



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

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

August 11, 2006

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

Subject: Charles Gibson Site
(Pine and Tuscarora Site)
Niagara Falls, New York
NYSDEC Registry No. 9-32-063
Semi-Annual Ground Water Sampling Report
April 2006

Dear Mr. Hinton:

Enclosed is one hard copy and one electronic version (PDF) of the subject report. The analytical data summary for ground water is listed in Table 1. Analytical results for the annual leachate sampling at Manhole B are listed in Table 2. The Data Usability Summary Report is presented in Appendix A. The field logs for this sampling event are also attached in Appendix B. The Site Inspection Forms and the Ground Water Elevation Forms are included in Appendices C and D respectively. The analytical data has been validated and found to be acceptable.

Ground water is scheduled for hexachlorobenzene (HCB) analyses in October 2006. You will recall that in 2004, Olin requested discontinuing the (HCB) monitoring in groundwater. NYSDEC responded they would reconsider the request after the 2005 leachate data became known. HCB was not detected in the April 2005 leachate sample. Olin requests NYSDEC reconsider eliminating hexachlorobenzene (HCB) testing in the monitoring program based on results from the leachate HCB data collected in April 2005 and from past monitoring. Data indicates HCB has never been detected in the leachate or in any of the monitoring wells at the site.

If you have any questions, please call me at 423/ 336-4381.

Sincerely,
OLIN CORPORATION

A handwritten signature in cursive script that reads "Lorraine M. Miller".

Lorraine M. Miller
Principal Environmental Specialist

cc: B. H. Brayley (e-mail)
C.M. Richards (e-mail)
J. R. Pawelczyk (e-mail)
M. E. Walker (e-mail)

Charles Gibson Site

(PINE AND TUSCARORA)

Niagara Falls, NY

NYSDEC Registry No. 9-32-063

Semi-Annual Groundwater Sampling

April 19, 2006

TABLE 1

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK

ANALYTICAL RESULTS SUMMARY
SEMI-ANNUAL GROUND WATER SAMPLING

April 19, 2006

	MW-1R	MW-1R (dup)	MW-2	MW-4	MW-5	MW-A3
PARAMETER						
alpha-BHC	.037J	.049U	.050U	.049U	.049U	.049U
beta-BHC	.036J	.049U	.050U	.022J	.049U	.049U
delta-BHC	.050U	.049U	.050U	.049U	.049U	.049U
gamma-BHC	.050U	.049U	.050U	.030J	.049U	.049U
Hexachlorobenzene	NR	NR	NR	NR	NR	NR

Notes:

U Undetected at associated value

J Estimated value

NR Not required

Concentration in ug/l

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

Data has been validated and judged acceptable as qualified.

Next sampling for hexachlorobenzene is scheduled for October 2006.

TABLE 2

CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORKANALYTICAL RESULTS SUMMARY
ANNUAL LEACHATE SAMPLING

April 19, 2006

	MANHOLE B (MHB)
PARAMETER	
alpha-BHC	.065U
beta-BHC	.046J
delta-BHC	.25
gamma-BHC	.050U
Hexachlorobenzene	NR

Notes:

U Undetected

J Estimated value

NR Not Required

Concentration in ug/l

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

Data has been validated and judged acceptable as qualified.

Next hexachlorobenzene (HCB) sampling scheduled for October 2010

APPENDIX A

DATA USABILITY SUMMARY REPORT
SEMI-ANNUAL GROUND WATER SAMPLING
AND
ANNUAL LEACHATE SAMPLING OF MANHOLE B

APRIL 2006

CHARLES GIBSON SITE
(PINE AND TUSCARORA SITE)
NIAGARA FALLS, NEW YORK
NYSDEC Registry No. 9-32-063

**DATA USABILITY SUMMARY REPORT
SEMI-ANNUAL SAMPLING
APRIL 2006**

**CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK**

**PREPARED BY:
SEVENSON ENVIRONMENTAL SERVICES, INC.
2749 LOCKPORT ROAD
NIAGARA FALLS, NEW YORK 14305**

Report Submitted: July 20, 2006

TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION	1
2.0 SAMPLE HOLDING TIMES	1
3.0 SURROGATE SPIKE RECOVERIES	2
4.0 LABORATORY BLANK ANALYSES	2
5.0 MATRIX SPIKE/MATRIX SPIKE DUPLICATE ANALYSES	3
6.0 BLANK SPIKE ANALYSES	3
7.0 FIELD QA/QC	3
7.1 FIELD BLANKS	3
7.2 FIELD DUPLICATES	4
7.3 RINSE BLANKS	4
8.0 CONCLUSIONS	5

LIST OF TABLES

TABLE 1	ANALYTICAL RESULTS SUMMARY – SEMI-ANNUAL WELL SAMPLING
TABLE 2	ANALYTICAL RESULTS SUMMARY – “MANHOLE B” SAMPLING

LIST OF APPENDICES

APPENDIX A	CHAIN OF CUSTODY FORM
APPENDIX B	SUMMARY ANALYTICAL REPORT

1.0 INTRODUCTION

The following details an assessment and validation of analytical results reported by Severn Trent Laboratories, Inc. (STL) of Buffalo, New York, for groundwater samples collected in April 2006 for the Semi-Annual Well Sampling at the Charles Gibson Site in Niagara Falls, New York. The semi-annual sampling includes the collection of groundwater samples from five monitoring wells (MW-1R, MW-2, MW-4, MW-5, and MW-A3), a field duplicate of MW-1R (designated as MW-7), and a field blank. The semi-annual sampling also included the collection of a leachate sample from "Manhole B". All samples were collected in accordance with the "Operation and Maintenance Manual" for the site, dated June 2000.

All aqueous samples were submitted for the analysis of the pesticides alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC, using United States Environmental Protection Agency (USEPA) SW-846 Methods 3510 and 8081A. Analyses are referenced from "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846 Third Edition, 1986 and subsequent revisions. The analytical data are presented in Tables 1 and 2 for the groundwater samples and Manhole B leachate sample, respectively. A copy of the chain of custody form is included in Appendix A and the summary report from the laboratory is included in Appendix B. Data evaluation was based on information obtained from the finished data sheets, chain-of-custody forms, blank data, field duplicate data, and recovery data for matrix, blank, and surrogate spikes.

The Quality Assurance/Quality Control (QA/QC) criteria by which these data have been assessed are outlined in the analytical methods and in "National Functional Guidelines for Organic Data Review," USEPA, October 1999.

2.0 SAMPLE HOLDING TIMES

Based on the criteria outlined in the methods of analysis, the following holding time requirements were used:

Parameter	Matrix	Collection to Extraction (days)	Extraction to Analysis (days)
BHCs	Water	7	40

Based on sample chain-of-custody forms and laboratory analysis reports, samples were collected on April 19, 2006, extracted on April 20, 2006, and analyzed on April 21 and 24, 2006 for pesticides. The sample extraction and analysis was performed within the holding times specified in the "National Functional Guidelines for Organic Data Review" (USEPA, 1999).

As indicated on the Non-Conformance Summary included with the laboratory analytical data report, the laboratory received the sample coolers at temperatures of 2°C, in good condition. Samples were hand delivered to the laboratory on the same day that the samples were collected.

3.0 SURROGATE SPIKE RECOVERIES

All field samples, blanks, and laboratory QC samples (e.g., matrix spike, matrix spike duplicate, blank spike) analyzed for BHCs are spiked with surrogate compounds prior to extraction. The primary function of the surrogate spiking activity is to determine the efficiency of recovery of analytes in the samples preparation and analysis and thus the degree to which the sample matrix plays a role in the analysis. This matrix interference is measured as a percent recovery, which is then used to gauge the total accuracy of the analytical method for that sample.

All samples submitted for BHC analyses were spiked with the surrogate compounds decachlorobiphenyl (DCB) and tetrachloro-m-xylene (TCX). All surrogate recoveries were within the laboratory control limits, demonstrating acceptable analytical efficiency.

4.0 LABORATORY BLANK ANALYSES

The purpose of assessing the results of laboratory blank analyses is to determine the existence and magnitude of sample contamination resulting from laboratory sample preparation and analysis activities. A method blank is a sample of non-contaminated deionized water that is subjected to all of the sample preparation (i.e., extraction) and analytical methodology applied to the samples.

Laboratory blanks were extracted and analyzed at a frequency of one per analytical batch. All BHC results in the method blank were non-detect, indicating that contamination from laboratory activities was not a factor for this sampling round.

5.0 MATRIX SPIKE/MATRIX SPIKE DUPLICATE ANALYSES (MS/MSD)

To assess the effects of sample matrices on analytical efficiency, samples are spiked in duplicate with known concentrations of the target compounds into a prepared portion of a sample just prior to analysis. The matrix spike recovery provides information on matrix effects encountered during analysis and indicates whether the selected analytical method is appropriate for the recovery of the contaminants of concern for the matrix. The MS/MSD recoveries are used to evaluate analytical accuracy, while the relative percent difference (RPD) values between the MS and MSD are used to evaluate analytical precision.

The MS and MSD analyses for pesticides were performed using groundwater samples collected from monitoring well MW-2 for this sampling event. A limited list of pesticides was added to the MS and MSD samples, including gamma-BHC. Gamma-BHC recoveries and the associated RPD are within the laboratory control limits, demonstrating acceptable laboratory accuracy and precision.

6.0 BLANK SPIKE ANALYSES

Blank spikes are analyzed as samples to assess the analytical accuracy of the methods employed in the absence of matrix interference. The blank spike contains known concentrations of the analytes of concern and is carried through the entire preparation and analysis process. The actual analyte concentration and percent recovery is reported with the laboratory QC data. Blank spikes are analyzed at a minimum frequency of one per analytical batch.

All BHC recoveries reported by the laboratory for the blank spike analyses were within the laboratory control limits, demonstrating acceptable analytical accuracy.

7.0 FIELD QA/QC

7.1 Field Blanks

The purpose of field blank analysis is to determine the existence and magnitude of contamination resulting from sample bottles, field sampling activities, sample transport, and/or storage. One field blank

was collected by pouring distilled water into the same type of sample bottles utilized for the field samples and kept with the field samples throughout the sampling event, shipment, and storage in the laboratory.

The field blank collected during this sampling event was submitted to the laboratory identified as "Field Blank". All results were non-detect, indicating that contamination from sampling and storage activities was not a factor for this event.

7.2 Field Duplicates

Field duplicate samples are collected in a manner that is identical to the original sample - the original field samples and its duplicate are collected at the same time, by the sample personnel, using the same procedures and sampling equipment, and is placed in the same type of containers. Field duplicates are used as a relative measure of the combined precision of the sample collection and analytical process. One field duplicate sample was collected during this sampling event and submitted as a "blind" sample to the laboratory. The field duplicate collected for this sampling event consisted of the following:

<u>Sample ID</u>	<u>Field Duplicate ID</u>
MW-1R-041906	MW-7-041906

Results from the analysis of the primary sample were compared to the results from the duplicate sample analysis and agreement expressed in terms of relative percent difference (RPD). The sample results for the MW-1R/MW-7 duplicate pair (Table 1) indicate that all parameters were not detected in sample MW-7, while alpha-BHC and beta-BHC were reported with "J" qualifiers in sample MW-1R (i.e., the results were less than the sample quantitation limit but greater than zero). The duplicate sample results demonstrate acceptable reproducibility, indicating good sampling and analytical precision.

7.3 Rinse Blanks

No rinse blanks were collected for this sampling event, as dedicated equipment was used for monitoring well sample collection.

8.0 CONCLUSIONS

The analytical data package from Severn Trent was complete with all required QC information. The method blanks were free from contamination. All analyses were performed using specified methods within proper holding times. The relative percent differences, and surrogate, blank spike, and matrix spike/matrix spike duplicate recoveries were within laboratory control limits for all parameters and analyses. Based on this assessment and validation of the laboratory report, the data produced by STL are acceptable without qualification.

TABLES

TABLE 1
ANALYTICAL RESULTS SUMMARY - SEMI-ANNUAL WELL SAMPLING
CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
APRIL 2006

Sample ID	MW-A3-041906	MW-1R-041906	MW-7-041906*	MW-2-041906	MW-4-041906	MW-5-041906
Sample Date	04/19/06	04/19/06	04/19/06	04/19/06	04/19/06	04/19/06
BHC Isomers in Water via Method 8081A (ug/L)						
alpha-BHC	0.049 U	0.037 J	0.049 U	0.050 U	0.049 U	0.049 U
beta-BHC	0.049 U	0.036 J	0.049 U	0.050 U	0.022 J	0.049 U
delta-BHC	0.049 U	0.050 U	0.049 U	0.050 U	0.049 U	0.049 U
gamma-BHC (lindane)	0.049 U	0.050 U	0.049 U	0.050 U	0.030 J	0.049 U

Notes:

- * MW-7 is a field duplicate of MW-1R
- U Compound was analyzed for but not detected
- J Estimated value - result is less than the sample quantitation limit but greater than zero.

TABLE 2
ANALYTICAL RESULTS SUMMARY - "MANHOLE B" SAMPLING
CHARLES GIBSON SITE
NIAGARA FALLS, NEW YORK
APRIL 2006

Sample ID	MHB-041906
Sample Date	04/19/06
BHC Isomers in Water via Method 8081A (ug/L)	
alpha-BHC	0.065
beta-BHC	0.046 J
delta-BHC	0.25
gamma-BHC (lindane)	0.050 U

Notes:

- U Compound was analyzed for but not detected
- J Estimated value - result is less than the sample quantitation limit but greater than zero

APPENDIX A

CHAIN OF CUSTODY FORM

STL-4124 (0901)

32/269

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

APPENDIX B

SUMMARY ANALYTICAL REPORT

**STL****STL Buffalo**10 Hazelwood Drive, Suite 106
Amherst, NY 14228Tel: 716 691 2600 Fax: 716 691 7991
www.stl-inc.com**ANALYTICAL REPORT**Job#: A06-4221STL Project#: NY3A9025
Site Name: OLIN CORPORATION
Task: Charles Gibson SiteMs. Lorraine Miller
Olin Corporation
1186 Lower River Road
Charleston, TN 37310

CC: Mr. Michael Walker

STL Buffalo

A handwritten signature in black ink, appearing to read "Brian J. Fischer", written over a horizontal line.

Brian J. Fischer
Project Manager

A handwritten signature in black ink, appearing to read "Donna Besco", written over a horizontal line.

Donna Besco
Analyst

04/28/06

STL Buffalo Current Certifications

As of 4/10/2006

STATE	Program	Cert # / Lab ID
AFCEE	AFCEE	
Arkansas	SDWA, CWA, RCRA, SOIL	03-054-D/88-0686
California	NELAP CWA, RCRA	01169CA
Connecticut	SDWA, CWA, RCRA, SOIL	PH-0568
Florida	NELAP CWA, 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	SDWA, CWA, RCRA	036-999-337
New Hampshire	NELAP SDWA, CWA	233701
New Jersey	SDWA, CWA, RCRA, CLP	NY455
New York	NELAP, AIR, SDWA, CWA, RCRA, ASP	10026
Oklahoma	CWA, RCRA	9421
Pennsylvania	Env. Lab Reg.	68-281
South Carolina	RCRA	91013
Tennessee	SDWA	02970
USACE	USACE	
USDA	FOREIGN SOIL PERMIT	S-41579
USDOE	Department of Energy	DOECAP-STB
Virginia	SDWA	278
Washington	CWA, RCRA	C1677
West Virginia	CWA, RCRA	252
Wisconsin	CWA	998310390

Sample Data Summary Package

SAMPLE SUMMARY

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	SAMPLED		RECEIVED	
			DATE	TIME	DATE	TIME
A6422108	FIELD BLANK	WATER	04/19/2006	12:00	04/19/2006	14:00
A6422101	MHB-041906	LEACH	04/19/2006	08:50	04/19/2006	14:00
A6422102	MW-1R-041906	GW	04/19/2006	11:00	04/19/2006	14:00
A6422103	MW-2-041906	GW	04/19/2006	11:40	04/19/2006	14:00
A6422103MS	MW-2-041906	GW	04/19/2006	11:40	04/19/2006	14:00
A6422103SD	MW-2-041906	GW	04/19/2006	11:40	04/19/2006	14:00
A6422104	MW-4-041906	GW	04/19/2006	10:30	04/19/2006	14:00
A6422105	MW-5-041906	GW	04/19/2006	09:50	04/19/2006	14:00
A6422106	MW-7-041906	GW	04/19/2006	11:25	04/19/2006	14:00
A6422107	MWA-3-041906	GW	04/19/2006	13:20	04/19/2006	14:00

METHODS SUMMARY

Job#: A06-4221STL Project#: NY3A9025Site Name: Olin Corporation - Charles Gibson site

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
ASP 2000- METHOD 8081 EHC'S	ASP00 8081

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

NON-CONFORMANCE SUMMARY

Job#: A06-4221STL Project#: NY3A9025Site Name: Olin Corporation - Charles Gibson siteGeneral Comments

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

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

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

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

Sample Receipt Comments

A06-4221

Sample Cooler(s) were received at the following temperature(s); 2@2.0 °C
All samples were received in good condition.

GC Extractable Data

For method 8081, the sample extracts for MW-5-041906 and the associated quality control samples required treatment with Copper prior to analysis due to the presence of elemental Sulfur.

For method 8081 pesticides, all sample extracts were acid treated prior to analysis to minimize matrix interferences. The target pesticide compounds reported for this job were not effected by this cleanup.

For method 8082, the associated calibration verifications demonstrated an increased instrument response, >15% difference, for the surrogate Tetrachloro-m-xylene. The theoretical consequence of these would be a high bias in the calculated surrogate recoveries. The associated sample surrogate recoveries are well within the quality control limits. In the technical judgment of the laboratory, the sample data has not been impacted and no further corrective action was required.

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

4-28-06

Date

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION
AND
ANALYTICAL REQUEST SUMMARY

LAB NAME: SEVERN TRENT LABORATORIES, INC.

CUSTOMER SAMPLE ID	LABORATORY SAMPLE ID	ANALYTICAL REQUIREMENTS						
		VOA GC/MS	BNA GC/MS	VOA GC	PEST PCB	METALS	TCLP HERB	WATER QUALITY
FIELD BLANK	A6422108	-	-	-	ASP00	-	-	-
MHB-041906	A6422101	-	-	-	ASP00	-	-	-
MW-1R-041906	A6422102	-	-	-	ASP00	-	-	-
MW-2-041906	A6422103	-	-	-	ASP00	-	-	-
MW-4-041906	A6422104	-	-	-	ASP00	-	-	-
MW-5-041906	A6422105	-	-	-	ASP00	-	-	-
MW-7-041906	A6422106	-	-	-	ASP00	-	-	-
MWA-3-041906	A6422107	-	-	-	ASP00	-	-	-

NYSDEC-1

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
FIELD BLANK	WATER	04/19/2006	04/19/2006	04/19/2006	04/20/2006
MHB-041906	LEACH	04/19/2006	04/19/2006	04/19/2006	04/20/2006
MW-1R-041906	GW	04/19/2006	04/19/2006	04/19/2006	04/20/2006
MW-2-041906	GW	04/19/2006	04/19/2006	04/19/2006	04/20/2006
MW-4-041906	GW	04/19/2006	04/19/2006	04/19/2006	04/20/2006
MW-5-041906	GW	04/19/2006	04/19/2006	04/19/2006	04/20/2006
MW-7-041906	GW	04/19/2006	04/19/2006	04/19/2006	04/20/2006
MWA-3-041906	GW	04/19/2006	04/19/2006	04/19/2006	04/20/2006

NYSDEC-4

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
FIELD BLANK	WATER	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MHB-041906	LEACH	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-1R-041906	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-2-041906	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-4-041906	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-5-041906	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MW-7-041906	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED
MWA-3-041906	GW	ASP00	SEPF	AS REQUIRED	AS REQUIRED

NYSDEC-6



DATA QUALIFIER PAGE

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

ORGANIC DATA QUALIFIERS

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

INORGANIC DATA QUALIFIERS

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

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

Client No.

FIELD BLANK

Lab Name: STL Buffalo

Contract: _____

Lab Code: REXNY Case No.: _____ SAS No.: _____ SDG No.: _____Matrix: (soil/water) WATERLab Sample ID: A6422108Sample wt/vol: 1060.00 (g/mL) MLLab File ID: 6A09022.TX0% Moisture: _____ decanted: (Y/N) NDate Samp/Recv: 04/19/2006 04/19/2006Extraction: (SepF/Cont/Sonc/Soxh): SEPFDate Extracted: 04/20/2006Concentrated Extract Volume: 10000 (uL)Date Analyzed: 04/21/2006Injection Volume: 1.00 (uL)Dilution Factor: 1.00GPC Cleanup: (Y/N) N pH: 6.00Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Q

CAS NO.	COMPOUND		
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.

MHB-041906

Lab Name: STL Buffalo

Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____Matrix: (soil/water) WATERLab Sample ID: A6422101Sample wt/vol: 1000.00 (g/mL) MLLab File ID: 6A09011.TX0% Moisture: _____ decanted: (Y/N) NDate Samp/Recv: 04/19/2006 04/19/2006Extraction: (SepF/Cont/Sonc/Soxh): SEPFDate Extracted: 04/20/2006Concentrated Extract Volume: 10000 (uL)Date Analyzed: 04/21/2006Injection Volume: 1.00 (uL)Dilution Factor: 1.00GPC Cleanup: (Y/N) N pH: 6.00Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

319-84-6-----	alpha-BHC	0.065	
319-85-7-----	beta-BHC	0.046	J
319-86-8-----	delta-BHC	0.25	
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-1R-041906

Lab Name: STL Buffalo

Contract: _____

Lab Code: RECNY

Case No.: _____

SAS No.: _____

SDG No.: _____

Matrix: (soil/water) WATERLab Sample ID: A6422102Sample wt/vol: 1010.00 (g/mL) MLLab File ID: 6A09012.TX0% Moisture: _____ decanted: (Y/N) NDate Samp/Recv: 04/19/2006 04/19/2006Extraction: (SepF/Cont/Sonc/Soxh): SEPFDate Extracted: 04/20/2006Concentrated Extract Volume: 10000 (uL)Date Analyzed: 04/21/2006Injection Volume: 1.00 (uL)Dilution Factor: 1.00GPC Cleanup: (Y/N) N pH: 6.00Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Q

CAS NO.	COMPOUND		
319-84-6-----	alpha-BHC	0.037	J
319-85-7-----	beta-BHC	0.036	J
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-2-041906

Lab Name: STL Buffalo

Contract: _____

Lab Code: REQNY Case No.: _____ SAS No.: _____ SDG No.: _____Matrix: (soil/water) WATERLab Sample ID: A6422103Sample wt/vol: 1010.00 (g/mL) MLLab File ID: 6A09013.TX0% Moisture: _____ decanted: (Y/N) NDate Samp/Recv: 04/19/2006 04/19/2006Extraction: (SepF/Cont/Sonc/Soxh): SEPFDate Extracted: 04/20/2006Concentrated Extract Volume: 10000 (uL)Date Analyzed: 04/21/2006Injection Volume: 1.00 (uL)Dilution Factor: 1.00GPC Cleanup: (Y/N) N pH: 6.00Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:

CAS NO.

COMPOUND

(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-4-041906

Lab Name: STL Buffalo

Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____Matrix: (soil/water) WATERLab Sample ID: A6422104Sample wt/vol: 1020.00 (g/mL) MLLab File ID: 6A09032.TX0% Moisture: _____ decanted: (Y/N) NDate Samp/Recv: 04/19/2006 04/19/2006Extraction: (SepF/Cont/Sonc/Soxh): SEPFDate Extracted: 04/20/2006Concentrated Extract Volume: 10000 (uL)Date Analyzed: 04/24/2006Injection Volume: 1.00 (uL)Dilution Factor: 1.00GPC Cleanup: (Y/N) N pH: 6.00Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Q

CAS NO.	COMPOUND		
319-84-6-----	alpha-BHC	0.049	U
319-85-7-----	beta-BHC	0.022	J
319-86-8-----	delta-BHC	0.049	U
58-89-9-----	gamma-BHC (Lindane)	0.030	J

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

Client No.

MW-5-041906

Lab Name: STL Buffalo Contract: _____Lab Code: REONY Case No.: _____ SAS No.: _____ SDG No.: _____Matrix: (soil/water) WATER Lab Sample ID: A6422105Sample wt/vol: 1020.00 (g/mL) ML Lab File ID: 6A09019.TX0% Moisture: _____ decanted: (Y/N) N Date Samp/Recv: 04/19/2006 04/19/2006Extraction: (SepF/Cont/Sonc/Soxh): SEPF Date Extracted: 04/20/2006Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/21/2006Injection Volume: 1.00 (uL) Dilution Factor: 1.00GPC Cleanup: (Y/N) N pH: 6.00 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

319-84-6-----	alpha-BHC	0.049	U
319-85-7-----	beta-BHC	0.049	U
319-86-8-----	delta-BHC	0.049	U
58-89-9-----	gamma-BHC (Lindane)	0.049	U

18/269

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

Client No.

MW-7-041906

Lab Name: STL Buffalo

Contract: _____

Lab Code: RECNY

Case No.: _____

SAS No.: _____

SDG No.: _____

Matrix: (soil/water) WATERLab Sample ID: A6422106Sample wt/vol: 1025.00 (g/mL) MLLab File ID: 6A09020.TX0% Moisture: _____ decanted: (Y/N) NDate Samp/Recv: 04/19/2006 04/19/2006Extraction: (SepF/Cont/Sonc/Soxh): SEPFDate Extracted: 04/20/2006Concentrated Extract Volume: 10000 (uL)Date Analyzed: 04/21/2006Injection Volume: 1.00 (uL)Dilution Factor: 1.00GPC Cleanup: (Y/N) N pH: 6.00Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Q

CAS NO.	COMPOUND		
319-84-6-----	alpha-BHC	0.049	U
319-85-7-----	beta-BHC	0.049	U
319-86-8-----	delta-BHC	0.049	U
58-89-9-----	gamma-BHC (Lindane)	0.049	U

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

Client No.

MWA-3-041906

Lab Name: STL Buffalo

Contract: _____

Lab Code: RECNY

Case No.: _____

SAS No.: _____

SDG No.: _____

Matrix: (soil/water) WATERLab Sample ID: A6422107Sample wt/vol: 1025.00 (g/mL) MLLab File ID: 6A09021.TX0% Moisture: _____ decanted: (Y/N) NDate Samp/Recv: 04/19/2006 04/19/2006Extraction: (SepF/Cont/Sonc/Soxh): SEPFDate Extracted: 04/20/2006Concentrated Extract Volume: 10000 (uL)Date Analyzed: 04/21/2006Injection Volume: 1.00 (uL)Dilution Factor: 1.00GPC Cleanup: (Y/N) N pH: 6.00Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Q

CAS NO.	COMPOUND		
319-84-6-----	alpha-BHC	0.049	U
319-85-7-----	beta-BHC	0.049	U
319-86-8-----	delta-BHC	0.049	U
58-89-9-----	gamma-BHC (Lindane)	0.049	U

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

Lab Name: STL Buffalo

Contract: _____

Lab Code: RECNY

Case No.: _____

SAS No.: _____

SDG No.: _____

GC Column(1): RTX-CLPI 3ID: 0.53 (nm)

	Client Sample ID	Lab Sample ID	DCBP %REC	#	TCMX %REC	#						TOT OUT
1	FIELD BLANK	A6422108	78		64							0
2	Matrix Spike Blank	A6B1745401	48		64							0
3	Method Blank	A6B1745402	46		64							0
4	MHB-041906	A6422101	70		68							0
5	MW-1R-041906	A6422102	58		60							0
6	MW-2-041906	A6422103	83		58							0
7	MW-2-041906	A6422103MS	86		60							0
8	MW-2-041906	A6422103SD	80		56							0
9	MW-4-041906	A6422104	66		64							0
10	MW-5-041906	A6422105	58		54							0
11	MW-7-041906	A6422106	72		60							0
12	MWA-3-041906	A6422107	80		63							0

QC LIMITS

(DCBP) = Decachlorobiphenyl
 (TCMX) = Tetrachloro-m-xylene

(30-150)
 (30-150)

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

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

Lab Name: STL Buffalo

Contract: _____

Lab Samp ID: A6422103Lab Code: RECNY

Case No.: _____

SAS No.: _____

SDG No.: _____

Matrix Spike - Client Sample No.: MW-2-041906

COMPOUND	SPIKE ADDED UG/L	SAMPLE CONCENTRATION UG/L	MS CONCENTRATION UG/L	MS % REC #	QC LIMITS REC.	+
gamma-BHC (Lindane)_____	0.495	0	0.405	82	56 - 123	=

COMPOUND	SPIKE ADDED UG/L	MSD CONCENTRATION UG/L	MSD % REC #	% RPD #	QC LIMITS RPD REC.	+
gamma-BHC (Lindane)_____	0.492	0.383	78	5	15 56 - 123	=

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

* Values outside of QC limits

RPD: 0 out of 1 outside limitsSpike recovery: 0 out of 2 outside limits

Comments: _____

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

Lab Name: STL Buffalo

Contract: _____

Lab Samp ID: A6B1745402Lab Code: RECNY Case No.: _____

SAS No.: _____

SDG No.: _____

Matrix Spike - Client Sample No.: Method Blank

COMPOUND	SPIKE ADDED UG/L	MSB CONCENTRATION UG/L	MSB % REC #	QC LIMITS REC.	+
gamma-BHC (Lindane)_____	0.500	0.419	84	56 - 123	

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

* Values outside of QC limits

Spike recovery: 0 out of 1 outside limits

Comments: _____

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

Client No. _____

Method Blank

Lab Name: STL Buffalo

Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: _____Lab Sample ID: A6B1745402Lab File ID: 6A09010.TX0Matrix: (soil/water) WATERExtraction: SEPFSulfur Cleanup: (Y/N): NDate Extracted: 04/20/2006Date Analyzed (1): 04/21/2006

Date Analyzed (2): _____

Time Analyzed (1): 15:50

Time Analyzed (2): _____

Instrument ID (1): HP6890-6

Instrument ID (2): _____

GC Column (1): RTX-CLPI 3 Dia: 0.53(mm) GC Column (2): _____ Dia: _____(mm)

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	=====	=====	=====	=====
1	FIELD BLANK	A6422108	04/21/2006	
2	Matrix Spike Blank	A6B1745401	04/21/2006	
3	MHB-041906	A6422101	04/21/2006	
4	MW-1R-041906	A6422102	04/21/2006	
5	MW-2-041906	A6422103	04/21/2006	
6	MW-2-041906	A6422103MS	04/21/2006	
7	MW-2-041906	A6422103SD	04/21/2006	
8	MW-4-041906	A6422104	04/24/2006	
9	MW-5-041906	A6422105	04/21/2006	
10	MW-7-041906	A6422106	04/21/2006	
11	MWA-3-041906	A6422107	04/21/2006	

Comments: _____

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

Client No.

Method Blank

Lab Name: STL Buffalo

Contract: _____

Lab Code: RECNY

Case No.: _____

SAS No.: _____

SDG No.: _____

Matrix: (soil/water) WATERLab Sample ID: A6B1745402Sample wt/vol: 1000.00 (g/mL) MLLab File ID: 6A09010.TX0% Moisture: _____ decanted: (Y/N) N

Date Samp/Recv: _____

Extraction: (SepF/Cont/Sonc/Soxh): SEPFDate Extracted: 04/20/2006Concentrated Extract Volume: 10000 (uL)Date Analyzed: 04/21/2006Injection Volume: 1.00 (uL)Dilution Factor: 1.00GPC Cleanup: (Y/N) N pH: 5.00Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Q

CAS NO.	COMPOUND		
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

APPENDIX B
FIELD LOGS
SEMI-ANNUAL GROUND WATER SAMPLING
AND
ANNUAL LEACHATE SAMPLING AT MANHOLE B

April 2006

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 SAMPLING FIELD PARAMETERS
FIELD INSTRUMENTATION CALIBRATION FORM

DATE: 4/19/2006 SEMI-ANNUAL SAMPLING EVENT: Spring 2006

PERSON CALIBRATING METERS: Chris Jones

pH METER USED: MANUFACTURER: Corning

MODEL: Ph - 20

IDENTIFICATION/CONTROL NUMBER: 0.0425

CALIBRATION STANDARDS USED:

STANDARD 7.00 METER READ: 7.01

STANDARD 4.00 METER READ: 3.98

STANDARD 10.00 METER READ: 10

METER CALIBRATION COMMENTS: _____

SPECIFIC CONDUCTIVITY METER USED:

MANUFACTURER: Oakton

MODEL: WD- 35607-30

IDENTIFICATION/CONTROL NUMBER: _____

CALIBRATION STANDARDS USED: 447ms

STANDARD 0 READ: _____

(STANDARD 0 USED: AX)

STANDARD 447ms READ 448ms

STANDARD _____ READ: _____

METER CALIBRATION COMMENTS: _____

THERMOMETER USED: TYPE: Traceable Thermometer

MANUFACTURER: Fisher scientific

IDENTIFICATION/CONTROL NUMBER: 14-648-12

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: _____

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

RECORDED BY: <u>C. Jones</u>		SAMPLE ID: <u>MHB-041906</u>	
SAMPLED BY: <u>C. Jones</u>		SAMPLING EVENT/DATE: <u>4/19/2006</u>	
COMPANY: <u>Sevenson</u>		MONITORING WELL: <u>XXX</u>	
		CONDITION: <u>Good</u>	
GROUNDWATER PURGE DATA			
PURGE DATE: <u>4/19/2006</u>			
DEPTH TO BOTTOM FROM TOP OF RISER: <u>XXX</u> (FT.)		NOTE: ALL GIBSON SITE MONITORING WELLS ARE	
DEPTH TO WATER FROM TOP OF RISER: <u>XXX</u> (FT.)		2-INCH DIAMETER STAIN-	
WATER COLUMN: _____ (FT.)		LESS STEEL. WELL DEPTHS:	
2" DIA. WELL CONSTANT: <u>0.16</u>		MW-1R 12.10'	
ONE WELL VOLUME= <u>XXX</u> (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 TIME:	
PURGE OBSERVATIONS:			
FIELD PARAMETER MEASUREMENTS:			
WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm	TEMP. (C OR F)
1	7.51	582	10.3
2			
3			
4			
5			
TOTAL VOLUME PURGED: <u>XXX</u>			
GROUNDWATER OR SEDIMENT SAMPLING DATA:			
SAMPLE DATE: <u>4/19/2006</u>			
MEDIA: GROUNDWATER <u>X</u>	SAMPLE TIME: <u>850</u>		
CREEK SEDIMENT _____			
LOCATION: <u>Manhole "B"</u>			
SAMPLE METHOD: <u>Grab sample using pump w/ dedicated tubing</u>			
SAMPLING OBSERVATIONS: _____			
QC SAMPLES TAKEN: <u>No</u>			
OTHER OBSERVATIONS/COMMENTS: <u>2, 1 liter amber jars 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 AND SEDIMENT
SAMPLING FIELD FORM

RECORDED BY: <u>C. Jones</u>		SAMPLE ID: <u>Field blank</u>	
SAMPLED BY: <u>C. Jones</u>		SAMPLING EVENT/DATE: <u>4/19/2006</u>	
COMPANY: <u>Sevenson</u>		MONITORING WELL: <u>field blank</u>	
CONDITION: _____			
GROUNDWATER PURGE DATA		PURGE DATE: _____	
DEPTH TO BOTTOM FROM TOP OF RISER: _____ (FT.)		NOTE: ALL GIBSON SITE MONITORING WELLS ARE	
DEPTH TO WATER FROM TOP OF RISER: _____ (FT.)		2-INCH DIAMETER STAIN-	
WATER COLUMN: _____ (FT.)		LESS STEEL. WELL DEPTHS:	
2" DIA. WELL CONSTANT: <u>0.16</u>		MW-1R	12.10'
ONE WELL VOLUME= _____ (GALS)		MW-2	12.13'
		MW-A3	11.95'
		MW-4	13.75'
		MW-5	15.28'
PURGE METHOD: _____			
BOTTOM OF WELL/SILT BUILDUP: _____			
PURGE START TIME: _____		STOP TIME: _____	
PURGE OBSERVATIONS: _____			
FIELD PARAMETER MEASUREMENTS:			
WELL VOLUME	pH	SPECIFIC CONDUCTIVITY <u>umhos/cm</u>	TEMP. <u>(C OR F)</u>
1			NOTES: _____
2			
3			
4			
5			
TOTAL VOLUME PURGED: _____			
GROUNDWATER OR SEDIMENT SAMPLING DATA:		SAMPLE DATE: <u>4/19/2006</u>	
MEDIA: GROUNDWATER _____		SAMPLE TIME: <u>1200</u>	
CREEK SEDIMENT _____			
LOCATION: <u>Field blank</u>			
SAMPLE METHOD: <u>2, 1 liter glass ambers filled with volatile free water provided by STL labs.</u>			
SAMPLING OBSERVATIONS: <u>Clear</u>			
QC SAMPLES TAKEN: _____			
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: C. Jones SAMPLE ID: MW-1-041906
SAMPLED BY: C. Jones SAMPLING EVENT/DATE: 4/19/2006
COMPANY: Sevenson MONITORING WELL: MW-1 and "MW-7"
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 4/19/2006
DEPTH TO BOTTOM FROM TOP OF RISER: 12.1 (FT.) NOTE: ALL GIBSON SITE
DEPTH TO WATER FROM TOP OF RISER: 4.61 (FT.) MONITORING WELLS ARE
WATER COLUMN: 7.49 (FT.) 2-INCH DIAMETER STAIN-
2" DIA. WELL CONSTANT: 0.16 LESS STEEL. WELL DEPTHS:
ONE WELL VOLUME= 1.20 (GALS) MW-1R 12.10'
MW-2 12.13'
MW-A3 11.95'
MW-4 13.75'
MW-5 15.28'
PURGE METHOD: Parastaltic Pump (3 volumes)
BOTTOM OF WELL/SILT BUILDUP: no
PURGE START TIME: STOP TIME:
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm	TEMP. (C OR F)	NOTES:
1	7.63	775	10.9	Clear
2	7.69	810	9.8	Clear
3	7.41	825	10.2	Clear
4				
5				

TOTAL VOLUME PURGED: 4 gal.

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/19/2006
MEDIA: GROUNDWATER X SAMPLE TIME: 1100
CREEK SEDIMENT

LOCATION: MW-1

SAMPLE METHOD: Low Flow, purge 3 volumes using parastaltic pump with dedicated tubing

SAMPLING OBSERVATIONS: Clear

QC SAMPLES TAKEN: Yes, Blind Duplicate sample labeled MW-7

OTHER OBSERVATIONS/COMMENTS: Blind dupe labeled MW-7 sampled @1125

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

RECORDED BY: <u>C. Jones</u>	SAMPLE ID: <u>MW-2-041906</u>
SAMPLED BY: <u>C. Jones</u>	SAMPLING EVENT/DATE: <u>4/19/2006</u>
COMPANY: <u>Sevenson</u>	MONITORING WELL: <u>MW-2</u>
	CONDITION: <u>Good</u>

GROUNDWATER PURGE DATA	PURGE DATE: <u>4/19/2006</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>5.15 (FT.)</u>		
WATER COLUMN: <u>6.98 (FT.)</u>		
2" DIA. WELL CONSTANT: <u>0.16</u>		MW-1R 12.10'
ONE WELL VOLUME= <u>1.12 (GALS)</u>		MW-2 12.13'
		MW-A3 11.95'
PURGE METHOD: <u>Parastaltic Pump (3 volumes)</u>		MW-4 13.75'
BOTTOM OF WELL/SILT BUILDUP: <u>no</u>		MW-5 15.28'
PURGE START TIME: _____	STOP TIME: _____	
PURGE OBSERVATIONS: _____		

FIELD PARAMETER MEASUREMENTS:				
WELL VOLUME	pH	SPECIFIC CONDUCTIVITY <small>umhos/cm</small>	TEMP. <small>(C OR F)</small>	NOTES:
1	7.34	1117	9.2	Clear
2	7.24	1108	8.3	Clear
3	7.23	1048	8.3	Clear
4				
5				

TOTAL VOLUME PURGED: <u>4 gal.</u>	
------------------------------------	--

GROUNDWATER OR SEDIMENT SAMPLING DATA:	SAMPLE DATE: <u>4/19/2006</u>
MEDIA: <u>GROUNDWATER</u> <u>X</u>	SAMPLE TIME: <u>1140</u>
<u>CREEK SEDIMENT</u>	
LOCATION: <u>MW-2</u>	
SAMPLE METHOD: <u>Low Flow, purge 3 volumes using parastaltic pump with dedicated tubing</u>	
SAMPLING OBSERVATIONS: <u>Clear</u>	
QC SAMPLES TAKEN: <u>MS/MSD samples taken at this location</u>	
OTHER OBSERVATIONS/COMMENTS: <u>6, 1 Liter amber jars filled.</u>	

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

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

RECORDED BY: C. Jones SAMPLE ID: MW-4-041906
SAMPLED BY: C. Jones SAMPLING EVENT/DATE: 4/19/2006
COMPANY: Sevenson MONITORING WELL: MW-4
CONDITION: Good

GROUNDWATER PURGE DATA PURGE DATE: 4/19/2006
DEPTH TO BOTTOM FROM TOP OF RISER: 13.75 (FT.) NOTE: ALL GIBSON SITE
MONITORING WELLS ARE
DEPTH TO WATER FROM TOP OF RISER: 6.65 (FT.) 2-INCH DIAMETER STAIN-
WATER COLUMN: 7.1 (FT.) LESS STEEL WELL DEPTHS:
2" DIA. WELL CONSTANT: 0.16 MW-1R 12.10'
ONE WELL VOLUME= 1.14 (GALS) MW-2 12.13'
MW-A3 11.95'
MW-4 13.75'
MW-5 15.28'
PURGE METHOD: Parastaltic Pump (3 volumes)
BOTTOM OF WELL/SILT BUILDUP: no
PURGE START TIME: STOP TIME:
PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm	TEMP. (C OR F)	NOTES:
1	7.17	1341	9.6	Dark turbid
2	7.03	1445	9.4	Hint of sulfur
3	6.89	1511	9.5	Clear
4				
5				

TOTAL VOLUME PURGED: 4.5 gal.

GROUNDWATER OR SEDIMENT SAMPLING DATA: SAMPLE DATE: 4/19/2006

MEDIA: GROUNDWATER X SAMPLE TIME: 1030
CREEK SEDIMENT

LOCATION: MW-4

SAMPLE METHOD: Low Flow, purge 3 volumes using parastaltic pump with dedicated tubing

SAMPLING OBSERVATIONS: Turbid to clear.

QC SAMPLES TAKEN: No

OTHER OBSERVATIONS/COMMENTS: 2, 1 liter amber jars taken.

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: C. Jones SAMPLE ID: MW-5-041906
SAMPLED BY: C. Jones SAMPLING EVENT/DATE: 4/19/2006
COMPANY: Sevenson MONITORING WELL: MW-5
CONDITION: Good

GROUNDWATER PURGE DATA

PURGE DATE: 4/19/2006

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

NOTE: ALL GIBSON SITE
MONITORING WELLS ARE

DEPTH TO WATER FROM TOP OF RISER: 7 (FT.)

2-INCH DIAMETER STAIN-

WATER COLUMN: 8.28 (FT.)

LESS STEEL WELL DEPTHS:

2" DIA. WELL CONSTANT: 0.16

MW-1R 12.10'

ONE WELL VOLUME= 1.32 (GALS)

MW-2 12.13'

MW-A3 11.95'

PURGE METHOD: Parastaltic Pump (3 volumes)

MW-4 13.75'

BOTTOM OF WELL/SILT BUILDUP: no

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)	NOTES:
1	6.71	1808	8.8	Turbid
2	6.7	1705	9.5	Clearing
3	6.31	1655	10.6	clear.
4				
5				

TOTAL VOLUME PURGED: 4 gal.

GROUNDWATER OR SEDIMENT SAMPLING DATA:

SAMPLE DATE: 4/19/2006

MEDIA: GROUNDWATER X
CREEK SEDIMENT

SAMPLE TIME: 950

LOCATION: MW-5

SAMPLE METHOD: Low Flow, purge 3 volumes using parastaltic pump with dedicated tubing

SAMPLING OBSERVATIONS: Turbid to clear.

QC SAMPLES TAKEN: No

OTHER OBSERVATIONS/COMMENTS: 2, 1 liter amber jars taken.

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: C. Jones SAMPLE ID: MW-A3-041906
SAMPLED BY: C. Jones SAMPLING EVENT/DATE: 4/19/2006
COMPANY: Sevenson MONITORING WELL: MW-A3
CONDITION: Good

GROUNDWATER PURGE DATA

PURGE DATE: 4/19/2006

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

NOTE: ALL GIBSON SITE
MONITORING WELLS ARE

DEPTH TO WATER FROM TOP OF RISER: 6.7 (FT.)

2-INCH DIAMETER STAIN-

WATER COLUMN: 5.25 (FT.)

LESS STEEL. WELL DEPTHS:

2" DIA. WELL CONSTANT: 0.16

MW-1R 12.10'

ONE WELL VOLUME= 0.84 (GALS)

MW-2 12.13'

MW-A3 11.95'

MW-4 13.75'

MW-5 15.28'

PURGE METHOD: Parastaltic Pump (3 volumes)

BOTTOM OF WELL/SILT BUILDUP: no

PURGE START TIME:

STOP TIME:

PURGE OBSERVATIONS:

FIELD PARAMETER MEASUREMENTS:

WELL VOLUME	pH	SPECIFIC CONDUCTIVITY umhos/cm	TEMP. (C OR F)	NOTES:
1	6.82	522	10.9	Clear
2	6.87	607	10.6	Clear
3	6.89	612	10.7	Clear
4				
5				

TOTAL VOLUME PURGED: 3 gal.

GROUNDWATER OR SEDIMENT SAMPLING DATA:

SAMPLE DATE: 4/19/2006

MEDIA: GROUNDWATER X
CREEK SEDIMENT

SAMPLE TIME: 1320

LOCATION: MW-A3

SAMPLE METHOD: Low Flow, purge 3 volumes using parastaltic pump with dedicated tubing

SAMPLING OBSERVATIONS: Clear

QC SAMPLES TAKEN: no

OTHER OBSERVATIONS/COMMENTS: 2, 1 liter glass amber jars taken.

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

APPENDIX C
QUARTERLY SITE INSPECTION FORMS

January - June 2006

CHARLES GIBSON SITE
(PINE AND TUSCARORA SITE)
NIAGARA FALLS, NEW YORK
NYSDEC Registry No. 9-32-063

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

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

DATE: 2/15/2006 TIME: 800

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER: Windy, Cloudy, 40F

REASON FOR INSPECTION (QUARTERLY OR OTHER): Quarterly Inspection and G/W Levels

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

		COMMENTS
ACCESS ROAD	<u>A</u>	<u>Snow Covered</u>
COVER VEGETATION	<u>A</u>	<u>What was visible</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>New gate on side facing Niagara Falls Blvd.</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:

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

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

DATE: 4/19/2006 TIME: 830

INSPECTOR: Chris jones COMPANY: Sevenson

WEATHER:

REASON FOR INSPECTION (QUARTERLY OR OTHER): Spring Sample Event 2006

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 D

QUARTERLY GROUNDWATER ELEVATION /PUMPING FORMS

January - June 2006

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: 2/15/2006 TIME: 800

INSPECTOR: M. Walker COMPANY: Sevenson

WEATHER: Windy, Cloudy, 40F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	<u>7.22</u>	<u>565.5</u>	<u>OK</u>
P-2	574.89	<u>9.37</u>	<u>565.52</u>	<u>OK</u>
P-3	574.16	<u>6.57</u>	<u>567.59</u>	<u>OK</u>
P-4	576.14	<u>10.71</u>	<u>565.43</u>	<u>OK</u>
P-5	575.05	<u>5.53</u>	<u>569.52</u>	<u>OK</u>
P-6	578.28	<u>10.31</u>	<u>567.97</u>	<u>OK</u>
MANHOLE A	575.22	<u>11.2</u>	<u>564.02</u>	<u>OK</u>
MANHOLE B	577.34	<u>13.26</u>	<u>564.08</u>	<u>OK</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: Site looks good.

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

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

DATE: 4/19/2006 TIME: 1300

INSPECTOR: Craig Bove COMPANY: Sevenson

WEATHER: Sunny 55 F

PIEZOMETER	RISER ELEVATION (INSIDE CASING)	DEPTH TO WATER (FT.)	WATER ELEVATION	COMMENTS
P-1	572.72	<u>7.31</u>	<u>565.41</u>	<u>OK</u>
P-2	574.89	<u>9.45</u>	<u>565.44</u>	<u>OK</u>
P-3	574.16	<u>7.16</u>	<u>567</u>	<u>OK</u>
P-4	576.14	<u>10.76</u>	<u>565.38</u>	<u>OK</u>
P-5	575.05	<u>6.09</u>	<u>568.96</u>	<u>OK</u>
P-6	578.28	<u>10.61</u>	<u>567.67</u>	<u>OK</u>
MANHOLE A	575.22	<u>11.5</u>	<u>563.72</u>	<u>OK</u>
MANHOLE B	577.34	<u>13.54</u>	<u>563.8</u>	<u>OK</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: _____

The outer casing on P-3 has settled a bit and the 2" PVC well is pushing up on the metal cover.
