# Semi-Annual Water Sampling and Analysis Report

*Prepared for*

Hertford County Closed Unlined MSWLF
Winton, North Carolina

## December 2009

**Permit Number: 46-01**
**MESCO Project Number: G090012.0**

Completed on March 3, 2010

Municipal Services Garner, NC
Engineering Company, P.A. Boone, NC
Municipal Engineering Services Company, P.A.
Garner, Boone and Morehead City, North Carolina

DENR USE ONLY: ☐ Paper Report ☐ Electronic Data - Email CD (data loaded: Yes / No ) Doc/Event #:

NC DENR
Division of Waste Management - Solid Waste

# Environmental Monitoring Reporting Form

**Notice:** This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

## Instructions:

- **Prepare one form for each individually monitored unit.**
- **Please type or print legibly.**
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i).
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

## Solid Waste Monitoring Data Submittal Information

**Name of entity submitting data (laboratory, consultant, facility owner):**

Municipal Engineering Services Co., PA

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

Name: Jonathan Pfohl Phone: (919)772-5393

E-mail: jpfohl@mesco.com

| Facility name: | Facility Address: | Facility Permit # | NC Landfill Rule: (.0500 or .1600) | Actual sampling dates (e.g., October 20-24, 2006) |
|---|---|---|---|---|
| Hertford County Closed Unlined MSWLF | 227 Mount Moriah Road Winton, NC 27986 | 46-01 | .0500 | December 30, 2009 |

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

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

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

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

**Notification attached?**

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

## Certification

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

Jonathan Pfohl — Facility Representative Name (Print)

Environmental Specialist — Title

(919) 772-5393 — (Area Code) Telephone Number

Jonathan Pfohl — Signature

Digitally signed by Jonathan Pfohl
DN: cn=Jonathan Pfohl, o=MESCO, ou, email=jpfohl@mesco.com, c=US
Date: 2010.01.06 08:25:16 -05'00'

3/3/10 — Date

Affix NC Licensed/ Professional Geologist Seal

P.O. BOX 97, Garner, NC 27529

Facility Representative Address

C-0281

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

Revised 6/2009

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OPERATION/CONSTRUCTION MANAGERS

**Municipal Services**

CIVIL/SANITARY ENGINEERS

**Engineering Company, P.A.**

March 3, 2010

Mr. Ervin Lane
Solid Waste Section
Division of Waste Management
North Carolina Department of Environment and Natural Resources
401 Oberlin Road, Suite 150
Raleigh, NC 27605

Re: Semi-Annual Water Quality Report
Hertford County Closed Unlined Landfill
Permit No. 46-01
MESCO Project No. G09012.0

Dear Mr. Lane:

## Introduction

The Hertford County Closed Unlined MSWLF located near Winton, NC, which operated under permit #46-01, is required to submit semi-annual compliance reports as a condition of 15A NCAC 13B .0500. This sampling event was performed on December 30, 2009 according to the semi-annual monitoring schedule prescribed by the NC Solid Waste Section (SWS) rules/regulations.

The comprehensive monitoring program includes sampling locations as outlined in the approved Sampling and Analysis Plan (SAP) contained in the facility *Transition Plan* dated November 1995. The current sampling locations consist of 13 groundwater monitoring wells and 4 surface water points. This report includes a summary of sampling procedures, field and laboratory results, groundwater and surfacewater characterization, and findings. A table of detections compared to Standards, field data results table, groundwater flow directions/rates table, a single-day potentiometric map, quality assurance/quality control data, and full laboratory analytical data results are also enclosed.

## Sampling Procedure

Environment 1, Inc. (E1) of Greenville, NC performed both the collection of water samples and the laboratory analysis for this sampling event. Water samples were reportedly collected from all 13 groundwater monitoring wells (MW-A through MW-M) and all four surface waters (SW-1 through SW-4). Quality control measures were also implemented during this event which included submittal and subsequent quantification of blanks (EB, TB). All monitoring locations are shown upon the enclosed single-day potentiometric map (Plate 1).

All sampling was reported to be performed utilizing methodology outlined in the NCDENR *Solid Waste Section Guidelines for Groundwater, Soil, and Surface Water Sampling* revised April 2008. The depth to water in each well was gaged prior to purging to quantify the static water level and used to construct the attached potentiometric map. All of the collected samples were transported under proper chain-of-custody (C-O-C) within the specified hold times for each analysis. The required field parameters (pH, specific conductance, and temperature) were measured upon sample extraction.

PO Box 97, Garner, North Carolina 27529 (919) 772-5393
PO Box 828, Morehead City, NC 28557 (252) 726-9481 PO Box 349, Boone, North Carolina 28607 (828) 262-1767

## Field and Laboratory Results

All of the groundwater samples were reportedly analyzed in the laboratory for the complete Appendix I list of volatile organic compounds (VOCs) per EPA 8260B and the complete Appendix I list of metals via EPA 200.8. In addition all of the samples were analyzed for mercury through method EPA 200.8.

The field parameters are included in Appendix A and the data appears to be generally consistent relative to each other and congruent with data historically reported. All water samples were analyzed utilizing the Method Detection Limits (MDL) with reference to the Solid Waste Section detection limits (SWSL) values current as of the sampling event. Enclosed Table 1 summarizes all detected constituents detected within groundwater and surface water samples above the Solid Waste Section detection limit (SWSL), Groundwater Protection Standards (GWP), North Carolina Groundwater Standards (2L) or the North Carolina Surface Water Standards (2B). Effective January 1, 2010 the 2L Standards have been raised for ten constituents and lowered for ten constituents. A net effect of three less VOCs were detected above the 2L Standard from this entire data set following the change in 2L Standards (three rise above and zero fall below).

Metals in concentrations above the SWSL were detected within all of the monitoring locations with the exception of MW-K, MW-M, and surface water SW-4. However, this is the second consecutive event that no metals were detected from groundwater samples in concentrations in exceedance of the 2L Standard current as of the collection date.

No constituents were detected within any of the surface water samples in concentrations above the applicable 2B Standard.

Quantifiable concentrations (>SWSL) of VOCs continue to be detected within all of the monitoring wells with the exception of MW-C, MW-K, and MW-M. The total cumulative VOC concentrations per sample location is shown in enclosed Plate 1. Downgradient wells (MW-D, MW-E, MW-F, MW-H, MW-I, MW-J, MW-L), crossgradient well MW-A, and upgradient wells (MW-B, MW-G) were found to contain VOCs in concentrations in exceedance of the 2L Standard current as of the sample event date. The additional numbers of low level VOC detections during the latest several events is attributed to the reduction of the reporting limits to the MDL and should not be misconstrued as a recent release. All of the monitoring locations that were found to contain VOCs contained either a mixture of both dissolved phase aromatic hydrocarbons and chlorinated aliphatic hydrocarbons (CAH) or only one CAH, vinyl chloride. All VOCs detected from groundwater samples have previously been detected at their respective location with the exception of 1,4-dichlorobenzene in MW-J. The often final biodegradation byproduct vinyl chloride continues to be the most prevalent VOC detected upon the site with the parameter found above the 2L within all of the wells containing quantifiable VOCs. Natural attenuation is apparent as evidenced by the decrease in parent compounds and an increase in intermediate and daughter products over time.

## Groundwater and Surface Water Characterization

MESCO completed and enclosed the single-day potentiometric map from groundwater elevation data obtained by E1 on December 30, 2009 (Plate 1). Groundwater flow rates and directions were also calculated based upon this data and is included in the attached Table 2. Groundwater flow within the surficial aquifer continues to be calculated to be in a general north/northwest direction towards Potecasi Creek. Groundwater velocities calculated based upon the equipotential contours ranged from approximately <1ft./yr. (MW-C) to 188 ft./yr. (MW-H) averaging approximately 42 ft./yr. The flow directions and gradients are consistent with historical observations, showing no changes that would result in a different interpretation of the groundwater system or hinder the effectiveness of the current monitoring network.

## Findings

The results of the latest semi-annual sampling event indicate that VOCs continue to persist within the surficial aquifer up-down- and cross-gradient from the closed MSWLF. Landfill gas has previously been detected at the facility and may be attributing to the lower level dissolved VOCs within the groundwater, especially in the wells located upgradient of the waste boundary. However, Potecasi Creek which serves as the downgradient local discharge feature continues to not be impacted as indicated by the lack of VOCs detected within all surface water samples downstream of the landfill. The facility is located in a rural setting and the residents in closest proximity to the property boundary are now connected to municipal water which should effectively limit the potential of human exposure to the groundwater.

## Closing

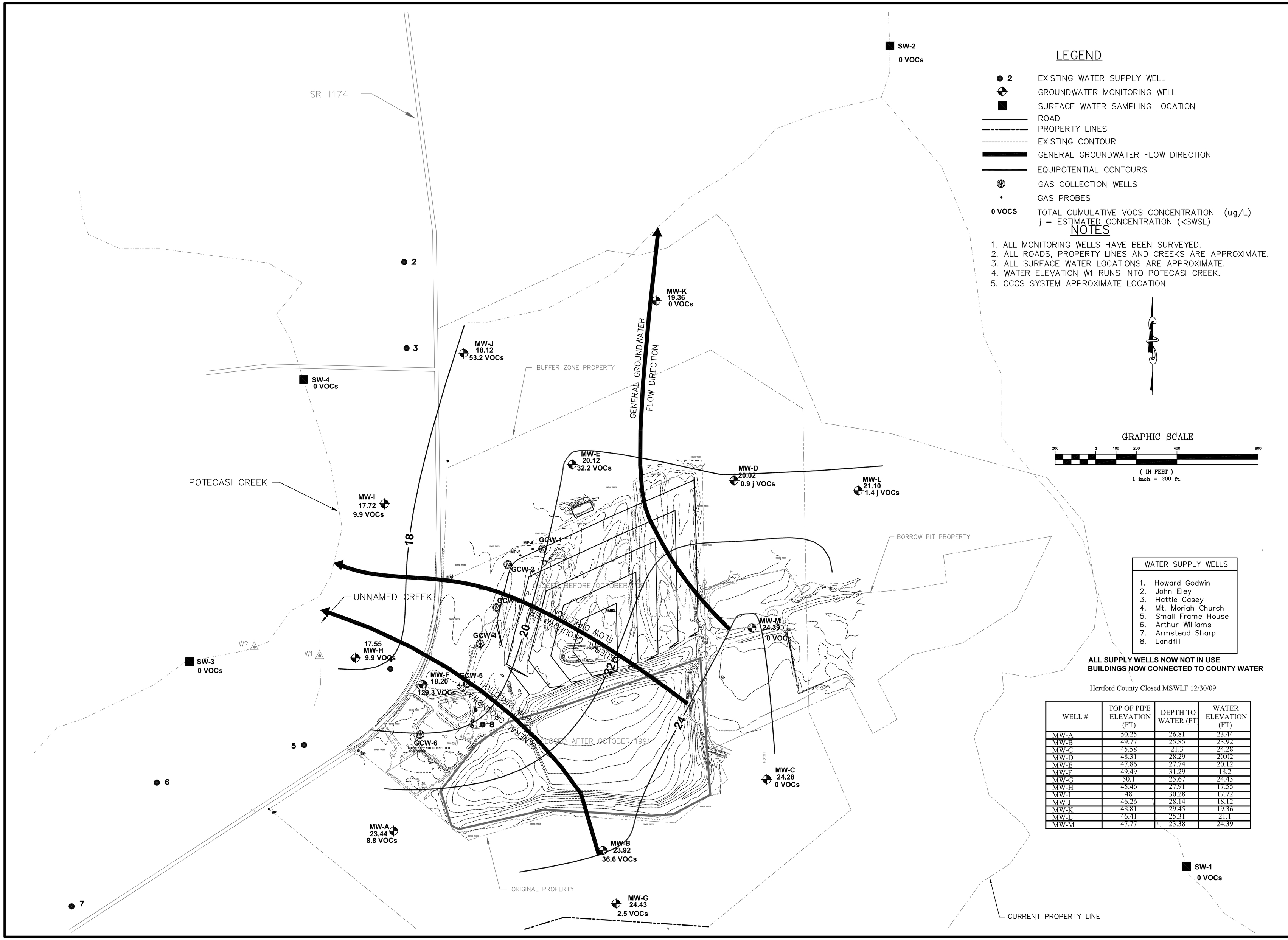
The Hertford County Closed Landfill will continue to be monitored and the next water sample collection event is tentatively scheduled for June 2010. If you have any questions or comments regarding this report, please contact me by phone at (919) 772-5393 or by email at jpfohl@mesco.com.

Sincerely,
MUNICIPAL ENGINEERING SERVICES CO., P.A.

Jonathan Pfohl
Environmental Specialist

Enclosures
cc: Mr. Melvin Nichols
Hertford County

# Plates




## LEGEND

- ● 2 — EXISTING WATER SUPPLY WELL
- GROUNDWATER MONITORING WELL
- SURFACE WATER SAMPLING LOCATION
- ROAD
- PROPERTY LINES
- EXISTING CONTOUR
- GENERAL GROUNDWATER FLOW DIRECTION
- EQUIPOTENTIAL CONTOURS
- GAS COLLECTION WELLS
- GAS PROBES
- 0 VOCS — TOTAL CUMULATIVE VOCS CONCENTRATION (ug/L)
  j = ESTIMATED CONCENTRATION (<SWSL)

## NOTES

1. ALL MONITORING WELLS HAVE BEEN SURVEYED.
2. ALL ROADS, PROPERTY LINES AND CREEKS ARE APPROXIMATE.
3. ALL SURFACE WATER LOCATIONS ARE APPROXIMATE.
4. WATER ELEVATION W1 RUNS INTO POTECASI CREEK.
5. GCCS SYSTEM APPROXIMATE LOCATION

| WATER SUPPLY WELLS |
|---|
| 1. Howard Godwin |
| 2. John Eley |
| 3. Hattie Casey |
| 4. Mt. Moriah Church |
| 5. Small Frame House |
| 6. Arthur Williams |
| 7. Armstead Sharp |
| 8. Landfill |

**ALL SUPPLY WELLS NOW NOT IN USE**
**BUILDINGS NOW CONNECTED TO COUNTY WATER**

Hertford County Closed MSWLF 12/30/09

| WELL # | TOP OF PIPE ELEVATION (FT) | DEPTH TO WATER (FT) | WATER ELEVATION (FT) |
|---|---|---|---|
| MW-A | 50.25 | 26.81 | 23.44 |
| MW-B | 49.77 | 25.85 | 23.92 |
| MW-C | 45.58 | 21.3 | 24.28 |
| MW-D | 48.31 | 28.29 | 20.02 |
| MW-E | 47.86 | 27.74 | 20.12 |
| MW-F | 49.49 | 31.29 | 18.2 |
| MW-G | 50.1 | 25.67 | 24.43 |
| MW-H | 45.46 | 27.91 | 17.55 |
| MW-I | 48 | 30.28 | 17.72 |
| MW-J | 46.26 | 28.14 | 18.12 |
| MW-K | 48.81 | 29.45 | 19.36 |
| MW-L | 46.41 | 25.31 | 21.1 |
| MW-M | 47.77 | 23.38 | 24.39 |


Municipal Engineering Services Company, P.A.
LICENSE NUMBER: C-0281
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 349 BOONE, N.C. 27529 (704) 262-1767


# MUNICIPAL SOLID WASTE LANDFILL FACILITY
# HERTFORD COUNTY NORTH CAROLINA

| DATE | BY | REV. | DESCRIPTION |
|---|---|---|---|

## SINGLE DAY POTENTIOMETRIC MAP UPPERMOST AQUIFER

| | |
|---|---|
| SCALE: | 1" = 200' |
| DATE: | 2/10/10 |
| DRWN. BY: | J PFOHL |
| CHKD. BY: | M BROWN |
| PROJECT NUMBER | G10012.0 |
| DRAWING NO. | PLATE 1 |
| SHEET NO. | 1 OF 1 |

# Tables

**Table 1**

**Detection Scan All Appendix I VOCs, Metals, and Mercury Detected above SWSL, GWP, 2L, or 2B (Current as of Sample Date)**
**Hertford County Closed Unlined MSWLF**

| Sample ID | Parameter Name [1] | Sample Date | Result | Unit | MDL [2] | SWSL [3] | 2L [4] | 2B [5] | GWP [6] | Exceedance | Preliminary Cause |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-A | 1,4-Dichlorobenzene | 12/30/09 | 1.2 | ug/l | 0.39 | 1 | 1.4 | | | | |
| MW-A | Barium | 12/30/09 | 147 | ug/l | 0.04 | 100 | 2000 | | | | |
| **MW-A** | **Benzene** | **12/30/09** | **1.7** | **ug/l** | **0.24** | **1** | **1** | | | **0.7** | **L &/or LFG** |
| MW-A | Chlorobenzene | 12/30/09 | 4.6 | ug/l | 0.30 | 3 | 50 | | | | |
| MW-A | Cobalt | 12/30/09 | 116 | ug/l | 0.02 | 10 | | | 70 | 46 | |
| **MW-A** | **Vinyl Chloride** | **12/30/09** | **1.3** | **ug/l** | **0.63** | **1** | **0.015** | | | **1.285** | **L &/or LFG** |
| MW-B | Barium | 12/30/09 | 126 | ug/l | 0.04 | 100 | 2000 | | | | |
| **MW-B** | **Benzene** | **12/30/09** | **1.4** | **ug/l** | **0.24** | **1** | **1** | | | **0.4** | **O, L &/or LFG** |
| MW-B | Chlorobenzene | 12/30/09 | 5.4 | ug/l | 0.30 | 3 | 50 | | | | |
| MW-B | Cis-1,2-Dichloroethene | 12/30/09 | 18.5 | ug/l | 0.25 | 5 | 70 | | | | |
| MW-B | Cobalt | 12/30/09 | 57 | ug/l | 0.02 | 10 | | | 70 | | |
| **MW-B** | **Trichloroethene** | **12/30/09** | **5.6** | **ug/l** | **0.23** | **1** | **2.8** | | | **2.8** | **O, L &/or LFG** |
| **MW-B** | **Vinyl Chloride** | **12/30/09** | **5.7** | **ug/l** | **0.63** | **1** | **0.015** | | | **5.685** | **O, L &/or LFG** |
| MW-B | Zinc | 12/30/09 | 13 | ug/l | 0.14 | 10 | 1050 | | | | |
| MW-C | Zinc | 12/30/09 | 19 | ug/l | 0.14 | 10 | 1050 | | | | |
| MW-D | Barium | 12/30/09 | 147 | ug/l | 0.04 | 100 | 2000 | | | | |
| MW-D | Cobalt | 12/30/09 | 48 | ug/l | 0.02 | 10 | | | 70 | | |
| MW-D | Vanadium | 12/30/09 | 12.8[j] | ug/l | 0.28 | 25 | | | 3.5 | 9.3 | |
| **MW-D** | **Vinyl Chloride** | **12/30/09** | **0.9[j]** | **ug/l** | **0.63** | **1** | **0.015** | | | **0.885** | **L &/or LFG** |
| MW-D | Zinc | 12/30/09 | 64 | ug/l | 0.14 | 10 | 1050 | | | | |
| **MW-E** | **1,4-Dichlorobenzene** | **12/30/09** | **4.5** | **ug/l** | **0.39** | **1** | **1.4** | | | **3.1** | **L &/or LFG** |
| MW-E | Barium | 12/30/09 | 159 | ug/l | 0.04 | 100 | 2000 | | | | |
| **MW-E** | **Benzene** | **12/30/09** | **3.3** | **ug/l** | **0.24** | **1** | **1** | | | **2.3** | **L &/or LFG** |
| MW-E | Chlorobenzene | 12/30/09 | 22.2 | ug/l | 0.30 | 3 | 50 | | | | |
| MW-E | Cobalt | 12/30/09 | 59 | ug/l | 0.02 | 10 | | | 70 | | |
| **MW-E** | **Vinyl Chloride** | **12/30/09** | **2.2** | **ug/l** | **0.63** | **1** | **0.015** | | | **2.185** | **L &/or LFG** |
| MW-E | Zinc | 12/30/09 | 11 | ug/l | 0.14 | 10 | 1050 | | | | |
| MW-F | 1,1-Dichloroethane | 12/30/09 | 5.4 | ug/l | 0.20 | 5 | 70 | | | | |
| **MW-F** | **1,2-Dichloroethane** | **12/30/09** | **0.8[j]** | **ug/l** | **0.27** | **1** | **0.38** | | | **0.42** | **L &/or LFG** |
| **MW-F** | **1,4-Dichlorobenzene** | **12/30/09** | **4.7** | **ug/l** | **0.39** | **1** | **1.4** | | | **3.3** | **L &/or LFG** |
| MW-F | Barium | 12/30/09 | 594 | ug/l | 0.04 | 100 | 2000 | | | | |
| **MW-F** | **Benzene** | **12/30/09** | **3.9** | **ug/l** | **0.24** | **1** | **1** | | | **2.9** | **L &/or LFG** |
| MW-F | Chlorobenzene | 12/30/09 | 18.4 | ug/l | 0.30 | 3 | 50 | | | | |
| **MW-F** | **Cis-1,2-Dichloroethene** | **12/30/09** | **76.4** | **ug/l** | **0.25** | **5** | **70** | | | **6.4** | **L &/or LFG** |
| MW-F | Cobalt | 12/30/09 | 188 | ug/l | 0.02 | 10 | | | 70 | 118 | |
| **MW-F** | **Tetrachloroethene** | **12/30/09** | **1.1** | **ug/l** | **0.17** | **1** | **0.7** | | | **0.4** | **L &/or LFG** |
| MW-F | Trichloroethene | 12/30/09 | 1.8 | ug/l | 0.23 | 1 | 2.8 | | | | |
| **MW-F** | **Vinyl Chloride** | **12/30/09** | **16.8** | **ug/l** | **0.63** | **1** | **0.015** | | | **16.785** | **L &/or LFG** |
| MW-F | Zinc | 12/30/09 | 29 | ug/l | 0.14 | 10 | 1050 | | | | |
| MW-G | Barium | 12/30/09 | 120 | ug/l | 0.04 | 100 | 2000 | | | | |
| **MW-G** | **Vinyl Chloride** | **12/30/09** | **2.5** | **ug/l** | **0.63** | **1** | **0.015** | | | **2.485** | **O, L &/or LFG** |
| MW-G | Zinc | 12/30/09 | 29 | ug/l | 0.14 | 10 | 1050 | | | | |

| Sample ID | Parameter Name [1] | Sample Date | Result | Unit | MDL [2] | SWSL [3] | 2L [4] | 2B [5] | GWP [6] | Exceedance | Preliminary Cause |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-H | Barium | 12/30/09 | 1568 | ug/l | 0.04 | 100 | 2000 | | | | |
| MW-H | Benzene | 12/30/09 | 1 | ug/l | 0.24 | 1 | 1 | | | | |
| MW-H | Cis-1,2-Dichloroethene | 12/30/09 | 7.1 | ug/l | 0.25 | 5 | 70 | | | | |
| MW-H | Cobalt | 12/30/09 | 317 | ug/l | 0.02 | 10 | | | 70 | 247 | |
| MW-H | Thallium | 12/30/09 | 1[j] | ug/l | 0.03 | 5 | | | 0.28 | 0.72 | |
| **MW-H** | **Vinyl Chloride** | **12/30/09** | **1.8** | **ug/l** | **0.63** | **1** | **0.015** | | | **1.785** | **L &/or LFG** |
| MW-I | Barium | 12/30/09 | 220 | ug/l | 0.04 | 100 | 2000 | | | | |
| MW-I | Cis-1,2-Dichloroethene | 12/30/09 | 6.1 | ug/l | 0.25 | 5 | 70 | | | | |
| MW-I | Cobalt | 12/30/09 | 65 | ug/l | 0.02 | 10 | | | 70 | | |
| **MW-I** | **Vinyl Chloride** | **12/30/09** | **3.8** | **ug/l** | **0.63** | **1** | **0.015** | | | **3.785** | **L &/or LFG** |
| MW-I | Zinc | 12/30/09 | 21 | ug/l | 0.14 | 10 | 1050 | | | | |
| **MW-J** | **1,4-Dichlorobenzene** | **12/30/09** | **5.7** | **ug/l** | **0.39** | **1** | **1.4** | | | **4.3** | **L &/or LFG** |
| **MW-J** | **Benzene** | **12/30/09** | **3.7** | **ug/l** | **0.24** | **1** | **1** | | | **2.7** | **L &/or LFG** |
| MW-J | Chlorobenzene | 12/30/09 | 19.4 | ug/l | 0.30 | 3 | 50 | | | | |
| MW-J | Cis-1,2-Dichloroethene | 12/30/09 | 8.7 | ug/l | 0.25 | 5 | 70 | | | | |
| **MW-J** | **Vinyl Chloride** | **12/30/09** | **15.7** | **ug/l** | **0.63** | **1** | **0.015** | | | **15.685** | **L &/or LFG** |
| MW-J | Zinc | 12/30/09 | 13 | ug/l | 0.14 | 10 | 1050 | | | | |
| **MW-L** | **1,2-Dichloropropane** | **12/30/09** | **0.7[j]** | **ug/l** | **0.21** | **1** | **0.51** | | | **0.19** | **L &/or LFG** |
| MW-L | Cobalt | 12/30/09 | 16 | ug/l | 0.02 | 10 | | | 70 | | |
| MW-L | Vanadium | 12/30/09 | 4[j] | ug/l | 0.28 | 25 | | | 3.5 | 0.5 | |
| **MW-L** | **Vinyl Chloride** | **12/30/09** | **0.7[j]** | **ug/l** | **0.63** | **1** | **0.015** | | | **0.685** | **L &/or LFG** |
| MW-L | Zinc | 12/30/09 | 58 | ug/l | 0.14 | 10 | 1050 | | | | |
| SW-1 | Zinc | 12/30/09 | 13 | ug/l | 0.14 | 10 | | 50 | | | |
| SW-2 | Zinc | 12/30/09 | 14 | ug/l | 0.14 | 10 | | 50 | | | |
| SW-3 | Zinc | 12/30/09 | 20 | ug/l | 0.14 | 10 | | 50 | | | |

[1] Table only contains detected constituents detected above the SWSL, GWP, 2L or 2B Standards (Current as of Sampling Event)
[2] MDL = Method Detection Limit
[3] SWSL = Solid Waste Section Reporting Limit (Current as of Sampling Event)
[4] 2L = North Carolina Ground Water 2L Standard (Current as of Sampling Event)
[5] 2B = North Carolina Surface Water 2B Standard for Specific Stream Classification (Current as of Sampling Event)
[J] =The reported value is estimated & between the laboratory MDL & the SWSL, adjusted for actual sample preparation data and moisture content
L = Leachate
LFG = Landfill Gas
O = Offsite
NE = Not Established
**BOLD** = Concentration => 2L or 2B Standard (Current as of Sampling Event)

**Table 2**
**Hydrologic Properties at Monitoring Well Locations**
**Hertford County Closed Unlined MSWLF**

| Monitoring Well | Hydraulic Conductivity (cm/sec) | Effective Porosity (%) | Hydraulic Gradient | Flow Rate (ft/yr) | Flow Direction | Water Table Depth (ft) | Water Table Elevation (ft) | Screened Interval Lithology | Direction in Relation to MSWLF Boundary |
|---|---|---|---|---|---|---|---|---|---|
| MW-A | 7.30E-04 | 20% | 0.0028 | 10 | N00W | 26.81 | 23.44 | Sand | Crossgradient |
| MW-B | 6.90E-04 | 20% | 0.0062 | 22 | N15W | 25.85 | 23.92 | Sand | Upgradient |
| MW-C | 1.10E-04 | 20% | 0.0005 | 0.3 | N55W | 21.3 | 24.28 | Clayey Sand | Upgradient |
| MW-D | 4.40E-04 | 20% | 0.0697 | 159 | N00W | 28.29 | 20.02 | Clayey Silt | Downgradient |
| MW-E | 3.10E-03 | 20% | 0.0032 | 52 | N42W | 27.74 | 20.12 | Sand | Downgradient |
| MW-F | 3.10E-03 | 20% | 0.0010 | 16 | N43W | 31.29 | 18.2 | Clayey Sand | Downgradient |
| MW-G | 1.80E-03 | 20% | 0.0017 | 16 | N17W | 25.67 | 24.43 | Sand | Upgradient |
| MW-H | 4.60E-03 | 20% | 0.0079 | 188 | N01E | 27.91 | 17.55 | Sand | Downgradient |
| MW-I | 1.10E-03 | 20% | 0.0019 | 11 | N75W | 30.28 | 17.72 | Sand | Downgradient |
| MW-J | 1.20E-03 | 20% | 0.0030 | 19 | N66W | 28.14 | 18.12 | Sand | Downgradient |
| MW-K | 3.50E-03 | 20% | 0.0008 | 15 | N07E | 29.45 | 19.36 | Sand | Downgradient |
| MW-L | 1.60E-04 | 20% | 0.0081 | 7 | N02W | 25.31 | 21.1 | Sand | Downgradient |
| MW-M | 1.20E-03 | 20% | 0.0057 | 35 | N01W | 23.38 | 24.39 | Sand | Crossgradient |

NOTE: Data for effective porosity & hydraulic conductivities obtained from GAI Consultants' Assessment Report (Feb. 1996)
Hydrologic Gradient taken from the December 30, 2009 sampling event.
Flow rate ($Q$) is defined by the equation:

where $$Q = -\frac{K}{n_e} \cdot \frac{dh}{dl}$$

$K$ = hydraulic conductivity
$n_e$ = effective porosity
$dh$ = head difference
$dl$ = horizontal distance

Mean $v_x$: 42
Median $v_x$: 16

# Appendix A
# Laboratory Analysis Report &
# Chain of Custodies

# Environment 1, Incorporated

Drinking Water ID: 17715
Wastewater ID: 10

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

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

ID#: 6025

HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
P.O. BOX 97
GARNER ,NC 27529

DATE COLLECTED: 12/30/09
DATE REPORTED : 01/13/10

REVIEWED BY:

| PARAMETERS | MDL | SWSL | MW-A | MW-B | MW-C | MW-D | MW-E | Analysis Date | Analyst | Method Code |
|---|---|---|---|---|---|---|---|---|---|---|
| PH (field measurement), Units | | | 5.5 | 5.7 | 4.9 | 5.8 | 5.9 | 12/30/09 | RJH | SM4500HB |
| Antimony, ug/l | 0.06 | 6.0 | 0.9 J | 0.2 J | 0.1 J | 0.2 J | 0.1 J | 01/05/10 | CMF | EPA200.8 |
| Arsenic, ug/l | 0.17 | 10.0 | 2.4 J | 9.6 J | --- U | 1.6 J | 7.4 J | 01/05/10 | CMF | EPA200.8 |
| Barium, ug/l | 0.04 | 100.0 | 147 | 126 | 52.0 J | 147 | 159 | 01/05/10 | LFJ | EPA200.8 |
| Beryllium, ug/l | 0.06 | 1.0 | 0.1 J | 0.2 J | 0.8 J | 0.6 J | --- U | 01/05/10 | CMF | EPA200.8 |
| Cadmium, ug/l | 0.04 | 1.0 | 0.1 J | 0.1 J | 0.1 J | 0.3 J | 0.1 J | 01/05/10 | CMF | EPA200.8 |
| Cobalt, ug/l | 0.02 | 10.0 | 116 | 57 | 4.0 J | 48 | 59 | 01/05/10 | CMF | EPA200.8 |
| Copper, ug/l | 0.04 | 10.0 | 1.6 J | 1.8 J | 4.2 J | 6.0 J | 2.1 J | 01/05/10 | CMF | EPA200.8 |
| Total Chromium, ug/l | 0.10 | 10.0 | --- U | --- U | 0.4 J | 7.0 J | --- U | 01/05/10 | CMF | EPA200.8 |
| Lead, ug/l | 0.04 | 10.0 | 0.3 J | 0.3 J | 0.7 J | 2.4 J | 0.1 J | 01/05/10 | CMF | EPA200.8 |
| Mercury, ug/l | 0.03 | 0.20 | 0.09 J | 0.06 J | 0.03 J | 0.04 J | --- U | 01/05/10 | CMF | EPA200.8 |
| Nickel, ug/l | 0.04 | 50.0 | 2.9 J | 11.3 J | 3.5 J | 9.7 J | 6.2 J | 01/05/10 | CMF | EPA200.8 |
| Selenium, ug/l | 0.12 | 10.0 | --- U | --- U | --- U | 0.7 J | --- U | 01/05/10 | CMF | EPA200.8 |
| Silver, ug/l | 0.04 | 10.0 | 0.1 J | 0.1 J | 0.1 J | 0.1 J | 0.1 J | 01/05/10 | CMF | EPA200.8 |
| Thallium, ug/l | 0.03 | 5.0 | 0.1 J | --- U | --- U | --- U | --- U | 01/05/10 | CMF | EPA200.8 |
| Vanadium, ug/l | 0.28 | 25.0 | 1.0 J | 1.8 J | 1.8 J | 12.8 J | 1.1 J | 01/05/10 | CMF | EPA200.8 |
| Zinc, ug/l | 0.14 | 10.0 | 7.8 J | 13 | 19 | 64 | 11 | 01/05/10 | CMF | EPA200.8 |
| Conductivity (at 25c), uMhos | 1.0 | 1.0 | 267 | 228 | 59 | 362 | 452 | 12/30/09 | RJH | SM2510B |
| Temperature, °C | | | 16 | 15 | 15 | 14 | 16 | 12/30/09 | RJH | SM2550B |
| Static Water Level, feet | | | 26.81 | 25.85 | 21.30 | 28.29 | 27.74 | 12/30/09 | RJH | |
| Well Depth, feet | | | 30.41 | 28.85 | 25.20 | 35.49 | 35.39 | 12/30/09 | RJH | |

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

# Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

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

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

ID#: 6025

HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
P.O. BOX 97
GARNER ,NC 27529

DATE COLLECTED: 12/30/09
DATE REPORTED : 01/13/10

REVIEWED BY:

| PARAMETERS | MDL | SWSL | MW-F | MW-G | MW-H | MW-I | MW-J | Analysis Date | Analyst | Method Code |
|---|---|---|---|---|---|---|---|---|---|---|
| PH (field measurement), Units | | | 6.2 | 6.0 | 6.5 | 5.9 | 5.7 | 12/30/09 | RJH | SM4500HB |
| Antimony, ug/l | 0.06 | 6.0 | 0.1 J | 0.1 J | 0.3 J | --- U | | 01/05/10 | CMF | EPA200.8 |
| Antimony, ug/l | 0.06 | 6.0 | | | | | 0.2 J | 01/12/10 | CMF | EPA200.8 |
| Arsenic, ug/l | 0.17 | 10.0 | 3.6 J | 0.4 J | 2.2 J | 3.2 J | | 01/05/10 | CMF | EPA200.8 |
| Arsenic, ug/l | 0.17 | 10.0 | | | | | --- U | 01/12/10 | CMF | EPA200.8 |
| Barium, ug/l | 0.04 | 100.0 | 594 | 120 | 1568 | 220 | | 01/05/10 | LFJ | EPA200.8 |
| Barium, ug/l | 0.04 | 100.0 | | | | | 87.9 J | 01/12/10 | CMF | EPA200.8 |
| Beryllium, ug/l | 0.06 | 1.0 | 0.2 J | 0.1 J | 0.1 J | 0.1 J | | 01/05/10 | CMF | EPA200.8 |
| Beryllium, ug/l | 0.06 | 1.0 | | | | | 0.1 J | 01/12/10 | CMF | EPA200.8 |
| Cadmium, ug/l | 0.04 | 1.0 | 0.2 J | --- U | 0.1 J | 0.1 J | | 01/05/10 | CMF | EPA200.8 |
| Cadmium, ug/l | 0.04 | 1.0 | | | | | 0.2 J | 01/12/10 | CMF | EPA200.8 |
| Cobalt, ug/l | 0.02 | 10.0 | 188 | 5.9 J | 317 | 65 | | 01/05/10 | CMF | EPA200.8 |
| Cobalt, ug/l | 0.02 | 10.0 | | | | | 9.2 J | 01/12/10 | CMF | EPA200.8 |
| Copper, ug/l | 0.04 | 10.0 | 1.1 J | 1.3 J | 1.8 J | 0.3 J | | 01/05/10 | CMF | EPA200.8 |
| Copper, ug/l | 0.04 | 10.0 | | | | | 0.4 J | 01/12/10 | CMF | EPA200.8 |
| Total Chromium, ug/l | 0.10 | 10.0 | --- U | --- U | --- U | --- U | | 01/05/10 | CMF | EPA200.8 |
| Total Chromium, ug/l | 0.10 | 10.0 | | | | | 0.2 J | 01/12/10 | CMF | EPA200.8 |
| Lead, ug/l | 0.04 | 10.0 | 0.4 J | 0.1 J | 0.1 J | 0.1 J | | 01/05/10 | CMF | EPA200.8 |
| Lead, ug/l | 0.04 | 10.0 | | | | | --- U | 01/12/10 | CMF | EPA200.8 |
| Mercury, ug/l | 0.03 | 0.20 | 0.06 J | --- U | 0.06 J | 0.07 J | | 01/05/10 | CMF | EPA200.8 |
| Mercury, ug/l | 0.03 | 0.20 | | | | | 0.09 J | 01/12/10 | CMF | EPA200.8 |
| Nickel, ug/l | 0.04 | 50.0 | 11.8 J | 9.4 J | 32.7 J | 7.9 J | | 01/05/10 | CMF | EPA200.8 |
| Nickel, ug/l | 0.04 | 50.0 | | | | | 5.4 J | 01/12/10 | CMF | EPA200.8 |
| Selenium, ug/l | 0.12 | 10.0 | 0.3 J | --- U | 0.4 J | 0.6 J | | 01/05/10 | CMF | EPA200.8 |
| Selenium, ug/l | 0.12 | 10.0 | | | | | --- U | 01/12/10 | CMF | EPA200.8 |
| Silver, ug/l | 0.04 | 10.0 | 0.1 J | 0.1 J | 0.1 J | --- U | | 01/05/10 | CMF | EPA200.8 |
| Silver, ug/l | 0.04 | 10.0 | | | | | --- U | 01/12/10 | CMF | EPA200.8 |
| Thallium, ug/l | 0.03 | 5.0 | 0.1 J | --- U | 1.0 J | --- U | | 01/05/10 | CMF | EPA200.8 |
| Thallium, ug/l | 0.03 | 5.0 | | | | | --- U | 01/12/10 | CMF | EPA200.8 |
| Vanadium, ug/l | 0.28 | 25.0 | 1.7 J | 1.5 J | 0.8 J | 0.5 J | | 01/05/10 | CMF | EPA200.8 |
| Vanadium, ug/l | 0.28 | 25.0 | | | | | 1.3 J | 01/12/10 | CMF | EPA200.8 |
| Zinc, ug/l | 0.14 | 10.0 | 29 | 29 | 0.4 J | 21 | | 01/05/10 | CMF | EPA200.8 |
| Zinc, ug/l | 0.14 | 10.0 | | | | | 13 | 01/12/10 | CMF | EPA200.8 |
| Conductivity (at 25c), uMhos | 1.0 | 1.0 | 916 | 290 | 616 | 517 | 218 | 12/30/09 | RJH | SM2510B |
| Temperature, °C | | | 17 | 14 | 14 | 14 | 14 | 12/30/09 | RJH | SM2550B |
| Static Water Level, feet | | | 31.29 | 25.67 | 27.91 | 30.28 | 28.14 | 12/30/09 | RJH | |
| Well Depth, feet | | | 35.28 | 39.65 | 37.11 | 36.47 | 38.45 | 12/30/09 | RJH | |

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

# Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

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

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

ID#: 6025

HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
P.O. BOX 97
GARNER ,NC 27529

DATE COLLECTED: 12/30/09
DATE REPORTED : 01/13/10

REVIEWED BY:

| PARAMETERS | MDL | SWSL | MW-K | MW-L | MW-M | Trip Blank | Equipment Blank | Analysis Date | Analyst | Method Code |
|---|---|---|---|---|---|---|---|---|---|---|
| PH (field measurement), Units | | | 5.9 | 5.5 | 5.3 | | | 12/30/09 | RJH | SM4500HB |
| Antimony, ug/l | 0.06 | 6.0 | 0.3 J | 0.2 J | 0.1 J | | 0.6 J | 01/12/10 | CMF | EPA200.8 |
| Arsenic, ug/l | 0.17 | 10.0 | --- U | 0.8 J | --- U | | --- U | 01/12/10 | CMF | EPA200.8 |
| Barium, ug/l | 0.04 | 100.0 | 46.3 J | 79.6 J | 61.4 J | | 0.1 J | 01/12/10 | CMF | EPA200.8 |
| Beryllium, ug/l | 0.06 | 1.0 | --- U | 0.4 J | 0.3 J | | --- U | 01/12/10 | CMF | EPA200.8 |
| Cadmium, ug/l | 0.04 | 1.0 | 0.1 J | 0.5 J | --- U | | --- U | 01/12/10 | CMF | EPA200.8 |
| Cobalt, ug/l | 0.02 | 10.0 | 0.1 J | 16 | 1.2 J | | 0.1 J | 01/12/10 | CMF | EPA200.8 |
| Copper, ug/l | 0.04 | 10.0 | 1.0 J | 2.7 J | 0.7 J | | --- U | 01/12/10 | CMF | EPA200.8 |
| Total Chromium, ug/l | 0.10 | 10.0 | 1.8 J | 1.5 J | 1.7 J | | 0.2 J | 01/12/10 | CMF | EPA200.8 |
| Lead, ug/l | 0.04 | 10.0 | --- U | 0.9 J | 0.4 J | | --- U | 01/12/10 | CMF | EPA200.8 |
| Mercury, ug/l | 0.03 | 0.20 | 0.1 J | 0.16 J | 0.16 J | | 0.09 J | 01/12/10 | CMF | EPA200.8 |
| Nickel, ug/l | 0.04 | 50.0 | 2.1 J | 3.4 J | 1.4 J | | --- U | 01/12/10 | CMF | EPA200.8 |
| Selenium, ug/l | 0.12 | 10.0 | 0.2 J | --- U | --- U | | --- U | 01/12/10 | CMF | EPA200.8 |
| Silver, ug/l | 0.04 | 10.0 | 0.2 J | --- U | --- U | | --- U | 01/12/10 | CMF | EPA200.8 |
| Thallium, ug/l | 0.03 | 5.0 | --- U | --- U | --- U | | --- U | 01/12/10 | CMF | EPA200.8 |
| Vanadium, ug/l | 0.28 | 25.0 | 1.1 J | 4.0 J | 1.2 J | | --- U | 01/12/10 | CMF | EPA200.8 |
| Zinc, ug/l | 0.14 | 10.0 | 4.7 J | 58 | 5..4 J | | 0.4 J | 01/12/10 | CMF | EPA200.8 |
| Conductivity (at 25c), uMhos | 1.0 | 1.0 | 154 | 102 | 79 | | | 12/30/09 | RJH | SM2510B |
| Temperature, °C | | | 14 | 14 | 17 | | | 12/30/09 | RJH | SM2550B |
| Static Water Level, feet | | | 29.45 | 25.31 | 23.38 | | | 12/30/09 | RJH | |
| Well Depth, feet | | | 42.92 | 35.19 | 39.83 | | | 12/30/09 | RJH | |

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

# Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

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

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

CLIENT: HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
P.O. BOX 97
GARNER, NC 27529

CLIENT ID: 6025

ANALYST: MAO
DATE COLLECTED: 12/30/09
DATE ANALYZED: 01/11/10
DATE REPORTED: 01/13/10



REVIEWED BY: _____

## VOLATILE ORGANICS
## EPA METHOD 8260B

| PARAMETERS, ug/l | MDL | SWSL | MW-A | MW-B | MW-C | MW-D | MW-E |
|---|---|---|---|---|---|---|---|
| 1. Chloromethane | 0.77 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 2. Vinyl Chloride | 0.63 | 1.0 | 1.30 | 5.70 | --- U | 0.90 J | 2.20 |
| 3. Bromomethane | 0.67 | 10.0 | --- U | --- U | --- U | --- U | --- U |
| 4. Chloroethane | 0.48 | 10.0 | 0.60 J | --- U | --- U | --- U | 1.40 J |
| 5. Trichlorofluoromethane | 0.24 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 6. 1,1-Dichloroethene | 0.17 | 5.0 | --- U | --- U | --- U | --- U | --- U |
| 7. Acetone | 9.06 | 100.0 | --- U | --- U | --- U | --- U | --- U |
| 8. Iodomethane | 0.26 | 10.0 | --- U | --- U | --- U | --- U | --- U |
| 9. Carbon Disulfide | 0.23 | 100.0 | --- U | --- U | --- U | --- U | --- U |
| 10. Methylene Chloride | 0.64 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 11. trans-1,2-Dichloroethene | 0.23 | 5.0 | --- U | 0.30 J | --- U | --- U | --- U |
| 12. 1,1-Dichloroethane | 0.20 | 5.0 | 0.90 J | 2.30 J | --- U | 0.40 J | 0.90 J |
| 13. Vinyl Acetate | 0.20 | 50.0 | --- U | --- U | --- U | --- U | --- U |
| 14. Cis-1,2-Dichloroethene | 0.25 | 5.0 | 0.80 J | 18.50 | --- U | 2.60 J | 0.80 J |
| 15. 2-Butanone | 2.21 | 100.0 | --- U | --- U | --- U | --- U | --- U |
| 16. Bromochloromethane | 0.27 | 3.0 | --- U | --- U | --- U | --- U | --- U |
| 17. Chloroform | 0.25 | 5.0 | --- U | --- U | --- U | --- U | --- U |
| 18. 1,1,1-Trichloroethane | 0.19 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 19. Carbon Tetrachloride | 0.22 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 20. Benzene | 0.24 | 1.0 | 1.70 | 1.40 | --- U | 0.70 J | 3.30 |
| 21. 1,2-Dichloroethane | 0.27 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 22. Trichloroethene | 0.23 | 1.0 | --- U | 5.60 | --- U | 0.30 J | --- U |
| 23. 1,2-Dichloropropane | 0.21 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 24. Bromodichloromethane | 0.21 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 25. Cis-1,3-Dichloropropene | 0.24 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 26. 4-Methyl-2-Pentanone | 1.19 | 100.0 | --- U | --- U | --- U | --- U | --- U |
| 27. Toluene | 0.23 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 28. trans-1,3-Dichloropropene | 0.28 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 29. 1,1,2-Trichloroethane | 0.25 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 30. Tetrachloroethene | 0.17 | 1.0 | --- U | 0.20 J | --- U | 0.40 J | --- U |
| 31. 2-Hexanone | 1.57 | 50.0 | --- U | --- U | --- U | --- U | --- U |
| 32. Dibromochloromethane | 0.24 | 3.0 | --- U | --- U | --- U | --- U | --- U |
| 33. 1,2-Dibromoethane | 0.26 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 34. Chlorobenzene | 0.30 | 3.0 | 4.60 | 5.40 | --- U | 0.60 J | 22.20 |
| 35. 1,1,1,2-Tetrachloroethane | 0.22 | 5.0 | --- U | --- U | --- U | --- U | --- U |
| 36. Ethylbenzene | 0.21 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 37. Xylenes | 0.68 | 5.0 | --- U | --- U | --- U | --- U | --- U |
| 38. Dibromomethane | 0.28 | 10.0 | --- U | --- U | --- U | --- U | --- U |
| 39. Styrene | 0.19 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 40. Bromoform | 0.20 | 3.0 | --- U | --- U | --- U | --- U | --- U |
| 41. 1,1,2,2-Tetrachloroethane | 0.26 | 3.0 | --- U | --- U | --- U | --- U | --- U |
| 42. 1,2,3-Trichloropropane | 0.43 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 43. 1,4-Dichlorobenzene | 0.39 | 1.0 | 1.20 | 0.80 J | --- U | 0.70 J | 4.50 |
| 44. 1,2-Dichlorobenzene | 0.32 | 5.0 | --- U | --- U | --- U | --- U | --- U |
| 45. 1,2-Dibromo-3-Chloropropane | 0.34 | 13.0 | --- U | --- U | --- U | --- U | --- U |
| 46. Acrylonitrile | 2.72 | 200.0 | --- U | --- U | --- U | --- U | --- U |
| 47. trans-1,4-Dichloro-2-Butene | 0.42 | 100.0 | --- U | --- U | --- U | --- U | --- U |

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

# Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

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

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

CLIENT: HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
P.O. BOX 97
GARNER, NC 27529

CLIENT ID: 6025

ANALYST: MAO
DATE COLLECTED: 12/30/09
DATE ANALYZED: 01/11/10
DATE REPORTED: 01/13/10



REVIEWED BY:

## VOLATILE ORGANICS
## EPA METHOD 8260B

| PARAMETERS, ug/l | MDL | SWSL | MW-F | MW-G | MW-H | MW-I | MW-J |
|---|---|---|---|---|---|---|---|
| 1. Chloromethane | 0.77 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 2. Vinyl Chloride | 0.63 | 1.0 | 16.80 | 2.50 | 1.80 | 3.80 | 15.70 |
| 3. Bromomethane | 0.67 | 10.0 | --- U | --- U | --- U | --- U | --- U |
| 4. Chloroethane | 0.48 | 10.0 | 1.20 J | --- U | --- U | --- U | 0.60 J |
| 5. Trichlorofluoromethane | 0.24 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 6. 1,1-Dichloroethene | 0.17 | 5.0 | --- U | --- U | --- U | --- U | --- U |
| 7. Acetone | 9.06 | 100.0 | --- U | --- U | --- U | --- U | --- U |
| 8. Iodomethane | 0.26 | 10.0 | --- U | --- U | --- U | --- U | --- U |
| 9. Carbon Disulfide | 0.23 | 100.0 | --- U | --- U | --- U | --- U | --- U |
| 10. Methylene Chloride | 0.64 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 11. trans-1,2-Dichloroethene | 0.23 | 5.0 | 0.60 J | --- U | --- U | --- U | --- U |
| 12. 1,1-Dichloroethane | 0.20 | 5.0 | 5.40 | --- U | 1.10 J | 0.50 J | 1.80 J |
| 13. Vinyl Acetate | 0.20 | 50.0 | --- U | --- U | --- U | --- U | --- U |
| 14. Cis-1,2-Dichloroethene | 0.25 | 5.0 | 76.40 | --- U | 7.10 | 6.10 | 8.70 |
| 15. 2-Butanone | 2.21 | 100.0 | --- U | --- U | --- U | --- U | --- U |
| 16. Bromochloromethane | 0.27 | 3.0 | --- U | --- U | --- U | --- U | --- U |
| 17. Chloroform | 0.25 | 5.0 | --- U | --- U | --- U | --- U | --- U |
| 18. 1,1,1-Trichloroethane | 0.19 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 19. Carbon Tetrachloride | 0.22 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 20. Benzene | 0.24 | 1.0 | 3.90 | --- U | 1.00 | 0.70 J | 3.70 |
| 21. 1,2-Dichloroethane | 0.27 | 1.0 | 0.80 J | --- U | --- U | --- U | --- U |
| 22. Trichloroethene | 0.23 | 1.0 | 1.80 | 0.40 J | --- U | 0.50 J | 0.30 J |
| 23. 1,2-Dichloropropane | 0.21 | 1.0 | --- U | --- U | --- U | --- U | 0.30 J |
| 24. Bromodichloromethane | 0.21 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 25. Cis-1,3-Dichloropropene | 0.24 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 26. 4-Methyl-2-Pentanone | 1.19 | 100.0 | --- U | --- U | --- U | --- U | --- U |
| 27. Toluene | 0.23 | 1.0 | 0.50 J | --- U | --- U | --- U | --- U |
| 28. trans-1,3-Dichloropropene | 0.28 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 29. 1,1,2-Trichloroethane | 0.25 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 30. Tetrachloroethene | 0.17 | 1.0 | 1.10 | 0.20 J | --- U | 0.60 J | 0.20 J |
| 31. 2-Hexanone | 1.57 | 50.0 | --- U | --- U | --- U | --- U | --- U |
| 32. Dibromochloromethane | 0.24 | 3.0 | --- U | --- U | --- U | --- U | --- U |
| 33. 1,2-Dibromoethane | 0.26 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 34. Chlorobenzene | 0.30 | 3.0 | 18.40 | --- U | 2.70 J | 0.70 J | 19.40 |
| 35. 1,1,1,2-Tetrachloroethane | 0.22 | 5.0 | --- U | --- U | --- U | --- U | --- U |
| 36. Ethylbenzene | 0.21 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 37. Xylenes | 0.68 | 5.0 | --- U | --- U | --- U | --- U | --- U |
| 38. Dibromomethane | 0.28 | 10.0 | --- U | --- U | --- U | --- U | --- U |
| 39. Styrene | 0.19 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 40. Bromoform | 0.20 | 3.0 | --- U | --- U | --- U | --- U | --- U |
| 41. 1,1,2,2-Tetrachloroethane | 0.26 | 3.0 | --- U | --- U | --- U | --- U | --- U |
| 42. 1,2,3-Trichloropropane | 0.43 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 43. 1,4-Dichlorobenzene | 0.39 | 1.0 | 4.70 | --- U | 0.90 J | --- U | 5.70 |
| 44. 1,2-Dichlorobenzene | 0.32 | 5.0 | --- U | --- U | --- U | --- U | --- U |
| 45. 1,2-Dibromo-3-Chloropropane | 0.34 | 13.0 | --- U | --- U | --- U | --- U | --- U |
| 46. Acrylonitrile | 2.72 | 200.0 | --- U | --- U | --- U | --- U | --- U |
| 47. trans-1,4-Dichloro-2-Butene | 0.42 | 100.0 | --- U | --- U | --- U | --- U | --- U |

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

# Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

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

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

CLIENT: HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
P.O. BOX 97
GARNER, NC 27529

CLIENT ID: 6025

ANALYST: MAO
DATE COLLECTED: 12/30/09
DATE ANALYZED: 01/11/10
DATE REPORTED: 01/13/10



REVIEWED BY:

## VOLATILE ORGANICS
## EPA METHOD 8260B

| PARAMETERS, ug/l | MDL | SWSL | MW-K | MW-L | MW-M | Trip Blank | Equipment Blank |
|---|---|---|---|---|---|---|---|
| 1. Chloromethane | 0.77 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 2. Vinyl Chloride | 0.63 | 1.0 | --- U | 0.70 J | --- U | --- U | --- U |
| 3. Bromomethane | 0.67 | 10.0 | --- U | --- U | --- U | --- U | --- U |
| 4. Chloroethane | 0.48 | 10.0 | --- U | --- U | --- U | --- U | --- U |
| 5. Trichlorofluoromethane | 0.24 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 6. 1,1-Dichloroethene | 0.17 | 5.0 | --- U | --- U | --- U | --- U | --- U |
| 7. Acetone | 9.06 | 100.0 | --- U | --- U | --- U | --- U | --- U |
| 8. Iodomethane | 0.26 | 10.0 | --- U | --- U | --- U | --- U | --- U |
| 9. Carbon Disulfide | 0.23 | 100.0 | --- U | --- U | --- U | --- U | --- U |
| 10. Methylene Chloride | 0.64 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 11. trans-1,2-Dichloroethene | 0.23 | 5.0 | --- U | --- U | --- U | --- U | --- U |
| 12. 1,1-Dichloroethane | 0.20 | 5.0 | --- U | --- U | --- U | --- U | --- U |
| 13. Vinyl Acetate | 0.20 | 50.0 | --- U | --- U | --- U | --- U | --- U |
| 14. Cis-1,2-Dichloroethene | 0.25 | 5.0 | --- U | 1.20 J | 0.50 J | --- U | --- U |
| 15. 2-Butanone | 2.21 | 100.0 | --- U | --- U | --- U | --- U | --- U |
| 16. Bromochloromethane | 0.27 | 3.0 | --- U | --- U | --- U | --- U | --- U |
| 17. Chloroform | 0.25 | 5.0 | 0.30 J | --- U | --- U | --- U | --- U |
| 18. 1,1,1-Trichloroethane | 0.19 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 19. Carbon Tetrachloride | 0.22 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 20. Benzene | 0.24 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 21. 1,2-Dichloroethane | 0.27 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 22. Trichloroethene | 0.23 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 23. 1,2-Dichloropropane | 0.21 | 1.0 | --- U | 0.70 J | --- U | --- U | --- U |
| 24. Bromodichloromethane | 0.21 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 25. Cis-1,3-Dichloropropene | 0.24 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 26. 4-Methyl-2-Pentanone | 1.19 | 100.0 | --- U | --- U | --- U | --- U | --- U |
| 27. Toluene | 0.23 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 28. trans-1,3-Dichloropropene | 0.28 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 29. 1,1,2-Trichloroethane | 0.25 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 30. Tetrachloroethene | 0.17 | 1.0 | --- U | --- U | 0.50 J | --- U | --- U |
| 31. 2-Hexanone | 1.57 | 50.0 | --- U | --- U | --- U | --- U | --- U |
| 32. Dibromochloromethane | 0.24 | 3.0 | --- U | --- U | --- U | --- U | --- U |
| 33. 1,2-Dibromoethane | 0.26 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 34. Chlorobenzene | 0.30 | 3.0 | --- U | --- U | --- U | --- U | --- U |
| 35. 1,1,1,2-Tetrachloroethane | 0.22 | 5.0 | --- U | --- U | --- U | --- U | --- U |
| 36. Ethylbenzene | 0.21 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 37. Xylenes | 0.68 | 5.0 | --- U | --- U | --- U | --- U | --- U |
| 38. Dibromomethane | 0.28 | 10.0 | --- U | --- U | --- U | --- U | --- U |
| 39. Styrene | 0.19 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 40. Bromoform | 0.20 | 3.0 | --- U | --- U | --- U | --- U | --- U |
| 41. 1,1,2,2-Tetrachloroethane | 0.26 | 3.0 | --- U | --- U | --- U | --- U | --- U |
| 42. 1,2,3-Trichloropropane | 0.43 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 43. 1,4-Dichlorobenzene | 0.39 | 1.0 | --- U | --- U | --- U | --- U | --- U |
| 44. 1,2-Dichlorobenzene | 0.32 | 5.0 | --- U | --- U | --- U | --- U | --- U |
| 45. 1,2-Dibromo-3-Chloropropane | 0.34 | 13.0 | --- U | --- U | --- U | --- U | --- U |
| 46. Acrylonitrile | 2.72 | 200.0 | --- U | --- U | --- U | --- U | --- U |
| 47. trans-1,4-Dichloro-2-Butene | 0.42 | 100.0 | --- U | --- U | --- U | --- U | --- U |

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

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

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

# CHAIN OF CUSTODY RECORD



**CLIENT:** 6025 **Week:** 50

**HERTFORD COUNTY LANDFILL**
**C/O MUNICIPAL ENGINEERS**
**P.O. BOX 97**
**GARNER NC 27529**

**(919) 772-5393**

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

| SAMPLE LOCATION | COLLECTION DATE | COLLECTION TIME | TOTAL CHLORINE, mg/l AT COLLECTION | TEMPERATURE, °C AT COLLECTION | # OF CONTAINERS | Field pH | Metals | Conductivity | Temperature | Field Parameter | EPA 8260B | 8260 Dup. 1 | 8260 Dup. 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | L2 | | | | L2 | L2 | L2 |
| | | | | | | P | P | P | P | | G | G | G |
| | | | | | | A | A | A | A | | E | E | E |
| MW-A | 12 3009 | 0935 | | 16 | 5 | G | G | G | G | G | G | G | G |
| MW-B | 12 3009 | 0955 | | 15 | 4 | G | G | G | G | G | G | G | |
| MW-C | 12 3009 | 0930 | | 15 | 4 | G | G | G | G | G | G | G | |
| MW-D | 12 3009 | 1055 | | 14 | 4 | G | G | G | G | G | G | G | |
| MW-E | 12 3009 | 1045 | | 16 | 4 | G | G | G | G | G | G | G | |
| MW-F | 12 3009 | 0945 | | 17 | 4 | G | G | G | G | G | G | G | |
| MW-G | 12 3009 | 1000 | | 14 | 4 | G | G | G | G | G | G | G | |
| MW-H | 12 3009 | 1015 | | 14 | 4 | G | G | G | G | G | G | G | |
| MW-I | 12 3009 | 1030 | | 14 | 4 | G | G | G | G | G | G | G | |
| MW-J | 12 3009 | 1040 | | 14 | 4 | G | G | G | G | G | G | G | |
| MW-K | 12 3009 | 1115 | | 14 | 4 | G | G | G | G | G | G | G | |

PARAMETERS

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB)

CONTAINER TYPE, P/G

CHEMICAL PRESERVATION

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

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

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

SAMPLES COLLECTED BY:
(Please Print)
H Igoe / Fat

SAMPLES RECEIVED IN LAB AT 0.2 °C

| RELINQUISHED BY (SIG.) (SAMPLER) | DATE/TIME | RECEIVED BY (SIG.) | DATE/TIME |
|---|---|---|---|
| Bob H Igoe | 12 3009 | B [signature] | 12/30/1.52 |
| RELINQUISHED BY (SIG.) | DATE/TIME | RECEIVED BY (SIG.) | DATE/TIME |
| RELINQUISHED BY (SIG.) | DATE/TIME | RECEIVED BY (SIG.) | DATE/TIME |

COMMENTS:

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

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

FORM #5

№ 193197

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

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

# CHAIN OF CUSTODY RECORD



**CLIENT:** 6025 **Week:** 50

**HERTFORD COUNTY LANDFILL**
**C/O MUNICIPAL ENGINEERS**
**P.O. BOX 97**
**GARNER NC 27529**

**(919) 772-5393**

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

| SAMPLE LOCATION | COLLECTION DATE | COLLECTION TIME | TOTAL CHLORINE, mg/l AT COLLECTION | TEMPERATURE, °C AT COLLECTION | # OF CONTAINERS | Field pH | Metals | Conductivity | Temperature | Field Parameter | EPA 8260B | 8260 Dup. 1 | 8260 Dup. 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 2 | | | | 12 | 12 | 12 |
| | | | | | | P | P | P | P | | G | G | G |
| | | | | | | A | A | A | A | | E | E | E |
| MW-L | 12 30 09 | 1105 | | 14 | 4 | G | G | G | G | G | G | G | |
| MW-M | 12 30 09 | 0920 | | 17 | 5 | G | G | G | G | G | G | G | G |
| Trip Blank | 12 3 | | | | 2 | | | | | | | | |
| Equipment Blank | 12 30 09 | | | | 3 | | G | | | | G | G | |

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB)

CONTAINER TYPE, P/G

CHEMICAL PRESERVATION

PARAMETERS

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

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

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY
Y N

SAMPLES COLLECTED BY: (Please Print) H Lopez / Fox

SAMPLES RECEIVED IN LAB AT 0.2 °C

| RELINQUISHED BY (SIG.) (SAMPLER) | DATE/TIME | RECEIVED BY (SIG.) | DATE/TIME |
|---|---|---|---|
| Bob H Lopez | 12 30 09 | B [signature] | 12/30/157 |
| RELINQUISHED BY (SIG.) | DATE/TIME | RECEIVED BY (SIG.) | DATE/TIME |
| RELINQUISHED BY (SIG.) | DATE/TIME | RECEIVED BY (SIG.) | DATE/TIME |

COMMENTS:

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

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

FORM #5

№ 193196

# Environment 1, Incorporated

Drinking Water ID: 37716
Wastewater ID: 10

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

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


ID#: 6025 A

HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
P.O. BOX 97
GARNER ,NC 27529

DATE COLLECTED: 12/30/09
DATE REPORTED : 01/13/10

REVIEWED BY:

| PARAMETERS | MDL | SWSL | SW-1 | SW-2 | SW-3 | SW-4 | Analysis Date | Analyst | Method Code |
|---|---|---|---|---|---|---|---|---|---|
| PH (field measurement), Units | | | 6.1 | 6.3 | 6.3 | 6.7 | 12/30/09 | RJH | SM4500HB |
| Antimony, ug/l | 0.06 | 6.0 | 0.1 J | 0.1 J | 0.1 J | --- U | 01/12/10 | CMF | EPA200.8 |
| Arsenic, ug/l | 0.17 | 10.0 | 0.7 J | 0.4 J | 0.6 J | 0.4 J | 01/12/10 | CMF | EPA200.8 |
| Barium, ug/l | 0.04 | 100.0 | 40.1 J | 46.8 J | 141 | 52.2 J | 01/12/10 | CMF | EPA200.8 |
| Beryllium, ug/l | 0.06 | 1.0 | 0.1 J | 0.1 J | --- U | 0.1 J | 01/12/10 | CMF | EPA200.8 |
| Cadmium, ug/l | 0.04 | 1.0 | 0.4 J | 0.2 J | 0.1 J | --- U | 01/12/10 | CMF | EPA200.8 |
| Cobalt, ug/l | 0.02 | 10.0 | 1.1 J | 1.8 J | 6.7 J | 0.9 J | 01/12/10 | CMF | EPA200.8 |
| Copper, ug/l | 0.04 | 10.0 | 2.0 J | 2.3 J | 1.9 J | 1.4 J | 01/12/10 | CMF | EPA200.8 |
| Total Chromium, ug/l | 0.10 | 10.0 | 1.7 J | 2.4 J | 1.0 J | 1.2 J | 01/12/10 | CMF | EPA200.8 |
| Lead, ug/l | 0.04 | 10.0 | 1.1 J | 1.5 J | 1.0 J | 0.5 J | 01/12/10 | CMF | EPA200.8 |
| Nickel, ug/l | 0.04 | 50.0 | 1.3 J | 1.9 J | 1.9 J | 1.2 J | 01/12/10 | CMF | EPA200.8 |
| Selenium, ug/l | 0.12 | 10.0 | --- U | --- U | --- U | --- U | 01/12/10 | CMF | EPA200.8 |
| Silver, ug/l | 0.04 | 10.0 | --- U | --- U | --- U | --- U | 01/12/10 | CMF | EPA200.8 |
| Thallium, ug/l | 0.03 | 5.0 | --- U | --- U | --- U | --- U | 01/12/10 | CMF | EPA200.8 |
| Vanadium, ug/l | 0.28 | 25.0 | 2.7 J | 3.8 J | 2.3 J | 2.0 J | 01/12/10 | CMF | EPA200.8 |
| Zinc, ug/l | 0.14 | 10.0 | 13 | 14 | 20 | 3.8 J | 01/12/10 | CMF | EPA200.8 |
| Conductivity (at 25c), uMhos | 1.0 | 1.0 | 56 | 55 | 269 | 159 | 12/30/09 | RJH | SM2510B |
| Temperature, °C | | | 3 | 3 | 4 | 3 | 12/30/09 | RJH | SM2550B |

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

# Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

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

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

CLIENT: HERTFORD COUNTY LANDFILL
C/O MUNICIPAL ENGINEERS
P.O. BOX 97
GARNER, NC 27529

CLIENT ID: 6025 A

ANALYST: MAO
DATE COLLECTED: 12/30/09
DATE ANALYZED: 01/11/10
DATE REPORTED: 01/13/10



REVIEWED BY:

## VOLATILE ORGANICS
## EPA METHOD 8260B

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

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

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

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

# CHAIN OF CUSTODY RECORD



**CLIENT:** 6025 A **Week: 50**

**HERTFORD COUNTY LANDFILL**
**C/O MUNICIPAL ENGINEERS**
**P.O. BOX 97**
**GARNER NC 27529**

**(919) 772-5393**

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

| SAMPLE LOCATION | COLLECTION DATE | COLLECTION TIME | TOTAL CHLORINE, mg/l AT COLLECTION | TEMPERATURE, °C AT COLLECTION | # OF CONTAINERS | Field pH | Metals | Conductivity | Temperature | EPA 8260B | 8260 Dup. 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 12 | | | 12 | 12 |
| | | | | | | P | P | P | P | G | G |
| | | | | | | A | A | A | A | E | E |
| SW-1 | 12 30 09 | 1135 | | 3 | 4 | G | G | G | G | G | G |
| SW-2 | 12 30 09 | 1130 | | 3 | 4 | G | G | G | G | G | G |
| SW-3 | 12 30 09 | 1020 | | 4 | 4 | G | G | G | G | G | G |
| SW-4 | 12 30 09 | 1035 | | 3 | 4 | G | G | G | G | G | G |

PARAMETERS

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB)

CONTAINER TYPE, P/G

CHEMICAL PRESERVATION

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

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

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY
Y N

SAMPLES COLLECTED BY: (Please Print) H Igoe / Fct

SAMPLES RECEIVED IN LAB AT 02 °C

| RELINQUISHED BY (SIG.) (SAMPLER) | DATE/TIME | RECEIVED BY (SIG.) | DATE/TIME |
|---|---|---|---|
| Bob H Igoe | 12 30 09 | [signature] | 12/30 1:57 |
| RELINQUISHED BY (SIG.) | DATE/TIME | RECEIVED BY (SIG.) | DATE/TIME |
| RELINQUISHED BY (SIG.) | DATE/TIME | RECEIVED BY (SIG.) | DATE/TIME |

COMMENTS:

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

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

FORM #5

№ 193195