December 7, 2015 1239-651615.300

Ms. Jackie Drummond
Department of Environmental Quality
Division of Waste Management - Solid Waste Section
2090 US Highway 70
Swannanoa, NC 28778
828-296-4706

RE: ASSESSMENT MONITORING NOTIFICATION AND WORK PLAN
WASTE INDUSTRIES OF HIGH POINT C&D LANDFILL, PERMIT NO. 41-16
GUILFORD COUNTY, NORTH CAROLINA

Dear Jackie:

On behalf of Waste Industries, Golder Associates NC, Inc. (Golder) is submitting the following notification of initiation of Assessment Monitoring and Assessment Monitoring Work Plan (Plan) to the North Carolina Department of Environmental Quality (NC DEQ). This Plan outlines the Waste Industries' intention to initiate Assessment Monitoring at the Waste Industries of High Point Construction and Demolition (C&D) Landfill, Permit No. 41-16.

Pursuant to 15A NCAC 13B .0545, Assessment Monitoring is required when one or more constituents, as listed in Part(b)(1)(D) of Rule .0544, are detected above the current groundwater protection standards during any sampling event. Detections of volatile organic constituents (VOCs) at concentrations above applicable groundwater standards and the Solid Waste Section Limits (SWSLs) have been documented in samples from groundwater monitoring well MW-2 at this facility since the July 2014 compliance monitoring event. On February 3, 2015, Golder submitted an Alternate Source Demonstration (ASD) to the NC Environment and Natural Resources (NC DENR) that requested additional time to assess the potential sources of the VOCs detected in MW-2 and evaluate concentration trends, as it was not apparent that the VOC detections are related to a leachate release from the facility's waste disposal area. NC DENR allowed six months of additional time to assess the potential sources of the low level VOCs, per correspondence dated March 2, 2015. After the six month period, if any VOCs exceed the applicable groundwater standards, the facility would be required to begin the Assessment Monitoring Program.

Based on the second semi-annual water quality monitoring event's analytical results, Waste Industries will initiate an Assessment Monitoring Program at the Waste Industries of High Point C&D Landfill, beginning with the January 2016 semi-annual groundwater sampling event and is submitting this Plan. It is Waste Industries' intent to comply with the requirements of 15A NCAC 13B. 0545.(a) and (b).

15A NCAC 13B .0545(a)(1) and (b)(1): INSTALLATION OF ADDITIONAL MONITORING POINT:

Rule 15A NCAC 13B .0545(a)(1) requires the installation of at least one additional monitoring well or methane gas monitoring well at the facility or compliance boundary. As shown on the attached Drawing 1, MW-2 is in close proximity to the facility boundary and steep topography will limit the ability to install an additional monitoring well. Therefore, Waste Industries proposes to monitor an additional surface water monitoring point (SW-2A) downgradient of MW-2 along the unnamed tributary of Richland Creek that forms the western property boundary. The proposed location of SW-2A is shown on the attached Drawing 1.

On November 30, 2015, Golder collected a sample from the proposed SW-2A location. The sample was analyzed for NC Appendix I VOCs and indicator parameters chloride, sulfate, alkalinity, and total

Golder, Golder Associates and the GA globe design are trademarks of Golder Associates Corporation

dissolved solids (TDS). No VOCs were detected in the sample from SW-2A. An evaluation of historical water level data from nested well pair MW-4S and MW-4D, which are also located adjacent to the unnamed tributary, indicates there is a relatively strong upward flow gradient near the stream. Surface water monitoring point SW-2A will serve as the downgradient groundwater monitoring point for assessment monitoring, as it has been demonstrated that groundwater is discharging to this surface water feature.

NCAC 13B. 0545(a)(2): NOTIFICATION TO ALL PERSONS WHO OWN LAND OR RESIDE ON LAND WITHIN THE CONTAMINATE PLUME:

The property adjacent to the western facility boundary is owned by the City of High Point and is utilized as the Kersey Valley MSW Landfill. There are no structures on the adjacent properties within 700 feet of the property line at MW-2 and no known users of groundwater on the adjacent parcel immediately adjacent to MW-2. Based on the adjacent land use and because it does not appear that VOCs occur in groundwater at the property line, Waste Industries does not intend to notify the adjacent land owner. If VOCs are detected in future samples from SW-2A at concentrations that exceed groundwater standards, the adjacent landowner will be notified that the contaminant plume has reached the property boundary.

15A NCAC 13B .0545(a)(3): SUBMISSION OF ASSESSMENT MONITORING WORK PLAN:

Waste Industries is submitting this Assessment Monitoring Work Plan as required by Rule. Once approved by the Division of Waste Management, the approved Plan will be placed in the facility's operating record, and all appropriate government officials will be notified.

In order to comply with 15A NCAC 13B .0545 (b), Waste Industries will also complete the following activities:

15A NCAC 13B. 0545(b)(2): ANALYSIS OF ADDITIONAL PARAMETERS IN GROUNDWATER:

As part of the Assessment Monitoring Work Plan, analysis of additional groundwater quality parameters will be performed in upgradient monitoring well MW-1 and downgradient monitoring well MW-2 during the January 2016 event in accordance to NCAC 13B. 0545(b)(2). A subset of the compliance monitoring wells may be analyzed for Assessment Monitoring Parameters as allowed in 15A NCAC 13B .0545 (b) (6) and data support limited impacts at this time, which support the subset of wells proposed for Assessment Monitoring. The additional assessment monitoring parameters will include all of the constituents listed in the Appendix II of 40CFR 258 and the required indicator parameters for C&D landfills (chloride, manganese, sulfate, iron, specific conductance, pH, temperature, alkalinity, total dissolved solids, and tetrahydrofuran). One event for the complete NC Appendix II list is allowed in 15A NCAC 13B .0545 (b) (6) and is supported by the fact that many of the NC Appendix II parameters (e.g., PCBs, pesticides, and herbicides) are unlikely to be present based on the acceptable waste in the facility permit. As required by Rule, for any constituent detected in MW-2 as a result of analyzing the NC Appendix II parameters, a minimum of four independent samples from MW-2 will be collected and analyzed to establish background for the new constituents. The sampling schedule and list of parameters will proceed as follows:

First Semi-Annual Groundwater Sampling Event 2016	Second Semi-Annual Groundwater Sampling Event 2016
NC Appendix II list and C&D Indicator List (MW-1 and MW-2)	*NC Appendix I list plus detected NC Appendix II constituents and C&D Indicator List (MW-1 and MW-2)*
First Semi-Annual Groundwater Sampling Event 2017	**Second Semi-Annual Groundwater Sampling Event 2017**
NC Appendix I list plus detected NC Appendix II constituents and C&D Indicator List (MW-1 and MW-2)	*NC Appendix I list plus detected NC Appendix II constituents and C&D Indicator List (MW-1 and MW-2)*

Upon completion of each of the background sampling events, semi-annual reports will be submitted to the Division. Upon completion of the final background sampling event, a report will be submitted to NC DEQ in accordance with 15A NCAC .0545(b)(7) to be sealed by a licensed geologist. The concentrations of NC Appendix II constituents for each background monitoring event will be compared to established 15A NCAC 02L. 0202 groundwater quality standards (2L Standards) and Solid Waste Section Groundwater Protection Standards (SWS GPSs). In the case of metals, comparisons will also be made to background concentrations. Pending the results of background sampling results, Waste Industries may petition the Division to return to a Detection Monitoring Program [15A NCAC 13B .0545(b)(9)], request selective Assessment Monitoring for a subset of NC Appendix II constituents for analysis [15A NCAC .0545(b)(6)], and/or will begin the process to implement Assessment of Corrective Measures [15A NCAC 13B .0545(c)].

In summary, Waste Industries will initiate an Assessment Monitoring Program at the Waste Industries of High Point C&D Landfill beginning with the next semi-annual groundwater sampling event in January 2015 as described in this Plan. The additional assessment activities described in this plan will be initiated upon final approval of this Plan by the NC DENR. In the interim, Waste Industries will continue to investigate landfill gas as a potential source of VOCs in groundwater and ascertain what assessment and corrective measures may be appropriate as necessary. If you have any questions regarding the implementation of the Assessment Monitoring Work Plan, please contact the undersigned at 336-852-4903.

Sincererly,
GOLDER ASSOCIATES NC, INC.

David "Dusty" Y. Reedy II, PG
Senior Hydrogeologist

Rachel P. Kirkman, PG
Associate and Senior Consultant

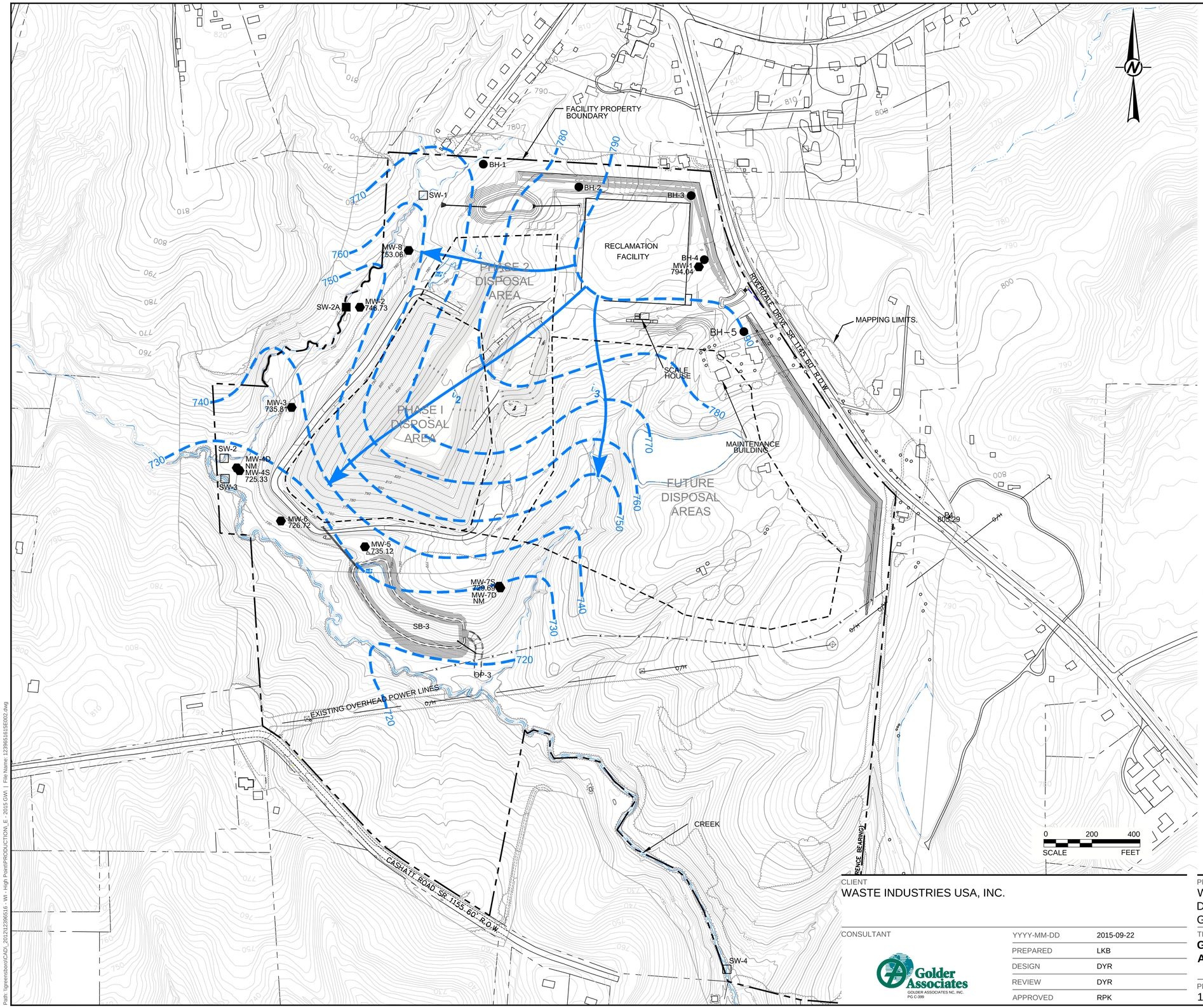
C: Seth Heath, General Manager, Waste Industries of High Point, 5830 Riverdale Drive, Jamestown, NC 27282, seth.heath@wasteindustries.com, 336-886-3560.

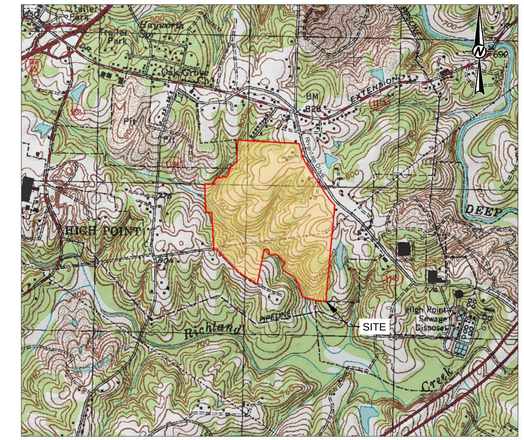
David Pepper, Area Landfill Manager, Waste Industries USA, Inc., 3301 Benson Drive, Suite 601, Raleigh, NC 27609, david.pepper@wasteindustries.com, 919-877-2235. (Electronic Copy)

Ben Habets, Region Manager, Waste Industries USA, Inc., 3301 Benson Drive, Suite 601, Raleigh, NC 27609, ben.habets@wasteindustries.com, 919-877-2228. (Electronic Copy)

Attachments: Groundwater Contour Map – August 12, 2015
Laboratory Certificate-of-Analysis
SW-2A Field Form

g:\projects\waste industries\high point\groundwater\wqmr\assessment monitoring notification and work plan\final wi of hp amwp 2015.docx





SITE LOCATION MAP

LEGEND

	EXISTING 10' CONTOURS
	EXISTING 2' CONTOURS
	PROPERTY LINE
	STREAM
	TREELINE
	EXISTING ROAD
	PROPOSED OR EXISTING LIMITS OF WASTE
MW-3 735.81	MONITORING WELL LOCATION IDENTIFICATION AND GROUNDWATER ELEVATION
SW-1	SURFACE WATER MONITORING POINT
SW-2A	PROPOSED SURFACE WATER MONITORING POINT
BM-1	BENCH MARK
SB-1	SEDIMENT BASIN
760	GROUNDWATER SURFACE CONTOURS
i 1	GROUNDWATER FLOW SEGMENT USED TO CALCULATE GRADIENT

NOTES

1. TOPOGRAPHIC CONTOUR INTERVAL = 2 FEET
2. GROUNDWATER SURFACE CONTOUR INTERVAL = 10 FEET
3. GROUNDWATER ELEVATIONS MEASURED ON AUGUST 12, 2015.
4. GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATA, TOPOGRAPHIC CONTOURS AND KNOWN FIELD CONDITIONS. THEREFORE, GROUNDWATER CONTOURS MAY NOT REFLECT ACTUAL CONDITIONS.
5. GROUNDWATER CONTOURS LINES SHOW THE WATER TABLE SHAPE AND ELEVATION. THESE CONTOURS ARE INFERRED LINES FOLLOWING THE GROUNDWATER SURFACE AT A CONSTANT ELEVATION ABOVE SEA LEVEL. THE GROUNDWATER FLOW DIRECTION IS GENERALLY PERPENDICULAR TO THE GROUNDWATER SURFACE CONTOURS, SIMILAR TO THE RELATIONSHIP BETWEEN SURFACE WATER FLOW AND TOPOGRAPHIC CONTOURS.
6. THE GROUNDWATER ELEVATIONS FOR MW-4D AND MW-7D WERE NOT USED IN THE CONSTRUCTION OF GROUNDWATER CONTOURS.
7. DRAWING BASED ON SITE PLAN PLAN PREPARED BY JOYCE ENGINEERING, INC DATED JULY 7, 2004.
8. UPDATED TOPOGRAPHY PROVIDED FROM AERIAL SURVEY PREPARED BY SURVEYING SOLUTIONS, P.C., PHOTOGRAPHY DATE JANUARY 13, 2015.

CLIENT
WASTE INDUSTRIES USA, INC.

CONSULTANT
Golder Associates
GOLDER ASSOCIATES NC, INC.
PG C-399

YYYY-MM-DD	2015-09-22
PREPARED	LKB
DESIGN	DYR
REVIEW	DYR
APPROVED	RPK

PROJECT
WASTE INDUSTRIES OF HIGH POINT CONSTRUCTION AND DEMOLITION DEBRIS LANDFILL AND RECLAMATION FACILITY
GUILFORD COUNTY, NORTH CAROLINA

TITLE
GROUNDWATER CONTOUR MAP
AUGUST 12, 2015

PROJECT No.	PHASE	Rev.	DRAWING
1239-651615	102	0	1

Path: \\greensboro\CAD_2012\1239616 - WI - High Point\PRODUCTION_E - 2015 GW\ | File Name: 1239651615E002.dwg

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D
0 1in

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary NC, 27511
Phone: 919.467.3090 FAX: 919.467.3515
www.encolabs.com

Tuesday, November 24, 2015

Golder Associates, Inc. (GO007)

Attn: Dusty Reedy

5B Oak Branch Drive

Greensboro, NC 27407

RE: Laboratory Results for
Project Number: [none], Project Name/Desc: WI High Point SWs
ENCO Workorder(s): C513550

Dear Dusty Reedy,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Monday, November 2, 2015.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Stephanie Franz

Project Manager

Enclosure(s)

The total number of pages in this report, including this page is 23.

PROJECT NARRATIVE

Date: 24 November 2015
Client: Golder Associates, Inc. (GO007)
Project: WI High Point SWs
Lab ID: C513550

Overview

This report is an amendment to the original report dated 12 November 2015 for this work order. This report was revised, at the client's request to divide the report into two separate reports.

Environmental Conservation Laboratories, Inc. (ENCO) analyzed all submitted samples in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling by ENCO are discussed in the QC Remarks section below.

Quality Control Samples

The spike recoveries of Alkalinity, Chloride, and Sulfate were outside of control limits for the MS and/or MSD samples, and precision between duplicate spikes of Chloride and Sulfate exceeded acceptance criteria. The QC batches were approved based on acceptable LCS recovery of these analytes.

Quality Control Remarks

No Comments

Other Comments

All samples received under this work order arrived in acceptable conditions. The samples were not checked for residual chlorine, as it is not required. Sample SW-3 was not analyzed, per client request.

The analytical data presented in this report are consistent with the methods as referenced in the analytical report. Any exceptions or deviations are noted in the QC remarks section of this narrative or in the Flags/Notes and Definitions section of the report.

Released By:
Environmental Conservation Laboratories, Inc.

Stephanie Franz
Project Manager

Page 2 of 23

www.encolabs.com

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: 4116-SW2A	Lab ID: C513550-03	Sampled: 10/30/15 15:20	Received: 11/02/15 09:45

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 300.0	11/27/15	11/06/15 08:10	11/6/2015 08:10
EPA 310.2	11/13/15	11/02/15 13:44	11/2/2015 16:15
EPA 8260B	11/13/15	11/06/15 15:44	11/12/2015 12:14
SM 2540C-1997	11/06/15	11/03/15 15:52	11/3/2015 15:52

Client ID: 4116-Field Blank	Lab ID: C513550-04RE1	Sampled: 10/30/15 15:55	Received: 11/02/15 09:45

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	11/13/15	11/06/15 15:44	11/12/2015 09:50

Client ID: 4116-Trip Blank	Lab ID: C513550-05RE1	Sampled: 10/30/15 15:10	Received: 11/02/15 09:45

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	11/13/15	11/06/15 15:48	11/11/2015 02:05

Page 3 of 23

www.encolabs.com

NORTH CAROLINA SWS SAMPLE DETECTION SUMMARY

Client ID: 4116-SW2A **Lab ID:** C513550-03

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Chloride	12000		1	2200	5000	NE	ug/L	EPA 300.0	
Sulfate as SO4	96000	J	1	2900	5000	250000	ug/L	EPA 300.0	
Total Alkalinity as CaCO3	33000		1	14000	15000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	200000		1	50000	50000	NE	ug/L	SM 2540C-1997	

Page 4 of 23

www.encolabs.com

ANALYTICAL RESULTS

Description: 4116-SW2A
Matrix: Ground Water
Project: WI High Point SWs

Lab Sample ID: C513550-03
Sampled: 10/30/15 15:20
Sampled By: David Reedy

Received: 11/02/15 09:45
Work Order: C513550

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.17	U	ug/L	1	0.17	1.0	5	EPA 8260B	11/12/15 12:14	MSZ	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	11/12/15 12:14	MSZ	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	11/12/15 12:14	MSZ	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/12/15 12:14	MSZ	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	11/12/15 12:14	MSZ	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	11/12/15 12:14	MSZ	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	11/12/15 12:14	MSZ	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	11/12/15 12:14	MSZ	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	11/12/15 12:14	MSZ	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	11/12/15 12:14	MSZ	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	11/12/15 12:14	MSZ	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	11/12/15 12:14	MSZ	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	11/12/15 12:14	MSZ	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	11/12/15 12:14	MSZ	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	11/12/15 12:14	MSZ	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/12/15 12:14	MSZ	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	11/12/15 12:14	MSZ	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	11/12/15 12:14	MSZ	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	11/12/15 12:14	MSZ	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/12/15 12:14	MSZ	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	11/12/15 12:14	MSZ	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	11/12/15 12:14	MSZ	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0		EPA 8260B	11/12/15 12:14	MSZ	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/12/15 12:14	MSZ	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	11/12/15 12:14	MSZ	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	11/12/15 12:14	MSZ	
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	11/12/15 12:14	MSZ	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	11/12/15 12:14	MSZ	

www.encolabs.com

Description:	4116-SW2A	**Lab Sample ID:**	C513550-03	**Received:**	11/02/15 09:45
Matrix:	Ground Water	**Sampled:**	10/30/15 15:20	**Work Order:**	C513550
Project:	WI High Point SWs	**Sampled By:**	David Reedy		

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	**Notes**
4-Bromofluorobenzene	*43*	*1*	*50.0*	*87 %*	*53-136*	*5K11037*	*EPA 8260B*	*11/12/15 12:14*	*MSZ*	
Dibromofluoromethane	*52*	*1*	*50.0*	*103 %*	*67-129*	*5K11037*	*EPA 8260B*	*11/12/15 12:14*	*MSZ*	
Toluene-d8	*48*	*1*	*50.0*	*96 %*	*59-134*	*5K11037*	*EPA 8260B*	*11/12/15 12:14*	*MSZ*	

www.encolabs.com

Description: 4116-SW2A
Matrix: Ground Water
Project: WI High Point SWs

Lab Sample ID: C513550-03
Sampled: 10/30/15 15:20
Sampled By: David Reedy

Received: 11/02/15 09:45
Work Order: C513550

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Chloride [16887-00-6] ^	**12000**		ug/L	1	2200	5000	NE	EPA 300.0	11/06/15 08:10	MMR	
Sulfate as SO4 [14808-79-8] ^	**96000**	J	ug/L	1	2900	5000	250000	EPA 300.0	11/06/15 08:10	MMR	
Total Alkalinity as CaCO3 [471-34-1] ^	**33000**		ug/L	1	14000	15000	NE	EPA 310.2	11/02/15 16:15	JLJ	
Total Dissolved Solids^	**200000**		ug/L	1	50000	50000	NE	SM 2540C-1997	11/03/15 15:52	MMR	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

Page 7 of 23

www.encolabs.com

Description: 4116-Field Blank | **Lab Sample ID:** C513550-04 | **Received:** 11/02/15 09:45
Matrix: Water | **Sampled:** 10/30/15 15:55 | **Work Order:** C513550
Project: WI High Point SWs | **Sampled By:** David Reedy

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.17	U	ug/L	1	0.17	1.0	5	EPA 8260B	11/12/15 09:50	MSZ	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	11/12/15 09:50	MSZ	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	11/12/15 09:50	MSZ	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/12/15 09:50	MSZ	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	11/12/15 09:50	MSZ	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	11/12/15 09:50	MSZ	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	11/12/15 09:50	MSZ	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	11/12/15 09:50	MSZ	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	11/12/15 09:50	MSZ	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	11/12/15 09:50	MSZ	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	11/12/15 09:50	MSZ	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	11/12/15 09:50	MSZ	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	11/12/15 09:50	MSZ	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	11/12/15 09:50	MSZ	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	11/12/15 09:50	MSZ	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/12/15 09:50	MSZ	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	11/12/15 09:50	MSZ	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	11/12/15 09:50	MSZ	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	11/12/15 09:50	MSZ	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/12/15 09:50	MSZ	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	11/12/15 09:50	MSZ	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	11/12/15 09:50	MSZ	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0		EPA 8260B	11/12/15 09:50	MSZ	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/12/15 09:50	MSZ	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	11/12/15 09:50	MSZ	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	11/12/15 09:50	MSZ	
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	11/12/15 09:50	MSZ	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	11/12/15 09:50	MSZ	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*43*	*1*	*50.0*	*86 %*	*53-136*	*5K11037*	*EPA 8260B*	*11/12/15 09:50*	*MSZ*	

Page 8 of 23

www.encolabs.com

Description:	4116-Field Blank	**Lab Sample ID:**	C513550-04	**Received:**	11/02/15 09:45
Matrix:	Water	**Sampled:**	10/30/15 15:55	**Work Order:**	C513550
Project:	WI High Point SWs	**Sampled By:**	David Reedy		

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	**Notes**
Dibromofluoromethane	*51*	*1*	*50.0*	*101 %*	*67-129*	*5K11037*	*EPA 8260B*	*11/12/15 09:50*	*MSZ*	
Toluene-d8	*49*	*1*	*50.0*	*97 %*	*59-134*	*5K11037*	*EPA 8260B*	*11/12/15 09:50*	*MSZ*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

Page 9 of 23

www.encolabs.com

Description: 4116-Trip Blank | **Lab Sample ID:** C513550-05 | **Received:** 11/02/15 09:45

Matrix: Water | **Sampled:** 10/30/15 15:10 | **Work Order:** C513550

Project: WI High Point SWs | **Sampled By:** ENCO

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.17	U	ug/L	1	0.17	1.0	5	EPA 8260B	11/11/15 02:05	MSZ	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	11/11/15 02:05	MSZ	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	11/11/15 02:05	MSZ	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/11/15 02:05	MSZ	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	11/11/15 02:05	MSZ	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	11/11/15 02:05	MSZ	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	11/11/15 02:05	MSZ	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	11/11/15 02:05	MSZ	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	11/11/15 02:05	MSZ	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	11/11/15 02:05	MSZ	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	11/11/15 02:05	MSZ	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	11/11/15 02:05	MSZ	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	11/11/15 02:05	MSZ	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	11/11/15 02:05	MSZ	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	11/11/15 02:05	MSZ	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/11/15 02:05	MSZ	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	11/11/15 02:05	MSZ	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	11/11/15 02:05	MSZ	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	11/11/15 02:05	MSZ	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	11/11/15 02:05	MSZ	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	11/11/15 02:05	MSZ	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	11/11/15 02:05	MSZ	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0		EPA 8260B	11/11/15 02:05	MSZ	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	11/11/15 02:05	MSZ	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	11/11/15 02:05	MSZ	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	11/11/15 02:05	MSZ	
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	11/11/15 02:05	MSZ	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	11/11/15 02:05	MSZ	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*85 %*	*53-136*	*5K10012*	*EPA 8260B*	*11/11/15 02:05*	*MSZ*	

www.encolabs.com

Description: 4116-Trip Blank
Matrix: Water
Project: WI High Point SWs

Lab Sample ID: C513550-05
Sampled: 10/30/15 15:10
Sampled By: ENCO

Received: 11/02/15 09:45
Work Order: C513550

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	**Notes**
Dibromofluoromethane	*43*	*1*	*50.0*	*86 %*	*67-129*	*5K10012*	*EPA 8260B*	*11/11/15 02:05*	*MSZ*	
Toluene-d8	*45*	*1*	*50.0*	*90 %*	*59-134*	*5K10012*	*EPA 8260B*	*11/11/15 02:05*	*MSZ*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

Page 11 of 23

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K06037 - EPA 5030B_MS

Blank (5K06037-BLK1) Prepared: 11/06/2015 15:44 Analyzed: 11/09/2015 10:21

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.17	U	1.0	ug/L							
1,1,1-Trichloroethane	0.12	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.28	U	1.0	ug/L							
1,1,2-Trichloroethane	0.14	U	1.0	ug/L							
1,1-Dichloroethane	0.13	U	1.0	ug/L							
1,1-Dichloroethene	0.21	U	1.0	ug/L							
1,2,3-Trichloropropane	0.23	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.66	U	1.0	ug/L							
1,2-Dichlorobenzene	0.19	U	1.0	ug/L							
1,2-Dichloroethane	0.21	U	1.0	ug/L							
1,2-Dichloropropane	0.10	U	1.0	ug/L							
1,4-Dichlorobenzene	0.19	U	1.0	ug/L							
2-Butanone	1.3	U	5.0	ug/L							
2-Hexanone	0.88	U	5.0	ug/L							
4-Methyl-2-pentanone	1.1	U	5.0	ug/L							
Acetone	1.2	U	5.0	ug/L							
Acrylonitrile	3.5	U	10	ug/L							
Benzene	0.15	U	1.0	ug/L							
Bromochloromethane	0.48	U	1.0	ug/L							
Bromodichloromethane	0.17	U	1.0	ug/L							
Bromoform	0.22	U	1.0	ug/L							
Bromomethane	0.14	U	1.0	ug/L							
Carbon disulfide	1.5	U	5.0	ug/L							
Carbon tetrachloride	0.17	U	1.0	ug/L							
Chlorobenzene	0.17	U	1.0	ug/L							
Chloroethane	0.23	U	1.0	ug/L							
Chloroform	0.18	U	1.0	ug/L							
Chloromethane	0.13	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.15	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.20	U	1.0	ug/L							
Dibromochloromethane	0.17	U	1.0	ug/L							
Dibromomethane	0.27	U	1.0	ug/L							
Ethylbenzene	0.13	U	1.0	ug/L							
Iodomethane	1.7	U	5.0	ug/L							
Methylene chloride	0.23	U	1.0	ug/L							
Styrene	0.11	U	1.0	ug/L							
Tetrachloroethene	0.17	U	1.0	ug/L							
Tetrahydrofuran	0.80	U	1.0	ug/L							
Toluene	0.14	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.21	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.15	U	1.0	ug/L							
trans-1,4-Dichloro-2-butene	0.70	U	1.0	ug/L							
Trichloroethene	0.15	U	1.0	ug/L							
Trichlorofluoromethane	0.24	U	1.0	ug/L							
Vinyl acetate	0.95	U	5.0	ug/L							
Vinyl chloride	0.32	U	1.0	ug/L							
Xylenes (Total)	0.45	U	3.0	ug/L							

Page 12 of 23

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K06037 - EPA 5030B_MS

Blank (5K06037-BLK1) Continued Prepared: 11/06/2015 15:44 Analyzed: 11/09/2015 10:21

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Surrogate: 4-Bromofluorobenzene	*51*			*ug/L*	*50.0*		*101*	*53-136*			
Surrogate: Dibromofluoromethane	*50*			*ug/L*	*50.0*		*101*	*67-129*			
Surrogate: Toluene-d8	*52*			*ug/L*	*50.0*		*103*	*59-134*			

LCS (5K06037-BS1) Prepared: 11/06/2015 15:44 Analyzed: 11/09/2015 10:53

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	21		1.0	ug/L	20.0		104	75-133			
Benzene	21		1.0	ug/L	20.0		106	81-134			
Chlorobenzene	21		1.0	ug/L	20.0		103	83-117			
Toluene	20		1.0	ug/L	20.0		101	71-118			
Trichloroethene	22		1.0	ug/L	20.0		109	74-119			

Matrix Spike (5K06037-MS1) Prepared: 11/06/2015 15:44 Analyzed: 11/09/2015 11:23

Source: C512566-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	21		1.0	ug/L	20.0	0.21 U	105	75-133			
Benzene	23		1.0	ug/L	20.0	1.4	107	81-134			
Chlorobenzene	23		1.0	ug/L	20.0	1.7	107	83-117			
Toluene	20		1.0	ug/L	20.0	0.14 U	99	71-118			
Trichloroethene	20		1.0	ug/L	20.0	0.15 U	100	74-119			

Matrix Spike Dup (5K06037-MSD1) Prepared: 11/06/2015 15:44 Analyzed: 11/09/2015 11:52

Source: C512566-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	24		1.0	ug/L	20.0	0.21 U	120	75-133	13	20	
Benzene	23		1.0	ug/L	20.0	1.4	109	81-134	2	17	
Chlorobenzene	23		1.0	ug/L	20.0	1.7	107	83-117	0.3	16	
Toluene	21		1.0	ug/L	20.0	0.14 U	103	71-118	4	17	
Trichloroethene	21		1.0	ug/L	20.0	0.15 U	104	74-119	4	22	

Batch 5K09035 - EPA 5030B_MS

Blank (5K09035-BLK1) Prepared: 11/09/2015 15:05 Analyzed: 11/10/2015 10:34

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.17	U	1.0	ug/L							
1,1,1-Trichloroethane	0.12	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.28	U	1.0	ug/L							
1,1,2-Trichloroethane	0.14	U	1.0	ug/L							
1,1-Dichloroethane	0.13	U	1.0	ug/L							
1,1-Dichloroethene	0.21	U	1.0	ug/L							
1,2,3-Trichloropropane	0.23	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.66	U	1.0	ug/L							

Page 13 of 23

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K09035 - EPA 5030B_MS

Blank (5K09035-BLK1) Continued Prepared: 11/09/2015 15:05 Analyzed: 11/10/2015 10:34

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichlorobenzene	0.19	U	1.0	ug/L							
1,2-Dichloroethane	0.21	U	1.0	ug/L							
1,2-Dichloropropane	0.10	U	1.0	ug/L							
1,4-Dichlorobenzene	0.19	U	1.0	ug/L							
2-Butanone	1.3	U	5.0	ug/L							
2-Hexanone	0.88	U	5.0	ug/L							
4-Methyl-2-pentanone	1.1	U	5.0	ug/L							
Acetone	1.2	U	5.0	ug/L							
Acrylonitrile	3.5	U	10	ug/L							
Benzene	0.15	U	1.0	ug/L							
Bromochloromethane	0.48	U	1.0	ug/L							
Bromodichloromethane	0.17	U	1.0	ug/L							
Bromoform	0.22	U	1.0	ug/L							
Bromomethane	0.14	U	1.0	ug/L							
Carbon disulfide	1.5	U	5.0	ug/L							
Carbon tetrachloride	0.17	U	1.0	ug/L							
Chlorobenzene	0.17	U	1.0	ug/L							
Chloroethane	0.23	U	1.0	ug/L							
Chloroform	0.18	U	1.0	ug/L							
Chloromethane	0.13	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.15	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.20	U	1.0	ug/L							
Dibromochloromethane	0.17	U	1.0	ug/L							
Dibromomethane	0.27	U	1.0	ug/L							
Ethylbenzene	0.13	U	1.0	ug/L							
Iodomethane	1.7	U	5.0	ug/L							
Methylene chloride	0.23	U	1.0	ug/L							
Styrene	0.11	U	1.0	ug/L							
Tetrachloroethene	0.17	U	1.0	ug/L							
Tetrahydrofuran	0.80	U	1.0	ug/L							
Toluene	0.14	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.21	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.15	U	1.0	ug/L							
trans-1,4-Dichloro-2-butene	0.70	U	1.0	ug/L							
Trichloroethene	0.15	U	1.0	ug/L							
Trichlorofluoromethane	0.24	U	1.0	ug/L							
Vinyl acetate	0.95	U	5.0	ug/L							
Vinyl chloride	0.32	U	1.0	ug/L							
Xylenes (Total)	0.45	U	3.0	ug/L							
Surrogate: 4-Bromofluorobenzene	*52*			*ug/L*	*50.0*		*104*	*53-136*			
Surrogate: Dibromofluoromethane	*50*			*ug/L*	*50.0*		*100*	*67-129*			
Surrogate: Toluene-d8	*52*			*ug/L*	*50.0*		*105*	*59-134*			

LCS (5K09035-BS1) Prepared: 11/09/2015 15:05 Analyzed: 11/10/2015 11:04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	25		1.0	ug/L	20.0		125	75-133			
Benzene	21		1.0	ug/L	20.0		105	81-134			

Page 14 of 23

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K09035 - EPA 5030B_MS

LCS (5K09035-BS1) Continued Prepared: 11/09/2015 15:05 Analyzed: 11/10/2015 11:04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chlorobenzene	18		1.0	ug/L	20.0		92	83-117			
Toluene	19		1.0	ug/L	20.0		97	71-118			
Trichloroethene	19		1.0	ug/L	20.0		93	74-119			

Matrix Spike (5K09035-MS1) Prepared: 11/09/2015 15:05 Analyzed: 11/10/2015 11:33

Source: C514418-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	21		1.0	ug/L	20.0	0.21 U	104	75-133			
Benzene	22		1.0	ug/L	20.0	0.15 U	110	81-134			
Chlorobenzene	21		1.0	ug/L	20.0	0.17 U	106	83-117			
Toluene	18		1.0	ug/L	20.0	0.14 U	92	71-118			
Trichloroethene	19		1.0	ug/L	20.0	0.15 U	96	74-119			

Matrix Spike Dup (5K09035-MSD1) Prepared: 11/09/2015 15:05 Analyzed: 11/10/2015 12:02

Source: C514418-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	21		1.0	ug/L	20.0	0.21 U	104	75-133	0.6	20	
Benzene	20		1.0	ug/L	20.0	0.15 U	98	81-134	11	17	
Chlorobenzene	18		1.0	ug/L	20.0	0.17 U	92	83-117	14	16	
Toluene	19		1.0	ug/L	20.0	0.14 U	93	71-118	1	17	
Trichloroethene	19		1.0	ug/L	20.0	0.15 U	95	74-119	0.4	22	

Batch 5K10012 - EPA 5030B_MS

Blank (5K10012-BLK1) Prepared: 11/10/2015 14:25 Analyzed: 11/11/2015 10:51

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.17	U	1.0	ug/L							
1,1,1-Trichloroethane	0.12	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.28	U	1.0	ug/L							
1,1,2-Trichloroethane	0.14	U	1.0	ug/L							
1,1-Dichloroethane	0.13	U	1.0	ug/L							
1,1-Dichloroethene	0.21	U	1.0	ug/L							
1,2,3-Trichloropropane	0.23	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.66	U	1.0	ug/L							
1,2-Dichlorobenzene	0.19	U	1.0	ug/L							
1,2-Dichloroethane	0.21	U	1.0	ug/L							
1,2-Dichloropropane	0.10	U	1.0	ug/L							
1,4-Dichlorobenzene	0.19	U	1.0	ug/L							
2-Butanone	1.3	U	5.0	ug/L							
2-Hexanone	0.88	U	5.0	ug/L							
4-Methyl-2-pentanone	1.1	U	5.0	ug/L							
Acetone	1.2	U	5.0	ug/L							
Acrylonitrile	3.5	U	10	ug/L							
Benzene	0.15	U	1.0	ug/L							

Page 15 of 23

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K10012 - EPA 5030B_MS

Blank (5K10012-BLK1) Continued Prepared: 11/10/2015 14:25 Analyzed: 11/11/2015 10:51

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Bromochloromethane	0.48	U	1.0	ug/L							
Bromodichloromethane	0.17	U	1.0	ug/L							
Bromoform	0.22	U	1.0	ug/L							
Bromomethane	0.14	U	1.0	ug/L							
Carbon disulfide	1.5	U	5.0	ug/L							
Carbon tetrachloride	0.17	U	1.0	ug/L							
Chlorobenzene	0.17	U	1.0	ug/L							
Chloroethane	0.23	U	1.0	ug/L							
Chloroform	0.18	U	1.0	ug/L							
Chloromethane	0.13	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.15	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.20	U	1.0	ug/L							
Dibromochloromethane	0.17	U	1.0	ug/L							
Dibromomethane	0.27	U	1.0	ug/L							
Ethylbenzene	0.13	U	1.0	ug/L							
Iodomethane	1.7	U	5.0	ug/L							
Methylene chloride	0.23	U	1.0	ug/L							
Styrene	0.11	U	1.0	ug/L							
Tetrachloroethene	0.17	U	1.0	ug/L							
Tetrahydrofuran	0.80	U	1.0	ug/L							
Toluene	0.14	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.21	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.15	U	1.0	ug/L							
trans-1,4-Dichloro-2-butene	0.70	U	1.0	ug/L							
Trichloroethene	0.15	U	1.0	ug/L							
Trichlorofluoromethane	0.24	U	1.0	ug/L							
Vinyl acetate	0.95	U	5.0	ug/L							
Vinyl chloride	0.32	U	1.0	ug/L							
Xylenes (Total)	0.45	U	3.0	ug/L							
Surrogate: 4-Bromofluorobenzene	*46*			*ug/L*	*50.0*		*91*	*53-136*			
Surrogate: Dibromofluoromethane	*47*			*ug/L*	*50.0*		*93*	*67-129*			
Surrogate: Toluene-d8	*48*			*ug/L*	*50.0*		*96*	*59-134*			

LCS (5K10012-BS1) Prepared: 11/10/2015 14:25 Analyzed: 11/11/2015 11:20

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	16		1.0	ug/L	20.0		79	75-133			
Benzene	19		1.0	ug/L	20.0		94	81-134			
Chlorobenzene	20		1.0	ug/L	20.0		101	83-117			
Toluene	20		1.0	ug/L	20.0		102	71-118			
Trichloroethene	18		1.0	ug/L	20.0		92	74-119			

Matrix Spike (5K10012-MS1) Prepared: 11/10/2015 14:25 Analyzed: 11/11/2015 11:49

Source: C514418-06

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	16		1.0	ug/L	20.0	0.21 U	79	75-133			
Benzene	19		1.0	ug/L	20.0	0.15 U	95	81-134			

Page 16 of 23

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K10012 - EPA 5030B_MS

Matrix Spike (5K10012-MS1) Continued Prepared: 11/10/2015 14:25 Analyzed: 11/11/2015 11:49

Source: C514418-06

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chlorobenzene	21		1.0	ug/L	20.0	0.17 U	103	83-117			
Toluene	21		1.0	ug/L	20.0	0.14 U	104	71-118			
Trichloroethene	18		1.0	ug/L	20.0	0.15 U	92	74-119			

Matrix Spike Dup (5K10012-MSD1) Prepared: 11/10/2015 14:25 Analyzed: 11/11/2015 12:18

Source: C514418-06

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	16		1.0	ug/L	20.0	0.21 U	78	75-133	2	20	
Benzene	19		1.0	ug/L	20.0	0.15 U	94	81-134	0.3	17	
Chlorobenzene	20		1.0	ug/L	20.0	0.17 U	99	83-117	3	16	
Toluene	21		1.0	ug/L	20.0	0.14 U	103	71-118	0.3	17	
Trichloroethene	18		1.0	ug/L	20.0	0.15 U	92	74-119	0.4	22	

Batch 5K11037 - EPA 5030B_MS

Blank (5K11037-BLK1) Prepared: 11/11/2015 16:25 Analyzed: 11/12/2015 03:37

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.17	U	1.0	ug/L							
1,1,1-Trichloroethane	0.12	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.28	U	1.0	ug/L							
1,1,2-Trichloroethane	0.14	U	1.0	ug/L							
1,1-Dichloroethane	0.13	U	1.0	ug/L							
1,1-Dichloroethene	0.21	U	1.0	ug/L							
1,2,3-Trichloropropane	0.23	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.66	U	1.0	ug/L							
1,2-Dichlorobenzene	0.19	U	1.0	ug/L							
1,2-Dichloroethane	0.21	U	1.0	ug/L							
1,2-Dichloropropane	0.10	U	1.0	ug/L							
1,4-Dichlorobenzene	0.19	U	1.0	ug/L							
2-Butanone	1.3	U	5.0	ug/L							
2-Hexanone	0.88	U	5.0	ug/L							
4-Methyl-2-pentanone	1.1	U	5.0	ug/L							
Acetone	1.2	U	5.0	ug/L							
Acrylonitrile	3.5	U	10	ug/L							
Benzene	0.15	U	1.0	ug/L							
Bromochloromethane	0.48	U	1.0	ug/L							
Bromodichloromethane	0.17	U	1.0	ug/L							
Bromoform	0.22	U	1.0	ug/L							
Bromomethane	0.14	U	1.0	ug/L							
Carbon disulfide	1.5	U	5.0	ug/L							
Carbon tetrachloride	0.17	U	1.0	ug/L							
Chlorobenzene	0.17	U	1.0	ug/L							
Chloroethane	0.23	U	1.0	ug/L							
Chloroform	0.18	U	1.0	ug/L							

Page 17 of 23

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K11037 - EPA 5030B_MS

Blank (5K11037-BLK1) Continued Prepared: 11/11/2015 16:25 Analyzed: 11/12/2015 03:37

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloromethane	0.13	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.15	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.20	U	1.0	ug/L							
Dibromochloromethane	0.17	U	1.0	ug/L							
Dibromomethane	0.27	U	1.0	ug/L							
Ethylbenzene	0.13	U	1.0	ug/L							
Iodomethane	1.7	U	5.0	ug/L							
Methylene chloride	0.23	U	1.0	ug/L							
Styrene	0.11	U	1.0	ug/L							
Tetrachloroethene	0.17	U	1.0	ug/L							
Tetrahydrofuran	0.80	U	1.0	ug/L							
Toluene	0.14	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.21	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.15	U	1.0	ug/L							
trans-1,4-Dichloro-2-butene	0.70	U	1.0	ug/L							
Trichloroethene	0.15	U	1.0	ug/L							
Trichlorofluoromethane	0.24	U	1.0	ug/L							
Vinyl acetate	0.95	U	5.0	ug/L							
Vinyl chloride	0.32	U	1.0	ug/L							
Xylenes (Total)	0.45	U	3.0	ug/L							
Surrogate: 4-Bromofluorobenzene	*44*			*ug/L*	*50.0*		*89*	*53-136*			
Surrogate: Dibromofluoromethane	*49*			*ug/L*	*50.0*		*98*	*67-129*			
Surrogate: Toluene-d8	*49*			*ug/L*	*50.0*		*97*	*59-134*			

LCS (5K11037-BS1) Prepared: 11/11/2015 16:25 Analyzed: 11/12/2015 04:06

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	17		1.0	ug/L	20.0		83	75-133			
Benzene	20		1.0	ug/L	20.0		101	81-134			
Chlorobenzene	21		1.0	ug/L	20.0		106	83-117			
Toluene	22		1.0	ug/L	20.0		108	71-118			
Trichloroethene	20		1.0	ug/L	20.0		102	74-119			

Matrix Spike (5K11037-MS1) Prepared: 11/11/2015 16:25 Analyzed: 11/12/2015 04:35

Source: C514418-10

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	16		1.0	ug/L	20.0	0.21 U	82	75-133			
Benzene	20		1.0	ug/L	20.0	0.15 U	101	81-134			
Chlorobenzene	21		1.0	ug/L	20.0	0.17 U	106	83-117			
Toluene	22		1.0	ug/L	20.0	0.14 U	108	71-118			
Trichloroethene	21		1.0	ug/L	20.0	0.15 U	105	74-119			

Matrix Spike Dup (5K11037-MSD1) Prepared: 11/11/2015 16:25 Analyzed: 11/12/2015 05:03

Source: C514418-10

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Page 18 of 23

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K11037 - EPA 5030B_MS

Matrix Spike Dup (5K11037-MSD1) Continued Prepared: 11/11/2015 16:25 Analyzed: 11/12/2015 05:03

Source: C514418-10

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	16		1.0	ug/L	20.0	0.21 U	81	75-133	1	20	
Benzene	20		1.0	ug/L	20.0	0.15 U	99	81-134	2	17	
Chlorobenzene	21		1.0	ug/L	20.0	0.17 U	106	83-117	0.1	16	
Toluene	21		1.0	ug/L	20.0	0.14 U	105	71-118	2	17	
Trichloroethene	20		1.0	ug/L	20.0	0.15 U	101	74-119	5	22	

Classical Chemistry Parameters - Quality Control

Batch 5K02029 - NO PREP

Blank (5K02029-BLK1) Prepared: 11/02/2015 13:44 Analyzed: 11/02/2015 15:53

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	14000	U	15000	ug/L							

LCS (5K02029-BS1) Prepared: 11/02/2015 13:44 Analyzed: 11/02/2015 15:54

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	98		15	mg/L	100		98	80-120			

Matrix Spike (5K02029-MS1) Prepared: 11/02/2015 13:44 Analyzed: 11/02/2015 15:55

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	180000		30000	ug/L	80000	100000	95	80-120			

Matrix Spike Dup (5K02029-MSD1) Prepared: 11/02/2015 13:44 Analyzed: 11/02/2015 15:56

Source: C511919-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	160000		30000	ug/L	80000	100000	69	80-120	13	25	QM-07

Batch 5K03005 - NO PREP

Blank (5K03005-BLK1) Prepared & Analyzed: 11/03/2015 15:52

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	50000	U	50000	ug/L							

LCS (5K03005-BS1) Prepared & Analyzed: 11/03/2015 15:52

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	960		50	mg/L	1000		96	90-110			

Duplicate (5K03005-DUP1) Prepared & Analyzed: 11/03/2015 15:52

Source: C511931-01

Page 19 of 23

QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 5K03005 - NO PREP

Duplicate (5K03005-DUP1) Continued Prepared & Analyzed: 11/03/2015 15:52

Source: C511931-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	2200000		100000	ug/L		2100000			0.9	20	

Duplicate (5K03005-DUP2) Prepared & Analyzed: 11/03/2015 15:52

Source: C511931-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	1800000		100000	ug/L		1800000			0.7	20	

Batch 5K06005 - NO PREP

Blank (5K06005-BLK1) Prepared & Analyzed: 11/06/2015 08:10

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	2200	U	5000	ug/L							
Sulfate as SO4	2900	U	5000	ug/L							

LCS (5K06005-BS1) Prepared & Analyzed: 11/06/2015 08:10

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	49000		5000	ug/L	50000		98	90-110			
Sulfate as SO4	48000		5000	ug/L	50000		96	90-110			

Matrix Spike (5K06005-MS3) Prepared & Analyzed: 11/06/2015 08:10

Source: C511919-04RE1

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	910000		50000	ug/L	200000	730000	92	90-110			
Sulfate as SO4	260000		50000	ug/L	200000	87000	88	90-110			QM-07

Matrix Spike (5K06005-MS4) Prepared & Analyzed: 11/06/2015 08:10

Source: C511919-01RE1

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	700000		50000	ug/L	200000	480000	110	90-110			
Sulfate as SO4	240000		50000	ug/L	200000	44000	98	90-110			

Matrix Spike Dup (5K06005-MSD2) Prepared & Analyzed: 11/06/2015 08:10

Source: C511919-04RE1

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	920000		50000	ug/L	200000	730000	97	90-110	51	10	QR-02
Sulfate as SO4	260000		50000	ug/L	200000	87000	89	90-110	112	10	QM-07, QM-11

Batch 5K10006 - NO PREP

Page 20 of 23

QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 5K10006 - NO PREP

Blank (5K10006-BLK1) Prepared & Analyzed: 11/10/2015 08:26

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	2200	U	5000	ug/L							
Sulfate as SO4	2900	U	5000	ug/L							

LCS (5K10006-BS1) Prepared & Analyzed: 11/10/2015 08:26

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	50000		5000	ug/L	50000		99	90-110			
Sulfate as SO4	48000		5000	ug/L	50000		96	90-110			

Matrix Spike (5K10006-MS1) Prepared & Analyzed: 11/10/2015 08:26

Source: C512565-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	69000		5000	ug/L	20000	48000	107	90-110			
Sulfate as SO4	20000		5000	ug/L	20000	2900 U	99	90-110			

Matrix Spike (5K10006-MS2) Prepared & Analyzed: 11/10/2015 08:26

Source: C512565-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	25000		5000	ug/L	20000	6100	94	90-110			
Sulfate as SO4	25000		5000	ug/L	20000	7100	88	90-110			QM-07

Matrix Spike Dup (5K10006-MSD1) Prepared & Analyzed: 11/10/2015 08:26

Source: C512565-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	70000		5000	ug/L	20000	48000	111	90-110	1	10	QM-07
Sulfate as SO4	20000		5000	ug/L	20000	2900 U	101	90-110	2	10	

Page 21 of 23

FLAGS/NOTES AND DEFINITIONS

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
MRL	Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-11	Precision between duplicate matrix spikes of the same sample was outside acceptance limits.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

Page 22 of 23

ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD
www.encolabs.com

10775 Central Port Dr.
Orlando, FL 32824
(407) 826-5314 Fax (407) 850-6945

4810 Executive Park Court, Suite 111
Jacksonville, FL 32216-6069
(904) 296-3007 Fax (904) 296-6210

102-A Woodwinds Industrial Ct.
Cary, NC 27511
(919) 467-3090 Fax (919) 467-3515

Page 1 of 1

Client Name: Golder Associates, Inc. (GO007)	Project Number: [none]
Address: 5B Oak Branch Drive	Project Name/Desc: WI High Point SWs
City/ST/Zip: Greensboro, NC 27407	PO # / Billing Info: 2012:
Tel: (336) 852-4903 Fax: (336) 852-4904	Reporting Contact: Dusty Reedy
Sampler(s) Name, Affiliation (Print): David Reedy / Golder	Billing Contact: ~~John Walker~~ Seth Heath
Sampler(s) Signature: [signature]	Site Location / Time Zone:

Requested Turnaround Times
Note : Rush requests subject to acceptance by the facility
___ Standard 5DAYS
✓ Expedited
Due ___/___/___

Lab Workorder: C513550

Requested Analyses — Preservation (See Codes) (Combine as necessary)

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	8260B Appendix 1,8260B Extended	Alkalinity 310.2,Chloride 300,TDS SM2540C	Sulfate 300							Sample Comments
	4116-SW1	10-30-15	1510	G	GW	1		X	X							
	4116-SW2	10-30-15	1540	G	GW	1		X	X							
	~~4116-SW3~~	~~10-30-15~~	~~1545~~	~~G~~	~~GW~~	~~1~~		~~X~~	~~X~~	Do not analyze, per client email						
	4116-SW2A	10-30-15	1520	G	GW	3	X	X	X							
	4116-Field Blank	10-30-15	1555	G	WA	3	X									
	4116-Trip Blank				WA	2	X									

<-- Total # of Containers

Sample Kit Prepared By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time
RAY	10/21	[signature]	11-2-15/8:00	[signature]	11-2-15 0945
Comments/Special Reporting Requirements: 5 day TAT		Relinquished By	Date/Time	Received By	Date/Time
		Relinquished By	Date/Time	Received By	Date/Time
		Cooler #'s & Temps on Receipt: C-673 1.2c		Condition Upon Receipt: ✓ Acceptable ___ Unacceptable	

Matrix : GW-Groundwater SO-Soil DW-Drinking Water SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments)
Preservation: I-Ice H-HCl N-HNO3 S-H2SO4 NO-NaOH O-Other (detail in comments)

Note : All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist

WORK ORDER

Printed: 11/12/2015 4:21:45PM

C513550

ENCO Cary

Sample Receipt Conditions

Client:	**Golder Associates, Inc. (GO007)**	**Lab Project Mgr:**	**Stephanie Franz**
Project:	**WI High Point SWs**	**Project Number:**	**[none]**
PO #:	**2012:**		

Report To:

Golder Associates, Inc. (GO007)
Dusty Reedy
5B Oak Branch Drive
Greensboro, NC 27407
Phone: (336) 852-4903
Fax: (336) 852-4904

Invoice To:

Waste Corporation of America - High Point (WA034)
John Walker
5830 Riverdale Drive
Jamestown, NC 27282
Phone :(336) 886-3560
Fax:

Received By:	John C King	Date Received:	02-Nov-15 09:45
Logged In By:	John C King	Date Logged In:	02-Nov-15 10:46

Work Order Comments:

C-673 received at 1.2°C

Containers Intact	Y	Containers Properly Preserved	Y	Proper Containers Received	Y	All Samples in PreLog Received	Y	COC/Labels Agree	Y
Custody Seals Intact	Y	Volatile Containers Preserved	Y	Volatile Containers Headspace Free	Y	Aqueous Samples Checked for Residual Cl	N	Received On Ice	Y
Temperature Corrected	Y								

DATE: 10-30-15

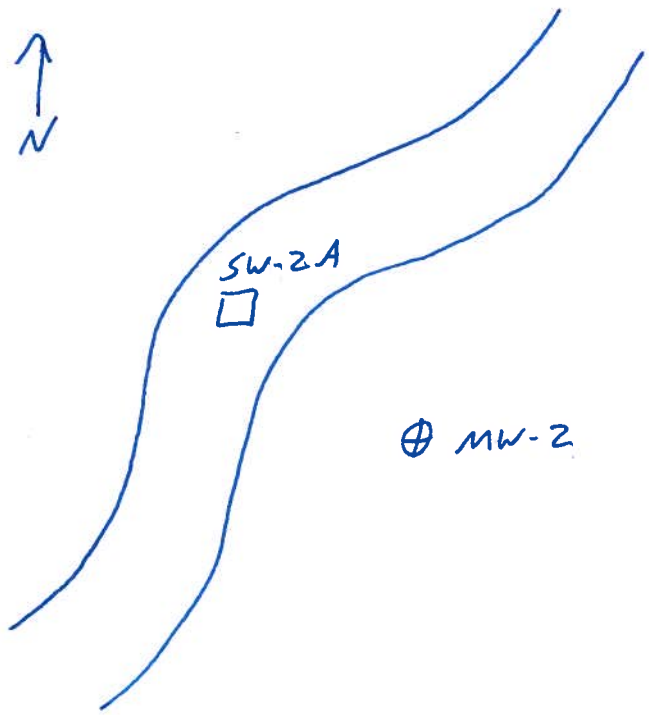
Golder Associates

SURFACE WATER SAMPLING LOG

Project Name: W1 of High Point **Project No./Phase No.:** 1239651615.300
Sample ID: SW-2A **Sampler(s):** David Reedy
Sampling Location: Stream behind MW-2
Equipment: YSI 556

Time	15:20
pH s.u.	6.79
Cond. mS/cm	319.9
Turb. ntu	clear
Dis. O2 mg/L	7.61
Temp. oC	15.0
ORP mv	-17.9

Surface Water Location Sketch



Comments (sample methodology, weather conditions, color, silt, etc.):
Sunny, 64°

Signature: David S Reedy Date: 10-30-15

QA/QC Sign Off: Rachel Jain Date: 12-2-15