WATER QUALITY MONITORING REPORT

SECOND SEMI-ANNUAL 2013 SAMPLING EVENT

A-1 Sandrock Construction and Demolition Landfill, Permit No. 41-17

Guilford County, North Carolina

Submitted To:

A-1 Sandrock Inc.
2091 Bishop Road
Greensboro, NC. 27406 USA

Submitted By: Golder Associates NC, Inc.
5B Oak Branch Drive
Greensboro, NC. 27407 USA

July 2014 **1139-606313.100**

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NC DENR
Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

Notice: This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

Instructions:

- **Prepare one form for each individually monitored unit.**
- **Please type or print legibly.**
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i).
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

Solid Waste Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

Golder Associates NC, Inc. on behalf of A-1 Sandrock, Inc.

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: David Y. Reedy II Phone: 336-852-4903

E-mail: dreedy@golder.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
A-1 Sandrock C&D Landfill	2091 Bishop Road, Greensboro, NC 27406	41-17	.0500	November 25, 2013

Environmental Status: (Check all that apply)

☐ Initial/Background Monitoring ☒ Detection Monitoring ☐ Assessment Monitoring ☐ Corrective Action

Type of data submitted: (Check all that apply)

☒ Groundwater monitoring data from monitoring wells
☐ Groundwater monitoring data from private water supply wells
☐ Leachate monitoring data
☒ Surface water monitoring data
☐ Methane gas monitoring data
☐ Corrective action data (specify) _____
☐ Other(specify) _____

Notification attached?

☐ No. No groundwater or surface water standards were exceeded.
☒ Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.
☐ Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

David Y. Reedy II, P.G. | Senior Project Hydrogeologist | 336-852-4903

Facility Representative Name (Print) | Title | (Area Code) Telephone Number

Signature | 7-24-14 Date

Affix NC Licensed/ Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 1963 GEOLOGIST DAVID YATES REEDY, II 7-24-14

Golder Associates NC, Inc., 5B Oak Branch Drive, Greensboro, NC 27407

Facility Representative Address

C-2862

NC PE Firm License Number (if applicable effective May 1, 2009)

Revised 6/2009

July 24, 2014 1139-606313.100

Ms. Jaclynne Drummond, Hydrogeologist
NC DENR Division of Waste Management
Solid Waste Section
401 Oberlin Road, Suite 150
Raleigh, North Carolina 27605

RE: WATER QUALITY MONITORING REPORT, SECOND SEMI-ANNUAL 2013 SAMPLING EVENT
A-1 SANDROCK CONSTRUCTION AND DEMOLITION LANDFILL, PERMIT NO. 41-17
GUILFORD COUNTY, NORTH CAROLINA

Dear Jackie:

Golder Associates NC, Inc. (Golder) is submitting the enclosed *Water Quality Monitoring Report*, which documents the results of the November 25, 2013, compliance monitoring event at the A-1 Sandrock Construction and Demolition Landfill.

A-1 Sandrock Inc. currently monitors groundwater at the facility for parameters listed in Title 15A NCAC 13B.0544 of the North Carolina Solid Waste Management Rules (NCSWMR). No NC Appendix I constituents were detected at concentrations above their respective Solid Waste Section Reporting Limits (SWSLs) and applicable groundwater protection standards during the November 2013 sampling event. Vanadium was detected at estimated concentrations below the SWSL, but above the Solid Waste Section Groundwater Protection Standards (GPSs) in samples from several groundwater monitoring wells during the event. The vanadium detections are considered to be naturally occurring based on historical data. No NC Appendix I constituents were detected above the SWSL and applicable surface water standard in surface water monitoring points during this event.

Based on the results summarized herein, A-1 Sandrock Inc. will continue monitoring this facility in accordance with the requirements of the Detection Monitoring Program for C&D Landfills as outlined in Title 15A NCAC 13B.0544. The next groundwater monitoring event is tentatively scheduled for May 2014. If you have any questions, please contact the undersigned at 336-852-4903.

Sincerely,
GOLDER ASSOCIATES NC, INC.

David "Dusty" Y. Reedy II, P.G.
Senior Project Hydrogeologist

Rachel P. Kirkman, P.G.
Associate and Senior Geologist

C: Ronnie Petty, A-1 Sandrock Inc., 2091 Bishop Road, Greensboro, NC, 27406. 336-855-8195.

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1.0 INTRODUCTION

This report summarizes the monitoring results from November 25, 2013, groundwater and surface water sampling and analysis event at the A-1 Sandrock Construction & Demolition (C&D) Landfill in Guilford County, North Carolina (NC) in accordance with Title 15A of the North Carolina Administrative Code (NCAC) Subchapter 13B.0544. The A-1 Sandrock C&D Landfill, an active C&D landfill, is owned and operated by A-1 Sandrock Inc. under Permit No. 41-17 issued by the NC Department of Environment and Natural Resources (DENR).

1.1 Site Description and Background

The location of the facility is shown on the inlay on Drawing 1. As presented, the A-1 Sandrock C&D Landfill is located along Bishop Road near Greensboro in Guilford County, NC. The site consists of approximately 75 acres which is permitted as a mine and landfill. Approximately 21.9 acres of the site will be utilized for C&D landfill waste disposal, of which 8.18 acres comprise the Phase 1 waste unit (David Garrett, 2009 Update). The landfill and associated processing facility became operational in April 2009.

One named stream, Hickory Creek, traverses the site from north to south approximately along the western facility boundary. Four unnamed streams enter the site and flow into Hickory Creek.

Topographic surface elevations at the facility range from approximately 722 to 822 feet above mean sea level. Much of the facility consists of mining and landfill operations with some wooded areas. Surrounding property uses include other mining operations and landfills, an asphalt plant, a trucking terminal, a MSW transfer station, and other businesses (David Garrett, 2009 Update). Some wooded properties also surround the site.

1.2 Compliance Monitoring History

Groundwater monitoring at the facility was initiated in October 2009 after approval of the Groundwater Monitoring Plan by the DENR. Currently the facility's monitoring network is comprised of five monitoring wells (MW-1, MW-2, MW-3, MW-4, and MW-5), which monitor the uppermost aquifer beneath the facility. In addition to the groundwater monitoring points, the facility's monitoring network includes four surface water sampling points. Three of the surface water sampling points are upstream monitoring points: SW-1 is located in the northwest corner of the facility where Hickory Creek enters the property; SW-2 is located along the eastern facility boundary where an unnamed tributary of Hickory Creek enters the property; and SW-3 is located near the southernmost portion of the facility where another unnamed tributary of Hickory Creek enters the property. Downstream monitoring point SW-4 is located near the southwest corner of the facility where Hickory Creek exits the site. These points are sampled in conjunction with the groundwater monitoring wells in accordance with the facility's permit.

1.3 Hydrogeologic Setting

Geologically, the facility is located within the Charlotte Belt in the Piedmont Physiographic Province. Bedrock at the facility consists of granite and diorite of early- to mid-Paleozoic age (David Garrett, 2002). A regional-scale diabase dike of Mesozoic age crosses the site. The dike follows the typical north-south lineament and is 30 to 50 feet wide (David Garrett, 2002) and is shown on the NC State Geologic Map (NCGS, 1985).

The uppermost groundwater beneath the facility is present in a shallow, unconfined aquifer comprised of saprolite, partially weathered rock, and granitic bedrock (David Garrett, 2002). Groundwater occurs at depths of approximately 45 feet below grade along the upgradient side of the waste disposal area, and at depths of approximately 30 feet below grade along the perimeter downgradient boundary. Groundwater elevations obtained during the November 2013 monitoring event and summarized in Table 1 were used to prepare a groundwater surface contour map presented as Drawing 1.

Surface water and groundwater at the site generally flows west and northwest and discharges to Hickory Creek within the Randleman Reservoir watershed. Groundwater beneath the site flows in three distinguishable and vertically interconnected hydrogeologic units: saprolite, partially weathered rock, and bedrock.

Based on the November 25, 2013, groundwater surface contour map, the average hydraulic gradient in the shallow aquifer underlying the site, as measured along the conceptual flow paths shown on Drawing 1, was calculated to be approximately 0.046 feet per foot. Groundwater velocities were calculated using a hydraulic conductivity of 6.32E-06 centimeters per second, which is the geometric mean of the hydraulic conductivities from individual well aquifer tests (David Garrett, 2002). The estimated effective porosity of the shallow aquifer is 0.20 (David Garrett, 2002 and Driscoll, 1986).

Using the above values, the estimated rate of groundwater flow for the uppermost aquifer beneath the facility was calculated using the following modified Darcy equation:

$$V_{gw} = Ki/n_e$$

where V_{gw} = average linear velocity (feet per year), K = hydraulic conductivity (feet per year), i = horizontal hydraulic gradient, and n_e = effective porosity.

The average estimated linear groundwater flow velocity under the waste management unit is approximately 1.49 feet per year, which is consistent with previous estimates (Table 2). The range of groundwater flow is expected to vary depending on the hydrogeologic unit in which it occurs. The linear velocity equation above makes the simplified assumptions of a homogeneous and isotropic aquifer. Therefore, this equation represents a likely average value for the uppermost aquifer and does not account

for heterogeneous and/or anisotropic conditions that may be present in the uppermost aquifer at the facility.

2.0 FIELD PROGRAM, MONITORING RESULTS, AND DISCUSSION

Field activities conducted for the November 2013 sampling event are discussed in the following sections.

2.1 Visual Inspection Program

In order to ensure that a potential release is detected at the earliest possible time, the visual inspection program is used by the sampling crew at the A-1 Sandrock C&D Landfill. This program includes physical indicators such as potential water table mounding beneath the waste management unit, physical examination of any stresses in biological communities, visible signs of leachate migration (i.e., leachate seeps), unexplained changes in soil characteristics, and any other change to the environment due to the waste management unit. During the November 2013 compliance monitoring event, no physical indicators of a potential release were observed in the vicinity of the waste management area.

2.2 Well Network and Groundwater Elevation Measurements

The approved network of groundwater monitoring wells at the facility consists of wells MW-1, MW-2, MW-3, MW-4, and MW-5. Monitoring well construction information is summarized on Table 3 and the well locations are shown on Drawing 1. The well locations were selected to yield groundwater samples representative of the conditions in the uppermost aquifer underlying the facility and to monitor for potential releases from the landfill unit. Three upstream (SW-1, SW-2, and SW-3) and one downstream (SW-4) surface water monitoring points are also monitored.

Monitoring well MW-1 is the facility's background well and is located hydraulically upgradient of the waste disposal area. Monitoring wells MW-2, MW-3, MW-4, and MW-5 are located downgradient of the waste disposal area and represent the facility's downgradient compliance wells.

Depth to water measurements were recorded to the nearest 0.01 foot prior to initiating groundwater purging and sampling activities. The respective groundwater level elevations for this event are presented in Table 1. The historical water level data are also shown on this table.

As presented, the data indicate that the hydraulic head level in the uppermost aquifer beneath the facility is fairly consistent, with temporal variation from the long-term average limited to approximately 3 feet (plus or minus). As expected, the range in fluctuation appears to be greater in the upgradient well MW-1, as this well is located in a groundwater recharge area. The range in fluctuation in compliance wells MW-2, MW-3, MW-4, and MW-5, which are located near groundwater discharge areas, is less, presumably due to the stabilizing effect of the hydraulic discharge boundary.

2.3 November 2013 Groundwater and Surface Water Monitoring Event

On November 25, 2013, Golder Associates NC, Inc. (Golder) personnel purged and sampled monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-5, and sampled surface water monitoring points SW-1, SW-2, SW-3, and SW-4. Each monitoring well was purged and sampled using disposable bailers. Measurements of temperature, pH, and specific conductivity were recorded at the onset of purging, at each purge volume, and at the time of sampling. Unless the well was purged dry, three purge volumes were removed from each well before sampling.

Prior to sampling, the laboratory-supplied sample containers were prepared. Each sample container was labeled with the sample identification number, sampling personnel, date and time of sample collection, project name and number, and requested laboratory analyses. The required groundwater samples were collected directly from the bailers in the labeled, laboratory-supplied, pre-preserved sample containers. After collection, the samples were placed in a cooler on ice, under chain-of-custody control.

The surface water samples were collected directly from the stream flow, by lowering the sample containers into the stream flow with the opening facing away from the current flow, taking care to prevent the over flow of the sample containers and to minimize sample-induced turbidity. Measurements of pH, specific conductivity, temperature, dissolved oxygen, oxidation reduction potential, and turbidity were recorded during the collection of the surface water samples.

After collection, the samples were placed in a cooler on ice, under chain-of-custody control. Copies of the sampling logs are presented in Appendix A. Included in each log is a description of the sampling location and equipment, sampling method, field observations, and field parameter measurements.

2.4 Laboratory Analysis Program

The November 2013 groundwater and surface water samples were shipped to Environmental Conservation Laboratories, Inc. (ENCO) of Cary, NC under chain-of-custody control for analysis. As presented, groundwater samples at the facility were analyzed for the NC Appendix I parameter list plus tetrahydrofuran and several indicator parameters listed in Title 15A NCAC 13B.0544. The surface water samples were analyzed for the NC Appendix I parameter list plus tetrahydrofuran. The samples were received by the laboratory on November 26, 2013, in good condition and properly preserved.

2.5 November 2013 Sampling Results

Analytical results for the November 2013 groundwater and surface water samples are summarized in Tables 4 and 5, respectively, with available historical data. The laboratory certificates-of-analysis, chain-of-custody form, and laboratory data review for the sampling event are included in Appendix B.

As presented, two Appendix I inorganic constituent that were detected at a quantifiable concentrations above their respective Solid Waste Section Limits (SWSLs) during the November 2013 event was barium in the sample from MW-4 and zinc in the sample from MW-3. The indicator metal, iron, was detected

above the SWSL in samples collected from three downgradient monitoring wells MW-3, and MW-4. Indicator metal, manganese, was detected above the SWSL in samples from the four downgradient wells MW-2, MW-3, MW-4, and MW-5. Indicator parameters total dissolved solids and total alkalinity were detected at quantifiable concentrations in samples from each well, as they have been during previous events. Indicator parameter chloride was detected at quantifiable concentrations in samples MW-2 and MW-5.

No NC Appendix I volatile organic compounds (VOCs) were detected at concentrations above their respective laboratory detection limit in samples from downgradient monitoring wells during the November 2013 event.

No NC Appendix I constituents were reported at concentrations above the SWSL in any samples from upstream or downstream monitoring points during the November 2013 event.

3.0 LABORATORY AND FIELD QA/QC

A field blank was collected by the sampling personnel as part of the November 2013 water quality sampling event. In addition to the field blank, a laboratory-prepared trip blank accompanied the volatile sample containers to and from the laboratory. ENCO analyzed the field blank for NC Appendix I VOCs and inorganic constituents plus mercury, iron, manganese, and tetrahydrofuran. The trip blank was analyzed for NC Appendix I VOCs and tetrahydrofuran.

A review of the laboratory data was performed by Golder personnel (included in Appendix B). As presented, barium, copper and manganese were detected at estimated concentrations in the field blank during the November 2013 event. Based on Golder's review, cobalt concentrations in samples from MW-1, MW-2, MW-3, MW-4, MW-5, SW-1, SW-2, SW-3, and SW-4 and manganese detections in the sample from MW-1 are considered to be blank-qualified.

4.0 NOVEMBER 2013 GROUNDWATER AND SURFACE WATER QUALITY STANDARD COMPARISONS

As presented in Table 4, no NC Appendix I constituents were detected at concentrations that exceeded both their respective SWSL and applicable water quality standard during the November 2013 event. Vanadium was reported in samples from upgradient well MW-1 and downgradient wells MW-2, MW-3, and MW-4 at estimated concentrations below the SWSL, but exceeded the Solid Waste Section Groundwater Protection Standard (GPS). Indicator metal, iron, was detected in the samples from downgradient wells MW-3 and MW-4 and indicator metal, manganese, was detected in the samples from downgradient wells MW-2, MW-3, MW-4, and MW-5 at concentrations above their respective SWSLs and NC 2L Standards. Vanadium, iron, and manganese have been detected in upgradient and downgradient wells at similar concentrations during this and previous events and are considered to be naturally occurring.

As presented on Table 5, no NC Appendix I constituents were reported at concentrations that exceeded applicable surface water standards in samples collected from the upstream and downstream surface water monitoring locations during the event.

5.0 CONCLUSIONS

No NC Appendix I were detected at concentrations above their respective SWSLs and applicable groundwater protection standards during the November 2013 sampling event. Vanadium was detected at estimated concentrations below their respective SWSLs, but above the GPS in samples from downgradients well during the event. The vanadium detections are considered to be naturally occurring. No NC Appendix I constituents were detected above the SWSLs and applicable surface water standards in an upstream surface water monitoring point this event.

Based on the results summarized herein, A-1 Sandrock will continue monitoring this facility in accordance with the requirements of the Detection Monitoring Program for C&D Landfills as outlined in Title 15A NCAC 13B.0544. The next groundwater monitoring event is scheduled for May 2014.

6.0 REFERENCES

David Garrett, P.G., P.E. Engineering and Geology, 2010, Report of April 2010 Semi-Annual Ground Water Monitoring Event, A-1 Sandrock C&D Landfill, Greensboro, Guilford County, North Carolina, Solid Waste Permit No. 41-17. October 6.

David Garrett, P.G., P.E. Engineering and Geology, 2009 Update, Facility and Operations Plan Update, A-1 Sandrock CDLF (Phase 1) and Processing Facility, Guilford County, North Carolina, Solid Waste Permit No. 41-17. February 22.

David Garrett, P.G., P.E. Engineering and Geology, 2002, Site Application Report – Part 1 and 2, Construction and Demolition Debris Landfill (South Side), Guilford County, North Carolina. June.

Driscoll, F.G., 1986, Groundwater and Wells: Johnson Division, St. Paul, Minnesota. Page 67.

Heath, Ralph C., 1982, Basic Ground-Water Hydrology, USGS Water Supply Paper 2220.

NCGS (North Carolina Geologic Survey), 1985. Geologic Map of North Carolina

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TABLES

TABLE 1

Summary of Historical Groundwater Elevation Data in Monitoring Wells
A-1 Sandrock Construction and Demolition Landfill, Permit No. 41-17
Guilford County, North Carolina

	Monitoring Wells				
	MW-1	**MW-2**	**MW-3**	**MW-4**	**MW-5**
TOC Elevation (ft AMSL)	**816.05**	**761.92**	**731.82**	**733.17**	**762.88**
Date	**Static Groundwater Elevation (ft AMSL)**				
11/29/06	790.20	753.51	727.39	728.62	747.92
10/27/09	787.02	752.51	725.90	726.30	747.35
04/09/10	791.96	753.13	727.72	728.35	747.94
11/01/10	787.14	752.57	725.53	726.73	747.30
05/24/11	787.68	752.47	724.83	727.26	747.45
11/01/11	784.96	752.72	727.91	727.52	747.64
05/17/12	788.55	752.51	728.07	728.13	747.79
11/15/12	785.21	752.49	725.71	727.85	747.38
06/27/13	788.75	752.73	728.47	727.27	747.53
11/25/13	787.44	752.27	725.14	726.80	747.39
MEAN	*787.89*	*752.69*	*726.67*	*727.48*	*747.57*
MAXIMUM	*791.96*	*753.51*	*728.47*	*728.62*	*747.94*
MINIMUM	*784.96*	*752.27*	*724.83*	*726.30*	*747.30*

Notes:

1. TOC = top of casing
2. ft AMSL = feet above mean sea level
3. Monitoring well MW-1 is the facility background well.

TABLE 2

Summary of Estimated Horizontal Flow Velocities
A-1 Sandrock Construction and Demolition Landfill, Permit No. 41-17
Guilford County, North Carolina

November 2013							
Gradient Calculation Segment	**Flow Direction**	**Gradient Segment Length (feet)**	**Gradient Segment Elevations (feet)**	**Horizontal Gradient (i, feet)**	**Effective Porosity (n_e)**	**Hydraulic Conductivity (K, cm/sec)**	**Velocity (V_{gw}, feet/year)**
i_1	N	496	780 / 760	0.0403	0.20	6.32E-06	1.32
i_2	NW	1068	780 / 730	0.0468	0.20	6.32E-06	1.53
i_3	W	1002	780 / 730	0.0499	0.20	6.32E-06	1.63

Notes:
1. Horizontal velocities based on the modified Darcy equation $V_{gw} = Ki/n_e$.
2. The geometric mean of K from individual well aquifer tests was used to calculate the hydraulic conductivity (tests conducted by David Garrett, P.G., P.E. as part of the Site Suitability Report).
3. The effective porosity used in velocity calculations are published empirical values form Driscoll, 1986.
4. cm/sec = centimeters per second

TABLE 3

Summary of Well Construction Information
A-1 Sandrock Construction and Demolition Landfill, Permit No. 41-17
Guilford County, North Carolina

WELL IDENTIFICATION	DATE INSTALLED	CASING DIAMETER (inches)	WELL ELEVATIONS		TOTAL DEPTH DRILLED		TOP OF BEDROCK		SCREENED INTERVAL				LITHOLOGY OF SCREENED INTERVAL
			GROUND SURFACE	TOC	DEPTH (feet AMSL)	ELEV. (feet AMSL)	DEPTH (feet BGS)	ELEV. (feet AMSL)	DEPTH (feet BGS)		ELEVATION (feet AMSL)		
			(feet AMSL)						from	to	from	to	
MW-1	08/28/02	2	813.40	816.05	44.0	769.40	19.0	794.40	34.0	44.0	779.40	769.40	Bedrock
MW-2	08/26/02	2	759.90	761.92	33.0	726.90	13.0	746.90	23.0	33.0	736.90	726.90	Bedrock
MW-3	08/25/02	2	729.80	731.82	33.0	696.80	33.0	696.80	18.0	33.0	711.80	696.80	PWR
MW-4	08/25/02	2	731.10	733.17	24.0	707.10	24.0	707.10	9.0	24.0	722.10	707.10	PWR
MW-5	08/27/02	2	761.10	762.88	28.5	732.60	8.0	753.10	18.5	28.5	742.60	732.60	Bedrock

Notes:

1. AMSL = above mean sea level
2. BGS = below ground surface
3. TOC = top of casing
4. PWR = partially weathered rock

TABLE 4

Summary of Detected Constituents in Groundwater
A-1 Sandrock Construction and Demolition Landfill, Permit No. 41-17
Guilford County, North Carolina

Parameter	Reporting Units	Sample Date	SWS Reporting Limit	Upgradient		Downgradient								Blanks	
				MW-1		MW-2		MW-3		MW-4		MW-5			
Antimony	ug/L	11/29/06	6	ND		ND		ND		ND		ND		ND	
SWS GPS = 1 ug/L	ug/L	10/27/09	6	ND		ND		ND		ND		ND		ND	
	ug/L	04/09/10	6	ND		ND		ND		ND		ND		ND	
	ug/L	11/02/10	6	ND		ND		ND		ND		ND		ND	
	ug/L	05/25/11	6	ND		ND		ND		ND		ND		ND	
	ug/L	11/01/11	6	ND		ND		ND		ND		ND		ND	
	ug/L	05/18/12	6	0.567	B	1.12	B	0.287	B	ND		ND		0.230	J
	ug/L	11/15/12	6	ND		0.328	J	ND		ND		ND		ND	
	ug/L	06/28/13	6	ND		0.484	J	ND		ND		ND		ND	
	ug/L	11/25/13	6	ND		ND		ND		ND		ND		ND	
Arsenic	ug/L	11/29/06	10	ND		ND		ND		ND		ND		ND	
NC 2L = 10 ug/L	ug/L	10/27/09	10	ND		ND		ND		ND		ND		ND	
	ug/L	04/09/10	10	ND		ND		ND		ND		ND		ND	
	ug/L	11/02/10	10	7.75	J	ND		ND		ND		ND		ND	
	ug/L	05/25/11	10	ND		ND		ND		ND		ND		ND	
	ug/L	11/01/11	10	ND		ND		ND		ND		ND		ND	
	ug/L	05/18/12	10	ND		3.49	B	3.78	B	3.24	B	3.17	B	3.56	J
	ug/L	11/15/12	10	ND		ND		ND		ND		ND		ND	
	ug/L	06/28/13	10	ND		ND		ND		ND		ND		ND	
	ug/L	11/25/13	10	ND		ND		ND		ND		ND		ND	
Barium	ug/L	11/29/06	100	390		449		860		768		534		ND	
NC 2L = 700 ug/L	ug/L	10/27/09	100	22.9	B	50.8	B	334	B	163	B	42.4	B	18.8	B*
	ug/L	04/09/10	100	26.9	B	42.8	B	75.2	B	63.8	B	37.6	B	ND	B*
	ug/L	11/02/10	100	64.7	J	59.5	J	46.4	J	49.5	J	52.9	J	ND	
	ug/L	05/25/11	100	20.2	J	45.3	J	106		53.8	J	51.9	J	ND	
	ug/L	11/01/11	100	42.8	J	43.6	J	95.5	J	101		58.5	J	ND	
	ug/L	05/18/12	100	31.8	J	47.2	J	118		109		52.9	J	ND	
	ug/L	11/15/12	100	31.5	J	68.2	J	68.7	J	105		69.8	J	ND	
	ug/L	06/28/13	100	27.5	J	58.1	J	75.3	J	94.5	J	63.3	J	1.40	J
	ug/L	11/25/13	100	28.6	J	62.2	J	81.8	J	112		80.2	J	1.75	J
Beryllium	ug/L	11/29/06	1	ND		ND		ND		ND		ND		ND	
SWS GPS = 4 ug/L	ug/L	10/27/09	1	ND		ND		ND		ND		ND		ND	
	ug/L	04/09/10	1	ND		ND		ND		ND		ND		ND	
	ug/L	11/02/10	1	ND		ND		ND		ND		ND		ND	
	ug/L	05/25/11	1	ND		0.103	J	ND		ND		ND		ND	
	ug/L	11/01/11	1	ND		ND		ND		ND		ND		ND	
	ug/L	05/18/12	1	ND		ND		ND		ND		ND		ND	
	ug/L	11/15/12	1	ND		ND		ND		ND		ND		ND	
	ug/L	06/28/13	1	ND		ND		ND		ND		ND		ND	
	ug/L	11/25/13	1	ND		ND		ND		ND		ND		ND	
Chromium	ug/L	11/29/06	10	ND		ND		29		11		11		ND	
NC 2L = 10 ug/L	ug/L	10/27/09	10	ND		ND		28.7	B	24.5	B	ND		4.33	B*
	ug/L	04/09/10	10	3.58	B	2.81	B	6.43	B	4.24	B	2.38	B	2.26	J
	ug/L	11/02/10	10	7.88	J	5.92	J	7.88	J	7.36	J	5.71	J	ND	
	ug/L	05/25/11	10	1.55	J	ND		9.76	J	1.75	J	4.22	J	ND	
	ug/L	11/01/11	10	6.48	J	1.43	J	8.87	J	7.84	J	1.40	J	ND	
	ug/L	05/18/12	10	1.32	J	2.28	J	10.5		6.98	J	ND		ND	
	ug/L	11/15/12	10	1.43	J	2.01	J	10.9		4.30	J	4.89	J	ND	
	ug/L	06/28/13	10	2.29	J	ND		6.39	J	6.83	J	ND		ND	
	ug/L	11/25/13	10	ND		ND		6.87	J	5.03	J	ND		ND	
Cobalt	ug/L	11/29/06	10	9	J	9	J	30		11		14		ND	
SWS GPS = 1 ug/L	ug/L	10/27/09	10	ND		ND		20.0		9.53	J	1.96	J	ND	
	ug/L	04/09/10	10	ND		ND		3.08	J	4.97	J	2.13	J	ND	
	ug/L	11/02/10	10	ND		ND		ND		ND		ND		ND	
	ug/L	05/25/11	10	ND		ND		5.10	J	5.49	J	2.08	J	ND	
	ug/L	11/01/11	10	2.10	J	ND		3.41	J	3.76	J	ND		ND	
	ug/L	05/18/12	10	ND		2.33	J	5.16	J	7.22	J	3.25	J	ND	
	ug/L	11/15/12	10	ND		1.38	J	2.14	J	2.02	J	2.77	J	ND	
	ug/L	06/28/13	10	ND		1.19	J	3.12	J	2.31	J	6.13	J	ND	
	ug/L	11/25/13	10	1.34	B	2.52	B	4.08	B	2.82	B	6.96	J	1.19	J

TABLE 4

Summary of Detected Constituents in Groundwater
A-1 Sandrock Construction and Demolition Landfill, Permit No. 41-17
Guilford County, North Carolina

Parameter	Reporting Units	Sample Date	SWS Reporting Limit	Upgradient		Downgradient								Blanks	
				MW-1		MW-2		MW-3		MW-4		MW-5			
Copper	ug/L	11/29/06	10	36		45		60		67		55		ND	
NC 2L = 1000 ug/L	ug/L	10/27/09	10	3.02	B	8.77	B	27.8	B	35.0	B	8.49	B	1.82	B*
	ug/L	04/09/10	10	1.71	J	2.39	J	6.71	J	5.07	J	6.21	J	ND	
	ug/L	11/02/10	10	13.7		6.64	J	5.98	J	7.09	J	7.07	J	ND	
	ug/L	05/25/11	10	ND		ND		4.70	J	1.79	J	10.9		ND	
	ug/L	11/01/11	10	7.29	B	4.06	B	5.51	B	11.2	B	4.97	B	3.88	J
	ug/L	05/18/12	10	ND		2.91	J	4.85	J	9.56	J	2.80	J	ND	
	ug/L	11/15/12	10	ND		ND		6.39	J	4.02	J	5.03	J	ND	
	ug/L	06/28/13	10	ND		ND		ND		6.24	J	3.96	J	ND	
	ug/L	11/25/13	10	ND		ND		ND		3.54	J	ND		ND	
Lead	ug/L	11/29/06	10	11		ND		ND		60		ND		ND	
NC 2L = 15 ug/L	ug/L	10/27/09	10	ND		ND		10.4		ND		ND		ND	
	ug/L	04/09/10	10	ND		ND		ND		6.82	J	ND		ND	
	ug/L	11/02/10	10	ND		10.1	B	7.96	B	8.01	B	ND		8.48	J
	ug/L	05/25/11	10	ND		ND		2.94	J	ND		ND		ND	
	ug/L	11/01/11	10	ND		ND		ND		ND		ND		ND	
	ug/L	05/18/12	10	2.43	J	ND		ND		2.24	J	ND		ND	
	ug/L	11/15/12	10	ND		ND		ND		ND		ND		ND	
	ug/L	06/28/13	10	ND		ND		ND		ND		ND		ND	
	ug/L	11/25/13	10	ND		ND		ND		ND		ND		ND	
Nickel	ug/L	11/29/06	50	10	J	ND		67		15	J	14	J	ND	
NC 2L = 100 ug/L	ug/L	10/27/09	50	ND		ND		31.0	J	20.5	J	3.02	J	ND	
	ug/L	04/09/10	50	ND		ND		10.6	J	6.29	J	3.11	J	ND	
	ug/L	11/02/10	50	7.28	J	2.59	J	6.82	J	3.80	J	5.01	J	ND	
	ug/L	05/25/11	50	ND		ND		9.74	J	3.86	J	2.92	J	ND	
	ug/L	11/01/11	50	2.84	J	ND		8.41	J	9.74	J	4.41	J	ND	
	ug/L	05/18/12	50	ND		ND		8.54	J	9.60	J	3.23	J	ND	
	ug/L	11/15/12	50	ND		ND		7.45	J	8.64	J	7.47	J	ND	
	ug/L	06/28/13	50	ND		ND		3.62	J	6.24	J	5.67	J	ND	
	ug/L	11/25/13	50	ND		ND		2.35	J	3.58	J	1.94	J	ND	
Selenium	ug/L	11/29/06	10	ND		ND		ND		ND		ND		ND	
NC 2L = 20 ug/L	ug/L	10/27/09	10	ND		ND		6.34	J	ND		ND		ND	
	ug/L	04/09/10	10	2.90	J	2.89	J	ND		ND		ND		ND	
	ug/L	11/02/10	10	ND		ND		ND		ND		ND		ND	
	ug/L	05/25/11	10	ND		ND		ND		ND		ND		ND	
	ug/L	11/01/11	10	ND		ND		ND		ND		ND		ND	
	ug/L	05/18/12	10	ND		ND		ND		ND		ND		ND	
	ug/L	11/15/12	10	ND		ND		ND		ND		ND		ND	
	ug/L	06/28/13	10	ND		ND		ND		ND		ND		ND	
	ug/L	11/25/13	10	ND		ND		ND		ND		ND		ND	
Silver	ug/L	11/29/06	10	12		ND		ND		ND		ND		ND	
NC 2L = 20 ug/L	ug/L	10/27/09	10	1.24	B	3.43	B	ND		0.880	B	1.09	B	2.88	B*
	ug/L	04/09/10	10	ND		1.04	J	ND		ND		ND		ND	
	ug/L	11/02/10	10	7.14	J	7.32	J	6.32	J	6.57	J	6.99	J	ND	
	ug/L	05/25/11	10	ND		ND		ND		ND		ND		ND	
	ug/L	11/01/11	10	3.81	J	ND		ND		ND		ND		ND	
	ug/L	05/18/12	10	ND		ND		ND		ND		ND		ND	
	ug/L	11/15/12	10	ND		ND		ND		ND		ND		ND	
	ug/L	06/28/13	10	1.90	J	2.09	J	ND		ND		ND		ND	
	ug/L	11/25/13	10	ND		ND		ND		ND		ND		ND	
Vanadium	ug/L	11/29/06	25	200		200		135		106		145		ND	
SWS GPS = 0.3 ug/L	ug/L	10/27/09	25	12.3		8.3	B	61.5		34.8		11.2		1.96	J
	ug/L	04/09/10	25	9.79	B	ND		2.44	B	ND		ND		ND	B*
	ug/L	11/02/10	25	ND		ND		ND		ND		ND		1.10	B
	ug/L	05/25/11	25	9.29	J	2.23	J	17.3	J	2.07	J	9.21	J	ND	
	ug/L	11/01/11	25	14.9	J	2.55	J	13.3	J	10.5	J	ND		ND	
	ug/L	05/18/12	25	9.03	J	5.35	J	19.4	J	12.6	J	2.01	J	ND	
	ug/L	11/15/12	25	8.78	J	5.25	J	9.30	J	8.88	J	2.92	J	ND	
	ug/L	06/28/13	25	9.81	J	2.45	J	11.4	J	10.3	J	1.57	J	ND	
	ug/L	11/25/13	25	8.19	J	2.19	J	12.7	J	10.7	J	ND		ND	
Zinc	ug/L	11/29/06	10	202		236		219		354		501		ND	
NC 2L = 1000 ug/L	ug/L	10/27/09	10	2.00	J	4.41	J	65.7		18.2		2.68	J	ND	
	ug/L	04/09/10	10	ND		ND		9.32	J	2.41	J	1.91	J	ND	
	ug/L	11/02/10	10	18.8	B	7.99	B	7.30	B	9.02	B	6.58	B	5.99	B
	ug/L	05/25/11	10	ND		6.68	J	21.3		13.5		6.38	J	ND	
	ug/L	11/01/11	10	10.2		ND		16.4		17.2		ND		ND	
	ug/L	05/18/12	10	ND		9.70	J	23.7		8.69	J	ND		ND	
	ug/L	11/15/12	10	ND		ND		15.1		3.83	J	5.79	J	ND	
	ug/L	06/28/13	10	6.16	J	4.32	J	11.2		6.33	J	4.10	J	ND	
	ug/L	11/25/13	10	ND		4.09	J	19.7		6.99	J	6.57	J	ND	

TABLE 4

Summary of Detected Constituents in Groundwater
A-1 Sandrock Construction and Demolition Landfill, Permit No. 41-17
Guilford County, North Carolina

Parameter	Reporting Units	Sample Date	SWS Reporting Limit	Upgradient		Downgradient								Blanks	
				MW-1		MW-2		MW-3		MW-4		MW-5			
Iron	ug/L	11/29/06	300	ND		ND		ND		ND		ND		ND	
NC 2L = 300 ug/L	ug/L	10/27/09	300	158	B	2360	B	35200	B	17700	B	1250	B	ND	B*
	ug/L	04/09/10	300	71.2	J	94.0	J	2890		6860		162	J	ND	
	ug/L	11/02/10	300	81.6	B	ND		48.6	B	2160		245	J	25.2	B
	ug/L	05/25/11	300	145	J	394		8960		3050		2290		ND	
	ug/L	11/01/11	300	2790		821		6660		4410		332		ND	
	ug/L	05/18/12	300	123	J	2090		9690		6190		550		ND	
	ug/L	11/15/12	300	43.1	J	1690		3810		2590		428		ND	
	ug/L	06/28/13	300	630		474		4720		3260		184	J	ND	
	ug/L	11/25/13	300	78.2	J	226	J	5610		3200		72.8	J	ND	
Manganese	ug/L	11/29/06	50	ND		ND		ND		ND		ND		ND	
NC 2L = 50 ug/L	ug/L	10/27/09	50	13.6	J	63.4		481		767		418		ND	
	ug/L	04/09/10	50	7.45	J	13.8	J	187		992		146		0.740	J
	ug/L	11/02/10	50	118		8.31	B	4.37	B	32.5		73.9		4.76	B
	ug/L	05/25/11	50	6.53	J	12.5	J	181		879		240		ND	
	ug/L	11/01/11	50	84.0		23.9	J	125		360		202		ND	
	ug/L	05/18/12	50	5.67	J	49.9	J	125		765		403		ND	
	ug/L	11/15/12	50	2.75	J	76.8		59.2		280		691		ND	
	ug/L	06/28/13	50	15.3	J	131		58.6		184		776		1.37	J
	ug/L	11/25/13	50	6.69	B	200		60.6		95.4		1450		1.39	J
Chloride	mg/L	11/29/06	--	--		--		--		--		--		--	
NC 2L = 250 mg/L	mg/L	10/27/09	--	4.05		3.24		2.61		2.94		7.00		ND	
	mg/L	04/09/10	--	4.9	B	3.6	B	3.1	B	4.1	B	3.9	B	4.9	
	mg/L	11/02/10	--	5.27		3.23		2.74		3.38		5.96		ND	
	mg/L	05/25/11	--	4.90	B	4.50	B	4.10	B	4.30	B	7.20	B	1.90	J
	mg/L	11/01/11	--	4.70	B	4.20	B	3.60	B	3.80	B	8.80		1.50	J
	mg/L	05/18/12	--	4.50	B	4.30	B	3.60	B	4.20	B	6.90		1.20	
	mg/L	11/15/12	--	4.60	B	5.00	B	3.80	B	4.20	B	11.0		1.40	
	mg/L	06/28/13	--	4.70	J	5.10		3.80	J	4.30	J	8.30		ND	
	mg/L	11/25/13	--	4.50	J	5.20		3.80	J	4.40	J	13.0		ND	
Total Dissolved Solids	mg/L	11/29/06	--	--		--		--		--		--		--	
NC 2L = 1000 mg/L	mg/L	10/27/09	--	84.0		75.0		84.0		77.0		132		ND	
	mg/L	04/09/10	--	176		109		128		101		129		10.0	
	mg/L	11/02/10	--	19		23		20		22		169		ND	
	mg/L	05/25/11	--	170		110		130		110		210		ND	
	mg/L	11/01/11	--	150		92		130		140		180		ND	
	mg/L	05/18/12	--	190		140		160		140		160		ND	
	mg/L	11/15/12	--	170		130		140		170		250		ND	
	mg/L	06/28/13	--	160		120		130		160		240		ND	
	mg/L	11/25/13	--	180		130		170		180		310		ND	
Sulfate as SO4	mg/L	11/29/06	250	--		--		--		--		--		2.25	J
NC 2L = 250 mg/L	mg/L	10/27/09	250	26.7	J	10.5	J	7.43	J	8.35	J	16.1	J	ND	
	mg/L	04/09/10	250	33.5	J	12.1	J	6.3	J	12.2	J	39.1	J	ND	
	mg/L	11/02/10	250	13.1	J	9.8	J	6.0	J	7.4	J	28.5	J	ND	
	mg/L	05/25/11	250	25.0	J	11.0	J	8.70	J	11.0	J	42.0	J	ND	
	mg/L	11/01/11	250	26.0	J	11.0	J	8.70	J	9.40	J	48.0	J	ND	
	mg/L	05/18/12	250	28.0	J	11.0	J	9.20	J	14.0	J	51.0	J	ND	
	mg/L	11/15/12	250	28.0	J	12.0	J	9.50	J	17.0	J	43.0	J	ND	
	mg/L	06/28/13	250	26.0	J	12.0	J	8.90	J	19.0	J	63.0	J	1.50	J
	mg/L	11/25/13	250	27.0	J	14.0	J	8.80	J	27.0	J	50.0	J	ND	
Total Alkalinity as CaCO3	mg/L	11/29/06	--	--		--		--		--		--		--	
No Standard	mg/L	10/27/09	--	71.4		47.9		52.8		46.9		84.1		ND	
	mg/L	04/09/10	--	80.0		64.0		60.5		97.5		35.5		4.5	
	mg/L	11/02/10	--	10.0	B	53.0		59.0		42.8		77.0		2.5	
	mg/L	05/25/11	--	68.0		51.0		56.0		39.0		61.0		ND	
	mg/L	11/01/11	--	70.0		49.0		52.0		60.0		77.0		ND	
	mg/L	05/18/12	--	72.0		53.0		53.0		48.0		71.0		ND	
	mg/L	11/15/12	--	69.0		53.0		54.0		75.0		120		ND	
	mg/L	06/28/13	--	81.0		56.0	J	58.0		73.0		100		ND	
	mg/L	11/25/13	--	75.0		62.0		58.0		80.0		150		ND	

TABLE 4

Summary of Detected Constituents in Groundwater
A-1 Sandrock Construction and Demolition Landfill, Permit No. 41-17
Guilford County, North Carolina

Parameter	Reporting Units	Sample Date	SWS Reporting Limit	Upgradient	Downgradient				Blanks
				MW-1	MW-2	MW-3	MW-4	MW-5	
pH (Field)	S.U.	11/29/06	--	6.42	6.20	6.28	6.01	6.27	--
	S.U.	10/27/09	--	7.07	7.07	7.06	6.11	6.07	--
	S.U.	04/09/10	--	6.55	6.01	6.04	5.70	5.93	--
	S.U.	05/20/10	--	--	--	--	--	5.93	--
	S.U.	11/02/10	--	5.73	6.01	5.97	5.75	6.00	--
	S.U.	05/25/11	--	5.71	5.61	5.91	5.61	5.33	--
	S.U.	11/01/11	--	6.50	6.16	6.08	6.39	5.99	--
	S.U.	05/18/12	--	6.65	6.27	6.10	6.09	5.96	--
	S.U.	11/15/12	--	7.09	6.33	6.25	6.21	6.25	--
	S.U.	06/28/13	--	4.51	5.16	5.14	5.61	5.76	--
	S.U.	11/25/13	--	6.74	6.21	6.19	6.52	6.22	--
Specific Conductance (Field)	uS/cm	11/29/06	--	216	125	128	128	218	--
	uS/cm	10/27/09	--	260	140	130	150	260	--
	uS/cm	04/09/10	--	221.0	126.1	131.0	125.3	182.2	--
	uS/cm	05/20/10	--	--	--	--	--	179.0	--
	uS/cm	11/02/10	--	93.9	124.1	117.7	129.7	232	--
	uS/cm	05/25/11	--	234	145	145	133	251	--
	uS/cm	11/01/11	--	226	165.1	161.7	187.1	291	--
	uS/cm	05/18/12	--	251	168.1	168.6	176.0	304	--
	uS/cm	11/15/12	--	190	135	127	165	305	--
	uS/cm	06/28/13	--	237	177	159	201	381	--
	uS/cm	11/25/13	--	246	203	172	221	428	--
Temperature (Field)	^{o}C	11/29/06	--	--	--	--	--	--	--
	^{o}C	10/27/09	--	14.6	14.8	14.2	16.0	16.0	--
	^{o}C	04/09/10	--	15.4	12.8	13.8	13.2	14.2	--
	^{o}C	05/20/10	--	--	--	--	--	14.2	--
	^{o}C	11/02/10	--	15.1	15.9	16.0	15.0	15.9	--
	^{o}C	05/25/11	--	15.70	14.04	15.38	16.34	14.90	--
	^{o}C	11/01/11	--	14.8	16.3	15.6	16.1	16.9	--
	^{o}C	05/18/12	--	15.1	15.3	15.9	14.2	14.8	--
	^{o}C	11/15/12	--	14.38	14.86	14.65	14.54	15.84	--
	^{o}C	06/28/13	--	15.88	17.82	16.71	16.13	16.01	--
	^{o}C	11/25/13	--	13.7	15.4	14.1	14.5	15.5	--
Turbidity (Field)	NTU	11/29/06	--	>1000	>1000	>1000	>1000	725	--
	NTU	10/27/09	--	>1000	972	>1000	378	>1000	--
	NTU	04/09/10	--	7.91	36.98	772.8	>1000	40.83	--
	NTU	05/20/10	--	--	--	--	--	29.34	--
	NTU	11/02/10	--	0.98	148.5	1.13	71.0	23.7	--
	NTU	05/25/11	--	6.49	11.9	216	35.7	133	--
	NTU	11/01/11	--	10.2	51.7	152	83.1	10.9	--
	NTU	05/18/12	--	13.3	92.6	136	135	44.0	--
	NTU	11/15/12	--	3.42	50.5	139	61.3	10.9	--
	NTU	06/28/13	--	14.9	7.93	143	86.8	21.3	--
	NTU	11/25/13	--	4.92	11.0	234	78.0	2.20	--

Notes:
1. MW = groundwater monitoring well
2. ug/L = micrograms per liter
3. mg/L = milligrams per liter
4. J = estimated Value
5. B = blank-qualified data
6. S.U. = Standard Units
7. NTU = Nephelometric Turbidity Units
8. uS/cm = microsiemens per centimeter
9. ^{o}C = degrees Celsius
10. ND = Not detected at or above the laboratory detection limit
11. Standards = NC 2L Groundwater Standards or North Carolina Solid Waste Section Groundwater Protection Standards
12. --- = no data available
13. Concentrations above the 2L Groundwater Standards or Groundwater Protection Standards have been shaded.
14. Blanks = Field, trip, and laboratory method blanks
15. SWS = Solid Waste Section
16. B* = Laboratory method blank concentrations not provided on the laboratory report, but the report indicates a detection in the laboratory blank by blank-qulaifying data (ND next to B* = non-detect in field and/or trip blank).

TABLE 5

Summary of Detected Constituents in Surface Water
A-1 Sandrock Construction and Demolition Landfill, Permit No. 41-17
Guilford County, North Carolina

Parameter	Reporting Units	Sample Date	SWS Reporting Limit	Upstream						Downstream		Blanks	
				SW-1		SW-2		SW-3		SW-4			
Antimony	ug/L	11/29/06	6	ND		ND		33		ND		ND	
No SW Standard	ug/L	10/27/09	6	ND		ND		ND		ND		ND	
	ug/L	04/09/10	6	ND		ND		ND		ND		ND	
	ug/L	11/02/10	6	ND		ND		ND		ND		ND	
	ug/L	05/25/11	6	ND		ND		ND		ND		ND	
	ug/L	11/01/11	6	ND		ND		ND		ND		ND	
	ug/L	05/18/12	6	0.224	B	ND		ND		0.573	B	0.230	J
	ug/L	11/15/12	6	ND		ND		ND		ND		ND	
	ug/L	06/27/13	6	ND		ND		ND		ND		ND	
	ug/L	11/25/13	6	ND		ND		ND		ND		ND	
Arsenic	ug/L	11/29/06	10	ND		ND		ND		ND		ND	
SW Standard = 50 ug/L	ug/L	10/27/09	10	ND		ND		ND		ND		ND	
	ug/L	04/09/10	10	ND		ND		ND		ND		ND	
	ug/L	11/02/10	10	ND		ND		ND		ND		ND	
	ug/L	05/25/11	10	ND		ND		ND		ND		ND	
	ug/L	11/01/11	10	ND		ND		ND		ND		ND	
	ug/L	05/18/12	10	ND		4.23	B	5.20	B	3.98	B	3.56	J
	ug/L	11/15/12	10	2.98	J	ND		ND		ND		ND	
	ug/L	06/27/13	10	ND		ND		ND		ND		ND	
	ug/L	11/25/13	10	ND		ND		ND		ND		ND	
Barium	ug/L	11/29/06	100	82	J	47	J	ND		70	J	ND	
No SW Standard	ug/L	10/27/09	100	57.7	B	81.7	B	61.7	B	62.6	B	18.8	B*
	ug/L	04/09/10	100	59.8	B	61.6	B	38.5	B	70.9	B	ND	B*
	ug/L	11/02/10	100	88.2	J	110		80.9	J	96.3	J	ND	
	ug/L	05/25/11	100	79.8	J	83.7	J	52.0	J	75.4	J	ND	
	ug/L	11/01/11	100	66.1	J	69.3	J	59.6	J	76.2	J	ND	
	ug/L	05/18/12	100	60.7	J	76.8	J	31.9	J	61.7	J	ND	
	ug/L	11/15/12	100	83.8	J	69.1	J	138		76.8	J	ND	
	ug/L	06/27/13	100	70.6	J	61.3	J	53.4	J	63.6	J	1.40	J
	ug/L	11/25/13	100	72.6	J	46.2	J	44.8	J	75.8	J	1.75	J
Chromium	ug/L	11/29/06	10	ND		ND		ND		ND		ND	
SW Standard = 50 ug/L	ug/L	10/27/09	10	3.33	B	ND		ND		ND		4.33	B*
	ug/L	04/09/10	10	5.55	B	3.47	B	3.47	B	4.46	B	2.26	J
	ug/L	11/02/10	10	5.71	J	6.53	J	6.43	J	7.05	J	ND	
	ug/L	05/25/11	10	ND		ND		ND		ND		ND	
	ug/L	11/01/11	10	1.37	J	1.10	J	1.35	J	1.52	J	ND	
	ug/L	05/18/12	10	ND		ND		1.19	J	ND		ND	
	ug/L	11/15/12	10	4.39	J	ND		3.64	J	ND		ND	
	ug/L	06/27/13	10	ND		ND		ND		ND		ND	
	ug/L	11/25/13	10	ND		ND		ND		ND		ND	
Cobalt	ug/L	11/29/06	10	ND		ND		ND		ND		ND	
No SW Standard	ug/L	10/27/09	10	ND		ND		4.84	J	ND		ND	
	ug/L	04/09/10	10	ND		ND		ND		ND		ND	
	ug/L	11/02/10	10	ND		ND		2.30	J	ND		ND	
	ug/L	05/25/11	10	ND		1.20	J	2.17	J	ND		ND	
	ug/L	11/01/11	10	ND		1.13	J	ND		ND		ND	
	ug/L	05/18/12	10	ND		1.17	J	2.65	J	ND		ND	
	ug/L	11/15/12	10	ND		ND		26.7		1.17	J	ND	
	ug/L	06/27/13	10	ND		ND		9.42	J	ND		ND	
	ug/L	11/25/13	10	1.50	B	2.05	B	4.57	B	1.39	B	1.19	J
Copper	ug/L	11/29/06	10	ND		ND		42	J	ND		ND	
SW Standard = 7 ug/L (AL)	ug/L	10/27/09	10	7.56	B	2.69	B	11.2	B	3.21	B	1.82	B*
	ug/L	04/09/10	10	5.69	J	7.82	J	53.1		5.67	J	ND	
	ug/L	11/02/10	10	7.26	J	7.90	J	12.0		6.32	J	ND	
	ug/L	05/25/11	10	ND		1.94	J	23.0		ND		ND	
	ug/L	11/01/11	10	3.08	B	5.34	B	19.2	B	3.65	B	3.88	J
	ug/L	05/18/12	10	ND		1.86	J	105		1.97	J	ND	
	ug/L	11/15/12	10	ND		ND		33.8		ND		ND	
	ug/L	06/27/13	10	ND		1.71	J	51.1		ND		ND	
	ug/L	11/25/13	10	ND		ND		1.60	J	ND		ND	

TABLE 5

Summary of Detected Constituents in Surface Water
A-1 Sandrock Construction and Demolition Landfill, Permit No. 41-17
Guilford County, North Carolina

Parameter	Reporting Units	Sample Date	SWS Reporting Limit	Upstream						Downstream		Blanks	
				SW-1		SW-2		SW-3		SW-4			
Lead	ug/L	11/29/06	10	ND		ND		ND		ND		ND	
SW Standard = 25 ug/L (N)	ug/L	10/27/09	10	ND		ND		ND		ND		ND	
	ug/L	04/09/10	10	7.08	J	ND		ND		ND		ND	
	ug/L	11/02/10	10	7.46	B	7.71	B	8.08	B	ND		8.48	J
	ug/L	05/25/11	10	ND		ND		ND		ND		ND	
	ug/L	11/01/11	10	ND		ND		ND		ND		ND	
	ug/L	05/18/12	10	ND		ND		2.30	J	ND		ND	
	ug/L	11/15/12	10	ND		ND		3.75	J	ND		ND	
	ug/L	06/27/13	10	ND		ND		ND		ND		ND	
	ug/L	11/25/13	10	ND		ND		ND		ND		ND	
Nickel	ug/L	11/29/06	50	ND		ND		ND		ND		ND	
SW Standard = 88 ug/L (N)	ug/L	10/27/09	50	4.92	J	ND		ND		ND		ND	
	ug/L	04/09/10	50	2.60	J	2.98	J	3.91	J	5.68	J	ND	
	ug/L	11/02/10	50	3.89	J	4.19	J	3.88	J	3.77	J	ND	
	ug/L	05/25/11	50	ND		ND		ND		ND		ND	
	ug/L	11/01/11	50	ND		ND		ND		ND		ND	
	ug/L	05/18/12	50	ND		ND		ND		ND		ND	
	ug/L	11/15/12	50	2.39	J	ND		4.59	J	ND		ND	
	ug/L	06/27/13	50	ND		ND		ND		ND		ND	
	ug/L	11/25/13	50	ND		ND		ND		ND		ND	
Selenium	ug/L	11/29/06	10	ND		ND		ND		ND		ND	
SW Standard = 5 ug/L	ug/L	10/27/09	10	ND		ND		ND		ND		ND	
	ug/L	04/09/10	10	4.67	J	ND		ND		ND		ND	
	ug/L	11/02/10	10	ND		3.97	J	ND		ND		ND	
	ug/L	05/25/11	10	ND		ND		ND		ND		ND	
	ug/L	11/01/11	10	ND		ND		ND		ND		ND	
	ug/L	05/18/12	10	ND		ND		7.92 (ND)	J	ND		ND	
	ug/L	11/15/12	10	ND		ND		ND		ND		ND	
	ug/L	06/27/13	10	ND		ND		ND		ND		ND	
	ug/L	11/25/13	10	ND		ND		ND		ND		ND	
Silver	ug/L	11/29/06	10	ND		ND		ND		ND		ND	
SW Standard = 0.06 ug/L (AL)	ug/L	10/27/09	10	0.670	B	ND		ND		ND		2.88	B*
	ug/L	04/09/10	10	ND		ND		ND		ND		ND	
	ug/L	11/02/10	10	6.72	J	6.96	J	6.84	J	7.14	J	ND	
	ug/L	05/25/11	10	ND		ND		ND		ND		ND	
	ug/L	11/01/11	10	ND		ND		ND		ND		ND	
	ug/L	05/18/12	10	ND		ND		ND		ND		ND	
	ug/L	11/15/12	10	ND		ND		ND		ND		ND	
	ug/L	06/27/13	10	ND		ND		ND		1.91	J	ND	
	ug/L	11/25/13	10	ND		ND		ND		ND		ND	
Vanadium	ug/L	11/29/06	25	ND		ND		ND		ND		ND	
No SW Standard	ug/L	10/27/09	25	9.74	B	4.43	B	3.27	B	ND		1.96	J
	ug/L	04/09/10	25	ND		ND		0.379	B	ND		ND	B*
	ug/L	11/02/10	25	ND		ND		ND		ND		1.10	B
	ug/L	05/25/11	25	ND		ND		2.71	J	ND		ND	
	ug/L	11/01/11	25	ND		ND		ND		ND		ND	
	ug/L	05/18/12	25	ND		ND		3.03	J	ND		ND	
	ug/L	11/15/12	25	ND		ND		12.1	J	ND		ND	
	ug/L	06/27/13	25	2.66	J	ND		1.85	J	1.45	J	ND	
	ug/L	11/25/13	25	ND		ND		ND		ND		ND	
Zinc	ug/L	11/29/06	10	ND		ND		ND		ND		ND	
SW Standard = 50 ug/L (AL)	ug/L	10/27/09	10	17.2		1.40	J	4.66	J	2.20	J	ND	
	ug/L	04/09/10	10	3.96	J	6.98	J	5.59	J	8.19	J	ND	
	ug/L	11/02/10	10	6.85	B	8.55	B	10.2	B	10.3	B	5.99	B
	ug/L	05/25/11	10	ND		3.97	J	3.95	J	4.18	J	ND	
	ug/L	11/01/11	10	4.47	J	4.76	J	4.40	J	4.91	J	ND	
	ug/L	05/18/12	10	ND		ND		5.38	J	4.43	J	ND	
	ug/L	11/15/12	10	5.53	J	ND		24.5		ND		ND	
	ug/L	06/27/13	10	4.83	J	6.45	J	ND		5.35	J	ND	
	ug/L	11/25/13	10	ND		ND		6.57	J	ND		ND	

TABLE 5

Summary of Detected Constituents in Surface Water
A-1 Sandrock Construction and Demolition Landfill, Permit No. 41-17
Guilford County, North Carolina

Parameter	Reporting Units	Sample Date	SWS Reporting Limit	Upstream			Downstream	Blanks
				SW-1	SW-2	SW-3	SW-4	
Acetone	ug/L	11/29/06	100	ND	ND	ND	ND	ND
SW Standard = 2000 ug/L	ug/L	10/27/09	100	2.98 J	ND	ND	2.57 J	ND
	ug/L	04/09/10	100	ND	ND	ND	ND	ND
	ug/L	11/02/10	100	2.26 B	ND	ND	3.17 B	4.26 J
	ug/L	05/25/11	100	ND	ND	ND	ND	ND
	ug/L	11/01/11	100	ND	ND	ND	ND	ND
	ug/L	05/18/12	100	ND	ND	ND	ND	ND
	ug/L	11/15/12	100	ND	ND	ND	ND	10 J
	ug/L	06/27/13	100	ND	ND	ND	ND	ND
	ug/L	11/25/13	100	ND	ND	ND	ND	ND
pH (Field)	S.U.	11/29/06	--	7.14	6.82	6.96	6.96	--
	S.U.	10/27/09	--	7.28	7.04	6.85	7.65	--
	S.U.	04/09/10	--	7.70	6.92	6.61	7.70	--
	S.U.	11/02/10	--	7.52	6.71	6.35	7.10	--
	S.U.	05/25/11	--	7.03	6.54	6.22	6.39	--
	S.U.	11/01/11	--	7.85	7.27	6.62	6.93	--
	S.U.	05/18/12	--	7.42	7.06	7.23	7.20	--
	S.U.	11/15/12	--	7.06	6.95	6.18	6.22	--
	S.U.	06/27/13	--	7.52	6.47	6.69	7.13	--
	S.U.	11/25/13	--	8.01	6.74	6.73	7.75	--
Specific Conductance (Field)	uS/cm	11/29/06	--	335	152	109	280	--
	uS/cm	10/27/09	--	300	430	200	360	--
	uS/cm	04/09/10	--	436	167	104	420	--
	uS/cm	11/02/10	--	117	279	60	274	--
	uS/cm	05/25/11	--	428	311	152	370	--
	uS/cm	11/01/11	--	426	256	174	479	--
	uS/cm	05/18/12	--	292	299	130	277	--
	uS/cm	11/15/12	--	413	225	128	261	--
	uS/cm	06/27/13	--	347	240	174	323	--
	uS/cm	11/25/13	--	599	223	193	588	--
Temperature (Field)	^{o}C	11/29/06	--	--	--	--	--	--
	^{o}C	10/27/09	--	14.5	13.8	13.1	15.0	--
	^{o}C	04/09/10	--	17.6	13.3	12.8	16.8	--
	^{o}C	11/02/10	--	12.2	11.3	13.1	13.2	--
	^{o}C	05/25/11	--	21.72	19.51	16.41	19.72	--
	^{o}C	11/01/11	--	10.8	7.9	8.8	11.6	--
	^{o}C	05/18/12	--	22.6	18.0	17.7	19.6	--
	^{o}C	11/15/12	--	9.97	9.10	6.84	7.69	--
	^{o}C	06/27/13	--	23.40	21.36	19.01	22.22	--
	^{o}C	11/25/13	--	8.3	6.4	2.4	6.0	--
Turbidity (Field)	NTU	11/29/06	--	22	15	38	32	--
	NTU	10/27/09	--	2.1	4.5	4.6	4.8	--
	NTU	04/09/10	--	18.63	33.63	23.06	26.99	--
	NTU	11/02/10	--	1.64	1.97	2.79	1.38	--
	NTU	05/25/11	--	2.94	6.61	5.79	4.11	--
	NTU	11/01/11	--	6.92	6.16	26.8	122	--
	NTU	05/18/12	--	22.6	17.8	40.6	20.5	--
	NTU	11/15/12	--	7.81	4.27	33.7	18.6	--
	NTU	06/27/13	--	12.2	14.6	13.0	12.6	--
	NTU	11/25/13	--	3.65	23.3	9.42	25.2	--
Oxidation-Reduction Potential	mV	05/25/11	--	192.8	92.9	108.2	127.5	--
(Field)	mV	11/01/11	--	--	--	--	--	--
	mV	05/18/12	--	--	--	--	--	--
	mV	11/15/12	--	8.6	25.3	34.9	9.8	--
	mV	06/27/13	--	108.3	116.6	120.4	55.9	--
	mV	11/25/13	--	134.6	-8.2	96.5	-1.4	--

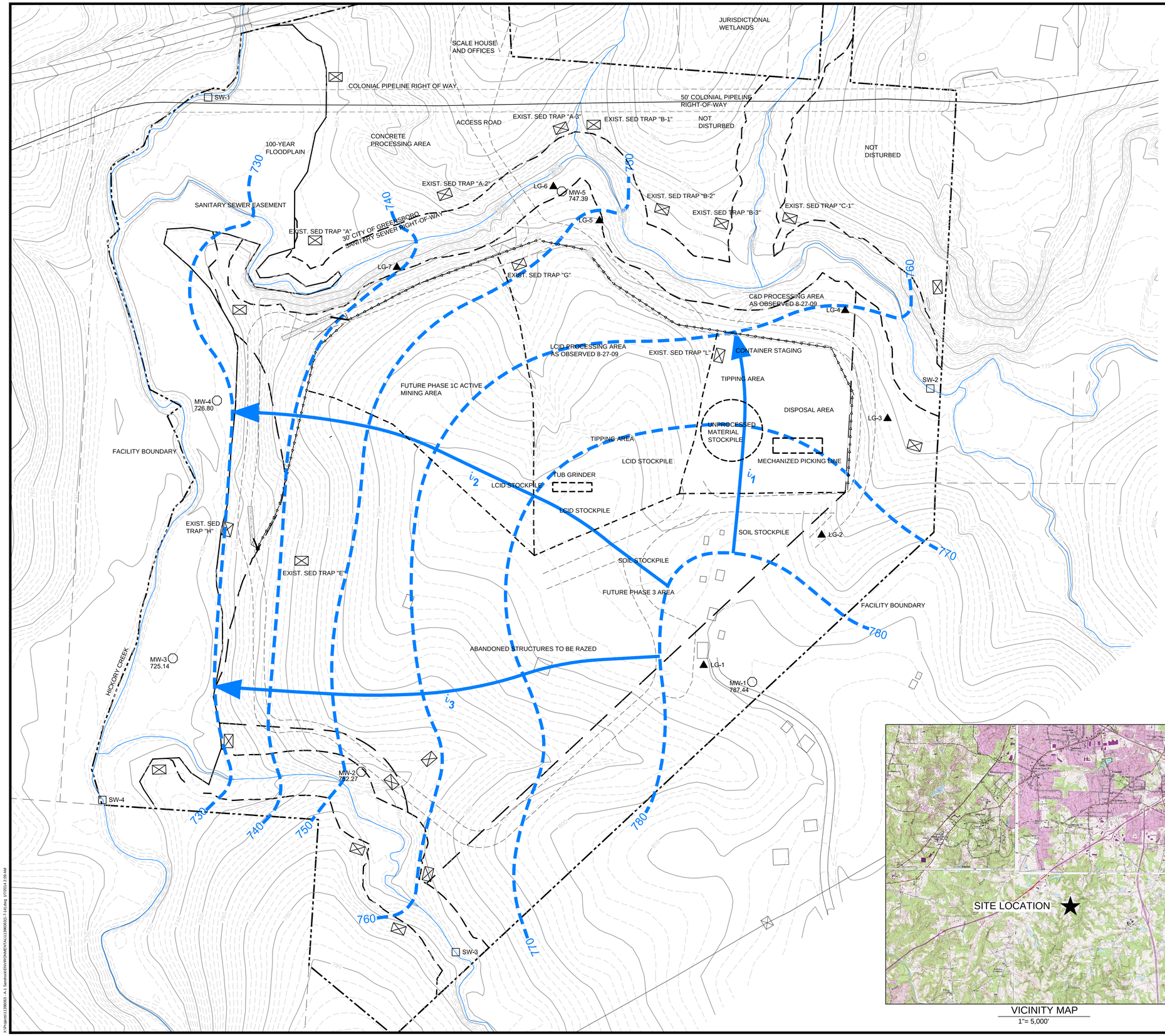
TABLE 5

Summary of Detected Constituents in Surface Water
A-1 Sandrock Construction and Demolition Landfill, Permit No. 41-17
Guilford County, North Carolina

Parameter	Reporting Units	Sample Date	SWS Reporting Limit	Upstream			Downstream	Blanks
				SW-1	SW-2	SW-3	SW-4	
Dissolved Oxygen (Field)	mg/L	05/25/11	--	10.41	8.54	6.33	8.01	--
	mg/L	11/01/11	--	--	--	--	--	--
	mg/L	05/18/12	--	--	--	--	--	--
	mg/L	11/15/12	--	10.41	8.21	7.98	9.97	--
	mg/L	06/27/13	--	8.31	7.66	6.64	6.80	--
	mg/L	11/25/13	--	10.72	2.01	8.48	11.92	--

Notes:
1. SW = surface water monitoring point
2. ug/L = micrograms per liter
3. J = estimated Value
4. B = blank-qualified data
5. S.U. = Standard Units
6. NTU = Nephelometric Turbidity Units
7. uS = microsiemens
8. ^{o}C = degrees Celsius
9. mV = millivolts
10. mg/L = milligrams per liter
11. ND = Not detected at or above the laboratory detection limit
12. Surface Water Standards for NC Appendix I constituents based on Class C Freshwater Aquatic Life stream classification per 15A NCAC 2B.
13. (AL) = SW Standard is an action level
14. (N) = SW Standard is a narrative standard
15. --- = no data available
16. Shaded values are above their respective NC Surface Water Standards.
17. Blanks = Field, trip and laboratory method blanks
18. SWS = Solid Waste Section
19. B* = Laboratory method blank concentrations not provided on the laboratory report, but the report indicates a detection in the laboratory blank by blank-qulaifying data.

DRAWING



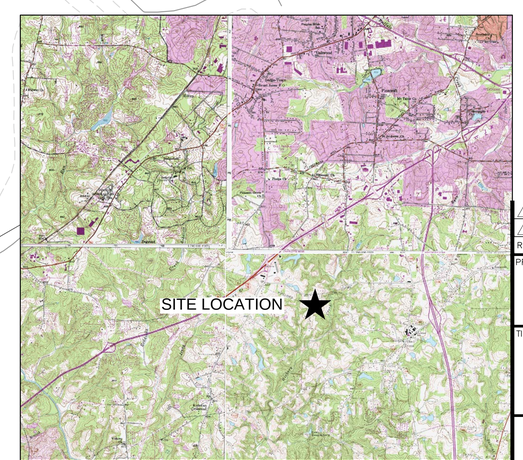
LEGEND

- EXISTING 10 FT. CONTOURS
- EXISTING 2 FT CONTOURS
- PROPERTY LINE
- STREAM
- EXISTING ROAD
- PROPOSED OR EXISTING LIMITS OF WASTE
- MONITORING WELL LOCATION, IDENTIFICATION AND GROUNDWATER ELEVATION — MW-3 725.14
- SURFACE WATER MONITORING POINT AND IDENTIFICATION — SW-1
- SEDIMENT TRAP
- BAR HOLE MONITORING LOCATION AND IDENTIFICATION — LG-1
- GROUNDWATER SURFACE CONTOUR — 760
- GROUNDWATER FLOW SEGMENT USED TO CALCULATE GRADIENT — i_1

NOTES

1. TOPOGRAPHIC CONTOUR INTERVAL = 2 FEET
2. GROUNDWATER SURFACE CONTOUR INTERVAL = 10 FEET
3. GROUNDWATER ELEVATIONS MEASURED ON NOVEMBER 25, 2013.
4. GROUNDWATER CONTOURS ARE BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATA, TOPOGRAPHIC CONTOURS, AND KNOWN FIELD CONDITIONS. THEREFORE, GROUNDWATER CONTOURS MAY NOT REFLECT ACTUAL GROUNDWATER CONDITIONS.
5. GROUNDWATER CONTOUR 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. GUILFORD COUNTY TAX MAP FOR SUMTER TOWNSHIP: ACL-3-185-755S-7, D.B. 4459, PG. 780.
7. TOPOGRAPHY WITHIN PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 3-27-01, BY SPATIAL DATA. TOPOGRAPHY OUTSIDE PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 1995, BY GUILFORD COUNTY GIS DEPARTMENT.
8. BOUNDARY INFORMATION FROM BOUNDARY MAP PREPARED BY L. DENNIS LEE, P.A., DATED NOVEMBER 14, 2002.
9. BASE GRADES SHOWN HERE ARE AS PERMITTED IN FEBRUARY 2004 BY NCDENR DIVISION OF WASTE MANAGEMENT (PERMIT #41-17). AS-BUILT SURVEY FOR PHASE 1A COMPLETED IN DECEMBER 2006 BY DENNIS LEE, RLS.

100 0 100 200
SCALE FEET



VICINITY MAP
1"= 5,000'

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW
2	1/4/2014	DAC	GROUNDWATER CONTOURS	LKB		
1	7/2/2013	DAC	GROUNDWATER CONTOURS	LKB	DYR	RPK

PROJECT
A-1 SANDROCK C&D LANDFILL
GUILFORD COUNTY, NC
SOLID WASTE PERMIT #41-17

TITLE
GROUNDWATER SURFACE CONTOUR MAP NOVEMBER 25, 2013

PG C-399

Golder Associates
GOLDER ASSOCIATES NC, INC.

PROJECT No. 1139606313.100			FILE No. 1139606313-7-14)
DESIGN	DYR	5/17/11	SCALE AS SHOWN REV. –
CADD	LKB	5/17/11	
CHECK	DYR	5/17/11	DWG. 1
REVIEW	RPK	5/17/11	

X:\Projects\1139603 - A-1 Sandrock\DVDROM\NEW\7\A1113960313-7-14\1-Avg 1/7/2014 2:09 AM

APPENDIX A

GROUNDWATER AND SURFACE WATER SAMPLING LOGS

DATE: 11/25/13

Golder Associates

GROUNDWATER SAMPLING LOG

Project Name: *A-1 Sandrock* **Project No./Phase No.:** *1139606313.100*
Well ID: MW-1 **Sampler(s):** *B. Freyer, D. Childress*
Well Diameter: 2 inches **Int. Depth to Water:** 28.61 feet
Depth to Bottom: 46.54 feet **Total Water Column:** 17.93 feet
Well Volume: 2.92 gallons **3x Well Volume:** 8.76 gallons
Well Location: SE of LF along property line, behind old house
Equipment: *YSI ProPlus, water level meter, Hach 2100P turbidimeter, disposable bailer*

Time	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	Temp. (°C)	Vol. (gallons)
0841	6.56	0.293	~~4.42~~ 21.8	13.8	Ø
0847	6.64	0.303	110	14.3	2.92
0852	6.63	0.240	80.7	14.2	5.84
0858	6.69	0.238	194	14.3	8.76
	sampled @ 1408				
1408	6.74	0.246	4.92	13.7	—

Comments (weather conditions, color, type of sample, purge-water management, etc.):
21°F, clear, calm

Signature: [signature] **Date:** 11/25/13

QA/QC Sign Off: [signature] **Date:** 1-8-14

DATE: 11/25/13

Golder Associates

GROUNDWATER SAMPLING LOG

Project Name: *A-1 Sandrock* **Project No./Phase No.:** *1139606313.100*
Well ID: MW-2 **Sampler(s):** *B. Freyer, D. Childress*
Well Diameter: 2 inches **Int. Depth to Water:** 9.65 feet
Depth to Bottom: 32.71 feet **Total Water Column:** 23.06 feet
Well Volume: 3.75 gallons **3x Well Volume:** 11.25 gallons
Well Location: Along perimeter road in SW corner of LF
Equipment: *YSI ProPlus, water level meter, Hach 2100P turbidimeter, disposable bailer*

Time	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	Temp. (°C)	Vol. (gallons)
0920	6.30	0.222	43.0	15.8	0
0924	6.16	0.224	24.4	15.7	3.75
0928	6.16	0.212	27.9	15.8	7.5
0932	6.16	0.226	25.6	15.9	11.25
		Sampled @ 1426			
1426	6.21	0.203	11.0	15.4	—

Comments (weather conditions, color, type of sample, purge-water management, etc.):
weather: 20°F, clear

Signature: Daniel Childress **Date:** 11/25/13

QA/QC Sign Off: [illegible] **Date:** 1-8-14

Golder Associates

DATE: 11/25/13

GROUNDWATER SAMPLING LOG

Project Name: *A-1 Sandrock*
Project No./Phase No.: *1139606313.100*
Well ID: MW-3
Sampler(s): *B. Freyer, D. Childress*
Well Diameter: 2 inches
Int. Depth to Water: 6.68 feet
Depth to Bottom: 33.00 feet
Total Water Column: 26.32 feet
Well Volume: 4.29 gallons
3x Well Volume: 12.87 gallons
Well Location: SW corner of LF chamhill off perimeter road
Equipment: *YSI ProPlus, water level meter, Hach 2100P turbidimeter, disposable bailer*

Time	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	Temp. (°C)	Vol. (gallons)
1012	6.35	0.192	24.8	14.1	Ø
1019	6.24	0.187	298	14.2	4.3
1025	6.24	0.183	929	14.1	8.6
1031	6.24	0.181	>1000	14.2	12.9
	sampled @ 1445				
1445	6.19	0.172	234	14.1	—

Comments (weather conditions, color, type of sample, purge-water management, etc.):
28°F, mostly cloudy, breeze

*Filtered sample (DISSOLVED METALS) collected in addition to Total Metals

Signature: BJF
Date: 11/25/13

QA/QC Sign Off: [signature]
Date: 1-8-14

Golder Associates

DATE: 11/25/13

GROUNDWATER SAMPLING LOG

Project Name: *A-1 Sandrock*
Project No./Phase No.: *1139606313.100*
Well ID: ~~MW-4S~~ BE MW-4
Sampler(s): *B. Freyer, D. Childress*
Well Diameter: 2 inches
Int. Depth to Water: 6.37 feet
Depth to Bottom: 25.41 feet
Total Water Column: 19.04 feet
Well Volume: 3.1 gallons
3x Well Volume: 9.3 gallons
Well Location: W of LF behind sed pond.
Equipment: *YSI ProPlus, water level meter, Hach 2100P turbidimeter, disposable bailer*

Time	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	Temp. (°C)	Vol. (gallons)
1106	6.53	0.260	130	14.6	0
1111	6.48	0.244	517	14.8	3.1
1121	6.45	0.178	>1000	14.5	6.2
1126	6.50	0.245	>1000	14.1	9.3
		Sampled	@ 1510		
1510	6.52	0.221	78.0	14.5	—

Comments (weather conditions, color, type of sample, purge-water management, etc.):
weather: 34°F, clear

Signature: Bavind Childress **Date:** 11/25/13

QA/QC Sign Off: [signature] **Date:** 1-8-14

DATE: 11/25/13

Golder Associates

GROUNDWATER SAMPLING LOG

Project Name: *A-1 Sandrock*
Project No./Phase No.: *1139606313.100*
Well ID: MW-5
Sampler(s): *B. Freyer, D. Childress*
Well Diameter: 2 inches
Int. Depth to Water: 15.49 feet
Depth to Bottom: 31.04 feet
Total Water Column: 15.55 feet
Well Volume: 2.53 gallons
3x Well Volume: 7.59 gallons
Well Location: along entrance road past scalehouse
Equipment: *YSI ProPlus, water level meter, Hach 2100P turbidimeter, disposable bailer*

Time	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	Temp. (°C)	Vol. (gallons)
1146	6.23	0.408	444	15.5	Ø
1149	6.18	0.431	65.3	15.6	2.53
1152	6.21	0.428	46.3	15.4	5.06
1159	6.21	0.418	6.10	15.4	7.59
	sample @ 1530				
1530	6.22	0.428	2.20	15.5	—

Comments (weather conditions, color, type of sample, purge-water management, etc.):
34°F, clear, breeze

*strong sulphur odor to purge water

Signature: B. Freyer **Date:** 11/25/13

QA/QC Sign Off: [illegible] **Date:** 1-8-14

Golder Associates

DATE: 11/25/13

SURFACE WATER SAMPLING LOG

Project Name: *A-1 Sandrock* **Project No./Phase No.:** *1139606313.100*

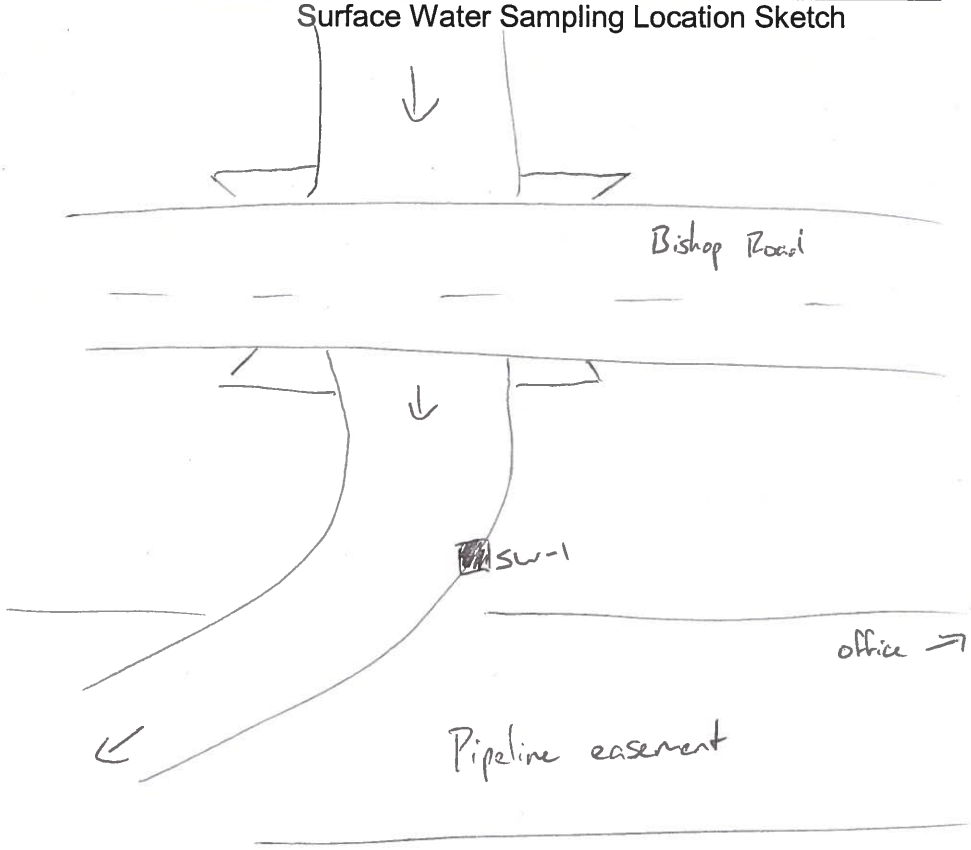
Sample ID: SW-1 **Sampler(s):** *B. Freyer, D. Childress*

Sampling Location: downstream of Bishop Rd. bridge

Equipment: *YSI ProPlus, Hach 2100P Turbidimeter*

Time	1325
pH s.u.	8.01
Cond. mS/cm	0.599
Turb. ntu	3.65
Dis. O_2 mg/L	10.72
Temp. °C	8.3
ORP mv	134.6

Surface Water Sampling Location Sketch



Comments (sample methodology, weather conditions, color, silt, etc.):
38°F, cloudy, breeze

Signature: [signature] **Date:** 11/25/13

QA/QC Sign Off: [signature] **Date:** 1-8-14

Golder Associates

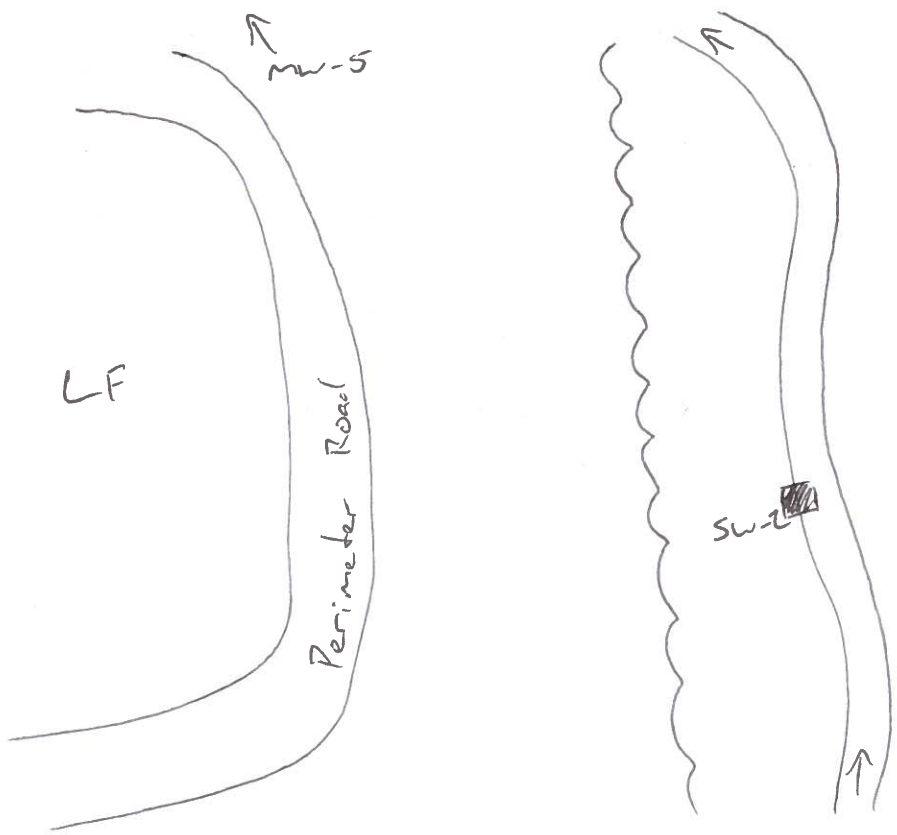
DATE: 11/25/13

SURFACE WATER SAMPLING LOG

Project Name: *A-1 Sandrock* **Project No./Phase No.:** *1139606313.100*
Sample ID: SW-2 **Sampler(s):** *B. Freyer, D. Childress*
Sampling Location: E of LF
Equipment: *YSI ProPlus, Hach 2100P Turbidimeter*

Time	1350
pH s.u.	6.74
Cond. mS/cm	0.223
Turb. ntu	23.3
Dis. O_2 mg/L	2.01
Temp. °C	6.4
ORP mv	-8.2

Surface Water Sampling Location Sketch



Comments (sample methodology, weather conditions, color, silt, etc.):
38°F, overcast, breeze

Signature: B. Freyer **Date:** 11/25/13

QA/QC Sign Off: [signature] **Date:** 1-8-14

DATE: 11/25/13

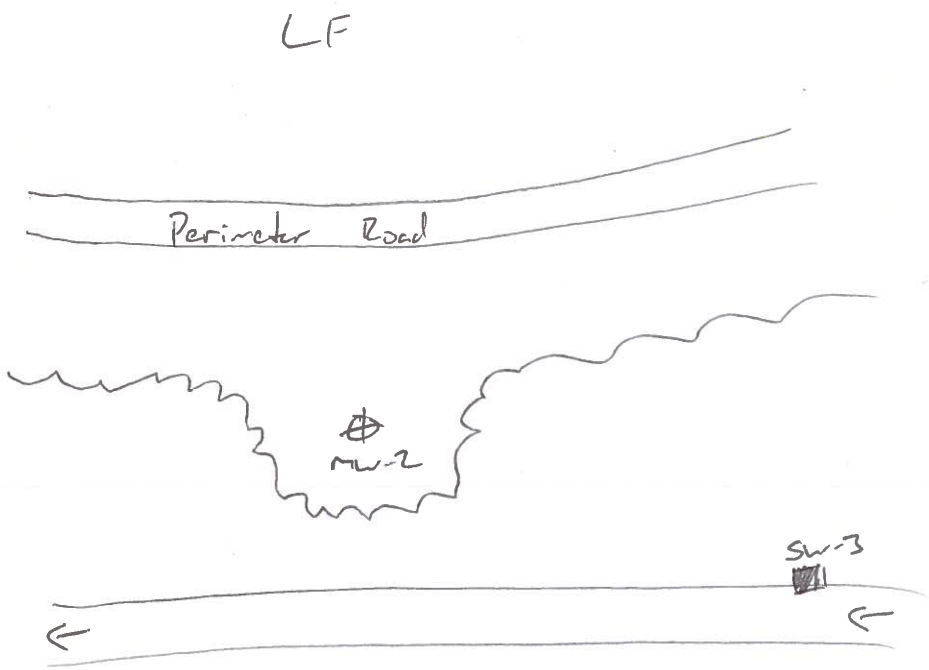
Golder Associates

SURFACE WATER SAMPLING LOG

Project Name: *A-1 Sandrock* **Project No./Phase No.:** *1139606313.100*
Sample ID: SW-3 **Sampler(s):** *B. Freyer, D. Childress*
Sampling Location: upstream from MW-2
Equipment: *YSI ProPlus, Hach 2100P Turbidimeter*

Time	0945
pH s.u.	6.73
Cond. mS/cm	0.193
Turb. ntu	9.42
Dis. O_2 mg/L	8.48
Temp. °C	2.4
ORP mv	96.5

Surface Water Sampling Location Sketch



Comments (sample methodology, weather conditions, color, silt, etc.):
20°F, clear, breeze

Signature: B. A. Freyer **Date:** 11/25/13

QA/QC Sign Off: [signature] **Date:** 1-8-14

DATE: 11/25/13

SURFACE WATER SAMPLING LOG

Project Name: *A-1 Sandrock* **Project No./Phase No.:** *1139606313.100*

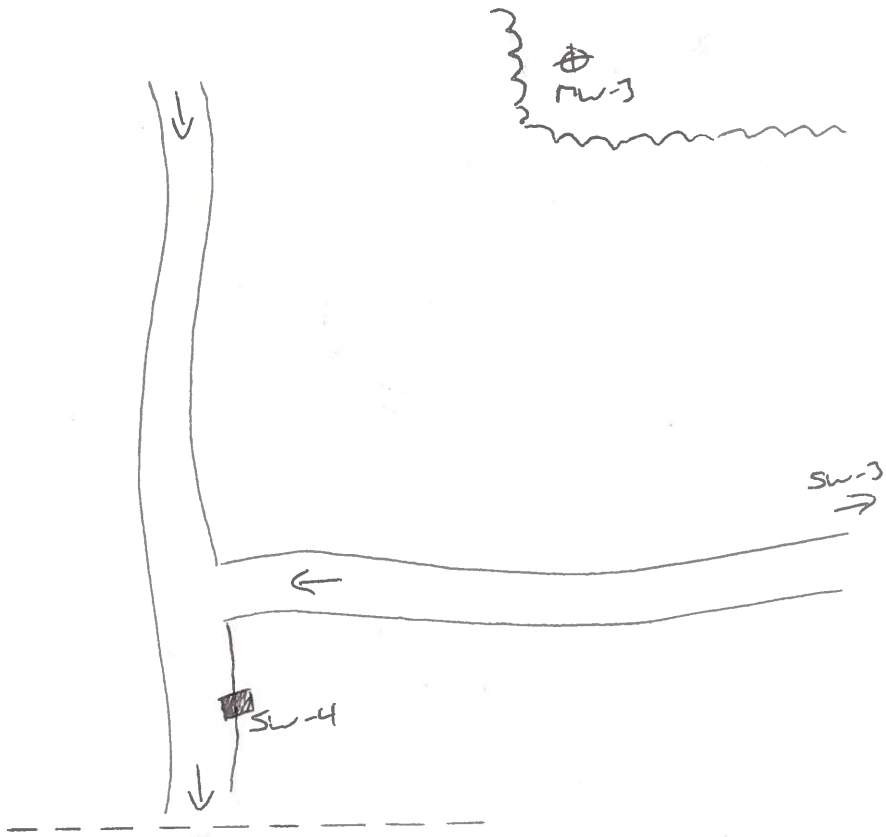
Sample ID: SW-4 **Sampler(s):** *B. Freyer, D. Childress*

Sampling Location: stream exiting property downstream of MW-3

Equipment: *YSI ProPlus, Hach 2100P Turbidimeter*

Time	1040
pH s.u.	7.75
Cond. mS/cm	0.588
Turb. ntu	25.2
Dis. O_2 mg/L	11.92
Temp. °C	6.0
ORP mv	-1.4

Surface Water Sampling Location Sketch



Comments (sample methodology, weather conditions, color, silt, etc.):
31°F, clear, breeze

Signature: B. Freyer **Date:** 11/25/13

QA/QC Sign Off: [signature] **Date:** 1-8-14

APPENDIX B
NOVEMBER 2013 GROUNDWATER AND SURFACE WATER CERTIFICATE-OF-ANALYSIS, CHAIN-OF-CUSTODY FORMS, AND LABORATORY DATA REVIEW

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

Thursday, December 12, 2013

Golder Associates, Inc. (GO007)

Attn: Dusty Reedy

5B Oak Branch Drive

Greensboro, NC 27407

RE: Laboratory Results for
Project Number: 1139-606313.100, Project Name/Desc: A-1 Sandrock C&D Landfill
ENCO Workorder(s): C314779

Dear Dusty Reedy,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Tuesday, November 26, 2013.

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 63.

PROJECT NARRATIVE

Date: 12 December 2013
Client: Golder Associates, Inc. (GO007)
Project: A-1 Sandrock C&D Landfill
Lab ID: C314779

Overview

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

Precision between duplicate analyses of TDS exceeded acceptance criteria. The QC batch was approved based on acceptable LCS recovery of this analyte.

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.

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

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: 4117-MW1 **Lab ID: C314779-01** **Sampled: 11/25/13 14:08** **Received: 11/26/13 12:15**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	12/23/13	12/05/13	08:48	12/6/2013 02:56
EPA 310.2	12/09/13	12/02/13	09:13	12/2/2013 11:21
EPA 6010C	05/24/14	12/05/13	10:52	12/9/2013 14:47
EPA 6020A	05/24/14	12/04/13	09:34	12/5/2013 13:24
EPA 7470A	12/23/13	12/10/13	10:41	12/11/2013 13:08
EPA 8260B	12/09/13	12/03/13	15:41	12/3/2013 20:42
SM 2540C-1997	12/02/13	11/27/13	17:00	11/27/2013 17:00

Client ID: 4117-MW2 (MS/MSD) **Lab ID: C314779-02** **Sampled: 11/25/13 14:26** **Received: 11/26/13 12:15**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	12/23/13	12/05/13	08:48	12/6/2013 03:13
EPA 310.2	12/09/13	12/02/13	09:13	12/2/2013 11:17
EPA 6010C	05/24/14	12/05/13	10:52	12/9/2013 13:58
EPA 6020A	05/24/14	12/04/13	09:34	12/5/2013 12:31
EPA 7470A	12/23/13	12/10/13	10:41	12/11/2013 12:51
EPA 8260B	12/09/13	12/03/13	10:01	12/3/2013 10:27
SM 2540C-1997	12/02/13	11/27/13	18:50	11/27/2013 18:50

Client ID: 4117-MW3 **Lab ID: C314779-03** **Sampled: 11/25/13 14:45** **Received: 11/26/13 12:15**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	12/23/13	12/05/13	08:48	12/6/2013 03:30
EPA 310.2	12/09/13	12/02/13	09:13	12/2/2013 11:22
EPA 6010C	05/24/14	12/05/13	10:52	12/9/2013 14:50
EPA 6020A	05/24/14	12/04/13	09:34	12/5/2013 13:28
EPA 7470A	12/23/13	12/10/13	10:41	12/11/2013 13:11
EPA 8260B	12/09/13	12/03/13	15:41	12/3/2013 21:11
SM 2540C-1997	12/02/13	11/27/13	18:50	11/27/2013 18:50

Client ID: 4117-MW4S **Lab ID: C314779-04** **Sampled: 11/25/13 15:10** **Received: 11/26/13 12:15**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	12/23/13	12/05/13	08:48	12/6/2013 04:21
EPA 310.2	12/09/13	12/02/13	09:13	12/2/2013 11:23
EPA 6010C	05/24/14	12/05/13	10:52	12/9/2013 14:52
EPA 6020A	05/24/14	12/04/13	09:34	12/5/2013 13:32
EPA 7470A	12/23/13	12/10/13	10:41	12/11/2013 13:13
EPA 8260B	12/09/13	12/03/13	15:41	12/3/2013 21:41
SM 2540C-1997	12/02/13	11/27/13	18:50	11/27/2013 18:50

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Client ID: 4117-MW5	Lab ID: C314779-05	Sampled: 11/25/13 15:30	Received: 11/26/13 12:15

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 300.0	12/23/13	12/05/13 08:48	12/6/2013 04:38
EPA 310.2	12/09/13	12/02/13 09:13	12/2/2013 11:26
EPA 6010C	05/24/14	12/05/13 10:52	12/9/2013 14:55
EPA 6020A	05/24/14	12/04/13 09:34	12/5/2013 13:36
EPA 7470A	12/23/13	12/10/13 10:41	12/11/2013 13:15
EPA 8260B	12/09/13	12/03/13 15:41	12/3/2013 22:11
SM 2540C-1997	12/02/13	11/27/13 18:50	11/27/2013 18:50

Client ID: 4117-SW1	Lab ID: C314779-06	Sampled: 11/25/13 13:25	Received: 11/26/13 12:15

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010C	05/24/14	12/05/13 10:52	12/9/2013 15:05
EPA 6020A	05/24/14	12/04/13 09:34	12/5/2013 13:40
EPA 8260B	12/09/13	12/03/13 15:41	12/3/2013 22:40

Client ID: 4117-SW2	Lab ID: C314779-07	Sampled: 11/25/13 13:50	Received: 11/26/13 12:15

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010C	05/24/14	12/05/13 10:52	12/9/2013 15:08
EPA 6020A	05/24/14	12/04/13 09:34	12/5/2013 13:44
EPA 8260B	12/09/13	12/03/13 15:41	12/3/2013 23:10

Client ID: 4117-SW3	Lab ID: C314779-08	Sampled: 11/25/13 09:45	Received: 11/26/13 12:15

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010C	05/24/14	12/05/13 10:52	12/9/2013 15:10
EPA 6020A	05/24/14	12/04/13 09:34	12/5/2013 13:48
EPA 8260B	12/09/13	12/03/13 15:41	12/3/2013 23:39

Client ID: 4117-SW4	Lab ID: C314779-09	Sampled: 11/25/13 10:40	Received: 11/26/13 12:15

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010C	05/24/14	12/05/13 10:52	12/9/2013 15:13
EPA 6020A	05/24/14	12/04/13 09:34	12/5/2013 13:52
EPA 8260B	12/09/13	12/03/13 15:41	12/4/2013 00:08

Client ID: 4117-Field Blank	Lab ID: C314779-10	Sampled: 11/25/13 15:40	Received: 11/26/13 12:15

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010C	05/24/14	12/05/13 10:52	12/9/2013 15:15
EPA 6020A	05/24/14	12/04/13 09:34	12/5/2013 14:04
EPA 7470A	12/23/13	12/10/13 10:41	12/11/2013 13:17
EPA 8260B	12/09/13	12/03/13 15:41	12/4/2013 00:38

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Client ID: 4117-Trip Blank	Lab ID: C314779-11	Sampled: 11/25/13 09:45	Received: 11/26/13 12:15

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	12/09/13	12/04/13 09:11	12/4/2013 13:44

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NORTH CAROLINA SWS SAMPLE DETECTION SUMMARY

Client ID: 4117-MW1 **Lab ID: C314779-01**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	28.6	J	1	1.00	10.0	100	ug/L	EPA 6010C	
Chloride	4500	J	1	2200	5000	NE	ug/L	EPA 300.0	
Cobalt - Total	1.34	J	1	1.10	10.0	10	ug/L	EPA 6010C	
Iron - Total	78.2	J	1	22.0	50.0	300	ug/L	EPA 6010C	
Manganese - Total	6.69	J	1	1.10	10.0	50	ug/L	EPA 6010C	
Sulfate as SO4	27000	J	1	2900	5000	250000	ug/L	EPA 300.0	
Total Alkalinity as CaCO3	75000		1	14000	15000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	180000		1	10000	10000	NE	ug/L	SM 2540C-1997	
Vanadium - Total	8.19	J	1	1.40	10.0	25	ug/L	EPA 6010C	

Client ID: 4117-MW2 (MS/MSD) **Lab ID: C314779-02**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	62.2	J	1	1.00	10.0	100	ug/L	EPA 6010C	
Chloride	5200		1	2200	5000	NE	ug/L	EPA 300.0	
Cobalt - Total	2.52	J	1	1.10	10.0	10	ug/L	EPA 6010C	
Iron - Total	226	J	1	22.0	50.0	300	ug/L	EPA 6010C	
Manganese - Total	200		1	1.10	10.0	50	ug/L	EPA 6010C	
Sulfate as SO4	14000	J	1	2900	5000	250000	ug/L	EPA 300.0	
Total Alkalinity as CaCO3	62000		1	14000	15000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	130000		1	10000	10000	NE	ug/L	SM 2540C-1997	
Vanadium - Total	2.19	J	1	1.40	10.0	25	ug/L	EPA 6010C	
Zinc - Total	4.09	J	1	3.80	10.0	10	ug/L	EPA 6010C	

Client ID: 4117-MW3 **Lab ID: C314779-03**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	81.8	J	1	1.00	10.0	100	ug/L	EPA 6010C	
Chloride	3800	J	1	2200	5000	NE	ug/L	EPA 300.0	
Chromium - Total	6.87	J	1	1.40	10.0	10	ug/L	EPA 6010C	
Cobalt - Total	4.08	J	1	1.10	10.0	10	ug/L	EPA 6010C	
Iron - Total	5610		1	22.0	50.0	300	ug/L	EPA 6010C	
Manganese - Total	60.6		1	1.10	10.0	50	ug/L	EPA 6010C	
Nickel - Total	2.35	J	1	1.80	10.0	50	ug/L	EPA 6010C	
Sulfate as SO4	8800	J	1	2900	5000	250000	ug/L	EPA 300.0	
Total Alkalinity as CaCO3	58000		1	14000	15000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	170000		1	10000	10000	NE	ug/L	SM 2540C-1997	
Vanadium - Total	12.7	J	1	1.40	10.0	25	ug/L	EPA 6010C	
Zinc - Total	19.7		1	3.80	10.0	10	ug/L	EPA 6010C	

Client ID: 4117-MW4S **Lab ID: C314779-04**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	112		1	1.00	10.0	100	ug/L	EPA 6010C	
Chloride	4400	J	1	2200	5000	NE	ug/L	EPA 300.0	
Chromium - Total	5.03	J	1	1.40	10.0	10	ug/L	EPA 6010C	
Cobalt - Total	2.82	J	1	1.10	10.0	10	ug/L	EPA 6010C	
Copper - Total	3.54	J	1	1.60	10.0	10	ug/L	EPA 6010C	
Iron - Total	3200		1	22.0	50.0	300	ug/L	EPA 6010C	
Manganese - Total	95.4		1	1.10	10.0	50	ug/L	EPA 6010C	
Nickel - Total	3.58	J	1	1.80	10.0	50	ug/L	EPA 6010C	
Sulfate as SO4	27000	J	1	2900	5000	250000	ug/L	EPA 300.0	

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Client ID: 4117-MW4S **Lab ID: C314779-04**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Total Alkalinity as CaCO3	80000		1	14000	15000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	180000		1	10000	10000	NE	ug/L	SM 2540C-1997	
Vanadium - Total	10.7	J	1	1.40	10.0	25	ug/L	EPA 6010C	
Zinc - Total	6.99	J	1	3.80	10.0	10	ug/L	EPA 6010C	

Client ID: 4117-MW5 **Lab ID: C314779-05**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	80.2	J	1	1.00	10.0	100	ug/L	EPA 6010C	
Chloride	13000		1	2200	5000	NE	ug/L	EPA 300.0	
Cobalt - Total	6.96	J	1	1.10	10.0	10	ug/L	EPA 6010C	
Iron - Total	72.8	J	1	22.0	50.0	300	ug/L	EPA 6010C	
Manganese - Total	1450		1	1.10	10.0	50	ug/L	EPA 6010C	
Nickel - Total	1.94	J	1	1.80	10.0	50	ug/L	EPA 6010C	
Sulfate as SO4	50000	J	1	2900	5000	250000	ug/L	EPA 300.0	
Total Alkalinity as CaCO3	150000		1	14000	15000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	310000		1	10000	10000	NE	ug/L	SM 2540C-1997	
Zinc - Total	6.57	J	1	3.80	10.0	10	ug/L	EPA 6010C	

Client ID: 4117-SW1 **Lab ID: C314779-06**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	72.6	J	1	1.00	10.0	100	ug/L	EPA 6010C	
Cobalt - Total	1.50	J	1	1.10	10.0	10	ug/L	EPA 6010C	

Client ID: 4117-SW2 **Lab ID: C314779-07**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	46.2	J	1	1.00	10.0	100	ug/L	EPA 6010C	
Cobalt - Total	2.05	J	1	1.10	10.0	10	ug/L	EPA 6010C	

Client ID: 4117-SW3 **Lab ID: C314779-08**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	44.8	J	1	1.00	10.0	100	ug/L	EPA 6010C	
Cobalt - Total	4.57	J	1	1.10	10.0	10	ug/L	EPA 6010C	
Copper - Total	1.60	J	1	1.60	10.0	10	ug/L	EPA 6010C	
Zinc - Total	6.57	J	1	3.80	10.0	10	ug/L	EPA 6010C	

Client ID: 4117-SW4 **Lab ID: C314779-09**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	75.8	J	1	1.00	10.0	100	ug/L	EPA 6010C	
Cobalt - Total	1.39	J	1	1.10	10.0	10	ug/L	EPA 6010C	

Client ID: 4117-Field Blank **Lab ID: C314779-10**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	1.75	J	1	1.00	10.0	100	ug/L	EPA 6010C	
Cobalt - Total	1.19	J	1	1.10	10.0	10	ug/L	EPA 6010C	
Manganese - Total	1.39	J	1	1.10	10.0	50	ug/L	EPA 6010C	

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ANALYTICAL RESULTS

Description: 4117-MW1 | **Lab Sample ID:** C314779-01 | **Received:** 11/26/13 12:15

Matrix: Ground Water | **Sampled:** 11/25/13 14:08 | **Work Order:** C314779

Project: A-1 Sandrock C&D Landfill | **Sampled By:** Daniel Childress

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	12/03/13 20:42	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	12/03/13 20:42	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	12/03/13 20:42	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/03/13 20:42	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	12/03/13 20:42	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/03/13 20:42	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/03/13 20:42	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	12/03/13 20:42	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	12/03/13 20:42	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	12/03/13 20:42	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	12/03/13 20:42	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	12/03/13 20:42	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	12/03/13 20:42	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	12/03/13 20:42	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	12/03/13 20:42	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	12/03/13 20:42	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	12/03/13 20:42	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	12/03/13 20:42	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 20:42	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	12/03/13 20:42	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 20:42	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	12/03/13 20:42	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	12/03/13 20:42	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	12/03/13 20:42	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 20:42	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/03/13 20:42	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	12/03/13 20:42	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	12/03/13 20:42	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/03/13 20:42	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	12/03/13 20:42	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	12/03/13 20:42	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/03/13 20:42	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	12/03/13 20:42	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/03/13 20:42	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	12/03/13 20:42	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/03/13 20:42	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	12/03/13 20:42	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 20:42	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0	NE	EPA 8260B	12/03/13 20:42	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/03/13 20:42	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/03/13 20:42	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 20:42	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	12/03/13 20:42	REF	

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Description:	4117-MW1	**Lab Sample ID:**	C314779-01	**Received:**	11/26/13 12:15
Matrix:	Ground Water	**Sampled:**	11/25/13 14:08	**Work Order:**	C314779
Project:	A-1 Sandrock C&D Landfill	**Sampled By:**	Daniel Childress		

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
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 20:42	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	12/03/13 20:42	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	12/03/13 20:42	REF	
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	12/03/13 20:42	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	12/03/13 20:42	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*81 %*	*51-122*	*3L03030*	*EPA 8260B*	*12/03/13 20:42*	*REF*	
Dibromofluoromethane	*41*	*1*	*50.0*	*81 %*	*68-117*	*3L03030*	*EPA 8260B*	*12/03/13 20:42*	*REF*	
Toluene-d8	*42*	*1*	*50.0*	*84 %*	*67-127*	*3L03030*	*EPA 8260B*	*12/03/13 20:42*	*REF*	

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Description:	4117-MW1	**Lab Sample ID:**	C314779-01	**Received:**	11/26/13 12:15
Matrix:	Ground Water	**Sampled:**	11/25/13 14:08	**Work Order:**	C314779
Project:	A-1 Sandrock C&D Landfill	**Sampled By:**	Daniel Childress		

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.170	U	ug/L	1	0.170	0.200	0.2	EPA 7470A	12/11/13 13:08	T1D	

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Description: 4117-MW1 | **Lab Sample ID:** C314779-01 | **Received:** 11/26/13 12:15

Matrix: Ground Water | **Sampled:** 11/25/13 14:08 | **Work Order:** C314779

Project: A-1 Sandrock C&D Landfill | **Sampled By:** Daniel Childress

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	12/05/13 13:24	VLO	
Arsenic [7440-38-2] ^	5.40	U	ug/L	1	5.40	10.0	10	EPA 6010C	12/09/13 14:47	JDH	
Barium [7440-39-3] ^	**28.6**	J	ug/L	1	1.00	10.0	100	EPA 6010C	12/09/13 14:47	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	12/09/13 14:47	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	12/09/13 14:47	JDH	
Chromium [7440-47-3] ^	1.40	U	ug/L	1	1.40	10.0	10	EPA 6010C	12/09/13 14:47	JDH	
Cobalt [7440-48-4] ^	**1.34**	J	ug/L	1	1.10	10.0	10	EPA 6010C	12/09/13 14:47	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	12/09/13 14:47	JDH	
Iron [7439-89-6] ^	**78.2**	J	ug/L	1	22.0	50.0	300	EPA 6010C	12/09/13 14:47	JDH	
Lead [7439-92-1] ^	2.10	U	ug/L	1	2.10	10.0	10	EPA 6010C	12/09/13 14:47	JDH	
Manganese [7439-96-5] ^	**6.69**	J	ug/L	1	1.10	10.0	50	EPA 6010C	12/09/13 14:47	JDH	
Nickel [7440-02-0] ^	1.80	U	ug/L	1	1.80	10.0	50	EPA 6010C	12/09/13 14:47	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	12/09/13 14:47	JDH	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	12/09/13 14:47	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	12/05/13 13:24	VLO	
Vanadium [7440-62-2] ^	**8.19**	J	ug/L	1	1.40	10.0	25	EPA 6010C	12/09/13 14:47	JDH	
Zinc [7440-66-6] ^	3.80	U	ug/L	1	3.80	10.0	10	EPA 6010C	12/09/13 14:47	JDH	

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Description: 4117-MW1
Matrix: Ground Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-01
Sampled: 11/25/13 14:08
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

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] ^	**4500**	J	ug/L	1	2200	5000	NE	EPA 300.0	12/06/13 02:56	AJB	
Sulfate as SO4 [14808-79-8] ^	**27000**	J	ug/L	1	2900	5000	250000	EPA 300.0	12/06/13 02:56	AJB	
Total Alkalinity as CaCO3 [471-34-1] ^	**75000**		ug/L	1	14000	15000	NE	EPA 310.2	12/02/13 11:21	AJB	
Total Dissolved Solids [ECL-0156] ^	**180000**		ug/L	1	10000	10000	NE	SM 2540C-1997	11/27/13 17:00	JOC	

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

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Description: 4117-MW2 (MS/MSD) **Lab Sample ID:** C314779-02 **Received:** 11/26/13 12:15
Matrix: Ground Water **Sampled:** 11/25/13 14:26 **Work Order:** C314779
Project: A-1 Sandrock C&D Landfill **Sampled By:** Daniel Childress

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	12/03/13 10:27	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	12/03/13 10:27	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	12/03/13 10:27	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/03/13 10:27	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	12/03/13 10:27	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/03/13 10:27	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/03/13 10:27	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	12/03/13 10:27	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	12/03/13 10:27	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	12/03/13 10:27	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	12/03/13 10:27	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	12/03/13 10:27	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	12/03/13 10:27	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	12/03/13 10:27	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	12/03/13 10:27	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	12/03/13 10:27	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	12/03/13 10:27	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	12/03/13 10:27	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 10:27	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	12/03/13 10:27	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 10:27	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	12/03/13 10:27	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	12/03/13 10:27	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	12/03/13 10:27	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 10:27	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/03/13 10:27	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	12/03/13 10:27	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	12/03/13 10:27	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/03/13 10:27	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	12/03/13 10:27	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	12/03/13 10:27	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/03/13 10:27	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	12/03/13 10:27	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/03/13 10:27	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	12/03/13 10:27	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/03/13 10:27	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	12/03/13 10:27	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 10:27	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0	NE	EPA 8260B	12/03/13 10:27	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/03/13 10:27	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/03/13 10:27	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 10:27	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	12/03/13 10:27	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 10:27	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	12/03/13 10:27	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	12/03/13 10:27	REF	

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Description: 4117-MW2 (MS/MSD)	**Lab Sample ID:** C314779-02	**Received:** 11/26/13 12:15
Matrix: Ground Water	**Sampled:** 11/25/13 14:26	**Work Order:** C314779
Project: A-1 Sandrock C&D Landfill	**Sampled By:** Daniel Childress	

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
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	12/03/13 10:27	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	12/03/13 10:27	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*46*	*1*	*50.0*	*92 %*	*51-122*	*3L03015*	*EPA 8260B*	*12/03/13 10:27*	*REF*	
Dibromofluoromethane	*46*	*1*	*50.0*	*92 %*	*68-117*	*3L03015*	*EPA 8260B*	*12/03/13 10:27*	*REF*	
Toluene-d8	*46*	*1*	*50.0*	*92 %*	*67-127*	*3L03015*	*EPA 8260B*	*12/03/13 10:27*	*REF*	

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Description:	4117-MW2 (MS/MSD)	**Lab Sample ID:**	C314779-02	**Received:**	11/26/13 12:15
Matrix:	Ground Water	**Sampled:**	11/25/13 14:26	**Work Order:**	C314779
Project:	A-1 Sandrock C&D Landfill	**Sampled By:**	Daniel Childress		

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.170	U	ug/L	1	0.170	0.200	0.2	EPA 7470A	12/11/13 12:51	T1D	

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Description: 4117-MW2 (MS/MSD) **Lab Sample ID:** C314779-02 **Received:** 11/26/13 12:15

Matrix: Ground Water **Sampled:** 11/25/13 14:26 **Work Order:** C314779

Project: A-1 Sandrock C&D Landfill **Sampled By:** Daniel Childress

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	12/05/13 12:31	VLO	
Arsenic [7440-38-2] ^	5.40	U	ug/L	1	5.40	10.0	10	EPA 6010C	12/09/13 13:58	JDH	
Barium [7440-39-3] ^	**62.2**	J	ug/L	1	1.00	10.0	100	EPA 6010C	12/09/13 13:58	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	12/09/13 13:58	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	12/09/13 13:58	JDH	
Chromium [7440-47-3] ^	1.40	U	ug/L	1	1.40	10.0	10	EPA 6010C	12/09/13 13:58	JDH	
Cobalt [7440-48-4] ^	**2.52**	J	ug/L	1	1.10	10.0	10	EPA 6010C	12/09/13 13:58	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	12/09/13 13:58	JDH	
Iron [7439-89-6] ^	**226**	J	ug/L	1	22.0	50.0	300	EPA 6010C	12/09/13 13:58	JDH	
Lead [7439-92-1] ^	2.10	U	ug/L	1	2.10	10.0	10	EPA 6010C	12/09/13 13:58	JDH	
Manganese [7439-96-5] ^	**200**		ug/L	1	1.10	10.0	50	EPA 6010C	12/09/13 13:58	JDH	
Nickel [7440-02-0] ^	1.80	U	ug/L	1	1.80	10.0	50	EPA 6010C	12/09/13 13:58	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	12/09/13 13:58	JDH	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	12/09/13 13:58	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	12/05/13 12:31	VLO	
Vanadium [7440-62-2] ^	**2.19**	J	ug/L	1	1.40	10.0	25	EPA 6010C	12/09/13 13:58	JDH	
Zinc [7440-66-6] ^	**4.09**	J	ug/L	1	3.80	10.0	10	EPA 6010C	12/09/13 13:58	JDH	

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Description: 4117-MW2 (MS/MSD)
Matrix: Ground Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-02
Sampled: 11/25/13 14:26
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

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] ^	**5200**		ug/L	1	2200	5000	NE	EPA 300.0	12/06/13 03:13	AJB	
Sulfate as SO4 [14808-79-8] ^	**14000**	J	ug/L	1	2900	5000	250000	EPA 300.0	12/06/13 03:13	AJB	
Total Alkalinity as CaCO3 [471-34-1] ^	**62000**		ug/L	1	14000	15000	NE	EPA 310.2	12/02/13 11:17	AJB	
Total Dissolved Solids [ECL-0156] ^	**130000**		ug/L	1	10000	10000	NE	SM 2540C-1997	11/27/13 18:50	JOC	

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

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Description: 4117-MW3 | **Lab Sample ID:** C314779-03 | **Received:** 11/26/13 12:15

Matrix: Ground Water | **Sampled:** 11/25/13 14:45 | **Work Order:** C314779

Project: A-1 Sandrock C&D Landfill | **Sampled By:** Daniel Childress

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	12/03/13 21:11	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	12/03/13 21:11	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	12/03/13 21:11	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/03/13 21:11	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	12/03/13 21:11	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/03/13 21:11	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/03/13 21:11	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	12/03/13 21:11	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	12/03/13 21:11	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	12/03/13 21:11	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	12/03/13 21:11	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	12/03/13 21:11	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	12/03/13 21:11	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	12/03/13 21:11	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	12/03/13 21:11	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	12/03/13 21:11	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	12/03/13 21:11	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	12/03/13 21:11	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 21:11	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	12/03/13 21:11	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 21:11	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	12/03/13 21:11	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	12/03/13 21:11	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	12/03/13 21:11	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 21:11	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/03/13 21:11	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	12/03/13 21:11	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	12/03/13 21:11	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/03/13 21:11	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	12/03/13 21:11	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	12/03/13 21:11	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/03/13 21:11	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	12/03/13 21:11	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/03/13 21:11	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	12/03/13 21:11	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/03/13 21:11	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	12/03/13 21:11	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 21:11	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0	NE	EPA 8260B	12/03/13 21:11	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/03/13 21:11	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/03/13 21:11	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 21:11	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	12/03/13 21:11	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 21:11	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	12/03/13 21:11	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	12/03/13 21:11	REF	

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Description: 4117-MW3
Matrix: Ground Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-03
Sampled: 11/25/13 14:45
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

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
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	12/03/13 21:11	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	12/03/13 21:11	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*81 %*	*51-122*	*3L03030*	*EPA 8260B*	*12/03/13 21:11*	*REF*	
Dibromofluoromethane	*41*	*1*	*50.0*	*81 %*	*68-117*	*3L03030*	*EPA 8260B*	*12/03/13 21:11*	*REF*	
Toluene-d8	*42*	*1*	*50.0*	*84 %*	*67-127*	*3L03030*	*EPA 8260B*	*12/03/13 21:11*	*REF*	

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Description: 4117-MW3
Matrix: Ground Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-03
Sampled: 11/25/13 14:45
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.170	U	ug/L	1	0.170	0.200	0.2	EPA 7470A	12/11/13 13:11	T1D	

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Description: 4117-MW3
Matrix: Ground Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-03
Sampled: 11/25/13 14:45
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	12/05/13 13:28	VLO	
Arsenic [7440-38-2] ^	5.40	U	ug/L	1	5.40	10.0	10	EPA 6010C	12/09/13 14:50	JDH	
Barium [7440-39-3] ^	**81.8**	J	ug/L	1	1.00	10.0	100	EPA 6010C	12/09/13 14:50	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	12/09/13 14:50	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	12/09/13 14:50	JDH	
Chromium [7440-47-3] ^	**6.87**	J	ug/L	1	1.40	10.0	10	EPA 6010C	12/09/13 14:50	JDH	
Cobalt [7440-48-4] ^	**4.08**	J	ug/L	1	1.10	10.0	10	EPA 6010C	12/09/13 14:50	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	12/09/13 14:50	JDH	
Iron [7439-89-6] ^	**5610**		ug/L	1	22.0	50.0	300	EPA 6010C	12/09/13 14:50	JDH	
Lead [7439-92-1] ^	2.10	U	ug/L	1	2.10	10.0	10	EPA 6010C	12/09/13 14:50	JDH	
Manganese [7439-96-5] ^	**60.6**		ug/L	1	1.10	10.0	50	EPA 6010C	12/09/13 14:50	JDH	
Nickel [7440-02-0] ^	**2.35**	J	ug/L	1	1.80	10.0	50	EPA 6010C	12/09/13 14:50	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	12/09/13 14:50	JDH	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	12/09/13 14:50	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	12/05/13 13:28	VLO	
Vanadium [7440-62-2] ^	**12.7**	J	ug/L	1	1.40	10.0	25	EPA 6010C	12/09/13 14:50	JDH	
Zinc [7440-66-6] ^	**19.7**		ug/L	1	3.80	10.0	10	EPA 6010C	12/09/13 14:50	JDH	

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Description: 4117-MW3
Matrix: Ground Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-03
Sampled: 11/25/13 14:45
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

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] ^	**3800**	J	ug/L	1	2200	5000	NE	EPA 300.0	12/06/13 03:30	AJB	
Sulfate as SO4 [14808-79-8] ^	**8800**	J	ug/L	1	2900	5000	250000	EPA 300.0	12/06/13 03:30	AJB	
Total Alkalinity as CaCO3 [471-34-1] ^	**58000**		ug/L	1	14000	15000	NE	EPA 310.2	12/02/13 11:22	AJB	
Total Dissolved Solids [ECL-0156] ^	**170000**		ug/L	1	10000	10000	NE	SM 2540C-1997	11/27/13 18:50	JOC	

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

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Description: 4117-MW4S
Matrix: Ground Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-04
Sampled: 11/25/13 15:10
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

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	12/03/13 21:41	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	12/03/13 21:41	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	12/03/13 21:41	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/03/13 21:41	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	12/03/13 21:41	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/03/13 21:41	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/03/13 21:41	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	12/03/13 21:41	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	12/03/13 21:41	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	12/03/13 21:41	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	12/03/13 21:41	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	12/03/13 21:41	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	12/03/13 21:41	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	12/03/13 21:41	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	12/03/13 21:41	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	12/03/13 21:41	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	12/03/13 21:41	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	12/03/13 21:41	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 21:41	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	12/03/13 21:41	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 21:41	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	12/03/13 21:41	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	12/03/13 21:41	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	12/03/13 21:41	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 21:41	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/03/13 21:41	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	12/03/13 21:41	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	12/03/13 21:41	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/03/13 21:41	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	12/03/13 21:41	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	12/03/13 21:41	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/03/13 21:41	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	12/03/13 21:41	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/03/13 21:41	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	12/03/13 21:41	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/03/13 21:41	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	12/03/13 21:41	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 21:41	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0	NE	EPA 8260B	12/03/13 21:41	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/03/13 21:41	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/03/13 21:41	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 21:41	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	12/03/13 21:41	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 21:41	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	12/03/13 21:41	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	12/03/13 21:41	REF	

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Description: 4117-MW4S
Matrix: Ground Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-04
Sampled: 11/25/13 15:10
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

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
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	12/03/13 21:41	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	12/03/13 21:41	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*82 %*	*51-122*	*3L03030*	*EPA 8260B*	*12/03/13 21:41*	*REF*	
Dibromofluoromethane	*42*	*1*	*50.0*	*84 %*	*68-117*	*3L03030*	*EPA 8260B*	*12/03/13 21:41*	*REF*	
Toluene-d8	*43*	*1*	*50.0*	*86 %*	*67-127*	*3L03030*	*EPA 8260B*	*12/03/13 21:41*	*REF*	

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Description: 4117-MW4S
Matrix: Ground Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-04
Sampled: 11/25/13 15:10
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.170	U	ug/L	1	0.170	0.200	0.2	EPA 7470A	12/11/13 13:13	T1D	

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Description: 4117-MW4S
Matrix: Ground Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-04
Sampled: 11/25/13 15:10
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	12/05/13 13:32	VLO	
Arsenic [7440-38-2] ^	5.40	U	ug/L	1	5.40	10.0	10	EPA 6010C	12/09/13 14:52	JDH	
Barium [7440-39-3] ^	**112**		ug/L	1	1.00	10.0	100	EPA 6010C	12/09/13 14:52	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	12/09/13 14:52	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	12/09/13 14:52	JDH	
Chromium [7440-47-3] ^	**5.03**	J	ug/L	1	1.40	10.0	10	EPA 6010C	12/09/13 14:52	JDH	
Cobalt [7440-48-4] ^	**2.82**	J	ug/L	1	1.10	10.0	10	EPA 6010C	12/09/13 14:52	JDH	
Copper [7440-50-8] ^	**3.54**	J	ug/L	1	1.60	10.0	10	EPA 6010C	12/09/13 14:52	JDH	
Iron [7439-89-6] ^	**3200**		ug/L	1	22.0	50.0	300	EPA 6010C	12/09/13 14:52	JDH	
Lead [7439-92-1] ^	2.10	U	ug/L	1	2.10	10.0	10	EPA 6010C	12/09/13 14:52	JDH	
Manganese [7439-96-5] ^	**95.4**		ug/L	1	1.10	10.0	50	EPA 6010C	12/09/13 14:52	JDH	
Nickel [7440-02-0] ^	**3.58**	J	ug/L	1	1.80	10.0	50	EPA 6010C	12/09/13 14:52	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	12/09/13 14:52	JDH	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	12/09/13 14:52	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	12/05/13 13:32	VLO	
Vanadium [7440-62-2] ^	**10.7**	J	ug/L	1	1.40	10.0	25	EPA 6010C	12/09/13 14:52	JDH	
Zinc [7440-66-6] ^	**6.99**	J	ug/L	1	3.80	10.0	10	EPA 6010C	12/09/13 14:52	JDH	

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Description: 4117-MW4S
Matrix: Ground Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-04
Sampled: 11/25/13 15:10
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

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] ^	**4400**	J	ug/L	1	2200	5000	NE	EPA 300.0	12/06/13 04:21	AJB	
Sulfate as SO4 [14808-79-8] ^	**27000**	J	ug/L	1	2900	5000	250000	EPA 300.0	12/06/13 04:21	AJB	
Total Alkalinity as CaCO3 [471-34-1] ^	**80000**		ug/L	1	14000	15000	NE	EPA 310.2	12/02/13 11:23	AJB	
Total Dissolved Solids [ECL-0156] ^	**180000**		ug/L	1	10000	10000	NE	SM 2540C-1997	11/27/13 18:50	JOC	

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

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Description: 4117-MW5 | **Lab Sample ID:** C314779-05 | **Received:** 11/26/13 12:15

Matrix: Ground Water | **Sampled:** 11/25/13 15:30 | **Work Order:** C314779

Project: A-1 Sandrock C&D Landfill | **Sampled By:** Daniel Childress

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	12/03/13 22:11	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	12/03/13 22:11	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	12/03/13 22:11	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/03/13 22:11	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	12/03/13 22:11	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/03/13 22:11	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/03/13 22:11	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	12/03/13 22:11	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	12/03/13 22:11	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	12/03/13 22:11	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	12/03/13 22:11	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	12/03/13 22:11	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	12/03/13 22:11	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	12/03/13 22:11	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	12/03/13 22:11	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	12/03/13 22:11	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	12/03/13 22:11	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	12/03/13 22:11	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 22:11	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	12/03/13 22:11	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 22:11	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	12/03/13 22:11	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	12/03/13 22:11	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	12/03/13 22:11	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 22:11	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/03/13 22:11	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	12/03/13 22:11	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	12/03/13 22:11	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/03/13 22:11	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	12/03/13 22:11	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	12/03/13 22:11	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/03/13 22:11	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	12/03/13 22:11	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/03/13 22:11	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	12/03/13 22:11	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/03/13 22:11	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	12/03/13 22:11	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 22:11	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0	NE	EPA 8260B	12/03/13 22:11	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/03/13 22:11	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/03/13 22:11	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 22:11	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	12/03/13 22:11	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 22:11	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	12/03/13 22:11	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	12/03/13 22:11	REF	

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Description: 4117-MW5
Matrix: Ground Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-05
Sampled: 11/25/13 15:30
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

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
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	12/03/13 22:11	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	12/03/13 22:11	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*82 %*	*51-122*	*3L03030*	*EPA 8260B*	*12/03/13 22:11*	*REF*	
Dibromofluoromethane	*41*	*1*	*50.0*	*82 %*	*68-117*	*3L03030*	*EPA 8260B*	*12/03/13 22:11*	*REF*	
Toluene-d8	*43*	*1*	*50.0*	*85 %*	*67-127*	*3L03030*	*EPA 8260B*	*12/03/13 22:11*	*REF*	

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Description:	4117-MW5	**Lab Sample ID:**	C314779-05	**Received:**	11/26/13 12:15
Matrix:	Ground Water	**Sampled:**	11/25/13 15:30	**Work Order:**	C314779
Project:	A-1 Sandrock C&D Landfill	**Sampled By:**	Daniel Childress		

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.170	U	ug/L	1	0.170	0.200	0.2	EPA 7470A	12/11/13 13:15	T1D	

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Description: 4117-MW5
Matrix: Ground Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-05
Sampled: 11/25/13 15:30
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	12/05/13 13:36	VLO	
Arsenic [7440-38-2] ^	5.40	U	ug/L	1	5.40	10.0	10	EPA 6010C	12/09/13 14:55	JDH	
Barium [7440-39-3] ^	**80.2**	J	ug/L	1	1.00	10.0	100	EPA 6010C	12/09/13 14:55	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	12/09/13 14:55	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	12/09/13 14:55	JDH	
Chromium [7440-47-3] ^	1.40	U	ug/L	1	1.40	10.0	10	EPA 6010C	12/09/13 14:55	JDH	
Cobalt [7440-48-4] ^	**6.96**	J	ug/L	1	1.10	10.0	10	EPA 6010C	12/09/13 14:55	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	12/09/13 14:55	JDH	
Iron [7439-89-6] ^	**72.8**	J	ug/L	1	22.0	50.0	300	EPA 6010C	12/09/13 14:55	JDH	
Lead [7439-92-1] ^	2.10	U	ug/L	1	2.10	10.0	10	EPA 6010C	12/09/13 14:55	JDH	
Manganese [7439-96-5] ^	**1450**		ug/L	1	1.10	10.0	50	EPA 6010C	12/09/13 14:55	JDH	
Nickel [7440-02-0] ^	**1.94**	J	ug/L	1	1.80	10.0	50	EPA 6010C	12/09/13 14:55	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	12/09/13 14:55	JDH	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	12/09/13 14:55	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	12/05/13 13:36	VLO	
Vanadium [7440-62-2] ^	1.40	U	ug/L	1	1.40	10.0	25	EPA 6010C	12/09/13 14:55	JDH	
Zinc [7440-66-6] ^	**6.57**	J	ug/L	1	3.80	10.0	10	EPA 6010C	12/09/13 14:55	JDH	

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Description: 4117-MW5
Matrix: Ground Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-05
Sampled: 11/25/13 15:30
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

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] ^	**13000**		ug/L	1	2200	5000	NE	EPA 300.0	12/06/13 04:38	AJB	
Sulfate as SO4 [14808-79-8] ^	**50000**	J	ug/L	1	2900	5000	250000	EPA 300.0	12/06/13 04:38	AJB	
Total Alkalinity as CaCO3 [471-34-1] ^	**150000**		ug/L	1	14000	15000	NE	EPA 310.2	12/02/13 11:26	AJB	
Total Dissolved Solids [ECL-0156] ^	**310000**		ug/L	1	10000	10000	NE	SM 2540C-1997	11/27/13 18:50	JOC	

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

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Description: 4117-SW1 | **Lab Sample ID:** C314779-06 | **Received:** 11/26/13 12:15

Matrix: Surface Water | **Sampled:** 11/25/13 13:25 | **Work Order:** C314779

Project: A-1 Sandrock C&D Landfill | **Sampled By:** Daniel Childress

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	12/03/13 22:40	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	12/03/13 22:40	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	12/03/13 22:40	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/03/13 22:40	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	12/03/13 22:40	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/03/13 22:40	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/03/13 22:40	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	12/03/13 22:40	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	12/03/13 22:40	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	12/03/13 22:40	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	12/03/13 22:40	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	12/03/13 22:40	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	12/03/13 22:40	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	12/03/13 22:40	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	12/03/13 22:40	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	12/03/13 22:40	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	12/03/13 22:40	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	12/03/13 22:40	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 22:40	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	12/03/13 22:40	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 22:40	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	12/03/13 22:40	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	12/03/13 22:40	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	12/03/13 22:40	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 22:40	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/03/13 22:40	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	12/03/13 22:40	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	12/03/13 22:40	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/03/13 22:40	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	12/03/13 22:40	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	12/03/13 22:40	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/03/13 22:40	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	12/03/13 22:40	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/03/13 22:40	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	12/03/13 22:40	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/03/13 22:40	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	12/03/13 22:40	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 22:40	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0	NE	EPA 8260B	12/03/13 22:40	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/03/13 22:40	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/03/13 22:40	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 22:40	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	12/03/13 22:40	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 22:40	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	12/03/13 22:40	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	12/03/13 22:40	REF	

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Description: 4117-SW1
Matrix: Surface Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-06
Sampled: 11/25/13 13:25
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

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
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	12/03/13 22:40	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	12/03/13 22:40	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*40*	*1*	*50.0*	*80 %*	*51-122*	*3L03030*	*EPA 8260B*	*12/03/13 22:40*	*REF*	
Dibromofluoromethane	*41*	*1*	*50.0*	*83 %*	*68-117*	*3L03030*	*EPA 8260B*	*12/03/13 22:40*	*REF*	
Toluene-d8	*42*	*1*	*50.0*	*83 %*	*67-127*	*3L03030*	*EPA 8260B*	*12/03/13 22:40*	*REF*	

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Description: 4117-SW1 | **Lab Sample ID:** C314779-06 | **Received:** 11/26/13 12:15

Matrix: Surface Water | **Sampled:** 11/25/13 13:25 | **Work Order:** C314779

Project: A-1 Sandrock C&D Landfill | **Sampled By:** Daniel Childress

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	12/05/13 13:40	VLO	
Arsenic [7440-38-2] ^	5.40	U	ug/L	1	5.40	10.0	10	EPA 6010C	12/09/13 15:05	JDH	
Barium [7440-39-3] ^	**72.6**	J	ug/L	1	1.00	10.0	100	EPA 6010C	12/09/13 15:05	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	12/09/13 15:05	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	12/09/13 15:05	JDH	
Chromium [7440-47-3] ^	1.40	U	ug/L	1	1.40	10.0	10	EPA 6010C	12/09/13 15:05	JDH	
Cobalt [7440-48-4] ^	**1.50**	J	ug/L	1	1.10	10.0	10	EPA 6010C	12/09/13 15:05	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	12/09/13 15:05	JDH	
Lead [7439-92-1] ^	2.10	U	ug/L	1	2.10	10.0	10	EPA 6010C	12/09/13 15:05	JDH	
Nickel [7440-02-0] ^	1.80	U	ug/L	1	1.80	10.0	50	EPA 6010C	12/09/13 15:05	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	12/09/13 15:05	JDH	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	12/09/13 15:05	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	12/05/13 13:40	VLO	
Vanadium [7440-62-2] ^	1.40	U	ug/L	1	1.40	10.0	25	EPA 6010C	12/09/13 15:05	JDH	
Zinc [7440-66-6] ^	3.80	U	ug/L	1	3.80	10.0	10	EPA 6010C	12/09/13 15:05	JDH	

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

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Description: 4117-SW2 | **Lab Sample ID:** C314779-07 | **Received:** 11/26/13 12:15

Matrix: Surface Water | **Sampled:** 11/25/13 13:50 | **Work Order:** C314779

Project: A-1 Sandrock C&D Landfill | **Sampled By:** Daniel Childress

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	12/03/13 23:10	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	12/03/13 23:10	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	12/03/13 23:10	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/03/13 23:10	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	12/03/13 23:10	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/03/13 23:10	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/03/13 23:10	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	12/03/13 23:10	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	12/03/13 23:10	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	12/03/13 23:10	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	12/03/13 23:10	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	12/03/13 23:10	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	12/03/13 23:10	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	12/03/13 23:10	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	12/03/13 23:10	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	12/03/13 23:10	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	12/03/13 23:10	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	12/03/13 23:10	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 23:10	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	12/03/13 23:10	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 23:10	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	12/03/13 23:10	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	12/03/13 23:10	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	12/03/13 23:10	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 23:10	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/03/13 23:10	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	12/03/13 23:10	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	12/03/13 23:10	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/03/13 23:10	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	12/03/13 23:10	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	12/03/13 23:10	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/03/13 23:10	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	12/03/13 23:10	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/03/13 23:10	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	12/03/13 23:10	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/03/13 23:10	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	12/03/13 23:10	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 23:10	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0	NE	EPA 8260B	12/03/13 23:10	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/03/13 23:10	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/03/13 23:10	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 23:10	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	12/03/13 23:10	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 23:10	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	12/03/13 23:10	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	12/03/13 23:10	REF	

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Description:	4117-SW2	**Lab Sample ID:**	C314779-07	**Received:**	11/26/13 12:15
Matrix:	Surface Water	**Sampled:**	11/25/13 13:50	**Work Order:**	C314779
Project:	A-1 Sandrock C&D Landfill	**Sampled By:**	Daniel Childress		

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
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	12/03/13 23:10	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	12/03/13 23:10	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*81 %*	*51-122*	*3L03030*	*EPA 8260B*	*12/03/13 23:10*	*REF*	
Dibromofluoromethane	*41*	*1*	*50.0*	*82 %*	*68-117*	*3L03030*	*EPA 8260B*	*12/03/13 23:10*	*REF*	
Toluene-d8	*42*	*1*	*50.0*	*84 %*	*67-127*	*3L03030*	*EPA 8260B*	*12/03/13 23:10*	*REF*	

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Description: 4117-SW2 | **Lab Sample ID:** C314779-07 | **Received:** 11/26/13 12:15

Matrix: Surface Water | **Sampled:** 11/25/13 13:50 | **Work Order:** C314779

Project: A-1 Sandrock C&D Landfill | **Sampled By:** Daniel Childress

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	12/05/13 13:44	VLO	
Arsenic [7440-38-2] ^	5.40	U	ug/L	1	5.40	10.0	10	EPA 6010C	12/09/13 15:08	JDH	
Barium [7440-39-3] ^	**46.2**	J	ug/L	1	1.00	10.0	100	EPA 6010C	12/09/13 15:08	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	12/09/13 15:08	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	12/09/13 15:08	JDH	
Chromium [7440-47-3] ^	1.40	U	ug/L	1	1.40	10.0	10	EPA 6010C	12/09/13 15:08	JDH	
Cobalt [7440-48-4] ^	**2.05**	J	ug/L	1	1.10	10.0	10	EPA 6010C	12/09/13 15:08	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	12/09/13 15:08	JDH	
Lead [7439-92-1] ^	2.10	U	ug/L	1	2.10	10.0	10	EPA 6010C	12/09/13 15:08	JDH	
Nickel [7440-02-0] ^	1.80	U	ug/L	1	1.80	10.0	50	EPA 6010C	12/09/13 15:08	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	12/09/13 15:08	JDH	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	12/09/13 15:08	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	12/05/13 13:44	VLO	
Vanadium [7440-62-2] ^	1.40	U	ug/L	1	1.40	10.0	25	EPA 6010C	12/09/13 15:08	JDH	
Zinc [7440-66-6] ^	3.80	U	ug/L	1	3.80	10.0	10	EPA 6010C	12/09/13 15:08	JDH	

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

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Description: 4117-SW3
Matrix: Surface Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-08
Sampled: 11/25/13 09:45
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

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	12/03/13 23:39	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	12/03/13 23:39	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	12/03/13 23:39	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/03/13 23:39	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	12/03/13 23:39	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/03/13 23:39	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/03/13 23:39	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	12/03/13 23:39	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	12/03/13 23:39	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	12/03/13 23:39	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	12/03/13 23:39	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	12/03/13 23:39	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	12/03/13 23:39	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	12/03/13 23:39	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	12/03/13 23:39	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	12/03/13 23:39	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	12/03/13 23:39	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	12/03/13 23:39	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 23:39	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	12/03/13 23:39	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 23:39	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	12/03/13 23:39	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	12/03/13 23:39	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	12/03/13 23:39	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 23:39	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/03/13 23:39	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	12/03/13 23:39	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	12/03/13 23:39	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/03/13 23:39	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	12/03/13 23:39	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	12/03/13 23:39	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/03/13 23:39	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	12/03/13 23:39	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/03/13 23:39	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	12/03/13 23:39	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/03/13 23:39	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	12/03/13 23:39	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/03/13 23:39	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0	NE	EPA 8260B	12/03/13 23:39	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/03/13 23:39	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/03/13 23:39	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 23:39	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	12/03/13 23:39	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/03/13 23:39	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	12/03/13 23:39	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	12/03/13 23:39	REF	

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Description:	4117-SW3	**Lab Sample ID:**	C314779-08	**Received:**	11/26/13 12:15
Matrix:	Surface Water	**Sampled:**	11/25/13 09:45	**Work Order:**	C314779
Project:	A-1 Sandrock C&D Landfill	**Sampled By:**	Daniel Childress		

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
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	12/03/13 23:39	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	12/03/13 23:39	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*82 %*	*51-122*	*3L03030*	*EPA 8260B*	*12/03/13 23:39*	*REF*	
Dibromofluoromethane	*42*	*1*	*50.0*	*84 %*	*68-117*	*3L03030*	*EPA 8260B*	*12/03/13 23:39*	*REF*	
Toluene-d8	*42*	*1*	*50.0*	*85 %*	*67-127*	*3L03030*	*EPA 8260B*	*12/03/13 23:39*	*REF*	

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Description: 4117-SW3 | **Lab Sample ID:** C314779-08 | **Received:** 11/26/13 12:15

Matrix: Surface Water | **Sampled:** 11/25/13 09:45 | **Work Order:** C314779

Project: A-1 Sandrock C&D Landfill | **Sampled By:** Daniel Childress

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	12/05/13 13:48	VLO	
Arsenic [7440-38-2] ^	5.40	U	ug/L	1	5.40	10.0	10	EPA 6010C	12/09/13 15:10	JDH	
Barium [7440-39-3] ^	**44.8**	J	ug/L	1	1.00	10.0	100	EPA 6010C	12/09/13 15:10	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	12/09/13 15:10	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	12/09/13 15:10	JDH	
Chromium [7440-47-3] ^	1.40	U	ug/L	1	1.40	10.0	10	EPA 6010C	12/09/13 15:10	JDH	
Cobalt [7440-48-4] ^	**4.57**	J	ug/L	1	1.10	10.0	10	EPA 6010C	12/09/13 15:10	JDH	
Copper [7440-50-8] ^	**1.60**	J	ug/L	1	1.60	10.0	10	EPA 6010C	12/09/13 15:10	JDH	
Lead [7439-92-1] ^	2.10	U	ug/L	1	2.10	10.0	10	EPA 6010C	12/09/13 15:10	JDH	
Nickel [7440-02-0] ^	1.80	U	ug/L	1	1.80	10.0	50	EPA 6010C	12/09/13 15:10	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	12/09/13 15:10	JDH	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	12/09/13 15:10	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	12/05/13 13:48	VLO	
Vanadium [7440-62-2] ^	1.40	U	ug/L	1	1.40	10.0	25	EPA 6010C	12/09/13 15:10	JDH	
Zinc [7440-66-6] ^	**6.57**	J	ug/L	1	3.80	10.0	10	EPA 6010C	12/09/13 15:10	JDH	

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

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Description: 4117-SW4 | **Lab Sample ID:** C314779-09 | **Received:** 11/26/13 12:15

Matrix: Surface Water | **Sampled:** 11/25/13 10:40 | **Work Order:** C314779

Project: A-1 Sandrock C&D Landfill | **Sampled By:** Daniel Childress

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	12/04/13 00:08	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	12/04/13 00:08	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	12/04/13 00:08	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/04/13 00:08	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	12/04/13 00:08	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/04/13 00:08	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/04/13 00:08	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	12/04/13 00:08	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	12/04/13 00:08	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	12/04/13 00:08	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	12/04/13 00:08	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	12/04/13 00:08	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	12/04/13 00:08	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	12/04/13 00:08	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	12/04/13 00:08	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	12/04/13 00:08	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	12/04/13 00:08	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	12/04/13 00:08	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/04/13 00:08	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	12/04/13 00:08	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/04/13 00:08	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	12/04/13 00:08	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	12/04/13 00:08	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	12/04/13 00:08	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/04/13 00:08	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/04/13 00:08	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	12/04/13 00:08	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	12/04/13 00:08	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/04/13 00:08	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	12/04/13 00:08	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	12/04/13 00:08	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/04/13 00:08	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	12/04/13 00:08	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/04/13 00:08	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	12/04/13 00:08	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/04/13 00:08	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	12/04/13 00:08	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/04/13 00:08	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0	NE	EPA 8260B	12/04/13 00:08	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/04/13 00:08	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/04/13 00:08	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/04/13 00:08	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	12/04/13 00:08	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/04/13 00:08	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	12/04/13 00:08	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	12/04/13 00:08	REF	

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Description: 4117-SW4
Matrix: Surface Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-09
Sampled: 11/25/13 10:40
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

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
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	12/04/13 00:08	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	12/04/13 00:08	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*81 %*	*51-122*	*3L03030*	*EPA 8260B*	*12/04/13 00:08*	*REF*	
Dibromofluoromethane	*42*	*1*	*50.0*	*85 %*	*68-117*	*3L03030*	*EPA 8260B*	*12/04/13 00:08*	*REF*	
Toluene-d8	*43*	*1*	*50.0*	*86 %*	*67-127*	*3L03030*	*EPA 8260B*	*12/04/13 00:08*	*REF*	

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Description: 4117-SW4 | **Lab Sample ID:** C314779-09 | **Received:** 11/26/13 12:15

Matrix: Surface Water | **Sampled:** 11/25/13 10:40 | **Work Order:** C314779

Project: A-1 Sandrock C&D Landfill | **Sampled By:** Daniel Childress

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	12/05/13 13:52	VLO	
Arsenic [7440-38-2] ^	5.40	U	ug/L	1	5.40	10.0	10	EPA 6010C	12/09/13 15:13	JDH	
Barium [7440-39-3] ^	**75.8**	J	ug/L	1	1.00	10.0	100	EPA 6010C	12/09/13 15:13	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	12/09/13 15:13	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	12/09/13 15:13	JDH	
Chromium [7440-47-3] ^	1.40	U	ug/L	1	1.40	10.0	10	EPA 6010C	12/09/13 15:13	JDH	
Cobalt [7440-48-4] ^	**1.39**	J	ug/L	1	1.10	10.0	10	EPA 6010C	12/09/13 15:13	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	12/09/13 15:13	JDH	
Lead [7439-92-1] ^	2.10	U	ug/L	1	2.10	10.0	10	EPA 6010C	12/09/13 15:13	JDH	
Nickel [7440-02-0] ^	1.80	U	ug/L	1	1.80	10.0	50	EPA 6010C	12/09/13 15:13	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	12/09/13 15:13	JDH	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	12/09/13 15:13	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	12/05/13 13:52	VLO	
Vanadium [7440-62-2] ^	1.40	U	ug/L	1	1.40	10.0	25	EPA 6010C	12/09/13 15:13	JDH	
Zinc [7440-66-6] ^	3.80	U	ug/L	1	3.80	10.0	10	EPA 6010C	12/09/13 15:13	JDH	

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

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Description: 4117-Field Blank
Matrix: Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-10
Sampled: 11/25/13 15:40
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

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	12/04/13 00:38	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	12/04/13 00:38	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	12/04/13 00:38	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/04/13 00:38	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	12/04/13 00:38	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/04/13 00:38	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/04/13 00:38	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	12/04/13 00:38	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	12/04/13 00:38	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	12/04/13 00:38	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	12/04/13 00:38	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	12/04/13 00:38	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	12/04/13 00:38	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	12/04/13 00:38	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	12/04/13 00:38	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	12/04/13 00:38	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	12/04/13 00:38	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	12/04/13 00:38	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/04/13 00:38	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	12/04/13 00:38	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/04/13 00:38	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	12/04/13 00:38	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	12/04/13 00:38	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	12/04/13 00:38	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/04/13 00:38	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/04/13 00:38	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	12/04/13 00:38	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	12/04/13 00:38	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/04/13 00:38	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	12/04/13 00:38	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	12/04/13 00:38	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/04/13 00:38	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	12/04/13 00:38	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/04/13 00:38	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	12/04/13 00:38	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/04/13 00:38	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	12/04/13 00:38	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/04/13 00:38	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0	NE	EPA 8260B	12/04/13 00:38	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/04/13 00:38	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/04/13 00:38	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/04/13 00:38	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	12/04/13 00:38	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/04/13 00:38	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	12/04/13 00:38	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	12/04/13 00:38	REF	

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Description: 4117-Field Blank
Matrix: Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-10
Sampled: 11/25/13 15:40
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

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
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	12/04/13 00:38	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	12/04/13 00:38	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*82 %*	*51-122*	*3L03030*	*EPA 8260B*	*12/04/13 00:38*	*REF*	
Dibromofluoromethane	*41*	*1*	*50.0*	*82 %*	*68-117*	*3L03030*	*EPA 8260B*	*12/04/13 00:38*	*REF*	
Toluene-d8	*43*	*1*	*50.0*	*85 %*	*67-127*	*3L03030*	*EPA 8260B*	*12/04/13 00:38*	*REF*	

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Description:	4117-Field Blank	**Lab Sample ID:**	C314779-10	**Received:**	11/26/13 12:15
Matrix:	Water	**Sampled:**	11/25/13 15:40	**Work Order:**	C314779
Project:	A-1 Sandrock C&D Landfill	**Sampled By:**	Daniel Childress		

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.170	U	ug/L	1	0.170	0.200	0.2	EPA 7470A	12/11/13 13:17	T1D	

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Description: 4117-Field Blank
Matrix: Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-10
Sampled: 11/25/13 15:40
Sampled By: Daniel Childress

Received: 11/26/13 12:15
Work Order: C314779

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	12/05/13 14:04	VLO	
Arsenic [7440-38-2] ^	5.40	U	ug/L	1	5.40	10.0	10	EPA 6010C	12/09/13 15:15	JDH	
Barium [7440-39-3] ^	**1.75**	J	ug/L	1	1.00	10.0	100	EPA 6010C	12/09/13 15:15	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	12/09/13 15:15	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	12/09/13 15:15	JDH	
Chromium [7440-47-3] ^	1.40	U	ug/L	1	1.40	10.0	10	EPA 6010C	12/09/13 15:15	JDH	
Cobalt [7440-48-4] ^	**1.19**	J	ug/L	1	1.10	10.0	10	EPA 6010C	12/09/13 15:15	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	12/09/13 15:15	JDH	
Iron [7439-89-6] ^	22.0	U	ug/L	1	22.0	50.0	300	EPA 6010C	12/09/13 15:15	JDH	
Lead [7439-92-1] ^	2.10	U	ug/L	1	2.10	10.0	10	EPA 6010C	12/09/13 15:15	JDH	
Manganese [7439-96-5] ^	**1.39**	J	ug/L	1	1.10	10.0	50	EPA 6010C	12/09/13 15:15	JDH	
Nickel [7440-02-0] ^	1.80	U	ug/L	1	1.80	10.0	50	EPA 6010C	12/09/13 15:15	JDH	
Selenium [7782-49-2] ^	5.00	U	ug/L	1	5.00	10.0	10	EPA 6010C	12/09/13 15:15	JDH	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	12/09/13 15:15	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	12/05/13 14:04	VLO	
Vanadium [7440-62-2] ^	1.40	U	ug/L	1	1.40	10.0	25	EPA 6010C	12/09/13 15:15	JDH	
Zinc [7440-66-6] ^	3.80	U	ug/L	1	3.80	10.0	10	EPA 6010C	12/09/13 15:15	JDH	

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

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Description: 4117-Trip Blank
Matrix: Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-11
Sampled: 11/25/13 09:45
Sampled By: ENCO

Received: 11/26/13 12:15
Work Order: C314779

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	12/04/13 13:44	REF	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	12/04/13 13:44	REF	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	12/04/13 13:44	REF	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/04/13 13:44	REF	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	12/04/13 13:44	REF	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/04/13 13:44	REF	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/04/13 13:44	REF	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	12/04/13 13:44	REF	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	12/04/13 13:44	REF	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	12/04/13 13:44	REF	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	12/04/13 13:44	REF	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	12/04/13 13:44	REF	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	12/04/13 13:44	REF	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	12/04/13 13:44	REF	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	12/04/13 13:44	REF	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	12/04/13 13:44	REF	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	12/04/13 13:44	REF	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	12/04/13 13:44	REF	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/04/13 13:44	REF	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	12/04/13 13:44	REF	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/04/13 13:44	REF	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	12/04/13 13:44	REF	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	12/04/13 13:44	REF	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	12/04/13 13:44	REF	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/04/13 13:44	REF	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/04/13 13:44	REF	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	12/04/13 13:44	REF	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	12/04/13 13:44	REF	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/04/13 13:44	REF	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	12/04/13 13:44	REF	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	12/04/13 13:44	REF	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	12/04/13 13:44	REF	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	12/04/13 13:44	REF	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	12/04/13 13:44	REF	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	12/04/13 13:44	REF	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	12/04/13 13:44	REF	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	12/04/13 13:44	REF	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	12/04/13 13:44	REF	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0	NE	EPA 8260B	12/04/13 13:44	REF	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	12/04/13 13:44	REF	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	12/04/13 13:44	REF	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/04/13 13:44	REF	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	12/04/13 13:44	REF	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	12/04/13 13:44	REF	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	12/04/13 13:44	REF	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	12/04/13 13:44	REF	

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Description: 4117-Trip Blank
Matrix: Water
Project: A-1 Sandrock C&D Landfill

Lab Sample ID: C314779-11
Sampled: 11/25/13 09:45
Sampled By: ENCO

Received: 11/26/13 12:15
Work Order: C314779

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
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	12/04/13 13:44	REF	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	12/04/13 13:44	REF	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*84 %*	*51-122*	*3L03032*	*EPA 8260B*	*12/04/13 13:44*	*REF*	
Dibromofluoromethane	*41*	*1*	*50.0*	*82 %*	*68-117*	*3L03032*	*EPA 8260B*	*12/04/13 13:44*	*REF*	
Toluene-d8	*43*	*1*	*50.0*	*86 %*	*67-127*	*3L03032*	*EPA 8260B*	*12/04/13 13:44*	*REF*	

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

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QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 3L03015 - EPA 5030B_MS

Blank (3L03015-BLK1) Prepared: 12/03/2013 05:01 Analyzed: 12/03/2013 05:38

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							

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QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 3L03015 - EPA 5030B_MS

Blank (3L03015-BLK1) Continued Prepared: 12/03/2013 05:01 Analyzed: 12/03/2013 05:38

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Surrogate: 4-Bromofluorobenzene	*46*			*ug/L*	*50.0*		*92*	*51-122*			
Surrogate: Dibromofluoromethane	*46*			*ug/L*	*50.0*		*92*	*68-117*			
Surrogate: Toluene-d8	*45*			*ug/L*	*50.0*		*90*	*67-127*			

LCS (3L03015-BS1) Prepared: 12/03/2013 05:01 Analyzed: 12/03/2013 06:07

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	15		1.0	ug/L	20.0		76	75-133			
Benzene	19		1.0	ug/L	20.0		97	81-134			
Chlorobenzene	20		1.0	ug/L	20.0		101	83-117			
Toluene	18		1.0	ug/L	20.0		91	71-118			
Trichloroethene	21		1.0	ug/L	20.0		106	74-119			

Matrix Spike (3L03015-MS1) Prepared: 12/03/2013 05:01 Analyzed: 12/03/2013 09:29

Source: C314779-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	23		1.0	ug/L	20.0	0.21 U	113	75-133			
Benzene	20		1.0	ug/L	20.0	0.15 U	102	81-134			
Chlorobenzene	22		1.0	ug/L	20.0	0.17 U	108	83-117			
Toluene	21		1.0	ug/L	20.0	0.14 U	104	71-118			
Trichloroethene	23		1.0	ug/L	20.0	0.15 U	116	74-119			

Matrix Spike Dup (3L03015-MSD1) Prepared: 12/03/2013 05:01 Analyzed: 12/03/2013 09:58

Source: C314779-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	22		1.0	ug/L	20.0	0.21 U	111	75-133	1	20	
Benzene	20		1.0	ug/L	20.0	0.15 U	102	81-134	0.1	17	
Chlorobenzene	22		1.0	ug/L	20.0	0.17 U	108	83-117	0.6	16	
Toluene	20		1.0	ug/L	20.0	0.14 U	102	71-118	2	17	
Trichloroethene	22		1.0	ug/L	20.0	0.15 U	112	74-119	3	22	

Batch 3L03030 - EPA 5030B_MS

Blank (3L03030-BLK1) Prepared: 12/03/2013 15:41 Analyzed: 12/03/2013 16:47

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							

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QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 3L03030 - EPA 5030B_MS

Blank (3L03030-BLK1) Continued Prepared: 12/03/2013 15:41 Analyzed: 12/03/2013 16:47

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	*42*			*ug/L*	*50.0*		*83*	*51-122*			
Surrogate: Dibromofluoromethane	*41*			*ug/L*	*50.0*		*82*	*68-117*			
Surrogate: Toluene-d8	*43*			*ug/L*	*50.0*		*86*	*67-127*			

LCS (3L03030-BS1) Prepared: 12/03/2013 15:41 Analyzed: 12/03/2013 17:16

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	20		1.0	ug/L	20.0		98	75-133			
Benzene	20		1.0	ug/L	20.0		102	81-134			

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QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 3L03030 - EPA 5030B_MS

LCS (3L03030-BS1) Continued Prepared: 12/03/2013 15:41 Analyzed: 12/03/2013 17:16

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chlorobenzene	22		1.0	ug/L	20.0		109	83-117			
Toluene	22		1.0	ug/L	20.0		111	71-118			
Trichloroethene	20		1.0	ug/L	20.0		100	74-119			

Matrix Spike (3L03030-MS1) Prepared: 12/03/2013 15:41 Analyzed: 12/03/2013 17:45

Source: C315378-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	19		1.0	ug/L	20.0	0.21 U	94	75-133			
Benzene	20		1.0	ug/L	20.0	0.15 U	100	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	110	71-118			
Trichloroethene	20		1.0	ug/L	20.0	0.15 U	101	74-119			

Matrix Spike Dup (3L03030-MSD1) Prepared: 12/03/2013 15:41 Analyzed: 12/03/2013 18:14

Source: C315378-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	18		1.0	ug/L	20.0	0.21 U	92	75-133	2	20	
Benzene	20		1.0	ug/L	20.0	0.15 U	101	81-134	0.2	17	
Chlorobenzene	21		1.0	ug/L	20.0	0.17 U	105	83-117	1	16	
Toluene	21		1.0	ug/L	20.0	0.14 U	106	71-118	3	17	
Trichloroethene	19		1.0	ug/L	20.0	0.15 U	96	74-119	5	22	

Batch 3L03032 - EPA 5030B_MS

Blank (3L03032-BLK1) Prepared: 12/03/2013 16:52 Analyzed: 12/04/2013 11:16

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							

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QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 3L03032 - EPA 5030B_MS

Blank (3L03032-BLK1) Continued Prepared: 12/03/2013 16:52 Analyzed: 12/04/2013 11:16

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	*40*			*ug/L*	*50.0*		*81*	*51-122*			
Surrogate: Dibromofluoromethane	*40*			*ug/L*	*50.0*		*81*	*68-117*			
Surrogate: Toluene-d8	*43*			*ug/L*	*50.0*		*85*	*67-127*			

LCS (3L03032-BS1) Prepared: 12/03/2013 16:52 Analyzed: 12/04/2013 11:46

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	19		1.0	ug/L	20.0		95	75-133			
Benzene	20		1.0	ug/L	20.0		102	81-134			
Chlorobenzene	21		1.0	ug/L	20.0		106	83-117			
Toluene	22		1.0	ug/L	20.0		111	71-118			
Trichloroethene	20		1.0	ug/L	20.0		101	74-119			

Matrix Spike (3L03032-MS1) Prepared: 12/03/2013 16:52 Analyzed: 12/04/2013 12:15

Source: C315378-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	20		1.0	ug/L	20.0	0.21 U	99	75-133			
Benzene	21		1.0	ug/L	20.0	0.15 U	103	81-134			

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QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 3L03032 - EPA 5030B_MS

Matrix Spike (3L03032-MS1) Continued Prepared: 12/03/2013 16:52 Analyzed: 12/04/2013 12:15

Source: C315378-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chlorobenzene	22		1.0	ug/L	20.0	0.17 U	108	83-117			
Toluene	22		1.0	ug/L	20.0	0.14 U	110	71-118			
Trichloroethene	20		1.0	ug/L	20.0	0.15 U	100	74-119			

Matrix Spike Dup (3L03032-MSD1) Prepared: 12/03/2013 16:52 Analyzed: 12/04/2013 12:45

Source: C315378-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	19		1.0	ug/L	20.0	0.21 U	96	75-133	3	20	
Benzene	20		1.0	ug/L	20.0	0.15 U	101	81-134	2	17	
Chlorobenzene	21		1.0	ug/L	20.0	0.17 U	106	83-117	2	16	
Toluene	22		1.0	ug/L	20.0	0.14 U	108	71-118	2	17	
Trichloroethene	20		1.0	ug/L	20.0	0.15 U	98	74-119	3	22	

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 3L10014 - EPA 7470A

Blank (3L10014-BLK1) Prepared: 12/10/2013 10:41 Analyzed: 12/11/2013 12:47

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.170	U	0.200	ug/L							

LCS (3L10014-BS1) Prepared: 12/10/2013 10:41 Analyzed: 12/11/2013 12:49

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.77		0.200	ug/L	5.00		95	80-120			

Matrix Spike (3L10014-MS1) Prepared: 12/10/2013 10:41 Analyzed: 12/11/2013 12:53

Source: C314779-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.76		0.200	ug/L	5.00	0.170 U	95	75-125			

Matrix Spike Dup (3L10014-MSD1) Prepared: 12/10/2013 10:41 Analyzed: 12/11/2013 12:55

Source: C314779-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.89		0.200	ug/L	5.00	0.170 U	98	75-125	3	25	

Post Spike (3L10014-PS1) Prepared: 12/10/2013 10:41 Analyzed: 12/11/2013 12:58

Source: C314779-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.55		0.200	ug/L	5.00	-0.0410	92	75-125			

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QUALITY CONTROL

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 3L04011 - EPA 3005A

Blank (3L04011-BLK1) Prepared: 12/04/2013 09:34 Analyzed: 12/05/2013 12:14

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	0.220	U	2.00	ug/L							
Thallium	0.110	U	1.00	ug/L							

LCS (3L04011-BS1) Prepared: 12/04/2013 09:34 Analyzed: 12/05/2013 12:27

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	212		2.00	ug/L	200		106	80-120			
Thallium	199		1.00	ug/L	200		99	80-120			

Matrix Spike (3L04011-MS1) Prepared: 12/04/2013 09:34 Analyzed: 12/05/2013 12:35

Source: C314779-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	215		2.00	ug/L	200	0.220 U	108	75-125			
Thallium	189		1.00	ug/L	200	0.110 U	94	75-125			

Matrix Spike Dup (3L04011-MSD1) Prepared: 12/04/2013 09:34 Analyzed: 12/05/2013 12:39

Source: C314779-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	215		2.00	ug/L	200	0.220 U	108	75-125	0.04	20	
Thallium	191		1.00	ug/L	200	0.110 U	96	75-125	1	20	

Post Spike (3L04011-PS1) Prepared: 12/04/2013 09:34 Analyzed: 12/05/2013 12:43

Source: C314779-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	221		2.00	ug/L	200	-0.244	110	80-120			
Thallium	197		1.00	ug/L	200	0.0591	99	80-120			

Batch 3L05023 - EPA 3005A

Blank (3L05023-BLK1) Prepared: 12/05/2013 10:52 Analyzed: 12/09/2013 13:42

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	5.40	U	10.0	ug/L							
Barium	1.00	U	10.0	ug/L							
Beryllium	0.100	U	1.00	ug/L							
Cadmium	0.360	U	1.00	ug/L							
Chromium	1.40	U	10.0	ug/L							
Cobalt	1.10	U	10.0	ug/L							
Copper	1.60	U	10.0	ug/L							
Iron	22.0	U	50.0	ug/L							
Lead	2.10	U	10.0	ug/L							
Manganese	1.10	U	10.0	ug/L							
Nickel	1.80	U	10.0	ug/L							
Selenium	5.00	U	10.0	ug/L							

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QUALITY CONTROL

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 3L05023 - EPA 3005A

Blank (3L05023-BLK1) Continued Prepared: 12/05/2013 10:52 Analyzed: 12/09/2013 13:42

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Silver	1.90	U	10.0	ug/L							
Vanadium	1.40	U	10.0	ug/L							
Zinc	3.80	U	10.0	ug/L							

LCS (3L05023-BS1) Prepared: 12/05/2013 10:52 Analyzed: 12/09/2013 13:55

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	184		10.0	ug/L	200		92	80-120			
Barium	177		10.0	ug/L	200		88	80-120			
Beryllium	18.0		1.00	ug/L	20.0		90	80-120			
Cadmium	17.9		1.00	ug/L	20.0		89	80-120			
Chromium	178		10.0	ug/L	200		89	80-120			
Cobalt	184		10.0	ug/L	200		92	80-120			
Copper	174		10.0	ug/L	200		87	80-120			
Iron	902		50.0	ug/L	1000		90	80-120			
Lead	178		10.0	ug/L	200		89	80-120			
Manganese	175		10.0	ug/L	200		88	80-120			
Nickel	175		10.0	ug/L	200		87	80-120			
Selenium	180		10.0	ug/L	200		90	80-120			
Silver	186		10.0	ug/L	200		93	80-120			
Vanadium	181		10.0	ug/L	200		91	80-120			
Zinc	176		10.0	ug/L	200		88	80-120			

Matrix Spike (3L05023-MS1) Prepared: 12/05/2013 10:52 Analyzed: 12/09/2013 14:01

Source: C314779-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	187		10.0	ug/L	200	5.40 U	93	75-125			
Barium	251		10.0	ug/L	200	62.2	94	75-125			
Beryllium	18.0		1.00	ug/L	20.0	0.100 U	90	75-125			
Cadmium	19.1		1.00	ug/L	20.0	0.360 U	96	75-125			
Chromium	181		10.0	ug/L	200	1.40 U	91	75-125			
Cobalt	188		10.0	ug/L	200	2.52	93	75-125			
Copper	175		10.0	ug/L	200	1.60 U	88	75-125			
Iron	1210		50.0	ug/L	1000	226	99	75-125			
Lead	182		10.0	ug/L	200	2.10 U	91	75-125			
Manganese	368		10.0	ug/L	200	200	84	75-125			
Nickel	185		10.0	ug/L	200	1.80 U	93	75-125			
Selenium	185		10.0	ug/L	200	5.00 U	93	75-125			
Silver	184		10.0	ug/L	200	1.90 U	92	75-125			
Vanadium	186		10.0	ug/L	200	2.19	92	75-125			
Zinc	190		10.0	ug/L	200	4.09	93	75-125			

Matrix Spike Dup (3L05023-MSD1) Prepared: 12/05/2013 10:52 Analyzed: 12/09/2013 14:03

Source: C314779-02

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

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QUALITY CONTROL

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 3L05023 - EPA 3005A

Matrix Spike Dup (3L05023-MSD1) Continued Prepared: 12/05/2013 10:52 Analyzed: 12/09/2013 14:03

Source: C314779-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	193		10.0	ug/L	200	5.40 U	97	75-125	3	20	
Barium	257		10.0	ug/L	200	62.2	97	75-125	2	20	
Beryllium	18.8		1.00	ug/L	20.0	0.100 U	94	75-125	4	20	
Cadmium	19.5		1.00	ug/L	20.0	0.360 U	97	75-125	2	20	
Chromium	188		10.0	ug/L	200	1.40 U	94	75-125	3	20	
Cobalt	192		10.0	ug/L	200	2.52	95	75-125	2	20	
Copper	183		10.0	ug/L	200	1.60 U	92	75-125	4	20	
Iron	1240		50.0	ug/L	1000	226	101	75-125	2	20	
Lead	187		10.0	ug/L	200	2.10 U	93	75-125	3	20	
Manganese	384		10.0	ug/L	200	200	92	75-125	4	20	
Nickel	190		10.0	ug/L	200	1.80 U	95	75-125	3	20	
Selenium	190		10.0	ug/L	200	5.00 U	95	75-125	3	20	
Silver	193		10.0	ug/L	200	1.90 U	96	75-125	4	20	
Vanadium	192		10.0	ug/L	200	2.19	95	75-125	4	20	
Zinc	195		10.0	ug/L	200	4.09	95	75-125	2	20	

Post Spike (3L05023-PS1) Prepared: 12/05/2013 10:52 Analyzed: 12/09/2013 14:06

Source: C314779-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	0.185		0.0100	mg/L	0.200	-0.00232	94	80-120			
Barium	0.254		0.0100	mg/L	0.200	0.0622	96	80-120			
Beryllium	0.0185		0.00100	mg/L	0.0200	8.30E-5	92	80-120			
Cadmium	0.0191		0.00100	mg/L	0.0200	0.000331	94	80-120			
Chromium	0.184		0.0100	mg/L	0.200	0.000748	92	80-120			
Cobalt	0.189		0.0100	mg/L	0.200	0.00252	93	80-120			
Copper	0.179		0.0100	mg/L	0.200	-0.000900	90	80-120			
Iron	1.21		0.0500	mg/L	1.00	0.226	98	80-120			
Lead	0.182		0.0100	mg/L	0.200	-0.00392	93	80-120			
Manganese	0.381		0.0100	mg/L	0.200	0.200	91	80-120			
Nickel	0.185		0.0100	mg/L	0.200	-0.00139	93	80-120			
Selenium	0.184		0.0100	mg/L	0.200	-3.72E-5	92	80-120			
Silver	0.190		0.0100	mg/L	0.200	0.00119	94	80-120			
Vanadium	0.189		0.0100	mg/L	0.200	0.00219	93	80-120			
Zinc	0.191		0.0100	mg/L	0.200	0.00409	94	80-120			

Classical Chemistry Parameters - Quality Control

Batch 3K27021 - NO PREP

Blank (3K27021-BLK1) Prepared & Analyzed: 11/27/2013 17:00

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	10000	U	10000	ug/L							

LCS (3K27021-BS1) Prepared & Analyzed: 11/27/2013 17:00

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QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 3K27021 - NO PREP

LCS (3K27021-BS1) Continued Prepared & Analyzed: 11/27/2013 17:00

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	990		10	mg/L	1000		99	90-110			

Duplicate (3K27021-DUP1) Prepared & Analyzed: 11/27/2013 17:00

Source: C314377-01RE1

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	62000		10000	ug/L		70000			12	10	QM-12

Duplicate (3K27021-DUP2) Prepared & Analyzed: 11/27/2013 17:00

Source: C314779-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	170000		10000	ug/L		180000			3	10	

Batch 3K27023 - NO PREP

Blank (3K27023-BLK1) Prepared & Analyzed: 11/27/2013 18:50

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	10000	U	10000	ug/L							

LCS (3K27023-BS1) Prepared & Analyzed: 11/27/2013 18:50

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	1000		10	mg/L	1000		101	90-110			

Duplicate (3K27023-DUP1) Prepared & Analyzed: 11/27/2013 18:50

Source: C314779-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	130000		10000	ug/L		130000			5	10	

Batch 3L02011 - NO PREP

Blank (3L02011-BLK1) Prepared: 12/02/2013 09:13 Analyzed: 12/02/2013 11:15

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 (3L02011-BS1) Prepared: 12/02/2013 09:13 Analyzed: 12/02/2013 11:16

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	97		15	mg/L	100		97	80-120			

Matrix Spike (3L02011-MS1) Prepared: 12/02/2013 09:13 Analyzed: 12/02/2013 11:18

Source: C314779-02

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QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 3L02011 - NO PREP

Matrix Spike (3L02011-MS1) Continued Prepared: 12/02/2013 09:13 Analyzed: 12/02/2013 11:18

Source: C314779-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	100000		15000	ug/L	37800	62000	108	80-120			

Matrix Spike Dup (3L02011-MSD1) Prepared: 12/02/2013 09:13 Analyzed: 12/02/2013 11:19

Source: C314779-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	100000		15000	ug/L	37800	62000	105	80-120	1	25	

Batch 3L05012 - NO PREP

Blank (3L05012-BLK1) Prepared: 12/05/2013 08:48 Analyzed: 12/06/2013 00:22

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 (3L05012-BS1) Prepared: 12/05/2013 08:48 Analyzed: 12/06/2013 01:47

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	48000		5000	ug/L	50000		96	90-110			
Sulfate as SO4	46000		5000	ug/L	50000		92	90-110			

Matrix Spike (3L05012-MS1) Prepared: 12/05/2013 08:48 Analyzed: 12/06/2013 02:04

Source: C314779-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	23000		5000	ug/L	20000	5200	91	90-110			
Sulfate as SO4	32000		5000	ug/L	20000	14000	93	90-110			

Matrix Spike Dup (3L05012-MSD1) Prepared: 12/05/2013 08:48 Analyzed: 12/06/2013 02:22

Source: C314779-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	24000		5000	ug/L	20000	5200	92	90-110	1	10	
Sulfate as SO4	32000		5000	ug/L	20000	14000	94	90-110	0.6	10	

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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-12	Precision between duplicate samples was outside acceptance limits.

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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

Client Name: Golder Associates, Inc. (GO007)	Project Number: 1139-606313.100
Address: 5B Oak Branch Drive	Project Name/Desc: A-1 Sandrock C&D Landfill
City/ST/Zip: Greensboro, NC 27407	PO # / Billing Info:
Tel: (336) 852-4903 Fax: (336) 852-4904	Reporting Contact: Dusty Reedy
Sampler(s) Name, Affiliation (Print): Daniel Childress, Golder	Billing Contact: Accounts Payable
Sampler(s) Signature: Daniel Childress	Site Location / Time Zone: Greensboro, NC / EST

Requested Turnaround Times

Note : Rush requests subject to acceptance by the facility

X Standard

___ Expedited

Due ___/___/___

Lab Workorder: C314779

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	Ag,As,Ba,Be,Cd,Co,Cr,Cu,Fe,Mn,Ni,Pb,Sb,Se,Sa,Tl,V,Zn	Ag,As,Ba,Be,Cd,Co,Cr,Cu,Ni,Pb,Sb,Se,Sa,Tl,V,Zn	Alkalinity 310.2, Chloride 300, TDS SM2540C	Hg	Sulfate 300	DISSOLVED METALS				Sample Comments
	4117-MW1	11/25/13	1408	G	GW	5	X	X		X	X	X					
	4117-MW2 (MS/MSD)	11/25/13	1426	G	GW	9	X	X		X	X	X					
	4117-MW3	11/25/13	1445	G	GW	5	X	X		X	X	X	X				Filtered sample collected
	4117-MW4S	11/25/13	1510	G	GW	5	X	X		X	X	X					
	4117-MW5	11/25/13	1530	G	GW	5	X	X		X	X	X					
	4117-SW1	11/25/13	1325	G	SW	4	X		X								
	4117-SW2	11/25/13	1350	G	SW	4	X		X								
	4117-SW3	11/25/13	0945	G	SW	4	X		X								
	4117-SW4	11/25/13	1040	G	SW	4	X		X								
	4117-Field Blank	11/25/13	1540	G	WA	4	X	X			X						
	4117-Trip Blank	11/25/13	—	—	WA	2	X										

<-- Total # of Containers

Sample Kit Prepared By: RJ	Date/Time: 11/14/13 1000	Relinquished By: Daniel Childress	Date/Time: 11/26/13 0900
Received By: [illegible]	Date/Time: 11/26 1215	Relinquished By:	Date/Time:
Received By:	Date/Time:	Relinquished By:	Date/Time:
Received By:	Date/Time:	Cooler #'s & Temps on Receipt: C-506 1.2	Condition Upon Receipt: X Acceptable ___ Unacceptable

Comments/Special Reporting Requirements
1) Please provide a "Level 2" data report.
2) Unit Rates per "Basic Ordering Agreement for Lab Services" dated 4/9/04 + 2013 Unit Price Sheet.
3) Est. Fee = $2160

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: 12/12/2013 10:48:06AM

C314779

ENCO Cary

Sample Receipt Conditions

Client:	**Golder Associates, Inc. (GO007)**	**Lab Project Mgr:**	**Stephanie Franz**
Project:	**A-1 Sandrock C&D Landfill**	**Project Number:**	**1139-606313.100**
PO #:			

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:

Golder Associates, Inc. (GO007)
Accounts Payable
5B Oak Branch Drive
Greensboro, NC 27407
Phone :(804) 358-7900
Fax: 804-358-2900

Received By:	Andrew S Coons	Date Received:	26-Nov-13 12:15
Logged In By:	Andrew S Coons	Date Logged In:	26-Nov-13 13:35

Work Order Comments:

C-506 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

GOLDER ASSOCIATES INC.
QUALITY ASSURANCE & QUALITY CONTROL
LABORATORY DATA REVIEW

Project Name: A-1 Sandrock C&D Landfill

Project Reference Number: 1139-606313.100

Sampling Event Date: November 25, 2013

Review Date: December 31, 2013 *Initials:* BF

Report #: C314799

Person(s) performing the review are to initial each item on this form as acknowledgement of data acceptance, or as acknowledgement of a review issue. In the case of the latter, a brief explanation should follow the applicable item.

Golder Associates Inc. has reviewed the laboratory certificates of analysis, chain-of-custody form, and laboratory provided sample group quality assurance and quality control data for the above referenced sample group to identify potential bias or inaccuracy, in general accordance with the following United States Environmental Protection Agency documents:

- Region III Modifications to Functional Guidelines for Organic Data Review Multi-Media, Multi-Concentration, September 1994;
- Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses, April 1993; and
- Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses, July 1998.

COMPLIANCE ANALYTE LIST(S) (check all that apply)

___ NC Closed Facility List (.500 Rules)

X NC C & D List (New Rules)

___ NC Appendix I

___ NC Appendix I + Detects

___ NC Appendix II

___ NC Subtitle D Leachate List

Other: _____

1.0 CHAIN OF CUSTODY (COC) REVIEW

BF COC was properly signed by all parties.

BF Correct project name and number are on the form.

BF Sample receipt condition at laboratory was acceptable.

BF Each sample and blank submitted for analysis appears in the report.

2.0 SAMPLE HOLDING TIMES

BF Holding times for extraction and/or analysis were met for each analytical Method (see below for reference).

Review Criteria		
Method	**Analytes**	**Holding Time**
SW-846 Method 8260 and 8011	VOCs	14 days
SW-846 Methods 8270, 8080, 8081, 8082, and 8151	SVOCs, PCBs, pesticides and herbicides	7 days for extraction, 40 days from extraction for analysis
SW-846 Methods 6000 and 7000 Series	Metals except mercury	6 months (no temperature requirements)
SW-846 Method 7470	Mercury	28 days
SW-846 Method 376.1	Sulfide	7 days
SW-846 Method 9010	Cyanide	14 days
EPA Method 300	Nitrate/Sulfate	48 hours/28 days
EPA Method 405.1	BOD	48 hours
EPA Method 410.4	COD	28 days
EPA Method 365.4	Phosphorous	28 days

3.0 LABORATORY QUALITY CONTROL REVIEW

BF Laboratory analyzed at least one internal blank for each method, where applicable.

BF Laboratory blank is interference-free.

BF Surrogate recoveries are provided for each analytical method, where applicable.

BF Surrogate recoveries for each method are within the acceptable limits (i.e., at least 50% of the surrogates were within range).

BF MS/MSD/LCS data results are provided for each analytical method.

BF MS/MSD/LCS recoveries for each method are within the acceptable limits (i.e., at least 1 of the 3 were within range).

4.0 ANALYTE LISTS/METHODS

BF The proper number of constituents are present for each analyte list as identified above (including detects where applicable).

BF Proper EPA SW-846 analytical methods were used for analysis.

5.0 DATA REPORTING

BF All analytical reporting associated with the event was performed by the contracted lab.

BF Trip, field and/or equipment, and laboratory blank results have all been reported. All detects for blanks are listed below by constituent. All laboratory method blanks, if any, have been 'flagged' with a 'B' where detected in other samples as appropriate and a laboratory narrative was provided. If the sample was flagged by the laboratory and is not within 5X of the concentration in the blank (or 10X for commonly detected laboratory contaminants-acetone, methylene chloride and phthalates), list below with explanation if flags should be removed. If flags need to be added for samples, also list below.

Field Blank:

- ***Barium @ 1.75 ug/L (J)***
- ***Copper @ 1.19 ug/L (J)***
- ***Manganese @ 1.39 ug/L (J)***

BF It is clear from the laboratory report that samples have or have not been diluted during analysis, and if the samples have been diluted, the result is reported as a multiple of the dilution (e.g., a sample diluted 10x resulting in an analytical detection of 1.0 should be reported as 10). Those that have been diluted are listed below with the dilution factor.

BF The report provides the reporting limit for each constituent.

BF The results were reported at or below their proper reporting limits (i.e., MDLs with SWSLs reported). Those that are not reported correctly are listed below (by constituent) with the proper reporting limit listed beside them. State if the reporting limit error is due to dilutions.

BF No organic constituents were reported above their respective SWSLs, and no inorganic or organic constituents were reported above their respective NC 2L Drinking Water Standards/GWPS in wells, or field/equipment/trip blanks, or above applicable surface water standards in surface water points.

- ***Cobalt (GWPS = 1 ug/L)***
  - ***MW-2 @ 1.34 ug/L (B)***
  - ***MW-2 @ 2.52 ug/L (B)***
  - ***MW-3 @ 4.08 ug/L (B)***
  - ***MW-4 @ 2.82 ug/L (B)***
  - ***MW-5 @ 6.96 ug/L (J)***
  - ***Field Blank @ 1.19 ug/L (J)***

- ***Vanadium (GWPS = 0.3 ug/L)***
  - ***MW-1 @ 8.19 ug/L (J)***
  - ***MW-2 @ 2.19 ug/L (J)***
  - ***MW-3 @ 12.7 ug/L (J)***
  - ***MW-4 @ 10.7 ug/L (J)***

- ***Iron (NC 2L = 300 ug/L)***
  - ***MW-3 @ 5160 ug/L***
  - ***MW-4 @ 3200 ug/L***

- ***Manganese (NC 2L = 50 ug/L)***
  - ***MW-2 @ 200 ug/L***
  - ***MW-3 @ 60.6 ug/L***
  - ***MW-4 @ 95.4 ug/L***
  - ***MW-5 @ 1450 ug/L***

BF No inorganic and organic constituents were detected in a well or surface water point at quantified concentrations outside of their historical range (more than 5X previous concentrations or first-time detections).

BF Other report issues/Communications with laboratory/etc.:

At Golder Associates we strive to be the most respected global group of companies specializing in ground engineering and environmental services. Employee owned since our formation in 1960, we have created a unique culture with pride in ownership, resulting in long-term organizational stability. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees now operating from offices located throughout Africa, Asia, Australasia, Europe, North America and South America.

Africa	+ 27 11 254 4800
Asia	+ 852 2562 3658
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 55 21 3095 9500

solutions@golder.com
www.golder.com

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

Golder Associates