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):

Smith Gardner, Inc.

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

Name: Madeline German Phone: 919-828-0577 x 222

E-mail: madeline@smithgardnerinc.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Davidson County Phase 2 MSW Landfill	1242 Old Highway 29 Thomasville, NC 27360	29-06	0.1600	April 17-18, 2013

Environmental Status: (Check all that apply)

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

Type of data submitted: (Check all that apply)

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

Notification attached?

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

Certification

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

Madeline Germsn	Geologist	919-828-0577 x 222
Facility Representative Name (Print)	Title	(Area Code) Telephone Number

Affix NC Licensed/ Professional Geologist Seal

Signature Date 7/1/13

14 N. Boylan Ave. Raleigh, NC 27603

Facility Representative Address

C-0828

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

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Groundwater Monitoring Report
April 2013 Semi-Annual Event

Davidson County Phase 2 MSW Landfill
NC Solid Waste Permit No. 29-06

Prepared for:

Davidson County Integrated Solid Waste
1242 Old Highway 29
Thomasville, North Carolina 27360-0024

June 2013

Prepared by:

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

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April 2013 Groundwater Monitoring Report

Davidson County Phase 2 MSW Landfill
NC Solid Waste Permit No. 29-06

Prepared For:
Davidson County Integrated Solid Waste
Thomasville, North Carolina 27360-0024

S+G Project No. DAVDCO 10-9

Madeline German, P.G.
Project Geologist

Joan Smyth, P.G.
Senior Hydrogeologist

June 2013

SMITH+GARDNER
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

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Davidson County Phase 2 MSW Landfill
NC Solid Waste Permit No. 29-06

April 2013 Groundwater Monitoring Report

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1.0 INTRODUCTION

Smith Gardner, Inc. (S+G) was contracted by Davidson County to perform their semi-annual ground water monitoring at the Davidson County Phase 2 MSW Landfill, permit number 29-06, as required by 15A NCAC 13B .1600. Sampling was conducted April 17 & 18, 2013. This report summarizes the event sampling procedures, field and laboratory results and ground water characterization as required by NC Solid Waste Regulations. Summary tables, a potentiometric map and the laboratory analytical report are also included.

2.0 SITE GEOLOGY

The Davidson County Landfill facility is located in the Piedmont Physiographic Province of North Carolina approximately three and a half miles northeast of the City of Lexington, NC. The Geologic Map of North Carolina (*USGS*, 1985) indicates that the site lies at the western margin of the Carolina Slate Belt; an area of predominantly volcanic and sedimentary rocks of Late Proterozoic to Cambrian age that have been metamorphosed and intruded by numerous igneous plutons. The boundary zone between the Carolina Slate Belt and the adjacent Charlotte Belt is known as the Gold Hill/Silver Hill shear zone. The site vicinity is underlain by volcanic rocks from the Flat Swamp Member of the Cid Formation and metavolcanic rocks of the Battleground Formation.

3.0 SAMPLING LOCATIONS

The groundwater network for Phase 2 at Davidson County, includes fourteen monitoring wells (MW-1, MW-2, MW-3S, MW-3D, MW-4S, MW-4D, MW-5, MW-6S, MW-6D, MW-7, MW-8, MW-9, MW-10S and MW-10D), three surface water locations (SW-1, SW-2 and SW-3) and one leachate sampling point (Leachate). Monitoring wells MW-6D and MW-7, and SW-3 were reported as dry, therefore, were not sampled this event. MW-1 serves as the background well for this site. A trip blank was submitted for quality control purposes.

Sampling locations are shown on **Figure 1.**

4.0 SAMPLING PROCEDURES

Sampling procedures followed the protocols set forth in the site's Water Quality Monitoring Plan[1] and the North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities (North Carolina Department of Environment and Natural Resources, Division of Waste Management). Each well was gauged to determine ground water depth and purged three to five well volumes or until dry. Field measurements for pH, specific conductivity and temperature were recorded at each well. Ground water elevations are provided in **Table 1**.

[1] Water Quality Monitoring Plan, Davidson County, Phase 2, Richardson Smith Gardner and Associates, Inc. July 2007, presented in the Permit to Construct application.

Environment 1, Inc. (NC Laboratory Certification # 10) provided laboratory prepared sample containers for the specified analytical procedures. Sample collection was performed using factory sealed teflon bailers. Ground water samples were properly preserved, placed on ice and transported to the laboratory facility within the specified hold times for each analysis.

Sampling wells and locations were inspected and found to be in good condition and free of obstructions. Field logs are presented in **Appendix A**.

5.0 FIELD & LABORATORY RESULTS

5.1 Field Results

Temperature, pH, and specific conductance were measured in the field at the time of sampling via direct read instruments. Turbidity could not be measured this event due to equipment malfunction. The field parameter results are summarized in **Table 2** and have remained consistent with previously reported sampling events.

5.2 Laboratory Analysis

Samples were transported to Environment 1, Inc., in Greenville, NC, a North Carolina certified laboratory (NC Wastewater ID #10). Laboratory analysis for groundwater included metals via EPA Test Method 200.8 and Appendix I Volatile Organic Compounds (VOCs) via EPA Test Method 8260B. Leachate samples were also analyzed for BOD, COD, total suspended residue, ammonia nitrogen, nitrate nitrogen, total phosphorus and sulfate via the SWS approved method noted in the laboratory analytical report. Analytical results were compared to the NC DWM Solid Waste Section Quantitation Limits (SWSLs) and 15A NCAC 2L.0200 (2LStandard). The laboratory analysis is presented in **Appendix B**.

Additionally, samples from bedrock wells MW-3D, MW-4D and MW-10D were analyzed for dissolved metals in accordance with the Phase 2 Area 2 Water Quality Monitoring Plan[2]. A permit condition for approval of the Phase 2 Area 2 Water Quality Monitoring Plan was to collect filtered samples for inorganic analysis to evaluate metals concentrations due to some previously elevated results. Therefore, filtered samples were collected and analyzed during this event to meet this permit condition. These results are summarized in **Section 5.2.2**.

5.2.1 Inorganic Constituents

Six inorganic constituents' barium, cobalt, copper, chromium, vanadium and zinc were detected above their respective SWSL's. Chromium (MW-2, MW-4S, MW-6S, MW-9 and MW-10S) were detected above their 2L Standards. Most inorganic

2 Water Quality Monitoring Plan, Davidson County MSW Landfill; Phase 2 Areas 1 and 2. Smith Gardner, Inc. January 2013.

constituents were either below the method detection limit (MDL) or were "J-values" indicating a non-quantifiable value.

No inorganics were detected above 2B Standards in surface water samples. A summary of inorganic laboratory results is presented in **Table 3**.

5.2.2 Dissolved Inorganic Constituents

No inorganic constituents were detected in the dissolved samples from wells MW-3D, MW-4D and MW-10D at concentrations above their SWSL or 2L Standards; indicating that historical detections were likely due to turbidity within the samples rather than indicative of impact from the landfill.

Since the results from this analysis indicate concentrations below the SWSL and 2L standard, these bedrock wells will only be used for recording semi-annual water levels from this point forward in accordance with the approved Water Quality Monitoring Plan for Phase 2 Area 2.

Dissolved inorganic detections are presented in **Table 4**.

5.2.3 Organic Constituents

No organic constituents were detected above their MDL for the April monitoring event.

6.0 STATISTICAL ANALYSIS

S+G reviewed the laboratory data from this event to evaluate trends, examine major site changes and establish statistical significance while considering differences between up and down gradient wells. Data entry and analysis was performed using the Chempoint and Chemstat statistical software package developed specifically for RCRA Subtitle D sites (Starpoint Software, Cincinnati, OH). Chemstat follows EPA and DWM protocols for approved statistical analysis methods for groundwater data.

Event data was added to the existing database and reviewed to evaluate the most appropriate analysis methods and check for outliers or erroneous results. Statistical analysis was performed on inorganic constituents using Parametric Prediction Interval Analysis (Inter-Well), Wilcoxon Non-Parametric Analysis (Inter-Well) or Poisson Prediction Limit (Inter-Well).

Statistical analysis was performed for barium, cobalt, copper, chromium, vanadium and zinc where a non J-qualified detection was reported. No wells were found to have significant concentrations for these metals. Results are summarized in **Table 5**.

7.0 GROUNDWATER CHARACTERIZATION

A potentiometric surface map was prepared from ground water data from this sampling event. Ground water flow velocities for this sampling event were calculated for monitoring wells using the equation:

$$V = KI/n$$

where: K = hydraulic conductivity
I = ground water gradient
n = porosity

Ground water velocities in the uppermost aquifer at the Phase 2 MSW Landfill ranged from 0.019 feet/day (MW-3S) to 0.570 feet/day (MW-9) and averaging 0.151 feet/day. Calculations are included in Table 6. Groundwater elevations indicate the flow direction is generally northwest across the site; which is consistent with historically reported ground water flow patterns. The potentiometric surface map is included as Figure 1.

8.0 CONCLUSIONS

Laboratory results indicate the water quality at the Davidson County Phase 2 Landfill is generally consistent with reported historical detections. Inorganic constituent detections are likely due to natural occurrence and their presence in the soil and rock formations, not impact from the landfill. Dissolved inorganic analysis on bedrock wells MW-3D, MW-4D and MW-10D indicates no landfill impact on the bedrock aquifer and these wills will be used for water levels only unless additional investigation is necessary concerning contaminant concentrations in the uppermost aquifer. In general, detected ground water concentrations at the site have remained stable. The next ground water monitoring event will be performed in October 2013; results will be reported to NCDENR in accordance with 15A NCAC 13B.1600 et seq.

FIGURES

April 2013 Groundwater Monitoring Report
Davidson County Phase 2 MSW Landfill
NC Solid Waste Permit No. 29-06

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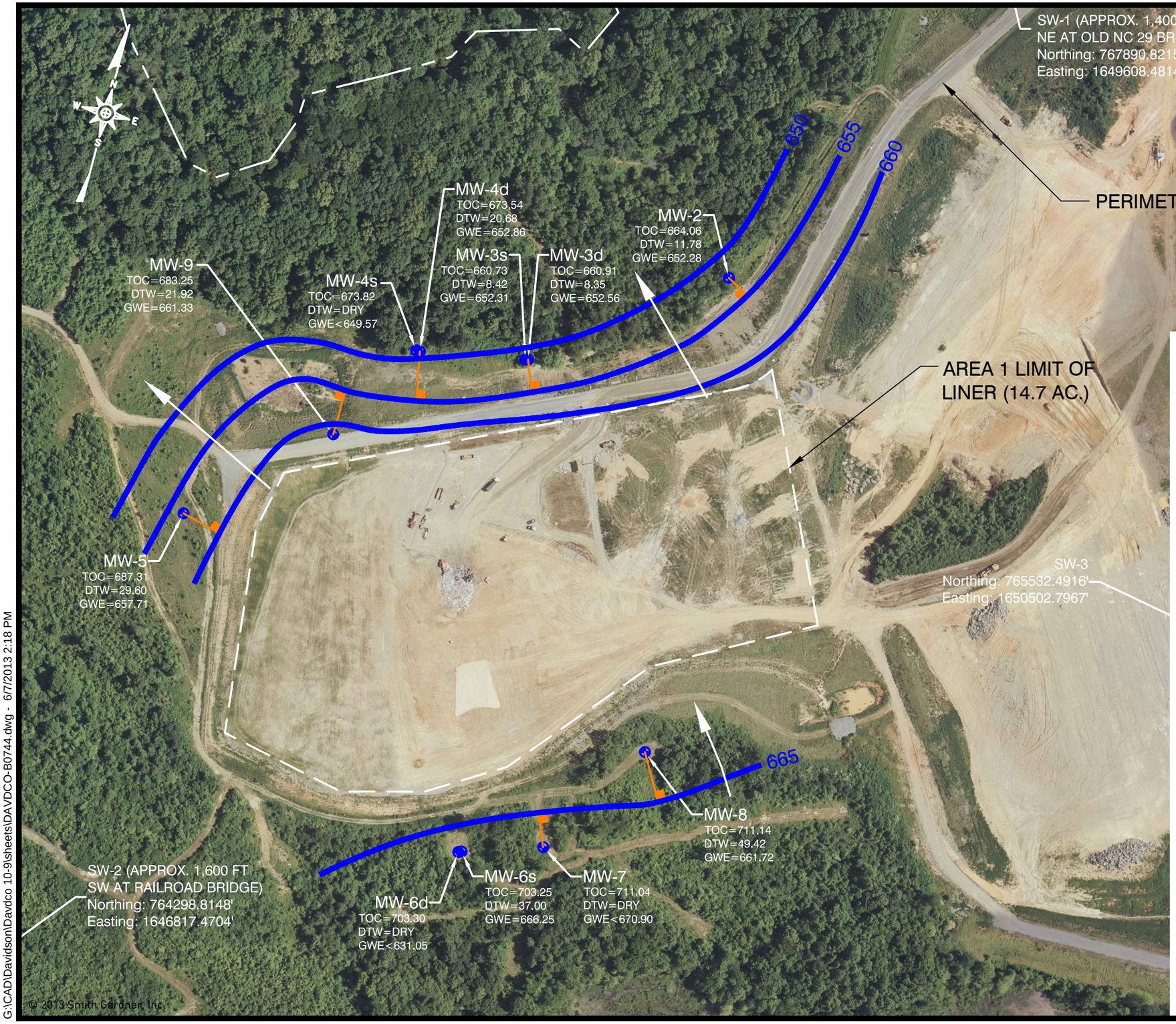

LEGEND:

MW-1A	EXISTING MONITORING WELL
MW-5	BEDROCK MONITORING WELL
SW-2	EXISTING SURFACE WATER MONITORING STATION
710	GROUNDWATER SURFACE CONTOUR
	PROPERTY LINE (SHOWN AS WHITE ON MAP)
	WASTE BOUNDARY
	MEASUREMENT FOR HYDRAULIC GRADIENT CALCULATION
	DIRECTION OF GROUNDWATER FLOW
TOC	TOP OF CASING ELEVATION
DTW	DEPTH TO WATER MEASUREMENT
GWE	GROUNDWATER ELEVATION

NOTE

1. GROUNDWATER DATA RECORDED ON APRIL 17, 2013 BY SMITH GARDNER, INC. PERSONNEL.

0 200' 400'

PREPARED BY:
SMITH+GARDNER
NC LIC. NO. C-0926 [ENGINEERING]
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

PREPARED FOR:

POTENTIPOMETRIC SURFACE MAP
APRIL 2013
PHASE 2 LANDFILL
DAVIDSON COUNTY, NC

FIGURE NO.	1
FILENAME:	DAVDCO-B0744
SCALE:	AS SHOWN
APPROVED:	
PROJECT NO:	DAVDCO 10-9
DRAWN:	K.C.B.
DATE:	Jun 2013

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TABLES

April 2013 Groundwater Monitoring Report
Davidson County Phase 2 MSW Landfill
Solid Waste Permit No. 29-06

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Table 1
Groundwater Elevations
Davidson County Phase 2 Landfill
April 17, 2013

By: JRF
Date: 4/22/2013

Well	Northing	Easting	TOC Elevation (feet)	Depth to Water (feet)	Water Level Elevation (feet)
MW-1	767416.7610	1651389.0830	734.16	19.45	714.71
MW-2	766376.8072	1649303.3872	664.06	11.78	652.28
MW-3S	766204.9705	1648875.8572	660.73	8.42	652.31
MW-3D	766204.6283	1648881.1437	660.91	8.35	652.56
MW-4S	766223.2813	1648660.2736	673.82	21.02	652.56
MW-4D	766220.6778	1648667.3780	673.54	20.68	652.86
MW-5	765901.6002	1648200.9255	687.31	29.60	657.71
MW-6S	765234.1084	1648749.7961	703.25	37.00	666.25
MW-6D	765233.1390	1648743.0790	703.30	dry	<631.05
MW-7	765242.8464	1648910.6331	711.04	dry	<670.90
MW-8	765430.5188	1649111.6524	711.14	49.42	661.72
MW-9	766057.5112	1648496.3934	683.25	21.92	661.33
MW-10S	NA	NA	NA	16.55	NA
MW-10D	NA	NA	NA	17.45	NA

Notes:
Velocity Calculated from V=K*I/n where:
V = velocity
K = Hydraulic Conductivity
I = Gradient
n = Porosity
Hydraulic Conductivity data from slug tests performed in 1994
Porosity values assumed from Groundwater & Wells (Driscoll)
Survey Data collected by Surveying Solutions, P.C.
MW-10S and MW-10D have not been surveyed. Well construction details are not available.

SMITH+GARDNER

Table 2
Field Parameters
Davidson County Phase 2 Landfill
April 17, 2013

By: JRF
Date: 4/22/2013

Well	pH (Std. Units)	Conductivity (umhos)	Temp. (celsius)
MW-1	6.62	49.8	18.68
MW-2	6.54	15.6	14.56
MW-3S	7.08	18.8	13.46
MW-3D	7.42	23.9	15.31
MW-4S	6.62	11.5	18.46
MW-4D	6.93	23.7	16.43
MW-5	6.31	10.9	16.99
MW-6S	6.77	43.9	17.08
MW-8	6.88	28.5	17.16
MW-9	6.69	18.2	16.94
MW-10S	6.72	19.1	14.69
MW-10D	7.25	27.7	15.20
SW-1	8.31	196	8.31
SW-2	8.63	185	20.51
SW-3	-	-	-

NOTES:
Data Collected by Jared Lemaster and John Fearrington of S+G Engineers Inc.
Turbidity unable to be measured this event due to broken meter.
SW-3 had insufficient water for measurement

SMITH+GARDNER

Table 3
Detected Constituents
Davidson County Phase 2 Landfill
April 17, 2013

By: CS
Date:5/29/2013

Parameter	MDL	SWSL	2L or GWP§	2B	MW-1	MW-2	MW-3S	MW-3D	MW-4S	MW-4D	MW-5	MW-6S	MW-8	MW-9	MW-10S	MW-10D	SW-1	SW-2
Inorganic Constituents																		
antimony	0.02	6	1 §	640	0.15 J	0.11 J	<0.02	0.07 J	0.08 J	0.04 J	0.45 J	0.18 J	0.15 J	0.10 J	<0.02	0.02 J	0.33 J	0.29 J
arsenic	0.05	10	10	10	0.46 J	1.0 J	0.17 J	0.29 J	0.65 J	<0.05	0.14 J	1.1 J	<0.05	1.6 J	1.4 J	0.18 J	0.32 J	0.26 J
barium	0.06	100	700	2000000	**158**	48.3 J	22.4 J	49.5 J	**124**	41.2 J	28.2 J	**432**	4.1 J	**119**	**163**	11.7 J	27.4 J	32.0 J
beryllium	0.03	1	4 §	6.5	0.17 J	0.16 J	<0.03	<0.03	0.12 J	<0.03	0.10 J	0.34 J	<0.03	0.42 J	0.49 J	<0.03	<0.03	<0.03
cadmium	0.05	1	2	2	0.15 J	0.13 J	<0.05	0.12 J	0.07 J	<0.05	0.24 J	0.27 J	0.12 J	0.19 J	0.19 J	<0.05	<0.05	<0.05
cobalt	0.02	10	1 §	270	**15**	5.8 J	0.66 J	0.36 J	**12**	0.08 J	5.6 J	**18**	1.2 J	**12**	**20**	0.19 J	0.42 J	0.80 J
copper	0.06	10	1000	7	**222**	**43**	1.5 J	0.32 J	**140**	1.1 J	**21**	**242**	3.6 J	**83**	**80**	1.8 J	1.8 J	2.2 J
chromium, total	0.04	10	10	50	8.1 J	**40**	2.3 J	<0.04	**17**	<0.04	5.1 J	**21**	5.5 J	**19**	**56**	3.2 J	0.14 J	0.65 J
lead	0.02	10	15	25	3.2 J	2.8 J	0.13 J	0.05 J	3.0 J	0.07 J	2.0 J	5.1 J	0.56 J	5.3 J	5.7 J	0.10 J	0.31 J	0.70 J
nickel	0.45	50	100	88	12.7 J	7.9 J	1.2 J	0.66 J	11.9 J	0.65 J	5.9 J	15.2 J	2.7 J	6.3 J	25.1 J	1.0 J	1.7 J	2.1 J
selenium	0.06	10	20	5	0.51 J	0.42 J	0.82 J	0.74 J	0.13 J	0.26 J	<0.06	0.92 J	0.42 J	1.0 J	0.47 J	0.12 J	0.21 J	0.22 J
silver	0.03	10	20	0.06	0.11 J	0.14 J	<0.03	<0.03	0.08 J	<0.03	0.03 J	0.08 J	<0.03	0.09 J	0.21 J	<0.03	<0.03	<0.03
thallium	0.02	5.5	0.28 §	0.47	0.09 J	0.03 J	0.34 J	0.05 J	0.07 J	<0.02	0.05 J	0.17 J	<0.02	0.08 J	0.08 J	<0.02	0.03 J	<0.02
vanadium	0.07	25	0.3 §	NE	**49**	**35**	10.2 J	2.1 J	**68**	9.2 J	23.9 J	**89**	9.7 J	**99**	**63**	7.7 J	1.4 J	2.8 J
zinc	0.47	10	1000	50	**53**	**14**	2.6 J	**11**	**49**	2.8 J	**23**	**138**	4.3 J	**33**	**86**	2.2 J	5.5 J	5.4 J

NOTE:

SWSL	-	Solid Waste Section Quantitation Limits
2L	-	Groundwater Standards (15A NCAC 2L 0200)
2B	-	NCAC 2B Standard for Class C waters
MDL	-	Method Detection Limit
GWP	-	Groundwater Protection Standard (indicated with §)
Shading	-	Detection above 2L Standard
Bold Letters	-	Constituents detected above SWSL
J	-	Laboratory reported between MDL and SWSL limit
< MDL	-	Not detected at or above MDL

Table units are presented in ug/l.
Lab data analysis by Environment 1, Inc. report dated 05/20/2013, ID#6059.

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SMITH+GARDNER

By: MG
Date:5/30/2013

Table 4
Dissolved Metals
Davidson County Phase 2 Landfill
April 17, 2013

Parameter	MDL	SWSL	2L or GWP§	MW-3D	MW-4D	MW-10D
arsenic	0.13	10	10	0.37 J	0.18 J	0.29 J
barium	0.07	100	700	47.3 J	37.8 J	11.6 J
cobalt	0.02	10	1 §	0.34 J	0.05 J	0.12 J
copper	0.06	10	1000	0.22 J	0.66 J	0.80 J
lead	0.08	10	15	<0.08	<0.08	0.11 J
nickel	0.06	50	100	0.78 J	0.72 J	1.3 J
selenium	0.17	10	20	0.57 J	0.19 J	<0.17
vanadium	0.10	25	0.3 §	2.4 J	9.0 J	6.9 J
zinc	0.47	10	1000	9.4	1.2	2.3

NOTE:

SWSL	-	Solid Waste Section Quantitation Limits
2L	-	Groundwater Standards (15A NCAC 2L 0200)
MDL	-	Method Detection Limit
GWP	-	Groundwater Protection Standard (indicated with §)
Shading	-	Detection above 2L Standard
Bold Letters	-	Constituents detected above SWSL
J	-	Laboratory reported between MDL and SWSL limit
< MDL	-	Not detected at or above MDL

Table units are presented in ug/l.
Lab data analysis by Environment 1, Inc. report dated 05/20/2013, ID#6059.

SMITH+GARDNER

By: CS
Date: 5/29/2013

Table 5
Leachate Analytical Data
Davidson County Phase 2 Landfill
April 17, 2013

Parameter	Unit	Leachate
1,1-Dichloroethane	ug/l	0.8 J
1,2-Dichloroethane	ug/l	1.5
1,4-Dichlorobenzene	ug/l	6.5
2-Butanone	ug/l	959
2-Hexanone	ug/l	9 J
4-Methyl-2-Pentanone	ug/l	22.8
Acetone	ug/l	964
Benzene	ug/l	16.2
Chlorobenzene	ug/l	0.60 J
Cis-1,2-Dichloroethene	ug/l	0.4 J
Ethylbenzene	ug/l	20.1
Styrene	ug/l	15.4
Toluene	ug/l	776
trans-1,2-Dichloroethene	ug/l	2.10 J
Vinyl Chloride	ug/l	3.4
Xylenes	ug/l	51.7
Ammonia Nitrogen as N	mg/l	12.08
BOD	mg/l	414
COD	mg/l	75
Nitrate Nitrogen as N	mg/l	0.11 J
Sulfate	mg/l	10.5 J
Total Phosphorus as P	mg/l	1.15
Total Suspended Residue	mg/l	128
Antimony	ug/l	28
Arsenic	ug/l	14
Barium	ug/l	138
Beryllium	ug/l	0.07 J
Cadmium	ug/l	2
Cobalt	ug/l	18
Copper	ug/l	11
Lead	ug/l	1.5 J
Nickel	ug/l	163
Selenium	ug/l	15
Silver	ug/l	0.55 J
Total Chromium	ug/l	67
Vanadium	ug/l	68
Zinc	ug/l	148

NOTES:
J-values are laboratory estimated values for detections between the SWSL and MDL.
Lab data analysis by Environment 1, Inc. report dated 05/20/2013, ID#6059.

Table 6
Statistical Analysis Summary
Davidson County Landfill Phase 2
April 17, 2013

Location	Parameter	Result (ug/l)	Detection Limit (ug/l)	Test Units	%ND	Test	Statistically Significant?
MW-4S	Barium	124	100	ug/l	0	PPI	N
MW-6S	Barium	432	100	ug/l	0	PPI	N
MW9	Barium	119	100	ug/l	8.33	PPI	N
MW-10S	Barium	163	100	ug/l	0	PPI	N
MW-4S	Cobalt	12	10	ug/l	0	WRS	N
MW-6S	Cobalt	18	10	ug/l	0	WRS	N
MW9	Cobalt	12	10	ug/l	0	WRS	N
MW-10S	Cobalt	20	10	ug/l	0	WRS	N
MW-2	Copper	43	10	ug/l	0	PPI	N
MW-4S	Copper	140	10	ug/l	0	PPI	N
MW-5	Copper	21	10	ug/l	0	PPI	N
MW-6S	Copper	242	10	ug/l	0	PPI	N
MW-9	Copper	83	10	ug/l	0	PPI	N
MW-10S	Copper	80	10	ug/l	0	PPI	N
MW-2	Chromium	40	10	ug/l	0	PPL	N
MW-4S	Chromium	17	10	ug/l	0	PPL	N
MW-6S	Chromium	21	10	ug/l	0	PPL	N
MW-9	Chromium	19	10	ug/l	0	PPL	N
MW-10S	Chromium	56	10	ug/l	0	PPL	N
MW-2	Vanadium	35	25	ug/l	8.33	PPI	N
MW-4S	Vanadium	68	25	ug/l	0	PPI	N
MW-6S	Vanadium	89	25	ug/l	0	PPI	N
MW-9	Vanadium	99	25	ug/l	0	PPI	N
MW-10S	Vanadium	63	25	ug/l	0	PPI	N
MW-2	Zinc	14	10	ug/l	8.33	PPL	N
MW3D	Zinc	11	10	ug/l	0	PPL	N
MW-4S	Zinc	49	10	ug/l	0	PPL	N
MW-5	Zinc	23	10	ug/l	0	PPL	N
MW-6S	Zinc	138	10	ug/l	0	PPL	N
MW-9	Zinc	33	10	ug/l	0	PPL	N
MW-10S	Zinc	86	10	ug/l	0	PPL	N

Highlighting indicates statistical significance.
Upgradient well : MW -1
PPI = Parametric Predicaiton Interval Analysis (Inter-well)
WRS = Wilcoxon Non-Parametric Analysis (Inter-Well)
PPL = Poisson Prediction Limit (Inter-well)

SMITH+GARDNER

By: MG
Date: 6/7/2013

Table 7
Aquifer Conductivity and Velocity Calculations
Davidson County Phase 2 Landfill
April 17, 2013

Well Number	Aquifer	Conductivity (ft/day)	Conductivity (ft/min)	Assumed Porosity (n)	Gradient (I)	Velocity (ft/day)
MW-1	Sandy Silt	1.61E-03	1.12E-06	0.18	NA	NA
MW-2	Sandy Silt	6.75E-02	4.69E-05	0.18	0.060	0.023
MW-3s	Sand	8.60E-02	5.97E-05	0.20	0.045	0.019
MW-3d	Granite	3.42E-02	2.38E-05	0.10	NA	NA
MW-4s	Sandy Silt	6.22E-02	4.32E-05	0.18	DRY	-
MW-4d	Diorite	7.55E+00	5.24E-03	0.10	NA	NA
MW-5	Clayey Silt	4.31E-01	2.99E-04	0.18	0.031	0.073
MW-6s	Sand and Gravel	4.64E-01	3.22E-04	0.22	0.025	0.053
MW-6d	Diorite	NA	NA	NA	NA	NA
MW-7	Diorite	NA	NA	NA	NA	NA
MW-8	Diorite	4.90E-01	3.40E-04	0.10	0.035	0.169
MW-9	Diorite	7.20E-01	5.00E-04	0.10	0.079	0.570

NA = Well had insufficient water to perform Slug Test, or insuffienent data to complete calculation.
Porosity assumed based upon soil type from monitoring well boring log.
Velocity Calculated by equation V = KI/n
Gradient for bedrock wells assumed to be the same as for unconsolidated aquifer
Gradient calculated from Spring 2013 potentiometric surface.

Appendix A

Field Data Sheets

April 2013 – Groundwater Monitoring Report
Davidson County Phase 2 MSW Landfill
Solid Waste Permit No. 29-06

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SMITH+GARDNER **Groundwater Monitoring Well Inspection Checklist**

This checklist is provided to inform our clients about the health and maintenance of their groundwater monitoring wells. This checklist provides no information pertaining to groundwater quality, but focuses on the physical characteristics of the well and its vicinity.

Site: DAVIDSON PH 2 **Date:** 4/17/13

Well ID: MW-1 **Initials:** DPA

Please mark the aproprate box for the following areas of concern. If you answer NO, please explain in the comment box.

1. Well Vicinity	YES	NO
A. Well is assessable and surrounding area is safe for employees.	-	
B. Vicinity is free of potential contaminants.	-	
C. Dead trees, etc. not in danger of falling and damaging wells.	-	
D. Well is in the same location as on field maps.	-	
E.		

Comments/ items addressed or to be addressed:

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	-	
B. Steel case is present and upright.	-	
C. Steel case is not movable and cemented in.	-	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	-	
E. Well tag is present with pertinent information.	-	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	-	
G. No evidence of tampering is present.	-	
H. Lock operates properly.	-	
I.		

Comments/ items addressed or to be addressed:

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	-	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	-	
C. Riser is not loose/ easily moved.	-	
D. Riser does not appear cracked, broken, or brittle.	-	
E. No visual sign of external contamination entering well through riser.	-	
F.		

Comments/ items addressed or to be addressed:

SMITH+GARDNER Groundwater Monitoring Well Inspection Checklist

This checklist is provided to inform our clients about the health and maintenance of their groundwater monitoring wells. This checklist provides no information pertaining to groundwater quality, but focuses on the physical characteristics of the well and its vicinity.

Site: Davidson Pit 2 **Date:** 4/17/13

Well ID: MW-2 **Initials:** AJR

Please mark the aproprate box for the following areas of concern. If you answer NO, please explain in the comment box.

1. Well Vicinity	YES	NO
A. Well is assessable and surrounding area is safe for employees.	-	
B. Vicinity is free of potential contaminants.	-	
C. Dead trees, etc. not in danger of falling and damaging wells.	-	
D. Well is in the same location as on field maps.	-	
E.		

Comments/ items addressed or to be addressed:

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	-	
B. Steel case is present and upright.	-	
C. Steel case is not movable and cemented in.	-	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	-	
E. Well tag is present with pertinent information.	-	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	-	
G. No evidence of tampering is present.	-	
H. Lock operates properly.	-	
I.		

Comments/ items addressed or to be addressed:

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	-	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	-	
C. Riser is not loose/ easily moved.	-	
D. Riser does not appear cracked, broken, or brittle.	-	
E. No visual sign of external contamination entering well through riser.	-	
F.		

Comments/ items addressed or to be addressed:

SMITH+GARDNER **Groundwater Monitoring Well Inspection Checklist**

This checklist is provided to inform our clients about the health and maintenance of their groundwater monitoring wells. This checklist provides no information pertaining to groundwater quality, but focuses on the physical characteristics of the well and its vicinity.

Site: DAVIDSON PH 2 **Date:** 4/17

Well ID: MW-3S **Initials:** DRA

Please mark the apropriate box for the following areas of concern. If you answer NO, please explain in the comment box.

1. Well Vicinity	YES	NO
A. Well is assessable and surrounding area is safe for employees.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.		

Comments/ items addressed or to be addressed:

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	✓	
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	✓	
G. No evidence of tampering is present.	✓	
H. Lock operates properly.		✓
I.		

Comments/ items addressed or to be addressed:

NO LOCK UPON ARRIVAL

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	✓	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	✓	
C. Riser is not loose/ easily moved.	✓	
D. Riser does not appear cracked, broken, or brittle.	✓	
E. No visual sign of external contamination entering well through riser.	✓	
F.		

Comments/ items addressed or to be addressed:

SMITH+GARDNER Groundwater Monitoring Well Inspection Checklist

This checklist is provided to inform our clients about the health and maintenance of their groundwater monitoring wells. This checklist provides no information pertaining to groundwater quality, but focuses on the physical characteristics of the well and its vicinity.

Site: Davidson Pit 2 **Date:** 4/17/13

Well ID: MW-3D **Initials:** JPF

Please mark the aproprate box for the following areas of concern. If you answer NO, please explain in the comment box.

1. Well Vicinity	YES	NO
A. Well is assessable and surrounding area is safe for employees.	-	
B. Vicinity is free of potential contaminants.	-	
C. Dead trees, etc. not in danger of falling and damaging wells.	-	
D. Well is in the same location as on field maps.	-	
E.		

Comments/ items addressed or to be addressed:

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	-	
B. Steel case is present and upright.	-	
C. Steel case is not movable and cemented in.	-	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	-	
E. Well tag is present with pertinent information.	-	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	-	
G. No evidence of tampering is present.	-	
H. Lock operates properly.		-
I.		

Comments/ items addressed or to be addressed:

NO LOCK UPON ARRIVAL

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	-	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	-	
C. Riser is not loose/ easily moved.	-	
D. Riser does not appear cracked, broken, or brittle.	-	
E. No visual sign of external contamination entering well through riser.	-	
F.		

Comments/ items addressed or to be addressed:

SMITH+GARDNER **Groundwater Monitoring Well Inspection Checklist**

This checklist is provided to inform our clients about the health and maintenance of their groundwater monitoring wells. This checklist provides no information pertaining to groundwater quality, but focuses on the physical characteristics of the well and its vicinity.

Site: Davidson Ph 2 **Date:** 4/17/13

Well ID: MW-45 **Initials:** ORF

Please mark the apropriate box for the following areas of concern. If you answer NO, please explain in the comment box.

1. Well Vicinity	YES	NO
A. Well is assessable and surrounding area is safe for employees.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.		

Comments/ items addressed or to be addressed:

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	✓	
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	✓	
G. No evidence of tampering is present.	✓	
H. Lock operates properly.	✓	
I.		

Comments/ items addressed or to be addressed:

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	✓	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	✓	
C. Riser is not loose/ easily moved.	✓	
D. Riser does not appear cracked, broken, or brittle.	✓	
E. No visual sign of external contamination entering well through riser.	✓	
F.		

Comments/ items addressed or to be addressed:

SMITH+GARDNER **Groundwater Monitoring Well Inspection Checklist**

This checklist is provided to inform our clients about the health and maintenance of their groundwater monitoring wells. This checklist provides no information pertaining to groundwater quality, but focuses on the physical characteristics of the well and its vicinity.

Site: Davidson Ph 2 **Date:** 4/17/13

Well ID: MW-4D **Initials:** JRA

Please mark the aproprate box for the following areas of concern. If you answer NO, please explain in the comment box.

1. Well Vicinity	YES	NO
A. Well is assessable and surrounding area is safe for employees.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.		

Comments/ items addressed or to be addressed:

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	✓	
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	✓	
G. No evidence of tampering is present.	✓	
H. Lock operates properly.	✓	
I.		

Comments/ items addressed or to be addressed:

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	✓	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	✓	
C. Riser is not loose/ easily moved.	✓	
D. Riser does not appear cracked, broken, or brittle.	✓	
E. No visual sign of external contamination entering well through riser.	✓	
F.		

Comments/ items addressed or to be addressed:

SMITH+GARDNER **Groundwater Monitoring Well Inspection Checklist**

This checklist is provided to inform our clients about the health and maintenance of their groundwater monitoring wells. This checklist provides no information pertaining to groundwater quality, but focuses on the physical characteristics of the well and its vicinity.

Site: DAVIDSON PH 2 **Date:** 4/17/13

Well ID: MW-5 **Initials:** JRT

Please mark the aproprate box for the following areas of concern. If you answer NO, please explain in the comment box.

1. Well Vicinity	YES	NO
A. Well is assessable and surrounding area is safe for employees.	–	
B. Vicinity is free of potential contaminants.	–	
C. Dead trees, etc. not in danger of falling and damaging wells.	–	
D. Well is in the same location as on field maps.	–	
E.		

Comments/ items addressed or to be addressed:

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	–	
B. Steel case is present and upright.	–	
C. Steel case is not movable and cemented in.	–	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	–	
E. Well tag is present with pertinent information.	–	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	–	
G. No evidence of tampering is present.	–	
H. Lock operates properly.		–
I.		

Comments/ items addressed or to be addressed:

LOCK WAS CUT

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	–	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	–	
C. Riser is not loose/ easily moved.	–	
D. Riser does not appear cracked, broken, or brittle.	–	
E. No visual sign of external contamination entering well through riser.	–	
F.		

Comments/ items addressed or to be addressed:

SMITH+GARDNER **Groundwater Monitoring Well Inspection Checklist**

This checklist is provided to inform our clients about the health and maintenance of their groundwater monitoring wells. This checklist provides no information pertaining to groundwater quality, but focuses on the physical characteristics of the well and its vicinity.

Site: Davidson Pt 2 **Date:** 4/17/13

Well ID: MW-05 **Initials:** ORA

Please mark the apropriate box for the following areas of concern. If you answer NO, please explain in the comment box.

1. Well Vicinity	YES	NO
A. Well is assessable and surrounding area is safe for employees.	-	
B. Vicinity is free of potential contaminants.	-	
C. Dead trees, etc. not in danger of falling and damaging wells.	-	
D. Well is in the same location as on field maps.	-	
E.		

Comments/ items addressed or to be addressed:

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	-	
B. Steel case is present and upright.	-	
C. Steel case is not movable and cemented in.	-	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	-	
E. Well tag is present with pertinent information.	-	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	-	
G. No evidence of tampering is present.	-	
H. Lock operates properly.	-	
I.		

Comments/ items addressed or to be addressed:

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	-	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	-	
C. Riser is not loose/ easily moved.	-	
D. Riser does not appear cracked, broken, or brittle.	-	
E. No visual sign of external contamination entering well through riser.	-	
F.		

Comments/ items addressed or to be addressed:

SMITH+GARDNER **Groundwater Monitoring Well Inspection Checklist**

This checklist is provided to inform our clients about the health and maintenance of their groundwater monitoring wells. This checklist provides no information pertaining to groundwater quality, but focuses on the physical characteristics of the well and its vicinity.

Site: Davidson PH 2 Date: 4/17/13

Well ID: MW-8 Initials: [signature]

Please mark the aproprate box for the following areas of concern. If you answer NO, please explain in the comment box.

1. Well Vicinity	YES	NO
A. Well is assessable and surrounding area is safe for employees.	-	
B. Vicinity is free of potential contaminants.	-	
C. Dead trees, etc. not in danger of falling and damaging wells.	-	
D. Well is in the same location as on field maps.	-	
E.		

Comments/ items addressed or to be addressed:

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	-	
B. Steel case is present and upright.	-	
C. Steel case is not movable and cemented in.	-	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	-	
E. Well tag is present with pertinent information.	-	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	-	
G. No evidence of tampering is present.	-	
H. Lock operates properly.	-	
I.		

Comments/ items addressed or to be addressed:

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	-	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	-	
C. Riser is not loose/ easily moved.	-	
D. Riser does not appear cracked, broken, or brittle.	-	
E. No visual sign of external contamination entering well through riser.	-	
F.		

Comments/ items addressed or to be addressed:

SMITH+GARDNER **Groundwater Monitoring Well Inspection Checklist**

This checklist is provided to inform our clients about the health and maintenance of their groundwater monitoring wells. This checklist provides no information pertaining to groundwater quality, but focuses on the physical characteristics of the well and its vicinity.

Site: DAVIDSON PH 2 **Date:** 4/17/13

Well ID: MW-9 **Initials:** AR

Please mark the apropriate box for the following areas of concern. If you answer NO, please explain in the comment box.

1. Well Vicinity	YES	NO
A. Well is assessable and surrounding area is safe for employees.	✓	
B. Vicinity is free of potential contaminants.	✓	
C. Dead trees, etc. not in danger of falling and damaging wells.	✓	
D. Well is in the same location as on field maps.	✓	
E.		

Comments/ items addressed or to be addressed:

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	✓	
B. Steel case is present and upright.	✓	
C. Steel case is not movable and cemented in.	✓	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	✓	
E. Well tag is present with pertinent information.	✓	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	✓	
G. No evidence of tampering is present.	✓	
H. Lock operates properly.	✓	
I.		

Comments/ items addressed or to be addressed:

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.	✓	
B. Riser is of appropriate height (has not been cut off too low within the steel case).	✓	
C. Riser is not loose/ easily moved.	✓	
D. Riser does not appear cracked, broken, or brittle.	✓	
E. No visual sign of external contamination entering well through riser.	✓	
F.		

Comments/ items addressed or to be addressed:

SMITH+GARDNER **Groundwater Monitoring Well Inspection Checklist**

This checklist is provided to inform our clients about the health and maintenance of their groundwater monitoring wells. This checklist provides no information pertaining to groundwater quality, but focuses on the physical characteristics of the well and its vicinity.

Site: DAVIDSON PT 2 **Date:** 4/17/13

Well ID: MW-105 **Initials:** ORA

Please mark the aproprate box for the following areas of concern. If you answer NO, please explain in the comment box.

1. Well Vicinity	YES	NO
A. Well is assessable and surrounding area is safe for employees.	-	
B. Vicinity is free of potential contaminants.	-	
C. Dead trees, etc. not in danger of falling and damaging wells.	-	
D. Well is in the same location as on field maps.	-	
E.		

Comments/ items addressed or to be addressed:

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	-	
B. Steel case is present and upright.		-
C. Steel case is not movable and cemented in.		-
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.		-
E. Well tag is present with pertinent information.		-
F. Well numbers are prominently displayed (Reflective address numbers, etc.).		-
G. No evidence of tampering is present.		-
H. Lock operates properly.		-
I.		

Comments/ items addressed or to be addressed:

NO CASING

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.		-
B. Riser is of appropriate height (has not been cut off too low within the steel case).	-	
C. Riser is not loose/ easily moved.	-	
D. Riser does not appear cracked, broken, or brittle.	-	
E. No visual sign of external contamination entering well through riser.	-	
F.		

Comments/ items addressed or to be addressed:

NO CAP

SMITH+GARDNER Groundwater Monitoring Well Inspection Checklist

This checklist is provided to inform our clients about the health and maintenance of their groundwater monitoring wells. This checklist provides no information pertaining to groundwater quality, but focuses on the physical characteristics of the well and its vicinity.

Site: DAVIDSON PH 2 **Date:** 4/17/13

Well ID: MW-10D **Initials:** QRT

Please mark the aproprate box for the following areas of concern. If you answer NO, please explain in the comment box.

1. Well Vicinity	YES	NO
A. Well is assessable and surrounding area is safe for employees.	-	
B. Vicinity is free of potential contaminants.	-	
C. Dead trees, etc. not in danger of falling and damaging wells.	-	
D. Well is in the same location as on field maps.	-	
E.		

Comments/ items addressed or to be addressed:

2. Concrete Apron and Steel Case	YES	NO
A. Concrete apron is present and in good condition.	-	
B. Steel case is present and upright.		-
C. Steel case is not movable and cemented in.		-
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.		-
E. Well tag is present with pertinent information.		-
F. Well numbers are prominently displayed (Reflective address numbers, etc.).		-
G. No evidence of tampering is present.		-
H. Lock operates properly.		-
I.		

Comments/ items addressed or to be addressed:

~~PVC~~ NO CASING

3. PVC Riser	YES	NO
A. Monitoring cap is present and provides a tight seal.		-
B. Riser is of appropriate height (has not been cut off too low within the steel case).	-	
C. Riser is not loose/ easily moved.	-	
D. Riser does not appear cracked, broken, or brittle.	-	
E. No visual sign of external contamination entering well through riser.	-	
F.		

Comments/ items addressed or to be addressed:

NO CAP ON PVC

Appendix B

Monitoring Well Information

April 2013 Groundwater Monitoring Report
Davidson County Phase 2 MSW Landfill
NC Solid Waste Permit No. 29-06

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Richardson Smith Gardner and Assoc
14 North Boylan Avenue, Raleigh NC 27603
(919) 828-0577

FIELD BOREHOLE LOG

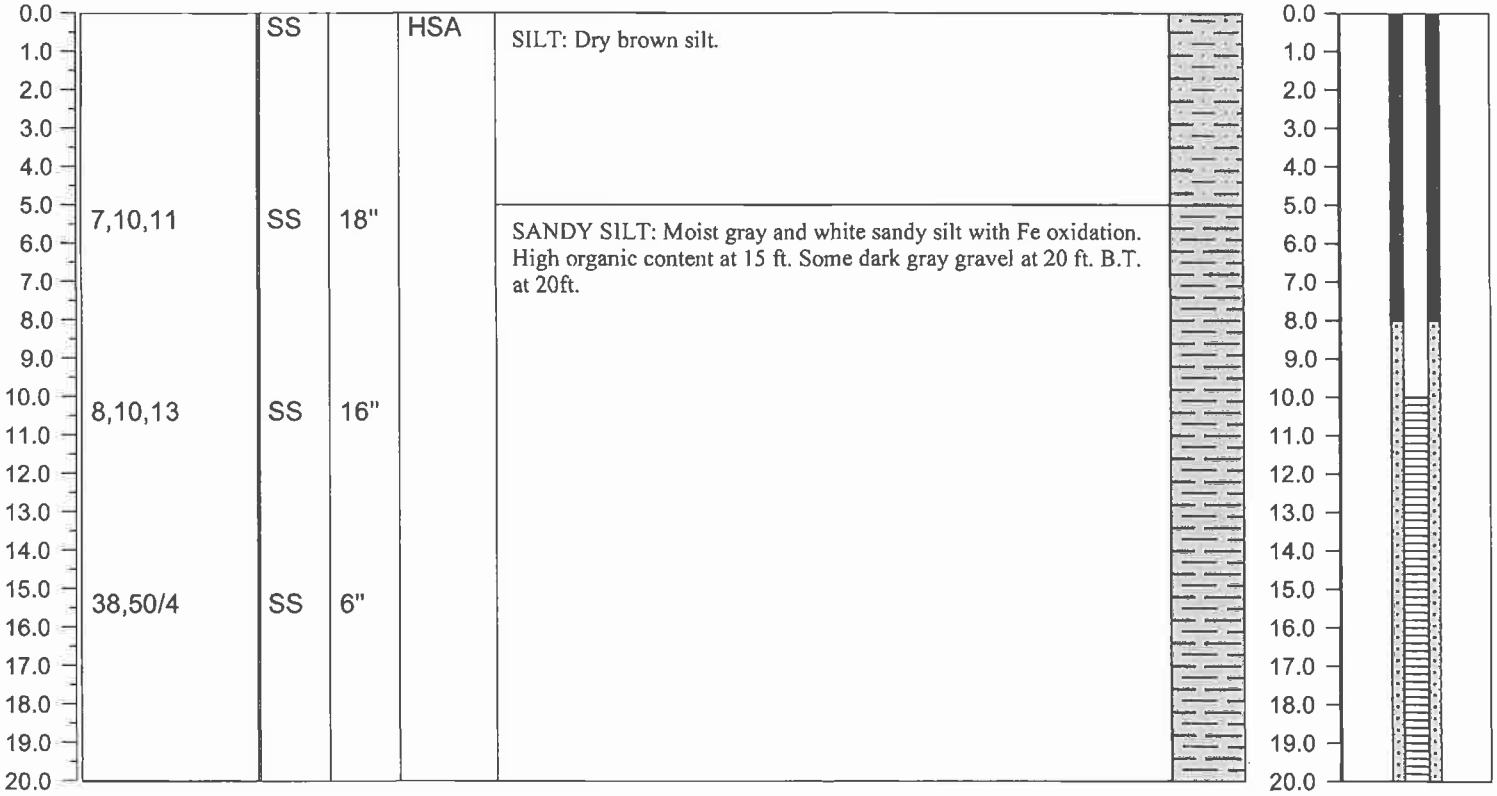
BOREHOLE NUMBER **MW-1** Page 1 of 1

PROJECT NAME: **Davidson County Landfill**
LOCATION: **Davidson County**
DRILLING CO: **Engineering Tectonics, P.A.**
DRILLING METHOD: **HSA**
FIELD PARTY: **David Barron**
GEOLOGIST: **Clark Wipfield**
DATE BEGUN: **3/25/08** DATE COMPLETED: **3/25/08**

TOTAL DEPTH: **20 ft.**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)		
Time		
Date		

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL INSTALLATION
0.0		SS		HSA	SILT: Dry brown silt.		0.0	
5.0	7,10,11	SS	18"		SANDY SILT: Moist gray and white sandy silt with Fe oxidation. High organic content at 15 ft. Some dark gray gravel at 20 ft. B.T. at 20ft.			
10.0	8,10,13	SS	16"					
15.0	38,50/4	SS	6"					
20.0							20.0	



Richardson Smith Gardner and Assoc
14 North Boylan Avenue, Raleigh NC 27603
(919) 828-0577

FIELD BOREHOLE LOG

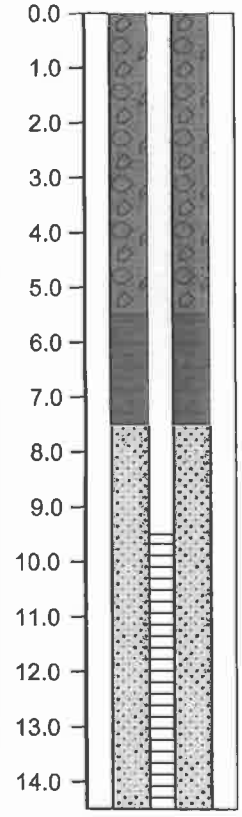
BOREHOLE NUMBER **MW-2** Page 1 of 1

PROJECT NAME: **Davidson County - Phase 2**
LOCATION: **Lexington, NC**
DRILLING CO: **Engineering Tectonics, P.A.**
DRILLING METHOD: **HSA**
FIELD PARTY: **David Barron**
GEOLOGIST: **Clark Wipfield**
DATE BEGUN: **8/12/08** DATE COMPLETED: **8/12/08**

TOTAL DEPTH: **14.5**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)	13.06	
Time	11:00 am	
Date	8/12/08	

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY
0.0				HSA	SILT: Dry dark brown silt with samll quarz fragments and black mottles.	
5.0	10,12,15	SS	18"		SANDY SILT: Moist sandy silt with partially weathered andesite and Fe spotting.	
10.0	8,17,23	SS	18"			
13.0		Grab			GRANITE: Dry, partially weathered granite. B.T. @ 14.5 feet.	
14.0						



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FIELD BOREHOLE LOG

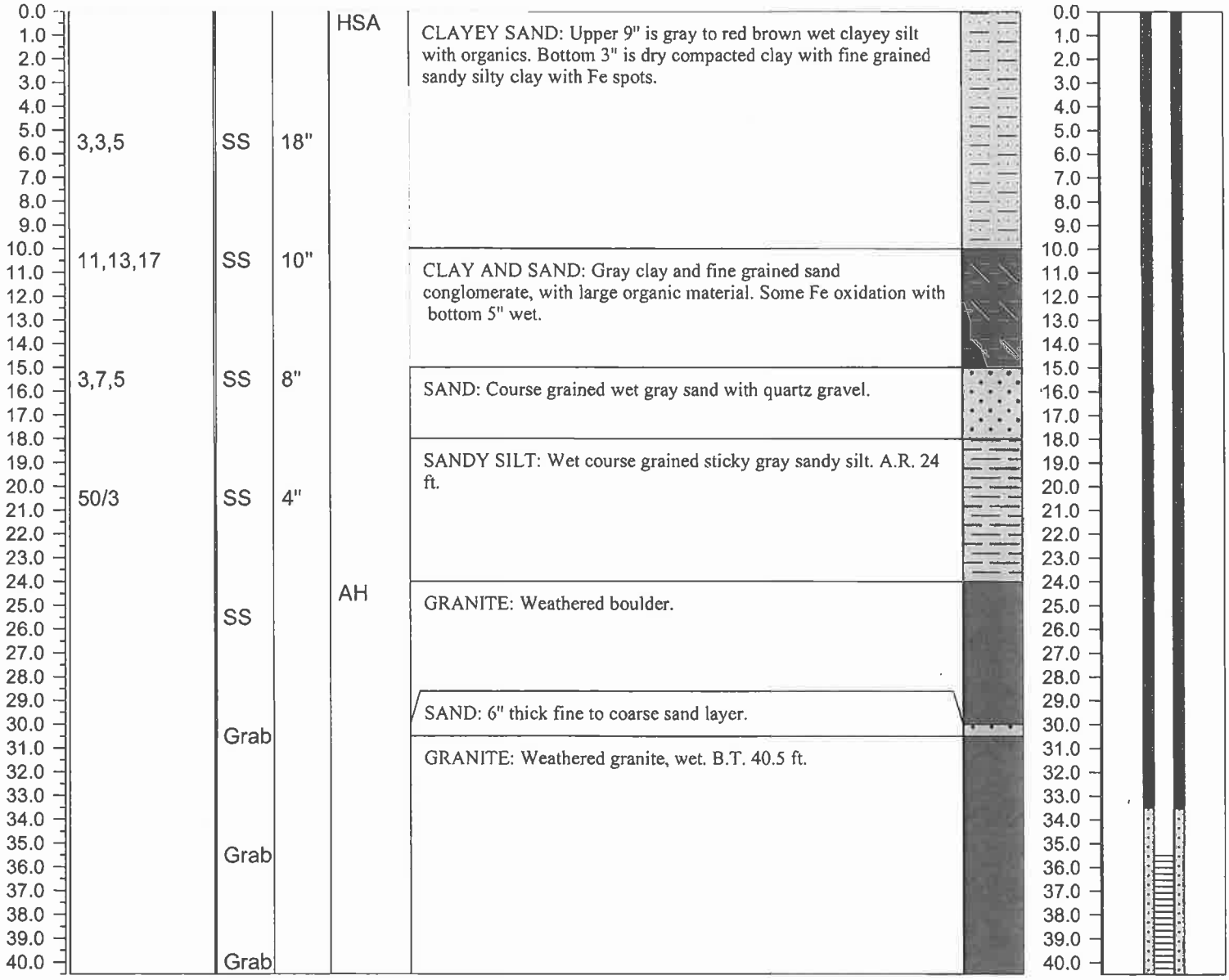
BOREHOLE NUMBER **MW-3D** Page 1 of 1

PROJECT NAME: **Davidson County Landfill**
LOCATION: **Davidson County**
DRILLING CO: **Engineering Tectonics, P.A.**
DRILLING METHOD: **HSA**
FIELD PARTY: **Daivd Barron**
GEOLOGIST: **Clark Wipfield**
DATE BEGUN: **3/26/08** DATE COMPLETED: **3/26/08**

TOTAL DEPTH: **40.5 ft.**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)		
Time		
Date		

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY
0.0				HSA	CLAYEY SAND: Upper 9" is gray to red brown wet clayey silt with organics. Bottom 3" is dry compacted clay with fine grained sandy silty clay with Fe spots.	
5.0	3,3,5	SS	18"			
10.0	11,13,17	SS	10"		CLAY AND SAND: Gray clay and fine grained sand conglomerate, with large organic material. Some Fe oxidation with bottom 5" wet.	
15.0	3,7,5	SS	8"		SAND: Course grained wet gray sand with quartz gravel.	
20.0	50/3	SS	4"		SANDY SILT: Wet course grained sticky gray sandy silt. A.R. 24 ft.	
24.0		SS		AH	GRANITE: Weathered boulder.	
29.0					SAND: 6" thick fine to coarse sand layer.	
30.0		Grab			GRANITE: Weathered granite, wet. B.T. 40.5 ft.	
35.0		Grab				
40.0		Grab				



DEPTH | WELL INSTALLATION

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FIELD BOREHOLE LOG

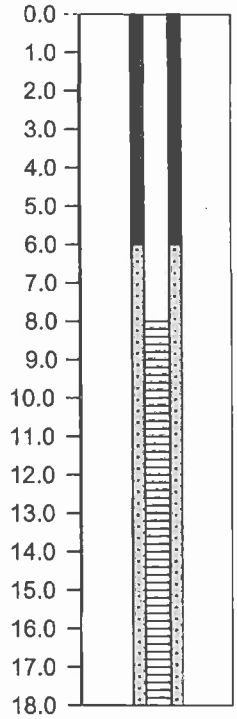
BOREHOLE NUMBER **MW-3s** Page 1 of 1

PROJECT NAME: **Davidson County**
LOCATION: **Davidson County Landfill**
DRILLING CO: **Engineering Tectonics, P.A.**
DRILLING METHOD: **HSA**
FIELD PARTY: **David Barron**
GEOLOGIST: **Clark Wipfield**
DATE BEGUN: **3/24/08** DATE COMPLETED: **3/24/08**

TOTAL DEPTH: **18 ft.**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)	6.21	
Time	1:10pm	
Date	3/27/08	

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY
0.0		SS		HSA	CLAYEY SILT: Upper 9" is grAy to red brown wet clayey silt with organics. Bottom 3" is dry, compacted clay; and fine grained sandy silty clay with Fe spots.	
5.0	3,3,5	SS	18"			
10.0	11,13,17	SS	10"		CLAY AND SAND: Gray clay and fine grained sand conglomerate with large organic material. Some Fe oxidation, with bottom 5" wet.	
15.0	3,7,5	SS	8"		SAND: Course grained wet gray sand with quartz gravel. B.T. 18 ft.	



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FIELD BOREHOLE LOG

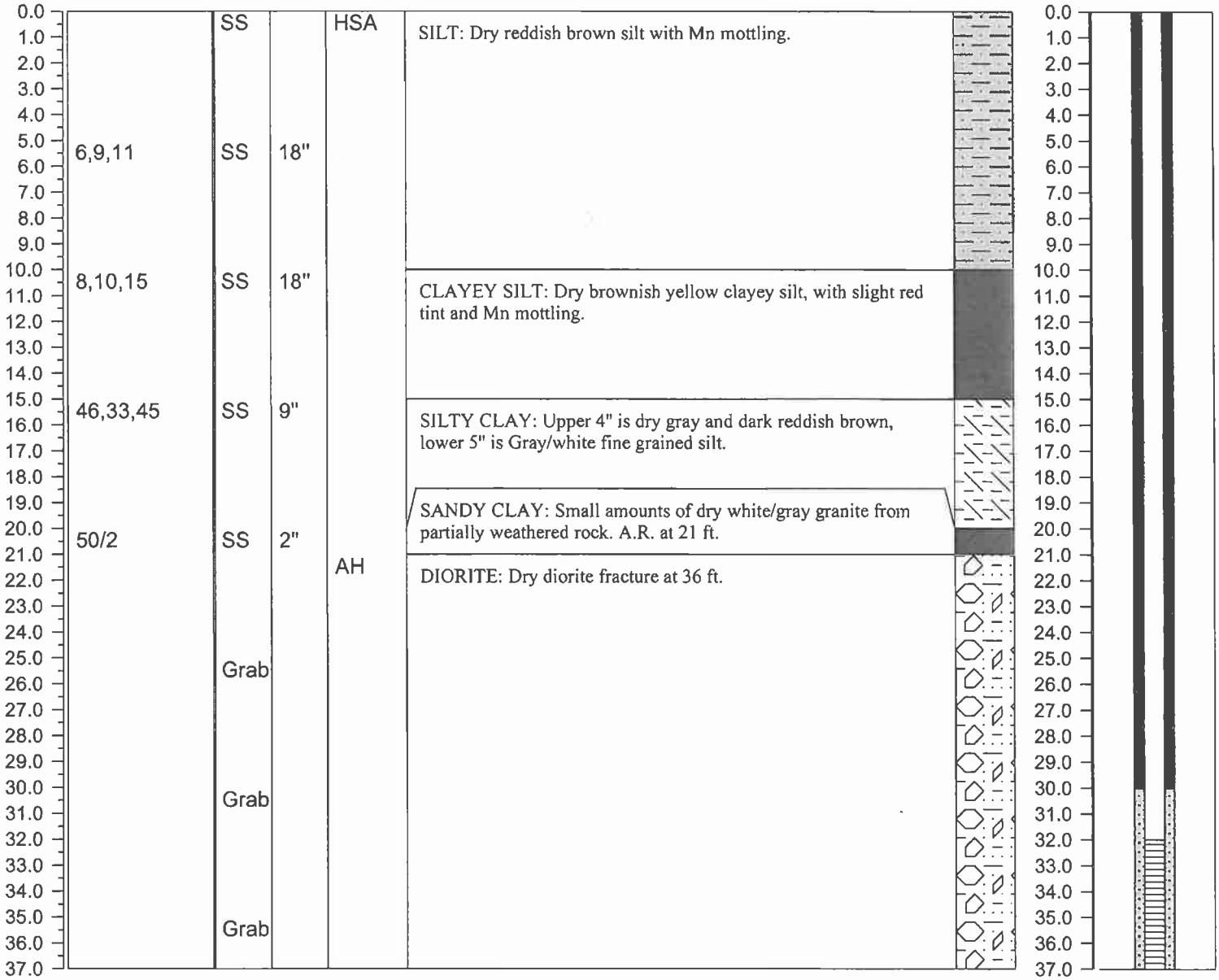
BOREHOLE NUMBER **MW-4D** Page 1 of 1

PROJECT NAME: **Davidson County**
LOCATION: **Davidson County Landfill**
DRILLING CO: **Engineering Tectonics, P.A.**
DRILLING METHOD: **HSA and AH**
FIELD PARTY: **David Barron**
GEOLOGIST: **Clark Wipfield**
DATE BEGUN: **3/26/08** DATE COMPLETED: **3/26/08**

TOTAL DEPTH: **37 ft.**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)		
Time		
Date		

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION
0.0		SS		HSA	SILT: Dry reddish brown silt with Mn mottling.
5.0	6,9,11	SS	18"		
10.0	8,10,15	SS	18"		CLAYEY SILT: Dry brownish yellow clayey silt, with slight red tint and Mn mottling.
15.0	46,33,45	SS	9"		SILTY CLAY: Upper 4" is dry gray and dark reddish brown, lower 5" is Gray/white fine grained silt.
20.0	50/2	SS	2"		SANDY CLAY: Small amounts of dry white/gray granite from partially weathered rock. A.R. at 21 ft.
21.0				AH	DIORITE: Dry diorite fracture at 36 ft.
25.0		Grab			
30.0		Grab			
35.0		Grab			
37.0					



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FIELD BOREHOLE LOG

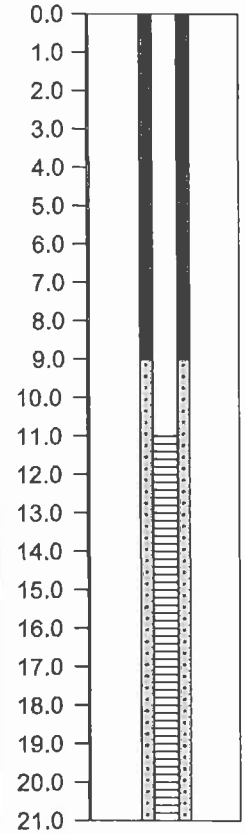
BOREHOLE NUMBER **MW-4s** Page 1 of 1

PROJECT NAME: **Davidson County**
LOCATION: **Davidson County Landfill**
DRILLING CO: **Engineering Tectonics, P.A.**
DRILLING METHOD: **HSA**
FIELD PARTY: **David Barron**
GEOLOGIST: **Clark Wipfield**
DATE BEGUN: **3/24/08** DATE COMPLETED: **3/24/08**

TOTAL DEPTH: **21**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)	18.97	
Time	1:30pm	
Date	3/27/08	

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY
0.0		SS		HSA	SILT: Dry reddish brown silt with Mn mottles.	
5.0	6,9,11	SS	18"			
10.0	8,10,15	SS	18"		CLAYEY SILT: dry brownish yellow clayey silt, with slight red tint and Mn mottles.	
15.0	46,33,45	SS	9"		SILTY CLAY: Upper 4" is dry gray and dark reddish brown, lower 5" is gray/white fine grained silt.	
20.0	50/2	SS	2"		SANDY SILT: Dry white/gray with small amounts of granite from partially weathered rock. A.R. at 21ft.	
21.0						



DEPTH | WELL INSTALLATION

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FIELD BOREHOLE LOG

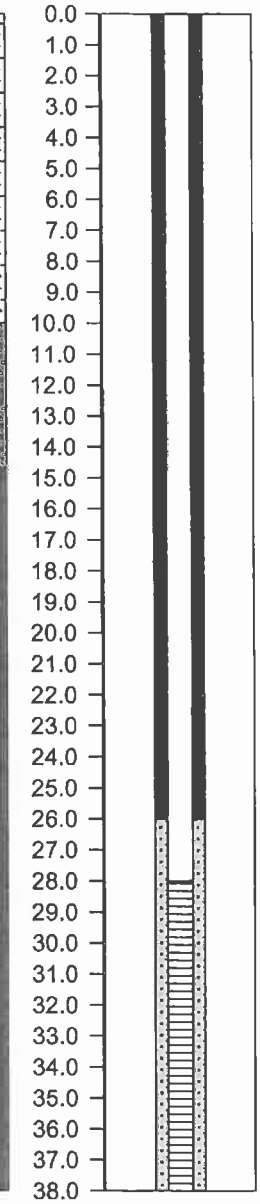
BOREHOLE NUMBER **MW-5** Page 1 of 1

PROJECT NAME: **Davidson County**
LOCATION: **Davidson County Landfill**
DRILLING CO: **Engineering Tectonics, P.A.**
DRILLING METHOD: **HSA**
FIELD PARTY: **David Barron**
GEOLOGIST: **Clark Wipfield**
DATE BEGUN: **3/24/08** DATE COMPLETED: **3/24/08**

TOTAL DEPTH: **38 ft.**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)	27.77	
Time	1:40pm	
Date	3/27/08	

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY
0.0		SS	18"	HSA	SILTY CLAY: Dry red silty clay	
5.0	3,9,7	SS	14"			
10.0	6,9,14	SS	17"		CLAY AND SAND: Upper 4" red clay, middle 8" white and brown fine grained sand with organics, bottom 5" white/ gray clay silt.	
15.0	4,4,7	SS	14"		CLAYEY SILT: Moist white and gray clayey silt with Fe oxidation incremental banding from 45 degrees to parallel respectively. Brown sand observed at 36 ft. B.T. at 38 ft.	
20.0	5,10,15	SS	16"			
25.0	13,20,27	SS	10"			
30.0	9,17,27	SS	12"			
35.0	27,26,50/6	SS	14"			
38.0						



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FIELD BOREHOLE LOG

BOREHOLE NUMBER **MW-6D** Page 1 of 2

PROJECT NAME: **Davidson County Landfill**
LOCATION: **Davidson County**
DRILLING CO: **Engineering Tectoncis, P.A.**
DRILLING METHOD: **HSA and AH**
FIELD PARTY: **David Barron**
GEOLOGIST: **Clark Wipfield**
DATE BEGUN: **3/27/08** DATE COMPLETED: **3/27/08**

TOTAL DEPTH: **70.5 ft.**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)		
Time		
Date		

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL INSTALLATION
0.0				HSA	SANDY SILT: Brownish fine grained yellow sandy silt with Mn spots in upper 10". Lower portion is white/ gray compacted fine grained sandy silt quartz fragments increase in size with depth. Increased percent of Fe banding and oxidation with depth.		0.0	
5.0	28,37,50/1	SS	13"				5.0	
10.0	20,36,31	SS	17"				10.0	
15.0	23,36,50/6	SS	14"				15.0	
20.0	32,44,50/5	SS	18"				20.0	
25.0	50/5	SS	18"		SILT: Upper 14" is sticky wet viscous silt with Fe oxidation. Lower 4" hard compact gray/white silt.		25.0	
30.0	29,32,50/4	SS	12"		SANDY SILT: Brownish yellow sandy silt with Fe oxidation and quartz bands at 45 degree angles.		30.0	
35.0	28,50/5	SS	10"		GRAVEL AND SAND: Upper 4" wet gravel with large rock with medium grained sand. Lower 6" poorly sorted, mostly white silty		35.0	
37.0							37.0	

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FIELD BOREHOLE LOG

PROJECT NAME: **Davidson County Landfill**
LOCATION: **Davidson County**
DRILLING CO: **Engineering Tectoncis, P.A.**
DRILLING METHOD: **HSA and AH**
FIELD PARTY: **David Barron**
GEOLOGIST: **Clark Wipfield**
DATE BEGUN: **3/27/08** DATE COMPLETED: **3/27/08**

TOTAL DEPTH: **70.5 ft.**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)		
Time		
Date		

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL INSTALLATION
37.0					sand, with quartz fragments.			
40.0	41,42,50/6	SS	5"		SILT AND SAND: Upper 2" wet silty gray sand. Bottom 3" dry white and gray sandy silt with black and Fe spots.			
45.0	19,27,50	SS	14"		SANDY SILT: Gray and light red sandy silt with Fe oxidation bands.			
49.0					SILTY SAND: Wet white and gray silty sand with dark brown coarse sand. A.R. at 51 ft.			
50.0	50/2	SS	50/2'	AH	GRANITE: Weathered granite			
55.0		Grab						
60.0		Grab						
65.0		Grab						
66.0					DIORITE: Large fracture at 68' produced a lot of water. B.T. at 70.5 ft.			
70.0								

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FIELD BOREHOLE LOG

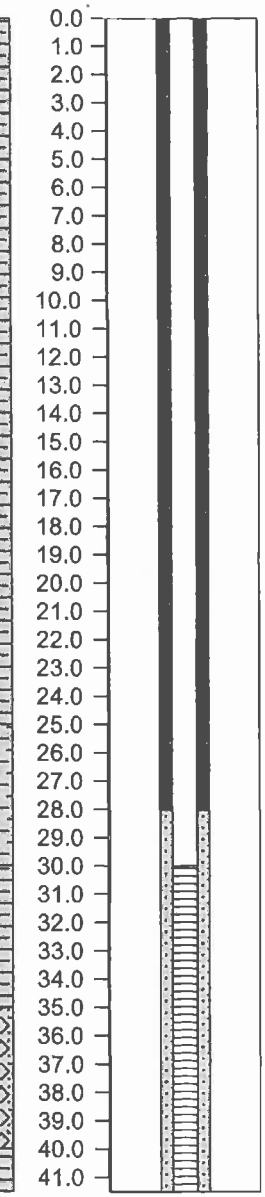
BOREHOLE NUMBER **MW-6s** Page 1 of 1

PROJECT NAME: **Davidson County**
LOCATION: **Davidson County Landfill**
DRILLING CO: **Engineering Tectonics, P.A.**
DRILLING METHOD: **HSA**
FIELD PARTY: **David Barron**
GEOLOGIST: **Clark Wipfield**
DATE BEGUN: **3/25/08** DATE COMPLETED: **3/25/08**

TOTAL DEPTH: **40 ft.**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)	33.60	
Time	2:00pm	
Date	3/27/08	

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY
0.0				HSA	SANDY SILT: Brownish fine grained yellow sandy silt with Mn spots in upper 10". Lower portion is white/ gray compacted fine grained sand with silt quartz fragments, increase in size with depth. Increased percent of Fe banding and oxidation with depth.	
5.0	28,37,50/1	SS	13"			
10.0	20,36,31	SS	17"			
15.0	23,36,50/6	SS	14"			
20.0	32,44,50/5	SS	18"			
25.0	50/5	SS	18"		SILT: Upper 14" is sticky wet viscous silt with Fe oxidation. Lower 4" hard compact gray/white silt.	
30.0	29,32,50/4	SS	12"		SANDY SILT: Moist brownish yellow sandy silt, with Fe oxidation and quartz bands at 45 degree angles.	
35.0	28,50/5	SS	10"		GRAVEL AND SAND: Moist brownish yellow sandy silt, with Fe oxidation and quartz banks at 45 degree angles.	
40.0	42,50/6	SS	5"		SANDY SILT: Upper 2" is wet silty gray sand. Bottom 3" is dry white & gray sandy silt, with black and Fe oxidation spots. B.T. at 40 ft.	



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FIELD BOREHOLE LOG

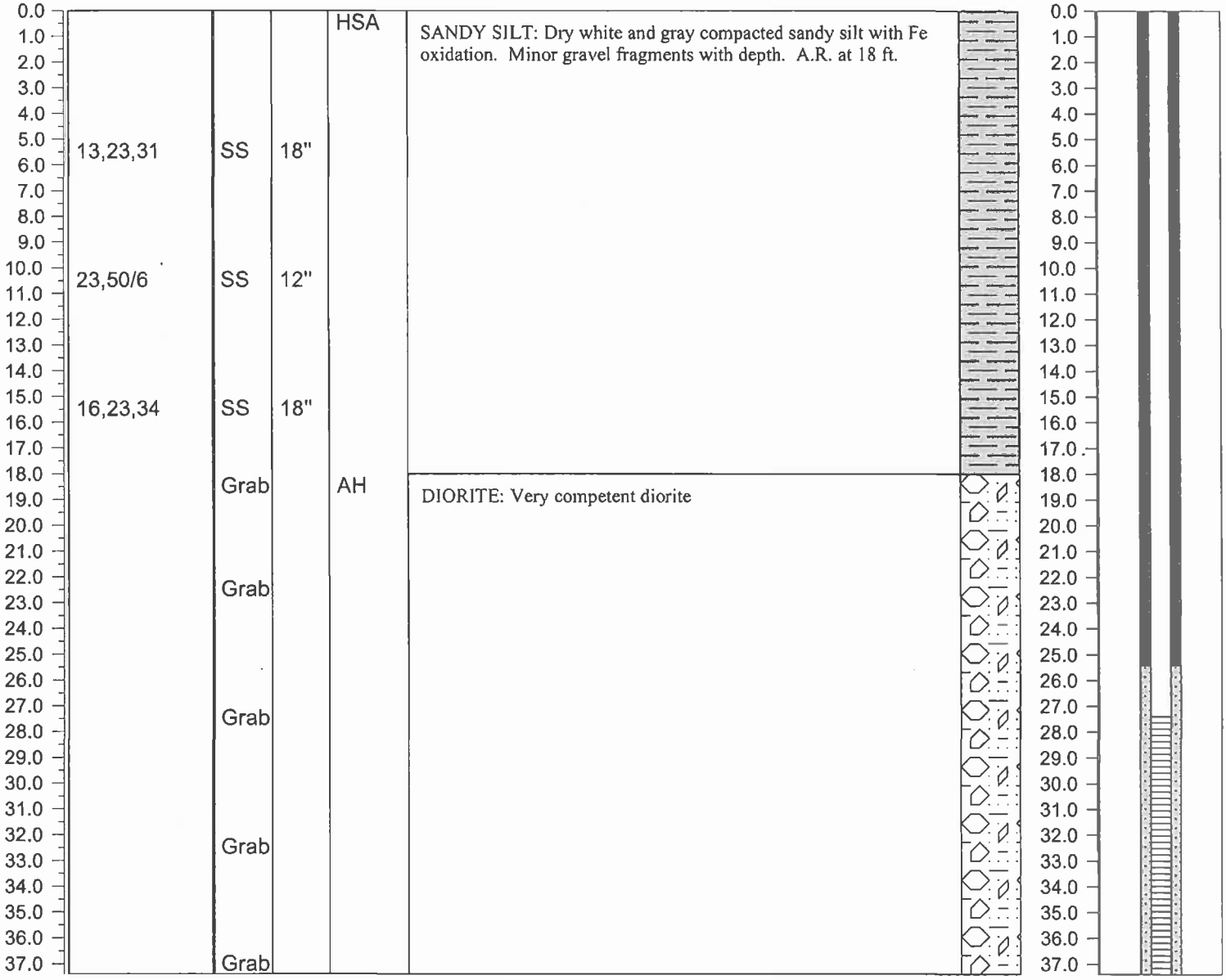
BOREHOLE NUMBER **MW-7** Page 1 of 1

PROJECT NAME: **Davidson County Landfill**
LOCATION: **Holy Springs, NC**
DRILLING CO: **Engineering Tectonics, P.A.**
DRILLING METHOD: **HSA and AH**
FIELD PARTY: **David Barron**
GEOLOGIST: **Clark Wipfield**
DATE BEGUN: **3/24/08** DATE COMPLETED: **3/25/08**

TOTAL DEPTH: **37.4**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)		
Time		
Date		

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION
0.0				HSA	SANDY SILT: Dry white and gray compacted sandy silt with Fe oxidation. Minor gravel fragments with depth. A.R. at 18 ft.
5.0	13,23,31	SS	18"		
10.0	23,50/6	SS	12"		
15.0	16,23,34	SS	18"		
18.0		Grab		AH	DIORITE: Very competent diorite
22.0		Grab			
27.0		Grab			
32.0		Grab			
37.0		Grab			



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FIELD BOREHOLE LOG

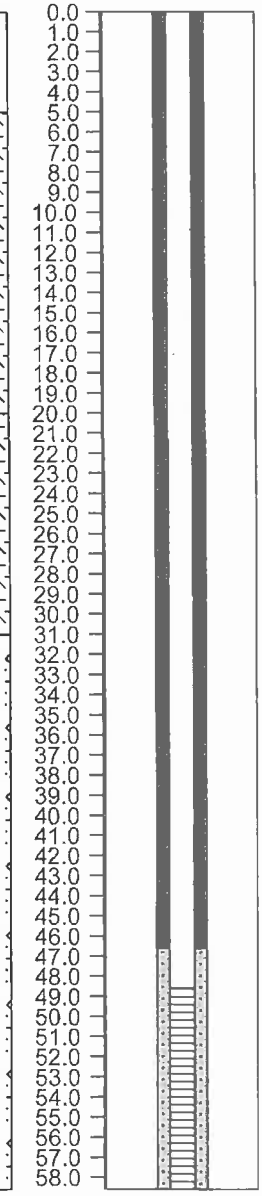
BOREHOLE NUMBER **MW-8** Page 1 of 1

PROJECT NAME: **Davidson County Landfill**
LOCATION: **Davidson County**
DRILLING CO: **Engineering Tectonics, P.A.**
DRILLING METHOD: **HSA and AH**
FIELD PARTY: **David Barron**
GEOLOGIST: **Clark Wipfield**
DATE BEGUN: **3/24/08** DATE COMPLETED: **3/25/08**

TOTAL DEPTH: **58.6**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)	46.58	
Time	10:45am	
Date	4/3/08	

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY
0.0				HSA	SANDY SILTY CLAY: Dry light brown sandy silty clay with 1" bands at 45 degrees in white/gray sandy silt. Minor amounts of Fe oxidation	
6.0	13,5,6	SS	16"		SILTY CLAY: Dry light brown silty clay bands (horizontal) in white/gray fined grained sandy silt	
11.0	8,9,13	SS	17"			
16.0	11,14,17	SS	18"			
21.0	14,18,28	SS	17"		SILTY CLAY: Yellow silt in silty sand that is white/gray with Mn mottles. A.R. at 31ft.	
26.0	15,18,22	SS	18"			
31.0	50/1	SS	2"	AH	DIORITE: Competent diorite. B.T. at 58.6 ft.	
36.0		Grab				
41.0		Grab				
46.0		Grab				
51.0		Grab				
56.0		Grab				
58.0						



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FIELD BOREHOLE LOG

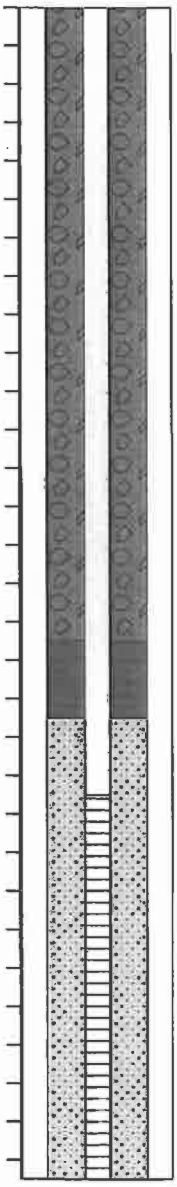
BOREHOLE NUMBER **MW-9** Page 1 of 1

PROJECT NAME: **Davidson County - Phase 2**
LOCATION: **Lexington, NC**
DRILLING CO: **Engineering Tectonics, P.A.**
DRILLING METHOD: **HSA/AH**
FIELD PARTY: **David Barron**
GEOLOGIST: **Clark Wipfield**
DATE BEGUN: **8/12/08** DATE COMPLETED: **8/14/08**

TOTAL DEPTH: **30.5**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)	19.35	
Time	2:30 pm	
Date	8/14/08	

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL INSTALLATION
0.0				HSA	SAND: Dry brown fine grained sand.		0.0	
5.0		Grab					5.0	
10.0		Grab					10.0	
15.0	50/0	SS	0"		DIORITE: Dry partially weathered diorite, with water at 21ft. Some brown/red silt with cutting at 20 feet. B.T. at 30.5 feet.		15.0	
20.0		Grab					20.0	
25.0		Grab					25.0	
30.0		Grab		AH			30.0	



NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2089

1. WELL CONTRACTOR:
David BARRON
Well Contractor (Individual) Name
Eng. Tectonics
Well Contractor Company Name
STREET ADDRESS 1720 VARGRAVE ST.
W-Salem N.C. 27107
City or Town State Zip Code
(336) 724-6994
Area code- Phone number

2. WELL INFORMATION:
SITE WELL ID #(if applicable) MW1
STATE WELL PERMIT#(if applicable)
DWQ or OTHER PERMIT #(if applicable)
WELL USE (Check Applicable Box) Monitoring [X] Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)
DATE DRILLED 4-3-08
TIME COMPLETED 4-7-08 AM [X] PM ☐

3. WELL LOCATION:
CITY: Thomasville COUNTY Davidson
1242 Old Hwy 29 27360-0024
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
TOPOGRAPHIC / LAND SETTING:
☐ Slope ☐ Valley [X] Flat ☐ Ridge ☐ Other
(check appropriate box)
LATITUDE 35 51 11.4107
LONGITUDE 80 10 34.8794
May be in degrees, minutes, seconds or in a decimal format
Latitude/longitude source: ☐ GPS ☐ Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

4. FACILITY- is the name of the business where the well is located.
FACILITY ID #(if applicable)
NAME OF FACILITY Davidson Co. Landfill
STREET ADDRESS 1242 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
CONTACT PERSON Charlie Brushwood
MAILING ADDRESS 1242 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
(336) 242-0284
Area code - Phone number

5. WELL DETAILS:
a. TOTAL DEPTH: 20.0'
b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO [X]
c. WATER LEVEL Below Top of Casing: 14.1 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):
From _____ To _____ From _____ To _____
From _____ To _____ From _____ To _____
From _____ To _____ From _____ To _____

6. CASING:

	Depth		Diameter	Thickness/ Weight	Material
From +3.0	To 10.0	Ft.	2"	Sch 40	PVC
From	To	Ft.			
From	To	Ft.			

7. GROUT:

	Depth		Material	Method
From 6.0	To 8.0	Ft.	Bentonite	Tremie
From 0.0	To 6.0	Ft.	Portland	Pump
From	To	Ft.		

8. SCREEN:

	Depth		Diameter	Slot Size	Material
From 10.0	To 20.0	Ft.	2" in.	.010 in.	PVC
From	To	Ft.	in.	in.	
From	To	Ft.	in.	in.	

9. SAND/GRAVEL PACK:

	Depth		Size	Material
From 8.0	To 20.0	Ft.	#3	SAND
From	To	Ft.		
From	To	Ft.		

10. DRILLING LOG

From	To	Formation Description

11. 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.

David Barron — 4-11-08
SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE

David BARRON
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days: Attn: Information Mgt., 1617 Mail Service Center – Raleigh, NC 27699-1617 Phone No. (919) 733-7015 ext 568.

Form GW-1b
Rev. 7/05

919 828 2899

REC'D AUG 28 2008

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2089

1. WELL CONTRACTOR:
DAVID BARRON
Well Contractor (Individual) Name
ENG. TECTONICS
Well Contractor Company Name
STREET ADDRESS 1720 VARGRAVE ST.
W-SALEM N.C. 27107
City or Town State Zip Code
(336) 724-6994
Area code- Phone number

2. WELL INFORMATION:
SITE WELL ID #(if applicable) MW#2
WELL CONSTRUCTION PERMIT#(if applicable)
OTHER ASSOCIATED PERMIT #(if applicable)

3. WELL USE (Check Applicable Box) Monitoring X Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)
DATE DRILLED 8-11-08
TIME COMPLETED 8-15-08 AM X PM ☐

4. WELL LOCATION:
CITY: THOMASVILLE COUNTY DAVIDSON
1160 old Hwy 29 27360-0024
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
TOPOGRAPHIC / LAND SETTING:
☐ Slope X Valley ☐ Flat ☐ Ridge ☐ Other
(check appropriate box)
LATITUDE
LONGITUDE
May be in degrees, minutes, seconds or in a decimal format
Latitude/longitude source: ☐ GPS ☐ Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

5. FACILITY- is the name of the business where the well is located.
FACILITY ID #(if applicable)
NAME OF FACILITY DAVIDSON CO. LANDFILL
STREET ADDRESS 1160 old Hwy 29
THOMASVILLE N.C. 27360-0024
City or Town State Zip Code
CONTACT PERSON CHARLIE BRUSHWOOD
MAILING ADDRESS 1248 old Hwy 29
THOMASVILLE N.C. 27360-0024
City or Town State Zip Code
(336) 242-2084
Area code - Phone number

6. WELL DETAILS:
a. TOTAL DEPTH: 14.0
b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO X
c. WATER LEVEL Below Top of Casing: 13.0 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):
From To From To
From To From To
From To From To

7. CASING:

	Depth		Diameter	Thickness/ Weight	Material
From +3'	To 4'	Ft.	2"	sch 40	PVC
From	To	Ft.			
From	To	Ft.			

8. GROUT:

	Depth		Material	Method
From 0	To 2.0	Ft.	PORTLAND	TREMIE
From 2.0	To 3.0	Ft.	BENTONITE	TREMIE
From	To	Ft.		

9. SCREEN:

	Depth		Diameter		Slot Size		Material
From 4.0	To 14.0	Ft.	2"	in.	.010	in.	PVC
From	To	Ft.		in.		in.	
From	To	Ft.		in.		in.	

10. SAND/GRAVEL PACK:

	Depth		Size	Material
From 3.0	To 14.0	Ft.	#3	SAND
From	To	Ft.		
From	To	Ft.		

11. DRILLING LOG

From	To	Formation Description

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.

David Barron — 8-20-08
SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE

DAVID BARRON
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days. Attn: Information Mgt., 1617 Mail Service Center – Raleigh, NC 27699-1617 Phone No. (919) 733-7015 ext 568.

Form GW-1b
Rev. 3/07

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2089

1. WELL CONTRACTOR:
David BARRON
Well Contractor (Individual) Name
Eng. Tectonics
Well Contractor Company Name
STREET ADDRESS 1720 VARGRAVE ST.
W-Salem N.C. 27107
City or Town State Zip Code
(336) 724-6994
Area code- Phone number

2. WELL INFORMATION:
SITE WELL ID #(if applicable) MW # 35
STATE WELL PERMIT#(if applicable)
DWQ or OTHER PERMIT #(if applicable)
WELL USE (Check Applicable Box) Monitoring [X] Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)
DATE DRILLED 3-31
TIME COMPLETED 4-1 AM [X] PM ☐

3. WELL LOCATION:
CITY: Thomasville COUNTY Davidson
1242 Old Hwy 29 27360-0024
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
TOPOGRAPHIC / LAND SETTING:
☐ Slope ☐ Valley [X] Flat ☐ Ridge ☐ Other
(check appropriate box)
LATITUDE 35.50 58.13561
LONGITUDE 80 11 05.49742
May be in degrees, minutes, seconds or in a decimal format
Latitude/longitude source: ☐ GPS ☐ Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

4. FACILITY- is the name of the business where the well is located.
FACILITY ID #(if applicable)
NAME OF FACILITY Davidson Co. Landfill
STREET ADDRESS 1242 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
CONTACT PERSON Charlie Brushwood
MAILING ADDRESS 1242 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
(336) 242-0284
Area code - Phone number

5. WELL DETAILS:
a. TOTAL DEPTH: 18.0
b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO [X]
c. WATER LEVEL Below Top of Casing: 7.93 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):
From _____ To _____ From _____ To _____
From _____ To _____ From _____ To _____
From _____ To _____ From _____ To _____

6. CASING:

	Depth	Diameter	Thickness/ Weight	Material
From +3	To 8.0 Ft.	2"	Sch 40	PVC
From	To Ft.			
From	To Ft.			

7. GROUT:

	Depth	Material	Method
From 6.0	To 8.0 Ft.	Bentonite	Tremie
From 0.0	To 6.0 Ft.	Portland	Pump
From	To Ft.		

8. SCREEN:

	Depth	Diameter	Slot Size	Material
From 8.0	To 18.0 Ft.	2" in.	.010 in.	PVC
From	To Ft.	in.	in:	
From	To Ft.	in.	in.	

9. SAND/GRAVEL PACK:

	Depth	Size	Material
From 6.0	To 18.0 Ft.	#3	SAND
From	To Ft.		
From	To Ft.		

10. DRILLING LOG

From	To	Formation Description

11. 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.

David Barron — 4-11-08
SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE

David BARRON
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days: Attn: Information Mgt., 1617 Mail Service Center – Raleigh, NC 27699-1617 Phone No. (919) 733-7015 ext 568.

Form GW-1b
Rev. 7/05

Apr. 11. 2008 3:49PM ENGINEERING TECTONICS, PA

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2089

1. WELL CONTRACTOR:
David BARRON
Well Contractor (Individual) Name
Eng. Tectonics
Well Contractor Company Name
STREET ADDRESS 1720 VARGRAVE ST.
W-Salem N.C. 27107
City or Town State Zip Code
(336) 724-6994
Area code - Phone number

2. WELL INFORMATION:
SITE WELL ID #(if applicable) MW 3D
STATE WELL PERMIT#(if applicable)
DWQ or OTHER PERMIT #(if applicable)
WELL USE (Check Applicable Box) Monitoring [X] Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)
DATE DRILLED 4-9
TIME COMPLETED 4-11 AM [X] PM ☐

3. WELL LOCATION:
CITY: Thomasville COUNTY Davidson
1242 Old Hwy 89 27360-0024
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
TOPOGRAPHIC / LAND SETTING:
☐ Slope ☐ Valley [X] Flat ☐ Ridge ☐ Other
(check appropriate box)
LATITUDE 35 50 58.13562
LONGITUDE 80 11 05.4984
May be in degrees, minutes, seconds or in a decimal format
Latitude/longitude source: ☐ GPS ☐ Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

4. FACILITY- is the name of the business where the well is located.
FACILITY ID #(if applicable)
NAME OF FACILITY Davidson Co. LANDFILL
STREET ADDRESS 1242 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
CONTACT PERSON Charlie Brushwood
MAILING ADDRESS 1242 old Hwy 89
Thomasville N.C. 27360-0024
City or Town State Zip Code
(336) 242-2284
Area code - Phone number

5. WELL DETAILS:
a. TOTAL DEPTH: 40.5
b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO [X]
c. WATER LEVEL Below Top of Casing: 7.82 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):
From To From To
From To From To
From To From To

6. CASING:

	Depth		Diameter	Thickness/ Weight	Material
From +3	To 35.5	Ft.	2"	Sch 40	PVC
From 0.0	To 24	Ft.	4"	Sch 40	PVC
From	To	Ft.			

7. GROUT:

	Depth		Material	Method
From 31.5	To 33.5	Ft.	Bentonite	Tremie
From 0.0	To 31.5	Ft.	Portland	Pump
From	To	Ft.		

8. SCREEN:

	Depth		Diameter	Slot Size	Material
From 35.5	To 40.5	Ft.	2" in.	.010 in.	PVC
From	To	Ft.	in.	in.	
From	To	Ft.	in.	in.	

9. SAND/GRAVEL PACK:

	Depth		Size	Material
From 38.5	To 40.5	Ft.	#3	SAND
From	To	Ft.		
From	To	Ft.		

10. DRILLING LOG

From	To	Formation Description

11. 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.

David Barron 4-11-08
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

David BARRON
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days: Attn: Information Mgt., 1617 Mail Service Center – Raleigh, NC 27699-1617 Phone No. (919) 733-7015 ext 568.

Form GW-1b
Rev. 7/05

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2089

1. WELL CONTRACTOR:
David BARRON
Well Contractor (individual) Name
Eng. Tectonics
Well Contractor Company Name
STREET ADDRESS 1720 VARGRAVE ST.
W-Salem N.C. 27107
City or Town State Zip Code
(336) 724-6994
Area code- Phone number

2. WELL INFORMATION:
SITE WELL ID #(if applicable) MW4S
STATE WELL PERMIT#(if applicable)
DWQ or OTHER PERMIT #(if applicable)
WELL USE (Check Applicable Box) Monitoring [X] Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)
DATE DRILLED 3-31
TIME COMPLETED 4-1 AM [X] PM ☐

3. WELL LOCATION:
CITY: Thomasville COUNTY Davidson
1242 Old Hwy 29 27360-0024
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
TOPOGRAPHIC / LAND SETTING:
☐ Slope ☐ Valley [X] Flat ☐ Ridge ☐ Other
(check appropriate box)
LATITUDE 35 50 58.2283
LONGITUDE 80 11 08.13518
May be in degrees, minutes, seconds or in a decimal format
Latitude/longitude source: ☐ GPS ☐ Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

4. FACILITY- is the name of the business where the well is located.
FACILITY ID #(if applicable)
NAME OF FACILITY Davidson Co. Landfill
STREET ADDRESS 1242 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
CONTACT PERSON Charlie Brushwood
MAILING ADDRESS 1248 old Hwy 29
Thomasville N.C. 27360-0084
City or Town State Zip Code
(336) 242-0284
Area code - Phone number

5. WELL DETAILS:
a. TOTAL DEPTH: 21.0
b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO [X]
c. WATER LEVEL Below Top of Casing: 18.6 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):
From _____ To _____ From _____ To _____
From _____ To _____ From _____ To _____
From _____ To _____ From _____ To _____

6. CASING:

	Depth		Diameter	Thickness/ Weight	Material
From +3	To 11.0	Ft.	2"	Sch 40	PVC
From	To	Ft.			
From	To	Ft.			

7. GROUT:

	Depth		Material	Method
From 7.0	To 9.0	Ft.	Bentonite	Tremie
From 0.0	To 7.0	Ft.	Portland	Pump
From	To	Ft.		

8. SCREEN:

	Depth		Diameter	Slot Size	Material
From 11.0	To 21.0	Ft.	2" in.	.010 in.	PVC
From	To	Ft.	in.	in.	
From	To	Ft.	in.	in.	

9. SAND/GRAVEL PACK:

	Depth		Size	Material
From 9.0	To 21.0	Ft.	#3	SAND
From	To	Ft.		
From	To	Ft.		

10. DRILLING LOG

From	To	Formation Description

11. 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.

David Barron — 4-11-08
SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE

David BARRON
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days; Attn: Information Mgt., 1617 Mail Service Center – Raleigh, NC 27699-1617 Phone No. (919) 733-7015 ext 568.

Form GW-1b
Rev. 7/05

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2089

1. WELL CONTRACTOR:
DAVID BARRON
Well Contractor (Individual) Name
Eng. Tectonics
Well Contractor Company Name
STREET ADDRESS 1720 VARGRAVE ST.
W-Salem N.C. 27107
City or Town State Zip Code
(336) 724-6994
Area code- Phone number

2. WELL INFORMATION:
SITE WELL ID #(if applicable) MW 4D
STATE WELL PERMIT#(if applicable)
DWQ or OTHER PERMIT #(if applicable)
WELL USE (Check Applicable Box) Monitoring [X] Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)
DATE DRILLED 4-9
TIME COMPLETED 4-11 AM [X] PM ☐

3. WELL LOCATION:
CITY: Thomasville COUNTY Davidson
1242 Old Hwy 29 27360-0024
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
TOPOGRAPHIC / LAND SETTING:
☐ Slope ☐ Valley [X] Flat ☐ Ridge ☐ Other
(check appropriate box)
LATITUDE 35 50 58.29291
LONGITUDE 80 11 08.13521
May be in degrees, minutes, seconds or in a decimal format
Latitude/longitude source: ☐ GPS ☐ Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

4. FACILITY - is the name of the business where the well is located.
FACILITY ID #(if applicable)
NAME OF FACILITY Davidson Co. Landfill
STREET ADDRESS 1242 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
CONTACT PERSON Charlie Brushwood
MAILING ADDRESS 1242 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
(336) 242-0284
Area code - Phone number

5. WELL DETAILS:
a. TOTAL DEPTH: 37.0
b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO [X]
c. WATER LEVEL Below Top of Casing: 18.2 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):
From _____ To _____ From _____ To _____
From _____ To _____ From _____ To _____
From _____ To _____ From _____ To _____

6. CASING:

	Depth		Diameter	Thickness/ Weight	Material
From +3	To 27.0	Ft.	2"	Sch 40	PVC
From 0.0	To 21.5	Ft.	4"	Sch 40	PVC
From	To	Ft.			

7. GROUT:

	Depth		Material	Method
From 28.0	To 30.0	Ft.	Bentonite	Tremie
From 0.0	To 28.0	Ft.	Portland	Pump
From	To	Ft.		

8. SCREEN:

	Depth		Diameter		Slot Size		Material
From 32.0	To 37.0	Ft.	2"	in.	.010	In.	PVC
From	To	Ft.		in.		in.	
From	To	Ft.		in.		In.	

9. SAND/GRAVEL PACK:

	Depth		Size	Material
From 30.0	To 37.0	Ft.	#3	SAND
From	To	Ft.		
From	To	Ft.		

10. DRILLING LOG

From	To	Formation Description

11. 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.

David Barron — 4-11-08
SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE

DAVID BARRON
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days; Attn: Information Mgt., 1617 Mail Service Center – Raleigh, NC 27699-1617 Phone No. (919) 733-7015 ext 568.

Form GW-1b
Rev. 7/05

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2089

1. WELL CONTRACTOR:
DAVID BARRON
Well Contractor (Individual) Name
Eng. Tectonics
Well Contractor Company Name
STREET ADDRESS 1720 VARGRAVE ST.
W-Salem N.C. 27107
City or Town State Zip Code
(336) 724-6994
Area code- Phone number

2. WELL INFORMATION:
SITE WELL ID #(if applicable) MW#5
STATE WELL PERMIT#(if applicable)
DWQ or OTHER PERMIT #(if applicable)
WELL USE (Check Applicable Box) Monitoring [X] Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)
DATE DRILLED 4-1
TIME COMPLETED 4-8 AM [X] PM ☐

3. WELL LOCATION:
CITY: Thomasville COUNTY Davidson
1242 old Hwy 29 27360-0024
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
TOPOGRAPHIC / LAND SETTING:
☐ Slope ☐ Valley [X] Flat ☐ Ridge ☐ Other
(check appropriate box)
LATITUDE 35 50 55.03410
LONGITUDE 80 11 13.66395
May be in degrees, minutes, seconds or in a decimal format
Latitude/longitude source: ☐ GPS ☐ Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

4. FACILITY- is the name of the business where the well is located.
FACILITY ID #(if applicable)
NAME OF FACILITY Davidson Co. Landfill
STREET ADDRESS 1242 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
CONTACT PERSON Charlie Brushwood
MAILING ADDRESS 1242 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
(336) 242-0284
Area code - Phone number

5. WELL DETAILS:
a. TOTAL DEPTH: 38.0
b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO [X]
c. WATER LEVEL Below Top of Casing: 27.47 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):
From To From To
From To From To
From To From To

6. CASING:

	Depth		Diameter	Thickness/ Weight	Material
From +3'	To 28	Ft.	2"	Sch 40	PVC
From	To	Ft.			
From	To	Ft.			

7. GROUT:

	Depth		Material	Method
From 24.0	To 26.0	Ft.	Bentonite	Tremie
From 0.0	To 24.0	Ft.	Portland	Pump
From	To	Ft.		

8. SCREEN:

	Depth		Diameter	Slot Size	Material
From 28.0	To 38.0	Ft.	2" in.	.010 in.	PVC
From	To	Ft.	in.	in.	
From	To	Ft.	in.	in.	

9. SAND/GRAVEL PACK:

	Depth		Size	Material
From 26.0	To 38.0	Ft.	#3	SAND
From	To	Ft.		
From	To	Ft.		

10. DRILLING LOG

From	To	Formation Description

11. 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.

David Barron — 4-11-08
SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE

DAVID BARRON
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days: Attn: Information Mgt., 1617 Mail Service Center – Raleigh, NC 27699-1617 Phone No. (919) 733-7015 ext 568.

Form GW-1b
Rev. 7/05

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2089

1. WELL CONTRACTOR:
DAVID BARRON
Well Contractor (Individual) Name
ENG. TECTONICS
Well Contractor Company Name
STREET ADDRESS 1720 VARGRAVE ST.
W-SALEM N.C. 27107
City or Town State Zip Code
(336) 724-6994
Area code- Phone number

2. WELL INFORMATION:
SITE WELL ID #(if applicable) MW65
STATE WELL PERMIT#(if applicable)
DWQ or OTHER PERMIT #(if applicable)
WELL USE (Check Applicable Box) Monitoring [X] Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)
DATE DRILLED 4-8
TIME COMPLETED 4-10 AM [X] PM ☐

3. WELL LOCATION:
CITY: THOMASVILLE COUNTY DAVIDSON
1242 Old Hwy 29 27360-0024
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
TOPOGRAPHIC / LAND SETTING:
☐ Slope ☐ Valley [X] Flat ☐ Ridge ☐ Other
(check appropriate box)
LATITUDE 35 50 48.51500
LONGITUDE 80 11 06.89024
May be in degrees, minutes, seconds or in a decimal format
Latitude/longitude source: ☐ GPS ☐ Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

4. FACILITY- is the name of the business where the well is located.
FACILITY ID #(if applicable)
NAME OF FACILITY DAVIDSON CO. LANDFILL
STREET ADDRESS 1242 old Hwy 29
THOMASVILLE N.C. 27360-0024
City or Town State Zip Code
CONTACT PERSON CHARLIE BRUSHWOOD
MAILING ADDRESS 1242 old Hwy 29
THOMASVILLE N.C. 27360-0024
City or Town State Zip Code
(336) 242-0284
Area code - Phone number

5. WELL DETAILS:
a. TOTAL DEPTH: 40.0
b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO [X]
c. WATER LEVEL Below Top of Casing: 31.9 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):
From _____ To _____ From _____ To _____
From _____ To _____ From _____ To _____
From _____ To _____ From _____ To _____

8. CASING:

	Depth		Diameter	Thickness/ Weight	Material
From +3	To 30.0	Ft.	2"	Sch 40	PVC
From	To	Ft.			
From	To	Ft.			

7. GROUT:

	Depth		Material	Method
From 26.0	To 28.0	Ft.	Bentonite	Tremie
From 0.0	To 26.0	Ft.	Portland	Pump
From	To	Ft.		

8. SCREEN:

	Depth		Diameter	Slot Size	Material
From 30.0	To 40.0	Ft.	2" in.	.010 in.	PVC
From	To	Ft.	in.	in.	
From	To	Ft.	in.	in.	

9. SAND/GRAVEL PACK:

	Depth		Size	Material
From 28.0	To 40.0	Ft.	#3	SAND
From	To	Ft.		
From	To	Ft.		

10. DRILLING LOG

From	To	Formation Description

11. 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.

DAVID BARRON — 4-11-08
SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE

DAVID BARRON
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days: Attn: Information Mgt., 1617 Mail Service Center – Raleigh, NC 27699-1617 Phone No. (919) 733-7015 ext 568.

Form GW-1b
Rev. 7/05

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2089

1. WELL CONTRACTOR:
DAVID BARRON
Well Contractor (Individual) Name
Eng. Tectonics
Well Contractor Company Name
STREET ADDRESS 1720 VARGRAVE ST.
W-Salem N.C. 27107
City or Town State Zip Code
(336) 724-6994
Area code - Phone number

2. WELL INFORMATION:
SITE WELL ID #(if applicable) MW 60
STATE WELL PERMIT#(if applicable)
DWQ or OTHER PERMIT #(if applicable)
WELL USE (Check Applicable Box) Monitoring [X] Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)
DATE DRILLED 4-8
TIME COMPLETED 4-10 AM [X] PM ☐

3. WELL LOCATION:
CITY: Thomasville COUNTY Davidson
1242 old Hwy 29 27360-0024
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
TOPOGRAPHIC / LAND SETTING:
☐ Slope ☐ Valley [X] Flat ☐ Ridge ☐ Other
(check appropriate box)
LATITUDE 35 50 48.51500
LONGITUDE 80 11 06.89030
May be in degrees, minutes, seconds or in a decimal format
Latitude/longitude source: ☐ GPS ☐ Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

4. FACILITY- is the name of the business where the well is located.
FACILITY ID #(if applicable)
NAME OF FACILITY Davidson Co. Landfill
STREET ADDRESS 1242 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
CONTACT PERSON Charlie Brushwood
MAILING ADDRESS 1242 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
(336) 242-0284
Area code - Phone number

5. WELL DETAILS:
a. TOTAL DEPTH: 70.5
b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO [X]
c. WATER LEVEL Below Top of Casing: 32.12 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 .0116.
e. YIELD (gpm): _____ METHOD OF TEST _____
f. DISINFECTION: Type _____ Amount _____
g. WATER ZONES (depth):
From _____ To _____ From _____ To _____
From _____ To _____ From _____ To _____
From _____ To _____ From _____ To _____

6. CASING:

	Depth		Diameter	Thickness/ Weight	Material
From +3.0	To 65.5	Ft.	2"	Sch 40	PVC
From 0.0	To 57.0	Ft.	4"	Sch 40	PVC
From	To	Ft.			

7. GROUT:

	Depth		Material	Method
From 61.5	To 63.5	Ft.	Bentonite	Tremie
From	To	Ft.	Portland	Pump
From	To	Ft.		

8. SCREEN:

	Depth		Diameter	Slot Size	Material
From 65.5	To 70.5	Ft.	2" in.	.010 in.	PVC
From	To	Ft.	in.	in.	
From	To	Ft.	in.	in.	

9. SAND/GRAVEL PACK:

	Depth		Size	Material
From 63.5	To 70.5	Ft.	#3	SAND
From	To	Ft.		
From	To	Ft.		

10. DRILLING LOG

From	To	Formation Description

11. 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.

David Barron — 4-11-08
SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE

DAVID BARRON
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days: Attn: Information Mgt., 1617 Mail Service Center – Raleigh, NC 27699-1617 Phone No. (919) 733-7015 ext 568.

Form GW-1b
Rev. 7/05

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2089

1. WELL CONTRACTOR:
David BARRON
Well Contractor (Individual) Name
Eng. Tectonics
Well Contractor Company Name
STREET ADDRESS 1720 VARGRAVE ST.
W-Salem N.C. 27107
City or Town State Zip Code
(336) 724-6994
Area code- Phone number

2. WELL INFORMATION:
SITE WELL ID #(if applicable) MW # 7
STATE WELL PERMIT#(if applicable)
DWQ or OTHER PERMIT #(if applicable)
WELL USE (Check Applicable Box) Monitoring [X] Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)
DATE DRILLED 4-4-08
TIME COMPLETED 4-8-08 AM [X] PM ☐

3. WELL LOCATION:
CITY: Thomasville COUNTY Davidson
1242 Old Hwy 29 27360-0024
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
TOPOGRAPHIC / LAND SETTING:
☐ Slope ☐ Valley [X] Flat ☐ Ridge ☐ Other
(check appropriate box)
LATITUDE 35 50 48.6102
LONGITUDE 80 11 04.88235
May be in degrees, minutes, seconds or in a decimal format
Latitude/longitude source: ☐ GPS ☐ Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

4. FACILITY- is the name of the business where the well is located.
FACILITY ID #(if applicable)
NAME OF FACILITY Davidson Co. Landfill
STREET ADDRESS 1242 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
CONTACT PERSON Charlie Brushwood
MAILING ADDRESS 1242 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
(336) 242-2284
Area code - Phone number

5. WELL DETAILS:
a. TOTAL DEPTH: 37'-4"
b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO [X]
c. WATER LEVEL Below Top of Casing: 28.6 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):
From To From To
From To From To
From To From To

6. CASING:

From	To	Depth Ft.	Diameter	Thickness/ Weight	Material
+3	27.4	Ft.	2"	Sch 40	PVC
		Ft.			
		Ft.			

7. GROUT:

From	To	Depth Ft.	Material	Method
23.4	25.4	Ft.	Bentonite	Tremie
0.0	23.4	Ft.	Portland	Pump
		Ft.		

8. SCREEN:

From	To	Depth Ft.	Diameter	Slot Size	Material
[redacted]	37.4	Ft.	2" in.	.010 in.	PVC
27.4		Ft.	in.	in.	
		Ft.	in.	in.	

9. SAND/GRAVEL PACK:

From	To	Depth Ft.	Size	Material
[redacted]	37.4	Ft.	#3	SAND
25.4		Ft.		
		Ft.		

10. DRILLING LOG

From	To	Formation Description

11. 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.

David Barron 4-11-08
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

David BARRON
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days: Attn: Information Mgt., 1617 Mail Service Center – Raleigh, NC 27699-1617 Phone No. (919) 733-7015 ext 568.

Form GW-1b
Rev. 7/05

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2089

1. WELL CONTRACTOR:
DAVID BARRON
Well Contractor (Individual) Name
Eng. Tectonics
Well Contractor Company Name
STREET ADDRESS 1720 VARGRAVE ST.
W-Salem N.C. 27107
City or Town State Zip Code
(336) 724-6994
Area code - Phone number

2. WELL INFORMATION:
SITE WELL ID #(if applicable) MW#8
STATE WELL PERMIT#(if applicable)
DWQ or OTHER PERMIT #(if applicable)
WELL USE (Check Applicable Box) Monitoring [X] Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)
DATE DRILLED 4-4-08
TIME COMPLETED 4-9-08 AM [X] PM ☐

3. WELL LOCATION:
CITY: Thomasville COUNTY Davidson
1242 Old Hwy 29 27360-0024
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
TOPOGRAPHIC / LAND SETTING:
☐ Slope ☐ Valley [X] Flat ☐ Ridge ☐ Other
(check appropriate box)
LATITUDE 35 50 50.57123
LONGITUDE 80 11 02.42828
May be in degrees, minutes, seconds or in a decimal format
Latitude/longitude source: ☐ GPS ☐ Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

4. FACILITY - is the name of the business where the well is located.
FACILITY ID #(if applicable)
NAME OF FACILITY Davidson Co. Landfill
STREET ADDRESS 1242 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
CONTACT PERSON Charlie Brushwood
MAILING ADDRESS 1242 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
(336) 242-2284
Area code - Phone number

5. WELL DETAILS:
a. TOTAL DEPTH: 58'-6"
b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO [X]
c. WATER LEVEL Below Top of Casing: 48.49 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):
From _____ To _____ From _____ To _____
From _____ To _____ From _____ To _____
From _____ To _____ From _____ To _____

6. CASING:

	Depth		Diameter	Thickness/ Weight	Material
From +3.0	To 48.6	Ft.	2"	Sch 40	PVC
From	To	Ft.			
From	To	Ft.			

7. GROUT:

	Depth		Material	Method
From 44.6	To 46.6	Ft.	Bentonite	Tremie
From 0.0	To 44.6	Ft.	Portland	Pump
From	To	Ft.		

8. SCREEN:

	Depth		Diameter	Slot Size	Material
From 48.6	To 58.6	Ft.	2" in.	.010 in.	PVC
From	To	Ft.	in.	in.	
From	To	Ft.	in.	in.	

9. SAND/GRAVEL PACK:

	Depth		Size	Material
From 46.6	To 58.6	Ft.	#3	SAND
From	To	Ft.		
From	To	Ft.		

10. DRILLING LOG

From	To	Formation Description

11. 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.

David Barron — 4-11-08
SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE

DAVID BARRON
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days: Attn: Information Mgt., 1617 Mail Service Center – Raleigh, NC 27699-1617 Phone No. (919) 733-7015 ext 568.

Form GW-1b
Rev. 7/05

REC'D AUG 28 2008

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2089

1. WELL CONTRACTOR:
DAVID BARRON
Well Contractor (Individual) Name
Eng. Tectonics
Well Contractor Company Name
STREET ADDRESS 1720 UARGRAVE ST.
W-Salem N.C. 27107
City or Town State Zip Code
(336) 724-6994
Area code- Phone number

2. WELL INFORMATION:
SITE WELL ID #(if applicable) MW+9
WELL CONSTRUCTION PERMIT#(if applicable)
OTHER ASSOCIATED PERMIT #(if applicable)

3. WELL USE (Check Applicable Box) Monitoring [X] Municipal/Public [ ]
Industrial/Commercial [ ] Agricultural [ ] Recovery [ ] Injection [ ]
Irrigation [ ] Other [ ] (list use)
DATE DRILLED 8-14-08
TIME COMPLETED 8-19-08 AM [X] PM [ ]

4. WELL LOCATION:
CITY: Thomasville COUNTY Davidson
1160 old Hwy 29 27360-0024
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
TOPOGRAPHIC / LAND SETTING:
[ ] Slope [ ] Valley [ ] Flat [ ] Ridge [ ] Other
(check appropriate box)
LATITUDE
LONGITUDE
May be in degrees, minutes, seconds or in a decimal format
Latitude/longitude source: [ ] GPS [ ] Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

5. FACILITY- is the name of the business where the well is located.
FACILITY ID #(if applicable)
NAME OF FACILITY DAVIDSON CO. LANDFILL
STREET ADDRESS 1160 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
CONTACT PERSON Charlie Brushwood
MAILING ADDRESS 1242 old Hwy 29
Thomasville N.C. 27360-0024
City or Town State Zip Code
(336) 242-2284
Area code - Phone number

6. WELL DETAILS:
a. TOTAL DEPTH: 30.50
b. DOES WELL REPLACE EXISTING WELL? YES [ ] NO [X]
c. WATER LEVEL Below Top of Casing: 20.0 FT.
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS Flush 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):
From 20.5 To 30.5 From _____ To _____
From _____ To _____ From _____ To _____
From _____ To _____ From _____ To _____

7. CASING:

	Depth		Diameter	Thickness/ Weight	Material
From 0	To 20.5	Ft.	2"	sch 40	PVC
From	To	Ft.			
From	To	Ft.			

8. GROUT:

	Depth		Material	Method
From 0	To 15.5	Ft.	Portland	Tremie
From 15.5	To 18.5	Ft.	Bentonite	Tremie
From	To	Ft.		

9. SCREEN:

	Depth		Diameter		Slot Size		Material
From 20.5	To 30.5	Ft.	2"	in.	.010	in.	PVC
From	To	Ft.		in.		in.	
From	To	Ft.		in.		in.	

10. SAND/GRAVEL PACK:

	Depth		Size	Material
From 18.5	To 30.5	Ft.	#3	Sand
From	To	Ft.		
From	To	Ft.		

11. DRILLING LOG

From	To	Formation Description

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.

David Barron — 8-20-08
SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE

DAVID BARRON
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days. Attn: Information Mgt., 1617 Mail Service Center – Raleigh, NC 27699-1617 Phone No. (919) 733-7015 ext 568.

Form GW-1b
Rev. 3/07

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Appendix C

Laboratory Analytical Report

April 2013 Groundwater Monitoring Report
Davidson County Phase 2 MSW Landfill
NC Solid Waste Permit No. 29-06

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Environment 1, Incorporated

Drinking Water ID: 37715 5
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

ID#: 6059 A

DAVIDSON COUNTY (PHASE 2)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH ,NC 27603

DATE COLLECTED: 04/17/13
DATE REPORTED : 05/20/13

REVIEWED BY:

PARAMETERS	MDL	SWSL	SW-1	SW-2	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.02	6.0	0.33 J	0.29 J	04/30/13	LFJ	EPA200.8
Arsenic, ug/l	0.05	10.0	0.34 J	0.26 J	04/30/13	LFJ	EPA200.8
Barium, ug/l	0.06	100.0	27.4 J	32.0 J	04/30/13	LFJ	EPA200.8
Beryllium, ug/l	0.03	1.0	--- U	--- U	04/30/13	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0	--- U	--- U	04/30/13	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	0.42 J	0.80 J	04/30/13	LFJ	EPA200.8
Copper, ug/l	0.06	10.0	1.8 J	2.2 J	04/30/13	LFJ	EPA200.8
Total Chromium, ug/l	0.04	10.0	0.14 J	0.65 J	04/30/13	LFJ	EPA200.8
Lead, ug/l	0.02	10.0	0.31 J	0.70 J	04/30/13	LFJ	EPA200.8
Nickel, ug/l	0.45	50.0	1.7 J	2.1 J	04/30/13	LFJ	EPA200.8
Selenium, ug/l	0.06	10.0	0.21 J	0.22 J	04/30/13	LFJ	EPA200.8
Silver, ug/l	0.03	10.0	--- U	--- U	04/30/13	LFJ	EPA200.8
Thallium, ug/l	0.02	5.5	0.03 J	--- U	04/30/13	LFJ	EPA200.8
Vanadium, ug/l	0.07	25.0	1.4 J	2.8 J	04/30/13	LFJ	EPA200.8
Zinc, ug/l	0.47	10.0	5.5 J	5.4 J	04/30/13	LFJ	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

ID#: 6059 A

DAVIDSON COUNTY (PHASE 2)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH ,NC 27603

DATE COLLECTED: 04/18/13
DATE REPORTED : 05/21/13

REVIEWED BY:

PARAMETERS	MDL	Leachate SWSL		Analysis Date	Analyst	Method Code
BOD, mg/l	2.0	2.0	414	04/19/13	TRB	5210B-01
COD, mg/l	20.0	20.0	75	04/22/13	TRB	H8000-79
Total Suspended Residue, mg/l	1.0	1.0	128	04/19/13	DRF	2540D-97
Ammonia Nitrogen as N, mg/l	0.04	0.04	12.08	04/25/13	ANO	350.1 R2-93
Nitrate Nitrogen as N, mg/l	0.03	10.0	0.11 J	04/19/13	ANO	353.2 R2-93
Total Phosphorus as P, mg/l	0.04	0.04	1.15	04/25/13	BJC	365.4-74
Sulfate, mg/l	5.0	250.0	10.5 J	04/25/13	TRB	4500SO42E97
Antimony, ug/l	0.02	6.0	28	04/30/13	LFJ	EPA200.8
Arsenic, ug/l	0.05	10.0	14	04/30/13	LFJ	EPA200.8
Barium, ug/l	0.06	100.0	138	04/30/13	LFJ	EPA200.8
Beryllium, ug/l	0.03	1.0	0.07 J	04/30/13	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0	2	04/30/13	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	18	04/30/13	LFJ	EPA200.8
Copper, ug/l	0.06	10.0	11	04/30/13	LFJ	EPA200.8
Total Chromium, ug/l	0.04	10.0	67	04/30/13	LFJ	EPA200.8
Lead, ug/l	0.02	10.0	1.5 J	04/30/13	LFJ	EPA200.8
Nickel, ug/l	0.45	50.0	163	04/30/13	LFJ	EPA200.8
Selenium, ug/l	0.06	10.0	15	04/30/13	LFJ	EPA200.8
Silver, ug/l	0.03	10.0	0.55 J	04/30/13	LFJ	EPA200.8
Thallium, ug/l	0.02	5.5	--- U	04/30/13	LFJ	EPA200.8
Vanadium, ug/l	0.07	25.0	68	05/03/13	LFJ	EPA200.8
Zinc, ug/l	0.47	10.0	148	04/30/13	LFJ	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: DAVIDSON COUNTY (PHASE 2)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH, NC 27603

CLIENT ID: 6059 A

ANALYST: MAO
DATE COLLECTED: 04/18/13
DATE ANALYZED: 05/02/13
DATE REPORTED: 05/21/13

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	Leachate
1. Chloromethane	0.77	1.0	--- U
2. Vinyl Chloride	0.63	1.0	3.40
3. Bromomethane	0.67	10.0	--- U
4. Chloroethane	0.48	10.0	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U
7. Acetone	9.06	100.0	964.00
8. Iodomethane	0.26	10.0	--- U
9. Carbon Disulfide	0.23	100.0	--- U
10. Methylene Chloride	0.64	1.0	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	2.10 J
12. 1,1-Dichloroethane	0.20	5.0	0.80 J
13. Vinyl Acetate	0.20	50.0	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	0.40 J
15. 2-Butanone	2.21	100.0	959.00
16. Bromochloromethane	0.27	3.0	--- U
17. Chloroform	0.25	5.0	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U
20. Benzene	0.24	1.0	16.20
21. 1,2-Dichloroethane	0.27	1.0	1.50
22. Trichloroethene	0.23	1.0	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U
24. Bromodichloromethane	0.21	1.0	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	22.80 J
27. Toluene	0.23	1.0	776.00
28. trans-1,3-Dichloropropene	0.28	1.0	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U
30. Tetrachloroethene	0.17	1.0	--- U
31. 2-Hexanone	1.57	50.0	9.00 J
32. Dibromochloromethane	0.24	3.0	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U
34. Chlorobenzene	0.30	3.0	0.60 J
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U
36. Ethylbenzene	0.21	1.0	20.10
37. Xylenes	0.68	5.0	51.70
38. Dibromomethane	0.28	10.0	--- U
39. Styrene	0.19	1.0	15.40
40. Bromoform	0.20	3.0	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	6.50
44. 1,2-Dichlorobenzene	0.32	5.0	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U
46. Acrylonitrile	2.72	200.0	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

ID#: 6059

DAVIDSON COUNTY (PHASE 2)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH ,NC 27603

DATE COLLECTED: 04/18/13
DATE REPORTED : 05/20/13

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-1	MW-2	MW-3S	MW-3D	MW-4S	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.02	6.0	0.15 J	0.11 J		0.07 J		04/30/13	LFJ	EPA200.8
Antimony, ug/l	0.02	6.0			--- U		0.08 J	05/06/13	LFJ	EPA200.8
Arsenic, ug/l	0.05	10.0	0.46 J	1.0 J		0.29 J		04/30/13	LFJ	EPA200.8
Arsenic, ug/l	0.05	10.0			0.17 J		0.65 J	05/06/13	LFJ	EPA200.8
Barium, ug/l	0.06	100.0	158	48.3 J		49.5 J		04/30/13	LFJ	EPA200.8
Barium, ug/l	0.06	100.0			22.4 J		124	05/06/13	LFJ	EPA200.8
Beryllium, ug/l	0.03	1.0	0.17 J	0.16 J		--- U		04/30/13	LFJ	EPA200.8
Beryllium, ug/l	0.03	1.0			--- U		0.12 J	05/06/13	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0	0.15 J	0.13 J		0.12 J		04/30/13	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0			--- U		0.07 J	05/06/13	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	15	5.8 J		0.36 J		04/30/13	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0			0.66 J		12	05/06/13	LFJ	EPA200.8
Copper, ug/l	0.06	10.0	222	43		0.32 J		04/30/13	LFJ	EPA200.8
Copper, ug/l	0.06	10.0			1.5 J		140	05/06/13	LFJ	EPA200.8
Total Chromium, ug/l	0.04	10.0	8.1 J	40		--- U		04/30/13	LFJ	EPA200.8
Total Chromium, ug/l	0.04	10.0			2.3 J		17	05/06/13	LFJ	EPA200.8
Lead, ug/l	0.02	10.0	3.2 J	2.8 J		0.05 J		04/30/13	LFJ	EPA200.8
Lead, ug/l	0.02	10.0			0.13 J		3.0 J	05/06/13	LJF	EPA200.8
Nickel, ug/l	0.45	50.0	12.7 J	7.9 J		0.66 J		04/30/13	LFJ	EPA200.8
Nickel, ug/l	0.45	50.0			1.2 J		11.9 J	05/06/13	LFJ	EPA200.8
Selenium, ug/l	0.06	10.0	0.51 J	0.42 J		0.74 J		04/30/13	LFJ	EPA200.8
Selenium, ug/l	0.06	10.0			0.82 J		0.13 J	05/06/13	LFJ	EPA200.8
Silver, ug/l	0.03	10.0	0.11 J	0.14 J		--- U		04/30/13	LFJ	EPA200.8
Silver, ug/l	0.03	10.0			--- U		0.08 J	05/06/13	LFJ	EPA200.8
Thallium, ug/l	0.02	5.5	0.09 J	0.03 J		0.05 J		04/30/13	LFJ	EPA200.8
Thallium, ug/l	0.02	5.5			0.34 J		0.07 J	05/06/13	LFJ	EPA200.8
Vanadium, ug/l	0.07	25.0	49	35		2.1 J		04/30/13	LFJ	EPA200.8
Vanadium, ug/l	0.07	25.0			10.2 J			05/06/13	LFJ	EPA200.8
Vanadium, ug/l	0.07	25.0					68	05/03/13	LFJ	EPA200.8
Zinc, ug/l	0.47	10.0	53	14		11		04/30/13	LFJ	EPA200.8
Zinc, ug/l	0.47	10.0			2.6 J		49	05/06/13	LJF	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

ID#: 6059

DAVIDSON COUNTY (PHASE 2)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH ,NC 27603

DATE COLLECTED: 04/18/13
DATE REPORTED : 05/20/13

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-4D	MW-5	MW-6S	MW-8	MW-9	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.02	6.0	0.04 J	0.45 J	0.18 J	0.15 J	0.10 J	04/30/13	LFJ	EPA200.8
Arsenic, ug/l	0.05	10.0	--- U	0.14 J	1.1 J	--- U	1.6 J	04/30/13	LFJ	EPA200.8
Barium, ug/l	0.06	100.0	41.2 J	28.2 J	432	4.1 J	119	04/30/13	LFJ	EPA200.8
Beryllium, ug/l	0.03	1.0	--- U	0.10 J	0.34 J	--- U	0.42 J	04/30/13	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0	--- U	0.24 J	0.27 J	0.12 J	0.19 J	04/30/13	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	0.08 J	5.6 J	18	1.2 J	12	04/30/13	LFJ	EPA200.8
Copper, ug/l	0.06	10.0	1.1 J	21	242	3.6 J	83	04/30/13	LFJ	EPA200.8
Total Chromium, ug/l	0.04	10.0	--- U	5.1 J	21	5.5 J	19	04/30/13	LFJ	EPA200.8
Lead, ug/l	0.02	10.0	0.07 J	2.0 J	5.1 J	0.56 J	5.3 J	04/30/13	LFJ	EPA200.8
Nickel, ug/l	0.45	50.0	0.65 J	5.9 J	15.2 J	2.7 J	6.3 J	04/30/13	LFJ	EPA200.8
Selenium, ug/l	0.06	10.0	0.26 J	--- U	0.92 J	0.42 J	1.0 J	04/30/13	LFJ	EPA200.8
Silver, ug/l	0.03	10.0	--- U	0.03 J	0.08 J	--- U	0.09 J	04/30/13	LFJ	EPA200.8
Thallium, ug/l	0.02	5.5	--- U	0.05 J	0.17 J	--- U	0.08 J	04/30/13	LFJ	EPA200.8
Vanadium, ug/l	0.07	25.0	9.2 J	23.9 J		9.7 J		04/30/13	LFJ	EPA200.8
Vanadium, ug/l	0.07	25.0			89		99	05/03/13	LFJ	EPA200.8
Zinc, ug/l	0.47	10.0	2.8 J	23	138	4.3 J	33	04/30/13	LFJ	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
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ID#: 6059

DAVIDSON COUNTY (PHASE 2)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH ,NC 27603

DATE COLLECTED: 04/18/13
DATE REPORTED : 05/20/13

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-10S	MW-10D	Trip Blank	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.02	6.0	--- U			05/02/13	MEL	EPA200.8
Antimony, ug/l	0.02	6.0		0.02 J		04/30/13	LFJ	EPA200.8
Arsenic, ug/l	0.05	10.0	1.4 J			05/02/13	MEL	EPA200.8
Arsenic, ug/l	0.05	10.0		0.18 J		04/30/13	LFJ	EPA200.8
Barium, ug/l	0.06	100.0	163			05/02/13	MEL	EPA200.8
Barium, ug/l	0.06	100.0		11.7 J		04/30/13	LFJ	EPA200.8
Beryllium, ug/l	0.03	1.0	0.49 J			05/02/13	MEL	EPA200.8
Beryllium, ug/l	0.03	1.0		--- U		04/30/13	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0	0.19 J			05/02/13	MEL	EPA200.8
Cadmium, ug/l	0.05	1.0		--- U		04/30/13	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	20			05/02/13	MEL	EPA200.8
Cobalt, ug/l	0.02	10.0		0.19 J		04/30/13	LFJ	EPA200.8
Copper, ug/l	0.06	10.0	80			05/02/13	MEL	EPA200.8
Copper, ug/l	0.06	10.0		1.8 J		04/30/13	LFJ	EPA200.8
Total Chromium, ug/l	0.04	10.0	56			05/02/13	MEL	EPA200.8
Total Chromium, ug/l	0.04	10.0		3.2 J		04/30/13	LFJ	EPA200.8
Lead, ug/l	0.02	10.0	5.7 J			05/02/13	MEL	EPA200.8
Lead, ug/l	0.02	10.0		0.10 J		04/30/13	LFJ	EPA200.8
Nickel, ug/l	0.45	50.0	25.1 J			05/02/13	MEL	EPA200.8
Nickel, ug/l	0.45	50.0		1.0 J		04/30/13	LFJ	EPA200.8
Selenium, ug/l	0.06	10.0	0.47 J			05/02/13	MEL	EPA200.8
Selenium, ug/l	0.06	10.0		0.12 J		04/30/13	LFJ	EPA200.8
Silver, ug/l	0.03	10.0	0.21 J			05/02/13	MEL	EPA200.8
Silver, ug/l	0.03	10.0		--- U		04/30/13	LFJ	EPA200.8
Thallium, ug/l	0.02	5.5	0.08 J			05/02/13	MEL	EPA200.8
Thallium, ug/l	0.02	5.5		--- U		04/30/13	LFJ	EPA200.8
Vanadium, ug/l	0.07	25.0	63			05/02/13	MEL	EPA200.8
Vanadium, ug/l	0.07	25.0		7.7 J		04/30/13	LFJ	EPA200.8
Zinc, ug/l	0.47	10.0	86			05/02/13	MEL	EPA200.8
Zinc, ug/l	0.47	10.0		2.2 J		04/30/13	LFJ	EPA200.8

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Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

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CLIENT: DAVIDSON COUNTY (PHASE 2)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH, NC 27603

CLIENT ID: 6059

ANALYST: MAO
DATE COLLECTED: 04/18/13
DATE REPORTED: 05/20/13

REVIEWED BY: _____

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	Date Analyzed: 05/01/13 MW-1	05/01/13 MW-2	05/01/13 MW-3S	05/01/13 MW-3D	05/01/13 MW-4S
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	--- U	--- U	--- U
3. Bromomethane	0.67	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- U	--- U	--- U
7. Acetone	9.06	100.0	--- U	--- U	--- U	--- U	--- U
8. Iodomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	--- U	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	--- U	--- U	--- U
15. 2-Butanone	2.21	100.0	--- U	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U	--- U	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U	--- U	--- U	--- U
20. Benzene	0.24	1.0	--- U	--- U	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
24. Bromodichloromethane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U	--- U	--- U	--- U	--- U
27. Toluene	0.23	1.0	--- U	--- U	--- U	--- U	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.17	1.0	--- U	--- U	--- U	--- U	--- U
31. 2-Hexanone	1.57	50.0	--- U	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.24	3.0	--- U	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.30	3.0	--- U	--- U	--- U	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.21	1.0	--- U	--- U	--- U	--- U	--- U
37. Xylenes	0.68	5.0	--- U	--- U	--- U	--- U	--- U
38. Dibromomethane	0.28	10.0	--- U	--- U	--- U	--- U	--- U
39. Styrene	0.19	1.0	--- U	--- U	--- U	--- U	--- U
40. Bromoform	0.20	3.0	--- U	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U	--- U	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U	--- U	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U	--- U	--- U	--- U	--- U
46. Acrylonitrile	2.72	200.0	--- U	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

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CLIENT: DAVIDSON COUNTY (PHASE 2)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH, NC 27603

CLIENT ID: 6059
ANALYST: MAO
DATE COLLECTED: 04/18/13
DATE REPORTED: 05/20/13

REVIEWED BY: _____

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	Date Analyzed: MDL	SWSL	05/01/13 MW-4D	05/01/13 MW-5	05/01/13 MW-6S	05/01/13 MW-8	05/01/13 MW-9
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	--- U	--- U	--- U
3. Bromomethane	0.67	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- U	--- U	--- U
7. Acetone	9.06	100.0	--- U	--- U	--- U	--- U	--- U
8. Iodomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	--- U	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	--- U	--- U	--- U
15. 2-Butanone	2.21	100.0	--- U	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U	--- U	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U	--- U	--- U	--- U
20. Benzene	0.24	1.0	--- U	--- U	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
24. Bromodichloromethane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U	--- U	--- U	--- U	--- U
27. Toluene	0.23	1.0	--- U	--- U	--- U	--- U	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.17	1.0	--- U	--- U	--- U	--- U	--- U
31. 2-Hexanone	1.57	50.0	--- U	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.24	3.0	--- U	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.30	3.0	--- U	--- U	--- U	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.21	1.0	--- U	--- U	--- U	--- U	--- U
37. Xylenes	0.68	5.0	--- U	--- U	--- U	--- U	--- U
38. Dibromomethane	0.28	10.0	--- U	--- U	--- U	--- U	--- U
39. Styrene	0.19	1.0	--- U	--- U	--- U	--- U	--- U
40. Bromoform	0.20	3.0	--- U	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U	--- U	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U	--- U	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U	--- U	--- U	--- U	--- U
46. Acrylonitrile	2.72	200.0	--- U	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: DAVIDSON COUNTY (PHASE 2)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH, NC 27603

CLIENT ID: 6059
ANALYST: MAO
DATE COLLECTED: 04/18/13
DATE REPORTED: 05/20/13

REVIEWED BY: _____

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	Date Analyzed: MDL	SWSL	05/01/13 MW-10S	05/01/13 MW-10D	05/02/13 Trip Blank
1. Chloromethane	0.77	1.0	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	--- U
3. Bromomethane	0.67	10.0	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- U
7. Acetone	9.06	100.0	--- U	--- U	--- U
8. Iodomethane	0.26	10.0	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	--- U
15. 2-Butanone	2.21	100.0	--- U	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U	--- U
20. Benzene	0.24	1.0	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U	--- U
24. Bromodichloromethane	0.21	1.0	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U	--- U	--- U
27. Toluene	0.23	1.0	--- U	--- U	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U	--- U	--- U
30. Tetrachloroethene	0.17	1.0	--- U	--- U	--- U
31. 2-Hexanone	1.57	50.0	--- U	--- U	--- U
32. Dibromochloromethane	0.24	3.0	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U	--- U	--- U
34. Chlorobenzene	0.30	3.0	--- U	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U	--- U	--- U
36. Ethylbenzene	0.21	1.0	--- U	--- U	--- U
37. Xylenes	0.68	5.0	--- U	--- U	--- U
38. Dibromomethane	0.28	10.0	--- U	--- U	--- U
39. Styrene	0.19	1.0	--- U	--- U	--- U
40. Bromoform	0.20	3.0	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U	--- U	--- U
46. Acrylonitrile	2.72	200.0	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

ID#: 6059 B

DAVIDSON COUNTY (PHASE 2)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH ,NC 27603

DATE COLLECTED: 04/18/13
DATE REPORTED : 05/20/13

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-3D	MW-4D	MW-10D	Analysis Date	Analyst	Method Code
Antimony, Total Dissolved, ug/l	0.02	6.0	--- U	--- U	--- U	04/30/13	LFJ	EPA200.8
Arsenic, Total Dissolved, ug/l	0.13	10.0	0.37 J	0.18 J	0.29 J	04/30/13	LFJ	EPA200.8
Barium, Total Dissolved, ug/l	0.07	100.0	47.3 J	37.8 J	11.6 J	04/30/13	LFJ	EPA200.8
Beryllium, Total Dissolved, ug/l	0.07	1.0	--- U	--- U	--- U	04/30/13	LFJ	EPA200.8
Cadmium, Total Dissolved, ug/l	0.03	1.0	--- U	--- U	--- U	04/30/13	LFJ	EPA200.8
Cobalt, Total Dissolved, ug/l	0.02	10.0	0.34 J	0.05 J	0.12 J	04/30/13	LFJ	EPA200.8
Copper, Total Dissolved, ug/l	0.06	10.0	0.22 J			05/03/13	LFJ	EPA200.8
Copper, Total Dissolved, ug/l	0.06	10.0		0.66 J	0.80 J	04/30/13	LFJ	EPA200.8
Chromium, Total Dissolved, ug/l	0.18	10.0	--- U	--- U	--- U	04/30/13	LFJ	EPA200.8
Lead, Total Dissolved, ug/l	0.08	10.0	--- U	--- U	0.11 J	04/30/13	LFJ	EPA200.8
Nickel, Total Dissolved, ug/l	0.06	50.0	0.78 J	0.72 J		04/30/13	LFJ	EPA200.8
Nickel, Total Dissolved, ug/l	0.06	50.0			1.3 J	05/08/13	LFJ	EPA200.8
Selenium, Total Dissolved, ug/l	0.17	10.0	0.57 J	0.19 J	--- U	04/30/13	LFJ	EPA200.8
Silver, Total Dissolved, ug/l	0.10	10.0	--- U	--- U	--- U	04/30/13	LFJ	EPA200.8
Thallium, Total Dissolved, ug/l	0.07	5.5	--- U	--- U	--- U	04/30/13	LFJ	EPA200.8
Vanadium, Total Dissolved, ug/l	0.10	25.0	2.4 J	9.0 J	6.9 J	04/30/13	LFJ	EPA200.8
Zinc, Total Dissolved, ug/l			9.4	1.2		05/08/13	LFJ	EPA200.8
Zinc, Total Dissolved, ug/l					2.3	05/15/13	LFJ	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quantitation Limits.

Environment 1, Inc.
P.O. Box 7085, 114 Oakmont Dr.
Greenville, NC 27858

Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: 6059 A **Week: 19**

DAVIDSON COUNTY (PHASE 2)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH NC 27603

(919) 828-0577

DISINFECTION
- ☐ CHLORINE
- ☐ UV
- ☐ NONE
- ☐ _____

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l OR ug/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	BOD	COD	TSR	Ammonia Nitro.	Nitrate	T. Phosphorus	Sulfate	Metals	EPA 8260B	8260 Dup. 1	8260 Dup. 2
CHLORINE NEUTRALIZED AT COLLECTION																
pH CHECK (LAB)						K2		K2		K2			2	2	2	2
CONTAINER TYPE, P/G						P	P	P	P	P	P	P	P	G	G	G
CHEMICAL PRESERVATION						A	C	A	C	A	C	A	A	E	E	E
SW-1	4/17	2:44 P			3 A								▒	▒	▒	▒
SW-2	4/17	3:00 P			3								▒	▒	▒	
Leachate	4/18	10:30 A			10	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	

PARAMETERS

A - NONE D - NAOH
B - HNO_3 E - HCL
C - H_2SO_4 F - ZINC ACETATE/NAOH
G - NA THIOSULFATE

CLASSIFICATION:
- ☐ WASTEWATER (NPDES)
- ☐ DRINKING WATER
- ☐ DWQ/GW
- ☒ SOLID WASTE SECTION

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY
(Y) N

SAMPLES COLLECTED BY:
(Please Print)

SAMPLES RECEIVED IN LAB AT 1.4 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
	4/18 12:58 P		4/19/13 8:00 am
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS:

PLEASE READ Instructions for completing this form on the reverse side.

Sampler must place a "C" for composite sample or a "G" for Grab sample in the blocks above for each parameter requested.

FORM #5

№ 261110

Environment 1, Inc.
P.O. Box 7085, 114 Oakmont Dr.
Greenville, NC 27858

Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: 6059 **Week:** 19

DAVIDSON COUNTY (PHASE 2)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH NC 27603

(919) 828-0577

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l OR ug/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Metals	EPA 8260B	8260 Dup. 1	8260 Dup. 2
						12	12	12	12
						P	G	G	G
						A	E	E	E
MW-1	4/18	11:25A			4	▒	▒	▒	▒
MW-2	4/18	9:10A			3	▒	▒	▒	
MW-3S	4/18	9:30A			3	▒	▒	▒	
MW-3D	4/18	9:24A			3	▒	▒	▒	
MW-4S	4/18	9:41A			3	▒	▒	▒	
MW-4D	4/18	9:37A			3	▒	▒	▒	
MW-5	4/18	10:21A			3	▒	▒	▒	
MW-6S	4/18	10:10A			4	▒	▒	▒	▒
MW-8	4/18	10:00A			3	▒	▒	▒	
MW-9	4/18	9:48A			3	▒	▒	▒	
MW-10S	4/18	8:50A			3	▒	▒	▒	

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB)

CONTAINER TYPE, P/G

CHEMICAL PRESERVATION

PARAMETERS

A - NONE D - NAOH
B - HNO_3 E - HCL
C - H_2SO_4 F - ZINC ACETATE/NAOH
G - NA THIOSULFATE

CLASSIFICATION:
☐ WASTEWATER (NPDES)
☐ DRINKING WATER
☐ DWQ/GW
☒ SOLID WASTE SECTION

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY
(Y) N

SAMPLES COLLECTED BY: (Please Print)

SAMPLES RECEIVED IN LAB AT 1.4 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
[signature]	4/18 1:24P	[signature]	4/19/13 8:00am
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS:

PLEASE READ Instructions for completing this form on the reverse side.

Sampler must place a "C" for composite sample or a "G" for Grab sample in the blocks above for each parameter requested.

FORM #5

№ 261112

Environment 1, Inc.
P.O. Box 7085, 114 Oakmont Dr.
Greenville, NC 27858

Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: 6059 **Week: 19**

DAVIDSON COUNTY (PHASE 2)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH NC 27603

(919) 828-0577

DISINFECTION
- ☐ CHLORINE
- ☐ UV
- ☐ NONE
- ☐ _____

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l OR ug/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Metals	EPA 8260B	8260 Dup. 1	8260 Dup. 2
						12	12	12	
						P	G	G	G
						A	E	E	E
MW-10D	4/1/13	8:45a			3	▒	▒	▒	
Trip Blank					2		▒	▒	

CHLORINE NEUTRALIZED AT COLLECTION
pH CHECK (LAB)
CONTAINER TYPE, P/G
CHEMICAL PRESERVATION
PARAMETERS

A - NONE D - NAOH
B - HNO_3 E - HCL
C - H_2SO_4 F - ZINC ACETATE/NAOH
G - NA THIOSULFATE

CLASSIFICATION:
- ☐ WASTEWATER (NPDES)
- ☐ DRINKING WATER
- ☐ DWQ/GW
- ☒ SOLID WASTE SECTION

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY
(Y) N

SAMPLES COLLECTED BY:
(Please Print)

SAMPLES RECEIVED IN LAB AT 1.4 °C

	DATE/TIME		DATE/TIME
RELINQUISHED BY (SIG.) (SAMPLER)	4/1/13 1:27p	RECEIVED BY (SIG.)	4/1/13 8:00am
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS:

PLEASE READ Instructions for completing this form on the reverse side.

Sampler must place a "C" for composite sample or a "G" for Grab sample in the blocks above for each parameter requested.

FORM #5

№ 261111

Environment 1, Inc.
P.O. Box 7085, 114 Oakmont Dr.
Greenville, NC 27858

Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: **6059 B** **Week: 19**

DAVIDSON COUNTY (PHASE 2)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH NC 27603

(919) 828-0577

DISINFECTION
- ☐ CHLORINE
- ☐ UV
- ☐ NONE
- ☐ _____

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l OR ug/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Metals (Dis.)
MW-3D	4/18	9:24 A			1	
MW-4D	4/18	9:37 A			1	
MW-10D	4/18	8:45 A			1	

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	COMMENTS:
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	

4/19/13 8:00 AM

FIELD FILTERED METALS

	CHLORINE NEUTRALIZED AT COLLECTION
12	pH CHECK (LAB)
P	CONTAINER TYPE, P/G
A	CHEMICAL PRESERVATION

PARAMETERS

A - NONE D - NAOH
B - HNO_3 E - HCL
C - H_2SO_4 F - ZINC ACETATE/NAOH
G - NA THIOSULFATE

CLASSIFICATION:
- ☐ WASTEWATER (NPDES)
- ☐ DRINKING WATER
- ☐ DWQ/GW
- ☒ SOLID WASTE SECTION

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY
(Y) N

SAMPLES COLLECTED BY:
(Please Print)

SAMPLES RECEIVED IN LAB AT 1.4 °C

PLEASE READ Instructions for completing this form on the reverse side.

Sampler must place a "C" for composite sample or a "G" for Grab sample in the blocks above for each parameter requested.

FORM #5

№ 261109

Appendix D

Time vs. Concentration Graphs

April 2013 Groundwater Monitoring Report
Davidson County Phase 2 MSW Landfill
NC Solid Waste Permit No. 29-06

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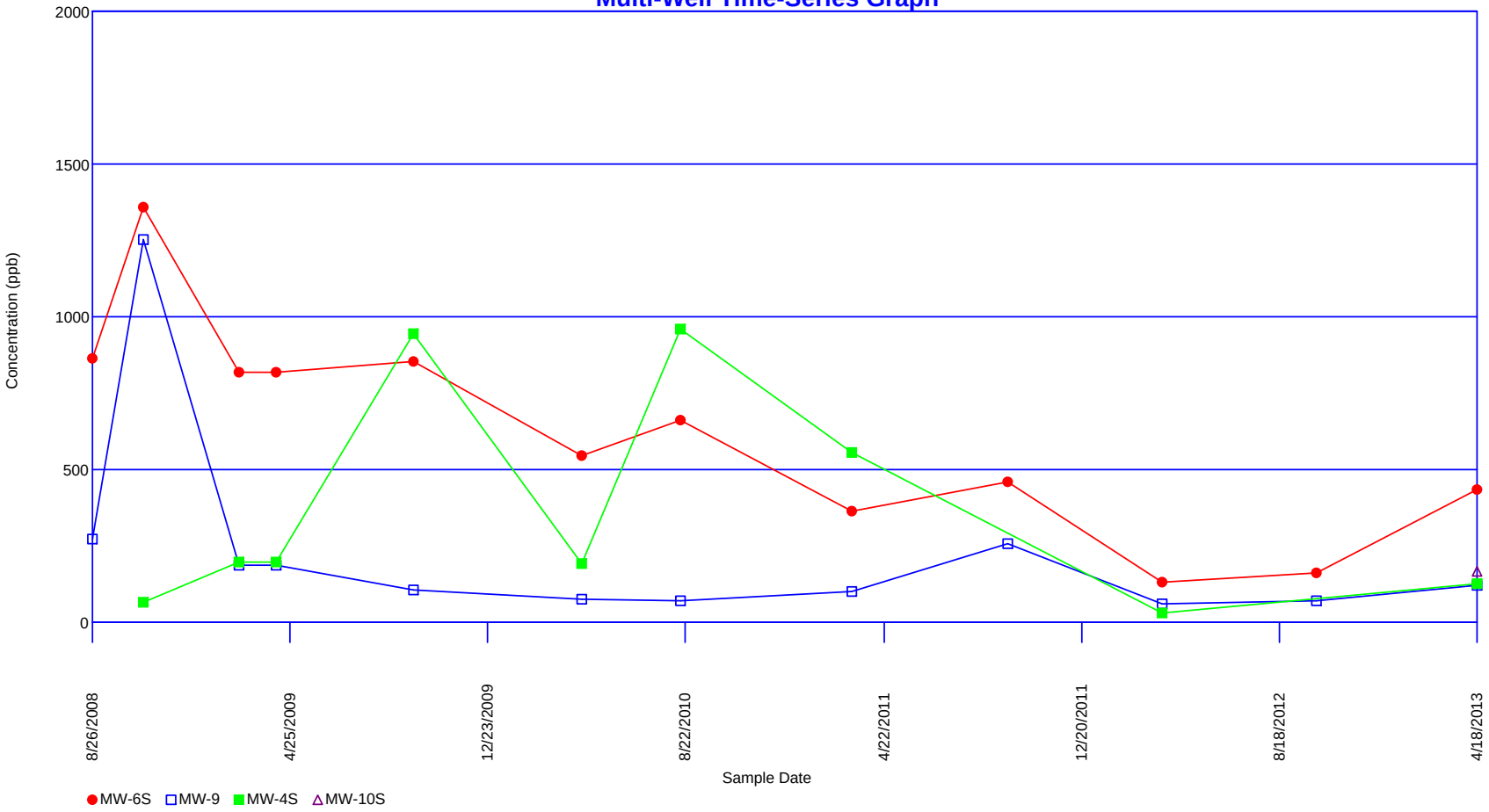
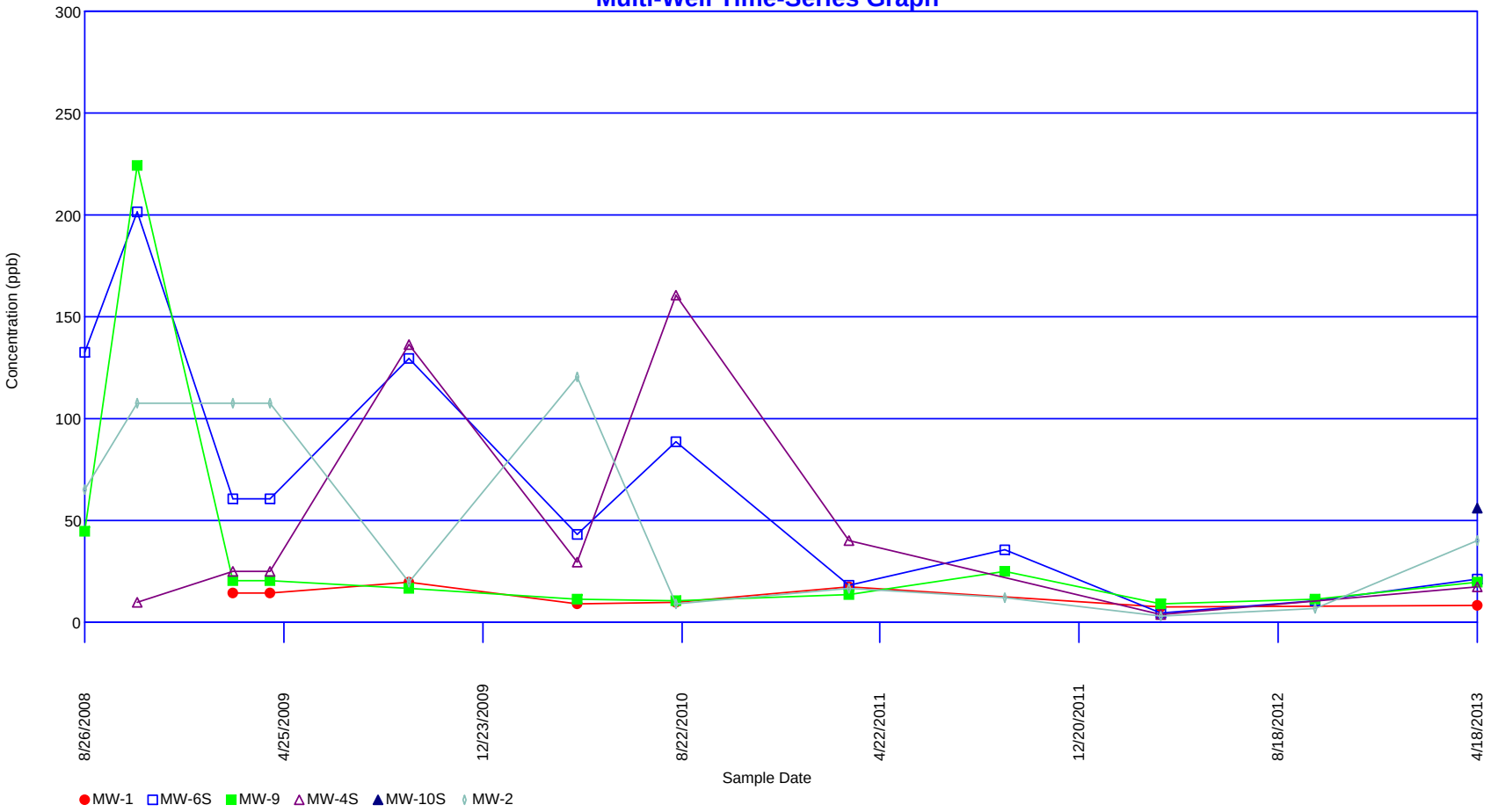
Barium, total

Multi-Well Time-Series Graph



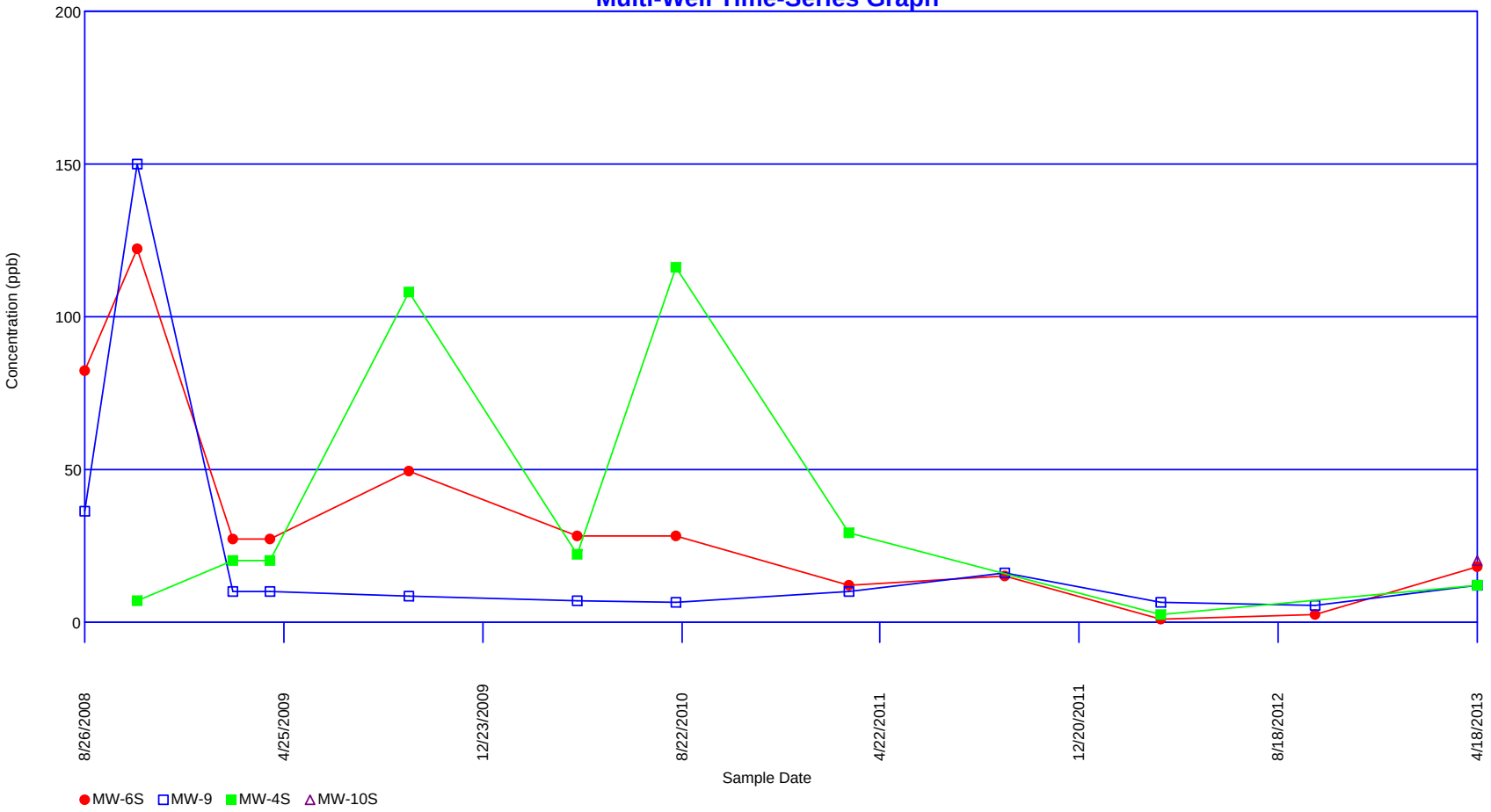
Total Chromium

Multi-Well Time-Series Graph



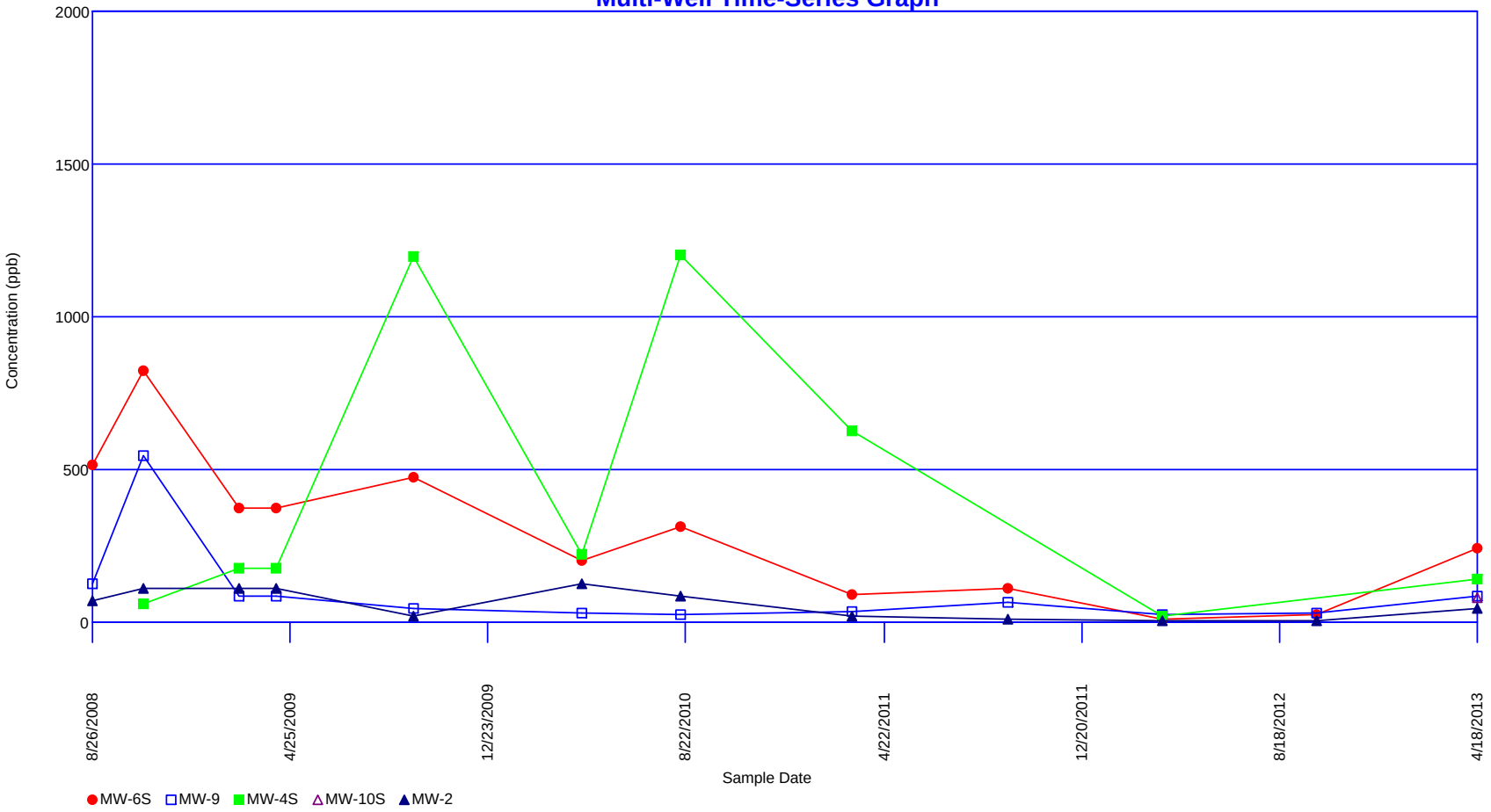
Cobalt, total

Multi-Well Time-Series Graph



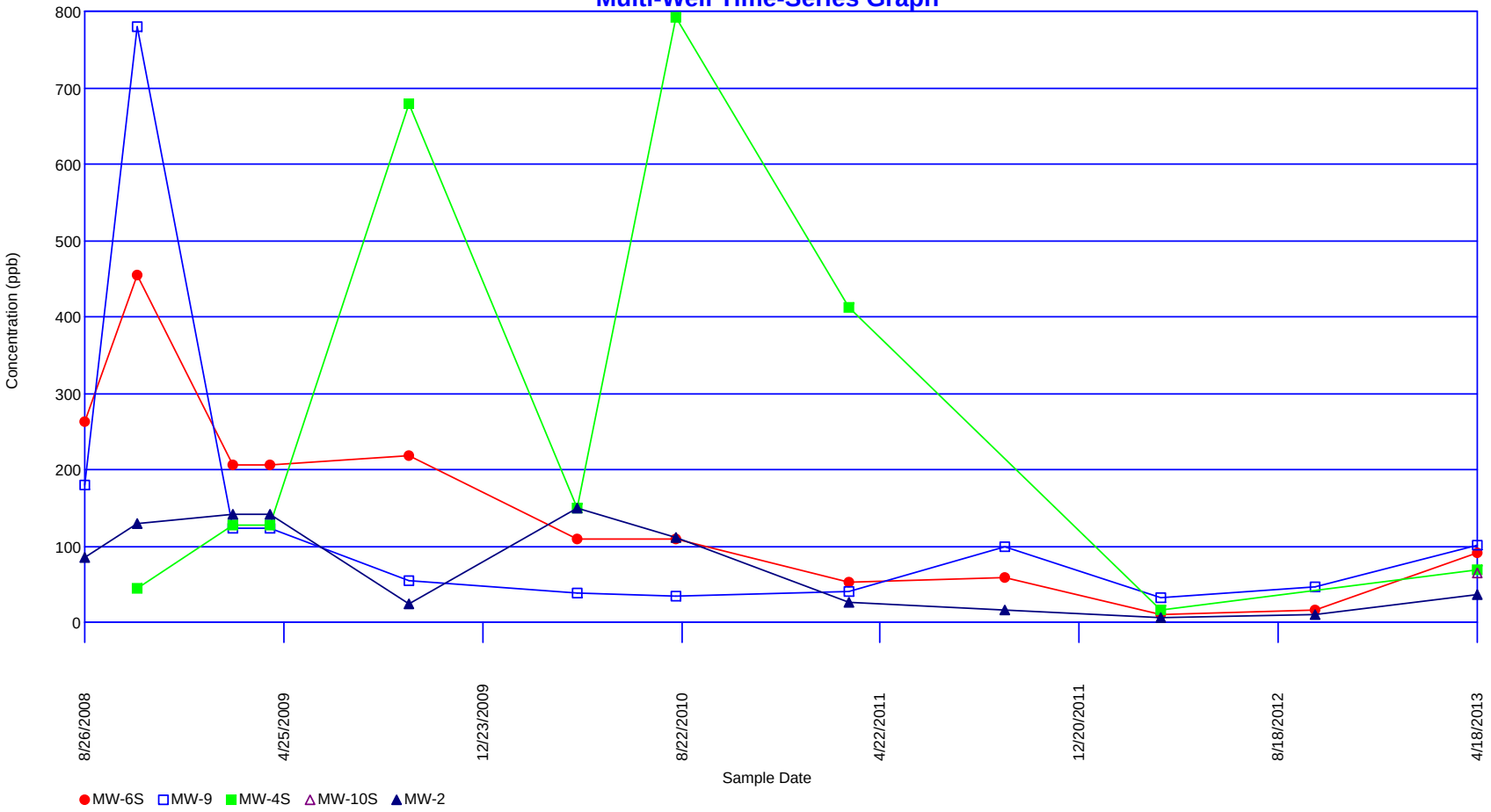
Copper, total

Multi-Well Time-Series Graph



Vanadium

Multi-Well Time-Series Graph



Zinc

Multi-Well Time-Series Graph