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):

Richardson Smith Gardner and Associates, Inc.

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

Name: Joan A. Smyth, P.G. Phone: 919-828-0577 x 221

E-mail: joan@rsgengineers.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Davidson County Closed Phase 1 MSW landfill	1242 Old Highway 29 Thomasville, NC 27360	29-06	.1600	9-20-2011

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.

Joan A. Smyth, P.G.	Senior Hydrogeologist	919-828-0577 x 221
Facility Representative Name (Print)	Title	(Area Code) Telephone Number

Joan Smyth — 12/30/11
Signature — Date

Affix NC Licensed/ Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 1369 GEOLOGIST JOAN A. SMYTH

14 N. Boylan Avenue Raleigh, NC 27603

Facility Representative Address

C-0828

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

12/30/11

Revised 6/2009

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Ground Water Monitoring Report

Fall 2011 Monitoring Event

Davidson County
Phase 1 Lined MSW Landfill
Lexington, North Carolina
NC Solid Waste Permit # 29-06

Prepared for:

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

December 2011

RICHARDSON SMITH GARDNER
& ASSOCIATES
ENGINEERING & GEOLOGICAL
SERVICES

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Ground Water Monitoring Report
Davidson County Lined MSW Landfill
Fall 2011 Semi - Annual Report

Prepared for:

Davidson County Integrated Solid Waste
1242 Old Highway 29
Thomasville, NC 27360

RSG Project No. **DAVDCO - 4**

Joan A. Smyth, P.G.
Senior Hydrogeologist

December 2011

RICHARDSON SMITH GARDNER
& ASSOCIATES
ENGINEERING & GEOLOGICAL
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Davidson County Lined MSW Landfill

Ground Water Monitoring Report
Fall 2011 Monitoring Event

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1.0 INTRODUCTION

Richardson Smith Gardner & Associates, Inc. (RSG) was contracted by Davidson County to perform their semi-annual ground water monitoring event at the Davidson County Phase 1 Lined Landfill, permit number 29-06, as required by 15A NCAC 13B.1600. Sampling was conducted September 20, 2011. The following 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 MONITORING EVENT

3.1 Sampling Locations

Ground water sampling was performed at twelve well locations (MW-1S, MW-3, MW-4, MW-5, MW-6, MW-7S, MW-7D, MW-8, MW-9A, MW-10, MW-11and MW-12). Monitoring well MW-2 was not sampled because there was insufficient water. MW-9A was installed in November 2010 to replace broken MW-9. Surface water samples were collected from SW-2, located downstream of the landfill on Jimmy's Creek. Upstream surface water sampling location, SW-1, was dry. Leachate samples were collected and analyzed for leachate specific parameters. A trip blank and equipment blank were submitted for quality control purposes.

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

3.2 Sampling Procedures

Sampling procedures followed the protocols set forth in the site's Water Quality Monitoring Plan 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 then purged three to five well volumes or until dry. Ground water elevations are provided in **Table 1**. Ground water purging and sample collection was performed using a factory sealed teflon bailer.

Field measurements for pH, specific conductivity, turbidity and temperature, were recorded for each well and surface water sampling location.

Environment 1, Inc. (NC Laboratory Certification # 10) provided laboratory prepared sample containers for the specified analytical procedures. Ground water samples were properly preserved, placed on ice and

transported to the laboratory facility within the specified hold times for each analysis.

During the sampling process, wells were inspected and found to be in good condition and free of obstructions.

4.0 FIELD AND LABORATORY RESULTS

Field parameter data is summarized in **Table 2**. Field data sheets are included in **Appendix A.** Ground water and field measurements are included as **Tables 1 and 2**.

Samples were transported to Environment 1, Inc., a North Carolina certified laboratory (NC Wastewater ID #10) and analyzed for the Appendix I VOCs via EPA Test Method 8260B and metals via EPA Test Method 200.8. Background well MW-1S samples were also analyzed for total alkalinity via Test Method SM2320B, chloride via Test Method SM4500-CLB, total dissolved residue via Test Method SM 2540C, sulfate via Test Method SM426C and iron via Test Method SM3111B. A trip blank (TB) and equipment blank (EB) were also submitted for quality control purposes. The laboratory analytical report is included as Appendix B.

Samples were transported to the laboratory facility under proper chain of custody analyzed at the specified Method Detection Limits (MDL)[1]. The laboratory analysis is included in **Appendix C**.

Six inorganic constituents cobalt (MW-3), copper (MW-3, MW-4, MW-7S, MW-8, MW-9A and MW-11), total chromium (MW-7S and MW-11), iron (MW-1S), vanadium (MW-3, MW-7S, MW-8 and MW-11) and zinc (MW-3, MW-4, MW-7S, MW8, MW-9A, MW-11 and MW-12) were detected above the Solid Waste Section Practical Quantitation Limits (SWSLs). The following inorganic constituents were detected above their 15A NCAC 2L.0200 (2L)/Ground Water Protection Standards:

- Cobalt (MW-1S, MW-3, MW-4, MW-5, MW-7S, MW-8, MW-9A, MW-10 and MW-11);
- Chromium (MW-7S and MW-11);
- iron (MW-1s); and
- vanadium (MW-1S, MW-3, MW-4, MW-5, MW-6, MW-7S, MW-7D, MW-8, MW-9A, MW-10, MW-11and MW-12)

Cobalt detections except for MW-3 and vanadium detections except for MW-3, MW-7S, MW-8 and MW-11 were "j-qualified" as non-quantifiable values. Elevated turbidity measurements indicate a high bias for metals in samples for this event. The inorganic concentrations in background well MW-1s indicate metals are likely naturally occurring. Cadmium was detected above the 2B standard in SW-2.

No organic constituents were detected above the SWSL or 2L Standard for this event.

The laboratory results for inorganic and organic detections are summarized in **Tables 3 and 4**, respectively, and are included in **Appendix C**. Time versus concentration graphs for cobalt, chromium, iron and vanadium are presented in **Appendix D**.

1 New guidelines for electronic submittal of environmental monitoring data memo, NCDENR DWM, Solid Waste Section, October 27, 2006.

A leachate sample was collected from the lined landfill. This sample was analyzed for Appendix I metals via EPA Test Method 200.8 and VOCs via EPA Test Method 8260B as well as BOD via Test Method SM5210B, COD via Test Method HACH8000, nitrate nitrogen via EPA Test Method 353.2 and total phosphorus via Test Method SM426C. No organic constituents were detected. The laboratory report is included in **Appendix C** and leachate results are provided in **Table 5**.

5.0 STATISTICAL ANALYSIS

No statistical analyses were performed on the analytical data based on the latest version of 15A NCAC 13B.1632 and .1633 effective April 1, 2011.

6.0 GROUNDWATER CHARACTERIZATION

A potentiometric surface map was prepared for the site from ground water elevation data from this sampling event. Ground water velocity was calculated for each monitoring well on-site 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 1 lined MSW landfill ranged from 0.0032 feet/day (MW-6) to 1.51 feet/day (MW-11). Calculations are included in **Table 6**. Groundwater elevations indicate the flow direction underneath the lined MSW landfill is generally north and northwest towards Jimmy's Creek. This is consistent with ground water flow patterns previously observed at this site. The potentiometric surface map is presented as **Figure 1**.

7.0 CONCLUSIONS

The analytical results for the Phase 1 lined landfill are consistent with reported historic inorganic detections. Inorganic detections are likely naturally occurring, due to turbidity and suspended solids in the samples and are not indicative of landfill impact. Elevated turbidity can impact inorganic detections as a "high biased" result in ground water analysis. Most samples that yielded elevated inorganic constituents indicated elevated turbidity measurements during sample collection. The next ground water monitoring event is tentatively scheduled for March 2012. Sampling results and analysis will be reported to NCDENR in accordance with 15A NCAC 13B.

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Figures

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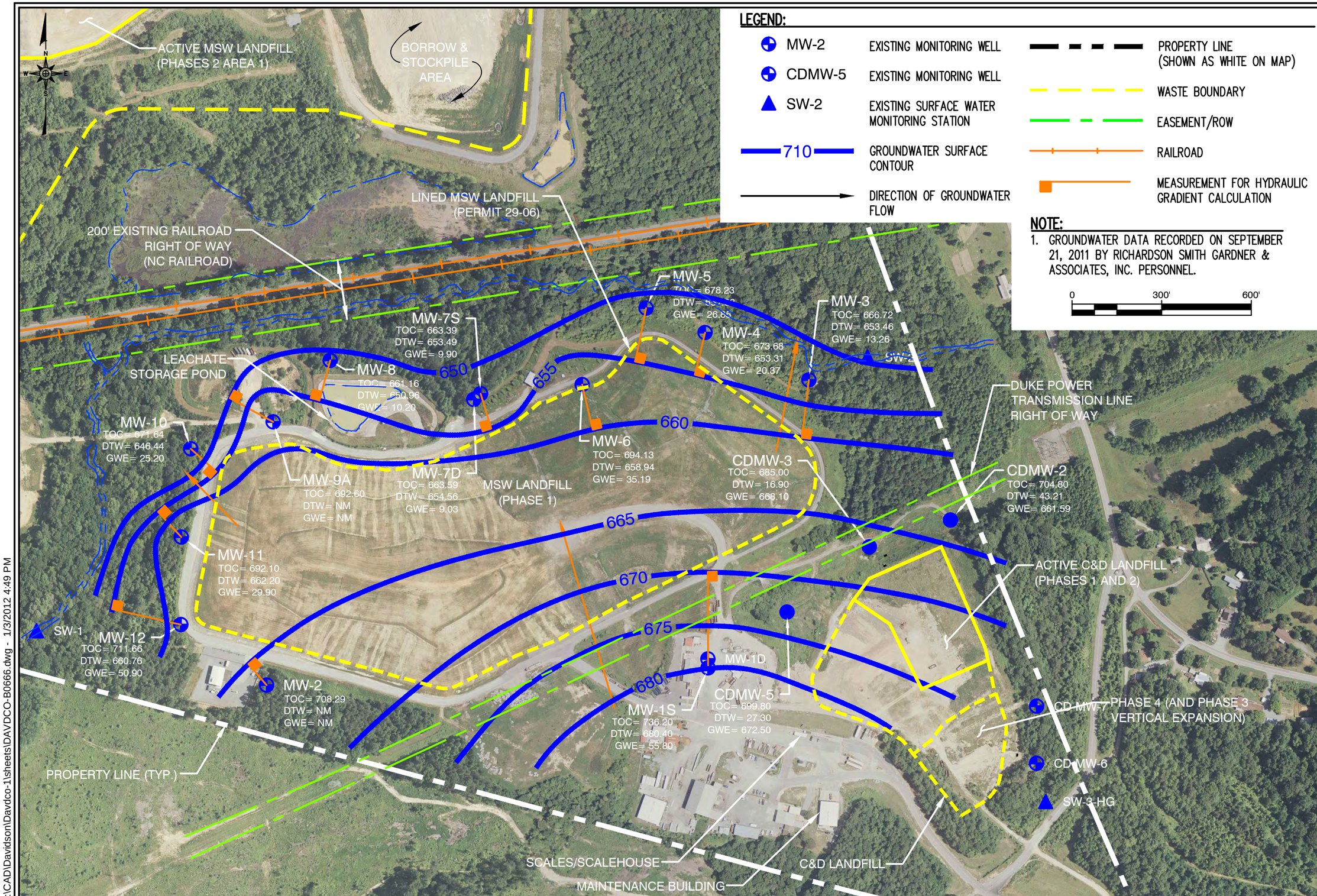

LEGEND:

MW-2	EXISTING MONITORING WELL
CDMW-5	EXISTING MONITORING WELL
SW-2	EXISTING SURFACE WATER MONITORING STATION
710	GROUNDWATER SURFACE CONTOUR
	DIRECTION OF GROUNDWATER FLOW
	PROPERTY LINE (SHOWN AS WHITE ON MAP)
	WASTE BOUNDARY
	EASEMENT/ROW
	RAILROAD
	MEASUREMENT FOR HYDRAULIC GRADIENT CALCULATION

NOTE:

1. GROUNDWATER DATA RECORDED ON SEPTEMBER 21, 2011 BY RICHARDSON SMITH GARDNER & ASSOCIATES, INC. PERSONNEL.

0 300' 600'

RICHARDSON SMITH GARDNER & ASSOCIATES
NC LIC. NO. C-0828 (Engineering)
14 N. Boylan Ave. Raleigh, N.C. 27603
ph: 919-828-0577
fax: 919-828-3899
www.rsgengineers.com

FIGURE NO.	2
FILE NAME	DAVDCO-B0666
SCALE:	AS SHOWN
PROJECT NO.	DAVDCO-1
CHECKED BY:	M.M.G.
DRAWN BY:	W.R.B.
DATE:	Jan. 2012

TITLE:
POTENTIOMETRIC SURFACE MAP
FALL 2011
PHASE 1 (CLOSED)
DAVIDSON COUNTY, NC

G:\CAD\Davidson\Davdco-1\sheets\DAVDCO-B0666.dwg - 1/3/2012 4:49 PM

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Tables

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By: MG
Date: 11/28/2011

Table 1
Ground Water Elevations
Davidson County Phase 1 Lined Landfill
9/20/2011

Well	Northing	Easting	TOC Elevation (feet)	Water Level (feet)	GW Elev (feet)
MW-1S	763311.06	1650889.31	736.20	55.80	680.40
MW-2	763253.60	1649411.40	708.29	DRY	NA
MW-3	764274.92	1651226.41	666.72	13.26	653.46
MW-4	764433.34	1650879.10	673.68	20.37	653.31
MW-5	764515.15	1650681.80	678.23	26.85	651.38
MW-6	764259.47	1650467.49	694.13	35.19	658.94
MW-7S	764228.53	1650127.95	663.39	9.90	653.49
MW-7D	764228.53	1650127.95	663.59	9.03	654.56
MW-8	764340.45	1649624.12	661.16	10.20	650.96
MW-9A	764134.52	1649433.54	692.60	31.20	661.40
MW-10	764044.52	1649157.57	671.64	25.20	646.44
MW-11	763749.09	1649125.82	692.10	29.90	662.20
MW-12	763456.03	1649124.23	711.66	50.90	660.76

Notes: Survey Data collected by Michael Green and Associates.
NA - Water elevation for MW-2 is not available as this well was dry.

By: MG

Date: 11/28/2011

Table 2
Field Parameters
Davidson County Phase 1 Lined Landfill
9/20/2011

Well	pH (Std. Units)	Conductivity (umhos)	Temp. (celsius)	Turbidity (NTU)
MW-1	6.6	550	17.5	NA
MW-3	6.7	180	16	131
MW-4	6.2	100	14	168
MW-5	6.4	120	14	153
MW-6	7.7	200	15.5	NA
MW-7S	NR	170	16	497
MW-7d	6.2	60	17	90
MW-8	7.7	100	16	NA
MW-9A	8.3	280	15	NA
MW-10	7.4	280	14	NA
MW-11	7.7	290	14	NA
MW-12	8.1	480	15	NA
SW-2	6.3	200	17	21

Notes: Data Collected by RSG personel, Don Misenheimer and Lindsay Quant.
MW-2 and SW-1 were dry therefore field meaurements were not recorded for the September event.
NA - Turbidity meter failed during monitoring event after several wells. Data collected prior to failure is reported.

By: MG
Date: 11/23/2011

Table 3
Detected Inorganic Constituents
Davidson County Phase 1 Lined Landfill
9/20/2011

Parameter	SWSL	2L or GWP	2B	MW-1S	MW-3	MW-4	MW-5	MW-6	MW-7S	MW-7D	MW-8	MW-9A	MW-10	MW-11	MW-12	SW-2
antimony	6	1 §	640	ND	ND	ND	ND	ND	ND	0.15 J	ND	ND	ND	ND	ND	ND
arsenic	10	10	10	0.28 J	0.34 J	0.22 J	ND	ND	0.72 J	ND	0.43 J	0.68 J	ND	0.66 J	ND	0.48 J
barium	100	700	2000000	38.8 J	**325**	87.2	69.5 J	13 J	87.9 J	9.5 J	56.4 J	**134**	7.5 J	50.1 J	1.1 J	**47.3**
beryllium	1	4 §	6.5	ND	0.29 J	0.1 J	0.07 J	ND	0.35 J	ND	0.15 J	0.16 J	0.08 J	0.49 J	ND	ND
cadmium	1	2	2	0.04 J	0.12 J	0.09 J	0.07 J	0.11 J	0.15 J	0.14 J	0.08 J	0.39 J	0.04 J	0.21 J	0.06 J	**6**
cobalt	10	1 §	270	1.2 J	**11**	4.3 J	1.9 J	0.09 J	6.7 J	0.38 J	7.7 J	7.3 J	1.3 J	5.6 J	0.2 J	2.5 J
copper	10	1000	7	2.7 J	**44**	**19**	5.7 J	0.38 J	**34**	2.4 J	**14**	**47**	3.2 J	**27**	0.53 J	0.46 J
chromium, total	10	10	50	0.76 J	4.3 J	7.6 J	2.8 J	ND	**11**	ND	9.2 J	3.6 J	3.6 J	**21**	0.3 J	ND
iron	300	300	1000	**1430**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
manganese	50	50	200	46 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
lead	10	15	25	0.63 J	2.4 J	1.5 J	0.87 J	0.1 J	2.8 J	0.2 J	8.6 J	4.8 J	0.57 J	5.8 J	0.08 J	0.11 J
nickel	50	100	88	1.4 J	9.7 J	3.7 J	1.6 J	ND	6.7 J	ND	4.8 J	17.2	1.5 J	9.8 J	0.19 J	0.2 J
selenium	10	20	5	0.56 J	ND	ND	ND	ND	ND	ND	ND	0.9 J	ND	0.47	0.23 J	ND
silver	10	20	0.06	ND	0.06 J	ND	ND	ND	0.08 J	ND	ND	ND	ND	0.1 J	ND	ND
thallium	5.5	0.28 §	0.47	ND	0.18 J	0.04 J	ND	ND	0.05 J	0.04 J	0.03 J	0.04 J	ND	0.05 J	ND	ND
vanadium	25	0.3 §	NE	4.5 J	**48**	19 J	11.1 J	0.63 J	**27**	2.2 J	**30**	15.6 J	10.9 J	**48**	6.9 J	0.87 J
zinc	10	1000	50	5.6 J	**80**	**32**	8.5 J	1.9 J	**33**	4.9 J	**18**	**28**	5 J	**33**	**225**	1.9 J

SWSL	-	Solid Waste Section Quantitation Limits
2L	-	Groundwater Standards (15A NCAC 2L 0200)
2B	-	NCAC 2B Standard for Class C waters
GWP	-	Groundwater Protection Standards (noted by §)
MDL	-	Method Detection Limit
Shading	-	Detection above 2L standard or GWP standard
Bold Letters	-	Constituents detected above SWSL
J	-	Detected between MDL and SWSL limit
ND	-	Not detected at or above MDL
NA	-	Not analyzed

Table units are presented in ug/l.
Lab data analysis by Environment 1, Inc. report dated 10/14/2011, ID#6038.

By: MG
Date: 11/23/2011

Table 3
Detected Organic Constituents
Davidson County Phase 1 Lined Landfill
9/20/2011

Parameter	SWSL	2L	MW-4	MW-5	MW-7S	MW-9A	Equipment Blank
acetone	100	6000	35.2 J	15.7 J	194	19.5 J	10.4 J
chloroform	5	70	ND	ND	ND	ND	0.7 J

SWSL	-	Solid Waste Section Quantitation Limits
2L	-	Groundwater Standards (15A NCAC 2L 0200)
MDL	-	Method Detection Limit
Shading	-	Detection above 2L standard
Bold Letters	-	Constituents detected above SWSL
J	-	Detected between MDL and SWSL limit
ND	-	Not detected at or above MDL
NA	-	Not analyzed

Table units are presented in ug/l.
Lab data analysis by Environment 1, Inc. report dated 10/14/2011, ID#6038.

By: MG
Date: 11/28/2011

Table 4
Davidson County Phase 1 Lined Landfill
Leachate Analytical Data
9/20/2011

Parameter	Unit	Leachate
Antimony	ug/l	0.34 J
Arsenic	ug/l	2.7 J
Barium	ug/l	**113**
Beryllium	ug/l	0.12 J
BOD	ug/l	**20000**
Cobalt	ug/l	4.8 J
COD	ug/l	**141000**
Copper	ug/l	**12**
Lead	ug/l	1.9 J
Nitrate Nitrogen as N	ug/l	540 J
Nickel	ug/l	31.3 J
Selenium	ug/l	4.3 J
Sulfate	ug/l	10800 J
Thallium	ug/l	0.03 J
Total Chromium	ug/l	7.8 J
Total Phosphorus as P	ug/l	**230**
Vanadium	ug/l	**29**
Zinc	ug/l	8.9 J

J-values were detected below the SWSL. These are estimated concentrations.
Bold indicates constituent detected above SWSL

By: MG
Date: 11/28/2011

Table 5
Aquifer Conductivity and Velocity
Davidson County Phase 1 Lined Landfill
9/20/2011

Well Number	Aquifer	Conductivity (ft/day)	Conductivity (ft/min)	Assumed Porosity (n)	Gradient (I)	Velocity (ft/day)
MW-1	Bedrock	0.14	9.72E-05	0.1	0.029	4.06E-02
MW-2	Bedrock	0.17	1.18E-04	0.1	NA	NA
MW-3	Unconsolidated	0.62	4.31E-04	0.2	0.017	5.27E-02
MW-4	Unconsolidated	1.31	9.10E-04	0.2	0.013	8.52E-02
MW-5	Unconsolidated	NA	NA	NA	NA	NA
MW-6	Bedrock	0.02	1.39E-05	0.1	0.016	3.20E-03
MW-7S	Unconsolidated	0.38	2.64E-04	0.15	0.037	9.37E-02
MW-7D	Unconsolidated	NA	NA	NA	NA	NA
MW-8	Unconsolidated	0.57	3.96E-04	0.15	0.04	1.37E-01
MW-9	Unconsolidated	2.65	1.84E-03	0.1	0.01	3.18E-01
MW-10	Unconsolidated	0.88	6.11E-04	0.2	0.061	2.68E-01
MW-11	Unconsolidated	4.13	2.87E-03	0.2	0.073	1.51E+00
MW-12	Unconsolidated	0.58	4.03E-04	0.2	0.035	1.02E-01

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 Michael Green and Associates.
Gradient calculated from Spring 2011 potentiometric surface.

NM - Not Measured
NA - Not Available

Appendix A

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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 Phase 1 Landfill **Date:__9/21/11_____**

Well ID:____MW-1s_____ **Initials:___DMM_____**

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.	X	
B. Vicinity is free of potential contaminants.	X	
C. Dead trees, etc. not in danger of falling and damaging wells.	X	
D. Well is in the same location as on field maps.	X	
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.	X	
B. Steel case is present and upright.	X	
C. Steel case is not movable and cemented in.	X	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	X	
E. Well tag is present with pertinent information.	X	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	X	
G. No evidence of tampering is present.	X	
H. Lock operates properly.	X	
I.		

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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 Phase 1 Landfill **Date:__9/21/11_____**

Well ID:____MW-2_____ **Initials:___DMM_____**

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

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

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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 Phase 1 Landfill **Date:__9/21/11_____**

Well ID:____MW-3_____ **Initials:___DMM_____**

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

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

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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 Phase 1 Landfill **Date:__9/21/11_____**

Well ID:____MW-4_____ **Initials:___DMM_____**

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

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

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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 Phase 1 Landfill **Date:__9/21/11_____**

Well ID:____MW-5_____ **Initials:___DMM_____**

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

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

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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 Phase 1 Landfill **Date:__9/21/11_____**

Well ID:____MW-6_____ **Initials:___DMM_____**

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

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

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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 Phase 1 Landfill **Date:__9/21/11_____**

Well ID:____MW-7s_____ **Initials:___DMM_____**

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.	X	
B. Vicinity is free of potential contaminants.	X	
C. Dead trees, etc. not in danger of falling and damaging wells.	X	
D. Well is in the same location as on field maps.	X	
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.	X	
B. Steel case is present and upright.	X	
C. Steel case is not movable and cemented in.	X	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	X	
E. Well tag is present with pertinent information.	X	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	X	
G. No evidence of tampering is present.	X	
H. Lock operates properly.	X	
I.		

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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 Phase 1 Landfill **Date:__9/21/11_____**

Well ID:____MW-7d_____ **Initials:___DMM_____**

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.	X	
B. Vicinity is free of potential contaminants.	X	
C. Dead trees, etc. not in danger of falling and damaging wells.	X	
D. Well is in the same location as on field maps.	X	
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.	X	
B. Steel case is present and upright.	X	
C. Steel case is not movable and cemented in.	X	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	X	
E. Well tag is present with pertinent information.	X	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	X	
G. No evidence of tampering is present.	X	
H. Lock operates properly.	X	
I.		

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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 Phase 1 Landfill **Date:__9/21/11_____**

Well ID:____MW-8_____ **Initials:___DMM_____**

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

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

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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 Phase 1 Landfill **Date:__9/21/11_____**

Well ID:____MW-9a_____ **Initials:___DMM_____**

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.	X	
B. Vicinity is free of potential contaminants.	X	
C. Dead trees, etc. not in danger of falling and damaging wells.	X	
D. Well is in the same location as on field maps.	X	
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.	X	
B. Steel case is present and upright.	X	
C. Steel case is not movable and cemented in.	X	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	X	
E. Well tag is present with pertinent information.	X	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	X	
G. No evidence of tampering is present.	X	
H. Lock operates properly.	X	
I.		

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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 Phase 1 Landfill **Date:__9/21/11_____**

Well ID:____MW-10_____ **Initials:___DMM_____**

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.	X	
B. Vicinity is free of potential contaminants.	X	
C. Dead trees, etc. not in danger of falling and damaging wells.	X	
D. Well is in the same location as on field maps.	X	
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.	X	
B. Steel case is present and upright.	X	
C. Steel case is not movable and cemented in.	X	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	X	
E. Well tag is present with pertinent information.	X	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	X	
G. No evidence of tampering is present.	X	
H. Lock operates properly.	X	
I.		

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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 Phase 1 Landfill **Date:__9/21/11_____**

Well ID:____MW-11_____ **Initials:___DMM_____**

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.	X	
B. Vicinity is free of potential contaminants.	X	
C. Dead trees, etc. not in danger of falling and damaging wells.	X	
D. Well is in the same location as on field maps.	X	
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.	X	
B. Steel case is present and upright.	X	
C. Steel case is not movable and cemented in.	X	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	X	
E. Well tag is present with pertinent information.	X	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	X	
G. No evidence of tampering is present.	X	
H. Lock operates properly.	X	
I.		

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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 Phase 1 Landfill **Date:__9/21/11_____**

Well ID:____MW-12_____ **Initials:___DMM_____**

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.	X	
B. Vicinity is free of potential contaminants.	X	
C. Dead trees, etc. not in danger of falling and damaging wells.	X	
D. Well is in the same location as on field maps.	X	
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.	X	
B. Steel case is present and upright.	X	
C. Steel case is not movable and cemented in.	X	
D. Steel case lid opens and closes correctly with no gaps. Lock can be easily applied.	X	
E. Well tag is present with pertinent information.	X	
F. Well numbers are prominently displayed (Reflective address numbers, etc.).	X	
G. No evidence of tampering is present.	X	
H. Lock operates properly.	X	
I.		

Comments/ items addressed or to be addressed:

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

Comments/ items addressed or to be addressed:

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Appendix B

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FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-2

PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 5/5/94 DATE COMPLETED: 5/5/94

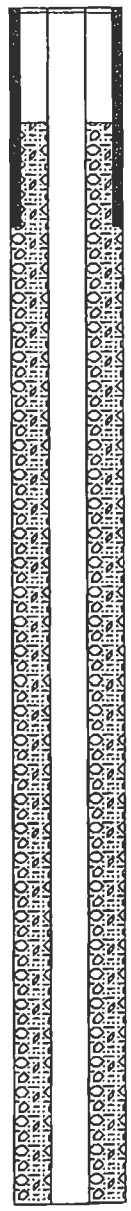
TOP OF CASING ELEVATION: -
TOTAL DEPTH: 39.0
GROUND SURFACE ELEVATION: -
SHEET: 1 OF: 2

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)		
Time		
Date:		

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	CGI	LITHOLOGY DESCRIPTION
2.0								
1.0								
0.0								SAND AND SILT: brown;fine grained.
1.0								
2.0								CLAY AND SILT AND SAND: brown to green; fine grained.
3.0	6	Ss	S1					
4.0	6 7							
5.0								
6.0								
7.0								
8.0	4	Ss	S2					
9.0	6 7							
10.0								
11.0								SAND AND SILT: brown green; fine grained.
12.0								
13.0	11	Ss	S3					
14.0	16 16							
15.0								
16.0								
17.0								
18.0	14	Ss	S4					
19.0	21 22							
20.0								

LITHOLOGY

WELL INSTALLATION



FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-2

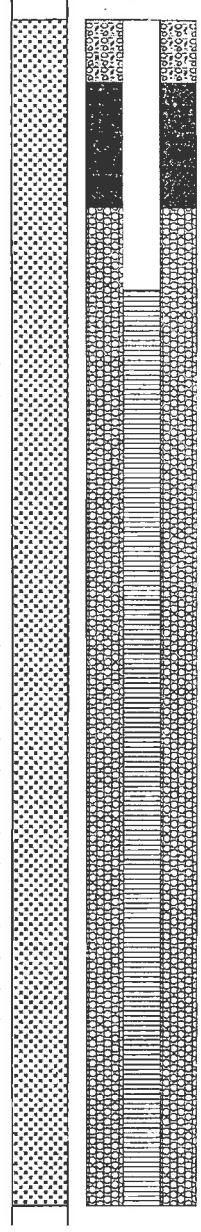
PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 5/5/94 DATE COMPLETED: 5/5/94

TOP OF CASING ELEVATION: -
TOTAL DEPTH: 39.0
GROUND SURFACE ELEVATION: -
SHEET: 2 OF 2

STATIC WATER LEVEL (BLS)		
WO=While Drilling AB=After Boring		
Depth(ft)		
Time		
Date		

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
20.0								DIORITE: white feldspar with augite, weathered
21.0								
22.0								
23.0	15	Ss	S5					
24.0	32							
	37							
25.0								
26.0								
27.0								
28.0	40	Ss	S6					
29.0	50/5							
30.0								
31.0								
32.0				W				
33.0	50/5	Ss	S7					
34.0								
35.0								
36.0								
37.0								
38.0	50/5	Ss	S8					
39.0								

DEPTH | LITHOLOGY | WELL INSTALLATION



FIELD BOREHOLE LOG

BOREHOLE NUMBER
MW-3

PROJECT NUMBER 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 4/27/94 DATE COMPLETED: 4/27/94

TOP OF CASING ELEVATION 666.72
TOTAL DEPTH 20.0
GROUND SURFACE ELEVATION 664.56
SHEET: 1 OF: 1

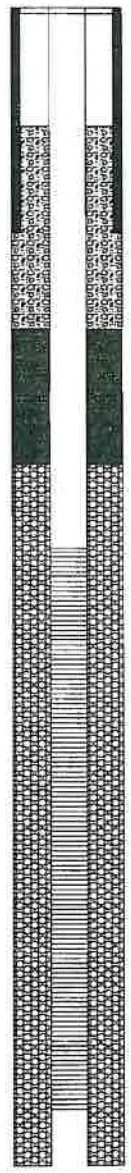
STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	12.10 AB	
Time	15:40	
Date:	05/03/94	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
2.0								
1.0								
0.0								SAND AND CLAY: organic rich, heavily rooted, trace to abundant 1/4" black and orange rind concretions, moist, firm to stiff; brown to dark brown.
1.0								
2.0								
3.0	4	Ss	S1					
4.0	5 11							
5.0								
6.0								
7.0								
8.0	10	Ss	S2					
9.0	12 15							CLAY AND SILT AND SAND: numerous white feldspar black manganese, and orange iron inclusions, firm; moist; orange brown
10.0								
11.0								
12.0								
13.0	50/6	Ss	S3					
14.0								SAND AND CLAY: medium to coarse grained sand, some muscovite and feldspar, moist, light tan to medium gray
15.0								
16.0								
17.0								
18.0	10	Ss	S4	W				
19.0	11 12							SAND AND CLAY AND SILT: 1.5 inch pegmatite zones; med. tan to gray
20.0								

DEPTH

LITHOLOGY

WELL INSTALLATION



FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-4

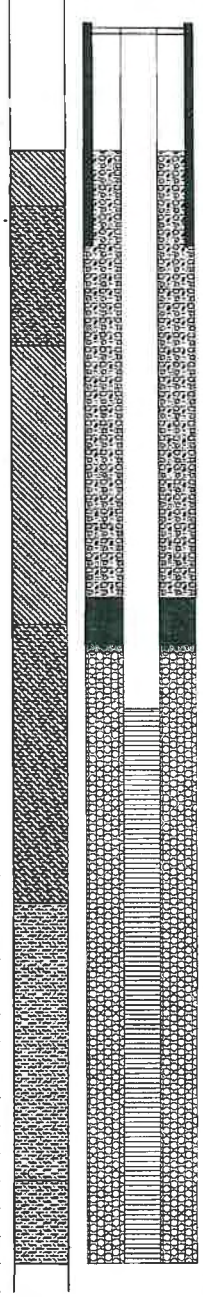
PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 4/28/94 DATE COMPLETED: 4/28/94

TOP OF CASING ELEVATION: 673.68
TOTAL DEPTH: 20.0
GROUND SURFACE ELEVATION: 671.51
SHEET 1 OF: 1

STATIC WATER LEVEL (BLS)		
WO=While Drilling AB=After Boring		
Depth(ft)	19.21 AB	
Time	16:50	
Date	05/03/94	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
2.0								
1.0								
0.0								SAND AND CLAY: tan to orange; fill
1.0								SAND AND CLAY AND SILT: rooted, med. brown
2.0								
3.0	16	Ss	S1					CLAY AND SAND: some silt, relict granite gneiss with white med to coarse feldspar, medium to fine quartz and abundant biotite laminae dry, very dense; light tan to orange tan
4.0	32							
	42							
5.0								
6.0								
7.0								
8.0	36	Ss	S2					SILT AND CLAY: trace fine biotite (2 inches), coarse clayey sand granite gneiss, coarse white feldspar and biotite, dry, very dense; dark olive green
9.0	50/4							
	25							
10.0								
11.0								
12.0								
13.0	27	Ss	S3					SAND AND SILT: with some clay; medium to coarse grained feldspar and quartz, abundant muscovite; weathered granite gneiss; equigranular, dry; very dense; light tan
14.0								
15.0								
16.0								
17.0								
18.0	36	Ss	S4	W				SAND AND SILT: fine to med feldspar, some biotite; moist, very dense, light gray
19.0	36							
	50/5							
20.0								

LITHOLOGY



WELL INSTALLATION

FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-5A

PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 4/28/94 DATE COMPLETED: 4/28/94

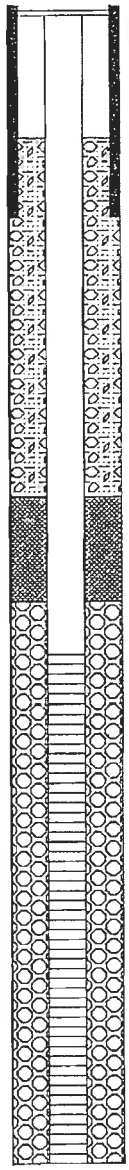
TOP OF CASING ELEVATION: 674.57
TOTAL DEPTH: 19.5
GROUND SURFACE ELEVATION: 672.23
SHEET: 1 OF: 1

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	19.45 DB	
Time	16:15	
Date:	04/28/94	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	ORGANIC VAPOR	CGI	LITHOLOGY DESCRIPTION
2.0								
1.0								
0.0								CLAY AND SILT: with manganese staining; dry; stiff; yellow tan.
1.0								
2.0								
3.0	8	Ss	S1					
4.0	7 9							
5.0								
6.0								
7.0								
8.0	12	Ss	S2					
9.0	15 25							SAND AND CLAY: med. to coarse grained quartz and feldspar; feldspar is white to pinkish; abundant biotite; some iron staining; dry; dense; weathered granite gneiss; light tan.
10.0								
11.0								
12.0								
13.0	25	Ss	S3					
14.0	50/5							SAND AND CLAY: med. to coarse feldspar (white) and quartz; abundant muscovite; orange iron staining throughout; equigranular; very dense; wet; orange tan.
15.0								
16.0								
17.0								
18.0	50/5	Ss	S4					
19.0				W				CLAY AND SAND AND SILT: med. to fine grained; abundant feldspar and blue quartz; lt. brown.
20.0								

LITHOLOGY

WELL INSTALLATION



FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-6D

PROJECT NUMBER 94012
PROJECT NAME DAVIDSON COUNTY
LOCATION LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 5/04/94 DATE COMPLETED: 5/04/94

TOP OF CASING ELEVATION 694.13
TOTAL DEPTH: 68.5
GROUND SURFACE ELEVATION 692.79
SHEET: 1 OF: 3

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)		
Time		
Date:		

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
0.0								CLAY AND SILT AND SAND: fill.
1.0								CLAY AND SAND coarse sand, light tan brown, soft, moist; fill; some roots
3.0–4.0	5 7 7	Ss	S1					
8.0–9.0	5 6 9	Ss	S2					CLAY AND SILT: tan brown to orange red; interbedded with light tan coarse sandy clay, with quartz and feldspar; soft, moist; medium dense.
13.0–14.0	6 10 12	Ss	S3					CLAY AND SILT light tan, interbedded with orange coarse sandy clay, some greenstone and wood fragments; stiff.
18.0–19.0	9 10 9	Ss	S4					CLAY AND SILT: light tan, interbedded with orange coarse sandy clay, some greenstone fragments, stiff.

DEPTH: 1.0, 0.0, 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 11.0, 12.0, 13.0, 14.0, 15.0, 16.0, 17.0, 18.0, 19.0, 20.0, 21.0

LITHOLOGY

WELL INSTALLATION

FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-6D

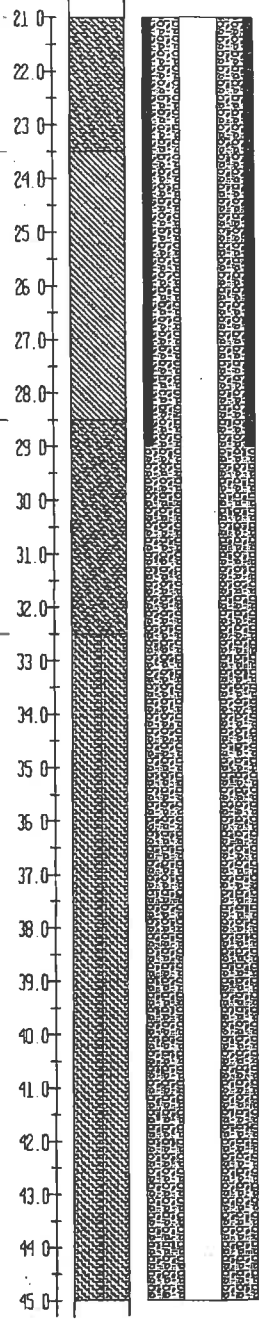
PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 5/04/94 DATE COMPLETED: 5/04/94

TOP OF CASING ELEVATION: 694.13
TOTAL DEPTH: 68.5
GROUND SURFACE ELEVATION: 692.79
SHEET 2 OF 3

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)		
Time		
Date:		

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
21.0								CLAY AND SILT: light tan; interbedded with orange coarse sandy clay, some greenstone fragments, stiff.
22.0								
23.0	6	Ss	S5					
24.0	10							CLAY AND SAND: orange brown, coarse grained; moist; stiff.
	14							
25.0								
26.0								
27.0								
28.0	12	Ss	S6					
29.0	50/5							CLAY AND SAND AND SILT: dark brown to orange and tan; heavy manganese staining; tan feldspar bands; residual weathered gneiss.
30.0								
31.0								
32.0								
33.0	50/1	Ss	S7					GRANITE GNEISS: bedrock; auger refusal
34.0								
35.0								
36.0								
37.0								
38.0								
39.0								
40.0								
41.0								
42.0								
43.0								
44.0								
45.0								

DEPTH | LITHOLOGY | WELL INSTALLATION



FIELD BOREHOLE LOG

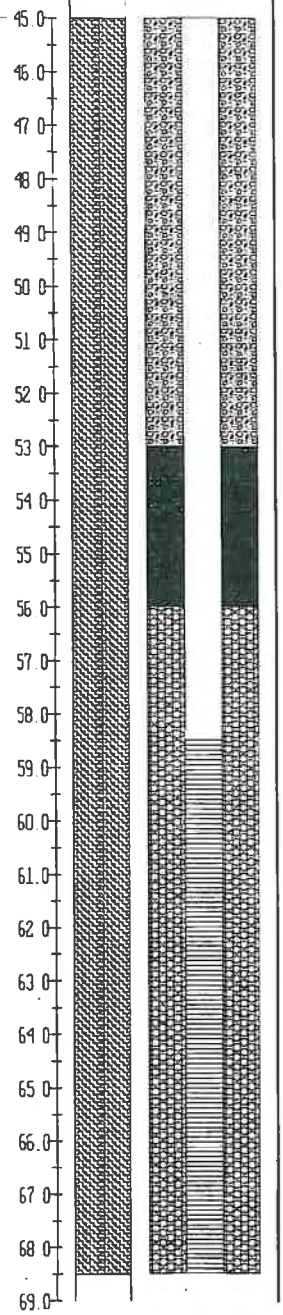
BOREHOLE NUMBER: MW-6D

PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 5/04/94 DATE COMPLETED: 5/04/94

TOP OF CASING ELEVATION: 694.13
TOTAL DEPTH: 68.5
GROUND SURFACE ELEVATION: 692.79
SHEET: 3 OF 3

STATIC WATER LEVEL (BLS)		
WO=While Drilling AB=After Boring		
Depth(ft)		
Time		
Date		

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
45.0								GRANITE GNEISS: bedrock.
46.0								
47.0								
48.0								
49.0								
50.0								
51.0								
52.0								
53.0								
54.0								
55.0								
56.0								
57.0								
58.0								
59.0								
60.0								
61.0								
62.0								
63.0								
64.0								
65.0								
66.0								
67.0								
68.0								
69.0								



FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-7

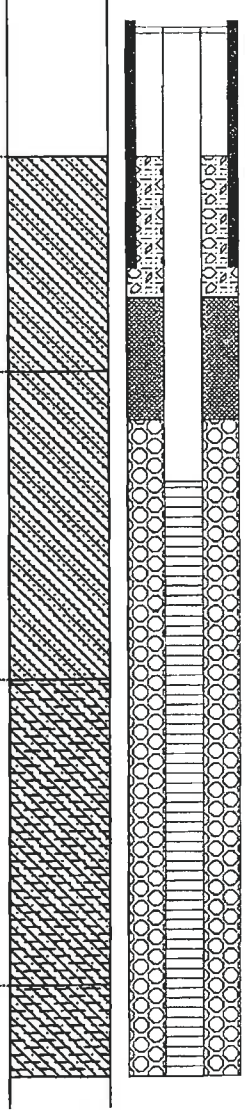
PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 4/25/94 DATE COMPLETED: 4/25/94

TOP OF CASING ELEVATION: 663.39
TOTAL DEPTH: 15.0
GROUND SURFACE ELEVATION: 661.30
SHEET: 1 DF: 1

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	5.08 AB	
Time	12:43	
Date:	05/03/94	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	ORGANIC VAPOR	CGI	LITHOLOGY DESCRIPTION
2.0								
1.0								
0.0								CLAY AND SAND: fill; orange brown; moist.
1.0								
2.0								
3.0	13	Ss	S1	W				
4.0	17							CLAY AND SAND: orange brown to orange gray; hard; moist; 1 inch orange to tan clay sand with quartz (granite residuum); 3 inch green and white chlorite feldspar gneiss; wet; SM.
	25							
5.0	26							
6.0								
7.0								
8.0	9	Ss	S2					
9.0	11							CLAY AND SILT: relict chlorite schist structure with trace of white feldspar veins; dark green and white; hard; wet.
	14							
10.0								
11.0								
12.0								
13.0	7	Ss	S3					
14.0	11							CLAY AND SILT: chlorite feldspar schist; one 45 degree fracture; dk. green and white.
	16							
15.0								

LITHOLOGY



WELL INSTALLATION

FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-7D

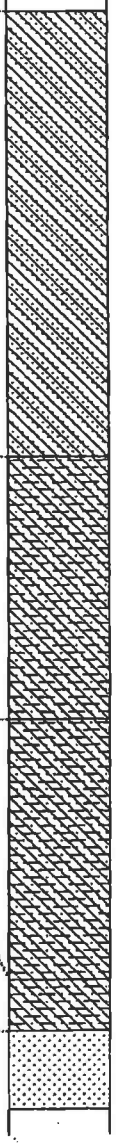
PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER AND AIR ROTARY
WEATHER: SUNNY
FIELD PARTY: KENNY MOGLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 4/26/94 DATE COMPLETED: 4/26/94.

TOP OF CASING ELEVATION: 663.59
TOTAL DEPTH: 46.0
GROUND SURFACE ELEVATION: 661.44
SHEET: 1 OF: 2

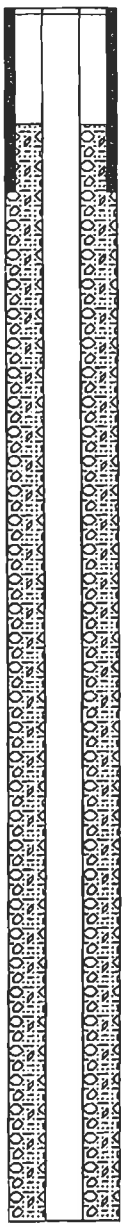
STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	4.55 AB	
Time	4:37	
Date:	04/26/94	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	ORGANIC VAPOR	CGI	LITHOLOGY DESCRIPTION
2.0								
1.0								
0.0								CLAY AND SAND: with organics; yellowish orange grading to gray green coarse sandy clay; some relict chlorite schist fabric; dry to moist; hard.
1.0								
2.0								
3.0	8	Ss	S1					
4.0	13							
	18							
5.0								
6.0								
7.0								
8.0	8	Ss	S2					
9.0	11							CLAY AND SILT: gray to green; relict chlorite schist; with heavy orange brown iron staining and bands; saprolite; moist; trace hair veins; hard.
	13							
10.0								
11.0								
12.0								
13.0	13	Ss	S3					
14.0	13			W				CLAY AND SILT: equigranular chlorite/white feldspar schist with red/brown iron stained fractures; moist; dense.
	19							
15.0								
16.0								
17.0								SILT AND CLAY: gray green chlorite feldspar schist; numerous miscellaneously oriented feldspar microveins; orange staining.
18.0	20	Ss	S4					
19.0	36							
	50/6							
20.0								SAND: coarse grained feldspar, quartz muscovite granite; iron stained.
21.0								

LITHOLOGY



WELL INSTALLATION



FIELD BOREHOLE LOG

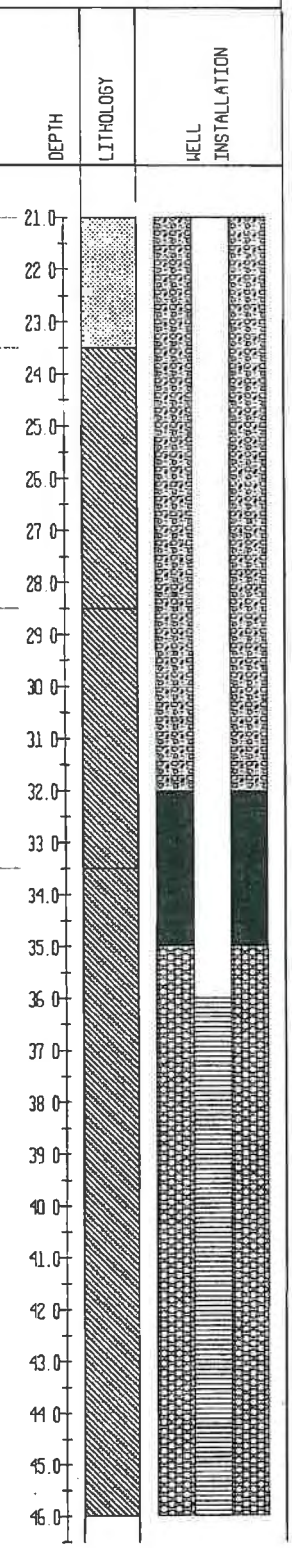
BOREHOLE NUMBER: MW-7D

PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 4/26/94 DATE COMPLETED: 4/26/94

TOP OF CASING ELEVATION 663.59
TOTAL DEPTH 46.0
GROUND SURFACE ELEVATION 661.44
SHEET: 2 OF: 2

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(Ft)	4.55 AB	
Time	4:37	
Date:	04/26/94	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
21.0								SAND coarse grained quartz muscovite granite, medium gray with gray quartz; heavy iron staining
22.0								
23.0	25	Ss	S5					
24.0	50/6 50/5							SAND AND CLAY coarse sand, orange brown porphyritic gray quartz/white feldspar trace muscovite and hornblende granite; heavy iron staining
25.0								
26.0								
27.0								
28.0	50/5	Ss	S6					
29.0								SAND AND CLAY coarse sand, brown; porphyritic gray quartz/white feldspar; trace muscovite and hornblende granite, heavy iron staining
30.0								
31.0								
32.0								
33.0	50/4	Ss	S7					
34.0								SAND AND CLAY coarse sand, dark brown; porphyritic gray quartz/white feldspar, trace muscovite and hornblende granite, heavy iron staining
35.0								
36.0								
37.0								
38.0	50/5	Ss	S8					
39.0								
40.0								
41.0								
42.0								
43.0	50/3	Ss	S9					
44.0								
45.0								
46.0								



FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-8

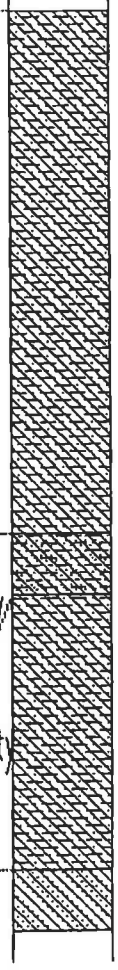
PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 4/27/94 DATE COMPLETED: 4/27/94

TOP OF CASING ELEVATION: 661.16
TOTAL DEPTH: 15.0
GROUND SURFACE ELEVATION: 659.83
SHEET: 1 OF: 1

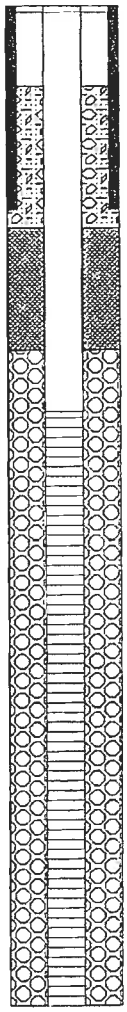
STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	6.34 AB	
Time	9:37	
Date:	04/28/94	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	ORGANIC VAPOR	CGI	LITHOLOGY DESCRIPTION
2.0								
1.0								
0.0								CLAY AND SILT: with medium to coarse sand; engineered fill (nine inches thick); numerous root fragments; mottled iron staining; wetland soil; dark grayish brown.
1.0								
2.0								
3.0	7	Ss	S1					
4.0	4							
	5							
5.0								
6.0								
7.0				W				
8.0	6	Ss	S2					
9.0	4							CLAY AND SAND AND SILT: sand is med. to coarse blue quartz; angular; some reddish orange sandy clay; moist; med. dense.
	4							
10.0								
11.0								
12.0								CLAY AND SILT: light bluish green with tan silty clay; some iron staining; slight relict chlorite/feldspar schist fabric.
13.0	10	Ss	S3					
14.0	10							
	9							CLAY AND SAND: relict granite texture; quartz; feldspar; equigranular; moist.
15.0								

LITHOLOGY



WELL INSTALLATION



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

FIELD BOREHOLE LOG

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

PROJECT NAME: **Davidson Co Phase 1 Landfill**
LOCATION: **Davidson County**
DRILLING CO: **Geologic Explorations**
DRILLING METHOD: **AH**
FIELD PARTY: **Johnny Burr**
GEOLOGIST: **Lindsay Quant**
DATE BEGUN: **11/11/10** COMPLETED: **11/11/10**

TOTAL DEPTH: **33**
TOP OF CASING ELEV.:
GROUND ELEV.: **686.32**
NORTHING: **764126.597**
EASTING: **1649351.338**

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

DEPTH Feet	BLOW COUNT Per 6"	SAMPLING METHOD	RECOVERY Inches	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH Feet	WELL INSTALLATION
0.0				AH	SILT: Dry tan silt.		0.0	
5.0		Grab			SILTY CLAY: Dry tan silty clay.		5.0	
10.0		Grab					10.0	
					SANDY SILT: Dry tan sandy silt.			
15.0		Grab					15.0	
20.0		Grab					20.0	
					SILT: Dry to moist gray silt.			
25.0		Grab					25.0	
					PWR: Moist to wet gray silty partially weathered granitic rock. Boring terminated at 33 feet.			
30.0		Grab					30.0	

FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-1D

PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER AND AIR ROTARY
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 5/03/94 DATE COMPLETED: 5/03/94

TOP OF CASING ELEVATION: 736.18
TOTAL DEPTH: 88.5
GROUND SURFACE ELEVATION: 735.01
SHEET: 1 OF: 4

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	51.88 AB	
Time	9:37	
Date:	05/04/94	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	OGI	LITHOLOGY DESCRIPTION
2.0								
1.0								
0.0								CLAY AND SILT: with sand; white quartz and weathered feldspar; grades into light green weathered chlorite schist.
1.0								
2.0								
3.0	15	Ss	S1					
4.0	50/5							
5.0								
6.0								
7.0								
8.0	26	Ss	S2					
9.0	50/4							CLAY AND SILT: chlorite schist; light bluish green; some black stained vertical fractures; very dense; dry.
10.0								
11.0								
12.0								
13.0	42	Ss	S3					
14.0	50/4							CLAY AND SILT: bluish gray green; weathered chlorite schist; with white feldspar (talc) veins; some black to orange stained subvertical fractures.
15.0								
16.0								
17.0								
18.0	35	Ss	S4					
19.0	50/4							CLAY AND SILT: weathered chlorite/white feldspar schist; horizontal to subvertical fractures; dry; very dense; auger refusal.
20.0								
21.0								

LITHOLOGY

WELL INSTALLATION

FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-1D

PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: AIR ROTARY
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 5/03/94 DATE COMPLETED: 5/03/94

TOP OF CASING ELEVATION: 736.18
TOTAL DEPTH: 88.5
GROUND SURFACE ELEVATION: 735.01
SHEET: 2 OF: 4

STATIC WATER LEVEL (BLS)		
WD-While Drilling AB-After Boring		
Depth(ft)	51.88 AB	
Time	9:37	
Date:	05/04/94	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	ORGANIC VAPOR	OGI	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL INSTALLATION
21.0								SCHIST: chlorite/white feldspar schist; few horizontal to subvertical fractures.		
22.0										
23.0										
24.0										
25.0										
26.0										
27.0										
28.0										
29.0										
30.0										
31.0										
32.0										
33.0										
34.0										
35.0										
36.0										
37.0										
38.0										
39.0										
40.0										
41.0										
42.0										
43.0										
44.0										
45.0										

FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-1D

PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: AIR ROTARY
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 5/03/94 DATE COMPLETED: 5/03/94

TOP OF CASING ELEVATION: 736.18
TOTAL DEPTH: 88.5
GROUND SURFACE ELEVATION: 735.01
SHEET: 3 OF: 4

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	51.88 AB	
Time	9:37	
Date:	05/04/94	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	ORGANIC VAPOR	CGI	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL INSTALLATION
45.0								SCHIST: chlorite/white feldspar schist; few horizontal to subvertical fractures.		
46.0										
47.0										
48.0										
49.0										
50.0										
51.0										
52.0										
53.0										
54.0										
55.0										
56.0										
57.0										
58.0										
59.0										
60.0										
61.0										
62.0										
63.0										
64.0										
65.0										
66.0										
67.0										
68.0										

FIELD BOREHOLE LOG

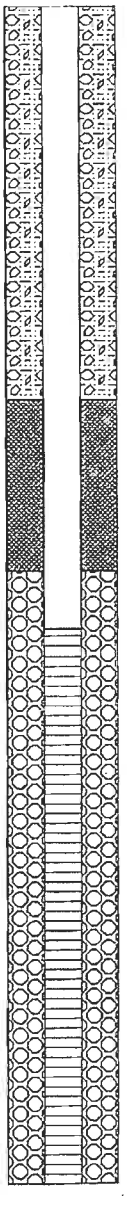
BOREHOLE NUMBER: MW-10

PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: AIR ROTARY
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 5/03/94 DATE COMPLETED: 5/03/94

TOP OF CASING ELEVATION: 736.18
TOTAL DEPTH: 88.5
GROUND SURFACE ELEVATION: 735.01
SHEET: 4 OF: 4

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(Ft)	51.88 AB	
Time	9:37	
Date:	05/04/94	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	ORGANIC VAPOR	CGI	LITHOLOGY DESCRIPTION	LITHOLOGY	WELL INSTALLATION
68.0								SCHIST: chlorite/white feldspar schist; few horizontal to subvertical fractures.		
69.0										
70.0										
71.0										
72.0										
73.0										
74.0										
75.0										
76.0										
77.0										
78.0										
79.0										
80.0										
81.0										
82.0										
83.0										
84.0										
85.0										
86.0										
87.0										
88.0										



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Appendix C

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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#: 6038

DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
133 SPRING AVENUE
FUQUAY VARINA ,NC 27526

DATE COLLECTED: 09/20/11
DATE REPORTED : 10/14/11

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-1S	MW-2	MW-3	MW-4	MW-5	Analysis Date	Analyst	Method Code
Total Alkalinity, mg/l	1.0	1.0	276					09/23/11	TRB	SM2320B
Chloride, mg/l	5.0	5.0	44					09/29/11	HLB	SM4500-CLB
Total Dissolved Residue, mg/l	1.0	1.0	421					09/27/11	MEL	SM2540C
Sulfate, mg/l	5.0	250.0	34.8 J					09/30/11	TRB	SM426C
Antimony, ug/l	0.14	6.0	--- U	Missing	--- U	--- U	--- U	09/27/11	CMF	EPA200.8
Arsenic, ug/l	0.10	10.0	0.28 J	Missing	0.34 J	0.22 J	--- U	09/27/11	CMF	EPA200.8
Barium, ug/l	0.02	100.0	38.8 J	Missing	325	87.2 J	69.5 J	09/27/11	CMF	EPA200.8
Beryllium, ug/l	0.02	1.0	--- U	Missing	0.29 J	0.10 J	0.07 J	09/27/11	CMF	EPA200.8
Cadmium, ug/l	0.02	1.0	0.04 J	Missing	0.12 J	0.09 J	0.07 J	09/27/11	CMF	EPA200.8
Cobalt, ug/l	0.03	10.0	1.2 J	Missing	11	4.3 J	1.9 J	09/27/11	CMF	EPA200.8
Copper, ug/l	0.02	10.0	2.7 J	Missing	44	19	5.7 J	09/27/11	CMF	EPA200.8
Total Chromium, ug/l	0.04	10.0	0.76 J	Missing	4.3 J	7.6 J	2.8 J	09/27/11	CMF	EPA200.8
Iron, ug/l	15.9	300.0	1430					10/06/11	ADD	SM3111B
Manganese, ug/l	0.61	50.0	46 J					10/03/11	LFJ	EPA200.7
Lead, ug/l	0.02	10.0	0.63 J	Missing	2.4 J	1.5 J	0.87 J	09/27/11	CMF	EPA200.8
Mercury, ug/l	0.05	0.20	--- U					09/27/11	CMF	EPA200.8
Nickel, ug/l	0.04	50.0	1.4 J	Missing	9.7 J	3.7 J	1.6 J	09/27/11	CMF	EPA200.8
Selenium, ug/l	0.20	10.0	0.56 J	Missing	--- U	--- U	--- U	09/27/11	CMF	EPA200.8
Silver, ug/l	0.02	10.0	--- U	Missing	0.06 J	--- U	--- U	09/27/11	CMF	EPA200.8
Thallium, ug/l	0.02	5.5	--- U	Missing	0.18 J	0.04 J	--- U	09/27/11	CMF	EPA200.8
Vanadium, ug/l	0.14	25.0	4.5 J	Missing	48	19.0 J	11.1 J	09/27/11	CMF	EPA200.8
Zinc, ug/l	0.24	10.0	5.6 J	Missing	80	32	8.5 J	09/27/11	CMF	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quanititation 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#: 6038

DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
133 SPRING AVENUE
FUQUAY VARINA ,NC 27526

DATE COLLECTED: 09/20/11
DATE REPORTED : 10/14/11

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-6	MW-7D	MW-8	MW-7S	MW-9A	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.14	6.0	--- U	0.15 J	--- U	--- U	--- U	09/27/11	CMF	EPA200.8
Arsenic, ug/l	0.10	10.0	--- U	--- U	0.43 J	0.72 J	0.68 J	09/27/11	CMF	EPA200.8
Barium, ug/l	0.02	100.0	13.0 J	9.5 J	56.4 J	87.9 J	134	09/27/11	CMF	EPA200.8
Beryllium, ug/l	0.02	1.0	--- U	--- U	0.15 J	0.35 J	0.16 J	09/27/11	CMF	EPA200.8
Cadmium, ug/l	0.02	1.0	0.11 J	0.14 J	0.08 J	0.15 J	0.39 J	09/27/11	CMF	EPA200.8
Cobalt, ug/l	0.03	10.0	0.09 J	0.38 J	7.7 J	6.7 J	7.3 J	09/27/11	CMF	EPA200.8
Copper, ug/l	0.02	10.0	0.38 J	2.4 J	14	34	47	09/27/11	CMF	EPA200.8
Total Chromium, ug/l	0.04	10.0	--- U	--- U	9.2 J	11	3.6 J	09/27/11	CMF	EPA200.8
Lead, ug/l	0.02	10.0	0.10 J	0.20 J	8.6 J	2.8 J	4.8 J	09/27/11	CMF	EPA200.8
Nickel, ug/l	0.04	50.0	--- U	--- U	4.8 J	6.7 J	17.2 J	09/27/11	CMF	EPA200.8
Selenium, ug/l	0.20	10.0	--- U	--- U	--- U	--- U	0.90 J	09/27/11	CMF	EPA200.8
Silver, ug/l	0.02	10.0	--- U	--- U	--- U	0.08 J	--- U	09/27/11	CMF	EPA200.8
Thallium, ug/l	0.02	5.5	--- U	0.04 J	0.03 J	0.05 J	0.04 J	09/27/11	CMF	EPA200.8
Vanadium, ug/l	0.14	25.0	0.63 J	2.2 J	30	27	15.6 J	09/27/11	CMF	EPA200.8
Zinc, ug/l	0.24	10.0	1.9 J	4.9 J	18	33	28	09/27/11	CMF	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quanititation 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 (LINED)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
133 SPRING AVENUE
FUQUAY VARINA, NC 27526

CLIENT ID: 6038

ANALYST: MAO
DATE COLLECTED: 09/20/11
DATE ANALYZED: 09/26/11
DATE REPORTED: 10/14/11

Page: 1

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-18	MW-3	MW-4	MW-5	MW-6
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	35.20 J	15.70 J	--- 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 Quanititation 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 (LINED)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
133 SPRING AVENUE
FUQUAY VARINA, NC 27526

REVIEWED BY:

CLIENT ID: 6038

ANALYST: MAO
DATE COLLECTED: 09/20/11
DATE ANALYZED: 09/26/11
DATE REPORTED: 10/14/11

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-7D	MW-8	MW-7S	MW-9A
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	194.00	19.50 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	--- 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-Dichloroethane	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. Tetrachloroethane	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 = Betwesn MDL and SWSL, U = Below ALL Quanititation 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: 6038 **Week:** 39

DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
133 SPRING AVENUE
FUQUAY VARINA NC 27526

(919) 828-0577

DISINFECTION
- [ ] CHLORINE
- [ ] UV
- [ ] NONE
- [ ] _____

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB): 12 12 12 12

CHEMICAL PRESERVATION

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

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l OR ug/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Alkalinity	Chloride	TDS	Sulfate	Metals	EPA 8260B	8260 Dup. 1	8260 Dup. 2
CONTAINER TYPE, P/G						P	P	P	P	P	G	G	G
CHEMICAL PRESERVATION						A	A	A	A	A	E	E	E
MW-1S	9/20/11	10:32a			8	■	■	■	■	■	■	■	■
MW-2	9/20/11	Dry			3					■	■	■	
MW-3	9/20/11	8:52a			3					■	■	■	
MW-4	9/20/11	9:14a			3					■	■	■	
MW-5	9/20/11	9:07a			3					■	■	■	
MW-6	9/20/11	10:07a			3					■	■	■	
MW-7D	9/20/11	9:58a			3					■	■	■	
MW-8	9/20/11	10:19a			3					■	■	■	
MW-7S	9/20/11	9:51a			3					■	■	■	
MW-9A	9/20/11	11:20a			3					■	■	■	

PARAMETERS

CLASSIFICATION:
- [ ] WASTEWATER (NPDES)
- [ ] DRINKING WATER
- [ ] DWQ/GW
- [x] SOLID WASTE SECTION

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

SAMPLES COLLECTED BY: (Please Print) LAQ & DMM

SAMPLES RECEIVED IN LAB AT 0.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
[signature]	9/22/11 2:00p	[signature]	9/23 8:00
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

№ 222576

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#: 6038 B

DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
133 SPRING AVENUE
FUQUAY VARINA ,NC 27526

DATE COLLECTED: 09/20/11
DATE REPORTED : 10/14/11

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-10	MW-11	MW-12	SW-1	SW-2	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.14	6.0	--- U	--- U	--- U	Missing	--- U	09/27/11	CMF	EPA200.8
Arsenic, ug/l	0.10	10.0	--- U	0.66 J	--- U	Missing	0.48 J	09/27/11	CMF	EPA200.8
Barium, ug/l	0.02	100.0	7.5 J	50.1 J	1.1 J	Missing	47.3 J	09/27/11	CMF	EPA200.8
Beryllium, ug/l	0.02	1.0	0.08 J	0.49 J	--- U	Missing	--- U	09/27/11	CMF	EPA200.8
Cadmium, ug/l	0.02	1.0	0.04 J	0.21 J	0.06 J	Missing	6	09/27/11	CMF	EPA200.8
Cobalt, ug/l	0.03	10.0	1.3 J	5.6 J	0.20 J	Missing	2.5 J	09/27/11	CMF	EPA200.8
Copper, ug/l	0.02	10.0	3.2 J	27	0.53 J	Missing	0.46 J	09/27/11	CMF	EPA200.8
Total Chromium, ug/l	0.04	10.0	3.6 J	21	0.30 J	Missing	--- U	09/27/11	CMF	EPA200.8
Lead, ug/l	0.02	10.0	0.57 J	5.8 J	0.08 J	Missing	0.11 J	09/27/11	CMF	EPA200.8
Nickel, ug/l	0.04	50.0	1.5 J	9.8 J	0.19 J	Missing	0.20 J	09/27/11	CMF	EPA200.8
Selenium, ug/l	0.20	10.0	--- U	0.47 J	0.23 J	Missing	--- U	09/27/11	CMF	EPA200.8
Silver, ug/l	0.02	10.0	--- U	0.10 J	--- U	Missing	--- U	09/27/11	CMF	EPA200.8
Thallium, ug/l	0.02	5.5	--- U	0.05 J	--- U	Missing	--- U	09/27/11	CMF	EPA200.8
Vanadium, ug/l	0.14	25.0	10.9 J	48	6.9 J	Missing	0.87 J	09/27/11	CMF	EPA200.8
Zinc, ug/l	0.24	10.0	5.0 J	33	225	Missing	1.9 J	09/27/11	CMF	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quanititation 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 (LINED)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
133 SPRING AVENUE
FUQUAY VARINA, NC 27526

REVIEWED BY:

CLIENT ID: 6038 B

ANALYST: MAO
DATE COLLECTED: 09/20/11
DATE ANALYZED: 09/26/11
DATE REPORTED: 10/14/11

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-10	MW-11	MW-12	SW-2	Equipment Blank
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	10.40 J
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-Butenone	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	0.70 J
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 Quanititation 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 (LINED)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
133 SPRING AVENUE
FUQUAY VARINA, NC 27526

CLIENT ID: 6038 B

ANALYST: MAO
DATE COLLECTED: 09/20/11
DATE ANALYZED: 09/26/11
DATE REPORTED: 10/14/11

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	Trip Blank
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 Quanititation 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: 6038 B **Week:** 39

DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
133 SPRING AVENUE
FUQUAY VARINA NC 27526

(919) 828-0577

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

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

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

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
MW-10	9/20/11	11:12a			4	■	■	■	■
MW-11	9/20/11	11:04a			3	■	■	■	
MW-12	9/20/11	10:55a			3	■	■	■	
SW-1	9/20/11	Dry			3	■	■	■	
SW-2	9/20/11	9:30a			3	■	■	■	
Equipment Blank					2		■	■	
Trip Blank					2		■	■	

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

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

SAMPLES COLLECTED BY: (Please Print) LAQ & DMM

SAMPLES RECEIVED IN LAB AT 02 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
[signature]	9/22/11 2:00p	[signature]	9/23 8:00
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

№ 222574

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#: 6038 A

DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
133 SPRING AVENUE
FUQUAY VARINA ,NC 27526

DATE COLLECTED: 09/22/11
DATE REPORTED : 10/17/11

REVIEWED BY:

PARAMETERS	MDL	SWSL	Leachate	Analysis Date	Analyst	Method Code
BOD, mg/l	2.0	2.0	20	09/23/11	TRB	SM5210B
COD, mg/l	20.0	20.0	141	09/27/11	TRB	HACH8000
Nitrate Nitrogen as N, mg/l	0.03	10.0	0.54 J	09/23/11	ANO	EPA353.2
Total Phosphorus as P, mg/l	0.04	0.04	0.23	09/29/11	SEJ	EPA365.4
Sulfate, mg/l	5.0	250.0	10.8 J	09/30/11	TRB	SM426C
Antimony, ug/l	0.14	6.0	0.34 J	10/04/11	CMF	EPA200.8
Arsenic, ug/l	0.10	10.0	2.7 J	10/04/11	CMF	EPA200.8
Barium, ug/l	0.02	100.0	113	10/04/11	CMF	EPA200.8
Beryllium, ug/l	0.02	1.0	0.12 J	10/04/11	CMF	EPA200.8
Cadmium, ug/l	0.02	1.0	--- U	10/04/11	CMF	EPA200.8
Cobalt, ug/l	0.03	10.0	4.8 J	10/04/11	CMF	EPA200.8
Copper, ug/l	0.02	10.0	12	10/04/11	CMF	EPA200.8
Total Chromium, ug/l	0.04	10.0	7.8 J	10/04/11	CMF	EPA200.8
Lead, ug/l	0.02	10.0	1.9 J	10/04/11	CMF	EPA200.8
Nickel, ug/l	0.04	50.0	31.3 J	10/04/11	CMF	EPA200.8
Selenium, ug/l	0.20	10.0	4.3 J	10/04/11	CMF	EPA200.8
Silver, ug/l	0.02	10.0	--- U	10/04/11	CMF	EPA200.8
Thallium, ug/l	0.02	5.5	0.03 J	10/04/11	CMF	EPA200.8
Vanadium, ug/l	0.14	25.0	29	10/04/11	CMF	EPA200.8
Zinc, ug/l	0.24	10.0	8.9 J	10/04/11	CMF	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quanititation 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 (LINED)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
133 SPRING AVENUE
FUQUAY VARINA, NC 27526

CLIENT ID: 6038 A

ANALYST: MAO
DATE COLLECTED: 09/22/11
DATE ANALYZED: 09/28/11
DATE REPORTED: 10/17/11

REVIEWED BY: _____

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	Leachate
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 Quanititation 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: 6038 A **Week:** 39

DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
RICHARDSON SMITH GARDNER
133 SPRING AVENUE
FUQUAY VARINA NC 27526

(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	Nitrate	T. Phosphorus	Sulfate	Metals	EPA 8260B	8260 Dup. 1
CHLORINE NEUTRALIZED AT COLLECTION													
pH CHECK (LAB)							<2		<2		>2	>2	>2
CONTAINER TYPE, P/G						P	P	P	P	P	P	G	G
CHEMICAL PRESERVATION						A	C	A	C	A	A	E	E
Leachate	9/22/11	1:03p			8								

PARAMETERS

A - NONE
B - HNO_3
C - H_2SO_4
D - NAOH
E - HCL
F - ZINC ACETATE
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) DMM

SAMPLES RECEIVED IN LAB AT 0.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
[signature]	9/22/11 2:00p	[signature]	9/23 800
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

№ 222575

Appendix D

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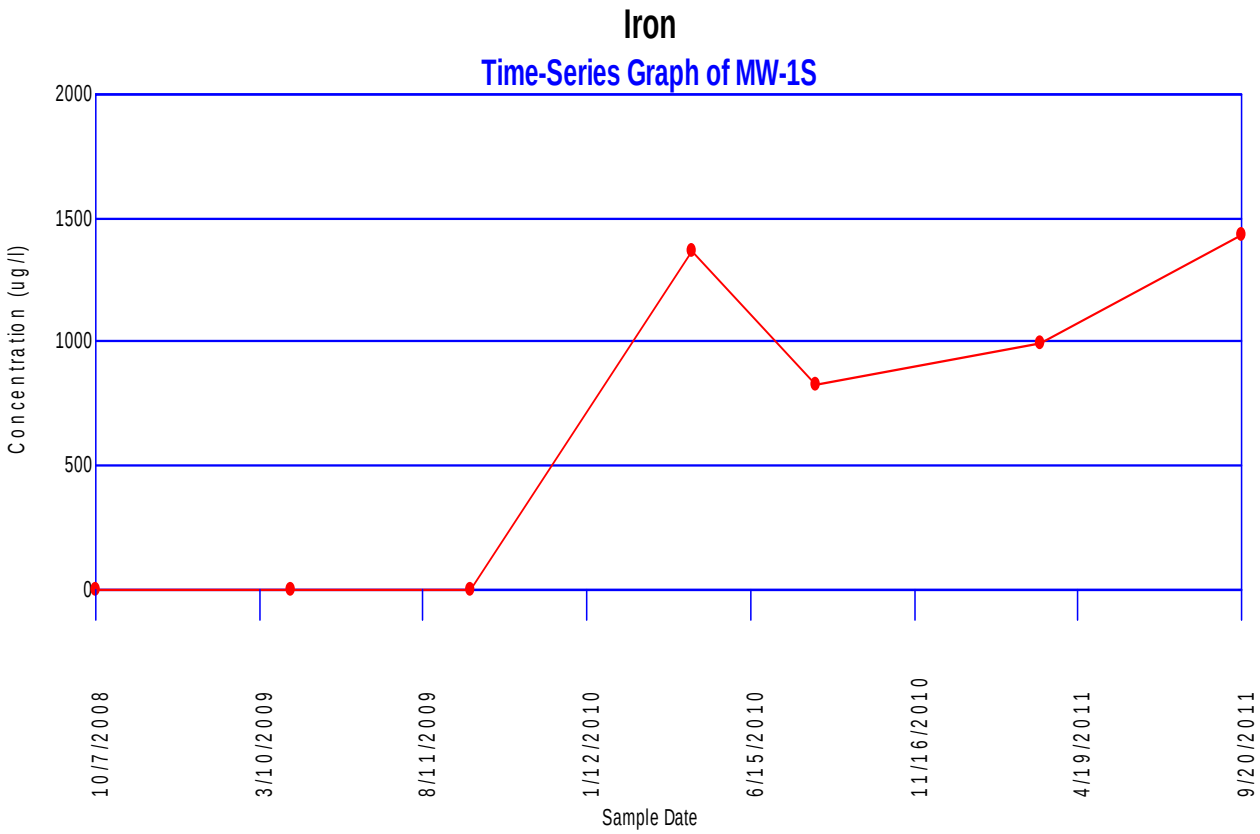
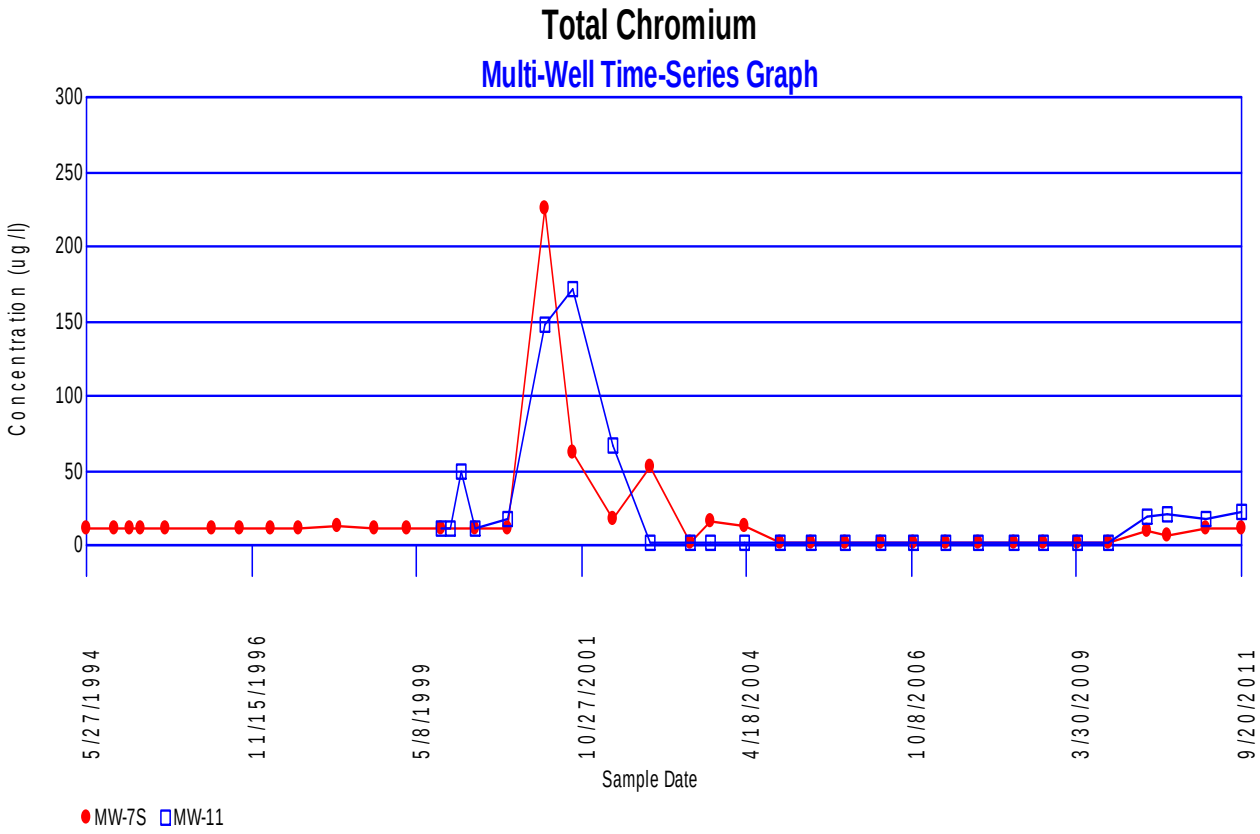
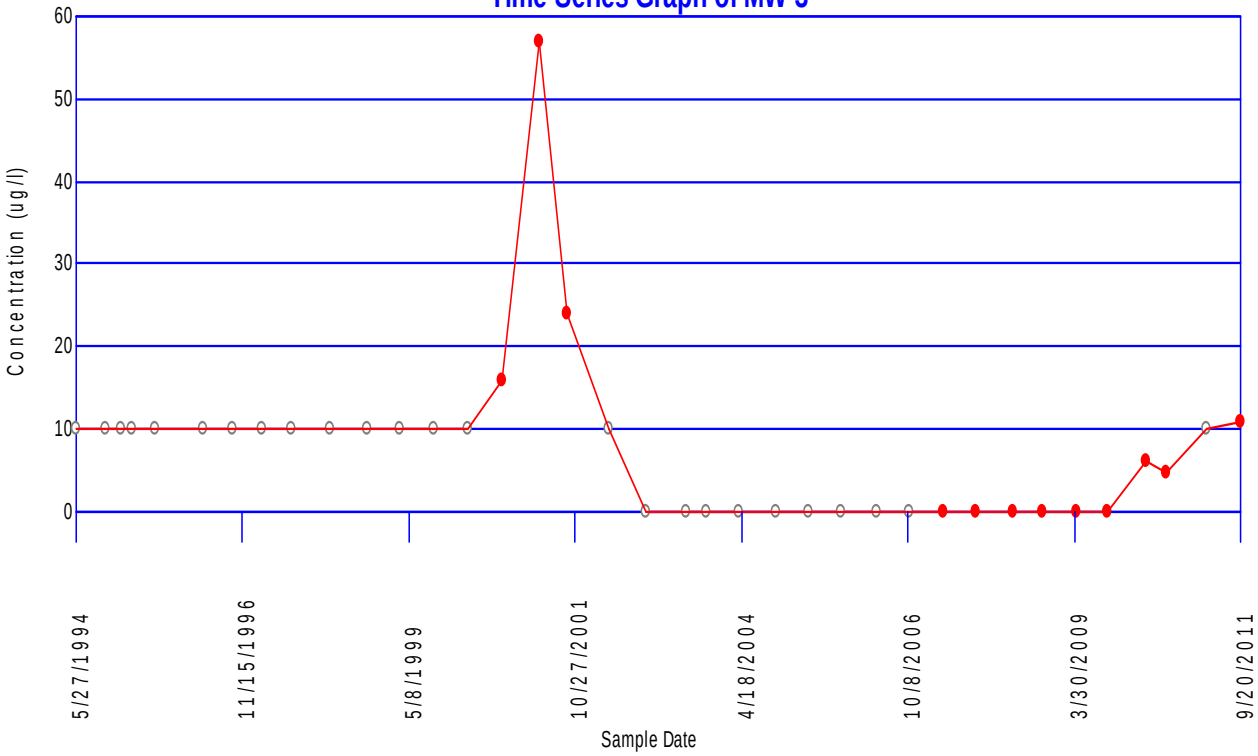
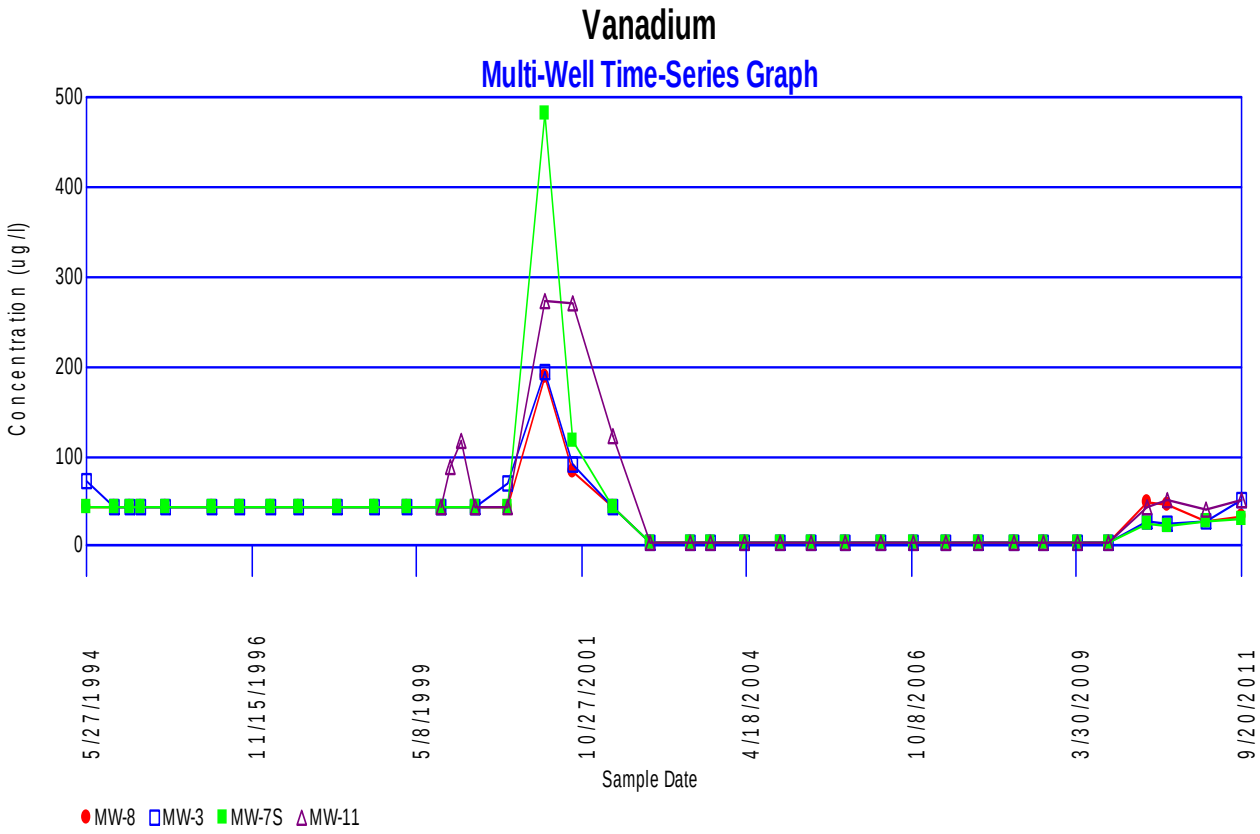

Iron
Time-Series Graph of MW-1S
2000
1500
1000
500
0
Concentration (ug/l)
10/7/2008
3/10/2009
8/11/2009
1/12/2010
6/15/2010
11/16/2010
4/19/2011
9/20/2011
Sample Date


Total Chromium
Multi-Well Time-Series Graph
300
250
200
150
100
50
0
Concentration (ug/l)
5/27/1994
11/15/1996
5/8/1999
10/27/2001
4/18/2004
10/8/2006
3/30/2009
9/20/2011
Sample Date
MW-7S
MW-11

Cobalt

Time-Series Graph of MW-3




Vanadium
Multi-Well Time-Series Graph
500
400
300
200
100
0
Concentration (ug/l)
5/27/1994
11/15/1996
5/8/1999
10/27/2001
4/18/2004
10/8/2006
3/30/2009
9/20/2011
Sample Date
MW-8
MW-3
MW-7S
MW-11