

**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)).
- In accordance with NC General Statutes Chapter 89C and 89E and NC Solid Waste Management Rules 15A NCAC 13B, be sure to affix a seal to the bottom of this page, when applicable.
- 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):

S&ME, Inc.

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

Name: Jerry Paul or Sam Watts, P.G.

Phone: (919) 872-2660

E-mail: jpaul@smeinc.com or swatts@smeinc.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
City of Durham - Closed Municipal Solid Waste Landfill	City of Durham Department of Water Management 1600 Mist Lake Drive Durham, NC 27704	32-01	.1600	June 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     Methane gas monitoring data  
 Groundwater monitoring data from private water supply wells     Corrective action data (specify) \_\_\_\_\_  
 Leachate monitoring data     Other(specify) \_\_\_\_\_  
 Surface water monitoring data

**Notification attached?**

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

**Certification**

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

Samuel P. Watts, P.G.

Senior Project Manager

(919) 872-2660

Facility Representative Name (Print)

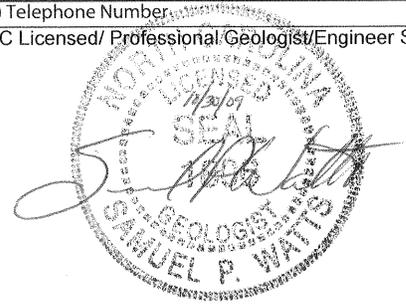
Title

(Area Code) Telephone Number

*Samuel P. Watts*  
Signature

10/30/09  
Date

Affix NC Licensed/ Professional Geologist/Engineer Seal here:



**JUNE 2009**

**SEMI-ANNUAL  
GROUNDWATER AND SURFACE WATER  
MONITORING REPORT**

**City of Durham  
Closed Municipal Solid Waste Landfill  
Durham County, North Carolina  
(DWM Permit No. 32-01)  
S&ME Project Number 1054-07-469**

**Prepared for:**



**CITY OF DURHAM  
DEPARTMENT OF WATER MANAGEMENT  
1600 MIST LAKE DRIVE  
DURHAM, NORTH CAROLINA 27704**

**Prepared by:**



**3201 Spring Forest Road  
Raleigh, North Carolina 27616**



---

Gerald Paul  
Environmental Staff Professional



---

Samuel P. Watts, P.G.  
Senior Project Manager

October 29, 2009

## TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
<b>1.0 INTRODUCTION.....</b>	<b>1</b>
<b>1.1 SITE DESCRIPTION AND BACKGROUND .....</b>	<b>1</b>
<b>1.2 COMPLIANCE MONITORING HISTORY .....</b>	<b>1</b>
<b>1.3 HYDROGEOLOGIC SETTING .....</b>	<b>3</b>
<b>2.0 FIELD PROGRAM, MONITORING RESULTS, AND DISCUSSION.....</b>	<b>4</b>
<b>2.1 VISUAL INSPECTION/MAINTENANCE ACTIVITIES .....</b>	<b>4</b>
<b>2.2 MONITORING WELL NETWORK .....</b>	<b>4</b>
<b>2.3 JUNE 2009 SAMPLING EVENT .....</b>	<b>5</b>
<b>2.4 GROUNDWATER QUALITY.....</b>	<b>6</b>
<b>2.4.1 METHODS AND STANDARDS.....</b>	<b>6</b>
<b>2.4.2 GROUNDWATER ANALYTICAL DATA .....</b>	<b>6</b>
<b>2.4.3 SURFACE WATER ANALYTICAL DATA.....</b>	<b>8</b>
<b>3.0 LABORATORY AND FIELD QA/QC.....</b>	<b>9</b>
<b>4.0 DATA EVALUATION.....</b>	<b>9</b>
<b>4.1 STATISTICAL EVALUATIONS .....</b>	<b>9</b>
<b>4.2 NORTH CAROLINA GROUNDWATER AND SURFACE WATER QUALITY STANDARD         COMPARISONS .....</b>	<b>11</b>
<b>5.0 CONCLUSIONS &amp; RECOMMENDATIONS.....</b>	<b>12</b>
<b>5.1 CONCLUSIONS.....</b>	<b>12</b>
<b>5.2 RECOMMENDATIONS .....</b>	<b>13</b>
<b>6.0 REFERENCES.....</b>	<b>14</b>

### FIGURES

FIGURE 1:	VICINITY MAP
FIGURE 2:	SITE MAP
FIGURE 3:	GROUNDWATER CONTOUR MAP JUNE 30, 2009

### TABLES

TABLE 1:	SUMMARY OF HISTORICAL STATIC WATER LEVEL DATA
TABLE 2:	SUMMARY OF ESTIMATED HORIZONTAL FLOW VELOCITIES
TABLE 3:	MONITOR WELL CONSTRUCTION INFORMATION
TABLE 4:	GROUNDWATER QUALITY SUMMARY - JUNE 2009
TABLE 5:	SUMMARY OF HISTORICALLY DETECTED CONSTITUENTS IN GROUNDWATER
TABLE 6:	SUMMARY OF HISTORICALLY DETECTED CONSTITUENTS IN SURFACE WATER
TABLE 7:	SOLID WASTE SECTION SUMMARY DATABASE (REFER TO COMPACT DISK IN APPENDIX III)

### APPENDICES

APPENDIX I:	GROUNDWATER SAMPLING LOGS
APPENDIX II:	JUNE 2009 CERTIFICATES-OF-ANALYSIS, CHAIN-OF-CUSTODY FORMS AND LABORATORY DATA
APPENDIX III:	COMPACT DISK WITH ELECTRONIC COPY OF TABLE 7 (.XLS) AND ELECTRONIC COPY OF THIS REPORT (.PDF)

## **1.0 INTRODUCTION**

This report summarizes the monitoring results from the June 30, 2009 semi-annual groundwater and surface monitoring event at the City of Durham Closed Landfill in Durham County, North Carolina. The monitoring event was performed in accordance with Title 15A of the North Carolina Administrative Code (NCAC) Subchapter 13B.1632. The City of Durham Landfill is a closed municipal solid waste (MSW) landfill and is maintained by the City of Durham Department of Water Management under Permit No. 32-01 issued by the North Carolina Department of Environment and Natural Resources, Division of Waste Management (NCDENR-DWM).

### **1.1 Site Description and Background**

The subject property is a closed, unlined MSW landfill that ceased accepting wastes in 1997. The vicinity location of the facility is shown on **Figure 1**, with more details of the location and the immediate area shown on **Figure 2**. The landfill is located northeast of downtown Durham, near the North Durham Water Reclamation Facility off East Club Boulevard at Glenn Road.

According to the topographic map, elevations at the facility range from approximately 280 to 380 feet above mean sea level. In general, surface drainage from the facility and surrounding areas is routed by drainage channels and stormwater control structures toward Ellerbe Creek to the west of the facility. Locally, surface water flows in a radial direction, away from the closed and capped landfill toward unnamed streams to the northeast, south and west. These streams are tributaries of Ellerbe Creek, which flows into Falls Lake, located northeast of the landfill.

### **1.2 Compliance Monitoring History**

Groundwater quality at the landfill has been monitored since 1989, and is currently monitored semiannually in accordance with the approved Water Quality Monitoring Plan (WQMP) prepared by Malcolm Pirnie, Inc. in April 1994 (MP, 1994). Assessment Monitoring was conducted for the landfill from November 1996 through June 1999 after the detection of benzene in the monitoring well MW-3R sample. Following the June 1999 monitoring event, the NCDENR Solid Waste Section (Section) granted approval for the City to return to Detection Monitoring. Detection Monitoring was conducted for the site from October 1999 through December 2004. At that time, based on additional detections of volatile organic compounds (VOCs), Assessment Monitoring was resumed during the June 2005 monitoring event (Weston, 2006). Beginning with the November 2007 sampling event, a modified Assessment Monitoring protocol has been used which generally alternates between analysis for the Appendix I constituent list during the fall sampling event and the Appendix II constituent during the spring sampling event.

In May 2008 MW-9R replaced PZ-6 as the upgradient/background monitoring well due to the poor water quality and elevated metals concentrations detected in the background well (PZ-6). Also in May 2008, MW-3R replaced MW-3 as a downgradient compliance monitoring well due to the determination that MW-3 was located in or in close proximity to the landfill waste boundary. Prior to inclusion into the groundwater monitoring network, both wells (MW-3R and MW-9R) were sampled once for the full Appendix I list of constituents plus Appendix II semi-volatile organic compounds (SVOC) constituents on May 1, 2008 to assess groundwater quality at these locations.

As indicated in the *May 2008-Groundwater Monitoring Report – Semi-Annual Monitoring of Groundwater and Surface Water* (S&ME, July 2008), downgradient monitor well MW-6R appears to be located in or in close proximity to the landfill waste boundary, and may not accurately reflect true groundwater quality within the uppermost aquifer. Additionally, due to its close proximity to buried waste, monitor well MW-6R does not meet the requirements listed under Section .1631(a) of the Solid Waste Rules (15A NCAC 13B) as well as EPA's RCRA Technical Enforcement Guidance Document (TEGD) SW-846. As a result, MW-6R was removed from the groundwater monitoring network. MW-6R will remain in place and will be utilized to collect groundwater levels to assist in the determination of groundwater flow characteristics.

On August 20, 2008, S&ME installed a new compliance monitoring well (MW-10) in the vicinity of the former compliance well (MW-6R) beyond the waste boundary. On September 9, 2008, MW-10 was sampled and the results of the sampling were summarized in S&ME's report *Monitoring Well Installation Report*, dated October 2, 2008, included in Appendix IV of the *November 2008 Semi-Annual Monitoring of Groundwater and Surface Water*. The locations of MW-3, MW-3R, MW-6R and MW-10 in relation to the approximate limits of the waste boundary are shown on **Figure 3**. The City is currently evaluating the location of monitor well MW-10 for compliance monitoring.

The facility's water quality monitoring network consists of 14 monitor wells/piezometers and four surface water locations. Sample locations are depicted on **Figure 3**. Of the 14 wells/piezometers at the site, six (6) are used to measure water levels only. The eight (8) wells used to collect water quality samples for laboratory analysis consist of one upgradient/background monitoring well (MW-9R) and seven downgradient compliance monitoring wells (MW-2, MW-3R, MW-4R, MW-5, MW-7R, MW-8, and MW-10). These compliance wells monitor the uppermost aquifer. For the June 2009 groundwater monitoring event, the collected groundwater samples from all wells were analyzed for the North Carolina Appendix I constituents. The facility's monitoring network also includes one upstream surface water monitoring point (S-4) and three downstream surface water sampling points (S-1, S-2 and S-3), which are sampled in conjunction with the groundwater monitoring wells during the semi-annual groundwater monitoring events. Surface water samples are analyzed semiannually for NC Appendix I constituents.

### 1.3 Hydrogeologic Setting

The facility is located within the Piedmont Physiographic Province of North Carolina and geologically within the Durham Triassic Basin (North Carolina Geological Survey, 1985). The Durham Basin is included in the Chatham Group of Triassic sediments, which include sandstones, mudstones, conglomerates and unconsolidated sediments occurring from the erosion of adjoining Piedmont Metavolcanic Rocks. The uppermost aquifer beneath the facility is unconfined and located within soil, saprolite and weathered rock, which transitions into arkosic sandstone, siltstone and mudstone bedrock of the Triassic-aged Pekin Formation. Site monitoring wells are screened in the uppermost pervasive aquifer contained within silty sands, silty to sandy clays, and sandstones of the Triassic saprolite soils and weathered rock at the site. The depth to groundwater typically ranges from approximately 4 feet below grade along the western and southern perimeter of the facility to nearly 50 feet below grade in the central and eastern portion of the facility. Historical static water level data are presented on **Table 1**. As shown by the historical water level data, the hydraulic head level within the uppermost aquifer beneath the facility is fairly consistent. The range in static water elevation fluctuation is greater in the upgradient well, which is more centrally located to the regional groundwater recharge area. The reduction in range of fluctuation in the downgradient compliance wells, which are generally located to the west nearer groundwater discharge areas, is likely due to the stabilizing affect of hydraulic discharge boundaries.

Static water level measurements obtained on June 30, 2009 were used to prepare the groundwater potentiometric map presented as **Figure 3**. As shown by the potentiometric contours, groundwater flow across the majority of the site is projected to the north, northwest, and west, which is consistent with previous groundwater data. Based on the June 30, 2009 groundwater potentiometric map, the hydraulic gradient in the uppermost aquifer underlying the site was measured along the projected flow paths shown on **Figure 3**. The average hydraulic gradient for the groundwater flow was calculated to be approximately 0.036 feet/foot (**Table 2**). An estimated effective porosity of 20% was used for the uppermost aquifer (Heath, 2001). Using the above values, the estimated rate of groundwater seepage flow within the monitored zone of the uppermost aquifer beneath the facility was calculated using the following modified Darcy equation:

$$V_{gw} = Ki/ne$$

Where values are equal to the following:

- V<sub>gw</sub> = average seepage velocity (feet/year),
- K = hydraulic conductivity (feet/year),
- i = horizontal hydraulic gradient, and
- ne = effective porosity.

The values for K and ne were based on estimates from Malcolm Pirnie, Inc.'s *City of Durham Municipal Solid Waste Landfill, December 1998 Groundwater Monitoring Letter Report*, dated January 29, 1999 and Weston Solutions, Inc.'s *December 2005*

*Semiannual Event – Closed Durham City Landfill.* The average calculated groundwater flow seepage velocity under the waste management unit is approximately 10.01 feet/year to the west/northwest (**Table 2**).

## **2.0 FIELD PROGRAM, MONITORING RESULTS, AND DISCUSSION**

Field activities conducted as part of the June 2009 sampling event are discussed in the following sections.

### **2.1 Visual Inspection/Maintenance Activities**

Monitor wells at the City of Durham Closed Landfill are visually inspected for integrity and access obstructions to sampling. At each monitoring well, the following items were checked:

- Surface water is diverted away from the well head.
- The concrete pad is in tact and free of cracks.
- The outer casing is secured and locked.
- The well identification is legible
- The inner well casing is firmly grouted in place.
- The inner and outer well casings remain upright and unobstructed.
- Monitor wells are visible and adequately protected from moving equipment and obstruction due to brush and weeds.

During the June 2009 compliance monitoring event the 14 monitor wells/piezometers were found to be in good condition. No maintenance activities were performed on the facility monitoring network between November 2008 and the June 2009.

### **2.2 Monitoring Well Network**

The network of groundwater monitoring wells at the City of Durham Closed Landfill consists of 14 wells/piezometers. Of these, six are used solely to obtain static water level measurements and eight are sampled for water quality and laboratory analysis. The compliance monitoring wells consist of MW-2, MW-3R, MW-4R, MW-5, MW-7R, MW-8, MW-9R and MW-10. Monitoring well construction information is summarized in **Table 3** and the well locations are shown on **Figure 3**. Monitoring well MW-9R is the facility's background well and is located hydraulically upgradient of the waste disposal area. Monitoring wells MW-2, MW-3R, MW-4R, MW-5, MW-7R, MW-8 and MW-10 are located downgradient or sidegradient of the waste disposal area and represent the facility's downgradient compliance wells.

### 2.3 June 2009 Sampling Event

Groundwater monitor well locations and surface water sampling locations for the June 2009 sampling event are depicted on **Figure 3**. A discussion of field sampling methods and locations for the June 2009 groundwater sampling event is provided below. S&ME personnel performed sampling at the facility in accordance with the Solid Waste Rules and the facility's *Water Quality Monitoring Plan (WQMP)*, dated April 1994.

Prior to initiating purging and sampling activities, the wells were opened, allowed to equilibrate with atmospheric pressure and depth-to-water measurements were recorded to the nearest 0.01 foot using an electronic water level indicator. The electronic water level indicator was decontaminated before its initial use and between measurements at each well location. Field personnel wore clean protective/non-reactive gloves at each well location when collecting water level measurements. In addition to the sampled wells, the depth to static groundwater was also measured in monitoring wells MW-3, MW-6R, PZ-2R, PZ-3, PZ-4R and PZ-6 to provide additional data points for construction of the groundwater potentiometric map. The resulting water level elevations for this event were added to the historical water elevation data presented in **Table 1**.

Following the collection of static groundwater level measurements, monitoring wells to be sampled were purged utilizing the dedicated bladder pumps installed in each well. As purging proceeded, pH, temperature, specific conductivity, dissolved oxygen, and turbidity were measured and recorded by S&ME field personnel. Purging was considered complete at each well after the field parameters fluctuated no more than 10 percent between measurements. The field parameters measured immediately before collecting each groundwater sample is presented in **Table 5**. One blind duplicate groundwater sample set was collected from MW-10 (labeled MW-1 on laboratory chain of custody) for sample Quality Assurance/Quality Control (QA/QC).

After purging was complete, groundwater samples were collected in new, sterile, laboratory-supplied sample containers. Prior to sample collection, the sample containers were labeled with the sample identification number, sampling personnel, date and time of sample collection, project name and number, and requested chemical analyses. The required groundwater samples were collected directly from the bladder pump tubing into the labeled sample containers, closed and placed in a cooler on ice, under chain-of-custody control. Copies of the sampling logs are presented in **Appendix I**. Included in each log is a description of the sampling equipment, sampling method, field observations, and field parameter water quality measurements.

In addition to the groundwater samples, surface water samples were collected from locations S-4 (upstream) and S-3 (downstream) on June 30, 2009. The intermittent surface water sample locations S-1 and S-2 were dry during this sampling event, and surface water samples could not be collected from these two locations. The surface water samples were collected by lowering the sample containers into the stream with the opening facing into the current flow, taking care to prevent overflow of the sample containers and to minimize turbidity.

The groundwater and surface water samples were submitted to Environmental Conservation Laboratories, Inc. (ENCO) of Cary, North Carolina on July 1, 2009, under chain-of-custody protocols. The groundwater samples (MW-2, MW-3R, MW-4R, MW-5, MW-7R, MW-8, MW-9R and MW-10) were submitted for analysis of NC Appendix I constituents. The surface water samples (S-3 and S-4) were analyzed for NC Appendix I constituents. The results of analytical testing are discussed in Section 2.4 and a summary of compound concentrations detected during the June 2009 sampling event are presented in **Table 4**. A copy of the analytical laboratory report is provided in **Appendix II**.

## **2.4 Groundwater Quality**

### *2.4.1 Methods and Standards*

The NCDENR-Division of Waste Management (DWM), has established groundwater quality criteria, termed the Solid Waste Section Limit (SWSL) regarding the detection of constituents in groundwater at levels below the previously used Practical Quantitation Limits (PQLs). The SWSL is defined as the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy (i.e. repeatable results) and is the concentration below which reported analytical results must be qualified as estimated. The SWSL is the updated version of the PQL that appears in older North Carolina Solid Waste Section literature. The SWSL is the limit established by the laboratory survey conducted by the North Carolina Solid Waste Section. The Section also requires that laboratories report analytical results to the Method Detection Limits (MDLs) rather than the SWSL.

In reference to the constituents detected during this sampling event, the new SWSLs and MDLs are lower than the previous PQLs. For this reason, several constituents that have not been reported as detected prior to 2007 were reported as detected in the November 2007, May 2008, November 2008 and June 2009 sampling events. In our opinion, these findings generally are not indicative of an increase in the presence of these constituents in the groundwater, but rather are due to changes in the reporting and evaluation limits.

### *2.4.2 Groundwater Analytical Data*

Constituent concentrations detected in the groundwater samples above the laboratory MDLs are summarized on **Table 4**. For comparison purposes, these results are shown with their respective SWSL and 15A NCAC Subchapter 2L .0200 Groundwater Quality Standards (2L Standards). Where target groundwater constituents have no established 2L Standard, the analytical results were compared to the North Carolina Groundwater Protection (GWP) Standard established by the NCDENR.

**Volatiles** No volatile organic compounds (VOCs) were detected above the method detection limit in the groundwater sample from upgradient (background) well MW-9R.

There were no reported VOC detections above 2L Standards in any of the samples collected from the downgradient compliance monitoring wells with the exception of MW-10. The following is a summary of the VOCs detected at reported concentrations above their respective 2L Standards in the groundwater sample collected from MW-10:

- Benzene (4.6 µg/L) exceeded the 2L standard (1.0 µg/L).
- 1,2-Dichloropropane (9.4 µg/L) exceeded the 2L standard (0.51 µg/L).
- 1,4-Dichlorobenzene (2.2 µg/L) exceeded the 2L standard (1.4 µg/L).
- cis-1,2-Dichloroethene (370 µg/L) exceeded the 2L standard (70 µg/L).
- Tetrachloroethene (2.6 µg/L) exceeded the 2L standard (0.7 µg/L).
- Trichloroethene (38 µg/L) exceeded the 2L standard (2.8 µg/L).
- Vinyl chloride (23 µg/L) exceeded the 2L standard (0.015 µg/L).

Benzene, 1,4-dichlorobenzene and tetrachloroethene were detected in the MW-10 sample were reported with a “J” laboratory qualifier, indicating that the values are estimated concentration below the lowest calibration point.

1,1-Dichloroethane (7.8 µg/L) and trans-1,2-dichloroethane (9.7 µg/L) were detected at quantifiable levels (above their respective SWSLs) in the MW-10 sample but below the 2L Standards.

The following VOC was detected above the method detection limits but below the SWLS and below groundwater protection standards:

- cis-1, 2-Dichloroethene (0.41 µg/L) in MW-3R.

This detection was reported with a “J” laboratory qualifier indicating that the value is an estimated concentration below the lowest calibration point. There were no other VOCs detected in any of the other compliance well groundwater samples above the method detection limits (**Table 4**).

**Inorganics** Vanadium was the only inorganic constituent detected above a 2L or GWP Standard in any of the groundwater samples collected during the June 2009 groundwater monitoring event. The reported concentration of 6.9 µg/l for vanadium in monitoring well MW-10 exceeds the GWP Standard for vanadium set at 3.5 µg/L. This detection was reported with a “J” laboratory qualifier indicating that the value is an estimated concentration below the lowest calibration point.

In all other groundwater samples detected concentrations of metals were reported below their respective 2L or GWP Standards.

Site groundwater samples have been analyzed for both total metals (required) and dissolved metals (voluntary additional) since June 1996. The purpose of the dissolved analyses has been to provide additional data for interpretation of total metals results. Analysis of total metals provides the level of both dissolved and mobile particulate-associated metals available for potential transport. Typically, a dissolved (filtered) metal determination is less than its concentration as a total (unfiltered) metal, indicating that mobile particulates, removed by filtering for the dissolved analysis, contribute to the total concentration. A high total metals result paired with a low to non-detectable dissolved metals result suggests that the total metal concentration reported by the laboratory may be the result of turbidity (suspended solids) in the sample. Mobile particulates are frequently present in groundwater with high turbidity, such as has been previously observed in groundwater sampled from several of the site wells, including MW-3R and MW-9R (**Table 5**). The replacement of the dedicated bladder pumps and redevelopment of the monitor wells in April 2008 apparently resulted in lower turbidity levels. Therefore, due to low detected concentrations of total metals dissolved metals were not analyzed for the June 2009 sampling event.

### 2.4.3 Surface Water Analytical Data

As specified by the facility *Water Quality Monitoring Plan* four surface water sampling locations have been established at the facility. Two surface water locations are located along ditches/intermittent streams (SW-1 and SW-2) and are established to monitor water quality downstream of the facility. Two surface water locations are located along Ellerbe Creek (SW-3 and SW-4). SW3 is established to monitor water quality in Ellerbe Creek downstream of the facility. SW-4 is established to monitor water quality in Ellerbe Creek upstream of the facility.

#### **Volatiles**

In June 2009, samples were collected at surface water sampling points S-3 and S-4. Surface water locations S-1 and S-2 were dry, and surface water samples could not be collected from these two locations. The surface water samples were analyzed for Appendix I volatile organic compounds by EPA Method 8260B and Appendix I metals by EPA Method 6010B. The following results are discussed in comparison with the monitored constituents respective 2B Standard (15A NCAC Subchapter 2B .0200 Surface Water Quality Standards). No organic constituents detected above their respective method detection limit during the June 2009 semiannual sampling event. The historical surface water organic constituent data for the current and previous sampling events are summarized in **Table 5**.

#### **Inorganics**

The inorganic constituents; barium, chromium, cobalt, lead, nickel, vanadium and zinc were detected in one or more samples from both the upstream (SW-4) and downstream (SW-3) surface water monitoring locations during the June 2009 monitoring event. The

detected concentrations of inorganic constituents in the downstream samples were similar to the concentrations in the upstream samples. All inorganic constituents were detected at reported concentrations less than their respective 2B Standard. The historic surface water inorganic constituent data is summarized in **Table 6**.

### **3.0 LABORATORY AND FIELD QA/QC**

One blind duplicate/replicate groundwater sample set was collected from monitor well MW-10. The duplicate sample collected from MW-10 was labeled MW-1 on the laboratory chain of custody. The concentrations of the VOCs and inorganic constituents detected in the duplicate/replicate sample from MW-10 were similar to the record sample.

One equipment blank was collected by S&ME personnel as part of the June 2009 groundwater sampling event. The equipment blank was collected by pumping laboratory-supplied de-ionized water directly from laboratory supplied containers through new, disposable Teflon tubing and silicon tubing using a peristaltic pump. The de-ionized water was then pumped across an electronic water level indicator and collected into the laboratory sample containers. The equipment blank was analyzed for NC Appendix I constituents. No VOCs were detected above the method detection limit in the equipment blank; however, the following four inorganic constituents were detected: arsenic, copper, nickel and zinc. All of the inorganic constituents detected in the equipment blank were reported with a “J” laboratory qualifier indicating that the values are estimated concentrations below the lowest calibration point.

A laboratory-prepared trip blank accompanied the sample containers to and from the laboratory. The trip blank was analyzed for Appendix I VOCs. No VOCs were detected in the trip blank included in the June 2009 sampling event.

### **4.0 DATA EVALUATION**

The results of the data evaluations are presented in the following sections.

#### **4.1 Statistical Evaluations**

Previous monitoring reports submitted to the Section for this facility have included a statistical evaluation of groundwater monitoring data for considering whether or not a statistically significant increase (SSI) above statistically computed Upper Limits calculated from the upgradient background data set had occurred. For this sampling event, the historical data pool has been updated and included in this report (**Table 5** and **Table 6**); however, no statistical analysis was performed on the data collected during the current groundwater monitoring event for the following reasons:

**.1633(g) and (h) - Establish Background Conditions**

Pursuant to the requirements of 15A NCAC 13B .1633 (Detection Monitoring), when concentrations are detected in one or more downgradient monitoring wells at levels above their respective SWSLs, these concentrations should be statistically evaluated in accordance with the procedures outlined in 15A NCAC 13B.1632(g) and (h) to determine if the reported concentrations exceeded the facility background concentration.

During the 2007 groundwater monitoring year, the NCDENR-DWM promulgated revised Solid Waste Section Limits (SWSLs) which replaced the former Practical Quantitation Limit (PQL) for all Appendix I and Appendix II constituents. The newly promulgated SWSLs were based on updated toxicological data and were not based on EPA analytical methodology employed by the certified laboratories throughout North Carolina for groundwater analyses. The EPA Analytical Methods used by the laboratories to detect constituents in groundwater have a finite method detection limit (MDL). Constituent concentrations below the MDL will be reported as non-detect (ND). The intent of the SWSL as well as the former PQL is to define the lowest possible concentration of a particular constituent which can be repeated with reasonable accuracy over multiple analyses of the same sample using the same analytical methodology at the laboratory. Values detected below the SWSL are considered estimated values which may show a different result if the analysis was repeated on the same sample.

In reference to the constituents detected during the May 2007, November 2007, May 2008, November 2008 and June 2009 sampling events, the new SWSLs and MDLs are lower than the previous PQLs. For these reasons, several constituents that have not been reported as detected prior to 2007 were reported as detected in the subsequent sampling events. In our opinion, these findings are not indicative of an increase in the presence of these constituents in the groundwater but rather are due to changes in the reporting and evaluation standards. As a result, a new baseline of background concentrations of the monitored constituents using the lower SWSLs and MDLs should be conducted to “re-establish” background water quality at the facility.

In accordance with Section .1634 (b), it is recommended that a minimum of four independent samples be collected from each well (background and downgradient) to establish background for the newly detected constituents for statistical analysis. However, in order to calculate statistical Upper Limits required by 15A NCAC 13B.1633, EPA’s Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance document recommends a minimum of eight (8) background samples for a parametrically distributed background data set. For non-parametrically distributed background data sets the same guidance by EPA recommends a minimum of thirteen (13) background samples for computation of statistical Upper Limits. These minimum sample set sizes are recommended in order to provide adequate statistical power for a 95% Prediction or Tolerance Interval test. At the time of the June 2009 groundwater monitoring event, only four (5) background samples have been collected under the new SWSLs for use in calculating statistical Upper Limits. At least three additional sampling events are recommended to “re-establish” background conditions for use in statistical Upper Limits computations. ite.

## **4.2 North Carolina Groundwater and Surface Water Quality Standard Comparisons**

Benzene, cis-1, 2-dichloroethene, 1, 4-dichlorobenzene, 1, 2-dichloropropane, tetrachloroethene, trichloroethene and vinyl chloride were detected above their respective 2L Standards in MW-10 during the June 2009 event. Vanadium was detected in monitoring well MW-10 above the its respective GWP Standard during this event. No other organic or inorganic constituents were detected in groundwater above their respective 2L or GWP Standards during this event. Monitor well MW-10 is well within the facility compliance boundary. The wooded area down gradient from MW-10 offers more than adequate space to re-locate the compliance monitoring well in accordance with 13B .1631(a)(2)(a) (no more than 250 feet from a waste boundary, and shall be at least 50 feet within the facility property boundary).

No constituents were detected any of the surface water samples above the 2B surface water standards (action limit). Concentrations are consistent with historical data and do not indicate an impact to surface water by the facility.

## 5.0 CONCLUSIONS & RECOMMENDATIONS

### 5.1 Conclusions

This report summarizes the results of the June 30, 2009 semi-annual ground water and surface water monitoring event at the City of Durham closed MSW landfill. Static water level measurements obtained from on-site monitor wells/piezometers were used to prepare a groundwater potentiometric map (**Figure 3**). Based on the June 2009 groundwater potentiometric contours, and site hydrogeologic characteristics, the average groundwater seepage flow velocity is approximately 10.01 feet/year to the west/northwest beneath the waste management unit.

One (upgradient) background monitor well (MW-9R) and seven (downgradient) compliance monitor wells (MW-2, MW-3R, MR-4R, MW-5, MW-7R, MW-8 and MW-10) were sampled during the June 2009 sampling event. Samples were submitted for laboratory analysis of Appendix I constituents.

Benzene, cis-1, 2-dichloroethene, 1, 4-dichlorobenzene, 1, 2-dichloropropane, tetrachloroethene, trichloroethene and vinyl chloride were detected above their respective 2L Standards in MW-10 during the June 2009 event. Vanadium was detected in monitoring well MW-10 above the its respective GWP Standard during this event. No other organic or inorganic constituents were detected in groundwater above their respective 2L or GWP Standards during this event.

No constituents were detected any of the surface water samples above the 2B Surface Water Standards.

Net groundwater flow beneath the landfill is projected toward the northwest. Locally, groundwater appears to flow radially away from the closed and capped landfill toward streams nearly surrounding the former disposal area to the northeast, south, and west. Horizontal flow gradients and estimated linear velocities calculated for this monitoring event are consistent with the previous events. Based on the calculated direction of groundwater flow at the facility, the current configuration of the Water Quality Monitoring Network appears to adequately monitor the landfill. However, there appears to be a superfluous number of groundwater monitoring locations distributed in the up-gradient/side-gradient direction (MW-4R, MW-5, MW-7R, MW-8 and MW-9) compared to the relatively wider distribution of sampling locations in the down-gradient direction (MW-2, MW-3R and MW-10).

A compact disk (CD) with an electronic copy of **Table 7** in Excel spreadsheet format (.xls) and an electronic copy of the report in portable document format (.pdf) is included in **Appendix III**.

## 5.2 Recommendations

The apparent trigger for the facility to begin Assessment Monitoring in December 2005 was the installation of monitor well MW-6R which replaced monitor well MW-6 in June 2004 (WESTON, September 2004). The location of MW-6R, and the detections of chemical constituents at MW-6R not previously detected in MW-6, provide an indication that the well is installed within close proximity to buried waste. Static water levels observed in MW-6R are likely to be influenced by constructed fill and may represent transient water conditions within more permeable waste or disturbed soils rather than the zone of saturation (i.e., rather than groundwater). Water quality observed in MW-6R is likely more indicative of the physical and chemical characteristics of water in the landfill itself rather than that of groundwater. To better evaluate groundwater quality in this area, monitor well MW-10 was installed approximately 60 feet west of MW-6R in the down-gradient direction.

Based on the detection of organic constituents in groundwater exceeding 2L Standards in MW-10, similar to those previously detected in MW-6R, and the close proximity of the well to the landfill waste boundary, S&ME recommends the installation of a replacement well for MW-10. In accordance with Section .1631(a)(2)(a), the relevant point of compliance for the area near MW-10 shall be established no more than 250 feet from a waste boundary, and shall be at least 50 feet within the facility property boundary. The wooded area down gradient from MW-10 offers more than adequate space to re-locate the compliance monitoring well according to those criteria. A ditch/intermittent stream lies between the current location of MW-10 and the apparent down-gradient location for the proposed replacement well, and should be considered when establishing a new compliance monitoring location in this area. The proposed location for the replacement monitoring well near MW-10 and proposed changes to the current monitor well network should be submitted to the Section for approval. Assuming the groundwater constituents from this newly installed well will be below 2L or GWP Standards, as well as background statistical Upper Limits, the facility may remain under the Detection Monitoring Program. The primary focus going forward should be to establish an adequate Water Quality Monitoring Network that will accurately depict groundwater conditions at the facility.

S&ME recommends performing the Detection Monitoring for the next sampling event scheduled for November/December 2009. The results of the groundwater samples collected from the replacement well for MW-10 may determine the need to initiate Assessment Monitoring. As required by the North Carolina Solid Waste Management Rules, Assessment Monitoring as outlined in Title 15A NCAC 13B.1634 would include analysis of the constituents included in Appendix II of 40 CFR Part 258. 40 CFR Part 258 - "Appendix II List of Hazardous Inorganic and Organic Constituents."

## **6.0 REFERENCES**

Heath, Ralph C., 1993, *Basic Ground-Water Hydrology*, USGS Water Supply Paper 2220.

MP 1994 (Malcolm Pirnie, Inc.), April 1994. *City of Durham Sanitary Landfill Water Quality Monitoring Plan*.

MP 1996 (Malcolm Pirnie, Inc.), December 1996. *City of Durham Municipal Solid Waste Landfill November 1996 Assessment Monitoring*.

NCGS (North Carolina Geologic Survey), 1985. Geologic Map of North Carolina. Scale 1:500,000.

S&ME, February 2008 (S&ME, Inc.), February 29, 2008. *November 2007-Groundwater Monitoring Report-Semi-Annual Monitoring of Groundwater and Surface Water*.

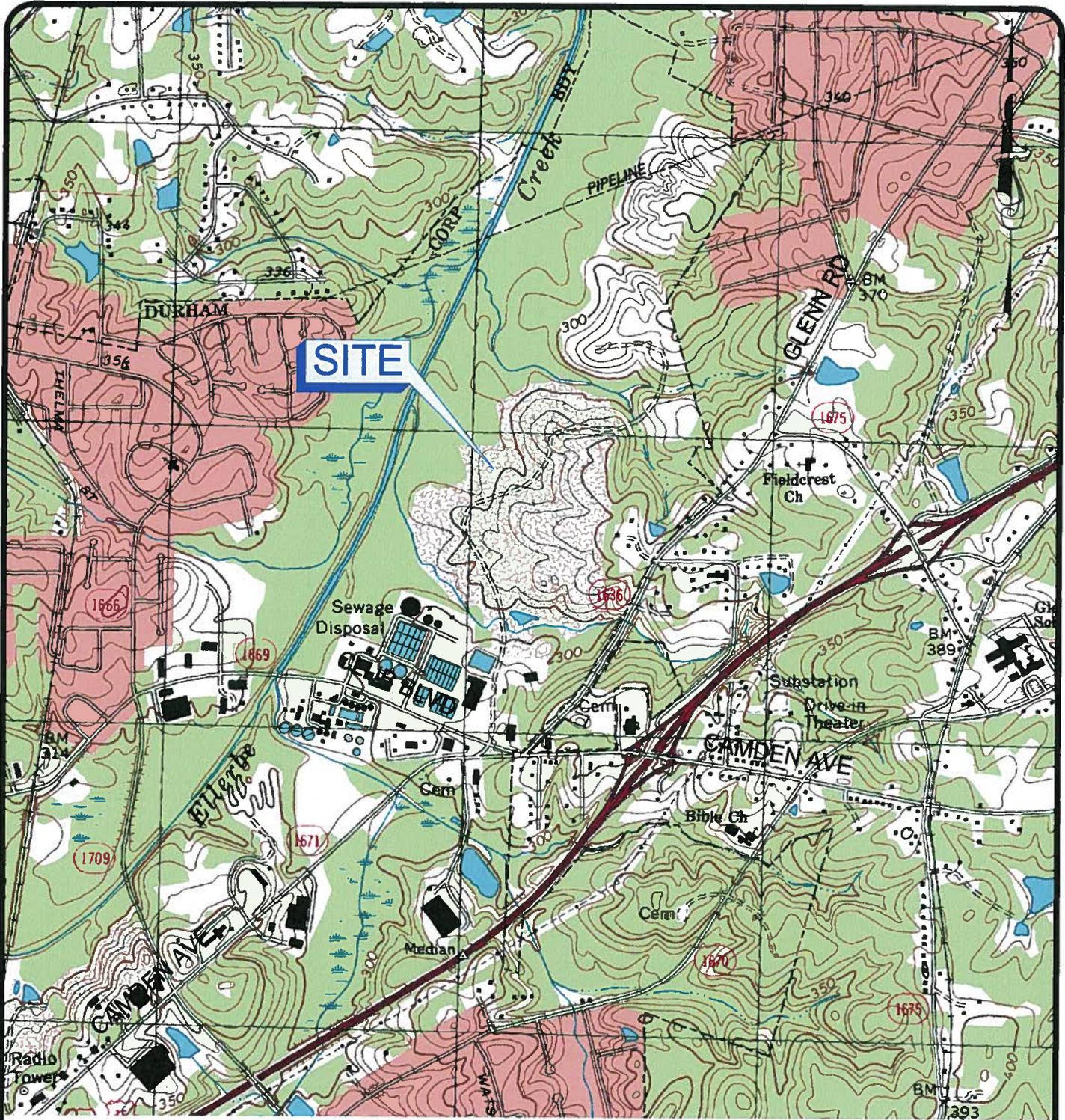
S&ME, July 2008 (S&ME, Inc.), July 30, 2008. *May 2008-Groundwater Monitoring Report-Semi-Annual Monitoring of Groundwater and Surface Water*.

S&ME, October 2008 (S&ME, Inc.), October 2, 2008. *October 2008- Monitor Well(MW-10) Installation Report*.

S&ME, February 2009 (S&ME, Inc.), February 18, 2008. *November 2008-Groundwater Monitoring Report-Semi-Annual Monitoring of Groundwater and Surface Water*.

Weston 2006 (Weston Solutions, Inc.), February 2006. December 2005 Semiannual Event—Closed Durham City Landfill.

## **FIGURES**



**SITE**

GRAPHIC SCALE



( IN FEET )

SOURCE: NCGS DRG  
NE DURHAM (O36078A7), DATED 1999

A-1051

SCALE:	1" = 1500'
DATE:	DEC. 2007
DRAWN BY:	BTR
PROJECT NO:	1054-07-469



VICINITY MAP  
CLOSED LANDFILL PERMIT #32-01  
DURHAM, NORTH CAROLINA

FIGURE NO.

1

S:\PROJECTS\2007\1054-07-469\COPY of Durham MEWE\036078A7.dwg - PLOT: 7/25/2008 3:54 PM PLT 11

S:\PROJECTS\1054-07-469\GIS\Durham\MEML\GIS\1054-07-469\_770\2008\_3-25-08\_3-25-08\_PM\_111

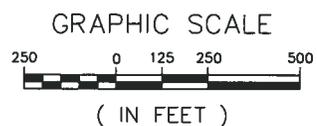


IMAGE SOURCE: DURHAM GIS  
REF #s 54130488 & 88865549

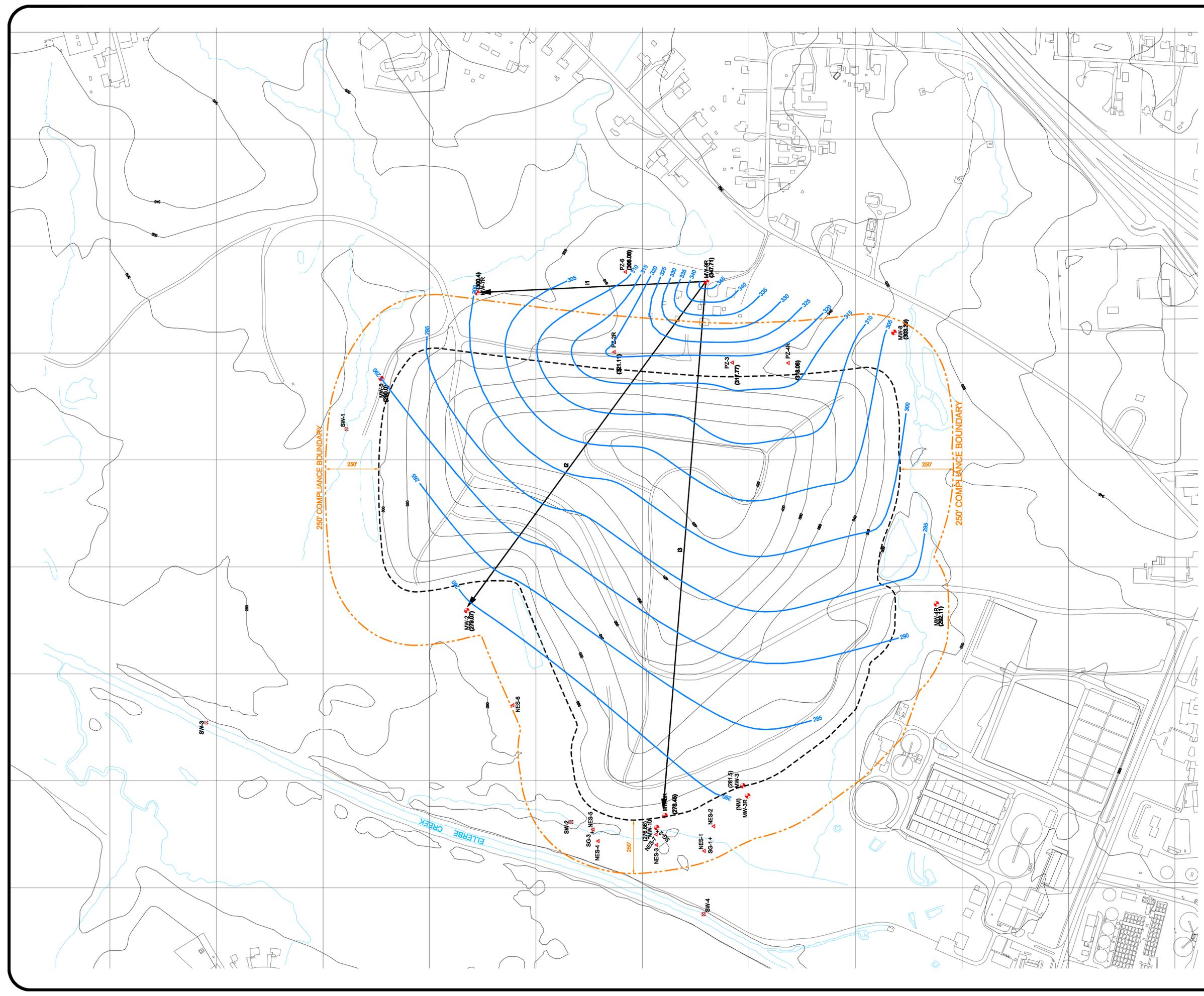
A-1052

SCALE:	1" = 500'
DATE:	DEC. 2007
DRAWN BY:	BTR
PROJECT NO:	1054-07-469



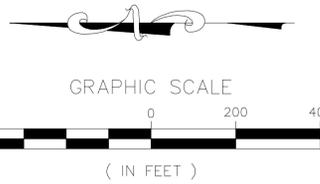
**SITE MAP**  
CLOSED LANDFILL PERMIT #32-01  
DURHAM, NORTH CAROLINA

FIGURE NO.  
**2**



- LEGEND**
- MONITOR WELLS
  - PIEZOMETERS
  - SURFACE WATER SAMPLE LOCATIONS
  - GAS COMPLIANCE MONITORING POINTS
  - CONTOUR LINE - MAJOR (20 FT)
  - CONTOUR LINE - MINOR
  - (279.07) GROUNDWATER ELEVATION
  - 285 GROUNDWATER CONTOUR WITH ELEVATION
  - GROUNDWATER FLOW DIRECTION
  - APPROXIMATE LIMIT OF WASTE
  - (NM) NOT MEASURED

- NOTE:**
- 1.) MONITOR WELL LOCATIONS SURVEYED BY MULKEY ENGINEERING IN JANUARY 2001 AND 2005.
  - 2.) WELLS MW-1, MW-4, MW-6, MW-7, MW-9, PZ-1, PZ-2 AND PZ-4 HAVE BEEN ABANDONED, DAMAGED OR DESTROYED AND ARE NOT SHOWN ON THIS MAP.
  - 3.) TOPOGRAPHIC CONTOUR INTERVAL = 2 ft.
  - 4.) GROUNDWATER SURFACE CONTOUR INTERVAL = 5 ft.
  - 5.) GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOW DATA, TOPOGRAPHIC CONTOURS, AND KNOWN FIELD CONDITIONS. THEREFORE, GROUNDWATER CONTOURS MAY NOT REFLECT ACTUAL POTENTIOMETRIC CONDITIONS.
  - 6.) GW ELEVATIONS MEASURED ON JUNE 30, 2009.
  - 7.) \*MW-10 SURVEYED BY BATEMAN CIVIL SURVEY.
  - 8.) MW-3R HAS NOT BEEN SURVEYED, AND WAS NOT INCLUDED IN CALCULATION OF CONTOUR LINES.



SOURCE:  
 CONTOURS - NCDOT LIDAR DATED APRIL 2007  
 BUILDINGS - DURHAM GIS DATED 1994  
 IMAGERY - DURHAM GIS DATED 2005



**S&ME**  
 WWW.SMEINC.COM

NO.	DATE	DESCRIPTION

GROUNDWATER POTENTIOMETRIC MAP  
 JUNE 30, 2009

CLOSED LANDFILL PERMIT #32-01  
 DURHAM, NORTH CAROLINA

DRAWN BY: BTR	CHECKED BY:
DESIGNED BY:	APPROVED BY:
PROJECT NUMBER: 1054-07-469	DATE: SEPT. 2009
SCALE: 1" = 200'	DRAWING NUMBER: D-1115
DRAWING: 3	OF: 3

## **TABLES**

**Table 1**  
**Summary of Historical Static Water Level Data**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**

Well #	MW-2	MW-3	MW-3R <sub>2</sub>	MW-4R	MW-5	MW-6R <sub>1</sub>	MW-7R <sub>1</sub>	MW-8	MW-9R <sub>1</sub>	MW-10	PZ-2R <sub>1</sub>	PZ-3	PZ-4R	PZ-6
<b>TOC Elevation (ft AMSL)</b>	286.54	285.80	NM	295.63	299.76	291.39	318.21	313.10	361.47	284.00	346.56	350.03	339.42	350.11
<b>Date</b>														
5/26/1998	280.20	283.50	NI	NI	290.20	NI	NI	304.40	NI	NI	NI	318.80	NI	308.10
12/1/1998	280.06	282.97	NI	NI	298.43	NI	NI	304.40	NI	NI	NI	321.29	NI	304.79
6/7/1999	275.71	275.30	NI	NI	285.79	NI	NI	300.87	NI	NI	NI	319.05	NI	303.68
7/8/1999	NM	NM	NI	289.09	NM	NI	NI	NM	NI	NI	NI	NM	NI	NM
12/13/1999	279.09	280.10	NI	289.49	288.28	NI	NI	302.19	NI	NI	NI	319.83	NI	303.64
6/6/2000	277.15	279.28	NI	289.37	287.10	NI	NI	301.98	NI	NI	NI	319.45	NI	305.02
12/11/2000	277.10	279.50	NI	289.15	288.05	NI	NI	302.01	NI	NI	NI	320.27	NI	303.71
6/4/2001	278.37	279.67	NI	289.67	286.67	NI	NI	301.42	NI	NI	NI	318.52	NI	304.90
12/4/2001	275.19	278.85	NI	289.15	288.25	NI	NI	299.32	NI	NI	NI	319.11	NI	304.71
6/10/2002	275.59	277.77	NI	288.52	288.38	NI	NI	302.55	NI	NI	NI	317.57	NI	304.11
12/16/2002	280.13	282.09	NI	290.51	292.22	NI	NI	305.28	NI	NI	NI	318.72	NI	305.12
6/9/2003	278.90	280.11	NI	290.04	288.21	NI	NI	301.45	NI	NI	NI	317.81	NI	305.75
12/8/2003	278.49	279.69	NI	289.82	288.06	NI	NI	310.00	NI	NI	NI	319.84	NI	305.53
6/28/2004	276.34	279.29	NM	290.00	287.15	275.79	297.73	300.87	349.02	NI	318.70	319.37	313.74	308.83
12/20/2004	275.48	279.70	NM	289.78	288.18	276.89	299.55	301.72	334.52	NI	318.98	321.02	319.78	307.16
6/6/2005	280.35	279.12	NM	289.87	287.31	275.79	297.82	300.74	349.62	NI	320.93	321.07	320.42	306.90
12/5/2005	274.26	279.46	NM	289.94	287.72	275.59	299.17	300.09	346.25	NI	319.65	320.75	317.42	302.60
6/5/2006	277.45	279.24	NM	291.10	287.45	275.81	298.91	300.51	347.47	NI	319.74	318.85	317.89	304.85
12/4/2006	279.40	279.90	NM	290.02	288.80	277.18	300.86	301.80	349.22	NI	319.56	319.30	317.42	304.10
5/30/2007	279.38	281.60	NM	291.00	289.89	278.59	300.48	303.60	348.47	NI	320.18	318.56	319.08	300.51
11/19/2007	273.92	281.27	NM	292.72	287.60	276.62	298.07	302.37	343.35	NI	319.20	318.91	316.28	304.41
5/19/2008	282.10	NM	*3.43	293.41	291.72	280.04	302.98	304.87	349.36	NI	319.85	317.82	317.18	308.27
11/19/2008	280.36	282.80	*3.64	293.30	291.25	279.42	302.46	304.58	346.98	277.32	319.64	318.31	317.07	306.72
6/30/2009	279.07	281.50	*5.08	292.11	290.00	278.45	300.40	303.39	347.71	276.86	321.11	317.77	318.08	308.08
<b>MEAN</b>	278.00	280.12	-	290.38	288.99	277.29	299.86	302.63	346.54	277.09	319.78	319.22	317.67	305.28
<b>MAXIMUM</b>	282.10	283.50	-	293.41	298.43	280.04	302.98	310.00	349.62	277.32	321.11	321.29	320.42	308.83
<b>MINIMUM</b>	273.92	275.30	-	288.52	285.79	275.59	297.73	299.32	334.52	276.86	318.70	317.57	313.74	300.51

**Notes:**

AMSL = Above Mean Sea Level

NA= Not Applicable

NM=Not Measured

TOC=Top of Well Casing

\*= Depth to water measurement taken from top of casing

NI=Not Installed

TOC elevations were surveyed by Barbara H. Mulkey Engineering in January 2001.

1. TOC elevations surveyed for new wells PZ-2R, PZ-4R, MW-6R, MW-7R and MW-9R in 2005 by Mulkey Engineering.

2. Monitor well 3R has not been surveyed as of this sampling event.

3. Monitor well 10 TOC elevation surveyed by Bateman Civil Surveying, P.C. in September 2008.

4. Unless otherwise noted, static water levels are calculated relative to mean sea level by subtracting the depth-to-water measurement from the TOC elevation.

**Table 2**  
**Summary of Estimated Horizontal Flow Velocities**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**

<i>June 2009</i>								
Gradient Calculation Segment	Monitoring Wells	Flow Direction	Gradient Segment Length (feet)	Gradient Segment Elevations (feet)	Horizontal Gradient (i, feet)	Effective Porosity (ne)	Hydraulic Conductivity (K, cm/sec)	Velocity (V <sub>gw</sub> , feet/year)
<i>i</i> 1	<i>MW-9R to</i>	N	1073	347.71	0.044	0.2	5.85E-05	13.29
	<i>MW-7R</i>			300.4				
<i>i</i> 2	<i>MW-9R to</i>	NW	1900	347.71	0.036	0.2	5.43E-05	10.09
	<i>MW-2</i>			279.07				
<i>i</i> 3	<i>MW-9R to</i>	W	2489	347.71	0.028	0.2	4.65E-05	6.66
	<i>MW-6R</i>			278.45				

Avg. Hydraulic Gradient = **0.036**

Avg. Velocity = **10.01**

Notes:

Horizontal velocities based on the modified Darcy equation  $V_{gw} = Ki/ne$ .

Hydraulic conductivity values (K) for MW-2, MW-6R, MW-7R from *May 2008 Monitoring Report* (S&ME, July 2008)

Effective Porosity ( $n_e$ ) estimated for residual soils in Carolina Slate Belt

Hydraulic Gradient (i) calculated by measuring linear feet between selected contour intervals

Ave. Linear Velocity ( $v$ ) =  $(1.035E06)K*i/n$  for units shown

To convert cm/sec to ft/yr, multiply n by 1.035E06

**Table 3**  
**Monitor Well Construction Information**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**

<b>Well Identification</b>	<b>Ground Surface Elevation (ft AMSL)</b>	<b>TOC Elevation (ft AMSL)</b>	<b>Well Depth* (ft bgs)</b>	<b>Well Diameter (inches)</b>	<b>Screened Interval** (ft bgs)</b>
MW-2	284.84	286.54	19.62	2	9.62 - 19.62
MW-3	284.20	285.80	25.33	2	15.33 - 25.33
MW-3R	--	--	17.65	2	7.65 - 17.65
MW-4R	293.00	295.63	17.39	2	7.39 - 17.39
MW-5	297.76	299.76	21.77	2	11.77 - 21.77
MW-6R	289.39	291.39	26.72	2	16.72 - 26.72
MW-7R	315.70	318.21	44.10	2	19.10 - 44.10
MW-8	309.30	313.10	16.52	2	9.02 - 16.52
MW-9R	358.81	361.47	22.55	2	12.55 - 22.55
MW-10	282.11	284.00	16.61	2	6.61-16.61
PZ-2R	348.83	346.56	34.59	2	24.59 - 34.59
PZ-3	346.90	350.03	42.40	2	27.40 - 42.40
PZ-4R	336.40	339.42	38.38	2	23.38 - 38.38
PZ-6	347.61	350.11	61.50	2	41.50 - 61.50

**Notes:**

ft AMSL = feet above mean sea level

TOC = top of well casing elevation

-- = no data available

bgs = below ground surface

TOC and Ground Surface Elevations were surveyed by Barbara H. Mulkey Engineering in January 2001.

TOC and Ground Surface Elevations surveyed for new wells P2-R, P-4R, MW-6R, MW-7R and MW-9R in 2005 by Mulkey Engineering.

TOC and Ground Surface Elevations surveyed for new well MW-10 TOC elevation surveyed by Bateman Civil Survey P.C. in September 2008

\*\* Screened interval is approximate, based on field measurements by S&ME in May 2008.

\* Depth to bottom measurements taken on June 13, 2008.

**Table 4**  
**Groundwater Quality Summary**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**June 2009 Sampling Event**  
**S&ME Project No. 1054-07-469**

		GROUNDWATER QUALITY SUMMARY											SURFACE WATER QUALITY SUMMARY						
APPENDIX I VOCs EPA METHOD 8260	UNITS	2L Standard	BACKGROUND MONITOR WELL	COMPLIANCE MONITOR WELLS							QUALITY CONTROL		2B Standard	SAMPLING LOCATION				SWSL	
			MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Duplicate (MW-10)	Equipment Blank		Upstream (S-4)	Downstream (S-1)	Downstream (S-2)	Downstream (S-3)		
BENZENE	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<b>4.6 JD</b>	<b>4.4 JD</b>	<0.20	1.19	<0.20	NS	NS	<0.20	1
CHLOROBENZENE	µg/L	50	<0.27	<0.27	0.41 J	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	488	<0.27	NS	NS	<0.27	3
1,4-DICHLOROBENZENE	µg/L	1.4	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<b>2.2 JD</b>	<b>2.5 JD</b>	<0.38	4.88	<0.38	NS	NS	<0.38	1
1,1-DICHLOROETHANE	µg/L	70	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	7.8 D	7.5 D	<0.24	3,400	<0.24	NS	NS	<0.24	5
CIS-1,2 DICHLOROETHENE	µg/L	70	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<b>370 D</b>	<b>380 D</b>	<0.36	340	<0.36	NS	NS	<0.36	5
TRANS-1,2-DICHLOROETHENE	µg/L	100	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	9.7 D	9.3 D	<0.34	140	<0.34	NS	NS	<0.34	5
1,2-DICHLOROPROPANE	µg/L	0.51	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<b>9.4 D</b>	<b>8.8 D</b>	<0.20	0.52	<0.20	NS	NS	<0.20	1
TETRACHLOROETHENE	µg/L	0.7	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<b>2.6 JD</b>	<b>2.1 JD</b>	<0.36	NS	<0.36	NS	NS	<0.36	1
TRICHLOROETHENE	µg/L	2.8	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<b>38 D</b>	<b>37 D</b>	<0.36	NS	<0.36	NS	NS	<0.36	1
VINYL CHLORIDE	µg/L	0.015	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<b>23 D</b>	<b>24 D</b>	<0.30	2.0	<0.30	NS	NS	<0.30	1
APPENDIX I INORGANIC COMPOUNDS EPA METHOD 6010/6020	UNITS	2L Standard	BACKGROUND MONITOR WELL	COMPLIANCE MONITOR WELLS							QUALITY CONTROL		2B Standard	SAMPLING LOCATION				SWSL	
			MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Duplicate (MW-10)	Equipment Blank		Upstream (S-4)	Downstream (S-1)	Downstream (S-2)	Downstream (S-3)		
ARSENIC	µg/L	50	<2.8	<2.8	6.2 JB	8.2 JB	4.9 JB	4.4 JB	<2.8	<2.8	2.9 J	4.3 JB	10	<2.8	NS	NS	<2.8	10	
BARIUM	µg/L	2,000	51.2 J	80.8 J	440	552	1,590	618	106	341	340	<4.20	1,000	9.78 J	NS	NS	8.29 J	100	
BERYLLIUM	µg/L	4*	0.47 J	0.11 J	<0.08	0.13 J	<0.08	<0.08	<0.08	0.46 J	0.46 J	<0.08	6.5	<0.08	NS	NS	<0.08	1	
CADMIUM	µg/L	1.75	<0.09	<0.09	0.12 J	<0.09	0.13 J	<0.09	<0.09	0.26 J	0.22 J	<0.09	2.0	<0.09	NS	NS	<0.09	1	
CHROMIUM	µg/L	50	0.7 J	1.4 J	1.2 J	0.7 J	1.3 J	1.2 J	0.7 J	6.1 J	2.4 J	<0.7	50	<0.7	NS	NS	1.1 J	10	
COBALT	µg/L	70*	5.9 J	0.7 J	6.7 J	0.8 J	<0.6	<0.6	5.7 J	21.7	21.1	<0.6	106	0.9 J	NS	NS	0.7 J	10	
COPPER	µg/L	1,000	1.14 J	<0.81	<0.81	<0.81	<0.81	<0.81	<0.81	1.33 J	<0.81	2.36 J	7 (AL)	<0.81	NS	NS	<0.81	10	
LEAD	µg/L	15	<1.6	<1.6	<1.6	3.6 JB	2.1 JB	<1.6	2.3 JB	8.8 JB	9.0 JB	<1.6	25 (N)	2.4 JB	NS	NS	<1.6	10	
NICKEL	µg/L	100	3.6 JB	3.4 JB	8.7 JB	5.0 JB	5.7 JB	2.1 JB	7.6 JB	13.1 JB	11.1 JB	0.6 JB	88 (N)	3.1 JB	NS	NS	3.8 JB	50	
VANADIUM	µg/L	3.5*	<0.7	<0.7	1.1 J	<0.7	<0.7	<0.7	<0.7	<b>6.9 J</b>	<b>3.5 J</b>	<0.7	NS	2.4 J	NS	NS	2.4 J	25	
ZINC	µg/L	1,050	5.8 J	7.9 J	3.5 J	<3.4	<3.4	4.7 J	<3.4	22.4	15.2	3.8 J	50 (AL)	24.7	NS	NS	28.3	10	

NOTES:

VOCs = Volatile Organic Compounds

2L STANDARD = North Carolina groundwater standards as promulgated by 15A North Carolina Administrative Code, Subchapter 2L.

SWSL = Solid Waste Section Limit

\* Indicates there is currently no 2L Standard. The target analyte was compared to the Solid Waste Groundwater Protection (GWP) Standard.

µg/L = Micrograms Per Liter

Duplicate sample collected from monitor well MW-10 (indicated on COC as MW-1).

Values which are **BOLDED** and shaded indicate levels above their respective NCDENR 2L or GWP Standards.

Compounds not shown were not detected during this sampling event.

Samples were collected on June 30, 2009 and analyzed by ESC. Detection limits are shown on laboratory reports.

NA = Not Analyzed

NS = No Standard Listed

(AL) = Action Level Standard

(N) = Narrative Standard

J = Laboratory Qualifier. Estimated value below the lowest calibration point. Confidence correlates with concentration.

B = Analyte detected in associated method blank

D = The sample was analyzed at a dilution

**Table 5**  
**Summary of Historically Detected Constituents in Groundwater**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**  
**Permit No. 32-01**

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	Background Well MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Equipment Blank	Trip Blank
Antimony - (GPS = 1.4 ug/L) SWID # = 13	ug/L	9/19/1994	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	2/2/1994	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	2/7/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	3/13/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	11/1/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/10/1996	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	11/12/1996	--	--	5	NM	6	NM	--	ND	--	ND	--	--	--
	ug/L	3/18/1997	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	10/2/1997	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	5/26/1998	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/1/1998	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/7/1999	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	7/8/1999	--	--	5	NM	ND	NM	ND	--	--	ND	--	--	--
	ug/L	12/15/1999	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	6/6/2000	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	12/27/2000	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	6/4/2001	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	12/3/2001	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	6/10/2002	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	12/16/2002	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	6/9/2003	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	12/8/2003	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	6/29/2004	--	--	5	NM	ND	NM	ND	ND	ND	ND	--	--	--
	ug/L	12/20/2004	--	--	5	NM	ND	NM	ND	ND	ND	ND	--	--	--
	ug/L	6/5/2005	--	--	5	NM	ND	NM	ND	ND	ND	ND	--	--	--
	ug/L	12/5/2005	--	--	5	NM	ND	NM	ND	ND	ND	ND	--	--	--
	ug/L	6/5/2006	--	--	5	NM	ND	NM	ND	ND	ND	ND	--	--	--
	ug/L	12/5/2006	--	--	5	NM	ND	NM	ND	ND	ND	ND	--	--	--
	ug/L	5/30/2007	0.58	2	6	NM	ND	NM	ND	ND	ND	ND	--	--	ND
	ug/L	11/19/2007	0.22	1	6	NM	<0.22	NM	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
ug/L	5/19/2008	0.22	1	6	NM	<0.22	<0.22	0.26	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	NM
ug/L	11/19/2008	0.29	1	6	NM	0.51	0.59 J	0.68 J	0.65 J	0.53 J	0.54 J	0.54 J	0.59 J	0.53 J	NM
ug/L	6/30/2009	0.68	1	6	NM	<0.68	<0.68	<0.68	<0.68	<0.68	<0.68	<0.68	<0.68	<0.68	NM
Arsenic - (NC 2L = 50 ug/L) SWID # = 14	ug/L	9/19/1994	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/2/1994	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	2/7/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	3/13/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	11/1/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/10/1996	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	11/12/1996	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	3/18/1997	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	10/2/1997	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	5/26/1998	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/1/1998	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/7/1999	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	7/8/1999	--	--	5	NM	--	NM	5	--	--	ND	--	--	--
	ug/L	12/15/1999	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	6/6/2000	--	--	5	NM	ND	NM	ND	7	--	ND	--	--	--
	ug/L	12/27/2000	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	6/4/2001	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	12/3/2001	--	--	5	NM	ND	NM	ND	6	--	ND	--	--	--
	ug/L	6/10/2002	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	12/16/2002	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	6/9/2003	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	12/8/2003	--	--	5	NM	ND	NM	6	--	--	ND	--	--	--
	ug/L	6/29/2004	--	--	5	NM	ND	NM	ND	ND	ND	ND	--	--	--
	ug/L	12/20/2004	--	--	5	NM	ND	NM	ND	7	ND	ND	--	--	--
	ug/L	6/5/2005	--	--	5	NM	ND	NM	ND	6	6	ND	--	--	--
	ug/L	12/5/2005	--	--	5	NM	ND	NM	ND	ND	ND	ND	--	--	--
	ug/L	6/5/2006	--	--	5	NM	ND	NM	ND	7	ND	ND	--	--	--
	ug/L	12/5/2006	--	--	5	NM	ND	NM	ND	6	ND	ND	--	--	--
	ug/L	5/30/2007	2	10	10	NM	ND	NM	ND	3.4 B	2.0 B	3.1 B	--	--	ND
	ug/L	11/19/2007	0.15	1	10	NM	0.46	NM	0.69	4.4	4.8	1.2	--	--	0.89
ug/L	5/19/2008	0.15	1	10	NM	<0.15	<0.15	2.7	<0.15	1.9	0.72	<0.15	--	<0.15	
ug/L	11/19/2008	0.22	1	10	NM	0.26 J	0.59 J	5.9 J	1.2 J	4.4 J	1.7 J	1.3 J	3.7 J	<0.22	
ug/L	6/30/2009	2.8	1	10	NM	<2.8	<2.8	6.2 JB	8.2 JB	4.9 JB	4.4 JB	<2.8	<2.8	4.3 JB	

**Notes:**  
ug/L = micrograms per liter  
mg/L = milligrams per liter  
S.U. = Standard Units  
NTU = Nephelometric Turbidity Units  
mV = millivolts  
ND = not detected at the stated reporting limit  
ORP = Oxidation Reduction Potential  
µS/cm = micro Siemens per centimeter  
-- = no data available  
Blanks = field, trip and method blanks  
NM = not measured/analyzed  
NS = not sampled

Shaded = Concentrations above the NC 2L or Solid Waste Section Groundwater Protection Standards have been shaded  
\* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
\* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
\* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
\* Sample data from 11/07 collected, compiled and reported by S&ME.  
\* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

**Table 5**  
**Summary of Historically Detected Constituents in Groundwater**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**  
**Permit No. 32-01**

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	Background Well MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Equipment Blank	Trip Blank
Barium - (NC 2L= 2000 ug/L) SWID # = 15	ug/L	9/19/1994	--	--	--	NM	199	NM	--	9400	--	2115	--	--	--
	ug/L	12/2/1994	--	--	--	NM	32	NM	--	2300	--	119	--	--	--
	ug/L	2/7/1995	--	--	--	NM	48	NM	--	2436	--	111	--	--	--
	ug/L	3/13/1995	--	--	--	NM	37	NM	--	1630	--	118	--	--	--
	ug/L	11/1/1995	--	--	--	NM	25	NM	--	3369	--	120	--	--	--
	ug/L	6/10/1996	--	--	--	NM	50	NM	--	992	--	123	--	--	--
	ug/L	11/12/1996	--	--	--	NM	47	NM	--	976	--	84	--	--	--
	ug/L	3/18/1997	--	--	--	NM	70	NM	--	1154	--	138	--	--	--
	ug/L	10/2/1997	--	--	--	NM	48	NM	--	1250	--	312	--	--	--
	ug/L	5/26/1998	--	--	--	NM	48	NM	--	1637	--	103	--	--	--
	ug/L	12/1/1998	--	--	--	NM	45	NM	--	867	--	118	--	--	--
	ug/L	6/7/1999	--	--	--	NM	106	NM	--	996	--	373	--	--	--
	ug/L	7/8/1999	--	--	--	NM	--	NM	1217	--	--	--	--	--	--
	ug/L	12/15/1999	--	--	--	NM	84	NM	315	--	942	--	116	--	--
	ug/L	6/6/2000	--	--	--	NM	46	NM	377	--	3979	--	114	--	--
	ug/L	12/27/2000	--	--	--	NM	144	NM	1120	--	5757	--	104	--	--
	ug/L	6/4/2001	--	--	--	NM	128	NM	964	--	3649	--	475	--	--
	ug/L	12/3/2001	--	--	--	NM	153	NM	1053	--	1441	--	778	--	--
	ug/L	6/10/2002	--	--	--	NM	53	NM	943	--	1167	--	843	--	--
	ug/L	12/16/2002	--	--	--	NM	59	NM	544	--	909	--	209	--	--
	ug/L	6/9/2003	--	--	--	NM	67	NM	437	--	941	--	120	--	--
	ug/L	12/8/2003	--	--	--	NM	85	NM	544	--	3692	--	141	--	--
	ug/L	6/29/2004	--	--	--	NM	97	NM	551	--	1899	763	139	--	--
	ug/L	12/20/2004	--	--	--	NM	90	NM	543	--	4192	639	111	--	--
	ug/L	6/5/2005	--	--	--	NM	64	NM	607	--	1845	817	93	--	--
	ug/L	12/5/2005	--	--	--	NM	126	NM	585	--	1758	703	92	--	--
	ug/L	6/5/2006	--	--	--	NM	97	NM	796	--	3778	880	90	--	--
	ug/L	12/5/2006	--	--	--	NM	63	NM	890	--	3134	924	71	--	--
	ug/L	5/30/2007	0.2	10	100	NM	67.2 J	NM	472	1240	622	69.0 J	ND	ND	ND
	ug/L	11/19/2007	1	5	100	NM	120	NM	510	1400	820	300	<1	<1	NM
ug/L	5/19/2008	1	5	100	55	66	530	580	1300	600	33	<1	<1	NM	
ug/L	11/19/2008	1.1	5	100	38 J	82 J	380	510	1400	580	64 J	250	<1.1	NM	
ug/L	6/30/2009	4.2	5	100	51.2 J	80.8 J	440	552	1590	618	106	341	<4.20	NM	
Beryllium - (GPS = 4 ug/L) SWID # = 23	ug/L	9/19/1994	--	--	1	NM	1.5	NM	--	9.8	--	7.3	--	--	
	ug/L	12/2/1994	--	--	1	NM	ND	NM	--	5	--	ND	--	--	
	ug/L	2/7/1995	--	--	1	NM	ND	NM	--	4.7	--	ND	--	--	
	ug/L	3/13/1995	--	--	1	NM	ND	NM	--	5.2	--	ND	--	--	
	ug/L	11/1/1995	--	--	1	NM	ND	NM	--	8	--	ND	--	--	
	ug/L	6/10/1996	--	--	1	NM	1.5	NM	--	ND	--	ND	--	--	
	ug/L	11/12/1996	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	
	ug/L	3/18/1997	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	
	ug/L	10/2/1997	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	
	ug/L	5/26/1998	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	
	ug/L	12/1/1998	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	
	ug/L	6/7/1999	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	
	ug/L	7/8/1999	--	--	1	NM	--	NM	2	--	--	--	--	--	
	ug/L	12/15/1999	--	--	1	NM	ND	NM	ND	--	ND	--	ND	--	
	ug/L	6/6/2000	--	--	1	NM	ND	NM	ND	5	--	ND	--	--	
	ug/L	12/27/2000	--	--	1	NM	ND	NM	ND	8	--	ND	--	--	
	ug/L	6/4/2001	--	--	1	NM	ND	NM	ND	2	--	ND	--	--	
	ug/L	12/3/2001	--	--	1	NM	ND	NM	ND	ND	--	ND	--	--	
	ug/L	6/10/2002	--	--	1	NM	ND	NM	ND	ND	--	ND	--	--	
	ug/L	12/16/2002	--	--	1	NM	ND	NM	ND	ND	--	ND	--	--	
	ug/L	6/9/2003	--	--	1	NM	ND	NM	ND	ND	--	ND	--	--	
	ug/L	12/8/2003	--	--	1	NM	ND	NM	ND	2	--	ND	--	--	
	ug/L	6/29/2004	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	--	
	ug/L	12/20/2004	--	--	1	NM	ND	NM	ND	2	ND	ND	--	--	
	ug/L	6/5/2005	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	--	
	ug/L	12/5/2005	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	--	
	ug/L	6/5/2006	--	--	1	NM	ND	NM	ND	2	ND	ND	--	--	
	ug/L	12/5/2006	--	--	1	NM	ND	NM	ND	1	ND	ND	--	--	
	ug/L	5/30/2007	0.7	1	1	NM	ND	NM	ND	ND	ND	ND	--	ND	
	ug/L	11/19/2007	0.24	1	1	NM	<0.24	NM	<0.24	<0.24	0.79	0.93	--	<0.24	
ug/L	5/19/2008	0.24	1	1	0.38	<0.24	0.25	<0.24	<0.24	<0.24	<0.24	3.7	<0.24		
ug/L	11/19/2008	0.28	1	1	0.73 J	0.73	<1.4	<1.4	0.34 J	0.3 J	0.37 J	<1.4	<0.28		
ug/L	6/30/2009	<0.08	1	1	0.47 J	0.11 J	<0.08	0.13 J	<0.08	<0.08	<0.08	0.46 J	<0.08		

**Notes:**  
ug/L = micrograms per liter  
mg/L = milligrams per liter  
S.U. = Standard Units  
NTU = Nephelometric Turbidity Units  
mV = millivolts  
ND = Not detected at the stated reporting limit  
ORP = Oxidation Reduction Potential  
µS/cm = micro Siemens per centimeter  
-- = no data available  
Blanks = field, trip and method blanks  
NM = not measured/analyzed  
NS = not sampled

Shaded - Concentrations above the NC 2L or Solid Waste Section Groundwater Protection Standards have been shaded  
\* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
\* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
\* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
\* Sample data from 11/07 thru 11/08 collected, compiled and reported by S&ME.  
\* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

**Table 5**  
**Summary of Historically Detected Constituents in Groundwater**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**  
**Permit No. 32-01**

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	Background Well MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Equipment Blank	Trip Blank
Cadmium - (NC 2L = 1.75 ug/L) SWID # = 34	ug/L	9/19/1994	--	--	1	NM	ND	NM	--	1.6	--	ND	--	--	--
	ug/L	12/2/1994	--	--	1	NM	1	NM	--	ND	--	ND	--	--	--
	ug/L	2/7/1995	--	--	1	NM	ND	NM	--	1.6	--	ND	--	--	--
	ug/L	3/13/1995	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	11/1/1995	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/10/1996	--	--	1	NM	1.8	NM	--	ND	--	ND	--	--	--
	ug/L	11/12/1996	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	3/18/1997	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	10/2/1997	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	5/26/1998	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/1/1998	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/7/1999	--	--	1	NM	ND	NM	--	3	--	ND	--	--	--
	ug/L	7/8/1999	--	--	1	NM	--	NM	--	ND	--	--	--	--	--
	ug/L	12/15/1999	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/6/2000	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/27/2000	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/4/2001	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/3/2001	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/10/2002	--	--	1	NM	7	NM	--	2	--	ND	--	--	--
	ug/L	12/16/2002	--	--	1	NM	1	NM	--	ND	--	ND	--	--	--
	ug/L	6/9/2003	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/8/2003	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/29/2004	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/20/2004	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/5/2005	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/5/2005	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/5/2006	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/5/2006	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	5/30/2007	0.5	1	1	NM	ND	NM	--	ND	--	ND	--	ND	--
	ug/L	11/19/2007	0.24	0.5	1	NM	<0.24	NM	--	<0.24	--	0.34	--	ND	--
ug/L	5/19/2008	0.24	0.5	1	NM	<0.24	<0.24	--	<0.24	--	<0.24	--	<0.24	NM	
ug/L	11/19/2008	0.15	0.5	1	NM	0.29 J	0.49 J	--	0.34 J	--	0.4 J	--	0.31 J	0.28 J	NM
ug/L	6/30/2009	0.09	0.5	1	NM	<0.09	0.12 J	--	<0.09	--	<0.09	--	0.26 J	0.22 J	NM
Chromium - (NC 2L = 50 ug/L) SWID # = 51	ug/L	9/19/1994	--	--	5	NM	25	NM	--	699	--	139	--	--	--
	ug/L	12/2/1994	--	--	5	NM	ND	NM	--	142	--	9.7	--	--	--
	ug/L	2/7/1995	--	--	5	NM	ND	NM	--	128	--	8.3	--	--	--
	ug/L	3/13/1995	--	--	5	NM	ND	NM	--	36	--	13	--	--	--
	ug/L	11/1/1995	--	--	5	NM	ND	NM	--	129	--	6	--	--	--
	ug/L	6/10/1996	--	--	5	NM	ND	NM	--	12	--	ND	--	--	--
	ug/L	11/12/1996	--	--	5	NM	ND	NM	--	19	--	9	--	--	--
	ug/L	3/18/1997	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	10/2/1997	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	5/26/1998	--	--	5	NM	ND	NM	--	6	--	ND	--	--	--
	ug/L	12/1/1998	--	--	5	NM	ND	NM	--	ND	--	11	--	--	--
	ug/L	6/7/1999	--	--	5	NM	ND	NM	--	7	--	ND	--	--	--
	ug/L	7/8/1999	--	--	5	NM	--	NM	--	108	--	--	--	--	--
	ug/L	12/15/1999	--	--	5	NM	5	NM	--	5	--	5	--	--	--
	ug/L	6/6/2000	--	--	5	NM	5	NM	--	5	--	5	--	--	--
	ug/L	12/27/2000	--	--	5	NM	7	NM	--	ND	--	150	--	--	--
	ug/L	6/4/2001	--	--	5	NM	ND	NM	--	ND	--	13	--	--	--
	ug/L	12/3/2001	--	--	5	NM	ND	NM	--	ND	--	24	--	--	--
	ug/L	6/10/2002	--	--	5	NM	ND	NM	--	7	--	6	--	--	--
	ug/L	12/16/2002	--	--	5	NM	ND	NM	--	30	--	17	--	--	--
	ug/L	6/9/2003	--	--	5	NM	5	NM	--	9	--	10	--	--	--
	ug/L	12/8/2003	--	--	5	NM	ND	NM	--	17	--	10	--	--	--
	ug/L	6/29/2004	--	--	5	NM	13	NM	--	16	--	12	--	--	--
	ug/L	12/20/2004	--	--	5	NM	6	NM	--	ND	--	7	--	--	--
	ug/L	6/5/2005	--	--	5	NM	ND	NM	--	14	--	18	--	--	--
	ug/L	12/5/2005	--	--	5	NM	5	NM	--	5	--	7	--	--	--
	ug/L	6/5/2006	--	--	5	NM	6	NM	--	ND	--	9	--	--	--
	ug/L	12/5/2006	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	5/30/2007	2	10	10	NM	ND	NM	--	ND	--	ND	--	ND	--
	ug/L	11/19/2007	2.3	10	10	NM	4.7	NM	--	2.3	--	18	--	<2.3	--
ug/L	5/19/2008	2.3	10	10	NM	<2.3	<2.3	--	2.4	--	<2.3	--	<2.3	NM	
ug/L	11/19/2008	2	10	10	NM	<2.0	<2.0	--	3.0 J	--	2.5 J	--	6.3 J	<2.0	NM
ug/L	6/30/2009	0.7	10	10	NM	1.4 J	1.2 J	--	0.7 J	--	1.2 J	--	6.1 J	<0.7	NM

**Notes:**  
ug/L = micrograms per liter  
mg/L = milligrams per liter  
S.U. = Standard Units  
NTU = Nephelometric Turbidity Units  
mV = millivolts  
ND = Not detected at the stated reporting limit  
uSRP = Oxidation Reduction Potential  
uS/cm = micro Siemens per centimeter  
-- = no data available  
Blanks = field, trip and method blanks  
NM = not measured/analyzed  
NS = not sampled

Shaded = Concentrations above the NC 2L or Solid Waste Section Groundwater Protection Standards have been shaded  
\* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
\* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
\* Sample data from 5/07 collected, compiled and reported by Galder Associates.  
\* Sample data from 11/07 thru 11/08 collected, compiled and reported by S&ME.  
\* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

**Table 5**  
**Summary of Historically Detected Constituents in Groundwater**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**  
**Permit No. 32-01**

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	Background Well MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Equipment Blank	Trip Blank
Cobalt - (GPS = 70 ug/L) SWID # = 53	ug/L	9/19/1994	--	--	--	NM	ND	NM	--	89	--	32	--	--	--
	ug/L	12/2/1994	--	--	--	NM	ND	NM	--	39	--	ND	--	--	--
	ug/L	2/7/1995	--	--	--	NM	ND	NM	--	23	--	ND	--	--	--
	ug/L	3/13/1995	--	--	--	NM	ND	NM	--	18	--	ND	--	--	--
	ug/L	11/1/1995	--	--	10	NM	ND	NM	--	47	--	ND	--	--	--
	ug/L	6/10/1996	--	--	10	NM	ND	NM	--	ND	--	12	--	--	--
	ug/L	11/12/1996	--	--	10	NM	ND	NM	--	ND	--	13	--	--	--
	ug/L	3/18/1997	--	--	10	NM	ND	NM	--	ND	--	16	--	--	--
	ug/L	10/2/1997	--	--	10	NM	ND	NM	--	ND	--	21.5	--	--	--
	ug/L	5/26/1998	--	--	10	NM	ND	NM	--	ND	--	15	--	--	--
	ug/L	12/1/1998	--	--	25	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/7/1999	--	--	10	NM	ND	NM	--	ND	--	14	--	--	--
	ug/L	7/8/1999	--	--	10	NM	--	NM	--	29	--	--	--	--	--
	ug/L	12/15/1999	--	--	10	NM	ND	NM	ND	ND	--	14	--	--	--
	ug/L	6/6/2000	--	--	10	NM	ND	NM	ND	76	--	14	--	--	--
	ug/L	12/27/2000	--	--	10	NM	ND	NM	ND	150	--	19	--	--	--
	ug/L	6/4/2001	--	--	10	NM	ND	NM	ND	60	--	13	--	--	--
	ug/L	12/3/2001	--	--	10	NM	ND	NM	ND	11	--	17	--	--	--
	ug/L	6/10/2002	--	--	10	NM	ND	NM	ND	14	--	20	--	--	--
	ug/L	12/16/2002	--	--	10	NM	ND	NM	11	ND	--	25	--	--	--
	ug/L	6/9/2003	--	--	10	NM	ND	NM	ND	ND	--	16	--	--	--
	ug/L	12/8/2003	--	--	10	NM	ND	NM	ND	65	--	16	--	--	--
	ug/L	6/29/2004	--	--	10	NM	ND	NM	ND	ND	ND	26	--	--	--
	ug/L	12/20/2004	--	--	5	NM	ND	NM	ND	47	ND	20	--	--	--
	ug/L	6/5/2005	--	--	--	NM	ND	NM	--	--	--	--	--	--	--
	ug/L	12/5/2005	--	--	--	NM	ND	NM	--	--	--	--	--	--	--
	ug/L	6/5/2006	--	--	--	NM	ND	NM	--	--	--	--	--	--	--
	ug/L	12/5/2006	--	--	--	NM	ND	NM	--	--	--	--	--	--	--
	ug/L	5/30/2007	2	--	10	NM	ND	NM	ND	ND	ND	11.2	--	ND	--
	ug/L	11/19/2007	1.1	1.1	10	NM	2.3	NM	2	2.5	7	21	--	<1.1	--
	ug/L	5/19/2008	1.1	1.1	10	5	<1.1	7.3	<1.1	<1.1	<1.1	2.6	--	<1.1	NM
	ug/L	11/19/2008	1.1	1.1	10	5	<1.1	4.7 J	<1.1	<1.1	<1.1	7.8 J	--	16	<1.1
	ug/L	6/30/2009	0.6	0.6	10	5.9 J	0.7 J	6.7 J	0.8 J	0.6	0.6	5.7 J	--	21.7	<0.6
Copper - (NC 2L = 1000 ug/L) SWID # = 54	ug/L	9/19/1994	--	--	--	NM	7	NM	--	398	--	73	--	--	--
	ug/L	12/2/1994	--	--	--	NM	ND	NM	--	113	--	7.3	--	--	--
	ug/L	2/7/1995	--	--	--	NM	ND	NM	--	75	--	5.2	--	--	--
	ug/L	3/13/1995	--	--	--	NM	ND	NM	--	58	--	6.8	--	--	--
	ug/L	11/1/1995	--	--	5	NM	ND	NM	--	145	--	ND	--	--	--
	ug/L	6/10/1996	--	--	5	NM	ND	NM	--	8.7	--	ND	--	--	--
	ug/L	11/12/1996	--	--	5	NM	ND	NM	--	10	--	ND	--	--	--
	ug/L	3/18/1997	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	10/2/1997	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	5/26/1998	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/1/1998	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/7/1999	--	--	5	NM	ND	NM	--	10	--	ND	--	--	--
	ug/L	7/8/1999	--	--	5	NM	--	NM	--	89	--	--	--	--	--
	ug/L	12/15/1999	--	--	5	NM	5	NM	5	6	--	5	--	--	--
	ug/L	6/6/2000	--	--	5	NM	5	NM	5	--	--	5	--	--	--
	ug/L	12/27/2000	--	--	5	NM	5	NM	5	34	--	ND	--	--	--
	ug/L	6/4/2001	--	--	5	NM	ND	NM	ND	28	--	ND	--	--	--
	ug/L	12/3/2001	--	--	5	NM	ND	NM	ND	15	--	ND	--	--	--
	ug/L	6/10/2002	--	--	5	NM	ND	NM	ND	20	--	7	--	--	--
	ug/L	12/16/2002	--	--	5	NM	ND	NM	20	16	--	23	--	--	--
	ug/L	6/9/2003	--	--	5	NM	ND	NM	ND	14	--	8	--	--	--
	ug/L	12/8/2003	--	--	5	NM	ND	NM	6	26	--	7	--	--	--
	ug/L	6/29/2004	--	--	5	NM	5	NM	5	12	--	5	--	--	--
	ug/L	12/20/2004	--	--	5	NM	ND	NM	ND	--	ND	6	--	--	--
	ug/L	6/5/2005	--	--	2	NM	ND	NM	ND	--	11	ND	--	--	--
	ug/L	12/5/2005	--	--	2	NM	4	NM	4	--	ND	ND	--	--	--
	ug/L	6/5/2006	--	--	2	NM	3	NM	3	--	7	4	--	--	--
	ug/L	12/5/2006	--	--	2	NM	ND	NM	ND	--	ND	ND	--	--	--
	ug/L	5/30/2007	0.6	10	10	NM	1.1 B	NM	1.7 B	ND	0.6 B	ND	--	ND	--
	ug/L	11/19/2007	0.45	1	10	NM	2.1	NM	1.1	4	7.2	17	--	1.1	--
	ug/L	5/19/2008	0.45	1	10	2.4	1.8	7.3	4.6	1.7	1.3	1.8	--	5.7	NM
	ug/L	11/19/2008	0.48	1	10	1.2 J	1.4 J	3.4 J	1.5 J	1.3 J	1.2 J	2.6 J	--	3.7 J	1.1 J
	ug/L	6/30/2009	0.81	1	10	1.14 J	<0.81	<0.81	<0.81	<0.81	<0.81	<0.81	--	1.33 J	2.36 J

**Notes:**  
ug/L = micrograms per liter  
mg/L = milligrams per liter  
S.U. = Standard Units  
NTU = Nephelometric Turbidity Units  
mV = millivolts  
ND = Not detected at the stated reporting limit  
ORP = Oxidation Reduction Potential  
µS/cm = micro Siemens per centimeter  
-- = no data available  
Blanks = field, trip and method blanks  
NM = not measured/analyzed  
NS = not sampled

Shaded = Concentrations above the NC 2L or Solid Waste Section Groundwater Protection Standards have been shaded  
\* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
\* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
\* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
\* Sample data from 11/07 thru 11/08 collected, compiled and reported by S&ME.  
\* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

Table 5  
 Summary of Historically Detected Constituents in Groundwater  
 City of Durham Closed Municipal Solid Waste Landfill  
 S&ME Project No. 1054-07-469  
 Permit No. 32-01

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	Background Well MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Equipment Blank	Trip Blank
Lead - (NC 2L = 15 ug/L) SWID # = 131	ug/L	9/19/1994	--	--	5	NM	ND	NM	--	199	--	47	--	--	--
	ug/L	12/2/1994	--	--	5	NM	14	NM	--	77	--	10	--	--	--
	ug/L	2/7/1995	--	--	5	NM	7.8	NM	--	63	--	12	--	--	--
	ug/L	3/13/1995	--	--	5	NM	ND	NM	--	35	--	63	--	--	--
	ug/L	11/1/1995	--	--	5	NM	ND	NM	--	60	--	ND	--	--	--
	ug/L	6/10/1996	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	11/12/1996	--	--	5	NM	ND	NM	--	8	--	ND	--	--	--
	ug/L	3/18/1997	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	10/2/1997	--	--	5	NM	ND	NM	--	14	--	7	--	--	--
	ug/L	5/26/1998	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/1/1998	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/7/1999	--	--	5	NM	ND	NM	--	8	--	ND	--	--	--
	ug/L	7/8/1999	--	--	5	NM	--	NM	29	--	--	--	--	--	--
	ug/L	12/15/1999	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	6/6/2000	--	--	5	NM	ND	NM	ND	16	--	ND	--	--	--
	ug/L	12/27/2000	--	--	5	NM	10	NM	ND	82	--	ND	--	--	--
	ug/L	6/4/2001	--	--	5	NM	8	NM	ND	68	--	ND	--	--	--
	ug/L	12/3/2001	--	--	5	NM	ND	NM	ND	23	--	ND	--	--	--
	ug/L	6/10/2002	--	--	5	NM	ND	NM	ND	7	--	ND	--	--	--
	ug/L	12/16/2002	--	--	5	NM	5	NM	8	ND	--	12	--	--	--
	ug/L	6/9/2003	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	12/8/2003	--	--	5	NM	ND	NM	ND	47	--	ND	--	--	--
	ug/L	6/28/2004	--	--	5	NM	ND	NM	28	11	6	ND	--	--	--
	ug/L	12/20/2004	--	--	5	NM	ND	NM	ND	75	ND	ND	--	--	--
	ug/L	6/5/2005	--	--	5	NM	ND	NM	ND	39	7	ND	--	--	--
	ug/L	12/7/2005	--	--	5	NM	ND	NM	ND	13	ND	ND	--	--	--
	ug/L	6/5/2006	--	--	5	NM	ND	NM	ND	38	ND	ND	--	--	--
	ug/L	12/5/2006	--	--	5	NM	ND	NM	ND	12	ND	ND	--	--	--
	ug/L	5/30/2007	2	10	10	NM	ND	NM	ND	ND	ND	ND	--	3.1 J	--
	ug/L	11/19/2007	2.4	5	10	NM	11	NM	3.8	5.1	13	17	--	3.5	--
	ug/L	5/19/2008	2.4	5	5	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	--	<2.4	NM
	ug/L	11/19/2008	0.13	1	10	3.2 J	0.5 J	1.3 J	0.19 J	0.29 J	4.7 J	1.2 J	3.8 J	3.1 J	NM
	ug/L	6/30/2009	<1.6	1	10	<1.6	<1.6	<1.6	3.6 JB	2.1 JB	<1.6	2.3 JB	8.8 JB	<1.6	NM
	Mercury - (NC 2L=1.05 ug/L) SWID # = 132	ug/L	12/1/1998	--	0.2	0.2	NM	ND	NM	--	ND	--	ND	--	--
ug/L		6/7/1999	--	0.2	0.2	NM	ND	NM	--	ND	--	ND	--	--	--
ug/L		7/8/1999	--	0.2	0.2	NM	--	NM	--	ND	--	--	--	--	--
ug/L		12/15/1999	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
ug/L		6/6/2000	--	--	5	NM	ND	NM	ND	16	--	ND	--	--	--
ug/L		12/22/2000	--	--	5	NM	10	NM	ND	82	--	ND	--	--	--
ug/L		6/4/2001	--	--	5	NM	8	NM	ND	68	--	ND	--	--	--
ug/L		12/3/2001	--	--	5	NM	ND	NM	ND	23	--	ND	--	--	--
ug/L		6/10/2002	--	--	5	NM	ND	NM	ND	7	--	ND	--	--	--
ug/L		12/16/2002	--	--	5	NM	5	NM	8	ND	--	12	--	--	--
ug/L		6/9/2003	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
ug/L		12/8/2003	--	--	5	NM	ND	NM	ND	47	--	ND	--	--	--
ug/L		6/28/2004	--	--	5	NM	ND	NM	28	11	6	ND	--	--	--
ug/L		12/20/2004	--	--	5	NM	ND	NM	ND	75	ND	ND	--	--	--
ug/L		6/5/2005	--	--	5	NM	ND	NM	ND	39	7	ND	--	--	--
ug/L		12/7/2005	--	--	5	NM	ND	NM	ND	13	ND	ND	--	--	--
ug/L		6/5/2006	--	--	5	NM	ND	NM	ND	38	ND	ND	--	--	--
ug/L		12/5/2006	--	--	5	NM	ND	NM	ND	12	ND	ND	--	--	--
ug/L		5/30/2007	0.11	0.2	0.2	NM	ND	NM	ND	ND	ND	ND	--	ND	--
ug/L		11/19/2007	0.044	0.2	0.2	NM	<0.044	NM	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044
ug/L		5/19/2008	0.044	0.2	0.2	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	NM
ug/L		11/19/2008	0.044	0.2	0.2	<0.044	<0.044	<0.044	0.11 J	<0.044	<0.044	<0.044	<0.044	<0.044	NM
ug/L		6/30/2009	0.044	0.2	0.2	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM

**Notes:**  
 ug/L = micrograms per liter  
 mg/L = milligrams per liter  
 S.U. = Standard Units  
 NTU = Nephelometric Turbidity Units  
 mV = millivolts  
 ND = Not detected at the stated reporting limit  
 ORP = Oxidation Reduction Potential  
 µS/cm = micro Siemens per centimeter  
 -- = no data available  
 Blanks = field, trip and method blanks  
 NM = not measured/analyzed  
 NS = not sampled

Shaded = Concentrations above the NC 2L or Solid Waste Section Groundwater Protection Standards have been shaded  
 \* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
 \* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
 \* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
 \* Sample data from 11/07 thru 11/08 collected, compiled and reported by S&ME.  
 \* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

**Table 5**  
**Summary of Historically Detected Constituents in Groundwater**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**  
**Permit No. 32-01**

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	Background Well MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Equipment Blank	Trip Blank
Nickel - (NC 2L = 100 ug/L) SWID # = 152	ug/L	9/19/1994	--	--	10	NM	15	NM	--	468	--	77	--	--	--
	ug/L	12/2/1994	--	--	10	NM	ND	NM	--	96	--	14	--	--	--
	ug/L	2/7/1995	--	--	10	NM	ND	NM	--	64	--	ND	--	--	--
	ug/L	3/13/1995	--	--	10	NM	ND	NM	--	61	--	11	--	--	--
	ug/L	11/1/1995	--	--	10	NM	ND	NM	--	68	--	ND	--	--	--
	ug/L	6/10/1996	--	--	10	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	11/12/1996	--	--	10	NM	ND	NM	--	12	--	ND	--	--	--
	ug/L	3/18/1997	--	--	10	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	10/2/1997	--	--	10	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	5/26/1998	--	--	10	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/1/1998	--	--	10	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/7/1999	--	--	10	NM	ND	NM	--	16	--	ND	--	--	--
	ug/L	7/8/1999	--	--	10	NM	--	NM	37	--	--	--	--	--	--
	ug/L	12/15/1999	--	--	10	NM	10	NM	ND	--	ND	--	ND	--	--
	ug/L	6/6/2000	--	--	10	NM	ND	NM	ND	--	13	--	ND	--	--
	ug/L	12/27/2000	--	--	10	NM	ND	NM	ND	--	132	--	ND	--	--
	ug/L	6/4/2001	--	--	10	NM	ND	NM	11	--	20	--	ND	--	--
	ug/L	12/3/2001	--	--	10	NM	ND	NM	19	--	19	--	ND	--	--
	ug/L	6/10/2002	--	--	10	NM	ND	NM	ND	--	ND	--	ND	--	--
	ug/L	12/16/2002	--	--	10	NM	ND	NM	ND	--	ND	--	14	--	--
	ug/L	6/9/2003	--	--	10	NM	ND	NM	ND	--	ND	--	11	--	--
	ug/L	12/8/2003	--	--	10	NM	ND	NM	ND	--	29	--	ND	--	--
	ug/L	6/29/2004	--	--	10	NM	12	NM	ND	10	14	10	ND	--	--
	ug/L	12/20/2004	--	--	10	NM	ND	NM	ND	46	10	ND	ND	--	--
	ug/L	6/5/2005	--	--	10	NM	ND	NM	ND	13	11	ND	11	--	--
	ug/L	12/5/2005	--	--	10	NM	10	NM	ND	15	ND	ND	ND	--	--
	ug/L	6/5/2006	--	--	10	NM	ND	NM	ND	33	ND	ND	ND	--	--
	ug/L	12/5/2006	--	--	10	NM	ND	NM	ND	ND	ND	ND	ND	--	--
	ug/L	5/30/2007	2	10	50	NM	ND	NM	2.9 J	4.0 J	ND	ND	2.9 J	--	ND
	ug/L	11/19/2007	9.8	20	50	NM	9.9	NM	<-9.8	11	19	37	<-9.8	--	<-9.8
	ug/L	5/19/2008	9.8	20	50	<-9.8	<-9.8	<-9.8	<-9.8	<-9.8	<-9.8	<-9.8	<-9.8	--	<-9.8
	ug/L	11/19/2008	9.8	20	50	<-9.8	<-9.8	11.0 J	<-9.8	<-9.8	<-9.8	<-9.8	<-9.8	10.0 J	<-9.8
	ug/L	6/30/2009	0.6	20	50	3.6 JB	3.4 JB	8.7 JB	5.0 JB	5.7 JB	2.1 JB	7.6 JB	13.1 JB	13.1 JB	0.6 JB
Selenium - (NC 2L = 50 ug/L) SWID # = 183	ug/L	9/19/1994	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/2/1994	--	--	5	NM	7.6	NM	--	ND	--	ND	--	--	--
	ug/L	2/7/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	3/13/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	11/1/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/10/1996	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	11/12/1996	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	3/18/1997	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	10/2/1997	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	5/26/1998	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/1/1998	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/7/1999	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	7/8/1999	--	--	5	NM	--	NM	ND	--	--	--	--	--	--
	ug/L	12/15/1999	--	--	5	NM	ND	NM	ND	--	ND	--	ND	--	--
	ug/L	6/6/2000	--	--	5	NM	ND	NM	ND	--	ND	--	ND	--	--
	ug/L	12/27/2000	--	--	5	NM	ND	NM	ND	--	ND	--	ND	--	--
	ug/L	6/4/2001	--	--	5	NM	ND	NM	ND	--	ND	--	ND	--	--
	ug/L	12/3/2001	--	--	5	NM	ND	NM	ND	--	ND	--	ND	--	--
	ug/L	6/10/2002	--	--	5	NM	ND	NM	ND	--	ND	--	ND	--	--
	ug/L	12/16/2002	--	--	5	NM	ND	NM	ND	--	ND	--	ND	--	--
	ug/L	6/9/2003	--	--	5	NM	ND	NM	ND	--	ND	--	ND	--	--
	ug/L	12/8/2003	--	--	5	NM	ND	NM	ND	--	ND	--	ND	--	--
	ug/L	6/29/2004	--	--	5	NM	ND	NM	ND	--	ND	--	ND	--	--
	ug/L	12/20/2004	--	--	5	NM	ND	NM	ND	--	ND	--	ND	--	--
	ug/L	6/5/2005	--	--	5	NM	ND	NM	ND	--	ND	--	ND	--	--
	ug/L	12/5/2005	--	--	5	NM	ND	NM	ND	--	ND	--	ND	--	--
	ug/L	6/5/2006	--	--	5	NM	ND	NM	ND	--	ND	--	ND	--	--
	ug/L	12/5/2006	--	--	5	NM	ND	NM	ND	--	ND	--	ND	--	--
	ug/L	5/30/2007	2	10	10	NM	ND	NM	ND	ND	ND	3.2 B	3.2 B	--	ND
	ug/L	11/19/2007	0.43	1	10	NM	0.51	NM	1.5	1.5	1	2.5	2.5	--	0.52
	ug/L	5/19/2008	0.43	1	10	<-0.43	<-0.43	0.85	0.47	<-0.43	<-0.43	<-0.43	<-0.43	--	<-0.43
	ug/L	11/19/2008	0.32	1	10	0.55 J	<-0.32	1.5 J	0.42 J	0.64 J	0.67 J	0.67 J	1.5 J	1.5 J	0.36 J
	ug/L	6/30/2009	3.4	1	10	3.6 JB	3.4 JB	8.7 JB	5.0 JB	5.7 JB	2.1 JB	7.6 JB	13.1 JB	13.1 JB	0.6 JB

Notes:  
ug/L = micrograms per liter  
mg/L = milligrams per liter  
S.U. = Standard Units  
NTU = Nephelometric Turbidity Units  
mV = millivolts  
ND = Not detected at the stated reporting limit  
ORP = Oxidation Reduction Potential  
µS/cm = micro Siemens per centimeter  
-- = no data available  
Blanks = field, trip and method blanks  
NM = not measured/analyzed  
NS = not sampled

Shaded = Concentrations above the NC 2L or Solid Waste Section Groundwater Protection Standards have been shaded  
\* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
\* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
\* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
\* Sample data from 11/07 thru 11/08 collected, compiled and reported by S&ME.  
\* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

**Table 5**  
**Summary of Historically Detected Constituents in Groundwater**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**  
**Permit No. 32-01**

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	Background Well MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Equipment Blank	Trip Blank	
Silver - (NC 2L = 17.5 ug/L) SWID # = 184	ug/L	9/19/1994	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	12/2/1994	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	2/7/1995	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	3/13/1995	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	11/1/1995	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	6/10/1996	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	11/12/1996	--	--	1	NM	2	NM	--	ND	--	ND	--	--	--	
	ug/L	3/18/1997	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	10/2/1997	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	5/26/1998	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	12/1/1998	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	6/7/1999	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	7/8/1999	--	--	1	NM	ND	NM	ND	ND	--	ND	--	--	--	
	ug/L	12/15/1999	--	--	1	NM	10	NM	ND	ND	--	ND	--	--	--	
	ug/L	6/6/2000	--	--	1	NM	ND	NM	ND	ND	--	ND	--	--	--	
	ug/L	12/27/2000	--	--	1	NM	ND	NM	ND	2	--	ND	--	--	--	
	ug/L	6/4/2001	--	--	1	NM	3	NM	ND	2	--	ND	--	--	--	
	ug/L	12/3/2001	--	--	1	NM	ND	NM	ND	ND	--	ND	--	--	--	
	ug/L	6/10/2002	--	--	1	NM	ND	NM	1	ND	--	ND	--	--	--	
	ug/L	12/16/2002	--	--	1	NM	ND	NM	ND	ND	--	ND	--	--	--	
	ug/L	6/9/2003	--	--	1	NM	ND	NM	ND	ND	--	ND	--	--	--	
	ug/L	12/8/2003	--	--	1	NM	ND	NM	ND	3	--	ND	--	--	--	
	ug/L	6/29/2004	--	--	1	NM	1	NM	ND	ND	ND	ND	--	--	--	
	ug/L	12/20/2004	--	--	1	NM	1	NM	ND	ND	ND	ND	--	--	--	
	ug/L	6/5/2005	--	--	1	NM	ND	NM	ND	ND	2	ND	--	--	--	
	ug/L	12/5/2005	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	--	--	
	ug/L	6/5/2006	--	--	1	NM	ND	NM	ND	1	ND	ND	--	--	--	
	ug/L	12/5/2006	--	--	1	NM	ND	NM	ND	2	ND	ND	--	--	--	
	ug/L	5/30/2007	2	10	10	NM	ND	NM	2.0 J	ND	ND	ND	--	ND	--	
	ug/L	11/19/2007	2.5	10	10	NM	<2.5	NM	<2.5	<2.5	<2.5	<2.5	--	<2.5	--	
	ug/L	5/19/2008	2.5	10	10	<2.5	<2.5	NM	<2.5	<2.5	<2.5	<2.5	--	<2.5	NM	
	ug/L	11/19/2008	3.2	10	10	<3.2	<3.2	NM	<3.2	<3.2	<3.2	<3.2	--	<3.2	NM	
	ug/L	6/30/2009	3.2	10	10	NM	NM	NM	NM	NM	NM	NM	--	NM	NM	
	Thallium - (GPS = 0.28 ug/L) SWID # = 194	ug/L	9/19/1994	--	--	5	NM	ND	NM	--	6 J	--	ND	--	--	--
		ug/L	12/2/1994	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
		ug/L	2/7/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
		ug/L	3/13/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
		ug/L	11/1/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
		ug/L	6/10/1996	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
ug/L		11/12/1996	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--	
ug/L		3/18/1997	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--	
ug/L		10/2/1997	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--	
ug/L		5/26/1998	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--	
ug/L		12/1/1998	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--	
ug/L		6/7/1999	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
ug/L		7/8/1999	--	--	1	NM	--	NM	ND	--	--	--	--	--	--	
ug/L		12/15/1999	--	--	1	NM	ND	NM	ND	ND	--	--	--	--	--	
ug/L		6/6/2000	--	--	1	NM	ND	NM	ND	ND	--	--	--	--	--	
ug/L		12/27/2000	--	--	1	NM	ND	NM	ND	1	--	--	--	--	--	
ug/L		6/4/2001	--	--	1	NM	ND	NM	ND	1	--	--	--	--	--	
ug/L		12/3/2001	--	--	1	NM	ND	NM	ND	ND	--	--	--	--	--	
ug/L		6/10/2002	--	--	1	NM	ND	NM	ND	ND	--	--	--	--	--	
ug/L		12/16/2002	--	--	1	NM	ND	NM	ND	ND	--	--	--	--	--	
ug/L		6/9/2003	--	--	1	NM	ND	NM	ND	ND	--	--	--	--	--	
ug/L		12/8/2003	--	--	1	NM	ND	NM	ND	ND	--	--	--	--	--	
ug/L		6/29/2004	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	--	--	
ug/L		12/20/2004	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	--	--	
ug/L		6/5/2005	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	--	--	
ug/L		12/5/2005	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	--	--	
ug/L		6/5/2006	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	--	--	
ug/L		12/5/2006	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	--	--	
ug/L		5/30/2007	0.44	0.05	5.5	NM	ND	NM	ND	ND	ND	ND	--	ND	--	
ug/L		11/19/2007	0.09	1	5.5	NM	<0.09	NM	<0.09	<0.09	<0.09	<0.09	--	<0.09	--	
ug/L		5/19/2008	0.09	1	5.5	<0.09	<0.09	NM	<0.09	<0.09	<0.09	<0.09	--	<0.09	NM	
ug/L		11/19/2008	0.22	1	5.5	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	NM	
ug/L		6/30/2009	0.036	1	5.5	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	--	<0.036	<0.036	

**Notes:**  
ug/L = micrograms per liter  
mg/L = milligrams per liter  
S.U. = Standard Units  
NTU = Nephelometric Turbidity Units  
mV = millivolts  
ND = Not detected at the stated reporting limit  
ORP = Oxidation Reduction Potential  
µS/cm = micro Siemens per centimeter  
-- = no data available  
Blanks = field, trip and method blanks  
NM = not measured/analyzed  
NS = not sampled

Shaded = Concentrations above the NC 2L or Solid Waste Section Groundwater Protection Standards have been shaded  
\* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
\* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
\* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
\* Sample data from 11/07 thru 11/08 collected, compiled and reported by S&ME.  
\* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

**Table 5**  
**Summary of Historically Detected Constituents in Groundwater**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**  
**Permit No. 32-01**

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	Background Well MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Equipment Blank	Trip Blank
Vanadium - (GPS = 3.5 ug/L) SWID # = 209	ug/L	9/19/1994	--	--	5	NM	23	NM	--	411	--	122	--	--	--
	ug/L	12/2/1994	--	--	5	NM	ND	NM	--	124	--	7.9	--	--	--
	ug/L	2/7/1995	--	--	5	NM	ND	NM	--	99	--	6	--	--	--
	ug/L	3/13/1995	--	--	5	NM	ND	NM	--	85	--	9.4	--	--	--
	ug/L	11/1/1995	--	--	5	NM	ND	NM	--	16	--	7	--	--	--
	ug/L	6/10/1996	--	--	5	NM	ND	NM	--	14	--	ND	--	--	--
	ug/L	11/12/1996	--	--	5	NM	ND	NM	--	25	--	12	--	--	--
	ug/L	3/18/1997	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	10/2/1997	--	--	5	NM	ND	NM	--	ND	--	5.8	--	--	--
	ug/L	5/26/1998	--	--	5	NM	ND	NM	--	ND	--	5	--	--	--
	ug/L	12/1/1998	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/7/1999	--	--	5	NM	ND	NM	--	11	--	ND	--	--	--
	ug/L	7/8/1999	--	--	5	NM	--	NM	--	16	--	--	--	--	--
	ug/L	12/15/1999	--	--	5	NM	ND	NM	ND	6	--	6	--	--	--
	ug/L	6/6/2000	--	--	5	NM	ND	NM	ND	23	--	6	--	--	--
	ug/L	12/27/2000	--	--	5	NM	ND	NM	ND	44	--	ND	--	--	--
	ug/L	6/4/2001	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	12/3/2001	--	--	5	NM	ND	NM	ND	26	--	ND	--	--	--
	ug/L	6/10/2002	--	--	5	NM	ND	NM	ND	8	--	9	--	--	--
	ug/L	12/16/2002	--	--	5	NM	ND	NM	ND	ND	--	17	--	--	--
	ug/L	6/9/2003	--	--	5	NM	ND	NM	ND	ND	--	9	--	--	--
	ug/L	12/8/2003	--	--	5	NM	ND	NM	ND	43	--	5	--	--	--
	ug/L	6/29/2004	--	--	5	NM	ND	NM	ND	17	12	ND	--	--	--
	ug/L	12/20/2004	--	--	5	NM	ND	NM	ND	69	5	5	--	--	--
	ug/L	6/5/2005	--	--	5	NM	ND	NM	ND	17	17	ND	--	--	--
	ug/L	12/5/2005	--	--	5	NM	ND	NM	ND	16	ND	ND	--	--	--
	ug/L	6/5/2006	--	--	5	NM	ND	NM	ND	42	7	ND	--	--	--
	ug/L	12/5/2006	--	--	5	NM	ND	NM	ND	7	ND	ND	--	--	--
	ug/L	5/30/2007	1	10	25	NM	ND	NM	ND	ND	ND	ND	--	--	ND
	ug/L	11/19/2007	2.9	10	25	NM	3.1	NM	ND	3.8	13	17	--	--	ND
	ug/L	5/19/2008	2.9	10	25	4.0	ND	9.0	ND	ND	ND	ND	--	--	ND
	ug/L	11/19/2008	1.9	10	25	<1.9	<1.9	2.3 J	<1.9	<1.9	<1.9	<1.9	<1.9	3.6 J	<1.9
	ug/L	6/30/2009	0.7	10	25	<0.7	<0.7	1.1 J	<0.7	<0.7	<0.7	<0.7	<0.7	6.9 J	<0.7

**Notes:**  
ug/L = micrograms per liter  
mg/L = milligrams per liter  
S.U. = Standard Units  
NTU = Nephelometric Turbidity Units  
mV = millivolts  
ND = Not detected at the stated reporting limit  
ORP = Oxidation Reduction Potential  
µS/cm = micro Siemens per centimeter  
-- = no data available  
Blanks = field, trip and method blanks  
NM = not measured/analyzed  
NS = not sampled

Shaded – Concentrations above the NC 2L or Solid Waste Section Groundwater Protection Standards have been shaded  
\* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
\* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
\* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
\* Sample data from 11/07 thru 11/08 collected, compiled and reported by S&ME.  
\* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

**Table 5**  
**Summary of Historically Detected Constituents in Groundwater**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**  
**Permit No. 32-01**

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	Background Well MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Equipment Blank	Trip Blank
Zinc - (NC 2L = 1050 ug/L) SWID # = 213	ug/L	9/19/1994	--	--	10	NM	34	NM	--	1030	--	207	--	--	--
	ug/L	12/2/1994	--	--	10	NM	ND	NM	--	202	--	ND	--	--	--
	ug/L	2/7/1995	--	--	10	NM	ND	NM	--	183	--	70	--	--	--
	ug/L	3/13/1995	--	--	10	NM	ND	NM	--	185	--	59	--	--	--
	ug/L	11/1/1995	--	--	10	NM	ND	NM	--	225	--	ND	--	--	--
	ug/L	6/10/1996	--	--	10	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	11/12/1996	--	--	10	NM	ND	NM	--	26	--	11	--	--	--
	ug/L	3/18/1997	--	--	10	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	10/2/1997	--	--	10	NM	23	NM	--	ND	--	ND	--	--	--
	ug/L	5/26/1998	--	--	10	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/1/1998	--	--	10	NM	11	NM	--	ND	--	ND	--	--	--
	ug/L	6/7/1999	--	--	10	NM	31	NM	--	31	--	92	--	--	--
	ug/L	7/8/1999	--	--	10	NM	--	NM	64	--	--	--	--	--	--
	ug/L	12/15/1999	--	--	10	NM	38	NM	56	50	--	33	--	--	--
	ug/L	6/6/2000	--	--	10	NM	17	NM	ND	28	--	ND	--	--	--
	ug/L	12/27/2000	--	--	10	NM	28	NM	257	414	--	ND	--	--	--
	ug/L	6/4/2001	--	--	10	NM	24	NM	162	269	--	121	--	--	--
	ug/L	12/3/2001	--	--	10	NM	59	NM	214	55	--	249	--	--	--
	ug/L	6/10/2002	--	--	10	NM	52	NM	141	20	--	168	--	--	--
	ug/L	12/16/2002	--	--	10	NM	12	NM	26	14	--	37	--	--	--
	ug/L	6/9/2003	--	--	10	NM	19	NM	10	ND	--	27	--	--	--
	ug/L	12/8/2003	--	--	10	NM	18	NM	13	216	--	11	--	--	--
	ug/L	6/29/2004	--	--	10	NM	18	NM	ND	35	59	ND	--	--	--
	ug/L	12/20/2004	--	--	10	NM	52	NM	ND	134	15	13	--	--	--
	ug/L	6/5/2005	--	--	10	NM	44	NM	ND	103	55	20	--	--	--
	ug/L	12/5/2005	--	--	10	NM	74	NM	ND	35	ND	ND	--	--	--
	ug/L	6/5/2006	--	--	10	NM	31	NM	ND	98	18	ND	--	--	--
	ug/L	12/5/2006	--	--	10	NM	14	NM	ND	26	ND	ND	--	--	--
	ug/L	5/30/2007	1	10	10	NM	10.4 B	NM	1.1 B	3.3 B	12.3	4.4 B	--	2.4 J	--
	ug/L	11/19/2007	3	10	10	NM	21	NM	58	20	66	66	90	--	--
ug/L	5/19/2008	3	10	10	12	8.7	45	30	54	34	4.6	--	<3.0	NM	
ug/L	11/19/2008	3.3	10	10	7.7	14	23	22	58	26	9.8 J	26	<3.3	NM	
ug/L	6/30/2009	3.4	10	10	5.8 J	7.9 J	3.5 J	<3.4	<3.4	4.7 J	<3.4	22.4	15.2	NM	
Acetone - (NC 2L = 700 ug/L) SWID # = 3	ug/L	9/19/1994	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	ug/L	12/2/1994	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	ug/L	2/7/1995	--	--	--	NM	ND	NM	--	ND	--	49.8	--	--	--
	ug/L	3/13/1995	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	11/1/1995	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/10/1996	--	--	25	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	11/12/1996	--	--	25	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	3/18/1997	--	--	25	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	10/2/1997	--	--	25	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	5/26/1998	--	--	20	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/1/1998	--	--	20	NM	ND	NM	--	ND	--	235	--	ND	--
	ug/L	2/26/1999	--	--	20	NM	--	NM	--	--	--	ND	--	--	--
	ug/L	6/7/1999	--	--	20	NM	ND	NM	--	ND	--	ND	--	ND	--
	ug/L	7/8/1999	--	--	20	NM	--	NM	ND	--	--	--	--	--	--
	ug/L	12/15/1999	--	--	50	NM	ND	NM	ND	ND	--	ND	--	ND	--
	ug/L	6/6/2000	--	--	50	NM	ND	NM	ND	ND	--	ND	--	ND	--
	ug/L	12/27/2000	--	--	20	NM	ND	NM	ND	ND	--	ND	--	ND	--
	ug/L	6/4/2001	--	--	20	NM	ND	NM	ND	ND	--	ND	--	ND	--
	ug/L	12/3/2001	--	--	20	NM	ND	NM	ND	ND	--	ND	--	ND	--
	ug/L	6/10/2002	--	--	20	NM	ND	NM	ND	ND	--	ND	--	ND	--
	ug/L	12/16/2002	--	--	20	NM	ND	NM	ND	ND	--	ND	--	ND	--
	ug/L	6/9/2003	--	--	20	NM	ND	NM	ND	ND	--	ND	--	ND	--
	ug/L	12/8/2003	--	--	20	NM	ND	NM	ND	ND	--	ND	--	ND	--
	ug/L	6/29/2004	--	--	20	NM	ND	NM	ND	ND	--	ND	--	ND	--
	ug/L	12/20/2004	--	--	10	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	6/5/2005	--	--	10	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	12/5/2005	2.5	--	10	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	6/5/2006	--	--	10	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	12/5/2006	--	--	10	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	5/30/2007	0.9	5	100	NM	ND	NM	ND	ND	ND	1.7 B	--	3.8 J	3.2 J
ug/L	11/19/2007	8.9	50	100	NM	<8.9	NM	<8.9	<8.9	<8.9	<8.9	--	<8.9	<8.9	
ug/L	5/19/2008	8.9	50	100	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	--	13	13	
ug/L	11/19/2008	8.9	50	100	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	--	<8.9	<8.9	
ug/L	6/30/2009	1.5	50	100	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	

**Notes:**  
ug/L = micrograms per liter  
mg/L = milligrams per liter  
S.U. = Standard Units  
NTU = Nephelometric Turbidity Units  
mV = millivolts  
ND = Not detected at the stated reporting limit  
ORP = Oxidation Reduction Potential  
µS/cm = micro Siemens per centimeter  
-- = no data available  
Blanks = field, trip and method blanks  
NM = not measured/analyzed  
NS = not sampled

Shaded = Concentrations above the NC 2L or Solid Waste Section Groundwater Protection Standards have been shaded  
\* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
\* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
\* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
\* Sample data from 11/07 thru 11/08 collected, compiled and reported by S&ME.  
\* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

Table 5  
 Summary of Historically Detected Constituents in Groundwater  
 City of Durham Closed Municipal Solid Waste Landfill  
 S&ME Project No. 1054-07-469  
 Permit No. 32-01

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	Background Well MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Equipment Blank	Trip Blank
Benzene - (NC 2L= 1 ug/L) SWID # = 16	ug/L	9/19/1994	--	--	--	NM	--	NM	--	--	--	ND	--	--	--
	ug/L	12/2/1994	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	2/7/1995	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	3/13/1995	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	11/1/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/10/1996	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	9/3/1996	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	ug/L	10/2/1996	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	ug/L	11/2/1996	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	3/18/1997	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	10/2/1997	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	5/26/1998	--	--	1	NM	ND	NM	--	ND	--	ND	--	ND	--
	ug/L	12/1/1998	--	--	1	NM	ND	NM	--	ND	--	ND	--	ND	--
	ug/L	6/7/1999	--	--	5	NM	ND	NM	--	ND	--	ND	--	ND	--
	ug/L	7/8/1999	--	--	5	NM	--	NM	ND	--	--	--	--	ND	--
	ug/L	12/15/1999	--	--	5	NM	ND	NM	ND	ND	ND	--	ND	--	ND
	ug/L	6/6/2000	--	--	5	NM	ND	NM	ND	ND	ND	--	ND	--	ND
	ug/L	12/27/2000	--	--	--	NM	ND	NM	ND	ND	ND	--	ND	--	ND
	ug/L	6/4/2001	--	--	5	NM	ND	NM	ND	ND	ND	--	ND	--	ND
	ug/L	12/3/2001	--	--	5	NM	ND	NM	ND	ND	ND	--	ND	--	ND
	ug/L	6/10/2002	--	--	5	NM	ND	NM	ND	ND	ND	--	ND	--	ND
	ug/L	12/16/2002	--	--	5	NM	ND	NM	ND	ND	ND	--	ND	--	ND
	ug/L	6/9/2003	--	--	5	NM	ND	NM	ND	ND	ND	--	ND	--	ND
	ug/L	12/8/2003	--	--	3	NM	ND	NM	ND	ND	ND	--	ND	--	ND
	ug/L	6/29/2004	--	--	3	NM	ND	NM	ND	ND	ND	--	ND	--	ND
	ug/L	12/20/2004	--	--	0.5	NM	ND	NM	ND	ND	ND	--	ND	--	ND
	ug/L	6/5/2005	--	--	0.5	NM	ND	NM	ND	ND	ND	--	ND	--	ND
	ug/L	12/5/2005	0.14	--	0.5	NM	ND	NM	ND	ND	ND	--	ND	--	ND
	ug/L	6/5/2006	--	--	0.5	NM	ND	NM	ND	ND	ND	--	ND	--	ND
	ug/L	12/5/2006	--	--	0.5	NM	ND	NM	ND	ND	ND	--	ND	--	ND
	ug/L	5/30/2007	0.12	1	1	NM	ND	NM	ND	ND	ND	--	ND	--	ND
	ug/L	11/19/2007	0.29	1	1	NM	<0.29	NM	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29
	ug/L	5/19/2008	0.29	1	1	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29
	ug/L	11/19/2008	0.29	1	1	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29
	ug/L	6/30/2009	<0.20	1	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	4.0	<0.29	<0.29
	ug/L	9/19/1994	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/2/1994	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	2/7/1995	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	3/13/1995	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--
ug/L	11/1/1995	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--	
ug/L	6/10/1996	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--	
ug/L	9/3/1996	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--	
ug/L	10/2/1996	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--	
ug/L	11/2/1996	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--	
ug/L	3/18/1997	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--	
ug/L	10/2/1997	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--	
ug/L	12/1/1998	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--	
ug/L	6/7/1999	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--	
ug/L	7/8/1999	--	--	--	NM	ND	NM	ND	ND	ND	--	ND	--	--	
ug/L	12/15/1999	--	--	--	NM	ND	NM	ND	ND	ND	--	ND	--	--	
ug/L	6/6/2000	--	--	--	NM	ND	NM	ND	ND	ND	--	ND	--	--	
ug/L	12/27/2000	--	--	--	NM	ND	NM	ND	ND	ND	--	ND	--	--	
ug/L	6/4/2001	--	--	--	NM	ND	NM	ND	ND	ND	--	ND	--	--	
ug/L	12/3/2001	--	--	--	NM	ND	NM	ND	ND	ND	--	ND	--	--	
ug/L	6/10/2002	--	--	--	NM	ND	NM	ND	ND	ND	--	ND	--	--	
ug/L	12/16/2002	--	--	--	NM	ND	NM	ND	ND	ND	--	ND	--	--	
ug/L	6/9/2003	--	--	--	NM	ND	NM	ND	ND	ND	--	ND	--	--	
ug/L	12/8/2003	--	--	1	NM	ND	NM	ND	ND	ND	--	ND	--	ND	
ug/L	6/29/2004	--	--	1	NM	ND	NM	ND	ND	ND	--	ND	--	ND	
ug/L	12/20/2004	--	--	1	NM	ND	NM	ND	ND	ND	--	ND	--	ND	
ug/L	6/5/2005	--	--	1	NM	ND	NM	ND	ND	ND	--	ND	--	ND	
ug/L	12/5/2005	0.24	--	1	NM	ND	NM	ND	ND	ND	--	ND	--	ND	
ug/L	6/5/2006	--	--	1	NM	ND	NM	ND	ND	ND	--	ND	--	ND	
ug/L	12/5/2006	--	--	1	NM	ND	NM	ND	ND	ND	--	ND	--	ND	
ug/L	5/30/2007	0.16	3	3	NM	<0.26	NM	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	
ug/L	11/19/2007	0.26	1	3	NM	<0.26	NM	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	
ug/L	5/19/2008	0.26	1	3	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	
ug/L	11/19/2008	0.26	1	3	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	
ug/L	6/30/2009	0.27	1	3	<0.27	<0.27	0.41 J	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	

**Notes:**  
 ug/L = micrograms per liter  
 mg/L = milligrams per liter  
 S.U. = Standard Units  
 NTU = Nephelometric Turbidity Units  
 mV = millivolts  
 ND = Not detected at the stated reporting limit  
 ORP = Oxidation Reduction Potential  
 µS/cm = micro Siemens per centimeter  
 -- = no data available  
 Blanks = field, trip and method blanks  
 NM = not measured/analyzed  
 NS = not sampled

Shaded = Concentrations above the NC 2L or Solid Waste Section Groundwater Protection Standards have been shaded  
 \* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
 \* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
 \* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
 \* Sample data from 11/07 thru 11/08 collected, compiled and reported by S&ME.  
 \* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

Table 5  
 Summary of Historically Detected Constituents in Groundwater  
 City of Durham Closed Municipal Solid Waste Landfill  
 S&ME Project No. 1054-07-469  
 Permit No. 32-01

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	Background Well MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Equipment Blank	Trip Blank	
1,4-Dichlorobenzene - (NC 2L= 1.4 ug/L) SWID # = 71	ug/l	12/8/2003	--	--	1	NM	ND	NM	ND	ND	--	ND	--	ND	--	
	ug/l	6/28/2004	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--	
	ug/l	12/20/2004	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--	
	ug/l	6/5/2005	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--	
	ug/l	12/5/2005	0.32	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--	
	ug/l	6/5/2006	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--	
	ug/l	12/5/2006	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--	
	ug/l	5/30/2007	0.15	1	1	NM	ND	NM	ND	ND	ND	ND	--	ND	ND	
	ug/L	11/19/2007	0.3	1	1	NM	<3.0	NM	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
	ug/L	5/19/2008	0.3	1	1	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
	ug/L	11/19/2008	0.3	1	1	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
	ug/L	6/30/2009	0.38	1	1	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	1.3	<0.38	<0.38
	1,1-Dichloroethane - (NC 2L= 70 ug/L) SWID # = 75	ug/L	12/8/2003	--	--	5	NM	ND	NM	ND	ND	--	ND	--	ND	--
ug/L		6/28/2004	--	--	5	NM	ND	NM	ND	ND	ND	ND	--	ND	--	
ug/L		12/20/2004	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--	
ug/L		6/5/2005	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--	
ug/L		12/5/2005	0.38	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--	
ug/L		6/5/2006	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--	
ug/L		12/5/2006	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--	
ug/L		5/30/2007	0.09	1	5	NM	ND	NM	ND	ND	ND	ND	--	ND	ND	
ug/L		11/19/2007	0.31	1	5	NM	<0.31	NM	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
ug/L		5/19/2008	0.31	1	5	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
ug/L		11/19/2008	0.31	1	5	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	9.8	<0.31	<0.31
ug/L		6/30/2009	0.24	1	5	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	7.8 D	<0.24	<0.24
cis-1,2-Dichloroethene - (NC 2L= 70 ug/L) SWID # = 78		ug/L	9/22/1994	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	ug/L	12/2/1994	--	--	--	NM	--	NM	--	--	--	--	--	--	--	
	ug/L	2/7/1995	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	3/13/1995	--	--	--	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	11/1/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	6/7/1996	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	9/3/1996	--	--	--	NM	--	NM	--	--	--	--	--	--	--	
	ug/L	11/13/1996	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	3/18/1997	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	10/2/1997	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	12/1/1998	--	--	2	NM	ND	NM	--	ND	--	ND	--	ND	--	
	ug/L	6/7/1999	--	--	5	NM	ND	NM	--	ND	--	ND	--	ND	--	
	ug/L	7/8/1999	--	--	5	NM	--	NM	--	--	--	--	--	--	--	
	ug/L	12/15/1999	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	ND	
	ug/L	6/6/2000	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	ND	
	ug/L	12/13/2000	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	ND	
	ug/L	6/4/2001	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	ND	
	ug/L	12/3/2001	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	ND	
	ug/L	6/10/2002	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	ND	
	ug/L	12/16/2002	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	ND	
	ug/L	6/9/2003	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	ND	
	ug/L	12/8/2003	--	--	5	NM	ND	NM	ND	ND	--	ND	--	--	ND	
	ug/L	6/28/2004	--	--	5	NM	ND	NM	ND	ND	ND	ND	ND	--	ND	
	ug/L	12/20/2004	--	--	1	NM	ND	NM	ND	ND	ND	ND	ND	--	ND	
	ug/L	6/5/2005	--	--	1	NM	ND	NM	ND	ND	ND	ND	ND	--	ND	
	ug/L	12/5/2005	0.47	--	1	NM	1.1	NM	ND	ND	ND	ND	ND	--	ND	
	ug/L	6/5/2006	--	--	1	NM	ND	NM	ND	ND	ND	ND	ND	--	ND	
	ug/L	12/5/2006	--	--	1	NM	ND	NM	ND	ND	ND	ND	ND	--	ND	
	ug/L	5/30/2007	0.14	1	5	NM	ND	NM	ND	ND	ND	ND	ND	--	ND	
	ug/L	11/19/2007	0.38	1	5	NM	0.62	NM	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
	ug/L	5/19/2008	0.38	1	5	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
	ug/L	11/19/2008	0.38	1	5	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38
	ug/L	6/30/2009	0.36	1	5	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	370	<0.36	<0.36

Notes:  
 ug/L = micrograms per liter  
 mg/L = milligrams per liter  
 S.U. = Standard Units  
 NTU = Nephelometric Turbidity Units  
 mV = millivolts  
 ND = Not detected at the stated reporting limit  
 ORP = Oxidation Reduction Potential  
 µS/cm = micro Siemens per centimeter  
 -- = no data available  
 Blanks = field, trip and method blanks  
 NM = not measured/analyzed  
 NS = not sampled

Shaded = Concentrations above the NC 2L or Solid Waste Section Groundwater Protection Standards have been shaded  
 \* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
 \* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
 \* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
 \* Sample data from 11/07 thru 11/08 collected, compiled and reported by S&ME.  
 \* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

Table 5  
 Summary of Historically Detected Constituents in Groundwater  
 City of Durham Closed Municipal Solid Waste Landfill  
 S&ME Project No. 1054-07-469  
 Permit No. 32-01

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	Background Well MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Equipment Blank	Trip Blank
trans-1,2-Dichloroethene - (NC 2L= 100 ug/L) SWID # = 79	ug/L	12/8/2003	--	--	5	NM	ND	NM	ND	ND	--	ND	--	ND	--
	ug/L	6/28/2004	--	--	5	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	12/20/2004	--	--	2	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	6/5/2005	--	--	2	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	12/5/2005	0.56	--	2	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	6/5/2006	--	--	2	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	12/5/2006	--	--	2	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	5/30/2007	0.1	1	5	NM	ND	NM	ND	ND	ND	ND	--	ND	ND
	ug/L	11/19/2007	0.3	1	5	NM	<0.3	NM	<0.3	<0.3	<0.3	<0.3	--	<0.3	<0.3
	ug/L	5/19/2008	0.3	1	5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	--	<0.3	<0.3
	ug/L	11/19/2008	0.3	1	5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	12.0	<0.3	<0.3
	ug/L	6/30/2009	0.34	1	5	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	9.7 D	<0.34	<0.34
	1,2-Dichloropropane - (NC 2L= 0.51 ug/L) SWID # = 82	ug/L	12/8/2003	--	--	5	NM	ND	NM	ND	ND	--	ND	--	ND
ug/L		6/28/2004	--	--	5	NM	ND	NM	ND	ND	ND	ND	--	ND	--
ug/L		12/20/2004	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--
ug/L		6/5/2005	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--
ug/L		12/5/2005	0.26	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--
ug/L		6/5/2006	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--
ug/L		12/5/2006	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--
ug/L		5/30/2007	0.18	1	1	NM	ND	NM	ND	ND	ND	ND	--	ND	ND
ug/L		11/19/2007	0.52	1	1	NM	<0.52	NM	<0.52	<0.52	<0.52	<0.52	--	<0.52	<0.52
ug/L		5/19/2008	0.52	1	1	<0.52	<0.52	<0.52	<0.52	<0.52	<0.52	<0.52	--	<0.52	<0.52
ug/L		11/19/2008	0.52	1	1	<0.52	<0.52	<0.52	<0.52	<0.52	<0.52	<0.52	11.0	<0.52	<0.52
ug/L		6/30/2009	0.2	1	5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	9.4 D	<0.20	<0.20
Ethylbenzene - (NC 2L = 550 ug/L) SWID # = 110		ug/L	5/30/2007	--	1	1	NM	ND	NM	ND	ND	ND	ND	--	ND
	ug/L	11/19/2007	0.22	1	1	NM	0.6	NM	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22
	ug/L	5/19/2008	0.22	1	1	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	--	<0.22	<0.22
	ug/L	11/19/2008	0.22	1	1	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
	ug/L	6/30/2009	0.20	1	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methylene Chloride - (NC 2L= 4.6 ug/L) SWID # = 140	ug/L	9/22/1994	--	--	1	NM	--	NM	--	--	--	ND	--	--	--
	ug/L	12/2/1994	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	2/7/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	3/13/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	11/1/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	6/7/1996	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	11/13/1996	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	3/18/1997	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	10/2/1997	--	--	5	NM	ND	NM	--	22	--	ND	--	--	--
	ug/L	5/26/1998	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--
	ug/L	12/1/1998	--	--	5	NM	ND	NM	--	ND	--	ND	--	ND	--
	ug/L	6/7/1999	--	--	5	NM	ND	NM	--	ND	--	ND	--	ND	--
	ug/L	7/8/1999	--	--	5	NM	--	NM	--	ND	--	ND	--	--	--
	ug/L	12/15/1999	--	--	5	NM	ND	NM	--	ND	--	ND	--	ND	--
	ug/L	6/6/2000	--	--	5	NM	ND	NM	--	ND	--	ND	--	ND	--
	ug/L	12/22/2000	--	--	5	NM	ND	NM	--	ND	--	ND	--	ND	--
	ug/L	6/4/2001	--	--	5	NM	ND	NM	--	ND	--	ND	--	ND	--
	ug/L	12/3/2001	--	--	5	NM	92	NM	ND	68	--	66	--	ND	--
	ug/L	6/10/2002	--	--	5	NM	ND	NM	ND	ND	--	ND	--	ND	--
	ug/L	12/16/2002	--	--	5	NM	ND	NM	ND	ND	--	ND	--	ND	--
	ug/L	6/9/2003	--	--	5	NM	ND	NM	ND	ND	--	ND	--	ND	--
	ug/L	12/8/2003	--	--	5	NM	ND	NM	ND	ND	--	ND	--	ND	--
	ug/L	6/28/2004	--	--	5	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	12/20/2004	--	--	2	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	6/5/2005	--	--	2	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	12/5/2005	0.61	--	2	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	6/5/2006	--	--	2	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	12/5/2006	--	--	2	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	5/30/2007	0.088	1	1	NM	ND	NM	ND	ND	ND	ND	--	ND	ND
	ug/L	11/19/2007	0.3	5	1	NM	0.47	NM	<0.30	<0.30	<0.30	<0.30	--	0.038	0.49
	ug/L	5/19/2008	0.3	5	1	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	--	<0.30	<0.30
	ug/L	11/19/2008	0.3	5	1	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
	ug/L	6/30/2009	0.53	5	1	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53
Tetrachloroethene - (NC 2L= 0.7 ug/L) SWID # = 192	ug/L	6/5/2005	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	12/5/2005	0.49	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	6/5/2006	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	12/5/2006	--	--	1	NM	ND	NM	ND	ND	ND	ND	--	ND	--
	ug/L	5/30/2007	0.25	1	1	NM	ND	NM	ND	ND	ND	ND	--	ND	ND
	ug/L	11/19/2007	0.29	1	1	NM	<0.29	NM	<0.29	<0.29	<0.29	<0.29	--	<0.29	<0.29
	ug/L	5/19/2008	0.29	1	1	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	--	<0.29	<0.29
	ug/L	11/19/2008	0.29	1	1	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	1.8	<0.29	<0.29
	ug/L	6/30/2009	0.36	1	1	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	2.6 JD	<0.36	<0.36

**Notes:**  
 ug/L = micrograms per liter  
 mg/L = milligrams per liter  
 S.U. = Standard Units  
 NTU = Nephelometric Turbidity Units  
 mV = millivolts  
 ND = Not detected at the stated reporting limit  
 ORP = Oxidation Reduction Potential  
 µS/cm = micro Siemens per centimeter  
 -- = no data available  
 Blanks = field, trip and method blanks  
 NM = not measured/analyzed  
 NS = not sampled

Shaded = Concentrations above the NC 2L or Solid Waste Section Groundwater Protection Standards have been shaded  
 \* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
 \* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
 \* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
 \* Sample data from 11/07 thru 11/08 collected, compiled and reported by S&ME.  
 \* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

Table 5  
 Summary of Historically Detected Constituents in Groundwater  
 City of Durham Closed Municipal Solid Waste Landfill  
 S&ME Project No. 1054-07-469  
 Permit No. 32-01

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	Background Well MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Equipment Blank	Trip Blank	
Toluene - (NC 2L= 1000 ug/L) SWID # = 196	ug/L	9/19/1994	--	--	--	NM	--	NM	--	--	--	ND	--	--	--	
	ug/L	12/2/1994	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	2/7/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	3/13/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	11/1/1995	--	--	5	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	6/10/1996	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	11/12/1996	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	3/18/1997	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	10/2/1997	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	5/26/1998	--	--	1	NM	ND	NM	--	ND	--	ND	--	--	--	
	ug/L	12/1/1998	--	--	1	NM	ND	NM	--	ND	--	ND	--	ND	--	
	ug/L	6/7/1999	--	--	5	NM	ND	NM	--	ND	--	ND	--	ND	--	
	ug/L	7/8/1999	--	--	5	NM	--	NM	ND	--	--	--	--	--	--	
	ug/L	12/15/1999	--	--	5	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	6/6/2000	--	--	5	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	12/22/2000	--	--	5	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	6/4/2001	--	--	5	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	12/3/2001	--	--	5	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	6/10/2002	--	--	5	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	12/16/2002	--	--	5	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	6/9/2003	--	--	5	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	12/8/2003	--	--	5	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	6/29/2004	--	--	5	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	12/20/2004	--	--	1	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	6/5/2005	--	--	1	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	ND
ug/L	12/5/2005	0.39	--	1	NM	ND	NM	ND	ND							
ug/L	6/5/2006	--	--	1	NM	ND	NM	ND	ND							
ug/L	12/5/2006	--	--	1	NM	ND	NM	ND	ND							
ug/L	5/30/2007	0.15	1	1	NM	ND	NM	ND	ND	ND	ND	ND	ND	0.33 J	ND	
ug/L	11/19/2007	0.27	1	1	NM	0.37	NM	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	
ug/L	5/19/2008	0.27	1	1	NM	<0.27	<0.27	<0.27	<0.27	0.45	<0.27	<0.27	<0.27	0.66	<0.27	
ug/L	11/19/2008	0.27	1	1	NM	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	0.44 J	
ug/L	6/30/2009	0.27	1	1	NM	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	
Trichloroethene - (NC 2L= 2.8 ug/L) SWID # = 201	ug/L	12/8/2003	--	--	5	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	
	ug/L	6/28/2004	--	--	5	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	
	ug/L	12/20/2004	--	--	2	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	
	ug/L	6/5/2005	--	--	2	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	
	ug/L	12/5/2005	0.52	--	2	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	
	ug/L	6/5/2006	--	--	2	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	
	ug/L	12/5/2006	--	--	2	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	
	ug/L	5/30/2007	0.23	1	1	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	
	ug/L	11/19/2007	0.37	1	1	NM	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	
	ug/L	5/19/2008	0.37	1	1	NM	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	
	ug/L	11/19/2008	0.37	1	1	NM	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	
	ug/L	6/30/2009	0.36	1	1	NM	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	
	ug/L	12/8/2003	--	--	10	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	6/28/2004	--	--	10	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	ND
	ug/L	12/20/2004	--	--	2	NM	ND	NM	ND	ND	ND	ND	ND	ND	ND	ND
ug/L	6/5/2005	--	--	2	NM	ND	NM	ND	ND							
ug/L	12/5/2005	0.6	--	2	NM	ND	NM	ND	ND							
ug/L	6/5/2006	--	--	2	NM	ND	NM	ND	ND							
ug/L	12/5/2006	--	--	2	NM	ND	NM	ND	ND							
ug/L	5/30/2007	0.15	1	1	NM	ND	NM	ND	ND							
ug/L	11/19/2007	0.27	1	1	NM	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	
ug/L	5/19/2008	0.27	1	1	NM	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	
ug/L	11/19/2008	0.27	1	1	NM	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	
ug/L	6/30/2009	0.3	1	1	NM	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
Bis(2-ethylhexyl)phthalate - (NC 2L= 2.5 ug/L) SWID # = 11	ug/L	5/30/2007	1	10	15	NM	1.2 J	NM	1.2 J	ND	ND	ND	ND	ND	ND	
	ug/L	11/19/2007	1.3	10	15	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
	ug/L	5/19/2008	1.3	10	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	ug/L	11/19/2008	1.3	10	10	<1.3	NM	NM								
	ug/L	6/30/2009	1.3	10	10	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
1,4-Naphthoquinone - (No Est. GW Standards) SWID # = 149	ug/L	5/19/2008	3.5	11	10	<3.5	<3.5	<3.5	<3.5	<3.5	18	<3.5	<3.5	<3.5	NM	
	ug/L	11/19/2008	3.5	11	10	<3.5	<3.5	<3.5	<3.5	<3.5	18	<3.5	<3.5	<3.5	NM	
	ug/L	6/30/2009	3.5	11	10	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
n-Nitrosodi-n-butylamine - (No Est. GW Standards) SWID # = 162	ug/L	5/19/2008	3.5	11	10	<3.5	<3.5	<3.5	<3.5	<3.5	3.8	3.6	--	3.9	<3.5	
	ug/L	11/19/2008	3.5	11	10	<3.5	<3.5	<3.5	<3.5	<3.5	3.8	3.6	<3.5	3.9	<3.5	
	ug/L	11/19/2008	3.5	11	10	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	

**Notes:**  
 ug/L = micrograms per liter  
 mg/L = milligrams per liter  
 S.U. = Standard Units  
 NTU = Nephelometric Turbidity Units  
 mV = millivolts  
 ND = Not detected at the stated reporting limit  
 ORP = Oxidation Reduction Potential  
 µS/cm = micro Siemens per centimeter  
 -- = no data available  
 Blanks = field, trip and method blanks  
 NM = not measured/analyzed  
 NS = not sampled

Shaded – Concentrations above the NC 2L or Solid Waste Section Groundwater Protection Standards have been shaded  
 \* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
 \* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
 \* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
 \* Sample data from 11/07 thru 11/08 collected, compiled and reported by S&ME.  
 \* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

**Table 5**  
**Summary of Historically Detected Constituents in Groundwater**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**  
**Permit No. 32-01**

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	Background Well MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Equipment Blank	Trip Blank
Cyanide - (NC 2L = 70 ug/L) SWID # = 58	ug/L	12/2/1994	--	--	2	NM	--	NM	--	--	--	--	--	--	--
	ug/L	2/7/1995	--	--	2	NM	--	NM	--	--	--	--	--	--	--
	ug/L	3/13/1995	--	--	2	NM	--	NM	--	--	--	--	--	--	--
	ug/L	11/1/1995	--	--	2	NM	--	NM	--	--	--	--	--	--	--
	ug/L	6/10/1996	--	--	2	NM	--	NM	--	--	--	--	--	--	--
	ug/L	11/12/1996	--	--	2	NM	--	NM	--	--	--	--	--	--	--
	ug/L	3/18/1997	--	--	2	NM	--	NM	--	--	--	--	--	--	--
	ug/L	10/2/1997	--	--	2	NM	--	NM	--	--	--	--	--	--	--
	ug/L	5/26/1998	--	--	2	NM	--	NM	--	--	--	--	--	--	--
	ug/L	12/1/1998	--	--	2	NM	--	NM	--	--	--	--	--	--	--
	ug/L	6/7/1999	--	--	2	NM	2	NM	--	ND	ND	--	ND	--	--
	ug/L	7/8/1999	--	--	2	NM	--	NM	--	ND	ND	--	ND	--	--
	ug/L	12/15/1999	--	--	2	NM	ND	NM	ND	ND	ND	--	ND	--	--
	ug/L	6/6/2000	--	--	2	NM	ND	NM	ND	ND	ND	--	ND	--	--
	ug/L	12/27/2000	--	--	2	NM	ND	NM	ND	ND	ND	--	ND	--	--
	ug/L	6/4/2001	--	--	2	NM	ND	NM	ND	ND	ND	--	ND	--	--
	ug/L	12/3/2001	--	--	2	NM	ND	NM	ND	ND	ND	--	ND	--	--
	ug/L	6/10/2002	--	--	2	NM	ND	NM	ND	ND	ND	--	ND	--	--
	ug/L	12/16/2002	--	--	2	NM	ND	NM	ND	ND	ND	--	ND	--	--
	ug/L	6/9/2003	--	--	2	NM	ND	NM	ND	ND	ND	--	ND	--	--
	ug/L	12/8/2003	--	--	2	NM	ND	NM	ND	ND	ND	--	ND	--	--
	ug/L	6/29/2004	--	--	2	NM	ND	NM	ND	ND	ND	2	ND	--	--
	ug/L	9/19/2004	--	--	2	NM	--	NM	--	--	--	--	--	--	--
	ug/L	12/20/2004	--	--	2	NM	ND	NM	ND	ND	ND	ND	ND	--	--
	ug/L	6/5/2005	--	--	2	NM	ND	NM	ND	ND	ND	2.6	2.6	--	--
	ug/L	12/5/2005	1.6	--	2	NM	4.3	NM	5	5.4	5.8	3.7	3.7	--	--
	ug/L	6/5/2006	--	--	2	NM	1.9 J	NM	1.8 J	2.5	ND	2.2	2.2	--	--
	ug/L	12/5/2006	--	--	2	NM	4.6	NM	5.1	4.9	2.1	5.6	5.6	--	--
	ug/L	5/30/2007	5.8	10	10000	NM	ND	NM	ND	ND	ND	ND	ND	--	ND
	ug/L	11/19/2007	1.2	5	10	NM	NM	NM	NM	NM	NM	NM	NM	--	NM
	ug/L	5/19/2008	1.2	5	10	<1.2	<1.2	2.5	<1.2	1.3	<1.2	<1.2	<1.2	--	<1.2
	ug/L	11/19/2008	1.3	5	10	<1.3	NM	NM	NM	NM	<1.3	NM	<1.3	--	NM
	ug/L	6/30/2009	1.3	5	10	NM	NM	NM	NM	NM	NM	NM	NM	--	NM
Sulfide - (No NC 2L Std.) SWID # = 187	ug/L	12/2/1994	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	ug/L	2/7/1995	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	ug/L	3/13/1995	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	ug/L	11/1/1995	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	ug/L	6/10/1996	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	ug/L	11/12/1996	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	ug/L	3/18/1997	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	ug/L	10/2/1997	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	ug/L	5/26/1998	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	ug/L	12/1/1998	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	ug/L	6/7/1999	--	--	200	NM	ND	NM	--	300	--	200	--	--	--
	ug/L	7/8/1999	--	--	--	NM	--	NM	--	300	--	--	--	--	--
	ug/L	12/15/1999	--	--	--	NM	600	NM	900	400	--	200	--	--	--
	ug/L	6/6/2000	--	--	100	NM	100	NM	600	500	--	100	--	--	--
	ug/L	12/27/2000	--	--	--	NM	300	NM	290	520	--	260	--	--	--
	ug/L	6/4/2001	--	--	--	NM	400	NM	400	200	--	300	--	--	--
	ug/L	12/3/2001	--	--	400	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	6/10/2002	--	--	200	NM	ND	NM	ND	ND	--	ND	--	--	--
	ug/L	12/16/2002	--	--	200	NM	300	NM	ND	ND	--	ND	--	--	--
	ug/L	6/9/2003	--	--	200	NM	ND	NM	ND	ND	--	1600	--	--	--
	ug/L	12/8/2003	--	--	2000	NM	ND	NM	12000	ND	--	ND	--	--	--
	ug/L	6/29/2004	--	--	2000	NM	ND	NM	ND	ND	ND	ND	--	--	--
	ug/L	9/19/2004	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	ug/L	12/20/2004	--	--	2000	NM	ND	NM	ND	ND	ND	ND	ND	--	--
	ug/L	6/5/2005	--	--	2000	NM	ND	NM	12000	ND	14000	15000	15000	--	--
	ug/L	12/5/2005	94	--	2000	NM	ND	NM	ND	ND	ND	ND	ND	--	--
	ug/L	6/5/2006	--	--	2000	NM	ND	NM	ND	11000	ND	ND	ND	--	--
	ug/L	12/5/2006	--	--	--	NM	16000	NM	17000	14000	15000	12000	12000	--	--
	ug/L	5/30/2007	500	1000	1000	NM	ND	NM	ND	ND	ND	ND	ND	--	ND
	ug/L	11/19/2007	16	50	1000	NM	ND	NM	ND	ND	ND	ND	ND	--	NM
	ug/L	5/19/2008	16	50	1000	27	<16.0	36	<16.0	21	22	<16.0	<16.0	--	<16.0
	ug/L	11/19/2008	3.4	50	1000	5.4	NM	NM	NM	NM	NM	<3.4	NM	--	<3.4
	ug/L	6/30/2009	3.4	50	1000	NM	NM	NM	NM	NM	NM	NM	NM	--	NM

**Notes:**  
ug/L = micrograms per liter  
mg/L = milligrams per liter  
S.U. = Standard Units  
NTU = Nephelometric Turbidity Units  
mV = millivolts  
ND = Not detected at the stated reporting limit  
ORP = Oxidation Reduction Potential  
µS/cm = micro Siemens per centimeter  
-- = no data available  
Blanks = field, trip and method blanks  
NM = not measured/analyzed  
NS = not sampled

Shaded = Concentrations above the NC 2L or Solid Waste Section Groundwater Protection Standards have been shaded  
\* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
\* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
\* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
\* Sample data from 11/07 thru 11/08 collected, compiled and reported by S&ME.  
\* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

**Table 5**  
**Summary of Historically Detected Constituents in Groundwater**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**  
**Permit No. 32-01**

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	Background Well MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Equipment Blank	Trip Blank	
Ph (field) SWID # = 320	S.U.	5/26/1998	--	--	--	NM	6	NM	--	7.2	--	7.3	--	--	--	
		12/1/1998	--	--	--	NM	5	NM	--	6.7	--	6.5	--	--	--	
		6/7/1999	--	--	--	--	NM	6.19	NM	--	6.7	--	5.98	--	--	--
		7/8/1999	--	--	--	--	NM	--	NM	7.29	--	--	--	--	--	--
		12/13/1999	--	--	--	--	NM	5.37	NM	6.96	--	6.88	--	5.96	--	--
		6/6/2000	--	--	--	--	NM	5.8	NM	7.31	--	7.15	--	6.38	--	--
		12/11/2000	--	--	--	--	NM	5.82	NM	7.14	--	7.36	--	6.36	--	--
		6/4/2001	--	--	--	--	NM	5.65	NM	7.02	--	7.27	--	6.6	--	--
		12/3/2001	--	--	--	--	NM	5.45	NM	7.04	--	7.18	--	6.4	--	--
		6/10/2002	--	--	--	--	NM	5.81	NM	6.74	--	6.07	--	6.51	--	--
		12/16/2002	--	--	--	--	NM	5.67	NM	7.27	--	7.6	--	6.24	--	--
		6/9/2003	--	--	--	--	NM	5.44	NM	7.08	--	7.23	--	6.46	--	--
		12/9/2003	--	--	--	--	NM	5.9	NM	7.67	--	--	--	7.07	--	--
		6/24/2004	--	--	--	--	NM	5.78	NM	6.96	--	7.3	7.51	6.37	--	--
		12/20/2004	--	--	--	--	NM	7.39	NM	7.52	--	7.68	7.85	7.58	--	--
		6/8/2005	--	--	--	--	NM	5.68	NM	6.94	--	7.23	7.79	6.52	--	--
		12/7/2005	--	--	--	--	NM	5.76	NM	7.13	--	7.16	7.74	6.09	--	--
		6/5/2006	--	--	--	--	NM	5.93	NM	7.01	--	7.19	7.78	6.76	--	--
		12/5/2006	--	--	--	--	NM	5.85	NM	7.06	--	6.95	7.73	6.53	--	--
		5/30/2007	--	--	--	--	NM	6.12	NM	6.67	--	8.57	7.23	5.55	--	--
11/19/2007	--	--	--	--	NM	5.27	NM	7.51	--	6.99	7.3	6.92	--	--		
5/19/2008	--	--	--	--	6.40	5.21	6.27	6.85	--	7.11	7.78	6.14	--	--		
11/19/2008	--	--	--	--	4.82	5.74	6.4	7.05	--	7.18	7.87	6.19	5.87	--		
6/30/2009	--	--	--	--	4.63	5.76	6.13	6.82	--	6.94	7.52	6.06	5.54	--		
Conductivity (field) SWID # = 323	µS/cm	5/26/1998	--	--	--	NM	80	NM	--	383	--	348	--	--	--	
		12/1/1998	--	--	--	NM	59	NM	--	388	--	406	--	--	--	
		6/7/1999	--	--	--	--	NM	95.1	NM	--	467	--	490	--	--	
		7/8/1999	--	--	--	--	NM	--	NM	608	--	--	--	--	--	
		12/13/1999	--	--	--	--	NM	81.4	NM	692	--	487	--	426	--	--
		6/6/2000	--	--	--	--	NM	85.8	NM	726	--	474	--	479	--	--
		12/11/2000	--	--	--	--	NM	103	NM	463	--	445	--	460	--	--
		6/4/2001	--	--	--	--	NM	66.5	NM	539	--	366	--	334	--	--
		12/3/2001	--	--	--	--	NM	107	NM	534	--	437.1	--	422	--	--
		6/10/2002	--	--	--	--	NM	78	NM	625	--	444	--	430	--	--
		12/16/2002	--	--	--	--	NM	84	NM	668	--	529	--	242	--	--
		6/9/2003	--	--	--	--	NM	78	NM	652	--	543	--	386	--	--
		12/8/2003	--	--	--	--	NM	103	NM	645	--	--	--	401	--	--
		6/28/2004	--	--	--	--	NM	92	NM	630	--	471	340	379	--	--
		12/20/2004	--	--	--	--	NM	87	NM	689	--	583	431	440	--	--
		6/8/2005	--	--	--	--	NM	768	NM	575	--	467	349	386	--	--
		12/8/2005	--	--	--	--	NM	171	NM	708	--	623	450	388	--	--
		6/5/2006	--	--	--	--	NM	66	NM	604	--	535	348	237	--	--
		12/5/2006	--	--	--	--	NM	76	NM	731	--	724	437	269	--	--
		5/30/2006	--	--	--	--	NM	67	NM	720	--	748	427	302	--	--
11/19/2007	--	--	--	--	NM	163	NM	587	--	639	431	402	--	--		
5/19/2008	--	--	--	--	50	70	1650	770	--	770	445	146	--	--		
11/19/2008	--	--	--	--	53	104	1584	711	--	846	423	231	654	--		
6/30/2009	--	--	--	--	47	86	1577	652	--	774	381	250	525	--		
Temperature (field) SWID # = 325	°C	5/26/1998	--	--	--	NM	14.6	NM	--	15.3	--	15.2	--	--	--	
		12/1/1998	--	--	--	NM	16	NM	--	16.5	--	16.8	--	--	--	
		6/7/1999	--	--	--	--	NM	15.1	NM	--	15.3	--	16.2	--	--	
		7/8/1999	--	--	--	--	NM	--	NM	17.3	--	--	--	--	--	
		12/13/1999	--	--	--	--	NM	13.7	NM	16.1	--	17.5	--	16.3	--	--
		6/6/2000	--	--	--	--	NM	17.4	NM	16.2	--	15.4	--	16.5	--	--
		12/11/2000	--	--	--	--	NM	14.2	NM	12.6	--	16	--	14.2	--	--
		6/4/2001	--	--	--	--	NM	15.1	NM	13.6	--	14.7	--	15.7	--	--
		12/3/2001	--	--	--	--	NM	14.4	NM	15.8	--	19.4	--	15.7	--	--
		6/10/2002	--	--	--	--	NM	19	NM	15.8	--	15.2	--	16.3	--	--
		12/16/2002	--	--	--	--	NM	12.6	NM	14.1	--	15.9	--	14.1	--	--
		6/9/2003	--	--	--	--	NM	13.6	NM	16.4	--	14.8	--	16.6	--	--
		12/8/2003	--	--	--	--	NM	14.8	NM	14	--	--	--	14.6	--	--
		6/28/2004	--	--	--	--	NM	17	NM	16.3	--	15.3	14.4	16.8	--	--
		12/20/2004	--	--	--	--	NM	12.57	NM	13.48	--	14.59	14.62	13.92	--	--
		6/8/2005	--	--	--	--	NM	16.62	NM	18.58	--	15.6	15.08	15.69	--	--
		12/8/2005	--	--	--	--	NM	14.4	NM	13.36	--	15.05	14.51	14.53	--	--
		6/5/2006	--	--	--	--	NM	15.44	NM	15.18	--	17.5	14.58	15.63	--	--
		12/5/2006	--	--	--	--	NM	14.12	NM	14.91	--	16.21	14.04	14.15	--	--
		5/30/2006	--	--	--	--	NM	16.10	NM	20.39	--	20.52	17.11	19.31	--	--
11/19/2007	--	--	--	--	NM	16.44	NM	16.48	--	18.07	15.13	17.12	--	--		
5/19/2008	--	--	--	--	16.20	14.41	14.2	14.7	--	14.46	14.9	14.7	--	--		
11/19/2008	--	--	--	--	16.00	14.86	15.84	15.45	--	17.22	14.84	16.01	15.99	--		
6/30/2009	--	--	--	--	16.62	17.52	15.43	17.74	--	15.96	15.44	16.38	16.57	--		

**Notes:**  
ug/L = micrograms per liter  
mg/L = milligrams per liter  
S.U. = Standard Units  
NTU = Nephelometric Turbidity Units  
mV = millivolts  
ND = Not detected at the stated reporting limit  
ORP = Oxidation Reduction Potential  
µS/cm = micro Siemens per centimeter  
-- = no data available  
Blanks = field, trip and method blanks  
NM = not measured/analyzed  
NS = not sampled

Shaded = Concentrations above the NC 2L or Solid Waste Section Groundwater Protection Standards have been shaded  
\* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
\* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
\* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
\* Sample data from 11/07 thru 11/08 collected, compiled and reported by S&ME.  
\* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

Table 5  
 Summary of Historically Detected Constituents in Groundwater  
 City of Durham Closed Municipal Solid Waste Landfill  
 S&ME Project No. 1054-07-469  
 Permit No. 32-01

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	Background Well MW-9R	MW-2	MW-3R	MW-4R	MW-5	MW-7R	MW-8	MW-10	Equipment Blank	Trip Blank
Turbidity (field) SWID # = 330	NTU	5/26/1998	--	--	--	NM	66.2	NM	--	118	--	73.9	--	--	--
	NTU	12/1/1998	--	--	--	NM	34	NM	--	201	--	14.7	--	--	--
	NTU	6/7/1999	--	--	--	NM	--	NM	--	125	--	172	--	--	--
	NTU	7/8/1999	--	--	--	NM	--	NM	turbid	--	--	--	--	--	--
	NTU	12/13/1999	--	--	--	NM	52.6	NM	265	107	--	127.1	--	--	--
	NTU	6/6/2000	--	--	--	NM	5.74	NM	48.2	686	--	75	--	--	--
	NTU	12/11/2000	--	--	--	NM	>200	NM	51.3	>200	--	161	--	--	--
	NTU	6/4/2001	--	--	--	NM	23.6	NM	35	>1000	--	130	--	--	--
	NTU	12/3/2001	--	--	--	NM	14	NM	11	>999	--	65	--	--	--
	NTU	6/10/2002	--	--	--	NM	6.61	NM	20	--	--	190	--	--	--
	NTU	12/16/2002	--	--	--	NM	12	NM	245	--	--	1000	--	--	--
	NTU	6/9/2003	--	--	--	NM	128	NM	45	75	--	275	--	--	--
	NTU	12/9/2003	--	--	--	NM	110	NM	15	--	--	280	--	--	--
	NTU	6/4/2004	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	NTU	12/20/2004	--	--	--	NM	48	NM	3.5	372	--	32.9	--	--	--
	NTU	6/8/2005	--	--	--	NM	5	NM	8.9	611	275	9.1	--	--	--
	NTU	12/7/2005	--	--	--	NM	63	NM	1	>1000	11	15	--	--	--
	NTU	6/5/2006	--	--	--	NM	70.4	NM	5.3	>1000	133	100	--	--	--
	NTU	12/5/2006	--	--	--	NM	15.8	NM	2.8	597	45	25	--	--	--
	NTU	5/30/2007	--	--	--	NM	0	NM	0	>1000	--	61.8	--	--	--
NTU	11/19/2007	--	--	--	NM	52	NM	9.3	259	233	121.4	--	--	--	
NTU	5/19/2008	--	--	--	NM	21.5	5.6	60.4	3.1	6.9	8.4	--	--	--	
NTU	11/19/2008	--	--	--	NM	11.3	11.4	56.3	3.9	7.4	14.7	124.2	--	--	
NTU	6/30/2009	--	--	--	NM	7.5	9.2	9.9	0	3	9	98	--	--	
ORP (field) SWID # = 336	mV	5/30/2007	--	--	--	NM	228	NM	95	--	193	156	--	--	--
	mV	11/19/2007	--	--	--	NM	218	NM	--	-82	-103	NM	--	--	--
	mV	5/19/2008	--	--	--	NM	291	40	151	-75.2	-45	49	--	--	--
	mV	11/19/2008	--	--	--	NM	199.3	103.7	-92.4	40.9	-103.7	-69.5	-33.8	-8.8	--
	mV	6/30/2009	--	--	--	NM	246	154	-47.7	30.4	-43	55	137	20.8	--
Dissolved Oxygen (field) SWID # = 356	mg/L	12/1/2001	--	--	--	NM	4.00	NM	3.90	3.50	--	2.25	--	--	--
	mg/L	6/10/2002	--	--	--	NM	9.08	NM	7.00	16.85	--	5.69	--	--	--
	mg/L	12/16/2002	--	--	--	NM	7.92	NM	5.99	10.20	--	3.30	--	--	--
	mg/L	6/9/2003	--	--	--	NM	9.58	NM	4.63	2.65	--	3.69	--	--	--
	mg/L	12/8/2003	--	--	--	NM	5.00	NM	7.90	--	--	4.30	--	--	--
	mg/L	6/24/2004	--	--	--	NM	8.44	NM	5.37	2.96	5.23	6.20	--	--	--
	mg/L	12/20/2004	--	--	--	NM	7.52	NM	3.65	3.61	4.60	4.63	--	--	--
	mg/L	6/8/2005	--	--	--	NM	--	NM	--	--	--	--	--	--	--
	mg/L	6/5/2006	--	--	--	NM	4.48	NM	4.31	3.48	2.19	2.69	--	--	--
	mg/L	12/5/2006	--	--	--	NM	7.19	NM	2.83	20.00	2.40	3.91	--	--	--
	mg/L	5/30/2007	--	--	--	NM	2.60	NM	4.60	--	5.60	2.80	--	--	--
	mg/L	11/19/2007	--	--	--	NM	2.72	NM	1.57	0.24	0.12	1.18	--	--	--
	mg/L	5/19/2008	--	--	--	NM	--	NM	NM	NM	NM	NM	--	--	--
	mg/L	11/19/2008	--	--	--	NM	4.89	9.21	3.84	7.62	0.89	3.48	0.82	3.36	--
	mg/L	6/30/2009	--	--	--	NM	8.5	67.5	2.9	33.6	6.1	24.6	30	3.3	--

Notes:  
 ug/L = micrograms per liter  
 mg/L = milligrams per liter  
 S.U. = Standard Units  
 NTU = Nephelometric Turbidity Units  
 mV = millivolts  
 ND = Not detected at the stated reporting limit  
 ORP = Oxidation Reduction Potential  
 µS/cm = micro Siemens per centimeter  
 -- = no data available  
 Blanks = field, trip and method blanks  
 NM = not measured/analyzed  
 NS = not sampled

Shaded = Concentrations above the NC 2L or Solid Waste Section Groundwater Protection Standards have been shaded  
 \* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
 \* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
 \* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
 \* Sample data from 11/07 thru 11/08 collected, compiled and reported by S&ME.  
 \* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

**Table 6**  
**Summary of Historically Detected Constituents in Surface Water**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**  
**Permit No. 32-01**

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	S-4 (Upstream)	S-1	S-2	S-3
Antimony - (SW Standard 5.6 ug/L) SWID # = 13	ug/L	12/20/2004			5	ND	ND	ND	ND
		6/5/2005			5	ND	ND	5	ND
		12/7/2005			5	ND	ND	ND	ND
		6/5/2006			5	ND	ND	DRY	ND
		12/5/2006			5	ND	ND	ND	ND
		5/30/2007	0.58	2	6	ND	DRY	DRY	ND
		11/30/2007	0.22	1	6	0.94	DRY	DRY	0.97
		5/19/2008	0.22	1	6	0.40	<-0.22	0.24	0.36
		11/19/2008	0.22	1	6	J 0.76	J 0.59	J 0.7	J 0.76
		6/30/2009	0.68	1	6	<-0.68	DRY	DRY	<-0.68
Arsenic - (SW Standard = 10 ug/L) SWID # = 14	ug/L	5/30/2007		10	10	ND	DRY	DRY	ND
		11/30/2007	0.15	1	10	1.5	DRY	DRY	1.7
		5/19/2008	0.15	1	10	<0.15	<0.15	1.2	<0.15
		11/19/2008	0.15	1	10	J 1.2	J 1.4	J 1.2	J 1
		6/30/2009	2.8	1	10	<2.8	DRY	DRY	<2.8
Barium - (SW Standard = 1000 ug/L) SWID # = 15	ug/L	2/7/1995	--	--	--	27	69	82	39
		3/13/1995	--	--	25	51	61	59	ND
		6/10/1996	--	--	25	42	86	75	ND
		11/12/1996	--	--	25	32	37	59	ND
		3/18/1997	--	--	--	44	126	41	27
		10/2/1997	--	--	25	92	162	62	ND
		5/26/1998	--	--	--	35	94	72	106
		12/1/1998	--	--	--	47	DRY	DRY	25
		6/7/1999	--	--	25	ND	DRY	DRY	ND
		12/1/1999	--	--	--	54	174	85	96
		6/6/2000	--	--	--	73	DRY	DRY	DRY
		12/22/2000	--	--	--	66	DRY	DRY	DRY
		6/4/2001	--	--	25	ND	97	80	ND
		12/3/2001	--	--	25	ND	DRY	DRY	ND
		6/10/2002	--	--	25	ND	DRY	DRY	ND
		12/16/2002	--	--	--	76	58	64	29
		6/10/2003	--	--	25	ND	111	93	28
		12/8/2003	--	--	25	14	59	62	ND
		6/29/2004	--	--	25	ND	83	49	ND
		12/20/2004	--	--	25	ND	42	71	ND
		6/5/2005	--	--	25	ND	73	6	28
		12/7/2005	--	--	--	39	59	52	46
		6/5/2006	--	--	25	ND	126	DRY	ND
		12/5/2006	--	--	--	28	106	79	25
		5/30/2007	0.2	10	100	8.1 J	DRY	DRY	7.6 J
		11/30/2007	1	5	100	3.2	DRY	DRY	9.1
		5/19/2008	1	5	100	17	64	66	18
11/19/2008	1	5	100	13 J	96 J	64 J	11 J		
6/30/2009	4.2	5	100	9.78 J	DRY	DRY	8.29 J		
Beryllium - (SW Standard = .0068 ug/L) SWID # = 23	ug/L	11/30/2007	0.24	1	1	0.4	DRY	DRY	0.43
		5/19/2008	0.24	1	1	<0.24	<0.24	0.34	<0.24
		11/19/2008	0.24	1	1	<1.4	<1.4	<1.4	<1.4
		6/30/2009	0.08	1	1	<0.08	DRY	DRY	<0.08
Chromium - (SW Standard = 50 ug/L) SWID # = 51	ug/L	2/7/1995	--	--	5	ND	ND	ND	ND
		3/13/1995	--	--	5	ND	ND	ND	ND
		6/10/1996	--	--	5	ND	ND	ND	ND
		11/12/1996	--	--	5	ND	ND	ND	ND
		3/18/1997	--	--	5	ND	ND	ND	ND
		10/2/1997	--	--	5	ND	5.9	ND	ND
		5/26/1998	--	--	5	ND	5	ND	ND
		12/1/1998	--	--	5	ND	DRY	DRY	ND
		6/7/1999	--	--	5	ND	DRY	DRY	ND
		12/1/1999	--	--	--	7	16	8	8
		6/6/2000	--	--	5	ND	DRY	DRY	DRY
		12/22/2000	--	--	5	ND	DRY	DRY	DRY
		6/4/2001	--	--	5	ND	ND	ND	ND
		12/3/2001	--	--	5	ND	DRY	DRY	ND
		6/10/2002	--	--	5	ND	DRY	DRY	ND
		12/16/2002	--	--	5	ND	ND	ND	ND
		6/10/2003	--	--	5	ND	5	ND	ND
		12/8/2003	--	--	5	ND	5	ND	ND
		6/29/2004	--	--	5	ND	ND	ND	ND
		12/20/2004	--	--	5	5	ND	ND	ND
		6/5/2005	--	--	5	ND	ND	ND	5
		12/7/2005	--	--	5	5	ND	ND	9
		6/5/2006	--	--	5	ND	ND	DRY	ND
		12/5/2006	--	--	5	ND	ND	ND	ND
		5/30/2007	2	10	10	ND	DRY	DRY	ND
		11/30/2007	2.3	10	10	<-2.3	DRY	DRY	ND
		5/19/2008	2.3	10	10	<-2.3	<-2.3	<-2.3	<-2.3
11/19/2008	2.3	10	10	<-2.0	<-2.0	J 3.0	<-2.0		
6/30/2009	0.7	10	10	<-0.7	DRY	DRY	1.1 J		

**Notes:**

ug/L = micrograms per liter  
mg/L = milligrams per liter  
S.U. = Standard Units  
NTU = Nephelometric Turbidity Units  
mV = millivolts  
ND = Not detected at the stated reporting limit  
ORP = Oxidation Reduction Potential  
µS/cm = microsiemens per centimeter  
-- = no data available  
Blanks = field, trip and method blanks  
NM = not measured/analyzed

Surface Water Standards SW Standards are WS Standards (Ellerbee Creek is a WS-IV Classification) or Freshwater Aquatic Life Standards if no WS Standard exists  
Shaded = Concentrations above the applicable Surface Water Standards have been shaded.

\* Standard is an Action Limit  
\* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
\* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
\* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
\* Sample data from 1/07 to present collected, compiled and reported by S&ME.

SWS Reporting Limit = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and Later.  
\* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

**Table 6**  
**Summary of Historically Detected Constituents in Surface Water**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**  
**Permit No. 32-01**

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	S-4 (Upstream)	S-1	S-2	S-3
Copper - (SW Standard = 7 ug/L**) SWID # = 54	ug/L	2/7/1995	--	--	5	ND	ND	ND	ND
		3/13/1995	--	--	5	5.5	6.8	8.6	ND
		6/10/1996	--	--	5	6.3	5.9	5.7	ND
		11/12/1996	--	--	5	ND	ND	ND	ND
		3/18/1997	--	--	5	6	ND	ND	6
		10/2/1997	--	--	5	ND	ND	ND	ND
		5/26/1998	--	--	5	6	8	6	8
		12/1/1998	--	--	5	ND	DRY	DRY	ND
		6/7/1999	--	--	5	ND	DRY	DRY	ND
		12/1/1999	--	--	5	10	14	10	11
		6/6/2000	--	--	5	ND	DRY	DRY	DRY
		12/22/2000	--	--	5	ND	DRY	DRY	DRY
		6/4/2001	--	--	5	13	ND	8	ND
		12/3/2001	--	--	5	ND	DRY	DRY	ND
		6/10/2002	--	--	5	ND	DRY	DRY	ND
		12/16/2002	--	--	5	21	8	10	8
		6/10/2003	--	--	5	ND	8	6	ND
		12/8/2003	--	--	5	ND	5	6	5
		6/29/2004	--	--	5	ND	8	ND	ND
		12/20/2004	--	--	5	ND	ND	ND	ND
		6/5/2005	--	--	--	3	5	5	2
		12/7/2005	--	--	--	9	7	10	11
		6/5/2006	--	--	--	3	9	DRY	3
		12/5/2006	--	--	--	2	3	6	3
		5/30/2007	0.6	10	10	1.3 B	DRY	DRY	0.8 B
		11/30/2007	0.45	1	10	1.3	DRY	DRY	2.1
		5/19/2008	0.45	1	10	4	6	10	3.8
		11/19/2008	0.45	1	10	2.7 J	4.3 J	4.7 J	3.3 J
		6/30/2009	0.81	1	10	<0.81	DRY	DRY	<0.81
		Lead - (SW Standard = 25 ug/L) SWID # = 131	ug/L	2/7/1995	--	--	5	11	ND
3/13/1995	--			--	5	ND	ND	7.5	ND
6/10/1996	--			--	5	ND	ND	ND	ND
11/12/1996	--			--	5	ND	ND	ND	ND
3/18/1997	--			--	5	5	ND	ND	5
10/2/1997	--			--	5	ND	ND	ND	ND
5/26/1998	--			--	5	ND	ND	ND	ND
12/1/1998	--			--	5	5	DRY	DRY	5
6/7/1999	--			--	5	ND	DRY	DRY	7
12/1/1999	--			--	5	17	5	5	7
6/6/2000	--			--	5	ND	DRY	DRY	DRY
12/22/2000	--			--	5	ND	DRY	DRY	DRY
6/4/2001	--			--	5	ND	9	ND	ND
12/3/2001	--			--	5	ND	DRY	DRY	ND
6/10/2002	--			--	5	ND	DRY	DRY	ND
12/16/2002	--			--	5	ND	ND	ND	ND
6/10/2003	--			--	5	9	ND	6	ND
12/8/2003	--			--	5	ND	ND	ND	ND
6/29/2004	--			--	5	ND	ND	ND	ND
12/20/2004	--			--	5	ND	ND	ND	ND
6/5/2005	--			--	5	9	ND	6	ND
12/7/2005	--			--	5	10	ND	ND	10
6/5/2006	--			--	5	ND	ND	DRY	ND
12/5/2006	--			--	5	ND	ND	ND	ND
5/30/2007	2			10	10	ND	DRY	DRY	ND
11/30/2007	2.4			5	5	<2.4	DRY	DRY	<2.4
5/19/2008	2.4			5	5	<2.4	4.1	4.1	<2.4
11/19/2008	2.4			5	5	J 0.5	J 0.79	J 1.7	J 0.45
6/30/2009	1.6			5	5	2.4 JB	DRY	DRY	<1.6
Nickel - (SW Standard = 25 ug/L) SWID # = 152	ug/L			2/7/1995	--	--	10	ND	ND
		3/13/1995	--	--	10	ND	13	16	ND
		6/10/1996	--	--	10	ND	ND	ND	ND
		11/12/1996	--	--	10	ND	ND	ND	ND
		3/18/1997	--	--	10	ND	ND	ND	ND
		10/2/1997	--	--	10	ND	ND	ND	ND
		5/26/1998	--	--	10	ND	ND	ND	ND
		12/1/1998	--	--	10	ND	DRY	DRY	ND
		6/7/1999	--	--	10	ND	DRY	DRY	ND
		12/1/1999	--	--	10	10	12	10	10
		6/6/2000	--	--	10	ND	DRY	DRY	DRY
		12/22/2000	--	--	10	ND	DRY	DRY	DRY
		6/4/2001	--	--	10	ND	ND	ND	ND
		12/3/2001	--	--	10	ND	DRY	DRY	ND
		6/10/2002	--	--	10	ND	DRY	DRY	ND
		12/16/2002	--	--	10	ND	ND	ND	ND
		6/10/2003	--	--	10	ND	ND	ND	ND
		12/8/2003	--	--	10	ND	ND	ND	ND
		6/29/2004	--	--	10	ND	ND	ND	ND
		12/20/2004	--	--	10	ND	ND	ND	ND
		6/5/2005	--	--	10	ND	ND	ND	ND
		12/7/2005	--	--	10	ND	ND	ND	ND
		6/5/2006	--	--	10	ND	ND	ND	ND
		12/5/2006	--	--	10	ND	ND	ND	ND
		5/30/2007	2	10	50	2.7 J	DRY	DRY	2.7 J
		11/30/2007	9.8	20	50	<9.8	DRY	DRY	<9.8
		5/19/2008	9.8	20	50	<9.8	<9.8	<9.8	<9.8
		11/19/2008	9.8	20	50	<9.8	<9.8	<9.8	<9.8
		6/30/2009	0.6	10	50	3.1 JB	DRY	DRY	3.8 JB

**Notes:**

ug/L = micrograms per liter  
mg/L = milligrams per liter  
S.U. = Standard Units  
NTU = Nephelometric Turbidity Units  
mV = millivolts  
ND = Not detected at the stated reporting limit  
ORP= Oxidation Reduction Potential  
µS/cm= microsiemens per centimeter  
-- = no data available  
Blanks = field, trip and method blanks  
NM= not measured/analyzed

Surface Water Standards SW Standards are WS Standards (Ellerbe Creek is a WS-IV Classification) or Freshwater Aquatic Life Standards if no WS Standard exists  
Shaded = Concentrations above the applicable Surface Water Standards have been shaded.

- \* Standard is an Action Limit
- \* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.
- \* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.
- \* Sample data from 5/07 collected, compiled and reported by Golder Associates.
- \* Sample data from 11/07 to present collected, compiled and reported by S&ME.
- 
- SWS Reporting Limit = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and Later.
- \* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

**Table 6**  
**Summary of Historically Detected Constituents in Surface Water**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**  
**Permit No. 32-01**

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	S-4 (Upstream)	S-1	S-2	S-3
Selenium - (SW Standard = 5 ug/L) SWID # = 183	ug/L	5/30/2007	2	10	10	2.9 B	DRY	DRY	2.3 B
		11/30/2007	0.43	1	10	2.6	DRY	DRY	<0.43
		5/19/2008	0.43	1	10	<0.43	<0.43	<0.43	<0.43
		11/19/2008	0.43	1	10	J 1.2	<0.32	J 0.54	J 0.39
		6/30/2009	3.4	1	10	<3.4	DRY	DRY	<3.4
Silver - (SW Standard = 17 ug/L) SWID # = 184	ug/L	2/7/1995	--	--	1	ND	ND	ND	ND
		3/13/1995	--	--	1	ND	ND	ND	ND
		6/10/1996	--	--	1	ND	1.8	3.3	ND
		11/12/1996	--	--	1	ND	ND	ND	ND
		3/18/1997	--	--	1	ND	ND	ND	ND
		10/2/1997	--	--	1	ND	ND	ND	ND
		5/26/1998	--	--	1	ND	ND	ND	ND
		12/1/1998	--	--	1	ND	DRY	DRY	ND
		6/7/1999	--	--	1	ND	DRY	DRY	ND
		12/1/1999	--	--	1	1	1	1	1
		6/6/2000	--	--	1	ND	DRY	DRY	DRY
		12/22/2000	--	--	1	ND	DRY	DRY	DRY
		6/4/2001	--	--	1	ND	ND	ND	ND
		12/3/2001	--	--	1	ND	DRY	DRY	DRY
		6/10/2002	--	--	1	ND	DRY	DRY	DRY
		12/16/2002	--	--	1	ND	ND	ND	ND
		6/10/2003	--	--	1	ND	ND	ND	ND
		12/8/2003	--	--	1	ND	ND	ND	ND
		6/29/2004	--	--	1	ND	ND	ND	ND
		12/20/2004	--	--	1	ND	ND	ND	ND
		6/5/2005	--	--	1	ND	ND	ND	ND
		12/7/2005	--	--	1	ND	ND	ND	ND
		6/5/2006	--	--	1	ND	ND	ND	ND
		12/5/2006	--	--	1	ND	ND	ND	ND
		5/30/2007	2	10	10	ND	DRY	DRY	ND
		11/30/2007	2.5	10	10	2.7	DRY	DRY	2.7
		5/19/2008	2.5	10	10	<2.5	<2.5	<2.5	<2.5
11/19/2008	2.5	10	10	<2.5	<2.5	<2.5	<2.5		
6/30/2009	1	10	10	<1.0	DRY	DRY	<1.0		
Thallium - (SW Standard = 0.35 ug/L) SWID # = 194	ug/L	11/30/2007	0.09	1	5.5	0.61	DRY	DRY	0.62
		5/19/2008	0.09	1	5.5	<0.09	<0.09	<0.09	
		11/19/2008	0.09	1	5.5	<0.09	<0.09	<0.09	
		6/30/2009	0.036	1	5.5	<0.036	DRY	DRY	<0.036
Vanadium - (SW Standard 24 ug/L) SWID # = 209	ug/L	2/7/1995	--	--	5	ND	ND	ND	ND
		3/13/1995	--	--	5	ND	ND	ND	ND
		6/10/1996	--	--	5	ND	ND	7.7	ND
		11/12/1996	--	--	5	ND	8	ND	ND
		3/18/1997	--	--	5	ND	ND	ND	ND
		10/2/1997	--	--	5	ND	8.5	ND	5.7
		5/26/1998	--	--	5	ND	5	5	5
		12/1/1998	--	--	5	ND	DRY	DRY	5
		6/7/1999	--	--	5	ND	DRY	DRY	ND
		12/1/1999	--	--	--	11	22	10	11
		6/6/2000	--	--	--	5	DRY	DRY	DRY
		12/22/2000	--	--	--	5	DRY	DRY	DRY
		6/4/2001	--	--	5	ND	ND	5	ND
		12/3/2001	--	--	--	6	DRY	DRY	6
		6/10/2002	--	--	--	6	DRY	DRY	6
		12/16/2002	--	--	5	7	ND	ND	ND
		6/10/2003	--	--	5	ND	7	5	ND
		12/8/2003	--	--	5	ND	ND	ND	ND
		6/29/2004	--	--	5	ND	ND	ND	ND
		12/20/2004	--	--	5	ND	ND	ND	ND
6/5/2005	--	--	5	5	ND	ND	ND		
12/7/2005	--	--	5	7	ND	ND	6		
6/5/2006	--	--	5	ND	ND	DRY	ND		
12/5/2006	--	--	5	ND	ND	ND	ND		
5/30/2007	1	10	25	ND	DRY	DRY	1.2 J		
11/30/2007	2.9	10	25	<2.9	DRY	DRY	<2.9		
5/19/2008	2.9	10	25	<2.9	<2.9	3.1	<2.9		
11/19/2008	2.9	10	25	<1.9	<1.9	J 2.6	<1.9		
6/30/2009	0.7	10	25	2.4 J	DRY	DRY	2.4 J		

**Notes:**

ug/L = micrograms per liter  
mg/L = milligrams per liter  
S.U. = Standard Units  
NTU = Nephelometric Turbidity Units  
mV = millivolts  
ND = Not detected at the stated reporting limit  
ORP = Oxidation Reduction Potential  
µS/cm = microsiemens per centimeter  
-- = no data available  
Blanks = field, trip and method blanks  
NM = not measured/analyzed

Surface Water Standards SW Standards are WS Standards (Ellerbe Creek is a WS-IV Classification) or Freshwater Aquatic Life Standards if no WS Standard exists  
Shaded = Concentrations above the applicable Surface Water Standards have been shaded.

\* Standard is an Action Limit  
\* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
\* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
\* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
\* Sample data from 11/07 to present collected, compiled and reported by S&ME.

SWS Reporting Limit = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and Later.  
\* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

**Table 6**  
**Summary of Historically Detected Constituents in Surface Water**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**  
**Permit No. 32-01**

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	S-4 (Upstream)	S-1	S-2	S-3
Zinc - (SW Standard = 50 ug/L)** SWID # = 213	ug/L	2/7/1995	--	--	10	33	ND	ND	21
		3/13/1995	--	--	--	34	63	87	67
		6/10/1996	--	--	10	ND	ND	ND	13
		11/12/1996	--	--	10	20	ND	16	22
		3/18/1997	--	--	10	32	ND	ND	32
		10/2/1997	--	--	10	10	14	21	146
		5/26/1998	--	--	--	25	26	19	48
		12/1/1998	--	--	10	ND	DRY	DRY	56
		6/7/1999	--	--	--	76	DRY	DRY	42
		12/1/1999	--	--	--	89	58	45	66
		6/6/2000	--	--	--	10	DRY	DRY	DRY
		12/22/2000	--	--	10	ND	DRY	DRY	DRY
		6/4/2001	--	--	--	39	14	16	28
		12/3/2001	--	--	--	42	DRY	DRY	80
		6/10/2002	--	--	--	25	DRY	DRY	36
		12/16/2002	--	--	--	106	18	16	39
		6/10/2003	--	--	--	18	22	15	19
		12/8/2003	--	--	10	106	11	ND	42
		6/29/2004	--	--	10	21	ND	ND	19
		12/20/2004	--	--	10	31	ND	ND	30
		6/5/2005	--	--	10	33	ND	ND	30
		12/7/2005	--	--	--	38	10	16	33
		6/5/2006	--	--	--	21	17	DRY	17
		12/5/2006	--	--	10	38	ND	11	41
		5/30/2007	1	10	10	51.9	DRY	DRY	52.5
		11/30/2007	3	10	10	73	DRY	DRY	62
		5/19/2008	3	10	10	48	10	38	47
		11/19/2008	3	10	10	29	12	26	26
		6/30/2009	3.4	10	10	24.7	DRY	DRY	28.3
		Acetone - (SW Standard 2000 ug/L) SWID # = 3	ug/L	5/30/2007	0.9	5	100	ND	DRY
11/30/2007	8.9			50	100	<8.9	DRY	DRY	<8.9
5/19/2008	8.9			50	100	<8.9	<8.9	<8.9	<8.9
11/19/2008	8.9			50	100	<8.9	<8.9	<8.9	<8.9
6/30/2009	1.5			5	100	<1.5	DRY	DRY	<1.5
Chloroform - (SW Standard 5.7 ug/L) SWID # = 16	ug/L	9/19/1994	--	--	--	ND	DRY	DRY	ND
		2/7/1995	--	--	5	ND	ND	ND	ND
		3/13/1995	--	--	5	ND	ND	ND	ND
		6/10/1996	--	--	1	ND	ND	ND	ND
		11/12/1996	--	--	1	ND	ND	ND	ND
		3/18/1997	--	--	1	ND	ND	ND	ND
		10/2/1997	--	--	1	ND	ND	ND	ND
		5/26/1998	--	--	1	ND	DRY	DRY	ND
		12/1/1998	--	--	2	ND	ND	ND	ND
		6/7/1999	--	--	5	ND	DRY	DRY	DRY
		12/1/1999	--	--	5	ND	DRY	DRY	DRY
		6/6/2000	--	--	5	ND	ND	ND	ND
		12/22/2000	--	--	5	ND	DRY	DRY	DRY
		6/4/2001	--	--	5	ND	DRY	DRY	ND
		12/3/2001	--	--	5	ND	ND	ND	ND
		6/10/2002	--	--	5	ND	ND	ND	ND
		12/16/2002	--	--	5	ND	ND	ND	ND
		6/10/2003	--	--	5	ND	ND	ND	ND
		12/8/2003	--	--	5	ND	ND	ND	ND
		6/29/2004	--	--	5	ND	ND	ND	ND
12/20/2004	--	--	1	ND	ND	ND	ND		
6/5/2005	--	--	1	ND	ND	ND	ND		
12/7/2005	0.35	--	1	ND	ND	ND	ND		
6/5/2006	--	--	1	0.65 J	ND	ND	0.59 J		
12/5/2006	--	--	1	ND	ND	ND	ND		
5/30/2007	0.16	1	5	0.60 J	DRY	DRY	0.55 J		
11/30/2007	0.33	5	5	0.6	DRY	DRY	0.42		
5/19/2008	0.33	5	5	0.66	<-0.33	<-0.33	0.58		
11/19/2008	0.33	5	5	0.39	<-0.33	<-0.33	0.42		
6/30/2009	0.20	1	5	<-0.20	DRY	DRY	<-0.20		
Methylene Chloride - (SW Standard 27500 ug/L) SWID # = 140	ug/L	9/19/1994	--	--	--	ND	DRY	DRY	9.5
		2/7/1995	--	--	5	ND	ND	ND	ND
		3/13/1995	--	--	5	ND	ND	ND	ND
		6/10/1996	--	--	5	ND	ND	ND	ND
		11/12/1996	--	--	5	ND	ND	ND	ND
		3/18/1997	--	--	5	ND	ND	ND	ND
		10/2/1997	--	--	5	10	ND	ND	ND
		5/26/1998	--	--	5	ND	ND	ND	ND
		12/1/1998	--	--	5	ND	ND	ND	ND
		6/1/1999	--	--	5	ND	DRY	DRY	ND
		12/15/1999	--	--	5	ND	ND	ND	ND
		6/6/2000	--	--	5	ND	DRY	DRY	DRY
		12/22/2000	--	--	5	ND	DRY	DRY	DRY
		6/4/2001	--	--	5	ND	ND	ND	ND
		12/3/2001	--	--	5	ND	DRY	DRY	ND
		6/10/2002	--	--	5	ND	DRY	DRY	ND
		12/16/2002	--	--	5	ND	ND	ND	ND
		6/9/2003	--	--	5	ND	ND	ND	ND
		12/8/2003	--	--	5	ND	ND	ND	ND
		6/28/2004	--	--	5	ND	ND	ND	ND
12/20/2004	--	--	2	ND	ND	ND	ND		
6/5/2005	--	--	2	ND	ND	ND	ND		
12/7/2005	0.61	--	2	ND	ND	ND	ND		
6/5/2006	--	--	2	ND	ND	ND	ND		
12/5/2006	--	--	2	ND	ND	ND	ND		
5/30/2007	0.088	1	1	ND	DRY	DRY	ND		
11/30/2007	0.3	5	1	<-0.30	DRY	DRY	<-0.30		
5/19/2008	0.3	5	1	<-0.30	<-0.30	<-0.30	<-0.30		
11/19/2008	0.3	5	1	<-0.30	<-0.30	<-0.30	<-0.30		
6/30/2009	0.53	1	1	<-0.53	DRY	DRY	<-0.53		

**Notes:**

ug/L = micrograms per liter  
mg/L = milligrams per liter  
S.U. = Standard Units  
NTU = Nephelometric Turbidity Units  
mV = millivolts  
ND = Not detected at the stated reporting limit  
ORP = Oxidation Reduction Potential  
µS/cm = microsiemens per centimeter  
-- = no data available  
Blanks = field, trip and method blanks  
NM = not measured/analyzed

Surface Water Standards SW Standards are WS Standards (Ellerbee Creek is a WS-IV Classification) or Freshwater Aquatic Life Standards if no WS Standard exists

Shaded = Concentrations above the applicable Surface Water Standards have been shaded.

\* Standard is an Action Limit

\*\* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.

\* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.

\* Sample data from 5/07 collected, compiled and reported by Golder Associates.

\* Sample data from 11/07 to present collected, compiled and reported by S&ME.

--

SWS Reporting Limit = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and Later.

\* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

**Table 6**  
**Summary of Historically Detected Constituents in Surface Water**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**  
**Permit No. 32-01**

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	S-4 (Upstream)	S-1	S-2	S-3
Toluene - (SW Standard = 11 ug/L) SWID # = 196	ug/L	9/19/1994	--	--	--	ND	ND	ND	ND
		2/7/1995	--	--	5	ND	ND	ND	ND
		3/13/1995	--	--	5	ND	ND	ND	ND
		6/10/1996	--	--	--	1.1 B	1.1 B	1.4 B	1.1 B
		11/12/1996	--	--	1	ND	1	ND	1.7
		3/18/1997	--	--	1	ND	ND	ND	ND
		10/2/1997	--	--	1	ND	ND	ND	ND
		5/26/1998	--	--	1	ND	ND	ND	ND
		12/1/1998	--	--	1	ND	ND	ND	ND
		6/7/1999	--	--	5	ND	DRY	DRY	ND
		12/15/1999	--	--	5	ND	ND	ND	ND
		6/6/2000	--	--	5	ND	ND	ND	ND
		12/22/2000	--	--	5	ND	DRY	DRY	DRY
		6/4/2001	--	--	5	ND	DRY	DRY	DRY
		12/3/2001	--	--	5	ND	ND	ND	ND
		6/10/2002	--	--	5	ND	DRY	DRY	ND
		12/16/2002	--	--	5	ND	DRY	DRY	ND
		6/9/2003	--	--	5	ND	ND	ND	ND
		12/8/2003	--	--	5	ND	ND	ND	ND
		6/28/2004	--	--	5	ND	ND	ND	ND
		12/20/2004	--	--	1	ND	ND	ND	ND
		6/5/2005	--	--	--	ND	ND	ND	ND
		12/7/2005	0.39	--	1	ND	ND	ND	ND
6/5/2006	--	--	1	ND	ND	ND	ND		
12/5/2006	--	--	1	ND	ND	ND	ND		
5/30/2007	0.15	1	1	ND	DRY	DRY	ND		
11/30/2007	0.27	5	1	<.27	DRY	DRY	<.27		
5/19/2008	0.27	5	1	<.27	<.27	<.27	<.27		
11/19/2008	0.27	5	1	<.27	<.27	<.27	<.27		
6/30/2009	0.27	1	1	<.27	DRY	DRY	<.27		
Cyanide - (SW Standard = 5 ug/L) SWID # = 58	ug/L	12/1/1998	--	--	10	ND	DRY	DRY	ND
		6/7/1999	--	--	2	2	DRY	DRY	ND
		12/1/1999	--	--	--	5	2	2	2
		6/6/2000	--	--	2	ND	DRY	DRY	DRY
		12/22/2000	--	--	2	ND	DRY	DRY	DRY
		6/4/2001	--	--	2	ND	2	ND	ND
		12/3/2001	--	--	2	ND	DRY	DRY	ND
		6/10/2002	--	--	2	3	DRY	DRY	ND
		12/16/2002	--	--	2	2	ND	ND	ND
		6/10/2003	--	--	2	ND	ND	ND	ND
		12/8/2003	--	--	2	ND	ND	ND	ND
		6/29/2004	--	--	2	ND	ND	ND	ND
		12/20/2004	--	--	2	6.1	ND	ND	4.8
		6/5/2005	--	--	2	ND	ND	ND	ND
		12/7/2005	--	--	2	ND	4.9	4.9	5.4
		6/5/2006	--	--	--	3.1	2.2	DRY	3.1
		12/5/2006	--	--	--	4.8	2.9	7.2	6.9
5/30/2007	--	--	--	--	--	--	--		
11/30/2007	--	--	10	--	--	--	--		
5/19/2008	--	--	10	NM	NM	NM	NM		
11/19/2008	--	--	10	NM	NM	NM	NM		
6/30/2009	--	--	10	NM	DRY	DRY	NM		
Fluoride - (SW Standard = 1800 ug/L) SWID # = 312	ug/L	11/30/2007	32	100	2000	NM	DRY	DRY	NM
		5/19/2008	32	100	2000	320	97	110	290
		11/19/2008	32	100	2000	J 450	J 73	J 84	J 460
		6/30/2009	--	--	2000	NM	DRY	DRY	NM
		12/1/1998	--	--	1000	ND	DRY	DRY	ND
Sulfide - (SW Standard 2.0 ug/L) SWID # = 187	ug/L	6/7/1999	--	--	200	600	DRY	DRY	ND
		12/1/1999	--	--	--	--	--	--	--
		6/6/2000	--	--	--	500	DRY	DRY	DRY
		12/22/2000	--	--	--	760	DRY	DRY	DRY
		6/4/2001	--	--	--	800	400	400	800
		12/3/2001	--	--	200	ND	DRY	DRY	300
		6/10/2002	--	--	200	ND	DRY	DRY	ND
		12/16/2002	--	--	200	300	600	ND	400
		6/10/2003	--	--	200	2600	800	ND	ND
		12/8/2003	--	--	2000	ND	ND	ND	3700
		6/29/2004	--	--	2000	ND	ND	ND	ND
		12/20/2004	--	--	2000	ND	ND	ND	ND
		6/5/2005	--	--	--	2500	15000	16000	15000
		12/7/2005	--	--	2000	ND	ND	ND	ND
		6/5/2006	--	--	2000	ND	120 J	DRY	ND
		12/5/2006	--	--	--	16000	16000	16000	15000
		5/30/2007	--	--	--	--	--	--	--
11/30/2007	--	--	1000	NM	NM	NM	NM		
5/19/2008	--	--	1000	NM	NM	NM	NM		
11/19/2008	--	--	1000	NM	NM	NM	NM		
6/30/2009	--	--	1000	NM	DRY	DRY	NM		

Notes:  
ug/L = micrograms per liter  
mg/L = milligrams per liter  
S.U. = Standard Units  
NTU = Nephelometric Turbidity Units  
mV = millivolts  
ND = Not detected at the stated reporting limit  
ORP = Oxidation Reduction Potential  
µS/cm = microsiemens per centimeter  
-- = no data available  
Blanks = field, trip and method blanks  
NM = not measured/analyzed

Surface Water Standards SW Standards are WS Standards (Ellerbe Creek is a WS-IV Classification) or Freshwater Aquatic Life Standards if no WS Standard exists  
Shaded = Concentrations above the applicable Surface Water Standards have been shaded.  
\* Standard is an Action Limit  
\* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
\* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
\* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
\* Sample data from 11/07 to present collected, compiled and reported by S&ME.  
--  
SWS Reporting Limit = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and Later.  
\* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

**Table 6**  
**Summary of Historically Detected Constituents in Surface Water**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**  
**Permit No. 32-01**

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	S-4 (Upstream)	S-1	S-2	S-3
Ph (field) SWID # = 320	S.U.	5/26/1998	--	--	--	--	--	--	--
		12/1/1998	--	--	--	--	--	--	--
		6/7/1999	--	--	--	6	DRY	DRY	5.76
		7/8/1999	--	--	--	--	DRY	DRY	--
		12/13/1999	--	--	--	6.47	6.3	6.44	6.58
		6/6/2000	--	--	--	6.54	DRY	DRY	DRY
		12/11/2000	--	--	--	7.48	DRY	DRY	DRY
		6/4/2001	--	--	--	7.08	6.92	6.94	7.11
		12/3/2001	--	--	--	6.59	DRY	DRY	5.99
		6/10/2002	--	--	--	7.81	DRY	DRY	8.13
		12/16/2002	--	--	--	7.28	7.66	6.81	7.2
		6/9/2003	--	--	--	7.14	7.58	--	7.49
		12/9/2003	--	--	--	8.46	7.82	8.58	8.46
		6/24/2004	--	--	--	7.53	6.91	7.4	7.57
		12/20/2004	--	--	--	7.64	8.00	--	7.66
		6/8/2005	--	--	--	7.5	7.69	7.31	7.59
		12/7/2005	--	--	--	7.2	7.3	7.14	7.47
		6/5/2006	--	--	--	7.58	7.24	DRY	7.49
		12/5/2006	--	--	--	7.39	7.63	8.54	15.2
		5/31/2007	--	--	--	8.55	DRY	DRY	8.64
11/30/2007	--	--	--	NM	DRY	DRY	NM		
5/19/2008	--	--	--	8.26	8.25	8.35	8.3		
11/19/2008	--	--	--	7.51	7.36	7.53	7.18		
6/30/2009	--	--	--	7.21	DRY	DRY	7.36		
Conductivity (field) SWID # = 323	µs/cm	5/26/1998	--	--	--	--	--	--	--
		12/1/1998	--	--	--	--	--	--	--
		6/7/1999	--	--	--	198	DRY	DRY	167
		7/8/1999	--	--	--	--	DRY	DRY	--
		12/13/1999	--	--	--	257.4	272.8	137.8	134.5
		6/6/2000	--	--	--	202.3	DRY	DRY	DRY
		12/11/2000	--	--	--	277.5	DRY	DRY	DRY
		6/4/2001	--	--	--	372.6	184.8	166.9	393.4
		12/3/2001	--	--	--	445	DRY	DRY	433.5
		6/10/2002	--	--	--	451	DRY	DRY	250
		12/16/2002	--	--	--	123	60	110	341
		6/9/2003	--	--	--	186	177	--	316
		12/8/2003	--	--	--	411.1	29.9	24.3	410
		6/28/2004	--	--	--	451	284	277	431
		12/20/2004	--	--	--	434	249	--	424
		6/8/2005	--	--	--	336	197.1	190.5	345.8
		12/8/2005	--	--	--	250	129	140	176
		6/5/2006	--	--	--	391	161	DRY	412
		12/5/2006	--	--	--	392	194	232	391
		5/31/2007	--	--	--	477	DRY	DRY	485
11/30/2007	--	--	--	NM	DRY	DRY	NM		
5/19/2008	--	--	--	120	120	300	320		
11/19/2008	--	--	--	0.37	0.16	0.16	0.38		
6/30/2009	--	--	--	0.33	DRY	DRY	0.031		
Temperature (field) SWID # = 325	°C	5/26/1998	--	--	--	--	--	--	--
		12/1/1998	--	--	--	--	--	--	--
		6/7/1999	--	--	--	17.2	DRY	DRY	18
		7/8/1999	--	--	--	--	DRY	DRY	--
		12/13/1999	--	--	--	18.1	20.1	17.8	19.2
		6/6/2000	--	--	--	17.7	DRY	DRY	DRY
		12/11/2000	--	--	--	8.9	DRY	DRY	DRY
		6/4/2001	--	--	--	22.3	18.7	20.2	22.5
		12/3/2001	--	--	--	19.5	DRY	DRY	16.2
		6/10/2002	--	--	--	23.49	DRY	DRY	23.43
		12/16/2002	--	--	--	11.19	3.52	4.3	10.53
		6/9/2003	--	--	--	23.36	23.23	--	23.08
		12/8/2003	--	--	--	13.3	6.6	7.8	13.2
		6/28/2004	--	--	--	22.92	21.22	23.4	22.84
		12/20/2004	--	--	--	12.07	1.95	--	9.37
		6/8/2005	--	--	--	23.06	20.83	21.45	22.9
		12/8/2005	--	--	--	12.26	9.29	8.98	10.33
		6/5/2006	--	--	--	21.8	20.12	DRY	21.75
		12/5/2006	--	--	--	15.02	8.32	8	15.2
		5/31/2007	--	--	--	24.28	DRY	DRY	23.8
11/30/2007	--	--	--	NM	DRY	DRY	NM		
5/19/2008	--	--	--	19.0	19.0	22.6	21.7		
11/19/2008	--	--	--	14.7	7.5	6.0	14.6		
6/30/2009	--	--	--	20.4	DRY	DRY	20.3		

**Notes:**

µg/L = micrograms per liter  
mg/L = milligrams per liter  
S.U. = Standard Units  
NTU = Nephelometric Turbidity Units  
mV = millivolts  
ND = Not detected at the stated reporting limit  
ORP = Oxidation Reduction Potential  
µS/cm = microsiemens per centimeter  
-- = no data available  
Blanks = field, trip and method blanks  
NM = not measured/analyzed

Surface Water Standards, SW Standards are WS Standards (Ellebee Creek is a WS-IV Classification) or Freshwater Aquatic Life Standards if no WS Standard exists  
Shaded = Concentrations above the applicable Surface Water Standards have been shaded.  
\* = Standard is an Action Limit  
\* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
\* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
\* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
\* Sample data from 11/07 to present collected, compiled and reported by S&ME.  
--  
SWS Reporting Limit = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and Later.  
\* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

**Table 6**  
**Summary of Historically Detected Constituents in Surface Water**  
**City of Durham Closed Municipal Solid Waste Landfill**  
**S&ME Project No. 1054-07-469**  
**Permit No. 32-01**

Detected Monitoring Constituents/Analytes	Units	Sample Date	Detection Limit	Quantitation Limit	Solid Waste Section Limits	S-4 (Upstream)	S-1	S-2	S-3
Turbidity (field) SWID # = 330	NTU	5/26/1998	--	--	--	--	--	--	--
		12/1/1998	--	--	--	--	--	--	--
		6/7/1999	--	--	--	12	DRY	DRY	--
		7/8/1999	--	--	--	--	DRY	DRY	--
		12/13/1999	--	--	--	139.2	229	139.8	146.7
		6/6/2000	--	--	--	42.8	DRY	DRY	DRY
		12/11/2000	--	--	--	27.3	DRY	DRY	DRY
		6/4/2001	--	--	--	17.2	18.2	90	7.6
		12/3/2001	--	--	--	--	DRY	DRY	2.2
		6/10/2002	--	--	--	3.2	DRY	DRY	2.6
		12/16/2002	--	--	--	6.4	9	10	5.8
		6/9/2003	--	--	--	34	65.2	--	18
		12/8/2003	--	--	--	12	25	23	13
		6/28/2004	--	--	--	--	--	--	--
		12/20/2004	--	--	--	--	--	--	--
		6/8/2005	--	--	--	7.55	22.1	53	8.99
		12/8/2005	--	--	--	88	31	66	120
		6/5/2006	--	--	--	15.6	26.4	DRY	17.9
		12/5/2006	--	--	--	4.44	20.6	27.5	8.31
		5/31/2007	--	--	--	0	DRY	DRY	56.9
11/30/2007	--	--	--	NM	DRY	DRY	NM		
5/19/2008	--	--	--	NM	NM	NM	NM		
11/19/2008	--	--	--	NM	NM	NM	NM		
6/30/2009	--	--	--	NM	DRY	DRY	NM		
ORP (field) SWID # = 336	mV	5/31/2007	--	--	--	70	DRY	DRY	45
		11/30/2007	--	--	--	NM	DRY	DRY	NM
		5/19/2008	--	--	--	NM	NM	NM	NM
		11/19/2008	--	--	--	NM	NM	NM	NM
		6/30/2009	--	--	--	NM	DRY	DRY	NM
Dissolved Oxygen (field) SWID # = 356	mg/L	12/1/2001	--	--	--	5.9	DRY	DRY	4.7
		6/10/2002	--	--	--	9.1	DRY	DRY	13.3
		12/16/2002	--	--	--	11.64	10.81	10.51	11.57
		6/9/2003	--	--	--	10.16	7.8	--	10.04
		12/8/2003	--	--	--	10.5	12.6	12.5	10.5
		6/24/2004	--	--	--	8.01	4.53	7.4	7.83
		12/20/2004	--	--	--	9.93	12.2	--	10.01
		6/8/2005	--	--	--	--	--	--	--
		6/5/2006	--	--	--	6.59	5.45	DRY	6.74
		12/5/2006	--	--	--	8.25	4.46	9.89	7.24
		5/31/2007	--	--	--	8.1	DRY	DRY	7.7
		11/30/2007	--	--	--	NM	DRY	DRY	NM
		5/19/2008	--	--	--	NM	NM	NM	NM
		11/19/2008	--	--	--	NM	NM	NM	NM
		6/30/2009	--	--	--	NM	DRY	DRY	NM

Notes:  
ug/L = micrograms per liter  
mg/L = milligrams per liter  
S.U. = Standard Units  
NTU = Nephelometric Turbidity Units  
mV = millivolts  
ND = Not detected at the stated reporting limit  
ORP= Oxidation Reduction Potential  
µS/cm= microsiemens per centimeter  
-- = no data available  
Blanks = field, trip and method blanks  
NM= not measured/analyzed

Surface Water Standards SW Standards are WS Standards (Ellerbe Creek is a WS-IV Classification) or Freshwater Aquatic Life Standards if no WS Standard exists  
Shaded = Concentrations above the applicable Surface Water Standards have been shaded.  
\* = Standard is an Action Limit  
\* Sample data from 9/94 through 12/98 compiled and reported by Malcolm Pirnie, Inc.  
\* Sample data from 6/99 through 12/06 collected, compiled and reported by Weston Solutions, Inc.  
\* Sample data from 5/07 collected, compiled and reported by Golder Associates.  
\* Sample data from 11/07 to present collected, compiled and reported by S&ME.  
--  
SWS Reporting Limit = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and Later.  
\* Laboratory data prior to November 2007 was not validated by S&ME. Solid Waste Section Limits = NCPQL from 9/14/94 through 12/5/06 and NCSWSL for 5/30/07 and later

**APPENDIX I**  
**GROUNDWATER SAMPLING LOGS**

**GROUNDWATER SAMPLE COLLECTION SHEET**

**Project Name:** City of Durham Closed (MSWLF) **Date:** 6/30/09  
**Job Number:** 1054-07-469 **Sampler:** JP/MP/JV

<b>WELL I.D.</b>	<b>MW-9R</b>	<b>MW-2</b>	<b>MW-3R</b>	<b>MW-4R</b>	<b>MW-5</b>
Casing Diameter (in.)	2	2	2	2	2
Total Well depth (ft.)	22.55	19.62	17.65	17.39	21.77
Water Depth	13.76	7.47	5.08	3.52	9.76
<b>PURGE DATA</b>					
Water Column (Total depth – Water depth)	8.79	12.15	12.57	13.87	12.01
Well Volume	1.43	1.98	2.04	2.26	1.95
Volume to Purge (3 to 5 well volumes)	4.3	5.94	6.15	6.8	5.87
Volume Purged (note if well bailed dry)	5.0	6.0	7.0	7.0	6.0
Date Purged	6/30/09	6/30/09	6/30/09	6/30/09	6/30/09
<b>FIELD ANALYSIS DATA</b>					
pH	5.63	6.66	6.07	6.96	7.11
Conductivity (µS/cm)	0.049	0.100	1.580	0.632	0.386
Temperature (C) (1 Volume)	17.53	15.42	15.36	18.46	18.9
Turbidity (NTU)	96	7.1	30	0	0.8
Dissolved Oxygen (mg/L)	28.8	17.4	9.3	48.8	27.4
pH	4.74	5.87	6.12	6.89	6.97
Conductivity (µS/cm)	0.047	0.107	1.573	0.643	0.775
Temperature (C) (2 Volumes)	16.64	16.25	15.58	18.05	16.00
Turbidity (NTU)	34.9	31	24	0	12
Dissolved Oxygen (mg/L)	10.5	30.2	3.0	43.3	3.7
pH	4.63	5.76	6.13	6.82	6.94
Conductivity (µS/cm)	0.047	0.086	1.577	0.652	0.774
Temperature (C) (3 Volumes)	16.62	17.52	15.43	17.74	15.96
Turbidity (NTU)	7.5	9.2	9.9	0	3.0
Dissolved Oxygen (mg/L)	8.5	67.5	2.9	33.6	6.1
<b>GROUNDWATER SAMPLE DATA</b>					
Date Sampled	6/30/09	6/30/09	6/30/09	6/30/09	6/30/09
Time Sampled	0955	1253	1610	1635	1220
Equipment Blank	-	-	-	-	-
Parameters	Appendix I	Appendix I	Appendix I	Appendix I	Appendix I
Note: Volumes Per foot of Water Column For: 2" Well = 0.16 gal./ft. 4" Well = 0.66 gal./ft. 6" Well = 1.50 gal./ft.					
	0.16	0.16	0.16	0.16	0.16
<b>Remarks:</b> All wells sampled with dedicated bladder pumps and YSI Flow Thru Cell.					

**GROUNDWATER SAMPLE COLLECTION SHEET**

**Project Name:** City of Durham Closed (MSWLF) **Date:** 6/30/09  
**Job Number:** 1054-07-469 **Sampler:** JP/MP/JV

<b>WELL I.D.</b>	<b>MW-7R</b>	<b>MW-8</b>	<b>MW-10</b>	<b>PZ-2R*</b>	<b>PZ-3*</b>	<b>PZ-4R*</b>
Casing Diameter (in.)	2	2	2	2	2	2
Total Well depth (ft.)	44.1	16.52	16.50	34.59	42.40	38.38
Water Depth	17.81	9.71	7.14	25.45	32.26	21.34
<b>PURGE DATA</b>						
Water Column (Total depth – Water depth)	26.29	6.81	9.36	-	-	-
Well Volume	4.28	1.11	1.52	-	-	-
Volume to Purge (3 to 5 well volumes)	12.85	3.33	4.56	-	-	-
Volume Purged (note if well bailed dry)	14.0	4.0	5.0	-	-	-
Date Purged	6/30/09	6/30/09	6/30/09	-	-	-
<b>FIELD ANALYSIS DATA</b>						
pH	7.13	5.98	5.69	-	-	-
Conductivity (µS/cm)	0.369	0.35	0.556	-	-	-
Temperature (C) (1 Volume)	16.51	16.7	16.87	-	-	-
Turbidity (NTU)	151	25.4	361	-	-	-
Dissolved Oxygen (mg/L)	27.5	8.1	5.8	-	-	-
pH	7.37	6.14	5.54	-	-	-
Conductivity (µS/cm)	0.383	0.31	0.529	-	-	-
Temperature (C) (2 Volumes)	15.49	15.8	16.58	-	-	-
Turbidity (NTU)	69.1	101	400	-	-	-
Dissolved Oxygen (mg/L)	17.1	7.7	4.0	-	-	-
pH	7.52	6.06	5.54	-	-	-
Conductivity (µS/cm)	0.381	0.25	0.525	-	-	-
Temperature (C) (3 Volumes)	15.44	16.38	16.57	-	-	-
Turbidity (NTU)	22	9.0	98	-	-	-
Dissolved Oxygen (mg/L)	24.6	30.0	3.3	-	-	-
<b>GROUNDWATER SAMPLE DATA</b>						
Date Sampled	6/30/09	6/30/09	6/30/09	-	-	-
Time Sampled	1145	1050	1525	-	-	-
Equipment Blank	-	-	-	-	-	-
Parameters	Appendix I	Appendix I	Appendix I	-	-	-
Note: Volumes Per foot of Water Column For: 2" Well = 0.16 gal./ft. 4" Well = 0.66 gal./ft. 6" Well = 1.50 gal./ft.	0.16	0.16	0.16	-	-	-
* = Fourth volume sample data						
Remarks: All wells sampled with dedicated bladder pumps and YSI Flow Thru Cell. * = Monitoring well gauged for water level only, groundwater samples not collected.						

**GROUNDWATER SAMPLE COLLECTION SHEET**

**Project Name:** City of Durham Closed (MSWLF) **Date:** 6/30/09  
**Job Number:** 1054-07-469 **Sampler:** JP/MP/JV

<b>WELL I.D.</b>	<b>PZ-6*</b>	<b>MW-3*</b>	<b>MW-6R*</b>			
Casing Diameter (in.)	2	2	2			
Total Well depth (ft.)	61.25	25.33	26.72			
Water Depth	42.03	4.30	12.94			
<b>PURGE DATA</b>						
Water Column (Total depth – Water depth)	17.86	22.33	14.75			
Well Volume	2.86	3.57	2.36			
Volume to Purge (3 to 5 well volumes)	8.57	10.72	7.08			
Volume Purged (note if well bailed dry)	-	-	-			
Date Purged	-	-	-			
<b>FIELD ANALYSIS DATA</b>						
pH	-	-	-			
Conductivity (µS/cm)	-	-	-			
Temperature (C) (1 Volume)	-	-	-			
Turbidity (NTU)	-	-	-			
Dissolved Oxygen (mg/L)	-	-	-			
pH	-	-	-			
Conductivity (µS/cm)	-	-	-			
Temperature (C) (2 Volumes)	-	-	-			
Turbidity (NTU)	-	-	-			
Dissolved Oxygen (mg/L)	-	-	-			
pH	-	-	-			
Conductivity (µS/cm)	-	-	-			
Temperature (C) (3 Volumes)	-	-	-			
Turbidity (NTU)	-	-	-			
Dissolved Oxygen (mg/L)	-	-	-			
<b>GROUNDWATER SAMPLE DATA</b>						
Date Sampled	-	-	-			
Time Sampled	-	-	-			
Equipment Blank	-	-	-			
Parameters	-	-	-			
	-	-	-			
Note: Volumes Per foot of Water Column For: 2" Well = 0.16 gal./ft. 4" Well = 0.66 gal./ft. 6" Well = 1.50 gal./ft.	-	-	-			
* = Fourth volume sample data						
Remarks: All wells sampled with dedicated bladder pumps and YSI Flow Thru Cell. * = Monitoring well gauged for water level only, groundwater samples not collected.						

**APPENDIX II**  
**JUNE 2009**  
**CERTIFICATES-OF-ANALYSIS, CHAIN-OF-CUSTODY FORMS AND**  
**LABORATORY DATA**

**Environmental Conservation Laboratories, Inc.**

102-A Woodwinds Industrial Court

Cary NC, 27511

Phone: 919.467.3090 FAX: 919.467.3515



www.encolabs.com

Wednesday, July 29, 2009

S&ME, Inc. (SM001)

Attn: Gerald Paul

3201 Spring Forest Road

Raleigh, NC 27616

**RE: Laboratory Results for  
Project Number: 1054-07-469, Project Name/Desc: City of Durham Closed MSWLF  
ENCO Workorder: C905416**

Dear Gerald Paul,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Wednesday, July 1, 2009.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink that reads 'Chuck Smith'. The signature is written in a cursive, flowing style.

Chuck Smith

Project Manager

Enclosure(s)



www.encolabs.com

**SAMPLE SUMMARY/LABORATORY CHRONICLE**

<b>Client ID:</b> 3201-MW1	<b>Lab ID:</b> C905416-01	<b>Sampled:</b> 06/30/09 18:00	<b>Received:</b> 07/01/09 13:10
----------------------------	---------------------------	--------------------------------	---------------------------------

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010B	12/27/09	07/06/09 10:08	7/7/2009 11:23
EPA 6020	12/27/09	07/06/09 10:17	7/7/2009 11:21

<b>Client ID:</b> 3201-MW1	<b>Lab ID:</b> C905416-01RE1	<b>Sampled:</b> 06/30/09 18:00	<b>Received:</b> 07/01/09 13:10
----------------------------	------------------------------	--------------------------------	---------------------------------

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	07/14/09	07/03/09 09:10	7/3/2009 14:23

<b>Client ID:</b> 3201-MW2	<b>Lab ID:</b> C905416-02	<b>Sampled:</b> 06/30/09 12:53	<b>Received:</b> 07/01/09 13:10
----------------------------	---------------------------	--------------------------------	---------------------------------

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010B	12/27/09	07/06/09 10:08	7/7/2009 11:25
EPA 6020	12/27/09	07/06/09 10:17	7/7/2009 11:24

<b>Client ID:</b> 3201-MW2	<b>Lab ID:</b> C905416-02RE1	<b>Sampled:</b> 06/30/09 12:53	<b>Received:</b> 07/01/09 13:10
----------------------------	------------------------------	--------------------------------	---------------------------------

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	07/14/09	07/08/09 07:08	7/8/2009 12:15

<b>Client ID:</b> 3201-MW3R	<b>Lab ID:</b> C905416-03	<b>Sampled:</b> 06/30/09 16:10	<b>Received:</b> 07/01/09 13:10
-----------------------------	---------------------------	--------------------------------	---------------------------------

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010B	12/27/09	07/06/09 10:08	7/7/2009 11:28
EPA 6020	12/27/09	07/06/09 10:17	7/7/2009 11:28

<b>Client ID:</b> 3201-MW3R	<b>Lab ID:</b> C905416-03RE1	<b>Sampled:</b> 06/30/09 16:10	<b>Received:</b> 07/01/09 13:10
-----------------------------	------------------------------	--------------------------------	---------------------------------

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	07/14/09	07/03/09 09:10	7/3/2009 14:53

<b>Client ID:</b> 3201-MW4R	<b>Lab ID:</b> C905416-04	<b>Sampled:</b> 06/30/09 16:35	<b>Received:</b> 07/01/09 13:10
-----------------------------	---------------------------	--------------------------------	---------------------------------

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010B	12/27/09	07/06/09 10:08	7/7/2009 11:30
EPA 6020	12/27/09	07/06/09 10:17	7/7/2009 11:42

<b>Client ID:</b> 3201-MW4R	<b>Lab ID:</b> C905416-04RE1	<b>Sampled:</b> 06/30/09 16:35	<b>Received:</b> 07/01/09 13:10
-----------------------------	------------------------------	--------------------------------	---------------------------------

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	07/14/09	07/03/09 09:10	7/3/2009 15:23



www.encolabs.com

**Client ID:** 3201-MW5      **Lab ID:** C905416-05      **Sampled:** 06/30/09 12:20      **Received:** 07/01/09 13:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010B	12/27/09	07/06/09 10:08	7/7/2009 11:33
EPA 6020	12/27/09	07/06/09 10:17	7/7/2009 11:45

**Client ID:** 3201-MW5      **Lab ID:** C905416-05RE1      **Sampled:** 06/30/09 12:20      **Received:** 07/01/09 13:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	07/14/09	07/03/09 09:10	7/3/2009 15:52

**Client ID:** 3201-MW7R      **Lab ID:** C905416-06      **Sampled:** 06/30/09 11:45      **Received:** 07/01/09 13:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010B	12/27/09	07/06/09 10:08	7/7/2009 11:35
EPA 6020	12/27/09	07/06/09 10:17	7/7/2009 11:49

**Client ID:** 3201-MW7R      **Lab ID:** C905416-06RE1      **Sampled:** 06/30/09 11:45      **Received:** 07/01/09 13:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	07/14/09	07/03/09 09:10	7/3/2009 16:22

**Client ID:** 3201-MW8      **Lab ID:** C905416-07      **Sampled:** 06/30/09 10:50      **Received:** 07/01/09 13:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010B	12/27/09	07/06/09 10:08	7/7/2009 11:37
EPA 6020	12/27/09	07/06/09 10:17	7/7/2009 11:52

**Client ID:** 3201-MW8      **Lab ID:** C905416-07RE1      **Sampled:** 06/30/09 10:50      **Received:** 07/01/09 13:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	07/14/09	07/03/09 09:10	7/3/2009 16:52

**Client ID:** 3201-MW9R      **Lab ID:** C905416-08      **Sampled:** 06/30/09 09:55      **Received:** 07/01/09 13:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010B	12/27/09	07/06/09 10:08	7/7/2009 11:40
EPA 6020	12/27/09	07/06/09 10:17	7/7/2009 11:56

**Client ID:** 3201-MW9R      **Lab ID:** C905416-08RE1      **Sampled:** 06/30/09 09:55      **Received:** 07/01/09 13:10

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	07/14/09	07/03/09 09:10	7/3/2009 17:22





www.encolabs.com

**NORTH CAROLINA SWS SAMPLE DETECTION SUMMARY**

Client ID: 3201-MW1		Lab ID: C905416-01								
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes	
Arsenic - Total	2.9	JB	1	2.8	10.0	10	ug/L	EPA 6010B	J-01	
Barium - Total	340		1	4.20	10.0	100	ug/L	EPA 6010B		
Beryllium - Total	0.46	J	1	0.08	1.00	1	ug/L	EPA 6010B		
Cadmium - Total	0.22	J	1	0.09	1.00	1	ug/L	EPA 6010B		
Chromium - Total	2.4	J	1	0.7	10.0	10	ug/L	EPA 6010B		
Cobalt - Total	21.1		1	0.6	10.0	10	ug/L	EPA 6010B		
Lead - Total	9.0	JB	1	1.6	10.0	10	ug/L	EPA 6010B		
Nickel - Total	11.1	JB	1	0.6	10.0	50	ug/L	EPA 6010B	QB-01	
Vanadium - Total	3.5	J	1	0.7	10.0	25	ug/L	EPA 6010B		
Zinc - Total	15.2		1	3.4	10.0	10	ug/L	EPA 6010B		

Client ID: 3201-MW1		Lab ID: C905416-01RE1								
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes	
1,1-Dichloroethane	7.5	D	5	1.6	5.0	5	ug/L	EPA 8260B		
1,2-Dichloropropane	8.8	D	5	1.0	5.0	1	ug/L	EPA 8260B		
1,4-Dichlorobenzene	2.5	JD	5	1.9	5.0	1	ug/L	EPA 8260B		
Benzene	4.4	JD	5	1.0	5.0	1	ug/L	EPA 8260B		
cis-1,2-Dichloroethene	380	D	5	1.8	5.0	5	ug/L	EPA 8260B		
Tetrachloroethene	2.1	JD	5	1.8	5.0	1	ug/L	EPA 8260B		
trans-1,2-Dichloroethene	9.3	D	5	1.7	5.0	5	ug/L	EPA 8260B		
Trichloroethene	37	D	5	1.9	5.0	1	ug/L	EPA 8260B		
Vinyl chloride	24	D	5	1.5	5.0	1	ug/L	EPA 8260B		

Client ID: 3201-MW2		Lab ID: C905416-02								
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes	
Barium - Total	80.8	J	1	4.20	10.0	100	ug/L	EPA 6010B		
Beryllium - Total	0.11	J	1	0.08	1.00	1	ug/L	EPA 6010B		
Chromium - Total	1.4	J	1	0.7	10.0	10	ug/L	EPA 6010B		
Cobalt - Total	0.7	J	1	0.6	10.0	10	ug/L	EPA 6010B		
Nickel - Total	3.4	JB	1	0.6	10.0	50	ug/L	EPA 6010B	J-01	
Zinc - Total	7.9	J	1	3.4	10.0	10	ug/L	EPA 6010B		

Client ID: 3201-MW3R		Lab ID: C905416-03								
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes	
Arsenic - Total	6.2	JB	1	2.8	10.0	10	ug/L	EPA 6010B	J-01	
Barium - Total	440		1	4.20	10.0	100	ug/L	EPA 6010B		
Cadmium - Total	0.12	J	1	0.09	1.00	1	ug/L	EPA 6010B		
Chromium - Total	1.2	J	1	0.7	10.0	10	ug/L	EPA 6010B		
Cobalt - Total	6.7	J	1	0.6	10.0	10	ug/L	EPA 6010B		
Nickel - Total	8.7	JB	1	0.6	10.0	50	ug/L	EPA 6010B	QB-01	
Vanadium - Total	1.1	J	1	0.7	10.0	25	ug/L	EPA 6010B		
Zinc - Total	3.5	J	1	3.4	10.0	10	ug/L	EPA 6010B		

Client ID: 3201-MW3R		Lab ID: C905416-03RE1								
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes	
Chlorobenzene	0.41	J	1	0.27	1.0	3	ug/L	EPA 8260B		



www.encolabs.com

Client ID: 3201-MW4R Lab ID: C905416-04

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Arsenic - Total	8.2	JB	1	2.8	10.0	10	ug/L	EPA 6010B	J-01
Barium - Total	552		1	4.20	10.0	100	ug/L	EPA 6010B	
Cadmium - Total	0.13	J	1	0.09	1.00	1	ug/L	EPA 6010B	
Chromium - Total	0.7	J	1	0.7	10.0	10	ug/L	EPA 6010B	
Cobalt - Total	0.8	J	1	0.6	10.0	10	ug/L	EPA 6010B	
Lead - Total	3.6	JB	1	1.6	10.0	10	ug/L	EPA 6010B	J-01
Nickel - Total	5.0	JB	1	0.6	10.0	50	ug/L	EPA 6010B	J-01

Client ID: 3201-MW5 Lab ID: C905416-05

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Arsenic - Total	4.9	JB	1	2.8	10.0	10	ug/L	EPA 6010B	J-01
Barium - Total	1590		1	4.20	10.0	100	ug/L	EPA 6010B	
Cadmium - Total	0.13	J	1	0.09	1.00	1	ug/L	EPA 6010B	
Chromium - Total	1.3	J	1	0.7	10.0	10	ug/L	EPA 6010B	
Lead - Total	2.1	JB	1	1.6	10.0	10	ug/L	EPA 6010B	J-01
Nickel - Total	5.7	JB	1	0.6	10.0	50	ug/L	EPA 6010B	J-01

Client ID: 3201-MW7R Lab ID: C905416-06

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Arsenic - Total	4.4	JB	1	2.8	10.0	10	ug/L	EPA 6010B	J-01
Barium - Total	618		1	4.20	10.0	100	ug/L	EPA 6010B	
Chromium - Total	1.2	J	1	0.7	10.0	10	ug/L	EPA 6010B	
Nickel - Total	2.1	JB	1	0.6	10.0	50	ug/L	EPA 6010B	J-01
Zinc - Total	4.7	J	1	3.4	10.0	10	ug/L	EPA 6010B	

Client ID: 3201-MW8 Lab ID: C905416-07

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	106		1	4.20	10.0	100	ug/L	EPA 6010B	
Chromium - Total	0.7	J	1	0.7	10.0	10	ug/L	EPA 6010B	
Cobalt - Total	5.7	J	1	0.6	10.0	10	ug/L	EPA 6010B	
Lead - Total	2.3	JB	1	1.6	10.0	10	ug/L	EPA 6010B	J-01
Nickel - Total	7.6	JB	1	0.6	10.0	50	ug/L	EPA 6010B	QB-01

Client ID: 3201-MW9R Lab ID: C905416-08

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	51.2	J	1	4.20	10.0	100	ug/L	EPA 6010B	
Beryllium - Total	0.47	J	1	0.08	1.00	1	ug/L	EPA 6010B	
Chromium - Total	0.7	J	1	0.7	10.0	10	ug/L	EPA 6010B	
Cobalt - Total	5.9	J	1	0.6	10.0	10	ug/L	EPA 6010B	
Copper - Total	1.14	J	1	0.81	10.0	10	ug/L	EPA 6010B	
Nickel - Total	3.6	JB	1	0.6	10.0	50	ug/L	EPA 6010B	J-01
Zinc - Total	5.8	J	1	3.4	10.0	10	ug/L	EPA 6010B	

Client ID: 3201-MW10 Lab ID: C905416-09

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	341		1	4.20	10.0	100	ug/L	EPA 6010B	
Beryllium - Total	0.46	J	1	0.08	1.00	1	ug/L	EPA 6010B	
Cadmium - Total	0.26	J	1	0.09	1.00	1	ug/L	EPA 6010B	
Chromium - Total	6.1	J	1	0.7	10.0	10	ug/L	EPA 6010B	
Cobalt - Total	21.7	J	1	0.6	10.0	10	ug/L	EPA 6010B	
Copper - Total	1.33	J	1	0.81	10.0	10	ug/L	EPA 6010B	



www.encolabs.com

Client ID: 3201-MW10		Lab ID: C905416-09								
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes	
Lead - Total	8.8	JB	1	1.6	10.0	10	ug/L	EPA 6010B	J-01	
Nickel - Total	13.1	JB	1	0.6	10.0	50	ug/L	EPA 6010B	QB-01	
Vanadium - Total	6.9	J	1	0.7	10.0	25	ug/L	EPA 6010B		
Zinc - Total	22.4		1	3.4	10.0	10	ug/L	EPA 6010B		

Client ID: 3201-MW10		Lab ID: C905416-09RE1								
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes	
1,1-Dichloroethane	7.8	D	5	1.6	5.0	5	ug/L	EPA 8260B		
1,2-Dichloropropane	9.4	D	5	1.0	5.0	1	ug/L	EPA 8260B		
1,4-Dichlorobenzene	2.2	JD	5	1.9	5.0	1	ug/L	EPA 8260B		
Benzene	4.6	JD	5	1.0	5.0	1	ug/L	EPA 8260B		
cis-1,2-Dichloroethene	370	D	5	1.8	5.0	5	ug/L	EPA 8260B		
Tetrachloroethene	2.6	JD	5	1.8	5.0	1	ug/L	EPA 8260B		
trans-1,2-Dichloroethene	9.7	D	5	1.7	5.0	5	ug/L	EPA 8260B		
Trichloroethene	38	D	5	1.9	5.0	1	ug/L	EPA 8260B		
Vinyl chloride	23	D	5	1.5	5.0	1	ug/L	EPA 8260B		

Client ID: 3201-S3		Lab ID: C905416-10								
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes	
Barium - Total	8.29	J	1	4.20	10.0	100	ug/L	EPA 6010B		
Chromium - Total	1.1	J	1	0.7	10.0	10	ug/L	EPA 6010B		
Cobalt - Total	0.7	J	1	0.6	10.0	10	ug/L	EPA 6010B		
Nickel - Total	3.8	JB	1	0.6	10.0	50	ug/L	EPA 6010B	J-01	
Vanadium - Total	2.4	J	1	0.7	10.0	25	ug/L	EPA 6010B		
Zinc - Total	28.3		1	3.4	10.0	10	ug/L	EPA 6010B		

Client ID: 3201-S4		Lab ID: C905416-11								
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes	
Barium - Total	9.78	J	1	4.20	10.0	100	ug/L	EPA 6010B		
Cobalt - Total	0.9	J	1	0.6	10.0	10	ug/L	EPA 6010B		
Lead - Total	2.4	JB	1	1.6	10.0	10	ug/L	EPA 6010B	J-01	
Nickel - Total	3.1	JB	1	0.6	10.0	50	ug/L	EPA 6010B	J-01	
Vanadium - Total	2.4	J	1	0.7	10.0	25	ug/L	EPA 6010B		
Zinc - Total	24.7		1	3.4	10.0	10	ug/L	EPA 6010B		

Client ID: 3201-Equipment Blank		Lab ID: C905416-12								
Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes	
Arsenic - Total	4.3	JB	1	2.8	10.0	10	ug/L	EPA 6010B	J-01	
Copper - Total	2.36	J	1	0.81	10.0	10	ug/L	EPA 6010B		
Nickel - Total	0.6	JB	1	0.6	10.0	50	ug/L	EPA 6010B	J-01	
Zinc - Total	3.8	J	1	3.4	10.0	10	ug/L	EPA 6010B		



www.encolabs.com

**ANALYTICAL RESULTS****Description:** 3201-MW1**Lab Sample ID:** C905416-01**Received:** 07/01/09 13:10**Matrix:** Ground Water**Sampled:** 06/30/09 18:00**Work Order:** C905416**Project:** City of Durham Closed MSWLF**Sampled By:** Gerald Paul**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>MRL</u>	<u>NC SWSL</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
1,1,1,2-Tetrachloroethane [630-20-6] ^	2.0	UD	ug/L	5	2.0	5.0	5	EPA 8260B	07/03/09 14:23	JKG	
1,1,1-Trichloroethane [71-55-6] ^	1.4	UD	ug/L	5	1.4	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	1.6	UD	ug/L	5	1.6	5.0	3	EPA 8260B	07/03/09 14:23	JKG	
1,1,2-Trichloroethane [79-00-5] ^	1.8	UD	ug/L	5	1.8	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
<b>1,1-Dichloroethane [75-34-3] ^</b>	<b>7.5</b>	D	ug/L	5	1.6	5.0	5	EPA 8260B	07/03/09 14:23	JKG	
1,1-Dichloroethene [75-35-4] ^	1.2	UD	ug/L	5	1.2	5.0	5	EPA 8260B	07/03/09 14:23	JKG	
1,2,3-Trichloropropane [96-18-4] ^	2.8	UD	ug/L	5	2.8	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	2.4	UD	ug/L	5	2.4	5.0	13	EPA 8260B	07/03/09 14:23	JKG	
1,2-Dibromoethane [106-93-4] ^	2.1	UD	ug/L	5	2.1	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
1,2-Dichlorobenzene [95-50-1] ^	1.4	UD	ug/L	5	1.4	5.0	5	EPA 8260B	07/03/09 14:23	JKG	
1,2-Dichloroethane [107-06-2] ^	3.2	UD	ug/L	5	3.2	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
<b>1,2-Dichloropropane [78-87-5] ^</b>	<b>8.8</b>	D	ug/L	5	1.0	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
<b>1,4-Dichlorobenzene [106-46-7] ^</b>	<b>2.5</b>	JD	ug/L	5	1.9	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
2-Butanone [78-93-3] ^	5.0	UD	ug/L	5	5.0	25	100	EPA 8260B	07/03/09 14:23	JKG	
2-Hexanone [591-78-6] ^	3.4	UD	ug/L	5	3.4	25	50	EPA 8260B	07/03/09 14:23	JKG	
4-Methyl-2-pentanone [108-10-1] ^	5.5	UD	ug/L	5	5.5	25	100	EPA 8260B	07/03/09 14:23	JKG	
Acetone [67-64-1] ^	7.5	UD	ug/L	5	7.5	25	100	EPA 8260B	07/03/09 14:23	JKG	
Acrylonitrile [107-13-1] ^	10	UD	ug/L	5	10	50	200	EPA 8260B	07/03/09 14:23	JKG	
<b>Benzene [71-43-2] ^</b>	<b>4.4</b>	JD	ug/L	5	1.0	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
Bromochloromethane [74-97-5] ^	2.1	UD	ug/L	5	2.1	5.0	3	EPA 8260B	07/03/09 14:23	JKG	
Bromodichloromethane [75-27-4] ^	1.8	UD	ug/L	5	1.8	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
Bromoform [75-25-2] ^	3.6	UD	ug/L	5	3.6	5.0	3	EPA 8260B	07/03/09 14:23	JKG	
Bromomethane [74-83-9] ^	2.4	UD	ug/L	5	2.4	5.0	10	EPA 8260B	07/03/09 14:23	JKG	
Carbon disulfide [75-15-0] ^	2.7	UD	ug/L	5	2.7	25	100	EPA 8260B	07/03/09 14:23	JKG	
Carbon tetrachloride [56-23-5] ^	1.9	UD	ug/L	5	1.9	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
Chlorobenzene [108-90-7] ^	1.4	UD	ug/L	5	1.4	5.0	3	EPA 8260B	07/03/09 14:23	JKG	
Chloroethane [75-00-3] ^	1.5	UD	ug/L	5	1.5	5.0	10	EPA 8260B	07/03/09 14:23	JKG	
Chloroform [67-66-3] ^	1.0	UD	ug/L	5	1.0	5.0	5	EPA 8260B	07/03/09 14:23	JKG	
Chloromethane [74-87-3] ^	1.7	UD	ug/L	5	1.7	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
<b>cis-1,2-Dichloroethene [156-59-2] ^</b>	<b>380</b>	D	ug/L	5	1.8	5.0	5	EPA 8260B	07/03/09 14:23	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	1.4	UD	ug/L	5	1.4	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
Dibromochloromethane [124-48-1] ^	1.6	UD	ug/L	5	1.6	5.0	3	EPA 8260B	07/03/09 14:23	JKG	
Dibromomethane [74-95-3] ^	1.8	UD	ug/L	5	1.8	5.0	10	EPA 8260B	07/03/09 14:23	JKG	
Ethylbenzene [100-41-4] ^	1.0	UD	ug/L	5	1.0	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
Iodomethane [74-88-4] ^	2.6	UD	ug/L	5	2.6	25	10	EPA 8260B	07/03/09 14:23	JKG	
Methylene chloride [75-09-2] ^	2.6	UD	ug/L	5	2.6	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
Styrene [100-42-5] ^	1.3	UD	ug/L	5	1.3	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
<b>Tetrachloroethene [127-18-4] ^</b>	<b>2.1</b>	JD	ug/L	5	1.8	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
Toluene [108-88-3] ^	1.4	UD	ug/L	5	1.4	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
<b>trans-1,2-Dichloroethene [156-60-5] ^</b>	<b>9.3</b>	D	ug/L	5	1.7	5.0	5	EPA 8260B	07/03/09 14:23	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	1.9	UD	ug/L	5	1.9	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	2.7	UD	ug/L	5	2.7	5.0	100	EPA 8260B	07/03/09 14:23	JKG	
<b>Trichloroethene [79-01-6] ^</b>	<b>37</b>	D	ug/L	5	1.9	5.0	1	EPA 8260B	07/03/09 14:23	JKG	
Trichlorofluoromethane [75-69-4] ^	1.4	UD	ug/L	5	1.4	5.0	1	EPA 8260B	07/03/09 14:23	JKG	



www.encolabs.com

Description: 3201-MW1

Lab Sample ID: C905416-01

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 18:00

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Table with 11 columns: Analyte [CAS Number], Results, Flag, Units, DF, MDL, MRL, NC SWSL, Method, Analyzed, By, Notes. Rows include Vinyl acetate, Vinyl chloride, and Xylenes (Total).

Table with 11 columns: Surrogates, Results, DF, Spike Lvl, % Rec, % Rec Limits, Batch, Method, Analyzed, By, Notes. Rows include 4-Bromofluorobenzene, Dibromofluoromethane, and Toluene-d8.

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Table with 11 columns: Analyte [CAS Number], Results, Flag, Units, DF, MDL, MRL, NC SWSL, Method, Analyzed, By, Notes. Rows include Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



www.encolabs.com

Description: 3201-MW2

Lab Sample ID: C905416-02

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 12:53

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/08/09 12:15	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	07/08/09 12:15	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
1,1-Dichloroethane [75-34-3] ^	0.33	U	ug/L	1	0.33	1.0	5	EPA 8260B	07/08/09 12:15	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	07/08/09 12:15	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	07/08/09 12:15	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	07/08/09 12:15	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	07/08/09 12:15	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	07/08/09 12:15	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	07/08/09 12:15	JKG	
Acetone [67-64-1] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	07/08/09 12:15	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	07/08/09 12:15	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	07/08/09 12:15	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	07/08/09 12:15	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	07/08/09 12:15	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	07/08/09 12:15	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
Chlorobenzene [108-90-7] ^	0.27	U	ug/L	1	0.27	1.0	3	EPA 8260B	07/08/09 12:15	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	07/08/09 12:15	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	07/08/09 12:15	JKG	
Chloromethane [74-87-3] ^	0.34	U	ug/L	1	0.34	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.36	U	ug/L	1	0.36	1.0	5	EPA 8260B	07/08/09 12:15	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	07/08/09 12:15	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	07/08/09 12:15	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	07/08/09 12:15	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	07/08/09 12:15	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	07/08/09 12:15	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/08/09 12:15	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	07/08/09 12:15	JKG	
Vinyl chloride [75-01-4] ^	0.30	U	ug/L	1	0.30	1.0	1	EPA 8260B	07/08/09 12:15	JKG	



www.encolabs.com

Description: 3201-MW2

Lab Sample ID: C905416-02

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 12:53

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

### Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Xylenes (Total) [1330-20-7] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/08/09 12:15	JKG	

#### Surrogates

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	45	1	50.0	90 %	51-122	9G08001	EPA 8260B	07/08/09 12:15	JKG	
Dibromofluoromethane	47	1	50.0	94 %	68-117	9G08001	EPA 8260B	07/08/09 12:15	JKG	
Toluene-d8	47	1	50.0	95 %	69-110	9G08001	EPA 8260B	07/08/09 12:15	JKG	

### Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.68	U	ug/L	1	0.68	2.00	6	EPA 6020	07/07/09 11:24	VLO	
Arsenic [7440-38-2] ^	2.8	U	ug/L	1	2.8	10.0	10	EPA 6010B	07/07/09 11:25	VLO	
Barium [7440-39-3] ^	80.8	J	ug/L	1	4.20	10.0	100	EPA 6010B	07/07/09 11:25	VLO	
Beryllium [7440-41-7] ^	0.11	J	ug/L	1	0.08	1.00	1	EPA 6010B	07/07/09 11:25	VLO	
Cadmium [7440-43-9] ^	0.09	U	ug/L	1	0.09	1.00	1	EPA 6010B	07/07/09 11:25	VLO	
Chromium [7440-47-3] ^	1.4	J	ug/L	1	0.7	10.0	10	EPA 6010B	07/07/09 11:25	VLO	
Cobalt [7440-48-4] ^	0.7	J	ug/L	1	0.6	10.0	10	EPA 6010B	07/07/09 11:25	VLO	
Copper [7440-50-8] ^	0.81	U	ug/L	1	0.81	10.0	10	EPA 6010B	07/07/09 11:25	VLO	
Lead [7439-92-1] ^	1.6	U	ug/L	1	1.6	10.0	10	EPA 6010B	07/07/09 11:25	VLO	
Nickel [7440-02-0] ^	3.4	JB	ug/L	1	0.6	10.0	50	EPA 6010B	07/07/09 11:25	VLO	J-01
Selenium [7782-49-2] ^	3.4	U	ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:25	VLO	
Silver [7440-22-4] ^	1.0	U	ug/L	1	1.0	10.0	10	EPA 6010B	07/07/09 11:25	VLO	
Thallium [7440-28-0] ^	0.036	U	ug/L	1	0.036	1.00	5.5	EPA 6020	07/07/09 11:24	VLO	
Vanadium [7440-62-2] ^	0.7	U	ug/L	1	0.7	10.0	25	EPA 6010B	07/07/09 11:25	VLO	
Zinc [7440-66-6] ^	7.9	J	ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:25	VLO	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



www.encolabs.com

Description: 3201-MW3R

Lab Sample ID: C905416-03

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 16:10

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/03/09 14:53	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	07/03/09 14:53	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
1,1-Dichloroethane [75-34-3] ^	0.33	U	ug/L	1	0.33	1.0	5	EPA 8260B	07/03/09 14:53	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	07/03/09 14:53	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	07/03/09 14:53	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	07/03/09 14:53	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	07/03/09 14:53	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	07/03/09 14:53	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	07/03/09 14:53	JKG	
Acetone [67-64-1] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	07/03/09 14:53	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	07/03/09 14:53	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	07/03/09 14:53	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	07/03/09 14:53	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	07/03/09 14:53	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	07/03/09 14:53	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
<b>Chlorobenzene [108-90-7] ^</b>	<b>0.41</b>	<b>J</b>	ug/L	1	0.27	1.0	3	EPA 8260B	07/03/09 14:53	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	07/03/09 14:53	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	07/03/09 14:53	JKG	
Chloromethane [74-87-3] ^	0.34	U	ug/L	1	0.34	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.36	U	ug/L	1	0.36	1.0	5	EPA 8260B	07/03/09 14:53	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	07/03/09 14:53	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	07/03/09 14:53	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	07/03/09 14:53	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	07/03/09 14:53	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	07/03/09 14:53	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 14:53	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	07/03/09 14:53	JKG	
Vinyl chloride [75-01-4] ^	0.30	U	ug/L	1	0.30	1.0	1	EPA 8260B	07/03/09 14:53	JKG	



www.encolabs.com

Description: 3201-MW3R

Lab Sample ID: C905416-03

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 16:10

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

### Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Xylenes (Total) [1330-20-7] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/03/09 14:53	JKG	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	47	1	50.0	94 %	51-122	9G03002	EPA 8260B	07/03/09 14:53	JKG	
Dibromofluoromethane	49	1	50.0	98 %	68-117	9G03002	EPA 8260B	07/03/09 14:53	JKG	
Toluene-d8	47	1	50.0	94 %	69-110	9G03002	EPA 8260B	07/03/09 14:53	JKG	

### Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.68	U	ug/L	1	0.68	2.00	6	EPA 6020	07/07/09 11:28	VLO	
Arsenic [7440-38-2] ^	6.2	JB	ug/L	1	2.8	10.0	10	EPA 6010B	07/07/09 11:28	VLO	J-01
Barium [7440-39-3] ^	440		ug/L	1	4.20	10.0	100	EPA 6010B	07/07/09 11:28	VLO	
Beryllium [7440-41-7] ^	0.08	U	ug/L	1	0.08	1.00	1	EPA 6010B	07/07/09 11:28	VLO	
Cadmium [7440-43-9] ^	0.12	J	ug/L	1	0.09	1.00	1	EPA 6010B	07/07/09 11:28	VLO	
Chromium [7440-47-3] ^	1.2	J	ug/L	1	0.7	10.0	10	EPA 6010B	07/07/09 11:28	VLO	
Cobalt [7440-48-4] ^	6.7	J	ug/L	1	0.6	10.0	10	EPA 6010B	07/07/09 11:28	VLO	
Copper [7440-50-8] ^	0.81	U	ug/L	1	0.81	10.0	10	EPA 6010B	07/07/09 11:28	VLO	
Lead [7439-92-1] ^	1.6	U	ug/L	1	1.6	10.0	10	EPA 6010B	07/07/09 11:28	VLO	
Nickel [7440-02-0] ^	8.7	JB	ug/L	1	0.6	10.0	50	EPA 6010B	07/07/09 11:28	VLO	QB-01
Selenium [7782-49-2] ^	3.4	U	ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:28	VLO	
Silver [7440-22-4] ^	1.0	U	ug/L	1	1.0	10.0	10	EPA 6010B	07/07/09 11:28	VLO	
Thallium [7440-28-0] ^	0.036	U	ug/L	1	0.036	1.00	5.5	EPA 6020	07/07/09 11:28	VLO	
Vanadium [7440-62-2] ^	1.1	J	ug/L	1	0.7	10.0	25	EPA 6010B	07/07/09 11:28	VLO	
Zinc [7440-66-6] ^	3.5	J	ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:28	VLO	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



www.encolabs.com

Description: 3201-MW4R

Lab Sample ID: C905416-04

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 16:35

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/03/09 15:23	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	07/03/09 15:23	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
1,1-Dichloroethane [75-34-3] ^	0.33	U	ug/L	1	0.33	1.0	5	EPA 8260B	07/03/09 15:23	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	07/03/09 15:23	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	07/03/09 15:23	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	07/03/09 15:23	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	07/03/09 15:23	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	07/03/09 15:23	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	07/03/09 15:23	JKG	
Acetone [67-64-1] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	07/03/09 15:23	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	07/03/09 15:23	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	07/03/09 15:23	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	07/03/09 15:23	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	07/03/09 15:23	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	07/03/09 15:23	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
Chlorobenzene [108-90-7] ^	0.27	U	ug/L	1	0.27	1.0	3	EPA 8260B	07/03/09 15:23	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	07/03/09 15:23	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	07/03/09 15:23	JKG	
Chloromethane [74-87-3] ^	0.34	U	ug/L	1	0.34	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.36	U	ug/L	1	0.36	1.0	5	EPA 8260B	07/03/09 15:23	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	07/03/09 15:23	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	07/03/09 15:23	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	07/03/09 15:23	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	07/03/09 15:23	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	07/03/09 15:23	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 15:23	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	07/03/09 15:23	JKG	
Vinyl chloride [75-01-4] ^	0.30	U	ug/L	1	0.30	1.0	1	EPA 8260B	07/03/09 15:23	JKG	



www.encolabs.com

Description: 3201-MW4R

Lab Sample ID: C905416-04

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 16:35

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Xylenes (Total) [1330-20-7] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/03/09 15:23	JKG	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	48	1	50.0	96 %	51-122	9G03002	EPA 8260B	07/03/09 15:23	JKG	
Dibromofluoromethane	49	1	50.0	98 %	68-117	9G03002	EPA 8260B	07/03/09 15:23	JKG	
Toluene-d8	47	1	50.0	94 %	69-110	9G03002	EPA 8260B	07/03/09 15:23	JKG	

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.68	U	ug/L	1	0.68	2.00	6	EPA 6020	07/07/09 11:42	VLO	
Arsenic [7440-38-2] ^	8.2	JB	ug/L	1	2.8	10.0	10	EPA 6010B	07/07/09 11:30	VLO	J-01
Barium [7440-39-3] ^	552		ug/L	1	4.20	10.0	100	EPA 6010B	07/07/09 11:30	VLO	
Beryllium [7440-41-7] ^	0.08	U	ug/L	1	0.08	1.00	1	EPA 6010B	07/07/09 11:30	VLO	
Cadmium [7440-43-9] ^	0.13	J	ug/L	1	0.09	1.00	1	EPA 6010B	07/07/09 11:30	VLO	
Chromium [7440-47-3] ^	0.7	J	ug/L	1	0.7	10.0	10	EPA 6010B	07/07/09 11:30	VLO	
Cobalt [7440-48-4] ^	0.8	J	ug/L	1	0.6	10.0	10	EPA 6010B	07/07/09 11:30	VLO	
Copper [7440-50-8] ^	0.81	U	ug/L	1	0.81	10.0	10	EPA 6010B	07/07/09 11:30	VLO	
Lead [7439-92-1] ^	3.6	JB	ug/L	1	1.6	10.0	10	EPA 6010B	07/07/09 11:30	VLO	J-01
Nickel [7440-02-0] ^	5.0	JB	ug/L	1	0.6	10.0	50	EPA 6010B	07/07/09 11:30	VLO	J-01
Selenium [7782-49-2] ^	3.4	U	ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:30	VLO	
Silver [7440-22-4] ^	1.0	U	ug/L	1	1.0	10.0	10	EPA 6010B	07/07/09 11:30	VLO	
Thallium [7440-28-0] ^	0.036	U	ug/L	1	0.036	1.00	5.5	EPA 6020	07/07/09 11:42	VLO	
Vanadium [7440-62-2] ^	0.7	U	ug/L	1	0.7	10.0	25	EPA 6010B	07/07/09 11:30	VLO	
Zinc [7440-66-6] ^	3.4	U	ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:30	VLO	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



www.encolabs.com

Description: 3201-MW5

Lab Sample ID: C905416-05

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 12:20

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/03/09 15:52	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	07/03/09 15:52	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
1,1-Dichloroethane [75-34-3] ^	0.33	U	ug/L	1	0.33	1.0	5	EPA 8260B	07/03/09 15:52	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	07/03/09 15:52	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	07/03/09 15:52	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	07/03/09 15:52	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	07/03/09 15:52	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	07/03/09 15:52	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	07/03/09 15:52	JKG	
Acetone [67-64-1] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	07/03/09 15:52	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	07/03/09 15:52	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	07/03/09 15:52	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	07/03/09 15:52	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	07/03/09 15:52	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	07/03/09 15:52	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
Chlorobenzene [108-90-7] ^	0.27	U	ug/L	1	0.27	1.0	3	EPA 8260B	07/03/09 15:52	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	07/03/09 15:52	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	07/03/09 15:52	JKG	
Chloromethane [74-87-3] ^	0.34	U	ug/L	1	0.34	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.36	U	ug/L	1	0.36	1.0	5	EPA 8260B	07/03/09 15:52	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	07/03/09 15:52	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	07/03/09 15:52	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	07/03/09 15:52	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	07/03/09 15:52	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	07/03/09 15:52	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 15:52	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	07/03/09 15:52	JKG	
Vinyl chloride [75-01-4] ^	0.30	U	ug/L	1	0.30	1.0	1	EPA 8260B	07/03/09 15:52	JKG	



www.encolabs.com

Description: 3201-MW5

Lab Sample ID: C905416-05

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 12:20

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Table with columns: Analyte [CAS Number], Results, Flag, Units, DF, MDL, MRL, NC SWSL, Method, Analyzed, By, Notes. Rows include Xylenes (Total) and Surrogates (4-Bromofluorobenzene, Dibromofluoromethane, Toluene-d8).

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Table with columns: Analyte [CAS Number], Results, Flag, Units, DF, MDL, MRL, NC SWSL, Method, Analyzed, By, Notes. Rows include Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



www.encolabs.com

Description: 3201-MW7R

Lab Sample ID: C905416-06

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 11:45

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/03/09 16:22	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	07/03/09 16:22	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
1,1-Dichloroethane [75-34-3] ^	0.33	U	ug/L	1	0.33	1.0	5	EPA 8260B	07/03/09 16:22	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	07/03/09 16:22	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	07/03/09 16:22	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	07/03/09 16:22	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	07/03/09 16:22	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	07/03/09 16:22	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	07/03/09 16:22	JKG	
Acetone [67-64-1] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	07/03/09 16:22	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	07/03/09 16:22	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	07/03/09 16:22	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	07/03/09 16:22	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	07/03/09 16:22	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	07/03/09 16:22	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
Chlorobenzene [108-90-7] ^	0.27	U	ug/L	1	0.27	1.0	3	EPA 8260B	07/03/09 16:22	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	07/03/09 16:22	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	07/03/09 16:22	JKG	
Chloromethane [74-87-3] ^	0.34	U	ug/L	1	0.34	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.36	U	ug/L	1	0.36	1.0	5	EPA 8260B	07/03/09 16:22	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	07/03/09 16:22	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	07/03/09 16:22	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	07/03/09 16:22	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	07/03/09 16:22	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	07/03/09 16:22	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 16:22	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	07/03/09 16:22	JKG	
Vinyl chloride [75-01-4] ^	0.30	U	ug/L	1	0.30	1.0	1	EPA 8260B	07/03/09 16:22	JKG	



www.encolabs.com

Description: 3201-MW7R

Lab Sample ID: C905416-06

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 11:45

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

### Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Xylenes (Total) [1330-20-7] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/03/09 16:22	JKG	
<b>Surrogates</b>											
4-Bromofluorobenzene	47	1	50.0	93 %	51-122	9G03002	EPA 8260B	07/03/09 16:22	JKG		
Dibromofluoromethane	50	1	50.0	100 %	68-117	9G03002	EPA 8260B	07/03/09 16:22	JKG		
Toluene-d8	47	1	50.0	94 %	69-110	9G03002	EPA 8260B	07/03/09 16:22	JKG		

### Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.68	U	ug/L	1	0.68	2.00	6	EPA 6020	07/07/09 11:49	VLO	
Arsenic [7440-38-2] ^	4.4	JB	ug/L	1	2.8	10.0	10	EPA 6010B	07/07/09 11:35	VLO	J-01
Barium [7440-39-3] ^	618		ug/L	1	4.20	10.0	100	EPA 6010B	07/07/09 11:35	VLO	
Beryllium [7440-41-7] ^	0.08	U	ug/L	1	0.08	1.00	1	EPA 6010B	07/07/09 11:35	VLO	
Cadmium [7440-43-9] ^	0.09	U	ug/L	1	0.09	1.00	1	EPA 6010B	07/07/09 11:35	VLO	
Chromium [7440-47-3] ^	1.2	J	ug/L	1	0.7	10.0	10	EPA 6010B	07/07/09 11:35	VLO	
Cobalt [7440-48-4] ^	0.6	U	ug/L	1	0.6	10.0	10	EPA 6010B	07/07/09 11:35	VLO	
Copper [7440-50-8] ^	0.81	U	ug/L	1	0.81	10.0	10	EPA 6010B	07/07/09 11:35	VLO	
Lead [7439-92-1] ^	1.6	U	ug/L	1	1.6	10.0	10	EPA 6010B	07/07/09 11:35	VLO	
Nickel [7440-02-0] ^	2.1	JB	ug/L	1	0.6	10.0	50	EPA 6010B	07/07/09 11:35	VLO	J-01
Selenium [7782-49-2] ^	3.4	U	ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:35	VLO	
Silver [7440-22-4] ^	1.0	U	ug/L	1	1.0	10.0	10	EPA 6010B	07/07/09 11:35	VLO	
Thallium [7440-28-0] ^	0.036	U	ug/L	1	0.036	1.00	5.5	EPA 6020	07/07/09 11:49	VLO	
Vanadium [7440-62-2] ^	0.7	U	ug/L	1	0.7	10.0	25	EPA 6010B	07/07/09 11:35	VLO	
Zinc [7440-66-6] ^	4.7	J	ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:35	VLO	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



www.encolabs.com

Description: 3201-MW8

Lab Sample ID: C905416-07

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 10:50

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/03/09 16:52	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	07/03/09 16:52	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
1,1-Dichloroethane [75-34-3] ^	0.33	U	ug/L	1	0.33	1.0	5	EPA 8260B	07/03/09 16:52	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	07/03/09 16:52	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	07/03/09 16:52	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	07/03/09 16:52	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	07/03/09 16:52	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	07/03/09 16:52	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	07/03/09 16:52	JKG	
Acetone [67-64-1] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	07/03/09 16:52	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	07/03/09 16:52	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	07/03/09 16:52	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	07/03/09 16:52	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	07/03/09 16:52	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	07/03/09 16:52	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
Chlorobenzene [108-90-7] ^	0.27	U	ug/L	1	0.27	1.0	3	EPA 8260B	07/03/09 16:52	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	07/03/09 16:52	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	07/03/09 16:52	JKG	
Chloromethane [74-87-3] ^	0.34	U	ug/L	1	0.34	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.36	U	ug/L	1	0.36	1.0	5	EPA 8260B	07/03/09 16:52	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	07/03/09 16:52	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	07/03/09 16:52	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	07/03/09 16:52	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	07/03/09 16:52	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	07/03/09 16:52	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 16:52	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	07/03/09 16:52	JKG	
Vinyl chloride [75-01-4] ^	0.30	U	ug/L	1	0.30	1.0	1	EPA 8260B	07/03/09 16:52	JKG	



www.encolabs.com

Description: 3201-MW8

Lab Sample ID: C905416-07

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 10:50

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Xylenes (Total) [1330-20-7] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/03/09 16:52	JKG	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	47	1	50.0	95 %	51-122	9G03002	EPA 8260B	07/03/09 16:52	JKG	
Dibromofluoromethane	49	1	50.0	98 %	68-117	9G03002	EPA 8260B	07/03/09 16:52	JKG	
Toluene-d8	48	1	50.0	95 %	69-110	9G03002	EPA 8260B	07/03/09 16:52	JKG	

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.68	U	ug/L	1	0.68	2.00	6	EPA 6020	07/07/09 11:52	VLO	
Arsenic [7440-38-2] ^	2.8	U	ug/L	1	2.8	10.0	10	EPA 6010B	07/07/09 11:37	VLO	
Barium [7440-39-3] ^	106		ug/L	1	4.20	10.0	100	EPA 6010B	07/07/09 11:37	VLO	
Beryllium [7440-41-7] ^	0.08	U	ug/L	1	0.08	1.00	1	EPA 6010B	07/07/09 11:37	VLO	
Cadmium [7440-43-9] ^	0.09	U	ug/L	1	0.09	1.00	1	EPA 6010B	07/07/09 11:37	VLO	
Chromium [7440-47-3] ^	0.7	J	ug/L	1	0.7	10.0	10	EPA 6010B	07/07/09 11:37	VLO	
Cobalt [7440-48-4] ^	5.7	J	ug/L	1	0.6	10.0	10	EPA 6010B	07/07/09 11:37	VLO	
Copper [7440-50-8] ^	0.81	U	ug/L	1	0.81	10.0	10	EPA 6010B	07/07/09 11:37	VLO	
Lead [7439-92-1] ^	2.3	JB	ug/L	1	1.6	10.0	10	EPA 6010B	07/07/09 11:37	VLO	J-01
Nickel [7440-02-0] ^	7.6	JB	ug/L	1	0.6	10.0	50	EPA 6010B	07/07/09 11:37	VLO	QB-01
Selenium [7782-49-2] ^	3.4	U	ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:37	VLO	
Silver [7440-22-4] ^	1.0	U	ug/L	1	1.0	10.0	10	EPA 6010B	07/07/09 11:37	VLO	
Thallium [7440-28-0] ^	0.036	U	ug/L	1	0.036	1.00	5.5	EPA 6020	07/07/09 11:52	VLO	
Vanadium [7440-62-2] ^	0.7	U	ug/L	1	0.7	10.0	25	EPA 6010B	07/07/09 11:37	VLO	
Zinc [7440-66-6] ^	3.4	U	ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:37	VLO	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



www.encolabs.com

Description: 3201-MW9R

Lab Sample ID: C905416-08

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 09:55

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/03/09 17:22	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	07/03/09 17:22	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
1,1-Dichloroethane [75-34-3] ^	0.33	U	ug/L	1	0.33	1.0	5	EPA 8260B	07/03/09 17:22	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	07/03/09 17:22	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	07/03/09 17:22	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	07/03/09 17:22	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	07/03/09 17:22	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	07/03/09 17:22	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	07/03/09 17:22	JKG	
Acetone [67-64-1] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	07/03/09 17:22	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	07/03/09 17:22	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	07/03/09 17:22	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	07/03/09 17:22	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	07/03/09 17:22	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	07/03/09 17:22	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
Chlorobenzene [108-90-7] ^	0.27	U	ug/L	1	0.27	1.0	3	EPA 8260B	07/03/09 17:22	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	07/03/09 17:22	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	07/03/09 17:22	JKG	
Chloromethane [74-87-3] ^	0.34	U	ug/L	1	0.34	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.36	U	ug/L	1	0.36	1.0	5	EPA 8260B	07/03/09 17:22	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	07/03/09 17:22	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	07/03/09 17:22	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	07/03/09 17:22	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	07/03/09 17:22	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	07/03/09 17:22	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 17:22	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	07/03/09 17:22	JKG	
Vinyl chloride [75-01-4] ^	0.30	U	ug/L	1	0.30	1.0	1	EPA 8260B	07/03/09 17:22	JKG	



www.encolabs.com

Description: 3201-MW9R

Lab Sample ID: C905416-08

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 09:55

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Table with columns: Analyte [CAS Number], Results, Flag, Units, DF, MDL, MRL, NC SWSL, Method, Analyzed, By, Notes. Rows include Xylenes (Total) and Surrogates (4-Bromofluorobenzene, Dibromofluoromethane, Toluene-d8).

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Table with columns: Analyte [CAS Number], Results, Flag, Units, DF, MDL, MRL, NC SWSL, Method, Analyzed, By, Notes. Rows include Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



www.encolabs.com

Description: 3201-MW10

Lab Sample ID: C905416-09

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 15:25

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	2.0	UD	ug/L	5	2.0	5.0	5	EPA 8260B	07/03/09 17:51	JKG	
1,1,1-Trichloroethane [71-55-6] ^	1.4	UD	ug/L	5	1.4	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	1.6	UD	ug/L	5	1.6	5.0	3	EPA 8260B	07/03/09 17:51	JKG	
1,1,2-Trichloroethane [79-00-5] ^	1.8	UD	ug/L	5	1.8	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
<b>1,1-Dichloroethane [75-34-3] ^</b>	<b>7.8</b>	D	ug/L	5	1.6	5.0	5	EPA 8260B	07/03/09 17:51	JKG	
1,1-Dichloroethene [75-35-4] ^	1.2	UD	ug/L	5	1.2	5.0	5	EPA 8260B	07/03/09 17:51	JKG	
1,2,3-Trichloropropane [96-18-4] ^	2.8	UD	ug/L	5	2.8	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	2.4	UD	ug/L	5	2.4	5.0	13	EPA 8260B	07/03/09 17:51	JKG	
1,2-Dibromoethane [106-93-4] ^	2.1	UD	ug/L	5	2.1	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
1,2-Dichlorobenzene [95-50-1] ^	1.4	UD	ug/L	5	1.4	5.0	5	EPA 8260B	07/03/09 17:51	JKG	
1,2-Dichloroethane [107-06-2] ^	3.2	UD	ug/L	5	3.2	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
<b>1,2-Dichloropropane [78-87-5] ^</b>	<b>9.4</b>	D	ug/L	5	1.0	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
<b>1,4-Dichlorobenzene [106-46-7] ^</b>	<b>2.2</b>	JD	ug/L	5	1.9	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
2-Butanone [78-93-3] ^	5.0	UD	ug/L	5	5.0	25	100	EPA 8260B	07/03/09 17:51	JKG	
2-Hexanone [591-78-6] ^	3.4	UD	ug/L	5	3.4	25	50	EPA 8260B	07/03/09 17:51	JKG	
4-Methyl-2-pentanone [108-10-1] ^	5.5	UD	ug/L	5	5.5	25	100	EPA 8260B	07/03/09 17:51	JKG	
Acetone [67-64-1] ^	7.5	UD	ug/L	5	7.5	25	100	EPA 8260B	07/03/09 17:51	JKG	
Acrylonitrile [107-13-1] ^	10	UD	ug/L	5	10	50	200	EPA 8260B	07/03/09 17:51	JKG	
<b>Benzene [71-43-2] ^</b>	<b>4.6</b>	JD	ug/L	5	1.0	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
Bromochloromethane [74-97-5] ^	2.1	UD	ug/L	5	2.1	5.0	3	EPA 8260B	07/03/09 17:51	JKG	
Bromodichloromethane [75-27-4] ^	1.8	UD	ug/L	5	1.8	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
Bromoform [75-25-2] ^	3.6	UD	ug/L	5	3.6	5.0	3	EPA 8260B	07/03/09 17:51	JKG	
Bromomethane [74-83-9] ^	2.4	UD	ug/L	5	2.4	5.0	10	EPA 8260B	07/03/09 17:51	JKG	
Carbon disulfide [75-15-0] ^	2.7	UD	ug/L	5	2.7	25	100	EPA 8260B	07/03/09 17:51	JKG	
Carbon tetrachloride [56-23-5] ^	1.9	UD	ug/L	5	1.9	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
Chlorobenzene [108-90-7] ^	1.4	UD	ug/L	5	1.4	5.0	3	EPA 8260B	07/03/09 17:51	JKG	
Chloroethane [75-00-3] ^	1.5	UD	ug/L	5	1.5	5.0	10	EPA 8260B	07/03/09 17:51	JKG	
Chloroform [67-66-3] ^	1.0	UD	ug/L	5	1.0	5.0	5	EPA 8260B	07/03/09 17:51	JKG	
Chloromethane [74-87-3] ^	1.7	UD	ug/L	5	1.7	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
<b>cis-1,2-Dichloroethene [156-59-2] ^</b>	<b>370</b>	D	ug/L	5	1.8	5.0	5	EPA 8260B	07/03/09 17:51	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	1.4	UD	ug/L	5	1.4	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
Dibromochloromethane [124-48-1] ^	1.6	UD	ug/L	5	1.6	5.0	3	EPA 8260B	07/03/09 17:51	JKG	
Dibromomethane [74-95-3] ^	1.8	UD	ug/L	5	1.8	5.0	10	EPA 8260B	07/03/09 17:51	JKG	
Ethylbenzene [100-41-4] ^	1.0	UD	ug/L	5	1.0	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
Iodomethane [74-88-4] ^	2.6	UD	ug/L	5	2.6	25	10	EPA 8260B	07/03/09 17:51	JKG	
Methylene chloride [75-09-2] ^	2.6	UD	ug/L	5	2.6	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
Styrene [100-42-5] ^	1.3	UD	ug/L	5	1.3	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
<b>Tetrachloroethene [127-18-4] ^</b>	<b>2.6</b>	JD	ug/L	5	1.8	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
Toluene [108-88-3] ^	1.4	UD	ug/L	5	1.4	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
<b>trans-1,2-Dichloroethene [156-60-5] ^</b>	<b>9.7</b>	D	ug/L	5	1.7	5.0	5	EPA 8260B	07/03/09 17:51	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	1.9	UD	ug/L	5	1.9	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	2.7	UD	ug/L	5	2.7	5.0	100	EPA 8260B	07/03/09 17:51	JKG	
<b>Trichloroethene [79-01-6] ^</b>	<b>38</b>	D	ug/L	5	1.9	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
Trichlorofluoromethane [75-69-4] ^	1.4	UD	ug/L	5	1.4	5.0	1	EPA 8260B	07/03/09 17:51	JKG	
Vinyl acetate [108-05-4] ^	4.9	UD	ug/L	5	4.9	25	50	EPA 8260B	07/03/09 17:51	JKG	
<b>Vinyl chloride [75-01-4] ^</b>	<b>23</b>	D	ug/L	5	1.5	5.0	1	EPA 8260B	07/03/09 17:51	JKG	



www.encolabs.com

Description: 3201-MW10

Lab Sample ID: C905416-09

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 15:25

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

### Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Xylenes (Total) [1330-20-7] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/03/09 17:51	JKG	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	48	1	50.0	97 %	51-122	9G03002	EPA 8260B	07/03/09 17:51	JKG	
Dibromofluoromethane	49	1	50.0	98 %	68-117	9G03002	EPA 8260B	07/03/09 17:51	JKG	
Toluene-d8	48	1	50.0	97 %	69-110	9G03002	EPA 8260B	07/03/09 17:51	JKG	

### Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.68	U	ug/L	1	0.68	2.00	6	EPA 6020	07/07/09 11:04	VLO	
Arsenic [7440-38-2] ^	2.8	U	ug/L	1	2.8	10.0	10	EPA 6010B	07/07/09 11:04	VLO	
Barium [7440-39-3] ^	341		ug/L	1	4.20	10.0	100	EPA 6010B	07/07/09 11:04	VLO	
Beryllium [7440-41-7] ^	0.46	J	ug/L	1	0.08	1.00	1	EPA 6010B	07/07/09 11:04	VLO	
Cadmium [7440-43-9] ^	0.26	J	ug/L	1	0.09	1.00	1	EPA 6010B	07/07/09 11:04	VLO	
Chromium [7440-47-3] ^	6.1	J	ug/L	1	0.7	10.0	10	EPA 6010B	07/07/09 11:04	VLO	
Cobalt [7440-48-4] ^	21.7		ug/L	1	0.6	10.0	10	EPA 6010B	07/07/09 11:04	VLO	
Copper [7440-50-8] ^	1.33	J	ug/L	1	0.81	10.0	10	EPA 6010B	07/07/09 11:04	VLO	
Lead [7439-92-1] ^	8.8	JB	ug/L	1	1.6	10.0	10	EPA 6010B	07/07/09 11:04	VLO	J-01
Nickel [7440-02-0] ^	13.1	JB	ug/L	1	0.6	10.0	50	EPA 6010B	07/07/09 11:04	VLO	QB-01
Selenium [7782-49-2] ^	3.4	U	ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:04	VLO	
Silver [7440-22-4] ^	1.0	U	ug/L	1	1.0	10.0	10	EPA 6010B	07/07/09 11:04	VLO	
Thallium [7440-28-0] ^	0.036	U	ug/L	1	0.036	1.00	5.5	EPA 6020	07/07/09 11:04	VLO	
Vanadium [7440-62-2] ^	6.9	J	ug/L	1	0.7	10.0	25	EPA 6010B	07/07/09 11:04	VLO	
Zinc [7440-66-6] ^	22.4		ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:04	VLO	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



www.encolabs.com

Description: 3201-S3

Lab Sample ID: C905416-10

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 16:40

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/03/09 18:21	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	07/03/09 18:21	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
1,1-Dichloroethane [75-34-3] ^	0.33	U	ug/L	1	0.33	1.0	5	EPA 8260B	07/03/09 18:21	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	07/03/09 18:21	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	07/03/09 18:21	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	07/03/09 18:21	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	07/03/09 18:21	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	07/03/09 18:21	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	07/03/09 18:21	JKG	
Acetone [67-64-1] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	07/03/09 18:21	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	07/03/09 18:21	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	07/03/09 18:21	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	07/03/09 18:21	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	07/03/09 18:21	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	07/03/09 18:21	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
Chlorobenzene [108-90-7] ^	0.27	U	ug/L	1	0.27	1.0	3	EPA 8260B	07/03/09 18:21	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	07/03/09 18:21	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	07/03/09 18:21	JKG	
Chloromethane [74-87-3] ^	0.34	U	ug/L	1	0.34	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.36	U	ug/L	1	0.36	1.0	5	EPA 8260B	07/03/09 18:21	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	07/03/09 18:21	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	07/03/09 18:21	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	07/03/09 18:21	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	07/03/09 18:21	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	07/03/09 18:21	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 18:21	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	07/03/09 18:21	JKG	
Vinyl chloride [75-01-4] ^	0.30	U	ug/L	1	0.30	1.0	1	EPA 8260B	07/03/09 18:21	JKG	



www.encolabs.com

Description: 3201-S3

Lab Sample ID: C905416-10

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 16:40

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Xylenes (Total) [1330-20-7] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/03/09 18:21	JKG	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	50	1	50.0	100 %	51-122	9G03002	EPA 8260B	07/03/09 18:21	JKG	
Dibromofluoromethane	49	1	50.0	98 %	68-117	9G03002	EPA 8260B	07/03/09 18:21	JKG	
Toluene-d8	48	1	50.0	96 %	69-110	9G03002	EPA 8260B	07/03/09 18:21	JKG	

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.68	U	ug/L	1	0.68	2.00	6	EPA 6020	07/07/09 11:59	VLO	
Arsenic [7440-38-2] ^	2.8	U	ug/L	1	2.8	10.0	10	EPA 6010B	07/07/09 11:49	VLO	
Barium [7440-39-3] ^	8.29	J	ug/L	1	4.20	10.0	100	EPA 6010B	07/07/09 11:49	VLO	
Beryllium [7440-41-7] ^	0.08	U	ug/L	1	0.08	1.00	1	EPA 6010B	07/07/09 11:49	VLO	
Cadmium [7440-43-9] ^	0.09	U	ug/L	1	0.09	1.00	1	EPA 6010B	07/07/09 11:49	VLO	
Chromium [7440-47-3] ^	1.1	J	ug/L	1	0.7	10.0	10	EPA 6010B	07/07/09 11:49	VLO	
Cobalt [7440-48-4] ^	0.7	J	ug/L	1	0.6	10.0	10	EPA 6010B	07/07/09 11:49	VLO	
Copper [7440-50-8] ^	0.81	U	ug/L	1	0.81	10.0	10	EPA 6010B	07/07/09 11:49	VLO	
Lead [7439-92-1] ^	1.6	U	ug/L	1	1.6	10.0	10	EPA 6010B	07/07/09 11:49	VLO	
Nickel [7440-02-0] ^	3.8	JB	ug/L	1	0.6	10.0	50	EPA 6010B	07/07/09 11:49	VLO	J-01
Selenium [7782-49-2] ^	3.4	U	ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:49	VLO	
Silver [7440-22-4] ^	1.0	U	ug/L	1	1.0	10.0	10	EPA 6010B	07/07/09 11:49	VLO	
Thallium [7440-28-0] ^	0.036	U	ug/L	1	0.036	1.00	5.5	EPA 6020	07/07/09 11:59	VLO	
Vanadium [7440-62-2] ^	2.4	J	ug/L	1	0.7	10.0	25	EPA 6010B	07/07/09 11:49	VLO	
Zinc [7440-66-6] ^	28.3		ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:49	VLO	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



www.encolabs.com

Description: 3201-S4

Lab Sample ID: C905416-11

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 16:55

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/03/09 18:51	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	07/03/09 18:51	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
1,1-Dichloroethane [75-34-3] ^	0.33	U	ug/L	1	0.33	1.0	5	EPA 8260B	07/03/09 18:51	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	07/03/09 18:51	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	07/03/09 18:51	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	07/03/09 18:51	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	07/03/09 18:51	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	07/03/09 18:51	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	07/03/09 18:51	JKG	
Acetone [67-64-1] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	07/03/09 18:51	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	07/03/09 18:51	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	07/03/09 18:51	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	07/03/09 18:51	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	07/03/09 18:51	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	07/03/09 18:51	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
Chlorobenzene [108-90-7] ^	0.27	U	ug/L	1	0.27	1.0	3	EPA 8260B	07/03/09 18:51	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	07/03/09 18:51	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	07/03/09 18:51	JKG	
Chloromethane [74-87-3] ^	0.34	U	ug/L	1	0.34	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.36	U	ug/L	1	0.36	1.0	5	EPA 8260B	07/03/09 18:51	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	07/03/09 18:51	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	07/03/09 18:51	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	07/03/09 18:51	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	07/03/09 18:51	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	07/03/09 18:51	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 18:51	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	07/03/09 18:51	JKG	
Vinyl chloride [75-01-4] ^	0.30	U	ug/L	1	0.30	1.0	1	EPA 8260B	07/03/09 18:51	JKG	



www.encolabs.com

Description: 3201-S4

Lab Sample ID: C905416-11

Received: 07/01/09 13:10

Matrix: Ground Water

Sampled: 06/30/09 16:55

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

### Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Xylenes (Total) [1330-20-7] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/03/09 18:51	JKG	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	48	1	50.0	96 %	51-122	9G03002	EPA 8260B	07/03/09 18:51	JKG	
Dibromofluoromethane	49	1	50.0	98 %	68-117	9G03002	EPA 8260B	07/03/09 18:51	JKG	
Toluene-d8	47	1	50.0	94 %	69-110	9G03002	EPA 8260B	07/03/09 18:51	JKG	

### Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.68	U	ug/L	1	0.68	2.00	6	EPA 6020	07/07/09 12:03	VLO	
Arsenic [7440-38-2] ^	2.8	U	ug/L	1	2.8	10.0	10	EPA 6010B	07/07/09 11:51	VLO	
Barium [7440-39-3] ^	9.78	J	ug/L	1	4.20	10.0	100	EPA 6010B	07/07/09 11:51	VLO	
Beryllium [7440-41-7] ^	0.08	U	ug/L	1	0.08	1.00	1	EPA 6010B	07/07/09 11:51	VLO	
Cadmium [7440-43-9] ^	0.09	U	ug/L	1	0.09	1.00	1	EPA 6010B	07/07/09 11:51	VLO	
Chromium [7440-47-3] ^	0.7	U	ug/L	1	0.7	10.0	10	EPA 6010B	07/07/09 11:51	VLO	
Cobalt [7440-48-4] ^	0.9	J	ug/L	1	0.6	10.0	10	EPA 6010B	07/07/09 11:51	VLO	
Copper [7440-50-8] ^	0.81	U	ug/L	1	0.81	10.0	10	EPA 6010B	07/07/09 11:51	VLO	
Lead [7439-92-1] ^	2.4	JB	ug/L	1	1.6	10.0	10	EPA 6010B	07/07/09 11:51	VLO	J-01
Nickel [7440-02-0] ^	3.1	JB	ug/L	1	0.6	10.0	50	EPA 6010B	07/07/09 11:51	VLO	J-01
Selenium [7782-49-2] ^	3.4	U	ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:51	VLO	
Silver [7440-22-4] ^	1.0	U	ug/L	1	1.0	10.0	10	EPA 6010B	07/07/09 11:51	VLO	
Thallium [7440-28-0] ^	0.036	U	ug/L	1	0.036	1.00	5.5	EPA 6020	07/07/09 12:03	VLO	
Vanadium [7440-62-2] ^	2.4	J	ug/L	1	0.7	10.0	25	EPA 6010B	07/07/09 11:51	VLO	
Zinc [7440-66-6] ^	24.7		ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:51	VLO	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



www.encolabs.com

Description: 3201-Equipment Blank

Lab Sample ID: C905416-12

Received: 07/01/09 13:10

Matrix: Water

Sampled: 06/30/09 18:30

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/03/09 19:20	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	07/03/09 19:20	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
1,1-Dichloroethane [75-34-3] ^	0.33	U	ug/L	1	0.33	1.0	5	EPA 8260B	07/03/09 19:20	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	07/03/09 19:20	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	07/03/09 19:20	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	07/03/09 19:20	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	07/03/09 19:20	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	07/03/09 19:20	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	07/03/09 19:20	JKG	
Acetone [67-64-1] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	07/03/09 19:20	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	07/03/09 19:20	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	07/03/09 19:20	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	07/03/09 19:20	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	07/03/09 19:20	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	07/03/09 19:20	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
Chlorobenzene [108-90-7] ^	0.27	U	ug/L	1	0.27	1.0	3	EPA 8260B	07/03/09 19:20	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	07/03/09 19:20	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	07/03/09 19:20	JKG	
Chloromethane [74-87-3] ^	0.34	U	ug/L	1	0.34	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.36	U	ug/L	1	0.36	1.0	5	EPA 8260B	07/03/09 19:20	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	07/03/09 19:20	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	07/03/09 19:20	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	07/03/09 19:20	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	07/03/09 19:20	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	07/03/09 19:20	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	07/03/09 19:20	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	07/03/09 19:20	JKG	
Vinyl chloride [75-01-4] ^	0.30	U	ug/L	1	0.30	1.0	1	EPA 8260B	07/03/09 19:20	JKG	



www.encolabs.com

Description: 3201-Equipment Blank

Lab Sample ID: C905416-12

Received: 07/01/09 13:10

Matrix: Water

Sampled: 06/30/09 18:30

Work Order: C905416

Project: City of Durham Closed MSWLF

Sampled By: Gerald Paul

### Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Xylenes (Total) [1330-20-7] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	07/03/09 19:20	JKG	
Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes	
4-Bromofluorobenzene	48	1	50.0	96 %	51-122	9G03002	EPA 8260B	07/03/09 19:20	JKG		
Dibromofluoromethane	50	1	50.0	101 %	68-117	9G03002	EPA 8260B	07/03/09 19:20	JKG		
Toluene-d8	49	1	50.0	98 %	69-110	9G03002	EPA 8260B	07/03/09 19:20	JKG		

### Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.68	U	ug/L	1	0.68	2.00	6	EPA 6020	07/07/09 12:06	VLO	
<b>Arsenic [7440-38-2] ^</b>	<b>4.3</b>	JB	ug/L	1	2.8	10.0	10	EPA 6010B	07/07/09 11:53	VLO	J-01
Barium [7440-39-3] ^	4.20	U	ug/L	1	4.20	10.0	100	EPA 6010B	07/07/09 11:53	VLO	
Beryllium [7440-41-7] ^	0.08	U	ug/L	1	0.08	1.00	1	EPA 6010B	07/07/09 11:53	VLO	
Cadmium [7440-43-9] ^	0.09	U	ug/L	1	0.09	1.00	1	EPA 6010B	07/07/09 11:53	VLO	
Chromium [7440-47-3] ^	0.7	U	ug/L	1	0.7	10.0	10	EPA 6010B	07/07/09 11:53	VLO	
Cobalt [7440-48-4] ^	0.6	U	ug/L	1	0.6	10.0	10	EPA 6010B	07/07/09 11:53	VLO	
<b>Copper [7440-50-8] ^</b>	<b>2.36</b>	J	ug/L	1	0.81	10.0	10	EPA 6010B	07/07/09 11:53	VLO	
Lead [7439-92-1] ^	1.6	U	ug/L	1	1.6	10.0	10	EPA 6010B	07/07/09 11:53	VLO	
<b>Nickel [7440-02-0] ^</b>	<b>0.6</b>	JB	ug/L	1	0.6	10.0	50	EPA 6010B	07/07/09 11:53	VLO	J-01
Selenium [7782-49-2] ^	3.4	U	ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:53	VLO	
Silver [7440-22-4] ^	1.0	U	ug/L	1	1.0	10.0	10	EPA 6010B	07/07/09 11:53	VLO	
Thallium [7440-28-0] ^	0.036	U	ug/L	1	0.036	1.00	5.5	EPA 6020	07/07/09 12:06	VLO	
Vanadium [7440-62-2] ^	0.7	U	ug/L	1	0.7	10.0	25	EPA 6010B	07/07/09 11:53	VLO	
<b>Zinc [7440-66-6] ^</b>	<b>3.8</b>	J	ug/L	1	3.4	10.0	10	EPA 6010B	07/07/09 11:53	VLO	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



www.encolabs.com

**QUALITY CONTROL****Volatile Organic Compounds by GCMS - Quality Control**

Batch 9G02002 - EPA 5030B\_MS

Blank (9G02002-BLK1)

Prepared: 07/02/2009 08:16 Analyzed: 07/02/2009 10:24

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.40	U	1.0	ug/L							
1,1,1-Trichloroethane	0.27	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.33	U	1.0	ug/L							
1,1,2-Trichloroethane	0.37	U	1.0	ug/L							
1,1-Dichloroethane	0.33	U	1.0	ug/L							
1,1-Dichloroethene	0.24	U	1.0	ug/L							
1,2,3-Trichloropropane	0.55	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.27	U	1.0	ug/L							
1,2-Dichloroethane	0.65	U	1.0	ug/L							
1,2-Dichloropropane	0.20	U	1.0	ug/L							
1,4-Dichlorobenzene	0.38	U	1.0	ug/L							
2-Butanone	1.0	U	5.0	ug/L							
2-Hexanone	0.69	U	5.0	ug/L							
4-Methyl-2-pentanone	1.1	U	5.0	ug/L							
Acetone	1.5	U	5.0	ug/L							
Acrylonitrile	2.1	U	10	ug/L							
Benzene	0.20	U	1.0	ug/L							
Bromochloromethane	0.42	U	1.0	ug/L							
Bromodichloromethane	0.37	U	1.0	ug/L							
Bromoform	0.71	U	1.0	ug/L							
Bromomethane	0.49	U	1.0	ug/L							
Carbon disulfide	0.54	U	5.0	ug/L							
Carbon tetrachloride	0.38	U	1.0	ug/L							
Chlorobenzene	0.27	U	1.0	ug/L							
Chloroethane	0.30	U	1.0	ug/L							
Chloroform	0.20	U	1.0	ug/L							
Chloromethane	0.34	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.36	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.28	U	1.0	ug/L							
Dibromochloromethane	0.32	U	1.0	ug/L							
Dibromomethane	0.37	U	1.0	ug/L							
Ethylbenzene	0.20	U	1.0	ug/L							
Iodomethane	0.52	U	5.0	ug/L							
Methylene chloride	0.53	U	1.0	ug/L							
Styrene	0.26	U	1.0	ug/L							
Tetrachloroethene	0.36	U	1.0	ug/L							
Toluene	0.27	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.34	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.38	U	1.0	ug/L							
trans-1,4-Dichloro-2-butene	0.54	U	1.0	ug/L							
Trichloroethene	0.38	U	1.0	ug/L							
Trichlorofluoromethane	0.28	U	1.0	ug/L							
Vinyl acetate	0.98	U	5.0	ug/L							
Vinyl chloride	0.30	U	1.0	ug/L							
Xylenes (Total)	0.40	U	1.0	ug/L							
Surrogate: 4-Bromofluorobenzene	48			ug/L	50.0		97	51-122			



www.encolabs.com

**QUALITY CONTROL****Volatile Organic Compounds by GCMS - Quality Control**

Batch 9G02002 - EPA 5030B\_MS

**Blank (9G02002-BLK1) Continued**

Prepared: 07/02/2009 08:16 Analyzed: 07/02/2009 10:24

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Surrogate: Dibromofluoromethane	47			ug/L	50.0		94	68-117			
Surrogate: Toluene-d8	47			ug/L	50.0		94	69-110			

**LCS (9G02002-BS1)**

Prepared: 07/02/2009 08:16 Analyzed: 07/02/2009 10:54

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	20		1.0	ug/L	20.0		102	75-133			
Benzene	19		1.0	ug/L	20.0		93	81-134			
Chlorobenzene	21		1.0	ug/L	20.0		106	83-117			
Toluene	19		1.0	ug/L	20.0		97	71-118			
Trichloroethene	21		1.0	ug/L	20.0		104	75-115			

**Matrix Spike (9G02002-MS1)**

Prepared: 07/02/2009 08:16 Analyzed: 07/02/2009 11:23

**Source: C905416-09**

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	23		1.0	ug/L	20.0	0.56	113	75-133			
Benzene	26		1.0	ug/L	20.0	4.7	106	81-134			
Chlorobenzene	24		1.0	ug/L	20.0	0.27 U	120	83-117			QM-07
Toluene	22		1.0	ug/L	20.0	0.27 U	108	71-118			
Trichloroethene	68		1.0	ug/L	20.0	45	117	75-115			QM-07

**Matrix Spike Dup (9G02002-MSD1)**

Prepared: 07/02/2009 08:16 Analyzed: 07/02/2009 11:53

**Source: C905416-09**

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	22		1.0	ug/L	20.0	0.56	107	75-133	5	20	
Benzene	25		1.0	ug/L	20.0	4.7	102	81-134	3	17	
Chlorobenzene	22		1.0	ug/L	20.0	0.27 U	110	83-117	9	16	
Toluene	20		1.0	ug/L	20.0	0.27 U	100	71-118	7	17	
Trichloroethene	65		1.0	ug/L	20.0	45	101	75-115	5	18	

Batch 9G03002 - EPA 5030B\_MS

**Blank (9G03002-BLK1)**

Prepared: 07/03/2009 09:10 Analyzed: 07/03/2009 11:54

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.40	U	1.0	ug/L							
1,1,1-Trichloroethane	0.27	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.33	U	1.0	ug/L							
1,1,2-Trichloroethane	0.37	U	1.0	ug/L							
1,1-Dichloroethane	0.33	U	1.0	ug/L							
1,1-Dichloroethene	0.24	U	1.0	ug/L							
1,2,3-Trichloropropane	0.55	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.27	U	1.0	ug/L							



www.encolabs.com

**QUALITY CONTROL****Volatile Organic Compounds by GCMS - Quality Control**

Batch 9G03002 - EPA 5030B\_MS

**Blank (9G03002-BLK1) Continued**

Prepared: 07/03/2009 09:10 Analyzed: 07/03/2009 11:54

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichloroethane	0.65	U	1.0	ug/L							
1,2-Dichloropropane	0.20	U	1.0	ug/L							
1,4-Dichlorobenzene	0.38	U	1.0	ug/L							
2-Butanone	1.0	U	5.0	ug/L							
2-Hexanone	0.69	U	5.0	ug/L							
4-Methyl-2-pentanone	1.1	U	5.0	ug/L							
Acetone	1.5	U	5.0	ug/L							
Acrylonitrile	2.1	U	10	ug/L							
Benzene	0.20	U	1.0	ug/L							
Bromochloromethane	0.42	U	1.0	ug/L							
Bromodichloromethane	0.37	U	1.0	ug/L							
Bromoform	0.71	U	1.0	ug/L							
Bromomethane	0.49	U	1.0	ug/L							
Carbon disulfide	0.54	U	5.0	ug/L							
Carbon tetrachloride	0.38	U	1.0	ug/L							
Chlorobenzene	0.27	U	1.0	ug/L							
Chloroethane	0.30	U	1.0	ug/L							
Chloroform	0.20	U	1.0	ug/L							
Chloromethane	0.34	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.36	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.28	U	1.0	ug/L							
Dibromochloromethane	0.32	U	1.0	ug/L							
Dibromomethane	0.37	U	1.0	ug/L							
Ethylbenzene	0.20	U	1.0	ug/L							
Iodomethane	0.52	U	5.0	ug/L							
Methylene chloride	0.53	U	1.0	ug/L							
Styrene	0.26	U	1.0	ug/L							
Tetrachloroethene	0.36	U	1.0	ug/L							
Toluene	0.27	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.34	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.38	U	1.0	ug/L							
trans-1,4-Dichloro-2-butene	0.54	U	1.0	ug/L							
Trichloroethene	0.38	U	1.0	ug/L							
Trichlorofluoromethane	0.28	U	1.0	ug/L							
Vinyl acetate	0.98	U	5.0	ug/L							
Vinyl chloride	0.30	U	1.0	ug/L							
Xylenes (Total)	0.40	U	1.0	ug/L							
Surrogate: 4-Bromofluorobenzene	47			ug/L	50.0		95	51-122			
Surrogate: Dibromofluoromethane	45			ug/L	50.0		89	68-117			
Surrogate: Toluene-d8	46			ug/L	50.0		92	69-110			

**LCS (9G03002-BS1)**

Prepared: 07/03/2009 09:10 Analyzed: 07/03/2009 12:24

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	19		1.0	ug/L	20.0		97	75-133			
Benzene	18		1.0	ug/L	20.0		92	81-134			
Chlorobenzene	20		1.0	ug/L	20.0		102	83-117			
Toluene	18		1.0	ug/L	20.0		92	71-118			



www.encolabs.com

**QUALITY CONTROL****Volatile Organic Compounds by GCMS - Quality Control**

Batch 9G03002 - EPA 5030B\_MS

**LCS (9G03002-BS1) Continued**

Prepared: 07/03/2009 09:10 Analyzed: 07/03/2009 12:24

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Trichloroethene	20		1.0	ug/L	20.0		100	75-115			

**Matrix Spike (9G03002-MS1)**

Prepared: 07/03/2009 09:10 Analyzed: 07/03/2009 12:54

**Source: C907764-02**

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	19		1.0	ug/L	20.0	0.24 U	93	75-133			
Benzene	17		1.0	ug/L	20.0	0.20 U	86	81-134			
Chlorobenzene	20		1.0	ug/L	20.0	0.27 U	98	83-117			
Toluene	18		1.0	ug/L	20.0	0.27 U	91	71-118			
Trichloroethene	19		1.0	ug/L	20.0	0.38 U	93	75-115			

**Matrix Spike Dup (9G03002-MSD1)**

Prepared: 07/03/2009 09:10 Analyzed: 07/03/2009 13:23

**Source: C907764-02**

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	18		1.0	ug/L	20.0	0.24 U	88	75-133	5	20	
Benzene	17		1.0	ug/L	20.0	0.20 U	87	81-134	1	17	
Chlorobenzene	19		1.0	ug/L	20.0	0.27 U	97	83-117	1	16	
Toluene	17		1.0	ug/L	20.0	0.27 U	87	71-118	4	17	
Trichloroethene	19		1.0	ug/L	20.0	0.38 U	93	75-115	0.5	18	

Batch 9G08001 - EPA 5030B\_MS

**Blank (9G08001-BLK1)**

Prepared: 07/08/2009 07:08 Analyzed: 07/08/2009 09:46

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.40	U	1.0	ug/L							
1,1,1-Trichloroethane	0.27	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.33	U	1.0	ug/L							
1,1,2-Trichloroethane	0.37	U	1.0	ug/L							
1,1-Dichloroethane	0.33	U	1.0	ug/L							
1,1-Dichloroethene	0.24	U	1.0	ug/L							
1,2,3-Trichloropropane	0.55	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.27	U	1.0	ug/L							
1,2-Dichloroethane	0.65	U	1.0	ug/L							
1,2-Dichloropropane	0.20	U	1.0	ug/L							
1,4-Dichlorobenzene	0.38	U	1.0	ug/L							
2-Butanone	1.0	U	5.0	ug/L							
2-Hexanone	0.69	U	5.0	ug/L							
4-Methyl-2-pentanone	1.1	U	5.0	ug/L							
Acetone	1.5	U	5.0	ug/L							
Acrylonitrile	2.1	U	10	ug/L							
Benzene	0.20	U	1.0	ug/L							
Bromochloromethane	0.42	U	1.0	ug/L							
Bromodichloromethane	0.37	U	1.0	ug/L							



www.encolabs.com

**QUALITY CONTROL****Volatile Organic Compounds by GCMS - Quality Control**

Batch 9G08001 - EPA 5030B\_MS

**Blank (9G08001-BLK1) Continued**

Prepared: 07/08/2009 07:08 Analyzed: 07/08/2009 09:46

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Bromoform	0.71	U	1.0	ug/L							
Bromomethane	0.49	U	1.0	ug/L							
Carbon disulfide	0.54	U	5.0	ug/L							
Carbon tetrachloride	0.38	U	1.0	ug/L							
Chlorobenzene	0.27	U	1.0	ug/L							
Chloroethane	0.30	U	1.0	ug/L							
Chloroform	0.20	U	1.0	ug/L							
Chloromethane	0.34	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.36	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.28	U	1.0	ug/L							
Dibromochloromethane	0.32	U	1.0	ug/L							
Dibromomethane	0.37	U	1.0	ug/L							
Ethylbenzene	0.20	U	1.0	ug/L							
Iodomethane	0.52	U	5.0	ug/L							
Methylene chloride	0.53	U	1.0	ug/L							
Styrene	0.26	U	1.0	ug/L							
Tetrachloroethene	0.36	U	1.0	ug/L							
Toluene	0.27	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.34	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.38	U	1.0	ug/L							
trans-1,4-Dichloro-2-butene	0.54	U	1.0	ug/L							
Trichloroethene	0.38	U	1.0	ug/L							
Trichlorofluoromethane	0.28	U	1.0	ug/L							
Vinyl acetate	0.98	U	5.0	ug/L							
Vinyl chloride	0.30	U	1.0	ug/L							
Xylenes (Total)	0.40	U	1.0	ug/L							
Surrogate: 4-Bromofluorobenzene	46			ug/L	50.0		91	51-122			
Surrogate: Dibromofluoromethane	48			ug/L	50.0		96	68-117			
Surrogate: Toluene-d8	48			ug/L	50.0		96	69-110			

**LCS (9G08001-BS1)**

Prepared: 07/08/2009 07:08 Analyzed: 07/08/2009 10:16

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	19		1.0	ug/L	20.0		95	75-133			
Benzene	19		1.0	ug/L	20.0		94	81-134			
Chlorobenzene	20		1.0	ug/L	20.0		100	83-117			
Toluene	19		1.0	ug/L	20.0		94	71-118			
Trichloroethene	20		1.0	ug/L	20.0		98	75-115			

**Matrix Spike (9G08001-MS1)**

Prepared: 07/08/2009 07:08 Analyzed: 07/08/2009 10:46

Source: C907764-09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	19		1.0	ug/L	20.0	0.24 U	95	75-133			
Benzene	19		1.0	ug/L	20.0	0.20 U	94	81-134			
Chlorobenzene	20		1.0	ug/L	20.0	0.27 U	100	83-117			
Toluene	18		1.0	ug/L	20.0	0.27 U	92	71-118			
Trichloroethene	20		1.0	ug/L	20.0	0.38 U	100	75-115			



www.encolabs.com

**QUALITY CONTROL**

**Volatile Organic Compounds by GCMS - Quality Control**

Batch 9G08001 - EPA 5030B\_MS

**Matrix Spike Dup (9G08001-MSD1)**

Prepared: 07/08/2009 07:08 Analyzed: 07/08/2009 11:15

Source: C907764-09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	18		1.0	ug/L	20.0	0.24 U	92	75-133	3	20	
Benzene	19		1.0	ug/L	20.0	0.20 U	93	81-134	0.3	17	
Chlorobenzene	20		1.0	ug/L	20.0	0.27 U	99	83-117	1	16	
Toluene	19		1.0	ug/L	20.0	0.27 U	93	71-118	0.3	17	
Trichloroethene	20		1.0	ug/L	20.0	0.38 U	98	75-115	1	18	

**Metals by EPA 6000/7000 Series Methods - Quality Control**

Batch 9G06012 - EPA 3005A

**Blank (9G06012-BLK1)**

Prepared: 07/06/2009 10:08 Analyzed: 07/07/2009 10:59

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Arsenic</b>	<b>3.1</b>	<b>J</b>	10.0	ug/L							
Barium	4.20	U	10.0	ug/L							
Beryllium	0.08	U	1.00	ug/L							
Cadmium	0.09	U	1.00	ug/L							
Chromium	0.7	U	10.0	ug/L							
Cobalt	0.6	U	10.0	ug/L							
Copper	0.81	U	10.0	ug/L							
<b>Lead</b>	<b>1.6</b>	<b>J</b>	10.0	ug/L							
<b>Nickel</b>	<b>0.6</b>	<b>J</b>	10.0	ug/L							
Selenium	3.4	U	10.0	ug/L							
Silver	1.0	U	10.0	ug/L							
Vanadium	0.7	U	10.0	ug/L							
Zinc	3.4	U	10.0	ug/L							

**LCS (9G06012-BS1)**

Prepared: 07/06/2009 10:08 Analyzed: 07/07/2009 10:55

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	1090	B	10.0	ug/L	1000		109	80-120			
Barium	1080		10.0	ug/L	1000		108	80-120			
Beryllium	554		1.00	ug/L	500		111	80-120			
Cadmium	550		1.00	ug/L	500		110	80-120			
Chromium	1110		10.0	ug/L	1000		111	80-120			
Cobalt	1080		10.0	ug/L	1000		108	80-120			
Copper	545		10.0	ug/L	500		109	80-120			
Lead	1100	B	10.0	ug/L	1000		110	80-120			
Nickel	1100	B	10.0	ug/L	1000		110	80-120			
Selenium	1120		10.0	ug/L	1000		112	80-120			
Silver	112		10.0	ug/L	100		112	80-120			
Vanadium	559		10.0	ug/L	500		112	80-120			
Zinc	1110		10.0	ug/L	1000		111	80-120			

**Matrix Spike (9G06012-MS1)**

Prepared: 07/06/2009 10:08 Analyzed: 07/07/2009 11:06

Source: C905416-09



www.encolabs.com

**QUALITY CONTROL**

**Metals by EPA 6000/7000 Series Methods - Quality Control**

Batch 9G06012 - EPA 3005A

**Matrix Spike (9G06012-MS1) Continued**

Prepared: 07/06/2009 10:08 Analyzed: 07/07/2009 11:06

Source: C905416-09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	1060	B	10.0	ug/L	1000	2.8 U	106	75-125			
Barium	1340		10.0	ug/L	1000	341	100	75-125			
Beryllium	536		1.00	ug/L	500	0.46	107	75-125			
Cadmium	518		1.00	ug/L	500	0.26	104	75-125			
Chromium	1060		10.0	ug/L	1000	6.1	105	75-125			
Cobalt	1040		10.0	ug/L	1000	21.7	102	75-125			
Copper	523		10.0	ug/L	500	1.33	104	75-125			
Lead	1040	B	10.0	ug/L	1000	8.8	103	75-125			
Nickel	1050	B	10.0	ug/L	1000	13.1	104	75-125			
Selenium	1070		10.0	ug/L	1000	3.4 U	107	75-125			
Silver	109		10.0	ug/L	100	1.0 U	109	75-125			
Vanadium	545		10.0	ug/L	500	6.9	108	75-125			
Zinc	1060		10.0	ug/L	1000	22.4	103	75-125			

**Matrix Spike Dup (9G06012-MSD1)**

Prepared: 07/06/2009 10:08 Analyzed: 07/07/2009 11:09

Source: C905416-09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	1100	B	10.0	ug/L	1000	2.8 U	110	75-125	4	25	
Barium	1430		10.0	ug/L	1000	341	109	75-125	7	25	
Beryllium	568		1.00	ug/L	500	0.46	113	75-125	6	25	
Cadmium	548		1.00	ug/L	500	0.26	110	75-125	6	25	
Chromium	1120		10.0	ug/L	1000	6.1	111	75-125	6	25	
Cobalt	1100		10.0	ug/L	1000	21.7	108	75-125	6	25	
Copper	554		10.0	ug/L	500	1.33	111	75-125	6	25	
Lead	1080	B	10.0	ug/L	1000	8.8	107	75-125	4	25	
Nickel	1110	B	10.0	ug/L	1000	13.1	109	75-125	5	25	
Selenium	1120		10.0	ug/L	1000	3.4 U	112	75-125	5	25	
Silver	114		10.0	ug/L	100	1.0 U	114	75-125	5	25	
Vanadium	576		10.0	ug/L	500	6.9	114	75-125	5	25	
Zinc	1150		10.0	ug/L	1000	22.4	113	75-125	9	25	

**Post Spike (9G06012-PS1)**

Prepared: 07/06/2009 10:08 Analyzed: 07/07/2009 11:18

Source: C905416-09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	1.1	B	0.01	mg/L	1.00	0.001	108	75-125			
Barium	1.40		0.01	mg/L	1.00	0.34	106	75-125			
Beryllium	0.55		0.001	mg/L	0.500	0.0005	110	75-125			
Cadmium	0.54		0.001	mg/L	0.500	0.0003	107	75-125			
Chromium	1.1		0.01	mg/L	1.00	0.006	109	75-125			
Cobalt	1.1		0.01	mg/L	1.00	0.02	106	75-125			
Copper	0.54		0.01	mg/L	0.500	0.001	109	75-125			
Lead	1.1	B	0.01	mg/L	1.00	0.009	105	75-125			
Nickel	1.1	B	0.01	mg/L	1.00	0.01	107	75-125			
Selenium	1.1		0.01	mg/L	1.00	-0.004	110	75-125			
Silver	0.1		0.01	mg/L	0.100	0.00001	108	75-125			



**QUALITY CONTROL**

**Metals by EPA 6000/7000 Series Methods - Quality Control**

Batch 9G06012 - EPA 3005A

**Post Spike (9G06012-PS1) Continued**

Prepared: 07/06/2009 10:08 Analyzed: 07/07/2009 11:18

Source: C905416-09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vanadium	0.6		0.01	mg/L	0.500	0.007	112	75-125			
Zinc	1.1		0.01	mg/L	1.00	0.02	107	75-125			

Batch 9G06014 - EPA 3005A

**LCS (9G06014-BS1)**

Prepared: 07/06/2009 10:17 Analyzed: 07/07/2009 11:35

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	23.4		2.00	ug/L	25.0		94	85-115			
Thallium	24.8		1.00	ug/L	25.0		99	85-115			

**Matrix Spike (9G06014-MS1)**

Prepared: 07/06/2009 10:17 Analyzed: 07/07/2009 11:07

Source: C905416-09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	27.3		2.00	ug/L	25.0	0.68 U	109	85-115			
Thallium	24.8		1.00	ug/L	25.0	0.036 U	99	85-115			

**Matrix Spike Dup (9G06014-MSD1)**

Prepared: 07/06/2009 10:17 Analyzed: 07/07/2009 11:11

Source: C905416-09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	26.7		2.00	ug/L	25.0	0.68 U	107	85-115	3	20	
Thallium	25.2		1.00	ug/L	25.0	0.036 U	101	85-115	1	20	

**Post Spike (9G06014-PS1)**

Prepared: 07/06/2009 10:17 Analyzed: 07/07/2009 11:14

Source: C905416-09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	0.02		0.002	mg/L	0.0250	0.0001	92	75-125			
Thallium	0.025		0.001	mg/L	0.0250	0.000008	99	75-125			

**FLAGS/NOTES AND DEFINITIONS**

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
MRL	Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.
J-01	Result is estimated due to positive results in the associated method blank.
QB-01	The method blank had a positive result for the analyte; however, the concentration in the method blank is less than 10% of the sample result, which minimizes the impact of the deviation.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.



ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

10715 Central Point Dr. Orlando, FL 32804 (407) 825-5314 Fax (407) 650-6945
4810 Executive Park Court, Suite 211 Jacksonville, FL 32216-6069 (904) 266-3007 Fax (904) 266-6210
100-A Woodwinds Industrial Ct. Cary, NC 27511 (919) 467-3500 Fax (919) 467-3515

Page 1 of 2

Client Name: S&ME, Inc. (SM001)
Address: 3201 Spring Forest Road, Raleigh, NC 27616
Tel: (919) 872-2660 Fax: (919) 876-3958
Reporting Contact: Gerald Paul
Billing Contact: Accounts Payable
Facility # (if required):

Requested Analyses: Ag, As, Ba, Be, Cd, Co, Cr, Cu, Ni, Pb, Sb, Se, Tl, Zn
Preservation (See Codes) (Combine as necessary):
8260B Appendix 1

Note: Rush requests subject to acceptance by the facility
Requested Turnaround Times: X Standard, Expedited
Due: / /
Lab Workorder: C905416

Table with columns: Item #, Sample ID (Field Identification), Collection Date, Collection Time, Comp / Grab, Matrix (See Codes), Total # of Containers, and Sample Comments. Rows include MW-1 through MW-10, Duplicate, S-1, and S-2.

Sample(s) Prepared By: S. H. S. / S. H. S. Date Type: 5/14/05
Date Time: 7/1/09 09:30
Date Time: 7/1/09 9:30
Date Time: 7/1/09 11:00
Condition Upon Receipt: X Acceptable, Unacceptable

Matrix: GW Groundwater SO-Sol SE-Sediment SW-Surface Water WW-Wastewater AA-Air O-Other (detail in comments)
Note: All samples submitted to ENCO labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist.
Preservation: H-HC M-MIN3 S-S2504 ND-ND10R O-Other (detail in comments)



www.encolabs.com



ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

10715 Central Post Dr. Orlando, FL 32824 (407) 826-5316 Fax (407) 850-6945
4819 Executive Park Court, Suite 211 Jacksonville, FL 32216-9069 (904) 256-3007 Fax (904) 256-6310
102-A Woodlands Industrial Ct. Cary, NC 27511 (919) 487-3000 Fax (919) 487-3515

Page 2 of 2

Client Name: S&ME, Inc. (SM001)
Address: 3201 Spring Forest Road, Raleigh, NC 27616
Project Name: City of Durham Closed MSWLF
Project Number: 1054-07-469
Collection Date: 6/30/09
Collection Time: 1640
Matrix: GW
Total # of Containers: 5

Table with columns: Item #, Sample ID (Field Identification), Collection Date, Collection Time, Comp / Grab, Matrix (see codes), Total # of Containers, Preservation (See Codes) (Combine as necessary), Requested Analyses, Requested Turnaround Times, Sample Comments.

Requested by: [Signature] Date Time: 5/14/09
Requested by: [Signature] Date Time: 7/16/09
Requested by: [Signature] Date Time: 7/1/10
Condition Upon Receipt: X Acceptable, Unacceptable



www.encolabs.com

**APPENDIX III**

**COMPACT DISK WITH ELECTRONIC COPY OF TABLE 7 (.XLS)  
AND ELECTRONIC COPY OF THIS REPORT (.PDF)**