CDM Smith
5400 Glenwood Avenue Suite 300
Raleigh, North Carolina 27612
tel: 919 787-5620
fax: 919 781-5730

October 2, 2012

Mr. Brian Wootton
North Carolina Department of Environmental and Natural Resources
Division of Waste Management
Solid Waste Section
1646 Mail Service Center
Raleigh, NC 27699-1646

Subject: Monitoring Well Installation and Initial Sampling Report
Buncombe County Solid Waste Management Facility
C&D Landfill – Phase 5
Buncombe County
Permit No. 1107-CDLF-1998

Dear Mr. Wootton:

The purpose of this letter is to notify the Solid Waste Section (SWS) that groundwater monitoring wells MW-15s and MW-15d have been installed at the recently constructed Buncombe County Solid Waste Management Facility C&D Landfill – Phase 5. Initial water quality samples were collected from each of the new wells in addition to an initial sample from the new surface water sampling location (SW-6). Due to elevated metal results in the initial samples, the wells were re-sampled after additional well development. The groundwater wells were installed and located in accordance with the approved Water Quality Monitoring Plan (WQMP).

In addition to the well installation and initial sampling reporting, this letter also is intended to notify the SWS that landfill gas monitoring well M-10 was re-installed. M-10 was damaged during landfill construction. The well was abandoned and re-installed adjacent to groundwater monitoring wells MW-15s/MW-15d. Abandonment records were provided previously.

Well Installation and Sampling

Reuben Caldwell Drilling, Inc installed wells MW-15s/15d and M-10 on June 7, 2012 under supervision of a CDM Smith geologist. The wells were drilled with a truck-mounted drill rig utilizing air rotary drilling methods.

All wells were constructed of 2-inch schedule 40 PVC with 10 feet of 0.010-inch slotted screen. Following installation, each groundwater monitoring well was developed and completed with an above grade steel protective riser and a 2-foot diameter by 6-inch thick concrete pad. All wells were surveyed to State Plane coordinates. A well construction summary table is presented on **Table 1**. Well locations are provided on **Sheet 1.** Boring logs and well construction diagrams are provided in **Attachment A**.

Initial groundwater samples were collected from each well on July 27, 2012. The wells were re-sampled on August 17, 2012. The surface water sample (SW-6) was collected on August 3, 2012. All samples were submitted to ENCO Laboratories in Cary, North Carolina for analysis of the current C&D landfill constituents list (Appendix I VOC plus tetrahydrofuran; Appendix I Metals plus iron, manganese, and mercury; alkalinity, chloride, sulfate, and Total Dissolved Solids). Prior to sample collection, groundwater elevations were measured in each well and well volumes were calculated. Both wells were pumped dry prior to sampling. The wells were allowed to recharge and were sampled with laboratory decontaminated disposable Teflon bailers. Field parameters were measured with a YSI 556 water meter and included: pH, conductivity, temperature, dissolved oxygen, and oxidation/reduction potential. Turbidity was measured with a Lamont turbidity meter. Field parameters were also measured at the surface water sampling location. A summary of the field parameters at the time of sample collection is presented in **Table 2**.

Sampling Results

MW-15s

The initial sample from MW-15s was collected on July 27, 2012 and had detections of barium, iron, manganese, alkalinity, chloride, and Total Dissolved Solids above their respective Solid Waste Section reporting limits. In addition, arsenic, chromium, cobalt, lead, nickel, vanadium, zinc, and sulfate were reported as “J” values. The “J” values represent concentrations above the laboratory method detection limit, but below the Solid Waste Section reporting limit. The detected concentrations of cobalt, iron, manganese, and vanadium exceeded their respective North Carolina 2L Groundwater Standards.

MW-15s was re-sampled on August 17, 2012 and had detections of iron, manganese, alkalinity, chloride, and Total Dissolved Solids above their respective Solid Waste Section reporting limits. In addition, antimony, barium, chromium, cobalt, nickel, vanadium, zinc, and sulfate were reported as “J” values. The detected concentrations of cobalt, iron, manganese, and vanadium exceeded their respective North Carolina 2L Groundwater Standards.

MW-15d

The initial sample from MW-15d was collected on July 27, 2012 and had detections of barium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, silver, vanadium, zinc, alkalinity, chloride, Total Dissolved Solids, and tetrahydrofuran above their respective Solid Waste Section reporting limits. In addition, arsenic, thallium, and sulfate were reported as “J” values. The detected concentrations of barium, chromium, cobalt, iron, lead, manganese, nickel, thallium, and vanadium exceeded their respective North Carolina 2L Groundwater Standards.

Due to the detected metals in the initial sample, MW-15d was re-sampled on August 17, 2012. The re-sample and had detections of barium, chromium, cobalt, iron, manganese, nickel, vanadium, zinc, alkalinity, chloride, and Total Dissolved Solids above their respective Solid Waste Section reporting limits. In addition, antimony, copper, lead, thallium, sulfate, and tetrahydrofuran were reported as “J”

values. The detected concentrations of chromium, cobalt, iron, manganese, nickel, and vanadium exceeded their respective North Carolina 2L Groundwater Standards.

SW-6

The sample from SW-6 was collected on August 3, 2012 and had detections of iron, manganese, alkalinity, and Total Dissolved Solids above their respective Solid Waste Section reporting limits. In addition, arsenic, barium, chromium, cobalt, nickel, vanadium, zinc, chloride, and sulfate were reported as "J" values. The "J" values represent concentrations above the laboratory method detection limit, but below the Solid Waste Section reporting limit.

In most cases, detected constituents and concentrations in the groundwater monitoring wells decreased in the re-samples compared to the initial sampling results. It is likely that the detections are resultant from the drilling process and as additional well purging and sampling continues, constituent detections and concentrations will continue to decrease.

A summary of the initial sampling results is provided on **Table 2**. Copies of the laboratory data are provided in **Attachment B**. A signed Environmental Monitoring Reporting Form along with the Electronic Data Deliverables will be forwarded to the Compliance Unit of the Solid Waste Section. A copy of the Environmental Monitoring Form is also provided in **Attachment B**.

This submittal, which included a discussion of the installation and initial sampling of the approved groundwater surface water quality monitoring network, satisfies the groundwater and surface water monitoring criteria necessary to obtain the Permit to Operate for Phase 5 of the Buncombe County C&D landfill. If you have any questions or need additional information, please feel free to contact me at (919) 787-5620 or by email at colonemf@cdmsmith.com.

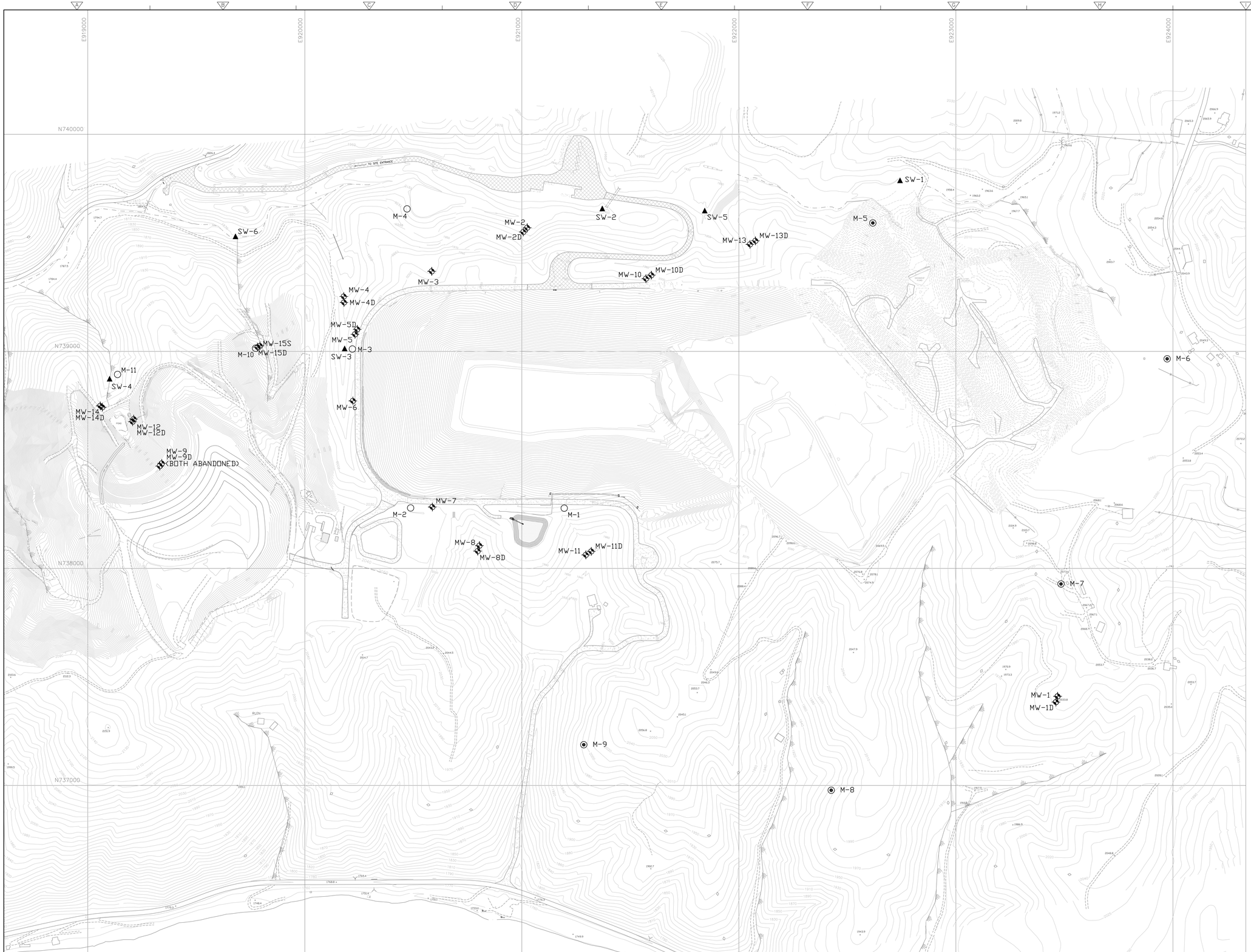
Sincerely,

Mathew F. Colone, P.G.
CDM Smith Inc.

NORTH CAROLINA LICENSED SEAL 1851 GEOLOGIST MATHEW F. COLONE

10/2/2012

cc: Allen Gaither, NCDENR SWS
Jackie Drummond, SWS
Jerry Mears, Buncombe County
Kristy Smith, Buncombe County
Kenton Yang, CDM Smith



REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. WEISPFENNING
DRAWN BY: A. WEISPFENNING
SHEET CHK'D BY: M. COLONE
CROSS CHK'D BY:
APPROVED BY:
DATE: OCTOBER 2011

CDM Smith
5400 Glenwood Ave, Suite 300
Raleigh, NC 27612
Tel: (919) 787-5620
North Carolina State License Number: F-1255

BUNCOMBE COUNTY
NORTH CAROLINA

BUNCOMBE COUNTY SOLID WASTE MANAGEMENT FACILITY

GROUNDWATER AND METHANE MONITORING WELL LOCATION MAP

PROJECT NO. 5000-90099
FILE NAME: SITE MAP.DWG
SHEET NO.
1

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REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

Table 1
Summary of Monitoring Well Completion Data
Buncombe County Solid Waste Management Facility
Phase 5 C&D Landfill

Well Designation	*TOC Elevation (MSL)*	*Ground Elevation (MSL)*	*Date of Construction*	*Drillng Method*	*Screened Interval Lithology*	*Depths (feet below ground surface)*				*Borehole Diameter (inches)*
						Total Borehole Depth	*Screen Interval*	*Sand Filter Interval*	*Bentonite Seal Interval*	
M-10*	1973.18	1970.03	6/7/2012	Air Rotary	Fill/Saprolite	23	13 - 23	11 - 23	9 - 11	6.0
MW-15s	1973.29	1970.21	6/7/2012	Air Rotary	Saprolite/PWR	26	16 - 26	14 - 26	12 - 14	6.0
MW-15d	1973.51	1970.25	6/7/2012	Air Rotary	Fractured Bedrock	43	33 - 43	31 - 43	27 - 31	6.0
Existing Groundwater Monitoring Wells										
MW-12	1947.39	1944.7	6/25/2002	Air Rotary	Saprolite/PWR	17	7-17	5 - 17	3 - 5	6
MW-12D	1947.10	1944.3	6/25/2002	Air Rotary	Bedrock	37	27-37	25 - 37	23 - 25	6
MW-14	1952.77	1949.8	4/5/2006	Air Rotary	Bedrock	49	39-49	36 - 49	33 - 36	6
MW-14D	1953.76	1950.7	4/6/2006	Air Rotary	Bedrock	88	78-88	74 - 88	71 - 74	6

NOTES:

MSL - Mean Sea Level

PWR - Partially Weathered Rock

*M-10 was damaged during construction. Well was abandoned and re-installed.

Table 2
Initial Sampling Summary
Detected Groundwater and Surface Water Constituents
Buncombe County Solid Waste Management Facility
Phase 5 C&D Landfill

		Field Parameters						*Metals*																		*Inorganics/VOC*				
Monitor Well	**Sample Date**	**pH**	**Conductivity (us/cm)**	**Temperature (°C)**	**Dissolved Oxygen (mg/L)**	**ORP (mvolts)**	**Turbidity (NTU)**	**Antimony**	**Arsenic**	**Barium**	**Beryllium**	**Cadmium**	**Chromium**	**Cobalt**	**Copper**	**Iron**	**Lead**	**Manganese**	**Mercury**	**Nickel**	**Selenium**	**Silver**	**Thallium**	**Vanadium**	**Zinc**	**Total Alkalinity**	**Chloride**	**Sulfate**	**Total Dissolved Solids**	**Tetrahydrofuran**
NC 2L Standard								**1***	**10**	**700**	**4***	**2**	**10**	**1***	**1000**	**300**	**15**	**50**	**1**	**100**	**20**	**20**	**0.2***	**0.3***	**1000**	**NE**	**250000**	**250000**	**500000**	**NE**
Solid Waste Section Limit								**6**	**10**	**100**	**1**	**1**	**10**	**10**	**10**	**300**	**10**	**50**	**0.2**	**50**	**10**	**10**	**5.5**	**25**	**10**	**NE**	**NE**	**250000**	**NE**	**NE**
MW-15s	27-Jul-12	5.57	141	16.21	1.82	112.6	>999		4.99J	108			4.18J	**8.36J**		**3720**	4.09J	**657**		6.88J				**10J**	8.62J	49000	8000B	19000JB	140000	
	17-Aug-12	5.77	149	18.08	2.09	148	253	0.443J		99.7J			1.75J	**1.22J**		**974**		**52.7**		2.76J				**2.93J**	8.44J	32000	13000B	11000J	30000	
MW-15d	27-Jul-12	6.27	548	13.14	1.98	123.1	>999		7.24J	**993**			**122**	**79.1**	151	**158000**	**79.7**	**3530**	0.256	**115**		10.2	**0.749J**	**369**	248	130000	18000B	120000JBD	420000	2.5
	17-Aug-12	6.03	1210	13.98	0.96	31.5	348	0.971J		179			**253**	**23**	8.90J	**11800**	4.14J	**1130**		**143**			0.120J	**27.8**	18.4	130000	18000BD	120000JD	380000	0.88J
SW-6	3-Aug-12	6.32	125	15.8	2.35	88	56		3.36J	87.6J			3.82J	1.10J	3.39J	2760		79		2.87J				6.85J	9.03J	65000	4000JB	7700J	150000	

Notes:
All units are in micrograms per liter (parts per billion).
- Concentration exceeds NC 2L Groundwater Standard or Groundwater Protection Standard
- Indicates results below detection limits
* - Groundwater Protection Standard
J - Indicates the analytical result is an estimated concentration between the Method Detection Limit and the Solid Waste Section Reporting Limit (SWSL)
B - Amount in Prep Blank > Method Detection Limit
D - Sample analyzed at dilution
Dup - Duplicate Sample

Attachment A
Boring Logs and Well Construction Diagrams

CDM Smith
5400 Glenwood Avenue Suite 300
Raleigh, North Carolina 27612
(919) 787-5620 tel
(919) 781-5730 fax

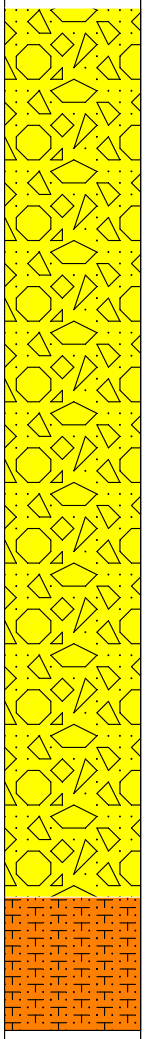
FIELD BOREHOLE LOG

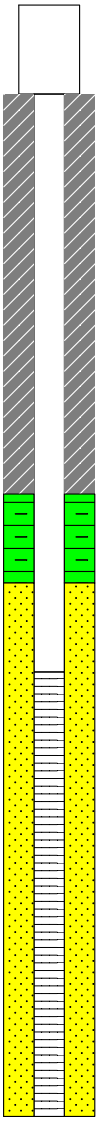
BOREHOLE NO.: **M-10**

TOTAL DEPTH: **23 ft**

PROJECT INFORMATION	DRILLING INFORMATION
PROJECT: **Phase 5 Expansion**	DRILLING CO.: **Reuben Caldwell Drilling, Inc**
SITE LOCATION: **Buncombe County C&D Landfill**	DRILLER: **Billie Nash**
JOB NO.: **5000-90099**	RIG TYPE: **Schramm T450**
GEOLOGIST: **Mat Colone**	METHOD OF DRILLING: **Air Rotary**
PROJECT MANAGER: **Mat Colone**	SAMPLING METHODS: **Visual inspection**
DATE DRILLED: **6/27/12**	HAMMER WT./DROP **NA**

Depth	Soil Symbol	Soil Description	Sample	Blows (Recovery)	Boring Completion	Well Description
0		FILL: Tan to reddish brown, silt/sand/clay.				Locking Protective Cover
-5						2" Schedule 40 PVC Riser
						Bentonite/Portland Cement Grout
-10						Bentonite Seal
-15						#2 Sand Filter Pack
-20		SILTY SAND: Medium sand with silt, gray to brown, micaceous, trace rock fragments. Saprolite/PWR.				2" Schedule 40 0.010" Slotted Screen
-25						





Notes:

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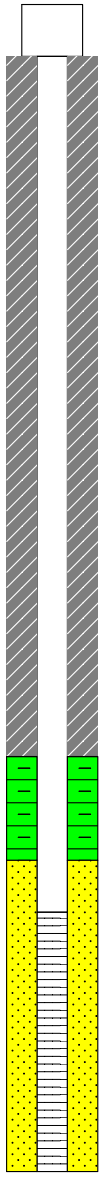
FIELD BOREHOLE LOG

BOREHOLE NO.: **MW-15d**

TOTAL DEPTH: **43 ft**

PROJECT INFORMATION	DRILLING INFORMATION
PROJECT: **Phase 5 Expansion**	DRILLING CO.: **Reuben Caldwell Drilling, Inc**
SITE LOCATION: **Buncombe County C&D Landfill**	DRILLER: **Billie Nash**
JOB NO.: **5000-90099**	RIG TYPE: **Schramm T450**
GEOLOGIST: **Mat Colone**	METHOD OF DRILLING: **Air Rotary**
PROJECT MANAGER: **Mat Colone**	SAMPLING METHODS: **Visual inspection**
DATE DRILLED: **6/27/12**	HAMMER WT./DROP **NA**

Depth	Soil Symbol	Soil Description	Sample	Blows (Recovery)	Boring Completion	Well Description
0		FILL: Tan to reddish brown, silt/sand/clay.				Locking Protective Cover
-5						2" Schedule 40 PVC Riser
-10						
-15						Bentonite/Portland Cement Grout
-20		SILTY SAND: Medium sand with silt, gray to brown, micaceous, trace rock fragments. Saprolite/PWR.				
-25		GNEISS: Fractured Rock - Undifferentiated Gneiss				
-30						Bentonite Seal
-35						#2 Sand Filter Pack
-40						2" Schedule 40 0.010" Slotted Screen
-45						

Notes: Bedrock @ 25 ft bls. Water bearing fracture @ 38 ft bls.

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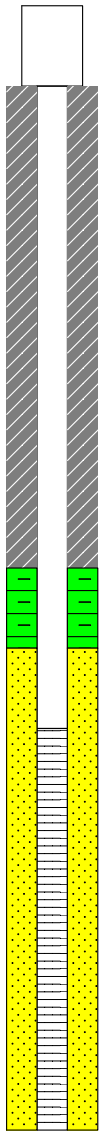
FIELD BOREHOLE LOG

BOREHOLE NO.: **MW-15s**

TOTAL DEPTH: **26 ft**

PROJECT INFORMATION	DRILLING INFORMATION
PROJECT: **Phase 5 Expansion**	DRILLING CO.: **Reuben Caldwell Drilling, Inc**
SITE LOCATION: **Buncombe County C&D Landfill**	DRILLER: **Billie Nash**
JOB NO.: **5000-90099**	RIG TYPE: **Schramm T450**
GEOLOGIST: **Mat Colone**	METHOD OF DRILLING: **Air Rotary**
PROJECT MANAGER: **Mat Colone**	SAMPLING METHODS: **Visual inspection**
DATE DRILLED: **6/27/12**	HAMMER WT./DROP **NA**

Depth	Soil Symbol	Soil Description	Sample	Blows (Recovery)	Boring Completion	Well Description
0		FILL: Tan to reddish brown, silt/sand/clay.				Locking Protective Cover 2" Schedule 40 PVC Riser Bentonite/Portland Cement Grout Bentonite Seal #2 Sand Filter Pack 2" Schedule 40 0.010" Slotted Screen
-5						
-10						
-15						
-20		SILTY SAND: Medium sand with silt, gray to brown, micaceous, trace rock fragments. Saprolite/PWR.				
-25		GNEISS: Fractured Rock - Undifferentiated Gneiss				

Notes: Damp cuttings at 23 ft bls. Initially dry after installation. Static water level ~20 ft bls.

NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 2771 A

1. WELL CONTRACTOR:

Billie Nash
Well Contractor (Individual) Name

Reuben Caldwell Drilling, Inc.
Well Contractor Company Name

351 New Leicester Hwy
Street Address

Asheville NC 28806
City or Town State Zip Code

(828) 254-3581
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT#

OTHER ASSOCIATED PERMIT#(if applicable) 1107-CDLF-1998

SITE WELL ID #(if applicable) M-10

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐

Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐

Irrigation ☐ Other ☐ (list use)

DATE DRILLED 6/27/12

4. WELL LOCATION:

Buncombe County C&D LF, Panther Branch Rd
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: Alexander COUNTY NC

TOPOGRAPHIC / LAND SETTING: (check appropriate box)

☐ Slope ☑ Valley ☐ Flat ☐ Ridge ☐ Other

LATITUDE 35 ° 43 ' 35.3346 " DMS OR 3x.xxxxxxxxx DD

LONGITUDE 82 ° 36 ' 24.5286 " DMS OR 7x.xxxxxxxxx DD

Latitude/longitude source: ☑ GPS ☐ Topographic map

(location of well must be shown on a USGS topo map andattached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)

Buncombe County C&D Lan SW Permit 1107
Facility Name Facility ID# (if applicable)

85 Panther Branch Road
Street Address

Alexander NC 28701
City or Town State Zip Code

Jerry Mears
Contact Name

85 Panther Branch Road
Mailing Address

Alexander NC 28701
City or Town State Zip Code

(828) 250-5467
Area code Phone number

6. WELL DETAILS:

a. TOTAL DEPTH: 23

b. DOES WELL REPLACE EXISTING WELL? YES ☑ NO ☐

c. WATER LEVEL Below Top of Casing: _____ FT.
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS 3 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): _____ METHOD OF TEST _____

f. DISINFECTION: Type _____ Amount _____

g. WATER ZONES (depth):

Top _____ Bottom _____ Top _____ Bottom _____
Top _____ Bottom _____ Top _____ Bottom _____
Top _____ Bottom _____ Top _____ Bottom _____

7. CASING:	Depth		Diameter	Thickness/ Weight	Material
Top +3	Bottom 13	Ft.	2	Sch40	PVC
Top	Bottom	Ft.			
Top	Bottom	Ft.			

8. GROUT:	Depth		Material	Method
Top 0	Bottom 9	Ft.	Portland	Poured
Top 9	Bottom 11	Ft.	Bentonite	Poured
Top	Bottom	Ft.		

9. SCREEN:	Depth		Diameter	Slot Size	Material
Top 13	Bottom 23	Ft.	2 in.	.010 in.	PVC
Top	Bottom	Ft.	in.	in.	
Top	Bottom	Ft.	in.	in.	

10. SAND/GRAVEL PACK:	Depth		Size	Material
Top 11	Bottom 23	Ft.	#2	Silica Sand
Top	Bottom	Ft.		
Top	Bottom	Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0	20	Fill
20	23	Silty Sand

12. REMARKS:

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Billie Nash 7/17/12
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

BILLIE NASH
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-161, Phone : (919) 807-6300

Form GW-1b
Rev. 2/09

NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

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1. WELL CONTRACTOR:

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Well Contractor (Individual) Name

Reuben Caldwell Drilling, Inc.
Well Contractor Company Name

351 New Leicester Hwy
Street Address

Asheville NC 28806
City or Town State Zip Code

(828) 254-3581
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT#

OTHER ASSOCIATED PERMIT#(if applicable) 1107-CDLF-1998

SITE WELL ID #(if applicable) MW-15s

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐

Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐

Irrigation ☐ Other ☐ (list use)

DATE DRILLED 6/27/12

4. WELL LOCATION:

Buncombe County C&D LF, Panther Branch Rd
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: Alexander COUNTY NC

TOPOGRAPHIC / LAND SETTING: (check appropriate box)

☐ Slope ☑ Valley ☐ Flat ☐ Ridge ☐ Other

LATITUDE 35 ° 43 ' 35.3346 " DMS OR 3x.xxxxxxxxx DD

LONGITUDE 82 ° 38 ' 24.6286 " DMS OR 7x.xxxxxxxxx DD

Latitude/longitude source: ☑ GPS ☐ Topographic map

(location of well must be shown on a USGS topo map andattached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)

Buncombe County C&D Landfill SW Permit 1107
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85 Panther Branch Road
Street Address

Alexander NC 28701
City or Town State Zip Code

Jerry Mears
Contact Name

85 Panther Branch Road
Mailing Address

Alexander NC 28701
City or Town State Zip Code

(828) 250-5467
Area code Phone number

6. WELL DETAILS:

a. TOTAL DEPTH: 26

b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☑

c. WATER LEVEL Below Top of Casing: 27.5 FT.
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS 3 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): METHOD OF TEST

f. DISINFECTION: Type Amount

g. WATER ZONES (depth):

Top Bottom Top Bottom
Top Bottom Top Bottom
Top Bottom Top Bottom

7. CASING:	Depth		Diameter	Thickness/ Weight	Material
Top +3	Bottom 16	Ft.	2	Sch40	PVC
Top	Bottom	Ft.			
Top	Bottom	Ft.			

8. GROUT:	Depth		Material	Method
Top 0	Bottom 12	Ft.	Portland	Poured
Top 12	Bottom 14	Ft.	Bentonite	Poured
Top	Bottom	Ft.		

9. SCREEN:	Depth		Diameter	Slot Size	Material
Top 16	Bottom 26	Ft.	2 in.	.010 in.	PVC
Top	Bottom	Ft.	in.	in.	
Top	Bottom	Ft.	in.	in.	

10. SAND/GRAVEL PACK:	Depth		Size	Material
Top 14	Bottom 26	Ft.	#2	Silica Sand
Top	Bottom	Ft.		
Top	Bottom	Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0	20	Fill
20	26	Silty Sand

12. REMARKS:

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Billie Nash 7/17/12
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

BILLIE NASH
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

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Form GW-1b
Rev. 2/09

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Reuben Caldwell Drilling, Inc.
Well Contractor Company Name

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Asheville NC 28806
City or Town State Zip Code

(828) 254-3581
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT#

OTHER ASSOCIATED PERMIT#(if applicable) 1107-CDLF-1998

SITE WELL ID #(if applicable) MW-15d

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)

DATE DRILLED 6/27/12

4. WELL LOCATION:

Buncombe County C&D LF, Panther Branch Rd
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: Alexander COUNTY NC

TOPOGRAPHIC / LAND SETTING: (check appropriate box)
☐ Slope ☑ Valley ☐ Flat ☐ Ridge ☐ Other

LATITUDE 35 ° 43 ' 35.3346 " DMS OR 3x.xxxxxxxxx DD

LONGITUDE 82 ° 38 ' 24.6286 " DMS OR 7x.xxxxxxxxx DD

Latitude/longitude source: ☑ GPS ☐ Topographic map
(location of well must be shown on a USGS topo map andattached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)

Buncombe County C&D Landfill SW Permit 1107
Facility Name Facility ID# (if applicable)

85 Panther Branch Road
Street Address

Alexander NC 28701
City or Town State Zip Code

Jerry Mears
Contact Name

85 Panther Branch Road
Mailing Address

Alexander NC 28701
City or Town State Zip Code

(828) 250-5467
Area code Phone number

6. WELL DETAILS:

a. TOTAL DEPTH: 43

b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☑

c. WATER LEVEL Below Top of Casing: 27.3 FT.
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS 3 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): METHOD OF TEST

f. DISINFECTION: Type Amount

g. WATER ZONES (depth):
Top Bottom Top Bottom
Top Bottom Top Bottom
Top Bottom Top Bottom

7. CASING:	Depth		Diameter	Thickness/ Weight	Material
Top +3	Bottom 33	Ft.	2	Sch40	PVC
Top	Bottom	Ft.			
Top	Bottom	Ft.			

8. GROUT:	Depth		Material	Method
Top 0	Bottom 27	Ft.	Portland	Poured
Top 27	Bottom 31	Ft.	Bentonite	Poured
Top	Bottom	Ft.		

9. SCREEN:	Depth		Diameter	Slot Size	Material
Top 31	Bottom 43	Ft.	2 in.	.010 in.	PVC
Top	Bottom	Ft.	in.	in.	
Top	Bottom	Ft.	in.	in.	

10. SAND/GRAVEL PACK:	Depth		Size	Material
Top 33	Bottom 43	Ft.	#2	Silica Sand
Top	Bottom	Ft.		
Top	Bottom	Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0	20	Fill
20	25	Silty Sand
25	43	Fractured Rock

12. REMARKS:

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Billie Nash 7/17/12
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

Billie NASH
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-161, Phone : (919) 807-6300

Form GW-1b
Rev. 2/09

Attachment B
Analytical Laboratory Data

DENR USE ONLY: ☐ Paper Report ☐ Electronic Data - Email CD (data loaded: Yes / No) Doc/Event #:

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):

Consultant - Camp Dresser McKee & Smith (CDM Smith)

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

Name: Mathew F. Colone Phone: 919-787-5620

E-mail: colonemf@cdmsmith.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Buncombe County C&D Landfill	85 Panther Branch Road, Alexander, NC	1107-CDLF-1998	.0500	July 27, 2012; August 3, 2012; August 17, 2012

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.

Mathew F. Colone — Consultant — (919) 787-5620

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

Mathew Colone — Digitally signed by Mathew Colone DN: cn=Mathew Colone, o=CDM Smith Inc, ou, email=colonemf@cdmsmith.com, c=US Date: 2012.10.02 14:10:39 -04'00' — 10/2/2012

Signature — Date

Affix NC Licensed Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 1851 GEOLOGIST MATHEW F. COLONE

10/2/2012

5400 Glenwood Ave, Suite 300, Raleigh, NC 27612

Facility Representative Address

F-0412

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

Revised 6/2009

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

Thursday, August 23, 2012

CDM Smith, Inc. (CD004)

Attn: Mathew Colone

5400 GLENWOOD AVE SUITE 300

RALEIGH, NC 27612-

RE: Laboratory Results for
Project Number: [none], Project Name/Desc: Buncombe County Phase 5 C&D
ENCO Workorder(s): C208446,C209177

Dear Mathew Colone,

Enclosed is a copy of your laboratory report for test samples received by our laboratory between Monday, July 30, 2012 and Tuesday, August 7, 2012.

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,

Chuck Smith

Project Manager

Enclosure(s)

The total number of pages in this report, including this page is 38.

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: 1107-MW15s **Lab ID: C208446-01** **Sampled: 07/27/12 08:05** **Received: 07/30/12 08:50**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	08/24/12	08/05/12	17:16	8/6/2012 17:21
EPA 310.2	08/10/12	08/01/12	15:23	8/1/2012 17:06
EPA 6010C	01/23/13	07/31/12	12:50	8/2/2012 12:12
EPA 6020A	01/23/13	07/31/12	12:54	8/7/2012 12:47
EPA 7470A	08/24/12	07/31/12	12:13	7/31/2012 18:03
EPA 8260B	08/10/12	07/31/12	09:52	8/2/2012 02:51
SM 2540C	08/03/12	08/03/12	14:05	8/3/2012 14:05

Client ID: 1107-MW15d **Lab ID: C208446-02** **Sampled: 07/27/12 11:40** **Received: 07/30/12 08:50**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	08/24/12	08/05/12	17:16	8/6/2012 17:38
EPA 310.2	08/10/12	08/01/12	15:23	8/1/2012 17:09
EPA 6010C	01/23/13	07/31/12	12:50	8/2/2012 12:14
EPA 6020A	01/23/13	07/31/12	12:54	8/7/2012 12:51
EPA 7470A	08/24/12	07/31/12	12:13	7/31/2012 18:05
EPA 8260B	08/10/12	07/31/12	09:52	8/2/2012 03:21
SM 2540C	08/03/12	08/03/12	14:05	8/3/2012 14:05

Client ID: 1107-MW15d **Lab ID: C208446-02RE1** **Sampled: 07/27/12 11:40** **Received: 07/30/12 08:50**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	08/24/12	08/05/12	17:16	8/7/2012 11:44
EPA 6010C	01/23/13	07/31/12	12:50	8/2/2012 13:34

Client ID: 1107-TripBlank **Lab ID: C208446-03** **Sampled: 07/27/12 08:05** **Received: 07/30/12 08:50**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 8260B	08/10/12	07/31/12	09:52	8/2/2012 03:50

Client ID: 1107-SW6 **Lab ID: C209177-01** **Sampled: 08/03/12 11:40** **Received: 08/07/12 13:20**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	08/31/12	08/15/12	09:44	8/16/2012 05:04
EPA 310.2	08/17/12	08/14/12	10:56	8/14/2012 13:40
EPA 6010C	01/30/13	08/07/12	15:57	8/8/2012 12:42
EPA 6020A	01/30/13	08/15/12	09:51	8/21/2012 12:34
EPA 7470A	08/31/12	08/13/12	10:40	8/13/2012 17:09
EPA 8260B	08/17/12	08/10/12	12:55	8/11/2012 11:34
SM 2540C	08/10/12	08/08/12	10:38	8/8/2012 10:38

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NORTH CAROLINA SWS SAMPLE DETECTION SUMMARY

Client ID: 1107-MW15s **Lab ID: C208446-01**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Arsenic - Total	4.99	J	1	2.80	10.0	10	ug/L	EPA 6010C	
Barium - Total	108		1	1.00	10.0	100	ug/L	EPA 6010C	
Chloride	8000	B	1	430	5000	NE	ug/L	EPA 300.0	J-01
Chromium - Total	4.18	J	1	1.00	10.0	10	ug/L	EPA 6010C	
Cobalt - Total	8.36	J	1	1.10	10.0	10	ug/L	EPA 6010C	
Iron - Total	3720		1	22.0	50.0	300	ug/L	EPA 6010C	
Lead - Total	4.09	J	1	1.90	10.0	10	ug/L	EPA 6010C	
Manganese - Total	657		1	1.10	10.0	50	ug/L	EPA 6010C	
Nickel - Total	6.88	J	1	1.80	10.0	50	ug/L	EPA 6010C	
Sulfate as SO4	19000	JB	1	40	5000	250000	ug/L	EPA 300.0	QB-01
Total Alkalinity as CaCO3	49000		1	12000	15000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	140000		1	10000	10000	NE	ug/L	SM 2540C	
Vanadium - Total	10.0	J	1	1.40	10.0	25	ug/L	EPA 6010C	
Zinc - Total	8.62	J	1	3.80	10.0	10	ug/L	EPA 6010C	

Client ID: 1107-MW15d **Lab ID: C208446-02**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Arsenic - Total	7.24	J	1	2.80	10.0	10	ug/L	EPA 6010C	
Barium - Total	993		1	1.00	10.0	100	ug/L	EPA 6010C	
Chloride	18000	B	1	430	5000	NE	ug/L	EPA 300.0	QB-01
Chromium - Total	122		1	1.00	10.0	10	ug/L	EPA 6010C	
Cobalt - Total	79.1		1	1.10	10.0	10	ug/L	EPA 6010C	
Copper - Total	151		1	1.60	10.0	10	ug/L	EPA 6010C	
Iron - Total	158000		1	22.0	50.0	300	ug/L	EPA 6010C	
Lead - Total	79.7		1	1.90	10.0	10	ug/L	EPA 6010C	
Manganese - Total	3530		1	1.10	10.0	50	ug/L	EPA 6010C	
Mercury - Total	0.256		1	0.170	0.200	0.2	ug/L	EPA 7470A	
Nickel - Total	115		1	1.80	10.0	50	ug/L	EPA 6010C	
Silver - Total	10.2		1	1.90	10.0	10	ug/L	EPA 6010C	
Tetrahydrofuran	2.5		1	0.80	1.0	NE	ug/L	EPA 8260B	
Thallium - Total	0.749	J	1	0.110	1.00	5.5	ug/L	EPA 6020A	
Total Alkalinity as CaCO3	130000		1	12000	15000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	420000		1	10000	10000	NE	ug/L	SM 2540C	
Vanadium - Total	369		1	1.40	10.0	25	ug/L	EPA 6010C	
Zinc - Total	248		1	3.80	10.0	10	ug/L	EPA 6010C	

Client ID: 1107-MW15d **Lab ID: C208446-02RE1**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Sulfate as SO4	120000	JBD	2	80	10000	250000	ug/L	EPA 300.0	QB-01

Client ID: 1107-SW6 **Lab ID: C209177-01**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Arsenic - Total	3.36	J	1	2.80	10.0	10	ug/L	EPA 6010C	
Barium - Total	87.6	J	1	1.00	10.0	100	ug/L	EPA 6010C	
Chloride	4000	JB	1	430	5000	NE	ug/L	EPA 300.0	J-01
Chromium - Total	3.82	J	1	1.00	10.0	10	ug/L	EPA 6010C	
Cobalt - Total	1.10	J	1	1.10	10.0	10	ug/L	EPA 6010C	
Copper - Total	3.39	J	1	1.60	10.0	10	ug/L	EPA 6010C	
Iron - Total	2760		1	22.0	50.0	300	ug/L	EPA 6010C	

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Client ID: 1107-SW6				Lab ID: C209177-01					
Analyte	**Results**	**Flag**	**DF**	**MDL**	**MRL**	**NC SWSL**	**Units**	**Method**	**Notes**
Manganese - Total	79.0		1	1.10	10.0	50	ug/L	EPA 6010C	
Nickel - Total	2.87	J	1	1.80	10.0	50	ug/L	EPA 6010C	
Sulfate as SO4	7700	J	1	40	5000	250000	ug/L	EPA 300.0	
Total Alkalinity as CaCO3	65000		1	12000	15000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	150000		1	10000	10000	NE	ug/L	SM 2540C	
Vanadium - Total	6.85	J	1	1.40	10.0	25	ug/L	EPA 6010C	
Zinc - Total	9.03	J	1	3.80	10.0	10	ug/L	EPA 6010C	

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ANALYTICAL RESULTS

Description: 1107-MW15s
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C208446-01
Sampled: 07/27/12 08:05
Sampled By: Daniel Forbes

Received: 07/30/12 08:50
Work Order: C208446

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	08/02/12 02:51	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	08/02/12 02:51	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	08/02/12 02:51	JKG	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	08/02/12 02:51	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	08/02/12 02:51	JKG	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	08/02/12 02:51	JKG	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	08/02/12 02:51	JKG	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	08/02/12 02:51	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	08/02/12 02:51	JKG	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	08/02/12 02:51	JKG	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	08/02/12 02:51	JKG	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	08/02/12 02:51	JKG	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	08/02/12 02:51	JKG	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	08/02/12 02:51	JKG	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	08/02/12 02:51	JKG	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	08/02/12 02:51	JKG	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	08/02/12 02:51	JKG	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	08/02/12 02:51	JKG	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	08/02/12 02:51	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	08/02/12 02:51	JKG	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	08/02/12 02:51	JKG	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	08/02/12 02:51	JKG	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0	NE	EPA 8260B	08/02/12 02:51	JKG	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	08/02/12 02:51	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	08/02/12 02:51	JKG	

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Description: 1107-MW15s
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C208446-01
Sampled: 07/27/12 08:05
Sampled By: Daniel Forbes

Received: 07/30/12 08:50
Work Order: C208446

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	08/02/12 02:51	JKG	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	08/02/12 02:51	JKG	
Vinyl chloride [75-01-4] ^	0.32	U	ug/L	1	0.32	1.0	1	EPA 8260B	08/02/12 02:51	JKG	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	08/02/12 02:51	JKG	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*85 %*	*51-122*	*2G31012*	*EPA 8260B*	*08/02/12 02:51*	*JKG*	
Dibromofluoromethane	*42*	*1*	*50.0*	*84 %*	*68-117*	*2G31012*	*EPA 8260B*	*08/02/12 02:51*	*JKG*	
Toluene-d8	*44*	*1*	*50.0*	*88 %*	*67-127*	*2G31012*	*EPA 8260B*	*08/02/12 02:51*	*JKG*	

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Description: 1107-MW15s
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C208446-01
Sampled: 07/27/12 08:05
Sampled By: Daniel Forbes

Received: 07/30/12 08:50
Work Order: C208446

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	07/31/12 18:03	T1D	

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Description: 1107-MW15s
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C208446-01
Sampled: 07/27/12 08:05
Sampled By: Daniel Forbes

Received: 07/30/12 08:50
Work Order: C208446

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	08/07/12 12:47	VLO	
Arsenic [7440-38-2] ^	**4.99**	J	ug/L	1	2.80	10.0	10	EPA 6010C	08/02/12 12:12	JDH	
Barium [7440-39-3] ^	**108**		ug/L	1	1.00	10.0	100	EPA 6010C	08/02/12 12:12	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	08/02/12 12:12	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	08/02/12 12:12	JDH	
Chromium [7440-47-3] ^	**4.18**	J	ug/L	1	1.00	10.0	10	EPA 6010C	08/02/12 12:12	JDH	
Cobalt [7440-48-4] ^	**8.36**	J	ug/L	1	1.10	10.0	10	EPA 6010C	08/02/12 12:12	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	08/02/12 12:12	JDH	
Iron [7439-89-6] ^	**3720**		ug/L	1	22.0	50.0	300	EPA 6010C	08/02/12 12:12	JDH	
Lead [7439-92-1] ^	**4.09**	J	ug/L	1	1.90	10.0	10	EPA 6010C	08/02/12 12:12	JDH	
Manganese [7439-96-5] ^	**657**		ug/L	1	1.10	10.0	50	EPA 6010C	08/02/12 12:12	JDH	
Nickel [7440-02-0] ^	**6.88**	J	ug/L	1	1.80	10.0	50	EPA 6010C	08/02/12 12:12	JDH	
Selenium [7782-49-2] ^	0.830	U	ug/L	1	0.830	1.00	10	EPA 6020A	08/07/12 12:47	VLO	QV-01
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	08/02/12 12:12	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	08/07/12 12:47	VLO	
Vanadium [7440-62-2] ^	**10.0**	J	ug/L	1	1.40	10.0	25	EPA 6010C	08/02/12 12:12	JDH	
Zinc [7440-66-6] ^	**8.62**	J	ug/L	1	3.80	10.0	10	EPA 6010C	08/02/12 12:12	JDH	

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Description: 1107-MW15s
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C208446-01
Sampled: 07/27/12 08:05
Sampled By: Daniel Forbes

Received: 07/30/12 08:50
Work Order: C208446

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] ^	**8000**	B	ug/L	1	430	5000	NE	EPA 300.0	08/06/12 17:21	CCB	J-01
Sulfate as SO4 [14808-79-8] ^	**19000**	JB	ug/L	1	40	5000	250000	EPA 300.0	08/06/12 17:21	CCB	QB-01
Total Alkalinity as CaCO3 [471-34-1] ^	**49000**		ug/L	1	12000	15000	NE	EPA 310.2	08/01/12 17:06	CCB	
Total Dissolved Solids [ECL-0156] ^	**140000**		ug/L	1	10000	10000	NE	SM 2540C	08/03/12 14:05	MPL	

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

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Description: 1107-MW15d
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C208446-02
Sampled: 07/27/12 11:40
Sampled By: Daniel Forbes

Received: 07/30/12 08:50
Work Order: C208446

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	08/02/12 03:21	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	08/02/12 03:21	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	08/02/12 03:21	JKG	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	08/02/12 03:21	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	08/02/12 03:21	JKG	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	08/02/12 03:21	JKG	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	08/02/12 03:21	JKG	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	08/02/12 03:21	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	08/02/12 03:21	JKG	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	08/02/12 03:21	JKG	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	08/02/12 03:21	JKG	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	08/02/12 03:21	JKG	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	08/02/12 03:21	JKG	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	08/02/12 03:21	JKG	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	08/02/12 03:21	JKG	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	08/02/12 03:21	JKG	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	08/02/12 03:21	JKG	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	08/02/12 03:21	JKG	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	08/02/12 03:21	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	08/02/12 03:21	JKG	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	08/02/12 03:21	JKG	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	08/02/12 03:21	JKG	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
Tetrahydrofuran [109-99-9] ^	**2.5**		ug/L	1	0.80	1.0	NE	EPA 8260B	08/02/12 03:21	JKG	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	08/02/12 03:21	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	08/02/12 03:21	JKG	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	08/02/12 03:21	JKG	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	08/02/12 03:21	JKG	

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Description: 1107-MW15d
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C208446-02
Sampled: 07/27/12 11:40
Sampled By: Daniel Forbes

Received: 07/30/12 08:50
Work Order: C208446

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	08/02/12 03:21	JKG	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	08/02/12 03:21	JKG	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*83 %*	*51-122*	*2G31012*	*EPA 8260B*	*08/02/12 03:21*	*JKG*	
Dibromofluoromethane	*42*	*1*	*50.0*	*84 %*	*68-117*	*2G31012*	*EPA 8260B*	*08/02/12 03:21*	*JKG*	
Toluene-d8	*44*	*1*	*50.0*	*87 %*	*67-127*	*2G31012*	*EPA 8260B*	*08/02/12 03:21*	*JKG*	

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Description: 1107-MW15d
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C208446-02
Sampled: 07/27/12 11:40
Sampled By: Daniel Forbes

Received: 07/30/12 08:50
Work Order: C208446

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] ^	**0.256**		ug/L	1	0.170	0.200	0.2	EPA 7470A	07/31/12 18:05	T1D	

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Description: 1107-MW15d
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C208446-02
Sampled: 07/27/12 11:40
Sampled By: Daniel Forbes

Received: 07/30/12 08:50
Work Order: C208446

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	08/07/12 12:51	VLO	
Arsenic [7440-38-2] ^	**7.24**	J	ug/L	1	2.80	10.0	10	EPA 6010C	08/02/12 12:14	JDH	
Barium [7440-39-3] ^	**993**		ug/L	1	1.00	10.0	100	EPA 6010C	08/02/12 12:14	JDH	
Beryllium [7440-41-7] ^	1.00	UD	ug/L	10	1.00	10.0	1	EPA 6010C	08/02/12 13:34	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	08/02/12 12:14	JDH	
Chromium [7440-47-3] ^	**122**		ug/L	1	1.00	10.0	10	EPA 6010C	08/02/12 12:14	JDH	
Cobalt [7440-48-4] ^	**79.1**		ug/L	1	1.10	10.0	10	EPA 6010C	08/02/12 12:14	JDH	
Copper [7440-50-8] ^	**151**		ug/L	1	1.60	10.0	10	EPA 6010C	08/02/12 12:14	JDH	
Iron [7439-89-6] ^	**158000**		ug/L	1	22.0	50.0	300	EPA 6010C	08/02/12 12:14	JDH	
Lead [7439-92-1] ^	**79.7**		ug/L	1	1.90	10.0	10	EPA 6010C	08/02/12 12:14	JDH	
Manganese [7439-96-5] ^	**3530**		ug/L	1	1.10	10.0	50	EPA 6010C	08/02/12 12:14	JDH	
Nickel [7440-02-0] ^	**115**		ug/L	1	1.80	10.0	50	EPA 6010C	08/02/12 12:14	JDH	
Selenium [7782-49-2] ^	0.830	U	ug/L	1	0.830	1.00	10	EPA 6020A	08/07/12 12:51	VLO	QV-01
Silver [7440-22-4] ^	**10.2**		ug/L	1	1.90	10.0	10	EPA 6010C	08/02/12 12:14	JDH	
Thallium [7440-28-0] ^	**0.749**	J	ug/L	1	0.110	1.00	5.5	EPA 6020A	08/07/12 12:51	VLO	
Vanadium [7440-62-2] ^	**369**		ug/L	1	1.40	10.0	25	EPA 6010C	08/02/12 12:14	JDH	
Zinc [7440-66-6] ^	**248**		ug/L	1	3.80	10.0	10	EPA 6010C	08/02/12 12:14	JDH	

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Description: 1107-MW15d
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C208446-02
Sampled: 07/27/12 11:40
Sampled By: Daniel Forbes

Received: 07/30/12 08:50
Work Order: C208446

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] ^	**18000**	B	ug/L	1	430	5000	NE	EPA 300.0	08/06/12 17:38	CCB	QB-01
Sulfate as SO4 [14808-79-8] ^	**120000**	JBD	ug/L	2	80	10000	250000	EPA 300.0	08/07/12 11:44	CCB	QB-01
Total Alkalinity as CaCO3 [471-34-1] ^	**130000**		ug/L	1	12000	15000	NE	EPA 310.2	08/01/12 17:09	CCB	
Total Dissolved Solids [ECL-0156] ^	**420000**		ug/L	1	10000	10000	NE	SM 2540C	08/03/12 14:05	MPL	

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

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Description: 1107-TripBlank
Matrix: Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C208446-03
Sampled: 07/27/12 08:05
Sampled By: ENCO

Received: 07/30/12 08:50
Work Order: C208446

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	08/02/12 03:50	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	08/02/12 03:50	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	08/02/12 03:50	JKG	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	08/02/12 03:50	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	08/02/12 03:50	JKG	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	08/02/12 03:50	JKG	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	08/02/12 03:50	JKG	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	08/02/12 03:50	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	08/02/12 03:50	JKG	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	08/02/12 03:50	JKG	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	08/02/12 03:50	JKG	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	08/02/12 03:50	JKG	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	08/02/12 03:50	JKG	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	08/02/12 03:50	JKG	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	08/02/12 03:50	JKG	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	08/02/12 03:50	JKG	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	08/02/12 03:50	JKG	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	08/02/12 03:50	JKG	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	08/02/12 03:50	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	08/02/12 03:50	JKG	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	08/02/12 03:50	JKG	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	08/02/12 03:50	JKG	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0	NE	EPA 8260B	08/02/12 03:50	JKG	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	08/02/12 03:50	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	08/02/12 03:50	JKG	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	08/02/12 03:50	JKG	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	08/02/12 03:50	JKG	

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Description: 1107-TripBlank
Matrix: Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C208446-03
Sampled: 07/27/12 08:05
Sampled By: ENCO

Received: 07/30/12 08:50
Work Order: C208446

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	08/02/12 03:50	JKG	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	08/02/12 03:50	JKG	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*43*	*1*	*50.0*	*85 %*	*51-122*	*2G31012*	*EPA 8260B*	*08/02/12 03:50*	*JKG*	
Dibromofluoromethane	*43*	*1*	*50.0*	*86 %*	*68-117*	*2G31012*	*EPA 8260B*	*08/02/12 03:50*	*JKG*	
Toluene-d8	*44*	*1*	*50.0*	*88 %*	*67-127*	*2G31012*	*EPA 8260B*	*08/02/12 03:50*	*JKG*	

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

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Description: 1107-SW6 | **Lab Sample ID:** C209177-01 | **Received:** 08/07/12 13:20

Matrix: Surface Water | **Sampled:** 08/03/12 11:40 | **Work Order:** C209177

Project: Buncombe County Phase 5 C&D | **Sampled By:** Daniel Forbes

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	08/11/12 11:34	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	08/11/12 11:34	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	08/11/12 11:34	JKG	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	08/11/12 11:34	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	08/11/12 11:34	JKG	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	08/11/12 11:34	JKG	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	08/11/12 11:34	JKG	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	08/11/12 11:34	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	08/11/12 11:34	JKG	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	08/11/12 11:34	JKG	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	08/11/12 11:34	JKG	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	08/11/12 11:34	JKG	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	08/11/12 11:34	JKG	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	08/11/12 11:34	JKG	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	08/11/12 11:34	JKG	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	08/11/12 11:34	JKG	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	08/11/12 11:34	JKG	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	08/11/12 11:34	JKG	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	08/11/12 11:34	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	08/11/12 11:34	JKG	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	08/11/12 11:34	JKG	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	08/11/12 11:34	JKG	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0	NE	EPA 8260B	08/11/12 11:34	JKG	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	08/11/12 11:34	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	08/11/12 11:34	JKG	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	08/11/12 11:34	JKG	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	08/11/12 11:34	JKG	

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Description: 1107-SW6 | **Lab Sample ID:** C209177-01 | **Received:** 08/07/12 13:20

Matrix: Surface Water | **Sampled:** 08/03/12 11:40 | **Work Order:** C209177

Project: Buncombe County Phase 5 C&D | **Sampled By:** Daniel Forbes

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	08/11/12 11:34	JKG	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	08/11/12 11:34	JKG	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*84 %*	*51-122*	*2H10021*	*EPA 8260B*	*08/11/12 11:34*	*JKG*	
Dibromofluoromethane	*41*	*1*	*50.0*	*81 %*	*68-117*	*2H10021*	*EPA 8260B*	*08/11/12 11:34*	*JKG*	
Toluene-d8	*39*	*1*	*50.0*	*78 %*	*67-127*	*2H10021*	*EPA 8260B*	*08/11/12 11:34*	*JKG*	

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Description:	1107-SW6	**Lab Sample ID:**	C209177-01	**Received:**	08/07/12 13:20
Matrix:	Surface Water	**Sampled:**	08/03/12 11:40	**Work Order:**	C209177
Project:	Buncombe County Phase 5 C&D	**Sampled By:**	Daniel Forbes		

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	08/13/12 17:09	T1D	

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Description: 1107-SW6 | **Lab Sample ID:** C209177-01 | **Received:** 08/07/12 13:20

Matrix: Surface Water | **Sampled:** 08/03/12 11:40 | **Work Order:** C209177

Project: Buncombe County Phase 5 C&D | **Sampled By:** Daniel Forbes

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	08/21/12 12:34	VLO	
Arsenic [7440-38-2] ^	**3.36**	J	ug/L	1	2.80	10.0	10	EPA 6010C	08/08/12 12:42	JDH	
Barium [7440-39-3] ^	**87.6**	J	ug/L	1	1.00	10.0	100	EPA 6010C	08/08/12 12:42	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	08/08/12 12:42	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	08/08/12 12:42	JDH	
Chromium [7440-47-3] ^	**3.82**	J	ug/L	1	1.00	10.0	10	EPA 6010C	08/08/12 12:42	JDH	
Cobalt [7440-48-4] ^	**1.10**	J	ug/L	1	1.10	10.0	10	EPA 6010C	08/08/12 12:42	JDH	
Copper [7440-50-8] ^	**3.39**	J	ug/L	1	1.60	10.0	10	EPA 6010C	08/08/12 12:42	JDH	
Iron [7439-89-6] ^	**2760**		ug/L	1	22.0	50.0	300	EPA 6010C	08/08/12 12:42	JDH	
Lead [7439-92-1] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	08/08/12 12:42	JDH	
Manganese [7439-96-5] ^	**79.0**		ug/L	1	1.10	10.0	50	EPA 6010C	08/08/12 12:42	JDH	
Nickel [7440-02-0] ^	**2.87**	J	ug/L	1	1.80	10.0	50	EPA 6010C	08/08/12 12:42	JDH	
Selenium [7782-49-2] ^	0.830	U	ug/L	1	0.830	1.00	10	EPA 6020A	08/21/12 12:34	VLO	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	08/08/12 12:42	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	08/21/12 12:34	VLO	
Vanadium [7440-62-2] ^	**6.85**	J	ug/L	1	1.40	10.0	25	EPA 6010C	08/08/12 12:42	JDH	
Zinc [7440-66-6] ^	**9.03**	J	ug/L	1	3.80	10.0	10	EPA 6010C	08/08/12 12:42	JDH	

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Description: 1107-SW6
Matrix: Surface Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C209177-01
Sampled: 08/03/12 11:40
Sampled By: Daniel Forbes

Received: 08/07/12 13:20
Work Order: C209177

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] ^	**4000**	JB	ug/L	1	430	5000	NE	EPA 300.0	08/16/12 05:04	CCB	J-01
Sulfate as SO4 [14808-79-8] ^	**7700**	J	ug/L	1	40	5000	250000	EPA 300.0	08/16/12 05:04	CCB	
Total Alkalinity as CaCO3 [471-34-1] ^	**65000**		ug/L	1	12000	15000	NE	EPA 310.2	08/14/12 13:40	CCB	
Total Dissolved Solids [ECL-0156] ^	**150000**		ug/L	1	10000	10000	NE	SM 2540C	08/08/12 10:38	MPL	

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

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 2G31012 - EPA 5030B_MS

Blank (2G31012-BLK1) Prepared: 07/31/2012 09:52 Analyzed: 08/01/2012 19:29

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							

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 2G31012 - EPA 5030B_MS

Blank (2G31012-BLK1) Continued Prepared: 07/31/2012 09:52 Analyzed: 08/01/2012 19:29

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Surrogate: 4-Bromofluorobenzene	*42*			*ug/L*	*50.0*		*85*	*51-122*			
Surrogate: Dibromofluoromethane	*42*			*ug/L*	*50.0*		*84*	*68-117*			
Surrogate: Toluene-d8	*44*			*ug/L*	*50.0*		*87*	*67-127*			

LCS (2G31012-BS1) Prepared: 07/31/2012 09:52 Analyzed: 08/01/2012 19:58

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		101	81-134			
Chlorobenzene	22		1.0	ug/L	20.0		110	83-117			
Toluene	21		1.0	ug/L	20.0		106	71-118			
Trichloroethene	23		1.0	ug/L	20.0		114	74-119			
Surrogate: 4-Bromofluorobenzene	*42*			*ug/L*	*50.0*		*85*	*51-122*			
Surrogate: Dibromofluoromethane	*41*			*ug/L*	*50.0*		*82*	*68-117*			
Surrogate: Toluene-d8	*43*			*ug/L*	*50.0*		*87*	*67-127*			

Matrix Spike (2G31012-MS1) Prepared: 07/31/2012 09:52 Analyzed: 08/01/2012 20:28

Source: C208539-01

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	98	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	21		1.0	ug/L	20.0	0.14 U	105	71-118			
Trichloroethene	23		1.0	ug/L	20.0	0.15 U	117	74-119			
Surrogate: 4-Bromofluorobenzene	*42*			*ug/L*	*50.0*		*84*	*51-122*			
Surrogate: Dibromofluoromethane	*42*			*ug/L*	*50.0*		*84*	*68-117*			
Surrogate: Toluene-d8	*45*			*ug/L*	*50.0*		*90*	*67-127*			

Matrix Spike Dup (2G31012-MSD1) Prepared: 07/31/2012 09:52 Analyzed: 08/01/2012 20:57

Source: C208539-01

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	4	20	
Benzene	19		1.0	ug/L	20.0	0.15 U	97	81-134	3	17	
Chlorobenzene	21		1.0	ug/L	20.0	0.17 U	105	83-117	0.8	16	
Toluene	21		1.0	ug/L	20.0	0.14 U	105	71-118	0.1	17	
Trichloroethene	22		1.0	ug/L	20.0	0.15 U	110	74-119	6	22	
Surrogate: 4-Bromofluorobenzene	*44*			*ug/L*	*50.0*		*88*	*51-122*			
Surrogate: Dibromofluoromethane	*42*			*ug/L*	*50.0*		*83*	*68-117*			
Surrogate: Toluene-d8	*44*			*ug/L*	*50.0*		*89*	*67-127*			

Batch 2H10021 - EPA 5030B_MS

Blank (2H10021-BLK1) Prepared: 08/10/2012 12:55 Analyzed: 08/11/2012 02:15

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 2H10021 - EPA 5030B_MS

Blank (2H10021-BLK1) Continued Prepared: 08/10/2012 12:55 Analyzed: 08/11/2012 02:15

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							

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 2H10021 - EPA 5030B_MS

Blank (2H10021-BLK1) Continued Prepared: 08/10/2012 12:55 Analyzed: 08/11/2012 02:15

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Surrogate: 4-Bromofluorobenzene	*44*			*ug/L*	*50.0*		*87*	*51-122*			
Surrogate: Dibromofluoromethane	*40*			*ug/L*	*50.0*		*80*	*68-117*			
Surrogate: Toluene-d8	*38*			*ug/L*	*50.0*		*77*	*67-127*			

LCS (2H10021-BS1) Prepared: 08/10/2012 12:55 Analyzed: 08/11/2012 02:45

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		99	75-133			
Benzene	19		1.0	ug/L	20.0		93	81-134			
Chlorobenzene	21		1.0	ug/L	20.0		103	83-117			
Toluene	20		1.0	ug/L	20.0		102	71-118			
Trichloroethene	19		1.0	ug/L	20.0		93	74-119			
Surrogate: 4-Bromofluorobenzene	*45*			*ug/L*	*50.0*		*90*	*51-122*			
Surrogate: Dibromofluoromethane	*39*			*ug/L*	*50.0*		*79*	*68-117*			
Surrogate: Toluene-d8	*40*			*ug/L*	*50.0*		*80*	*67-127*			

Matrix Spike (2H10021-MS1) Prepared: 08/10/2012 12:55 Analyzed: 08/11/2012 03:14

Source: C209149-11

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	17		1.0	ug/L	20.0	0.21 U	87	75-133			
Benzene	17		1.0	ug/L	20.0	0.15 U	86	81-134			
Chlorobenzene	19		1.0	ug/L	20.0	0.17 U	93	83-117			
Toluene	19		1.0	ug/L	20.0	0.14 U	94	71-118			
Trichloroethene	18		1.0	ug/L	20.0	0.15 U	90	74-119			
Surrogate: 4-Bromofluorobenzene	*44*			*ug/L*	*50.0*		*88*	*51-122*			
Surrogate: Dibromofluoromethane	*38*			*ug/L*	*50.0*		*76*	*68-117*			
Surrogate: Toluene-d8	*39*			*ug/L*	*50.0*		*78*	*67-127*			

Matrix Spike Dup (2H10021-MSD1) Prepared: 08/10/2012 12:55 Analyzed: 08/11/2012 03:43

Source: C209149-11

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	88	75-133	0.9	20	
Benzene	17		1.0	ug/L	20.0	0.15 U	84	81-134	2	17	
Chlorobenzene	19		1.0	ug/L	20.0	0.17 U	95	83-117	2	16	
Toluene	19		1.0	ug/L	20.0	0.14 U	93	71-118	0.4	17	
Trichloroethene	18		1.0	ug/L	20.0	0.15 U	90	74-119	0	22	
Surrogate: 4-Bromofluorobenzene	*45*			*ug/L*	*50.0*		*90*	*51-122*			
Surrogate: Dibromofluoromethane	*38*			*ug/L*	*50.0*		*76*	*68-117*			
Surrogate: Toluene-d8	*39*			*ug/L*	*50.0*		*79*	*67-127*			

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 2G30022 - EPA 7470A

Blank (2G30022-BLK1) Prepared: 07/31/2012 12:13 Analyzed: 07/31/2012 17:26

QUALITY CONTROL

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 2G30022 - EPA 7470A

Blank (2G30022-BLK1) Continued Prepared: 07/31/2012 12:13 Analyzed: 07/31/2012 17:26

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 (2G30022-BS1) Prepared: 07/31/2012 12:13 Analyzed: 07/31/2012 17:31

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	5.82		0.200	ug/L	5.00		116	80-120			

Matrix Spike (2G30022-MS1) Prepared: 07/31/2012 12:13 Analyzed: 07/31/2012 17:35

Source: C208390-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	6.46		0.200	ug/L	5.00	0.170 U	129	75-125			QM-07

Matrix Spike Dup (2G30022-MSD1) Prepared: 07/31/2012 12:13 Analyzed: 07/31/2012 17:37

Source: C208390-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	6.40		0.200	ug/L	5.00	0.170 U	128	75-125	0.9	25	QM-07

Post Spike (2G30022-PS1) Prepared: 07/31/2012 12:13 Analyzed: 07/31/2012 17:39

Source: C208390-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	6.02		0.200	ug/L	5.00	-0.122	123	75-125			

Batch 2H13017 - EPA 7470A

Blank (2H13017-BLK1) Prepared: 08/13/2012 10:40 Analyzed: 08/13/2012 16:50

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 (2H13017-BS1) Prepared: 08/13/2012 10:40 Analyzed: 08/13/2012 16:52

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	5.31		0.200	ug/L	5.00		106	80-120			

Matrix Spike (2H13017-MS1) Prepared: 08/13/2012 10:40 Analyzed: 08/13/2012 16:58

Source: C209231-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	6.15		0.200	ug/L	5.00	0.949	104	75-125			

Matrix Spike Dup (2H13017-MSD1) Prepared: 08/13/2012 10:40 Analyzed: 08/13/2012 17:00

Source: C209231-03

QUALITY CONTROL

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 2H13017 - EPA 7470A

Matrix Spike Dup (2H13017-MSD1) Continued Prepared: 08/13/2012 10:40 Analyzed: 08/13/2012 17:00

Source: C209231-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	6.23		0.200	ug/L	5.00	0.949	106	75-125	1	25	

Post Spike (2H13017-PS1) Prepared: 08/13/2012 10:40 Analyzed: 08/13/2012 17:02

Source: C209231-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	5.23		0.200	ug/L	5.00	0.949	86	75-125			

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

Batch 2G31017 - EPA 3005A

Blank (2G31017-BLK1) Prepared: 07/31/2012 12:50 Analyzed: 08/02/2012 10:57

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	2.80	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	1.00	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	1.90	U	10.0	ug/L							
Manganese	1.10	U	10.0	ug/L							
Nickel	1.80	U	10.0	ug/L							
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 (2G31017-BS1) Prepared: 07/31/2012 12:50 Analyzed: 08/02/2012 10:59

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	201		10.0	ug/L	200		100	80-120			
Barium	201		10.0	ug/L	200		100	80-120			
Beryllium	19.8		1.00	ug/L	20.0		99	80-120			
Cadmium	19.9		1.00	ug/L	20.0		99	80-120			
Chromium	197		10.0	ug/L	200		99	80-120			
Cobalt	201		10.0	ug/L	200		101	80-120			
Copper	193		10.0	ug/L	200		96	80-120			
Iron	1010		50.0	ug/L	1000		101	80-120			
Lead	202		10.0	ug/L	200		101	80-120			
Manganese	197		10.0	ug/L	200		99	80-120			
Nickel	199		10.0	ug/L	200		99	80-120			
Silver	202		10.0	ug/L	200		101	80-120			
Vanadium	199		10.0	ug/L	200		100	80-120			
Zinc	207		10.0	ug/L	200		103	80-120			

QUALITY CONTROL

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

Batch 2G31017 - EPA 3005A

Matrix Spike (2G31017-MS1) Prepared: 07/31/2012 12:50 Analyzed: 08/02/2012 11:05

Source: C207811-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	207		10.0	ug/L	200	2.80 U	104	75-125			
Barium	321		10.0	ug/L	200	112	105	75-125			
Beryllium	20.1		1.00	ug/L	20.0	0.100 U	101	75-125			
Cadmium	20.6		1.00	ug/L	20.0	0.360 U	103	75-125			
Chromium	199		10.0	ug/L	200	1.00 U	100	75-125			
Cobalt	198		10.0	ug/L	200	1.10 U	99	75-125			
Copper	249		10.0	ug/L	200	46.4	101	75-125			
Iron	1070		50.0	ug/L	1000	22.0 U	107	75-125			
Lead	206		10.0	ug/L	200	6.34	100	75-125			
Manganese	198		10.0	ug/L	200	1.27	99	75-125			
Nickel	205		10.0	ug/L	200	2.46	101	75-125			
Silver	207		10.0	ug/L	200	1.90 U	103	75-125			
Vanadium	203		10.0	ug/L	200	1.40 U	102	75-125			
Zinc	244		10.0	ug/L	200	39.9	102	75-125			

Matrix Spike Dup (2G31017-MSD1) Prepared: 07/31/2012 12:50 Analyzed: 08/02/2012 11:07

Source: C207811-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	191		10.0	ug/L	200	2.80 U	96	75-125	8	20	
Barium	304		10.0	ug/L	200	112	96	75-125	6	20	
Beryllium	19.9		1.00	ug/L	20.0	0.100 U	99	75-125	1	20	
Cadmium	19.2		1.00	ug/L	20.0	0.360 U	96	75-125	7	20	
Chromium	197		10.0	ug/L	200	1.00 U	99	75-125	0.9	20	
Cobalt	194		10.0	ug/L	200	1.10 U	97	75-125	2	20	
Copper	249		10.0	ug/L	200	46.4	102	75-125	0.3	20	
Iron	1010		50.0	ug/L	1000	22.0 U	101	75-125	6	20	
Lead	204		10.0	ug/L	200	6.34	99	75-125	1	20	
Manganese	196		10.0	ug/L	200	1.27	98	75-125	1	20	
Nickel	193		10.0	ug/L	200	2.46	95	75-125	6	20	
Silver	206		10.0	ug/L	200	1.90 U	103	75-125	0.3	20	
Vanadium	203		10.0	ug/L	200	1.40 U	101	75-125	0.4	20	
Zinc	228		10.0	ug/L	200	39.9	94	75-125	7	20	

Post Spike (2G31017-PS1) Prepared: 07/31/2012 12:50 Analyzed: 08/02/2012 11:09

Source: C207811-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	0.196		0.0100	mg/L	0.200	0.00115	98	80-120			
Barium	0.307		0.0100	mg/L	0.200	0.112	98	80-120			
Beryllium	0.0193		0.00100	mg/L	0.0200	-2.78E-5	97	80-120			
Cadmium	0.0196		0.00100	mg/L	0.0200	4.86E-5	98	80-120			
Chromium	0.191		0.0100	mg/L	0.200	-0.000186	95	80-120			
Cobalt	0.188		0.0100	mg/L	0.200	0.000652	94	80-120			
Copper	0.240		0.0100	mg/L	0.200	0.0464	97	80-120			
Iron	1.02		0.0500	mg/L	1.00	0.00170	101	80-120			

QUALITY CONTROL

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

Batch 2G31017 - EPA 3005A

Post Spike (2G31017-PS1) Continued Prepared: 07/31/2012 12:50 Analyzed: 08/02/2012 11:09

Source: C207811-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	0.196		0.0100	mg/L	0.200	0.00634	95	80-120			
Manganese	0.191		0.0100	mg/L	0.200	0.00127	95	80-120			
Nickel	0.196		0.0100	mg/L	0.200	0.00246	97	80-120			
Silver	0.179		0.0100	mg/L	0.200	-0.000544	90	80-120			
Vanadium	0.195		0.0100	mg/L	0.200	-9.67E-5	98	80-120			
Zinc	0.234		0.0100	mg/L	0.200	0.0399	97	80-120			

Batch 2G31018 - EPA 3005A

Blank (2G31018-BLK1) Prepared: 07/31/2012 12:54 Analyzed: 08/07/2012 11:38

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	0.220	U	2.00	ug/L							
Selenium	0.830	U	1.00	ug/L							
Thallium	0.110	U	1.00	ug/L							

LCS (2G31018-BS1) Prepared: 07/31/2012 12:54 Analyzed: 08/07/2012 11:42

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	204		2.00	ug/L	200		102	80-120			
Selenium	217		1.00	ug/L	200		109	80-120			
Thallium	204		1.00	ug/L	200		102	80-120			

Matrix Spike (2G31018-MS1) Prepared: 07/31/2012 12:54 Analyzed: 08/07/2012 11:50

Source: C207811-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	205		2.00	ug/L	200	0.591	102	75-125			
Selenium	220		1.00	ug/L	200	0.830 U	110	75-125			
Thallium	186		1.00	ug/L	200	0.110 U	93	75-125			

Matrix Spike Dup (2G31018-MSD1) Prepared: 07/31/2012 12:54 Analyzed: 08/07/2012 11:54

Source: C207811-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	206		2.00	ug/L	200	0.591	103	75-125	0.3	20	
Selenium	221		1.00	ug/L	200	0.830 U	111	75-125	0.7	20	
Thallium	189		1.00	ug/L	200	0.110 U	95	75-125	2	20	

Post Spike (2G31018-PS1) Prepared: 07/31/2012 12:54 Analyzed: 08/07/2012 11:58

Source: C207811-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	212		2.00	ug/L	200	0.591	106	80-120			
Selenium	235		1.00	ug/L	200	0.475	117	80-120			
Thallium	191		1.00	ug/L	200	0.101	96	80-120			

QUALITY CONTROL

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

Batch 2G31018 - EPA 3005A

Batch 2H07025 - EPA 3005A

Blank (2H07025-BLK1) Prepared: 08/07/2012 15:57 Analyzed: 08/08/2012 11:07

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	2.80	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	1.00	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	1.90	U	10.0	ug/L							
Manganese	1.10	U	10.0	ug/L							
Nickel	1.80	U	10.0	ug/L							
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 (2H07025-BS1) Prepared: 08/07/2012 15:57 Analyzed: 08/08/2012 11:18

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	202		10.0	ug/L	200		101	80-120			
Barium	210		10.0	ug/L	200		105	80-120			
Beryllium	19.9		1.00	ug/L	20.0		99	80-120			
Cadmium	20.3		1.00	ug/L	20.0		101	80-120			
Chromium	202		10.0	ug/L	200		101	80-120			
Cobalt	208		10.0	ug/L	200		104	80-120			
Copper	203		10.0	ug/L	200		101	80-120			
Iron	1040		50.0	ug/L	1000		104	80-120			
Lead	204		10.0	ug/L	200		102	80-120			
Manganese	202		10.0	ug/L	200		101	80-120			
Nickel	202		10.0	ug/L	200		101	80-120			
Silver	198		10.0	ug/L	200		99	80-120			
Vanadium	205		10.0	ug/L	200		102	80-120			
Zinc	202		10.0	ug/L	200		101	80-120			

Matrix Spike (2H07025-MS1) Prepared: 08/07/2012 15:57 Analyzed: 08/08/2012 12:10

Source: C208492-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	207		10.0	ug/L	200	5.34	101	75-125			
Barium	239		10.0	ug/L	200	40.6	99	75-125			
Beryllium	20.2		1.00	ug/L	20.0	0.100 U	101	75-125			
Cadmium	20.6		1.00	ug/L	20.0	0.360 U	103	75-125			
Chromium	200		10.0	ug/L	200	1.00 U	100	75-125			
Cobalt	208		10.0	ug/L	200	1.10 U	104	75-125			
Copper	206		10.0	ug/L	200	6.24	100	75-125			
Iron	1390		50.0	ug/L	1000	327	106	75-125			

QUALITY CONTROL

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

Batch 2H07025 - EPA 3005A

Matrix Spike (2H07025-MS1) Continued Prepared: 08/07/2012 15:57 Analyzed: 08/08/2012 12:10

Source: C208492-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	204		10.0	ug/L	200	1.90 U	102	75-125			
Manganese	862		10.0	ug/L	200	657	102	75-125			
Nickel	200		10.0	ug/L	200	1.80 U	100	75-125			
Silver	205		10.0	ug/L	200	1.90 U	102	75-125			
Vanadium	208		10.0	ug/L	200	1.40 U	104	75-125			
Zinc	776		10.0	ug/L	200	572	102	75-125			

Matrix Spike Dup (2H07025-MSD1) Prepared: 08/07/2012 15:57 Analyzed: 08/08/2012 12:12

Source: C208492-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	213		10.0	ug/L	200	5.34	104	75-125	3	20	
Barium	241		10.0	ug/L	200	40.6	100	75-125	0.6	20	
Beryllium	20.2		1.00	ug/L	20.0	0.100 U	101	75-125	0.3	20	
Cadmium	20.5		1.00	ug/L	20.0	0.360 U	102	75-125	0.6	20	
Chromium	201		10.0	ug/L	200	1.00 U	101	75-125	0.3	20	
Cobalt	209		10.0	ug/L	200	1.10 U	104	75-125	0.4	20	
Copper	209		10.0	ug/L	200	6.24	101	75-125	1	20	
Iron	1580		50.0	ug/L	1000	327	125	75-125	13	20	
Lead	202		10.0	ug/L	200	1.90 U	101	75-125	0.6	20	
Manganese	868		10.0	ug/L	200	657	105	75-125	0.7	20	
Nickel	201		10.0	ug/L	200	1.80 U	100	75-125	0.5	20	
Silver	206		10.0	ug/L	200	1.90 U	103	75-125	0.5	20	
Vanadium	209		10.0	ug/L	200	1.40 U	104	75-125	0.2	20	
Zinc	772		10.0	ug/L	200	572	100	75-125	0.6	20	

Post Spike (2H07025-PS1) Prepared: 08/07/2012 15:57 Analyzed: 08/08/2012 12:14

Source: C208492-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	0.197		0.0100	mg/L	0.200	0.00534	96	80-120			
Barium	0.223		0.0100	mg/L	0.200	0.0406	91	80-120			
Beryllium	0.0191		0.00100	mg/L	0.0200	-8.85E-5	96	80-120			
Cadmium	0.0194		0.00100	mg/L	0.0200	-0.000166	98	80-120			
Chromium	0.190		0.0100	mg/L	0.200	0.000512	95	80-120			
Cobalt	0.198		0.0100	mg/L	0.200	-4.37E-5	99	80-120			
Copper	0.197		0.0100	mg/L	0.200	0.00624	95	80-120			
Iron	1.28		0.0500	mg/L	1.00	0.327	95	80-120			
Lead	0.193		0.0100	mg/L	0.200	0.000165	96	80-120			
Manganese	0.833		0.0100	mg/L	0.200	0.657	88	80-120			
Nickel	0.190		0.0100	mg/L	0.200	0.000607	95	80-120			
Silver	0.205		0.0100	mg/L	0.200	0.00105	102	80-120			
Vanadium	0.197		0.0100	mg/L	0.200	0.000837	98	80-120			
Zinc	0.747		0.0100	mg/L	0.200	0.572	88	80-120			

Batch 2H15012 - EPA 3005A

QUALITY CONTROL

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

Batch 2H15012 - EPA 3005A

Blank (2H15012-BLK1) Prepared: 08/15/2012 09:51 Analyzed: 08/21/2012 12:26

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	0.220	U	2.00	ug/L							
Selenium	0.830	U	1.00	ug/L							
Thallium	0.110	U	1.00	ug/L							

LCS (2H15012-BS1) Prepared: 08/15/2012 09:51 Analyzed: 08/21/2012 12:30

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	211		2.00	ug/L	200		106	80-120			
Selenium	227		1.00	ug/L	200		113	80-120			
Thallium	209		1.00	ug/L	200		104	80-120			

Matrix Spike (2H15012-MS1) Prepared: 08/15/2012 09:51 Analyzed: 08/21/2012 12:38

Source: C209177-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	191		2.00	ug/L	200	0.220 U	95	75-125			
Selenium	212		1.00	ug/L	200	0.830 U	106	75-125			
Thallium	198		1.00	ug/L	200	0.110 U	99	75-125			

Matrix Spike Dup (2H15012-MSD1) Prepared: 08/15/2012 09:51 Analyzed: 08/21/2012 12:42

Source: C209177-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	191		2.00	ug/L	200	0.220 U	95	75-125	0.03	20	
Selenium	213		1.00	ug/L	200	0.830 U	106	75-125	0.1	20	
Thallium	197		1.00	ug/L	200	0.110 U	98	75-125	0.6	20	

Post Spike (2H15012-PS1) Prepared: 08/15/2012 09:51 Analyzed: 08/21/2012 12:46

Source: C209177-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	216		2.00	ug/L	200	-1.48	109	80-120			
Selenium	225		1.00	ug/L	200	0.441	112	80-120			
Thallium	202		1.00	ug/L	200	0.0489	101	80-120			

Classical Chemistry Parameters - Quality Control

Batch 2H01005 - NO PREP

Blank (2H01005-BLK1) Prepared: 08/01/2012 15:23 Analyzed: 08/01/2012 16:58

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	12000	U	15000	ug/L							

LCS (2H01005-BS1) Prepared: 08/01/2012 15:23 Analyzed: 08/01/2012 16:58

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

QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 2H01005 - NO PREP

LCS (2H01005-BS1) Continued Prepared: 08/01/2012 15:23 Analyzed: 08/01/2012 16:58

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	99000		15000	ug/L	100000		99	80-120			

Matrix Spike (2H01005-MS1) Prepared: 08/01/2012 15:23 Analyzed: 08/01/2012 17:00

Source: C208391-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	40000		15000	ug/L	37800	12000 U	107	80-120			

Matrix Spike Dup (2H01005-MSD1) Prepared: 08/01/2012 15:23 Analyzed: 08/01/2012 17:01

Source: C208391-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	40000		15000	ug/L	37800	12000 U	105	80-120	2	25	

Batch 2H03001 - NO PREP

Blank (2H03001-BLK1) Prepared & Analyzed: 08/03/2012 14:05

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 (2H03001-BS1) Prepared & Analyzed: 08/03/2012 14:05

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	1000		10	mg/L	1000		96	90-110			

Duplicate (2H03001-DUP1) Prepared & Analyzed: 08/03/2012 14:05

Source: C208446-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	170000		10000	ug/L		140000			25	10	QM-12

Batch 2H05002 - NO PREP

Blank (2H05002-BLK1) Prepared: 08/05/2012 17:16 Analyzed: 08/06/2012 16:13

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	**1600**	**J**	5000	ug/L							
Sulfate as SO4	**1900**	**J**	5000	ug/L							

LCS (2H05002-BS1) Prepared: 08/05/2012 17:16 Analyzed: 08/06/2012 16:30

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	48000	B	5000	ug/L	50000		97	90-110			
Sulfate as SO4	47000	B	5000	ug/L	50000		93	90-110			

QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 2H05002 - NO PREP

Matrix Spike (2H05002-MS1) Prepared: 08/05/2012 17:16 Analyzed: 08/06/2012 16:48

Source: C208539-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	50000	B	5000	ug/L	20000	30000	103	90-110			
Sulfate as SO4	76000	B	5000	ug/L	20000	56000	102	90-110			

Matrix Spike Dup (2H05002-MSD1) Prepared: 08/05/2012 17:16 Analyzed: 08/06/2012 17:05

Source: C208539-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	51000	B	5000	ug/L	20000	30000	105	90-110	0.9	10	
Sulfate as SO4	77000	B	5000	ug/L	20000	56000	105	90-110	0.6	10	

Batch 2H08002 - NO PREP

Blank (2H08002-BLK1) Prepared & Analyzed: 08/08/2012 10:38

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 (2H08002-BS1) Prepared & Analyzed: 08/08/2012 10:38

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

Duplicate (2H08002-DUP1) Prepared & Analyzed: 08/08/2012 10:38

Source: C207618-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	1800000		10000	ug/L		1800000			1	10	

Batch 2H14026 - NO PREP

Blank (2H14026-BLK1) Prepared: 08/14/2012 10:56 Analyzed: 08/14/2012 13:27

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	12000	U	15000	ug/L							

LCS (2H14026-BS1) Prepared: 08/14/2012 10:56 Analyzed: 08/14/2012 13:28

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	99000		15000	ug/L	100000		99	80-120			

Matrix Spike (2H14026-MS1) Prepared: 08/14/2012 10:56 Analyzed: 08/14/2012 13:29

Source: C207618-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	780000		75000	ug/L	200000	600000	87	80-120			

QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 2H14026 - NO PREP

Matrix Spike Dup (2H14026-MSD1) Prepared: 08/14/2012 10:56 Analyzed: 08/14/2012 13:30

Source: C207618-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	800000		75000	ug/L	200000	600000	97	80-120	2	25	

Batch 2H15010 - NO PREP

Blank (2H15010-BLK1) Prepared: 08/15/2012 09:44 Analyzed: 08/15/2012 22:11

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	**1500**	**J**	5000	ug/L							
Sulfate as SO4	40	U	5000	ug/L							

LCS (2H15010-BS1) Prepared: 08/15/2012 09:44 Analyzed: 08/15/2012 22:28

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	48000	B	5000	ug/L	50000		96	90-110			
Sulfate as SO4	46000		5000	ug/L	50000		93	90-110			

Matrix Spike (2H15010-MS1) Prepared: 08/15/2012 09:44 Analyzed: 08/15/2012 23:17

Source: C208679-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	540000	B	50000	ug/L	200000	320000	108	90-110			
Sulfate as SO4	380000		50000	ug/L	200000	180000	100	90-110			

Matrix Spike Dup (2H15010-MSD1) Prepared: 08/15/2012 09:44 Analyzed: 08/15/2012 23:34

Source: C208679-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	540000	B	50000	ug/L	200000	320000	108	90-110	0.1	10	
Sulfate as SO4	380000		50000	ug/L	200000	180000	100	90-110	0.1	10	

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.
J-01	Result is estimated due to positive results in the associated method blank.
QB-01	The method blank had a positive result for the analyte; however, the concentration in the method blank is less than 10% of the sample result, which minimizes the impact of the deviation.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-12	Precision between duplicate samples was outside acceptance limits.
QV-01	The associated continuing calibration verification standard exhibited high bias; since the result is ND, the impact on data quality is minimal.

ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

10775 Central Port Dr.
Orlando, FL 32824
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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

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Page 1 of 1

Client Name: CDM Smith, Inc. (CD004)	Project Number: [none]
Address: 5400 GLENWOOD AVE SUITE 300	Project Name/Desc: Buncombe County Phase 5 C&D
City/ST/Zip: RALEIGH, NC 27612-	PO # / Billing Info:
Tel: (919) 325-3569 Fax: (919) 781-5730	Reporting Contact: Mathew Colone
Sampler(s) Name, Affiliation (Print): DANIEL FORBES	Billing Contact: Accounts Payable
Sampler(s) Signature: [signature]	Site Location / Time Zone:

Requested Analyses

Requested Turnaround Times

Note : Rush requests subject to acceptance by the facility

X Standard

___ Expedited

Due ___/___/___

Lab Workorder: C208446

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,Tl,V,Zn	Alkalinity 310.2,Chloride 300,TDS SM2540C	Hg	Sulfate 300						Sample Comments
	1107-MW15s	7-27-12	0805	G	GW	5	X	X	X	X	X						
	1107-MW15d	7-27-12	1140	G	GW	5	X	X	X	X	X						
	~~1107-SW6~~				~~SW~~	~~5~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~						Not Sampled
	1107-TripBlank	—	—	G	WA	2	X										

<-- Total # of Containers

Sample Kit Prepared By: JK	Date/Time: 7-17	Relinquished By: [signature]	Date/Time: 7/30/12 0730	Received By: [signature]	Date/Time: ~~0800~~ 7/30/12 730
Comments/Special Reporting Requirements: Metals for MW-15s collected on 7/27/12 at 1145.		Relinquished By: [signature]	Date/Time: 7/30/12 ~~730~~	Received By: Rachel Yonish	Date/Time: 730 850
		Relinquished By:	Date/Time:	Received By:	Date/Time:
		Cooler #'s & Temps on Receipt: Blue 0.9°C		Condition Upon Receipt: X Acceptable ___ Unacceptable	

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

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

ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

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Cary, NC 27511
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Page 1 of 1

Client Name: CDM Smith Inc. (CD004)	Project Number:
Address: 5400 Glenwood Ave, Suite 300	Project Name/Desc: Buncombe County Phase 5 CTI
City/ST/Zip: Raleigh, NC 27612	PO # / Billing Info:
Tel: 919-787-5620 Fax: 919-781-5730	Reporting Contact: Mathew Colone
Sampler(s) Name, Affiliation (Print): DANIEL FORBES	Billing Contact: Accounts Payable
Sampler(s) Signature: Dal Forbes	Site Location / Time Zone:

Requested Analyses: 8260B Appendix I / Extended; Appendix I Metals; Alkalinity 310.2, Chloride 300, TDS SM2540C; H_2S; Sulfate 300

Requested Turnaround Times

Note : Rush requests subject to acceptance by the facility

X Standard

___ Expedited

Due ___/___/___

Lab Workorder: C209177

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 I / Extended	Appendix I Metals	Alkalinity 310.2, Chloride 300, TDS SM2540C	H_2S	Sulfate 300						Sample Comments
.	SW-6	8/3/12	1140	G	SW	5	/	/	/	/	/						

<-- Total # of Containers

Sample Kit Prepared By	Date/Time	Relinquished By: Dal Forbes	Date/Time: 8/7/12	Received By: Rachel Yonesi	Date/Time: 8/7/12 1025
Comments/Special Reporting Requirements		Relinquished By	Date/Time	Received By	Date/Time
		Relinquished By	Date/Time	Received By	Date/Time: 8/7/12 1200
		Cooler #'s & Temps on Receipt: 1.2°C		Condition Upon Receipt: X Acceptable ___ Unacceptable	

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

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

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

Tuesday, September 4, 2012

CDM Smith, Inc. (CD004)

Attn: Mathew Colone

5400 GLENWOOD AVE SUITE 300

RALEIGH, NC 27612-

RE: Laboratory Results for
Project Number: [none], Project Name/Desc: Buncombe County Phase 5 C&D
ENCO Workorder(s): C209533

Dear Mathew Colone,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Monday, August 20, 2012.

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,

Chuck Smith

Project Manager

Enclosure(s)

The total number of pages in this report, including this page is 22.

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: 1107-MW15s **Lab ID: C209533-01** **Sampled: 08/17/12 08:10** **Received: 08/20/12 09:10**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 300.0	09/14/12	08/28/12 09:41	8/30/2012 02:41
EPA 310.2	08/31/12	08/23/12 07:25	8/23/2012 09:47
EPA 6010C	02/13/13	08/21/12 10:34	8/22/2012 13:20
EPA 6020A	02/13/13	08/21/12 10:36	8/27/2012 10:31
EPA 7470A	09/14/12	08/21/12 10:29	8/21/2012 17:57
SM 2540C	08/24/12	08/23/12 14:46	8/23/2012 14:46

Client ID: 1107-MW15d **Lab ID: C209533-02** **Sampled: 08/16/12 16:00** **Received: 08/20/12 09:10**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 300.0	09/13/12	08/28/12 09:41	8/30/2012 02:57
EPA 310.2	08/30/12	08/23/12 07:25	8/23/2012 09:47
EPA 6010C	02/12/13	08/21/12 10:34	8/22/2012 13:41
EPA 6020A	02/12/13	08/21/12 10:36	8/27/2012 10:11
EPA 7470A	09/13/12	08/21/12 10:29	8/21/2012 18:19
EPA 8260B	08/30/12	08/23/12 12:11	8/24/2012 04:20
SM 2540C	08/23/12	08/23/12 14:46	8/23/2012 14:46

Client ID: 1107-TripBlank **Lab ID: C209533-03** **Sampled: 08/16/12 16:00** **Received: 08/20/12 09:10**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	08/30/12	08/23/12 12:11	8/24/2012 04:49

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NORTH CAROLINA SWS SAMPLE DETECTION SUMMARY

Client ID: 1107-MW15s **Lab ID: C209533-01**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Antimony - Total	0.443	J	1	0.220	2.00	6	ug/L	EPA 6020A	
Barium - Total	99.7	J	1	1.00	10.0	100	ug/L	EPA 6010C	
Chloride	13000	B	1	430	5000	NE	ug/L	EPA 300.0	J-01
Chromium - Total	1.75	J	1	1.00	10.0	10	ug/L	EPA 6010C	
Cobalt - Total	1.22	J	1	1.10	10.0	10	ug/L	EPA 6010C	
Iron - Total	974		1	22.0	50.0	300	ug/L	EPA 6010C	
Manganese - Total	52.7		1	1.10	10.0	50	ug/L	EPA 6010C	
Nickel - Total	2.76	J	1	1.80	10.0	50	ug/L	EPA 6010C	
Sulfate as SO4	11000	J	1	40	5000	250000	ug/L	EPA 300.0	
Total Alkalinity as CaCO3	32000		1	12000	15000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	30000		1	10000	10000	NE	ug/L	SM 2540C	
Vanadium - Total	2.93	J	1	1.40	10.0	25	ug/L	EPA 6010C	
Zinc - Total	8.44	J	1	3.80	10.0	10	ug/L	EPA 6010C	

Client ID: 1107-MW15d **Lab ID: C209533-02**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Acetone	4.5	J	1	1.2	5.0	100	ug/L	EPA 8260B	
Antimony - Total	0.971	J	1	0.220	2.00	6	ug/L	EPA 6020A	
Barium - Total	179		1	1.00	10.0	100	ug/L	EPA 6010C	
Chloride	18000	BD	2	860	10000	NE	ug/L	EPA 300.0	QB-01
Chromium - Total	253		1	1.00	10.0	10	ug/L	EPA 6010C	
Cobalt - Total	23.0		1	1.10	10.0	10	ug/L	EPA 6010C	
Copper - Total	8.90	J	1	1.60	10.0	10	ug/L	EPA 6010C	
Iron - Total	11800		1	22.0	50.0	300	ug/L	EPA 6010C	
Lead - Total	4.14	J	1	1.90	10.0	10	ug/L	EPA 6010C	
Manganese - Total	1130		1	1.10	10.0	50	ug/L	EPA 6010C	
Nickel - Total	143		1	1.80	10.0	50	ug/L	EPA 6010C	
Sulfate as SO4	120000	JD	2	80	10000	250000	ug/L	EPA 300.0	
Tetrahydrofuran	0.88	J	1	0.80	1.0	NE	ug/L	EPA 8260B	
Thallium - Total	0.120	J	1	0.110	1.00	5.5	ug/L	EPA 6020A	
Total Alkalinity as CaCO3	130000		1	12000	15000	NE	ug/L	EPA 310.2	
Total Dissolved Solids	380000		1	10000	10000	NE	ug/L	SM 2540C	
Vanadium - Total	27.8		1	1.40	10.0	25	ug/L	EPA 6010C	
Zinc - Total	18.4		1	3.80	10.0	10	ug/L	EPA 6010C	

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ANALYTICAL RESULTS

Description: 1107-MW15s
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C209533-01
Sampled: 08/17/12 08:10
Sampled By: Daniel Forbes

Received: 08/20/12 09:10
Work Order: C209533

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	08/21/12 17:57	T1D	

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Description: 1107-MW15s
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C209533-01
Sampled: 08/17/12 08:10
Sampled By: Daniel Forbes

Received: 08/20/12 09:10
Work Order: C209533

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] ^	**0.443**	J	ug/L	1	0.220	2.00	6	EPA 6020A	08/27/12 10:31	VLO	
Arsenic [7440-38-2] ^	2.80	U	ug/L	1	2.80	10.0	10	EPA 6010C	08/22/12 13:20	JDH	
Barium [7440-39-3] ^	**99.7**	J	ug/L	1	1.00	10.0	100	EPA 6010C	08/22/12 13:20	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	08/22/12 13:20	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	08/22/12 13:20	JDH	
Chromium [7440-47-3] ^	**1.75**	J	ug/L	1	1.00	10.0	10	EPA 6010C	08/22/12 13:20	JDH	
Cobalt [7440-48-4] ^	**1.22**	J	ug/L	1	1.10	10.0	10	EPA 6010C	08/22/12 13:20	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	08/22/12 13:20	JDH	
Iron [7439-89-6] ^	**974**		ug/L	1	22.0	50.0	300	EPA 6010C	08/22/12 13:20	JDH	
Lead [7439-92-1] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	08/22/12 13:20	JDH	
Manganese [7439-96-5] ^	**52.7**		ug/L	1	1.10	10.0	50	EPA 6010C	08/22/12 13:20	JDH	
Nickel [7440-02-0] ^	**2.76**	J	ug/L	1	1.80	10.0	50	EPA 6010C	08/22/12 13:20	JDH	
Selenium [7782-49-2] ^	0.830	U	ug/L	1	0.830	1.00	10	EPA 6020A	08/27/12 10:31	VLO	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	08/22/12 13:20	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	08/27/12 10:31	VLO	
Vanadium [7440-62-2] ^	**2.93**	J	ug/L	1	1.40	10.0	25	EPA 6010C	08/22/12 13:20	JDH	
Zinc [7440-66-6] ^	**8.44**	J	ug/L	1	3.80	10.0	10	EPA 6010C	08/22/12 13:20	JDH	

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Description: 1107-MW15s
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C209533-01
Sampled: 08/17/12 08:10
Sampled By: Daniel Forbes

Received: 08/20/12 09:10
Work Order: C209533

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**	B	ug/L	1	430	5000	NE	EPA 300.0	08/30/12 02:41	CCB	J-01
Sulfate as SO4 [14808-79-8] ^	**11000**	J	ug/L	1	40	5000	250000	EPA 300.0	08/30/12 02:41	CCB	
Total Alkalinity as CaCO3 [471-34-1] ^	**32000**		ug/L	1	12000	15000	NE	EPA 310.2	08/23/12 09:47	CCB	
Total Dissolved Solids [ECL-0156] ^	**30000**		ug/L	1	10000	10000	NE	SM 2540C	08/23/12 14:46	MPL	

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

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Description: 1107-MW15d
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C209533-02
Sampled: 08/16/12 16:00
Sampled By: Daniel Forbes

Received: 08/20/12 09:10
Work Order: C209533

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	08/24/12 04:20	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	08/24/12 04:20	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	08/24/12 04:20	JKG	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	08/24/12 04:20	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	08/24/12 04:20	JKG	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	08/24/12 04:20	JKG	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	08/24/12 04:20	JKG	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	08/24/12 04:20	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	08/24/12 04:20	JKG	
Acetone [67-64-1] ^	**4.5**	J	ug/L	1	1.2	5.0	100	EPA 8260B	08/24/12 04:20	JKG	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	08/24/12 04:20	JKG	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	08/24/12 04:20	JKG	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	08/24/12 04:20	JKG	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	08/24/12 04:20	JKG	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	08/24/12 04:20	JKG	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	08/24/12 04:20	JKG	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	08/24/12 04:20	JKG	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	08/24/12 04:20	JKG	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	08/24/12 04:20	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	08/24/12 04:20	JKG	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	08/24/12 04:20	JKG	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	08/24/12 04:20	JKG	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
Tetrahydrofuran [109-99-9] ^	**0.88**	J	ug/L	1	0.80	1.0	NE	EPA 8260B	08/24/12 04:20	JKG	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	08/24/12 04:20	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	08/24/12 04:20	JKG	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	08/24/12 04:20	JKG	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	08/24/12 04:20	JKG	

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Description: 1107-MW15d
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C209533-02
Sampled: 08/16/12 16:00
Sampled By: Daniel Forbes

Received: 08/20/12 09:10
Work Order: C209533

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	08/24/12 04:20	JKG	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	08/24/12 04:20	JKG	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*56*	*1*	*50.0*	*111 %*	*51-122*	*2H23027*	*EPA 8260B*	*08/24/12 04:20*	*JKG*	
Dibromofluoromethane	*48*	*1*	*50.0*	*95 %*	*68-117*	*2H23027*	*EPA 8260B*	*08/24/12 04:20*	*JKG*	
Toluene-d8	*51*	*1*	*50.0*	*102 %*	*67-127*	*2H23027*	*EPA 8260B*	*08/24/12 04:20*	*JKG*	

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Description: 1107-MW15d
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C209533-02
Sampled: 08/16/12 16:00
Sampled By: Daniel Forbes

Received: 08/20/12 09:10
Work Order: C209533

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	08/21/12 18:19	T1D	

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Description: 1107-MW15d
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C209533-02
Sampled: 08/16/12 16:00
Sampled By: Daniel Forbes

Received: 08/20/12 09:10
Work Order: C209533

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] ^	**0.971**	J	ug/L	1	0.220	2.00	6	EPA 6020A	08/27/12 10:11	VLO	
Arsenic [7440-38-2] ^	2.80	U	ug/L	1	2.80	10.0	10	EPA 6010C	08/22/12 13:41	JDH	
Barium [7440-39-3] ^	**179**		ug/L	1	1.00	10.0	100	EPA 6010C	08/22/12 13:41	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	08/22/12 13:41	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	08/22/12 13:41	JDH	
Chromium [7440-47-3] ^	**253**		ug/L	1	1.00	10.0	10	EPA 6010C	08/22/12 13:41	JDH	
Cobalt [7440-48-4] ^	**23.0**		ug/L	1	1.10	10.0	10	EPA 6010C	08/22/12 13:41	JDH	
Copper [7440-50-8] ^	**8.90**	J	ug/L	1	1.60	10.0	10	EPA 6010C	08/22/12 13:41	JDH	
Iron [7439-89-6] ^	**11800**		ug/L	1	22.0	50.0	300	EPA 6010C	08/22/12 13:41	JDH	
Lead [7439-92-1] ^	**4.14**	J	ug/L	1	1.90	10.0	10	EPA 6010C	08/22/12 13:41	JDH	
Manganese [7439-96-5] ^	**1130**		ug/L	1	1.10	10.0	50	EPA 6010C	08/22/12 13:41	JDH	
Nickel [7440-02-0] ^	**143**		ug/L	1	1.80	10.0	50	EPA 6010C	08/22/12 13:41	JDH	
Selenium [7782-49-2] ^	0.830	U	ug/L	1	0.830	1.00	10	EPA 6020A	08/27/12 10:11	VLO	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	08/22/12 13:41	JDH	
Thallium [7440-28-0] ^	**0.120**	J	ug/L	1	0.110	1.00	5.5	EPA 6020A	08/27/12 10:11	VLO	
Vanadium [7440-62-2] ^	**27.8**		ug/L	1	1.40	10.0	25	EPA 6010C	08/22/12 13:41	JDH	
Zinc [7440-66-6] ^	**18.4**		ug/L	1	3.80	10.0	10	EPA 6010C	08/22/12 13:41	JDH	

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Description: 1107-MW15d
Matrix: Ground Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C209533-02
Sampled: 08/16/12 16:00
Sampled By: Daniel Forbes

Received: 08/20/12 09:10
Work Order: C209533

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] ^	**18000**	BD	ug/L	2	860	10000	NE	EPA 300.0	08/30/12 02:57	CCB	QB-01
Sulfate as SO4 [14808-79-8] ^	**120000**	JD	ug/L	2	80	10000	250000	EPA 300.0	08/30/12 02:57	CCB	
Total Alkalinity as CaCO3 [471-34-1] ^	**130000**		ug/L	1	12000	15000	NE	EPA 310.2	08/23/12 09:47	CCB	
Total Dissolved Solids [ECL-0156] ^	**380000**		ug/L	1	10000	10000	NE	SM 2540C	08/23/12 14:46	MPL	

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

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Description: 1107-TripBlank
Matrix: Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C209533-03
Sampled: 08/16/12 16:00
Sampled By: ENCO

Received: 08/20/12 09:10
Work Order: C209533

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	08/24/12 04:49	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.12	U	ug/L	1	0.12	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.28	U	ug/L	1	0.28	1.0	3	EPA 8260B	08/24/12 04:49	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
1,1-Dichloroethane [75-34-3] ^	0.13	U	ug/L	1	0.13	1.0	5	EPA 8260B	08/24/12 04:49	JKG	
1,1-Dichloroethene [75-35-4] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	08/24/12 04:49	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	08/24/12 04:49	JKG	
1,2-Dibromoethane [106-93-4] ^	0.66	U	ug/L	1	0.66	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.19	U	ug/L	1	0.19	1.0	5	EPA 8260B	08/24/12 04:49	JKG	
1,2-Dichloroethane [107-06-2] ^	0.21	U	ug/L	1	0.21	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
1,2-Dichloropropane [78-87-5] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.19	U	ug/L	1	0.19	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
2-Butanone [78-93-3] ^	1.3	U	ug/L	1	1.3	5.0	100	EPA 8260B	08/24/12 04:49	JKG	
2-Hexanone [591-78-6] ^	0.88	U	ug/L	1	0.88	5.0	50	EPA 8260B	08/24/12 04:49	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	08/24/12 04:49	JKG	
Acetone [67-64-1] ^	1.2	U	ug/L	1	1.2	5.0	100	EPA 8260B	08/24/12 04:49	JKG	
Acrylonitrile [107-13-1] ^	3.5	U	ug/L	1	3.5	10	200	EPA 8260B	08/24/12 04:49	JKG	
Benzene [71-43-2] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
Bromochloromethane [74-97-5] ^	0.48	U	ug/L	1	0.48	1.0	3	EPA 8260B	08/24/12 04:49	JKG	
Bromodichloromethane [75-27-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
Bromoform [75-25-2] ^	0.22	U	ug/L	1	0.22	1.0	3	EPA 8260B	08/24/12 04:49	JKG	
Bromomethane [74-83-9] ^	0.14	U	ug/L	1	0.14	1.0	10	EPA 8260B	08/24/12 04:49	JKG	
Carbon disulfide [75-15-0] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	08/24/12 04:49	JKG	
Carbon tetrachloride [56-23-5] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
Chlorobenzene [108-90-7] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	08/24/12 04:49	JKG	
Chloroethane [75-00-3] ^	0.23	U	ug/L	1	0.23	1.0	10	EPA 8260B	08/24/12 04:49	JKG	
Chloroform [67-66-3] ^	0.18	U	ug/L	1	0.18	1.0	5	EPA 8260B	08/24/12 04:49	JKG	
Chloromethane [74-87-3] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	08/24/12 04:49	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
Dibromochloromethane [124-48-1] ^	0.17	U	ug/L	1	0.17	1.0	3	EPA 8260B	08/24/12 04:49	JKG	
Dibromomethane [74-95-3] ^	0.27	U	ug/L	1	0.27	1.0	10	EPA 8260B	08/24/12 04:49	JKG	
Ethylbenzene [100-41-4] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
Iodomethane [74-88-4] ^	1.7	U	ug/L	1	1.7	5.0	10	EPA 8260B	08/24/12 04:49	JKG	
Methylene chloride [75-09-2] ^	0.23	U	ug/L	1	0.23	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
Styrene [100-42-5] ^	0.11	U	ug/L	1	0.11	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
Tetrachloroethene [127-18-4] ^	0.17	U	ug/L	1	0.17	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
Tetrahydrofuran [109-99-9] ^	0.80	U	ug/L	1	0.80	1.0	NE	EPA 8260B	08/24/12 04:49	JKG	
Toluene [108-88-3] ^	0.14	U	ug/L	1	0.14	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.21	U	ug/L	1	0.21	1.0	5	EPA 8260B	08/24/12 04:49	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.70	U	ug/L	1	0.70	1.0	100	EPA 8260B	08/24/12 04:49	JKG	
Trichloroethene [79-01-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
Trichlorofluoromethane [75-69-4] ^	0.24	U	ug/L	1	0.24	1.0	1	EPA 8260B	08/24/12 04:49	JKG	
Vinyl acetate [108-05-4] ^	0.95	U	ug/L	1	0.95	5.0	50	EPA 8260B	08/24/12 04:49	JKG	

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Description: 1107-TripBlank
Matrix: Water
Project: Buncombe County Phase 5 C&D

Lab Sample ID: C209533-03
Sampled: 08/16/12 16:00
Sampled By: ENCO

Received: 08/20/12 09:10
Work Order: C209533

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	08/24/12 04:49	JKG	
Xylenes (Total) [1330-20-7] ^	0.45	U	ug/L	1	0.45	3.0	5	EPA 8260B	08/24/12 04:49	JKG	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*108 %*	*51-122*	*2H23027*	*EPA 8260B*	*08/24/12 04:49*	*JKG*	
Dibromofluoromethane	*48*	*1*	*50.0*	*96 %*	*68-117*	*2H23027*	*EPA 8260B*	*08/24/12 04:49*	*JKG*	
Toluene-d8	*50*	*1*	*50.0*	*100 %*	*67-127*	*2H23027*	*EPA 8260B*	*08/24/12 04:49*	*JKG*	

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

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 2H23027 - EPA 5030B_MS

Blank (2H23027-BLK1) Prepared: 08/23/2012 12:11 Analyzed: 08/23/2012 21:00

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							

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 2H23027 - EPA 5030B_MS

Blank (2H23027-BLK1) Continued Prepared: 08/23/2012 12:11 Analyzed: 08/23/2012 21:00

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Surrogate: 4-Bromofluorobenzene	*55*			*ug/L*	*50.0*		*111*	*51-122*			
Surrogate: Dibromofluoromethane	*49*			*ug/L*	*50.0*		*98*	*68-117*			
Surrogate: Toluene-d8	*51*			*ug/L*	*50.0*		*103*	*67-127*			

LCS (2H23027-BS1) Prepared: 08/23/2012 12:11 Analyzed: 08/23/2012 21:30

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		113	75-133			
Benzene	20		1.0	ug/L	20.0		102	81-134			
Chlorobenzene	20		1.0	ug/L	20.0		100	83-117			
Toluene	20		1.0	ug/L	20.0		98	71-118			
Trichloroethene	22		1.0	ug/L	20.0		111	74-119			
Surrogate: 4-Bromofluorobenzene	*56*			*ug/L*	*50.0*		*112*	*51-122*			
Surrogate: Dibromofluoromethane	*49*			*ug/L*	*50.0*		*99*	*68-117*			
Surrogate: Toluene-d8	*50*			*ug/L*	*50.0*		*100*	*67-127*			

Matrix Spike (2H23027-MS1) Prepared: 08/23/2012 12:11 Analyzed: 08/23/2012 21:59

Source: C209147-02

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	114	75-133			
Benzene	21		1.0	ug/L	20.0	0.15 U	105	81-134			
Chlorobenzene	33		1.0	ug/L	20.0	14	99	83-117			
Toluene	20		1.0	ug/L	20.0	0.14 U	99	71-118			
Trichloroethene	23		1.0	ug/L	20.0	0.15 U	113	74-119			
Surrogate: 4-Bromofluorobenzene	*57*			*ug/L*	*50.0*		*115*	*51-122*			
Surrogate: Dibromofluoromethane	*49*			*ug/L*	*50.0*		*98*	*68-117*			
Surrogate: Toluene-d8	*52*			*ug/L*	*50.0*		*104*	*67-127*			

Matrix Spike Dup (2H23027-MSD1) Prepared: 08/23/2012 12:11 Analyzed: 08/23/2012 22:28

Source: C209147-02

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	108	75-133	6	20	
Benzene	20		1.0	ug/L	20.0	0.15 U	98	81-134	6	17	
Chlorobenzene	32		1.0	ug/L	20.0	14	93	83-117	4	16	
Toluene	19		1.0	ug/L	20.0	0.14 U	93	71-118	7	17	
Trichloroethene	21		1.0	ug/L	20.0	0.15 U	104	74-119	8	22	
Surrogate: 4-Bromofluorobenzene	*56*			*ug/L*	*50.0*		*112*	*51-122*			
Surrogate: Dibromofluoromethane	*49*			*ug/L*	*50.0*		*97*	*68-117*			
Surrogate: Toluene-d8	*52*			*ug/L*	*50.0*		*104*	*67-127*			

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 2H21017 - EPA 245.1

Blank (2H21017-BLK1) Prepared: 08/21/2012 10:29 Analyzed: 08/21/2012 17:52

QUALITY CONTROL

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 2H21017 - EPA 245.1

Blank (2H21017-BLK1) Continued Prepared: 08/21/2012 10:29 Analyzed: 08/21/2012 17:52

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 (2H21017-BS1) Prepared: 08/21/2012 10:29 Analyzed: 08/21/2012 17:55

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.92		0.200	ug/L	5.00		98	80-120			

Matrix Spike (2H21017-MS1) Prepared: 08/21/2012 10:29 Analyzed: 08/21/2012 17:59

Source: C209533-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.78		0.200	ug/L	5.00	0.170 U	96	75-125			

Matrix Spike Dup (2H21017-MSD1) Prepared: 08/21/2012 10:29 Analyzed: 08/21/2012 18:01

Source: C209533-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.87		0.200	ug/L	5.00	0.170 U	97	75-125	2	25	

Post Spike (2H21017-PS1) Prepared: 08/21/2012 10:29 Analyzed: 08/21/2012 18:03

Source: C209533-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.21		0.200	ug/L	5.00	-0.155	87	75-125			

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

Batch 2H21019 - EPA 3005A

Blank (2H21019-BLK1) Prepared: 08/21/2012 10:34 Analyzed: 08/22/2012 13:15

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	**5.39**	**J**	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	1.00	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	1.90	U	10.0	ug/L							
Manganese	1.10	U	10.0	ug/L							
Nickel	1.80	U	10.0	ug/L							
Silver	1.90	U	10.0	ug/L							
Vanadium	1.40	U	10.0	ug/L							
Zinc	3.80	U	10.0	ug/L							

QUALITY CONTROL

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

Batch 2H21019 - EPA 3005A

LCS (2H21019-BS1) Prepared: 08/21/2012 10:34 Analyzed: 08/22/2012 13:18

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	189	B	10.0	ug/L	200		95	80-120			
Barium	193		10.0	ug/L	200		97	80-120			
Beryllium	19.2		1.00	ug/L	20.0		96	80-120			
Cadmium	20.2		1.00	ug/L	20.0		101	80-120			
Chromium	192		10.0	ug/L	200		96	80-120			
Cobalt	199		10.0	ug/L	200		99	80-120			
Copper	187		10.0	ug/L	200		94	80-120			
Iron	982		50.0	ug/L	1000		98	80-120			
Lead	190		10.0	ug/L	200		95	80-120			
Manganese	191		10.0	ug/L	200		96	80-120			
Nickel	195		10.0	ug/L	200		97	80-120			
Silver	196		10.0	ug/L	200		98	80-120			
Vanadium	194		10.0	ug/L	200		97	80-120			
Zinc	193		10.0	ug/L	200		96	80-120			

Matrix Spike (2H21019-MS1) Prepared: 08/21/2012 10:34 Analyzed: 08/22/2012 13:22

Source: C209533-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	193	B	10.0	ug/L	200	2.80 U	96	75-125			
Barium	290		10.0	ug/L	200	99.7	95	75-125			
Beryllium	19.5		1.00	ug/L	20.0	0.100 U	97	75-125			
Cadmium	19.8		1.00	ug/L	20.0	0.360 U	99	75-125			
Chromium	196		10.0	ug/L	200	1.75	97	75-125			
Cobalt	200		10.0	ug/L	200	1.22	99	75-125			
Copper	192		10.0	ug/L	200	1.60 U	96	75-125			
Iron	2000		50.0	ug/L	1000	974	103	75-125			
Lead	191		10.0	ug/L	200	1.90 U	96	75-125			
Manganese	246		10.0	ug/L	200	52.7	97	75-125			
Nickel	196		10.0	ug/L	200	2.76	97	75-125			
Silver	198		10.0	ug/L	200	1.90 U	99	75-125			
Vanadium	201		10.0	ug/L	200	2.93	99	75-125			
Zinc	198		10.0	ug/L	200	8.44	95	75-125			

Matrix Spike Dup (2H21019-MSD1) Prepared: 08/21/2012 10:34 Analyzed: 08/22/2012 13:24

Source: C209533-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	192	B	10.0	ug/L	200	2.80 U	96	75-125	0.3	20	
Barium	289		10.0	ug/L	200	99.7	95	75-125	0.3	20	
Beryllium	19.5		1.00	ug/L	20.0	0.100 U	97	75-125	0.05	20	
Cadmium	19.7		1.00	ug/L	20.0	0.360 U	98	75-125	0.8	20	
Chromium	196		10.0	ug/L	200	1.75	97	75-125	0.03	20	
Cobalt	204		10.0	ug/L	200	1.22	102	75-125	2	20	
Copper	191		10.0	ug/L	200	1.60 U	96	75-125	0.4	20	
Iron	1980		50.0	ug/L	1000	974	100	75-125	1	20	
Lead	194		10.0	ug/L	200	1.90 U	97	75-125	2	20	
Manganese	245		10.0	ug/L	200	52.7	96	75-125	0.3	20	

QUALITY CONTROL

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

Batch 2H21019 - EPA 3005A

Matrix Spike Dup (2H21019-MSD1) Continued Prepared: 08/21/2012 10:34 Analyzed: 08/22/2012 13:24

Source: C209533-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Nickel	195		10.0	ug/L	200	2.76	96	75-125	0.7	20	
Silver	198		10.0	ug/L	200	1.90 U	99	75-125	0.1	20	
Vanadium	201		10.0	ug/L	200	2.93	99	75-125	0.02	20	
Zinc	198		10.0	ug/L	200	8.44	95	75-125	0.04	20	

Post Spike (2H21019-PS1) Prepared: 08/21/2012 10:34 Analyzed: 08/22/2012 13:26

Source: C209533-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	0.180	B	0.0100	mg/L	0.200	-0.000675	90	80-120			
Barium	0.275		0.0100	mg/L	0.200	0.0997	87	80-120			
Beryllium	0.0183		0.00100	mg/L	0.0200	-6.10E-5	92	80-120			
Cadmium	0.0185		0.00100	mg/L	0.0200	-6.78E-5	93	80-120			
Chromium	0.183		0.0100	mg/L	0.200	0.00175	91	80-120			
Cobalt	0.190		0.0100	mg/L	0.200	0.00122	95	80-120			
Copper	0.178		0.0100	mg/L	0.200	0.00112	89	80-120			
Iron	1.89		0.0500	mg/L	1.00	0.974	92	80-120			
Lead	0.185		0.0100	mg/L	0.200	-0.000240	92	80-120			
Manganese	0.232		0.0100	mg/L	0.200	0.0527	90	80-120			
Nickel	0.184		0.0100	mg/L	0.200	0.00276	90	80-120			
Silver	0.190		0.0100	mg/L	0.200	-0.000207	95	80-120			
Vanadium	0.188		0.0100	mg/L	0.200	0.00293	92	80-120			
Zinc	0.198		0.0100	mg/L	0.200	0.00844	95	80-120			

Batch 2H21021 - EPA 3005A

Blank (2H21021-BLK1) Prepared: 08/21/2012 10:36 Analyzed: 08/27/2012 10:03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	0.220	U	2.00	ug/L							
Selenium	0.830	U	1.00	ug/L							
Thallium	0.110	U	1.00	ug/L							

LCS (2H21021-BS1) Prepared: 08/21/2012 10:36 Analyzed: 08/27/2012 10:07

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	201		2.00	ug/L	200		100	80-120			
Selenium	209		1.00	ug/L	200		104	80-120			
Thallium	198		1.00	ug/L	200		99	80-120			

Matrix Spike (2H21021-MS1) Prepared: 08/21/2012 10:36 Analyzed: 08/27/2012 10:15

Source: C209533-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	183		2.00	ug/L	200	0.971	91	75-125			
Selenium	204		1.00	ug/L	200	0.830 U	102	75-125			

QUALITY CONTROL

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

Batch 2H21021 - EPA 3005A

Matrix Spike (2H21021-MS1) Continued Prepared: 08/21/2012 10:36 Analyzed: 08/27/2012 10:15

Source: C209533-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Thallium	174		1.00	ug/L	200	0.120	87	75-125			

Matrix Spike Dup (2H21021-MSD1) Prepared: 08/21/2012 10:36 Analyzed: 08/27/2012 10:19

Source: C209533-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	184		2.00	ug/L	200	0.971	92	75-125	0.3	20	
Selenium	204		1.00	ug/L	200	0.830 U	102	75-125	0.4	20	
Thallium	175		1.00	ug/L	200	0.120	87	75-125	0.3	20	

Post Spike (2H21021-PS1) Prepared: 08/21/2012 10:36 Analyzed: 08/27/2012 10:23

Source: C209533-02

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	212		2.00	ug/L	200	0.971	105	80-120			
Selenium	219		1.00	ug/L	200	0.189	109	80-120			
Thallium	182		1.00	ug/L	200	0.120	91	80-120			

Classical Chemistry Parameters - Quality Control

Batch 2H23001 - NO PREP

Blank (2H23001-BLK1) Prepared: 08/23/2012 07:25 Analyzed: 08/23/2012 09:34

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	12000	U	15000	ug/L							

LCS (2H23001-BS1) Prepared: 08/23/2012 07:25 Analyzed: 08/23/2012 09:35

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	99000		15000	ug/L	100000		99	80-120			

Matrix Spike (2H23001-MS1) Prepared: 08/23/2012 07:25 Analyzed: 08/23/2012 09:36

Source: C208685-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	680000		75000	ug/L	200000	480000	98	80-120			

Matrix Spike Dup (2H23001-MSD1) Prepared: 08/23/2012 07:25 Analyzed: 08/23/2012 09:37

Source: C208685-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Alkalinity as CaCO3	670000		75000	ug/L	200000	480000	92	80-120	2	25	

Batch 2H23006 - NO PREP

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QUALITY CONTROL

Classical Chemistry Parameters - Quality Control

Batch 2H23006 - NO PREP

Blank (2H23006-BLK1) Prepared & Analyzed: 08/23/2012 14:46

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 (2H23006-BS1) Prepared & Analyzed: 08/23/2012 14:46

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	900		10	mg/L	1000		90	90-110			

Duplicate (2H23006-DUP1) Prepared & Analyzed: 08/23/2012 14:46

Source: C208685-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Dissolved Solids	1700000		10000	ug/L		1700000			0.7	10	

Batch 2H28012 - NO PREP

Blank (2H28012-BLK1) Prepared: 08/28/2012 09:41 Analyzed: 08/29/2012 19:31

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	**1600**	**J**	5000	ug/L							
Sulfate as SO4	40	U	5000	ug/L							

LCS (2H28012-BS1) Prepared: 08/28/2012 09:41 Analyzed: 08/29/2012 19:48

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	49000	B	5000	ug/L	50000		97	90-110			
Sulfate as SO4	46000		5000	ug/L	50000		93	90-110			

Matrix Spike (2H28012-MS1) Prepared: 08/28/2012 09:41 Analyzed: 08/29/2012 20:04

Source: C209487-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	21000	B	5000	ug/L	20000	2800	92	90-110			
Sulfate as SO4	31000		5000	ug/L	20000	11000	96	90-110			

Matrix Spike Dup (2H28012-MSD1) Prepared: 08/28/2012 09:41 Analyzed: 08/29/2012 20:21

Source: C209487-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride	21000	B	5000	ug/L	20000	2800	93	90-110	0.9	10	
Sulfate as SO4	30000		5000	ug/L	20000	11000	93	90-110	2	10	

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.
J-01	Result is estimated due to positive results in the associated method blank.
QB-01	The method blank had a positive result for the analyte; however, the concentration in the method blank is less than 10% of the sample result, which minimizes the impact of the deviation.

ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

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Page 1 of 1

Client Name: CDM Smith, Inc. (CD004)	Project Number: [none]
Address: 5400 GLENWOOD AVE SUITE 300	Project Name/Desc: Buncombe County Phase 5 C&D
City/ST/Zip: RALEIGH, NC 27612-	PO # / Billing Info:
Tel: (919) 325-3569 Fax: (919) 781-5730	Reporting Contact: Mathew Colone
Sampler(s) Name, Affiliation (Print): DANIEL FORBES / CDMSmith	Billing Contact: Accounts Payable
Sampler(s) Signature: Daniel Forbes	Site Location / Time Zone:

Requested Analyses: 8260B Appendix 1, 8260B Extended; Ag,As,Ba,Be,Cd,Co,Cr,Cu,Fe,Mn,Ni,Pb,Sb,Se,Tl,V,Zn; Alkalinity 310.2, Chloride 300, TDS SM2540C; Hg; Sulfate 300

Requested Turnaround Times

Note : Rush requests subject to acceptance by the facility

X Standard

___ Expedited

Due ___/___/___

Lab Workorder: C:209533

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,Tl,V,Zn	Alkalinity 310.2, Chloride 300, TDS SM2540C	Hg	Sulfate 300						Sample Comments
	1107-MW15s	8/16/12	1600	G	GW	2		X	X	X	X						
	1107-MW15d	8/17/12	0810	G	GW	5	X	X	X	X	X						
	1107-TripBlank	—	—	G	WA	2	X										

<-- Total # of Containers

Sample Kit Prepared By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time
		Daniel Forbes	8/20/12 1040	Rachel Yonush	8/20 910
		Relinquished By	Date/Time	Received By	Date/Time
		Relinquished By	Date/Time	Received By	Date/Time

Comments/Special Reporting Requirements

MW-15s Sampled at 0810 on 8/17/12

MW-15d Sampled at 1600 on 8/16/12

Cooler #'s & Temps on Receipt: 0.6°C

Condition Upon Receipt: ___ Acceptable ___ Unacceptable

Matrix : GW-Groundwater SO-Soil DW-Drinking Water SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments)

Preservation: I-Ice H-HCl N-HNO3 S-H2SO4 NO-NaOH O-Other (detail in comments)

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