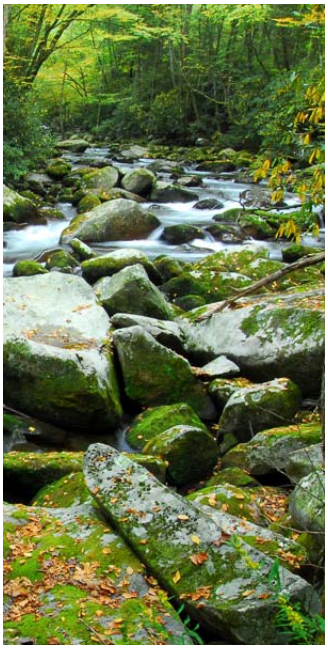

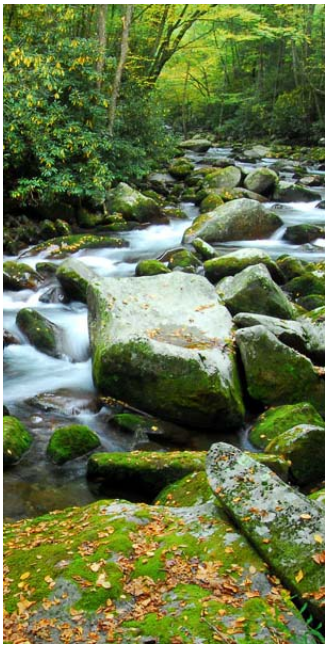

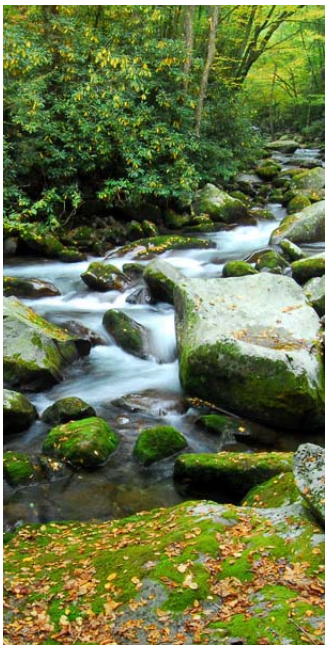

ALTAMONT ENVIRONMENTAL, INC.

ENGINEERING & HYDROGEOLOGY

Summary Report

Phased Assessment Plan and Upgrade of Monitoring Network

Closed and Unlined Madison County Landfill Permit #58-02

March 2, 2011

Prepared for
Madison County, North Carolina
271 Craig Rudisill Road
Marshall, NC 28753

Prepared by
Altamont Environmental, Inc.
231 Haywood Street
Asheville, NC 28801
(828) 281-3350

Summary Report

Phased Assessment Plan and Upgrade of Monitoring Network

Closed and Unlined Madison County Landfill Permit #58-02

March 2, 2011

Joel D. Lenk, P.G.

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1.0 Background

In January 2011, Altamont Environmental, Inc. (Altamont), on behalf of Madison County, completed work to upgrade the existing monitoring network at the Madison County Closed Landfill. This upgrade was initiated based on detections of tetrachloroethene (PCE) in groundwater samples obtained from Mr. and Mrs. Joel Edwards' water supply well. The Edwards' water supply well is an off-site water supply for the Edwards' home located on an adjacent property to the west of the landfill. The well was illegally drilled by Clearwater Drilling (Clearwater) of Hot Springs, North Carolina, within 500 feet of the landfill boundary. Madison County voluntarily began sampling the Edwards' well in April 2007 after the county learned of its installation. Clearwater received a Notice of Violation (NOV) for installation of the well in violation of North Carolina, 15A NCAC 2C.107 (a)(2)(j), *Standards of Construction: Water Supply Wells* on October 26, 2009 from the North Carolina Department of Environment and Natural Resources (DENR), Aquifer Protection Section. The NOV required Clearwater to abandon the well "promptly". PCE was first detected in the groundwater sample collected from the well during the Spring 2009 groundwater monitoring event. Since that time PCE has been detected intermittently in groundwater samples collected from the well at concentrations that hover near the 15A NCAC 2L.0202 groundwater quality standards (2L Standards). The Edwards family is working with the Town of Marshall, North Carolina and a contractor they have selected to establish a water connection to the Town water system. The County continues to serve as a liaison and advocate to the Edwardses in this endeavor.

In 2010, Madison County proactively completed work to determine the source of PCE detected in groundwater samples obtained from the well and to determine if the well could be modified to become a safe source of drinking water. This work was described in a letter from Altamont, dated April 14, 2010, to Mr. Jim Huff of the Madison County Solid Waste Department, Mr. Steve Garrison (Madison County Manager), and Ms. Jaclynne Drummond of the North Carolina Department of Environment and Natural Resources, Solid Waste Section (SWS).

Through written and verbal communication between Madison County, Altamont, and the SWS, and more specifically in a letter from the SWS dated May 11, 2010, the SWS specified that a phased assessment plan including installation of additional groundwater monitoring wells for the site be initiated. On July 15, 2010, Altamont submitted a report titled *Phased Assessment Plan and Upgrade of the Groundwater Monitoring Network* (Assessment/Upgrade Plan) to Madison County and the SWS. The Assessment/Upgrade Plan was discussed and refined on a conference call between Madison County, the SWS, and Altamont on July 29, 2010. The SWS approved the work specified in the Assessment/Upgrade Plan with additional comments in a letter from the SWS to Madison County dated September 28, 2010. The referenced Assessment/Upgrade Plan includes the installation of two additional monitoring wells near the western landfill boundary (compliance boundary) between the landfill and the Edwards' off-site water supply well. The September 28, 2010 SWS letter also stated that the static water level in the new wells was to be measured and the wells were purged and sampled for Appendix I of Code of Federal Regulations (CFR) 258 constituents.

Additionally, the SWS specified that compliance boundary LFG probes were to be installed at the landfill in a SWS audit report to Madison County dated October 14, 2009. This letter included approval of a Landfill Gas Monitoring Plan (Monitoring Plan) that was submitted to the SWS by McGill and Associates on April 20, 2010. The Monitoring Plan was approved by Mr. Zinith Barbee of the SWS in the Asheville Regional Office. During this phase of field work, Altamont coordinated and observed the installation of the 11 compliance boundary landfill gas probes (LFG probes) based on the Monitoring Plan.

The following sections of this report outline the Methods, Findings, and Conclusions related to the Assessment/Upgrade Plan of the groundwater monitoring network and installation of compliance boundary LFG probes.

2.0 Methods

2.1 Monitoring Well Installation

On December 2, 2010, Altamont and Geologic Exploration Inc. (Geologic) mobilized to the Madison County Closed Landfill (Figure 1) and initiated the upgrade of the groundwater monitoring network and installation of Compliance Boundary LFG probes. Monitoring well construction observation was conducted under the oversight of Joel Lenk, P.G., a North Carolina licensed professional geologist of Altamont, and North Carolina licensed well drillers and laborers employed by Geologic. Two monitoring wells designated as MW-03-OLD and MW-04-OLD were installed east of the Edwards/Madison County property line within the landfill parcel (Figure 2) during this phase of work. Prior to drilling, the drilling locations for both MW-03-OLD and MW-04-OLD were cleared of vegetation and leveled with an excavator by Madison County.

2.1.1 MW-03-OLD

Geologic and Altamont began the installation of monitoring well MW-03-OLD on December 2, 2010. The objective of drilling this well was to install a monitoring well that was screened across the shallowest water-bearing zone at the drilling location. Drilling was conducted using a track-mounted Geoprobe 8140 DT modified for air-rotary drilling. A pilot boring was drilled using a three and seven-eighth-inch diameter air-hammer bit to a depth of 40 feet below ground surface (bgs). Weathered rock was encountered at a depth of five feet bgs. Drilling was closely observed by Altamont and Geologic in an attempt to identify any water encountered. Drilling was paused for 30-minute periods at depths of 18, 22, and 27 feet bgs to determine if the boring was producing water. Evidence of water was not observed in the boring at any of these depths. Competent rock was encountered at 35 feet bgs and drilling of the pilot hole continued to 38 feet bgs. On December 3, 2010 the pilot hole was over-bored using a seven and 5/8-inch air hammer bit. A six-inch diameter surface casing was installed to 38 feet bgs. The surface casing was grouted in place using a minimum of five percent Bentonite, neat cement grout. Grout around the surface casing was allowed to cure no less than 24 hours before drilling beneath the surface casing continued per North Carolina 15A NCAC 02C Well Construction Standards.

On December 6, 2010, a three and seven-eighth-inch diameter air hammer bit was used to drill through the MW-03-OLD surface casing and into the rock below. A softer, fractured zone of rock was encountered between 46 and 47 feet bgs. Drilling was stopped at 49 feet bgs and the boring was allowed to sit for 30 minutes. It was determined that the boring was producing approximately four gallons of groundwater per hour. Accumulated water and drill cuttings were blown from the boring using the drill rig. The boring was again allowed to recharge and approximately 2.25 gallons of groundwater was bailed from the boring before a screening sample was collected and submitted to Pace Analytical Services for analysis of volatile organic compounds (VOC) under a 24-hour turn-around-time. This sample was collected in order to determine if groundwater in the vicinity of this boring was impacted and so that the boring could be extended to a more productive water-bearing zone without cross-contaminating potentially non-impacted groundwater, if necessary. Drilling was stopped until the results of the sample were received and the construction of the well was determined.

The 24-hour groundwater sampling results from the screening sample indicated that estimated concentrations (J-flag) of acetone and benzene and detections above the method reporting limit (MRL) for chlorobenzene, chloroethane, and 1,4-dichlorobenzene were present in the groundwater screening sample. Detections in the groundwater screening sample were compared to the North Carolina Title 15A North Carolina Administrative Code (NCAC) 2L.0202 (2L Standards), and North Carolina Division of Waste Management, Solid Waste Section Limits. None of the detections exceeded the 2L Standards, however concentration of chlorobenzene and 1,4-dichlorobenzene exceeded the Solid Waste Section Limits and were detected at concentrations of 3.3 µ/L and 3.3 µ/L

respectively. Based on telephone correspondence between Altamont and the SWS, MW-03-OLD was completed on December 8, 2010 as a two-inch-diameter PVC monitoring well with a total depth of 49 feet bgs. The wells completion includes a 0.10 slot well screen with a five-foot screen interval (44 to 49 feet bgs) that spans the fractured zone encountered between 46 and 47 feet bgs. Additional detail regarding monitoring well installation and construction can be found in Appendices A and B.

2.1.2 MW-04-OLD

Per correspondence that took place between the dates of December 8 and December 30, 2010 between Mr. Lenk of Altamont and Ms. Drummond and Mr. Mark Poindexter of the SWS, the SWS specified that the installation of a second monitoring well was required in order to help characterize groundwater quality in deeper fractures that may exist nearer to the elevation of the bottom of buried waste at the landfill. An additional deeper monitoring well was installed approximately 15 feet south of MW-03-OLD and is designated MW-04-OLD (Figure 2).

Drilling for the MW-04-OLD surface casing was originally initiated on December 8, 2010 using the Geoprobe 8140 DT rig. The surface casing boring was advanced to 70 feet bgs. However, while removing the drilling rods from the borehole, the drill string failed, resulting in 35 feet of drill rod and the drill bit being lost in the borehole. Work was stopped for more than a day in an effort to remove the bit and rods. Approximately 25 feet of drill rod was fished from the surface casing boring, however the remainder of the rods and the three and 7/8-inch bid were unable to be retrieved. The borehole was abandoned using neat cement grout. Geologic concluded that they did not wish to attempt a second surface casing boring with the same Geoprobe rig. Remobilizing a second rig in combination with weather delays resulted in a significant delay of the project.

An alternate track-mounted air rotary drill rig (Gill “Beetle” Rig) was mobilized to the landfill on December 28, 2010. Drilling of a new surface casing boring commenced that afternoon at the MW-04-OLD location indicated on Figure 2 with a 10” diameter air hammer and bit. Hard competent rock was encountered at nine feet bgs. A soft zone was encountered between 56 and 59 feet bgs. It is assumed that this is likely the same zone that monitoring well MW-03-OLD is screened across. Dust, blowing from the boring while drilling, ceased momentarily as this zone was drilled through. The surface casing boring for MW-04-OLD was extended to 66 feet bgs. No other potential water-bearing zones were observed below 59 feet bgs.

A six-inch diameter schedule 40 PVC surface casing was set at 66 feet bgs. Neat cement grout was installed in the annulus between the surface casing and boring and was allowed to cure for 24 hours before drilling was resumed inside and beneath the surface casing.

Drilling resumed on December 29, 2010, using a six-inch air-hammer and bit. Soft zones were encountered at 69 feet and 85 feet bgs, however dust never ceased blowing from the borehole while drilling, and signs of the borehole producing water were not observed while drilling. Drilling continued in the MW-04-OLD boring below the surface casing and the boring was terminated at the target depth of 154 feet bgs. This target depth was determined to be slightly below the elevation of buried waste at the landfill based on topographic data reviewed for the project.

While removing the drill string from the borehole, evidence of water entering the borehole was observed on the drilling rods at 85 feet bgs. After 150 minutes, the well produced approximately 4.5 gallons of water or approximately 1.8 gallons per hour which was just below the threshold specified by SWS in the letter to Madison County dated September 28, 2010. Based on a telephone discussion between Mr. Lenk of Altamont and Mr. Poindexter of the SWS, the well was allowed to recharge overnight. It was agreed that a decision would be made regarding if and how to complete the well on the following morning, December 30 2010, after groundwater in the boring had recharged overnight. On the following morning the depth to water was measured at 132 feet bgs and the total boring depth was measured at 153 feet bgs. The recharge rate was calculated to be 1.75 gallons per hour. Three-eighths-inch bentonite chips were used to plug the hole from 153 to 95 feet bgs. The well was completed as a two-inch diameter PVC monitoring well with a total depth

of 90 feet bgs. Filter sand was installed in the borehole from 95 to 67 feet bgs. The well was screened with two-inch diameter 0.20 slot PVC screen from 90'-70' bgs. Additional detail regarding monitoring well installation and construction can be found in Appendices A and B.

2.2 Monitoring Well Sampling

On January 6, 2011 after monitoring wells MW-03-OLD and MW-04-OLD were installed, both of the wells were developed and sampled. Prior to collecting groundwater samples from the monitoring wells, the static water level and total depth at each of the wells was measured and recorded in order to calculate the well volume. At each sample location, an initial round of field parameters (consisting of pH, specific conductivity, dissolved oxygen, oxidation reduction potential, turbidity, and temperature) was measured and recorded. Groundwater monitoring wells were then purged with a new disposable polyethylene bailer. As each consecutive well volume was removed with the bailer, an additional round of groundwater parameters was recorded. Each well was purged until three well volumes were removed and field parameters stabilized, or until the well had been bailed dry. Wells that were bailed dry were allowed to recharge prior to collecting a groundwater sample. Well sampling logs are found in Appendix C.

Altamont personnel wore new, non-reactive nitrile gloves during collection of each sample to prevent cross-contamination of water samples. Following sample collection, groundwater and surface water samples were immediately placed on ice in sample coolers for transport to Pace Analytical Laboratories (Pace), a North Carolina certified laboratory located in Asheville, North Carolina. Altamont submitted the water samples collected from the monitoring wells to Pace for analysis as follows:

- Appendix I volatile organic compounds (VOCs) using US Environmental Protection Agency (EPA) Method 8260
- Eight Resource Conservation and Recovery Act (RCRA) metals using EPA Methods 6010 and 7470

A trip blank, provided by the laboratory, was placed in the sample coolers and analyzed for Appendix I VOCs. Proper chain-of-custody documentation procedures were followed during collection and transport of each sample. Laboratory Analytical Reports and Chain-of-Custody Documentation are included as Appendix D.

Analytical results for groundwater were compared to the North Carolina 2L Standards, as promulgated in 15A North Carolina Administrative Code (NCAC) 2L.0202 (2L Standards), and North Carolina Division of Waste Management, Solid Waste Section Limits. Analytical results are summarized on Tables 1 and 2.

2.2.1 Landfill Gas Probe Installation

On December 2, 2010, Geologic Exploration and Altamont Environmental began the installation of 11 compliance boundary landfill gas monitoring probes. A Geoprobe 8140 DT rig equipped with a 4 and 1/4-inch hollow stem auger was used to install the borings. All landfill gas probes were installed above the water table. All probe borings were drilled to six feet bgs. Landfill gas probes were installed in general accordance with the McGill and Associates Landfill Gas Monitoring Probe diagram included in Appendix E and the approved Landfill Gas Monitoring Plan. Landfill gas probe borings were grouted to the surface above the bentonite plug shown in the referenced diagram and as described in lithologic logs included in Appendix B. A ball valve and NPT hose barbs were attached to the cap on the top of the probe as show in the photo in Appendix B to facilitate future landfill gas monitoring. Landfill gas probes were completed with three-feet-by-four-inch-by-four-inch stick-up surface completions set in two-feet-by-two-feet-by-four-inch concrete pads. Each surface completion contains a well tag, lock, and boring log. Quarterly landfill gas measurement are currently collected, recorded, and kept on file by Madison County.

3.0 Findings

3.1 MW-03-OLD—January 6, 2010

Analytical results for groundwater samples collected on January 6, 2011 from monitoring well MW-03-OLD are summarized in Tables 1 and 2. The following compounds were detected and are in bold font. Detections are followed by the 2L Standard in parenthesis and Solid Waste Section Limit in brackets respectively: **arsenic 6.5 µg/L** (10 µg/L) [10 µg/L], **barium 799 µg/L** (700 µg/L) [100 µg/L], **chromium 22.2 µg/L** (10 µg/L) [10 µg/L], **lead 8.8 J µg/L** (15 µg/L) [10 µg/L], **chlorobenzene 1.5 J µg/L** (50 µg/L) [3 µg/L], **1,4-dichlorobenzene 4.0 µg/L** (6 µg/L) [1 µg/L], **cis-1,2-dichloroethene 0.27J µg/L** (70 µg/L) [5 µg/L], and **diisopropyl ether 0.18J µg/L** (70 µg/L) [not established].

One VOC, **1,4-dichlorobenzene**, exceeded its SWSLs of 1 µg/L. No VOC exceeded its 2L Standard.

Two metals, **barium** and **chromium**, exceeded their respective 2L Standards and Solid Waste Section Limits, of (700 µg/L) [100 µg/L] and (10 µg/L) [10 µg/L], respectively.

3.2 MW-04-OLD—January 6, 2011

Analytical results for groundwater samples collected on January 6, 2011 from monitoring well MW-04-OLD are summarized in Tables 1 and 2. The following compounds were detected and are in bold font. Detections are followed by the 2L Standard in parenthesis and Solid Waste Section Limit in brackets respectively: **barium 650 µg/L** (700 µg/L) [100 µg/L], **benzene 0.88J µg/L** (1 µg/L) [1 µg/L], **chlorobenzene 3.9 µg/L** (50 µg/L) [3 µg/L], **chloroethane 3.4 J µg/L** (3,000 µg/L) [10 µg/L], **1,4-dichlorobenzene 4.5 µg/L** (6 µg/L) [1 µg/L], **1,1-dichloroethane 2.4 J µg/L** (6 µg/L) [5 µg/L], **cis-1,2-dichloroethene 6.2 µg/L** (70 µg/L) [5 µg/L], **diisopropyl ether 0.38J µg/L** (70 µg/L) [not established], **trichloroethene 2.0 µg/L** (3 µg/L) [1 µg/L], and **vinyl chloride 1.1 µg/L** (0.03 µg/L) [1 µg/L].

One VOC, vinyl chloride, was detected above both its 2L standard and Solid Waste Section Limit of (0.03 µg/L) [1 µg/L]. Three VOCs were detected above the Solid Waste Section Limit: chlorobenzene [3 µg/L], 1,4-dichlorobenzene [1 µg/L], cis-1,2-dichloroethene [5 µg/L].

One metal, barium, was detected above its SWSL [100 µg/L]. Barium has been historically detected in samples collected from the background sampling point and domestic water supply wells associated with the landfill at similar concentrations that exceed the SWSL for barium. Barium is known to be naturally occurring in surficial soils and materials throughout Western North Carolina (United States Geological Survey Professional Paper 1648, November 2001).

3.3 Landfill Gas Probes

Landfill gas readings were not collected as part of the scope of this project. Quarterly landfill gas measurement are currently collected, recorded, and kept on file by Madison County.

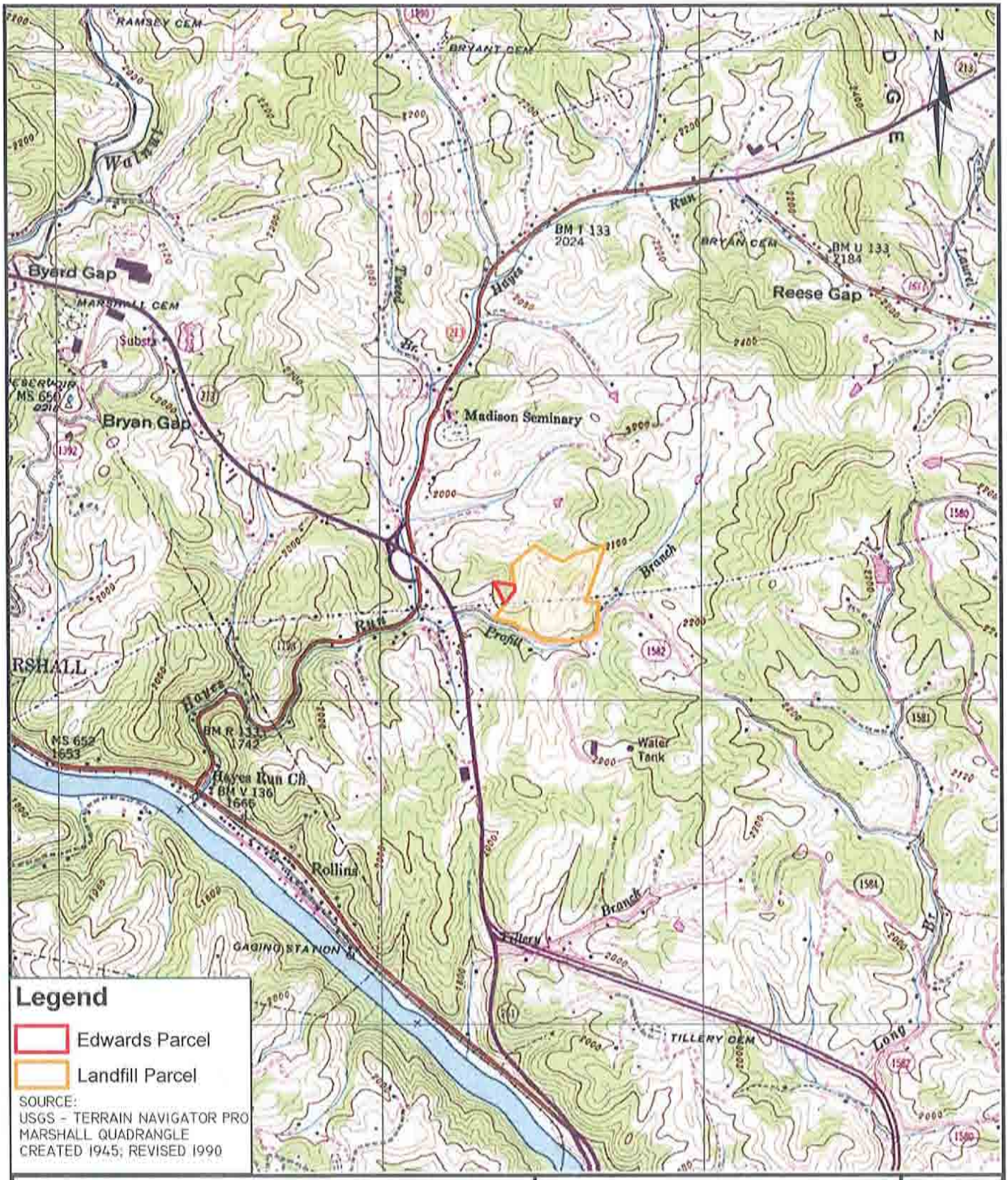
4.0 Conclusions

Based on the upgrade of the monitoring network that was completed between December 2, 2010 and January 6, 2011 and the associated analyses of groundwater samples taken from the new monitoring wells, the following bullets summarize the conclusions and reasonable assumptions:

- Groundwater was not encountered in the unconsolidated zone at the landfill boundary. The uppermost water-bearing zone is located within fractured bedrock.
- Water-bearing zones within fractured rock encountered while installing monitoring wells MW-03-OLD and MW-04-OLD near the landfill compliance boundary between the Edwards' water supply well and covered landfill waste are not prolific and yield between one and four gallons per hour.
- PCE was not-detected in samples collected from the monitoring wells MW-03-OLD and MW-04-OLD within the landfill boundary adjacent to the Edwards' property.

Monitoring wells MW-03-OLD and MW-04-OLD and 11 compliance boundary landfill gas probes (GP-1 through GP-11) have been installed at the Closed Madison County Landfill in order to upgrade the monitoring network. Groundwater sample collection from monitoring wells MW-03-OLD and MW-04-OLD will be added to the semiannual water quality monitoring events. Compliance boundary landfill gas probes will be monitored on a quarterly basis and landfill gas data will be kept on file with Madison County.

FIGURES



ALTAMONT ENVIRONMENTAL, INC.
ENGINEERING & HYDROGEOLOGY
231 HAYWOOD STREET, ASHEVILLE, NC 28801
TEL: 828.281.3350 FAX 828.281.3351
WWW.ALTAMONTENVIRONMENTAL.COM

DRAWN BY: EVAN YURKOVICH
PROJECT MANAGER: JOEL LENK
CLIENT: MADISON COUNTY
DATE: 3/26/2010

SCALE
0 500 1,000 2,000 Feet

SITE LOCATION MAP
MADISON COUNTY
CLOSED MSW LANDFILL

389 LONG BRANCH ROAD
MARSHALL, NC 28753

MADISON COUNTY, NORTH CAROLINA

FIGURE
1

P:\Madison County\Figures\GIS\GIS User\MXDs\5802-Figure 1-Site_Location_Madison Closed LF.mxd

Legend

- Approximate Monitoring Well Locations
- Domestic Well
- Roads
- Joel Edwards Parcel
- Landfill Parcel Boundary (Approximate)
- 10 Foot Interval Contours

Data Sources:
Aerial - NRCS 2009
Contours and Roads - NCDOT
Streams - NCOneMap
Property Boundary - Madison County GIS

ALTAMONT ENVIRONMENTAL, INC.
ENGINEERING & HYDROGEOLOGY
231 HAYWOOD STREET, ASHEVILLE, NC 28801
TEL.828.281.3350 FAX.828.281.3351
WWW.ALTAMONTENVIRONMENTAL.COM

APPROXIMATE LOCATION OF NEW MONITORING WELLS

Madison County Closed MSW Landfill
Long Branch Road
Marshall, North Carolina

FIGURE

2

Drawn By: Anna Saylor
Project Manager: Joel Lenk
Client: Madison County
Date: 01/26/2011

Scale
0 25 50 100 Feet

P:\Madison County\Figures\GIS\GIS User\MXDs\2011\Figure 1 - Approximate Monitoring Wells Location.mxd

TABLES

Table 1
Groundwater Sampling Results
Phased Assessment Plan and Upgrade of Groundwater Monitoring Network
Madison County Closed Municipal Solid Waste Landfill, Madison County, North Carolina

Sample Identification	Sample Collection Date	Arsenic (µg/L)	Barium (µg/L)	Benzene (µg/L)	Chlorobenzene (µg/L)	Chloroethane (µg/L)	Chromium (µg/L)	Lead (µg/L)	1,4-Dichlorobenzene (µg/L)	1,1-Dichloroethane (µg/L)	cis-1,2-Dichloroethene (µg/L)	Diisopropyl Ether (µg/L)	Trichloroethene (µg/L)	Vinyl Chloride (µg/L)
5802-MW03OLD	01/06/2011	6.5	**799**	0.25 U	1.5 *J*	0.54 U	**22.2**	8.8 *J*	4.0	0.32 U	0.27 J	0.18 J	0.47 U	0.62 U
5802-MW04OLD	01/06/2011	2.7 U	650	0.88 J	3.9	3.4 J	2.0 U	4.0 U	4.5	2.4 *J*	6.2	0.38 J	2.0	**1.1**
2L Standard		10	700	1	50	3,000	10	15	6	6	70	70	3	0.03
Soild Waste Section Limit		10	100	1	3	10	10	10	1	5	5	NE	1	1

Notes:
1. µg/L = micrograms per liter.
2. Volatile organic compounds (VOCs) analyzed according to US Environmental Protection Agency (EPA) Method 8260.
3. Metals analyzed according to EPA Method 6010.
4. "Method Reporting Limit" (MRL) is the minimum concentration of a target analyte that can be accurately determined by the referenced method.
   MRL is listed under "Practical Quantitation Limit" (PQL) column in the laboratory analytical report.
5. "Method" is the analytical method used to analyze the constituents. "NE" means Not Established. Blank cells indicate that there is no information relevant to the respective row.
6. Qualifiers are laboratory data qualifiers or "flags". "J" is used for estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
   "U" is used for parameters not detected at concentrations above the Method Detection Limit (MDL).
   An italicized J-flag is a data qualifier that reflects a detected concentration that is greater than the laboratory's MRL and MDL but less than the SWSL.
7. 2L Standard is from "North Carolina Administrative Code, Title 15A: Department of Environment and Natural Resources, Subchapter 2L - Groundwater Classifications and Standards," DENR (last amended on January 1, 2010).
8. "SWSL" is the Solid Waste Section Limit. This limit (identified by DENR) is the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy.
9. Concentrations above 2L Standard are bold.

Table 2
Analytical Data and Field Parameters
Phased Assessment Plan and Upgrade of Groundwater Monitoring Network
Madison County Closed Municipal Solid Waste Landfill, Madison County, North Carolina

FACILITY PERMIT	WELL ID	CAS NUMBER	SWS ID	PARAMETER	RESULT	UNITS	QUALIFIER	METHOD	MRL	MDL	SWSL	DILUTION FACTOR	COLLECT DATE	EXTRACTION DATE	ANALYSIS DATE	NC LABORATORY CERTIFICATION NUMBER
58-02	5802-MW030LD	630-20-6	190	1,1,1,2-Tetrachloroethane	0.33	µg/L	U	EPA 8260	1.0	0.33	5	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	71-55-6	200	1,1,1-Trichloroethane	0.48	µg/L	U	EPA 8260	1.0	0.48	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	79-34-5	191	1,1,2,2-Tetrachloroethane	0.40	µg/L	U	EPA 8260	1.0	0.40	3	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	79-00-5	202	1,1,2-Trichloroethane	0.29	µg/L	U	EPA 8260	1.0	0.29	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	75-34-3	75	1,1-Dichloroethane	0.32	µg/L	U	EPA 8260	1.0	0.32	5	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	75-35-4	77	1,1-Dichloroethene	0.56	µg/L	U	EPA 8260	1.0	0.56	5	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	96-18-4	206	1,2,3-Trichloropropane	0.41	µg/L	U	EPA 8260	1.0	0.41	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	96-12-8	67	1,2-Dibromo-3-chloropropane	2.5	µg/L	U	EPA 8260	5.0	2.5	13	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	106-93-4	68	1,2-Dibromoethane (EDB)	0.27	µg/L	U	EPA 8260	1.0	0.27	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	95-50-1	69	1,2-Dichlorobenzene	0.30	µg/L	U	EPA 8260	1.0	0.30	5	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	107-06-2	76	1,2-Dichloroethane	0.12	µg/L	U	EPA 8260	1.0	0.12	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	78-87-5	82	1,2-Dichloropropane	0.27	µg/L	U	EPA 8260	1.0	0.27	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	106-46-7	71	1,4-Dichlorobenzene	3.3	µg/L		EPA 8260	1.0	0.33	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	78-93-3	141	2-Butanone (MEK)	0.96	µg/L	U	EPA 8260	5.0	0.96	100	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	591-78-6	124	2-Hexanone	0.46	µg/L	U	EPA 8260	5.0	0.46	50	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	108-10-1	147	4-Methyl-2-pentanone (MIBK)	0.33	µg/L	U	EPA 8260	5.0	0.33	100	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	67-64-1	3	Acetone	8.1	µg/L	J	EPA 8260	25.0	2.2	100	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	107-13-1	8	Acrylonitrile	1.9	µg/L	U	EPA 8260	10.0	1.9	200	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	71-43-2	16	Benzene	0.41	µg/L	J	EPA 8260	1.0	0.25	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	74-97-5	28	Bromochloromethane	0.17	µg/L	U	EPA 8260	1.0	0.17	3	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	75-27-4	29	Bromodichloromethane	0.18	µg/L	U	EPA 8260	1.0	0.18	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	75-25-2	30	Bromoform	0.26	µg/L	U	EPA 8260	1.0	0.26	3	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	74-83-9	136	Bromomethane	0.29	µg/L	U	EPA 8260	2.0	0.29	10	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	75-15-0	35	Carbon disulfide	1.2	µg/L	U	EPA 8260	2.0	1.2	100	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	56-23-5	36	Carbon tetrachloride	0.25	µg/L	U	EPA 8260	1.0	0.25	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	108-90-7	39	Chlorobenzene	3.3	µg/L		EPA 8260	1.0	0.23	3	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	75-00-3	41	Chloroethane	1.6	µg/L	J	EPA 8260	1.0	0.54	10	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	67-66-3	44	Chloroform	0.14	µg/L	U	EPA 8260	1.0	0.14	5	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	74-87-3	137	Chloromethane	0.11	µg/L	U	EPA 8260	1.0	0.11	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	156-59-2	78	cis-1,2-Dichloroethene	0.19	µg/L	U	EPA 8260	1.0	0.19	5	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	10061-01-5	86	cis-1,3-Dichloropropene	0.13	µg/L	U	EPA 8260	1.0	0.13	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	124-48-1	66	Dibromochloromethane	0.21	µg/L	U	EPA 8260	1.0	0.21	3	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	74-95-3	139	Dibromomethane	0.21	µg/L	U	EPA 8260	1.0	0.21	10	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	100-41-4	110	Ethylbenzene	0.30	µg/L	U	EPA 8260	1.0	0.30	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	74-88-4	142	Iodomethane	0.32	µg/L	U	EPA 8260	5.0	0.32	10	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	179601-23-1	NE	m&p-Xylene	0.66	µg/L	U	EPA 8260	2.0	0.66	NE	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	75-09-2	140	Methylene Chloride	0.97	µg/L	U	EPA 8260	1.0	0.97	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	95-47-6	408	o-Xylene	0.23	µg/L	U	EPA 8260	1.0	0.23	NE	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	100-42-5	186	Styrene	0.26	µg/L	U	EPA 8260	1.0	0.26	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	127-18-4	192	Tetrachloroethene	0.46	µg/L	U	EPA 8260	1.0	0.46	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	108-88-3	196	Toluene	0.26	µg/L	U	EPA 8260	1.0	0.26	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	156-60-5	79	trans-1,2-Dichloroethene	0.49	µg/L	U	EPA 8260	1.0	0.49	5	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	10061-02-6	87	trans-1,3-Dichloropropene	0.26	µg/L	U	EPA 8260	1.0	0.26	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	110-57-6	73	trans-1,4-Dichloro-2-butene	1.0	µg/L	U	EPA 8260	1.0	1.0	100	1	12/6/2010		12/7/2010	12

Table 2
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Phased Assessment Plan and Upgrade of Groundwater Monitoring Network
Madison County Closed Municipal Solid Waste Landfill, Madison County, North Carolina

FACILITY PERMIT	WELL ID	CAS NUMBER	SWS ID	PARAMETER	RESULT	UNITS	QUALIFIER	METHOD	MRL	MDL	SWSL	DILUTION FACTOR	COLLECT DATE	EXTRACTION DATE	ANALYSIS DATE	NC LABORATORY CERTIFICATION NUMBER
58-02	5802-MW030LD	79-01-6	201	Trichloroethene	0.47	µg/L	U	EPA 8260	1.0	0.47	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	75-69-4	203	Trichlorofluoromethane	0.20	µg/L	U	EPA 8260	1.0	0.20	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	108-05-4	210	Vinyl acetate	0.35	µg/L	U	EPA 8260	2.0	0.35	50	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	75-01-4	211	Vinyl chloride	0.62	µg/L	U	EPA 8260	1.0	0.62	1	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	1330-20-7	346	Xylene (Total)	1	µg/L	U	EPA 8261	1	1	5	1	12/6/2010		12/7/2010	12
58-02	5802-MW030LD	7782-44-7	356	Dissolved Oxygen	6.73	mg/L							12/6/2010			
58-02	5802-MW030LD	SW336	336	Oxygen Reduction Potential	-122.6	mV							12/6/2010			
58-02	5802-MW030LD	SW320	320	pH	12.58	SU							12/6/2010			
58-02	5802-MW030LD	SW323	323	Specific Conductivity	1775	mS							12/6/2010			
58-02	5802-MW030LD	SW325	325	Temperature	10.27	°C							12/6/2010			
58-02	5802-MW030LD	SW330	330	Turbidity	968.6	NTU							12/6/2010			
58-02	5802-MW030LD	7440-38-2	14	Arsenic	6.5	µg/L	J	EPA 6010	5.0	2.7	10	1	1/6/2011	1/13/2011	1/14/2011	40
58-02	5802-MW030LD	7440-39-3	15	Barium	799	µg/L		EPA 6010	5.0	2.5	100	1	1/6/2011	1/13/2011	1/14/2011	40
58-02	5802-MW030LD	7440-43-9	34	Cadmium	0.50	µg/L	U	EPA 6010	1.0	0.50	1	1	1/6/2011	1/13/2011	1/14/2011	40
58-02	5802-MW030LD	7440-47-3	51	Chromium	22.2	µg/L		EPA 6010	5.0	2.0	10	1	1/6/2011	1/13/2011	1/14/2011	40
58-02	5802-MW030LD	7439-92-1	131	Lead	8.8	µg/L	J	EPA 6010	5.0	4.0	10	1	1/6/2011	1/13/2011	1/14/2011	40
58-02	5802-MW030LD	7439-97-6	132	Mercury	0.10	µg/L	U	EPA 7470	0.20	0.10	0.2	1	1/6/2011	1/13/2011	1/14/2011	12
58-02	5802-MW030LD	7782-49-2	183	Selenium	5.0	µg/L	U	EPA 6010	10.0	5.0	10	1	1/6/2011	1/13/2011	1/14/2011	40
58-02	5802-MW030LD	7440-22-4	184	Silver	2.5	µg/L	U	EPA 6010	5.0	2.5	10	1	1/6/2011	1/13/2011	1/14/2011	40
58-02	5802-MW030LD	630-20-6	190	1,1,1,2-Tetrachloroethane	0.33	µg/L	U	EPA 8260	1.0	0.33	5	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	71-55-6	200	1,1,1-Trichloroethane	0.48	µg/L	U	EPA 8260	1.0	0.48	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	79-34-5	191	1,1,2,2-Tetrachloroethane	0.40	µg/L	U	EPA 8260	1.0	0.40	3	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	79-00-5	202	1,1,2-Trichloroethane	0.29	µg/L	U	EPA 8260	1.0	0.29	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	75-34-3	75	1,1-Dichloroethane	0.32	µg/L	U	EPA 8260	1.0	0.32	5	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	75-35-4	77	1,1-Dichloroethene	0.56	µg/L	U	EPA 8260	1.0	0.56	5	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	96-18-4	206	1,2,3-Trichloropropane	0.41	µg/L	U	EPA 8260	1.0	0.41	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	96-12-8	67	1,2-Dibromo-3-chloropropane	2.5	µg/L	U	EPA 8260	5.0	2.5	13	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	106-93-4	68	1,2-Dibromoethane (EDB)	0.27	µg/L	U	EPA 8260	1.0	0.27	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	95-50-1	69	1,2-Dichlorobenzene	0.30	µg/L	U	EPA 8260	1.0	0.30	5	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	107-06-2	76	1,2-Dichloroethane	0.12	µg/L	U	EPA 8260	1.0	0.12	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	78-87-5	82	1,2-Dichloropropane	0.27	µg/L	U	EPA 8260	1.0	0.27	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	106-46-7	71	1,4-Dichlorobenzene	4.0	µg/L		EPA 8260	1.0	0.33	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	78-93-3	141	2-Butanone (MEK)	0.96	µg/L	U	EPA 8260	5.0	0.96	100	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	591-78-6	124	2-Hexanone	0.46	µg/L	U	EPA 8260	5.0	0.46	50	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	108-10-1	147	4-Methyl-2-pentanone (MIBK)	0.33	µg/L	U	EPA 8260	5.0	0.33	100	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	67-64-1	3	Acetone	2.2	µg/L	U	EPA 8260	25.0	2.2	100	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	107-13-1	8	Acrylonitrile	1.9	µg/L	U	EPA 8260	10.0	1.9	200	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	71-43-2	16	Benzene	0.25	µg/L	U	EPA 8260	1.0	0.25	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	74-97-5	28	Bromochloromethane	0.17	µg/L	U	EPA 8260	1.0	0.17	3	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	75-27-4	29	Bromodichloromethane	0.18	µg/L	U	EPA 8260	1.0	0.18	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	75-25-2	30	Bromoform	0.26	µg/L	U	EPA 8260	1.0	0.26	3	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	74-83-9	136	Bromomethane	0.29	µg/L	U	EPA 8260	2.0	0.29	10	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	75-15-0	35	Carbon disulfide	1.2	µg/L	U	EPA 8260	2.0	1.2	100	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	56-23-5	36	Carbon tetrachloride	0.25	µg/L	U	EPA 8260	1.0	0.25	1	1	1/6/2011		1/8/2011	12

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Madison County Closed Municipal Solid Waste Landfill, Madison County, North Carolina

FACILITY PERMIT	WELL ID	CAS NUMBER	SWS ID	PARAMETER	RESULT	UNITS	QUALIFIER	METHOD	MRL	MDL	SWSL	DILUTION FACTOR	COLLECT DATE	EXTRACTION DATE	ANALYSIS DATE	NC LABORATORY CERTIFICATION NUMBER
58-02	5802-MW030LD	108-90-7	39	Chlorobenzene	1.5	µg/L	J	EPA 8260	1.0	0.23	3	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	75-00-3	41	Chloroethane	0.54	µg/L	U	EPA 8260	1.0	0.54	10	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	67-66-3	44	Chloroform	0.14	µg/L	U	EPA 8260	1.0	0.14	5	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	74-87-3	137	Chloromethane	0.11	µg/L	U	EPA 8260	1.0	0.11	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	156-59-2	78	cis-1,2-Dichloroethene	0.27	µg/L	J	EPA 8260	1.0	0.19	5	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	10061-01-5	86	cis-1,3-Dichloropropene	0.13	µg/L	U	EPA 8260	1.0	0.13	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	124-48-1	66	Dibromochloromethane	0.21	µg/L	U	EPA 8260	1.0	0.21	3	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	74-95-3	139	Dibromomethane	0.21	µg/L	U	EPA 8260	1.0	0.21	10	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	108-20-3	366	Diisopropyl ether	0.18	µg/L	J	EPA 8260	1.0	0.12	NE	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	100-41-4	110	Ethylbenzene	0.30	µg/L	U	EPA 8260	1.0	0.30	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	74-88-4	142	Iodomethane	0.32	µg/L	U	EPA 8260	5.0	0.32	10	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	179601-23-1	NE	m&p-Xylene	0.66	µg/L	U	EPA 8260	2.0	0.66	NE	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	75-09-2	140	Methylene Chloride	0.97	µg/L	U	EPA 8260	1.0	0.97	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	95-47-6	408	o-Xylene	0.23	µg/L	U	EPA 8260	1.0	0.23	NE	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	100-42-5	186	Styrene	0.26	µg/L	U	EPA 8260	1.0	0.26	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	127-18-4	192	Tetrachloroethene	0.46	µg/L	U	EPA 8260	1.0	0.46	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	108-88-3	196	Toluene	0.26	µg/L	U	EPA 8260	1.0	0.26	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	156-60-5	79	trans-1,2-Dichloroethene	0.49	µg/L	U	EPA 8260	1.0	0.49	5	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	10061-02-6	87	trans-1,3-Dichloropropene	0.26	µg/L	U	EPA 8260	1.0	0.26	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	110-57-6	73	trans-1,4-Dichloro-2-butene	1.0	µg/L	U	EPA 8260	1.0	1.0	100	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	79-01-6	201	Trichloroethene	0.47	µg/L	U	EPA 8260	1.0	0.47	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	75-69-4	203	Trichlorofluoromethane	0.20	µg/L	U	EPA 8260	1.0	0.20	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	108-05-4	210	Vinyl acetate	0.35	µg/L	U	EPA 8260	2.0	0.35	50	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	75-01-4	211	Vinyl chloride	0.62	µg/L	U	EPA 8260	1.0	0.62	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW030LD	7782-44-7	356	Dissolved Oxygen	3.44	mg/L							1/6/2011			
58-02	5802-MW030LD	SW336	336	Oxygen Reduction Potential	-18.6	mV							1/6/2011			
58-02	5802-MW030LD	SW320	320	pH	6.37	SU							1/6/2011			
58-02	5802-MW030LD	SW323	323	Specific Conductivity	869	mS							1/6/2011			
58-02	5802-MW030LD	SW325	325	Temperature	12.74	°C							1/6/2011			
58-02	5802-MW030LD	SW330	330	Turbidity	51.39	NTU							1/6/2011			
58-02	5802-MW040LD	7440-38-2	14	Arsenic	2.7	µg/L	U	EPA 6010	5.0	2.7	10	1	1/6/2011	1/13/2011	1/14/2011	40
58-02	5802-MW040LD	7440-39-3	15	Barium	650	µg/L		EPA 6010	5.0	2.5	100	1	1/6/2011	1/13/2011	1/14/2011	40
58-02	5802-MW040LD	7440-43-9	34	Cadmium	0.50	µg/L	U	EPA 6010	1.0	0.50	1	1	1/6/2011	1/13/2011	1/14/2011	40
58-02	5802-MW040LD	7440-47-3	51	Chromium	2.0	µg/L	U	EPA 6010	5.0	2.0	10	1	1/6/2011	1/13/2011	1/14/2011	40
58-02	5802-MW040LD	7439-92-1	131	Lead	4.0	µg/L	U	EPA 6010	5.0	4.0	10	1	1/6/2011	1/13/2011	1/14/2011	40
58-02	5802-MW040LD	7439-97-6	132	Mercury	0.10	µg/L	U	EPA 7470	0.20	0.10	0.2	1	1/6/2011	1/13/2011	1/14/2011	12
58-02	5802-MW040LD	7782-49-2	183	Selenium	5.0	µg/L	U	EPA 6010	10.0	5.0	10	1	1/6/2011	1/13/2011	1/14/2011	40
58-02	5802-MW040LD	7440-22-4	184	Silver	2.5	µg/L	U	EPA 6010	5.0	2.5	10	1	1/6/2011	1/13/2011	1/14/2011	40
58-02	5802-MW040LD	630-20-6	190	1,1,1,2-Tetrachloroethane	0.33	µg/L	U	EPA 8260	1.0	0.33	5	1	1/6/2011		1/8/2011	12
58-02	5802-MW040LD	71-55-6	200	1,1,1-Trichloroethane	0.48	µg/L	U	EPA 8260	1.0	0.48	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW040LD	79-34-5	191	1,1,2,2-Tetrachloroethane	0.40	µg/L	U	EPA 8260	1.0	0.40	3	1	1/6/2011		1/8/2011	12
58-02	5802-MW040LD	79-00-5	202	1,1,2-Trichloroethane	0.29	µg/L	U	EPA 8260	1.0	0.29	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW040LD	75-34-3	75	1,1-Dichloroethane	2.4	µg/L	J	EPA 8260	1.0	0.32	5	1	1/6/2011		1/8/2011	12
58-02	5802-MW040LD	75-35-4	77	1,1-Dichloroethene	0.56	µg/L	U	EPA 8260	1.0	0.56	5	1	1/6/2011		1/8/2011	12

Table 2
Analytical Data and Field Parameters
Phased Assessment Plan and Upgrade of Groundwater Monitoring Network
Madison County Closed Municipal Solid Waste Landfill, Madison County, North Carolina

FACILITY PERMIT	WELL ID	CAS NUMBER	SWS ID	PARAMETER	RESULT	UNITS	QUALIFIER	METHOD	MRL	MDL	SWSL	DILUTION FACTOR	COLLECT DATE	EXTRACTION DATE	ANALYSIS DATE	NC LABORATORY CERTIFICATION NUMBER
58-02	5802-MW04OLD	96-18-4	206	1,2,3-Trichloropropane	0.41	µg/L	U	EPA 8260	1.0	0.41	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	96-12-8	67	1,2-Dibromo-3-chloropropane	2.5	µg/L	U	EPA 8260	5.0	2.5	13	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	106-93-4	68	1,2-Dibromoethane (EDB)	0.27	µg/L	U	EPA 8260	1.0	0.27	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	95-50-1	69	1,2-Dichlorobenzene	0.30	µg/L	U	EPA 8260	1.0	0.30	5	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	107-06-2	76	1,2-Dichloroethane	0.12	µg/L	U	EPA 8260	1.0	0.12	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	78-87-5	82	1,2-Dichloropropane	0.27	µg/L	U	EPA 8260	1.0	0.27	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	106-46-7	71	1,4-Dichlorobenzene	4.5	µg/L		EPA 8260	1.0	0.33	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	78-93-3	141	2-Butanone (MEK)	0.96	µg/L	U	EPA 8260	5.0	0.96	100	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	591-78-6	124	2-Hexanone	0.46	µg/L	U	EPA 8260	5.0	0.46	50	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	108-10-1	147	4-Methyl-2-pentanone (MIBK)	0.33	µg/L	U	EPA 8260	5.0	0.33	100	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	67-64-1	3	Acetone	2.2	µg/L	U	EPA 8260	25.0	2.2	100	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	107-13-1	8	Acrylonitrile	1.9	µg/L	U	EPA 8260	10.0	1.9	200	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	71-43-2	16	Benzene	0.88	µg/L	J	EPA 8260	1.0	0.25	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	74-97-5	28	Bromochloromethane	0.17	µg/L	U	EPA 8260	1.0	0.17	3	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	75-27-4	29	Bromodichloromethane	0.18	µg/L	U	EPA 8260	1.0	0.18	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	75-25-2	30	Bromoform	0.26	µg/L	U	EPA 8260	1.0	0.26	3	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	74-83-9	136	Bromomethane	0.29	µg/L	U	EPA 8260	2.0	0.29	10	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	75-15-0	35	Carbon disulfide	1.2	µg/L	U	EPA 8260	2.0	1.2	100	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	56-23-5	36	Carbon tetrachloride	0.25	µg/L	U	EPA 8260	1.0	0.25	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	108-90-7	39	Chlorobenzene	3.9	µg/L		EPA 8260	1.0	0.23	3	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	75-00-3	41	Chloroethane	3.4	µg/L	J	EPA 8260	1.0	0.54	10	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	67-66-3	44	Chloroform	0.14	µg/L	U	EPA 8260	1.0	0.14	5	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	74-87-3	137	Chloromethane	0.11	µg/L	U	EPA 8260	1.0	0.11	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	156-59-2	78	cis-1,2-Dichloroethene	6.2	µg/L		EPA 8260	1.0	0.19	5	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	10061-01-5	86	cis-1,3-Dichloropropene	0.13	µg/L	U	EPA 8260	1.0	0.13	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	124-48-1	66	Dibromochloromethane	0.21	µg/L	U	EPA 8260	1.0	0.21	3	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	74-95-3	139	Dibromomethane	0.21	µg/L	U	EPA 8260	1.0	0.21	10	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	108-20-3	366	Diisopropyl ether	0.38	µg/L	J	EPA 8260	1.0	0.12	NE	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	100-41-4	110	Ethylbenzene	0.30	µg/L	U	EPA 8260	1.0	0.30	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	74-88-4	142	Iodomethane	0.32	µg/L	U	EPA 8260	5.0	0.32	10	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	179601-23-1	NE	m&p-Xylene	0.66	µg/L	U	EPA 8260	2.0	0.66	NE	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	75-09-2	140	Methylene Chloride	0.97	µg/L	U	EPA 8260	1.0	0.97	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	95-47-6	408	o-Xylene	0.23	µg/L	U	EPA 8260	1.0	0.23	NE	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	100-42-5	186	Styrene	0.26	µg/L	U	EPA 8260	1.0	0.26	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	127-18-4	192	Tetrachloroethene	0.46	µg/L	U	EPA 8260	1.0	0.46	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	108-88-3	196	Toluene	0.26	µg/L	U	EPA 8260	1.0	0.26	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	156-60-5	79	trans-1,2-Dichloroethene	0.49	µg/L	U	EPA 8260	1.0	0.49	5	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	10061-02-6	87	trans-1,3-Dichloropropene	0.26	µg/L	U	EPA 8260	1.0	0.26	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	110-57-6	73	trans-1,4-Dichloro-2-butene	1.0	µg/L	U	EPA 8260	1.0	1.0	100	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	79-01-6	201	Trichloroethene	2.0	µg/L		EPA 8260	1.0	0.47	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	75-69-4	203	Trichlorofluoromethane	0.20	µg/L	U	EPA 8260	1.0	0.20	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	108-05-4	210	Vinyl acetate	0.35	µg/L	U	EPA 8260	2.0	0.35	50	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	75-01-4	211	Vinyl chloride	1.1	µg/L		EPA 8260	1.0	0.62	1	1	1/6/2011		1/8/2011	12
58-02	5802-MW04OLD	7782-44-7	356	Dissolved Oxygen	5.67	mg/L							1/6/2011			
58-02	5802-MW04OLD	SW336	336	Oxygen Reduction Potential	127.3	mV							1/6/2011			

Table 2
Analytical Data and Field Parameters
Phased Assessment Plan and Upgrade of Groundwater Monitoring Network
Madison County Closed Municipal Solid Waste Landfill, Madison County, North Carolina

FACILITY PERMIT	WELL ID	CAS NUMBER	SWS ID	PARAMETER	RESULT	UNITS	QUALIFIER	METHOD	MRL	MDL	SWSL	DILUTION FACTOR	COLLECT DATE	EXTRACTION DATE	ANALYSIS DATE	NC LABORATORY CERTIFICATION NUMBER
58-02	5802-MW04OLD	SW320	320	pH	6.21	SU							1/6/2011			
58-02	5802-MW04OLD	SW323	323	Specific Conductivity	797	mS							1/6/2011			
58-02	5802-MW04OLD	SW325	325	Temperature	12.47	°C							1/6/2011			
58-02	5802-MW04OLD	SW330	330	Turbidity	6.39	NTU							1/6/2011			
58-02	5802-TRIPBLANKLAB	630-20-6	190	1,1,1,2-Tetrachloroethane	0.33	µg/L	U	EPA 8260	1.0	0.33	5	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	71-55-6	200	1,1,1-Trichloroethane	0.48	µg/L	U	EPA 8260	1.0	0.48	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	79-34-5	191	1,1,2,2-Tetrachloroethane	0.40	µg/L	U	EPA 8260	1.0	0.40	3	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	79-00-5	202	1,1,2-Trichloroethane	0.29	µg/L	U	EPA 8260	1.0	0.29	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	75-34-3	75	1,1-Dichloroethane	0.32	µg/L	U	EPA 8260	1.0	0.32	5	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	75-35-4	77	1,1-Dichloroethene	0.56	µg/L	U	EPA 8260	1.0	0.56	5	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	96-18-4	206	1,2,3-Trichloropropane	0.41	µg/L	U	EPA 8260	1.0	0.41	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	96-12-8	67	1,2-Dibromo-3-chloropropane	2.5	µg/L	U	EPA 8260	5.0	2.5	13	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	106-93-4	68	1,2-Dibromoethane (EDB)	0.27	µg/L	U	EPA 8260	1.0	0.27	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	95-50-1	69	1,2-Dichlorobenzene	0.30	µg/L	U	EPA 8260	1.0	0.30	5	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	107-06-2	76	1,2-Dichloroethane	0.12	µg/L	U	EPA 8260	1.0	0.12	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	78-87-5	82	1,2-Dichloropropane	0.27	µg/L	U	EPA 8260	1.0	0.27	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	106-46-7	71	1,4-Dichlorobenzene	0.33	µg/L	U	EPA 8260	1.0	0.33	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	78-93-3	141	2-Butanone (MEK)	0.96	µg/L	U	EPA 8260	5.0	0.96	100	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	591-78-6	124	2-Hexanone	0.46	µg/L	U	EPA 8260	5.0	0.46	50	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	108-10-1	147	4-Methyl-2-pentanone (MIBK)	0.33	µg/L	U	EPA 8260	5.0	0.33	100	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	67-64-1	3	Acetone	3.2	µg/L	J	EPA 8260	25.0	2.2	100	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	107-13-1	8	Acrylonitrile	1.9	µg/L	U	EPA 8260	10.0	1.9	200	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	71-43-2	16	Benzene	0.25	µg/L	U	EPA 8260	1.0	0.25	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	74-97-5	28	Bromochloromethane	0.17	µg/L	U	EPA 8260	1.0	0.17	3	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	75-27-4	29	Bromodichloromethane	0.18	µg/L	U	EPA 8260	1.0	0.18	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	75-25-2	30	Bromoform	0.26	µg/L	U	EPA 8260	1.0	0.26	3	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	74-83-9	136	Bromomethane	0.29	µg/L	U	EPA 8260	2.0	0.29	10	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	75-15-0	35	Carbon disulfide	1.2	µg/L	U	EPA 8260	2.0	1.2	100	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	56-23-5	36	Carbon tetrachloride	0.25	µg/L	U	EPA 8260	1.0	0.25	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	108-90-7	39	Chlorobenzene	0.23	µg/L	U	EPA 8260	1.0	0.23	3	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	75-00-3	41	Chloroethane	0.54	µg/L	U	EPA 8260	1.0	0.54	10	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	67-66-3	44	Chloroform	0.14	µg/L	U	EPA 8260	1.0	0.14	5	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	74-87-3	137	Chloromethane	0.11	µg/L	U	EPA 8260	1.0	0.11	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	156-59-2	78	cis-1,2-Dichloroethene	0.19	µg/L	U	EPA 8260	1.0	0.19	5	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	10061-01-5	86	cis-1,3-Dichloropropene	0.13	µg/L	U	EPA 8260	1.0	0.13	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	124-48-1	66	Dibromochloromethane	0.21	µg/L	U	EPA 8260	1.0	0.21	3	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	74-95-3	139	Dibromomethane	0.21	µg/L	U	EPA 8260	1.0	0.21	10	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	108-20-3	366	Diisopropyl ether	0.12	µg/L	U	EPA 8260	1.0	0.12	NE	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	100-41-4	110	Ethylbenzene	0.30	µg/L	U	EPA 8260	1.0	0.30	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	74-88-4	142	Iodomethane	0.32	µg/L	U	EPA 8260	5.0	0.32	10	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	179601-23-1	NE	m&p-Xylene	0.66	µg/L	U	EPA 8260	2.0	0.66	NE	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	75-09-2	140	Methylene Chloride	0.97	µg/L	U	EPA 8260	1.0	0.97	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	95-47-6	408	o-Xylene	0.23	µg/L	U	EPA 8260	1.0	0.23	NE	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	100-42-5	186	Styrene	0.26	µg/L	U	EPA 8260	1.0	0.26	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	127-18-4	192	Tetrachloroethene	0.46	µg/L	U	EPA 8260	1.0	0.46	1	1	1/6/2011		1/8/2011	12

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Analytical Data and Field Parameters
Phased Assessment Plan and Upgrade of Groundwater Monitoring Network
Madison County Closed Municipal Solid Waste Landfill, Madison County, North Carolina

FACILITY PERMIT	WELL ID	CAS NUMBER	SWS ID	PARAMETER	RESULT	UNITS	QUALIFIER	METHOD	MRL	MDL	SWSL	DILUTION FACTOR	COLLECT DATE	EXTRACTION DATE	ANALYSIS DATE	NC LABORATORY CERTIFICATION NUMBER
58-02	5802-TRIPBLANKLAB	108-88-3	196	Toluene	0.26	µg/L	U	EPA 8260	1.0	0.26	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	156-60-5	79	trans-1,2-Dichloroethene	0.49	µg/L	U	EPA 8260	1.0	0.49	5	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	10061-02-6	87	trans-1,3-Dichloropropene	0.26	µg/L	U	EPA 8260	1.0	0.26	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	110-57-6	73	trans-1,4-Dichloro-2-butene	1.0	µg/L	U	EPA 8260	1.0	1.0	100	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	79-01-6	201	Trichloroethene	0.47	µg/L	U	EPA 8260	1.0	0.47	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	75-69-4	203	Trichlorofluoromethane	0.20	µg/L	U	EPA 8260	1.0	0.20	1	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	108-05-4	210	Vinyl acetate	0.35	µg/L	U	EPA 8260	2.0	0.35	50	1	1/6/2011		1/8/2011	12
58-02	5802-TRIPBLANKLAB	75-01-4	211	Vinyl chloride	0.62	µg/L	U	EPA 8260	1.0	0.62	1	1	1/6/2011		1/8/2011	12

Notes:

1. "CAS Number" is a unique number assigned by the Chemical Abstracts Service (CAS) to all identified parameters. "SWS ID" is the Solid Waste Section Identification Number.
2. "Result" is analytical data reported by the laboratory in units of micrograms per liter (µg/L) or milligrams per liter (mg/L).
3. "Method Detection Limit" (MDL) is the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.
4. "Method Reporting Limit" (MRL) is the minimum concentration of a target analyte that can be accurately determined by the referenced method. MRL is listed under "Practical Quantitation Limit" (PQL) column in the laboratory analytical report.
5. "Method" is the analytical method used to analyze the constituents. "NE" means Not Established. Blank cells indicate that there is no information relevant to the respective row.
6. Qualifiers in non-italicized (roman type) text are laboratory data qualifiers or "flags". "U" is used for parameters not detected at concentrations above the Method Detection Limit (MDL). "J" is used for parameters detected at estimated concentrations above the Method Detection Limit (MDL) but below the laboratory's Method Reporting Limit (MRL) and the Solid Waste Section Limit (SWSL). An italicized*J* -flag is a data qualifier that reflects a detected concentration that is greater than the laboratory's MRL and MDL but less than the SWSL.
7. "SWSL" is the Solid Waste Section Limit. This limit (identified by DENR) is the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy.
8. "Dilution Factor" is reported as single number indicating dilution performed prior to analysis. A value of 1 indicates that the sample was not diluted prior to analysis.
9. "Collect Date" is the date on which the sample was collected in the field. "Analysis Date" is the date on which the sample was analyzed by the lab.
10. "Extraction Date" is the date on which the sample was prepared/extracted for analysis. If no extraction date is listed then no separate preparation/extraction was required for analysis.

APPENDICES

APPENDIX A
Well Construction Records

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 3098

1. WELL CONTRACTOR:
JOHNNY BURR
Well Contractor (Individual) Name
GEOLOGIC EXPLORATION, INC
Well Contractor Company Name
176 COMMERCE BLVD
Street Address
STATESVILLE NC 28625
City or Town State Zip Code
(704) 872-7686
Area code Phone number

2. WELL INFORMATION:
WELL CONSTRUCTION PERMIT# N/A
OTHER ASSOCIATED PERMIT#(if applicable)
SITE WELL ID #(if applicable) GP-1

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation☐ Other ☐ (list use)
DATE DRILLED 12/02/10 - 12/03/10

4. WELL LOCATION:
LONG BRANCH ROAD @ HWY 25 28753
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
CITY: MARSHALL COUNTY MADISON
TOPOGRAPHIC / LAND SETTING: (check appropriate box)
☐Slope ☐Valley ☐Flat ☐Ridge ☐Other
LATITUDE ___°___'___" DMS **OR** ___ DD
LONGITUDE ___°___'___" DMS **OR** ___ DD
Latitude/longitude source: ☐GPS ☐Topographic map
(location of well must be shown on a USGS topo map andattached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)
CLOSED MADISON CO LANDFILL N/A
Facility Name Facility ID# (if applicable)
LONG BRANCH ROAD @ HWY 25
Street Address
MARSHALL NC 28753
City or Town State Zip Code
JIM HUFF
Contact Name
271 CRAIG RUDISILL ROAD
Mailing Address
MARSHALL NC 28753
City or Town State Zip Code
( )
Area code Phone number

6. WELL DETAILS:
a. **TOTAL DEPTH:** 5.0 FEET
b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑
c. **WATER LEVEL** Below Top of Casing: DRY FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 3.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** N/A **METHOD OF TEST** N/A
f. **DISINFECTION: Type** N/A **Amount** N/A
g. **WATER ZONES** (depth):
Top___ Bottom___ Top___ Bottom___
Top___ Bottom___ Top___ Bottom___
Top___ Bottom___ Top___ Bottom___

7. CASING:	Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 4.0	Ft.	1 INCH	SCH 40	PVC
Top	Bottom	Ft.			
Top	Bottom	Ft.			

8. GROUT:	Depth		Material	Method
Top 0.0	Bottom 2.0	Ft.	PORTLAND BENTONITE	SLURRY
Top	Bottom	Ft.		
Top	Bottom	Ft.		

9. SCREEN:	Depth		Diameter	Slot Size	Material
Top 4.0	Bottom 5.0	Ft.	1.0 in.	.010 in.	PVC
Top	Bottom	Ft.	in.	in.	
Top	Bottom	Ft.	in.	in.	

10. SAND/GRAVEL PACK:	Depth		Size	Material
Top 3.0	Bottom 6.0	Ft.		PEA GRAVEL
Top	Bottom	Ft.		
Top	Bottom	Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	TAN/BROWN TOPSOIL
1.0	6.0	TAN PARTIALLY WEATHERED ROCK

12. REMARKS:
BENTONITE SEAL FROM 2.0 TO 3.0 FEET

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

SIGNATURE OF CERTIFIED WELL CONTRACTOR 01/04/11 DATE

JOHNNY BURR
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

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

Form GW-1b
Rev. 2/09

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 3098

1. WELL CONTRACTOR:
JOHNNY BURR
Well Contractor (Individual) Name
GEOLOGIC EXPLORATION, INC
Well Contractor Company Name
176 COMMERCE BLVD
Street Address
STATESVILLE NC 28625
City or Town State Zip Code
(704) 872-7686
Area code Phone number

2. WELL INFORMATION:
WELL CONSTRUCTION PERMIT# N/A
OTHER ASSOCIATED PERMIT#(if applicable)
SITE WELL ID #(if applicable) GP-2

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation☐ Other ☐ (list use)
DATE DRILLED 12/02/10 - 12/03/10

4. WELL LOCATION:
LONG BRANCH ROAD @ HWY 25 28753
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
CITY: MARSHALL COUNTY MADISON
TOPOGRAPHIC / LAND SETTING: (check appropriate box)
☐Slope ☐Valley ☐Flat ☐Ridge ☐Other
LATITUDE ___°___'___" DMS **OR** ___ DD
LONGITUDE ___°___'___" DMS **OR** ___ DD
Latitude/longitude source: ☐GPS ☐Topographic map
(location of well must be shown on a USGS topo map andattached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)
CLOSED MADISON CO LANDFILL N/A
Facility Name Facility ID# (if applicable)
LONG BRANCH ROAD @ HWY 25
Street Address
MARSHALL NC 28753
City or Town State Zip Code
JIM HUFF
Contact Name
271 CRAIG RUDISILL ROAD
Mailing Address
MARSHALL NC 28753
City or Town State Zip Code
( )
Area code Phone number

6. WELL DETAILS:
a. **TOTAL DEPTH:** 5.0 FEET
b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑
c. **WATER LEVEL** Below Top of Casing: DRY FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 3.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** N/A **METHOD OF TEST** N/A
f. **DISINFECTION: Type** N/A **Amount** N/A
g. **WATER ZONES** (depth):
Top___ Bottom___ Top___ Bottom___
Top___ Bottom___ Top___ Bottom___
Top___ Bottom___ Top___ Bottom___

7. CASING:	Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 4.0	Ft.	1 INCH	SCH 40	PVC
Top	Bottom	Ft.			
Top	Bottom	Ft.			

8. GROUT:	Depth		Material	Method
Top 0.0	Bottom 2.0	Ft.	PORTLAND BENTONITE	SLURRY
Top	Bottom	Ft.		
Top	Bottom	Ft.		

9. SCREEN:	Depth		Diameter	Slot Size	Material
Top 4.0	Bottom 5.0	Ft.	1.0 in.	.010 in.	PVC
Top	Bottom	Ft.	in.	in.	
Top	Bottom	Ft.	in.	in.	

10. SAND/GRAVEL PACK:	Depth		Size	Material
Top 3.0	Bottom 6.0	Ft.		PEA GRAVEL
Top	Bottom	Ft.		
Top	Bottom	Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	TAN/BROWN TOPSOIL
1.0	6.0	TAN PARTIALLY WEATHERED ROCK

12. REMARKS:
BENTONITE SEAL FROM 2.0 TO 3.0 FEET

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

SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE 01/04/11

JOHNNY BURR
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

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

Form GW-1b
Rev. 2/09

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 3098

1. WELL CONTRACTOR:

JOHNNY BURR
Well Contractor (Individual) Name

GEOLOGIC EXPLORATION, INC
Well Contractor Company Name

176 COMMERCE BLVD
Street Address

STATESVILLE | NC | 28625
City or Town | State | Zip Code

(704) 872-7686
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# N/A

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) GP-3

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

DATE DRILLED 12/02/10 - 12/03/10

4. WELL LOCATION:

LONG BRANCH ROAD @ HWY 25 28753
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: MARSHALL COUNTY MADISON

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

LATITUDE ___°___'___" DMS **OR** ___ DD

LONGITUDE ___°___'___" DMS **OR** ___ DD

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

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

CLOSED MADISON CO LANDFILL | N/A
Facility Name | Facility ID# (if applicable)

LONG BRANCH ROAD @ HWY 25
Street Address

MARSHALL | NC | 28753
City or Town | State | Zip Code

JIM HUFF
Contact Name

271 CRAIG RUDISILL ROAD
Mailing Address

MARSHALL | NC | 28753
City or Town | State | Zip Code

(___) ___
Area code Phone number

6. WELL DETAILS:

a. **TOTAL DEPTH:** 5.0 FEET

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

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

d. **TOP OF CASING IS** 3.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** N/A **METHOD OF TEST** N/A

f. **DISINFECTION: Type** N/A **Amount** N/A

g. **WATER ZONES** (depth):

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

7. CASING:

Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 4.0 Ft.	1 INCH	SCH 40	PVC
Top	Bottom Ft.			
Top	Bottom Ft.			

8. GROUT:

Depth		Material	Method
Top 0.0	Bottom 2.0 Ft.	PORTLAND BENTONITE	SLURRY
Top	Bottom Ft.		
Top	Bottom Ft.		

9. SCREEN:

Depth		Diameter	Slot Size	Material
Top 4.0	Bottom 5.0 Ft.	1.0 in.	.010 in.	PVC
Top	Bottom Ft.	in.	in.	
Top	Bottom Ft.	in.	in.	

10. SAND/GRAVEL PACK:

Depth		Size	Material
Top 3.0	Bottom 6.0 Ft.		PEA GRAVEL
Top	Bottom Ft.		
Top	Bottom Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	TAN/BROWN TOPSOIL
1.0	6.0	TAN PARTIALLY WEATHERED ROCK

12. REMARKS:

BENTONITE SEAL FROM 2.0 TO 3.0 FEET

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

SIGNATURE OF CERTIFIED WELL CONTRACTOR | 01/04/11 DATE

JOHNNY BURR
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

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

Form GW-1b
Rev. 2/09

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 3098

1. WELL CONTRACTOR:
JOHNNY BURR
Well Contractor (Individual) Name
GEOLOGIC EXPLORATION, INC
Well Contractor Company Name
176 COMMERCE BLVD
Street Address
STATESVILLE NC 28625
City or Town State Zip Code
(704) 872-7686
Area code Phone number

2. WELL INFORMATION:
WELL CONSTRUCTION PERMIT# N/A
OTHER ASSOCIATED PERMIT#(if applicable)
SITE WELL ID #(if applicable) GP-4

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation☐ Other ☐ (list use)
DATE DRILLED 12/02/10 - 12/06/10

4. WELL LOCATION:
LONG BRANCH ROAD @ HWY 25 28753
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
CITY: MARSHALL COUNTY MADISON
TOPOGRAPHIC / LAND SETTING: (check appropriate box)
☐Slope ☐Valley ☐Flat ☐Ridge ☐Other
LATITUDE ___°___'___" DMS OR ___ DD
LONGITUDE ___°___'___" DMS OR ___ DD
Latitude/longitude source: ☐GPS ☐Topographic map
(location of well must be shown on a USGS topo map andattached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)
CLOSED MADISON CO LANDFILL N/A
Facility Name Facility ID# (if applicable)
LONG BRANCH ROAD @ HWY 25
Street Address
MARSHALL NC 28753
City or Town State Zip Code
JIM HUFF
Contact Name
271 CRAIG RUDISILL ROAD
Mailing Address
MARSHALL NC 28753
City or Town State Zip Code
(_____) _____
Area code Phone number

6. WELL DETAILS:
a. **TOTAL DEPTH:** 5.0 FEET
b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑
c. **WATER LEVEL** Below Top of Casing: DRY FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 3.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.
e. **YIELD (gpm):** N/A **METHOD OF TEST** N/A
f. **DISINFECTION: Type** N/A **Amount** N/A
g. **WATER ZONES** (depth):
Top___ Bottom___ Top___ Bottom___
Top___ Bottom___ Top___ Bottom___
Top___ Bottom___ Top___ Bottom___

7. CASING:	Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 4.0	Ft.	1 INCH	SCH 40	PVC
Top	Bottom	Ft.			
Top	Bottom	Ft.			

8. GROUT:	Depth		Material	Method
Top 0.0	Bottom 2.0	Ft.	PORTLAND BENTONITE	SLURRY
Top	Bottom	Ft.		
Top	Bottom	Ft.		

9. SCREEN:	Depth		Diameter	Slot Size	Material
Top 4.0	Bottom 5.0	Ft.	1.0 in.	.010 in.	PVC
Top	Bottom	Ft.	in.	in.	
Top	Bottom	Ft.	in.	in.	

10. SAND/GRAVEL PACK:	Depth		Size	Material
Top 3.0	Bottom 6.0	Ft.		PEA GRAVEL
Top	Bottom	Ft.		
Top	Bottom	Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	TAN/BROWN TOPSOIL
1.0	6.0	TAN PARTIALLY WEATHERED ROCK

12. REMARKS:
BENTONITE SEAL FROM 2.0 TO 3.0 FEET

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

Johnny Burr 01/04/11
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

JOHNNY BURR
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

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

Form GW-1b
Rev. 2/09

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 3098

1. WELL CONTRACTOR:
JOHNNY BURR
Well Contractor (Individual) Name
GEOLOGIC EXPLORATION, INC
Well Contractor Company Name
176 COMMERCE BLVD
Street Address
STATESVILLE NC 28625
City or Town State Zip Code
(704) 872-7686
Area code Phone number

2. WELL INFORMATION:
WELL CONSTRUCTION PERMIT# N/A
OTHER ASSOCIATED PERMIT#(if applicable)
SITE WELL ID #(if applicable) GP-5

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation☐ Other ☐ (list use)
DATE DRILLED 12/02/10 - 12/06/10

4. WELL LOCATION:
LONG BRANCH ROAD @ HWY 25 28753
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
CITY: MARSHALL COUNTY MADISON
TOPOGRAPHIC / LAND SETTING: (check appropriate box)
☐Slope ☐Valley ☐Flat ☐Ridge ☐Other
LATITUDE ___°___'___" DMS OR ___ DD
LONGITUDE ___°___'___" DMS OR ___ DD
Latitude/longitude source: ☐GPS ☐Topographic map
(location of well must be shown on a USGS topo map andattached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)
CLOSED MADISON CO LANDFILL N/A
Facility Name Facility ID# (if applicable)
LONG BRANCH ROAD @ HWY 25
Street Address
MARSHALL NC 28753
City or Town State Zip Code
JIM HUFF
Contact Name
271 CRAIG RUDISILL ROAD
Mailing Address
MARSHALL NC 28753
City or Town State Zip Code
(____) ____
Area code Phone number

6. WELL DETAILS:
a. **TOTAL DEPTH:** 5.0 FEET
b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑
c. **WATER LEVEL** Below Top of Casing: DRY FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 3.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.
e. **YIELD (gpm):** N/A **METHOD OF TEST** N/A
f. **DISINFECTION: Type** N/A **Amount** N/A
g. **WATER ZONES** (depth):
Top___ Bottom___ Top___ Bottom___
Top___ Bottom___ Top___ Bottom___
Top___ Bottom___ Top___ Bottom___

7. CASING:	Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 4.0	Ft.	1 INCH	SCH 40	PVC
Top___	Bottom___	Ft.			
Top___	Bottom___	Ft.			

8. GROUT:	Depth		Material	Method
Top 0.0	Bottom 2.0	Ft.	PORTLAND BENTONITE	SLURRY
Top___	Bottom___	Ft.		
Top___	Bottom___	Ft.		

9. SCREEN:	Depth		Diameter	Slot Size	Material
Top 4.0	Bottom 5.0	Ft.	1.0 in.	.010 in.	PVC
Top___	Bottom___	Ft.	in.	in.	
Top___	Bottom___	Ft.	in.	in.	

10. SAND/GRAVEL PACK:	Depth		Size	Material
Top 3.0	Bottom 6.0	Ft.		PEA GRAVEL
Top___	Bottom___	Ft.		
Top___	Bottom___	Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	TAN/BROWN TOPSOIL
1.0	6.0	TAN PARTIALLY WEATHERED ROCK

12. REMARKS:
BENTONITE SEAL FROM 2.0 TO 3.0 FEET

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

SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE 01/04/11

JOHNNY BURR
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

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

Form GW-1b
Rev. 2/09

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 3098

1. WELL CONTRACTOR:

JOHNNY BURR
Well Contractor (Individual) Name

GEOLOGIC EXPLORATION, INC
Well Contractor Company Name

176 COMMERCE BLVD
Street Address

STATESVILLE | NC | 28625
City or Town | State | Zip Code

(704) 872-7686
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# N/A

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) GP-6

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

DATE DRILLED 12/02/10 - 12/07/10

4. WELL LOCATION:

LONG BRANCH ROAD @ HWY 25 28753
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: MARSHALL COUNTY MADISON

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

LATITUDE ___°___'___" DMS **OR** ___ DD

LONGITUDE ___°___'___" DMS **OR** ___ DD

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

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

CLOSED MADISON CO LANDFILL | N/A
Facility Name | Facility ID# (if applicable)

LONG BRANCH ROAD @ HWY 25
Street Address

MARSHALL | NC | 28753
City or Town | State | Zip Code

JIM HUFF
Contact Name

271 CRAIG RUDISILL ROAD
Mailing Address

MARSHALL | NC | 28753
City or Town | State | Zip Code

(___) ___
Area code Phone number

6. WELL DETAILS:

a. **TOTAL DEPTH:** 5.0 FEET

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

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

d. **TOP OF CASING IS** 3.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** N/A **METHOD OF TEST** N/A

f. **DISINFECTION: Type** N/A **Amount** N/A

g. **WATER ZONES** (depth):

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

7. CASING:

Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 4.0 Ft.	1 INCH	SCH 40	PVC
Top	Bottom Ft.			
Top	Bottom Ft.			

8. GROUT:

Depth		Material	Method
Top 0.0	Bottom 2.0 Ft.	PORTLAND BENTONITE	SLURRY
Top	Bottom Ft.		
Top	Bottom Ft.		

9. SCREEN:

Depth		Diameter	Slot Size	Material
Top 4.0	Bottom 5.0 Ft.	1.0 in.	.010 in.	PVC
Top	Bottom Ft.	in.	in.	
Top	Bottom Ft.	in.	in.	

10. SAND/GRAVEL PACK:

Depth		Size	Material
Top 3.0	Bottom 6.0 Ft.		PEA GRAVEL
Top	Bottom Ft.		
Top	Bottom Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	TAN/BROWN TOPSOIL
1.0	6.0	TAN PARTIALLY WEATHERED ROCK

12. REMARKS:

BENTONITE SEAL FROM 2.0 TO 3.0 FEET

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

Johnny Burr | 01/04/11
SIGNATURE OF CERTIFIED WELL CONTRACTOR | DATE

JOHNNY BURR
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

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

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NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 3098

1. WELL CONTRACTOR:
JOHNNY BURR
Well Contractor (Individual) Name
GEOLOGIC EXPLORATION, INC
Well Contractor Company Name
176 COMMERCE BLVD
Street Address
STATESVILLE NC 28625
City or Town State Zip Code
(704) 872-7686
Area code Phone number

2. WELL INFORMATION:
WELL CONSTRUCTION PERMIT# N/A
OTHER ASSOCIATED PERMIT#(if applicable)
SITE WELL ID #(if applicable) GP-7

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation☐ Other ☐ (list use)
DATE DRILLED 12/02/10 - 12/07/10

4. WELL LOCATION:
LONG BRANCH ROAD @ HWY 25 28753
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
CITY: MARSHALL COUNTY MADISON
TOPOGRAPHIC / LAND SETTING: (check appropriate box)
☐Slope ☐Valley ☐Flat ☐Ridge ☐Other
LATITUDE °' " DMS **OR** DD
LONGITUDE °' " DMS **OR** DD
Latitude/longitude source: ☐GPS ☐Topographic map
(location of well must be shown on a USGS topo map andattached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)
CLOSED MADISON CO LANDFILL N/A
Facility Name Facility ID# (if applicable)
LONG BRANCH ROAD @ HWY 25
Street Address
MARSHALL NC 28753
City or Town State Zip Code
JIM HUFF
Contact Name
271 CRAIG RUDISILL ROAD
Mailing Address
MARSHALL NC 28753
City or Town State Zip Code
( )
Area code Phone number

6. WELL DETAILS:
a. **TOTAL DEPTH:** 5.0 FEET
b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑
c. **WATER LEVEL** Below Top of Casing: DRY FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 3.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** N/A **METHOD OF TEST** N/A
f. **DISINFECTION: Type** N/A **Amount** N/A

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

7. CASING:	Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 4.0	Ft.	1 INCH	SCH 40	PVC
Top	Bottom	Ft.			
Top	Bottom	Ft.			

8. GROUT:	Depth		Material	Method
Top 0.0	Bottom 2.0	Ft.	PORTLAND BENTONITE	SLURRY
Top	Bottom	Ft.		
Top	Bottom	Ft.		

9. SCREEN:	Depth		Diameter	Slot Size	Material
Top 4.0	Bottom 5.0	Ft.	1.0 in.	.010 in.	PVC
Top	Bottom	Ft.	in.	in.	
Top	Bottom	Ft.	in.	in.	

10. SAND/GRAVEL PACK:	Depth		Size	Material
Top 3.0	Bottom 6.0	Ft.		PEA GRAVEL
Top	Bottom	Ft.		
Top	Bottom	Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	TAN/BROWN TOPSOIL
1.0	6.0	TAN PARTIALLY WEATHERED ROCK

12. REMARKS:
BENTONITE SEAL FROM 2.0 TO 3.0 FEET

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

Johnny Burr 01/04/11
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

JOHNNY BURR
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

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

Form GW-1b
Rev. 2/09

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 3098

1. WELL CONTRACTOR:

JOHNNY BURR
Well Contractor (Individual) Name

GEOLOGIC EXPLORATION, INC
Well Contractor Company Name

176 COMMERCE BLVD
Street Address

STATESVILLE NC 28625
City or Town State Zip Code

(704) 872-7686
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# N/A

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) GP-8

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

DATE DRILLED 12/02/10 - 12/08/10

4. WELL LOCATION:

LONG BRANCH ROAD @ HWY 25 28753
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: MARSHALL COUNTY MADISON

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

LATITUDE ___°___'___" DMS **OR** ___ DD

LONGITUDE ___°___'___" DMS **OR** ___ DD

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

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

CLOSED MADISON CO LANDFILL N/A
Facility Name Facility ID# (if applicable)

LONG BRANCH ROAD @ HWY 25
Street Address

MARSHALL NC 28753
City or Town State Zip Code

JIM HUFF
Contact Name

271 CRAIG RUDISILL ROAD
Mailing Address

MARSHALL NC 28753
City or Town State Zip Code

( )
Area code Phone number

6. WELL DETAILS:

a. **TOTAL DEPTH:** 5.0 FEET

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

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

d. **TOP OF CASING IS** 3.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** N/A **METHOD OF TEST** N/A

f. **DISINFECTION: Type** N/A **Amount** N/A

g. **WATER ZONES** (depth):

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

7. CASING:

Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 4.0	Ft. 1 INCH	SCH 40	PVC
Top	Bottom	Ft.		
Top	Bottom	Ft.		

8. GROUT:

Depth		Material	Method
Top 0.0	Bottom 2.0	Ft. PORTLAND BENTONITE	SLURRY
Top	Bottom	Ft.	
Top	Bottom	Ft.	

9. SCREEN:

Depth		Diameter	Slot Size	Material
Top 4.0	Bottom 5.0	Ft. 1.0 in.	.010 in.	PVC
Top	Bottom	Ft. in.	in.	
Top	Bottom	Ft. in.	in.	

10. SAND/GRAVEL PACK:

Depth		Size	Material
Top 3.0	Bottom 6.0	Ft.	PEA GRAVEL
Top	Bottom	Ft.	
Top	Bottom	Ft.	

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	TAN/BROWN TOPSOIL
1.0	6.0	TAN PARTIALLY WEATHERED ROCK

12. REMARKS:

BENTONITE SEAL FROM 2.0 TO 3.0 FEET

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

Johnny Burr 01/04/11
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

JOHNNY BURR
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

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

Form GW-1b
Rev. 2/09

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 3098

1. WELL CONTRACTOR:

JOHNNY BURR
Well Contractor (Individual) Name

GEOLOGIC EXPLORATION, INC
Well Contractor Company Name

176 COMMERCE BLVD
Street Address

STATESVILLE NC 28625
City or Town State Zip Code

(704) 872-7686
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# N/A

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) GP-9

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

DATE DRILLED 12/02/10 - 12/08/10

4. WELL LOCATION:

LONG BRANCH ROAD @ HWY 25 28753
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: MARSHALL COUNTY MADISON

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

LATITUDE ___°___'___" DMS **OR** ___ DD

LONGITUDE ___°___'___" DMS **OR** ___ DD

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

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

CLOSED MADISON CO LANDFILL N/A
Facility Name Facility ID# (if applicable)

LONG BRANCH ROAD @ HWY 25
Street Address

MARSHALL NC 28753
City or Town State Zip Code

JIM HUFF
Contact Name

271 CRAIG RUDISILL ROAD
Mailing Address

MARSHALL NC 28753
City or Town State Zip Code

(___) ___
Area code Phone number

6. WELL DETAILS:

a. **TOTAL DEPTH:** 5.0 FEET

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

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

d. **TOP OF CASING IS** 3.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** N/A **METHOD OF TEST** N/A

f. **DISINFECTION: Type** N/A **Amount** N/A

g. **WATER ZONES** (depth):

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

7. CASING:

Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 4.0 Ft.	1 INCH	SCH 40	PVC
Top	Bottom Ft.			
Top	Bottom Ft.			

8. GROUT:

Depth		Material	Method
Top 0.0	Bottom 2.0 Ft.	PORTLAND BENTONITE	SLURRY
Top	Bottom Ft.		
Top	Bottom Ft.		

9. SCREEN:

Depth		Diameter	Slot Size	Material
Top 4.0	Bottom 5.0 Ft.	1.0 in.	.010 in.	PVC
Top	Bottom Ft.	in.	in.	
Top	Bottom Ft.	in.	in.	

10. SAND/GRAVEL PACK:

Depth		Size	Material
Top 3.0	Bottom 6.0 Ft.		PEA GRAVEL
Top	Bottom Ft.		
Top	Bottom Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	TAN/BROWN TOPSOIL
1.0	6.0	TAN PARTIALLY WEATHERED ROCK

12. REMARKS:

BENTONITE SEAL FROM 2.0 TO 3.0 FEET

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

Johnny Burr 01/04/11
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

JOHNNY BURR
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

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

Form GW-1b
Rev. 2/09

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 3098

1. WELL CONTRACTOR:

JOHNNY BURR
Well Contractor (Individual) Name

GEOLOGIC EXPLORATION, INC
Well Contractor Company Name

176 COMMERCE BLVD
Street Address

STATESVILLE | NC | 28625
City or Town | State | Zip Code

(704) 872-7686
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# N/A

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) GP-10

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

DATE DRILLED 12/06/10 - 12/09/10

4. WELL LOCATION:

LONG BRANCH ROAD @ HWY 25 28753
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: MARSHALL COUNTY MADISON

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

LATITUDE ___°___'_____" DMS **OR** _____ DD

LONGITUDE ___°___'_____" DMS **OR** _____ DD

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

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

CLOSED MADISON CO LANDFILL | N/A
Facility Name | Facility ID# (if applicable)

LONG BRANCH ROAD @ HWY 25
Street Address

MARSHALL | NC | 28753
City or Town | State | Zip Code

JIM HUFF
Contact Name

271 CRAIG RUDISILL ROAD
Mailing Address

MARSHALL | NC | 28753
City or Town | State | Zip Code

(_____) _____
Area code Phone number

6. WELL DETAILS:

a. **TOTAL DEPTH:** 5.0 FEET

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

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

d. **TOP OF CASING IS** 3.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** N/A **METHOD OF TEST** N/A

f. **DISINFECTION: Type** N/A **Amount** N/A

g. **WATER ZONES** (depth):

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

7. CASING:

Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 4.0	Ft. 1 INCH	SCH 40	PVC
Top	Bottom	Ft.		
Top	Bottom	Ft.		

8. GROUT:

Depth		Material	Method
Top 0.0	Bottom 2.0	Ft. PORTLAND BENTONITE	SLURRY
Top	Bottom	Ft.	
Top	Bottom	Ft.	

9. SCREEN:

Depth		Diameter	Slot Size	Material
Top 4.0	Bottom 5.0	Ft. 1.0 in.	.010 in.	PVC
Top	Bottom	Ft. in.	in.	
Top	Bottom	Ft. in.	in.	

10. SAND/GRAVEL PACK:

Depth		Size	Material
Top 3.0	Bottom 6.0	Ft.	PEA GRAVEL
Top	Bottom	Ft.	
Top	Bottom	Ft.	

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	TAN/BROWN TOPSOIL
1.0	6.0	TAN PARTIALLY WEATHERED ROCK

12. REMARKS:

BENTONITE SEAL FROM 2.0 TO 3.0 FEET

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

Johnny Burr 01/04/11
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

JOHNNY BURR
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

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

Form GW-1b
Rev. 2/09

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 3098

1. WELL CONTRACTOR:

JOHNNY BURR
Well Contractor (Individual) Name

GEOLOGIC EXPLORATION, INC
Well Contractor Company Name

176 COMMERCE BLVD
Street Address

STATESVILLE | NC | 28625
City or Town | State | Zip Code

(704) 872-7686
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# N/A

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) GP-11

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

DATE DRILLED 12/06/10 - 12/09/10

4. WELL LOCATION:

LONG BRANCH ROAD @ HWY 25 28753
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: MARSHALL COUNTY MADISON

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

LATITUDE ___°___'___" DMS **OR** ___ DD

LONGITUDE ___°___'___" DMS **OR** ___ DD

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

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

CLOSED MADISON CO LANDFILL | N/A
Facility Name | Facility ID# (if applicable)

LONG BRANCH ROAD @ HWY 25
Street Address

MARSHALL | NC | 28753
City or Town | State | Zip Code

JIM HUFF
Contact Name

271 CRAIG RUDISILL ROAD
Mailing Address

MARSHALL | NC | 28753
City or Town | State | Zip Code

(_____) _____
Area code Phone number

6. WELL DETAILS:

a. **TOTAL DEPTH:** 5.0 FEET

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

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

d. **TOP OF CASING IS** 3.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** N/A **METHOD OF TEST** N/A

f. **DISINFECTION: Type** N/A **Amount** N/A

g. **WATER ZONES** (depth):

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

7. CASING:

Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 4.0 Ft.	1 INCH	SCH 40	PVC
Top	Bottom Ft.			
Top	Bottom Ft.			

8. GROUT:

Depth		Material	Method
Top 0.0	Bottom 2.0 Ft.	PORTLAND BENTONITE	SLURRY
Top	Bottom Ft.		
Top	Bottom Ft.		

9. SCREEN:

Depth		Diameter	Slot Size	Material
Top 4.0	Bottom 5.0 Ft.	1.0 in.	.010 in.	PVC
Top	Bottom Ft.	in.	in.	
Top	Bottom Ft.	in.	in.	

10. SAND/GRAVEL PACK:

Depth		Size	Material
Top 3.0	Bottom 6.0 Ft.		PEA GRAVEL
Top	Bottom Ft.		
Top	Bottom Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	TAN/BROWN TOPSOIL
1.0	6.0	TAN PARTIALLY WEATHERED ROCK

12. REMARKS:

BENTONITE SEAL FROM 2.0 TO 3.0 FEET

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

Johny Burr | 01/04/11
SIGNATURE OF CERTIFIED WELL CONTRACTOR | DATE

JOHNNY BURR
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

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

Form GW-1b
Rev. 2/09

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 3098

1. WELL CONTRACTOR:
JOHNNY BURR
Well Contractor (Individual) Name
GEOLOGIC EXPLORATION, INC
Well Contractor Company Name
176 COMMERCE BLVD
Street Address
STATESVILLE NC 28625
City or Town State Zip Code
(704) 872-7686
Area code Phone number

2. WELL INFORMATION:
WELL CONSTRUCTION PERMIT# N/A
OTHER ASSOCIATED PERMIT#(if applicable)
SITE WELL ID #(if applicable) MW-3 (OLD)

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)
DATE DRILLED 12/03/10 - 12/10/10

4. WELL LOCATION:
LONG BRANCH ROAD @ HWY 25 28753
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
CITY: MARSHALL COUNTY MADISON
TOPOGRAPHIC / LAND SETTING: (check appropriate box)
☐Slope ☐Valley ☐Flat ☐Ridge ☐Other
LATITUDE ___°___'___" DMS **OR** ___ DD
LONGITUDE ___°___'___" DMS **OR** ___ DD
Latitude/longitude source: ☐GPS ☐Topographic map
(location of well must be shown on a USGS topo map andattached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)
CLOSED MADISON CO LANDFILL N/A
Facility Name Facility ID# (if applicable)
LONG BRANCH ROAD @ HWY 25
Street Address
MARSHALL NC 28753
City or Town State Zip Code
JIM HUFF
Contact Name
271 CRAIG RUDISILL ROAD
Mailing Address
MARSHALL NC 28753
City or Town State Zip Code
(___) ___
Area code Phone number

6. WELL DETAILS:
a. **TOTAL DEPTH:** 49.0 FEET
b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑
c. **WATER LEVEL** Below Top of Casing: 43.0 FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 3.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.
e. **YIELD (gpm):** N/A **METHOD OF TEST** N/A
f. **DISINFECTION: Type** N/A **Amount** N/A
g. **WATER ZONES** (depth):
Top___ Bottom___ Top___ Bottom___
Top___ Bottom___ Top___ Bottom___
Top___ Bottom___ Top___ Bottom___

7. CASING:	Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 44.0	Ft.	2 INCH	SCH 40	PVC
Top 0.0	Bottom 38.0	Ft.	6 INCH	SCH 40	PVC
Top	Bottom	Ft.			

8. GROUT:	Depth		Material	Method
Top 0.0	Bottom 37.0	Ft.	PORTLAND BENTONITE	SLURRY
Top 0.0	Bottom 38.0	Ft.	PORTLAND BENTONITE	SLURRY
Top	Bottom	Ft.		

9. SCREEN:	Depth		Diameter	Slot Size	Material
Top 44.0	Bottom 49.0	Ft.	2.0 in.	.010 in.	PVC
Top	Bottom	Ft.	in.	in.	
Top	Bottom	Ft.	in.	in.	

10. SAND/GRAVEL PACK:

	Depth		Size	Material
Top 41.0	Bottom 49.0	Ft.	20-40	FINE SILICA SAND
Top	Bottom	Ft.		
Top	Bottom	Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	12.0	BROWN PARTIALLY WEATHER ROCK
12.0	16.0	GRAY GRANITE
16.0	18.0	BROWN PARTIALLY WEATHER ROCK
18.0	19.0	GRAY GRANITE
19.0	21.0	WHITE QUARTZ
21.0	26.0	GRAY GRANITE
26.0	35.0	BROWN PARTIALLY WEATHER ROCK
35.0	49.0	GRAY GRANITE

12. REMARKS:
BENTONITE SEAL FROM 37.0 TO 41.0 FEET

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

SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE 01/04/11

JOHNNY BURR
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

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

Form GW-1b
Rev. 2/09

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2452

1. WELL CONTRACTOR:

JERRY WATKINS
Well Contractor (Individual) Name

GEOLOGIC EXPLORATION, INC
Well Contractor Company Name

176 COMMERCE BLVD
Street Address

STATESVILLE | NC | 28625
City or Town | State | Zip Code

(704) 872-7686
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# N/A

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) MW-4 (OLD)

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

DATE DRILLED 12/28/10 - 12/30/10

4. WELL LOCATION:

LONG BRANCH ROAD @ HWY 25 28753
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: MARSHALL COUNTY MADISON

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

LATITUDE ___°___'___" DMS **OR** ___ DD

LONGITUDE ___°___'___" DMS **OR** ___ DD

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

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

CLOSED MADISON CO LANDFILL | N/A
Facility Name | Facility ID# (if applicable)

LONG BRANCH ROAD @ HWY 25
Street Address

MARSHALL | NC | 28753
City or Town | State | Zip Code

JIM HUFF
Contact Name

271 CRAIG RUDISILL ROAD
Mailing Address

MARSHALL | NC | 28753
City or Town | State | Zip Code

(___) ___
Area code Phone number

6. WELL DETAILS:

a. **TOTAL DEPTH:** 90.0 FEET

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

c. **WATER LEVEL** Below Top of Casing: 85.0 FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 0.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** N/A **METHOD OF TEST** N/A

f. **DISINFECTION: Type** N/A **Amount** N/A

g. **WATER ZONES** (depth):

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

7. CASING:	Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 70.0	Ft.	2 INCH	SCH 40	PVC
Top 0.0	Bottom 66.0	Ft.	6 INCH	SCH 40	PVC
Top	Bottom	Ft.			

8. GROUT:	Depth		Material	Method
Top 0.0	Bottom 64.0	Ft.	PORTLAND BENTONITE	SLURRY
Top 0.0	Bottom 66.0	Ft.	PORTLAND BENTONITE	SLURRY
Top	Bottom	Ft.		

9. SCREEN:	Depth		Diameter	Slot Size	Material
Top 70.0	Bottom 90.0	Ft.	2.0 in.	.010 in.	PVC
Top	Bottom	Ft.	in.	in.	
Top	Bottom	Ft.	in.	in.	

10. SAND/GRAVEL PACK:

	Depth		Size	Material
Top 67.0	Bottom 90.0	Ft.	20-40	FINE SILICA SAND
Top	Bottom	Ft.		
Top	Bottom	Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	2.0	ORANGE SANDY SILT
2.0	9.0	PARTIALLY WEATHERED ROCK
9.0	90.0	ROCK

12. REMARKS:

BENTONITE SEAL FROM 64.0 TO 67.0 FEET

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

Jerry Watkins | 01/04/11
SIGNATURE OF CERTIFIED WELL CONTRACTOR | DATE

JERRY WATKINS
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

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

Form GW-1b
Rev. 2/09

APPENDIX B
Lithologic Logs and Well Construction Diagrams

ALTAMONT ENVIRONMENTAL, INC.
ENGINEERING & HYDROGEOLOGY
231 HAYWOOD STREET, ASHEVILLE, NC 28801
TEL.828.281.3350 FAC.828.281.3351
WWW.ALTAMONTENVIRONMENTAL.COM

LITHOLOGIC LOG SHEET

Project Name: Madison County Closed LF
Project No.: 2313.18
Geologist: Joel Lenk
Driller: Johnny Burr
Rig Type: Geoprobe 8140 DT
Method Used: Air Rotary
Date Begun: 12/2/2010
Date Completed: 12/3/2010
Boring Name: GP-1
Sheet 1 of 1
Total Depth: 6 feet
Groundwater:

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
						Brown silty clay.
					1	
					2	
					3	
					4	
					5	
					6	
					7	GP-1 was completed as follows: one inch diameter schedule 40 PVC casing from 4'-0', 0.01 slot screen interval from 5'-4', pea gravel filter pack from 6'-3', bentonite seal from 3'-2', grout 2'-0'. Landfill soil gas probe was completed with a stickup
					8	surface completion set in a 2' x 2' x 4" concrete well pad. Completion included
					9	locking expansion plug and lock.
					10	
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					20	

Location Diagram

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LITHOLOGIC LOG SHEET

Project Name: Madison County Closed LF
Project No.: 2313.18
Geologist: Joel Lenk
Driller: Johnny Burr
Rig Type: Geoprobe 8140 DT
Method Used: Air Rotary
Date Begun: 12/2/2010
Date Completed: 12/3/2010
Boring Name: GP-2
Sheet 1 of 1
Total Depth: 6 feet
Groundwater:

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
						Brown sandy silt.
					1	
					2	
					3	
					4	
					5	
					6	
					7	GP-2 was completed as follows: one inch diameter schedule 40 PVC casing from 4'-0', 0.01 slot screen interval from 5'-4', pea gravel filter pack from 6'-3', bentonite seal from 3'-2', grout 2'-0'. Landfill soil gas probe was completed with a stickup
					8	surface completion set in a 2' x 2' x 4" concrete well pad. Completion included
					9	locking expansion plug and lock.
					10	
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					20	

Location Diagram

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LITHOLOGIC LOG SHEET

Project Name: Madison County Closed LF
Project No.: 2313.18
Geologist: Joel Lenk
Driller: Johnny Burr
Rig Type: Geoprobe 8140 DT
Method Used: Air Rotary
Date Begun: 12/2/2010
Date Completed: 12/3/2010
Boring Name: GP-3
Sheet 1 of 1
Total Depth: 6 feet
Groundwater:

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
						Reddish yellow sandy silt.
					1	
					2	
					3	
					4	
					5	
					6	
					7	GP-3 was completed as follows: one inch diameter schedule 40 PVC casing from 4'-0', 0.01 slot screen interval from 5'-4', pea gravel filter pack from 6'-3', bentonite seal from 3'-2', grout 2'-0'. Landfill soil gas probe was completed with a stickup
					8	surface completion set in a 2' x 2' x 4" concrete well pad. Completion included
					9	locking expansion plug and lock.
					10	
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					20	

Location Diagram

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LITHOLOGIC LOG SHEET

Project Name: Madison County Closed LF
Project No.: 2313.18
Geologist: Joel Lenk
Driller: Johnny Burr
Rig Type: Geoprobe 8140 DT
Method Used: Air Rotary

Date Begun: 12/2/2010
Date Completed: 12/6/2010

Boring Name: GP-4
Sheet 1 of 1
Total Depth: 6 feet
Groundwater:

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
						Reddish brown silty sand.
					1	
					2	
					3	
					4	
					5	
					6	
					7	GP-4 was completed as follows: one inch diameter schedule 40 PVC casing from 4'-0',
						0.01 slot screen interval from 5'-4', pea gravel filter pack from 6'-3', bentonite seal from
					8	3'-2', grout 2'-0'. Landfill soil gas probe was completed with a stickup
						surface completion set in a 2' x 2' x 4" concrete well pad. Completion included
					9	locking expansion plug and lock.
					10	
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					20	

Location Diagram

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LITHOLOGIC LOG SHEET

Project Name: Madison County Closed LF
Project No.: 2313.18
Geologist: Joel Lenk
Driller: Johnny Burr
Rig Type: Geoprobe 8140 DT
Method Used: Air Rotary
Date Begun: 12/2/2010
Date Completed: 12/6/2010
Boring Name: GP-5
Sheet 1 of 1
Total Depth: 6 feet
Groundwater:

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
						Reddish brown silty sand.
					1	
					2	
					3	
					4	
					5	
					6	
					7	GP-5 was completed as follows: one inch diameter schedule 40 PVC casing from 4'-0',
						0.01 slot screen interval from 5'-4', pea gravel filter pack from 6'-3', bentonite seal from
					8	3'-2', grout 2'-0'. Landfill soil gas probe was completed with a stickup
						surface completion set in a 2' x 2' x 4" concrete well pad. Completion included
					9	locking expansion plug and lock.
					10	
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					20	

Location Diagram

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LITHOLOGIC LOG SHEET

Project Name: Madison County Closed LF
Project No.: 2313.18
Geologist: Joel Lenk
Driller: Johnny Burr
Rig Type: Geoprobe 8140 DT
Method Used: Air Rotary
Date Begun: 12/2/2010
Date Completed: 12/7/2010
Boring Name: GP-6
Sheet 1 of 1
Total Depth: 6 feet
Groundwater:

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
						Light brown silty sand.
					1	
					2	
					3	
					4	
					5	
					6	Weathered rock.
					7	GP-6 was completed as follows: one inch diameter schedule 40 PVC casing from 4'-0', 0.01 slot screen interval from 5'-4', pea gravel filter pack from 6'-3', bentonite seal from 3'-2', grout 2'-0'. Landfill soil gas probe was completed with a stickup
					8	surface completion set in a 2' x 2' x 4" concrete well pad. Completion included
					9	locking expansion plug and lock.
					10	
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					20	

Location Diagram

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LITHOLOGIC LOG SHEET

Project Name: Madison County Closed LF
Project No.: 2313.18
Geologist: Joel Lenk
Driller: Johnny Burr
Rig Type: Geoprobe 8140 DT
Method Used: Air Rotary

Date Begun: 12/2/2010
Date Completed: 12/7/2010

Boring Name: GP-7
Sheet 1 of 1
Total Depth: 6 feet
Groundwater:

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
						Grayish brown weathered rock.
					1	
					2	
					3	
					4	
					5	
					6	
					7	GP-7 was completed as follows: one inch diameter schedule 40 PVC casing from 4'-0', 0.01 slot screen interval from 5'-4', pea gravel filter pack from 6'-3', bentonite seal from 3'-2', grout 2'-0'. Landfill soil gas probe was completed with a stickup
					8	surface completion set in a 2' x 2' x 4" concrete well pad. Completion included
					9	locking expansion plug and lock.
					10	
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					20	

Location Diagram

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LITHOLOGIC LOG SHEET

Project Name: Madison County Closed LF
Project No.: 2313.18
Geologist: Joel Lenk
Driller: Johnny Burr
Rig Type: Geoprobe 8140 DT
Method Used: Air Rotary
Date Begun: 12/2/2010
Date Completed: 12/8/2010
Boring Name: GP-8
Sheet 1 of 1
Total Depth: 6 feet
Groundwater:

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
						Loose to weatherd rock: yellowish brown, sandy silt.
					1	
					2	
					3	
					4	
					5	
					6	
					7	GP-8 was completed as follows: one inch diameter schedule 40 PVC casing from 4'-0',
						0.01 slot screen interval from 5'-4', pea gravel filter pack from 6'-3', bentonite seal from
					8	3'-2', grout 2'-0'. Landfill soil gas probe was completed with a stickup
						surface completion set in a 2' x 2' x 4" concrete well pad. Completion included
					9	locking expansion plug and lock.
					10	
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					20	

Location Diagram

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LITHOLOGIC LOG SHEET

Project Name: Madison County Closed LF
Project No.: 2313.18
Geologist: Joel Lenk
Driller: Johnny Burr
Rig Type: Geoprobe 8140 DT
Method Used: Air Rotary
Date Begun: 12/2/2010
Date Completed: 12/8/2010
Boring Name: GP-9
Sheet 1 of 1
Total Depth: 6 feet
Groundwater:

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
						Reddish yellow brown sandy silt.
					1	
					2	
					3	
					4	
					5	
					6	
					7	GP-9 was completed as follows: one inch diameter schedule 40 PVC casing from 4'-0',
						0.01 slot screen interval from 5'-4', pea gravel filter pack from 6'-3', bentonite seal from
					8	3'-2', grout 2'-0'. Landfill soil gas probe was completed with a stickup
						surface completion set in a 2' x 2' x 4" concrete well pad. Completion included
					9	locking expansion plug and lock.
					10	
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					20	

Location Diagram

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LITHOLOGIC LOG SHEET

Project Name: Madison County Closed LF
Project No.: 2313.18
Geologist: Joel Lenk
Driller: Johnny Burr
Rig Type: Geoprobe 8140 DT
Method Used: Air Rotary
Date Begun: 12/6/2010
Date Completed: 12/9/2010
Boring Name: GP-10
Sheet 1 of 1
Total Depth: 6 feet
Groundwater:

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
						Reddish yellow silty clay.
					1	
					2	
					3	
					4	
					5	
					6	
					7	GP-10 was completed as follows: one inch diameter schedule 40 PVC casing from 4'-0',
						0.01 slot screen interval from 5'-4', pea gravel filter pack from 6'-3', bentonite seal from
					8	3'-2', grout 2'-0'. Landfill soil gas probe was completed with a stickup
						surface completion set in a 2' x 2' x 4" concrete well pad. Completion included
					9	locking expansion plug and lock.
					10	
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					20	

Location Diagram

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LITHOLOGIC LOG SHEET

Project Name: Madison County Closed LF
Project No.: 2313.18
Geologist: Joel Lenk
Driller: Johnny Burr
Rig Type: Geoprobe 8140 DT
Method Used: Air Rotary
Date Begun: 12/6/2010
Date Completed: 12/9/2010
Boring Name: GP-11
Sheet 1 of 1
Total Depth: 6 feet
Groundwater:

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
						Brown silty clay to clayey silt.
					1	
					2	
					3	
					4	
					5	
					6	
					7	GP-11 was completed as follows: one inch diameter schedule 40 PVC casing from 4'-0',
						0.01 slot screen interval from 5'-4', pea gravel filter pack from 6'-3', bentonite seal from
					8	3'-2', grout 2'-0'. Landfill soil gas probe was completed with a stickup
						surface completion set in a 2' x 2' x 4" concrete well pad. Completion included
					9	locking expansion plug and lock.
					10	
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					20	

Location Diagram

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LITHOLOGIC LOG SHEET

Project Name	Madison County Closed LF	Boring Name	MW-03-Old
Project No.	2313.18		
Geologist	Joel Lenk		
Driller	Johnny Burr	Sheet	1 of 3
Rig Type	Geoprobe 8140 DT	Date Begun	12/3/2010
Method Used	Air Rotary/Hammer 7-5/8" Bit	Date Completed	12/10/2010
		Total Depth	49.5 feet
		Groundwater	45.5 feet

Location Diagram

See Figures 1 and 2 of report.

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
						Unconsolidated material. Moist, yellowish brown, micaceous silty fine sand with gravel and cobble size weathered rock fragments.
					1	
					2	
					3	
					4	
					5	Weathered and partially weathered rock. Differentiated weathered dry, grey micaceous gneiss interlayered with dry, grey to yellowish brown silty sand.
					6	
					7	
					8	
					9	
					10	
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					20	

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LITHOLOGIC LOG SHEET

Project Name: Madison County Closed LF
Project No.: 2313.18
Geologist: Joel Lenk
Driller: Johnny Burr
Rig Type: Geoprobe 8140 DT
Method Used: Air Rotary/Hammer 7-5/8" Bit

Date Begun: 12/3/2010
Date Completed: 12/10/2010

Boring Name: MW-03-Old
Sheet 2 of 3
Total Depth: 49.5 feet
Groundwater: 45.5 feet

Location Diagram: See Figures 1 and 2 of report.

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					30	
					1	
					2	
					3	
					4	
					5	Competent rock. Dry, grey micaceous gneiss.
					6	
					7	
					8	Elevation of bottom of surface casing.
					9	
					40	

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LITHOLOGIC LOG SHEET

Project Name	Madison County Closed LF	Boring Name	MW-03-Old
Project No.	2313.18		
Geologist	Joel Lenk		
Driller	Johnny Burr	Sheet	3 of 3
Rig Type	Geoprobe 8140 DT	Date Begun	12/3/2010
Method Used	Air Rotary/Hammer 7-5/8" Bit	Date Completed	12/10/2010
		Total Depth	49.5 feet
		Groundwater	45.5 feet

Location Diagram

See Figures 1 and 2 of report.

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
					1	
					2	
					3	
					4	
					5	
					6	Water-bearing fracture.
					7	
					8	
					9	Bottom of boring.
					50	MW-03-Old was completed as follows: six inch diameter schedule 40 PVC surface casing
					1	from 0.0'-38.0', two inch diameter schedule 40 PVC inner casing from 0.0'-44.0', 0.01 slot
					2	screen interval from 44.0'-49.0', sand filter pack (#2 sand) from 41.0'-49.25',
					3	bentonite seal from 37.0'-41.0'. Monitoring well was completed with a stickup
					4	surface completion set in a 2' x 2' x 4" concrete well pad. Completion included
					5	locking expansion plug and lock.
					6	
					7	
					8	
					9	
					60	

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LITHOLOGIC LOG SHEET

Project Name	Madison County Closed LF	Boring Name	MW-04-Old
Project No.	2313.18		
Geologist	Joel Lenk		
Driller	Johnny Burr	Sheet	1 of 5
Rig Type	Geoprobe 8140 DT	Date Begun	12/28/2010
Method Used	Air Rotary/Hammer 7-5/8" Bit	Date Completed	12/30/2010
		Total Depth	95 feet
		Groundwater	60.8 feet

Location Diagram: See Figures 1 and 2.

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
						Unconsolidated material. Moist, reddish brown fine to coarse sandy silt with weathered rock fragments.
					1	
					2	Weathered and partially weathered rock. Differentiated weathered dry, grey micaceous gneiss interlayered with reddish grey brown to grey silty sand.
					3	
					4	
					5	
					6	
					7	
					8	
					9	Competent rock. Dry, grey micaceous gneiss.
					10	
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					20	

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LITHOLOGIC LOG SHEET

Project Name: Madison County Closed LF
Project No.: 2313.18
Geologist: Joel Lenk
Driller: Johnny Burr
Rig Type: Geoprobe 8140 DT
Method Used: Air Rotary/Hammer 7-5/8" Bit

Date Begun: 12/28/2010
Date Completed: 12/30/2010

Boring Name: MW-04-Old
Sheet 2 of 5
Total Depth: 95 feet
Groundwater: 60.8 feet

Location Diagram: See Figures 1 and 2.

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					30	
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					40	

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LITHOLOGIC LOG SHEET

Project Name	Madison County Closed LF		
Project No.	2313.18		
Geologist	Joel Lenk		
Driller	Johnny Burr		
Rig Type	Geoprobe 8140 DT	Date Begun	12/28/2010
Method Used	Air Rotary/Hammer 7-5/8" Bit	Date Completed	12/30/2010

Boring Name	MW-04-Old
Sheet	3 of 5
Total Depth	95 feet
Groundwater	60.8 feet

Location Diagram

See Figures 1 and 2.

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					50	
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					60	

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LITHOLOGIC LOG SHEET

Project Name: Madison County Closed LF
Project No.: 2313.18
Geologist: Joel Lenk
Driller: Johnny Burr
Rig Type: Geoprobe 8140 DT
Method Used: Air Rotary/Hammer 7-5/8" Bit

Date Begun: 12/28/2010
Date Completed: 12/30/2010

Boring Name: MW-04-Old
Sheet 4 of 5
Total Depth: 95 feet
Groundwater: 60.8 feet

Location Diagram: See Figures 1 and 2.

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
					1	
					2	
					3	
					4	
					5	
					6	Elevation of bottom of surface casing.
					7	
					8	
					9	
					70	
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					80	

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LITHOLOGIC LOG SHEET

Project Name	Madison County Closed LF		
Project No.	2313.18	Boring Name	MW-04-Old
Geologist	Joel Lenk		
Driller	Johnny Burr	Sheet	5 of 5
Rig Type	Geoprobe 8140 DT	Date Begun	12/28/2010
Method Used	Air Rotary/Hammer 7-5/8" Bit	Date Completed	12/30/2010
Total Depth	95 feet	Groundwater	60.8 feet

Location Diagram: See Figures 1 and 2.

Sampling Method	Sample No.	Blow Count	Location Sampled	Recovery	Depth in Feet	Lithologic Description
					1	
					2	
					3	
					4	
					5	Water-bearing fracture.
					6	
					7	
					8	
					9	
					90	
					1	
					2	
					3	
					4	
					5	Bottom of boring.
					6	MW-04-Old was completed as follows: six inch diameter schedule 40 PVC surface casing from 0.0'-66.0', two inch diameter schedule 40 PVC inner casing from 0.0'-70.0',
					7	0.01 slot screen interval from 70.0'-90.0', sand filter pack (#2) from 67.0'-95.0',
					8	bentonite seal from 64.0'-67.0'. Monitoring well was completed with a stickup surface completion set in a 2' x 2' x 4" concrete well pad. Completion included
					9	locking expansion plug and lock.
					100	

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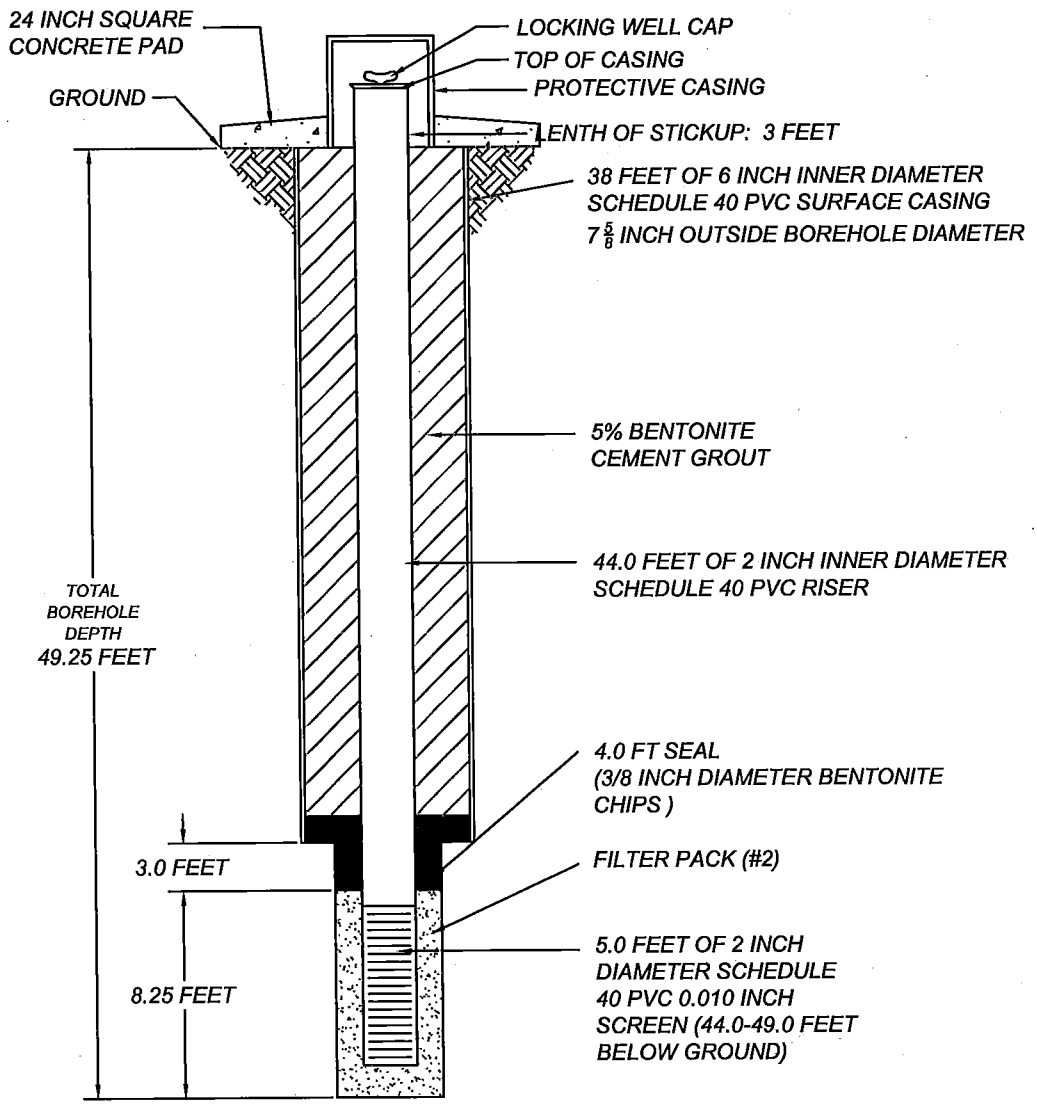
WELL CONSTRUCTION DIAGRAM

MW-03-OLD

PROJECT NAME:	PHASED ASSESSMENT PLAN AND UPGRADE TO GROUNDWATER MONITORING NETWORK
PROJECT LOCATION:	MADISON COUNTY CLOSED LANDFILL, MARSHALL, NORTH CAROLINA
CLIENT:	MADISON COUNTY
GEOLOGIST:	JOEL LENK
COMPANY/DRILLER:	GEOLOGIC EXPLORATION, INC.
INSTALLATION DATE:	JANUARY 20, 2011
PROJECT NO.:	2313.18

WELL SCHEMATIC



FILE PATH: P:\MADISON COUNTY\UPGRADE OF MONITORING NETWORK CLOSED LF\FIGURES\ MW-03-OLD.DWG

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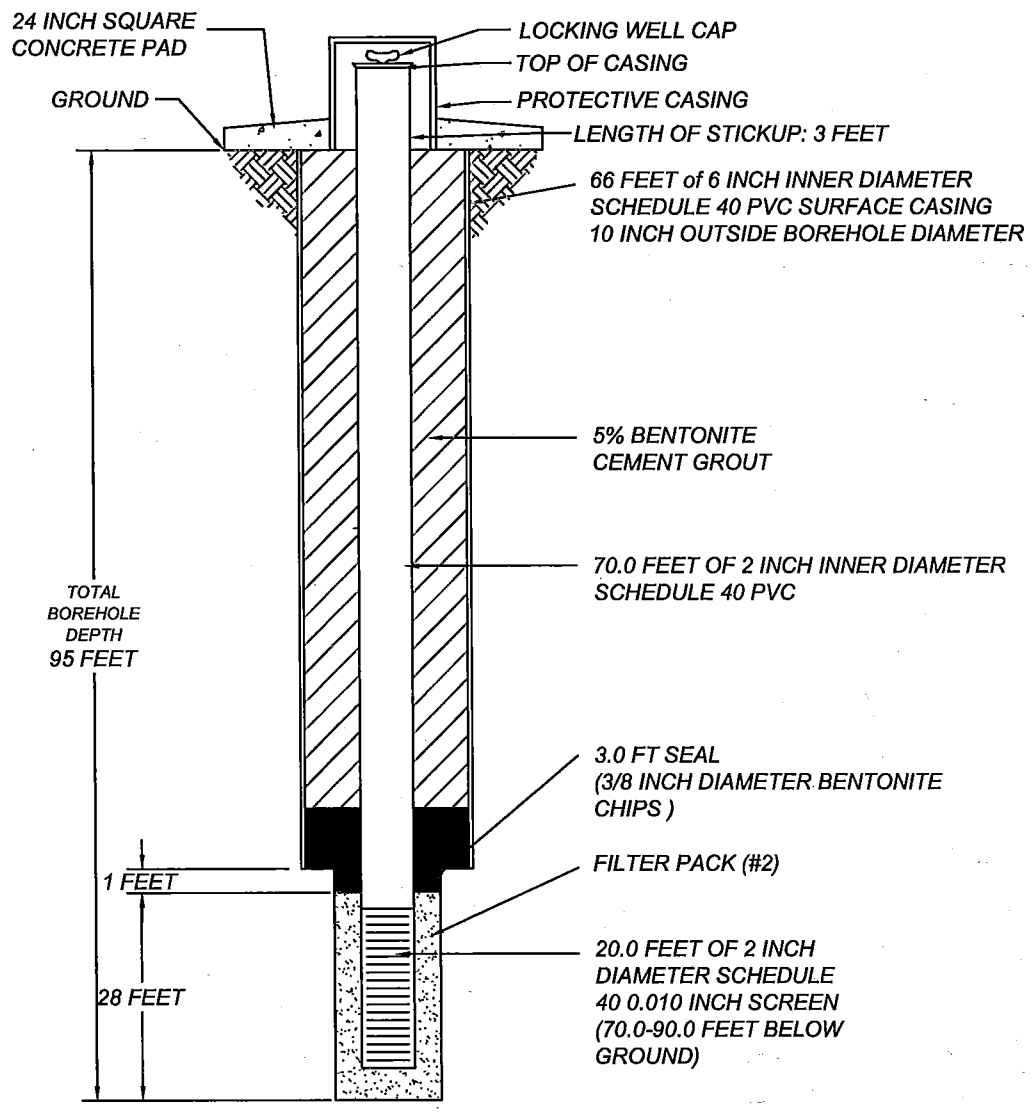
WELL CONSTRUCTION DIAGRAM

MW-04-OLD

PROJECT NAME:	PHASED ASSESSMENT PLAN AND UPGRADE TO GROUNDWATER MONITORING NETWORK
PROJECT LOCATION:	MADISON COUNTY CLOSED LANDFILL, MARSHALL, NORTH CAROLINA
CLIENT:	MADISON COUNTY
GEOLOGIST:	JOEL LENK
COMPANY/DRILLER:	GEOLOGIC EXPLORATION, INC.
INSTALLATION DATE:	DECEMBER 30, 2010
PROJECT NO.:	2313.18

WELL SCHEMATIC



FILE PATH: P:\MADISON COUNTY\UPGRADE OF MONITORING NETWORK CLOSED LF\FIGURES\ MW-04-OLD.DWG

APPENDIX C
Sampling Logs and Equipment Calibration Data Sheets

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Well Sampling Log

PROJECT NAME: Madison Co. Closed Landfill
PROJECT NUMBER: 2313
SAMPLING PERSONNEL: E. Yurkovich

DATE: 12/6/2010
WEATHER: Snow 20°
SAMPLE TIME: 1440

WELL NUMBER: MW-03-OLD
WELL DIAMETER: 4"
TYPE OF CASING: PVC
MEASURING POINT: TOC
FLUSH MOUNT / STICK-UP
COMMENTS: Only able to purge 1 vol from well. bailer unable to hold water w/ excess sediment from drilling, allowed to recharge prior to sampling

WELL DEPTH IN FEET (WD): 52.5 (?)
WATER LEVEL IN FEET (WL): 49.15
LENGTH OF WATER COLUMN: 3.35? FEET
(WD) - (WL) = (LWC)
ONE CASING VOLUME: 2.2 GALLONS
(LWC) x (WCV)
THREE CASING VOLUMES: 6.603 GALLONS
ACTUAL VOLUME PURGED: 2.25 GALLONS

WELL CASING VOLUMES (WCV)
1" = 0.041 Gal/Ft 2" = 0.17 Gal/Ft 3" = 0.38 Gal/Ft 4" = 0.66 Gal/Ft 6" = 1.5 Gal/Ft 8" = 2.6 Gal/Ft 12" = 5.8 Gal/Ft

PURGE METHOD: BAILER-DISP. BAILER-TEFLON DEDICATED PUMP WHALE PUMP GRUNDFOS OTHER:
SAMPLE METHOD: BAILER-DISP. BAILER-TEFLON DEDICATED PUMP WHALE PUMP GRUNDFOS OTHER:

READING	TIME	GALLONS PURGED	TEMP (°C)	SPECIFIC COND. (µS)	DISSOLVED OXYGEN (mg/L)	pH (S.U.) *report to 0.1 S.U.*	OXIDATION REDUCTION POTENTIAL (mV)	TURBIDITY (NTU)	COMMENTS
1	1355	initial	9.72	475	4.82	9.04	39.2	494.3	
2	1440	2.25	10.27	1775	6.73	12.58	-122.6	968.6	
3									
4									
5									
6									
7									
8									
9									
10									

SAMPLING CONTAINER	NUMBER OF CONTAINERS	REQUESTED ANALYSIS
500 mL PLASTIC		
250 mL PLASTIC		
125 mL PLASTIC		
40 mL GLASS	3	VOCs 8260
1 L GLASS		
OTHER		

PROTECTIVE CASING: OK PAD: NA LOCK: NA VEGETATION: ok ACCESS: ok

Sampling Personnel Signature: [signature] Date: 12/6/10

Notes: °C = degrees Celsius
µS = micro-Siemen
mg/L = milligrams per liter
S.U. = Standard Units
mV = millivolt
NTU = nephelometric turbidity units
Samples are analyzed immediately upon collection.

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Well Sampling Log

PROJECT NAME: Madison Co. Closed Landfill
PROJECT NUMBER: 2313.18
SAMPLING PERSONNEL: E. Yurkovich

DATE: 1/5/2011 and 1/6/2011
WEATHER: Cloudy 30°
SAMPLE TIME: 1105

WELL NUMBER: MW-04-OLD
WELL DIAMETER: 2"
TYPE OF CASING: PVC
MEASURING POINT: TOC
FLUSH MOUNT / STICK-UP
COMMENTS: Bailed 3 well volumes from well, allow to recharge and collect sample tomorrow. Collect sample on 1/6/11

WELL DEPTH IN FEET (WD): 94.5
WATER LEVEL IN FEET (WL): 63.75
LENGTH OF WATER COLUMN : 30.75 FEET
(WD) - (WL) = (LWC)
ONE CASING VOLUME: 5.23 GALLONS
(LWC) x (WCV)
THREE CASING VOLUMES: 15.68 GALLONS
ACTUAL VOLUME PURGED: 16.25 GALLONS

WELL CASING VOLUMES (WCV)
1" = 0.041 Gal/Ft 2" = 0.17 Gal/Ft 3" = 0.38 Gal/Ft 4" = 0.66 Gal/Ft 6" = 1.5 Gal/Ft 8" = 2.6 Gal/Ft 12" = 5.8 Gal/Ft

PURGE METHOD: BAILER-DISP BAILER-TEFLON DEDICATED PUMP WHALE PUMP GRUNDFOS OTHER:
SAMPLE METHOD: BAILER-DISP BAILER-TEFLON DEDICATED PUMP WHALE PUMP GRUNDFOS OTHER:

READING	TIME	GALLONS PURGED	TEMP (°C)	SPECIFIC COND. (µS)	DISSOLVED OXYGEN (mg/L)	pH (S.U.) *report to 0.1 S.U.*	OXIDATION REDUCTION POTENTIAL (mV)	TURBIDITY (NTU)	COMMENTS
1	1124	initial	10.99	1451	7.98	6.60	92.0	175.9	
2	1136	5.25	12.53	1579	7.26	6.54	116.5	526.5	
3	1149	10.50	11.63	1438	7.96	6.46	127.7	471.6	
4	1201	15.75	12.24	1522	7.78	6.63	125.8	518.2	
5	1105	16.25	12.47	797	5.67	6.21	127.3	6.39	
6									
7									
8									
9									
10									

SAMPLING CONTAINER	NUMBER OF CONTAINERS	REQUESTED ANALYSIS
500 mL PLASTIC		
250 mL PLASTIC		
125 mL PLASTIC	1	Metals 200.7
40 mL GLASS	3	App I VOCs
1 L GLASS		
OTHER		

PROTECTIVE CASING: ok PAD: ok LOCK: ok VEGETATION: NA ACCESS: ok

Sampling Personnel Signature: Date: 1/6/2011

Notes: °C = degrees Celsius
µS = micro-Siemen
mg/L = milligrams per liter
S.U. = Standard Units
mV = millivolt
NTU = nephelometric turbidity units
Samples are analyzed immediately upon collection.

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Well Sampling Log

PROJECT NAME: Madison Co. Closed Landfill
PROJECT NUMBER: 2313.18
SAMPLING PERSONNEL: E. Yurkovich

DATE: 1/5/2011 / 1/6/2011
WEATHER: Cloudy 30°
SAMPLE TIME: 1052

WELL NUMBER: MW-03-OLD
WELL DIAMETER: 2"
TYPE OF CASING: PVC
MEASURING POINT: TOC
FLUSH MOUNT / STICK-UP
COMMENTS: Bailed well dry after purging 2 well volumes, will allow well to recharge and collect sample tomorrow. Sample collected 1/6/11

WELL DEPTH IN FEET (WD): 52.9
WATER LEVEL IN FEET (WL): 48.51
LENGTH OF WATER COLUMN: 4.39 FEET
(WD) - (WL) = (LWC)
ONE CASING VOLUME: 0.75 GALLONS
(LWC) x (WCV)
THREE CASING VOLUMES: 2.24 GALLONS
ACTUAL VOLUME PURGED: 2.0 GALLONS

WELL CASING VOLUMES (WCV)
1" = 0.041 Gal/Ft 2" = 0.17 Gal/Ft 3" = 0.38 Gal/Ft 4" = 0.66 Gal/Ft 6" = 1.5 Gal/Ft 8" = 2.6 Gal/Ft 12" = 5.8 Gal/Ft

PURGE METHOD: BAILER-DISP. BAILER-TEFLON DEDICATED PUMP WHALE PUMP GRUNDFOS OTHER:
SAMPLE METHOD: BAILER-DISP. BAILER-TEFLON DEDICATED PUMP WHALE PUMP GRUNDFOS OTHER:

READING	TIME	GALLONS PURGED	TEMP (°C)	SPECIFIC COND. (µS)	DISSOLVED OXYGEN (mg/L)	pH (S.U.) *report to 0.1 S.U.*	OXIDATION REDUCTION POTENTIAL (mV)	TURBIDITY (NTU)	COMMENTS
1	1051	Initial	12.72	1420	6.37	6.41	-42.3	482.6	
2	1053	0.75	12.75	1404	3.75	6.38	-26.8	345.0	
3	1057	1.50	11.50	1417	3.56	6.33	-20.1	425.7	
4	1052	2.0	12.74	869	3.44	6.37	-18.6	51.39	
5									
6									
7									
8									
9									
10									

SAMPLING CONTAINER	NUMBER OF CONTAINERS	REQUESTED ANALYSIS
500 mL PLASTIC		
250 mL PLASTIC		
125 mL PLASTIC	1	Metals 200.7
40 mL GLASS	3	Appendix IVOCs
1 L GLASS		
OTHER		

PROTECTIVE CASING: ok PAD: ok LOCK: ok VEGETATION: N/A ACCESS: ok

Sampling Personnel Signature: [signature] Date: 1/6/2011

Notes: °C = degrees Celsius
µS = micro-Siemen
mg/L = milligrams per liter
S.U. = Standard Units
mV = millivolt
NTU = nephelometric turbidity units
Samples are analyzed immediately upon collection.

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Equipment Documentation & Instrument Calibration Data Sheet

Project Name: Madison Co. Closed LF
Project Number:
Project Location: Marshall, NC

Calibration Documentation
Person Conducting Calibration: E. Yurkovich
Date of Calibration: 12/6/10
Date of Field Measurements: 12/6/10

Equipment Documentation
Equipment or meters used to take measurements (e.g. water level meters, survey equipment, etc.):

Equipment Type	Serial Number	Brand	Date of Use
150-ft Water Level	26154	Solinist	
150-ft Water Level	22754	Solinist	
150-ft Water Level	150.	Testwell	
150-ft Drawdown	MP30-1527	QED	
Other			

Micro TPW Turbidity Meter

Calibration Standards Exp Date	Instrument Serial #	Instrument Reading		
		0.02 NTU	10.0 NTU	1000 NTU
August 2011	200601045	Initial: 0.40	Initial: 9.89	Initial: 1012
		Cal: 0.02	Cal: 10.05	Cal: 998.9
		Time: 938	Time: 939	Time: 940

YSI 556 Multiparameter Meter

Instrument Serial Number	07D100979						
Instrument Readings							Calibration Expiration Date
Dissolved Oxygen	Initial: 9.93	Cal: 9.99	mmHg: 705.7	Time: 919			NA
QC*	AM Time:	Meas:	Mid Day Time:	Check:	PM Time:	Check:	NA
pH 7 S.U. *report to 0.1 S.U.*	Initial: 7.02	pHmV: 7	Cal: 7.00	pHmV:	Time: 925		June 2012
pH 4 S.U. *report to 0.1 S.U.*	Initial: 4.01	pHmV:	Cal: 4.00	pHmV:	Time: 928		Sept 2011
pH 10 S.U. *report to 0.1 S.U.*	Initial: 10.04	pHmV:	Cal: 10.01	pHmV:	Time: 931		DEC 2010
QC* pH 7 S.U. *report to 0.1 S.U.*	AM Time: 938	Meas: 7.00	Mid Day Time:	Check:	PM Time:	Check:	June 2012
Spec. Cond. 447/84/23 mS**	Initial: 445	Cal: 447	Time: 921				June 2011
QC* 84 mS	AM Time: 936	Meas: 85	Mid Day Time:	Check:	PM Time:	Check:	May 2012
ORP 200 mV	Initial: 208.9	Cal: 200.0	Time: 934				Jan 2011

Comments:
Signature: [signature] Date: 12/6/10

Notes:
1. Electronic equipment calibrated according to the manufacturer's operation manual.
2. Specific Conductivity should be calibrated according to values representative of historic range.
3. Order of Calibration is as follows : Specific Conductivity, pH 7, pH 4, pH 10, ORP, QC checks.
4. QC Acceptable Ranges: pH +/- 0.1 S.U. and Specific Conductivity 10% of the true value. If readings are out of these ranges, meter needs to be recalibrated.
5. * Indicates that a QC check must be performed in the morning, afternoon, and the end of the day, or every four hours.
6. ** Indicates to choose a Specific Conductivity buffer of 447, 84, or 23 mS which is closest to historical readings from the project locatic

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Equipment Documentation & Instrument Calibration Data Sheet

Calibration Documentation

Project Name: Madison Co. Closed Landfill
Person Conducting Calibration: E. Yurkovich
Project Number: 2313.18
Date of Calibration: 1/6/2011
Project Location: Marshall, NC
Date of Field Measurements: 1/6/2011

Equipment Documentation
Equipment or meters used to take measurements (e.g. water level meters, survey equipment, etc.):

Equipment Type	Serial Number	Brand	Date of Use
150-ft Water Level	26154	Solinist	
150-ft Water Level	22754	Solinist	
150-ft Water Level	150	Testwell	
150-ft Drawdown	MP30-1527	QED	1/6/2011
Other			

Micro TPW Turbidity Meter

Calibration Standards Exp Date	Instrument Serial #	Instrument Reading		
		0.02 NTU	10.0 NTU	1000 NTU
August 2011	200601045	Initial: 0.00	Initial: 13.77	Initial: 963.9
		Cal: 0.02	Cal: 9.99	Cal: 1000
		Time: 953	Time: 954	Time: 955

YSI 556 Multiparameter Meter

Instrument Serial Number	07D100979						
Instrument Readings							Calibration Expiration Date
Dissolved Oxygen	Initial: 9.93	Cal: 9.04	mmHg: 697.9	Time: 934			NA
QC*	AM Time:	Meas:	Mid Day Time:	Check:	PM Time:	Check:	NA
pH 7 S.U. *report to 0.1 S.U.*	Initial: 7.01	pHmV:	Cal: 7.00	pHmV:	Time: 942		June 2012
pH 4 S.U. *report to 0.1 S.U.*	Initial: 3.99	pHmV:	Cal: 4.00	pHmV:	Time: 947		Sept 2011
pH 10 S.U. *report to 0.1 S.U.*	Initial: 9.98	pHmV:	Cal: 10.00	pHmV:	Time: 950		Sept 2012
QC* pH 7 S.U. *report to 0.1 S.U.*	AM Time: 955	Meas: 7.00	Mid Day Time:	Check:	PM Time:	Check:	June 2012
Spec. Cond. 447/84/23 mS**	Initial: 716	Cal: 447	Time: 937				July 2011
QC* 84 mS	AM Time: 953	Meas: 85	Mid Day Time:	Check:	PM Time:	Check:	June 2012
ORP 200 mV	Initial: 261.2	Cal: 200.0	Time: 952				Jan 2011

Comments:
Signature: [signature] Date: 1/6/11

Notes:
1. Electronic equipment calibrated according to the manufacturer's operation manual.
2. Specific Conductivity should be calibrated according to values representative of historic range.
3. Order of Calibration is as follows : Specific Conductivity, pH 7, pH 4, pH 10, ORP, QC checks.
4. QC Acceptable Ranges: pH +/- 0.1 S.U. and Specific Conductivity 10% of the true value. If readings are out of these ranges, meter needs to be recalibrated.
5. * Indicates that a QC check must be performed in the morning, afternoon, and the end of the day, or every four hours.
6. ** Indicates to choose a Specific Conductivity buffer of 447, 84, or 23 mS which is closest to historical readings from the project locatic

APPENDIX D
Laboratory Analytical Reports and Chain-of-Custody Documentation

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www.pacelabs.com

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2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

December 07, 2010

Mr. Joel Lenk
Altamont Environmental
321 Haywood Street
Asheville, NC 28801

RE: Project: Madison Co. Closed LF 2313
Pace Project No.: 9283396

Dear Mr. Lenk:
Enclosed are the analytical results for sample(s) received by the laboratory on December 06, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lorri Patton

Lorri Patton

lorri.patton@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: Madison Co. Closed LF 2313
Pace Project No.: 9283396

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/LELAP Certification #: 04034
New Jersey Certification #: NC012
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
Pennsylvania Certification #: 68-00784
South Carolina Certification #: 99006001
South Carolina Drinking Water Cert. #: 99006003
Virginia Certification #: 00213
Connecticut Certification #: PH-0104
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana DHH Drinking Water # LA 100031
West Virginia Certification #: 357

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(704)875-9092

SAMPLE SUMMARY

Project: Madison Co. Closed LF 2313
Pace Project No.: 9283396

Lab ID	Sample ID	Matrix	Date Collected	Date Received
9283396001	**MW-03-OLD**	Water	12/06/10 14:40	12/06/10 15:27

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SAMPLE ANALYTE COUNT

Project: Madison Co. Closed LF 2313
Pace Project No.: 9283396

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
9283396001	**MW-03-OLD**	EPA 8260	MCK	53	PASI-C

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Madison Co. Closed LF 2313
Pace Project No.: 9283396

Sample: MW-03-OLD **Lab ID: 9283396001** Collected: 12/06/10 14:40 Received: 12/06/10 15:27 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	**8.1J**	ug/L	25.0	2.2	1		12/07/10 12:55	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		12/07/10 12:55	107-13-1	
Benzene	**0.41J**	ug/L	1.0	0.25	1		12/07/10 12:55	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		12/07/10 12:55	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		12/07/10 12:55	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		12/07/10 12:55	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		12/07/10 12:55	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		12/07/10 12:55	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		12/07/10 12:55	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		12/07/10 12:55	56-23-5	
Chlorobenzene	**3.3**	ug/L	1.0	0.23	1		12/07/10 12:55	108-90-7	
Chloroethane	**1.6**	ug/L	1.0	0.54	1		12/07/10 12:55	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		12/07/10 12:55	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		12/07/10 12:55	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	2.5	1		12/07/10 12:55	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		12/07/10 12:55	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		12/07/10 12:55	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		12/07/10 12:55	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		12/07/10 12:55	95-50-1	
1,4-Dichlorobenzene	**3.3**	ug/L	1.0	0.33	1		12/07/10 12:55	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		12/07/10 12:55	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		12/07/10 12:55	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		12/07/10 12:55	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		12/07/10 12:55	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		12/07/10 12:55	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		12/07/10 12:55	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		12/07/10 12:55	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		12/07/10 12:55	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		12/07/10 12:55	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		12/07/10 12:55	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		12/07/10 12:55	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		12/07/10 12:55	74-88-4	
Methylene Chloride	ND	ug/L	1.0	0.97	1		12/07/10 12:55	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		12/07/10 12:55	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		12/07/10 12:55	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		12/07/10 12:55	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		12/07/10 12:55	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		12/07/10 12:55	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		12/07/10 12:55	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		12/07/10 12:55	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		12/07/10 12:55	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		12/07/10 12:55	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		12/07/10 12:55	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		12/07/10 12:55	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		12/07/10 12:55	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		12/07/10 12:55	75-01-4	

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ANALYTICAL RESULTS

Project: Madison Co. Closed LF 2313
Pace Project No.: 9283396

Sample: MW-03-OLD **Lab ID: 9283396001** Collected: 12/06/10 14:40 Received: 12/06/10 15:27 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Xylene (Total)	ND	ug/L	2.0	0.66	1		12/07/10 12:55	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		12/07/10 12:55	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		12/07/10 12:55	95-47-6	
4-Bromofluorobenzene (S)	97	%	70-130		1		12/07/10 12:55	460-00-4	
Dibromofluoromethane (S)	115	%	70-130		1		12/07/10 12:55	1868-53-7	
1,2-Dichloroethane-d4 (S)	121	%	70-130		1		12/07/10 12:55	17060-07-0	
Toluene-d8 (S)	97	%	70-130		1		12/07/10 12:55	2037-26-5	

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QUALITY CONTROL DATA

Project: Madison Co. Closed LF 2313
Pace Project No.: 9283396

QC Batch: MSV/13343
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV Low Level Landfill
Associated Lab Samples: 9283396001

METHOD BLANK: 537241
Matrix: Water
Associated Lab Samples: 9283396001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	12/07/10 12:30	
1,1,1-Trichloroethane	ug/L	ND	1.0	12/07/10 12:30	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/07/10 12:30	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/07/10 12:30	
1,1-Dichloroethane	ug/L	ND	1.0	12/07/10 12:30	
1,1-Dichloroethene	ug/L	ND	1.0	12/07/10 12:30	
1,2,3-Trichloropropane	ug/L	ND	1.0	12/07/10 12:30	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	12/07/10 12:30	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/07/10 12:30	
1,2-Dichlorobenzene	ug/L	ND	1.0	12/07/10 12:30	
1,2-Dichloroethane	ug/L	ND	1.0	12/07/10 12:30	
1,2-Dichloropropane	ug/L	ND	1.0	12/07/10 12:30	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/07/10 12:30	
2-Butanone (MEK)	ug/L	ND	5.0	12/07/10 12:30	
2-Hexanone	ug/L	ND	5.0	12/07/10 12:30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	12/07/10 12:30	
Acetone	ug/L	ND	25.0	12/07/10 12:30	
Acrylonitrile	ug/L	ND	10.0	12/07/10 12:30	
Benzene	ug/L	ND	1.0	12/07/10 12:30	
Bromochloromethane	ug/L	ND	1.0	12/07/10 12:30	
Bromodichloromethane	ug/L	ND	1.0	12/07/10 12:30	
Bromoform	ug/L	ND	1.0	12/07/10 12:30	
Bromomethane	ug/L	ND	2.0	12/07/10 12:30	
Carbon disulfide	ug/L	ND	2.0	12/07/10 12:30	
Carbon tetrachloride	ug/L	ND	1.0	12/07/10 12:30	
Chlorobenzene	ug/L	ND	1.0	12/07/10 12:30	
Chloroethane	ug/L	ND	1.0	12/07/10 12:30	
Chloroform	ug/L	ND	1.0	12/07/10 12:30	
Chloromethane	ug/L	ND	1.0	12/07/10 12:30	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/07/10 12:30	
cis-1,3-Dichloropropene	ug/L	ND	1.0	12/07/10 12:30	
Dibromochloromethane	ug/L	ND	1.0	12/07/10 12:30	
Dibromomethane	ug/L	ND	1.0	12/07/10 12:30	
Ethylbenzene	ug/L	ND	1.0	12/07/10 12:30	
Iodomethane	ug/L	ND	5.0	12/07/10 12:30	
m&p-Xylene	ug/L	ND	2.0	12/07/10 12:30	
Methylene Chloride	ug/L	ND	1.0	12/07/10 12:30	
o-Xylene	ug/L	ND	1.0	12/07/10 12:30	
Styrene	ug/L	ND	1.0	12/07/10 12:30	
Tetrachloroethene	ug/L	ND	1.0	12/07/10 12:30	
Toluene	ug/L	ND	1.0	12/07/10 12:30	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/07/10 12:30	
trans-1,3-Dichloropropene	ug/L	ND	1.0	12/07/10 12:30	

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QUALITY CONTROL DATA

Project: Madison Co. Closed LF 2313
Pace Project No.: 9283396

METHOD BLANK: 537241 Matrix: Water

Associated Lab Samples: 9283396001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
trans-1,4-Dichloro-2-butene	ug/L	ND	1.0	12/07/10 12:30	
Trichloroethene	ug/L	ND	1.0	12/07/10 12:30	
Trichlorofluoromethane	ug/L	ND	1.0	12/07/10 12:30	
Vinyl acetate	ug/L	ND	2.0	12/07/10 12:30	
Vinyl chloride	ug/L	ND	1.0	12/07/10 12:30	
Xylene (Total)	ug/L	ND	2.0	12/07/10 12:30	
1,2-Dichloroethane-d4 (S)	%	119	70-130	12/07/10 12:30	
4-Bromofluorobenzene (S)	%	97	70-130	12/07/10 12:30	
Dibromofluoromethane (S)	%	115	70-130	12/07/10 12:30	
Toluene-d8 (S)	%	98	70-130	12/07/10 12:30	

LABORATORY CONTROL SAMPLE: 537242

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	50.8	102	70-130	
1,1,1-Trichloroethane	ug/L	50	52.2	104	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	44.0	88	70-130	
1,1,2-Trichloroethane	ug/L	50	46.8	94	70-130	
1,1-Dichloroethane	ug/L	50	50.0	100	70-130	
1,1-Dichloroethene	ug/L	50	49.2	98	70-132	
1,2,3-Trichloropropane	ug/L	50	43.6	87	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	47.0	94	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	45.2	90	70-130	
1,2-Dichlorobenzene	ug/L	50	46.1	92	70-130	
1,2-Dichloroethane	ug/L	50	51.7	103	70-130	
1,2-Dichloropropane	ug/L	50	47.0	94	70-130	
1,4-Dichlorobenzene	ug/L	50	45.0	90	70-130	
2-Butanone (MEK)	ug/L	100	92.4	92	70-145	
2-Hexanone	ug/L	100	90.2	90	70-144	
4-Methyl-2-pentanone (MIBK)	ug/L	100	98.3	98	70-140	
Acetone	ug/L	100	95.8	96	50-175	
Acrylonitrile	ug/L	250	245	98	70-143	
Benzene	ug/L	50	45.8	92	70-130	
Bromochloromethane	ug/L	50	45.4	91	70-130	
Bromodichloromethane	ug/L	50	52.2	104	70-130	
Bromoform	ug/L	50	51.5	103	70-130	
Bromomethane	ug/L	50	51.4	103	54-130	
Carbon disulfide	ug/L	50	47.1	94	70-131	
Carbon tetrachloride	ug/L	50	57.3	115	70-132	
Chlorobenzene	ug/L	50	47.2	94	70-130	
Chloroethane	ug/L	50	59.0	118	64-134	
Chloroform	ug/L	50	52.4	105	70-130	
Chloromethane	ug/L	50	51.0	102	64-130	
cis-1,2-Dichloroethene	ug/L	50	49.9	100	70-131	
cis-1,3-Dichloropropene	ug/L	50	48.4	97	70-130	

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QUALITY CONTROL DATA

Project: Madison Co. Closed LF 2313
Pace Project No.: 9283396

LABORATORY CONTROL SAMPLE: 537242

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	50	49.2	98	70-130	
Dibromomethane	ug/L	50	47.9	96	70-131	
Ethylbenzene	ug/L	50	48.4	97	70-130	
Iodomethane	ug/L	100	103	103	49-180	
m&p-Xylene	ug/L	100	98.5	98	70-130	
Methylene Chloride	ug/L	50	51.2	102	63-130	
o-Xylene	ug/L	50	48.8	98	70-130	
Styrene	ug/L	50	51.1	102	70-130	
Tetrachloroethene	ug/L	50	47.0	94	70-130	
Toluene	ug/L	50	45.9	92	70-130	
trans-1,2-Dichloroethene	ug/L	50	48.2	96	70-130	
trans-1,3-Dichloropropene	ug/L	50	48.7	97	70-132	
trans-1,4-Dichloro-2-butene	ug/L	50	54.3	109	70-141	
Trichloroethene	ug/L	50	50.9	102	70-130	
Trichlorofluoromethane	ug/L	50	59.4	119	62-133	
Vinyl acetate	ug/L	100	91.0	91	66-157	
Vinyl chloride	ug/L	50	58.4	117	69-130	
Xylene (Total)	ug/L	150	147	98	70-130	
1,2-Dichloroethane-d4 (S)	%			109	70-130	
4-Bromofluorobenzene (S)	%			97	70-130	
Dibromofluoromethane (S)	%			106	70-130	
Toluene-d8 (S)	%			101	70-130	

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QUALIFIERS

Project: Madison Co. Closed LF 2313
Pace Project No.: 9283396

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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LABORATORIES

PASI-C Pace Analytical Services - Charlotte

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January 19, 2011

Mr. Joel Lenk
Altamont Environmental
321 Haywood Street
Asheville, NC 28801

RE: Project: Madison Co Closed LF 1/06
Pace Project No.: 9285324

Dear Mr. Lenk:
Enclosed are the analytical results for sample(s) received by the laboratory on January 06, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lorri Patton

Lorri Patton

lorri.patton@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Madison Co Closed LF 1/06
Pace Project No.: 9285324

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/LELAP Certification #: 04034
New Jersey Certification #: NC012
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
Pennsylvania Certification #: 68-00784
South Carolina Certification #: 99006001
South Carolina Drinking Water Cert. #: 99006003
Virginia Certification #: 00213
Connecticut Certification #: PH-0104
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana DHH Drinking Water # LA 100031
West Virginia Certification #: 357

Asheville Certification IDs

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Connecticut Certification #: PH-0106
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
New Jersey Certification #: NC011
North Carolina Bioassay Certification #: 9
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
Pennsylvania Certification #: 68-03578
South Carolina Bioassay Certification #: 99030002
South Carolina Certification #: 99030001
Virginia Certification #: 00072
West Virginia Certification #: 356

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SAMPLE SUMMARY

Project: Madison Co Closed LF 1/06
Pace Project No.: 9285324

Lab ID	Sample ID	Matrix	Date Collected	Date Received
9285324001	**MW-03-OLD**	Water	01/06/11 10:52	01/06/11 11:59
9285324002	**MW-04-OLD**	Water	01/06/11 11:05	01/06/11 11:59
9285324003	**TRIP BLANK LAB**	Water	01/06/11 00:00	01/06/11 11:59

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SAMPLE ANALYTE COUNT

Project: Madison Co Closed LF 1/06
Pace Project No.: 9285324

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
9285324001	**MW-03-OLD**	EPA 6010	SHB	7	PASI-A
		EPA 7470	JMW	1	PASI-A
		EPA 8260	MCK	53	PASI-C
9285324002	**MW-04-OLD**	EPA 6010	SHB	7	PASI-A
		EPA 7470	JMW	1	PASI-A
		EPA 8260	MCK	53	PASI-C
9285324003	**TRIP BLANK LAB**	EPA 8260	MCK	53	PASI-C

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Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Madison Co Closed LF 1/06
Pace Project No.: 9285324

Sample: MW-03-OLD **Lab ID: 9285324001** Collected: 01/06/11 10:52 Received: 01/06/11 11:59 Matrix: Water

Parameters	Results	Units		PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Arsenic	**6.5**	ug/L	10	5.0	2.7	1	01/13/11 10:50	01/14/11 20:42	7440-38-2	
Barium	**799**	ug/L	700	5.0	2.5	1	01/13/11 10:50	01/14/11 20:42	7440-39-3	
Cadmium	ND	ug/L		1.0	0.50	1	01/13/11 10:50	01/14/11 20:42	7440-43-9	
Chromium	**22.2**	ug/L	10	5.0	2.0	1	01/13/11 10:50	01/14/11 20:42	7440-47-3	
Lead	**8.8**	ug/L	15	5.0	4.0	1	01/13/11 10:50	01/14/11 20:42	7439-92-1	
Selenium	ND	ug/L		10.0	5.0	1	01/13/11 10:50	01/14/11 20:42	7782-49-2	
Silver	ND	ug/L		5.0	2.5	1	01/13/11 10:50	01/14/11 20:42	7440-22-4	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Mercury	ND	ug/L		0.20	0.10	1	01/13/11 11:50	01/14/11 12:56	7439-97-6	
8260 MSV Low Level Landfill	Analytical Method: EPA 8260									
Acetone	ND	ug/L		25.0	2.2	1		01/08/11 00:47	67-64-1	
Acrylonitrile	ND	ug/L		10.0	1.9	1		01/08/11 00:47	107-13-1	
Benzene	ND	ug/L		1.0	0.25	1		01/08/11 00:47	71-43-2	
Bromochloromethane	ND	ug/L		1.0	0.17	1		01/08/11 00:47	74-97-5	
Bromodichloromethane	ND	ug/L		1.0	0.18	1		01/08/11 00:47	75-27-4	
Bromoform	ND	ug/L		1.0	0.26	1		01/08/11 00:47	75-25-2	
Bromomethane	ND	ug/L		2.0	0.29	1		01/08/11 00:47	74-83-9	
2-Butanone (MEK)	ND	ug/L		5.0	0.96	1		01/08/11 00:47	78-93-3	
Carbon disulfide	ND	ug/L		2.0	1.2	1		01/08/11 00:47	75-15-0	
Carbon tetrachloride	ND	ug/L		1.0	0.25	1		01/08/11 00:47	56-23-5	
Chlorobenzene	**1.5**	ug/L	50	1.0	0.23	1		01/08/11 00:47	108-90-7	
Chloroethane	ND	ug/L		1.0	0.54	1		01/08/11 00:47	75-00-3	
Chloroform	ND	ug/L		1.0	0.14	1		01/08/11 00:47	67-66-3	
Chloromethane	ND	ug/L		1.0	0.11	1		01/08/11 00:47	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L		5.0	2.5	1		01/08/11 00:47	96-12-8	
Dibromochloromethane	ND	ug/L		1.0	0.21	1		01/08/11 00:47	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L		1.0	0.27	1		01/08/11 00:47	106-93-4	
Dibromomethane	ND	ug/L		1.0	0.21	1		01/08/11 00:47	74-95-3	
1,2-Dichlorobenzene	ND	ug/L		1.0	0.30	1		01/08/11 00:47	95-50-1	
1,4-Dichlorobenzene	**4.0**	ug/L	6	1.0	0.33	1		01/08/11 00:47	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0	1.0	1		01/08/11 00:47	110-57-6	
1,1-Dichloroethane	ND	ug/L		1.0	0.32	1		01/08/11 00:47	75-34-3	
1,2-Dichloroethane	ND	ug/L		1.0	0.12	1		01/08/11 00:47	107-06-2	
1,1-Dichloroethene	ND	ug/L		1.0	0.56	1		01/08/11 00:47	75-35-4	
cis-1,2-Dichloroethene	**0.27J**	ug/L	70	1.0	0.19	1		01/08/11 00:47	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L		1.0	0.49	1		01/08/11 00:47	156-60-5	
1,2-Dichloropropane	ND	ug/L		1.0	0.27	1		01/08/11 00:47	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L		1.0	0.13	1		01/08/11 00:47	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L		1.0	0.26	1		01/08/11 00:47	10061-02-6	
Diisopropyl ether	**0.18J**	ug/L	70	1.0	0.12	1		01/08/11 00:47	108-20-3	
Ethylbenzene	ND	ug/L		1.0	0.30	1		01/08/11 00:47	100-41-4	
2-Hexanone	ND	ug/L		5.0	0.46	1		01/08/11 00:47	591-78-6	
Iodomethane	ND	ug/L		5.0	0.32	1		01/08/11 00:47	74-88-4	
Methylene Chloride	ND	ug/L		1.0	0.97	1		01/08/11 00:47	75-09-2	

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Asheville, NC 28804
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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Madison Co Closed LF 1/06
Pace Project No.: 9285324

Sample: MW-03-OLD **Lab ID: 9285324001** Collected: 01/06/11 10:52 Received: 01/06/11 11:59 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		01/08/11 00:47	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		01/08/11 00:47	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		01/08/11 00:47	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		01/08/11 00:47	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		01/08/11 00:47	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		01/08/11 00:47	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		01/08/11 00:47	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		01/08/11 00:47	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		01/08/11 00:47	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		01/08/11 00:47	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		01/08/11 00:47	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		01/08/11 00:47	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		01/08/11 00:47	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		01/08/11 00:47	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		01/08/11 00:47	95-47-6	
4-Bromofluorobenzene (S)	96	%	70-130		1		01/08/11 00:47	460-00-4	
Dibromofluoromethane (S)	103	%	70-130		1		01/08/11 00:47	1868-53-7	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		01/08/11 00:47	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		01/08/11 00:47	2037-26-5	

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(828)254-7176

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Madison Co Closed LF 1/06
Pace Project No.: 9285324

Sample: MW-04-OLD **Lab ID: 9285324002** Collected: 01/06/11 11:05 Received: 01/06/11 11:59 Matrix: Water

Parameters	Results	Units		PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Arsenic	ND	ug/L		5.0	2.7	1	01/13/11 10:50	01/14/11 20:46	7440-38-2	
Barium	**650**	ug/L	700	5.0	2.5	1	01/13/11 10:50	01/14/11 20:46	7440-39-3	
Cadmium	ND	ug/L		1.0	0.50	1	01/13/11 10:50	01/14/11 20:46	7440-43-9	
Chromium	ND	ug/L		5.0	2.0	1	01/13/11 10:50	01/14/11 20:46	7440-47-3	
Lead	ND	ug/L		5.0	4.0	1	01/13/11 10:50	01/14/11 20:46	7439-92-1	
Selenium	ND	ug/L		10.0	5.0	1	01/13/11 10:50	01/14/11 20:46	7782-49-2	
Silver	ND	ug/L		5.0	2.5	1	01/13/11 10:50	01/14/11 20:46	7440-22-4	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Mercury	ND	ug/L		0.20	0.10	1	01/13/11 11:50	01/14/11 12:59	7439-97-6	
8260 MSV Low Level Landfill	Analytical Method: EPA 8260									
Acetone	ND	ug/L		25.0	2.2	1		01/08/11 01:13	67-64-1	
Acrylonitrile	ND	ug/L		10.0	1.9	1		01/08/11 01:13	107-13-1	
Benzene	**0.88J**	ug/L	1	1.0	0.25	1		01/08/11 01:13	71-43-2	
Bromochloromethane	ND	ug/L		1.0	0.17	1		01/08/11 01:13	74-97-5	
Bromodichloromethane	ND	ug/L		1.0	0.18	1		01/08/11 01:13	75-27-4	
Bromoform	ND	ug/L		1.0	0.26	1		01/08/11 01:13	75-25-2	
Bromomethane	ND	ug/L		2.0	0.29	1		01/08/11 01:13	74-83-9	
2-Butanone (MEK)	ND	ug/L		5.0	0.96	1		01/08/11 01:13	78-93-3	
Carbon disulfide	ND	ug/L		2.0	1.2	1		01/08/11 01:13	75-15-0	
Carbon tetrachloride	ND	ug/L		1.0	0.25	1		01/08/11 01:13	56-23-5	
Chlorobenzene	**3.9**	ug/L	50	1.0	0.23	1		01/08/11 01:13	108-90-7	
Chloroethane	**3.4**	ug/L	3,000	1.0	0.54	1		01/08/11 01:13	75-00-3	
Chloroform	ND	ug/L		1.0	0.14	1		01/08/11 01:13	67-66-3	
Chloromethane	ND	ug/L		1.0	0.11	1		01/08/11 01:13	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L		5.0	2.5	1		01/08/11 01:13	96-12-8	
Dibromochloromethane	ND	ug/L		1.0	0.21	1		01/08/11 01:13	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L		1.0	0.27	1		01/08/11 01:13	106-93-4	
Dibromomethane	ND	ug/L		1.0	0.21	1		01/08/11 01:13	74-95-3	
1,2-Dichlorobenzene	ND	ug/L		1.0	0.30	1		01/08/11 01:13	95-50-1	
1,4-Dichlorobenzene	**4.5**	ug/L	6	1.0	0.33	1		01/08/11 01:13	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0	1.0	1		01/08/11 01:13	110-57-6	
1,1-Dichloroethane	**2.4**	ug/L	6	1.0	0.32	1		01/08/11 01:13	75-34-3	
1,2-Dichloroethane	ND	ug/L		1.0	0.12	1		01/08/11 01:13	107-06-2	
1,1-Dichloroethene	ND	ug/L		1.0	0.56	1		01/08/11 01:13	75-35-4	
cis-1,2-Dichloroethene	**6.2**	ug/L	70	1.0	0.19	1		01/08/11 01:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L		1.0	0.49	1		01/08/11 01:13	156-60-5	
1,2-Dichloropropane	ND	ug/L		1.0	0.27	1		01/08/11 01:13	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L		1.0	0.13	1		01/08/11 01:13	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L		1.0	0.26	1		01/08/11 01:13	10061-02-6	
Diisopropyl ether	**0.38J**	ug/L	70	1.0	0.12	1		01/08/11 01:13	108-20-3	
Ethylbenzene	ND	ug/L		1.0	0.30	1		01/08/11 01:13	100-41-4	
2-Hexanone	ND	ug/L		5.0	0.46	1		01/08/11 01:13	591-78-6	
Iodomethane	ND	ug/L		5.0	0.32	1		01/08/11 01:13	74-88-4	
Methylene Chloride	ND	ug/L		1.0	0.97	1		01/08/11 01:13	75-09-2	

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(704)875-9092

ANALYTICAL RESULTS

Project: Madison Co Closed LF 1/06
Pace Project No.: 9285324

Sample: MW-04-OLD **Lab ID: 9285324002** Collected: 01/06/11 11:05 Received: 01/06/11 11:59 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		01/08/11 01:13	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		01/08/11 01:13	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		01/08/11 01:13	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		01/08/11 01:13	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		01/08/11 01:13	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		01/08/11 01:13	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		01/08/11 01:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		01/08/11 01:13	79-00-5	
Trichloroethene	**2.0**	ug/L 3	1.0	0.47	1		01/08/11 01:13	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		01/08/11 01:13	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		01/08/11 01:13	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		01/08/11 01:13	108-05-4	
Vinyl chloride	**1.1**	ug/L .03	1.0	0.62	1		01/08/11 01:13	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		01/08/11 01:13	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		01/08/11 01:13	95-47-6	
4-Bromofluorobenzene (S)	100	%	70-130		1		01/08/11 01:13	460-00-4	
Dibromofluoromethane (S)	112	%	70-130		1		01/08/11 01:13	1868-53-7	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1		01/08/11 01:13	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		01/08/11 01:13	2037-26-5	

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ANALYTICAL RESULTS

Project: Madison Co Closed LF 1/06
Pace Project No.: 9285324

Sample: TRIP BLANK LAB **Lab ID: 9285324003** Collected: 01/06/11 00:00 Received: 01/06/11 11:59 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	**3.2J**	ug/L	25.0	2.2	1		01/08/11 01:39	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		01/08/11 01:39	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		01/08/11 01:39	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		01/08/11 01:39	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		01/08/11 01:39	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		01/08/11 01:39	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		01/08/11 01:39	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		01/08/11 01:39	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		01/08/11 01:39	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		01/08/11 01:39	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		01/08/11 01:39	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		01/08/11 01:39	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		01/08/11 01:39	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		01/08/11 01:39	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	2.5	1		01/08/11 01:39	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		01/08/11 01:39	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		01/08/11 01:39	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		01/08/11 01:39	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		01/08/11 01:39	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		01/08/11 01:39	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		01/08/11 01:39	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		01/08/11 01:39	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		01/08/11 01:39	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		01/08/11 01:39	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		01/08/11 01:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		01/08/11 01:39	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		01/08/11 01:39	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		01/08/11 01:39	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		01/08/11 01:39	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	0.12	1		01/08/11 01:39	108-20-3	
Ethylbenzene	ND	ug/L	1.0	0.30	1		01/08/11 01:39	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		01/08/11 01:39	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		01/08/11 01:39	74-88-4	
Methylene Chloride	ND	ug/L	1.0	0.97	1		01/08/11 01:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		01/08/11 01:39	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		01/08/11 01:39	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		01/08/11 01:39	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		01/08/11 01:39	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		01/08/11 01:39	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		01/08/11 01:39	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		01/08/11 01:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		01/08/11 01:39	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		01/08/11 01:39	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		01/08/11 01:39	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		01/08/11 01:39	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		01/08/11 01:39	108-05-4	

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Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Madison Co Closed LF 1/06
Pace Project No.: 9285324

Sample: TRIP BLANK LAB **Lab ID: 9285324003** Collected: 01/06/11 00:00 Received: 01/06/11 11:59 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		01/08/11 01:39	75-01-4	
m&p-Xylene	ND	ug/L	2.0	0.66	1		01/08/11 01:39	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		01/08/11 01:39	95-47-6	
4-Bromofluorobenzene (S)	97	%	70-130		1		01/08/11 01:39	460-00-4	
Dibromofluoromethane (S)	109	%	70-130		1		01/08/11 01:39	1868-53-7	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1		01/08/11 01:39	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		01/08/11 01:39	2037-26-5	

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QUALITY CONTROL DATA

Project: Madison Co Closed LF 1/06
Pace Project No.: 9285324

QC Batch: MPRP/7712
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 9285324001, 9285324002

METHOD BLANK: 550919
Matrix: Water
Associated Lab Samples: 9285324001, 9285324002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	5.0	01/14/11 19:26	
Barium	ug/L	ND	5.0	01/14/11 19:26	
Cadmium	ug/L	ND	1.0	01/14/11 19:26	
Chromium	ug/L	ND	5.0	01/14/11 19:26	
Lead	ug/L	ND	5.0	01/14/11 19:26	
Selenium	ug/L	ND	10.0	01/14/11 19:26	
Silver	ug/L	ND	5.0	01/14/11 19:26	

LABORATORY CONTROL SAMPLE: 550920

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	500	508	102	80-120	
Barium	ug/L	500	504	101	80-120	
Cadmium	ug/L	500	520	104	80-120	
Chromium	ug/L	500	512	102	80-120	
Lead	ug/L	500	522	104	80-120	
Selenium	ug/L	500	512	102	80-120	
Silver	ug/L	250	257	103	80-120	

MATRIX SPIKE SAMPLE: 550921

Parameter	Units	9285175008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	13.2	500	474	92	75-125	
Barium	ug/L	314	500	743	86	75-125	
Cadmium	ug/L	ND	500	463	93	75-125	
Chromium	ug/L	ND	500	465	92	75-125	
Lead	ug/L	25.2	500	468	89	75-125	
Selenium	ug/L	ND	500	470	94	75-125	
Silver	ug/L	ND	250	234	93	75-125	

SAMPLE DUPLICATE: 550922

Parameter	Units	9285175009 Result	Dup Result	RPD	Max RPD	Qualifiers
Arsenic	ug/L	ND	ND		20	
Barium	ug/L	182	176	3	20	
Cadmium	ug/L	2.9	2.8	6	20	
Chromium	ug/L	14.0	13.5	4	20	
Lead	ug/L	32.0	30.9	3	20	

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Huntersville, NC 28078
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QUALITY CONTROL DATA

Project: Madison Co Closed LF 1/06
Pace Project No.: 9285324

SAMPLE DUPLICATE: 550922

Parameter	Units	9285175009 Result	Dup Result	RPD	Max RPD	Qualifiers
Selenium	ug/L	ND	ND		20	
Silver	ug/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: Madison Co Closed LF 1/06
Pace Project No.: 9285324

QC Batch: MERP/3245
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Associated Lab Samples: 9285324001, 9285324002

METHOD BLANK: 550775
Matrix: Water
Associated Lab Samples: 9285324001, 9285324002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/14/11 12:02	

LABORATORY CONTROL SAMPLE: 550776

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.2	89	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 550777 550778

Parameter	Units	9285379026 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.3	2.3	90	90	75-125	0	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 550779 550780

Parameter	Units	9285484002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.2	2.2	88	90	75-125	3	25	

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QUALITY CONTROL DATA

Project: Madison Co Closed LF 1/06
Pace Project No.: 9285324

QC Batch: MSV/13686 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level Landfill
Associated Lab Samples: 9285324001, 9285324002, 9285324003

METHOD BLANK: 549824 Matrix: Water
Associated Lab Samples: 9285324001, 9285324002, 9285324003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	01/07/11 19:39	
1,1,1-Trichloroethane	ug/L	ND	1.0	01/07/11 19:39	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	01/07/11 19:39	
1,1,2-Trichloroethane	ug/L	ND	1.0	01/07/11 19:39	
1,1-Dichloroethane	ug/L	ND	1.0	01/07/11 19:39	
1,1-Dichloroethene	ug/L	ND	1.0	01/07/11 19:39	
1,2,3-Trichloropropane	ug/L	ND	1.0	01/07/11 19:39	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	01/07/11 19:39	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/07/11 19:39	
1,2-Dichlorobenzene	ug/L	ND	1.0	01/07/11 19:39	
1,2-Dichloroethane	ug/L	ND	1.0	01/07/11 19:39	
1,2-Dichloropropane	ug/L	ND	1.0	01/07/11 19:39	
1,4-Dichlorobenzene	ug/L	ND	1.0	01/07/11 19:39	
2-Butanone (MEK)	ug/L	ND	5.0	01/07/11 19:39	
2-Hexanone	ug/L	ND	5.0	01/07/11 19:39	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	01/07/11 19:39	
Acetone	ug/L	ND	25.0	01/07/11 19:39	
Acrylonitrile	ug/L	ND	10.0	01/07/11 19:39	
Benzene	ug/L	ND	1.0	01/07/11 19:39	
Bromochloromethane	ug/L	ND	1.0	01/07/11 19:39	
Bromodichloromethane	ug/L	ND	1.0	01/07/11 19:39	
Bromoform	ug/L	ND	1.0	01/07/11 19:39	
Bromomethane	ug/L	ND	2.0	01/07/11 19:39	
Carbon disulfide	ug/L	ND	2.0	01/07/11 19:39	
Carbon tetrachloride	ug/L	ND	1.0	01/07/11 19:39	
Chlorobenzene	ug/L	ND	1.0	01/07/11 19:39	
Chloroethane	ug/L	ND	1.0	01/07/11 19:39	
Chloroform	ug/L	ND	1.0	01/07/11 19:39	
Chloromethane	ug/L	ND	1.0	01/07/11 19:39	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/07/11 19:39	
cis-1,3-Dichloropropene	ug/L	ND	1.0	01/07/11 19:39	
Dibromochloromethane	ug/L	ND	1.0	01/07/11 19:39	
Dibromomethane	ug/L	ND	1.0	01/07/11 19:39	
Diisopropyl ether	ug/L	ND	1.0	01/07/11 19:39	
Ethylbenzene	ug/L	ND	1.0	01/07/11 19:39	
Iodomethane	ug/L	ND	5.0	01/07/11 19:39	
m&p-Xylene	ug/L	ND	2.0	01/07/11 19:39	
Methylene Chloride	ug/L	ND	1.0	01/07/11 19:39	
o-Xylene	ug/L	ND	1.0	01/07/11 19:39	
Styrene	ug/L	ND	1.0	01/07/11 19:39	
Tetrachloroethene	ug/L	ND	1.0	01/07/11 19:39	
Toluene	ug/L	ND	1.0	01/07/11 19:39	
trans-1,2-Dichloroethene	ug/L	ND	1.0	01/07/11 19:39	

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Madison Co Closed LF 1/06
Pace Project No.: 9285324

METHOD BLANK: 549824 Matrix: Water

Associated Lab Samples: 9285324001, 9285324002, 9285324003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
trans-1,3-Dichloropropene	ug/L	ND	1.0	01/07/11 19:39	
trans-1,4-Dichloro-2-butene	ug/L	ND	1.0	01/07/11 19:39	
Trichloroethene	ug/L	ND	1.0	01/07/11 19:39	
Trichlorofluoromethane	ug/L	ND	1.0	01/07/11 19:39	
Vinyl acetate	ug/L	ND	2.0	01/07/11 19:39	
Vinyl chloride	ug/L	ND	1.0	01/07/11 19:39	
1,2-Dichloroethane-d4 (S)	%	103	70-130	01/07/11 19:39	
4-Bromofluorobenzene (S)	%	100	70-130	01/07/11 19:39	
Dibromofluoromethane (S)	%	107	70-130	01/07/11 19:39	
Toluene-d8 (S)	%	101	70-130	01/07/11 19:39	

LABORATORY CONTROL SAMPLE: 549825

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	46.5	93	70-130	
1,1,1-Trichloroethane	ug/L	50	43.6	87	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	42.8	86	70-130	
1,1,2-Trichloroethane	ug/L	50	48.0	96	70-130	
1,1-Dichloroethane	ug/L	50	44.8	90	70-130	
1,1-Dichloroethene	ug/L	50	41.0	82	70-132	
1,2,3-Trichloropropane	ug/L	50	43.0	86	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	47.7	95	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	46.0	92	70-130	
1,2-Dichlorobenzene	ug/L	50	45.9	92	70-130	
1,2-Dichloroethane	ug/L	50	44.8	90	70-130	
1,2-Dichloropropane	ug/L	50	46.4	93	70-130	
1,4-Dichlorobenzene	ug/L	50	46.0	92	70-130	
2-Butanone (MEK)	ug/L	100	105	105	70-145	
2-Hexanone	ug/L	100	100	100	70-144	
4-Methyl-2-pentanone (MIBK)	ug/L	100	105	105	70-140	
Acetone	ug/L	100	97.1	97	50-175	
Acrylonitrile	ug/L	250	241	96	70-143	
Benzene	ug/L	50	40.3	81	70-130	
Bromochloromethane	ug/L	50	45.2	90	70-130	
Bromodichloromethane	ug/L	50	45.5	91	70-130	
Bromoform	ug/L	50	44.4	89	70-130	
Bromomethane	ug/L	50	44.2	88	54-130	
Carbon disulfide	ug/L	50	43.7	87	70-131	
Carbon tetrachloride	ug/L	50	42.0	84	70-132	
Chlorobenzene	ug/L	50	45.1	90	70-130	
Chloroethane	ug/L	50	39.3	79	64-134	
Chloroform	ug/L	50	43.6	87	70-130	
Chloromethane	ug/L	50	35.4	71	64-130	
cis-1,2-Dichloroethene	ug/L	50	43.4	87	70-131	
cis-1,3-Dichloropropene	ug/L	50	42.7	85	70-130	

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QUALITY CONTROL DATA

Project: Madison Co Closed LF 1/06
Pace Project No.: 9285324

LABORATORY CONTROL SAMPLE: 549825

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	50	44.7	89	70-130	
Dibromomethane	ug/L	50	43.5	87	70-131	
Diisopropyl ether	ug/L	50	44.5	89	70-130	
Ethylbenzene	ug/L	50	44.5	89	70-130	
Iodomethane	ug/L	100	88.8	89	49-180	
m&p-Xylene	ug/L	100	82.0	82	70-130	
Methylene Chloride	ug/L	50	43.6	87	63-130	
o-Xylene	ug/L	50	45.3	91	70-130	
Styrene	ug/L	50	41.6	83	70-130	
Tetrachloroethene	ug/L	50	40.8	82	70-130	
Toluene	ug/L	50	45.4	91	70-130	
trans-1,2-Dichloroethene	ug/L	50	42.2	84	70-130	
trans-1,3-Dichloropropene	ug/L	50	46.8	94	70-132	
trans-1,4-Dichloro-2-butene	ug/L	50	46.6	93	70-141	
Trichloroethene	ug/L	50	44.3	89	70-130	
Trichlorofluoromethane	ug/L	50	38.0	76	62-133	
Vinyl acetate	ug/L	100	96.0	96	66-157	
Vinyl chloride	ug/L	50	40.1	80	69-130	
1,2-Dichloroethane-d4 (S)	%			106	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Dibromofluoromethane (S)	%			107	70-130	
Toluene-d8 (S)	%			102	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 549826 549827

Parameter	Units	9284986003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethene	ug/L	ND	50	50	43.9	45.0	88	90	70-166	2	30	
Benzene	ug/L	ND	50	50	41.0	42.0	82	84	70-148	2	30	
Chlorobenzene	ug/L	ND	50	50	42.0	42.9	84	86	70-146	2	30	
Toluene	ug/L	ND	50	50	45.1	47.9	90	96	70-155	6	30	
Trichloroethene	ug/L	ND	50	50	45.3	46.4	91	93	69-151	2	30	
1,2-Dichloroethane-d4 (S)	%						106	104	70-130			
4-Bromofluorobenzene (S)	%						100	99	70-130			
Dibromofluoromethane (S)	%						111	111	70-130			
Toluene-d8 (S)	%						103	103	70-130			

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QUALIFIERS

Project: Madison Co Closed LF 1/06
Pace Project No.: 9285324

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1408237

Section A Required Client Information:

Company: Altamont Environmental
Address: 231 Haywood Street
Asheville NC 28801
Email To: jlee@altamontenvironmental.com
Phone: 828-281-3230 Fax: 828-277-3351
Requested Due Date/TAT: 24 hr TAT

Section B Required Project Information:

Report To: Joel Lenk
Copy To:
Purchase Order No.:
Project Name: Malvern Gardens LF
Project Number: 2315

Section C Invoice Information:

Attention: Sue Brown
Company Name: Altamont
Address: Same
Pace Quote Reference:
Pace Project Manager: Lane Patton
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: NC

Section D Required Client Information

Matrix Codes — MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): Y/N; Analysis Test: VOCs 8260

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test: VOCs 8260	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-03-OLD	WT	G			12/1/10	12:40	10	3				X					X		
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Please analyze sample w/ 24 hour TAT and notify upon completion.	Evan Yokum / Altamont	12/1/10	1527	[signature]	12/6/10	1527	3.5	Y	N	Y

4

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Evan Yokum

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 12/6/10

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1291342

Section A Required Client Information:

Company: Alternate Environmental
Address: 231 Haywood Street
Asheville NC 28801
Email To: JLink@alternateenvironmental.com
Phone: 828-281-3350 Fax: 828-281-3351
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To: Joel Link
Copy To:
Purchase Order No.:
Project Name: Madison Co. Closed LF
Project Number: 2313.18

Section C Invoice Information:

Attention: Sue Brewer
Company Name: Alternate
Address: Same
Pace Quote Reference:
Pace Project Manager: Lori Patton
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: NC

Section D Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test: Aromatic VOCs	Analysis Test: Metals 2017	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-03-OLD	WT	G			1/6/11	1052	13	4			X	X					X	X		
2	MW-04-OLD	WT	G			1/6/11	1105	2	4			X	X					X	X		
3	TRIP BLANK LAB →								2				X					X			
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Evan Yokovich / Alternate	1/6/2011	11:59	[signature]	1/6/11	11:59	1.0	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Evan Yokovich

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 1/6/2011

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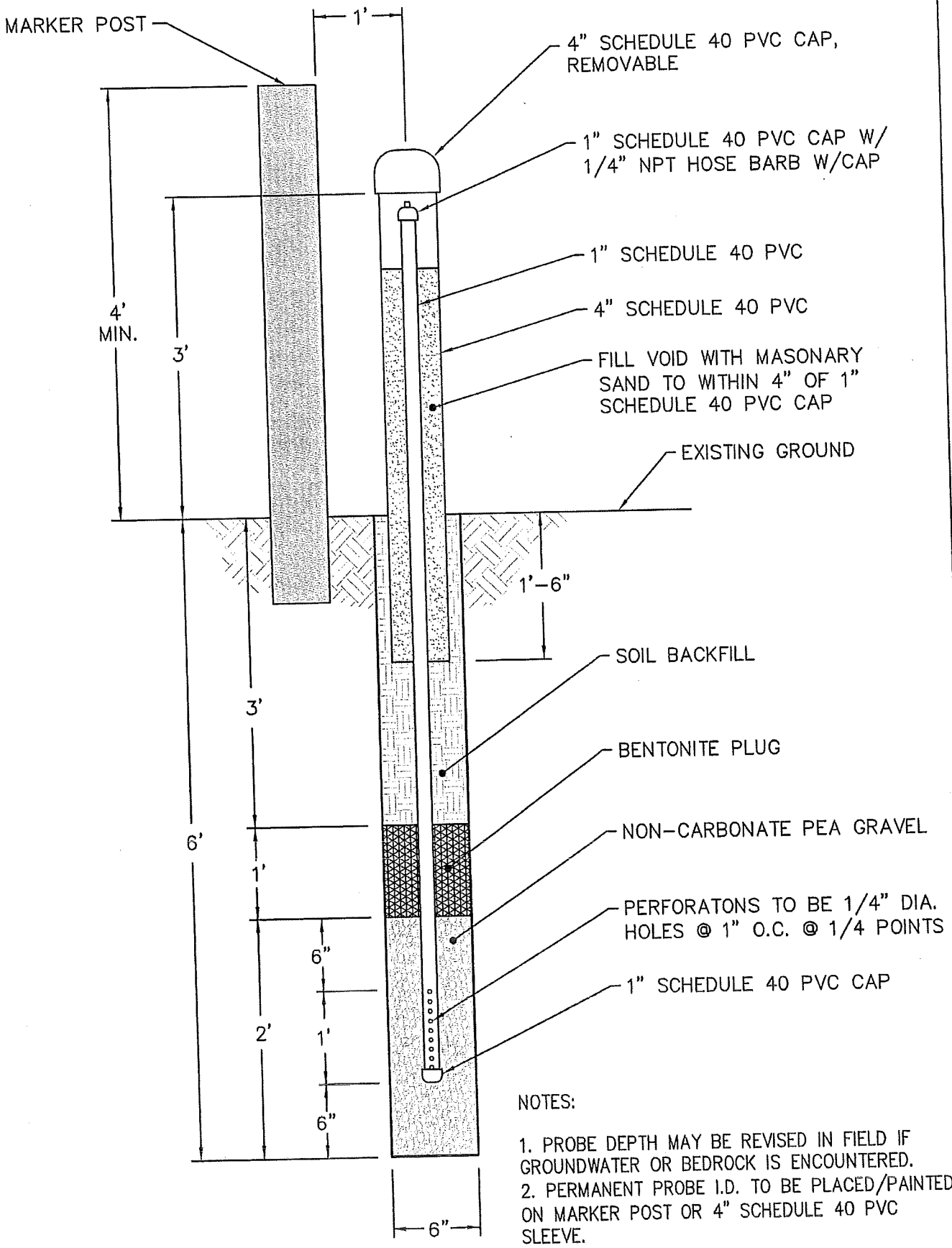
*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

APPENDIX E
Landfill Gas Probe Diagram and Photo



NOTES:

1. PROBE DEPTH MAY BE REVISED IN FIELD IF GROUNDWATER OR BEDROCK IS ENCOUNTERED.
2. PERMANENT PROBE I.D. TO BE PLACED/PAINTED ON MARKER POST OR 4" SCHEDULE 40 PVC SLEEVE.

LANDFILL GAS MONITORING PROBE

NOT TO SCALE

ON
OFF
ANSI/NSF 61-8
600 WOG
150 WSP
AMERICAN VALVE
13