

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	October 4, 2012

**Environmental Status: (Check all that apply)**

- Initial/Background Monitoring  Detection Monitoring  Assessment Monitoring  Corrective Action

**Type of data submitted: (Check all that apply)**

- Groundwater monitoring data from monitoring wells  Methane gas monitoring data  
 Groundwater monitoring data from private water supply wells  Corrective action data (specify) \_\_\_\_\_  
 Leachate monitoring data  Other(specify) \_\_\_\_\_  
 Surface water monitoring data

**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

Signature Date 1/14/13

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  
October 2012 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**



**January 2013**

Prepared by:

**SMITH+GARDNER**

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577



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# Groundwater Monitoring Report – October 2012

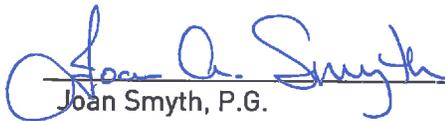
## Davidson County Phase 2 MSW Landfill NC Solid Waste Permit No. 29-06

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

**S+6 Project No. DAVDCO 10-9**



Madeline German P.G.  
Project Geologist



Joan Smyth, P.G.  
Senior Hydrogeologist



January 2013

# SMITH+GARDNER

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

**October 2012 Groundwater Monitoring Report**

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**FIGURE**

Figure 1                      Ground Water Potentiometric Map

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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 October 4, 2012. 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 twelve monitoring wells (MW-1, MW-2, MW-3S, MW-3D, MW-4S, MW-4D, MW-5, MW-6S, MW-6D, MW-7, MW-8 and MW-9), three surface water locations (SW-1, SW-2 and SW-3) and one leachate sampling point (Leachate). Monitoring wells MW-1, MW-4S, MW-6D and MW-7, 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<sup>1</sup> 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**.

---

<sup>1</sup> 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. 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.

#### **5.2.1 Inorganic Constituents**

Five inorganic constituents barium (MW-6S), copper (MW-5, MW-6S and MW-9), chromium (MW-9), vanadium (MW-5 and MW-9) and zinc (MW-2, MW-5, MW-6S, and MW-9) were detected above their respective SWSL's. No constituents were detected above their 2L Standards. Most inorganic 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.

#### **5.2.2 Organic Constituents**

No organic constituents were detected above their SWSL or 2L Standards for the October 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 Limits (Intra-Well), Kruskal-Wallis Non-Parametric Test or Wilcoxon Non-Parametric Analysis (Inter-Well).

Statistical analysis was performed for barium, 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 0.029 feet/day (MW-2) to 0.614 feet/day (MW-9) and averaging 0.203 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. In general, detected ground water concentrations at the site have remained stable. The next ground water monitoring event will be performed in April 2013; results will be reported to NCDENR in accordance with 15A NCAC 13B.1600 et seq.

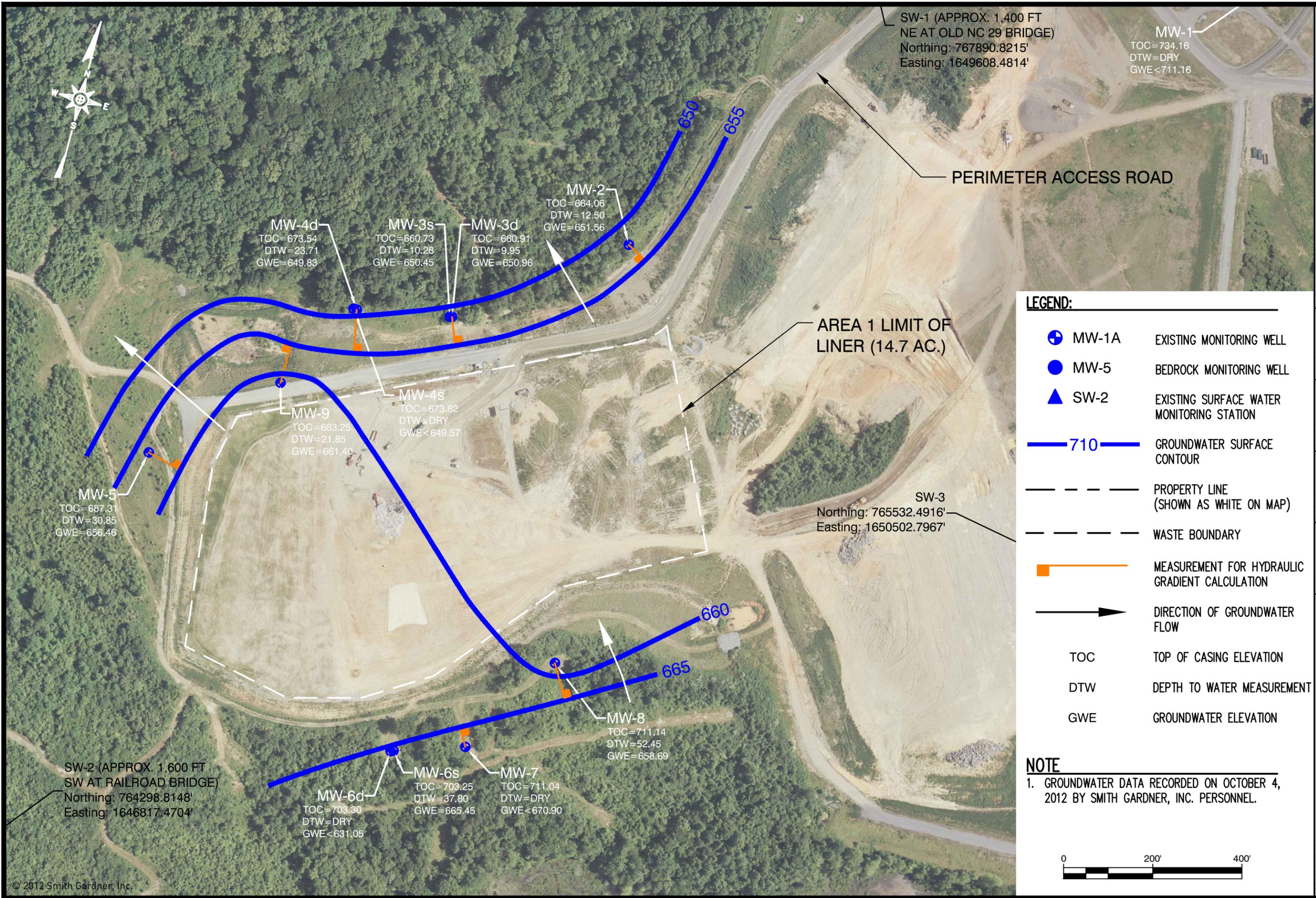
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## **FIGURES**

**October 2012 - 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 OCTOBER 4, 2012 BY SMITH GARDNER, INC. PERSONNEL.



PREPARED BY: **SMITH+GARDNER**  
 NC LIC. NO. C-0828 (ENGINEERING)  
 14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

APPROVED:	SCALE:	FIGURE NO:
J.A.L.	AS SHOWN	1
DRAWN:	PROJECT NO:	FILENAME:
J.A.L.	DAVDCO 10-9	DAVDCO-B0706
DATE:		
Dec 2012		

PREPARED FOR:  
**POTENTIOMETRIC SURFACE MAP**  
**FALL 2012**  
**PHASE 2 LANDFILL**  
**DAVIDSON COUNTY, NC**

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## **TABLES**

**October 2012 – Groundwater Monitoring Report  
Davidson County Phase 2 MSW Landfill  
Solid Waste Permit No. 29-06**

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**Table 1**  
**Ground Water Elevations**  
**Davidson County Phase 2 Landfill**  
**10/4/2012**

Well	Northing	Easting	TOC Elevation (feet)	Depth to Water (feet)	Water Level Elevation (feet)
MW-1	767416.7610	1651389.0830	734.16	DRY	<711.16
MW-2	766376.8072	1649303.3872	664.06	12.50	651.56
MW-3S	766204.9705	1648875.8572	660.73	10.28	650.45
MW-3D	766204.6283	1648881.1437	660.91	9.95	650.96
MW-4S	766223.2813	1648660.2736	673.82	DRY	<649.57
MW-4D	766220.6778	1648667.3780	673.54	23.71	649.83
MW-5	765901.6002	1648200.9255	687.31	30.85	656.46
MW-6S	765234.1084	1648749.7961	703.25	37.80	665.45
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	52.45	658.69
MW-9	766057.5112	1648496.3934	683.25	21.85	661.40

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.

**Table 2  
Field Parameters  
Davidson County Phase 2 Landfill  
10/4/2012**

<b>Well</b>	<b>pH (Std. Units)</b>	<b>Conductivity (umhos)</b>	<b>Temp. (celsius)</b>	<b>Turbidity (NTU)</b>
MW-1	-	-	-	-
MW-2	6.38	187	18.54	-
MW-3S	6.82	223	18.27	-
MW-3D	7.24	268	17.23	-
MW-4S	-	-	-	-
MW-4D	6.65	242	16.2	-
MW-5	6.1	112	15.66	-
MW-6S	6.8	456	15.8	-
MW-8	6.75	302	16.42	-
MW-9	6.38	183	16.79	-
SW-1	7.62	169	20.61	-
SW-2	7.29	202	20.77	-
SW-3	6.96	206	19.48	-

Notes: Data Collected by Don Misenheimer of S+G Engineers Inc.  
Turbidity unable to be measured this event due to broken meter.

**Table 3**  
**Detected Constituents**  
**Davidson County Phase 2 Landfill**  
**10/4/2012**

Parameter	MDL	SWSL	2L or GWP§	2B	MW-2	MW-3S	MW-3D	MW-4D	MW-5	MW-6S	MW-8	MW-9	SW-1	SW-2	SW-3
<b>Inorganic Constituents</b>															
antimony	0.02	6	1 <sup>s</sup>	640	0.03 J	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.09 J	0.05 J	0.03 J
arsenic	0.13	10	10	10	0.23 J	<0.13	<0.13	<0.13	0.4 J	0.26 J	<0.13	0.87 J	0.3 J	0.34 J	<0.13
barium	0.07	100	700	2000000	14.2 J	22.7 J	49 J	37.6 J	51 J	<b>158</b>	3.1 J	70.2 J	32 J	36.9 J	39.6 J
beryllium	0.07	1	4 <sup>s</sup>	6.5	<0.07	<0.07	<0.07	<0.07	0.17 J	<0.07	<0.07	0.24 J	<0.07	<0.07	<0.07
cadmium	0.03	1	2	2	0.03 J	0.03 J	<0.03	0.13 J	0.08 J	0.17 J	<0.03	0.26 J	<0.03	0.04 J	0.04 J
cobalt	0.02	10	1 <sup>s</sup>	270	0.86 J	0.32 J	0.33 J	0.07 J	9.1 J	2.4 J	0.76 J	5.5 J	0.42 J	1.3 J	1.5 J
copper	0.06	10	1000	7	4.8 J	1.2 J	0.19 J	0.5 J	<b>32</b>	<b>23</b>	2.7 J	<b>30</b>	2.8 J	3.7 J	1.4 J
chromium, total	0.18	10	10	50	6.2 J	1.5 J	<0.18	<0.18	7.1 J	9.9 J	3.4 J	<b>11</b>	0.21 J	1.3 J	<0.18
lead	0.08	10	15	25	0.44 J	0.14 J	<0.08	<0.08	4.1 J	1.1 J	0.45 J	2.7 J	0.45 J	1.6 J	0.74 J
nickel	0.06	50	100	88	2.1 J	1.2 J	0.64 J	0.7 J	9.9 J	5.4 J	2 J	3.8 J	1.4 J	1.9 J	0.74 J
selenium	0.17	10	20	5	<0.17	0.8 J	0.53 J	<0.017	<0.017	0.66 J	0.19 J	0.32 J	<0.017	<0.017	<0.017
thallium	0.07	5.5	0.28 <sup>s</sup>	0.47	<0.07	0.2 J	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
vanadium	0.10	25	0.3 <sup>s</sup>	NE	8.9 J	10.2 J	2.3 J	9.2 J	<b>35</b>	15.8 J	9.2 J	<b>46</b>	2.9 J	5.4 J	2.1 J
zinc	0.48	10	1000	50	<b>14</b>	8.6 J	9 J	3.9 J	<b>49</b>	<b>155</b>	2.2 J	<b>24</b>	4.4 J	12	9.1 J
<b>Organic Constituents</b>															
acetone	9.06	100	6000	NE	<9.06	<9.06	<9.06	<9.06	<9.06	<9.06	<9.06	12.40 J	<9.06	<9.06	<9.06

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 10/04/2012, ID#6059.

**Table 4**  
**Davidson County Phase 2 Landfill**  
**Leachate Analytical Data**  
**10/4/2012**

Parameter	Unit	Leachate
1,1-Dichloroethane	ug/l	0.6 J
1,2-Dichloroethane	ug/l	3
1,2-Dichloropropane	ug/l	0.4 J
1,4-Dichlorobenzene	ug/l	6.7
2-Butanone	ug/l	88.3 J
2-Hexanone	ug/l	1.9 J
4-Methyl-2-Pentanone	ug/l	17.7 J
Acetone	ug/l	54.5 J
Ammonia Nitrogen as N	mg/l	340
Antimony	ug/l	4.3 J
Arsenic	ug/l	8 J
Barium	ug/l	168
Benzene	ug/l	30.3
BOD	mg/l	70
Cadmium	ug/l	0.53 J
Chlorobenzene	ug/l	2.6 J
Chloroethane	ug/l	8.4 J
Cis-1,2-Dichloroethene	ug/l	0.4 J
Cobalt	ug/l	9.7 J
COD	mg/l	588
Copper	ug/l	6.9 J
Ethylbenzene	ug/l	36.4
Lead	ug/l	0.71 J
Methylene Chloride	ug/l	3.4
Nickel	ug/l	80
Nitrate Nitrogen as N	mg/l	0.05 J
Selenium	ug/l	9.9 J
Silver	ug/l	0.14 J
Styrene	ug/l	0.7 J
Sulfate	mg/l	19.3 J
Toluene	ug/l	50.1
Total Chromium	ug/l	37
Total Phosphorus as P	mg/l	0.86
Total Suspended Residue	mg/l	47
trans-1,2-Dichloroethene	ug/l	4.7 J
Vanadium	ug/l	25
Vinyl Chloride	ug/l	3.2
Xylenes	ug/l	77.3
Zinc	ug/l	109

J-values are laboratory estimated values for detections between the SWSL and MDL.

**Table 5**  
**Davidson County Landfill Phase 2**  
**Statistical Analysis Summary**  
**10/4/2012**

Location	Parameter	Result (mg/l)	Detection Limit (mg/l)	Test Units	%ND	CL	Test	Statistically Significant?
MW-6S	Barium	0.158	0.00007	ug/l	0	99%	PPL	N
MW-5	Copper	0.032	0.00006	ug/l	0	99%	PPL	N
MW-6S	Copper	0.023	0.00006	ug/l	0	99%	PPL	N
MW-9	Copper	0.03	0.00006	ug/l	0	99%	PPL	N
MW-9	Chromium	0.011	0.00018	ug/l	0	99%	KW	N
MW-5	Vanadium	0.035	0.0001	ug/l	0	99%	PPL	N
MW-9	Vanadium	0.046	0.0001	ug/l	0	99%	PPL	N
MW-2	Zinc	0.014	0.00048	ug/l	9.09	99%	WRS	N
MW-5	Zinc	0.049	0.00048	ug/l	0	99%	WRS	N
MW-6S	Zinc	0.155	0.00048	ug/l	0	99%	WRS	N
MW-9	Zinc	0.024	0.00048	ug/l	0	99%	WRS	N

Highlighting indicates statistical significance.  
Upgradient well : MW -1

**Table 6**  
**Aquifer Conductivity and Velocity Calculations**  
**Davidson County Phase 2 Landfill**  
**10/4/2012**

Well Number	Aquifer	Conductivity (ft/day)	Conductivity (ft/min)	Assumed Porosity (n)	Gradient (l)	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	0.076	0.029
MW-3s	Sand	8.60E-02	5.97E-05	0.20	0.076	0.033
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	0.047	0.113
MW-6s	Sand and Gravel	4.64E-01	3.22E-04	0.22	0.030	0.063
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	0.074	0.364
MW-9	Diorite	7.20E-01	5.00E-04	0.10	0.085	0.614

NA = Well had insufficient water to perform Slug Test, or insufficient 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 in

Gradient calculated from Fall 2011 potentiometric surface.

## **Appendix A**

### **Field Data Sheets**

**October 2012 – Groundwater Monitoring Report  
Davidson County Phase 2 MSW Landfill  
Solid Waste Permit No. 29-06**

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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: Dawson (P2) Date: 10-4-12  
 Well ID: MW-1 Initials: MD

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

	YES	NO
<b>1. Well Vicinity</b>		
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:  <p style="text-align: center;">o.k.</p>		

	YES	NO
<b>2. Concrete Apron and Steel Case</b>		
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:  <p style="text-align: center;">o.k.</p>		

	YES	NO
<b>3. PVC Riser</b>		
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:  <p style="text-align: center;">o.k.</p>		

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 (P2) Date: 10.4.12  
 Well ID: MW-2 Initials: MD

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

		YES	NO
<b>1. Well Vicinity</b>			
A.	Well is assessable and surrounding area is safe for employees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Vicinity is free of potential contaminants.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Dead trees, etc. not in danger of falling and damaging wells.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Well is in the same location as on field maps.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:			
o.k			

		YES	NO
<b>2. Concrete Apron and Steel Case</b>			
A.	Concrete apron is present and in good condition.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Steel case is present and upright.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Steel case is not movable and cemented in.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	Well tag is present with pertinent information.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.	Well numbers are prominently displayed (Reflective address numbers, etc.).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G.	No evidence of tampering is present.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
H.	Lock operates properly.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
I.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:			
o.k.			

		YES	NO
<b>3. PVC Riser</b>			
A.	Monitoring cap is present and provides a tight seal.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Riser is of appropriate height (has not been cut off too low within the steel case).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Riser is not loose/ easily moved.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Riser does not appear cracked, broken, or brittle.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	No visual sign of external contamination entering well through riser.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:			
o.k.			

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 (P2) Date: 10.4.12  
 Well ID: MW-35 Initials: JD

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

		YES	NO
<b>1. Well Vicinity</b>			
A.	Well is assessable and surrounding area is safe for employees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Vicinity is free of potential contaminants.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Dead trees, etc. not in danger of falling and damaging wells.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Well is in the same location as on field maps.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center;"><i>ok.</i></p>			

		YES	NO
<b>2. Concrete Apron and Steel Case</b>			
A.	Concrete apron is present and in good condition.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Steel case is present and upright.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Steel case is not movable and cemented in.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	Well tag is present with pertinent information.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.	Well numbers are prominently displayed (Reflective address numbers, etc.).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G.	No evidence of tampering is present.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
H.	Lock operates properly.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
I.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center;"><i>ok.</i></p>			

		YES	NO
<b>3. PVC Riser</b>			
A.	Monitoring cap is present and provides a tight seal.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Riser is of appropriate height (has not been cut off too low within the steel case).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Riser is not loose/ easily moved.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Riser does not appear cracked, broken, or brittle.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	No visual sign of external contamination entering well through riser.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center;"><i>ok.</i></p>			

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 (P2) Date: 10-4-12  
 Well ID: MW-3d Initials: MD

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

		YES	NO
<b>1. Well Vicinity</b>			
A.	Well is assessable and surrounding area is safe for employees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Vicinity is free of potential contaminants.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Dead trees, etc. not in danger of falling and damaging wells.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Well is in the same location as on field maps.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center;"><i>ok.</i></p>			

		YES	NO
<b>2. Concrete Apron and Steel Case</b>			
A.	Concrete apron is present and in good condition.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Steel case is present and upright.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Steel case is not movable and cemented in.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	Well tag is present with pertinent information.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.	Well numbers are prominently displayed (Reflective address numbers, etc.).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G.	No evidence of tampering is present.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
H.	Lock operates properly.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
I.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center;"><i>ok.</i></p>			

		YES	NO
<b>3. PVC Riser</b>			
A.	Monitoring cap is present and provides a tight seal.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Riser is of appropriate height (has not been cut off too low within the steel case).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Riser is not loose/ easily moved.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Riser does not appear cracked, broken, or brittle.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	No visual sign of external contamination entering well through riser.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center;"><i>ok.</i></p>			

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 (P2) Date: 10-4-12  
 Well ID: MW-45 Initials: AD

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

		YES	NO
<b>1. Well Vicinity</b>			
A.	Well is assessable and surrounding area is safe for employees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Vicinity is free of potential contaminants.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Dead trees, etc. not in danger of falling and damaging wells.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Well is in the same location as on field maps.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center;"><i>ok.</i></p>			

		YES	NO
<b>2. Concrete Apron and Steel Case</b>			
A.	Concrete apron is present and in good condition.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Steel case is present and upright.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Steel case is not movable and cemented in.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	Well tag is present with pertinent information.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.	Well numbers are prominently displayed (Reflective address numbers, etc.).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G.	No evidence of tampering is present.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
H.	Lock operates properly.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
I.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center;"><i>ok.</i></p>			

		YES	NO
<b>3. PVC Riser</b>			
A.	Monitoring cap is present and provides a tight seal.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Riser is of appropriate height (has not been cut off too low within the steel case).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Riser is not loose/ easily moved.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Riser does not appear cracked, broken, or brittle.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	No visual sign of external contamination entering well through riser.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center;"><i>ok.</i></p>			

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 (P2) Date: 10-4-12  
 Well ID: MW-4d Initials: JD

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

	YES	NO
<b>1. Well Vicinity</b>		
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:  <p style="text-align: center;">ok</p>		

	YES	NO
<b>2. Concrete Apron and Steel Case</b>		
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:  <p style="text-align: center;">ok</p>		

	YES	NO
<b>3. PVC Riser</b>		
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:  <p style="text-align: center;">ok</p>		

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 (P2) Date: 10.4.12  
 Well ID: MW-5 Initials: MD

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

	YES	NO
<b>1. Well Vicinity</b>		
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:  <p style="text-align: center;">ok</p>		

	YES	NO
<b>2. Concrete Apron and Steel Case</b>		
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:  <p style="text-align: center;">ok</p>		

	YES	NO
<b>3. PVC Riser</b>		
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:  <p style="text-align: center;">ok</p>		

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 (P2) Date: 10.4.12  
 Well ID: MW-65 Initials: JD

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

	YES	NO
<b>1. Well Vicinity</b>		
A. Well is assessable and surrounding area is safe for employees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B. Vicinity is free of potential contaminants.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C. Dead trees, etc. not in danger of falling and damaging wells.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D. Well is in the same location as on field maps.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center; font-size: 2em;">ok</p>		

	YES	NO
<b>2. Concrete Apron and Steel Case</b>		
A. Concrete apron is present and in good condition.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B. Steel case is present and upright.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C. Steel case is not movable and cemented in.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E. Well tag is present with pertinent information.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G. No evidence of tampering is present.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
H. Lock operates properly.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
I.	<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center; font-size: 2em;">ok</p>		

	YES	NO
<b>3. PVC Riser</b>		
A. Monitoring cap is present and provides a tight seal.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B. Riser is of appropriate height (has not been cut off too low within the steel case).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C. Riser is not loose/ easily moved.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D. Riser does not appear cracked, broken, or brittle.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E. No visual sign of external contamination entering well through riser.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.	<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center; font-size: 2em;">ok</p>		

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 (P2) Date: 10-4-12  
 Well ID: MW-64 Initials: [Signature]

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

	YES	NO
<b>1. Well Vicinity</b>		
A. Well is assessable and surrounding area is safe for employees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B. Vicinity is free of potential contaminants.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C. Dead trees, etc. not in danger of falling and damaging wells.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D. Well is in the same location as on field maps.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center; font-size: 2em;">ok</p>		

	YES	NO
<b>2. Concrete Apron and Steel Case</b>		
A. Concrete apron is present and in good condition.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B. Steel case is present and upright.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C. Steel case is not movable and cemented in.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E. Well tag is present with pertinent information.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G. No evidence of tampering is present.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
H. Lock operates properly.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
I.	<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center; font-size: 2em;">ok</p>		

	YES	NO
<b>3. PVC Riser</b>		
A. Monitoring cap is present and provides a tight seal.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B. Riser is of appropriate height (has not been cut off too low within the steel case).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C. Riser is not loose/ easily moved.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D. Riser does not appear cracked, broken, or brittle.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E. No visual sign of external contamination entering well through riser.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.	<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center; font-size: 2em;">ok</p>		

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 (PE) Date: 10-4-12  
 Well ID: MW-7 Initials: TD

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

		YES	NO
<b>1. Well Vicinity</b>			
A.	Well is assessable and surrounding area is safe for employees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Vicinity is free of potential contaminants.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Dead trees, etc. not in danger of falling and damaging wells.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Well is in the same location as on field maps.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center;">ok</p>			

		YES	NO
<b>2. Concrete Apron and Steel Case</b>			
A.	Concrete apron is present and in good condition.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Steel case is present and upright.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Steel case is not movable and cemented in.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	Well tag is present with pertinent information.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.	Well numbers are prominently displayed (Reflective address numbers, etc.).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G.	No evidence of tampering is present.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
H.	Lock operates properly.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
I.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center;">ok</p>			

		YES	NO
<b>3. PVC Riser</b>			
A.	Monitoring cap is present and provides a tight seal.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Riser is of appropriate height (has not been cut off too low within the steel case).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Riser is not loose/ easily moved.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Riser does not appear cracked, broken, or brittle.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	No visual sign of external contamination entering well through riser.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center;">ok</p>			

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 (P2) Date: 10-4-12  
 Well ID: NW-8 Initials: ND

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

		YES	NO
<b>1. Well Vicinity</b>			
A.	Well is assessable and surrounding area is safe for employees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Vicinity is free of potential contaminants.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Dead trees, etc. not in danger of falling and damaging wells.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Well is in the same location as on field maps.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center;"><i>ok.</i></p>			

		YES	NO
<b>2. Concrete Apron and Steel Case</b>			
A.	Concrete apron is present and in good condition.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Steel case is present and upright.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Steel case is not movable and cemented in.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	Well tag is present with pertinent information.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.	Well numbers are prominently displayed (Reflective address numbers, etc.).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G.	No evidence of tampering is present.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
H.	Lock operates properly.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
I.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center;"><i>ok</i></p>			

		YES	NO
<b>3. PVC Riser</b>			
A.	Monitoring cap is present and provides a tight seal.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	Riser is of appropriate height (has not been cut off too low within the steel case).	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Riser is not loose/ easily moved.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.	Riser does not appear cracked, broken, or brittle.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	No visual sign of external contamination entering well through riser.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.		<input type="checkbox"/>	<input type="checkbox"/>
Comments/ items addressed or to be addressed:  <p style="text-align: center;"><i>ok</i></p>			

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 (PR) Date: 10-4-12  
 Well ID: MW-9 Initials: D

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

		YES	NO
<b>1. Well Vicinity</b>			
A. Well is assessable and surrounding area is safe for employees.		<input checked="" type="checkbox"/>	<input type="checkbox"/>
B. Vicinity is free of potential contaminants.		<input checked="" type="checkbox"/>	<input type="checkbox"/>
C. Dead trees, etc. not in danger of falling and damaging wells.		<input checked="" type="checkbox"/>	<input type="checkbox"/>
D. Well is in the same location as on field maps.		<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.			
Comments/ items addressed or to be addressed:  <p style="text-align: center;">ok.</p>			

		YES	NO
<b>2. Concrete Apron and Steel Case</b>			
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:  <p style="text-align: center;">well is flush mount</p>			

		YES	NO
<b>3. PVC Riser</b>			
A. Monitoring cap is present and provides a tight seal.		<input checked="" type="checkbox"/>	<input type="checkbox"/>
B. Riser is of appropriate height (has not been cut off too low within the steel case).		<input checked="" type="checkbox"/>	<input type="checkbox"/>
C. Riser is not loose/ easily moved.		<input checked="" type="checkbox"/>	<input type="checkbox"/>
D. Riser does not appear cracked, broken, or brittle.		<input checked="" type="checkbox"/>	<input type="checkbox"/>
E. No visual sign of external contamination entering well through riser.		<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.			
Comments/ items addressed or to be addressed:  <p style="text-align: center;">ok</p>			

## **Appendix B**

### **Monitoring Well Information**

**October 2012 – Groundwater Monitoring Report  
Davidson County Phase 2 MSW Landfill  
NC Solid Waste Permit No. 29-06**

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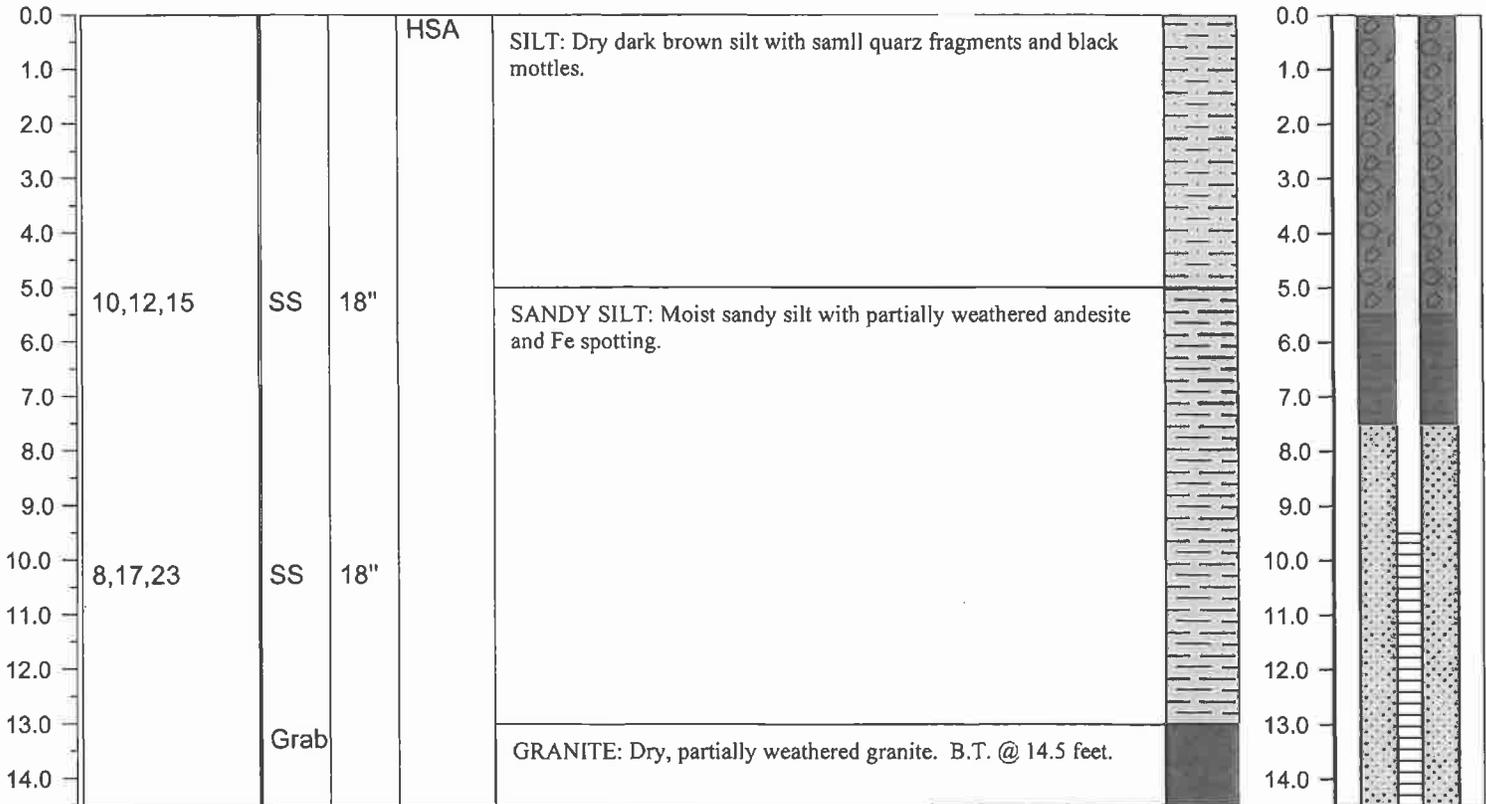


PROJECT NAME: **Davidson County - Phase 2**  
 LOCATION: **Lexington, NC**  
 DRILLING CO: **Engineering Tectonics, P.A.**  
 DRILLING METHOD: **HSA**  
 FIELD PARTY: **David Barron**  
 GEOLOGIST: **Clark Wipfield**  
 DATE BEGUN: **8/12/08** DATE COMPLETED: **8/12/08**

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	DEPTH	WELL INSTALLATION
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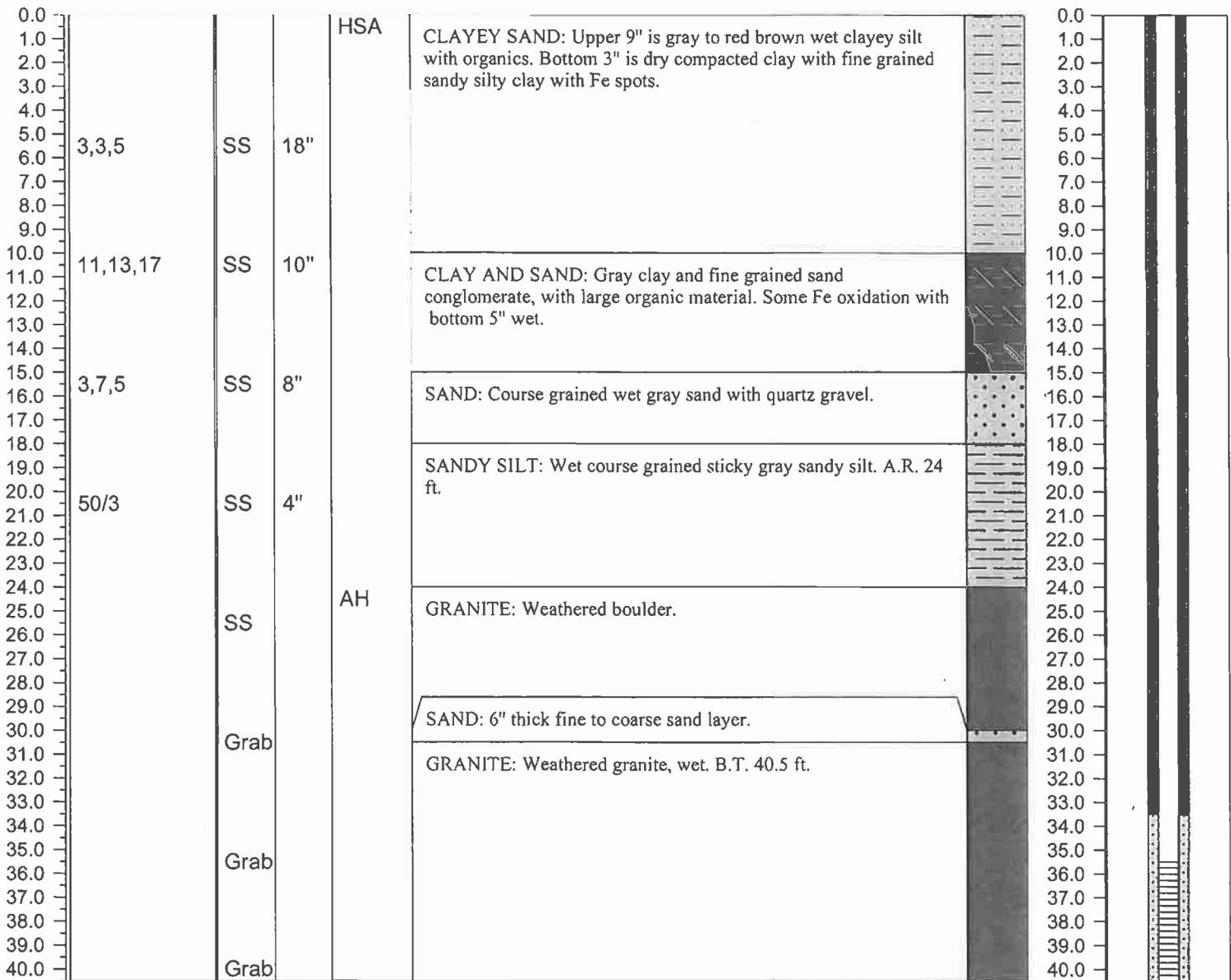


PROJECT NAME: **Davidson County Landfill**  
 LOCATION: **Davidson County**  
 DRILLING CO: **Engineering Tectonics, P.A.**  
 DRILLING METHOD: **HSA**  
 FIELD PARTY: **Daivd Barron**  
 GEOLOGIST: **Clark Wipfield**  
 DATE BEGUN: **3/26/08** DATE COMPLETED: **3/26/08**

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	DEPTH	WELL INSTALLATION
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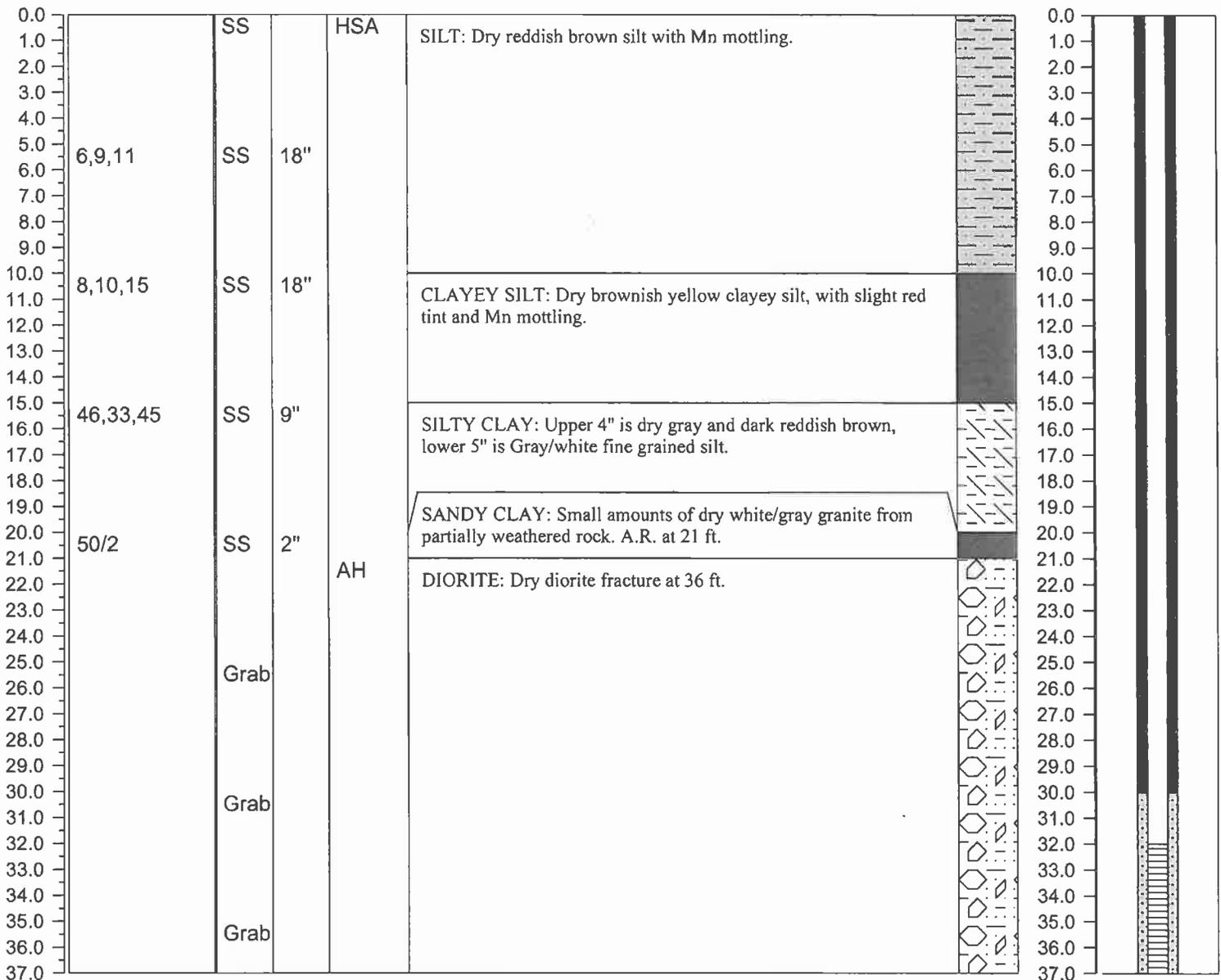


PROJECT NAME: **Davidson County**  
 LOCATION: **Davidson County Landfill**  
 DRILLING CO: **Engineering Tectonics, P.A.**  
 DRILLING METHOD: **HSA and AH**  
 FIELD PARTY: **David Barron**  
 GEOLOGIST: **Clark Wipfield**  
 DATE BEGUN: **3/26/08** DATE COMPLETED: **3/26/08**

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	LITHOLOGY	DEPTH	WELL INSTALLATION
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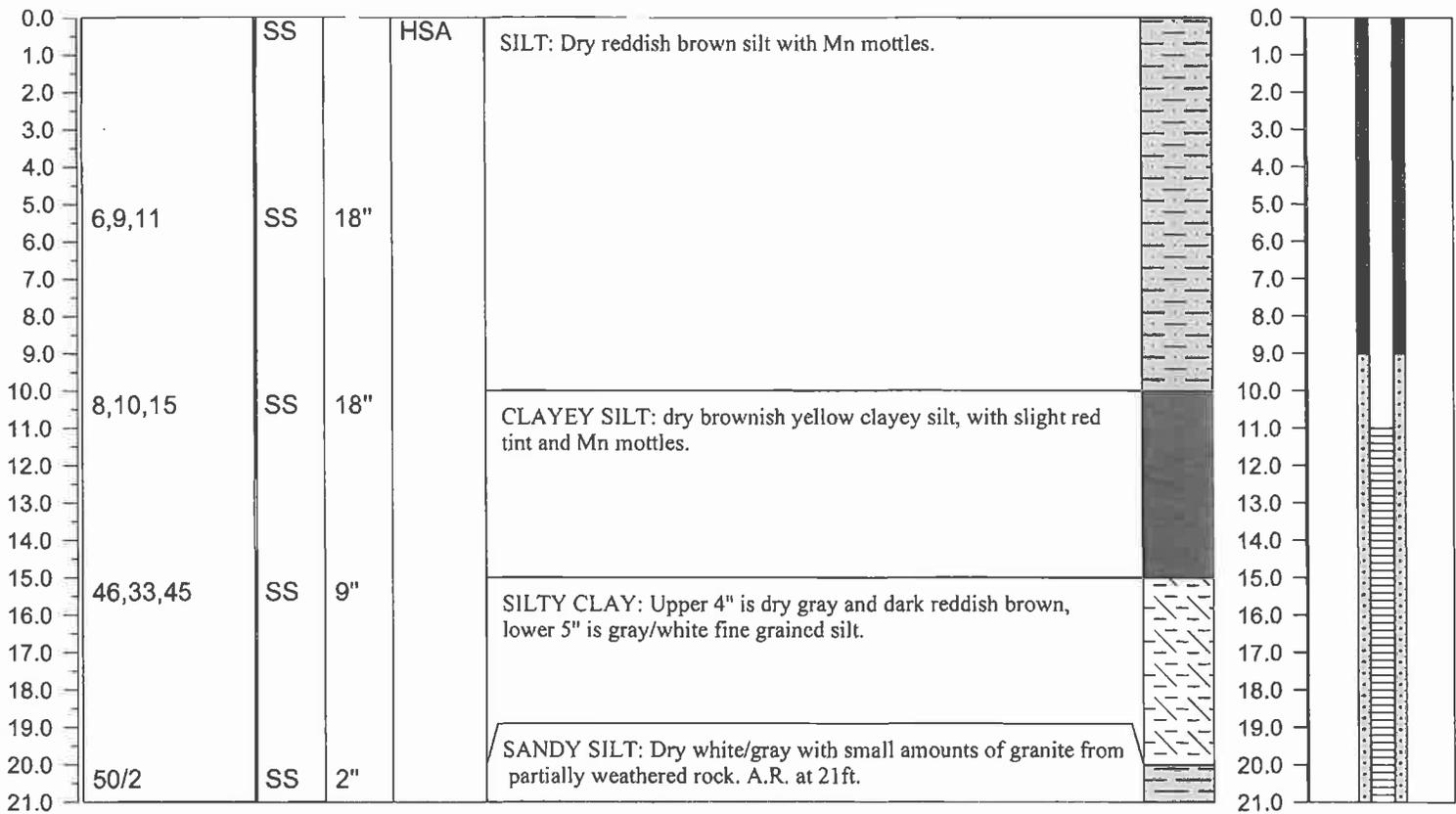


PROJECT NAME: **Davidson County**  
 LOCATION: **Davidson County Landfill**  
 DRILLING CO: **Engineering Tectonics, P.A.**  
 DRILLING METHOD: **HSA**  
 FIELD PARTY: **David Barron**  
 GEOLOGIST: **Clark Wipfield**  
 DATE BEGUN: **3/24/08**    DATE COMPLETED: **3/24/08**

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	DEPTH	WELL INSTALLATION
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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.		37.0		
38.0							38.0		
39.0							39.0		
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.		40.0		
41.0							41.0		
42.0							42.0		
43.0							43.0		
44.0							44.0		
45.0	19,27,50	SS	14"		SANDY SILT: Gray and light red sandy silt with Fe oxidation bands.		45.0		
46.0							46.0		
47.0							47.0		
48.0							48.0		
49.0							49.0		
50.0	50/2	SS	50/2'		SILTY SAND: Wet white and gray silty sand with dark brown coarse sand. A.R. at 51 ft.		50.0		
51.0				AH	GRANITE: Weathered granite		51.0		
52.0							52.0		
53.0							53.0		
54.0							54.0		
55.0		Grab					55.0		
56.0							56.0		
57.0							57.0		
58.0							58.0		
59.0							59.0		
60.0							60.0		
61.0		Grab					61.0		
62.0							62.0		
63.0							63.0		
64.0							64.0		
65.0							65.0		
66.0		Grab					66.0		
67.0					DIORITE: Large fracture at 68' produced a lot of water. B.T. at 70.5 ft.		67.0		
68.0							68.0		
69.0							69.0		
70.0							70.0		



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	DEPTH	WELL	INSTALLATION
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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.		0.0		
1.0							1.0		
2.0							2.0		
3.0							3.0		
4.0							4.0		
5.0	28,37,50/1	SS	13"				5.0		
6.0							6.0		
7.0							7.0		
8.0							8.0		
9.0							9.0		
10.0	20,36,31	SS	17"		10.0				
11.0					11.0				
12.0					12.0				
13.0					13.0				
14.0					14.0				
15.0	23,36,50/6	SS	14"		15.0				
16.0					16.0				
17.0					17.0				
18.0					18.0				
19.0					19.0				
20.0	32,44,50/5	SS	18"		20.0				
21.0					21.0				
22.0					22.0				
23.0					23.0				
24.0					24.0				
25.0	50/5	SS	18"		25.0				
26.0				SILT: Upper 14" is sticky wet viscous silt with Fe oxidation. Lower 4" hard compact gray/white silt.	26.0				
27.0					27.0				
28.0					28.0				
29.0					29.0				
30.0	29,32,50/4	SS	12"		30.0				
31.0				SANDY SILT: Moist brownish yellow sandy silt, with Fe oxidation and quartz bands at 45 degree angles.	31.0				
32.0					32.0				
33.0					33.0				
34.0					34.0				
35.0	28,50/5	SS	10"		35.0				
36.0				GRAVEL AND SAND: Moist brownish yellow sandy silt, with Fe oxidation and quartz banks at 45 degree angles.	36.0				
37.0					37.0				
38.0					38.0				
39.0					39.0				
40.0	42,50/6	SS	5"		40.0				
41.0				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.	41.0				

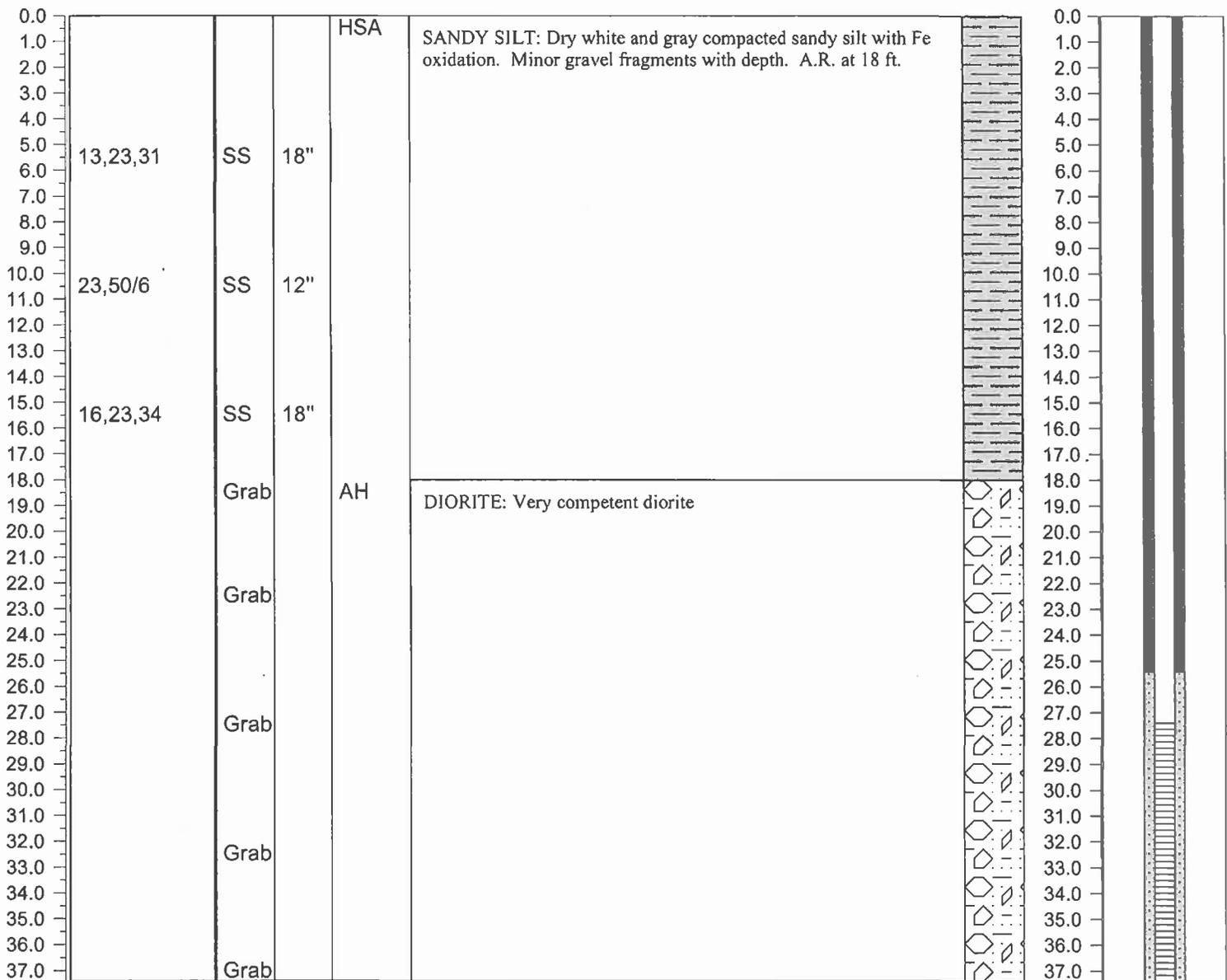


PROJECT NAME: **Davidson County Landfill**  
 LOCATION: **Holy Springs, NC**  
 DRILLING CO: **Engineering Tectonics, P.A.**  
 DRILLING METHOD: **HSA and AH**  
 FIELD PARTY: **David Barron**  
 GEOLOGIST: **Clark Wipfield**  
 DATE BEGUN: **3/24/08** DATE COMPLETED: **3/25/08**

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	LITHOLOGY	DEPTH	WELL INSTALLATION
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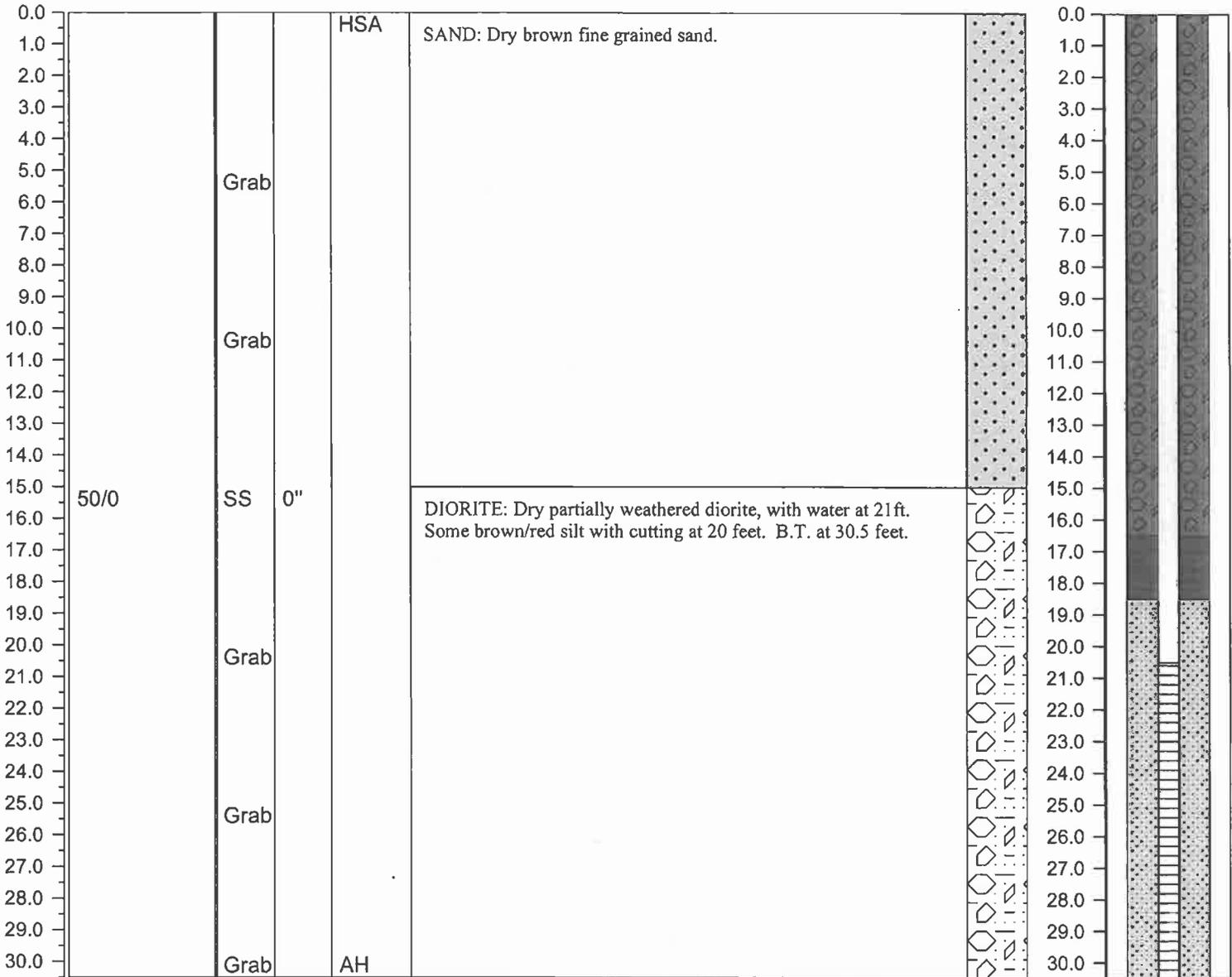
**FIELD BOREHOLE LOG**

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:

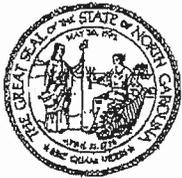
STATIC WATER LEVEL (TOC)		
Depth (ft)	19.35	
Time	2:30 pm	
Date	8/14/08	

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL INSTALLATION
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# 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 1780 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  Municipal/Public

Industrial/Commercial  Agricultural  Recovery  Injection

Irrigation  Other  (list use)

DATE DRILLED 3-31

TIME COMPLETED 4-1 AM  PM

### 3. WELL LOCATION:

CITY: Thomasville COUNTY: Davidsen

1242 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 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 topa 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 Davidsen 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: 18.0

b. DOES WELL REPLACE EXISTING WELL? YES  NO

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







# 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 40  
 STATE WELL PERMIT #(if applicable)  
 DWQ or OTHER PERMIT #(if applicable)  
 WELL USE (Check Applicable Box) Monitoring  Municipal/Public   
 Industrial/Commercial  Agricultural  Recovery  Injection   
 Irrigation  Other  (list use)  
 DATE DRILLED 4-9  
 TIME COMPLETED 4-11 AM  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  Flat  Ridge  Other  
 (check appropriate box)  
 LATITUDE 35 50 58.29291  
 LONGITUDE 80 11 08.13521  
 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: 37.0  
 b. DOES WELL REPLACE EXISTING WELL? YES  NO   
 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 \_\_\_\_\_

8. CASING:  

From	Depth	To	Diameter	Thickness/Weight	Material
From <u>+3</u>	To <u>27.0</u>	FL	<u>2"</u>	<u>Sch 40</u>	<u>PVC</u>
From <u>0.0</u>	To <u>21.5</u>	FL	<u>4"</u>	<u>Sch 40</u>	<u>PIE</u>
From _____	To _____	FL	_____	_____	_____

7. GROUT: Depth Material Method  
 From 28.0 To 30.0 FL Bentonite Treme  
 From 0.0 To 28.0 FL PORTLAND Pump  
 From \_\_\_\_\_ To \_\_\_\_\_ FL \_\_\_\_\_ \_\_\_\_\_

8. SCREEN: Depth Diameter Slot Size Material  
 From 32.0 To 37.0 FL 2" in. 10 in. PVC  
 From \_\_\_\_\_ To \_\_\_\_\_ FL \_\_\_\_\_ in. \_\_\_\_\_ in. \_\_\_\_\_  
 From \_\_\_\_\_ To \_\_\_\_\_ FL \_\_\_\_\_ in. \_\_\_\_\_ in. \_\_\_\_\_

9. SAND/GRAVEL PACK:  
 Depth Size Material  
 From 30.0 To 37.0 FL #3 SAND  
 From \_\_\_\_\_ To \_\_\_\_\_ FL \_\_\_\_\_ \_\_\_\_\_  
 From \_\_\_\_\_ To \_\_\_\_\_ FL \_\_\_\_\_ \_\_\_\_\_

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













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## **Appendix C**

### **Laboratory Analytical Report**

**October 2012 – 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  
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: 10/04/12  
DATE REPORTED : 10/31/12

REVIEWED BY: 

PARAMETERS	MDL	SWSL	MW-2	MW-3S	MW-3D	MW-4D	MW-5	Analysis	Method
								Date	Analyst
Antimony, ug/l	0.02	6.0	0.03 J	- - U	--- U	--- U	--- U	10/16/12LFFJ	EPA200.8
Arsenic, ug/l	0.13	10.0	0.23 J	- - U	--- U	--- U	0.40 J	10/16/12LFFJ	EPA200.8
Barium, ug/l	0.07	100.0	14.2 J	22.7 J	49.0 J	37.6 J	51.0 J	10/16/12LFFJ	EPA200.8
Beryllium, ug/l	0.07	1.0	--- U	- - U	--- U	--- U	0.17 J	10/16/12LFFJ	EPA200.8
Cadmium, ug/l	0.03	1.0	0.03 J	0.03 J	--- U	0.13 J	0.08 J	10/16/12LFFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	0.86 J	0.32 J	0.33 J	0.07 J	9.1 J	10/16/12LFFJ	EPA200.8
Copper, ug/l	0.06	10.0	4.8 J	1.2 J	0.19 J	0.50 J	32	10/16/12LFFJ	EPA200.8
Total Chromium, ug/l	0.18	10.0	6.2 J	1.5 J	--- U	--- U	7.1 J	10/16/12LFFJ	EPA200.8
Lead, ug/l	0.08	10.0	0.44 J	0.14 J	--- U	--- U	4.1 J	10/16/12LFFJ	EPA200.8
Nickel, ug/l	0.06	50.0	2.1 J	1.2 J	0.64 J	0.70 J	9.9 J	10/16/12LFFJ	EPA200.8
Selenium, ug/l	0.17	10.0	--- U	0.80 J	0.53 J	--- U	--- U	10/16/12LFFJ	EPA200.8
Silver, ug/l	0.10	10.0	--- U	- - U	--- U	--- U	--- U	10/16/12LFFJ	EPA200.8
Thallium, ug/l	0.07	5.5	--- U	0.20 J	--- U	--- U	--- U	10/16/12LFFJ	EPA200.8
Vanadium, ug/l	0.10	25.0	8.9 J	10.2 J	2.3 J	9.2 J	35	10/16/12LFFJ	EPA200.8
Zinc, ug/l	0.48	10.0	14	8.6 J	9.0 J	3.9 J	49	10/16/12LFFJ	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: 10/04/12  
DATE REPORTED : 10/31/12

REVIEWED BY: 

PARAMETERS	MDL	SWSL	MW-6S	MW-8	MW-9	Trip	Analysis	Method
						Blank	Date	Analyst
Antimony, ug/l	0.02	6.0	--- U	- - U	--- U		10/16/12LFJ	EPA200.8
Arsenic, ug/l	0.13	10.0	0.26 J	- - U	0.87 J		10/16/12LFJ	EPA200.8
Barium, ug/l	0.07	100.0	158	3.1 J	70.2 J		10/16/12LFJ	EPA200.8
Beryllium, ug/l	0.07	1.0	--- U	- - U	0.24 J		10/16/12LFJ	EPA200.8
Cadmium, ug/l	0.03	1.0	0.17 J	- - U	0.26 J		10/16/12LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	2.4 J	0.76 J	5.5 J		10/16/12LFJ	EPA200.8
Copper, ug/l	0.06	10.0	23	2.7 J	30		10/16/12LFJ	EPA200.8
Total Chromium, ug/l	0.18	10.0	9.9 J	3.4 J	11		10/16/12LFJ	EPA200.8
Lead, ug/l	0.08	10.0	1.1 J	0.45 J	2.7 J		10/16/12LFJ	EPA200.8
Nickel, ug/l	0.06	50.0	5.4 J	2.0 J	3.8 J		10/16/12LFJ	EPA200.8
Selenium, ug/l	0.17	10.0	0.66 J	0.19 J	0.32 J		10/16/12LFJ	EPA200.8
Silver, ug/l	0.10	10.0	--- U	- - U	--- U		10/16/12LFJ	EPA200.8
Thallium, ug/l	0.07	5.5	--- U	- - U	--- U		10/16/12LFJ	EPA200.8
Vanadium, ug/l	0.10	25.0	15.8 J	9.2 J	46		10/16/12LFJ	EPA200.8
Zinc, ug/l	0.48	10.0	155	2.2 J	24		10/16/12LFJ	EPA200.8

# Environment 1, Incorporated

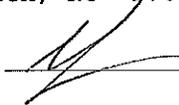
Drinking Water ID: 37715  
Wastewater ID: 10

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: 10/04/12  
DATE REPORTED: 10/31/12  
Page: 1

REVIEWED BY: 

## VOLATILE ORGANICS EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	Date Analyzed:		10/12/12	10/15/12	10/15/12	10/15/12	10/15/12
	MDL	SWSL	MW-2	MW-38	MW-3D	MW-4D	MW-5
1. Chloromethane	0.77	1.0	--- U				
2. Vinyl Chloride	0.63	1.0	--- U				
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	--- U				
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	--- U				
12. 1,1-Dichloroethane	0.20	5.0	--- U				
13. Vinyl Acetate	0.20	50.0	--- U				
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U				
15. 2-Butanone	2.21	100.0	--- U				
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	--- U				
21. 1,2-Dichloroethane	0.27	1.0	--- U				
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	--- U				
27. Toluene	0.23	1.0	--- U				
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	--- U				
32. Dibromochloromethane	0.24	3.0	--- U				
33. 1,2-Dibromoethane	0.26	1.0	--- U				
34. Chlorobenzene	0.30	3.0	--- U				
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U				
36. Ethylbenzene	0.21	1.0	--- U				
37. Xylenes	0.68	5.0	--- U				
38. Dibromomethane	0.28	10.0	--- U				
39. Styrene	0.19	1.0	--- U				
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	--- U				
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

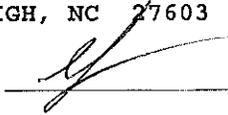
Drinking Water ID: 37715  
Wastewater ID: 10

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

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

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: 10/04/12  
DATE REPORTED: 10/31/12  
Page: 2

REVIEWED BY: 

## VOLATILE ORGANICS EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	Date Analyzed:		10/15/12	10/15/12	10/15/12	10/15/12
	MDL	SWSL	MW-6S	MW-8	MW-9	Trip Blank
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	--- U	--- U
3. Bromomethane	0.67	10.0	--- U	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- U	--- U
7. Acetone	9.06	100.0	--- U	--- U	12.40 J	--- U
8. Iodomethane	0.26	10.0	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	--- U	--- U
15. 2-Butanone	2.21	100.0	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U	--- U	--- U
20. Benzene	0.24	1.0	--- U	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U	--- U	--- U
24. Bromodichloromethane	0.21	1.0	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U	--- U	--- U	--- U
27. Toluene	0.23	1.0	--- U	--- U	--- U	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.17	1.0	--- U	--- U	--- U	--- U
31. 2-Hexanone	1.57	50.0	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.24	3.0	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.30	3.0	--- U	--- U	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.21	1.0	--- U	--- U	--- U	--- U
37. Xylenes	0.68	5.0	--- U	--- U	--- U	--- U
38. Dibromomethane	0.28	10.0	--- U	--- U	--- U	--- U
39. Styrene	0.19	1.0	--- U	--- U	--- U	--- U
40. Bromoform	0.20	3.0	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U	--- U	--- U	--- U
46. Acrylonitrile	2.72	200.0	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U	--- U	--- U	--- U

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

CLIENT: 6059 Week: 39

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

(919) 828-0577

CHAIN OF CUSTODY RECORD

SAMPLE LOCATION	COLLECTION		TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Metals			EPA 8260B	8260 Dup. 1	8260 Dup. 2	CHLORINE NEUTRALIZED AT COLLECTION	PH CHECK (LAB)	CONTAINER TYPE, P/G	CHEMICAL PRESERVATION	PARAMETERS	
	DATE	TIME				A	E	E									
MW-1	10-4-12	DRY			4												
MW-2	10-4-12	2:00p	18.5		3												
MW-3S	10-4-12	1:40p	18		3												
MW-3D	10-4-12	1:30p	17		3												
MW-4S	10-4-12	DRY			3												
MW-4D	10-4-12	1:45p	16		3												
MW-5	10-4-12	1:15p	15.5		3												
MW-6S	10-4-12	1:10p	15.8		4												
MW-6D	10-4-12	DRY			3												
MW-7	10-4-12	DRY			3												
MW-8	10-4-12	1:00p	16.5		3												
RELINQUISHED BY (SIG.)			DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	COMMENTS:											
RELINQUISHED BY (SIG.)			DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	SAMPLES COLLECTED BY: <u>DMN JAL</u>											
RELINQUISHED BY (SIG.)			DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	SAMPLES RECEIVED IN LAB AT <u>10/5/12 3:00p</u>											
RELINQUISHED BY (SIG.)			DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	SAMPLER MUST BE PLACED IN BLOCKS ABOVE FOR EACH PARAMETER REQUESTED.											

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. No 244668

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

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CLIENT: 6059 Week: 39

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

(919) 828-0577

CHAIN OF CUSTODY RECORD

SAMPLE LOCATION	COLLECTION		TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	DISINFECTION				Metals	EPA 8260B	8260 Dup. 1	8260 Dup. 2	PARAMETERS	
	DATE	TIME				<input type="checkbox"/> CHLORINE	<input type="checkbox"/> UV	<input type="checkbox"/> NONE	A						E
MW-9	10-4-12	1:25p			3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						A - NONE B - HNO <sub>3</sub> C - H <sub>2</sub> SO <sub>4</sub> D - NaOH E - HCL F - ZINC ACETATE G - NATHIOSULFATE	
Trip Blank					2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						CLASSIFICATION: <input type="checkbox"/> WASTEWATER (NPDES) <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> DWO/GW <input checked="" type="checkbox"/> SOLID WASTE SECTION	
CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY SAMPLES COLLECTED BY: <u>DMN JAL</u> (Please Print) SAMPLES RECEIVED IN LAB AT <u>0.6°C</u>															
REINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
COMMENTS:															

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

# 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: 10/04/12  
DATE REPORTED : 10/31/12

REVIEWED BY: 

PARAMETERS	MDL	SWSL	SW-1	SW-2	SW-3	Leachate	Analysis	Method
							Date	Analyst
BOD, mg/l	2.0	2.0				70	10/05/12TRB	5210B-01
COD, mg/l	20.0	20.0				588	10/10/12TRB	H8000-79
Total Suspended Residue, mg/l	1.0	1.0				47	10/05/12HLB	2540D-97
Ammonia Nitrogen as N, mg/l	0.04	0.04				340	10/11/12ANO	350.1 R2-93
Nitrate Nitrogen as N, mg/l	0.03	10.0				0.05 J	10/05/12ANO	353.2 R2-93
Total Phosphorus as P, mg/l	0.04	0.04				0.86	10/11/12BJC	365.4-74
Sulfate, mg/l	5.0	250.0				19.3 J	10/08/12TRB	4500SO42E97
Antimony, ug/l	0.02	6.0	0.09 J	0.05 J	0.03 J	4.3 J	10/16/12LFJ	EPA200.8
Arsenic, ug/l	0.13	10.0	0.30 J	0.34 J	---	8 J	10/16/12LFJ	EPA200.8
Barium, ug/l	0.07	100.0	32.0 J	36.9 J	39.6 J	168	10/16/12LFJ	EPA200.8
Beryllium, ug/l	0.07	1.0	---	---	---	---	10/16/12LFJ	EPA200.8
Cadmium, ug/l	0.03	1.0	---	0.04 J	0.04 J	0.53 J	10/16/12LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	0.42 J	1.3 J	1.5 J	9.7 J	10/16/12LFJ	EPA200.8
Copper, ug/l	0.06	10.0	2.8 J	3.7 J	1.4 J	6.9 J	10/16/12LFJ	EPA200.8
Total Chromium, ug/l	0.18	10.0	0.21 J	1.3 J	---	37	10/16/12LFJ	EPA200.8
Lead, ug/l	0.08	10.0	0.45 J	1.6 J	0.74 J	0.71 J	10/16/12LFJ	EPA200.8
Nickel, ug/l	0.06	50.0	1.4 J	1.9 J	0.74 J	80	10/16/12LFJ	EPA200.8
Selenium, ug/l	0.17	10.0	---	---	---	9.9 J	10/16/12LFJ	EPA200.8
Silver, ug/l	0.10	10.0	---	---	---	0.14 J	10/16/12LFJ	EPA200.8
Thallium, ug/l	0.07	5.5	---	---	---	---	10/16/12LFJ	EPA200.8
Vanadium, ug/l	0.10	25.0	2.9 J	5.4 J	2.1 J	25	10/16/12LFJ	EPA200.8
Zinc, ug/l	0.48	10.0	4.4 J	12	9.1 J	109	10/16/12LFJ	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

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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 A  
ANALYST: MAO  
DATE COLLECTED: 10/04/12  
DATE ANALYZED: 10/15/12  
DATE REPORTED: 10/31/12

Page: 1

REVIEWED BY: 

## VOLATILE ORGANICS EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	SW-1	SW-2	SW-3	Leachate
1. Chloromethane	0.77	1.0	-- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	-- U	--- U	--- U	3.20
3. Bromomethane	0.67	10.0	-- U	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	-- U	--- U	--- U	8.40 J
5. Trichlorofluoromethane	0.24	1.0	-- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	-- U	--- U	--- U	--- U
7. Acetone	9.06	100.0	-- U	--- U	--- U	54.50 J
8. Iodomethane	0.26	10.0	-- U	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	-- U	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	-- U	--- U	--- U	3.40
11. trans-1,2-Dichloroethene	0.23	5.0	-- U	--- U	--- U	4.70 J
12. 1,1-Dichloroethane	0.20	5.0	-- U	--- U	--- U	0.60 J
13. Vinyl Acetate	0.20	50.0	-- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	-- U	--- U	--- U	0.40 J
15. 2-Butanone	2.21	100.0	-- U	--- U	--- U	88.30 J
16. Bromochloromethane	0.27	3.0	-- U	--- U	--- U	--- U
17. Chloroform	0.25	5.0	-- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	-- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	-- U	--- U	--- U	--- U
20. Benzene	0.24	1.0	-- U	--- U	--- U	30.30
21. 1,2-Dichloroethane	0.27	1.0	-- U	--- U	--- U	3.00
22. Trichloroethene	0.23	1.0	-- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	-- U	--- U	--- U	0.40 J
24. Bromodichloromethane	0.21	1.0	-- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	-- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	-- U	--- U	--- U	17.70 J
27. Toluene	0.23	1.0	-- U	--- U	--- U	50.10
28. trans-1,3-Dichloropropene	0.28	1.0	-- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	-- U	--- U	--- U	--- U
30. Tetrachloroethene	0.17	1.0	-- U	--- U	--- U	--- U
31. 2-Hexanone	1.57	50.0	-- U	--- U	--- U	1.90 J
32. Dibromochloromethane	0.24	3.0	-- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.26	1.0	-- U	--- U	--- U	--- U
34. Chlorobenzene	0.30	3.0	-- U	--- U	--- U	2.60 J
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	-- U	--- U	--- U	--- U
36. Ethylbenzene	0.21	1.0	-- U	--- U	--- U	36.40
37. Xylenes	0.68	5.0	-- U	--- U	--- U	77.30
38. Dibromomethane	0.28	10.0	-- U	--- U	--- U	--- U
39. Styrene	0.19	1.0	-- U	--- U	--- U	0.70 J
40. Bromoform	0.20	3.0	-- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	-- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	-- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	-- U	--- U	--- U	6.70
44. 1,2-Dichlorobenzene	0.32	5.0	-- U	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	-- U	--- U	--- U	--- U
46. Acrylonitrile	2.72	200.0	-- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	-- U	--- U	--- U	--- U

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

Environment 4, Inc.  
 P.O. Box 7085, 114 Oakmont Dr.  
 Greenville, NC 27838

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

CLIENT: 6059 A Week: 39

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

(919) 828-0577

CHAIN OF CUSTODY RECORD

SAMPLE LOCATION	COLLECTION		TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	DISINFECTION			BOD	COD	TSR	Ammonia Nitro.	Nitrate	T. Phosphorus	Sulfate	Metals	EPA 8260B	8260 Dup. 1	8260 Dup. 2	PARAMETERS	CLASSIFICATION:		
	DATE	TIME				<input type="checkbox"/> CHLORINE	<input type="checkbox"/> UV	<input type="checkbox"/> NONE															
SW-1	10-4-12	12:25p		20.5	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
SW-2	10-4-12	12:10p		20.5	3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
SW-3	10-4-12	12:40p		19.5	3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
Leachate	10-4-12	2:15p			10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME
<i>[Signature]</i>	10-4-12 3:00p	<i>[Signature]</i>	10-5-12 8:19	<i>[Signature]</i>																			
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME	
COMMENTS:																							
CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY SAMPLES COLLECTED BY: <i>[Signature]</i> (Please Print) <i>[Signature]</i> SAMPLES RECEIVED IN LAB AT <u>1.8</u> °C <input checked="" type="checkbox"/> SOLID WASTE SECTION <input type="checkbox"/> WASTEWATER (NPDES) <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> DWQ/GW																							

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. No 244666

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## **Appendix D**

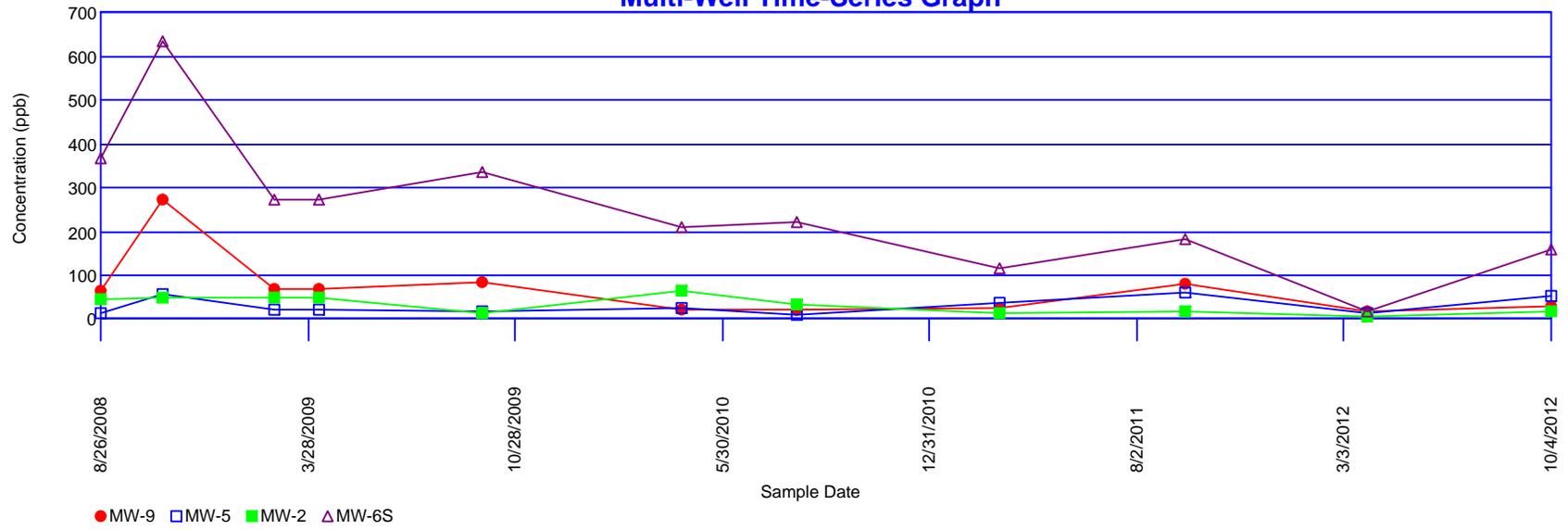
### **Time vs. Concentration Graphs**

**October 2012 – Groundwater Monitoring Report  
Davidson County Phase 2 MSW Landfill  
NC Solid Waste Permit No. 29-06**

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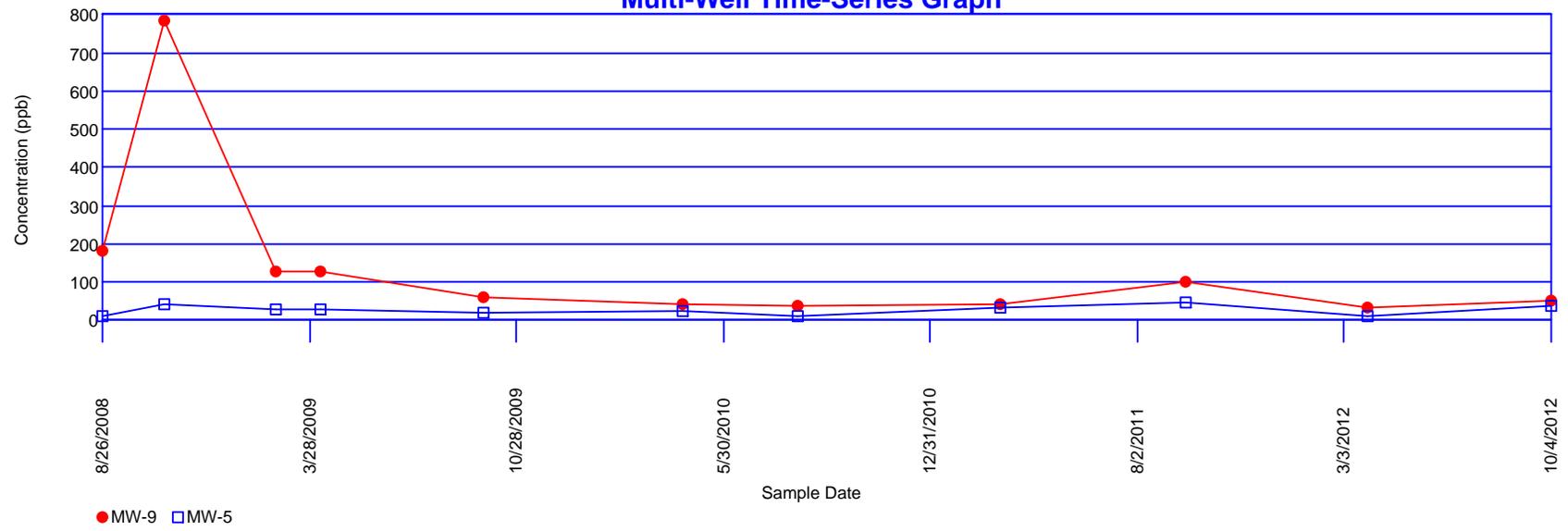
# Zinc

## Multi-Well Time-Series Graph



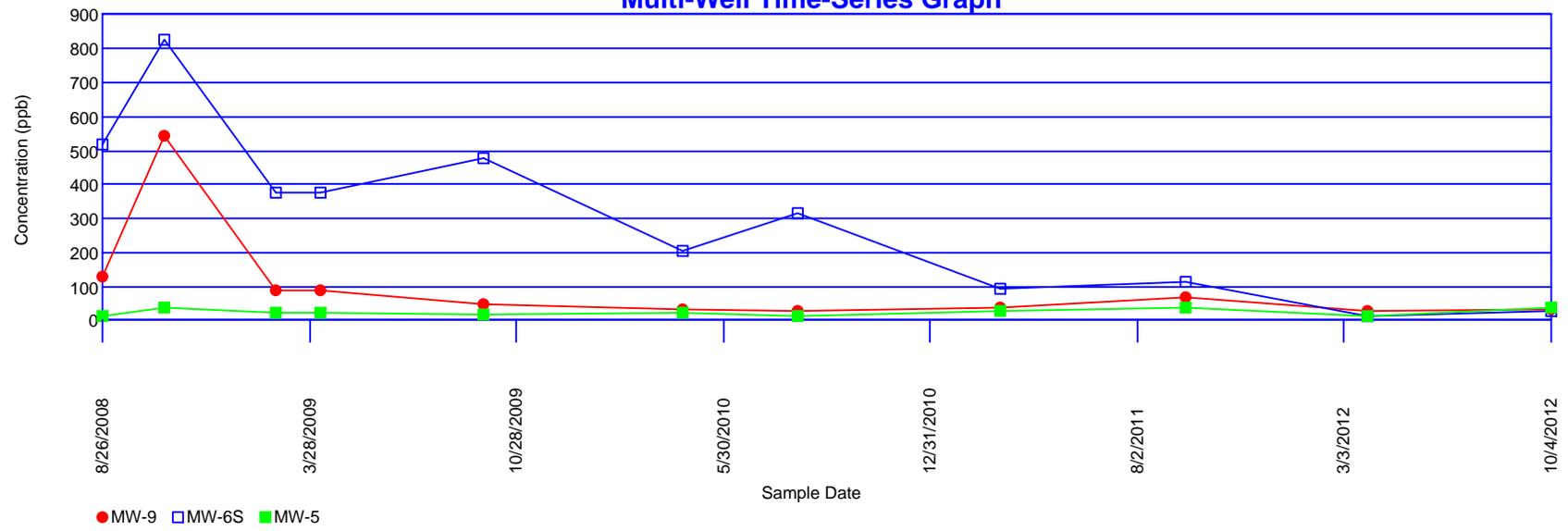
# Vanadium

## Multi-Well Time-Series Graph

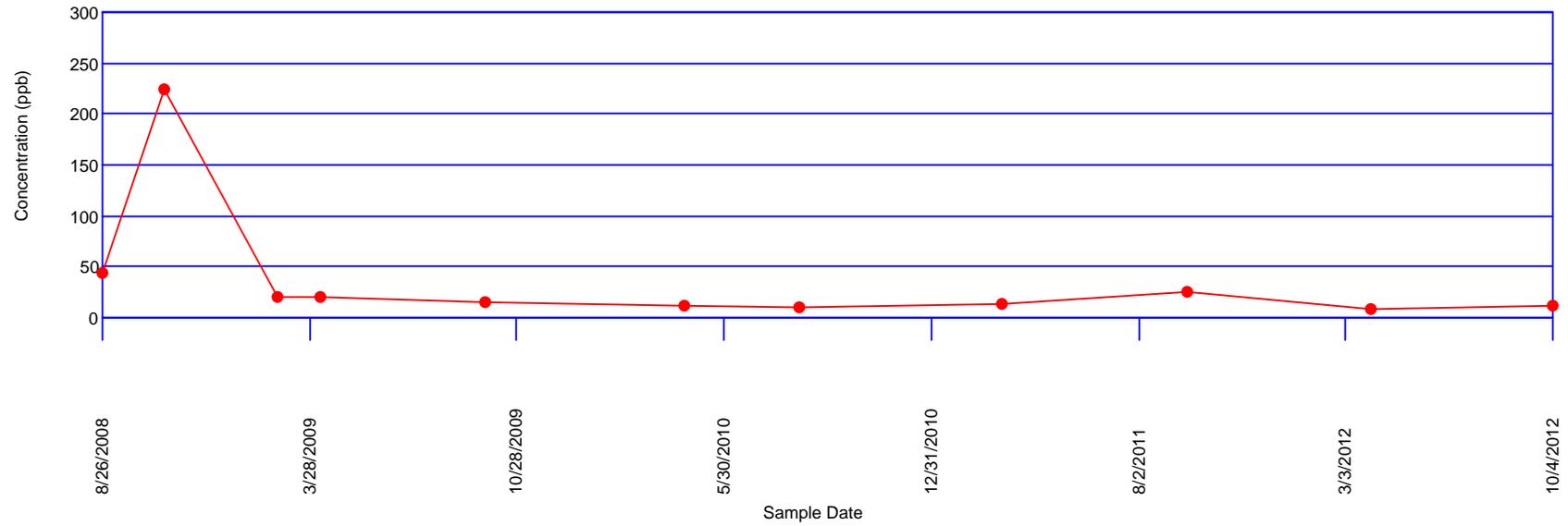


# Copper

## Multi-Well Time-Series Graph

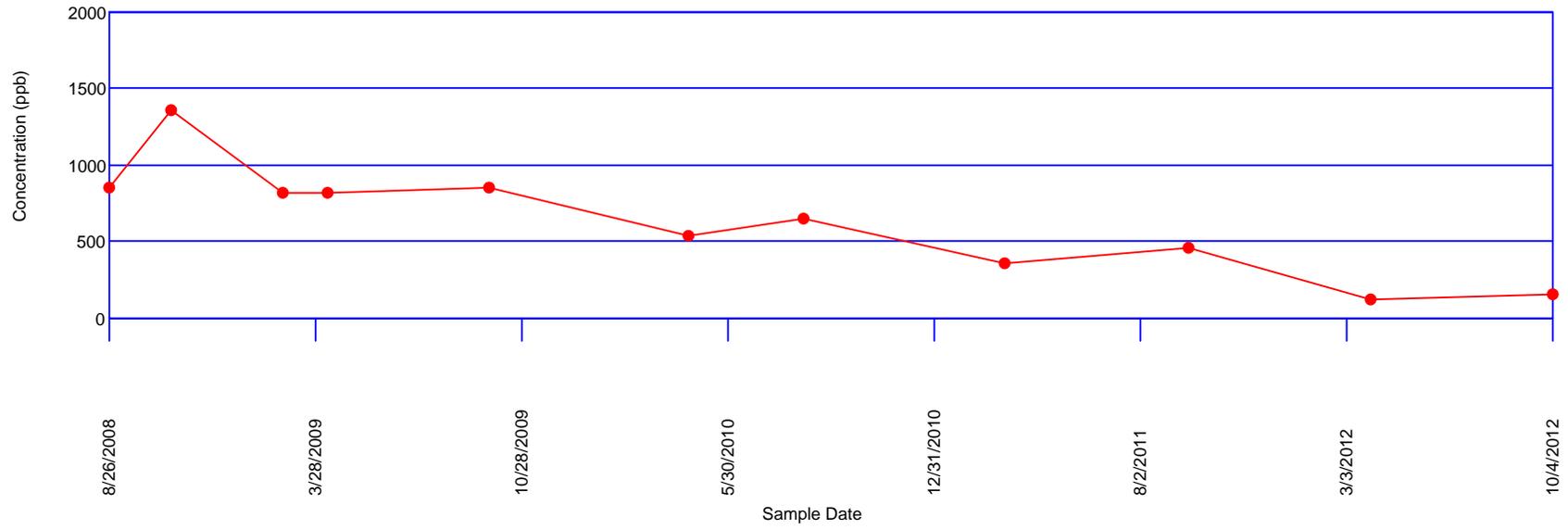


## Total Chromium Time-Series Graph of MW-9



# Barium

## Time-Series Graph of MW-6S



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