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ERP - E

VCP - V

BCP - C



932063

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

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

February 7, 2003

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 11 2003

NYSDEC - REG. 9
FOIL
REL UNREL

Subject: Charles Gibson Site
NYSDEC Registry No. 9-32-063
Tenth Annual Report - 2002

Dear Mr. Hinton:

Enclosed are three copies of the Tenth Annual Report - 2002 for the referenced site. This report summarizes the activities performed during 2002 for the operations 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 2002.

- Semi-annual groundwater sampling events were performed during April and September 2002.
- The annual sediment sampling was performed in September.
- The annual sampling and analysis of leachate was completed in September. There were no discharges to the City of Niagara Falls Wastewater Treatment Facility during 2002.
- The NYSDEC conducted a site inspection on April 30, 2002.

As part of an effort to consolidate reports, the Semi-Annual Ground Water Sampling and Annual Sediment Sampling Report - September 2002, is included as Appendix A to this report.

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

Sincerely,
OLIN CORPORATION

Lorraine M. Miller
Principal Environmental Specialist

cc: C. M. Richards via e-mail (report only)
Ryan Armasu via e-mail (report only)
Mike Walker

TENTH ANNUAL REPORT

2002

CHARLES GIBSON SITE

(PINE AND TUSCARORA SITE)

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

PREPARED BY OLIN CORPORATION

FEBRUARY 2003

Introduction

This is the Tenth Annual Report from Olin Corporation (Olin) for the Charles Gibson Site (Pine and Tuscarora Site), located in Niagara Falls, New York. This report summarizes the activities performed during 2002 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.

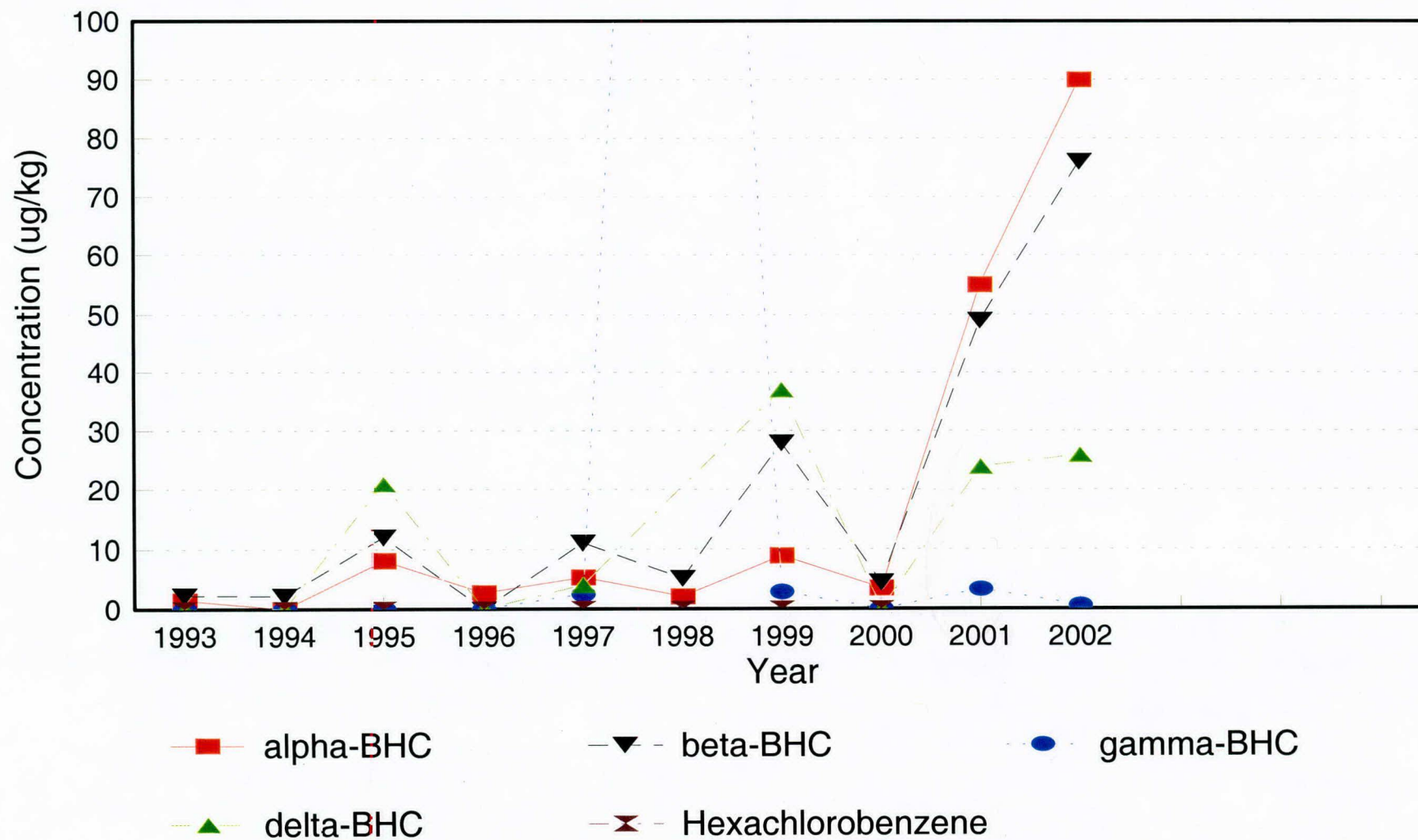
Discussion

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 during high and low water periods annually 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.

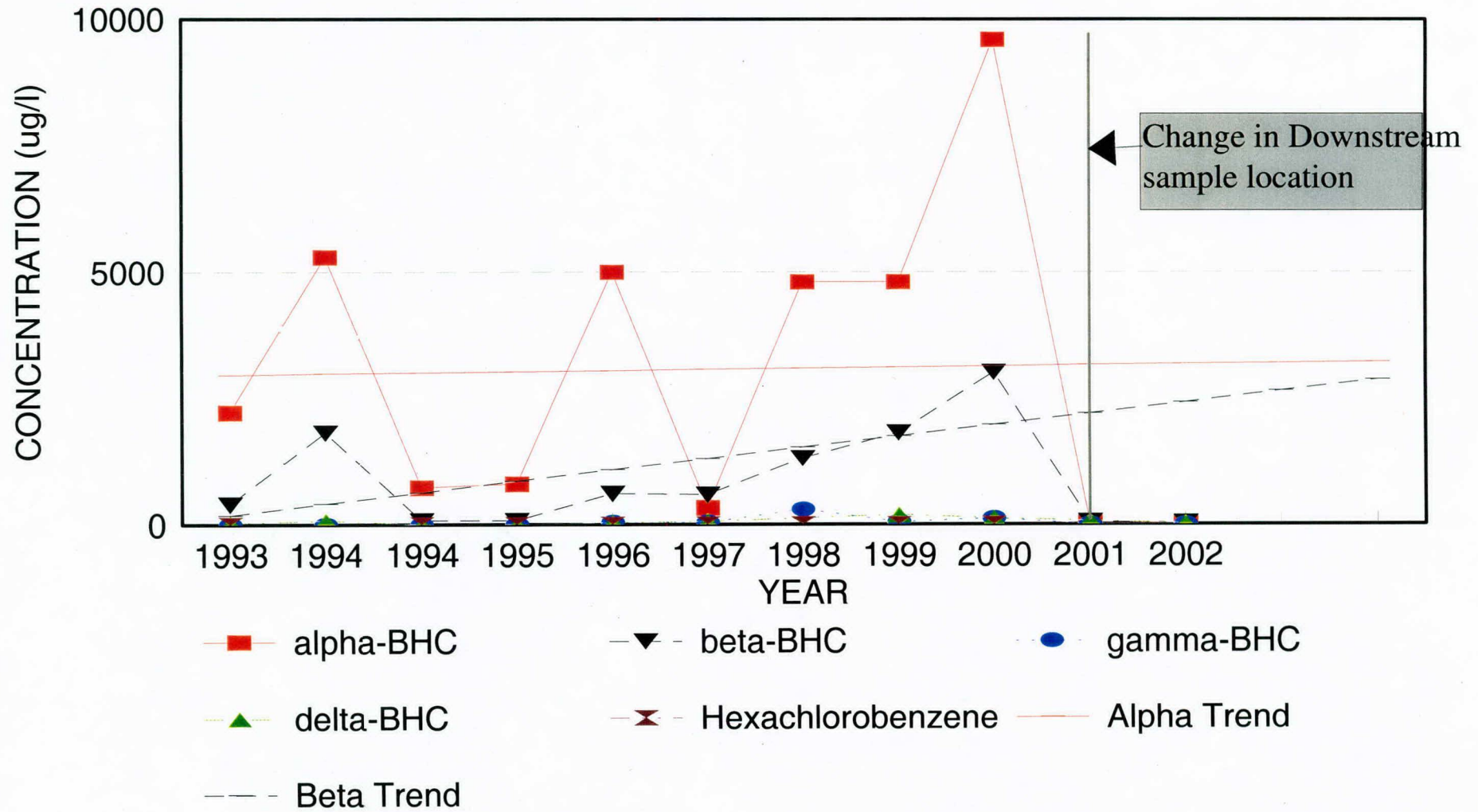
OLIN GIBSON SITE #932063

UPSTREAM SEDIMENT



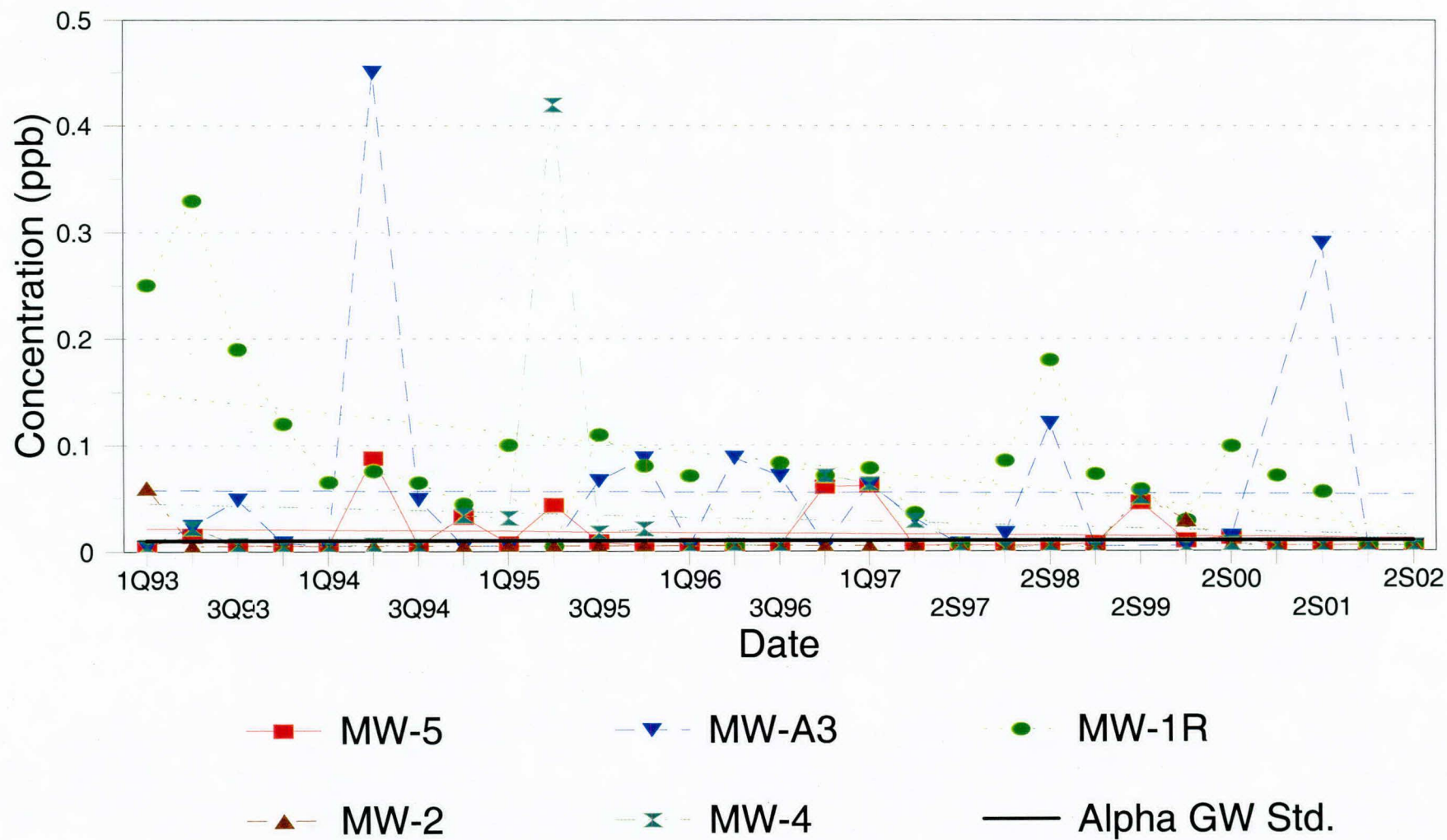
OLIN GIBSON SITE #932063

DOWNSTREAM SEDIMENT



Gibson Site #932063

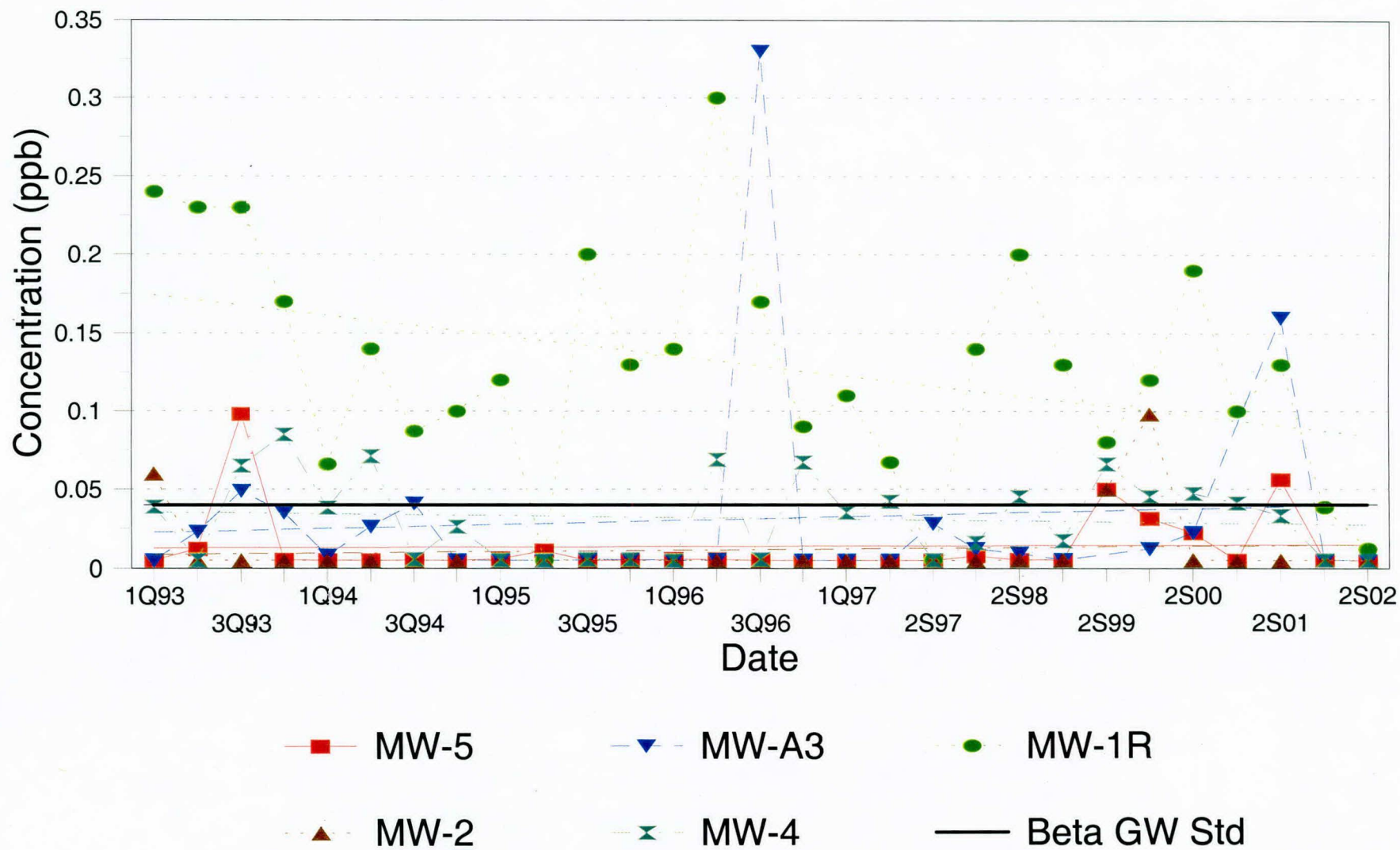
alpha - BHC



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

Gibson Site #932063

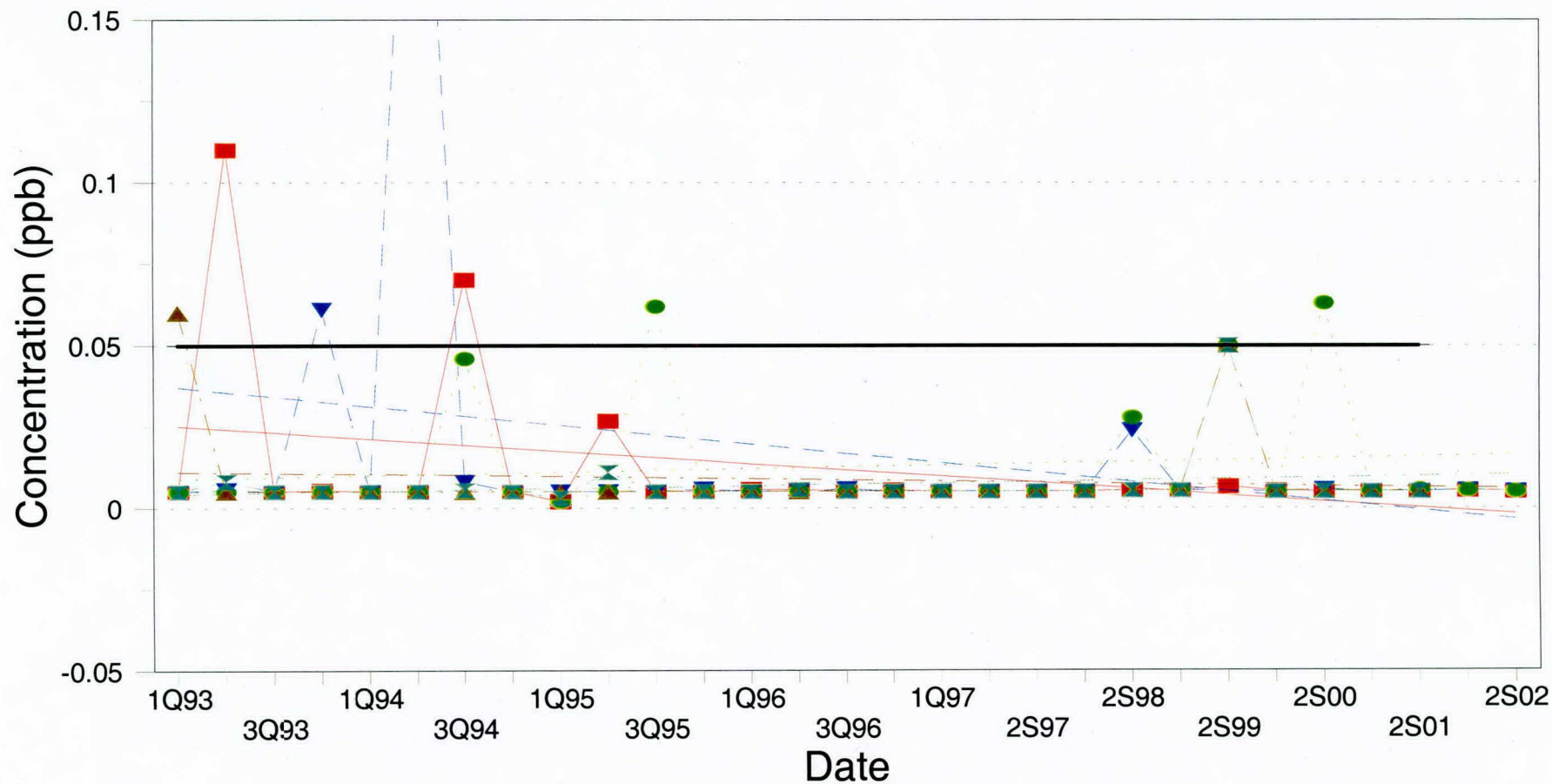
beta - BHC



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

Gibson Site #932063

gamma - BHC



■ MW-5

▼ MW-A3

● MW-1R

▲ MW-2

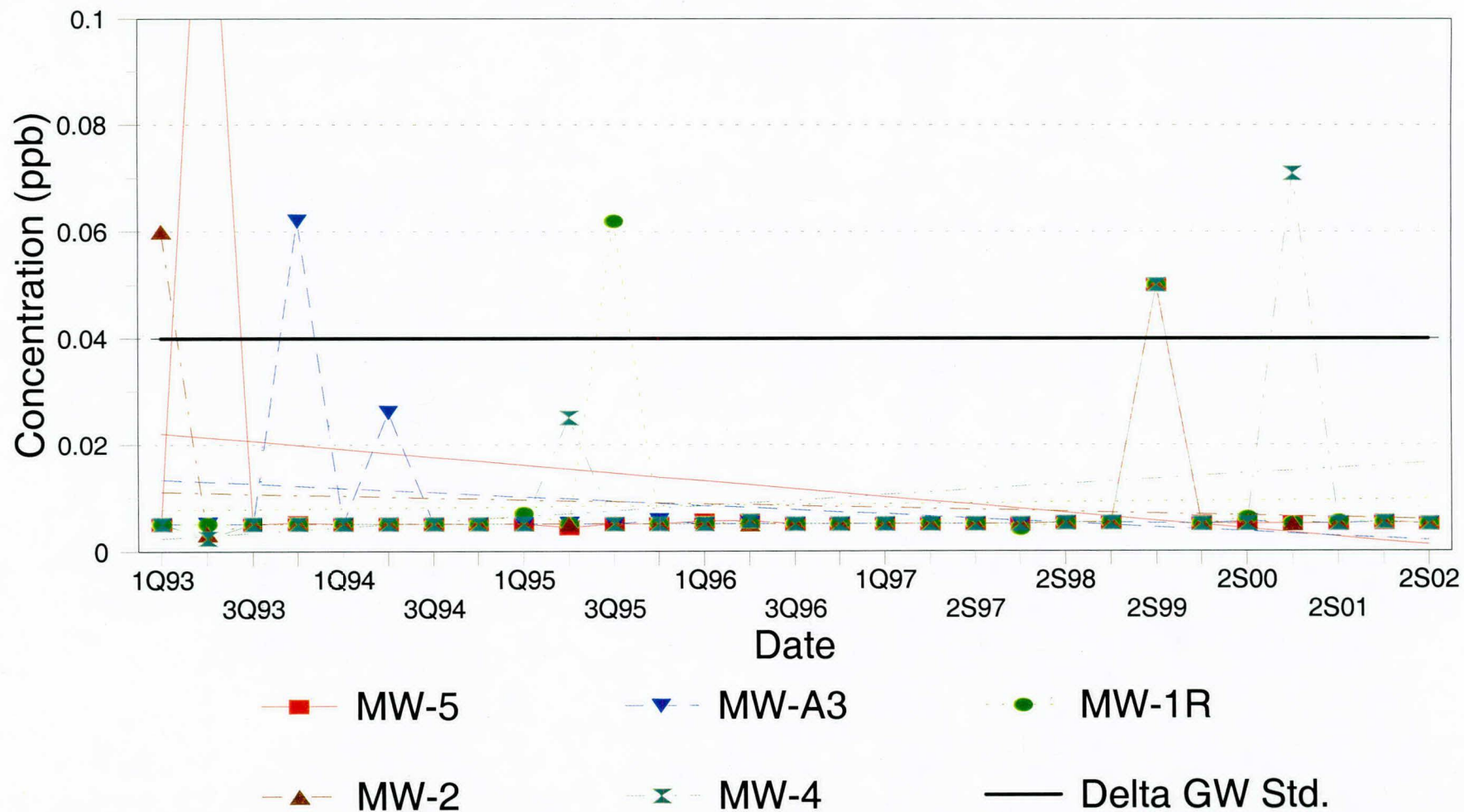
⋈ MW-4

— Gamma GW Std.

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

Gibson Site #932063

delta -BHC



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

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 16 and on September 12-13, 2002. 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 2002. The next HCB sampling is scheduled for October 2004.

The semi-annual ground water monitoring data summary from 1997 through 2002 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 13th. Upstream and downstream data were similar to the 2001 sampling event for the alpha, beta, and gamma BHC isomers. Annual upstream and downstream sediment sampling results for the project-to-date are summarized in Tables 2 and 3 respectively. Note that 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 generally being maintained in the containment area of the site (Table 4). Water level elevation in Manhole A and Manhole B are monitored quarterly (Table 5).

There were no Site discharges to the POTW during 2002. This is attributed to continuing drought conditions which exist in the region. A summary of yearly discharge volumes for the Site is provided in Table 6. Between 1991 and 2002, a total of 807,363 gallons of leachate have been 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 will be monitored every five

years starting in 2000. The sampling location is Manhole B. Analytical results for 2002 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 2002 included: repairing a section of the stockade perimeter fence along the southeast side of fence that was knocked over by high winds in March, replacing a weathered warning sign along this fence line in August, and the November removal of two rip rap crossovers in the creek on the north side of the Site. The rip rap material was returned to its location along the creek bank. 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 2002 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 2002 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 generally being maintained in the containment area of the site. 2002 data from sediment trap monitoring were similar to the 2001 monitoring.

Table 1
Semi-Annual Ground Water Summary

Monitor Well: MW-A3

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

Monitor Well: MW-1R

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

Monitor Well: MW-2

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

Notes: Concentrations in ug/L
 (*) Start of semi annual monitoring program
 U Not detected
 J Estimated value
 / Field Duplicates
 - Not enough water for analysis
 NR No longer required
 Data has been validated

Table 1 (cont.)

Semi-Annual Ground Water Summary

Monitor Well: MW- 4

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

Monitor Well: MW-5

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

Notes: Concentrations in ug/
 (*) Start of semi annual monitoring program
 U Not detected
 J Estimated value
 / Field Duplicates
 - Not enough water for analysis
 NR No longer 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
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
beta-BHC	2.3 J	NS	2.2 J	12	6.1U	11	5.2	28/19	4.5J	49	37/76
delta-BHC	6.0 U	NS	6.1 U	21	6.1U	4.0J	5.5	37/31	2.3U	24	31/26
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
HCB	500 U	NS	510 U	480 U	500U	330U	470U	480U/480U	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
alpha-BHC	2,200	5,300	720	790	5000	330	4800J/80000J	4800J	9600/13000	16	26
beta-BHC	390	1,800	82	83 J	600	580	1300J/12000J	1800	3000J/2700J	52	34
delta-BHC	27 J	80 J	67 U	250 U	41J	60J	53J/5500UJ	190J	1200U/1400U	65	20
gamma-BHC	40 U	690	67 U	250 U	35J	44J	300UJ/690J	52J	1200U/1400U	1.4J	6.0U
HCB	800 U	570 UR	550 U	420 U	330U	330U	520U/550U	510U	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

2002 Quarterly Groundwater Elevations Summary				
MH-A	563.25	564.12	563.52	563.82
Piezometer Pair	4/16/2002	6/28/2002	9/12/2002	11/25/2002
(P1) P2	565.72 ↓ 565.54 ↓	566.57 ↓ 565.55 ↓	565.07 ↑ 565.34 ↑	564.32 ↑ 564.94 ↑
(P3) P4	567.76 ↓ 565.44 ↓	567.36 ↓ 565.39 ↓	565.66 ↓ 565.14 ↓	564.56 ↓ 564.54 ↓
(P5) P6	569.72 ↓ 568.18 ↓	569.05 ↓ 568.03 ↓	567.13 ↗ 567.13 ↗	567.40 ↓ 567.33 ↓

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 did not pump in 2002

Table 5

**Manhole Monitoring
2002 Water Elevations
(ft.)**

Date	Manhole A	Manhole B	Comments
4/16/2002	563.25	563.34	Annual NYSDEC site visit
6/28/2002	564.12	564.19	
9/12/2002	563.52	563.54	Semi Annual ground water sampling
11/25/2002	563.82	563.89	

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
TOTALS	807,363

(*) Represents start of operation of direct discharge system

Table 7

Annual Manhole B Sampling

September 12, 2002

Parameter	Concentration (ug/l)
alpha - BHC	.10
beta - BHC	.073
delta - BHC	.59
gamma - BHC	.050U
Hexachlorobenzene	10U

Notes:

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

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

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 October) for BHC isomers.
Annually	Cayuga Creek sediment sampling (October) for BHC isomers.
Annually	Leachate sample collection and analysis (Manhole B) for BHC isomers (starting in 2000).
Annually	Annual report to NYSDEC (January).
Biennially	Groundwater monitoring well sampling (starting in April 2000) for HCB. The biennial sampling events following 2000 will alternate seasonally between April and October sampling. Next HCB sampling is October 2002.
Every Five Years	Leachate sample collection and analysis (Manhole B) (for HCB) (starting in 2000).

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 2002

PREPARED BY OLIN CORPORATION

In accordance with the approved sampling plan for the Charles Gibson Site, this report presents a summary of the data collected for the second Semi-Annual Ground Water and Annual Sediment Sampling performed during September 2002.

The analytical data summary for ground water is listed in Table 1. The analytical data summary for the annual sediment sampling is listed in Table 2. Results from the annual sampling of Manhole B (leachate) are presented in Table 3. The laboratory data summary package (Appendix 1), and the field logs (Appendix 2) for these events are also attached. The analytical data has been validated and found to be acceptable.

The Quarterly Site Inspection Forms and the Quarterly Ground Water Elevation Forms are included in Appendices 3 and 4, respectively.

TABLE 1
CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
ANALYTICAL RESULTS SUMMARY
SEMI-ANNUAL GROUND WATER SAMPLING
SEPTEMBER 12-13, 2002

	MW-A3	MW-1R	MW-1R (DUP)	MW-2	MW-4	MW-5
PARAMETER						
alpha-BHC	.050U	.050U	.050U	.050U	.050U	.050U
beta- BHC	.050U	.012J	.050U	.050U	.050U	.050U
delta-BHC	.050U	.050U	.050U	.050U	.050U	.050U
gamma- BHC	.050U	.050U	.050U	.050U	.050U	.050U
Hexachlorobenzene	10U	10U	10U	10U	10U	10U

Notes:

- Concentration in ug/L
- 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 limit, but greater than zero.
- U Compound was analyzed but not detected.
- Field blanks were non-detect for all parameters.
- Next scheduled sampling for hexachlorobenzene is October 2004.

TABLE 2

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY
ANNUAL SEDIMENT SAMPLING

SEPTEMBER 12, 2003

	UPSTREAM	DOWNSTREAM
PARAMETER		
alpha-BHC	19/90	26
beta-BHC	37/76	34
delta-BHC	31/26	20
gamma- BHC	5.8U/1.6J	6.0U

Notes:

Concentration in ug/Kg

J Compound was analyzed and determined to be present in the sample. The concentration listed is an estimated value which is less than the specified minimum detection level but greater than zero.

U Compound was analyzed but not detected.

TABLE 3

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY
ANNUAL MANHOLE B SAMPLING

SEPTEMBER 12, 2002

PARAMETER	MANHOLE B
alpha-BHC	0.10
beta-BHC	.073
delta-BHC	0.59
gamma-BHC	.050U
Hexachlorobenzene	10U

Notes:

U Compound was analyzed but not detected.

Next scheduled sampling for hexachlorobenzene is 2005.

APPENDIX 1
LABORATORY DATA SUMMARY PACKAGE

SEMI-ANNUAL GROUND WATER
ANNUAL SEDIMENT
ANNUAL LEACHATE

SEPTEMBER 2002

CHARLES GIBSON SITE
(PINE AND TUSCARORA)
NIAGARA FALLS, NEW YORK

NYSDEC Registry No. 9-32-063

ANALYTICAL REPORT

JOB NUMBER: 201907

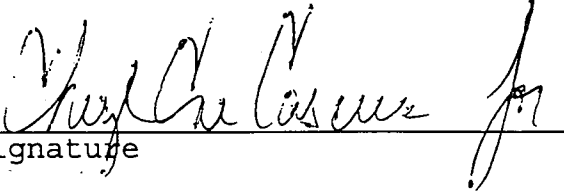
Prepared For:

OLIN CORPORATION
Sevenson Environmental Services, Inc.
2749 Lockport Road
Niagara Falls, NY 14305

Project: OLIN-CHARLES GIBSON

Attention: Mike Walker

Date: 10/02/2002


Signature

Name: Maryam A. Taylor

Title: Project Manager

E-Mail: mataylor@stl-inc.com


Date

STL Connecticut
128 Long Hill Cross Road
Shelton, CT 06484

This Report Contains (30) Pages

STL Report: 201907
OLIN CORPORATION

Case Narrative

Sample Receipt – One bottle for sample MW2 was received broken. All other samples were received in good condition.

Organic Extraction - Samples were extracted according to method 3510C. No problems were encountered. Due to limited sample volume, water QC samples were extracted at half volume for 8270 and 8081A analysis with surrogate addition and final volume adjusted so as to not affect reporting limits.

Semi-Volatile Organics - Semi-volatile organic samples were analyzed by capillary GC/MS using guidance provided in Method 8270C. The instrumentation used was a Hewlett-Packard Gas Chromatograph interfaced with a Mass Selective Detector.

A 2ul injection was used for all samples and standards. The instrument was calibrated at 10ng/ul (20 ng), 25 ng/ul(50 ng), 40ng/ul(80ng), 60ng/ul(120ng) and 80ng/ul(160ng). Internal standards were added to all samples and standards were at 20ng/ul(40ng).

All samples were analyzed without any apparent problems.

Pesticides - Pesticide samples were analyzed by GC/ECD using guidance provided in Method 8081A. The instrumentation used was a Hewlett-Packard Gas Chromatograph equipped with an Electron Capture Detector (Ni63).

The surrogate, Decachlorobiphenyl, was lost in sample matrix in US1-091302 and DS1-091302 on the DB-1701 column.

Surrogate recovery for Tetrachloro-m-xylene was below QC limits in US1-091302 and DS1-091302 on the DB-1701 column.

Surrogate recovery for Decachlorobiphenyl was above QC limits in OS1-091302, US1-091302, and DS1-091302 on the RTX-35 column.

The % differences for alpha-BHC and gamma-BHC were above QC limits in INDA3 analyzed at 16:14 on 9/26/02 on the RTX-35 column. This was the end standard for samples 9807-6SBLK, OS1-091302, US1-091302, and DS1-091302. All results were reported from the DB-1701 column.

The % breakdown for 4,4'-DDT was outside of QC limits in the IBS standards following the soil samples on both columns. This should not have an effect on the target compounds.

Manual integrations were performed if required, and any affected peaks were designated with an "M" on the quantitation report. Manual integrations were initialed by the analyst that performed the integration.

Sample Calculation:

Sample ID - MHB-091202

Compound - alpha-BHC

$$\frac{(15047278 \text{ area})(10000 \text{ ul})}{(1480728248 \text{ area/ng})(1000 \text{ ml})(1 \text{ ul})} = 0.10 \text{ ug/L}$$

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in the case narrative.

SAMPLE INFORMATION

Date: 11/13/2002

Job Number.: 201907
 Customer....: OLIN CORPORATION
 Attn.....: Mike Walker

Project Number.....: 20000103
 Customer Project ID....: OLIN-CHARLES GIBSON
 Project Description....: Olin-Charles Gibson

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
201907-1	MW-1R-091202	Water	09/12/2002	13:00	09/14/2002	10:50
201907-2	MW2-091202	Water	09/12/2002	14:10	09/14/2002	10:50
201907-3	MWA-3-091302	Water	09/13/2002	09:49	09/14/2002	10:50
201907-4	MW8-091302	Water	09/13/2002	10:35	09/14/2002	10:50
201907-5	MW7-091202	Water	09/12/2002	16:30	09/14/2002	10:50
201907-6	MHB-091202	Water	09/12/2002	11:50	09/14/2002	10:50
201907-7	MW5-091202	Water	09/12/2002	16:05	09/14/2002	10:50
201907-8	MW4-091202	Water	09/12/2002	15:20	09/14/2002	10:50
201907-9	OS1-091302	Soil water	09/13/2002	11:30	09/14/2002	10:50
201907-10	US1-091302	Soil	09/13/2002	11:45	09/14/2002	10:50
201907-11	DS1-091302	Soil	09/13/2002	12:15	09/14/2002	10:50

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: MW-1R-091202
Date Sampled: 09/12/2002
Time Sampled: 13:00
Sample Matrix: Water

Laboratory Sample ID: 201907-1
Date Received: 09/14/2002
Time Received: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TRCE
8270C	Semivolatile Organics Hexachlorobenzene	ND		U	0.5	10	1.00000	ug/L	9935		09/23/02 1724	htr

* In Description = Dry Wgt.

Job Number: 201907

LABORATORY TEST RESULTS

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: MW2-091202
 Date Sampled.....: 09/12/2002
 Time Sampled.....: 14:10
 Sample Matrix.....: Water

Laboratory Sample ID: 201907-2
 Date Received.....: 09/14/2002
 Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TEC
8270C	Semivolatile Organics Hexachlorobenzene	ND	U		0.5	10	1.00000	ug/L	9935		09/23/02 1749	hlr

* In Description = Dry Wgt.

00000

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: MWA-3-091302
 Date Sampled.....: 09/13/2002
 Time Sampled.....: 09:49
 Sample Matrix.....: Water

Laboratory Sample ID: 201907-3
 Date Received.....: 09/14/2002
 Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TRCE
8270C	Semivolatile Organics Hexachlorobenzene	ND		U	0.5	10	1.00000	ug/L	9935		09/23/02 1907	h1r

* In Description = Dry Wgt.

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LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: MW8-091302
Date Sampled.....: 09/13/2002
Time Sampled.....: 10:35
Sample Matrix.....: Water

Laboratory Sample ID: 201907-4
Date Received.....: 09/14/2002
Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
8270C	Semivolatile Organics Hexachlorobenzene	ND	U		0.5	10	1.00000	ug/L	9935		09/23/02 1932	hlr

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: MW7-091202
Date Sampled.....: 09/12/2002
Time Sampled.....: 16:30
Sample Matrix.....: Water

Laboratory Sample ID: 201907-5
Date Received.....: 09/14/2002
Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
8270C	Semivolatile Organics Hexachlorobenzene	ND		U	0.5	10	1.00000	ug/L	9935		09/23/02 1957	htr

* In Description, = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/09/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: MHB-091202
Date Sampled.....: 09/12/2002
Time Sampled.....: 11:50
Sample Matrix.....: Water

Laboratory Sample ID: 201907-6
Date Received.....: 09/14/2002
Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TEC
8270C	Semivolatile Organics Hexachlorobenzene	ND		U	0.5	10	1.00000	ug/L	9935		09/23/02 2023	hlr

* In Description = Dry Wgt.

00009 Rev.

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/09/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: MW5-091202
Date Sampled.....: 09/12/2002
Time Sampled.....: 16:05
Sample Matrix.....: Water

Laboratory Sample ID: 201907-7
Date Received.....: 09/14/2002
Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TEC
8270C	Semivolatile Organics Hexachlorobenzene	ND	U		0.5	10	1.00000	ug/L	9935		09/23/02 2049	hlr

* In Description = Dry Wgt.

09/10/02 rev.

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: MW4-091202
Date Sampled.....: 09/12/2002
Time Sampled.....: 15:20
Sample Matrix.....: Water

Laboratory Sample ID: 201907-8
Date Received.....: 09/14/2002
Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
8270C	Semivolatile Organics Hexachlorobenzene	ND		U	0.5	10	1.00000	ug/L	9935		09/23/02 2114	hlr

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: OS1-091302
 Date Sampled.....: 09/13/2002
 Time Sampled.....: 11:30
 Sample Matrix.....: ~~Water~~ *Soil*

Laboratory Sample ID: 201907-9
 Date Received.....: 09/14/2002
 Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
Solids	% Solids, Solid	28.9			0.10	0.10	1	%	10181		10/01/02 0000	ksw
	% Moisture, Solid	71.1			0.10	0.10	1	%	10181		10/01/02 0000	ksw

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: US1-091302
Date Sampled.....: 09/13/2002
Time Sampled.....: 11:45
Sample Matrix.....: Soil

Laboratory Sample ID: 201907-10
Date Received.....: 09/14/2002
Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TRC
Solids	% Solids, Solid	30.8			0.10	0.10	1	%	10181		10/01/02 0000	ksw
	% Moisture, Solid	69.2			0.10	0.10	1	%	10181		10/01/02 0000	ksw

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: DS1-091302
Date Sampled.....: 09/13/2002
Time Sampled.....: 12:15
Sample Matrix.....: Soil

Laboratory Sample ID: 201907-11
Date Received.....: 09/14/2002
Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TEC
Solids	% Solids, Solid	28.1			0.10	0.10	1	%	10181		10/01/02 0000	ksw
	% Moisture, Solid	71.9			0.10	0.10	1	%	10181		10/01/02 0000	ksw

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: MW-1R-091202
Date Sampled.....: 09/12/2002
Time Sampled.....: 13:00
Sample Matrix.....: Water

Laboratory Sample ID: 201907-1
Date Received.....: 09/14/2002
Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TRC
8081A	Organochlorine Pesticide Analysis											
	alpha-BHC	ND		U	0.0068	0.050	1.00000	ug/L	10012		09/26/02 0030	dmn
	beta-BHC	0.012		J	0.0072	0.050	1.00000	ug/L	10012		09/26/02 0030	dmn
	delta-BHC	ND		U	0.0046	0.050	1.00000	ug/L	10012		09/26/02 0030	dmn
	gamma-BHC (Lindane)	ND		U	0.0033	0.050	1.00000	ug/L	10014		09/26/02 0017	dmn

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: MW2-091202
Date Sampled.....: 09/12/2002
Time Sampled.....: 14:10
Sample Matrix.....: Water

Laboratory Sample ID: 201907-2
Date Received.....: 09/14/2002
Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TEC
8081A	Organochlorine Pesticide Analysis											
	alpha-BHC	ND	U		0.0068	0.050	1.00000	ug/L	10012		09/26/02 0102	clmm
	beta-BHC	ND	U		0.0072	0.050	1.00000	ug/L	10014		09/26/02 0056	clmm
	delta-BHC	ND	U		0.0046	0.050	1.00000	ug/L	10012		09/26/02 0102	clmm
	gamma-BHC (Lindane)	ND	U		0.0033	0.050	1.00000	ug/L	10014		09/26/02 0056	clmm

* In Description = Dry Wgt.

00016

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: MWA-3-091302
 Date Sampled.....: 09/13/2002
 Time Sampled.....: 09:49
 Sample Matrix.....: Water

Laboratory Sample ID: 201907-3
 Date Received.....: 09/14/2002
 Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
8081A	Organochlorine Pesticide Analysis											
	alpha-BHC	ND		U	0.0068	0.050	1.00000	ug/L	10012		09/26/02 0134	dmr
	beta-BHC	ND		U	0.0072	0.050	1.00000	ug/L	10014		09/26/02 0136	dmr
	delta-BHC	ND		U	0.0046	0.050	1.00000	ug/L	10012		09/26/02 0134	dmr
	gamma-BHC (Lindane)	ND		U	0.0033	0.050	1.00000	ug/L	10014		09/26/02 0136	dmr

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: MW8-091302
 Date Sampled.....: 09/13/2002
 Time Sampled.....: 10:35
 Sample Matrix.....: Water

Laboratory Sample ID: 201907-4
 Date Received.....: 09/14/2002
 Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TEC
8081A	Organochlorine Pesticide Analysis											
	alpha-BHC	ND		U	0.0068	0.050	1.00000	ug/L	10012		09/26/02 0207	dm
	beta-BHC	ND		U	0.0072	0.050	1.00000	ug/L	10014		09/26/02 0216	dm
	delta-BHC	ND		U	0.0046	0.050	1.00000	ug/L	10012		09/26/02 0207	dm
	gamma-BHC (Lindane)	ND		U	0.0033	0.050	1.00000	ug/L	10014		09/26/02 0216	dm

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: MW7-091202
 Date Sampled.....: 09/12/2002
 Time Sampled.....: 16:30
 Sample Matrix.....: Water

Laboratory Sample ID: 201907-5
 Date Received.....: 09/14/2002
 Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
8081A	Organochlorine Pesticide Analysis											
	alpha-BHC	ND	U		0.0068	0.050	1.00000	ug/L	10012		09/26/02 0239	chmn
	beta-BHC	ND	U		0.0072	0.050	1.00000	ug/L	10014		09/26/02 0256	chmn
	delta-BHC	ND	U		0.0046	0.050	1.00000	ug/L	10012		09/26/02 0239	chmn
	gamma-BHC (Lindane)	ND	U		0.0033	0.050	1.00000	ug/L	10014		09/26/02 0256	chmn

* In Description = Dry Wgt.

Job Number: 201907

LABORATORY TEST RESULTS

Date: 11/13/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: MHB-091202
Date Sampled.....: 09/12/2002
Time Sampled.....: 11:50
Sample Matrix.....: Water

Laboratory Sample ID: 201907-6
Date Received.....: 09/14/2002
Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
8081A	Organochlorine Pesticide Analysis											
	alpha-BHC	0.10			0.0068	0.050	1.00000	ug/L	10014		09/26/02 0336	dmm
	beta-BHC	0.073			0.0072	0.050	1.00000	ug/L	10014		09/26/02 0336	dmm
	delta-BHC	0.59			0.0046	0.050	1.00000	ug/L	10014		09/26/02 0336	dmm
	gamma-BHC (Lindane)	ND		U	0.0033	0.050	1.00000	ug/L	10014		09/26/02 0336	dmm

* In Description = Dry Wgt.

Job Number: 201907

LABORATORY TEST RESULTS

Date: 11/13/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: MW5-091202
Date Sampled.....: 09/12/2002
Time Sampled.....: 16:05
Sample Matrix.....: Water

Laboratory Sample ID: 201907-7
Date Received.....: 09/14/2002
Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
8081A	Organochlorine Pesticide Analysis											
	alpha-BHC	ND		U	0.0068	0.050	1.00000	ug/L	10012		09/26/02 0343	dmm
	beta-BHC	ND		U	0.0072	0.050	1.00000	ug/L	10014		09/26/02 0416	dmm
	delta-BHC	ND		U	0.0046	0.050	1.00000	ug/L	10012		09/26/02 0343	dmm
	gamma-BHC (Lindane)	ND		U	0.0033	0.050	1.00000	ug/L	10014		09/26/02 0416	dmm

* In Description = Dry Wgt.

000021 REV.

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: MW4-091202
Date Sampled.....: 09/12/2002
Time Sampled.....: 15:20
Sample Matrix.....: Water

Laboratory Sample ID: 201907-8
Date Received.....: 09/14/2002
Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TEC
8081A	Organochlorine Pesticide Analysis											
	alpha-BHC	ND	U		0.0068	0.050	1.00000	ug/L	10012		09/26/02 0415	dm
	beta-BHC	ND	U		0.0072	0.050	1.00000	ug/L	10014		09/26/02 0456	dm
	delta-BHC	ND	U		0.0046	0.050	1.00000	ug/L	10012		09/26/02 0415	dm
	gamma-BHC (Lindane)	ND	U		0.0033	0.050	1.00000	ug/L	10014		09/26/02 0456	dm

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: OS1-091302
Date Sampled.....: 09/13/2002
Time Sampled.....: 11:30
Sample Matrix.....: Water

Laboratory Sample ID: 201907-9
Date Received.....: 09/14/2002
Time Received.....: 10:50

*Soil
11/21/02*

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
Solids	% Solids, Solid	28.9			0.10	0.10	1	%	10181		10/01/02 0000	ksw
	% Moisture, Solid	71.1			0.10	0.10	1	%	10181		10/01/02 0000	ksw
8081A	Organochlorine Pesticide Analysis											
	alpha-BHC, Solid*	19			0.94	5.8	1.00000	ug/Kg	10013		09/24/02 1604	chmn
	beta-BHC, Solid*	37			0.92	5.8	1.00000	ug/Kg	10013		09/24/02 1604	chmn
	delta-BHC, Solid*	31			0.35	5.8	1.00000	ug/Kg	10013		09/24/02 1604	chmn
	gamma-BHC (Lindane), Solid*	ND		U	0.52	5.8	1.00000	ug/Kg	10013		09/24/02 1604	chmn

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: US1-091302
Date Sampled.....: 09/13/2002
Time Sampled.....: 11:45
Sample Matrix.....: Soil

Laboratory Sample ID: 201907-10
Date Received.....: 09/14/2002
Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
Solids	% Solids, Solid	30.8			0.10	0.10	1	%	10181		10/01/02 0000	ksw
	% Moisture, Solid	69.2			0.10	0.10	1	%	10181		10/01/02 0000	ksw
8081A	Organochlorine Pesticide Analysis											
	alpha-BHC, Solid*	90			0.89	5.5	1.00000	ug/Kg	10013		09/24/02 1637	dmm
	beta-BHC, Solid*	76			0.87	5.5	1.00000	ug/Kg	10013		09/24/02 1637	dmm
	delta-BHC, Solid*	26			0.33	5.5	1.00000	ug/Kg	10013		09/24/02 1637	dmm
	gamma-BHC (Lindane), Solid*	1.6	J		0.49	5.5	1.00000	ug/Kg	10013		09/24/02 1637	dmm

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 201907

Date: 10/02/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Customer Sample ID: DS1-091302
Date Sampled.....: 09/13/2002
Time Sampled.....: 12:15
Sample Matrix.....: Soil

Laboratory Sample ID: 201907-11
Date Received.....: 09/14/2002
Time Received.....: 10:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
Solids	% Solids, Solid	28.1			0.10	0.10	1	%	10181		10/01/02 0000	ksw
	% Moisture, Solid	71.9			0.10	0.10	1	%	10181		10/01/02 0000	ksw
8081A	Organochlorine Pesticide Analysis											
	alpha-BHC, Solid*	26			0.97	6.0	1.00000	ug/Kg	10013		09/24/02 1709	dmm
	beta-BHC, Solid*	34			0.94	6.0	1.00000	ug/Kg	10013		09/24/02 1709	dmm
	delta-BHC, Solid*	20			0.36	6.0	1.00000	ug/Kg	10013		09/24/02 1709	dmm
	gamma-BHC (Lindane), Solid*	ND		U	0.53	6.0	1.00000	ug/Kg	10013		09/24/02 1709	dmm

* In Description = Dry Wgt.

LABORATORY CHRONICLE

Job Number: 201907

Date: 11/13/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Lab ID: 201907-1 Client ID: MW-1R-091202		Date Recvd: 09/14/2002		Sample Date: 09/12/2002			
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
3510C	Extraction Sep. Funnel (Chlor.Pest)	1	9846			09/19/2002 0000	
3510C	Extraction Sep. Funnel (SVOC)	1	9848			09/19/2002 0000	
8081A	Organochlorine Pesticide Analysis	1	10014	9846		09/26/2002 0017	1.00000
8081A	Organochlorine Pesticide Analysis	1	10012	9846		09/26/2002 0030	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10014	9846		09/26/2002 0017	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10012	9846		09/26/2002 0030	1.00000
8270C	Semivolatiles Organics	1	9935	9848		09/23/2002 1724	1.00000
Lab ID: 201907-2 Client ID: MW2-091202		Date Recvd: 09/14/2002		Sample Date: 09/12/2002			
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
3510C	Extraction Sep. Funnel (Chlor.Pest)	1	9846			09/19/2002 0000	
3510C	Extraction Sep. Funnel (SVOC)	1	9848			09/19/2002 0000	
8081A	Organochlorine Pesticide Analysis	1	10014	9846		09/26/2002 0056	1.00000
8081A	Organochlorine Pesticide Analysis	1	10012	9846		09/26/2002 0102	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10014	9846		09/26/2002 0056	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10012	9846		09/26/2002 0102	1.00000
8270C	Semivolatiles Organics	1	9935	9848		09/23/2002 1749	1.00000
Lab ID: 201907-3 Client ID: MWA-3-091302		Date Recvd: 09/14/2002		Sample Date: 09/13/2002			
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
3510C	Extraction Sep. Funnel (Chlor.Pest)	1	9846			09/19/2002 0000	
3510C	Extraction Sep. Funnel (SVOC)	1	9848			09/19/2002 0000	
8081A	Organochlorine Pesticide Analysis	1	10012	9846		09/26/2002 0134	1.00000
8081A	Organochlorine Pesticide Analysis	1	10014	9846		09/26/2002 0136	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10012	9846		09/26/2002 0134	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10014	9846		09/26/2002 0136	1.00000
8270C	Semivolatiles Organics	1	9935	9848		09/23/2002 1907	1.00000
Lab ID: 201907-4 Client ID: MW8-091302		Date Recvd: 09/14/2002		Sample Date: 09/13/2002			
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
3510C	Extraction Sep. Funnel (Chlor.Pest)	1	9846			09/19/2002 0000	
3510C	Extraction Sep. Funnel (SVOC)	1	9848			09/19/2002 0000	
8081A	Organochlorine Pesticide Analysis	1	10012	9846		09/26/2002 0207	1.00000
8081A	Organochlorine Pesticide Analysis	1	10014	9846		09/26/2002 0216	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10012	9846		09/26/2002 0207	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10014	9846		09/26/2002 0216	1.00000
8270C	Semivolatiles Organics	1	9935	9848		09/23/2002 1932	1.00000
Lab ID: 201907-5 Client ID: MW7-091202		Date Recvd: 09/14/2002		Sample Date: 09/12/2002			
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
3510C	Extraction Sep. Funnel (Chlor.Pest)	1	9846			09/19/2002 0000	
3510C	Extraction Sep. Funnel (SVOC)	1	9848			09/19/2002 0000	
8081A	Organochlorine Pesticide Analysis	1	10012	9846		09/26/2002 0239	1.00000
8081A	Organochlorine Pesticide Analysis	1	10014	9846		09/26/2002 0256	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10012	9846		09/26/2002 0239	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10014	9846		09/26/2002 0256	1.00000
8270C	Semivolatiles Organics	1	9935	9848		09/23/2002 1957	1.00000
Lab ID: 201907-6 Client ID: MHB-091202		Date Recvd: 09/14/2002		Sample Date: 09/12/2002			
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
3510C	Extraction Sep. Funnel (Chlor.Pest)	1	9846			09/19/2002 0000	
3510C	Extraction Sep. Funnel (SVOC)	1	9848			09/19/2002 0000	
8081A	Organochlorine Pesticide Analysis	1	10014	9846		09/26/2002 0336	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10012	9846		09/26/2002 0311	1.00000
8270C	Semivolatiles Organics	1	9935	9848		09/23/2002 2023	1.00000

LABORATORY CHRONICLE

Job Number: 201907

Date: 11/13/2002

CUSTOMER: OLIN CORPORATION

PROJECT: OLIN-CHARLES GIBSON

ATTN: Mike Walker

Lab ID: 201907-7 Client ID: MW5-091202

Date Recvd: 09/14/2002 Sample Date: 09/12/2002

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
3510C	Extraction Sep. Funnel (Chlor.Pest)	1	9846			09/19/2002 0000	
3510C	Extraction Sep. Funnel (SVOC)	1	9848			09/19/2002 0000	
8081A	Organochlorine Pesticide Analysis	1	10012	9846		09/26/2002 0343	1.00000
8081A	Organochlorine Pesticide Analysis	1	10014	9846		09/26/2002 0416	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10012	9846		09/26/2002 0343	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10014	9846		09/26/2002 0416	1.00000
8270C	Semivolatiles Organics	1	9935	9848		09/23/2002 2049	1.00000

Lab ID: 201907-8 Client ID: MW4-091202

Date Recvd: 09/14/2002 Sample Date: 09/12/2002

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT # (S)	DATE/TIME ANALYZED	DILUTION
3510C	Extraction Sep. Funnel (Chlor.Pest)	1	9846		09/19/2002 0000	
3510C	Extraction Sep. Funnel (SVOC)	1	9848		09/19/2002 0000	
8081A	Organochlorine Pesticide Analysis	1	10012	9846	09/26/2002 0415	1.00000
8081A	Organochlorine Pesticide Analysis	1	10014	9846	09/26/2002 0456	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10012	9846	09/26/2002 0415	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10014	9846	09/26/2002 0456	1.00000
8270C	Semivolatiles Organics	1	9935	9848	09/23/2002 2114	1.00000

Lab ID: 201907-9 Client ID: OS1-091302

Date Recvd: 09/14/2002 Sample Date: 09/13/2002

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
ASTM D-2216		1	10181			10/01/2002 0000	
3550B	Extraction Ultrasonic (Chlor.Pest.)	1	9807			09/20/2002 0000	
8081A	Organochlorine Pesticide Analysis	1	10013	9807		09/24/2002 1604	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10015	9807		09/26/2002 1135	1.00000

Lab ID: 201907-10 Client ID: US1-091302

Date Recvd: 09/14/2002 Sample Date: 09/13/2002

METHOD	DESCRIPTION	RUN#	BATCH#	PREP	BT	#(S)	DATE/TIME ANALYZED	DILUTION
ASTM D-2216		1	10181				10/01/2002 0000	
3550B	Extraction Ultrasonic (Chlor.Pest.)	1	9807				09/20/2002 0000	
8081A	Organochlorine Pesticide Analysis	1	10013	9807			09/24/2002 1637	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10015	9807			09/26/2002 1255	1.00000

Lab ID: 201907-11 Client ID: DS1-091302

Date Recvd: 09/14/2002 Sample Date: 09/13/2002

METHOD	DESCRIPTION	RUN#	BATCH#	PREP	BT	#(S)	DATE/TIME ANALYZED	DILUTION
ASTM D-2216		1	10181				10/01/2002 0000	
3550B	Extraction Ultrasonic (Chlor.Pest.)	1	9807				09/20/2002 0000	
8081A	Organochlorine Pesticide Analysis	1	10013	9807			09/24/2002 1709	1.00000
8081A	Organochlorine Pesticide Confirmation	1	10015	9807			09/26/2002 1414	1.00000

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 10/02/2002

REPORT COMMENTS

- 1) All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.
- 2) Soil, sediment and sludge sample results are reported on a "dry weight" basis except when analyzed for landfill disposal or incineration parameters. All other solid matrix samples are reported on an "as received" basis unless noted differently.
- 3) Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.
- 4) The test results for the noted analytical method(s) meet the requirements of NELAC. Lab Cert. ID# 10604
- 5) 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 on laboratory receipt.

Glossary of flags, qualifiers and abbreviation

Inorganic Qualifiers (Q-Column)

- U Analyte was not detected at or above the reporting limit.
- < Not detected at or above the reporting limit.
- J Result is less than the RL, but greater than or equal to the method detection limit.
- B Result is less than the CRDL/RL, but greater than or equal to the IDL/MDL.
- S Result was determined by the Method of Standard Additions.

Inorganic Flags (Flag Column)

- ICV,CCV,ICB,CCB,ISA,ISB,CRI,CRA,MRL: Instrument related QC exceed th upper or lower control limits.
- * LCS, LCD, MD: Batch QC exceeds the upper or lower control limits.
- + MSA correlation coefficient is less than 0.995.
- 4 MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
- E SD: Serial dilution exceeds the control limits.
- H MB, EB: Batch QC is greater than reporting limit or had a negative instrument reading lower than the absolute value of the reporting limit.
- N MS, MSD: Spike recovery exceeds the upper or lower control limits.
- W PS: Post-digestion spike was outside 85-115% control limits.

Organic Qualifiers (Q - Column)

- U Analyte was not detected at or above the reporting limit.
- ND Compound not detected.
- J Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
- Q Result was qualitatively confirmed, but not quantified.
- C Pesticide identification was confirmed by GC/MS.
- Y The chromatographic response resembles a typical fuel pattern.
- Z The chromatographic response does not resemble a typical fuel pattern.
- E Result exceeded calibration range, secondary dilution required.

Organic Flags (Flags Column)

- MB,EB, MLE: Batch QC is greater than reporting limit.
- * LCS, LCD, CCV, MS, MSD, Surrogate, RS:Batch QC exceeds the upper or lower control limits.
- A Concentration exceeds the instrument calibration range or below the reporting limit.
- B Compound was found in the blank and sample.
- D Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
- H Alternate peak selection upon analytical review
- I Indicates the presence of an interference, recovery is not calculated.
- M Manually integrated compound.
- P The lower of the two values is reported when the % difference between the results of two GC columns is greater than 25%.

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 10/02/2002

Abbreviations

Batch	Designation given to identify a specific extraction, digestion, preparation set, or analysis set
CAP	Capillary Column
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CF	Confirmation Analysis
CRA	Low Level Standard Check - GFAA; Mercury
CRI	Low Level Standard Check - ICP
Dil Fac	Dilution Factor
DL	Secondary dilution and analysis
DLFac	Detection Limit Factor
DSH	Distilled Standard - High Level
DSL	Distilled Standard - Low Level
DSM	Distilled Standard - Medium Level
EB	Extraction Blank
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
IDL	Instrument Detection Limit
ISA	Interference Check Sample A
ISB	Interference Check Sample B
Job No.	The first six digits of the sample ID which refers to a specific client, project and sample group
Lab ID	An 8 number unique laboratory identification
LCD	Laboratory Control Standard Duplicate
LCS	Laboratory Control Standard with reagent grade water or a matrix free from the analyte of interest
MB	Method Blank or (PB) Preparation Blank
MD	Method Duplicate
MDL	Method Detection Limit
MLE	Medium Level Extraction Blank
MRL	Method Reporting Limit Standard
MSA	Method of Standard Additions
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not Detected
PACK	Packed Column
PREPF	Preparation factor used by the Laboratory's Information Management System (LIMS)
PS	Post Spike
PSD	Post Spike Duplicate
RA	Re-analysis
RE	Re-extraction and analysis
RL	Reporting Limit
RPD	Relative Percent Difference of duplicate (unrounded) analyses
RRF	Relative Response Factor
RS	Reference Standard
RT	Retention Time
RTW	Retention Time Window
SampleID	A 9 digit number unique for each sample, the first six digits are referred as the job number
SCB	Seeded Control Blank
SD	Serial Dilution
UCB	Unseeded Control Blank

One or a combination of these data qualifiers and abbreviations may appear in the analytical report.

STATE CERTIFICATIONS

In some instances it may be necessary for environmental data to be reported to a regulatory authority with reference to a certified laboratory. For your convenience, the laboratory identification numbers for the STL-Connecticut laboratory are provided in the following table. Many states certify laboratories for specific parameters or tests within a category (i.e. method 325.2 for wastewater). The information in the following table indicates the lab is certified in a general category of testing such as drinking water or wastewater analysis. The laboratory should be contacted directly if parameter-specific certification information is required.

STL-Connecticut Certification Summary (as of May 2002)

State	Responsible Agency	Certification	Lab Number
Connecticut	Department of Health Services	Drinking Water, Wastewater	PH-0497
Maine	Department of Health and Environmental Services	Drinking Water, Wastewater/Solid, Hazardous Waste	CT023
Massachusetts	Department of Environmental Protection	Potable/Non-Potable Water	M-CT023
New Hampshire	Department of Environmental Services	Drinking Water, Wastewater	2528
New Jersey	Department of Environmental Protection	Drinking Water, Wastewater	CT410
New York	Department of Health	CLP, Drinking Water, Wastewater, Solid/ Hazardous Waste NELAC	10602
North Carolina	Division of Environmental Management	Wastewater	388
Rhode Island	Department of Health	Chemistry...Non- Potable Water and Wastewater	A43
Utah	Department of Health	RCRA	2032614458
Wisconsin	Department of Natural Resources	Wastewater	998355710

Chain of Custody Record

SEVERN

TRENT

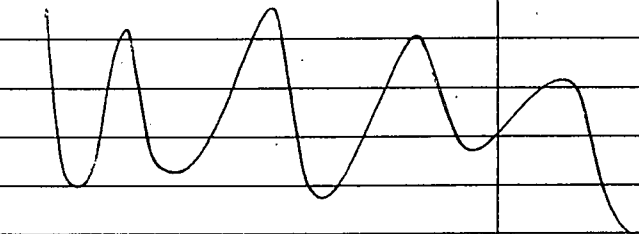
SERVICES

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client OLIN Corp		Project Manager Loren McKee		Date 9-13-02	Chain of Custody Number 151299
Address 1186 Lower River Rd PO Box 248		Telephone Number (Area Code)/Fax Number 423-336-4381 / 423-336-4166		Lab Number	Page _____ of _____

City Clarkston TN	State TN	Zip Code 37310	Site Contact Mike Walker	Lab Contact	Analysis (Attach list if more space is needed)	Special Instructions/ Conditions of Receipt
Project Name and Location (State) Charles Gibson Site, Niagara Falls, NY			Carrier/Waybill Number			

Contract/Purchase Order/Quote No.			Matrix				Containers & Preservatives						BHC Isomers		HCB		Special Instructions/Conditions of Receipt	
Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc	NaOH					
MMS-MHB-91202	9-12-02	1150		X			X							X	X		20	
MWS-091202	9-12-02	1605		X			X							X	X		07 00	
MW4-091202	9-12-02	520		X			X							X	X		06 07	
OS1-091302	9-13-02	1130			X		X							X			07 08	
OS1-091302	9-13-02	1145			X		X							X			09 09	
OS1-091302	9-13-02	1215			X		X							X			10 11	
																		
																201907	10/04/2002	
																OLIN CORPORATION		
																MIKE WALKER		
																OLIN-CHARLES GIBSON		

201907

10/04/2002

OLIN CORPORATION
MIKE WALKER
OLIN-CHARLES GIBSON

Possible Hazard Identification			Sample Disposal			(A fee may be assessed if samples are retained longer than 1 month)		
<input type="checkbox"/> Non-Hazard	<input type="checkbox"/> Flammable	<input type="checkbox"/> Skin Irritant	<input type="checkbox"/> Poison B	<input checked="" type="checkbox"/> Unknown	<input type="checkbox"/> Return To Client	<input checked="" type="checkbox"/> Disposal By Lab	<input type="checkbox"/> Archive For _____ Months	
Turn Around Time Required			QC Requirements (Specify)					
<input type="checkbox"/> 24 Hours	<input type="checkbox"/> 48 Hours	<input type="checkbox"/> 7 Days	<input type="checkbox"/> 14 Days	<input type="checkbox"/> 21 Days	<input type="checkbox"/> Other _____			
1. Relinquished By			Date	Time	1. Received By			
					Alex C. Yammursh			
2. Relinquished By			Date	Time	2. Received By			
3. Relinquished By			Date	Time	3. Received By			

Comments

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

CONC 3-7.5°C

"PASSED RAD SCREEN"

WASTE STREAM

TECHNOLOGY

302 GROVE STREET
BUFFALO, NY 14207
(716) 876-5290

TO STL Connecticut

PO Box 248

1186 Layne River Rd

Charleston, TN, 37316-0248

ph 423-336-4080

CHAIN OF CUSTODY RECORD

COOLER # 1 of 3

PROJECT NO:		SITE NAME:					SIZE & NO. OF CONTAINERS	PRESERVATIVES				REMARKS		
SAMPLERS (SIGNATURE):		716 2840431												
SAMPLE NO.	DATE	TIME	COMP	GRAB	MATRIX	SAMPLE LOCATION								
	9/12/02	1300		X	AQ	MW-1R-091202	3x1.5L	X	X					
	9/12/02	1410		X	AQ	MW2-MS/MSD 091202	2x1.5L	X	X			1 bottle received broken		
	9/13/02	0949		X	AQ	MWA-3 091302	3x1.5L	X	X					
<div style="display: flex; justify-content: space-between;"> <div> <p>201907</p> <p>OLIN CORPORATION MIKE WALKER OLIN-CHARLES GIBSON</p> </div> <div> <p>10/04/2002</p> </div> </div>														
<p>COOLER # 1 - 4.9°C</p> <p>"PASSED RAD SCREEN"</p>														
RELINQUISHED BY (SIGNATURE)			DATE/TIME		RECEIVED BY (SIGNATURE)			RELINQUISHED BY (SIGNATURE)			DATE/TIME		RECEIVED BY (SIGNATURE)	
RELINQUISHED BY (SIGNATURE)			DATE/TIME		RECEIVED BY (SIGNATURE)			RELINQUISHED BY (SIGNATURE)			DATE/TIME		RECEIVED BY (SIGNATURE)	
			9/13/02 500pm		VPS LAG TIME						9/14/02 10:50		Alex C. Jemowski	
SPECIAL INSTRUCTIONS: LAB Dispose of samples,														
TURNAROUND TIME _____														

LAB USE: REFRIGERATOR # _____

SHELF # _____

GROUP # _____

DUE DATE _____



302 GROTE STREET
BUFFALO, NY 14207
(716) 876-9290

STL comm.

COOLER 2063

PO BOX 248
1186 Lower River Rd.
Charleston, TN
37316-0248

ph 423-336-4000

CHAIN OF CUSTODY RECORD

PROJECT NO:		SITE NAME:					SIZE & NO. OF CONTAINERS	PRESERVATIVES										REMARKS	
SAMPLERS (SIGNATURE):								HCB											
SAMPLE NO.	DATE	TIME	COMP	GRAB	MATRIX	SAMPLE LOCATION													
	9/13/02	1035		X	AQ	MW8-091302	3x1Lg.	X	X										
	9/13/02	1630		X	AQ	MW7-091202	"	X	X										
	9/12/02	1410		X	AQ	MW2-091202	"	X	X										
201907																			
OLIN CORPORATION MIKE WALKER OLIN-CHARLES GIBSON																			
10/04/2002																			
COOLER 2-																			
8.2°C																			
"PASSED RAD SCREEN"																			
RELINQUISHED BY (SIGNATURE)		DATE/TIME		RECEIVED BY (SIGNATURE)		RELINQUISHED BY (SIGNATURE)		DATE/TIME		RECEIVED BY (SIGNATURE)		RELINQUISHED BY (SIGNATURE)		DATE/TIME		RECEIVED BY (SIGNATURE)			
[Signature]		11/13 5:00 PM		UPS LAG TIME		[Signature]		[Signature]		[Signature]		[Signature]		09/14/02 10:50		Alex C. Jaworski			
RELINQUISHED BY (SIGNATURE)		DATE/TIME		RECEIVED BY (SIGNATURE)		RELINQUISHED BY (SIGNATURE)		DATE/TIME		RECEIVED BY (SIGNATURE)		RELINQUISHED BY (SIGNATURE)		DATE/TIME		RECEIVED BY (SIGNATURE)			
SPECIAL INSTRUCTIONS: Lab: Dispose of Samples																			
TURNAROUND TIME _____																			

LAB USE: REFRIGERATOR # _____

SHELF # _____

GROUP # _____ DUE DATE _____

APPENDIX 2

FIELD LOGS

**SEMI-ANNUAL GROUNDWATER
ANNUAL SEDIMENT
ANNUAL LEACHATE
SAMPLING**

SEPTEMBER 2002

**CHARLES GIBSON SITE
(PINE AND TUSCARORA)**

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: M. Walker SAMPLE ID: MW-A3-091302
SAMPLED BY: M. Walker SAMPLING EVENT/DATE: Fall
COMPANY: Sevenson MONITORING WELL: MWA-3
CONDITION: Hinge & Hasp bent but still secure

GROUNDWATER PURGE DATA PURGE DATE: 9/13/2002
DEPTH TO BOTTOM FROM TOP OF RISER: 11.95 (FT.) NOTE: ALL GIBSON SITE
DEPTH TO WATER FROM TOP OF RISER: 10.37 (FT.) MONITORING WELLS ARE
WATER COLUMN: 1.58 (FT.) 2-INCH DIAMETER STAIN-
2" DIA. WELL CONSTANT: 0.16 LESS STEEL. WELL DEPTHS:
ONE WELL VOLUME= 0.2528 (GALS) MW-1R 12.10'
PURGE METHOD: Low flow using peristaltic pump and dedicated tubing MW-2 12.13'
BOTTOM OF WELL/SILT BUILDUP: OK MW-A3 11.95'
PURGE START TIME: 935 STOP TIM 949 MW-4 13.75'
PURGE OBSERVATIONS: Clear odor free 3 Quarts MW-5 15.28'

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.34	937	60.3	Clear/ No odor
2	7.38	934	60.9	"
3	7.36	944	60	"
4				
5				

TOTAL VOLUME PURGED: 3 quarts, (3 volumes)

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/13/2002

MEDIA: GROUNDWATER X SAMPLE TIME: 949
CREEK SEDIMENT _____

LOCATION: MWA-3

SAMPLE METHOD: Sample take using a peristaltic pump with a dedicated hose.

SAMPLING OBSERVATIONS: Clear water with no Odor

QC SAMPLES TAKEN: NO

OTHER OBSERVATIONS/COMMENTS: Total volume of samples taken = 3x 1liter amber glass

1 bottle for each parameter plus 1 back up in case of breakage.

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

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

RECORDED BY: <u>M. Walker</u>	SAMPLE ID: <u>MW1-R</u>			
SAMPLED BY: <u>M. Walker</u>	SAMPLING EVENT/DATE: <u>Fall</u>			
COMPANY: <u>Sevenson</u>	MONITORING WELL: <u>Mw1-R & MW-7(Duplicate)</u>			
	CONDITION: <u>OK</u>			
GROUNDWATER PURGE DATA				
PURGE DATE: <u>9/12/2002</u>	NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:			
DEPTH TO BOTTOM FROM TOP OF RISER: <u>12 (FT.)</u>				
DEPTH TO WATER FROM TOP OF RISER: <u>8.35 (FT.)</u>				
WATER COLUMN: <u>3.65 (FT.)</u>				
2" DIA. WELL CONSTANT: <u>0.16</u>	MW-1R 12.10'			
ONE WELL VOLUME= <u>0.584 (GALS)</u>	MW-2 12.13'			
	MW-A3 11.95'			
PURGE METHOD: <u>Low flow using peristaltic pump and dedicated tubing</u>	MW-4 13.75'			
BOTTOM OF WELL/SILT BUILDUP: <u>OK</u>	MW-5 15.28'			
PURGE START TIME: <u>1250</u> STOP TIM <u>1310</u>				
PURGE OBSERVATIONS: <u>Clear, Odor Free, 2 gallons</u>				
FIELD PARAMETER MEASUREMENTS:				
WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
1	7.7	1107	69.1 F	
2	7.7	1099	69.7 F	
3	7.7	1090	69.5 F	
4				
5				
TOTAL VOLUME PURGED: <u>2 gallons, just over 3 volumes.</u>				
GROUNDWATER OR SEDIMENT SAMPLING DATA:		SAMPLE DATE: <u>9/12/2002</u>		
MEDIA: GROUNDWATER <u>X</u>	CREEK SEDIMENT <u></u>	SAMPLE TIME: <u>1310</u>		
LOCATION: <u>MW1-R</u>				
SAMPLE METHOD: <u>Sample take using a peristaltic pump with a dedicated hose.</u>				
SAMPLING OBSERVATIONS: <u></u>				
QC SAMPLES TAKEN: <u>Took duplicate samples and labeled them "MW-7" for Lab purposes.</u>				
OTHER OBSERVATIONS/COMMENTS: <u>Total volume of samples= 6x 1 liter amber glass bottles</u>				
<u>1 bottle for each parameter plus 1 back up in case of breakage.</u>				
Note: specific conductivity formula to 25 degrees Celcius: $SC(25) = \frac{SC \text{ measured}}{\{(T-25)(0.02)\} + 1}$				

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

RECORDED BY: <u>M. Walker</u>	SAMPLE ID: <u>MW2-09102</u>																														
SAMPLED BY: <u>M. Walker</u>	SAMPLING EVENT/DATE: <u>Fall</u>																														
COMPANY: <u>Sevenson</u>	MONITORING WELL: <u>MW-2</u>																														
CONDITION: <u>OK</u>																															
GROUNDWATER PURGE DATA																															
PURGE DATE: <u>9/12/2002</u>	NOTE: ALL GIBSON SITE MONITORING WELLS ARE 2-INCH DIAMETER STAIN-LESS STEEL. WELL DEPTHS:																														
DEPTH TO BOTTOM FROM TOP OF RISER: <u>12.13 (FT.)</u>																															
DEPTH TO WATER FROM TOP OF RISER: <u>6.65 (FT.)</u>																															
WATER COLUMN: <u>5.48 (FT.)</u>																															
2" DIA. WELL CONSTANT: <u>0.16</u>	MW-1R 12.10'																														
ONE WELL VOLUME= <u>0.8768 (GALS)</u>	MW-2 12.13'																														
	MW-A3 11.95'																														
PURGE METHOD: <u>Low flow using perastaltic pump and dedicated tubing</u>	MW-4 13.75'																														
BOTTOM OF WELL/SILT BUILDUP: <u>OK</u>	MW-5 15.28'																														
PURGE START TIME: <u>1345</u> STOP TIM <u>1410</u>																															
PURGE OBSERVATIONS: <u>Clear odor free 3 gallons</u>																															
FIELD PARAMETER MEASUREMENTS:																															
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 15%;">WELL VOLUME</th><th style="width: 15%;">pH</th><th style="width: 25%;">SPECIFIC CONDUCTIVITY umhos/cm)</th><th style="width: 15%;">TEMP. (C OR F)</th><th style="width: 30%;">NOTES:</th></tr></thead><tbody><tr><td>1</td><td>7.33</td><td>1324</td><td>65.7</td><td></td></tr><tr><td>2</td><td>7.54</td><td>1333</td><td>66.2</td><td></td></tr><tr><td>3</td><td>7.51</td><td>1347</td><td>67.8</td><td></td></tr><tr><td>4</td><td></td><td></td><td></td><td></td></tr><tr><td>5</td><td></td><td></td><td></td><td></td></tr></tbody></table>		WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:	1	7.33	1324	65.7		2	7.54	1333	66.2		3	7.51	1347	67.8		4					5				
WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:																											
1	7.33	1324	65.7																												
2	7.54	1333	66.2																												
3	7.51	1347	67.8																												
4																															
5																															
TOTAL VOLUME PURGED: <u>3 gallons, just over 3 volumes</u>																															
GROUNDWATER OR SEDIMENT SAMPLING DATA:																															
SAMPLE DATE: <u>9/12/2002</u>																															
MEDIA: <u>GROUNDWATER</u> <u>X</u>	SAMPLE TIME: <u>1410</u>																														
<u>CREEK SEDIMENT</u>																															
LOCATION: <u>MW-2</u>																															
SAMPLE METHOD: <u>Sample take using a perastaltic pump with a dedicated hose.</u>																															
SAMPLING OBSERVATIONS: <u>Clear water with no Odor</u>																															
QC SAMPLES TAKEN: <u>MS/MSD Samples taken BHC and HCB, 1 Liter each</u>																															
OTHER OBSERVATIONS/COMMENTS: <u>Total volume of samples taken = 5 x 1 liter amber glass</u>																															
<u>1 bottle for each parameter plus 1 back up in case of breakage.</u> <u>Plus 1 liter each for MS/MSD.</u>																															
<u>Note: specific conductivity formula to 25 degrees Celcius: SC(25)=</u> <u>SC measured</u>																															
<u>{{T-25}(0.02)}+1</u>																															

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

RECORDED BY: <u>M. Walker</u>		SAMPLE ID: <u>MW4-091202</u>		
SAMPLED BY: <u>M. Walker</u>		SAMPLING EVENT/DATE: <u>Fall</u>		
COMPANY: <u>Sevenson</u>		MONITORING WELL: <u>MW-4</u>		
		CONDITION: <u>Good</u>		
GROUNDWATER PURGE DATA		PURGE DATE: <u>9/12/2002</u>		
DEPTH TO BOTTOM FROM TOP OF RISER: <u>13.75 (FT.)</u>		NOTE: ALL GIBSON SITE MONITORING WELLS ARE		
DEPTH TO WATER FROM TOP OF RISER: <u>7.3 (FT.)</u>		2-INCH DIAMETER STAIN-		
WATER COLUMN: <u>6.45 (FT.)</u>		LESS STEEL. WELL DEPTHS:		
2" DIA. WELL CONSTANT: <u>0.16</u>		MW-1R <u>12.10'</u>		
ONE WELL VOLUME= <u>1.032 (GALS)</u>		MW-2 <u>12.13'</u>		
		MW-A3 <u>11.95'</u>		
PURGE METHOD: <u>Low flow using perastaltic pump and dedicated tubing</u>		MW-4 <u>13.75'</u>		
BOTTOM OF WELL/SILT BUILDUP: <u>OK</u>		MW-5 <u>15.28'</u>		
PURGE START TIME: <u>1450</u> STOP TIM <u>1520</u>				
PURGE OBSERVATIONS: <u>Black / Grey, sulfur odor, 3.5 gallons</u>				
FIELD PARAMETER MEASUREMENTS:				
WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm)	TEMP. (C OR F)	NOTES:
<u>1</u>	<u>7.99</u>	<u>1535</u>	<u>66.3</u>	<u>see below</u>
<u>2</u>	<u>7.99</u>	<u>1782</u>	<u>63.4</u>	<u>"</u>
<u>3</u>	<u>7.65</u>	<u>1839</u>	<u>63</u>	<u>"</u>
<u>4</u>				
<u>5</u>				
TOTAL VOLUME PURGED: <u>3.5 gallons (3 volumes)</u>				
GROUNDWATER OR SEDIMENT SAMPLING DATA:		SAMPLE DATE: <u>9/12/2002</u>		
MEDIA: <u>GROUNDWATER</u>	<u>X</u>	SAMPLE TIME: <u>1520</u>		
<u>CREEK SEDIMENT</u>				
LOCATION: <u>MW-4</u>				
SAMPLE METHOD: <u>Sample take using a perastaltic pump with a dedicated hose.</u>				
SAMPLING OBSERVATIONS: <u>Purge water started out black, then cleared a little , then turned grey.</u>				
QC SAMPLES TAKEN: <u>NO</u>				
OTHER OBSERVATIONS/COMMENTS: <u>Black/Grey water with sulfur odor for initial 500ml. Then cleared</u>				
<u>up, but kept the odor. Total volume of samples= 3x 1 liter amber glas</u>				
Note: specific conductivity formula to 25 degrees Celcius: $SC(25)= \frac{SC \text{ measured}}{\{(T-25)(0.02)\}+1}$				

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

RECORDED BY: <u>M. Walker</u>		SAMPLE ID: <u>MW-5-091202</u>	
SAMPLED BY: <u>M. Walker</u>		SAMPLING EVENT/DATE: <u>Fall</u>	
COMPANY: <u>Sevenson</u>		MONITORING WELL: <u>MW-5</u>	
		CONDITION: <u>Good</u>	
GROUNDWATER PURGE DATA			
PURGE DATE: <u>9/12/2002</u>			
DEPTH TO BOTTOM FROM TOP OF RISER: <u>15.28 (FT.)</u>		NOTE: ALL GIBSON SITE MONITORING WELLS ARE	
DEPTH TO WATER FROM TOP OF RISER: <u>10.2 (FT.)</u>		2-INCH DIAMETER STAIN-	
WATER COLUMN: <u>5.08 (FT.)</u>		LESS STEEL. WELL DEPTHS:	
2" DIA. WELL CONSTANT: <u>0.16</u>		MW-1R <u>12.10'</u>	
ONE WELL VOLUME= <u>0.8128 (GALS)</u>		MW-2 <u>12.13'</u>	
		MW-A3 <u>11.95'</u>	
PURGE METHOD: <u>Low flow using peristaltic pump and dedicated tubing</u>		MW-4 <u>13.75'</u>	
BOTTOM OF WELL/SILT BUILDUP: <u>OK</u>		MW-5 <u>15.28'</u>	
PURGE START TIME: <u>1545</u> STOP TIM <u>1605</u>			
PURGE OBSERVATIONS: <u>Purge water, yellowish, no odor</u>			
FIELD PARAMETER MEASUREMENTS:			
WELL VOLUME	pH	SPECIFIC CONDUCTIVITY <u>umhos/cm</u>	TEMP. <u>(C OR F)</u>
<u>1</u>	<u>6.89</u>	<u>2.64</u>	<u>60.7</u>
<u>2</u>	<u>6.87</u>	<u>2.45</u>	<u>60.7</u>
<u>3</u>	<u>6.86</u>	<u>2.59</u>	<u>60.6</u>
<u>4</u>			
<u>5</u>			
TOTAL VOLUME PURGED: <u>3 gallons, ((3 volumes)</u>			
GROUNDWATER OR SEDIMENT SAMPLING DATA:			
SAMPLE DATE: <u>9/12/2002</u>			
MEDIA: <u>GROUNDWATER</u> <u>X</u>	SAMPLE TIME: <u>1605</u>		
<u>CREEK SEDIMENT</u>			
LOCATION: <u>MW-5</u>			
SAMPLE METHOD: <u>Sample take using a peristaltic pump with a dedicated hose.</u>			
SAMPLING OBSERVATIONS: <u>Water got clearer as purge progressed</u>			
QC SAMPLES TAKEN: <u>NO</u>			
OTHER OBSERVATIONS/COMMENTS: <u>Total volume of samples = 3 x 1 liter amber glass.</u>			
Note: specific conductivity formula to 25 degrees Celcius: $SC(25) = \frac{SC \text{ measured}}{\{(T-25)(0.02)\}+1}$			

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

RECORDED BY: M. Walker SAMPLE ID: MW8-0913-02
SAMPLED BY: M. Walker SAMPLING EVENT/DATE: Fall
COMPANY: Sevenson MONITORING WELL: Field Blank
CONDITION:

GROUNDWATER PURGE DATA PURGE DATE: 9-13-02
DEPTH TO BOTTOM FROM TOP OF RISER: (FT.)
DEPTH TO WATER FROM TOP OF RISER: (FT.)
WATER COLUMN: (FT.)
2" DIA. WELL CONSTANT: 0.16
ONE WELL VOLUME= (GALS)
PURGE METHOD:
BOTTOM OF WELL/SILT BUILDUP:
PURGE START TIME: STOP TIM
PURGE OBSERVATIONS:

NOTE: ALL GIBSON SITE
MONITORING WELLS ARE
2-INCH DIAMETER STAIN-
LESS STEEL. WELL DEPTHS:
MW-1R 12.10'
MW-2 12.13'
MW-A3 11.95'
MW-4 13.75'
MW-5 15.28'

FIELD PARAMETER MEASUREMENTS:

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

TOTAL VOLUME PURGED:

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 9/13/2002

MEDIA: GROUNDWATER _____ SAMPLE TIME: 1035
CREEK SEDIMENT _____

LOCATION: Sampling performed in driveway area, 25' inside main gate.

SAMPLE METHOD: Store bought, pure spring water was poured into 3, 1 liter glass bottles for analysis.

SAMPLING OBSERVATIONS: The water will be labeled MW-8-091302 for lab purposes and analysed for BHC and HCB.

QC SAMPLES TAKEN: NO

OTHER OBSERVATIONS/COMMENTS: Total volume of samples = 3 x 1 liter amber glass.

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

RECORDED BY: M. Walker		SAMPLE ID: MHB-091202	
SAMPLED BY: M. Walker		SAMPLING EVENT/DATE: Fall	
COMPANY: Severson		MONITORING WELL: Manhole B	
		CONDITION: OK	
GROUNDWATER PURGE DATA		PURGE DATE: 9/12/2002	
DEPTH TO BOTTOM FROM TOP OF RISER: 20.6' (FT.)		NOTE: ALL GIBSON SITE MONITORING WELLS ARE	
DEPTH TO WATER FROM TOP OF RISER: 13.8' (FT.)		2-INCH DIAMETER STAIN-	
WATER COLUMN: (FT.)		LESS STEEL. WELL DEPTHS:	
2" DIA. WELL CONSTANT: 0.16		MW-1R 12.10'	
ONE WELL VOLUME= (GALS)		MW-2 12.13'	
		MW-A3 11.95'	
PURGE METHOD: Grab Sample		MW-4 13.75'	
BOTTOM OF WELL/SILT BUILDUP: OK		MW-5 15.28'	
PURGE START TIME:		STOP TIME:	
PURGE OBSERVATIONS:			
FIELD PARAMETER MEASUREMENTS:			
WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm	TEMP. (C OR F)
1	7.3	723	56.3 F
2			
3			
4			
5			
NOTES: Lt. Sulfur smell			
Clear			
TOTAL VOLUME PURGED: Grab Sample			
GROUNDWATER OR SEDIMENT SAMPLING DATA:		SAMPLE DATE: 9/12/2002	
MEDIA: GROUNDWATER	X	SAMPLE TIME: 1150	
CREEK SEDIMENT			
LOCATION: Manhole "B"			
SAMPLE METHOD: Sample take using a parastaltic pump with a dedicated hose.			
SAMPLING OBSERVATIONS: Low Water level in M/H, Water was clear with a slight sulfur odor.			
QC SAMPLES TAKEN: No			
OTHER OBSERVATIONS/COMMENTS:			
Note: specific conductivity formula to 25 degrees Celcius: SC(25)= $\frac{SC \text{ measured}}{\{(T-25)(0.02)\}+1}$			

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

RECORDED BY: <u>M. Walker</u>	SAMPLE ID: <u>US1-091302 (OS1-091302)</u>
SAMPLED BY: <u>M. Walker</u>	SAMPLING EVENT/DATE: <u>Fall</u>
COMPANY: <u>Sevenson</u>	MONITORING WELL: <u>Upstream Creek Sediment</u>
CONDITION: <u>Still water, 3.5'D, Clay bottom</u>	

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

FIELD PARAMETER MEASUREMENTS:				
WELL VOLUME	pH	SPECIFIC CONDUCTIVITY <u>umhos/cm</u>	TEMP. <u>(C OR F)</u>	NOTES:
<u>1</u>				
<u>2</u>				
<u>3</u>				
<u>4</u>				
<u>5</u>				

TOTAL VOLUME PURGED: _____	
----------------------------	--

GROUNDWATER OR SEDIMENT SAMPLING DATA:	SAMPLE DATE: <u>9/13/2002</u>
MEDIA: GROUNDWATER _____ CREEK SEDIMENT <u>X</u>	SAMPLE TIME: <u>1130</u>

LOCATION: Upstream of site, inline with steel driveway gate posts.

SAMPLE METHOD: Sediment trap soils removed w/ stainless steel spoon.

SAMPLING OBSERVATIONS: 1.5" of sediment in trap, Brown, Black, Grey color. Very light silty

QC SAMPLES TAKEN: Duplicate sample taken and labeled "OS1-091302" for lab purposes.

OTHER OBSERVATIONS/COMMENTS: After sampling: D-Con and rinse the trap, replace in creek

No sheen on water after disturbing silt on creekbed. Replaced trap in same spot.

SC measured _____

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

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

RECORDED BY: <u>M. Walker</u>	SAMPLE ID: <u>DS1-091302</u>
SAMPLED BY: <u>M. Walker</u>	SAMPLING EVENT/DATE: <u>Fall</u>
COMPANY: <u>Sevenson</u>	MONITORING WELL: <u>Downstream Creek Sediment</u>
CONDITION: <u>No current, clay bottom, flat, 4'D</u>	

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

FIELD PARAMETER MEASUREMENTS:				
WELL VOLUME	pH	SPECIFIC CONDUCTIVITY <u>umhos/cm</u>	TEMP. <u>(C OR F)</u>	NOTES:
1				
2				
3				
4				
5				

TOTAL VOLUME PURGED:	
----------------------	--

GROUNDWATER OR SEDIMENT SAMPLING DATA:	SAMPLE DATE: <u>9/13/2002</u>
MEDIA: GROUNDWATER _____ CREEK SEDIMENT <u>X</u>	SAMPLE TIME: <u>1215</u>

LOCATION: <u>Downstream of site, middle of creek</u>	
SAMPLE METHOD: <u>Sediment trap soils removed w/ stainless steel spoon.</u>	
SAMPLING OBSERVATIONS: <u>2' of sediment layered in the trap. Dark grey on the bottom and tapering to a brown/green in the top 1". Clayey, silt, no sheen.</u>	
QC SAMPLES TAKEN: <u>NO</u>	
OTHER OBSERVATIONS/COMMENTS: <u>After sampling: D-Con and rinse the trap, replace in creek</u>	
<u>4 fenceposts upstream from the corner post, in the middle of creek. 1 8 oz. wide mouth jar taken.</u>	
Note: specific conductivity formula to 25 degrees Celcius: $SC(25) = \frac{SC \text{ measured}}{\{(T-25)(0.02)\}+1}$	

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

DATE: 9/12/2002 SEMI-ANNUAL SAMPLING EVENT: Fall

PERSON CALIBRATING METERS: M. Walker

pH METER USED: MANUFACTURER: Oakton

MODEL: pH Testr 2

IDENTIFICATION/CONTROL NUMBER: E706pH

CALIBRATION STANDARDS USED:

STANDARD 7.00 METER READ: 7.1

STANDARD 4.00 METER READ: 4.1

STANDARD 10.00 METER READ: 10

METER CALIBRATION COMMENTS: _____

SPECIFIC CONDUCTIVITY METER USED:

MANUFACTURER: Oakton

MODEL: Conductivity/Temp. Meter

IDENTIFICATION/CONTROL NUMBER: WD 35607-10

CALIBRATION STANDARDS USED:

STANDARD 0 READ: 0

(STANDARD 0 USED: AIR, WATER)

STANDARD 1413 READ: 1410

STANDARD 448 448

METER CALIBRATION COMMENTS: _____

THERMOMETER USED: TYPE: Fisher Scientific

MANUFACTURER: Fisher Scientific

IDENTIFICATION/CONTROL NUMBER: 21115741

COMMENTS: (DOES THERMOMETER TEMPERATURE AGREE WITH
SPECIFIC CONDUCTIVITY METER TEMPERATURE ?) yes

OTHER: _____

OTHER INSTRUMENTS USED: TYPE: _____

MANUFACTURER: _____

IDENTIFICATION/CONTROL NUMBER: _____

CALIBRATIONS PERFORMED: _____

OTHER CALIBRATION COMMENTS: _____

APPENDIX 3
QUARTERLY SITE INSPECTIONS FORMS
JULY- DECEMBER 2002

CHARLES GIBSON SITE
(PINE AND TUSCARORA)
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: 9/13/2002 TIME: 1400

INSPECTOR: Mike Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Semi-annual Sampling/Quarterly 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 occurrences.)

COMMENTS

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

SECURITY:

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

ADDITIONAL COMMENTS:

Mike Hinton from the NYSDEC stopped by and said that he had been here yesterday, and looked the site over.

He said that the site looked good, but that he had some concerns about the 2 rock bridges that some one had
built across the creek. He told me that he would be asking OLIN to remove the rocks from the creek and
place them back on the bank where they came from.

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: 11/1/2002 TIME: 800

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Removal of rocks from creek

GENERAL SITE CONDITIONS: U=UNACCEPTABLE A=ACCEPTABLE

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

COMMENTS

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

ADDITIONAL COMMENTS: Onsite at 0800 with excavator and operator to remove the rock bridge from
2 areas where it crosses Cayuga Creek. After removing the rocks, they were placed back on the
embankment where they came from and then graded to a smooth contour.

Charles Gibson Site
After removal of dam from Cayuga Creek
Work performed on 11/1/2002

Approximate location of former dam;
NE corner of site



11.7.2002

Charles Gibson Site
Removal of rip rap from Cayuga Creek
Work performed on 11/1/2002



Charles Gibson Site
After removal of dam from Cayuga Creek
Work performed on 11/1/2002



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: 11/25/2002 TIME: 12:45 PM

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER: Cloudy 32F

REASON FOR INSPECTION (QUARTERLY OR OTHER): Quarterly Site 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 occurrences.)

COMMENTS

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

ADDITIONAL COMMENTS:

APPENDIX 4

QUARTERLY GROUND WATER ELEVATION FORMS

JULY – DECEMBER 2002

**CHARLES GIBSON SITE
(PINE AND TUSCARORA)**

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: 9/12/2002 TIME: 1220

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER: Sunny 80 F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	<u>7.65</u>	<u>565.07</u>	
P-2	574.89	<u>9.55</u>	<u>565.34</u>	
P-3	574.16	<u>8.5</u>	<u>565.66</u>	
P-4	576.14	<u>11</u>	<u>565.14</u>	
P-5	575.05	<u>7.8</u>	<u>567.25</u>	
P-6	578.28	<u>11.15</u>	<u>567.13</u>	
MANHOLE A	575.22	<u>11.7</u>	<u>563.52</u>	
MANHOLE B	577.34	<u>13.8</u>	<u>563.54</u>	

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

ADDITIONAL COMMENTS/OBSERVATIONS:

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: 11/25/2002 TIME: 1:00 PM

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER: Cloudy 32 F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	<u>8.4</u>	<u>564.32</u>	
P-2	574.89	<u>9.95</u>	<u>564.94</u>	
P-3	574.16	<u>9.6</u>	<u>564.56</u>	
P-4	576.14	<u>11.6</u>	<u>564.54</u>	
P-5	575.05	<u>7.65</u>	<u>567.4</u>	
P-6	578.28	<u>10.95</u>	<u>567.33</u>	
MANHOLE A	575.22	<u>11.4</u>	<u>563.82</u>	
MANHOLE B	577.34	<u>13.45</u>	<u>563.89</u>	

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

ADDITIONAL COMMENTS/OBSERVATIONS: _____

