North Wake C&D Landfill
Facility Permit No. 92-09
Semi-Annual Sampling Report
(November 2014 Sampling Event)

Wake County

Report

December 2014

WAKE COUNTY
NORTH CAROLINA

CDM Smith

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 - CDM Smith Inc.

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)
Wake County - North Wake C&D Landfill	9004 Deponie Drive Raleigh, NC 27615	92-09	.0500	November 11-12, 2014

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

Signature — 12/30/2014 Date — Affix NC Licensed Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 1851 GEOLOGIST MATHEW F. COLONE

12/30/2014

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

5400 Glenwood Avenue, Suite 400
Raleigh, North Carolina 27612
tel: 919 325-3500
fax: 919 781-5730

December 30, 2014

Ms. Jaclynne Drummond
North Carolina Department of Environment and
Natural Resources
Division of Waste Management
Solid Waste Section
1646 Mail Service Center
Raleigh, North Carolina 27699-1646

Subject: November 2014 Semi-Annual Groundwater Monitoring Report
North Wake C&D Landfill
Facility Permit No. 92-09

Dear Ms. Drummond:

CDM Smith Inc. (CDM Smith), on behalf of Wake County, is submitting an electronic copy of the April 2014 semi-annual sampling event report. This letter report presents the results of the most recent semi-annual sampling event at the North Wake C&D Landfill and constitutes the second sampling event for 2014. The approved groundwater monitoring network consists of the background well (i.e. MW-1) and three downgradient compliance wells (i.e. CD-1, -2, and -3). Well construction details are provided on **Table 1**. Field activities and sampling results from the November 2014 event are discussed below.

Field Activities

Groundwater samples from the North Wake C&D Landfill were collected on November 11-12, 2014, by use of disposable, laboratory decontaminated bailers. Monitoring well locations for the North Wake C&D Landfill are shown on **Figure 1**. Groundwater elevations were measured at each well prior to sampling and are presented in **Table 2**. These groundwater elevations were used to construct a potentiometric surface map for this sampling event. The potentiometric contours are shown on **Figure 1**.

After depth to groundwater was measured, three well volumes of water were removed from each well prior to sampling to provide fresh formation water within the well water column. Each well volume was measured in the field for pH, conductivity, temperature, turbidity, dissolved oxygen, and oxidation-reduction potential using a YSI-556 multi-parameter water quality meter and a HANNA HI 98703 turbidity meter. Monitoring wells with elevated turbidity were allowed to stabilize prior to

sample collection. The water quality parameters at the time of sampling and groundwater elevations are presented in **Table 2**.

Sampling Results

ALS Environmental, Inc. located in Jacksonville, Florida analyzed the groundwater samples for North Carolina Appendix I volatile organic compounds (VOCs) and Resource and Conservation Recovery Act metals (i.e. arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). In accordance with Solid Waste Section (SWS) guidelines the analytical results were reported to the laboratory specific method detection limit (MDL) and are quantifiable at or below SWS Limits (SWSLs). All monitoring wells for the C&D Landfill had detections of analytes above the MDL but below SWSLs with the exception of barium in CD-1. Detections above the MDL but below the SWSL were qualified with estimated or "J" flags.

No Appendix I VOCs or metals were detected above the North Carolina 2L Standards (NC 2L). Methylene Chloride was detected, but below the NC 2L Standard and the SWSL in samples collected from the equipment blank. Similarly, mercury was detected, but below the NC 2L Standard and the SWSL in samples collected from MW-1 and CD-3. CDM Smith will monitor future analytical results to determine if a trend appears.

A complete summary of all detected constituents, including detections above the MDL, is presented in **Table 3**. A copy of the analytical results from the April 2014 semi-annual sampling event is provided in **Appendix A**.

Quality Assurance/Quality Control Sample Results

No VOCs or metals were detected in the trip blank.

The next semi-annual sampling event will be completed in the spring of 2015. If you have any questions or require further explanation, do not hesitate to call me at (919) 787-5620.

Very truly yours,

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

cc: John Roberson, WCSWM
Elliott Cornell, WCSWM

Table 1
Well Construction Summary
November 2014 Semi-Annual Sampling Event
North Wake C&D Landfill

Facility Permit #	Monitoring Well I.D.	Date Installed	Well Diameter (inches)	Total Depth (feet)	Depth to Top of Screened Interval (feet bgs)	Screened Interval (feet)	Geology of Screened Interval	TOC Elevation (feet AMSL)	Latitude	Longitude
92-09	MW-1	1994	2	58	48	48 - 58	Overburden	333.80	35.90984	78.58489
92-09	CD-1	May 2001	2	25	10	10 - 25	Overburden	296.26	35.90907	78.58318
92-09	CD-2	May 2001	2	25	10	10 - 25	Overburden	282.64	35.91032	78.58207
92-09	CD-3	May 2001	2	33	18	10 - 25	Overburden	301.49	35.91016	78.58340

Notes:
1. BGS - Below Ground Surface
2. AMSL - Above Mean Sea Level
3. TOC - Top of Casing
4. Latitude and longitude are in decimal degrees (WGS 1984)

Table 2
Water Quality Parameters
November 2014 Semi-Annual Sampling Event
North Wake C&D Landfill

Monitoring Well Code	Water Quality Parameters						Groundwater Elevations (Measured 11/11/2014)		
	pH	Conductivity	Temperature	Turbidity	DO	ORP	TOC Elevation	Depth to Groundwater	Groundwater Elevation
	(S.U.)	(uS/cm)	(degrees Celsius)	(NTUs)	(mg/L)	(mV)	(feet AMSL)	(feet)	(feet AMSL)
MW-1	5.73	83	16.2	43	5.02	103.1	333.80	47.12	286.68
CD-1	6.13	109	16.9	35	6.03	83.3	296.26	15.86	280.40
CD-2	6.09	119	16.4	7	5.92	155.5	282.64	12.04	270.60
CD-3	5.60	77	17.7	30	4.52	176.0	301.49	22.39	279.10

Notes:
1. AMSL - Above Mean Sea Level
2. TOC - Top of Casing
3. uS/cm - Microsiemens per centimeter
4. mg/L - Milligrams per liter
5. ORP - Oxidation-Reduction Potential
6. NTUs - Nephelometric Turbidity Units
7. mV - Millivolts
8. S.U. - Standard Units
9. DO - Dissolved Oxygen
10. Monitoring wells with high turbidity were allowed to settle prior to sampling; turbidity shown in table was recorded at the time of sampling.

Table 3
Detected Groundwater Constituents - Metals and Volatile Organic Compounds
November 2014 Semi-Annual Sampling Event
North Wake C&D Landfill

		Metals								Volatile Organic Compounds		
Monitoring Well Code	Sample Date	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Acetone	Chloroform	Toluene
North Carolina 2L Standard		**0.01**	**0.7**	**0.002**	**0.01**	**0.015**	**0.001**	**0.02**	**0.02**	**6,000**	**70**	**600**
Solid Waste Section Limit		**0.01**	**0.1**	**0.001**	**0.01**	**0.01**	**0.0002**	**0.01**	**0.01**	**100**	**5**	**1**
MW-1	5-Jun-01											
MW-1	29-Nov-01											
MW-1	5-Apr-02											
MW-1	7-Nov-02											
MW-1	16-Apr-03											
MW-1	30-Oct-03											
MW-1	7-Apr-04											
MW-1	19-Nov-04											
MW-1	22-Apr-05					**0.016**						
MW-1	10-Nov-05					**0.015**						
MW-1	13-Apr-06											
MW-1	8-Nov-06											
MW-1	18-Apr-07											
MW-1	7-Nov-07		0.151		**0.011**	**0.028**						
MW-1	13-May-08	0.00187JB	0.0452JB		0.00263J							
MW-1	3-Nov-08		0.0329J						0.00123JB			
MW-1	18-Mar-09		0.0308J						0.00127JB			
MW-1	19-Oct-09		0.0418J		0.00265J				0.00091JB			
MW-1	7-May-10		0.0439J		0.00132J	0.00236J						
MW-1	28-Oct-10		0.0378J									
MW-1	14-Mar-11		0.0421J									
MW-1	20-Oct-11		0.0444J					0.00619J				
MW-1	11-Apr-12		0.0384J									
MW-1	26-Oct-12		0.0431J			0.00387J						
MW-1	11-Apr-13		0.040J									
MW-1	2-Oct-13		0.050J		0.001J							
MW-1	3-Apr-14		0.040J		0.016					8.1J		
MW-1	12-Nov-14		0.040J				0.00006J					
CD-1	5-Jun-01		0.102									
CD-1	29-Nov-01		0.371									
CD-1	5-Apr-02											
CD-1	7-Nov-02											
CD-1	16-Apr-03											
CD-1	30-Oct-03											
CD-1	7-Apr-04											
CD-1	19-Nov-04			0.001								
CD-1	22-Apr-05		**0.735**		**0.011**	**0.015**						
CD-1	10-Nov-05											
CD-1	13-Apr-06											
CD-1	8-Nov-06					0.011						
CD-1	18-Apr-07		0.501		0.015	0.011						
CD-1	7-Nov-07		0.501		0.013	0.011						
CD-1	13-May-08	0.00417JB	0.257B		0.0138	**0.015**						
CD-1	3-Nov-08		0.131		0.00739J	0.00691J						
CD-1	18-Mar-08		0.135		0.00632J				0.00148JB			
CD-1	19-Oct-09		0.258		**0.0148**	0.00871J			0.00612J		0.11J	
CD-1	7-May-10		0.195		0.0095J	0.00272J						
CD-1	28-Oct-10		0.136		0.00717J							
CD-1	14-Mar-11	0.00312J	0.174		0.00978J	0.00434J						
CD-1	20-Oct-11		0.0629J		0.00306J							
CD-1	11-Apr-12		0.0731J		0.00372J							
CD-1	26-Oct-12		0.227		0.00793J	0.00669J						
CD-1	11-Apr-13		0.130		0.007J							
CD-1	2-Oct-13		0.220		**0.013**							
CD-1	3-Apr-14		0.130		**0.009J**							
CD-1	12-Nov-14		**0.120**		0.006J							

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North Wake C&D Landfill

		Metals								Volatile Organic Compounds		
Monitoring Well Code	Sample Date	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Acetone	Chloroform	Toluene
North Carolina 2L Standard		**0.01**	**0.7**	**0.002**	**0.01**	**0.015**	**0.001**	**0.02**	**0.02**	**6,000**	**70**	**600**
Solid Waste Section Limit		**0.01**	**0.1**	**0.001**	**0.01**	**0.01**	**0.0002**	**0.01**	**0.01**	**100**	**5**	**1**
CD-2	5-Jun-01											
CD-2	29-Nov-01		0.357									
CD-2	5-Apr-02											
CD-2	7-Nov-02											
CD-2	16-Apr-03											
CD-2	30-Oct-03											
CD-2	7-Apr-04											
CD-2	19-Nov-04				**0.015**	0.011						
CD-2	22-Apr-05					**0.018**						
CD-2	10-Nov-05											
CD-2	13-Apr-06											
CD-2	8-Nov-06					**0.016**						
CD-2	18-Apr-07		0.192									
CD-2	7-Nov-07		0.224			0.012						
CD-2	13-May-08		0.0451JB		0.0049J	0.00552J			0.00112J			
CD-2	3-Nov-08		0.0357J		0.00401J				0.00126JB			
CD-2	18-Mar-09		0.0418J		0.00116J				0.00124JB		0.00572	
CD-2	19-Oct-09		0.0637J		0.00716J				0.00333J		0.38J	
CD-2	7-May-10		0.137		0.00743J	0.00197J						
CD-2	28-Oct-10		0.0824J		0.00381J						0.98J	0.5J
CD-2	14-Mar-11		0.0569J		0.00174J			0.00274J			0.97J	
CD-2	20-Oct-11		0.0532J		0.00378J					5.9J	1.8J	
CD-2	11-Apr-12		0.340		**0.0156**	0.0142			0.00247J		0.80J	
CD-2	26-Oct-12		0.102		0.00481J	0.00389J						
CD-2	11-Apr-13		0.120		0.004J							
CD-2	2-Oct-13		0.080J		0.005J							
CD-2	3-Apr-14		0.060J		0.006J						0.61J	
CD-2	12-Nov-14		0.040J		0.003J							

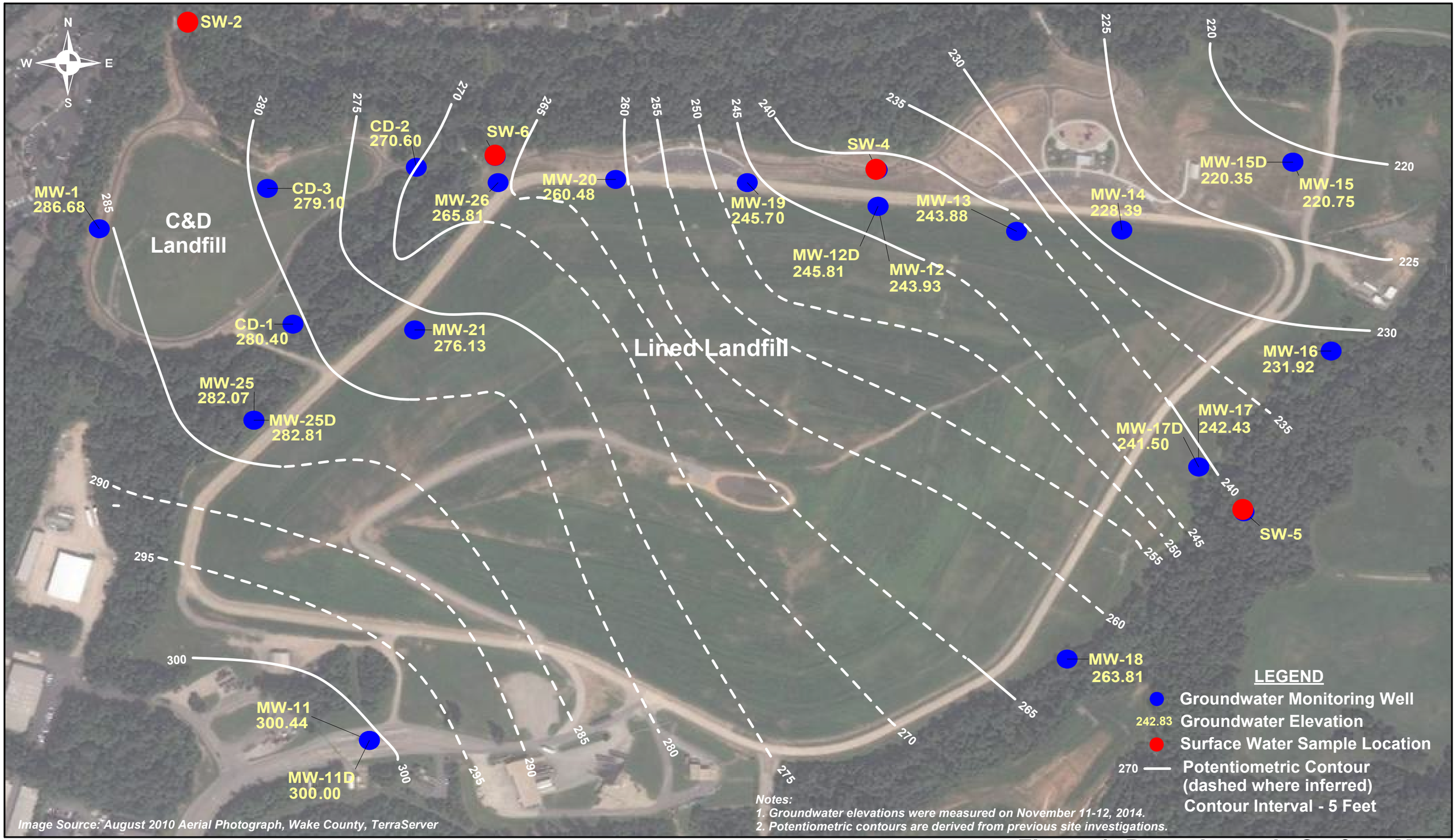
Table 3
Detected Groundwater Constituents - Metals and Volatile Organic Compounds
November 2014 Semi-Annual Sampling Event
North Wake C&D Landfill

		Metals								Volatile Organic Compounds		
Monitoring Well Code	Sample Date	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Acetone	Chloroform	Toluene
North Carolina 2L Standard		**0.01**	**0.7**	**0.002**	**0.01**	**0.015**	**0.001**	**0.02**	**0.02**	**6,000**	**70**	**600**
Solid Waste Section Limit		**0.01**	**0.1**	**0.001**	**0.01**	**0.01**	**0.0002**	**0.01**	**0.01**	**100**	**5**	**1**
CD-3	5-Jun-01											
CD-3	29-Nov-01											
CD-3	5-Apr-02											
CD-3	7-Nov-02											
CD-3	16-Apr-03											
CD-3	30-Oct-03											
CD-3	7-Apr-04											
CD-3	19-Nov-04											
CD-3	22-Apr-05											
CD-3	10-Nov-05											
CD-3	13-Apr-06											
CD-3	8-Nov-06											
CD-3	18-Apr-07		0.109									
CD-3	7-Nov-07		0.269			**0.015**						
CD-3	13-May-08		0.0312JB		0.00197J							
CD-3	3-Nov-08		0.0265J		0.00124J	0.0041J			0.00119JB			
CD-3	18-Mar-09		0.0423J						0.00109JB			
CD-3	19-Oct-09		0.0461J					0.00351J			0.15J	
CD-3	7-May-10		0.122		0.00161J	0.00517J				11J		0.63J
CD-3	28-Oct-10		0.872J									
CD-3	14-Mar-11		0.0507J									
CD-3	20-Oct-11		0.0453J									
CD-3	11-Apr-12		0.0675J			0.00226J						
CD-3	26-Oct-12		0.0731J			0.00361J						
CD-3	11-Apr-13		0.050J									
CD-3	1-Oct-13		0.030J				0.00003J					
CD-3	3-Apr-14		0.040J		0.001J							
CD-3	12-Nov-14		0.040J				0.00008J					

Notes:

1. Metal detections are in milligrams per liter (parts per million).
2. Volatile organic compound detections are in micrograms per liter (parts per billion).
3. J - Indicates the analytical result is an estimated concentration between the method detection limit and the Solid Waste Section Reporting Limit.
4. B - Indicates the analyte was detected in the associated method blank.

- Concentration exceeds the North Carolina 2L Groundwater Standard
- Indicates the result is below the detection limit



CDM Smith

Scale in Feet

0 175 350 525 700

Figure 1: Potentiometric Surface Map

November 2014 Semi-Annual Sampling Event
North Wake Lined and C&D Landfills
Raleigh, North Carolina

Appendix A

Analytical Data

December 08, 2014 Service Request No:J1408866

Aaron Weispfenning
CDM Smith, Inc.
5400 Glenwood Ave
Suite 300
Raleigh, NC 27612

Laboratory Results for: North Wake C&D Landfill

Dear Aaron,

Enclosed are the results of the sample(s) submitted to our laboratory November 13, 2014
For your reference, these analyses have been assigned our service request number **J1408866.**

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the NELAC 2003 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 4409. You may also contact me via email at Craig.Myers@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Craig Myers
Project Manager

ADDRESS 9143 Philips Highway, Suite 200, Jacksonville, FL 32256
PHONE +1 904 739 2277 | FAX +1 904 739 2011
ALS Group USA, Corp.
dba ALS Environmental

SAMPLE DETECTION SUMMARY

CLIENT ID: MW1	Lab ID: J1408866-001					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Barium, Total Recoverable	40	J	0.3	100	ug/L	6010C
Mercury, Total	0.06	J	0.02	0.20	ug/L	7470A

CLIENT ID: CD1	Lab ID: J1408866-002					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Barium, Total Recoverable	120		0.3	100	ug/L	6010C
Chromium, Total Recoverable	6	J	0.5	10	ug/L	6010C

CLIENT ID: CD2	Lab ID: J1408866-003					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Barium, Total Recoverable	50	J	0.3	100	ug/L	6010C
Chromium, Total Recoverable	3	J	0.5	10	ug/L	6010C

CLIENT ID: CD3	Lab ID: J1408866-004					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Barium, Total Recoverable	40	J	0.3	100	ug/L	6010C
Mercury, Total	0.08	J	0.02	0.20	ug/L	7470A

CLIENT ID: Trip Blank	Lab ID: J1408866-006					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Methylene Chloride	1.6	J	0.21	5.0	ug/L	8260B

9143 Philips Highway, Suite 200, Jacksonville, FL 32256 | 904-739-2277 | www.alsglobal.com

Client: Wake County Solid Waste Management
Project: North Wake C&D Landfill
Sample Matrix: Ground Water

Service Request:J1408866
Date Received:11/13/14

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables, including results of QC samples analyzed from this delivery group. When appropriate to the procedure, method blank results have been reported with each analytical test. Analytical procedures performed by the lab are validated in accordance with NELAC standards. Parameters that are included in the NELAC Fields of Testing but are not included in the lab's NELAC accreditation are identified in the discussion of each analytical procedure.

Sample Receipt

Six water samples were received for analysis at ALS Environmental on 11/13/2014. The samples were received in good condition and consistent with the accompanying chain of custody form. Samples are refrigerated at ≤6°C upon receipt at the lab except for aqueous samples designated for metals analyses, which are stored at room temperature.

Volatile Organic Analyses:

Method 8260B: The spike recovery of Chloromethane for Laboratory Control Sample (LCS) JQ1409200-01 was outside the lower control criterion. The analyte in question was not detected in the associated field samples. Since the analyte was detected in the MRL check standard, instrument sensitivity was documented. The data quality was not significantly affected and no further corrective action was taken.

Metals Analyses:

No significant data anomalies were noted with this analysis.

Approved by _____ Date 12/8/2014

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Department of Defense	66206	9/20/2016
Florida Department of Health	E82502	6/30/2015
Georgia Department of Natural Resources	958	6/30/2015
Kentucky Division of Waste Management	63	6/30/2015
Louisiana Department of Environmental Quality	02086	6/30/2015
Maine Department of Health and Human Services	2011006	2/3/2015
North Carolina Department of Environment and Natural Resources	527	12/31/2014
Pennsylvania Department of Environmental Protection	68-04835	8/31/2015
South Carolina Department of Health and Environmental Control	96021001	6/30/2015
Texas Commision on Environmental Quality	T104704197-13-5	5/31/2015
Virginia Environmental Accreditation Program	460191	12/14/2014

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	Internal standard not within the specified limits. See case narrative.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.
M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.

Data Qualifiers

Lab Standard

S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Wake County Solid Waste Management **Service Request:**J1408866
Project: North Wake C&D Landfill

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
J1408866-001	MW1	11/12/2014	0745
J1408866-002	CD1	11/12/2014	0850
J1408866-003	CD2	11/12/2014	0830
J1408866-004	CD3	11/12/2014	0810
J1408866-005	EQ Blank	11/12/2014	1625
J1408866-006	Trip Blank	11/12/2014	0000

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Analytical Report

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	11/12/14 07:45
Sample Matrix:	Ground Water	**Date Received:**	11/13/14 09:15
Sample Name:	MW1	**Units:**	ug/L
Lab Code:	J1408866-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
1,1,1,2-Tetrachloroethane	0.19 U	5.0	0.19	1	11/25/14 02:19	
1,1,1-Trichloroethane (TCA)	0.17 U	1.0	0.17	1	11/25/14 02:19	
1,1,2,2-Tetrachloroethane	0.29 U	3.0	0.29	1	11/25/14 02:19	
1,1,2-Trichloroethane	0.40 U	1.0	0.40	1	11/25/14 02:19	
1,1-Dichloroethane (1,1-DCA)	0.30 U	5.0	0.30	1	11/25/14 02:19	
1,1-Dichloroethene (1,1-DCE)	0.16 U	5.0	0.16	1	11/25/14 02:19	
1,2,3-Trichloropropane	0.42 U	2.0	0.42	1	11/25/14 02:19	
1,2-Dibromo-3-chloropropane (DBCP)	2.3 U	13	2.3	1	11/25/14 02:19	
1,2-Dibromoethane (EDB)	0.46 U	1.0	0.46	1	11/25/14 02:19	
1,2-Dichlorobenzene	0.48 U	5.0	0.48	1	11/25/14 02:19	
1,2-Dichloroethane	0.22 U	1.0	0.22	1	11/25/14 02:19	
1,2-Dichloropropane	0.19 U	1.0	0.19	1	11/25/14 02:19	
1,4-Dichlorobenzene	0.16 U	1.0	0.16	1	11/25/14 02:19	
2-Butanone (MEK)	3.8 U	100	3.8	1	11/25/14 02:19	
2-Hexanone	2.2 U	50	2.2	1	11/25/14 02:19	
4-Methyl-2-pentanone (MIBK)	1.1 U	100	1.1	1	11/25/14 02:19	
Acetone	5.6 U	100	5.6	1	11/25/14 02:19	
Acrylonitrile	1.5 U	200	1.5	1	11/25/14 02:19	
Benzene	0.21 U	1.0	0.21	1	11/25/14 02:19	
Bromochloromethane	0.27 U	5.0	0.27	1	11/25/14 02:19	
Bromodichloromethane	0.22 U	1.0	0.22	1	11/25/14 02:19	
Bromoform	0.42 U	3.0	0.42	1	11/25/14 02:19	
Bromomethane	0.23 U	10	0.23	1	11/25/14 02:19	
Carbon Disulfide	2.4 U	100	2.4	1	11/25/14 02:19	
Carbon Tetrachloride	0.34 U	1.0	0.34	1	11/25/14 02:19	
Chlorobenzene	0.16 U	3.0	0.16	1	11/25/14 02:19	
Chloroethane	0.52 U	10	0.52	1	11/25/14 02:19	
Chloroform	0.35 U	5.0	0.35	1	11/25/14 02:19	
Chloromethane	0.36 U	1.0	0.36	1	11/25/14 02:19	*
cis-1,2-Dichloroethene	0.36 U	5.0	0.36	1	11/25/14 02:19	
cis-1,3-Dichloropropene	0.20 U	1.0	0.20	1	11/25/14 02:19	
Dibromochloromethane	0.21 U	3.0	0.21	1	11/25/14 02:19	
Dibromomethane	0.36 U	10	0.36	1	11/25/14 02:19	
Ethylbenzene	0.21 U	1.0	0.21	1	11/25/14 02:19	
Iodomethane	2.7 U	10	2.7	1	11/25/14 02:19	
m,p-Xylenes	0.31 U	2.0	0.31	1	11/25/14 02:19	
Methylene Chloride	0.21 U	5.0	0.21	1	11/25/14 02:19	
o-Xylene	0.14 U	1.0	0.14	1	11/25/14 02:19	
Styrene	0.29 U	1.0	0.29	1	11/25/14 02:19	
Tetrachloroethene (PCE)	0.22 U	1.0	0.22	1	11/25/14 02:19	
Tetrahydrofuran	5.3 U	20	5.3	1	11/25/14 02:19	
Toluene	0.19 U	1.0	0.19	1	11/25/14 02:19	
trans-1,2-Dichloroethene	0.19 U	5.0	0.19	1	11/25/14 02:19	

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Analytical Report

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	11/12/14 07:45
Sample Matrix:	Ground Water	**Date Received:**	11/13/14 09:15
Sample Name:	MW1	**Units:**	ug/L
Lab Code:	J1408866-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260B

Analyte Name	Result		PQL	MDL	Dil.	Date Analyzed	Q
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	1	11/25/14 02:19	
trans-1,4-Dichloro-2-butene	2.2	U	100	2.2	1	11/25/14 02:19	
Trichloroethene (TCE)	0.36	U	1.0	0.36	1	11/25/14 02:19	
Trichlorofluoromethane	0.24	U	20	0.24	1	11/25/14 02:19	
Vinyl Acetate	1.9	U	50	1.9	1	11/25/14 02:19	
Vinyl Chloride	0.36	U	1.0	0.36	1	11/25/14 02:19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	93	72 - 121	11/25/14 02:19	
4-Bromofluorobenzene	94	86 - 113	11/25/14 02:19	
Dibromofluoromethane	100	86 - 112	11/25/14 02:19	
Toluene-d8	111	88 - 115	11/25/14 02:19	

ALS Group USA, Corp.
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Analytical Report

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	11/12/14 07:45
Sample Matrix:	Ground Water	**Date Received:**	11/13/14 09:15
Sample Name:	MW1	**Basis:**	NA
Lab Code:	J1408866-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total Recoverable	6010C	4	U	ug/L	10	4	1	11/20/14 00:32	11/19/14	
Barium, Total Recoverable	6010C	**40**	**J**	ug/L	100	0.3	1	11/20/14 00:32	11/19/14	
Cadmium, Total Recoverable	6010C	0.2	U	ug/L	5.0	0.2	1	11/20/14 00:32	11/19/14	
Chromium, Total Recoverable	6010C	0.5	U	ug/L	10	0.5	1	11/20/14 00:32	11/19/14	
Lead, Total Recoverable	6010C	4	U	ug/L	10	4	1	11/20/14 00:32	11/19/14	
Mercury, Total	7470A	**0.06**	**J**	ug/L	0.20	0.02	1	11/26/14 16:22	11/25/14	
Selenium, Total Recoverable	6010C	7	U	ug/L	10	7	1	11/20/14 00:32	11/19/14	
Silver, Total Recoverable	6010C	2	U	ug/L	10	2	1	11/20/14 00:32	11/19/14	

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	11/12/14 08:50
Sample Matrix:	Ground Water	**Date Received:**	11/13/14 09:15
Sample Name:	CD1	**Units:**	ug/L
Lab Code:	J1408866-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
1,1,1,2-Tetrachloroethane	0.19 U	5.0	0.19	1	11/25/14 02:46	
1,1,1-Trichloroethane (TCA)	0.17 U	1.0	0.17	1	11/25/14 02:46	
1,1,2,2-Tetrachloroethane	0.29 U	3.0	0.29	1	11/25/14 02:46	
1,1,2-Trichloroethane	0.40 U	1.0	0.40	1	11/25/14 02:46	
1,1-Dichloroethane (1,1-DCA)	0.30 U	5.0	0.30	1	11/25/14 02:46	
1,1-Dichloroethene (1,1-DCE)	0.16 U	5.0	0.16	1	11/25/14 02:46	
1,2,3-Trichloropropane	0.42 U	2.0	0.42	1	11/25/14 02:46	
1,2-Dibromo-3-chloropropane (DBCP)	2.3 U	13	2.3	1	11/25/14 02:46	
1,2-Dibromoethane (EDB)	0.46 U	1.0	0.46	1	11/25/14 02:46	
1,2-Dichlorobenzene	0.48 U	5.0	0.48	1	11/25/14 02:46	
1,2-Dichloroethane	0.22 U	1.0	0.22	1	11/25/14 02:46	
1,2-Dichloropropane	0.19 U	1.0	0.19	1	11/25/14 02:46	
1,4-Dichlorobenzene	0.16 U	1.0	0.16	1	11/25/14 02:46	
2-Butanone (MEK)	3.8 U	100	3.8	1	11/25/14 02:46	
2-Hexanone	2.2 U	50	2.2	1	11/25/14 02:46	
4-Methyl-2-pentanone (MIBK)	1.1 U	100	1.1	1	11/25/14 02:46	
Acetone	5.6 U	100	5.6	1	11/25/14 02:46	
Acrylonitrile	1.5 U	200	1.5	1	11/25/14 02:46	
Benzene	0.21 U	1.0	0.21	1	11/25/14 02:46	
Bromochloromethane	0.27 U	5.0	0.27	1	11/25/14 02:46	
Bromodichloromethane	0.22 U	1.0	0.22	1	11/25/14 02:46	
Bromoform	0.42 U	3.0	0.42	1	11/25/14 02:46	
Bromomethane	0.23 U	10	0.23	1	11/25/14 02:46	
Carbon Disulfide	2.4 U	100	2.4	1	11/25/14 02:46	
Carbon Tetrachloride	0.34 U	1.0	0.34	1	11/25/14 02:46	
Chlorobenzene	0.16 U	3.0	0.16	1	11/25/14 02:46	
Chloroethane	0.52 U	10	0.52	1	11/25/14 02:46	
Chloroform	0.35 U	5.0	0.35	1	11/25/14 02:46	
Chloromethane	0.36 U	1.0	0.36	1	11/25/14 02:46	*
cis-1,2-Dichloroethene	0.36 U	5.0	0.36	1	11/25/14 02:46	
cis-1,3-Dichloropropene	0.20 U	1.0	0.20	1	11/25/14 02:46	
Dibromochloromethane	0.21 U	3.0	0.21	1	11/25/14 02:46	
Dibromomethane	0.36 U	10	0.36	1	11/25/14 02:46	
Ethylbenzene	0.21 U	1.0	0.21	1	11/25/14 02:46	
Iodomethane	2.7 U	10	2.7	1	11/25/14 02:46	
m,p-Xylenes	0.31 U	2.0	0.31	1	11/25/14 02:46	
Methylene Chloride	0.21 U	5.0	0.21	1	11/25/14 02:46	
o-Xylene	0.14 U	1.0	0.14	1	11/25/14 02:46	
Styrene	0.29 U	1.0	0.29	1	11/25/14 02:46	
Tetrachloroethene (PCE)	0.22 U	1.0	0.22	1	11/25/14 02:46	
Tetrahydrofuran	5.3 U	20	5.3	1	11/25/14 02:46	
Toluene	0.19 U	1.0	0.19	1	11/25/14 02:46	
trans-1,2-Dichloroethene	0.19 U	5.0	0.19	1	11/25/14 02:46	

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Analytical Report

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	11/12/14 08:50
Sample Matrix:	Ground Water	**Date Received:**	11/13/14 09:15
Sample Name:	CD1	**Units:**	ug/L
Lab Code:	J1408866-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
trans-1,3-Dichloropropene	0.23 U	1.0	0.23	1	11/25/14 02:46	
trans-1,4-Dichloro-2-butene	2.2 U	100	2.2	1	11/25/14 02:46	
Trichloroethene (TCE)	0.36 U	1.0	0.36	1	11/25/14 02:46	
Trichlorofluoromethane	0.24 U	20	0.24	1	11/25/14 02:46	
Vinyl Acetate	1.9 U	50	1.9	1	11/25/14 02:46	
Vinyl Chloride	0.36 U	1.0	0.36	1	11/25/14 02:46	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	92	72 - 121	11/25/14 02:46	
4-Bromofluorobenzene	93	86 - 113	11/25/14 02:46	
Dibromofluoromethane	99	86 - 112	11/25/14 02:46	
Toluene-d8	111	88 - 115	11/25/14 02:46	

Analytical Report

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	11/12/14 08:50
Sample Matrix:	Ground Water	**Date Received:**	11/13/14 09:15
Sample Name:	CD1	**Basis:**	NA
Lab Code:	J1408866-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total Recoverable	6010C	4	U	ug/L	10	4	1	11/20/14 00:37	11/19/14	
Barium, Total Recoverable	6010C	**120**		ug/L	100	0.3	1	11/20/14 00:37	11/19/14	
Cadmium, Total Recoverable	6010C	0.2	U	ug/L	5.0	0.2	1	11/20/14 00:37	11/19/14	
Chromium, Total Recoverable	6010C	**6**	**J**	ug/L	10	0.5	1	11/20/14 00:37	11/19/14	
Lead, Total Recoverable	6010C	4	U	ug/L	10	4	1	11/20/14 00:37	11/19/14	
Mercury, Total	7470A	0.02	U	ug/L	0.20	0.02	1	11/26/14 16:23	11/25/14	
Selenium, Total Recoverable	6010C	7	U	ug/L	10	7	1	11/20/14 00:37	11/19/14	
Silver, Total Recoverable	6010C	2	U	ug/L	10	2	1	11/20/14 00:37	11/19/14	

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Analytical Report

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	11/12/14 08:30
Sample Matrix:	Ground Water	**Date Received:**	11/13/14 09:15
Sample Name:	CD2	**Units:**	ug/L
Lab Code:	J1408866-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
1,1,1,2-Tetrachloroethane	0.19 U	5.0	0.19	1	11/25/14 03:13	
1,1,1-Trichloroethane (TCA)	0.17 U	1.0	0.17	1	11/25/14 03:13	
1,1,2,2-Tetrachloroethane	0.29 U	3.0	0.29	1	11/25/14 03:13	
1,1,2-Trichloroethane	0.40 U	1.0	0.40	1	11/25/14 03:13	
1,1-Dichloroethane (1,1-DCA)	0.30 U	5.0	0.30	1	11/25/14 03:13	
1,1-Dichloroethene (1,1-DCE)	0.16 U	5.0	0.16	1	11/25/14 03:13	
1,2,3-Trichloropropane	0.42 U	2.0	0.42	1	11/25/14 03:13	
1,2-Dibromo-3-chloropropane (DBCP)	2.3 U	13	2.3	1	11/25/14 03:13	
1,2-Dibromoethane (EDB)	0.46 U	1.0	0.46	1	11/25/14 03:13	
1,2-Dichlorobenzene	0.48 U	5.0	0.48	1	11/25/14 03:13	
1,2-Dichloroethane	0.22 U	1.0	0.22	1	11/25/14 03:13	
1,2-Dichloropropane	0.19 U	1.0	0.19	1	11/25/14 03:13	
1,4-Dichlorobenzene	0.16 U	1.0	0.16	1	11/25/14 03:13	
2-Butanone (MEK)	3.8 U	100	3.8	1	11/25/14 03:13	
2-Hexanone	2.2 U	50	2.2	1	11/25/14 03:13	
4-Methyl-2-pentanone (MIBK)	1.1 U	100	1.1	1	11/25/14 03:13	
Acetone	5.6 U	100	5.6	1	11/25/14 03:13	
Acrylonitrile	1.5 U	200	1.5	1	11/25/14 03:13	
Benzene	0.21 U	1.0	0.21	1	11/25/14 03:13	
Bromochloromethane	0.27 U	5.0	0.27	1	11/25/14 03:13	
Bromodichloromethane	0.22 U	1.0	0.22	1	11/25/14 03:13	
Bromoform	0.42 U	3.0	0.42	1	11/25/14 03:13	
Bromomethane	0.23 U	10	0.23	1	11/25/14 03:13	
Carbon Disulfide	2.4 U	100	2.4	1	11/25/14 03:13	
Carbon Tetrachloride	0.34 U	1.0	0.34	1	11/25/14 03:13	
Chlorobenzene	0.16 U	3.0	0.16	1	11/25/14 03:13	
Chloroethane	0.52 U	10	0.52	1	11/25/14 03:13	
Chloroform	0.35 U	5.0	0.35	1	11/25/14 03:13	
Chloromethane	0.36 U	1.0	0.36	1	11/25/14 03:13	*
cis-1,2-Dichloroethene	0.36 U	5.0	0.36	1	11/25/14 03:13	
cis-1,3-Dichloropropene	0.20 U	1.0	0.20	1	11/25/14 03:13	
Dibromochloromethane	0.21 U	3.0	0.21	1	11/25/14 03:13	
Dibromomethane	0.36 U	10	0.36	1	11/25/14 03:13	
Ethylbenzene	0.21 U	1.0	0.21	1	11/25/14 03:13	
Iodomethane	2.7 U	10	2.7	1	11/25/14 03:13	
m,p-Xylenes	0.31 U	2.0	0.31	1	11/25/14 03:13	
Methylene Chloride	0.21 U	5.0	0.21	1	11/25/14 03:13	
o-Xylene	0.14 U	1.0	0.14	1	11/25/14 03:13	
Styrene	0.29 U	1.0	0.29	1	11/25/14 03:13	
Tetrachloroethene (PCE)	0.22 U	1.0	0.22	1	11/25/14 03:13	
Tetrahydrofuran	5.3 U	20	5.3	1	11/25/14 03:13	
Toluene	0.19 U	1.0	0.19	1	11/25/14 03:13	
trans-1,2-Dichloroethene	0.19 U	5.0	0.19	1	11/25/14 03:13	

Analytical Report

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	11/12/14 08:30
Sample Matrix:	Ground Water	**Date Received:**	11/13/14 09:15
Sample Name:	CD2	**Units:**	ug/L
Lab Code:	J1408866-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
trans-1,3-Dichloropropene	0.23 U	1.0	0.23	1	11/25/14 03:13	
trans-1,4-Dichloro-2-butene	2.2 U	100	2.2	1	11/25/14 03:13	
Trichloroethene (TCE)	0.36 U	1.0	0.36	1	11/25/14 03:13	
Trichlorofluoromethane	0.24 U	20	0.24	1	11/25/14 03:13	
Vinyl Acetate	1.9 U	50	1.9	1	11/25/14 03:13	
Vinyl Chloride	0.36 U	1.0	0.36	1	11/25/14 03:13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	91	72 - 121	11/25/14 03:13	
4-Bromofluorobenzene	91	86 - 113	11/25/14 03:13	
Dibromofluoromethane	103	86 - 112	11/25/14 03:13	
Toluene-d8	111	88 - 115	11/25/14 03:13	

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Analytical Report

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	11/12/14 08:30
Sample Matrix:	Ground Water	**Date Received:**	11/13/14 09:15
Sample Name:	CD2	**Basis:**	NA
Lab Code:	J1408866-003		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total Recoverable	6010C	4	U	ug/L	10	4	1	11/20/14 00:42	11/19/14	
Barium, Total Recoverable	6010C	**50**	**J**	ug/L	100	0.3	1	11/20/14 00:42	11/19/14	
Cadmium, Total Recoverable	6010C	0.2	U	ug/L	5.0	0.2	1	11/20/14 00:42	11/19/14	
Chromium, Total Recoverable	6010C	**3**	**J**	ug/L	10	0.5	1	11/20/14 00:42	11/19/14	
Lead, Total Recoverable	6010C	4	U	ug/L	10	4	1	11/20/14 00:42	11/19/14	
Mercury, Total	7470A	0.02	U	ug/L	0.20	0.02	1	11/26/14 16:24	11/25/14	
Selenium, Total Recoverable	6010C	7	U	ug/L	10	7	1	11/20/14 00:42	11/19/14	
Silver, Total Recoverable	6010C	2	U	ug/L	10	2	1	11/20/14 00:42	11/19/14	

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	11/12/14 08:10
Sample Matrix:	Ground Water	**Date Received:**	11/13/14 09:15
Sample Name:	CD3	**Units:**	ug/L
Lab Code:	J1408866-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
1,1,1,2-Tetrachloroethane	0.19 U	5.0	0.19	1	11/25/14 03:40	
1,1,1-Trichloroethane (TCA)	0.17 U	1.0	0.17	1	11/25/14 03:40	
1,1,2,2-Tetrachloroethane	0.29 U	3.0	0.29	1	11/25/14 03:40	
1,1,2-Trichloroethane	0.40 U	1.0	0.40	1	11/25/14 03:40	
1,1-Dichloroethane (1,1-DCA)	0.30 U	5.0	0.30	1	11/25/14 03:40	
1,1-Dichloroethene (1,1-DCE)	0.16 U	5.0	0.16	1	11/25/14 03:40	
1,2,3-Trichloropropane	0.42 U	2.0	0.42	1	11/25/14 03:40	
1,2-Dibromo-3-chloropropane (DBCP)	2.3 U	13	2.3	1	11/25/14 03:40	
1,2-Dibromoethane (EDB)	0.46 U	1.0	0.46	1	11/25/14 03:40	
1,2-Dichlorobenzene	0.48 U	5.0	0.48	1	11/25/14 03:40	
1,2-Dichloroethane	0.22 U	1.0	0.22	1	11/25/14 03:40	
1,2-Dichloropropane	0.19 U	1.0	0.19	1	11/25/14 03:40	
1,4-Dichlorobenzene	0.16 U	1.0	0.16	1	11/25/14 03:40	
2-Butanone (MEK)	3.8 U	100	3.8	1	11/25/14 03:40	
2-Hexanone	2.2 U	50	2.2	1	11/25/14 03:40	
4-Methyl-2-pentanone (MIBK)	1.1 U	100	1.1	1	11/25/14 03:40	
Acetone	5.6 U	100	5.6	1	11/25/14 03:40	
Acrylonitrile	1.5 U	200	1.5	1	11/25/14 03:40	
Benzene	0.21 U	1.0	0.21	1	11/25/14 03:40	
Bromochloromethane	0.27 U	5.0	0.27	1	11/25/14 03:40	
Bromodichloromethane	0.22 U	1.0	0.22	1	11/25/14 03:40	
Bromoform	0.42 U	3.0	0.42	1	11/25/14 03:40	
Bromomethane	0.23 U	10	0.23	1	11/25/14 03:40	
Carbon Disulfide	2.4 U	100	2.4	1	11/25/14 03:40	
Carbon Tetrachloride	0.34 U	1.0	0.34	1	11/25/14 03:40	
Chlorobenzene	0.16 U	3.0	0.16	1	11/25/14 03:40	
Chloroethane	0.52 U	10	0.52	1	11/25/14 03:40	
Chloroform	0.35 U	5.0	0.35	1	11/25/14 03:40	
Chloromethane	0.36 U	1.0	0.36	1	11/25/14 03:40	*
cis-1,2-Dichloroethene	0.36 U	5.0	0.36	1	11/25/14 03:40	
cis-1,3-Dichloropropene	0.20 U	1.0	0.20	1	11/25/14 03:40	
Dibromochloromethane	0.21 U	3.0	0.21	1	11/25/14 03:40	
Dibromomethane	0.36 U	10	0.36	1	11/25/14 03:40	
Ethylbenzene	0.21 U	1.0	0.21	1	11/25/14 03:40	
Iodomethane	2.7 U	10	2.7	1	11/25/14 03:40	
m,p-Xylenes	0.31 U	2.0	0.31	1	11/25/14 03:40	
Methylene Chloride	0.21 U	5.0	0.21	1	11/25/14 03:40	
o-Xylene	0.14 U	1.0	0.14	1	11/25/14 03:40	
Styrene	0.29 U	1.0	0.29	1	11/25/14 03:40	
Tetrachloroethene (PCE)	0.22 U	1.0	0.22	1	11/25/14 03:40	
Tetrahydrofuran	5.3 U	20	5.3	1	11/25/14 03:40	
Toluene	0.19 U	1.0	0.19	1	11/25/14 03:40	
trans-1,2-Dichloroethene	0.19 U	5.0	0.19	1	11/25/14 03:40	

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Analytical Report

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	11/12/14 08:10
Sample Matrix:	Ground Water	**Date Received:**	11/13/14 09:15
Sample Name:	CD3	**Units:**	ug/L
Lab Code:	J1408866-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
trans-1,3-Dichloropropene	0.23 U	1.0	0.23	1	11/25/14 03:40	
trans-1,4-Dichloro-2-butene	2.2 U	100	2.2	1	11/25/14 03:40	
Trichloroethene (TCE)	0.36 U	1.0	0.36	1	11/25/14 03:40	
Trichlorofluoromethane	0.24 U	20	0.24	1	11/25/14 03:40	
Vinyl Acetate	1.9 U	50	1.9	1	11/25/14 03:40	
Vinyl Chloride	0.36 U	1.0	0.36	1	11/25/14 03:40	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	93	72 - 121	11/25/14 03:40	
4-Bromofluorobenzene	92	86 - 113	11/25/14 03:40	
Dibromofluoromethane	98	86 - 112	11/25/14 03:40	
Toluene-d8	112	88 - 115	11/25/14 03:40	

Analytical Report

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	11/12/14 08:10
Sample Matrix:	Ground Water	**Date Received:**	11/13/14 09:15
Sample Name:	CD3	**Basis:**	NA
Lab Code:	J1408866-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total Recoverable	6010C	4	U	ug/L	10	4	1	11/20/14 00:47	11/19/14	
Barium, Total Recoverable	6010C	**40**	**J**	ug/L	100	0.3	1	11/20/14 00:47	11/19/14	
Cadmium, Total Recoverable	6010C	0.2	U	ug/L	5.0	0.2	1	11/20/14 00:47	11/19/14	
Chromium, Total Recoverable	6010C	0.5	U	ug/L	10	0.5	1	11/20/14 00:47	11/19/14	
Lead, Total Recoverable	6010C	4	U	ug/L	10	4	1	11/20/14 00:47	11/19/14	
Mercury, Total	7470A	**0.08**	**J**	ug/L	0.20	0.02	1	11/26/14 16:26	11/25/14	
Selenium, Total Recoverable	6010C	7	U	ug/L	10	7	1	11/20/14 00:47	11/19/14	
Silver, Total Recoverable	6010C	2	U	ug/L	10	2	1	11/20/14 00:47	11/19/14	

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Analytical Report

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	11/12/14 16:25
Sample Matrix:	Ground Water	**Date Received:**	11/13/14 09:15
Sample Name:	EQ Blank	**Units:**	ug/L
Lab Code:	J1408866-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
1,1,1,2-Tetrachloroethane	0.19 U	5.0	0.19	1	11/25/14 04:07	
1,1,1-Trichloroethane (TCA)	0.17 U	1.0	0.17	1	11/25/14 04:07	
1,1,2,2-Tetrachloroethane	0.29 U	3.0	0.29	1	11/25/14 04:07	
1,1,2-Trichloroethane	0.40 U	1.0	0.40	1	11/25/14 04:07	
1,1-Dichloroethane (1,1-DCA)	0.30 U	5.0	0.30	1	11/25/14 04:07	
1,1-Dichloroethene (1,1-DCE)	0.16 U	5.0	0.16	1	11/25/14 04:07	
1,2,3-Trichloropropane	0.42 U	2.0	0.42	1	11/25/14 04:07	
1,2-Dibromo-3-chloropropane (DBCP)	2.3 U	13	2.3	1	11/25/14 04:07	
1,2-Dibromoethane (EDB)	0.46 U	1.0	0.46	1	11/25/14 04:07	
1,2-Dichlorobenzene	0.48 U	5.0	0.48	1	11/25/14 04:07	
1,2-Dichloroethane	0.22 U	1.0	0.22	1	11/25/14 04:07	
1,2-Dichloropropane	0.19 U	1.0	0.19	1	11/25/14 04:07	
1,4-Dichlorobenzene	0.16 U	1.0	0.16	1	11/25/14 04:07	
2-Butanone (MEK)	3.8 U	100	3.8	1	11/25/14 04:07	
2-Hexanone	2.2 U	50	2.2	1	11/25/14 04:07	
4-Methyl-2-pentanone (MIBK)	1.1 U	100	1.1	1	11/25/14 04:07	
Acetone	5.6 U	100	5.6	1	11/25/14 04:07	
Acrylonitrile	1.5 U	200	1.5	1	11/25/14 04:07	
Benzene	0.21 U	1.0	0.21	1	11/25/14 04:07	
Bromochloromethane	0.27 U	5.0	0.27	1	11/25/14 04:07	
Bromodichloromethane	0.22 U	1.0	0.22	1	11/25/14 04:07	
Bromoform	0.42 U	3.0	0.42	1	11/25/14 04:07	
Bromomethane	0.23 U	10	0.23	1	11/25/14 04:07	
Carbon Disulfide	2.4 U	100	2.4	1	11/25/14 04:07	
Carbon Tetrachloride	0.34 U	1.0	0.34	1	11/25/14 04:07	
Chlorobenzene	0.16 U	3.0	0.16	1	11/25/14 04:07	
Chloroethane	0.52 U	10	0.52	1	11/25/14 04:07	
Chloroform	0.35 U	5.0	0.35	1	11/25/14 04:07	
Chloromethane	0.36 U	1.0	0.36	1	11/25/14 04:07	*
cis-1,2-Dichloroethene	0.36 U	5.0	0.36	1	11/25/14 04:07	
cis-1,3-Dichloropropene	0.20 U	1.0	0.20	1	11/25/14 04:07	
Dibromochloromethane	0.21 U	3.0	0.21	1	11/25/14 04:07	
Dibromomethane	0.36 U	10	0.36	1	11/25/14 04:07	
Ethylbenzene	0.21 U	1.0	0.21	1	11/25/14 04:07	
Iodomethane	2.7 U	10	2.7	1	11/25/14 04:07	
m,p-Xylenes	0.31 U	2.0	0.31	1	11/25/14 04:07	
Methylene Chloride	0.21 U	5.0	0.21	1	11/25/14 04:07	
o-Xylene	0.14 U	1.0	0.14	1	11/25/14 04:07	
Styrene	0.29 U	1.0	0.29	1	11/25/14 04:07	
Tetrachloroethene (PCE)	0.22 U	1.0	0.22	1	11/25/14 04:07	
Tetrahydrofuran	5.3 U	20	5.3	1	11/25/14 04:07	
Toluene	0.19 U	1.0	0.19	1	11/25/14 04:07	
trans-1,2-Dichloroethene	0.19 U	5.0	0.19	1	11/25/14 04:07	

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Analytical Report

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	11/12/14 16:25
Sample Matrix:	Ground Water	**Date Received:**	11/13/14 09:15
Sample Name:	EQ Blank	**Units:**	ug/L
Lab Code:	J1408866-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260B

Analyte Name	Result		PQL	MDL	Dil.	Date Analyzed	Q
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	1	11/25/14 04:07	
trans-1,4-Dichloro-2-butene	2.2	U	100	2.2	1	11/25/14 04:07	
Trichloroethene (TCE)	0.36	U	1.0	0.36	1	11/25/14 04:07	
Trichlorofluoromethane	0.24	U	20	0.24	1	11/25/14 04:07	
Vinyl Acetate	1.9	U	50	1.9	1	11/25/14 04:07	
Vinyl Chloride	0.36	U	1.0	0.36	1	11/25/14 04:07	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	91	72 - 121	11/25/14 04:07	
4-Bromofluorobenzene	92	86 - 113	11/25/14 04:07	
Dibromofluoromethane	101	86 - 112	11/25/14 04:07	
Toluene-d8	111	88 - 115	11/25/14 04:07	

Analytical Report

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	11/12/14 16:25
Sample Matrix:	Ground Water	**Date Received:**	11/13/14 09:15
Sample Name:	EQ Blank	**Basis:**	NA
Lab Code:	J1408866-005		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total Recoverable	6010C	4	U	ug/L	10	4	1	11/20/14 00:52	11/19/14	
Barium, Total Recoverable	6010C	0.3	U	ug/L	100	0.3	1	11/20/14 00:52	11/19/14	
Cadmium, Total Recoverable	6010C	0.2	U	ug/L	5.0	0.2	1	11/20/14 00:52	11/19/14	
Chromium, Total Recoverable	6010C	0.5	U	ug/L	10	0.5	1	11/20/14 00:52	11/19/14	
Lead, Total Recoverable	6010C	4	U	ug/L	10	4	1	11/20/14 00:52	11/19/14	
Mercury, Total	7470A	0.02	U	ug/L	0.20	0.02	1	11/26/14 16:27	11/25/14	
Selenium, Total Recoverable	6010C	7	U	ug/L	10	7	1	11/20/14 00:52	11/19/14	
Silver, Total Recoverable	6010C	2	U	ug/L	10	2	1	11/20/14 00:52	11/19/14	

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	11/12/14 00:00
Sample Matrix:	Ground Water	**Date Received:**	11/13/14 09:15
Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	J1408866-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260B

Analyte Name	Result		PQL	MDL	Dil.	Date Analyzed	Q
1,1,1,2-Tetrachloroethane	0.19	U	5.0	0.19	1	11/25/14 00:57	
1,1,1-Trichloroethane (TCA)	0.17	U	1.0	0.17	1	11/25/14 00:57	
1,1,2,2-Tetrachloroethane	0.29	U	3.0	0.29	1	11/25/14 00:57	
1,1,2-Trichloroethane	0.40	U	1.0	0.40	1	11/25/14 00:57	
1,1-Dichloroethane (1,1-DCA)	0.30	U	5.0	0.30	1	11/25/14 00:57	
1,1-Dichloroethene (1,1-DCE)	0.16	U	5.0	0.16	1	11/25/14 00:57	
1,2,3-Trichloropropane	0.42	U	2.0	0.42	1	11/25/14 00:57	
1,2-Dibromo-3-chloropropane (DBCP)	2.3	U	13	2.3	1	11/25/14 00:57	
1,2-Dibromoethane (EDB)	0.46	U	1.0	0.46	1	11/25/14 00:57	
1,2-Dichlorobenzene	0.48	U	5.0	0.48	1	11/25/14 00:57	
1,2-Dichloroethane	0.22	U	1.0	0.22	1	11/25/14 00:57	
1,2-Dichloropropane	0.19	U	1.0	0.19	1	11/25/14 00:57	
1,4-Dichlorobenzene	0.16	U	1.0	0.16	1	11/25/14 00:57	
2-Butanone (MEK)	3.8	U	100	3.8	1	11/25/14 00:57	
2-Hexanone	2.2	U	50	2.2	1	11/25/14 00:57	
4-Methyl-2-pentanone (MIBK)	1.1	U	100	1.1	1	11/25/14 00:57	
Acetone	5.6	U	100	5.6	1	11/25/14 00:57	
Acrylonitrile	1.5	U	200	1.5	1	11/25/14 00:57	
Benzene	0.21	U	1.0	0.21	1	11/25/14 00:57	
Bromochloromethane	0.27	U	5.0	0.27	1	11/25/14 00:57	
Bromodichloromethane	0.22	U	1.0	0.22	1	11/25/14 00:57	
Bromoform	0.42	U	3.0	0.42	1	11/25/14 00:57	
Bromomethane	0.23	U	10	0.23	1	11/25/14 00:57	
Carbon Disulfide	2.4	U	100	2.4	1	11/25/14 00:57	
Carbon Tetrachloride	0.34	U	1.0	0.34	1	11/25/14 00:57	
Chlorobenzene	0.16	U	3.0	0.16	1	11/25/14 00:57	
Chloroethane	0.52	U	10	0.52	1	11/25/14 00:57	
Chloroform	0.35	U	5.0	0.35	1	11/25/14 00:57	
Chloromethane	0.36	U	1.0	0.36	1	11/25/14 00:57	*
cis-1,2-Dichloroethene	0.36	U	5.0	0.36	1	11/25/14 00:57	
cis-1,3-Dichloropropene	0.20	U	1.0	0.20	1	11/25/14 00:57	
Dibromochloromethane	0.21	U	3.0	0.21	1	11/25/14 00:57	
Dibromomethane	0.36	U	10	0.36	1	11/25/14 00:57	
Ethylbenzene	0.21	U	1.0	0.21	1	11/25/14 00:57	
Iodomethane	2.7	U	10	2.7	1	11/25/14 00:57	
m,p-Xylenes	0.31	U	2.0	0.31	1	11/25/14 00:57	
Methylene Chloride	**1.6**	**J**	5.0	0.21	1	11/25/14 00:57	
o-Xylene	0.14	U	1.0	0.14	1	11/25/14 00:57	
Styrene	0.29	U	1.0	0.29	1	11/25/14 00:57	
Tetrachloroethene (PCE)	0.22	U	1.0	0.22	1	11/25/14 00:57	
Tetrahydrofuran	5.3	U	20	5.3	1	11/25/14 00:57	
Toluene	0.19	U	1.0	0.19	1	11/25/14 00:57	
trans-1,2-Dichloroethene	0.19	U	5.0	0.19	1	11/25/14 00:57	

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Analytical Report

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	11/12/14 00:00
Sample Matrix:	Ground Water	**Date Received:**	11/13/14 09:15
Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	J1408866-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260B

Analyte Name	Result		PQL	MDL	Dil.	Date Analyzed	Q
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	1	11/25/14 00:57	
trans-1,4-Dichloro-2-butene	2.2	U	100	2.2	1	11/25/14 00:57	
Trichloroethene (TCE)	0.36	U	1.0	0.36	1	11/25/14 00:57	
Trichlorofluoromethane	0.24	U	20	0.24	1	11/25/14 00:57	
Vinyl Acetate	1.9	U	50	1.9	1	11/25/14 00:57	
Vinyl Chloride	0.36	U	1.0	0.36	1	11/25/14 00:57	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	93	72 - 121	11/25/14 00:57	
4-Bromofluorobenzene	92	86 - 113	11/25/14 00:57	
Dibromofluoromethane	100	86 - 112	11/25/14 00:57	
Toluene-d8	109	88 - 115	11/25/14 00:57	

Analytical Report

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	JQ1409200-03	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260B

Analyte Name	Result		PQL	MDL	Dil.	Date Analyzed	Q
1,1,1,2-Tetrachloroethane	0.19	U	5.0	0.19	1	11/25/14 00:03	
1,1,1-Trichloroethane (TCA)	0.17	U	1.0	0.17	1	11/25/14 00:03	
1,1,2,2-Tetrachloroethane	0.29	U	3.0	0.29	1	11/25/14 00:03	
1,1,2-Trichloroethane	0.40	U	1.0	0.40	1	11/25/14 00:03	
1,1-Dichloroethane (1,1-DCA)	0.30	U	5.0	0.30	1	11/25/14 00:03	
1,1-Dichloroethene (1,1-DCE)	0.16	U	5.0	0.16	1	11/25/14 00:03	
1,2,3-Trichloropropane	0.42	U	2.0	0.42	1	11/25/14 00:03	
1,2-Dibromo-3-chloropropane (DBCP)	2.3	U	13	2.3	1	11/25/14 00:03	
1,2-Dibromoethane (EDB)	0.46	U	1.0	0.46	1	11/25/14 00:03	
1,2-Dichlorobenzene	0.48	U	5.0	0.48	1	11/25/14 00:03	
1,2-Dichloroethane	0.22	U	1.0	0.22	1	11/25/14 00:03	
1,2-Dichloropropane	0.19	U	1.0	0.19	1	11/25/14 00:03	
1,4-Dichlorobenzene	0.16	U	1.0	0.16	1	11/25/14 00:03	
2-Butanone (MEK)	3.8	U	100	3.8	1	11/25/14 00:03	
2-Hexanone	2.2	U	50	2.2	1	11/25/14 00:03	
4-Methyl-2-pentanone (MIBK)	1.1	U	100	1.1	1	11/25/14 00:03	
Acetone	5.6	U	100	5.6	1	11/25/14 00:03	
Acrylonitrile	1.5	U	200	1.5	1	11/25/14 00:03	
Benzene	0.21	U	1.0	0.21	1	11/25/14 00:03	
Bromochloromethane	0.27	U	5.0	0.27	1	11/25/14 00:03	
Bromodichloromethane	0.22	U	1.0	0.22	1	11/25/14 00:03	
Bromoform	0.42	U	3.0	0.42	1	11/25/14 00:03	
Bromomethane	0.23	U	10	0.23	1	11/25/14 00:03	
Carbon Disulfide	2.4	U	100	2.4	1	11/25/14 00:03	
Carbon Tetrachloride	0.34	U	1.0	0.34	1	11/25/14 00:03	
Chlorobenzene	0.16	U	3.0	0.16	1	11/25/14 00:03	
Chloroethane	0.52	U	10	0.52	1	11/25/14 00:03	
Chloroform	0.35	U	5.0	0.35	1	11/25/14 00:03	
Chloromethane	0.36	U	1.0	0.36	1	11/25/14 00:03	
cis-1,2-Dichloroethene	0.36	U	5.0	0.36	1	11/25/14 00:03	
cis-1,3-Dichloropropene	0.20	U	1.0	0.20	1	11/25/14 00:03	
Dibromochloromethane	0.21	U	3.0	0.21	1	11/25/14 00:03	
Dibromomethane	0.36	U	10	0.36	1	11/25/14 00:03	
Ethylbenzene	0.21	U	1.0	0.21	1	11/25/14 00:03	
Iodomethane	2.7	U	10	2.7	1	11/25/14 00:03	
m,p-Xylenes	0.31	U	2.0	0.31	1	11/25/14 00:03	
Methylene Chloride	0.21	U	5.0	0.21	1	11/25/14 00:03	
o-Xylene	0.14	U	1.0	0.14	1	11/25/14 00:03	
Styrene	0.29	U	1.0	0.29	1	11/25/14 00:03	
Tetrachloroethene (PCE)	0.22	U	1.0	0.22	1	11/25/14 00:03	
Tetrahydrofuran	**8.8**	**J**	20	5.3	1	11/25/14 00:03	
Toluene	0.19	U	1.0	0.19	1	11/25/14 00:03	
trans-1,2-Dichloroethene	0.19	U	5.0	0.19	1	11/25/14 00:03	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	JQ1409200-03	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260B

Analyte Name	Result	PQL	MDL	Dil.	Date Analyzed	Q
trans-1,3-Dichloropropene	0.23 U	1.0	0.23	1	11/25/14 00:03	
trans-1,4-Dichloro-2-butene	2.2 U	100	2.2	1	11/25/14 00:03	
Trichloroethene (TCE)	0.36 U	1.0	0.36	1	11/25/14 00:03	
Trichlorofluoromethane	0.24 U	20	0.24	1	11/25/14 00:03	
Vinyl Acetate	1.9 U	50	1.9	1	11/25/14 00:03	
Vinyl Chloride	0.36 U	1.0	0.36	1	11/25/14 00:03	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	95	72 - 121	11/25/14 00:03	
4-Bromofluorobenzene	96	86 - 113	11/25/14 00:03	
Dibromofluoromethane	101	86 - 112	11/25/14 00:03	
Toluene-d8	111	88 - 115	11/25/14 00:03	

Analytical Report

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	J1408866-MB		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	PQL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total Recoverable	6010C	4	U	ug/L	10	4	1	11/19/14 23:03	11/19/14	
Barium, Total Recoverable	6010C	0.3	U	ug/L	100	0.3	1	11/19/14 23:03	11/19/14	
Cadmium, Total Recoverable	6010C	0.2	U	ug/L	5.0	0.2	1	11/19/14 23:03	11/19/14	
Chromium, Total Recoverable	6010C	0.5	U	ug/L	10	0.5	1	11/19/14 23:03	11/19/14	
Lead, Total Recoverable	6010C	4	U	ug/L	10	4	1	11/19/14 23:03	11/19/14	
Mercury, Total	7470A	0.02	U	ug/L	0.20	0.02	1	11/26/14 15:53	11/25/14	
Selenium, Total Recoverable	6010C	7	U	ug/L	10	7	1	11/19/14 23:03	11/19/14	
Silver, Total Recoverable	6010C	2	U	ug/L	10	2	1	11/19/14 23:03	11/19/14	

Client: Wake County Solid Waste Management **Service Request:** J1408866
Project: North Wake C&D Landfill
Sample Matrix: Ground Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260B

Sample Name	Lab Code	1,2-Dichloroethane-d4 72 - 121	4-Bromofluorobenzene 86 - 113	Dibromofluoromethane 86 - 112
MW1	J1408866-001	93	94	100
CD1	J1408866-002	92	93	99
CD2	J1408866-003	91	91	103
CD3	J1408866-004	93	92	98
EQ Blank	J1408866-005	91	92	101
Trip Blank	J1408866-006	93	92	100
Lab Control Sample	JQ1409200-01	91	93	102
Duplicate Lab Control Sample	JQ1409200-02	90	93	99
Method Blank	JQ1409200-03	95	96	101

Client: Wake County Solid Waste Management **Service Request:** J1408866
Project: North Wake C&D Landfill
Sample Matrix: Ground Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260B

Sample Name	Lab Code	Toluene-d8 88 - 115
MW1	J1408866-001	111
CD1	J1408866-002	111
CD2	J1408866-003	111
CD3	J1408866-004	112
EQ Blank	J1408866-005	111
Trip Blank	J1408866-006	109
Lab Control Sample	JQ1409200-01	103
Duplicate Lab Control Sample	JQ1409200-02	104
Method Blank	JQ1409200-03	111

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Analyzed:**	11/24/14 - 11/25/14
Sample Matrix:	Ground Water		

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method:	8260B	**Units:**	ug/L
		Basis:	NA
		Analysis Lot:	422896

	Lab Control Sample JQ1409200-01			Duplicate Lab Control Sample JQ1409200-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,1,1,2-Tetrachloroethane	48.1	50.0	96	48.7	50.0	97	77-118	1	30
1,1,1-Trichloroethane (TCA)	43.6	50.0	87	42.9	50.0	86	70-122	2	30
1,1,2,2-Tetrachloroethane	49.3	50.0	99	48.9	50.0	98	66-135	<1	30
1,1,2-Trichloroethane	50.0	50.0	100	50.7	50.0	101	75-122	1	30
1,1-Dichloroethane (1,1-DCA)	48.8	50.0	98	50.3	50.0	101	79-117	3	30
1,1-Dichloroethene (1,1-DCE)	44.8	50.0	90	45.8	50.0	92	72-128	2	30
1,2,3-Trichloropropane	47.0	50.0	94	47.5	50.0	95	70-123	1	30
1,2-Dibromo-3-chloropropane (DBCP)	45.7	50.0	91	43.9	50.0	88	60-122	4	30
1,2-Dibromoethane (EDB)	49.8	50.0	100	50.2	50.0	100	76-118	<1	30
1,2-Dichlorobenzene	46.7	50.0	93	48.0	50.0	96	81-115	3	30
1,2-Dichloroethane	45.6	50.0	91	46.6	50.0	93	70-117	2	30
1,2-Dichloropropane	50.4	50.0	101	50.8	50.0	102	79-117	<1	30
1,4-Dichlorobenzene	48.5	50.0	97	50.3	50.0	101	82-115	4	30
2-Butanone (MEK)	47.1	50.0	94	48.2	50.0	96	62-138	2	30
2-Hexanone	48.0	50.0	96	49.6	50.0	99	74-127	3	30
4-Methyl-2-pentanone (MIBK)	47.8	50.0	96	49.8	50.0	100	77-120	4	30
Acetone	45.7	50.0	91	48.0	50.0	96	42-161	5	30
Acrylonitrile	48.2	50.0	96	47.5	50.0	95	63-132	2	30
Benzene	51.4	50.0	103	51.7	50.0	103	80-117	<1	30
Bromochloromethane	49.4	50.0	99	49.7	50.0	99	78-118	<1	30
Bromodichloromethane	48.2	50.0	96	49.2	50.0	98	75-118	2	30
Bromoform	48.4	50.0	97	46.9	50.0	94	63-121	3	30
Bromomethane	29.3	50.0	59	26.7	50.0	53	31-153	9	30
Carbon Disulfide	48.1	50.0	96	47.9	50.0	96	72-128	<1	30
Carbon Tetrachloride	43.1	50.0	86	42.5	50.0	85	67-124	1	30
Chlorobenzene	50.8	50.0	102	51.7	50.0	103	83-118	2	30
Chloroethane	55.5	50.0	111	60.9	50.0	122	68-132	9	30
Chloroform	47.7	50.0	95	49.2	50.0	98	77-116	3	30
Chloromethane	24.6	50.0	49 *	33.7	50.0	67	60-128	31 *	30
cis-1,2-Dichloroethene	49.0	50.0	98	49.6	50.0	99	78-117	1	30
cis-1,3-Dichloropropene	50.7	50.0	101	51.5	50.0	103	80-119	2	30
Dibromochloromethane	49.0	50.0	98	48.7	50.0	97	74-121	<1	30
Dibromomethane	47.0	50.0	94	47.0	50.0	94	76-117	<1	30
Ethylbenzene	48.6	50.0	97	50.6	50.0	101	82-119	4	30
Iodomethane	36.3	50.0	73	33.8	50.0	68	51-137	7	30
m,p-Xylenes	89.4	100	89	93.8	100	94	79-122	5	30
Methylene Chloride	49.4	50.0	99	48.9	50.0	98	75-123	1	30
o-Xylene	45.5	50.0	91	48.3	50.0	97	80-119	6	30
Styrene	49.9	50.0	100	51.8	50.0	104	80-121	4	30
Tetrachloroethene (PCE)	44.5	50.0	89	45.9	50.0	92	75-126	3	30
Tetrahydrofuran	101	100	101	103	100	103	40-152	2	30

Client:	Wake County Solid Waste Management	**Service Request:**	J1408866
Project:	North Wake C&D Landfill	**Date Analyzed:**	11/24/14 - 11/25/14
Sample Matrix:	Ground Water		

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method:	8260B	**Units:**	ug/L
		Basis:	NA
		Analysis Lot:	422896

	Lab Control Sample JQ1409200-01			Duplicate Lab Control Sample JQ1409200-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Toluene	51.0	50.0	102	52.1	50.0	104	52-152	2	30
trans-1,2-Dichloroethene	49.7	50.0	99	50.4	50.0	101	75-121	1	30
trans-1,3-Dichloropropene	50.2	50.0	100	49.6	50.0	99	76-118	1	30
trans-1,4-Dichloro-2-butene	47.5	50.0	95	47.6	50.0	95	10-198	<1	30
Trichloroethene (TCE)	44.9	50.0	90	45.5	50.0	91	78-122	1	30
Trichlorofluoromethane	43.5	50.0	87	43.5	50.0	87	58-134	<1	30
Vinyl Acetate	45.9	50.0	92	45.8	50.0	92	36-169	<1	30
Vinyl Chloride	41.1	50.0	82	44.4	50.0	89	69-138	8	30

Client: Wake County Solid Waste Management
Project: North Wake C&D Landfill
Sample Matrix: Ground Water

Service Request:J1408866
Date Analyzed:11/19/14 - 11/26/14

Lab Control Sample Summary
Inorganic Parameters

Units:ug/L
Basis:NA

Lab Control Sample
J1408866-LCS

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic, Total Recoverable	6010C	526	500	105	80-120
Barium, Total Recoverable	6010C	534	500	107	80-120
Cadmium, Total Recoverable	6010C	270	250	108	80-120
Chromium, Total Recoverable	6010C	528	500	106	80-120
Lead, Total Recoverable	6010C	549	500	110	80-120
Mercury, Total	7470A	1.28	1.25	102	80-120
Selenium, Total Recoverable	6010C	555	500	111	80-120
Silver, Total Recoverable	6010C	545	500	109	80-120

ALS Environmental

Cooler Receipt Form

Client: CDM Smith Service Request #: J1408866

Project: Northwake CID LF

Cooler received on 11/13/14 and opened on 11/14/14 by JA

COURIER: ALS UPS FEDEX Client Other _____ Airbill # 8055 4968 8100

1	Were custody seals on outside of cooler?	Yes	No		
	If yes, how many and where?	#:___ on lid	other		
2	Were seals intact and signature and date correct?	Yes	No	N/A	
3	Were custody papers properly filled out?	Yes	No	N/A	
4	Temperature of cooler(s) upon receipt (Should be 0°C and ≤ 6°C)	2.1			
5	Thermometer ID	T81			
6	Temperature Blank Present?	Yes	No		
7	Were Ice or Ice Packs present	Ice	Ice Packs	No	
8	Did all bottles arrive in good condition (unbroken, etc....)?	Yes	No	N/A	
9	Type of packing material present	Netting	Vial Holder	Bubble Wrap	
		Paper	Styrofoam	Other	N/A
10	Were all bottle labels complete (sample ID, preservation, etc....)?	Yes	No	N/A	
11	Did all bottle labels and tags agree with custody papers?	Yes	No	N/A	
12	Were the correct bottles used for the tests indicated?	Yes	No	N/A	
13	Were all of the preserved bottles received with the appropriate preservative?	Yes	No	N/A	
	HNO3 pH≤2 H2SO4 pH<2 ZnAc2/NaOH pH>9 NaOH pH>12 HCl pH<2				
	Preservative additions noted below				
14	Were all samples received within analysis holding times?	Yes	No	N/A	
15	Were all VOA vials free of air bubbles? If present, note below	Yes	No	N/A	
16	Where did the bottles originate?	ALS	Client		

Sample ID	Reagent	Lot #	ml added	Initials Date/Time

Additional comments and/or explanation of all discrepancies noted above:

Client approval to run samples if discrepancies noted: Date:

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

SR# 374330A

009, 010, 011, 012, 013, 014

T039550

J1408866 5

CDM Smith, Inc.
North Wake C&D Landfill

ALS Environmental

9143 Phillips Highway, Suite 200, Jacksonville, FL 32256
Phone (904) 739-2277 / 800-695-7222 x06 / FAX (904) 739-2011

Project Name: North Wake C&D Landfill
Project Number:
Report To: Aaron Weispfenning
Raleigh NC, 27612
Phone # 919-622-8784
FAX #
Sampler Signature: Mark Darwin
Sampler Printed Name: Mark Darwin

Report according to NC SWS Guidelines. Provide EDD.

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D 8260B / VOC_FP	28D 7470A / Hg T	180D 6010C / Metals R	1	2	3	4	5	Remarks
MW1		11-12-14	0745	Liquid	4	X	X	X						
CD1		11-12-14	0850	Liquid	4	X	X	X						
CD2		11-12-14	0830	Liquid	4	X	X	X						
CD3		11-12-14	0810	Liquid	4	X	X	X						
EQ Blank		11-12-14	1695	Liquid	4	X	X	X						
Trip Blank				Liquid	3	X								
7.				Liquid										
8.				Liquid										
9.				Liquid										
10.				Liquid										

Special Instructions/Comments:

2.1

Turnaround Requirements

___ RUSH (SURCHARGES APPLY)

✓ Standard

REQUESTED FAX DATE

Requested Report Date

Report Requirements

___ I. Results Only

✓ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)

___ III. Results + QC and Calibration Summaries

___ IV. Data Validation Report with Raw Data

EData ✓ Yes ___ No

Invoice Information

P.O.#

Bill To: Wake County

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: Mark Darwin	Signature: Aaron Alvarez	Signature	Signature	Signature	Signature
Printed Name: Mark Darwin	Printed Name: Adriza Alvarez	Printed Name	Printed Name	Printed Name	Printed Name
Firm: CDM Smith	Firm: ALS	Firm	Firm	Firm	Firm
Date/Time: 11-12-14 1645	Date/Time: 11/13/14 0915	Date/Time	Date/Time	Date/Time	Date/Time

CDM Smith

cdmsmith.com