they did. I will now have Steve reset the counter to zero, so the only counts on it will be actual gallons pumped from now on. I also want to note that the Electrical utility company was gearing up to do some maintenance on the high voltage lines adjacent to the property.

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

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

DATE: 11/23/2004 TIME: 1200N

INSPECTOR: Walker COMPANY: Sevenson

WEATHER: Cloudy Damp 39 F

REASON FOR INSPECTION (QUARTERLY OR OTHER): Quarterly Inspection

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

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

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

ADDITIONAL COMMENTS: The site looked good, the water level in the creek seemed low.

Fence was secure and the place looked ready for the winter season.

APPENDIX 4

QUARTERLY GROUNDWATER ELEVATION /PUMPING FORMS

July - December 2004

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
GROUNDWATER ELEVATION FORM

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

DATE: 9/20/2004 TIME: 930

INSPECTOR: Walker COMPANY: Sevenson

WEATHER: Sunny 70 F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	6.42	566.3	OK
P-2	574.89	9.4	565.49	OK
P-3	574.16	7.84	566.32	OK
P-4	576.14	10.71	565.43	OK
P-5	575.05	6	569.05	OK
P-6	578.28	10.39	567.89	OK
MANHOLE A	575.22	11	564.22	OK
MANHOLE B	577.34	13.07	564.27	OK

(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: The site looks good.

7118

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: 11/23/2004 TIME: 1200N

INSPECTOR: Walker COMPANY: Sevenson

WEATHER: Cloudy and Damp 39 F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	7.55	565.17	OK
P-2	574.89	9.58	565.31	OK
P-3	574.16	8.5	565.66	OK
P-4	576.14	10.86	565.28	OK
P-5	575.05	6.5	568.55	OK
P-6	578.28	10.8	567.48	OK
MANHOLE A	575.22	11.4	563.82	OK
MANHOLE B	577.34	13.45	563.89	OK

(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: Everything looked good.

Olin

P. O. BOX 248, 1186 LOWER RIVER ROAD, NW, CHARLESTON, TN 37310-0248

(423) 336-4000 FAX: (423) 336-4166

February 3, 2005

RECEIVED
FEB 0 8 2005
NYSDEC REG 9
FOIL
_v_REL ___UNREL

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
Twelfth Annual Report - 2004

Dear Mr. Hinton:

Enclosed are three copies of the Twelfth Annual Report - 2004 for the referenced site. This report summarizes the activities performed during 2004 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 2004.

- Semi-annual ground water sampling events were performed during April and September 2004.
- Annual sediment sampling was performed in September.
- Annual sampling and analysis of leachate was completed in September. There were 65, 082 gallons of leachate discharged to the City of Niagara Falls Wastewater Treatment Facility during 2004.
- NYSDEC conducted a site inspection on April 6, 2004.

The Semi-Annual Ground Water Sampling and Annual Sediment Sampling Report - September 2004, is included as Appendix A to this report.

At this time, Olin requests NYSDEC discontinue the requirement for hexachorobenzene (HCB) monitoring in ground water wells. This request is based on the Site never having any detections of this compound in the ground water. No! Will make decision after 2005 HCB Data from MW B

Please call me at 423/336-4381 to discuss any information concerning this report.

Sincerely,
OLIN CORPORATION

Lorraine M. Miller

Lorraine M. Miller
Principal Environmental Specialist

cc: C. M. Richards via e-mail
Tom Tirabassi via e-mail
Mike Walker via e-mail

dm:sites/P&T(Gibson)/ENV4060/O&M/Twelfth Annual Report 2004

TWELFTH ANNUAL REPORT

2004

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

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

PREPARED BY OLIN CORPORATION

FEBRUARY 2005

Introduction

This is the Twelfth 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 2004 for the operations and maintenance of the containment remedy for the Site and the ground water monitoring program outside of the containment area.

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 upon reasonable notice.

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;
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.

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. Additionally, if after seven years following the Release of Liability, Olin is able to demonstrate that element 8 is no longer necessary to ensure performance, Olin may alter the fiscal arrangements appropriately.

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 attached for reference (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 for the site compounds alpha-BHC, beta-BHC, gamma-BHC, delta-BHC on April 6 and on September 20, 2004. Analyses were performed using SW-846 Method 8080. Sampling results indicate that concentrations of site compounds being monitored are similar to previous results. Monitor wells are sampled for hexachlorobenzene (HCB) every other year. The monitor wells were sampled for HCB in September 2004. HCB was not detected in any of the ground water wells. HCB has not been detected in any ground water samples. The next HCB sampling is scheduled for September 2006. The semi-annual ground water monitoring data summary from 1997 through 2004 is provided in Table 1. The 1997 time period represents the start of the semi-annual events.

April

Element 2) **Annual creek sediment monitoring.** Annual sediment sampling was performed on September 20, 2004. Upstream data were similar to the 2003 sampling event for the alpha, beta, delta and gamma BHC isomers. Concentrations were typically below or slightly above the lab detection limits resulting in estimated concentrations. Downstream data were slightly above 2003 results for the alpha and beta BHC compounds while delta and gamma BHC results were lower than 2003 data. Annual upstream and downstream sediment sampling results for the project-to-date are summarized in Tables 2 and 3 respectively. 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. Evaluating results from sediment trap monitoring will require collecting additional data over the next few monitoring events.

Dup data?

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 maintain an inward hydraulic gradient in the containment area of the site. The data collected during each event is 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 in the containment area of the site (Table 4). Water level elevations in Manhole A and Manhole B are monitored quarterly (Table 5).

What about P1/P2?

There were 65,082 gallons of leachate discharged to the POTW during 2004. A summary of yearly discharge volumes for the Site is provided in Table 6. Between 1991 and 2004, a total of 877,675 gallons of leachate were removed from the Site. Annual leachate sampling and analysis

for BHC's began in 2000 to replace the POTW sampling that was previously performed. HCB is monitored every five years (started in 2000). The next scheduled sampling is 2005. The sampling location is Manhole B. Analytical results for 2004 are provided in Table 7.

Element 5) **Site protection.** Quarterly site inspections were conducted to identify any potential problems 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 2004 include: repairing a seventy foot section of the stockade perimeter fence along the northeast side of fence that was knocked over by high winds in April; removing and repairing the readout on the flow meter, and testing the pumping system in October. General site conditions and security status were noted on the Site Inspection Form and addressed as appropriate.

Conclusions/Recommendations:

The work performed for the Site during 2004 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 2004 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. Data from 2004 sediment trap monitoring were similar to the 2003 monitoring.

Olin requests NYSDEC to discontinue the requirement for hexachorobenzene (HCB) monitoring in ground water wells. This request is based on the Site never having any detections of this compound in the ground water. No

Table 1

Semi-Annual Ground Water Summary

Monitor Well: MW-A3

	1997	1998		1999		2000		2001		2002		2003		2004	
Parameter	September (*)	April	October	April	October	May	October	April	October	April	September	April	September	April	September
Alpha-BHC	.059	.016J	.12	.0043J	-	.050U	.054U	.050U	.050U	.050U	.029J	.048U	.035J	.048U	.047U
Beta-BHC	.028J	.012J	.0092J	.053U	-	.012J	.054U	.050U	.050U	.050U	.016J	.048U	.059U	.048U	.047U
Gamma-BHC	.050U	.050U	.024J	.053U	-	.050U	.054U	.050U	.050U	.050U	.050U	.048U	.059U	.048U	.047U
Delta-BHC	.050U	.050U	.053U	.053U	-	.050U	.054U	.050U	.050U	.050U	.050U	.048U	.059U	.048U	.047U
Hexachlorobenzene	10U	10U	-	11U	-	11U	NR	10U	NR	NR	NR	NR	NR	10U	NR

Monitor Well: MW-1R

	1997	1998		1999		2000		2001		2002		2003		2004	
Parameter	September (*)	April	October	April	October	May	October	April	October	April	September	April	September	April	September
Alpha-BHC	.058	.085	.18	.072	.057	.028J	.054U/.052U	.050U/.050U	.099/.060	.070/.061	.055/.030J	.014J/.015U	.052U	.049U/.049	.026J/.048U
Beta-BHC	.053	.14	.20	.13	.080	.12	.038J/.052U	.012J/.050U	.19/.15	.10/.050U	.13/.095	.053/.052	.052U	.049U/.065	.090/.024
Gamma-BHC	.050U	.050U	.028J	.053U	.050UJ	.051U	.054U/.052U	.050U/.050U	.063J/.058U	.050U/.050U	.055U	.049U	.052U	.049U/.049U	.048U/.048
Delta-BHC	.050U	.0042J	.053U	.0054J	.050U	.051U	.054U/.052U	.050U/.050U	.061U/.058U	.050U/.053	.055U	.049U	.052U	.049U/.049U	.048U/.048U
Hexachlorobenzene	10U	10U	11U	11U	10U	10U	NR	10U/10U	NR	NR	NR	NR	NR	10U	NR

Monitor Well: MW-2

	1997	1998		1999		2000		2001		2002		2003		2004	
Parameter	September (*)	April	October	April	October	May	October	April	October	April	October	April	September	April	September
Alpha-BHC	.050U	.050U	.053U	.053U	.050U	.029J	.053U	.050U	.054U	.050U	.050U	.050U	.050U	.050U	.050U
Beta-BHC	.050U	.050U	.053U	.053U	.050U	.098	.053U	.050U	.054U	.050U	.050U	.050U	.050U	.050U	.050U
Gamma-BHC	.050U	.050U	.053U	.053U	.050UJ	.052U	.053U	.050U	.054U	.050U	.050U	.050U	.030J	.050U	.030J
Delta-BHC	.050U	.050U	.053U	.053U	.050U	.052U	.053U	.050U	.054U	.050U	.050U	.050U	.050U	.050U	.050U
Hexachlorobenzene	10UJ	10U	11U	10U	10U	10U	NR	10U	NR	NR	NR	NR	NR	10U	NR

Notes: Concentrations in ug/L
(*) Start of semi annual monitoring program
U Not detected
J Estimated value
/ Field Duplicates
- Not enough sample for analysis
NR Not required
Data has been validated

Table 1 (cont.)

Semi-Annual Ground Water Summary

Monitor Well: MW- 4

	1997	1998		1999		2000		2001		2002		2003		2004	
Parameter	September (*)	April	October	April	October	May	October	April	October	April	September	April	September	April	September
Alpha-BHC	.050/.060	.0030J	.053U	.0031J	.050U	.051U/.052U	.054U	.050U	.0069J	.050U	.050U	.049U	.056	.048U	.048U
Beta-BHC	.055/.069	.016J	.045J	.017J	.066/.068	.045J/.062	.054U	.050U	.047J	.041J	.033J	.049U	.026J	.048U	.037J
Gamma-BHC	.050U	.050U	.053U	.053U	.050U	.051U/.052U	.054U	.050U	.050U	.071J	.050U	.049U	.033J	.048U	.048U
Delta-BHC	.050U	.050U	.053U	.053U	.050U	.051U/.052U	.054U	.050U	.050U	.050U	.050U	.049U	.050U	.048U	.048U
Hexachlorobenzene	10U	10U	10U	10U	10U	10U	NR	10U	NR	NR	NR	NR	NR	9U	NR

Monitor Well: MW-5

	1997	1998		1999		2000		2001		2002		2003		2004	
Parameter	September (*)	April	October	April	October	May	October	April	October	April	September	April	September	April	September
Alpha-BHC	.059	.050U/.0066J	.053U	.0071J	.045J	.010J	.054U	.050U	.013J	.050U	.050U	.048U	.049U	.048U	.048U
Beta-BHC	.050U	.0080J/.0084J	.053U	.053U	.050	.031J	.054U	.050U	.022J	.050U	.050U	.048U	.049U	.048U	.048U
Gamma-BHC	.050U	.050U	.053U	.053U	.0065J	.052U	.054U	.050U	.055U	.050U	.050U	.048U	.049U	.048U	.048U
Delta-BHC	.050U	.050U	.053U	.053U	.050U	.052U	.054U	.050U	.055U	.050U	.050U	.048U	.049U	.048U	.048U
Hexachlorobenzene	10U	10U	11U	11U/11U	10U	10U	NR	10U	NR	NR	NR	NR	NR	10U	NR

Notes: Concentrations in ug/l

- (*) Start of semi annual monitoring program
- U Not detected
- J Estimated value
- / Field Duplicates
- - Not enough sample for analysis
- NR Not required

Data has been validated

Table 2
Analytical Summary
Cayuga Creek
Annual Upstream Sediment Sampling

Parameter	1993 September	1994 June	1994 September	1995 August	1996 September	1997 September	1998 October	1999 October	2000 October	2001* October	2002 September	2003 September	2004 September
alpha-BHC	1.5 J	NS	6.1 U	8.1J	2.7J	5.3J	2.1J	8.9/7.4	3.5	55	19/90	28/22J	80U/86J
beta-BHC	2.3 J	NS	2.2 J	12	6.1U	11	5.2	28/19	4.5J	49	37/76	48/30	20J/190
delta-BHC	6.0 U	NS	6.1 U	21	6.1U	4.0J	5.5	37/31	2.3U	24	31/26	12J/28	23J/56J
gamma-BHC	6.0 U	NS	6.1 U	12 U	6.1U	2.5J	.31UJ	2.9J/.42J	2.3U	3.3J	5.8U/1.6U	1.9J/26U	80U/38J
HCB	500 U	NS	510 U	480 U	500U	330U	470U	480U	NR	NR	NR	NR	NR

Notes:
Concentration in microgram/kilogram (ug/kg)
BHC = Hexachlorocyclohexane
HCB = Hexachlorobenzene
J = Estimated value
U = Undetected at the concentration level specified
NS = Not sampled
NR = No longer required for this event
* Sediment Traps Installed April 2001
Data has been validated

Table 3
Analytical Summary
Cayuga Creek
Annual Downstream Sediment Sampling

Parameter	1993 September	1994 June	1994 September	1995 August	1996 September	1997 September	1998 October	1999 October	2000 October	2001* October	2002 September	2003 September	2004 September
alpha-BHC	2,200	5,300	720	790	5000	330	4800J/80000J	4800J	9600/13000	16	26	26J	200
beta-BHC	390	1,800	82	83 J	600	580	1300J/12000J	1800	3000J/2700J	52	34	45	140
delta-BHC	27 J	80 J	67 U	250 U	41J	60J	53J/5500UJ	190J	1200U/1400U	65	20	97	12J
gamma-BHC	40 U	690	67 U	250 U	35J	44J	300UJ/690J	52J	1200U/1400U	1.4J	6.0U	31U	7.4J
HCB	800 U	570 UR	550 U	420 U	330U	330U	520U/550U	510U	NR	NR	NR	NR	NR

Notes:
Concentration in microgram/kilogram (ug/kg)
BHC = Hexachlorocyclohexane
HCB = Hexachlorobenzene
J = Estimated value.
U = Undetected at the concentration level specified
R = Sample result rejected due to low surrogate recoveries caused by matrix interference
NR = No longer required for this event
* Sediment Traps Installed April 2001
Data has been validated

Table 4

2004 Quarterly Groundwater Elevations Summary

MH-B 564.50 564.01 564.22 563.82

Piezometer Pair	2/18/2004	4/6/2004	9/20/2004	11/23/2004
P1	565.14 ↑	565.70 ↑	566.30 ↓	565.17 ↑
P2	565.47 ↑	568.54 ↑	565.49 ↓	565.31 ↑
P3	567.04 ↓	567.91 ↓	566.32 ↓	565.66 ↓
P4	565.39 ↓	565.38 ↓	565.43 ↓	565.28 ↓
P5	569.21 ↓	569.88 ↓	569.05 ↓	568.55 ↓
P6	567.88 ↓	568.23 ↓	567.89 ↓	567.48 ↓

Note: Measurement units are in feet.
Piezometers P1, P3, P5 are outside the slurry wall.
Piezometers P2, P4, P6 are located within the containment area.
Discharge system pumped 65, 082 gallons during a 2004.

Table 5

Manhole Monitoring
2004 Water Elevations
(ft.)

Date	Manhole A	Manhole B	Comments
2/18/2004	564.50	564.54	Quarterly inspection
4/6/2004	564.01	564.08	Semi Annual ground water sampling; NYSDEC visit.
9/20/2004	564.22	564.27	Semi Annual ground water sampling
11/23/2004	563.82	563.89	Quarterly inspection

Notes:
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. (This pumping requirement is addressed by the operation of the direct discharge system which became operational in March 1997.)

Table 6

Summary of Yearly Discharge Volumes (gallons)

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**
TOTALS	**877,675**

Notes:
(*) Represents start of operation of direct discharge system
(1) Pumped during test of system on 4/13/2003
Discharge system pumped during February, March, April, May, July, and December of 2004.

Table 7

Annual Manhole B Sampling

September 20, 2004

Parameter	Concentration (ug/l)
alpha – BHC	.12J
beta - BHC	.18J
delta - BHC	.20J
gamma - BHC	.048U
Hexachlorobenzene	NR

Notes:
U Undetected at associated value
NR Not required for this event
Field blank was non-detect for all parameters of interest
Data has been validated and judged acceptable as qualified.
Next sampling for hexachlorobenzene is scheduled for October 2005.

ATTACHMENT 1

INSPECTION AND SAMPLING SCHEDULE

GIBSON SITE

GIBSON SITE
NIAGARA FALLS, NEW YORK
2005 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 2005.

APPENDIX A

CHARLES GIBSON SITE
(PINE AND TUSCARORA SITE)

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

SEMI-ANNUAL GROUND WATER AND ANNUAL SEDIMENT SAMPLING REPORT

SEPTEMBER 2004

PREPARED BY OLIN CORPORATION

In accordance with the approved sampling plan for the above referenced Site, this report presents a summary of data for the Semi-Annual Ground Water and Annual Sediment Sampling, collected during September 2004.

The analytical data summary for ground water is listed in Table 1. Analytical results for the annual sediment sampling are listed in Table 2. The laboratory data summary package (Appendix 1), and the field logs (Appendix 2) for this sampling event are also attached. The Quarterly Site Inspection Forms and the Quarterly Ground Water Elevation Forms are included in Appendices 3 and 4 respectively. The analytical data has been validated and found to be acceptable.

TABLE 1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY
SEMI-ANNUAL GROUND WATER SAMPLING

September 20, 2004

	MW-1R	MW-1R (DUP)	MW-2	MW-4	MW-5	MW-A3
PARAMETER						
alpha-BHC	.026J	.048U	.050U	.048U	.048U	.047U
beta-BHC	.090	.024J	.050U	.037J	.048U	.047U
delta-BHC	.048U	.048U	.050U	.048U	.048U	.047U
gamma-BHC	.048U	.048U	.050U	.048U	.048U	.047U
Hexachlorobenzene	NR	NR	NR	NR	NR	NR
						—

Notes:

Concentration in ug/l
U Undetected at associated value
J Estimated value
Field blank was non-detect for all parameters of interest.
Data has been validated and judged acceptable as qualified.
NR Not required for this event.
Next biennial sampling for hexachlorobenzene is scheduled for September 2006.

TABLE 2

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY
ANNUAL SEDIMENT SAMPLING

September 20, 2004

	UPSTREAM	DOWNSTREAM
PARAMETER		
alpha-BHC	80U/86J	200
beta-BHC	20J/190	140
delta-BHC	23J/56J	12J
gamma-BHC	80U/38J	7.4J

Notes:
Concentration in ug/kg
Data has been validated and judged acceptable as qualified.
U Compound was analyzed but not detected
J Compound was analyzed and determined to be present in sample. The concentration listed is an estimated value which is less than the specified minimum detection level but greater than zero

APPENDIX 1

LABORATORY DATA SUMMARY PACKAGE

SEMI-ANNUAL GROUND WATER SAMPLING

AND

ANNUAL SEDIMENT SAMPLING

September 2004

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

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#: A04-2982

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

Ms. Lorraine Miller
Olin Corporation
1186 Lower River Road
Charleston, TN 37310

CC: Mr. Michael Walker

STL Buffalo

Brian J Fischer
Project Manager

Mary Ann Neary
Analyst

10/6/2004

STL Buffalo
Current Certifications

STATE	Program	Cert # / Lab ID
Arkansas	SDWA, CWA, RCRA, SOIL	03-054-D/88-0686
California	NELAP SDWA, CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida	NELAP RCRA	E87672
Georgia	SDWA	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	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	10026
North Carolina	CWA	411
North Dakota	SDWA, CWA, RCRA	R-176
Oklahoma	CWA, RCRA	9421
Pennsylvania	Env. Lab Reg.	68-281
South Carolina	RCRA	91013
USDA	FOREIGN SOIL PERMIT	S-41579
Virginia	SDWA	278
Washington	CWA	C254
West Virginia	CWA	252
Wisconsin	CWA	998310390

SAMPLE DATA SUMMARY PACKAGE

SAMPLE SUMMARY

LAB SAMPLE ID	CLIENT SAMPLE ID	SAMPLED DATE	SAMPLED TIME	RECEIVED DATE	RECEIVED TIME
A4906409	DS-1	09/20/2004	16:30	09/20/2004	17:05
A4906407	FIELD BLANK X-1	09/20/2004	15:30	09/20/2004	17:05
A4906408	MANHOLE B	09/20/2004	15:20	09/20/2004	17:05
A4906410	MS-1	09/20/2004	16:00	09/20/2004	17:05
A4906401	MW-1R	09/20/2004	12:00	09/20/2004	17:05
A4906403	MW-2	09/20/2004	12:50	09/20/2004	17:05
A4906404	MW-4	09/20/2004	13:25	09/20/2004	17:05
A4906405	MW-5	09/20/2004	14:00	09/20/2004	17:05
A4906402	MW-7	09/20/2004	09:00	09/20/2004	17:05
A4906406	MW-A3	09/20/2004	14:50	09/20/2004	17:05
A4906411	~~VS-1~~ US-1	09/20/2004	15:50	09/20/2004	17:05

VOA
12/21/04

METHODS SUMMARY

Job#: A04-9064

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

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

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

NON-CONFORMANCE SUMMARY

Job#: A04-9064

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

General Comments

The enclosed data 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 and Dissolved Oxygen 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

A04-9064
Sample Cooler(s) were received at the following temperature(s); 3.2 °C
All samples were received in good condition.

GC Extractable Data

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

All extracts required treatment with Copper prior to analysis due to the presence of elemental Sulfur.

****

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

"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 hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Brian J. Fischer
Project Manager

10-6-04
Date

Date: 10/04/2004
Time: 12:16:19

Dilution Log w/Code Information
For Job A04-9064

Client Sample ID	Lab Sample ID	Parameter (Inorganic)/Method (Organic)	Dilution	Code
DS-1	A4906409	8081	2.00	008
MS-1	A4906410	8081	4.00	008
~~VS-1~~ LS-1	A4906411	8081	4.00	002

JDI 12/21/04

Dilution Code Definition:

002 - sample matrix effects
003 - excessive foaming
004 - high levels of non-target compounds
005 - sample matrix resulted in method non-compliance for an Internal Standard
006 - sample matrix resulted in method non-compliance for Surrogate
007 - nature of the TCLP matrix
008 - high concentration of target analyte(s)
009 - sample turbidity
010 - sample color
011 - insufficient volume for lower dilution
012 - sample viscosity
013 - other

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
DS-1	A4906409	-	-	-	ASP00	-	-	-
FIELD BLANK X-1	A4906407	-	-	-	ASP00	-	-	-
MANHOLE B	A4906408	-	-	-	ASP00	-	-	-
MS-1	A4906410	-	-	-	ASP00	-	-	-
MW-1R	A4906401	-	-	-	ASP00	-	-	-
MW-2	A4906403	-	-	-	ASP00	-	-	-
MW-4	A4906404	-	-	-	ASP00	-	-	-
MW-5	A4906405	-	-	-	ASP00	-	-	-
MW-7	A4906402	-	-	-	ASP00	-	-	-
MW-A3	A4906406	-	-	-	ASP00	-	-	-
~~VS-1~~ US-1	A4906411	-	-	-	ASP00	-	-	-

JAS
12/21/04

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
DS-1	SOIL	09/20/2004	09/20/2004	9/27/2004	9/30/2004
FIELD BLANK X-1	WATER	09/20/2004	09/20/2004	9/23/2004	9/27/2004
MANHOLE B	WATER	09/20/2004	09/20/2004	9/23/2004	09/27/2004
MS-1	SOIL	09/20/2004	09/20/2004	9/27/2004	9/30/2004
MW-1R	WATER	09/20/2004	09/20/2004	9/23/2004	9/26/2004
MW-2	WATER	09/20/2004	09/20/2004	9/23/2004	9/26/2004
MW-4	WATER	09/20/2004	09/20/2004	9/23/2004	9/26/2004
MW-5	WATER	09/20/2004	09/20/2004	9/23/2004	9/26/2004
MW-7	WATER	09/20/2004	09/20/2004	9/23/2004	9/26/2004
MW-A3	WATER	09/20/2004	09/20/2004	9/23/2004	9/26/2004
US-1 ~~VS-1~~	SOIL	09/20/2004	09/20/2004	9/27/2004	09/30/2004

VOJ
12/21/04

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
DS-1	SOIL	ASP00	SONC	AS REQUIRED	AS REQUIRED
FIELD BLANK X-1	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MANHOLE B	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MS-1	SOIL	ASP00	SONC	AS REQUIRED	AS REQUIRED
MW-1R	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-2	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-4	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-5	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-7	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-A3	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
~~VS-1~~ US-1	SOIL	ASP00	SONC	AS REQUIRED	AS REQUIRED

VAJ
12/21/04

DATA COMMENT PAGE

ORGANIC DATA QUALIFIERS

ND or U	Indicates compound was analyzed for, but not detected at or above the reporting limit.
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 a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. 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 at or above the reporting limit.
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.
K	Indicates the post digestion spike recovery is not within the quality control limits.
S	Indicates value determined by the Method of Standard Addition.
M	Indicates duplicate injection results exceeded quality control limits.
W	Post digestion spike for Furnace AA analysis is out of quality control limits (85-115%) while sample absorbance is less than 50% of spike absorbance.
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.
*	Indicates 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.

DS-1

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) SOIL Lab Sample ID: A4906409

Sample wt/vol: 30.23 (g/mL) G Lab File ID: 18B26154.TX0

% Moisture: 57.0 decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SONC Date Extracted: 09/27/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/30/2004

Injection Volume: 1.00 (uL) Dilution Factor: 2.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	200	
319-85-7	beta-BHC	140	
319-86-8	delta-BHC	12	J
58-89-9	gamma-BHC (Lindane)	7.4	J

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

Client No.

FIELD BLANK X-1

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) WATER Lab Sample ID: A4906407

Sample wt/vol: 1045.00 (g/mL) ML Lab File ID: 18B26069.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/23/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/27/2004

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.

MANHOLE B

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) WATER Lab Sample ID: A4906408

Sample wt/vol: 1045.00 (g/mL) ML Lab File ID: 18B26070.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/23/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/27/2004

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	0.12	J
319-85-7	beta-BHC	0.18	J
319-86-8	delta-BHC	0.20	J
58-89-9	gamma-BHC (Lindane)	0.048	U

JOS 12/21/04

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

Client No.

MS-1

Lab Name: SIL Buffalo Contract: _____

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

Matrix: (soil/water) SOIL Lab Sample ID: A4906410

Sample wt/vol: 30.24 (g/mL) G Lab File ID: 18B26155.TX0

% Moisture: 75.3 decanted: (Y/N) Y Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SONC Date Extracted: 09/27/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/30/2004

Injection Volume: 1.00 (uL) Dilution Factor: 4.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	86	J
319-85-7	beta-BHC	190	
319-86-8	delta-BHC	56	J
58-89-9	gamma-BHC (Lindane)	38	J

OLIN CORPORATION

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

Client No.

MW-1R

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) WATER Lab Sample ID: A4906401

Sample wt/vol: 1030.00 (g/mL) ML Lab File ID: 18B26059.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/23/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/26/2004

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.026	J
319-85-7	beta-BHC	0.090	
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

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) WATER Lab Sample ID: A4906403

Sample wt/vol: 1000.00 (g/mL) ML Lab File ID: 18B26061.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/23/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/26/2004

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 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

OLIN CORPORATION

OLIN CORPORATION - CHARLES GIBSON SITE

ASP 2000- METHOD 8081 BHC'S

ANALYSIS DATA SHEET

Client No.

MW-4

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) WATER Lab Sample ID: A4906404

Sample wt/vol: 1045.00 (g/mL) ML Lab File ID: 18B26064.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/23/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/26/2004

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 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	0.037	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

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) WATER Lab Sample ID: A4906405

Sample wt/vol: 1045.00 (g/mL) ML Lab File ID: 18B26065.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/23/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/26/2004

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 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-7

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) WATER Lab Sample ID: A4906402

Sample wt/vol: 1040.00 (g/mL) ML Lab File ID: 18B26060.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/23/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/26/2004

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	0.024	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-A3

Lab Name: SIL Buffalo Contract: _____

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

Matrix: (soil/water) WATER Lab Sample ID: A4906406

Sample wt/vol: 1055.00 (g/mL) ML Lab File ID: 18B26066.TX0

% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 09/23/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/26/2004

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.00 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.047	U
319-85-7	beta-BHC	0.047	U
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.

~~VS-1~~ US-1

JAS 12/21/04

Lab Name: STL Buffalo Contract: _____

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

Matrix: (soil/water) SOIL Lab Sample ID: A4906411

Sample wt/vol: 30.36 (g/mL) G Lab File ID: 18B26156.TX0

% Moisture: 60.6 decanted: (Y/N) N Date Samp/Recv: 09/20/2004 09/20/2004

Extraction: (SepF/Cont/Sonc/Soxh): SONC Date Extracted: 09/27/2004

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/30/2004

Injection Volume: 1.00 (uL) Dilution Factor: 4.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	80	U
319-85-7	beta-BHC	20	J
319-86-8	delta-BHC	23	J
58-89-9	gamma-BHC (Lindane)	80	U

Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
OHM CORP.	LORRAINE Miller	9-20-04	134349
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
PO Box 248, 1186 Lovell River Rd	423 336-4381 / 423 336 4166		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
Charleston, TN / TN / 37310	Mike Walker	Brian Fisher	
Project Name and Location (State)	**Carrier/Waybill Number**		
Charles Gibson Site, Niagara Falls, NY			
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	BNA ISOMERS	Special Instructions/ Conditions of Receipt
MW-1R	9-20-04	1200		X			X						X	2x 1 Liter GLASS
MW-7	9-20-04	0900		X			X						X	2x 1 Liter GLASS
MW-2	9-20-04	1250		X			X						X	2x 1L GLASS
MW-4	9-20 04	1325		X			X						X	2x 1L GLASS
MW-5	9-20-04	1400		X			X						X	"
MW-A3	9-20-04	1450		X			X						X	"
Field Blank X-1	9-20-04	1530		X			X						X	"
MANHOLE "B"	9-20-04	1520		X			X						X	
DS-1	9-20-04	1630			X		X						X	4 oz GLASS
MS-1	9-20-04	1600			X		X						X	"
US-1	9-20-04	1550			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)

	Relinquished By	Date	Time	Received By	Date	Time
1.	[signature]	9-20-04	1705	[signature]	9/20/04	1705
2.						
3.						

3.2°C

Comments

Copy to Mike Walker @ Severson Environmental, 2749 Lockport Rd, Niagara Falls, NY 14302
ph# 716 2840431 Fax # 716 2854201

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

APPENDIX 2

FIELD LOGS

SEMI-ANNUAL GROUND WATER SAMPLING
AND
ANNUAL SEDIMENT SAMPLING

September 2004

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
GROUNDWATER AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: Walker
SAMPLED BY: Walker
COMPANY: Sevenson

SAMPLE ID: MW-1R + MW-7
SAMPLING EVENT/DATE: 9/20/2004
MONITORING WELL: MW-1R + M
CONDITION: good

GROUNDWATER PURGE DATA PURGE DATE: 9/20/2004

DEPTH TO BOTTOM FROM TOP OF RISER: 12.1 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 5.3 (FT.)
WATER COLUMN: 6.8 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.09 (GALS)

PURGE METHOD: Parastaltic Pump w/ dedicated hose
BOTTOM OF WELL/SILT BUILDUP: None
PURGE START TIME: 1130 STOP TIME 1200
PURGE OBSERVATIONS: Clear

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	912	67.3	Clear
2	7.6	926	69.3	Clear
3	7.7	1023	65.5	Clear
4				
5				

TOTAL VOLUME PURGED: 3.0 Gal.

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/20/2004

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1200

LOCATION: MW-1R + MW-7
SAMPLE METHOD: Purge 3 volumes and then sample
SAMPLING OBSERVATIONS: Water clear
QC SAMPLES TAKEN: Duplicate samples taken and labeled MW-7 Sampled at "10:00 am"
OTHER OBSERVATIONS/COMMENTS: Collected 4 , 1 liter glass amber jars for BHC analysis.

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
SAMPLING EVENT/DATE: 9/20/2004
MONITORING WELL: MW-2
CONDITION: good

GROUNDWATER PURGE DATA PURGE DATE: 9/20/2004

DEPTH TO BOTTOM FROM TOP OF RISER: 12.13 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 5.75 (FT.)
WATER COLUMN: 6.38 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.02 (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: Parastaltic Pump w/ dedicated hose
BOTTOM OF WELL/SILT BUILDUP: None
PURGE START TIME: 1235 STOP TIMI 1250
PURGE OBSERVATIONS: Clear water with black specs.

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	8	1493	65.7	Clear/black specs
2	7.4	1266	65.8	Clear
3	7.4	1281	65.5	Clear
4	7.4	1279	63.8	clear
5				

TOTAL VOLUME PURGED: 3.0 Gal.

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/20/2004

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1250

LOCATION: MW-2
SAMPLE METHOD: Purge 3 volumes and then sample
SAMPLING OBSERVATIONS: Water clear
QC SAMPLES TAKEN:
OTHER OBSERVATIONS/COMMENTS: Collected 2 , 1 liter glass amber jars for BHC analysis.

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

SAMPLED BY: Walker
SAMPLING EVENT/DATE: 9/20/2004

COMPANY: Sevenson
MONITORING WELL: MW-4

CONDITION: good

GROUNDWATER PURGE DATA PURGE DATE: 9/20/2004

DEPTH TO BOTTOM FROM TOP OF RISER: 13.75 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 6.62 (FT.)
WATER COLUMN: 7.13 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.14 (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: Parastaltic Pump w/ dedicated hose
BOTTOM OF WELL/SILT BUILDUP: None
PURGE START TIME: 1310 STOP TIME 1325
PURGE OBSERVATIONS: Clear water with black specs. Sulfer smell

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.9	1874	63.8	Clear/black specs
2	7.8	1680	63.2	Cloudy /sulfer odor
3	7.7	1999	63.3	cloudy/no odor
4	7.7	2370	62.7	cloudy
5				

TOTAL VOLUME PURGED: 3.5 gallon

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/20/2004

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1325

LOCATION: MW-4

SAMPLE METHOD: Purge 3 volumes and then sample

SAMPLING OBSERVATIONS: Cloudy water no smell

QC SAMPLES TAKEN:

OTHER OBSERVATIONS/COMMENTS: Collected 2 , 1 liter glass amber jars for BHC analysis.

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
SAMPLED BY: Walker
SAMPLING EVENT/DATE: 9/20/2004
COMPANY: Sevenson
MONITORING WELL: MW-5
CONDITION: good

GROUNDWATER PURGE DATA PURGE DATE: 9/20/2004

DEPTH TO BOTTOM FROM TOP OF RISER: 15.28 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 7.35 (FT.)
WATER COLUMN: 7.93 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 1.27 (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: Parastaltic Pump w/ dedicated hose
BOTTOM OF WELL/SILT BUILDUP: None
PURGE START TIME: 1340 STOP TIMI 1400
PURGE OBSERVATIONS: Cloudy water turning clear

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.1	1386	65	orange/cloudy
2	6.9	2150	62.5	cloudy
3	6.9	2180	62.6	Clear
4	6.9	2150	62	Clear
5				

TOTAL VOLUME PURGED: 3.75 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/20/2004

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1400

LOCATION: MW-5
SAMPLE METHOD: Purge 3 volumes and then sample
SAMPLING OBSERVATIONS: Water clear
QC SAMPLES TAKEN: no
OTHER OBSERVATIONS/COMMENTS: Collected 2 , 1 liter glass amber jars for BHC analysis.

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-A3
SAMPLED BY: Walker
SAMPLING EVENT/DATE: 9/20/2004
COMPANY: Sevenson
MONITORING WELL: MW-A3
CONDITION: good

GROUNDWATER PURGE DATA PURGE DATE: 9/20/2004

DEPTH TO BOTTOM FROM TOP OF RISER: 11.95 (FT.)
DEPTH TO WATER FROM TOP OF RISER: 8.4 (FT.)
WATER COLUMN: 3.55 (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= 0.57 (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: Parastaltic Pump w/ dedicated hose
BOTTOM OF WELL/SILT BUILDUP: None
PURGE START TIME: 1435 STOP TIME 1450
PURGE OBSERVATIONS: Clear

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.6	884	61.8	Clear
2	7.6	660	60.6	Clear
3	7.5	623	61	Clear
4	7.5	615	61.4	Clear
5				

TOTAL VOLUME PURGED: 1.5 gallons

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/20/2004

MEDIA: GROUNDWATER X
CREEK SEDIMENT
SAMPLE TIME: 1450

LOCATION: MW-A3
SAMPLE METHOD: Purge 3 volumes and then sample
SAMPLING OBSERVATIONS: Water clear
QC SAMPLES TAKEN: no
OTHER OBSERVATIONS/COMMENTS: Collected 2 , 1 liter glass amber jars for BHC analysis.

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

RECORDED BY: Walker

SAMPLE ID: Manhole B

SAMPLED BY: Walker

SAMPLING EVENT/DATE: 9/20/2004

COMPANY: Sevenson

MONITORING WELL: Manhole B

CONDITION: good

GROUNDWATER PURGE DATA

PURGE DATE: 9/20/2004

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

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

WATER COLUMN: (FT.)

2" DIA. WELL CONSTANT:

ONE WELL VOLUME= (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: Parastaltic Pump w/ dedicated hose
BOTTOM OF WELL/SILT BUILDUP:
PURGE START TIME: STOP TIM
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

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

TOTAL VOLUME PURGED:

GROUNDWATER OR SEDIMENT SAMPLING DATA:

SAMPLE DATE: 9/20/2004

MEDIA: GROUNDWATER X
CREEK SEDIMENT

SAMPLE TIME: 1520

LOCATION: Manhole B

SAMPLE METHOD: Parastaltic Pump w/ dedicated hose

SAMPLING OBSERVATIONS: Water clear

QC SAMPLES TAKEN: no

OTHER OBSERVATIONS/COMMENTS: Collected 2 , 1 liter glass amber jars for BHC analysis.

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: DS-1
SAMPLING EVENT/DATE: 9/20/2004
MONITORING WELL: DS-1
CONDITION:

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: 9/20/2004
SAMPLE TIME: 1630

MEDIA: GROUNDWATER
CREEK SEDIMENT X

LOCATION: Creek bed down stream of the landfill cap

SAMPLE METHOD: Sediment trap composite

SAMPLING OBSERVATIONS:

QC SAMPLES TAKEN:

OTHER OBSERVATIONS/COMMENTS:

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: US-1
SAMPLING EVENT/DATE: 9/20/2004
MONITORING WELL: US-1
CONDITION: good

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: 9/20/2004
SAMPLE TIME: 1550

MEDIA: GROUNDWATER ____
CREEK SEDIMENT X

LOCATION: Creek bed upstream of the landfill cap

SAMPLE METHOD: Sediment trap composite

SAMPLING OBSERVATIONS: ____

QC SAMPLES TAKEN: Duplicate sample taken and labeled "MS-1" and timed 1600.

OTHER OBSERVATIONS/COMMENTS: ____

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

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

DATE: 9/20/2004 SEMI-ANNUAL SAMPLING EVENT: Fall 2004

PERSON CALIBRATING METERS: M. Walker

pH METER USED: MANUFACTURER: Oakton
MODEL: pH Tester 2 , Double Junction
IDENTIFICATION/CONTROL NUMBER: E-780

CALIBRATION STANDARDS USED:

STANDARD 7.00 METER READ: 7.1
STANDARD 4.00 METER READ: 4.1
STANDARD 10.00 METER READ:

METER CALIBRATION COMMENTS:

SPECIFIC CONDUCTIVITY METER USED:

MANUFACTURER: Oakton
MODEL:
IDENTIFICATION/CONTROL NUMBER: E-780

CALIBRATION STANDARDS USED:

STANDARD 0 READ:
(STANDARD 0 USED: ____ AIR, ____ WATER)
STANDAR
STANDARD ____ 447 450

METER CALIBRATION COMMENTS:

THERMOMETER USED: TYPE: Digital
MANUFACTURER: Fischer Scientific
IDENTIFICATION/CONTROL NUMBER: 14-648-12

COMMENTS: (DOES THERMOMETER TEMPERATURE AGREE WITH SPECIFIC CONDUCTIVITY METER TEMPERATURE ?) no

OTHER:

OTHER INSTRUMENTS USED: TYPE:
MANUFACTURER:
IDENTIFICATION/CONTROL NUMBER:

CALIBRATIONS PERFORMED:

OTHER CALIBRATION COMMENTS:

APPENDIX 3

QUARTERLY SITE INSPECTION FORMS

July - December 2004

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: 8/6/2004 TIME: 4:00 PM

INSPECTOR: Walker COMPANY: Sevenson

WEATHER: Sunny

REASON FOR INSPECTION (QUARTERLY OR OTHER): check on system, no fax report sent

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	Trees along the property line have been cut
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: Checked the auto dialer because no faxes have been sent. Found that the electrical fault light was lit. Shut down the dialer to reboot the unit

Locked the panel and left the site.

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

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

DATE: 9/17/2004 TIME: 1100

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Equipment repair

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: Met onsite with Steve from Carrier Controlss to continue troublshooting the Flow meter. After numerous phone conversations with the manufacturers tech line, it was determined that unit would have to be removed and sent in to be repaired at the factory. Apparently whatever fried the auto dialer has also fried the meter. Steve said he will call me when he gets a quote on repair or replacement of the unit.

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: 9/20/2004 TIME: 900

INSPECTOR: Mike Walker COMPANY: Sevenson

WEATHER: Sunny 70F

REASON FOR INSPECTION (QUARTERLY OR OTHER): Semi annual Sampling, Monthly Insp.

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: Some one had built a "bridge" made of rocks across the creek and it was acting as a dam. I removed a portion of the rocks and let the water flow through so the water would return to its intended level. (about 5" lower that it was).

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

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

DATE: 10/13/2004 TIME: 830

INSPECTOR: Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Install flow meter parts

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: Met onsite with David Carrier of Carrier Controls to install the repaired flow meter. Also rebooted the flow program and reset the parameters of the meter to original specs.

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

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

DATE: 10/27/2004 TIME: 900

INSPECTOR: Walker COMPANY: Sevenson

WEATHER: Sunny 70 F

REASON FOR INSPECTION (QUARTERLY OR OTHER): Adjust calibration on flowmeter/auto dialer

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: Met onsite with Steve Franks of Carrier Controls to find out why the Flow meter and the auto dialer where not communicating with each other. We corrected the problem and Steve installed a set of switches, to make testing the pumping system manually, safer and easier. We then ran the system for 77 gallons to see if the count would show up on the faxes for the following day, they did. I will now have Steve reset the counter to zero, so the only counts on it will be actual gallons pumped from now on. I also want to note that the Electrical utility company was gearing up to do some maintenance on the high voltage lines adjacent to the property.

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

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

DATE: 11/23/2004 TIME: 1200N

INSPECTOR: Walker COMPANY: Sevenson

WEATHER: Cloudy Damp 39 F

REASON FOR INSPECTION (QUARTERLY OR OTHER): Quarterly Inspection

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

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

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

SECURITY:

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

ADDITIONAL COMMENTS: The site looked good, the water level in the creek seemed low.

Fence was secure and the place looked ready for the winter season.

APPENDIX 4

QUARTERLY GROUNDWATER ELEVATION /PUMPING FORMS

July - December 2004

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
GROUNDWATER ELEVATION FORM

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

DATE: 9/20/2004 TIME: 930

INSPECTOR: Walker COMPANY: Sevenson

WEATHER: Sunny 70 F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	6.42	566.3	OK
P-2	574.89	9.4	565.49	OK
P-3	574.16	7.84	566.32	OK
P-4	576.14	10.71	565.43	OK
P-5	575.05	6	569.05	OK
P-6	578.28	10.39	567.89	OK
MANHOLE A	575.22	11	564.22	OK
MANHOLE B	577.34	13.07	564.27	OK

(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: The site looks good.

7118

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: 11/23/2004 TIME: 1200N

INSPECTOR: Walker COMPANY: Sevenson

WEATHER: Cloudy and Damp 39 F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	7.55	565.17	OK
P-2	574.89	9.58	565.31	OK
P-3	574.16	8.5	565.66	OK
P-4	576.14	10.86	565.28	OK
P-5	575.05	6.5	568.55	OK
P-6	578.28	10.8	567.48	OK
MANHOLE A	575.22	11.4	563.82	OK
MANHOLE B	577.34	13.45	563.89	OK

(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: Everything looked good.