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FINAL
JUNE 2010 (N=27) GROUNDWATER, SURFACE-WATER, AND METHANE MONITORING REPORT

FOR

LONGSTREET ROAD MSW LANDFILL
NCDENR LANDFILL PERMIT #26-02

FORT BRAGG, NORTH CAROLINA

Prepared by:

US Army Corps of Engineers
Savannah District
Hazardous, Toxic & Radioactive Waste Section
CESAS-EN-GH
100 W. Oglethorpe Avenue
Savannah, GA 31401

NOVEMBER 2010

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LIST OF ACRONYMS

C&D	Construction and Demolition
COCs	Chemicals of Concern
DPW	Directorate of Public Works
IDW	Investigation Derived Waste
LCID	Land Clearing and Inert Debris
µg/L	Micrograms Per Liter
MSWLF	Municipal Solid Waste Landfill Facility
NC2L	North Carolina Administrative Code, Title 15A, Subchapter 2L
NCDENR	North Carolina Department of Environmental and Natural Resources
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
USACE	US Army Corps of Engineers
VOCs	Volatile Organic Compounds

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1.0 INTRODUCTION

This is the N=27 Report for the groundwater and methane monitoring at the Longstreet Landfill (Figure 1) performed by the United States Army Corps of Engineers (USACE), Savannah District in June, 2010. The monitoring is required by the North Carolina Department of Environmental and Natural Resources (NCDENR) Solid Waste Management Division. This is the twenty-seventh (N=27) monitoring event for the site. This report summarizes the methods used for the groundwater and methane monitoring and presents the results of the sampling event.

1.1 Project Background

The Longstreet Road landfill is a Municipal Solid Waste Landfill Facility (MSWLF) located north of Longstreet Road at Fort Bragg in Cumberland County, North Carolina. Figure 1 is a map of the site location. The United States Army Corps of Engineers (USACE), Savannah District has been contracted by the Fort Bragg Directorate of Public Works (DPW) to conduct water quality and methane sampling for the Environmental Branch to satisfy the permit and Sampling and Analysis Plan (SAP) requirements. Groundwater, surface-water, and methane monitoring locations are shown on Figure 2. The current SAP, approved by NCDENR, includes sampling nine monitoring wells and two surface-water stations. The monitoring wells are SLMW-6, SLMW-7, SLMW-8, SLMW-9, SLMW-10, SLMW-11R, SLMW-12AR, SLMW-12BR, and SLMW-13, and the surface-water station is SW-1. Monitoring well SLMW-11R is a replacement well that was installed in July 2008. The replacement well was installed because well SLMW-11 had been dry for several events. All sampling was conducted according to North Carolina Solid Waste Management Guidelines.

1.2 Project Scope

The scope for this project included collecting 10 groundwater samples for all Appendix I and triggered Appendix II constituents, collecting 1 surface-water sample for all Appendix I & II constituents, performing methane monitoring at 14 selected methane monitoring wells and 6 buildings on site, evaluating the analytical results, and reporting the results of the investigation. The groundwater sampling and data analyses included obtaining field parameter measurements (i.e. pH, temperature, etc.), measuring water levels at the monitoring well locations, determining groundwater flow directions, validating laboratory analytical data, performing statistical analysis for each detected constituent as required by NC regulations, and determining the concentration changes of chemicals of concern (COCs) with time.

2.0 PROJECT HISTORY

2.1 Site Description

The MSWLF is located north of Longstreet Road at Fort Bragg in Cumberland County, North Carolina. Figures 1 and 2 show the site location and layout. The MSWLF is west of the main post and east of Cooleyconch Mountain. Cooleyconch Mountain is the prominent terrain feature west of the main post. A vehicle washing facility borders the site to the east, the Lamont Road LCID and C&D Landfills are approximately 1.5 miles east of the site (on the west side of Cooleyconch Mountain).

2.2 General Site Geology and Hydrology

Lithologic descriptions of soil borings and monitoring well borings from previous investigations at Fort Bragg indicate that in general Fort Bragg is underlain by alternating sands, silty sands, clayey sands, sandy clays, and clays, likely belonging to the Middendorf Formation. The sands and silty sands range in thickness from approximately 2 to 22 ft and are coarse grained. The clay units range in thickness from approximately 2 to 7 ft and are typically plastic.

2.3 Previous Investigation and Results

Several sampling events have been conducted at the Landfill. Initially, four monthly sampling events were conducted in July, August, September, and October 1996 by R,S & H Architect, Engineering, & Planning, Inc. Law & Company, Inc. conducted two sampling events in March and September, 1999 in conjunction with the installation of new wells. Then until 2005, sampling events were conducted by BPA Environmental & Engineering, Inc. The USACE has monitored the site since 2005.

The previous sampling event, held in November 2009 for Longstreet Landfill, was conducted by the USACE, Savannah District. Low levels of VOCs, SVOCs, pesticides and Appendix II inorganics were detected, but most detections were at

estimated levels and/or were below NC2L standards. Constituents found above the NC2L standards were: benzene, vinyl chloride, 4-methylphenol, Iron, Tetrachloroethene, and 1,2-dichloropropane

3.0 METHODS

3.1 Methane Monitoring

Methane monitoring was performed at 14 wells and 6 buildings. The monitoring included measuring levels of methane, carbon dioxide, and oxygen at each of the locations. The results of the monitoring are summarized in Table 1 and are also presented on Figure 3.

3.2 Water-Level Gauging

During this sampling event, USACE personnel measured the water levels in 10 monitoring wells. Measured water levels and calculated groundwater elevations are presented in Table 2. A Potentiometric map was developed based on the groundwater elevations; the map is presented as Figure 4. The map shows that the general direction of the groundwater flow at the Longstreet Landfill is towards the south-southeast.

3.3 Groundwater and Surface-Water Sampling

The groundwater sampling was conducted in accordance with the SAP for the Longstreet Road MSWLF (NCDENR Landfill Permit #26-02, which has been updated to reflect the most recent SAP). Groundwater samples were collected from ten monitoring wells and one surface-water station. Water quality parameters pH, specific conductivity, temperature, turbidity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) were measured during the purge cycle of each well and prior to sampling the surface-water stations. The measurements are summarized in Table 3.

The surface-water sample was collected using a peristaltic pump. The water to be collected for VOC analysis was not allowed to pass through the head of the pump, instead the tubing was filled and the flow was reversed to fill the bottles. Groundwater samples were collected using a low-flow purge method with a bladder pump. Immediately before purging a well, the static water level below the top of the well casing and the total depth of the well were measured to the nearest 0.01 foot and recorded in the field notebook. The volume of water in the well was calculated based on the static water level and the

well construction information. Well volume calculations were placed in the field notebook. The inlet of the sampling pump was placed at the mid-point of the screened interval. This level was adjusted for wells where the static water level is within the well screen. The monitoring wells were purged using a variable-flow bladder pump at a rate of 500 ml/min or less.

The wells were purged until the water quality had stabilized or five purge volumes were removed. The wells were considered stable when the following requirements were met for three consecutive readings: turbidity values within 10% or lower than 10 Nephelometric Turbidity Units (NTUs), temperature values within a range of 0.5 degrees Celcius, pH readings within 0.1 Standard Units (SU), ORP values within a range of 10 milivolts (mV), and conductivity values within 3%, and DO values within 10%.

The rate of pumping was determined and noted in the field notebook. The purge rate was adjusted, as necessary, to avoid purging any well to dryness and to equal the recharge of the aquifer. All sampling equipment was protected from contaminated soil surfaces to prevent contamination of the samples (e.g., equipment may be placed on disposable polyethylene plastic sheeting). Groundwater samples were collected after purging was complete. The tubing was disconnected from the flow through cell and the samples were collected from the pump outlet. The samples were labeled and placed into an ice-filled cooler for preservation.

Groundwater sampling data (including sample number, location, quantity of water purged, field parameters, site conditions, etc.) were documented in the field notebook. Water samples for Resource Conservation and Recovery Act (RCRA) metal analyses were un-filtered. The results of the groundwater sampling are presented in Table 4 and on Figure 5. The groundwater sampling field data logs are presented in Appendix A.

3.4 Investigation Derived Wastes Handling

The investigation derived wastes (IDW), including the waste water from well purging and decontamination water, were containerized in 55-gallon drums. Those

drums were appropriately labeled, sealed, and staged within designated areas until analytical results had been received and reviewed. Based on the analytical results of the groundwater samples, the IDW was classified as non-hazardous. With the concurrence of the Fort Bragg Installation Restoration Program Manager, the IDW was disposed of at an appropriate disposal facility.

4.0 ANALYTICAL RESULTS AND STATISTICAL ANALYSIS

4.1 Analytical Data Summary

Groundwater samples were analyzed for VOCs, SVOCs, Pesticides, PCBs, Organophosphorus Pesticides, and Appendix II Inorganics. The surface-water samples were analyzed for all Appendix I and Appendix II constituents. The summary of detections of the COCs is presented in Table 4. Figure 5 shows the distribution of the detections and their concentrations from this sampling event. The reports of chemical data quality assessment prepared by the Project Chemist are included as Appendix B. The laboratory reports of analytical results are included as Appendix C. For comparison, the analytical results of previous investigations are also presented in the Statistical Analyses Summary Report included in Appendix D.

In accordance with North Carolina guidance, analytical results are compared to North Carolina Groundwater 2L Standards (NC2L standards). The analytical data of the second 2010 sampling event indicated that some VOCs and inorganics were detected at low levels, and most detections were below NC2L standards (Table 4). Five wells and had detections exceeding the NC2L standards: wells SLMW-7, SLMW-8, SLMW-9, SLMW-10, and SLMW-11R. The analytical results for each of those wells are shown below:

- Well SLMW-7

  One compound was estimated or detected above the 2L standard as listed below:

Compound	2L	Concentration
4-Methylphenol	3.5 µg/L	26 µg/L

- Well SLMW-8

  Two compounds were estimated or detected above the 2L standard as listed below:

Compound	2L	Concentration
Benzene	1 µg/L	2.1 µg/L
Vinyl Chloride	0.015 µg/L	10 µg/L

No other constituents were above their 2L standards.

- Well SLMW-9

Two compounds were estimated or detected above the 2L standard as listed below:

Compound	2L	Concentration
Benzene	1 µg/L	1.8 µg/L
Vinyl Chloride	0.015 µg/L	2.1 µg/L

No other constituents were above their 2L standards.

- Well SLMW-10

One compound was estimated or detected above the 2L standard as listed below:

Compound	2L	Concentration
1,2-Dichloropropane	0.56 µg/L	1.7 µg/L

- Well SLMW-11R

One compound was estimated or detected above the 2L standard as listed below:

Compound	2L	Concentration
Tetrachloroethene	0.7 µg/L	1.2 µg/L

No other constituents were above their 2L standard.

Though wells had constituent detections above method detection limits, all other detections were below the respective NC2L standard and most are estimated values that were detected above the method detection limits but below the reporting limit (Table 4).

4.2 Statistical Analysis Results

A statistical test predicts the average behavior (distribution) of a random variable by comparing the means (normal distribution) or medians (lognormal and non-parametric distributions) of the compliance well data to background well data. Different statistical tests were used as appropriate for the different distributional patterns that occur within the data. Prior to testing for statistical significance, the distribution of each parameter was determined to be normal, lognormal, or non-normal.

If the data were non-normally distributed, or the fraction of nondetects exceeded 15% but were less than 90%, then the Kruskal-Wallis Test was applied. However, the Kruskal-Wallis test is prone to false positives. Therefore, additional statistical analyses were used to determine the validity of the positive results. If the fraction of non-detects exceeded 90%, then the Non-Parametric Prediction Limit was applied. Intra-well comparisons of data from a single well to previous data from the same well were performed to confirm if a trend of increasing concentration is occurring. The Mann-Kendall Trend Analysis and the Shewhart-CUSUM Control Chart statistical tests were selected for these additional analyses.

A detailed discussion of the statistical methods is presented in Appendix D. The results of the analysis indicated that 1,1-dichloroethane and barium results require additional sampling events to determine if evidence of a SSI or an upward trend exists. Compliance well concentrations do not vary significantly from background concentrations for any of the other parameters analyzed. Future analytical results will be evaluated using the same statistical procedures.

According to North Carolina Administrative Code Title 15A Chapter 13 Subchapter B Section 1634 paragraph f [15A NC3AC 13B.1634 (f)], assessment monitoring shall continue if Appendix II parameters are detected at statistically significant levels above background but below established groundwater protection standards. Assessment monitoring will have to continue at the landfill until the presence of no SSIs is confirmed in two consecutive monitoring events.

4.3 Methane Monitoring Results

The methane levels were measured at 19 locations at Longstreet. The results of the monitoring are summarized in Table 1 and are also presented on Figure 3. Five methane monitoring wells contained high levels of methane with one reading at or above 40.8% methane by volume. Methane vent flares were recommended for this landfill in the 2005 Report.

5.0 CONCLUSIONS AND RECOMMENATIONS

The annual monitoring program consists of two sampling events (this was the second) conducted six months apart. This was the N=27 sampling event for the Longstreet Road Landfill. Low levels of VOCs, SVOCs, pesticides and Appendix II inorganics were detected, but most detections were at estimated levels and/or were below NC2L standards. Benzene was detected above its NC2L standard at monitoring wells SLMW-8 and SLMW-9. Vinyl chloride was detected above the NC2L standard at monitoring wells SLMW-8 and SLMW-9.

According to the Statistical Analysis of groundwater Data (Appendix D), The results of the analysis indicated that the samples collected at the Longstreet Road Municipal Solid Waste Landfill did not exhibit any evidence of SSIs in the analytical results.

According to North Carolina Administrative Code Title 15A Chapter 13 Subchapter B Section 1634 paragraph f [15A NC3AC 13B.1634 (f)], assessment monitoring shall continue if Appendix II parameters are detected at statistically significant levels above background but below established groundwater protection standards. Assessment monitoring will have to continue at the landfill until the presence of no SSIs is confirmed in two consecutive monitoring events.

The methane levels were measured at 20 locations at Longstreet. Five methane monitoring wells showed high levels of methane with one reading at 40.8% methane by volume. Methane vent flares were recommended for this landfill in the 2005 Report.

6.0 REFERENCES

North Carolina Administrative Code, Title 15A, Department of Environment, Health, and Natural Resources, Division of Solid Waste, Management, Subchapter 13B, Solid Waste Management, Section .1600 (January 4, 1994).

North Carolina Administrative Code, Title 15A, Department of Environment, Health, and Natural Resources, Division of Solid Waste, Management, SubchapterNC2L, Classifications and Water Quality Standards Applicable to the Groundwaters of North Carolina, Sections .0100, .0200, and .0300 (November 8, 1993): from the Environmental Management Commission, Raleigh, North Carolina.

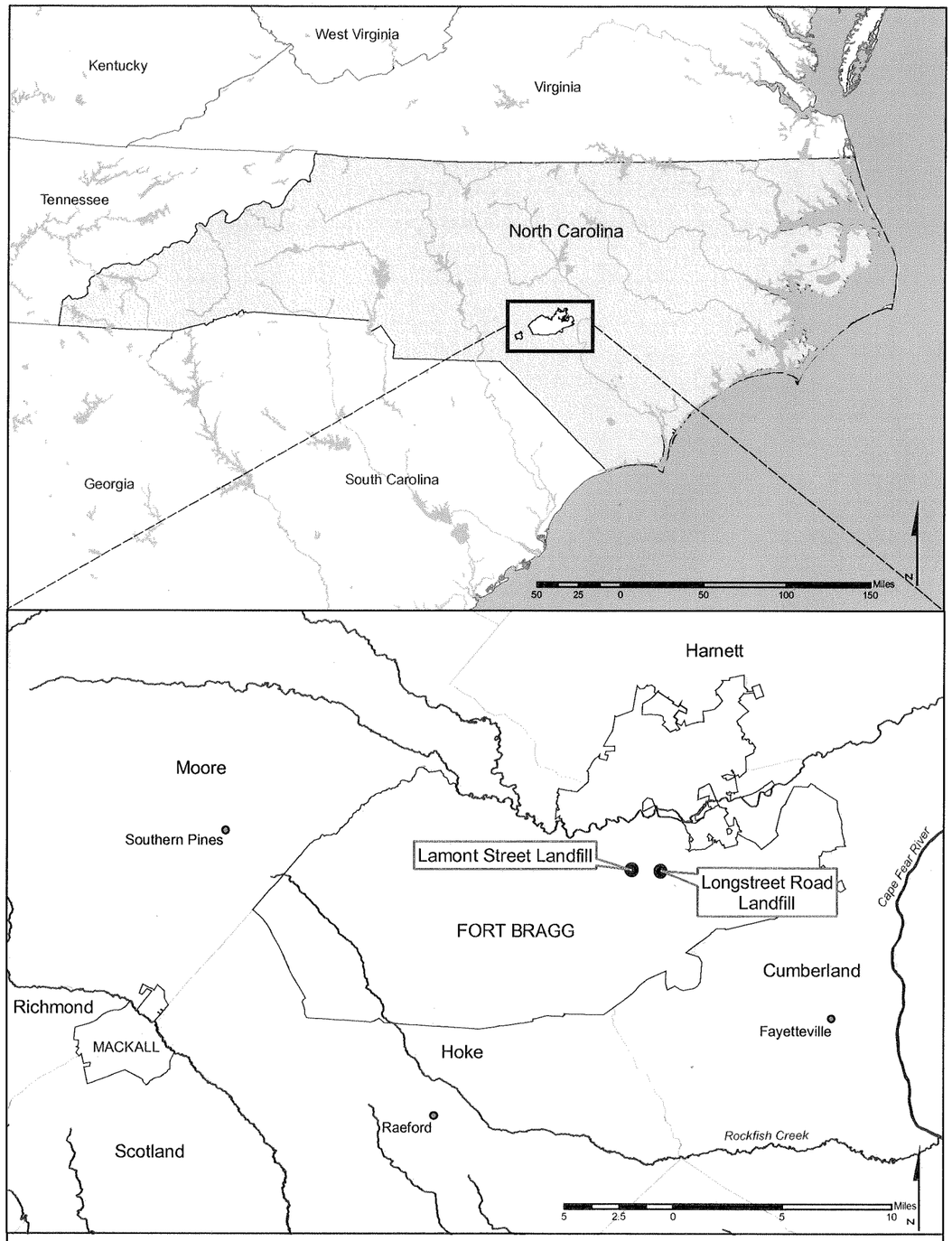

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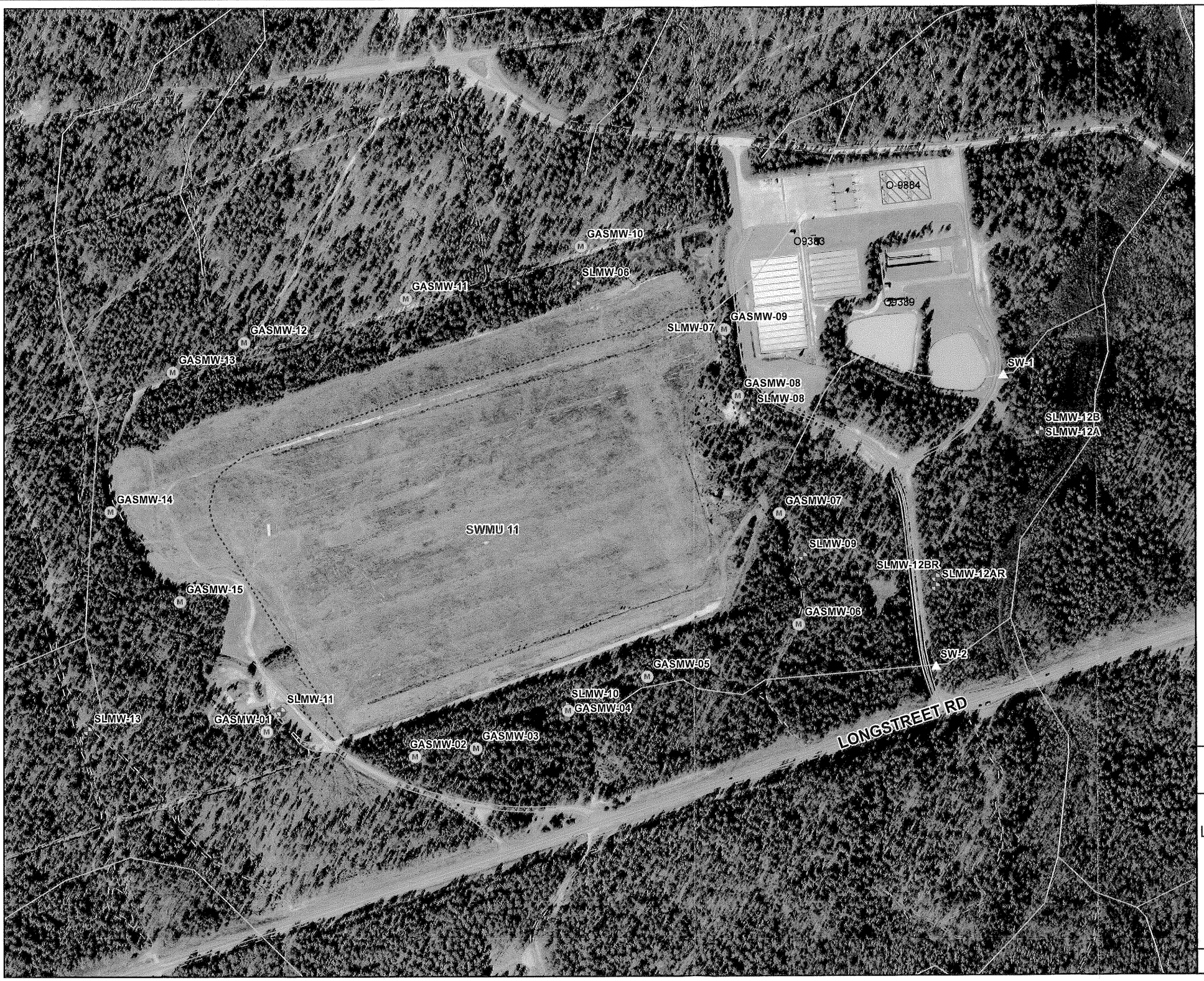
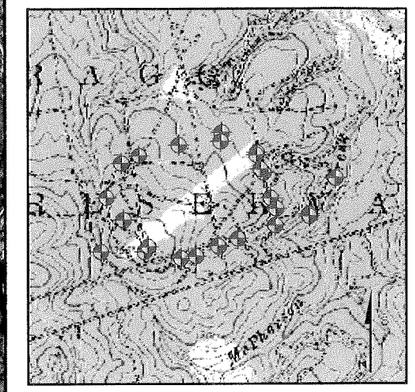
Figure 1
Site Map -- Ft. Bragg, NC





LEGEND

- METHANE SAMPLE
- SURFACE-WATER SAMPLE
- MONITORING WELL
- STREAM
- PAVED ROAD
- DIRT ROAD
- WASH RACK AREA
- BUILDING
- SWMU AREA

1 inch = 400 feet

0 200 400 800'

N

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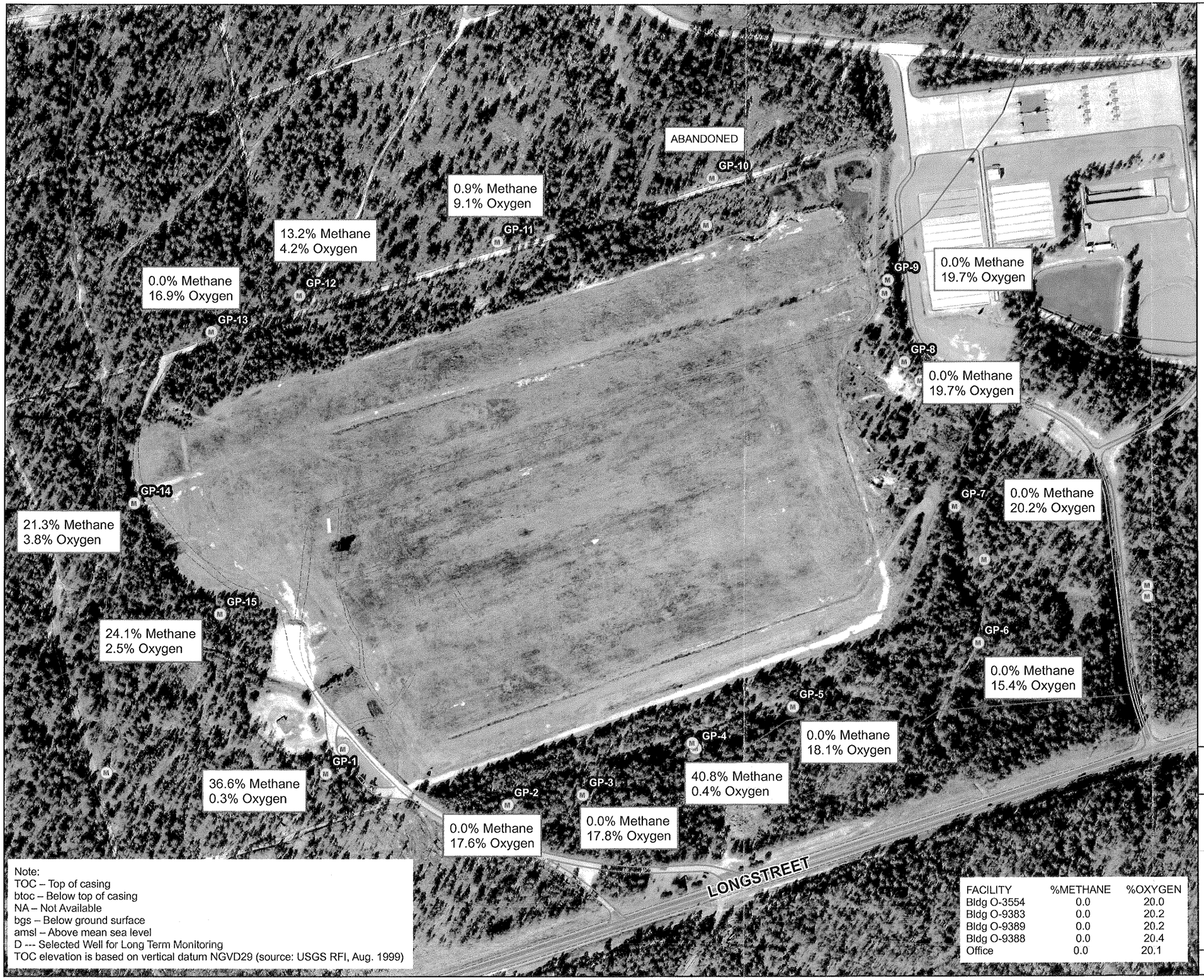
LOCATION MAP- LONGSTREET RD LANDFILL

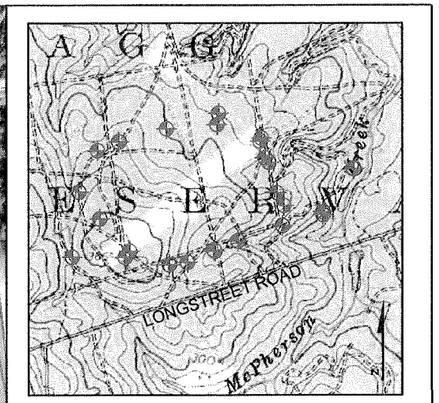
FT. BRAGG, NC

DATE: SEPT 2010 | FIGURE 2



Note:
TOC – Top of casing
btoc – Below top of casing
NA – Not Available
bgs – Below ground surface
amsl – Above mean sea level
D --- Selected Well for Long Term Monitoring
TOC elevation is based on vertical datum NGVD29 (source: USGS RFI, Aug. 1999)

FACILITY	%METHANE	%OXYGEN
Bldg O-3554	0.0	20.0
Bldg O-9383	0.0	20.2
Bldg O-9389	0.0	20.2
Bldg O-9388	0.0	20.4
Office	0.0	20.1



LEGEND

- METHANE SAMPLE
- STREAM
- BUILDING
- ROAD
- TRAIL

1 inch = 320 feet

0 170 340 680'

N

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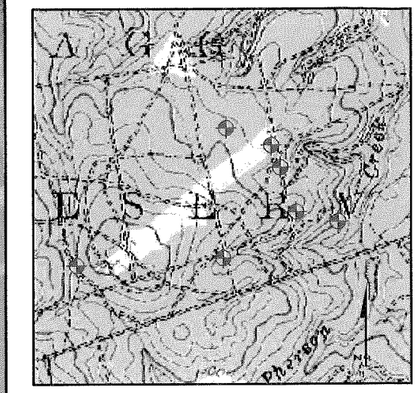
METHANE MONITORING RESULTS

LONGSTREET LANDFILL
FT. BRAGG, NC

DATE: SEPT 2010 | FIGURE 3



LEGEND

- Groundwater Flow
- SWMU Area
- Longstreet Wells
- Stream
- Groundwater Contour

Note: Monitoring wells used for potentiometric surface are displayed with elevations in feet above MSL in parenthesis below the label.

1 inch = 293 feet

0 140 280 560'

N

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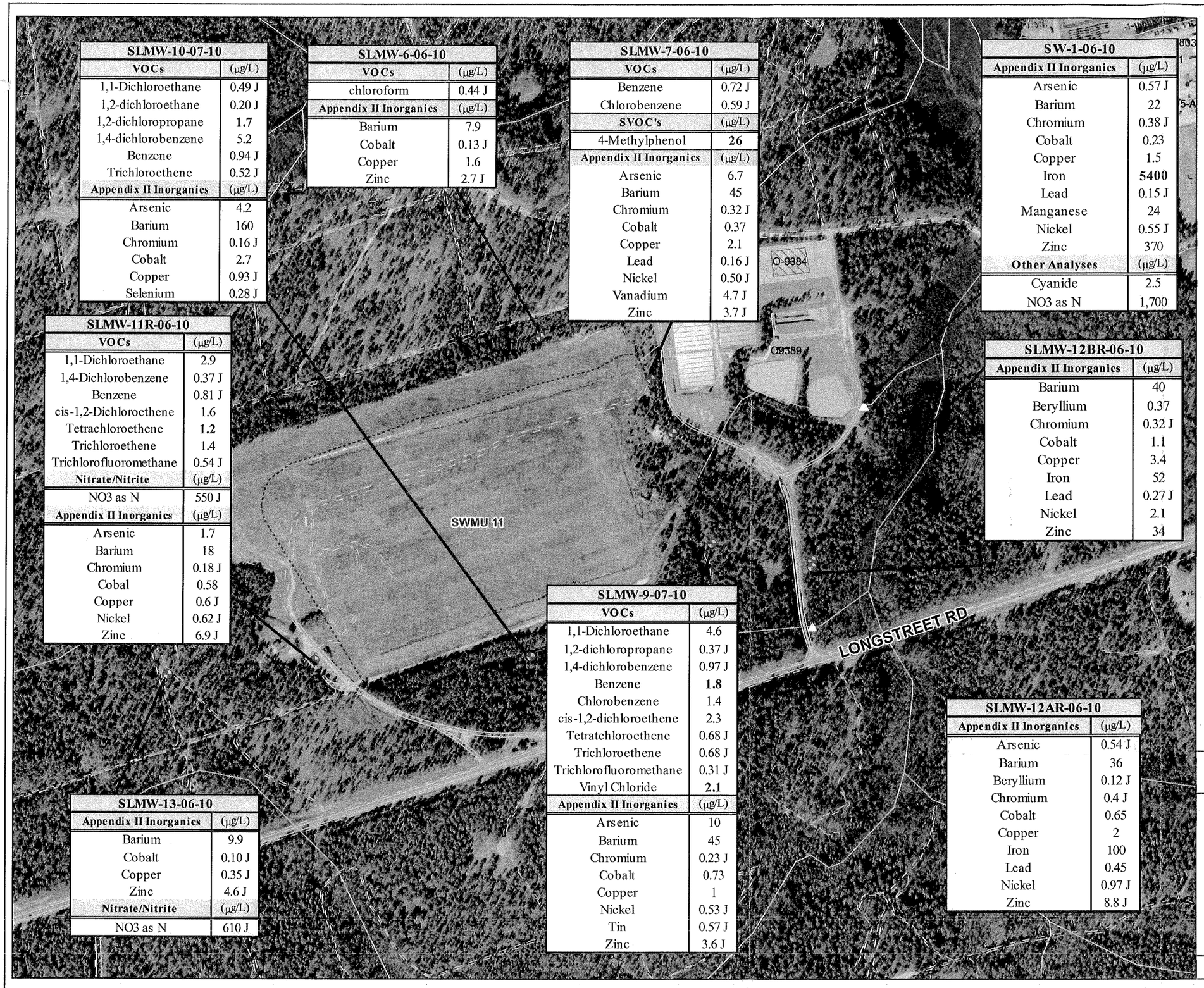
LONGSTREET LANDFILL, FORT BRAGG, NC

POTENTIOMETRIC MAP

DATE: SEPT 2010 | FIGURE 4



SLMW-10-07-10	
VOCs	**(µg/L)**
1,1-Dichloroethane	0.49 J
1,2-dichloroethane	0.20 J
1,2-dichloropropane	**1.7**
1,4-dichlorobenzene	5.2
Benzene	0.94 J
Trichloroethene	0.52 J
Appendix II Inorganics	**(µg/L)**
Arsenic	4.2
Barium	160
Chromium	0.16 J
Cobalt	2.7
Copper	0.93 J
Selenium	0.28 J

SLMW-6-06-10	
VOCs	**(µg/L)**
chloroform	0.44 J
Appendix II Inorganics	**(µg/L)**
Barium	7.9
Cobalt	0.13 J
Copper	1.6
Zinc	2.7 J

SLMW-7-06-10	
VOCs	**(µg/L)**
Benzene	0.72 J
Chlorobenzene	0.59 J
SVOC's	**(µg/L)**
4-Methylphenol	**26**
Appendix II Inorganics	**(µg/L)**
Arsenic	6.7
Barium	45
Chromium	0.32 J
Cobalt	0.37
Copper	2.1
Lead	0.16 J
Nickel	0.50 J
Vanadium	4.7 J
Zinc	3.7 J

SW-1-06-10	
Appendix II Inorganics	**(µg/L)**
Arsenic	0.57 J
Barium	22
Chromium	0.38 J
Cobalt	0.23
Copper	1.5
Iron	**5400**
Lead	0.15 J
Manganese	24
Nickel	0.55 J
Zinc	370
Other Analyses	**(µg/L)**
Cyanide	2.5
NO3 as N	1,700

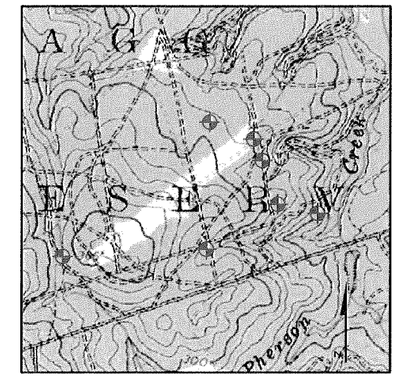
SLMW-11R-06-10	
VOCs	**(µg/L)**
1,1-Dichloroethane	2.9
1,4-Dichlorobenzene	0.37 J
Benzene	0.81 J
cis-1,2-Dichloroethene	1.6
Tetrachloroethene	**1.2**
Trichloroethene	1.4
Trichlorofluoromethane	0.54 J
Nitrate/Nitrite	**(µg/L)**
NO3 as N	550 J
Appendix II Inorganics	**(µg/L)**
Arsenic	1.7
Barium	18
Chromium	0.18 J
Cobal	0.58
Copper	0.6 J
Nickel	0.62 J
Zinc	6.9 J

SLMW-12BR-06-10	
Appendix II Inorganics	**(µg/L)**
Barium	40
Beryllium	0.37
Chromium	0.32 J
Cobalt	1.1
Copper	3.4
Iron	52
Lead	0.27 J
Nickel	2.1
Zinc	34

SLMW-9-07-10	
VOCs	**(µg/L)**
1,1-Dichloroethane	4.6
1,2-dichloropropane	0.37 J
1,4-dichlorobenzene	0.97 J
Benzene	**1.8**
Chlorobenzene	1.4
cis-1,2-dichloroethene	2.3
Tetratchloroethene	0.68 J
Trichloroethene	0.68 J
Trichlorofluoromethane	0.31 J
Vinyl Chloride	**2.1**
Appendix II Inorganics	**(µg/L)**
Arsenic	10
Barium	45
Chromium	0.23 J
Cobalt	0.73
Copper	1
Nickel	0.53 J
Tin	0.57 J
Zinc	3.6 J

SLMW-12AR-06-10	
Appendix II Inorganics	**(µg/L)**
Arsenic	0.54 J
Barium	36
Beryllium	0.12 J
Chromium	0.4 J
Cobalt	0.65
Copper	2
Iron	100
Lead	0.45
Nickel	0.97 J
Zinc	8.8 J

SLMW-13-06-10	
Appendix II Inorganics	**(µg/L)**
Barium	9.9
Cobalt	0.10 J
Copper	0.35 J
Zinc	4.6 J
Nitrate/Nitrite	**(µg/L)**
NO3 as N	610 J



LEGEND

- MONITORING WELL
- SURFACE-WATER SAMPLE
- STREAM
- PAVED ROAD
- DIRT ROAD
- WASH RACK AREA
- BUILDING
- SWMU AREA

NOTE: Only detected analytes shown.
Well labels show total well depth below ground surface in parenthesis.
NA - Not Available
U - Target analytes were not detected above the reporting limits
J - Analyte was present but concentration is an estimated value.
B - Observed in Method Blank
Bold - Concentrations exceed NC 2L standards.
*IMAC - Interim maximum allowable concentration
**PRG based on carcinogenic factor.

1 inch = 520 feet

0 255 510 1,020'

N

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LONGSTREET RD LANDFILL, FORT BRAGG, NC

GROUNDWATER ANALYTICAL RESULTS

DATE: SEPT 2010 | FIGURE 5

Table 1. Methane Monitoring Results
Longstreet Landfill, Ft. Bragg, NC

Well ID	Date Sampled	Time Sampled	%Methane by Volume	%Oxygen	%CO2
Gas-MW-1	06-12-10	1305	36.6 %	0.3 %	37.2 %
Gas-MW-2	06-12-10	1258	0.0 %	17.6 %	3.0 %
Gas-MW-3	06-12-10	1225	0.0 %	17.8 %	2.1 %
Gas-MW-4	06-12-10	1205	40.8%	0.4 %	28.7 %
Gas-MW-5	06-12-10	1213	0.0 %	18.1 %	1.7 %
Gas-MW-6	06-12-10	1510	0.0 %	15.4 %	3.4%
Gas-MW-7	06-12-10	1344	0.0%	20.2%	0.0%
Gas-MW-8	06-12-10	1134	0.0%	19.7%	0.1%
Gas-MW-9	06-12-10	1131	0.0 %	19.7 %	0.2 %
Gas-MW-10**	06-12-10	N/A	N/A	N/A	N/A
Gas-MW-11	06-12-10	1438	0.9 %	9.1 %	3.9 %
Gas-MW-12	06-12-10	1436	13.2 %	4.2 %	21.3 %
Gas-MW-13	06-12-10	1432	0.0%	16.9 %	3.8 %
Gas-MW-14	06-12-10	1333	21.3 %	3.8 %	21.7 %
Gas-MW-15	06-12-10	1314	24.1%	2.5 %	24 %
Scale House	06-12-10	1304	0.0%	20.6%	0.0%
Bldg O-9383	06-12-10	1124	0.0%	20.0 %	0.0 %
Bldg O-9389	06-12-10	1122	0.0 %	20.2 %	0.0 %
Bldg O-9388	06-12-10	1115	0.0 %	20.2 %	0.0 %
Office	06-12-10	1123	0.0 %	20.1 %	0.0 %

Note:
TOC – Top of casing, btoc – Below top of casing, NA – Not Available
bgs – Below ground surface, amsl – Above mean sea level
Δ --- Selected Well for Long Term Monitoring
TOC elevation is based on vertical datum NGVD29 (source: USGS RFI, Aug. 1999)
* Erroneous reading not reported in table.
**MW10 Abandoned

Table 2. Groundwater Elevation Data
Longstreet Landfill, Ft. Bragg, NC

Well ID	TOC Elev. (ft. amsl)	Water Level (ft. btoc) 11/06	Water Elev. (ft. amsl) 11/06	Water Level (ft. btoc) 5/07to 6/07	Water Elev. (ft. amsl) 5/07to 6/07	Water Level (ft. btoc) 11/07	Water Elev. (ft. amsl) 11/07	Water Level (ft. btoc) 11/08	Water Elev. (ft. amsl) 11/08	Water Level (ft. btoc) 06/09	Water Elev. (ft.amsl) 06/09	Water Level (ft. btoc) 11/09	Water Elev. (ft.amsl) 11/09	Water Level (ft. btoc) 06/10	Water Elev. (ft.amsl) 06/10
SLMW-6	293.55	27.27	266.28	25.24	268.31	28.61	264.94	26.27	267.28	26.11	267.44	28.22	265.33	25.08	268.47
SLMW-7	290.5	21.48	269.02	20.03	270.47	22.45	268.05	20.76	269.74	20.59	269.91	22.19	268.31	20.43	270.07
SLMW-8	290.34	23.2	267.14	22.93	267.41	24.39	265.95	22.91	267.43	23.03	267.31	24.21	266.13	22.91	267.43
SLMW-9	289.54	39.57	249.97	37.3	252.24	39.29	250.25	38.31	251.23	37.3	252.24	38.72	250.82	36.66	252.88
SLMW-10	305.99	20.3	285.69	19.31	286.68	20.55	285.44	19.42	286.57	19.59	286.4	20.39	285.6	19.7	286.29
SLMW-11	357.8	78	279.8	74.83	282.97	77.48	280.32	78.96	278.84	77.62	280.18	79.2	278.6	74.31	283.49
SLMW-12AR	243.36	8.12	235.24	20.12	223.24	53.39	286.63	8.45	234.91	9.03	234.33	9.53	233.83	8.75	234.61
SLMW-12BR	243.42	9.1	234.32	9	234.42	9.45	233.91	9.23	234.19	8.09	235.33	9.2	234.22	8.79	234.63
SLMW-13	340.02	53.98	286.04	50.79	289.23	9.44	224.98	53.14	286.88	51.9	288.12	53.29	286.73	50.58	289.44

Note:

TOC – Top of casing,
bgs – Below ground surface,
Δ --- Selected Well for Long Term Monitoring
btoc – Below top of casing,
amsl – Above mean sea level
*Well & ground-water elevations unavailable at this time.
NA – Not Available
NS – Not Surveyed
TOC elevation is based on vertical datum NGVD29 (source: USGS RFI, Aug. 1999)

Table 3. Field Parameter Measurements
Longstreet Landfill, Fort Bragg, NC

Well ID	Sample Identification	pH	Specific Conductivity (µs/cm)	Temperature (°C)	Turbidity (N.T.U.)	Dissolved Oxygen (mg/L)	ORP
SLMW-6	GW-SLMW-6-06-10	1.37	0.015	18.5	1.55	7.31	246.9
SLMW-7	GW-SLMW-7-06-10	5.43	0.478	18.9	5.57	0.57	-37.3
SLMW-8	GW-SLMW-8-06-10	5.34	0.487	25.1	8.52	1.34	-19.3
SLMW-9	GW-SLMW-9-07-10	6.12	0.678	19.7	6.66	0.75	-38.4
SLMW-10	GW-SLMW-10-07-10	6.44	0.708	18.5	3.95	0.46	-70.9
SLMW-11R	GW-SLMW-11-07-10	4.87	0.052	19.7	7.48	4.81	91.7
SLMW-12AR	GW-SLMW-12AR-06-10	4.03	0.042	23.4	7.96	3.80	91.6
SLMW-12BR	GW-SLMW-12BR-06-10	4.64	0.070	21.3	3.75	3.75	38.9
SLMW-13	GW-SLMW-13-06-10	3.35	0.015	19.4	7.54	8.97	186.7
SW-1	SW-1-06-10	6.98	1.415	--	10.1	0.6	245
SW-2	SW-2-11-09	N/A	N/A	N/A	N/A	N/A	N/A

Note: N.T.U. --- Nephelometric Turbidity Unit; ORP --- Oxidation Reduction Potential
#Monitoring Wells Permanently Abandoned
*High turbidity has been a continuing problem with this well.

Longstreet

COMPOUNDS (µg/L)	Groundwater NC 2L Standard (ug/l)	EPA Drinking water MCL (ug/l)	SLMW-6 04/05	SLMW-6 10/05	SLMW-6 4/06	SLMW-6 11/06	SLMW-6 05/07	SLMW-6 11/07	SLMW-6 11/08	SLMW-6 06/09	SLMW-6 11/09	SLMW-6 06/10	SLMW-7 04/05	SLMW-7 10/05	SLMW-7 4/06	SLMW-7 11/06	SLMW-7 05/07	SLMW-7 11/07	SLMW-7 11/08	SLMW-7 06/09	SLMW-7 11/09	SLMW-7 06/10	SLMW-8 04/05	SLMW-8 10/05	SLMW-8 4/06	SLMW-8 11/06	GW-SLMW-8 06/07	GW-SLMW-8 11/07	GW-SLMW-8 11/08	SLMW-8 06/09	SLMW-8 11/09	SLMW-8 06/10	SLMW-9 10/05	SLMW-9 4/06	SLMW-9 11/06	GW-SLMW-9 06/07	GW-SLMW-9 11/07	GW-SLMW-9 11/08	SLMW-9 06/09	SLMW-9 11/09	SLMW-9 7/10	SLMW-10 04/05	SLM-DUP1 04/05	SLMW-10 10/05	SLMW-10 4/06	SLMW-10 Dup 4/06	SLMW-10 11/06	SLMW-10 05/07	SLMW-10 Dup 05/07	SLMW-10 11/07	SLMW-10 11/08	SLMW-10 DUP 11/08
VOCs (EPA 8260B)																																																					
1,1,2,2-tetrachloroethane	0.17	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-dichloroethane	700	810*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.91 J	3.43	2.11	2.86	<2	4.11	3.08	5.2	NS	2.5	2.04	1.38J	1.39J	<2	3.170	3.11	7.6	4.8	4.6	1.25 J	1.41 J	1.6J	1.91J	1.85J	1.12J	<2	<2	1.35 J	0.92 J	0.9 J
1,2,3-trichloropropane	0.005	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,4-trimethylbenzene	350	15 *	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.43 J
1,2-dibromo-3-chloropropane	0.025	0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dibromoethane	0.0004	0.05	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichlorobenzene	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichloroethane	0.38	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	0.24 J	**0.44 J**	<2	<2	<2	<2	<2	**0.58J**	**0.61J**	<2	<2	<2	**0.42 J**	**0.48 J**	<2
1,2-dichloropropane	0.56	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	.23J	<2	<2	0.33 J	0.37 J	**2.12**	**2.28**	**3.32**	**3.97**	**3.72**	**2.93**	<2	<2	**3.78**	**3.27**	**3.09**
1,4-dichlorobenzene	75	75	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.28J	0.36J	0.43J	<2	0.28 J	0.31	0.62 J	NS	<2	0.54J	0.43J	0.4J	<2	.660J	<2	<2	<2	0.97 J	2.75	2.63	3.99	5.6	4.7	3.9	4.1	3.4	5.99	<2	<2
1,4-dioxane	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-butanone	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-isopropyltoluene	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
acetone	700	NA	NA	2.2	<2	<2	<2	<2	<2	7.6 J	<2	<2	NA	6.97	<2	1.34J	<2	<2	24	52	6 J	<2	NA	1.27J	<2	<2	<2	<2	9.72	9.8 J	NS	5.3 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2
acrolein	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
benzene	1	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.51J	0.68J	0.36J	**1.2**	0.50 J	1.01 J	0.73 J	<2	0.72 J	**3.22**	**4.99**	**2.54**	**4.03**	**3.2**	**4.5**	**2.72**	**3.6**	NS	**2.1**	**1.09J**	0.71J	0.8J	**2.2**	**1.54 J**	**1.35 J**	**1.9**	**1.4**	**1.8**	**1.8 J**	**1.72 J**	**1.32J**	**1.31J**	**1.24J**	0.96J	<2	<2	**1.38 J**	1.0 J	1.0 J
carbon disulfide	700	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.24J	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.54J	<2	<2	<2	<2	<2
chlorobenzene	50	100	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.29 J	<2	<2	0.59 J	1.78 J	2.75	1.69J	3.46	2.2	3.36	2.18	4.8	NS	1.9	0.34J	0.25J	0.28J	1.1	0.740 J	0.65 J	0.81 J	0.8 J	1.4	0.33 J	0.35 J	0.43J	0.59J	0.50J	0.4J	<2	<2	0.59 J	0.62 J	0.61 J
chloroethane	2800	4.6*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	2.74	1.47J	2.27	0.72J	<2	0.98 J	1.23 J	<2	<2	<2	0.76 J	0.96J	0.30J	0.38J	<2	<2	1.10 J	9.1	NS	<2	<2	<2	0.22J	<2	0.530 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloroform	70	80	0.24 J	<2	<2	<2	<2	0.27 J	0.21 J	0.31 J	<2	0.44 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloromethane (methyl chloride)	2.6	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	2.13	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
cis-1,2-dichloroethene	70	70	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.21 J	<2	<2	<2	<2	0.24 J	<2	<2	<2	<2	55.9	**105**	42.5	42.4	25	60.9	35	39	NS	43	1.26J	0.88J	0.71J	3.0	1.570 J	1.79 J	2.3	<2	2.3	9.33	10	13.4	15.8	15.5	8.96	9.1	8.9	13.6	11.8	11.6
dibromochloromethane	0.41	80	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
dichlorodifluoromethane	1400	390*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.61J	0.58J	<2	<2	<2	1.9	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	2.96	3.5	2.13	1.5J	1.18J	0.62J	<2	<2	<2	<2	<2
diisopropyl ether	70	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.43 J	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.54 J	0.56 J	1.04J	1.15J	1.22J	0.88J	<2	<2	1.13 J	<2	<2
isopropylbenzene	70	660*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
m&p xylene	530#	10000#	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.64 J
methylene chloride (dichloromethane)	4.6	5	<2	<2	<2	<2	<2	0.21 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.26	<2	<2	<2	<2	<2	<2	<2	0.75J	<2	0.43 J	<2	<2	NS	<2	<2	<2	<2	<2	0.200 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.28 J	<2	<2
MTBE	200	13*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.54J	<2	0.21J	<2	0.39 J	<2	<2	NS	<2	0.39J	0.22J	<2	<2	<2	0.29 J	<2	<2	<2	0.2 J	0.2 J	0.37J	0.44J	0.42J	0.28J	<2	<2	0.39 J	0.57 J	0.54 J
naphthalene	21	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.95 J
o-xylene	530#	10000#	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.24 J	0.71J	0.41J	0.46J	<2	0.27 J	0.29	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.33 J
sec-butylbenzene	70	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	0.230 J	<2	<2	<2	<2	<2	<2	<2	0.28J	0.22J	0.21J	<2	<2	<2	<2	<2
tetrachloroethene	0.7	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	**5.34**	**2.18**	**2.4**	**2.69**	<2	0.54 J	0.65	**0.80 J**	NS	0.24 J	0.32J	0.29J	0.21J	<2	0.280 J	0.41 J	0.39 J	0.58 J	0.68 J	**0.75 J**	0.45 J	**0.71J**	**0.96J**	**0.74J**	0.55J	<2	<2	0.31 J	0.25 J	0.26 J
toluene	1000	1000	<2	<2	0.43J	<2	<2	<2	<2	<2	<2	<2	<2	0.26J	0.39J	0.51J	<2	0.27 J	0.29 J	<2	<2	<2	0.22 J	0.55J	0.58J	0.49J	1.2 J	0.85 J	1.34	1	NS	0.39 J	<2	0.46J	<2	<2	0.200 J	0.33 J	0.35 J	<2	<2	<2	<2	<2	0.35J	0.55J	<2	<2	<2	<2	<2	0.24 J
trans-1,2-dichloroethene	70	100	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.28 J	0.52J	0.28J	3.65	<2	0.55 J	0.25	<2	NS	0.24 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.24 J	0.23 J	0.24J	0.29J	0.30J	0.59J	<2	<2	0.28 J	0.21 J	0.22 J
trichloroethene	2.8	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	2.29	**6.66**	2.22	**3.54**	1.6	**4.18**	1.3	1.3	NS	0.87 J	<2	0.45J	0.43J	0.6 J	0.740 J	0.6 J	0.67 J	0.73 J	0.68 J	0.88 J	1.01 J	1.15J	1.27J	1.29J	0.89J	<2	<2	1.00 J	0.91 J	0.89 J
trichlorofluoromethane	2100	1300*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	10.1	<2	NS	<2	0.53J	<2	<2	<2	<2	<2	<2	<2	0.31 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
vinyl chloride	0.015	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	**0.52 J**	**0.36J**	**0.64J**	**0.35J**	<2	<2	**0.58 J**	<2	<2	<2	**59**	**54.2**	**24.6**	**36.6**	**19**	**33.2**	**10.1**	**12**	NS	**10**	**1.45J**	**0.69J**	**0.73J**	<2	**1.71 J**	**1.41 J**	**2**	**1.2**	**2.1**	**1.91 J**	**3.58**	**2.48**	**2.8**	**2.62**	**1.7**	<2	<2	**2.59 J**	**1.58 J**	**1.72 J**
Cs (EPA 8270C)																																																					
1,4-dichlorobenzene (para)	1.4	75	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	NS	<10	<10	<10	<10	<10	0.54 J	<10	<10	<10	1.31 J	1.57 J	1.75J	2.79J	2.62J	**2.7J**	**1.94 J**	**1.75 J**	<10	**3.37 J**	**4.25 J**
4-methylphenol (p-cresol)	3.5	180*	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	1.87 J	<10	**14.6**	<10	**13.5**	<10	38.3	**12**	<10	**26**	**7.44 J**	<10	<10	<10	<10	<10	<10	<10	NS	NS	<10	<10	<10	<10	<10	<10	2.1 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	1.95 J
benzoic acid	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	8.4 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
benzyl alcohol	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
diethylphthalate	5000	29000*	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	1.06J	<10	<10	<10	<10	<10	<10	NS	NS	<10	<10	<10	2.55 J	1.44 J	<10	0.95 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
di-n-butylphthalate	700	3600*	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	NS	<10	<10	<10	<10	<10	<10	<10	3 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
bis(2-Ethylhexyl)phthalate	2.5	6	<10	<10	3.62	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	5.02	<10	<10	<10	<10	<10	<10	<10
phenol	300	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	2.89 J	<10	4.42 J	1.7J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**<10**	<10	<10	<10	<10	<10	<10	<10
Pesticides (EPA 8081)																																																					
delta-BHC	NA	NA	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	0.043	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	NS	NS	<.0505	<.0505	<.0505	<.0505	.015 PJ	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	0.124	<.0505
alpha-BHC	NA	NA	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	NS	NS	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	0.0496	<.0505
beta-BHC	NA	NA	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	NS	NS	<.0505	<.0505	<.0505	<.0505	<.0505	0.065	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	0.123	<.0505
gamma-BHC	0.2	0.2	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	.0207J	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	NS	NS	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	0.0496	<.0505
alpha-Chlordane*	0.1	2	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	NS	NS	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	**0.1**	<.0505	<.0505	<.0505	<.0505	<.0505
gamma-Chlordane*	0.1	2	<.0505	<.0505	<.0505	0.0202J	0.0202J	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	NS	NS	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	**0.11J**	<.0505	<.0505	<.0505	<.0505	<.0505
Aldrin	NA	NA	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	NS	NS	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
Dieldrin	0.0022	NA	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	NS	NS	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
Endosulfan I	NA	NA	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<.0505	<.0505	<.0505	<0.025	<0.025	<0.025	<0.025	0.0143 J	<.0505	<0.025	<.0505	<0.025	<.0505	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	NS	NS	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<.0505	<.0505	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Heptachlor	0.0078	0.4	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	NS	NS	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	**0.06J**	<.0505	<.0505	<.0505	<.0505	<.0505
PCBs (EPA 8082)																																																					
No Detections																															NS																					
Organophosphorus Pesticides (EPA 8141A)																																																					
No Detections																															NS																					
Appendix II Inorganics (EPA 6010B/6020A)																																																					
Antimony	NA	6	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.516 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	10	10	<2	<2	<2	<2	<2	<2	5.75	<2	<2	<2	5.76	8.44	9.41	4.84	9.45	12.3	5.37	5.2	<2	6.7	5.17	6.67	4.63	3.32	5.92	5.85	1.05 J	3.6	NS	1.7	6.28	**11**	**11.4**	**10.8**	8.98	**13.8**	8.6	8.7	10	1.13 J	1.17 J	<2	1.31J	1.31J	1.88J	3.62	3.75	4.82	2.11	2.34
Barium	2000	2000	5.7 J	5.5	<2	6.07	7.22	6.22	8	7	6.9	7.9	46.8	47.5	50	37.7	63.2	8.3	59.6	47	<2	45	95.7	65.2	70	85.5	76.3	100	64.2	55	NS	67	39	40	49.3	70.4	46.8	49	46	41	45	77.9	79.2	76.8	<2	110	123	139	129	118	0.15	0.151
Beryllium	NA	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	44	<4	<4	<4	<4	<4	<4	<4	<4	<4	46.2	<4	NS	<4	<4	<4	<4	<4	<4	41	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	56.3	56.8
Cadmium	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.8 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.50J	<1	0.532 J	0.518 J	<1	<1	<1
Chromium	50	100	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	< 50	<5	0.32 J	<5	<5	<5	<5	<5	<5	<5	< 5	NS	0.24 J	<5	<5	<5	<5	<5	<5	0.62 J	<5	0.23 J	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Cobalt	NA	NA	<1	<1	<1	<1	<1	<1	<1	0.13 J	0.13 J	0.13 J	<1	<1	<1	0.586J	<1	<1	<1	0.48	<1	0.37	<1	<1	<1	1	<1	<1	<1	0.4	NS	0.51	<1	0.01J	1.25	<1	<1	3.11 J	1	0.93	0.73	<1	<1	<1	<1	<1	1.45	<1	1.29 J	3 J	5.7	6.1
Copper	1000	1000	<1	<1	<1	<1	<1	5.16J	<1	1.2	1.3	1.6	<1	<1	<1	3.41J	10.8	7.06	6 J	2.3 J	<1	2.1	<1	<1	<1	<1	<1	<1	<1	< 1	NS	0.62 J	<1	0.01J	13.8	5.59 J	<5	<1	0.76 J	0.33 J	1	<1	<1	<1	<1	<1	<1	6.64 J	5.65 J	<1	<1	<1
Iron	300	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead	15	15	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.734 J	0.17 J	0.16 J	0.16 J	<1	<1	<1	<1	<1	<1	0.658 J	<1	NS	<1	<1	0.66J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	50	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	100	730*	<50	<50	<50	4.96	<50	<50	<50	0.35 J	0.32 J	<50	<50	<50	<50	1.74J	<50	<50	16.4	<50	<50	0.50 J	<50	<50	<50	<50	<50	<50	<50	< 50	NS	0.68 J	<50	<50	<50	<50	<50	<50	0.87	0.69 J	0.53 J	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Selenium	50	50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.34 J	<2	1.34J	<2	<2	<2	<2	0.27 J	<2	<2	1.63 J	1.52J	1.04J	<2	<2	<2	<2	<2	NS	<2	1.83J	1.32J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.04J	<2	<2	<2	<2	<2
Silver	18	100*	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	NS	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Thallium	NA	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tin	NA	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.0347	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.317	<5	NS	<5	<5	<5	<5	<5	<5	0.0139 J	0.45 J	<5	0.57 J	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.0116 J
Vanadium	NA	260*	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	8.33	<30	16.2	4.3 J	<30	4.7 J	<30	<30	<30	4.47J	12.0	21	9.1	1.4 J	NS	<30	<30	<30	<30	3.07 J	7.1	25	<30	<30	<30	<30	<30	<30	<30	<30	<30	3.77 J	4.23	9	39.4	39
Zinc	2100	5000	<60	<60	<60	<60	<60	<60	<60	18	7.6 J	2.7 J	<60	<60	<60	5J	73.8	<60	76.5	3.9 J	<60	3.7 J	<60	<60	<60	6.59J	51.6	27J	27.7 J	<60	NS	6.1 J	<60	<60	5.56J	56.6	25.6	<60	22	70	3.6 J	<60	<60	<60	<60	<60	<60	62.4	62.8	41 J	<60	<60
Other Analyses																																																					
Sulfide (EPA 376.1)	250,000	250,000	NA	<200	<200	<200	<200	<200	<200	<200	<200	<200	NA	<200	<200	<200	<200	<200	<200	<200	<200	<200	NA	<200	<200	<200	<200	<200	<200	<200	NS	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	NA	NA	<200	<200	<200	<200	<200	<200	<200	<200	<200
Cyanide (EPA 335.2)	154	200	NA	<20	<20	<20	14 J	<20	<20	<20	<20	<20	NA	<20	<20	<20	<20	<20	<20	<20	<20	<20	NA	<20	<20	<20	<20	<20	<20	<20	NS	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	NA	NA	<20	<20	<20	<20	<20	<20	<20	<20	<20
Mercury	1.05	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NS	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nitrate/Nitrite (SM 4500 - NO3-E)	10,000	10,000	NA	60	0.055	0.021J	36 J	43	58	200	<40	<40	NA	91	0.022J	0.058	74	30	<40	180 J	<40	<40	NA	332	<40	0.017J	35 J	<40	35 J	NA	NS	600 J	<40	0.01J	0.015J	29 J	32	<40	<40	<40	<40	NA	NA	19	0.038J	0.038J	<40	38 J	49	86	84	65

Note: NA -- Not Available; NS -- Not Sampled; U -- Target analytes were not detected above the reporting limits; J -- Analyte was present but concentration is an estimated value.

Bold--Concentration exceeds NC 2L Std. * No MCL, used PRG. #Used total values. **Used values for Chlordane.

Table 4. Summary of GroundWater Detections Longstreet Landfill, Fort Bragg, NC

COMPOUNDS (µg/L)	Groundwater NC 2L Standard (ug/l)	EPA Drinking water MCL (ug/l)	SLMW-10 06/09	SLMW-10 11/09	SLMW-10 7-10	SLMW-11 04/05	SLMW-11 10/05	SLMW-11 4/06	SLMW-11 11/06	GW-SLMW-11 06/07	GW-SLMW-11 11/07	GW-SLMW-11R 11/08	SLMW-11R 06-09	SLMW-11R 11-09	SLMW-11R 06/10	SLMW-12A 04/05	SLMW-12B 04/05	SLMW-12AR 04/05	SLMW-12AR 10/05
VOCs (EPA 8260B)																			
1,1,2,2-tetrachloroethane	0.17	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-dichloroethane	700	810*	0.97 J	1.1	0.49 J	3.86	2.18	1.68J	2.07	<2	4.05	0.56 J	2.9	0.42 J	2.9	<2	4.25	<2	1.21J
1,2,3-trichloropropane	0.005	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,4-trimethylbenzene	350	15 *	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dibromo-3-chloropropane	0.025	0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dibromoethane	0.0004	0.05	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichlorobenzene	NA	NA	<2	0.51 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichloroethane	0.38	5	<2	**0.45 J**	0.20 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichloropropane	0.56	5	**2.2**	**2.8**	**1.7**	**1.3 J**	<2	0.5J	**0.6J**	<2	**.950 J**	<2	<2	<2	<2	<2	<2	<2	<2
1,4-dichlorobenzene	75	75	3.4	6.9 J	5.2	<2	<2	<2	<2	<2	0.300 J	<2	0.48 J	<2	0.37 J	<2	1.11 J	<2	1.05J
1,4-dioxane	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-butanone	NA	NA	<2	<2	<2	<2	<2	<2	2.29J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-isopropyltoluene	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
acetone	700	NA	<2	26	<2	NA	<2	<2	13.9	100	100	<2	<2	<2	<2	NA	NA	NA	<2
acrolein	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
benzene	1	5	**1**	**1.3**	0.94 J	**4.58**	**1.54J**	0.83J	0.93J	**2.1**	**1.30 J**	<2	0.59 J	<2	0.81 J	<2	<2	<2	**1.03J**
carbon disulfide	700	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chlorobenzene	50	100	0.45 J	0.63 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.01 J	<2	0.57J
chloroethane	2800	4.6*	<2	<2	<2	<2	0.42J	0.56J	0.82J	<2	.200 J	<2	<2	<2	<2	<2	0.4 J	<2	<2
chloroform	70	80	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.22 J	<2	0.23 J	<2	<2	<2	<2	<2
chloromethane (methyl chloride)	2.6	NA	0.45 J	<2	<2	<2	<2	<2	2.44	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
cis-1,2-dichloroethene	70	70	9	<2	5.8	9.47	4.56	2.88	1.71J	5.7	3.24	<2	1.3	<2	1.6	<2	10.7	<2	2.9
dibromochloromethane	0.41	80	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
dichlorodifluoromethane	1400	390*	<2	<2	<2	4.85	0.8J	<2	0.68J	<2	0.410 J	1.64 J	1.3	1.1	<2	<2	3.73	<2	5.11
diisopropyl ether	70	NA	<2	<2	<2	<2	<2	<2	<2	<2	.0280 J	<2	<2	<2	<2	<2	<2	<2	<2
isopropylbenzene	70	660*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.5 J	<2	<2
m&p xylene	530#	10000#	<2	<2	<2	<2	0.23J	<2	<2	<2	0.510 J	<2	<2	<2	<2	<2	<2	<2	<2
methylene chloride (dichloromethane)	4.6	5	<2	<2	<2	<2	<2	<2	<2	<2	0.230 J	<2	<2	<2	<2	<2	<2	<2	<2
MTBE	200	13*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.32J
naphthalene	21	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-xylene	530#	10000#	<2	<2	<2	0.34 J	0.26J	<2	<2	<2	0.470 J	<2	<2	<2	<2	<2	<2	<2	<2
sec-butylbenzene	70	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
tetrachloroethene	0.7	5	<2	0.29 J	<2	**2.64**	0.46J	<2	0.49J	<2	0.380J	0.4 J	**2.3**	0.3 J	**1.2**	<2	0.42 J	<2	0.32J
toluene	1000	1000	<2	<2	<2	<2	<2	3.16	<2	<2	0.550 J	<2	<2	<2	<2	<2	<2	<2	<2
trans-1,2-dichloroethene	70	100	<2	0.27 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.22 J	<2	<2
trichloroethene	2.8	5	0.59 J	0.94 J	0.52 J	**3.01**	1.28J	0.59J	0.96J	2.0	1.01 J	0.29 J	1.5	0.22 J	1.4	<2	2.14	<2	0.64J
trichlorofluoromethane	2100	1300*	<2	<2	<2	<2	0.28J	<2	<2	<2	<2	0.2 J	<2	<2	0.54 J	<2	<2	<2	<2
vinyl chloride	0.015	2	**1.3**	**1.5**	<2	**3.57**	**0.9J**	**0.78J**	**0.8J**	<2	**0.48 J**	<2	<2	<2	<2	<2	**5.41**	<2	**2.08**
[illegible]s (EPA 8270C)																			
1,4-dichlorobenzene (para)	1.4	75	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-methylphenol (p-cresol)	3.5	180*	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
benzoic acid	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
benzyl alcohol	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
diethylphthalate	5000	29000*	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	3.49 J	<10	1.51J
di-n-butylphthalate	700	3600*	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	1.06J	<10
bis(2-Ethylhexyl)phthalate	2.5	6	<10	<10	<10	<10	<10	4.41	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
phenol	300	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pesticides (EPA 8081)																			
delta-BHC	NA	NA	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
alpha-BHC	NA	NA	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
beta-BHC	NA	NA	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
gamma-BHC	0.2	0.2	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
alpha-Chlordane*	0.1	2	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
gamma-Chlordane*	0.1	2	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
Aldrin	NA	NA	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
Dieldrin	0.0022	NA	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
Endosulfan I	NA	NA	<0.025	<.0505	<.0505	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<.0505	<.0505	<0.025	<0.025	<0.025	<0.025
Heptachlor	0.0078	0.4	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
PCBs (EPA 8082)																			
No Detections																			
Organophosphorus Pesticides (EPA 8141A)																			
No Detections																			
Appendix II Inorganics (EPA 6010B/6020A)																			
Antimony	NA	6	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	10	10	3.1	3.6	4.2	10.4	7.5	7.92	2.65	**25.5**	4.87	<2	<2	<2	1.7	<2	1.95 J	<2	2.02
Barium	2000	2000	170	130	160	28.8	19.1	30	116	50.0	33.7	10.5	11 J	7.2	18	36	40.1	43.4	27.7
Beryllium	NA	4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Cadmium	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium	50	100	0.22 J	0.27 J	0.16 J	<5	<5	<5	<5	4.61 J	<5	<5	< 5	0.22 J	0.18 J	<5	<5	<5	<5
Cobalt	NA	NA	2	2.8	2.7	<1	<1	0.01J	2.13	1.02 J	<1	<1	0.25	0.15 J	0.58	<1	<1	<1	<1
Copper	1000	1000	0.39 J	0.37 J	0.93 J	<1	<1	0.01J	<1	9.94 J	8.4	<1	< 1	0.73 J	0.6 J	<1	<1	<1	<1
Iron	300	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead	15	15	0.14 J	<1	<1	<1	<1	1.22	<1	<1	<1	0.636 J	<1	<1	<1	<1	<1	0.611	<1
Manganese	50	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	100	730*	0.59 J	<50	<50	<50	<50	<50	1.41J	<50	<50	<50	< 50	0.58	0.62 J	<50	<50	<50	<50
Selenium	50	50	0.25 J	0.25 J	0.28 J	<2	<2	1.39J	1.12J	<2	<2	<2	<2	<2	<2	<2	1.89 J	<2	1.54J
Silver	18	100*	<30	<30	<30	<30	<30	<30	<30	<30	<30	5.7 J	<30	<30	<30	<30	<30	<30	<30
Thallium	NA	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tin	NA	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vanadium	NA	260*	1.9 J	1.5 J	<30	<30	<30	<30	<30	5.32	<30	<30	<30	<30	<30	<30	<30	<30	<30
Zinc	2100	5000	28	3.1 J	<60	<60	<60	0.02J	<60	39.7	<60	<60	46	3.9 J	6.9 J	<60	<60	21.4	<60
Other Analyses																			
Sulfide (EPA 376.1)	250,000	250,000	<200	<200	<200	NA	<200	<200	<200	<200	<200	<200	<200	<200	<200	NA	NA	NA	<200
Cyanide (EPA 335.2)	154	200	<20	<20	<20	NA	<20	<20	<20	14 J	<20	<20	<20	<20	<20	NA	NA	NA	<20
Mercury	1.05	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nitrate/Nitrite (SM 4500 - NO3-E)	10,000	10,000	NA	<40	<40	NA	51	0.018J	0.060	33 J	45	130	270 J	<40	550J	NA	NA	NA	25J

COMPOUNDS (µg/L)	SLMW-12AR Dup 10/05	SLMW-12AR 4/06	SLMW-12AR 11/06	SLMW-12AR 05/07	SLMW-12AR 11/07	SLMW-12AR-DUP 11/07	SLMW-12AR11/08	SLMW-12AR 06/09	SLMW-12AR 11/09	SLMW-12AR 06/10	SLMW-12BR 04/05	SLMW-12BR Dup 04/05	SLMW-12BR 10/05	SLMW-12BR 4/06	SLMW-12BR 11/06	SLMW-12BR 05/07	SLMW-12BR 11/07
VOCs (EPA 8260B)																	
1,1,2,2-tetrachloroethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-dichloroethane	1.22J	1.39J	0.83J	<2	1.15 J	1.0 J	0.62 J	<2	0.35 J	<2	1.41J	1.39J	<2	<2	<2	<2	<2
1,2,3-trichloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,4-trimethylbenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dibromoethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichlorobenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichloroethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichloropropane	<2	<2	<2	<2	<2	0.23 J	<2	<2	<2	<2	0.42J	0.45J	<2	<2	<2	<2	<2
1,4-dichlorobenzene	0.94J	1.14J	0.84J	<2	0.78 J	0.67 J	0.49 J	<2	<2	<2	1.07J	1.15J	<2	<2	<2	<2	<2
1,4-dioxane	<2	<2	<2	<2	<2	<2	<2	<2	9.8	<2	<2	<2	<2	<2	<2	<2	<2
2-butanone	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-isopropyltoluene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
acetone	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NA	NA	<2	<2	<2	<2	<2
acrolein	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
benzene	0.95J	**1.04J**	0.76J	<2	0.84 J	0.72 J	0.53 J	<2	0.26 J	<2	**1.11J**	**1.15J**	<2	<2	<2	<2	<2
carbon disulfide	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chlorobenzene	0.53J	0.62J	0.53J	<2	0.56 J	0.51 J	0.4 J	<2	<2	<2	0.58J	0.6J	<2	<2	<2	<2	<2
chloroethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloroform	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloromethane (methyl chloride)	<2	<2	2.05	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
cis-1,2-dichloroethene	2.58	3.19	1.09J	<2	1.22 J	1.08 J	0.83 J	<2	<2	<2	3.79	4.02	<2	<2	<2	<2	<2
dibromochloromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
dichlorodifluoromethane	5.15	4.41	3.61	<2	1.81 J	1.78 J	<2	<2	<2	<2	10.2	11.6	<2	<2	<2	<2	<2
diisopropyl ether	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
isopropylbenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
m&p xylene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
methylene chloride (dichloromethane)	<2	<2	<2	<2	0.21 J	0.27 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.25 J
MTBE	0.35J	0.31J	<2	<2	0.22 J	0.21 J	<2	<2	<2	<2	0.36J	0.38J	<2	<2	<2	<2	<2
naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-xylene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
sec-butylbenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
tetrachloroethene	0.3J	0.35J	<2	<2	<2	<2	<2	<2	<2	<2	0.4J	0.38J	<2	<2	<2	<2	<2
toluene	<2	0.37J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.24J	<2	<2	<2
trans-1,2-dichloroethene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
trichloroethene	0.52J	0.55J	0.35J	<2	0.45 J	0.37 J	0.23 J	<2	0.13 J	<2	0.71J	0.68J	<2	<2	<2	<2	<2
trichlorofluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
vinyl chloride	**1.82J**	**2.44**	**1.17**	<2	**0.97 J**	**0.77 J**	**0.52 J**	<2	<2	<2	**3.25**	**3.5**	<2	<2	<2	<2	<2
[illegible]s (EPA 8270C)																	
1,4-dichlorobenzene (para)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	1.98J	<10	<10	<10
4-methylphenol (p-cresol)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
benzoic acid	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
benzyl alcohol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
diethylphthalate	1.23J	<10	1.15J	1.28 J	<10	<10	<10	<10	<10	<10	1.46J	2.2J	<10	<10	<10	<10	<10
di-n-butylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
bis(2-Ethylhexyl)phthalate	<10	<10	<10	<10	<10	<10	<10	<10	1.5 J	<10	<10	<10	<10	<10	<10	<10	<10
phenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pesticides (EPA 8081)																	
delta-BHC	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
alpha-BHC	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
beta-BHC	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
gamma-BHC	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
alpha-Chlordane*	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
gamma-Chlordane*	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
Aldrin	<.0505	<.0505	0.095	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	0.0918	<.0505	<.0505
Dieldrin	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
Endosulfan I	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<.0505	<.0505	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Heptachlor	<.0505	<.0505	0.125	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	**0.0255J**	<.0505	<.0505
PCBs (EPA 8082)																	
No Detections																	
Organophosphorus Pesticides (EPA 8141A)																	
No Detections																	
Appendix II Inorganics (EPA 6010B/6020A)																	
Antimony	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	1.61J	<2	1.05J	1.05 J	<2	<2	<2	0.42 J	0.5 J	0.54 J	1.26J	1.61J	<2	<2	<2	<2	<2
Barium	27.7	30	33.2	34.1	42.0	41.0	44.8	38	41	36	27.2	28.4	35	30	34.5	41.5	41
Beryllium	<4	<4	<4	<4	<4	<4	<4	0.13 J	0.12 J	0.12 J	<4	<4	<4	<4	<4	<4	<4
Cadmium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium	<5	<5	<5	<5	<5	<5	<5	< 5	0.74 J	0.4 J	<5	<5	<5	<5	<5	<5	<5
Cobalt	<1	<1	0.698J	<1	<1	<1	<1	< 1	0.8	0.65	<1	<1	<1	<1	1.46	<1	<1
Copper	<1	<1	<1	<1	<1	<1	<1	< 1	0.53 J	2	<1	<1	<1	<1	<1	<1	6 JB
Iron	<1	<1	<1	<1	<1	<1	<1	<1	<1	100	<1	<1	<1	<1	<1	<1	<1
Lead	<1	0.50J	<1	0.819 J	<1	<1	0.738 J	0.34	0.44	0.45	<1	<1	0.623J	0.50J	<1	<1	<1
Manganese	<1	<1	<1	<1	<1	<1	<1	<1	<1	30	<1	<1	<1	<1	<1	<1	<1
Nickel	<50	<50	<50	<50	<50	<50	<50	< 50	1	0.97 J	<50	<50	<50	<50	2.29	<50	4 J
Selenium	2.24	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.48J	1.46J	<2	<2	<2	<2	<2
Silver	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Thallium	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tin	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vanadium	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Zinc	<60	<60	<60	12.6 J	<60	<60	<60	4.5 J	12	8.8 J	99.7	<60	<60	<60	6.33J	<60	<60
Other Analyses																	
Sulfide (EPA 376.1)	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	NA	NA	<200	<200	<200	<200	<200
Cyanide (EPA 335.2)	<20	<20	<20	<20	<20	<20	<20	<20	4.2 J	<20	NA	NA	<20	<20	<20	<20	<20
Mercury	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nitrate/Nitrite (SM 4500 - NO3-E)	<40	0.033J	0.276	217	398	336	244	240 J	640 J	<40	NA	NA	48	0.033J	0.022J	20 J	52

COMPOUNDS (µg/L)	SLMW-12BR 11/08	SLMW-12BR 06/09	SLMW-12BR 11/09	SLMW-12BR 06/10	SLMW-13 04/05	SLMW-13 10/05	SLMW-13 4/06	SLMW-13 11/06	GW-SLMW-13 06/07	GW-SLMW-13 11/07	GW-SLMW-13 11/08	SLMW-13 06/09	SLMW-13 11/09	SLMW-13 06/10	Longstreet SW-1 04/05	Longstreet SW-1 10/05	Longstreet SW-1 4/06
VOCs (EPA 8260B)																	
1,1,2,2-tetrachloroethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-dichloroethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	7.64	7.8
1,2,3-trichloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,4-trimethylbenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dibromoethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichlorobenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichloroethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.41J
1,2-dichloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,4-dichlorobenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.76J	0.96J
1,4-dioxane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-butanone	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-isopropyltoluene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
acetone	<2	<2	<2	<2	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	NA	<2	<2
acrolein	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
benzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	**1.59J**	**1.72J**
carbon disulfide	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chlorobenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.35J	0.37J
chloroethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.51J	0.52J
chloroform	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloromethane (methyl chloride)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.51J	0.52J
cis-1,2-dichloroethene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	5.02	5.01
dibromochloromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	10.4	7.07
diisopropyl ether	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
isopropylbenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.2J	<2
m&p xylene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
methylene chloride (dichloromethane)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MTBE	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.2J	0.86J
naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-xylene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
sec-butylbenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
tetrachloroethene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	**1.41J**	**1.36J**
toluene	<2	<2	<2	<2	<2	<2	1.15J	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.42J
trans-1,2-dichloroethene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
trichloroethene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	2.36	2.21
trichlorofluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.59J	0.54J
vinyl chloride	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	**2.78**	**3.52**
[illegible]s (EPA 8270C)																	
1,4-dichlorobenzene (para)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-methylphenol (p-cresol)	<10	<10	<10	<10	<10	<10	<10	<10	**13.1**	<10	<10	<10	<10	<10	<10	<10	<10
benzoic acid	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
benzyl alcohol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
diethylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	2.81J	3.19J
di-n-butylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
bis(2-Ethylhexyl)phthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
phenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pesticides (EPA 8081)																	
delta-BHC	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
alpha-BHC	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	0.0255J	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
beta-BHC	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
gamma-BHC	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
alpha-Chlordane*	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	0.0306J	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
gamma-Chlordane*	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	0.0255J	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
Aldrin	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	0.0306J	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
Dieldrin	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
Endosulfan I	<0.025	<0.025	<.0505	<.0505	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<.0505	<.0505	<0.025	<0.025	<0.025
Heptachlor	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
PCBs (EPA 8082)																	
No Detections																	
Organophosphorus Pesticides (EPA 8141A)																	
No Detections																	
Appendix II Inorganics (EPA 6010B/6020A)																	
Antimony	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	<2	<2	<2	<2	<2	<2	<2	<2	1.11 J	<2	<2	<2	<2	<2	<2	2.37	3.89
Barium	43.2	42	37	40	8.7 J	<2	5	5.43	10.9	7	8.3	9	6.9	9.9	10.2	31.7	20
Beryllium	<4	0.36	0.33	0.37	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Cadmium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.774J	<1
Chromium	<5	<5	<5	0.32 J	<5	<5	<5	<5	<5	<5	<5	0.17 J	0.19 J	<5	<5	<5	<5
Cobalt	<1	1.1	1	1.1	<1	<1	<1	<1	<1	<1	<1	0.11 J	0.083 J	0.10 J	<1	<1	<1
Copper	<1	< 1	1.2	3.4	<1	<1	<1	<1	<1	<1	<1	0.50 J	0.3 J	0.35 J	<1	<1	<1
Iron	<1	<1	<1	52	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead	2.72	0.17 J	0.26 J	0.27 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.08	<1
Manganese	<1	<1	<1	14	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	<50	2.2 J	1.8	2.1	<50	<50	<50	1.27J	<50	<50	<50	0.36 J	0.42 J	<50	<50	22.9J	<50
Selenium	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.07J	1.16J
Silver	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	10.1J	<30
Thallium	<2	<2	0.1 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tin	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vanadium	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	10.1J	<30
Zinc	<60	8.3 J	20	34	<60	<60	<60	10.3	<60	<60	<60	14	3.4 J	4.6 J	<60	55.3J	<60
Other Analyses																	
Sulfide (EPA 376.1)	<200	<200	<200	<200	NA	<200	<200	<200	<200	<200	<200	<200	<200	<200	NA	<200	<200
Cyanide (EPA 335.2)	<20	<20	<20	<20	NA	<20	<20	<20	<20	<20	<20	<20	2.6 J	<20	NA	<20	<20
Mercury	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.12 J	<20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nitrate/Nitrite (SM 4500 - NO3-E)	146	150 J	<40	<40	NA	36J	0.068	0.094	140	387	151	420	<40	610 J	NA	78	0.058J

Table 4. Summary of GroundWater Detections Longstreet Landfill, Fort Bragg, NC

COMPOUNDS (µg/L)	Groundwater NC 2L Standard (ug/l)	EPA Drinking water MCL (ug/l)	SW-1 11/06	SW-1 06/07	SW-1 11/07	SW-1 11/08	SW-1 06/09	SW-1 11/09	SW-1 06/10	SW-2 04/05	SW-2 10/05	SW-2 4/06	SW-2 11/06	SW-2 06/07	SW-2 11/07	SW-2 11/08	SW-2 06/09	SW-2 11/09	SW-2 06/10	GW-Blank 11/06	GW-Blank 05/07	GW-Blank 06/07	GW-Blank 11/07	GW-Blank 11/08	Trip Blank 11/06	Trip Blank 05/07	Trip Blank 06/07	Trip Blank 11/07	Trip Blank 11/08
VOCs (EPA 8260B)																													
1,1,2,2-tetrachloroethane	0.17	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-dichloroethane	700	810*	3.93	7.7	7.36	7.73	10	0.46 J	<2	<2	<2	<2	<2	<2	0.20 J	0.31 J	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,3-trichloropropane	0.005	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,4-trimethylbenzene	350	15 *	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dibromo-3-chloropropane	0.025	0.2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dibromoethane	0.0004	0.05	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichlorobenzene	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichloroethane	0.38	5	<2	<2	<2	<2	0.34 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichloropropane	0.56	5	<2	<2	0.44 J	0.058 J	0.44 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,4-dichlorobenzene	75	75	0.51 J	<2	0.71 J	<2	0.62 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,4-dioxane	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	7.7 J	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-butanone	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	1.78J	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4-isopropyltoluene	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.21 J	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
acetone	700	NA	<2	<2	<2	<2	<2	<2	<2	NA	3.5	<2	<2	<2	4.29 J	<2	<2	<2	NS	8.6 J	<2	<2	<2	8.6 J	2.23	<2	<2	<2	<2
acrolein	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	2.59J	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
benzene	1	5	0.87J	**1.6**	**1.45 J**	**1.88 J**	**1.7**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
carbon disulfide	700	NA	<2	<2	<2	<2	<2	<2	<2	<2	0.28J	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chlorobenzene	50	100	<2	<2	0.22 J	0.42 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloroethane	2800	4.6*	0.23J	<2	0.38 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloroform	70	80	<2	<2	0.43 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
chloromethane (methyl chloride)	2.6	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
cis-1,2-dichloroethene	70	70	1.79J	6.1	4.73	5.24	4.8	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
dibromochloromethane	0.41	80	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
dichlorodifluoromethane	1400	390*	5.78	8.4	5.77	5.1	4.2	<2	<2	<2	<2	<2	<2	<2	<2	0.23 J	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
diisopropyl ether	70	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
isopropylbenzene	70	660*	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
m&p xylene	530#	10000#	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
methylene chloride (dichloromethane)	4.6	5	<2	<2	0.30 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	0.22 J	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	0.23 J	<2
MTBE	200	13*	<2	<2	0.56 J	0.66 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
naphthalene	21	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-xylene	530#	10000#	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
sec-butylbenzene	70	NA	<2	<2	0.20 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
tetrachloroethene	0.7	5	**0.77J**	<2	**0.88 J**	**1.32 J**	**1.1**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
toluene	1000	1000	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.62J	<2	<2	<2	<2	<2	<2	NS	0.22J	<2	<2	<2	<2	<2	<2	<2	<2	<2
trans-1,2-dichloroethene	70	100	0.27J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
trichloroethene	2.8	5	1.12J	<2	2.14	2.3	1.9	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
trichlorofluoromethane	2100	1300*	<2	<2	0.30 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
vinyl chloride	0.015	2	**1.89J**	<2	**3.24**	**2.98**	**2.8**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
(EPA 8270C)																													
1,4-dichlorobenzene (para)	1.4	75	<10	<10	<10	0.91 J	<10	<10	<10	<10	<10	<10	<10	**1.87 J**	<10	<10	<10	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-methylphenol (p-cresol)	3.5	180*	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
benzoic acid	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
benzyl alcohol	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	<10	<10	<10	<10	6.48 J	<10	<10	<10	<10	<10
diethylphthalate	5000	29000*	2.02J	2.51 J	1.79 J	1.98	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
di-n-butylphthalate	700	3600*	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
bis(2-Ethylhexyl)phthalate	2.5	6	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	1.35J	<10	<10	<10	<10	<10	NS	<10	<10	1.44 J	<10	<10	<10	<10	<10	<10	<10
phenol	300	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pesticides (EPA 8081)																													
delta-BHC	NA	NA	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	0.038 J	NS	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
alpha-BHC	NA	NA	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	0.04 J	NS	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
beta-BHC	NA	NA	<.0505	<.0505	<.0505	0.042	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	0.03	<.0505	0.051 J	NS	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
gamma-BHC	0.2	0.2	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	NS	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
alpha-Chlordane*	0.1	2	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	NS	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
gamma-Chlordane*	0.1	2	0.0354J	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	NS	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
Aldrin	NA	NA	0.131	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	NS	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
Dieldrin	0.0022	NA	**0.0505**	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	**0.0306J**	<.0505	<.0505	<.0505	<.0505	<.0505	NS	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
Endosulfan I	NA	NA	<0.025	<0.025	<0.025	<0.025	<0.025	<.0505	<.0505	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<.0505	NS	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<.0505
Heptachlor	0.0078	0.4	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	NS	**0.0101J**	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505	<.0505
PCBs (EPA 8082)																													
No Detections																													
Organophosphorus Pesticides (EPA 8141A)																													
No Detections																													
Appendix II Inorganics (EPA 6010B/6020A)																													
Antimony	NA	6	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	10	10	5.69	**14.0**	**27.7**	**14.4**	6.6	1.2	0.57 J	<2	1.09J	1.08J	<2	1.18 J	1.85 J	5.79	0.53 J	0.76 J	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Barium	2000	2000	22	35.0	21	28	26	8.2	22	10.3	15.6	10	11.6	9.3	20	22	23	15	NS	<2	<2	<2	<2	<2	<2	113	<2	<2	<10
Beryllium	NA	4	<4	<4	<4	19	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	0.36 J	0.094 J	NS	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Cadmium	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium	50	100	<5	<5	<5	<5	0.16 J	0.74 J	0.38 J	<5	<5	<5	<5	<5	<5	<5	<5	1.4 B	NS	<5	<5	<5	<5	<5	<5	<5	<5	<5	<20
Cobalt	NA	NA	<1	<1	<1	<1	0.19 J	0.18 J	0.23	<1	<1	<1	<1	<1	<1	<1	0.26	0.3	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2
Copper	1000	1000	<1	7.68 J	<1	<1	0.39 J	4.4	1.5	<1	<1	<1	<1	<1	5.4	<1	0.51 J	1.8	NS	<1	<1	<1	<1	<1	<1	<1	<1	5.04 J	<20
Iron	300	NA	<1	<1	<1	<1	<1	<1	**5400**	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead	15	15	<1	1.85	<1	<1	0.12 J	0.51	0.15 J	<1	<1	2.36	0.56J	<1	<1	<1	0.19 J	0.72	NS	<1	<1	<1	<1	0.631 J	<1	<1	<1	<1	<1
Manganese	50	NA	<1	<1	<1	<1	<1	<1	24	<1	<1	<1	<1	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	100	730*	<50	<50	<50	<50	0.54 J	1.7	0.55 J	<50	<50	<50	<50	<50	<50	<50	0.6	1.2	NS	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Selenium	50	50	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Silver	18	100*	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	NS	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Thallium	NA	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tin	NA	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NS	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vanadium	NA	260*	<30	13.1	11	11	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	NS	<30	<30	<30	<30	<30	<30	<30	<30	<30	<20
Zinc	2100	5000	5.73J	117	42 J	<60	20	15	370	37.1 J	<60	0.02J	34.5	24.5 J	<60	<60	12	24	NS	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60
Other Analyses																													
Sulfide (EPA 376.1)	250,000	250,000	<200	<200	<200	<200	<200	<200	10,000	NA	<200	<200	<200	<200	<200	<200	<200	<200	NS	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Cyanide (EPA 335.2)	154	200	<20	18 J	<20	<20	<20	4.2 J	2.5	NA	<20	<20	<20	18 J	<20	<20	<20	2.7 J	NS	<20	<20	<20	<20	<20	<20	39	<20	<20	<20
Mercury	1.05	2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NS	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<20
Nitrate/Nitrite (SM 4500 - NO3-E)	10,000	10,000	0.03J	11 J	<40	541	NA	<40	1,700	NA	<40	0.331J	0.492	68	<40	<40	880	<40	NS	0.031J	<40	<40	<40	67	<40	69	<40	<40	139

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft. Bragg, NC
DATE:06/17/10 TIME: 1240
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Hot, sunny and humid

Location: Longstreet Landfill	**Sample ID:GW-SLMW-SW1-06-10**

PRESERVATIVE: HCl, HNO_3, H_2SO_4, NaOH, NaOH/ZnOAc, Ice
ANALYSES REQUESTED: 8260, 8270, 8081, 8082, 8141, App II Metals, Cyanide, Nitrate, Sulfide
OF CONTAINERS:10
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐YES ☒NO DUPLICATE SAMPLE: ☐YES ☒NO

2. **WATER LEVEL DATA**
MEASURING POINT: ☒Top of casing ☐Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. **WELL EVACUATION DATA**
Well Depth (wd): _____ (ft) Diameter (d): _____ (in)
Depth to Water (dw): _____ (ft) Diameter (d): _____ (ft)
Well Volume = $(5.904 \times d^2 (wd\text{-}dw))$ = _____ (gallons)
Flow Rate : _____ (ml/min) Purge vol: _____ (gallons)
Length of Time Purged: _____ (minutes) Purge time: _____
Amount Purged= _____ (gallons)

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter – YSI 556 XL	☒
Conductivity YSI 556 XL	☒
Temperature – YSI 556 XL	☒
Turbidity Meter – Hach 2100 Q	☒
DO Meter – YSI 556 XL	☒
ORP Meter – YSI 556 XL	☒
CO_2– Hach Digital Titrator	☐

Time						
pH						
Sp. Cond						
Temp. °C						
Turbidity						
DO						
ORP						

5. **COMMENTS:**

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft. Bragg, NC
DATE:6/17/10 TIME: 1355
SAMPLED BY: Jackson, Louis
WEATHER CONDITIONS: Hot, sunny and humid

Location: Longstreet Landfill	**Sample ID:GW-SLMW-12AR-6-10**

PRESERVATIVE: HCl, HNO_3, H_2SO_4, NaOH, NaOH/ZnOAc, Ice
ANALYSES REQUESTED: 8260, 8270, 8081, 8082, 8141, App II Metals, Cyanide, Nitrate, Sulfide
OF CONTAINERS:13
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☐ YES ☒ NO

2. WATER LEVEL DATA

MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. WELL EVACUATION DATA

Well Depth (wd): 20.18 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 8.75 (ft) Diameter (d): 0.167 (ft)
Well Volume = $(5.904 \times d^2 (wd\text{-}dw))$ = 1.9 (gallons)
Flow Rate : 500 (ml/min) Purge vol: NA (gallons)
Length of Time Purged: 40 (minutes) Purge time: 1315
Amount Purged= 5.3 (gallons)

4. FIELD PARAMETERS

INSTRUMENT	CALIBRATED
pH Meter –YSI 556XL	☒
Conductivity Meter – YSI 556XL	☒
Temperature – YSI 556XL	☒
Turbidity Meter – Hach 2100 Q	☒
DO Meter – YSI 556XL	☒
ORP Meter – YSI 556XL	☒
CO_2– Hach Digital Titrator	☐

Time	1330	1340	1350			
pH	3.92	3.98	4.03			
Sp. Cond	0.042	0.042	0.042			
Temp. °C	23.1	23.3	23.4			
Turbidity	10.0	8.62	7.96			
DO	3.95	3.85	3.80			
ORP	95.4	99.6	91.6			

5. COMMENTS:

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft. Bragg, NC
DATE:06/17/10 TIME: 15515
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Warm, partly cloudy

Location: Longstreet Landfill	**Sample ID:GW-SLMW-12BR-06-10**

PRESERVATIVE: HCl, HNO_3, H_2SO_4, NaOH, NaOH/ZnOAc, Ice
ANALYSES REQUESTED: 8260, 8270, 8081, 8082, 8141, App II Metals, Cyanide, Nitrate, Sulfide
OF CONTAINERS:10
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐YES ☒NO DUPLICATE SAMPLE: ☐YES ☒NO

2. WATER LEVEL DATA

MEASURING POINT: ☒Top of casing ☐Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. WELL EVACUATION DATA

Well Depth (wd): 64.80 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 8.79 (ft) Diameter (d): 0.167 (ft)
Well Volume = $(5.904 \times d^2 (wd\text{-}dw))$ = 9.3 (gallons)
Flow Rate : 500 (ml/min) Purge vol: _____ (gallons)
Length of Time Purged: 35 (minutes) Purge time: 1440
Amount Purged= 4.6 (gallons)

4. FIELD PARAMETERS

INSTRUMENT	CALIBRATED
pH Meter – YSI 556 XL	☒
Conductivity YSI 556 XL	☒
Temperature – YSI 556 XL	☒
Turbidity Meter – Hach 2100 Q	☒
DO Meter – YSI 556 XL	☒
ORP Meter – YSI 556 XL	☒
CO_2– Hach Digital Titrator	☐

Time	1450	1500	1510			
pH	4.56	4.59	4.64			
Sp. Cond	0.071	0.070	0.070			
Temp. °C	21.1	21.2	21.3			
Turbidity	7.52	4.43	3.75			
DO	4.03	3.96	3.75			
ORP	56.6	48.1	38.9			

5. COMMENTS:

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft. Bragg, NC
DATE:06/30/10 TIME: 1040
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Hot, sunny

Location: Longstreet Landfill	**Sample ID:GW-SLMW-MW7-06-10**

PRESERVATIVE: HCl, HNO_3, H_2SO_4, NaOH, NaOH/ZnOAc, Ice
ANALYSES REQUESTED: 8260, 8270, 8081, 8082, 8141, App II Metals, Cyanide, Nitrate, Sulfide
OF CONTAINERS:10
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐YES ☒NO DUPLICATE SAMPLE: ☐YES ☒NO

2. **WATER LEVEL DATA**
MEASURING POINT: ☒Top of casing ☐Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. **WELL EVACUATION DATA**
Well Depth (wd): 27.21 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 20.43 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 1.1 (gallons)
Flow Rate : 500 (ml/min) Purge vol: _____ (gallons)
Length of Time Purged: 40 (minutes) Purge time: 1000
Amount Purged= 5.3 (gallons)

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter – YSI 556 XL	☒
Conductivity YSI 556 XL	☒
Temperature – YSI 556 XL	☒
Turbidity Meter – Hach 2100 Q	☒
DO Meter – YSI 556 XL	☒
ORP Meter – YSI 556 XL	☒
CO_2– Hach Digital Titrator	☐

Time	1010	1015	1025	1035		
pH	5.42	5.36	5.30	5.43		
Sp. Cond	0.358	0.453	0.462	0.478		
Temp. °C	18.9	18.7	18.9	18.9		
Turbidity	8.87	8.05	6.61	5.57		
DO	2.12	0.35	0.60	0.57		
ORP	47.6	-26.7	-30.4	-37.7		

5. **COMMENTS:**

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft. Bragg, NC
DATE:06/30/10 TIME: 1215
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Hot, sunny

Location: Longstreet Landfill	**Sample ID:GW-LSMW-MW8-06-10**

PRESERVATIVE: HCl, HNO_3, H_2SO_4, NaOH, NaOH/ZnOAc, Ice
ANALYSES REQUESTED: 8260, 8270, 8081, 8082, 8141, App II Metals, Cyanide, Nitrate, Sulfide
OF CONTAINERS:10
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: ☐ YES ☒ NO

2. **WATER LEVEL DATA**
MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. **WELL EVACUATION DATA**
Well Depth (wd): 27.40 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 22.91 (ft) Diameter (d): 0.167 (ft)
Well Volume = $(5.904 \times d^2 (wd-dw))$ = 0.7 (gallons)
Flow Rate : 500 (ml/min) Purge vol: _____ (gallons)
Length of Time Purged: 45 (minutes) Purge time: 1130
Amount Purged= 6.0 (gallons)

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter – YSI 556 XL	☒
Conductivity YSI 556 XL	☒
Temperature – YSI 556 XL	☒
Turbidity Meter – Hach 2100 Q	☒
DO Meter – YSI 556 XL	☒
ORP Meter – YSI 556 XL	☒
CO_2– Hach Digital Titrator	☐

Time	1145	1200	1210			
pH	5.35	5.35	5.34			
Sp. Cond	0.494	0.489	0.487			
Temp. °C	24.5	24.8	25.1			
Turbidity	24.0	18.4	8.52			
DO	1.62	1.52	1.34			
ORP	-7.1	-15.8	-19.3			

5. COMMENTS: Per project manager, VOC's, nitrates, Hg, app II metals and cyanide were sampled due to low volume.

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft. Bragg, NC
DATE:06/30/10 TIME: 1435
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Hot, sunny

Location: Longstreet Landfill	**Sample ID:GW-LSMW-MW6-06-10**

PRESERVATIVE: HCl, HNO_3, H_2SO_4, NaOH, NaOH/ZnOAc, Ice
ANALYSES REQUESTED: 8260, 8270, 8081, 8082, 8141, App II Metals, Cyanide, Nitrate, Sulfide
OF CONTAINERS:10
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: X YES NO

2. **WATER LEVEL DATA**
MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. **WELL EVACUATION DATA**
Well Depth (wd): 38.00 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 25.80 (ft) Diameter (d): 0.167 (ft)
Well Volume = $(5.904 \times d^2 (wd\text{-}dw))$ = 2.0 (gallons)
Flow Rate : 500 (ml/min) Purge vol: _____ (gallons)
Length of Time Purged: 35 (minutes) Purge time: 1400
Amount Purged= 4.6 (gallons)

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter – YSI 556 XL	☒
Conductivity YSI 556 XL	☒
Temperature – YSI 556 XL	☒
Turbidity Meter – Hach 2100 Q	☒
DO Meter – YSI 556 XL	☒
ORP Meter – YSI 556 XL	☒
CO_2– Hach Digital Titrator	☐

Time	1415	1420	1425	1430		
pH	2.77	1.62	1.52	1.37		
Sp. Cond	0.015	0.015	0.015	0.015		
Temp. °C	19.6	18.8	18.5	18.5		
Turbidity	5.23	4.48	1.62	1.55		
DO	7.40	7.51	7.37	7.31		
ORP	224.9	230.9	241.6	246.9		

5. COMMENTS: LSMW-DUP1-6-10 @ 1200

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft. Bragg, NC
DATE:06/30/10 TIME: 1645
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Hot, sunny

Location: Longstreet Landfill	**Sample ID:GW-LSMW-MW13-06-10**

PRESERVATIVE: HCl, HNO_3, H_2SO_4, NaOH, NaOH/ZnOAc, Ice
ANALYSES REQUESTED: 8260, 8270, 8081, 8082, 8141, App II Metals, Cyanide, Nitrate, Sulfide
OF CONTAINERS:10
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐YES ☒NO DUPLICATE SAMPLE: XYES NO

2. **WATER LEVEL DATA**
MEASURING POINT: ☒Top of casing ☐Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. **WELL EVACUATION DATA**
Well Depth (wd): 58.19 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 50.58 (ft) Diameter (d): 0.167 (ft)
Well Volume = (5.904 × d^2 (wd-dw)) = 1.3 (gallons)
Flow Rate : 500 (ml/min) Purge vol: ____ (gallons)
Length of Time Purged: 45 (minutes) Purge time: 1600
Amount Purged= 6.0 (gallons)

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter – YSI 556 XL	☒
Conductivity YSI 556 XL	☒
Temperature – YSI 556 XL	☒
Turbidity Meter – Hach 2100 Q	☒
DO Meter – YSI 556 XL	☒
ORP Meter – YSI 556 XL	☒
CO_2– Hach Digital Titrator	☐

Time	1616	1620	1630	1640		
pH	4.50	3.80	3.57	3.35		
Sp. Cond	0.037	0.021	0.017	0.015		
Temp. °C	20.3	19.3	19.3	19.4		
Turbidity	2.69	18.3	9.75	7.54		
DO	8.67	9.00	9.06	8.97		
ORP	134.9	165.1	185.9	186.7		

5. COMMENTS: LSMW-DUP2-6-10 @ 1500 MS/MSD

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft. Bragg, NC
DATE:07/01/10 TIME: 0835
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Hot, sunny

Location: Longstreet Landfill	**Sample ID:GW-LSMW-11R-07-10**

PRESERVATIVE: HCl, HNO_3, H_2SO_4, NaOH, NaOH/ZnOAc, Ice
ANALYSES REQUESTED: 8260, 8270, 8081, 8082, 8141, App II Metals, Cyanide, Nitrate, Sulfide
OF CONTAINERS:10
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: X YES NO

2. **WATER LEVEL DATA**
MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. **WELL EVACUATION DATA**
Well Depth (wd): 86.98 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 76.30 (ft) Diameter (d): 0.167 (ft)
Well Volume = $(5.904 \times d^2 (wd-dw))$ = 1.8 (gallons)
Flow Rate : 500 (ml/min) Purge vol: _____ (gallons)
Length of Time Purged: 50 (minutes) Purge time: 745
Amount Purged= 6.6 (gallons)

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter – YSI 556 XL	☒
Conductivity YSI 556 XL	☒
Temperature – YSI 556 XL	☒
Turbidity Meter – Hach 2100 Q	☒
DO Meter – YSI 556 XL	☒
ORP Meter – YSI 556 XL	☒
CO_2– Hach Digital Titrator	☐

Time	0800	0810	0820	0830		
pH	4.19	4.33	4.65	4.87		
Sp. Cond	0.027	0.038	0.042	0.052		
Temp. °C	19.6	19.6	19.7	19.7		
Turbidity	15.9	12.1	9.26	7.48		
DO	6.20	5.34	5.05	4.81		
ORP	181.2	136.4	118.9	91.7		

5. COMMENTS:

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft. Bragg, NC
DATE:07/01/10 TIME: 1125
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Hot, sunny

Location: Longstreet Landfill	**Sample ID:GW-LSMW-9-07-10**

PRESERVATIVE: HCl, HNO_3, H_2SO_4, NaOH, NaOH/ZnOAc, Ice
ANALYSES REQUESTED: 8260, 8270, 8081, 8082, 8141, App II Metals, Cyanide, Nitrate, Sulfide
OF CONTAINERS:10
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: X YES NO

2. **WATER LEVEL DATA**
MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. **WELL EVACUATION DATA**
Well Depth (wd): 48.76 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 36.66 (ft) Diameter (d): 0.167 (ft)
Well Volume = $(5.904 \times d^2 (wd-dw))$ = 2.0 (gallons)
Flow Rate : 500 (ml/min) Purge vol: _____ (gallons)
Length of Time Purged: 45 (minutes) Purge time: 1040
Amount Purged= 6.0 (gallons)

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter – YSI 556 XL	☒
Conductivity YSI 556 XL	☒
Temperature – YSI 556 XL	☒
Turbidity Meter – Hach 2100 Q	☒
DO Meter – YSI 556 XL	☒
ORP Meter – YSI 556 XL	☒
CO_2– Hach Digital Titrator	☐

Time	1050	1100	1110	1120		
pH	6.11	6.03	6.07	6.12		
Sp. Cond	0.640	0.653	0.661	0.678		
Temp. °C	19.8	19.7	19.8	19.7		
Turbidity	10.7	9.67	7.71	6.66		
DO	1.64	0.79	0.69	0.75		
ORP	-18.6	-27.1	-36.2	-38.4		

5. COMMENTS:

	U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT GEOLOGY and HYDROGEOLOGY	GROUND WATER FIELD DATA LOG

1. CLIENT: Ft. Bragg, NC
DATE:07/01/10 TIME: 1315
SAMPLED BY: Louis and Jackson
WEATHER CONDITIONS: Hot, sunny

Location: Longstreet Landfill	**Sample ID:GW-LSMW-10-07-10**

PRESERVATIVE: HCl, HNO_3, H_2SO_4, NaOH, NaOH/ZnOAc, Ice
ANALYSES REQUESTED: 8260, 8270, 8081, 8082, 8141, App II Metals, Cyanide, Nitrate, Sulfide
OF CONTAINERS:10
SAMPLING METHOD: ☐ Peristaltic Pump
☒ Bladder Pump LOW FLOW: ☒ YES ☐ NO
SAMPLES FILTERED: ☐ YES ☒ NO DUPLICATE SAMPLE: XYES NO

2. **WATER LEVEL DATA**
MEASURING POINT: ☒ Top of casing ☐ Other:
METHOD OF MEASUREMENT: Water Level Indicator

3. **WELL EVACUATION DATA**
Well Depth (wd): 27.80 (ft) Diameter (d): 2.00 (in)
Depth to Water (dw): 19.70 (ft) Diameter (d): 0.167 (ft)
Well Volume = $(5.904 \times d^2 (wd\text{-}dw))$ = 1.3 (gallons)
Flow Rate : 500 (ml/min) Purge vol: ____ (gallons)
Length of Time Purged: 50 (minutes) Purge time: 1225
Amount Purged= 6.6 (gallons)

4. **FIELD PARAMETERS**

INSTRUMENT	CALIBRATED
pH Meter – YSI 556 XL	☒
Conductivity YSI 556 XL	☒
Temperature – YSI 556 XL	☒
Turbidity Meter – Hach 2100 Q	☒
DO Meter – YSI 556 XL	☒
ORP Meter – YSI 556 XL	☒
CO_2– Hach Digital Titrator	☐

Time	1230	1240	1250	1300	1310	
pH	6.08	6.23	6.34	6.40	6.44	
Sp. Cond	0.738	0.721	0.714	0.710	0.708	
Temp. °C	18.2	18.6	18.2	18.3	18.5	
Turbidity	9.44	4.83	4.92	4.10	3.95	
DO	0.63	0.92	0.43	0.44	0.46	
ORP	-16.7	-41.2	-54.7	-63.7	-70.9	

5. COMMENTS: LSMW-BLK-07-10 @1410

QA LEVEL II - DATA EVALUATION CHECKLIST

Company Name: USACE
Project Name: Longstreet Landfill
Reviewer: Frank Burwell

Project Manager: Z. Kidwai
Project Number:
Validation Date: 14-Sept-2010

Laboratory: Test America
Analytical Method (type and no.): VOC (8260B), SVOCs (8270D), PCBs (8081B/8082A)
SDG #: 680-59057-1
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐
Sample Names: LSMW-7-6-10, LSMW-8-6-10, LSMW-6-6-10, LSMW-13-6-10, LSMW-Dup-1-6-10, LSMW-Dup-2-6-10, Trip Blank

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information

	YES	NO	NA	COMMENTS
a) Sampling dates noted?	☒	☐	☐	Grab sample indicated on COC form
b) Sampling team indicated?	☐	☒	☐	
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	
e) Sample type indicated (grab/composite)?	☐	☒	☐	pH, Conductivity, Temperature Dissolved Oxygen, ORP, Turbidity
f) Field QC noted?	☒	☐	☐	
g) Field parameters collected (note types)?	☒	☐	☐	
h) Field Calibration within control limits?	☒	☐	☐	
Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j) Does the laboratory narrative indicate deficiencies:	☐	☒	☐	

Note Deficiencies:

Chain-of-Custody (COC)

	YES	NO	NA	COMMENTS
k) Was the COC properly completed?	☒	☐	☐	
l) Was the COC signed by both field and laboratory personnel?	☒	☐	☐	
m) Were samples received in good condition?	☒	☐	☐	

General (Reference QAPP or Method)

	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	☒	☐	☐	• SVOC LSMW-13 re-extracted
b) Were hold times met for sample analysis?	☐	☒	☐	outside of preparation holding lim
c) Were the correct preservatives used?	☒	☐	☐	
d) Was the correct method used?	☒	☐	☐	
e) Were appropriate reporting limits achieved?	☒	☐	☐	
Were any sample dilutions noted?	☒	☐	☐	• Nitrate as NO3 diluted 5x
g) Were any matrix problems noted?	☐	☒	☐	

Blanks

	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☐	☒	☐	
b) Were analytes detected in the field blank(s)?	☐	☐	☒	
c) Were analytes detected in the equipment blank(s)?	☐	☐	☒	
d) Were analytes detected in the trip blank(s)?	☐	☒	☐	

Laboratory Control Sample (LCS)

	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	☒	☐	☐	
b) Were the proper compounds included in the LCS?	☒	☐	☐	
c) Was the LCS accuracy criteria met?	☒	☐	☐	

Duplicates

	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	☐	☐	☒	
b) Were field dup. precision criteria met (note RPD)?	☐	☐	☒	
c) Were lab duplicates analyzed (note original and duplicate samples)?	☐	☐	☒	
d) Were lab dup. precision criteria met (note RPD)?	☐	☐	☒	

Blind Standards

	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, compounds included and concentrations)?	☐	☐	☒	
Was the %D within control limits?	☐	☐	☒	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	☒	☐	☐	
b) Recovery could not be calculated since sample contained high concentration of analyte?	☐	☒	☐	
c) Was MSD accuracy criteria met?	☒	☐	☐	
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☒	☐	
d) Were MS/MSD precision criteria met?	☒	☐	☐	

Reagent Water Spike and Duplicate (RWS & RWSD)

	YES	NO	NA	COMMENTS
a) Was RWS accuracy criteria met?	☐	☐	☒	
b) Was RWSD accuracy criteria met?	☐	☐	☒	
c) Was RWS/RWSD precision criteria met (RPD)?	☐	☐	☒	

Surrogate Spikes

	YES	NO	NA	COMMENTS
a) Were surrogate recoveries within control limits?	☐	☒	☐	
b) Were surrogate recoveries not calculated due to dilutions?	☐	☒	☐	

Comments/Notes:

Organophosphorous (8141B), Metals (6020A), Mercury (7470A), Anions (Method 300.0), Cyanide (335.4), Sulfide (Method 9030)

LSMW-13, -6, -7, -8, -Dupl, -Dup-2 samples were redigested outside of holding time due to the lab spike recovering outside of control limits in the original batch.

(7470C) SLMW-10, +-9 had surrogates outside of acceptable criteria

(6020A) SLMW-13, -10, -11R, -9, -BLK had lab spikes recoveries outside of control limits in original batch

Data Qualification: Metals Method 6020 results determined to be ~~unusable~~ usable because samples were analyzed within 180 d.

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: _____ Date: _____

QA LEVEL II - DATA EVALUATION CHECKLIST

Company Name: USACE
Project Name: Longstreet Landfill
Reviewer: Frank Burwell

Project Manager: Z. Kidwai
Project Number:
Validation Date: 14 - Sept - 2010

Laboratory: Test America
SDG #: 680 - 59085 - 1
Analytical Method (type and no.): VOCs (8260B), SVOCs (8270D), PCBs (8081B/8082A), Organophosphorus (8141B)
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐
Sample Names: SLMW-11R-7-10, Trip Blank, SLMW-9-7-10, SLMW-10-7-10, SLMW-BLK-6-10

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	☒	☐	☐	Grab sample indicated on
b) Sampling team indicated?	☐	☒	☐	COC form
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	pH, Conductivity, Temperature,
e) Sample type indicated (grab/composite)?	☐	☒	☐	dissolved Oxygen, ORP, Turbidity
f) Field QC noted?	☒	☐	☐	
Field parameters collected (note types)?	☒	☐	☐	
Field Calibration within control limits?	☒	☐	☐	
i) Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j) Does the laboratory narrative indicate deficiencies:	☐	☒	☐	

Note Deficiencies:

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
k) Was the COC properly completed?	☒	☐	☐	
l) Was the COC signed by both field and laboratory personnel?	☒	☐	☐	
m) Were samples received in good condition?	☒	☐	☐	

General (Reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	☐	☐	☐	• Hold times were exceeded when
b) Were hold times met for sample analysis?	☐	☒	☐	re-analyzing metals by method 6020A.
c) Were the correct preservatives used?	☒	☐	☐	• Samples re-digested b/c lab spike was
d) Was the correct method used?	☒	☐	☐	recovered outside of limits.
Were appropriate reporting limits achieved?	☒	☐	☐	• Nitrate dilution 5x
f) Were any sample dilutions noted?	☒	☐	☐	
g) Were any matrix problems noted?	☐	☐	☒	

Blanks	YES	NO	NA	COMMENTS
Were analytes detected in the method blank(s)?	☐	☒	☐	
b) Were analytes detected in the field blank(s)?	☐	☐	☒	
c) Were analytes detected in the equipment blank(s)?	☐	☐	☒	
d) Were analytes detected in the trip blank(s)?	☐	☒	☐	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	☒	☐	☐	
b) Were the proper compounds included in the LCS?	☒	☐	☐	
c) Was the LCS accuracy criteria met?	☒	☐	☐	

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	☐	☐	☒	
b) Were field dup. precision criteria met (note RPD)?	☐	☐	☒	
c) Were lab duplicates analyzed (note original and duplicate samples)?	☐	☐	☒	
d) Were lab dup. precision criteria met (note RPD)?	☐	☐	☒	

Blind Standards	YES	NO	NA	COMMENTS
Was a blind standard used (indicate name, compounds included and concentrations)?	☐	☐	☒	
b) Was the %D within control limits?	☐	☐	☒	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	☒	☐	☐	
b) Recovery could not be calculated since sample contained high concentration of analyte?	☐	☒	☐	
c) Was MSD accuracy criteria met?	☒	☐	☐	
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☒	☐	
d) Were MS/MSD precision criteria met?	☒	☐	☐	

Reagent Water Spike and Duplicate (RWS & RWSD)	YES	NO	NA	COMMENTS
a) Was RWS accuracy criteria met?	☐	☐	☒	
b) Was RWSD accuracy criteria met?	☐	☐	☒	
c) Was RWS/RWSD precision criteria met (RPD)?	☐	☐	☒	

Surrogate Spikes	YES	NO	NA	COMMENTS
a) Were surrogate recoveries within control limits?	☐	☒	☐	
Were surrogate recoveries not calculated due to dilutions?	☐	☒	☐	

Comments/Notes:

Metals (6020A) Mercury (7470A), Anions (Method 300.0), Cyanide (method 335.4)
Sulfide (method 9030B)

Surrogate spikes
method 8081B - SLMW-9-7-10 surrogated Acceptance limit not reached
SLMW-10-7-10 DCB recovery percentages qualified
with (J)

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: _____ Date: _____

QA LEVEL II - DATA EVALUATION CHECKLIST

Company Name: USACE
Project Name: Longstreet Landfill
Reviewer: Frank Burwell
Project Manager: Z. Kidwai
Project Number: —
Validation Date: 14 Sept 2010
Laboratory: Test America
Analytical Method (type and no.): VOC (8260B), SVOCs (8270D), PCBs (8081B/8082A)
SDG #: 680-58693-1
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐
Sample Names: SW-1-6-10, SLMW-12AR-6-10, SLMW-12BR-6-10, Trip Blank

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information

	YES	NO	NA	COMMENTS
a) Sampling dates noted?	☒	☐	☐	Grab sample indicated on COC form
b) Sampling team indicated?	☐	☒	☐	
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	
e) Sample type indicated (grab/composite)?	☐	☒	☐	pH, conductivity, Temperature Dissolved Oxygen, ORP Turbidity.
f) Field QC noted?	☒	☐	☐	
g) Field parameters collected (note types)?	☒	☐	☐	
Field Calibration within control limits?	☒	☐	☐	
Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j) Does the laboratory narrative indicate deficiencies:	☐	☒	☐	

Note Deficiencies:

Chain-of-Custody (COC)

	YES	NO	NA	COMMENTS
k) Was the COC properly completed?	☒	☐	☐	
l) Was the COC signed by both field and laboratory personnel?	☒	☐	☐	
m) Were samples received in good condition?	☒	☐	☐	

General (Reference QAPP or Method)

	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	☒	☐	☐	
b) Were hold times met for sample analysis?	☒	☐	☐	Nitrate dilution 5x
c) Were the correct preservatives used?	☒	☐	☐	
d) Was the correct method used?	☒	☐	☐	
e) Were appropriate reporting limits achieved?	☒	☐	☐	
Were any sample dilutions noted?	☒	☐	☐	
g) Were any matrix problems noted?	☐	☒	☐	

Blanks

	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☒	☒	☐	Xylenes, Total - 0.235 ug/L J.
b) Were analytes detected in the field blank(s)?	☐	☐	☒	
c) Were analytes detected in the equipment blank(s)?	☐	☐	☒	
d) Were analytes detected in the trip blank(s)?	☐	☒	☐	

Laboratory Control Sample (LCS)

	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	☒	☐	☐	
b) Were the proper compounds included in the LCS?	☒	☐	☐	
c) Was the LCS accuracy criteria met?	☒	☐	☐	

Duplicates

	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	☐	☒	☐	
b) Were field dup. precision criteria met (note RPD)?	☐	☐	☒	
c) Were lab duplicates analyzed (note original and duplicate samples)?	☐	☒	☐	
d) Were lab dup. precision criteria met (note RPD)?	☐	☐	☒	

Blind Standards

	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, compounds included and concentrations)?	☐	☐	☒	
b) Was the %D within control limits?	☐	☐	☒	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	☒	☐	☐	
b) Recovery could not be calculated since sample contained high concentration of analyte?	☐	☒	☐	
c) Was MSD accuracy criteria met?	☒	☐	☐	
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☒	☐	
d) Were MS/MSD precision criteria met?	☒	☐	☐	

Reagent Water Spike and Duplicate (RWS & RWSD)

	YES	NO	NA	COMMENTS
a) Was RWS accuracy criteria met?	☐	☐	☒	
b) Was RWSD accuracy criteria met?	☐	☐	☒	
c) Was RWS/RWSD precision criteria met (RPD)?	☐	☐	☒	

Surrogate Spikes

	YES	NO	NA	COMMENTS
a) Were surrogate recoveries within control limits?	☒	☐	☐	
b) Were surrogate recoveries not calculated due to dilutions?	☒	☐	☐	

Comments/Notes:

Organophosphorous (8141B) Metals (6020A) Mercury (7470A)
Anions (Method 300.0)' Cyanide (335.4), Sulfide (Method 9030B)

* Initial Calibration Curve analyzed exceeded method criteria for the following - Benzidine, Benzaldehyde, Atrazine, a,a-Dimethylphenethylamine, Methapyrilene, 3,3-Dimethylbenzidine, hexachlorophene, 1,4-Dioxane, Pyridine, N-nitrosodimethylamine, bis-ether, Benzoic Acid 2,4-Dinitrophenol, 4-Nitroaniline, 4,6 Dinitro-2-methylphenol, Dinoseb, 2,3,4,6-Tetrachlorophenol, 2-Picoline, N-nitrosomethylethylamine, N-nitrosomorpholine, a,a-Dimethyl phenethylamine, Hexachlorophene, a-Pinene, Diallate, o,o,o-triethylphosphorothioate, Benzoic Acid, 4 Nitrophenol, Benzaldehyde. A CCV standard was analyzed w/ the affected samples was found to be acceptable. Any detection for the analytes above is Qualified with "J"

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: ______________________ Date: ______________