March 30, 2015

Mr. Ervin Lane
Compliance Hydrogeologist
NCDENR/Solid Waste Section
1646 Mail Service Center
Raleigh, NC 27699-1646

RE: 1st Semiannual Water Quality Monitoring Report of 2015
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Dear Mr. Lane,

Republic Services of North Carolina, LLC is submitting the First Semiannual Water Quality Monitoring Report of 2015 for the East Carolina Regional Landfill, Permit No. 08-03, in electronic format on the enclosed CD, as required by the North Carolina Division of Waste Management, Solid Waste Section. The CD also includes the electronic data deliverables (EDD) from the laboratory. The original hard copy Environmental Monitoring Reporting Form is attached to this letter.

This report completes the first semiannual compliance monitoring event of 2015 for the East Carolina Regional Landfill, Permit No. 08-03. If you have any questions, please contact or Van Burbach or Alex Everhart with Joyce Engineering at (336) 323-0092, or me at (919) 354-3227

Sincerely,

Matt Einsmann, P.E.
Environmental Manager

Enclosure

cc: Matt East, Division Manager, East Carolina Regional Landfill
Van Burbach, Joyce Engineering

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

NC DENR
Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

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

Instructions:

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

Solid Waste Monitoring Data Submittal Information

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

Joyce Engineering on behalf of Republic Services of NC, LLC

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

Name: G. Van Ness Burbach, Ph.D., P.G. Phone: (336)-323-0092

E-mail: vburbach@joyceengineering.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
East Carolina Regional Landfill	1922 Republican Road Aulander, NC 27805	08-03	.1600	January 28, 2015

Environmental Status: (Check all that apply)

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

Type of data submitted: (Check all that apply)

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

Notification attached?

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

Certification

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

G. VanNess Burbach, Ph.D., PG — Technical Consultant — (336)-323-0092

Facility Representative Name (Print) — Title — (Area Code) Telephone Number

Signature — Date: 3/20/15

Affix NC Licensed/ Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 1349 GEOLOGIST G. VAN NESS BURBACH

2211 W. Meadowview Rd. Ste. 101, Greensboro, NC 27407

Facility Representative Address

C-0782

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

Revised 6/2009

PREPARED FOR:

REPUBLIC SERVICES OF NORTH CAROLINA, LLC
D.B.A. EAST CAROLINA ENVIRONMENTAL
1922 REPUBLICAN ROAD
AULANDER, NORTH CAROLINA 27805

EAST CAROLINA REGIONAL LANDFILL
PERMIT NO. 08-03

FIRST SEMIANNUAL WATER QUALITY MONITORING REPORT OF 2015

MARCH 2015

PREPARED BY:

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GREENSBORO, NORTH CAROLINA 27407
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JOYCE ENGINEERING PROJECT NO. 00894.1501.12

EXECUTIVE SUMMARY

This report presents the results of the first semiannual water quality monitoring event conducted at the East Carolina Regional Landfill on January 28, 2015. Samples were collected by representatives of Joyce Engineering from groundwater monitoring wells, surface water monitoring points, and the leachate collection system. The analytical results from the January 2015 monitoring event have been reported by Analytical Services, Inc. of Norcross, Georgia laboratory certification number 381.

Eight inorganic constituents (barium, beryllium, chromium, cobalt, copper, lead, vanadium, and zinc) were detected in samples from one or more groundwater or surface water monitoring points at concentrations above their respective Solid Waste Section Reporting Limits (SWSLs). Barium was detected above the SWSL in GW-2, GW-9, GW-10, GW-13, GW-15, GW-17, and GW-18. Beryllium was detected above the SWSL in GW-7, and GW-17. Chromium was detected above the SWSL in GW-17. Cobalt was detected above the SWSL in GW-7 and GW-17. Copper was detected above the SWSL in GW-17 and PW-1. Lead was detected above the SWSL in GW-17. Vanadium was detected above the SWSL in GW-17. Zinc was detected above the SWSL in GW-2, GW-7, GW-9, GW-17, GW-18, and PW-1. No other inorganic or organic constituents were detected above their respective SWSLs in monitoring wells or surface water monitoring points during the January 2015 monitoring event.

Four inorganic constituents were detected in samples from one or more groundwater monitoring points at concentrations above their respective 15A NCAC 2L.0202 Groundwater Protection Standards (NC2L) or North Carolina Solid Waste Section Groundwater Protection Standards (GWPS). Cobalt was detected above its GWPS in monitoring wells GW-7 and GW-17, and chromium and lead were detected above their NC2L Standards in GW-17; and vanadium was detected above its GWPS in monitoring wells GW-17. A verification resampling event for chromium, lead and vanadium in GW-17 was conducted on March 5, 2015. The results of the verification event did <u>not</u> confirm chromium, lead, or vanadium above their respective NC2L or GWPS. The cobalt detections were statistically evaluated in accordance with the procedures outlined in 15A NCAC 13B.1632 (g) and (h) to determine whether the reported concentrations exceeded the facility background concentration. The cobalt detections were <u>not</u> identified as statistically significant increases above background; therefore, the background can be considered the GPS in accordance with 15A NCAC 13B.1634.(g).(5).

No inorganic or organic constituents were detected in surface water samples at quantified concentrations above applicable NC2B standards. Based on the results summarized herein, Republic Services of NC, LLC, will continue monitoring the uppermost aquifer beneath the East Carolina Regional Landfill in accordance with the requirements for Detection Monitoring Program as outlined in Title 15A NCAC 13B .1633.

First Semiannual Water Quality Monitoring Report of 2015
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

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1.0 INTRODUCTION

This report summarizes the monitoring results from the January 28, 2015, water quality monitoring event at the East Carolina Regional Landfill in Bertie County, North Carolina, in accordance with Title 15A of the North Carolina Administrative Code (NCAC) Subchapter 13B .1632. The East Carolina Regional Landfill, which is an active municipal solid waste landfill, is owned and operated by Republic Services of North Carolina, LLC (Republic) under Permit No. 08-03, issued by the North Carolina Department of Environment and Natural Resources (DENR).

1.1 Site Description and Background

The East Carolina Regional Landfill is an active Subtitle D municipal solid waste landfill that began operating in 1993. The location of the facility is shown on the inlay on Drawing 1. The East Carolina Regional Landfill is located approximately 7.5 miles northwest of Windsor, NC at the intersection of State Routes 1221 and 1225. The facility is bounded to the north and east by undeveloped property and the Connaritsa Swamp, to the west by State Route 1225 and undeveloped and agricultural property, and to the south by State Route 1221, wooded property, and undeveloped bottomlands associated with the easterly flowing Cashie River.

Topographic elevations at the facility range from approximately 30 to 70 feet above mean sea level. Along the northern and eastern portions of the facility, surface drainage from the facility and surrounding areas is routed by drainage channels and storm water control structures to tributaries of the southerly flowing Connaritsa Swamp, a tributary system of the Cashie River. Along the western and southern portions of the facility, surface drainage from the facility and surrounding areas is routed by drainage channels and storm water control structures to tributaries of the southeasterly flowing Cashie River. The Cashie River discharges to the Roanoke River south of the Town of Windsor.

1.2 Compliance Monitoring History

Groundwater monitoring at the facility was initiated in January 1995 under the Detection Monitoring Program for municipal solid waste landfills. The facility's monitoring network historically consisted of 14 monitoring wells (GW-1 through GW-14), which monitored the uppermost Yorktown Formation (GW-2, GW-3, GW-5, GW-7 through GW-11, GW-13, and GW-14) and the lower Black Creek Formation (GW-1, GW-4, GW-6, and GW-12). Monitoring wells GW-1 and GW-2 were considered upgradient background wells and the remaining wells were considered to be downgradient or side-gradient compliance wells. Well GW-16 was decommissioned following the January 2007 sampling event during the construction of Cell 12. Bunnell Lammons Engineering, Inc. (BLE) installed monitoring well GW-16R as a replacement well prior to the January 2008 monitoring event. BLE installed GW-17 following the January 2008 sampling event as an additional monitoring well during the construction of Cell 12. Monitoring well GW-14 was decommissioned and GW-18 was installed March 22, 2009, in

order to construct Cell 13. Piezometer PZ-110 was installed May 17, 2005, to monitoring well specifications. On June 3, 2009, PZ-110 was converted into a monitoring well and was renamed GW-21. A background sampling event for GW-18 and GW-21 was performed during the July 2009 monitoring event. Cell 13 began receiving waste in the first quarter of 2014 and wells GW-18 and GW-21 became part of the compliance network with the July 2014 sampling event. Due to damage, GW-11 was abandoned and replaced with GW-11R on July 21, 2014.

In accordance with the facility's permit, the current compliance monitoring network monitors the Yorktown formation and is composed of GW-2 (background), GW-7, GW-8, GW-9, GW-10, GW-11R, GW-13, GW-15, GW-16R, GW-17, GW-18, and GW-21, with the remaining monitoring wells used for static water level observation. Per the June 2005 revision to the Water Monitoring Procedures (BLE, 2005), the groundwater wells screened in the Black Creek Formation are no longer sampled.

In addition to the routine groundwater monitoring points, the facility's monitoring network includes one upstream surface water monitoring point (SW-1), and three downstream surface water sampling points (SW-2, SW-3, and SW-4), which are sampled in conjunction with the groundwater monitoring wells. Water supply well PW-1 is sampled during each routine monitoring event. The leachate is also sampled semiannually per the Solid Waste Section requirements.

1.3 Hydrogeologic Setting

Geologically, the facility is located within the Carolina Coastal Plain Physiographic Province of NC (NCGS 1985). The Coastal Plain Province is composed of easterly dipping sedimentary strata that thicken towards the east. Based on hydrogeologic characteristics, these strata are generally classified as aquifer systems separated by aquitard units. The strata underlying the facility include the Tertiary Yorktown Formation and the Cretaceous Black Creek Formation, both of which are classified as aquifers. The Yorktown Formation is unconfined at this location, and the lower Black Creek Formation, which is separated from the overlying Yorktown Formation by a low permeability unit, is confined.

The uppermost groundwater beneath the facility is present in the shallow, unconfined Yorktown Aquifer. Depending on topographic elevation, the depth to water in the Yorktown Formation ranges from approximately 5 feet below grade along the southwestern perimeter of the facility to approximately 25 feet below grade near the central and northeastern portion of the facility. In the lower Black Creek Formation, the depth to water ranges from 10 to 20 feet below grade in the monitoring wells screened in this unit. Historical static water level data are presented on Tables 1 and 2.

As presented in Table 1, the water level in the uppermost Yorktown aquifer beneath the facility is fairly consistent, with temporal variation from the long-term average limited to approximately four-five feet in the upgradient wells and three-four feet in the downgradient wells. Similarly, as

presented in Table 2, the fluctuation in the Black Creek aquifer is limited to approximately three feet from the average. As expected, the range in fluctuation appears to be greater in the upgradient wells, as these wells are more centrally located to the regional groundwater recharge area. The range in fluctuation in the downgradient compliance wells, which are generally located near groundwater discharge areas, is less likely due to the stabilizing effect of hydraulic discharge boundaries.

Static water level measurements obtained during the January 28, 2015, sampling event were used to prepare the groundwater surface contours presented on Drawing 1. In the upper Yorktown Formation, groundwater flow across most of the site is toward the south-southwest. This is consistent with previously submitted interpretations for this facility. Previous maps of the Black Creek Formation show an apparent flow direction towards the southeast.

Based on the January 28, 2015 potentiometric surface map, the hydraulic gradient in the uppermost aquifer underlying the site, as measured along the conceptual flow paths shown on the contour map, was calculated to be approximately 0.00090 to 0.00960 ft/ft (Table 3). The estimated rate of groundwater flow for the uppermost aquifer beneath the facility was calculated using the following modified Darcy equation:

$$\boldsymbol{V_{gw} = Ki/n_e}$$

Where V_{gw} = average linear velocity (feet per day), $\boldsymbol{K}$ = hydraulic conductivity (feet per day), $\boldsymbol{i}$ = horizontal hydraulic gradient, and $\boldsymbol{n_e}$ = effective porosity.

The estimated linear groundwater flow velocity under the waste management unit is approximately 0.00313 to 0.03324 ft/day, generally to the southwest (Table 3). The linear velocity equation and resultant rates are based on the simplifying assumptions of a homogeneous and isotropic aquifer, and may not be accurate when applied to heterogeneous and/or anisotropic conditions.

2.0 FIELD PROGRAM, MONITORING RESULTS, AND DISCUSSION

2.1 Visual Inspection Program

In order to detect potential releases of leachate and/or landfill gas migration in a timely manner, a visual inspection program has been implemented at the East Carolina Regional Landfill. This inspection program involves field personnel making the following observations:

- Observation of stress induced on the biological community (i.e., dead or dying vegetation);
- Indications of leachate impact (i.e., seeps, impacted surface water);
- Observations of erosion; and
- Negative changes around the waste facility.

During the January 2015 monitoring event, no physical indicators were observed in the vicinity of the waste management areas.

2.2 Well Network and Groundwater Elevation Measurements

Monitoring well GW-2 is the facility's background well and monitoring wells GW-7, GW-8, GW-9, GW-10, GW-11R, GW-13, GW-15, GW-16R, GW-17, GW-18, and GW-21 are the facility's compliance wells. These wells are all screened within the upper Yorktown Formation. The remaining monitoring wells are used as observation wells to monitor the depth to groundwater. Monitoring well construction information is summarized in Table 4 and the well locations are shown on Drawing 1. The network of monitoring wells was constructed to intercept the flow path for groundwater in the uppermost aquifer underlying the waste disposal areas.

Depth-to-water measurements were recorded to the nearest 0.01 foot prior to initiating groundwater purging and sampling activities. The water level elevations for this event are presented in Tables 1 and 2.

2.3 January 2015 Monitoring Event

Personnel from Joyce Engineering visited the facility on January 28, 2015, to purge and sample monitoring wells GW-2, GW-7, GW-8, GW-9, GW-10, GW-11R, GW-13, GW-15, GW-16R, GW-17, GW-18, and GW-21. In addition to the groundwater samples from the monitoring wells, a groundwater sample was collected from the on-site water supply well (PW-1) and a leachate sample was collected from the facility's holding tank (Tank B). Additional depth-to-water measurements were obtained from GW-1, GW-3, GW-4, GW-5, GW-6, and GW-12. Surface water samples were collected from one upstream point, SW-1, and one downstream monitoring point, SW-3. SW-2 and SW-4 were dry and were not sampled during the January 2015 monitoring event

Monitoring wells GW-2, GW-7, GW-8, GW-9, GW-10, GW-11R, GW-13, GW-15, GW-16R, GW-17, GW-18, and GW-21 were purged with dedicated bladder pumps using micropurge procedures pursuant to the facility's approved monitoring plan. Measurements of pH, specific conductance, dissolved oxygen, oxidation-reduction potential, temperature, and turbidity were recorded after each system volume collected during the purge with field-calibrated instruments to monitor for stabilization of water quality. For a table summarizing the field parameter data see Appendix A.

Prior to sampling, the laboratory-supplied sample containers were prepared. Each sample container was labeled with the sample identification number, sampling personnel, date and time of sample collection, project name and number, and requested chemical analyses.

The required groundwater samples were collected directly from the dedicated bladder pump discharge lines in the labeled, laboratory-supplied, pre-preserved sample containers after purging was completed based on stabilization of all field parameters. The on-site supply well was purged for 15 minutes by the spigot prior to sample collection. The supply well sample was then collected directly from the spigot.

The surface water samples were collected directly from the stream flow, by lowering the sample containers into the stream flow, taking care to prevent the overflow of the sample containers and to minimize sample induced turbidity. Measurements of temperature, pH, specific conductivity, and turbidity were recorded during the collection of the surface water samples.

The leachate sample was collected directly from the leachate piping manifold that serves the leachate holding tank (Tank B). Measurements of temperature, pH, specific conductivity, and turbidity were recorded during the collection of the leachate sample.

After collection, the samples were placed in a cooler on ice, under chain-of-custody control. Copies of the sampling logs are presented in Appendix A. Included in each log is a description of the sampling location, sampling equipment, sampling method, field observations, and field parameters.

Personnel from Joyce Engineering completed a resample event of monitoring well GW-17 on March 5, 2015. Measurements of temperature, pH, specific conductivity, dissolved oxygen, oxidation reduction potential and turbidity were recorded prior to sample collection. The dissolved oxygen meter failed to calibrate and the results are thus inadmissible.

2.4 Laboratory Analysis Program

The January 28, 2015, groundwater, surface water, and leachate samples were submitted to Analytical Services, Inc. of Norcross, Georgia under chain-of-custody control for analysis. The groundwater and surface water, including the Field Blank, were analyzed for North Carolina Appendix I constituents. The leachate sample was analyzed for NC Appendix I constituents, mercury, biochemical oxygen demand, chemical oxygen demand, cyanide, nitrate as N, nitrate/nitrite as N, nitrite as N, phosphorous, sulfate, total kjeldahl nitrogen, total suspended solids, phenolics, and oil & grease. The Trip Blank was analyzed for North Carolina Appendix I organic constituents only. Joyce Engineering requested a Level II data report for the final laboratory report. The samples were received by the laboratory on January 29, 2015 in good condition, properly preserved, and within analysis hold times.

The March 5, 2015, verification sample of GW-17 and a Field Blank were submitted to Analytical Services, Inc. of Norcross, Georgia under chain-of-custody control for analysis. GW-17 and the Field Blank were analyzed for total and dissolved chromium, lead, and vanadium. The samples were received by the laboratory on March 6, 2015 in good condition, properly preserved, and within analysis hold times.

2.5 January 2015 Sampling Results

Constituents detected at quantified concentrations above the SWSL for the January 28, 2015, samples are summarized in Table 5, and exceedances of groundwater standards for the event are summarized in Table 6. Historical analytical data for groundwater, surface water, and leachate are summarized in Appendix B. The laboratory's certificates-of-analysis and chains-of-custody for this monitoring event are included in Appendix B.

As presented in Table 5 and the laboratory certificates-of-analysis, eight inorganic constituents (barium, beryllium, chromium, cobalt, copper, lead, vanadium and zinc) were detected in samples from one or more groundwater or surface water monitoring points at concentrations above their respective Solid Waste Section Reporting Limits (SWSLs) during the January 2015 sampling event. Barium was detected above the SWSL in GW-2, GW-9, GW-10, GW-13, GW-15, GW-17, and GW-18. Beryllium was detected above the SWSL in GW-7 and GW-17. Cobalt was detected above the SWSL in GW-7. Copper was detected above the SWSL in GW-17 and PW-1. Zinc was detected above the SWSL in GW-9, GW-10, GW-17, GW-18, and PW-1. Chromium, lead and vanadium were detected above the SWSL in GW-17. No other inorganic or organic constituents were detected above their respective SWSLs in monitoring wells or surface water monitoring points during the January 2015 monitoring event. The results from the January 28, 2015, monitoring event are generally consistent with historical concentrations, except that most metals concentrations in GW-17 were higher than usual.

The March 2015 Verification Sample Results for chromium, lead, and vanadium in MW-17 were reported at estimated concentrations that did not confirm detections in exceedance of NC2L or GWPS standards.

There were no detections above the SWSL nor exceedances of NC2B surface water standards in and of the surface water samples collected during the January 2015 sampling event. The constituent concentrations reported for the leachate samples collected during the January 2015 monitoring event are generally consistent with historical data.

3.0 LABORATORY AND FIELD QA/QC

A Field Blank was collected by Joyce Engineering as part of the January 2015 monitoring event. In addition to the Field Blank, a laboratory-prepared Trip Blank accompanied the volatile sample containers for the sampling event to and from the laboratory. The Field Blank was analyzed for NC Appendix I constituents and the Trip Blank for NC Appendix I VOCs only. In addition to the Field and Trip Blanks, at least one Method Blank was analyzed by the laboratory for each method used.

Upon receipt of the laboratory data package, the data was reviewed by Joyce Engineering for the following:

- General typographical errors;
- Correct analyses performed and within method specified hold times;
- Correct reporting limits;
- Biased data results based on Surrogate Recoveries, Matrix Spike, Matrix Spike Duplicate, and Laboratory Control Samples;
- Blank qualified data (B-flags);
- Detections above the groundwater and surface water standards; and
- Detections that are above historical levels.

4.0 DATA EVALUATION

4.1 Comparisons to Groundwater and Surface Water Standards

Chromium, lead, and vanadium were initially detected above their respective NC2L or GWPS standards during the January 2015 event; however, the results of the March 2015 resampling event refuted those exceedances.

Cobalt, was detected at quantified concentrations in monitoring well GW-7 above its respective Solid Waste Section (SWS) Groundwater Protection Standard (GWPS) during the January 2015 event. The cobalt detection was statistically evaluated in accordance with the procedures outlined in 15A NCAC 13B.1632 (g) and (h) (see Section 4.2) to determine whether the reported concentrations exceeded the facility background concentration. Based on the statistical evaluation, the cobalt detection was <u>not</u> identified as statistically significant and is considered representative of historical background concentrations. In accordance with 15A NCAC .1634.g.5, we request that the background value of 54.4 µg/L be considered the applicable Groundwater Protection Standard for Cobalt.

No other inorganic or organic constituents were detected at quantified concentrations above their respective groundwater standards during the January 2015 event. There were no NC Appendix I constituents detected above the applicable NC 2B standards in surface water monitoring points during the January 2015 monitoring event.

4.2 Statistical Evaluations

The facility background data were evaluated through the use of the Shapiro-Wilkes Test, Parametric Prediction Limits, Parametric Tolerance Intervals, Aitchison's Adjustment, Non-parametric Prediction Limits, and Poisson Prediction Limits, as appropriate. Background data, tests for normality, outliers, Aitchison's adjustment, tolerance interval, or prediction limits are used, as appropriate based on the background data.

The statistical test by which downgradient data are compared to facility background data is based upon the nature of the data and the number of data values that are less than the laboratory limit of

detection. All statistical tests are evaluated at the 0.05 level of significance, 95% confidence level, and are conducted as one-tailed tests.

Cobalt was detected in the sample from downgradient monitoring wells GW-7 and GW-17 above its GWPS during the January 2015 sampling event. The detections were statistically evaluated in accordance with the procedures outlined in 15A NCAC 13B.1632 (g) and (h) to determine if the reported concentrations exceeded the facility background concentrations. The summary table and statistical worksheets are presented in Appendix C. Based on the statistical evaluations; the detection cobalt is not identified as statistically significant and is representative of historical background concentrations.

5.0 CONCLUSIONS

Based on the results summarized herein, Republic Services of NC, LLC will continue monitoring the uppermost aquifer beneath the East Carolina Regional Landfill in accordance with the requirements for Detection Monitoring Program as outlined in Title 15A NCAC 13B .1633. The next compliance monitoring event for this facility is tentatively scheduled for January 2015.

6.0 REFERENCES

BLE (Bunnell-Lammons Engineering, Inc.), December 2004. *Report of Ground Water Quality Results & Statistical Analysis, Second Semi-Annual Sampling Event of 2004 (N27) East Carolina Regional MSW Landfill, Bertie County, North Carolina.* 5 pp.

BLE (Bunnell-Lammons Engineering, Inc.), 2005. *Water Monitoring Procedures, June 2005 Revision.*

Law Engineering, August 1996. Design Hydrogeologic Report Phase II (Cells 7 and 8). 15 pp.

Golder Associates NC, Inc., August, 2011. Second Semi-Annual 2011 Sampling Event. Prepared for Republic Services of North Carolina, LLC.

North Carolina Dept. Environment, Health, and Natural Resources (NCDEHNR), 1995, N.C. Water Quality Monitoring Guidance Document for Solid Waste Facilities.

North Carolina Geologic Survey, 1985, Geologic Map of North Carolina; North Carolina Department of Natural Resources and Community Development, Geological Survey Section; scale 1:500,000.

Tables

TABLE 1
Historical Groundwater Elevations for the Yorktown Formation
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Location	Background	Downgradient															
	GW-2	GW-3	GW-5	GW-7	GW-8	GW-9	GW-10	GW-11	GW-11R	GW-13	GW-14	GW-15	GW-16	GW-16R	GW-17	GW-18	GW-21
TOC Elevation	66.36	66.23	62.60	58.79	60.04	51.94	53.22	72.42	70.90	74.76	78.74	78.23	63.02	66.12	85.68	62.00	62.07
Jan-95	51.79	54.53	48.45	47.12	46.43	47.89	-	-	-	-	-	-	-	-	-	-	-
Jul-95	55.85	51.80	50.42	53.84	48.12	48.13	-	-	-	-	-	-	-	-	-	-	-
Jan-96	58.36	53.73	51.42	49.89	49.09	49.43	-	-	-	-	-	-	-	-	-	-	-
Oct-96	59.92	55.53	53.05	49.87	49.14	50.32	50.32	-	-	-	-	-	-	-	-	-	-
Apr-97	57.00	51.96	50.85	47.77	47.50	49.15	49.67	50.20	-	-	-	-	-	-	-	-	-
Oct-97	50.20	48.05	46.74	44.79	44.41	45.61	45.41	43.67	-	-	-	-	-	-	-	-	-
Apr-98	55.12	51.65	50.52	47.78	47.26	48.01	47.00	44.22	-	-	-	-	-	-	-	-	-
Oct-98	51.35	49.25	48.24	46.30	45.58	47.82	45.43	DRY	-	-	-	-	-	-	-	-	-
07-Apr-99	53.54	51.25	50.01	48.15	47.50	47.45	45.85	DRY	-	-	-	-	-	-	-	-	-
20-Oct-99	57.26	52.67	51.25	48.79	52.38	49.12	47.80	45.82	-	-	-	-	-	-	-	-	-
26-Apr-00	54.03	50.93	49.56	48.02	47.52	47.46	45.75	DRY	-	-	-	-	-	-	-	-	-
18-Oct-00	52.71	49.70	48.56	46.80	46.23	45.57	43.40	DRY	-	-	-	-	-	-	-	-	-
18-Apr-01	53.54	50.36	48.94	47.37	46.85	46.32	43.93	DRY	-	48.31	-	-	-	-	-	-	-
24-Oct-01	50.78	47.97	47.00	45.50	44.75	44.84	44.48	43.99	-	47.95	-	-	-	-	-	-	-
22-Apr-02	51.64	49.10	47.94	46.92	46.38	45.67	46.46	46.07	-	49.30	-	-	-	-	-	-	-
21-Oct-02	50.06	47.73	46.41	45.70	45.30	46.22	47.07	46.61	-	48.82	-	-	-	-	-	-	-
01-Apr-03	56.58	51.55	50.37	48.69	48.07	48.30	49.81	48.94	-	53.08	-	-	-	-	-	-	-
27-Oct-03	54.61	50.14	48.86	46.99	46.42	47.81	48.57	48.63	-	51.91	53.64	-	-	-	-	-	-
26-Apr-04	55.24	50.59	49.25	47.69	47.10	48.45	48.82	48.74	-	52.02	54.55	-	-	-	-	-	-
26-Oct-04	53.01	48.53	47.38	45.91	45.49	46.99	48.20	48.27	-	50.79	52.11	-	-	-	-	-	-
15-Mar-05	54.56	49.40	47.93	46.88	46.57	47.72	48.48	48.42	-	51.96	54.34	-	-	-	-	-	-
12-Jul-05	53.25	48.88	47.74	46.35	45.86	47.22	47.98	48.34	-	51.00	52.71	-	-	-	-	-	-
19-Jan-06	55.12	49.82	48.23	46.81	46.60	48.28	48.74	48.40	-	51.66	53.92	53.10	-	-	-	-	-
11-Jul-06	54.89	49.63	48.44	47.28	46.79	47.78	48.06	48.25	-	51.46	53.16	52.90	51.00	-	-	-	-
17-Jan-07	56.09	51.21	47.81	48.67	48.00	49.68	48.67	48.28	-	52.23	54.74	53.59	53.11	-	-	-	-
09-Jul-07	52.58	48.30	47.41	45.21	44.69	46.44	46.82	46.11	-	50.50	50.84	51.42	49.53	-	-	-	-
14-Jan-08	50.15	46.67	45.64	44.76	44.95	46.45	<32.68	47.54	-	49.43	49.93	49.75	-	47.23	-	-	
30-Apr-08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52.99	-	-
14-Jul-08	51.58	47.34	46.60	46.22	46.11	46.67	<32.68	47.91	-	50.00	50.19	50.60	-	47.40	49.54	-	-
02-Oct-08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48.44	-	-
19-Jan-09	50.24	46.83	45.93	46.51	47.00	47.80	48.69	48.28	-	49.63	49.29	49.88	-	46.92	48.96	-	-
20-Jul-09	51.00	47.38	46.39	46.22	46.00	46.29	47.49	47.70	-	49.64	-	50.16	-	48.33	49.60	46.67	48.69
25-Jan-10	53.27	48.91	47.84	49.17	49.39	49.15	50.01	48.70	-	51.24	-	51.83	-	54.40	56.38	49.24	53.82
06-Jul-10	52.53	48.86	47.87	47.67	47.09	47.01	47.06	47.86	-	50.61	-	51.38	-	50.97	51.49	49.85	50.68
04-Jan-11	51.80	48.72	47.50	48.04	47.81	48.06	48.58	48.17	-	50.60	-	51.08	-	53.27	53.50	52.30	50.32
05-Jul-11	51.86	48.14	47.21	46.61	46.00	46.15	46.67	47.47	-	49.77	-	50.69	-	50.32	51.07	49.50	50.11
09-Jan-12	51.53	48.64	47.41	47.15	46.84	47.47	48.34	47.95	-	49.68	-	50.49	-	51.53	52.48	50.55	49.75
09-Jul-12	51.12	48.79	47.62	46.79	46.19	46.66	47.24	47.68	-	48.33	-	49.39	-	50.88	51.47	49.98	50.08
28-Jan-13	49.73	47.62	46.65	47.01	47.00	47.36	48.34	48.00	-	48.64	-	49.12	-	51.09	51.44	49.88	48.69
17-Jul-13	50.85	48.91	47.53	47.61	47.54	47.13	48.08	47.98	-	49.01	-	49.62	-	53.41	54.58	52.68	49.37
28-Jan-14	49.73	47.64	46.63	47.30	47.56	47.24	48.31	47.92	-	48.56	-	49.02	-	51.06	54.58	49.85	48.72
24-Jul-14	49.28	49.07	47.87	47.88	46.44	46.26	44.79	-	42.39	45.23	-	46.96	-	53.02	53.54	53.25	49.66
28-Jan-15	49.11	50.83	47.50	47.04	47.12	46.60	44.78	-	40.99	44.82	-	46.53	-	54.81	55.58	54.00	49.62
MEAN	*53.00*	*49.72*	*48.27*	*47.34*	*46.90*	*47.41*	*47.36*	*47.54*	*41.69*	*49.87*	*52.45*	*50.40*	*51.21*	*50.98*	*52.23*	*50.65*	*49.96*
MAXIMUM	*59.92*	*55.53*	*53.05*	*53.84*	*52.38*	*50.32*	*50.32*	*50.20*	*42.39*	*53.08*	*54.74*	*53.59*	*53.11*	*54.81*	*56.38*	*54.00*	*53.82*
MINIMUM	*49.73*	*46.67*	*45.64*	*44.76*	*44.41*	*44.84*	*43.40*	*43.67*	*40.99*	*44.82*	*49.29*	*46.53*	*49.53*	*46.92*	*48.44*	*46.67*	*48.69*

Notes:
Elevations in Ft-AMSL = Feet above mean sea level.
TOC = Top of casing.
'- = not measured
*MW-16 was decommissioned after the installation of MW-16R.
MW-11 was abandonded and MW-11R was installed on July 21, 2014.
All data prior to 2012 taken from previous report by Golder Associates NC, Inc.

TABLE 2
Historical Groundwater Elevations for the Black Creek Formation
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Location	Background	Downgradient		
	GW-1	GW-4	GW-6	GW-12
TOC Elevation	65.87	62.53	58.95	66.13
Jan-95	48.13	47.31	47.78	51.62
Jul-95	51.12	49.35	49.95	49.51
Jan-96	51.98	49.68	50.10	49.89
Oct-96	53.44	51.38	51.85	51.70
Apr-97	53.46	51.00	51.60	51.38
Oct-97	47.00	46.10	46.44	46.24
Apr-98	52.44	50.03	50.33	50.29
Oct-98	48.24	48.23	48.00	47.70
07-Apr-99	51.94	49.27	49.64	49.50
20-Oct-99	52.13	49.56	49.45	49.83
26-Apr-00	52.15	49.13	49.60	49.37
18-Oct-00	51.04	48.09	48.49	48.36
18-Apr-01	52.14	48.40	48.81	48.64
24-Oct-01	48.58	46.29	46.73	48.20
22-Apr-02	50.40	47.41	47.85	49.45
21-Oct-02	48.08	45.93	46.37	45.93
01-Apr-03	53.40	49.65	50.18	49.75
27-Oct-03	52.07	48.91	49.32	49.03
26-Apr-04	52.83	49.05	49.66	49.16
26-Oct-04	50.57	47.45	48.00	47.54
15-Mar-05	53.10	48.31	48.96	48.47
12-Jul-05	50.96	47.51	48.29	47.82
19-Jan-06	52.27	48.24	48.85	48.40
11-Jul-06	50.95	47.82	48.30	47.92
17-Jan-07	52.62	48.11	49.95	49.14
09-Jul-07	49.96	46.83	47.34	46.80
14-Jan-08	47.41	45.14	45.64	45.02
14-Jul-08	48.65	45.92	46.46	45.90
19-Jan-09	48.13	45.31	45.92	45.35
20-Jul-09	48.79	45.78	46.27	45.78
25-Jan-10	51.98	47.45	48.15	47.56
06-Jul-10	50.61	47.22	47.77	47.37
04-Jan-11	50.35	46.98	47.53	47.16
05-Jul-11	49.88	46.64	46.47	46.79
09-Jan-12	50.39	47.10	47.71	47.25
09-Jul-12	50.09	47.13	47.64	47.31
28-Jan-13	49.00	45.94	46.54	45.99
17-Jul-13	50.47	46.88	47.40	46.98
28-Jan-14	49.08	45.92	46.55	46.02
24-Jul-14	50.50	47.03	46.99	47.27
28-Jan-15	51.27	47.13	47.59	NM
MEAN	*50.67*	*47.72*	*48.21*	*48.08*
MAXIMUM	*53.46*	*51.38*	*51.85*	*51.70*
MINIMUM	*47.00*	*45.14*	*45.64*	*45.02*

Notes:
Elevations in Ft-AMSL = Feet above mean sea level.
TOC = Top of casing.
All data prior to 2012 taken from previous report by Golder Associates NC. Inc.

TABLE 3
Hydraulic Gradients and Linear Groundwater Velocities
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, NorthCarolina

			Yorktown Formation - January 2015				
Gradient Calculation Segment	**Flow Line Length** (feet)	**Flow Direction**	**Ground-water Elevation** (feet)	**Horizontal Gradient i** (ft/ft)	**Hydraulic Conductivity K** (ft/day)	**Effective Porosity n**	**Linear Velocity V** (ft/day)
i_1	4428	SW	54	0.00090	0.935	0.27	0.00313
			50				
i_2	2253	SW	50	0.00178	0.935	0.27	0.00615
			46				
i_3	1250	SW	54	0.00960	0.935	0.27	0.03324
			42				

Notes:
Horizontal velocities based on the modified Darcy equation V = Ki/n.
Values for K and n were taken from BLE's 2004 report reference in the text.

TABLE 4
Well Construction Information
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Well Identification	Construction Date	Ground Surface Elevation (Ft-AMSL)	TOC Elevation (Ft-AMSL)	Well Depth (Feet)	Well Diameter (Inches)	Screened Interval (Ft-AMSL)	Screened Geologic Formation
GW-1	1993	63.72	65.87	62	2	11.72 to 1.72	Black Creek Formation
GW-2	1993	64.02	66.36	26	2	48.02 to 38.02	Yorktown Formation
GW-3	1993	63.72	66.23	26	2	47.72 to 37.72	Yorktown Formation
GW-4	1993	60.68	62.53	59	2	11.68 to 1.68	Black Creek Formation
GW-5	1993	60.94	62.60	24	2	46.94 to 36.94	Yorktown Formation
GW-6	1993	57.53	58.95	63	2	4.53 to -5.47	Black Creek Formation
GW-7	1993	57.44	58.79	18	2	49.44 to 39.44	Yorktown Formation
GW-8	1993	58.60	60.04	18	2	50.60 to 40.60	Yorktown Formation
GW-9	1993	50.14	51.94	13	2	47.14 to 37.14	Yorktown Formation
GW-10	1996	50.47	53.22	22	2	40.47 to 30.47	Yorktown Formation
GW-11	1997	68.60	72.42	28	2	49.60 to 39.60	Yorktown Formation
GW-11R	2014	48.00	51.00	40	2	20.00 to 40.00	Yorktown Formation
GW-12	1993	63.70	66.13	54	2	19.70 to 9.70	Black Creek Formation
GW-13	2001	72.16	74.76	41.30	2	45.86 to 30.86	Yorktown Formation
GW-15	2005	75.25	78.23	39.22	2	51.03 to 36.03	Yorktown Formation
GW-16R	2007	63.02	66.12	24.24	2	53.78 to 38.78	Yorktown Formation
GW-17	2008	82.92	85.68	41.33	2	51.59 to 41.59	Yorktown Formation
GW-18	2009	59.20	62.07	26.71	2	47.49 to 32.49	Yorktown Formation
GW-21	2006	60.86	62.98	28.00	2	47.86 to 32.86	Yorktown Formation

Notes:
Ft-AMSL = Feet above mean sea level.
TOC - Top of casing (measureing point).
GW-1, -3, -4, -5, -6, -12, -18, and -21 are used for collection of water level data only.
All data prior to 2012 taken from report by Golder Associates NC, Inc
GW-11 was abandoned on July 21, 2014.

TABLE 5

Quantified Detections in Groundwater and Surface Water - January 2015

Well or Point ID	Collection Date	Constituent	Result	Units	MDL	SWSL
GW-2	1/28/2015	Total Barium	370	µg/L	0.1	100
GW-7	1/28/2015	Total Beryllium	2.03	µg/L	0.05	1
	1/28/2015	Total Cobalt	34.3	µg/L	0.26	10
GW-9	1/28/2015	Total Barium	241	µg/L	0.1	100
	1/28/2015	Total Zinc	14.8	µg/L	0.64	10
GW-10	1/28/2015	Total Barium	124	µg/L	0.1	100
	1/28/2015	Total Zinc	24.8	µg/L	0.64	10
GW-13	1/28/2015	Total Barium	332	µg/L	0.1	100
GW-15	1/28/2015	Total Barium	127	µg/L	0.1	100
GW-17	1/28/2015	Total Barium	340	µg/L	0.1	100
	1/28/2015	Total Beryllium	1.78	µg/L	0.05	1
	1/28/2015	Total Chromium	32.4	µg/L	0.73	10
	1/28/2015	Total Cobalt	11.9	µg/L	0.26	10
	1/28/2015	Total Copper	13.6	µg/L	0.22	10
	1/28/2015	Total Lead	18.3	µg/L	0.05	10
	1/28/2015	Total Vanadium	60.7	µg/L	0.93	25
	1/28/2015	Total Zinc	34.9	µg/L	0.64	10
GW-18	1/28/2015	Total Barium	237	µg/L	0.1	100
	1/28/2015	Total Zinc	11.1	µg/L	0.64	10
PW-1	1/28/2015	Total Copper	110	µg/L	0.22	10
	1/28/2015	Total Zinc	159	µg/L	0.64	10

Notes:
Concentrations are in micrograms per liter (µg/L).
SWSL = NC DENR Solid Waste Section Reporting Limits
MDL = Method Detection Limit

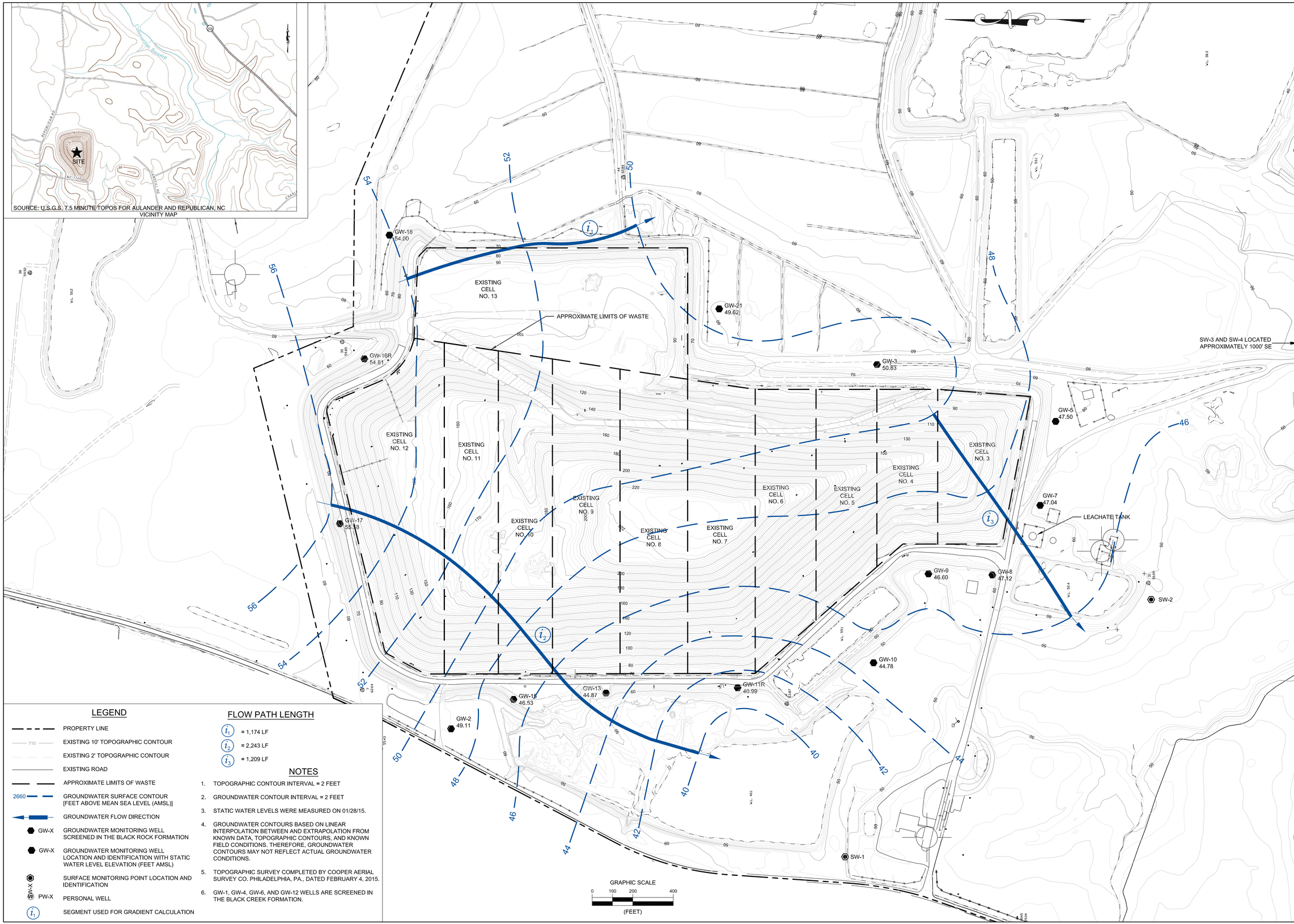
TABLE 6

Exceedences of Groundwater and Surface Water Standards - January 2015

Well or Point ID	Collection Date	Constituent	Result		Units	SWSL	NC 2L	GWPS	GPS
GW-7	1/28/2015	Total Cobalt	**32.4**		µg/L	10	---	1	49.7
GW-17	1/28/2015	Total Chromium	**11.9**		µg/L	10	10	---	
	3/5/2015	*Total Chromium	9.28	J	µg/L	10	10	---	
	1/28/2015	Total Cobalt	**18.3**		µg/L	10	---	1	49.7
	1/28/2015	Total Lead	**60.7**		µg/L	10	15	---	
	3/5/2015	*Total Lead	3.39	J	µg/L	10	15	---	
	1/28/2015	Total Vanadium	**34.3**		µg/L	25	---	0.3	
	3/5/2015	*Total Vanadium	15.3	J	µg/L	25	---	0.3	

Notes:
Concentrations are in micrograms per liter (µg/L).
SWSL = NC DENR Solid Waste Section reporting Limits
NC 2L = Groundwater Standard established in 15 A NCAC 2L.0202.
GWPS = NC DENR Solid Waste Section Groundwater Protection Standard for constituents with no listed NC 2L.
GPS = Groundwater Protection Standard per Rule 15A NCAC 13B.1634.g.5 determined by statistical analysis of site groundwater monitoring data.
J = Estimated concentrarion below the SWSL.
* March 5, 2015, Verification Event Results for Chromium, Lead, and Vanadium

Drawing



LEGEND

- PROPERTY LINE
- 710 EXISTING 10' TOPOGRAPHIC CONTOUR
- EXISTING 2' TOPOGRAPHIC CONTOUR
- EXISTING ROAD
- APPROXIMATE LIMITS OF WASTE
- 2660 GROUNDWATER SURFACE CONTOUR [FEET ABOVE MEAN SEA LEVEL (AMSL)]
- GROUNDWATER FLOW DIRECTION
- GW-X GROUNDWATER MONITORING WELL SCREENED IN THE BLACK ROCK FORMATION
- GW-X GROUNDWATER MONITORING WELL LOCATION AND IDENTIFICATION WITH STATIC WATER LEVEL ELEVATION (FEET AMSL)
- SW-X SURFACE MONITORING POINT LOCATION AND IDENTIFICATION
- PW-X PERSONAL WELL
- i_1 SEGMENT USED FOR GRADIENT CALCULATION

FLOW PATH LENGTH

- i_1 = 1,174 LF
- i_2 = 2,243 LF
- i_3 = 1,209 LF

NOTES

1. TOPOGRAPHIC CONTOUR INTERVAL = 2 FEET
2. GROUNDWATER CONTOUR INTERVAL = 2 FEET
3. STATIC WATER LEVELS WERE MEASURED ON 01/28/15.
4. GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATA, TOPOGRAPHIC CONTOURS, AND KNOWN FIELD CONDITIONS. THEREFORE, GROUNDWATER CONTOURS MAY NOT REFLECT ACTUAL GROUNDWATER CONDITIONS.
5. TOPOGRAPHIC SURVEY COMPLETED BY COOPER AERIAL SURVEY CO. PHILADELPHIA, PA., DATED FEBRUARY 4, 2015.
6. GW-1, GW-4, GW-6, AND GW-12 WELLS ARE SCREENED IN THE BLACK CREEK FORMATION.

DATE	REVISIONS AND RECORD OF ISSUE	NO	BY	CK	APP

DESIGNED	DG
DRAWN	RH
CHECKED	VB
APPROVED	VB
DATE	02/17/15

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EAST CAROLINA REGIONAL LANDFILL
BERTIE COUNTY, NORTH CAROLINA

POTENTIOMETRIC SURFACE CONTOUR MAP
YORKTOWN FORMATION
JANUARY 28,2015
PERMIT NO. 08-03

PROJECT NO.
894

SCALE
AS SHOWN

DRAWING NO.
1

L:\Republic NC\East Carolina\JANUARY 2015 East Carolina GW Map.dwg Layout=Layout1

Appendix A

Historical Tables

TABLE 7
Historical Groundwater Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	SWSL	GW-2	GW-7	GW-8	GW-9	GW-10	GW-11/11R	GW-13	GW-15	GW-16R	GW-17	GW-18	GW-21	Blanks
Inorganic Compounds															
Total Antimony	01/09/12	6.00	ND	ND	ND	ND	ND	ND	0.18 J	ND	ND	ND	---	---	ND
GWPS = 1 µg/L	07/09/12	6.00	0.70 J	0.24 J	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/28/13	6.00	1.47 J	0.40 J	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/17/13	6.00	2.85 B	0.97 B	0.55 B	0.34 B	ND	0.58 B	0.28 B	ND	ND	ND	---	---	0.39 J
	01/28/14	6.00	2.12 J	0.50 J	ND	ND	ND	---	ND	ND	ND	ND	---	---	ND
	05/31/14	6.00	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	06/24/14	6.00	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	07/24/14	6.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/28/15	6.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Arsenic	07/12/05	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
NC 2L = 10 µg/L	01/19/06	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/11/06	10.0	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	10/31/06	10.0	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/17/07	10.0	2.10 B	ND	2.10 B	ND	ND	2.10 B	ND	ND	---	---	---	---	3.40 J
	07/09/07	10.0	ND	ND	2.10 J	ND	ND	ND	ND	ND	---	---	---	---	ND
	01/14/08	10.0	ND	ND	2.10 J	2.70 J	ND	2.30 J	ND	ND	ND	---	---	---	ND
	04/30/08	10.0	---	---	---	---	---	---	---	---	---	ND	---	---	2.20 J
	07/14/08	10.0	ND	ND	ND	ND	ND	ND	ND	2.9 J	ND	3.50 J	---	---	ND
	10/03/08	10.0	---	---	---	---	---	---	---	---	---	ND	---	---	ND
	01/19/09	10.0	3.80 B	ND	2.80 B	5.20 B	3.70 B	3.90 B	4.40 B	4.5 B	4.10 B	ND	---	---	3.60 J
	07/20/09	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.02 J	ND	ND
	01/25/10	10.0	ND	4.61 J	3.57 J	5.19 J	ND	ND	4.10 J	4.24 J	ND	ND	---	---	ND
	07/06/10	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/04/11	10.0	3.06 J	5.85 J	ND	6.00 J	ND	ND	ND	8.04 J	ND	ND	---	---	ND
	07/05/11	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/09/12	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/09/12	10.0	ND	1.35 J	1.74 J	2.11 J	1.45 J	1.77 J	ND	ND	ND	ND	---	---	ND
	01/28/13	10.0	ND	ND	ND	3.49 J	ND	ND	ND	ND	ND	ND	---	---	ND
	07/17/13	10.0	ND	ND	ND	3.68 J	ND	ND	ND	ND	ND	0.93 J	---	---	ND
	01/28/14	10.0	ND	ND	ND	0.85 J	1.06 J	---	ND	1.23 J	0.94 J	1.80 J	---	---	ND
	05/31/14	10.0	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	06/24/14	10.0	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	07/24/14	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/28/15	10.0	ND	1.65 J	ND	1.43 J	ND	ND	ND	ND	ND	2.98 J	ND	ND	ND
Total Barium	10/28/98	500	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
NC 2L = 700 µg/L	04/07/99	500	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
	12/08/99	500	ND	ND	ND	ND	ND	ND	---	---	---	---	---	---	ND
	04/27/00	500	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
	10/18/00	500	ND	ND	ND	ND	ND	Dry	ND	---	---	---	---	---	ND
	11/28/00	500	---	---	---	---	---	---	ND	---	---	---	---	---	---
	01/03/01	500	---	---	---	---	---	---	ND	---	---	---	---	---	---
	02/08/01	500	---	---	---	---	---	---	ND	---	---	---	---	---	---
	04/19/01	500	ND	ND	ND	---	ND	Dry	ND	---	---	---	---	---	ND
	12/24/01	500	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/23/02	500	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/23/02	500	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/01/03	500	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/28/03	500	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/27/04	500	500	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/26/04	500	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	03/15/05	500	500	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/12/05	500	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	01/12/06	30	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/19/06	500	523	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/11/06	500	517	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	10/31/06	500	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/17/07	100	516	122	137	82.1	95.7	17.8	273	98.3	---	---	---	---	0.30 J
	07/09/07	100	448	162	121	93.5 J	89.3 J	20.8 J	259	114	---	---	---	---	0.80 J
	01/14/08	100	405	129	127	59.0 J	94.6 J	18.5 J	291	117	38 J	---	---	---	0.30 J
	04/30/08	100	---	---	---	---	---	---	---	---	---	106	---	---	0.50 J
	07/14/08	100	500	130	123	76.0 J	103	18.7 J	317	94.7 J	32.2 J	127	---	---	ND
	10/03/08	100	---	---	---	---	---	---	---	---	---	116	---	---	ND
	01/19/09	100	534	135	148	62.9 J	88.4 J	20.1 J	357	116	41.2 J	138	---	---	ND
	07/20/09	100	534	96.4 J	145	89.2 J	88.6 J	20.0 J	332	112	39.3 J	168	445	37.2 J	ND
	01/25/10	100	545	116	0.68 B	67.6 J	91.3 J	22.0 J	312	117	32.9 J	143	---	---	0.43 J
	07/06/10	100	419	49.1 J	103	89.2 J	73.5 J	18.1 J	245	92.7 J	32.5 J	117	---	---	ND
	01/04/11	100	409	100	120	207	92.8 J	21.8 J	261	105	37.8 J	156	---	---	1.11 J
	07/05/11	100	455	53.8 J	119	167	101	27.5 J	317	115	41.5 J	149	---	---	ND
	01/09/12	100	427	21.8 J	105	212	93.8 J	19.2 J	343	120	38.8 J	156	---	---	0.24 J
	07/09/12	100	414	45.1 J	108	196	114	21.1 J	369	124	46.9 J	135	---	---	0.75 J
	01/28/13	100	387	72.0 J	91.9 J	257	107	19.2 J	331	125	46.3 J	140	---	---	ND
	07/17/13	100	426	72.0	86.9 J	186	91.2 J	21.2 J	318	154	55.3 J	150	---	---	0.37 J
	01/28/14	100	382	63.7 J	78.4 J	251	117	---	320	141	69.1 J	214	---	---	ND
	05/31/14	100	---	---	---	---	---	---	---	---	---	---	261	29.8 J	ND
	06/24/14	100	---	---	---	---	---	---	---	---	---	---	285	27.3 J	ND
	07/24/14	100	390	42.7 J	91.1 J	222	107	48.2 J	233	123	64.6 J	146	209	23.9 J	0.32 J
	01/28/15	100	370	71.3 J	83.0 J	241	124	30.7 J	332	127	59.8 J	340	237	28.6 J	0.12 J

TABLE 7
Historical Groundwater Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	SWSL	GW-2	GW-7	GW-8	GW-9	GW-10	GW-11/11R	GW-13	GW-15	GW-16R	GW-17	GW-18	GW-21	Blanks
Total Beryllium	10/28/98	2.00	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
GWPS = 4 µg/L	04/07/99	2.00	ND	2.00	ND	ND	ND	Dry	---	---	---	---	---	---	ND
	12/08/99	2.00	ND	ND	ND	ND	ND	ND	---	---	---	---	---	---	ND
	04/27/00	2.00	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
	10/18/00	2.00	ND	ND	ND	ND	ND	Dry	ND	---	---	---	---	---	ND
	11/28/00	2.00	---	---	---	---	---	---	ND	---	---	---	---	---	---
	01/03/01	2.00	---	---	---	---	---	---	ND	---	---	---	---	---	---
	02/08/01	2.00	---	---	---	---	---	---	4.00	---	---	---	---	---	---
	04/19/01	2.00	ND	ND	ND	---	ND	Dry	ND	---	---	---	---	---	ND
	12/24/01	2.00	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/23/02	2.00	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/23/02	2.00	ND	3.00	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/01/03	2.00	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/28/03	2.00	ND	3.00	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/27/04	2.00	ND	3.00	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/26/04	2.00	ND	3.00	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	03/15/05	2.00	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/12/05	2.00	ND	2.20	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	01/12/06	2.00	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/19/06	2.00	ND	2.00	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/11/06	2.00	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	10/31/06	2.00	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/17/07	1.00	1.0	1.90	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	07/09/07	1.00	0.7 J	1.90	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	01/14/08	1.00	ND	1.50	ND	ND	ND	ND	ND	ND	ND	---	---	---	ND
	04/30/08	1.00	---	---	---	---	---	---	---	---	---	ND	---	---	ND
	07/14/08	1.00	0.80 J	1.60	ND	ND	ND	ND	0.10 J	ND	ND	0.10 J	---	---	ND
	10/03/08	1.00	---	---	---	---	---	---	---	---	---	0.20 J	---	---	ND
	01/19/09	1.00	0.90 J	1.30	ND	ND	ND	ND	0.30 J	ND	ND	0.10 J	---	---	ND
	07/20/09	1.00	1.3	2.11	0.80 J	0.49 J	0.252 B	0.39 J	0.60 J	0.31 B	0.12 B	0.59 J	1.66	0.359 B	0.0779 J
	01/25/10	1.00	1.34	2.11	1.52	0.46 J	0.256 J	0.45 J	0.61 J	0.35 J	0.15 J	0.35 J	---	---	ND
	07/06/10	1.00	0.87 J	1.98	0.47 J	0.45 J	0.164 J	0.25 J	0.37 J	0.23 J	ND	0.21 J	---	---	ND
	01/04/11	1.00	1.08	2.38	0.80 J	0.57 J	0.296 J	0.43 J	0.51 J	0.28 J	0.15 J	0.42 J	---	---	ND
	07/05/11	1.00	0.98 J	2.01	0.70 J	0.95 J	0.312 J	0.40 J	0.56 J	0.30 J	ND	0.38 J	---	---	ND
	01/09/12	1.00	0.99 J	0.80 J	0.60 J	0.49 J	0.16 J	0.29 J	0.58 J	0.44 J	0.07 J	0.50 J	---	---	ND
	07/09/12	1.00	1.03	1.94	0.62 J	1.11	0.52 J	0.28 J	0.61 J	0.27 J	0.10 J	0.31 J	---	---	ND
	01/28/13	1.00	0.85 J	2.01	0.46 J	1.38	0.22 J	0.23 J	0.52 J	0.27 J	ND	0.35 J	---	---	ND
	07/17/13	1.00	1.23	2.19	0.57 J	1.34	0.12 J	0.36 J	0.64 J	1.05	0.15 J	0.43 J	---	---	ND
	01/28/14	1.00	0.95 J	1.91	0.57 J	1.10	0.68 J	---	0.61 J	0.50 J	0.25 J	0.83 J	---	---	ND
	05/31/14	1.00	---	---	---	---	---	---	---	---	---	---	1.27	0.09 J	ND
	06/24/14	1.00	---	---	---	---	---	---	---	---	---	---	1.18	ND	ND
	07/24/14	1.00	1.02	1.68	0.55 J	1.05	0.34 J	0.69 J	0.39 J	0.29 J	0.15 J	0.29 J	0.91 J	0.09 J	ND
	01/28/15	1.00	0.63 J	2.03	0.53 J	0.89 J	0.51 J	0.12 J	0.60 J	0.35 J	0.17 J	1.78	0.97 J	0.07 J	ND
Total Cadmium	10/28/98	1.00	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
NC 2L = 2 µg/L	04/07/99	1.00	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
	12/08/99	1.00	ND	ND	ND	ND	ND	ND	---	---	---	---	---	---	ND
	04/27/00	1.00	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
	10/18/00	1.00	ND	ND	ND	ND	ND	Dry	ND	---	---	---	---	---	ND
	11/28/00	1.00	---	---	---	---	---	---	ND	---	---	---	---	---	---
	01/03/01	1.00	---	---	---	---	---	---	5.00	---	---	---	---	---	---
	02/08/01	1.00	---	---	---	---	---	---	ND	---	---	---	---	---	---
	04/19/01	1.00	ND	ND	ND	---	ND	Dry	ND	---	---	---	---	---	ND
	12/24/01	1.00	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/23/02	1.00	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/23/02	1.00	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/01/03	1.00	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/28/03	1.00	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/27/04	1.00	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/26/04	1.00	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	03/15/05	1.00	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/12/05	1.00	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	01/12/06	1.00	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/19/06	1.00	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/11/06	1.00	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	10/31/06	1.00	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/17/07	1.00	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	07/09/07	1.00	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	01/14/08	1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	ND
	04/30/08	1.00	---	---	---	---	---	---	---	---	---	ND	---	---	ND
	07/14/08	1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	10/03/08	1.00	---	---	---	---	---	---	---	---	---	ND	---	---	ND
	01/19/09	1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/20/09	1.00	0.14 B	0.26 B	0.11 B	ND	0.159 B	0.10 B	ND	ND	0.18 B	0.09 B	0.252 B	0.328 B	0.11 J
	01/25/10	1.00	0.39 B	0.35 B	1.59	0.88 B	0.357 B	0.26 B	0.33 B	0.391 B	0.36 B	0.43 B	---	---	0.28 J
	07/06/10	1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/04/11	1.00	0.43 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/05/11	1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/09/12	1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/09/12	1.00	0.07 J	ND	ND	ND	ND	ND	ND	0.06 J	0.28 J	ND	---	---	ND
	01/28/13	1.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/17/13	1.00	ND	ND	ND	ND	ND	0.19 J	0.14 J	ND	0.19 J	ND	---	---	ND
	01/28/14	1.00	0.20 J	0.09 J	ND	ND	0.16 J	---	ND	0.21 J	0.07 J	ND	---	---	ND
	05/31/14	1.00	---	---	---	---	---	---	---	---	---	---	0.05 J	ND	ND
	06/24/14	1.00	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	07/24/14	1.00	0.05 J	ND	ND	ND	ND	0.05 J	ND	ND	ND	ND	0.05 J	ND	ND
	01/28/15	1.00	ND	0.06 J	0.08 J	ND	0.06 J	ND	0.05 J	ND	ND	0.05 J	ND	ND	ND

TABLE 7
Historical Groundwater Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	SWSL	GW-2	GW-7	GW-8	GW-9	GW-10	GW-11/11R	GW-13	GW-15	GW-16R	GW-17	GW-18	GW-21	Blanks
Total Chromium	10/28/98	10.0	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
NC 2L = 10 µg/L	04/07/99	10.0	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
	12/08/99	10.0	ND	ND	ND	ND	ND	ND	---	---	---	---	---	---	ND
	04/27/00	10.0	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
	10/18/00	10.0	ND	ND	ND	ND	ND	Dry	ND	---	---	---	---	---	ND
	11/28/00	10.0	---	---	---	---	---	---	ND	---	---	---	---	---	---
	01/03/01	10.0	---	---	---	---	---	---	ND	---	---	---	---	---	---
	02/08/01	10.0	---	---	---	---	---	---	ND	---	---	---	---	---	---
	04/19/01	10.0	ND	ND	ND	---	ND	Dry	ND	---	---	---	---	---	ND
	12/24/01	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/23/02	10.0	ND	ND	10.0	ND	ND	ND	ND	---	---	---	---	---	ND
	10/23/02	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/01/03	10.0	ND	ND	10.0	ND	ND	ND	ND	---	---	---	---	---	ND
	10/28/03	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/27/04	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/26/04	10.0	ND	ND	10.0	ND	ND	ND	ND	---	---	---	---	---	ND
	03/15/05	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/12/05	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	01/12/06	10.0	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/19/06	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/11/06	10.0	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	10/31/06	10.0	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/17/07	10.0	ND	ND	ND	ND	ND	4.30 J	ND	ND	---	---	---	---	ND
	07/09/07	10.0	ND	ND	ND	ND	ND	2.50 J	ND	ND	---	---	---	---	ND
	01/14/08	10.0	2.60 J	ND	ND	ND	ND	5.90 J	3.80 J	ND	ND	---	---	---	ND
	04/30/08	10.0	---	---	---	---	---	---	---	---	---	8.80 J	---	---	ND
	07/14/08	10.0	ND	ND	ND	ND	ND	2.80 J	ND	ND	1.40 J	2.0 J	---	---	ND
	10/03/08	10.0	---	---	---	---	---	---	---	---	---	1.60 J	---	---	ND
	01/19/09	10.0	3.70 J	ND	ND	1.20 J	ND	4.60 J	ND	ND	3.0 J	1.6 J	---	---	ND
	07/20/09	10.0	0.94 J	0.78 J	0.80 J	ND	ND	4.17 J	ND	1.56 J	1.0 J	7.4 J	2.55 J	4.63 J	ND
	01/25/10	10.0	ND	ND	ND	ND	ND	5.97 J	ND	ND	ND	ND	---	---	ND
	07/06/10	10.0	10.4	2.17 J	1.15 J	ND	ND	3.08 J	ND	ND	ND	1.58 J	---	---	ND
	01/04/11	10.0	1.46 J	4.26 J	1.42 J	4.41 J	ND	4.82 J	ND	1.23 J	ND	5.21 J	---	---	ND
	07/05/11	10.0	1.44 J	1.40 J	ND	3.65 J	1.9 J	9.73 J	ND	1.67 J	ND	2.96 J	---	---	ND
	01/09/12	10.0	ND	ND	0.60 J	ND	ND	4.20 J	ND	2.62 J	ND	4.00 J	---	---	ND
	07/09/12	10.0	1.88 J	2.28 J	ND	ND	ND	3.82 J	ND	ND	ND	ND	---	---	ND
	01/28/13	10.0	2.40 B	2.06 B	1.82 B	3.18 B	1.27 B	5.98 B	0.75 B	2.24 B	0.78 B	3.08 B	---	---	1.38 J
	07/17/13	10.0	3.22 J	2.53 J	1.96 J	2.55 J	ND	4.64 J	ND	9.5 J	ND	2.20 J	---	---	ND
	01/28/14	10.0	1.85	3.38	2.35	2.79	3.96	---	ND	2.85	4.98	**11.1**	---	---	2.84 J
	05/31/14	10.0	---	---	---	---	---	---	---	---	---	---	2.18 B	2.93 B	3.93 J
	06/24/14	10.0	---	---	---	---	---	---	---	---	---	---	9.44 B	7.42 B	8.19 J
	07/24/14	10.0	0.83 J	1.32 J	ND	ND	ND	6.64 J	ND	ND	ND	ND	ND	ND	ND
	01/28/15	10.0	1.86 J	2.84 J	1.00 J	ND	2.27 J	1.78 J	ND	1.98 J	1.45 J	**32.4**	1.34 J	ND	ND
Verification Event >	03/05/15	10.0	---	---	---	---	---	---	---	---	---	9.28 J	---	---	ND
Total Cobalt	10/28/98	10.0	ND	**30**	ND	ND	ND	Dry	---	---	---	---	---	---	ND
GWPS = 1 µg/L	04/07/99	10.0	ND	**20**	ND	ND	ND	Dry	---	---	---	---	---	---	ND
	12/08/99	10.0	**10**	**20**	ND	ND	ND	ND	---	---	---	---	---	---	ND
	04/27/00	10.0	ND	**30**	ND	ND	ND	Dry	---	---	---	---	---	---	ND
	10/18/00	10.0	ND	**30**	ND	ND	ND	Dry	30.00	---	---	---	---	---	ND
	11/28/00	10.0	---	---	---	---	---	---	10.00	---	---	---	---	---	---
	01/03/01	10.0	---	---	---	---	---	---	ND	---	---	---	---	---	---
	02/08/01	10.0	---	---	---	---	---	---	ND	---	---	---	---	---	---
	04/19/01	10.0	ND	**30**	ND	---	ND	Dry	ND	---	---	---	---	---	ND
	12/24/01	10.0	ND	**30**	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/23/02	10.0	ND	**30**	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/23/02	10.0	ND	**50**	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/01/03	10.0	**10**	**40**	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/28/03	10.0	ND	**50**	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/27/04	10.0	ND	**30**	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/26/04	10.0	ND	**40**	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	03/15/05	10.0	10	**36**	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/12/05	10.0	ND	**40**	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	01/12/06	10.0	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/19/06	10.0	**11.9**	**30**	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/11/06	10.0	**12.5**	**31.6**	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	10/31/06	10.0	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/17/07	10.0	**10.30**	**34.9**	3.9 J	ND	ND	ND	3.0 J	2.90 J	---	---	---	---	ND
	07/09/07	10.0	**10.00**	**37.5**	2.9 J	ND	ND	ND	ND	2.60 J	---	---	---	---	ND
	01/14/08	10.0	**11.30**	**35.1**	4.2 J	3.20 J	3.8 J	2.0 J	3.30 J	3.40 J	2.60 J	---	---	---	ND
	04/30/08	10.0	---	---	---	---	---	---	---	---	---	20.50	---	---	ND
	07/14/08	10.0	**10.10**	**37.3**	2.6 J	ND	ND	ND	2.70 J	2.10 J	1.20 J	4.50 J	---	---	ND
	10/03/08	10.0	---	---	---	---	---	---	---	---	---	6.30 J	---	---	ND
	01/19/09	10.0	**12.0**	**23.7**	3.7 J	3.00 J	4.6 J	ND	1.80 J	1.70 J	1.80 J	5.20 J	---	---	ND
	07/20/09	10.0	**11.40**	**35.4**	3.93 J	1.47 J	2.91 J	0.59 J	2.00 J	2.67 J	0.77 J	3.93 J	7.69 J	0.895 J	ND
	01/25/10	10.0	**12.6**	**21.5**	2.0 B	2.46 J	0.858 B	1.6 B	2.71 J	3.62 J	1.57 B	3.02 B	---	---	0.49 J
	07/06/10	10.0	8.59 J	**26.6**	2.62 J	1.15 J	ND	ND	1.66 J	2.07 J	1.89 J	2.14 J	---	---	ND
	01/04/11	10.0	9.65 J	**29.8**	3.63 J	3.19 J	ND	1.19 J	2.24 J	2.6 J	1.77 J	5.07 J	---	---	ND
	07/05/11	10.0	**10.40**	**39.0**	3.19 J	2.17 J	2.03 J	1.40 J	2.34 J	2.8 J	2.18 J	3.65 J	---	---	ND
	01/09/12	10.0	9.51 J	**13.8**	2.92 J	2.44 J	1.63 J	0.73 J	2.73 J	3.29 J	1.84 J	3.93 J	---	---	ND
	07/09/12	10.0	9.76 J	**26.1**	3.39 J	2.19 J	2.52 J	0.78 J	3.44 J	2.94 J	3.29 J	3.13 J	---	---	ND
	01/28/13	10.0	9.53 J	**33.3**	2.98 J	2.84 J	3.22 J	0.82 J	3.28 J	3.13 J	1.83 J	3.49 J	---	---	ND
	07/17/13	10.0	**10.80**	**28.0**	2.50 J	2.67 J	1.14 J	0.95 J	2.89 J	6.64 J	3.91 J	3.79 J	---	---	ND
	01/28/14	10.0	9.72 J	**28.2**	2.24 J	2.88 J	7.80 J	---	2.83 J	4.06 J	4.70 J	5.35 J	---	---	ND
	05/31/14	10.0	---	---	---	---	---	---	---	---	---	---	5.78 J	0.42 J	ND
	06/24/14	10.0	---	---	---	---	---	---	---	---	---	---	5.64 J	ND	ND
	07/24/14	10.0	9.08 J	**23.0**	2.53 J	2.50 J	5.34 J	9.10 J	2.02 J	2.92 J	2.93 J	2.56 J	4.06 J	0.33 J	ND
	01/28/15	10.0	6.52 J	**34.3**	2.35 J	2.82 J	8.05 J	2.81 J	3.29 J	3.25 J	7.03 J	**11.9**	4.83 J	0.33 J	ND

TABLE 7
Historical Groundwater Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	SWSL	GW-2	GW-7	GW-8	GW-9	GW-10	GW-11/11R	GW-13	GW-15	GW-16R	GW-17	GW-18	GW-21	Blanks
Total Copper	07/12/05	200	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
NC 2L = 1000 µg/L	01/19/06	200	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/11/06	200	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	10/31/06	200	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/17/07	10.0	ND	0.80 J	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	07/09/07	10.0	ND	5.40 J	ND	ND	1 J	ND	ND	ND	---	---	---	---	ND
	01/14/08	10.0	4.70 J	1.60 B	1.30 B	1.30 B	ND	1.00 B	0.80 B	0.8 B	1.10 B	---	---	---	0.70 J
	04/30/08	10.0	---	---	---	---	---	---	---	---	---	2.60 B	---	---	1.40 J
	07/14/08	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	10/03/08	10.0	---	---	---	---	---	---	---	---	---	ND	---	---	ND
	01/19/09	10.0	ND	ND	1.70 J	ND	ND	ND	ND	ND	2.00 J	ND	---	---	ND
	07/20/09	10.0	ND	ND	0.868 B	ND	ND	ND	ND	ND	ND	2.19 B	ND	1.09 B	1.25 J
	01/25/10	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/06/10	10.0	ND	ND	ND	2.56 J	ND	ND	ND	ND	ND	ND	---	---	ND
	01/04/11	10.0	2.3 J	2.16 J	ND	3.09 J	1.8 J	4.68 J	ND	ND	ND	3.49 J	---	---	ND
	07/05/11	10.0	8.78 J	1.60 J	ND	2.66 J	ND	ND	ND	ND	ND	ND	---	---	ND
	01/09/12	10.0	1.57 B	1.54 B	1.06 B	0.62 B	0.62 B	0.68 B	0.59 B	1.87 B	0.32 B	2.32 B	---	---	0.66 J
	07/09/12	10.0	1.24 J	0.88 J	0.31 J	ND	0.64 J	0.24 J	ND	ND	0.65 J	0.45 J	---	---	ND
	01/28/13	10.0	1.12 B	1.13 B	1.23 B	1.39 B	1.45 B	1.15 B	0.84 B	1.19 B	0.46 B	1.74 B	---	---	0.26 J
	07/17/13	10.0	1.67 J	1.18 J	1.05 J	1.15 J	0.63 J	1.03 J	0.39 J	3.59 J	0.91 J	1.73 J	---	---	ND
	01/28/14	10.0	2.05 J	1.48 J	1.51 J	0.68 J	1.65 J	---	ND	1.96 J	4.48 J	5.79 J	---	---	ND
	05/31/14	10.0	---	---	---	---	---	---	---	---	---	---	0.98 J	0.81 J	ND
	06/24/14	10.0	---	---	---	---	---	---	---	---	---	---	0.79 B	0.42 B	0.23 J
	07/24/14	10.0	1.39 J	3.05 J	1.09 J	0.50 J	0.45 J	3.19 J	0.25 J	0.54 J	0.32 J	0.93 J	0.39 J	0.46 J	ND
	01/28/15	10.0	1.38 J	1.68 J	2.16 J	0.72 J	7.30 J	4.40 J	0.56 J	0.73 J	1.26 J	13.6	0.64 J	0.49 J	ND
Total Lead	10/28/98	10.0	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
NC 2L = 15 µg/L	04/07/99	10.0	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
	12/08/99	10.0	ND	ND	ND	ND	ND	ND	---	---	---	---	---	---	ND
	04/27/00	10.0	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
	10/18/00	10.0	ND	ND	ND	ND	ND	Dry	ND	---	---	---	---	---	ND
	11/28/00	10.0	---	---	---	---	---	---	ND	---	---	---	---	---	---
	01/03/01	10.0	---	---	---	---	---	---	ND	---	---	---	---	---	---
	02/08/01	10.0	---	---	---	---	---	---	ND	---	---	---	---	---	---
	04/19/01	10.0	ND	ND	ND	---	ND	Dry	ND	---	---	---	---	---	ND
	12/24/01	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/23/02	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/23/02	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/01/03	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/28/03	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/27/04	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/26/04	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	03/15/05	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/12/05	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	01/12/06	10.0	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/19/06	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/11/06	10.0	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	10/31/06	10.0	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/17/07	10.0	ND	2.30 J	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	07/09/07	10.0	2.30 J	2.90 J	2.90 J	ND	ND	2.00 J	ND	2.2 J	---	---	---	---	ND
	01/14/08	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	ND
	04/30/08	10.0	---	---	---	---	---	---	---	---	---	4.30 J	---	---	ND
	07/14/08	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.10 J	---	---	ND
	10/03/08	10.0	---	---	---	---	---	---	---	---	---	2.20 J	---	---	ND
	01/19/09	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/20/09	10.0	2.82 B	2.21 B	ND	1.71 B	2.73 B	ND	ND	ND	2.68 B	6.81 B	6.11 B	5.83 B	2.16 J
	01/25/10	10.0	ND	1.70 J	7.56 J	1.55 J	ND	ND	ND	ND	ND	2.06 J	---	---	ND
	07/06/10	10.0	ND	2.40 J	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/04/11	10.0	ND	3.03 J	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/05/11	10.0	ND	3.52 J	ND	2.16 J	ND	ND	ND	ND	ND	ND	---	---	ND
	01/09/12	10.0	0.77 B	1.21 B	0.47 B	0.75 B	0.45 B	0.20 B	2.43 B	2.33 B	0.43 B	3.19 B	---	---	0.94 J
	07/09/12	10.0	0.84 J	2.69 J	0.22 J	0.29 J	0.37 J	ND	0.21 J	0.11 J	0.21 J	1.34 J	---	---	ND
	01/28/13	10.0	0.25 J	1.14 J	0.22 J	1.77 J	0.52 J	ND	0.24 J	0.11 J	0.36 J	2.73 J	---	---	ND
	07/17/13	10.0	0.68 J	1.55 J	0.42 J	0.76 J	0.11 J	0.15 J	0.18 J	3.59 J	0.57 J	2.43 J	---	---	ND
	01/28/14	10.0	0.34 J	1.25 J	0.56 J	0.26 J	1.57 J	---	0.23 J	0.98 J	7.74 J	11.7	---	---	ND
	05/31/14	10.0	---	---	---	---	---	---	---	---	---	---	2.40 J	2.59 J	ND
	06/24/14	10.0	---	---	---	---	---	---	---	---	---	---	3.26 J	0.70 J	ND
	07/24/14	10.0	0.27 J	1.62 J	0.23 J	0.11 J	0.66 J	2.07 J	0.13 J	0.05 J	0.48 J	0.96 J	2.78 J	1.62 J	ND
	01/28/15	10.0	0.18 B	1.94 J	0.21 B	0.06 B	1.55 B	0.10 B	0.38 B	ND	1.95 J	**18.3**	2.35 J	1.35 B	0.34 J
Verification Event >	03/05/15	10.0	---	---	---	---	---	---	---	---	---	3.39 J	---	---	ND

TABLE 7
Historical Groundwater Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	SWSL	GW-2	GW-7	GW-8	GW-9	GW-10	GW-11/11R	GW-13	GW-15	GW-16R	GW-17	GW-18	GW-21	Blanks
Total Nickel	10/28/98	50.0	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
NC 2L = 100 µg/L	04/07/99	50.0	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
	12/08/99	50.0	ND	ND	ND	ND	ND	ND	---	---	---	---	---	---	ND
	04/27/00	50.0	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
	10/18/00	50.0	ND	ND	ND	ND	ND	Dry	ND	---	---	---	---	---	ND
	11/28/00	50.0	---	---	---	---	---	---	ND	---	---	---	---	---	---
	01/03/01	50.0	---	---	---	---	---	---	ND	---	---	---	---	---	---
	02/08/01	50.0	---	---	---	---	---	---	ND	---	---	---	---	---	---
	04/19/01	50.0	ND	ND	ND	---	ND	Dry	ND	---	---	---	---	---	ND
	12/24/01	50.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/23/02	50.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/23/02	50.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/01/03	50.0	ND	ND	20.00	ND	ND	ND	ND	---	---	---	---	---	ND
	10/28/03	50.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/27/04	50.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/26/04	50.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	03/15/05	50.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/12/05	50.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	01/12/06	50.0	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/19/06	50.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/11/06	50.0	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	10/31/06	50.0	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/17/07	50.0	7.40 J	10.40	3.70 J	4.10 J	ND	ND	3.00 J	3.6 J	---	---	---	---	ND
	07/09/07	50.0	6.00 J	9.10 J	3.80 J	2.00 J	ND	ND	2.30 J	2.5 J	---	---	---	---	ND
	01/14/08	50.0	11.00 J	8.00 J	5.80 J	3.70 J	2.0 J	3.20 J	4.70 J	3.8 J	ND	---	---	---	ND
	04/30/08	50.0	---	---	---	---	---	---	---	---	---	4.10 J	---	---	ND
	07/14/08	50.0	3.90 J	7.10 J	2.40 J	2.00 J	ND	ND	2.50 J	ND	ND	ND	---	---	ND
	10/03/08	50.0	---	---	---	---	---	---	---	---	---	2.40 J	---	---	ND
	01/19/09	50.0	7.80 B	7.10 B	3.40 B	4.10 B	3.1 B	2.40 B	4.40 B	5.2 B	ND	ND	---	---	2.20 J
	07/20/09	50.0	6.08 J	9.00 J	3.27 J	3.03 J	1.07 J	0.72 J	2.48 J	2.59 J	ND	2.56 J	9.37 J	1.49 J	ND
	01/25/10	50.0	4.55 J	6.31 J	ND	ND	ND	ND	ND	1.75 J	ND	ND	---	---	ND
	07/06/10	50.0	5.31 J	10.00 J	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/04/11	50.0	6.42 J	9.32 J	2.17 J	4.60 J	ND	ND	2.50 J	2.92 J	ND	2.54 J	---	---	ND
	07/05/11	50.0	6.82 J	10.60 J	2.64 J	6.35 J	ND	ND	2.94 J	3.22 J	ND	ND	---	---	ND
	01/09/12	50.0	6.14 J	6.14 J	3.28 J	6.42 J	1.37 J	1.14 J	3.10 J	3.66 J	0.67 J	1.76 J	---	---	ND
	07/09/12	50.0	7.09 J	10.80 J	2.78 J	6.67 J	1.68 J	1.45 J	3.75 J	3.52 J	0.70 J	1.16 J	---	---	ND
	01/28/13	50.0	7.35 J	9.57 J	2.6 J	8.82 J	5.06 J	2.37 J	3.48 J	3.57 J	0.74 J	1.70 J	---	---	ND
	07/17/13	50.0	7.88 J	9.55 J	2.48 J	6.23 J	1.52 J	1.43 J	2.75 J	5.84 J	1.31 J	2.04 J	---	---	ND
	01/28/14	50.0	7.86 J	13.60 J	3.19 J	8.60 J	3.67 J	---	3.25 J	5.79 J	2.88 J	3.37 J	---	---	ND
	05/31/14	50.0	---	---	---	---	---	---	---	---	---	---	6.80 J	0.59 J	ND
	06/24/14	50.0	---	---	---	---	---	---	---	---	---	---	6.61 J	ND	ND
	07/24/14	50.0	7.21 J	8.60 J	2.36 J	7.56 J	2.59 J	5.87 J	1.86 J	3.2 J	1.07 J	1.29 J	4.58 J	0.38 J	ND
	01/28/15	50.0	6.07 J	10.6 J	2.55 J	9.41 J	5.19 J	1.76 J	3.13 J	3.68 J	1.41 J	5.89 J	5.64 J	0.41 J	ND
Total Selenium	07/12/05	20.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
NC 2L = 20 µg/L	01/19/06	20.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/11/06	20.0	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	10/31/06	20.0	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/17/07	10.0	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	07/09/07	10.0	ND	ND	ND	ND	2.0 J	ND	ND	ND	---	---	---	---	ND
	01/14/08	10.0	2.30 J	ND	2.00 J	ND	ND	ND	ND	2.3 J	ND	---	---	---	ND
	04/30/08	10.0	---	---	---	---	---	---	---	---	---	ND	---	---	ND
	07/14/08	10.0	ND	3.30 J	ND	ND	ND	ND	2.90 J	ND	2.70 J	ND	---	---	ND
	10/03/08	10.0	---	---	---	---	---	---	---	---	---	ND	---	---	ND
	01/19/09	10.0	5.60 J	ND	4.40 J	2.90 J	ND	ND	ND	ND	ND	ND	---	---	ND
	07/20/09	10.0	ND	4.33 B	3.90 B	ND	5.08 B	ND	ND	ND	ND	4.21 B	7.32 B	8.27 B	3.58 J
	01/25/10	10.0	ND	1.62 J	1.08 J	1.86 J	1.32 J	ND	ND	0.918 J	0.88 J	0.86 J	---	---	ND
	07/06/10	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/04/11	10.0	ND	ND	ND	1.89 J	ND	ND	ND	ND	ND	ND	---	---	ND
	07/05/11	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/09/12	10.0	ND	ND	ND	0.80 J	ND	ND	ND	ND	ND	ND	---	---	ND
	07/09/12	10.0	ND	1.43	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/28/13	10.0	ND	1.10 J	ND	1.49 J	ND	ND	ND	ND	ND	ND	---	---	ND
	07/17/13	10.0	ND	1.44 J	ND	1.09 J	ND	ND	ND	ND	ND	ND	---	---	ND
	01/28/14	10.0	ND	0.83 J	ND	1.02 J	ND	---	ND	ND	ND	ND	---	---	ND
	05/31/14	10.0	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	06/24/14	10.0	---	---	---	---	---	---	---	---	---	---	1.28 J	ND	ND
	07/24/14	10.0	ND	1.20 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/28/15	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Silver	07/12/05	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
NC 2L = 20 µg/L	01/19/06	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/11/06	10.0	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	10/31/06	10.0	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/17/07	10.0	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	07/09/07	10.0	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	01/14/08	10.0	2.10 J	ND	ND	3.10 J	ND	ND	ND	2.1 J	ND	---	---	---	ND
	04/30/08	10.0	---	---	---	---	---	---	---	---	---	ND	---	---	ND
	07/14/08	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	10/03/08	10.0	---	---	---	---	---	---	---	---	---	ND	---	---	ND
	01/19/09	10.0	ND	ND	ND	ND	ND	ND	ND	ND	3.60 J	ND	---	---	ND
	07/20/09	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.05 J	ND	2.61 J	ND
	01/25/10	10.0	1.59 B	1.20 B	6.82 J	1.68 B	1.76 B	1.55 B	1.79 B	1.74 B	2.07 B	2.55 B	---	---	1.25 J
	07/06/10	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/04/11	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/05/11	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/09/12	10.0	ND	1.58 J	ND	ND	ND	ND	0.43 J	0.27 J	ND	0.83 J	---	---	ND
	07/09/12	10.0	ND	0.25 J	ND	0.50 J	0.43 J	0.68 J	1.00 J	0.83 J	ND	1.25 J	---	---	ND
	01/28/13	10.0	ND	0.34 J	ND	0.90 J	1.17 J	0.86 J	1.09 J	0.17 J	ND	2.13 J	---	---	ND
	07/17/13	10.0	ND	ND	ND	0.27 J	ND	ND	ND	1.64 J	ND	5.64 J	---	---	ND
	01/28/14	10.0	ND	0.57 J	ND	ND	1.02 J	---	ND	16.0	1.91 J	3.70 J	---	---	ND
	05/31/14	10.0	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	06/24/14	10.0	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	07/24/14	10.0	ND	0.23 J	ND	ND	0.80 J	ND	0.32 J	4.32 J	ND	6.50 J	ND	ND	ND
	01/28/15	10.0	ND	3.68 J	0.44 J	0.32 J	2.94 J	ND	1.01 J	0.18 J	0.49 J	5.38 J	ND	ND	ND

TABLE 7
Historical Groundwater Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	SWSL	GW-2	GW-7	GW-8	GW-9	GW-10	GW-11/11R	GW-13	GW-15	GW-16R	GW-17	GW-18	GW-21	Blanks
Total Thallium	07/12/05	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
GWPS = 0.2 µg/L	01/19/06	10.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/11/06	10.0	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	10/31/06	10.0	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/17/07	5.50	0.07 J	0.05 J	ND	ND	ND	ND	0.05 J	ND	---	---	---	---	ND
	07/09/07	5.50	0.07 J	0.05 J	0.06 J	0.05 J	ND	ND	0.06 J	ND	---	---	---	---	ND
	01/14/08	5.50	0.08 J	0.07 J	ND	ND	ND	ND	0.06 J	ND	ND	---	---	---	ND
	04/30/08	5.50	---	---	---	---	---	---	---	---	---	0.14 J	---	---	ND
	07/14/08	5.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	10/03/08	5.50	---	---	---	---	---	---	---	---	---	0.16 J	---	---	ND
	01/19/09	5.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/20/09	5.50	0.04 J	0.05 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/25/10	5.50	0.12 J	0.15 J	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/06/10	5.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/04/11	5.50	ND	0.12 J	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/05/11	5.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/09/12	5.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/09/12	5.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/28/13	5.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/17/13	5.50	0.15 J	0.10 J	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/28/14	5.50	0.13 J	0.09 J	ND	ND	ND	---	ND	ND	ND	0.08 J	---	---	ND
	05/31/14	5.50	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	06/24/14	5.50	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	07/24/14	5.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/28/15	5.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Vanadium	07/12/05	40.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
GWPS = 0.3 µg/L	01/19/06	40.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/11/06	40.0	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	10/31/06	40.0	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/17/07	25.0	ND	ND	ND	ND	ND	ND	1.00 J	1.1 J	---	---	---	---	ND
	07/09/07	25.0	ND	ND	ND	1.50 B	ND	ND	ND	ND	---	---	---	---	1.00 J
	01/14/08	25.0	1.60 B	ND	1.10 B	2.70 B	ND	2.00 B	ND	1 B	ND	---	---	---	1.00 J
	04/30/08	25.0	---	---	---	---	---	---	---	---	---	13.70 J	---	---	1.30 J
	07/14/08	25.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.00 J	---	---	ND
	10/03/08	25.0	---	---	---	---	---	---	---	---	---	ND	---	---	ND
	01/19/09	25.0	ND	ND	ND	ND	ND	ND	ND	ND	1.40 J	ND	---	---	ND
	07/20/09	25.0	1.55 B	0.78 B	ND	1.63 B	ND	ND	0.75 B	0.856 B	0.89 B	10.40 J	4.71 J	9.74 J	0.803 J
	01/25/10	25.0	ND	ND	3.64 J	ND	ND	1.83 J	ND	ND	ND	0.51 J	---	---	ND
	07/06/10	25.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/04/11	25.0	ND	6.03 J	ND	10.50 J	ND	ND	ND	ND	ND	8.25 J	---	---	ND
	07/05/11	25.0	ND	1.84 J	ND	7.12 J	1.42 J	2.51 J	ND	ND	ND	3.39 J	---	---	ND
	01/09/12	25.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.37 J	---	---	ND
	07/09/12	25.0	2.41 J	1.85 J	ND	ND	ND	ND	ND	ND	ND	1.71 J	---	---	ND
	01/28/13	25.0	2.24 B	ND	ND	15.30 B	ND	ND	ND	ND	ND	6.45 B	---	---	2.68 J
	07/17/13	25.0	3.64 J	ND	ND	11.80 J	ND	ND	2.29 J	15.3 J	ND	5.57 J	---	---	ND
	01/28/14	25.0	ND	ND	ND	2.50 B	ND	---	ND	2.65 B	13.9 B	34.3 B	---	---	8.09 J
	05/31/14	25.0	---	---	---	---	---	---	---	---	---	---	ND	4.36 J	ND
	06/24/14	25.0	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	07/24/14	25.0	1.24 B	ND	ND	1.44 B	ND	10.8 J	1.47 B	ND	0.97 B	2.30 B	1.20 B	4.69 B	1.41 J
	01/28/15	25.0	1.11 J	2.35 J	ND	ND	1.38 J	ND	ND	ND	2.37 J	**60.7**	ND	1.07 J	ND
Verification Event >	03/05/15	25.0	---	---	---	---	---	---	---	---	---	15.3 J	---	---	1.40 J
Total Zinc	10/28/98	50	ND	ND	ND	ND	ND	Dry	---	---	---	---	---	---	ND
NC 2L = 1000 µg/L	04/07/99	50	50.0	40.0	30.0	ND	ND	Dry	---	---	---	---	---	---	30.0
	12/08/99	50	ND	40.0	80.0	ND	60	30.0	---	---	---	---	---	---	ND
	04/27/00	50	90.0	70.0	ND	150	ND	Dry	---	---	---	---	---	---	ND
	10/18/00	50	ND	ND	ND	ND	ND	Dry	ND	---	---	---	---	---	ND
	11/28/00	50	---	---	---	---	---	---	60.0	---	---	---	---	---	---
	01/03/01	50	---	---	---	---	---	---	ND	---	---	---	---	---	---
	02/08/01	50	---	---	---	---	---	---	ND	---	---	---	---	---	---
	04/19/01	50	ND	ND	ND	---	ND	Dry	ND	---	---	---	---	---	ND
	12/24/01	50	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/23/02	50	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/23/02	50	ND	ND	ND	90.0	ND	ND	ND	---	---	---	---	---	ND
	04/01/03	50	110.0	120.0	50.0	90.0	50.0	70.0	40.0	---	---	---	---	---	30.0
	10/28/03	50	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	04/27/04	50	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	10/26/04	50	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	03/15/05	50	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/12/05	50	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	01/12/06	50	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/19/06	50	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/11/06	50	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	10/31/06	50	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/17/07	10.0	18.80 B	23.30 B	12.20 B	12.70 B	5.9 B	10.40 B	15.60 B	7.7 B	---	---	---	---	5.50 J
	07/09/07	10.0	8.30 J	21.50	3.90 J	4.80 J	4.4 J	ND	3.90 J	5.2 J	---	---	---	---	ND
	01/14/08	10.0	13.30	5.70 B	4.10 B	6.00 B	2.9 B	5.20 B	4.80 B	3.7 B	13.60	---	---	---	1.30 J
	04/30/08	10.0	---	---	---	---	---	---	---	---	---	18.80	---	---	ND
	07/14/08	10.0	10.20 B	7.40 B	4.90 B	6.10 B	ND	ND	4.40 B	5.9 B	ND	6.70 B	---	---	5.00 J
	10/03/08	10.0	---	---	---	---	---	---	---	---	---	8.70 J	---	---	ND
	01/19/09	10.0	10.90	4.10 J	4.10 J	10.60	ND	ND	4.30 J	ND	ND	ND	---	---	ND
	07/20/09	10.0	10.30	28.00	9.27 J	12.20	ND	ND	7.25 J	5.4 J	8.07 J	17.60	21.7	ND	ND
	01/25/10	10.0	13.00	6.56 J	ND	15.30	6.86 J	2.89 J	6.92 J	4.45 J	6.07 J	4.26 J	---	---	ND
	07/06/10	10.0	12.00	5.01 J	ND	9.64 J	ND	4.54 J	5.00 J	ND	6.07 J	ND	---	---	ND
	01/04/11	10.0	9.70 J	7.51 J	ND	14.00	ND	ND	ND	ND	ND	8.51 J	---	---	ND
	07/05/11	10.0	20.60	8.55 J	6.18 J	19.60	4.28 J	7.45 J	7.77 J	5.46 J	ND	6.28 J	---	---	ND
	01/09/12	10.0	12.40 B	3.07 B	3.85 B	13.80 B	2.31 B	3.53 B	7.41 B	73.8 B	3.38 B	7.26 B	---	---	15.90
	07/09/12	10.0	10.40 J	4.69 J	2.52 B	14.10	3.42 J	2.21 B	5.46 J	5.74 J	6.37 J	3.83 J	---	---	0.30 J
	01/28/13	10.0	8.93 J	4.76 B	2.66 B	9.37 J	3.84 B	1.55 B	5.26 B	3.96 B	2.93 B	5.01 B	---	---	0.57 J
	07/17/13	10.0	11.50	5.40 J	3.49 J	11.20	1.66 J	3.98 J	9.59 J	13.0	5.46 J	7.94 J	---	---	ND
	01/28/14	10.0	10.10	6.11 J	2.11 J	13.10	5.09 J	---	4.09 J	6.70 J	9.31 J	15.2	---	---	ND
	05/31/14	10.0	---	---	---	---	---	---	---	---	---	---	15.2	2.42 B	1.03 J
	06/24/14	10.0	---	---	---	---	---	---	---	---	---	---	19.0	3.04 B	1.70 J
	07/24/14	10.0	11.7	4.34 J	1.85 B	13.0	3.06 B	14.10	3.01 B	5.24 J	4.29 J	4.31 J	7.39 J	1.29 B	0.71 J
	01/28/15	10.0	9.68	7.77	5.38 B	14.8	24.8	4.73 B	5.83 B	4.43 B	5.89 B	34.9	11.1	3.41 B	1.38 J

TABLE 7
Historical Groundwater Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	SWSL	GW-2	GW-7	GW-8	GW-9	GW-10	GW-11/11R	GW-13	GW-15	GW-16R	GW-17	GW-18	GW-21	Blanks
Organic Compounds															
Benzene	01/28/13	1.0	0.70 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
NC 2L= 1 µg/L	07/17/13	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/28/14	1.0	ND	ND	ND	ND	ND	---	ND	ND	ND	ND	---	---	ND
	05/31/14	1.0	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	06/24/14	1.0	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	07/24/14	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/28/15	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	07/24/14	100	ND	ND	ND	ND	ND	0.80 J	ND	ND	ND	ND	ND	ND	ND
NC 2L = 700 µg/L	01/28/15	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	01/17/07	5.0	ND	ND	ND	ND	ND	0.63 J	ND	ND	---	---	---	---	ND
NC 2L = 70 µg/L	07/09/07	5.0	ND	ND	ND	ND	ND	0.37 J	ND	ND	---	---	---	---	ND
	01/14/08	5.0	ND	ND	ND	ND	ND	0.62 J	ND	ND	0.54 J	---	---	---	ND
	04/30/08	5.0	---	---	---	---	---	---	---	---	---	1.0 J	---	---	ND
	07/14/08	5.0	ND	ND	ND	ND	ND	0.66 J	ND	ND	1.10 J	2.0 J	---	---	ND
	10/03/08	5.0	---	---	---	---	---	---	---	---	---	2.7 J	---	---	ND
	01/19/09	5.0	ND	ND	ND	ND	ND	0.58 J	ND	ND	0.52 J	2.6 J	---	---	ND
	07/20/09	5.0	ND	ND	ND	ND	ND	0.52 J	ND	ND	0.65 J	1.5 J	ND	1.30 J	ND
	01/25/10	5.0	ND	ND	ND	ND	ND	0.68 J	ND	ND	1.10 J	3.2 J	---	---	ND
	07/06/10	5.0	ND	ND	ND	ND	ND	0.55 J	ND	ND	ND	1.3 J	---	---	ND
	01/04/11	5.0	ND	ND	ND	ND	ND	0.44 J	ND	ND	ND	2.3 J	---	---	ND
	07/05/11	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2 J	---	---	ND
	01/09/12	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2 J	---	---	ND
	07/09/12	5.0	ND	ND	ND	ND	ND	0.50 J	ND	ND	ND	1.1 J	---	---	ND
	01/28/13	5.0	ND	ND	ND	ND	ND	0.50 J	ND	ND	ND	1.2 J	---	---	ND
	07/17/13	5.0	ND	ND	ND	ND	ND	0.50 J	ND	ND	ND	1.8 J	---	---	ND
	01/28/14	5.0	ND	ND	ND	ND	ND	---	ND	ND	ND	1.0 J	---	---	ND
	05/31/14	5.0	---	---	---	---	---	---	---	---	---	---	ND	3.2 J	ND
	06/24/14	5.0	---	---	---	---	---	---	---	---	---	---	ND	4.2 J	ND
	07/24/14	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5 J	ND	3.8 J	ND
	01/28/15	5.0	ND	ND	ND	ND	ND	0.2 J	ND	ND	ND	0.6 J	ND	4.7 J	ND
Chloromethane	07/06/10	1.0	ND	ND	ND	ND	ND	ND	ND	ND	0.43 J	ND	---	---	ND
NC 2L = 3 µg/L	01/04/11	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/05/11	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/09/12	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/09/12	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/28/13	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/17/13	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/28/14	1.0	ND	ND	ND	ND	ND	---	ND	ND	ND	ND	---	---	ND
	05/31/14	1.0	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	06/24/14	1.0	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	07/24/14	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/28/15	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4- Dichlorobenzene	07/09/12	1.0	0.40 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
NC 2L = 6 µg/L	01/28/13	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/17/13	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/28/14	1.0	ND	ND	ND	ND	ND	---	ND	ND	ND	ND	---	---	ND
	05/31/14	1.0	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	06/24/14	1.0	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	07/24/14	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/28/15	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	01/28/13	1.0	0.50 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
NC 2L = 5 µg/L	07/17/13	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/28/14	1.0	ND	ND	ND	ND	ND	---	ND	ND	ND	ND	---	---	ND
	05/31/14	1.0	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	06/24/14	1.0	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	07/24/14	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/28/15	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	01/28/13	1.0	1.50 B	0.20 B	ND	ND	ND	ND	ND	ND	ND	ND	---	---	0.20 J
NC 2L = 200 µg/L	07/17/13	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/28/14	1.0	ND	ND	ND	ND	ND	---	ND	ND	ND	ND	---	---	ND
	05/31/14	1.0	---	---	---	---	---	---	---	---	---	---	ND	ND	0.30 J
	06/24/14	1.0	---	---	---	---	---	---	---	---	---	---	ND	ND	0.20 J
	07/24/14	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/28/15	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	07/12/05	5.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
NC 2L = 3 µg/L	01/19/06	5.0	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	---	ND
	07/11/06	5.0	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	10/31/06	5.0	---	---	---	---	---	---	---	ND	---	---	---	---	ND
	01/17/07	3.0	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	---	ND
	07/09/07	1.0	0.47 J	ND	0.35 J	ND	ND	ND	ND	ND	---	---	---	---	ND
	01/14/08	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	---	ND
	04/30/08	1.0	---	---	---	---	---	---	---	---	---	ND	---	---	ND
	07/14/08	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	10/03/08	1.0	---	---	---	---	---	---	---	---	---	ND	---	---	ND
	01/19/09	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/20/09	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/25/10	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/06/10	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/04/11	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/05/11	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/09/12	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/09/12	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/28/13	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	07/17/13	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	---	ND
	01/28/14	1.0	ND	ND	ND	ND	ND	---	ND	ND	ND	ND	---	---	ND
	05/31/14	1.0	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	06/24/14	1.0	---	---	---	---	---	---	---	---	---	---	ND	ND	ND
	07/24/14	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	01/28/15	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 7
Historical Groundwater Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	SWSL	GW-2	GW-7	GW-8	GW-9	GW-10	GW-11/11R	GW-13	GW-15	GW-16R	GW-17	GW-18	GW-21	Blanks
Field Parameters															
pH	10/28/98	---	5.38	4.61	5.58	5.76	6.63	Dry	---	---	---	---	---	---	---
(S.U.)	04/07/99	---	5.14	4.60	5.38	5.66	6.32	Dry	---	---	---	---	---	---	---
	12/08/99	---	5.11	6.31	5.20	5.30	6.02	7.50	---	---	---	---	---	---	---
	04/27/00	---	5.06	4.50	5.28	5.64	5.84	Dry	---	---	---	---	---	---	---
	10/18/00	---	4.93	4.19	5.04	5.41	6.04	Dry	6.00	---	---	---	---	---	---
	11/28/00	---	---	---	---	---	---	---	4.24	---	---	---	---	---	---
	01/03/01	---	---	---	---	---	---	---	5.83	---	---	---	---	---	---
	02/08/01	---	---	---	---	---	---	---	5.94	---	---	---	---	---	---
	04/19/01	---	4.98	4.26	5.07	---	6.27	Dry	5.76	---	---	---	---	---	---
	12/24/01	---	5.13	4.27	5.03	5.57	6.41	5.46	5.19	---	---	---	---	---	---
	04/23/02	---	4.97	4.24	4.91	5.40	6.5	5.05	4.89	---	---	---	---	---	---
	10/23/02	---	4.62	4.02	4.67	5.03	6.05	4.90	5.00	---	---	---	---	---	---
	04/01/03	---	4.92	4.26	4.99	5.46	6.25	5.41	5.28	---	---	---	---	---	---
	10/28/03	---	4.74	4.13	5.01	5.31	6.29	5.13	4.97	---	---	---	---	---	---
	04/27/04	---	4.70	4.19	4.70	5.08	6.03	5.16	4.59	---	---	---	---	---	---
	10/26/04	---	4.45	3.97	4.49	5.05	5.73	4.74	4.55	---	---	---	---	---	---
	03/15/05	---	4.70	4.21	5.04	5.32	6.03	5.26	4.78	---	---	---	---	---	---
	07/12/05	---	4.15	4.17	4.88	4.73	5.6	4.85	4.33	---	---	---	---	---	---
	01/19/06	---	2.69	2.38	5.05	4.68	6.58	3.56	5.76	---	---	---	---	---	---
	07/11/06	---	4.64	4.23	4.94	5.17	5.67	5.17	4.81	5.13	---	---	---	---	---
	10/31/06	---	---	---	---	---	---	---	---	4.67	---	---	---	---	---
	01/17/07	---	4.01	4.1	4.72	5.1	6.04	5.18	4.7	4.89	---	---	---	---	---
	07/09/07	---	4.31	4.18	5.00	5.20	6.08	4.98	4.65	4.84	---	---	---	---	---
	01/14/08	---	4.34	4.25	4.88	5.42	5.77	5.27	4.99	5.18	5.08	---	---	---	---
	04/30/08	---	---	---	---	---	---	---	---	---	---	4.51	---	---	---
	07/14/08	---	4.47	4.13	4.82	5.22	5.7	5.10	4.72	4.99	5.02	4.68	---	---	---
	10/03/08	---	---	---	---	---	---	---	---	---	---	4.33	---	---	---
	01/19/09	---	4.63	4.06	4.85	4.72	5.08	4.75	4.75	4.95	4.50	4.23	---	---	---
	07/20/09	---	4.79	4.29	4.80	5.34	5.55	4.16	3.83	4.46	4.74	4.39	4.23	4.65	---
	01/25/10	---	4.30	4.01	4.63	4.94	5.51	5.02	4.62	4.89	4.51	4.36	---	---	---
	07/06/10	---	4.17	4.08	4.70	5.09	5.49	4.66	4.73	4.17	4.48	4.41	---	---	---
	01/04/11	---	4.55	4.07	4.71	5.73	5.73	5.00	4.72	4.86	4.46	4.48	---	---	---
	07/05/11	---	3.71	3.69	4.29	4.98	4.47	4.43	3.89	4.71	3.68	3.50	---	---	---
	01/09/12	---	4.76	4.42	4.60	5.47	5.81	5.07	4.64	5.38	4.50	4.6	---	---	---
	07/09/12	---	4.83	4.24	4.9	5.24	5.82	5.33	4.89	5.24	4.94	4.8	---	---	---
	01/28/13	---	4.96	4.33	4.98	5.90	5.79	5.21	5.04	5.22	4.79	4.93	---	---	---
	07/17/13	---	4.19	4.00	4.7	5.10	5.29	4.29	4.24	5.01	4.03	4.70	---	---	---
	01/28/14	---	4.99	6.11	5.41	5.66	5.9	5.15	5.28	5.29	4.89	4.98	---	---	---
	05/31/14	---	---	---	---	---	---	---	---	---	---	---	4.01	4.22	---
	06/24/14	---	---	---	---	---	---	---	---	---	---	---	4.15	4.03	---
	07/24/14	---	4.49	4.18	4.51	4.87	5.14	5.15	4.87	5.36	4.35	4.65	4.22	4.01	---
	01/28/15	FIELD	5.46	3.85	4.62	4.88	4.83	5.42	4.29	5.08	4.43	4.51	4.39	4.33	---
	03/05/15	FIELD	---	---	---	---	---	---	---	---	---	4.63	---	---	---
Conductivity	10/28/98	---	83	257.0	98	78.00	115	Dry	---	---	---	---	---	---	---
(µS/cm)	04/07/99	---	69.41	173.0	75.21	52.07	67.89	Dry	---	---	---	---	---	---	---
	12/08/99	---	61	306.0	52	89.00	48	41	---	---	---	---	---	---	---
	04/27/00	---	78	210.0	87	57.00	57	Dry	---	---	---	---	---	---	---
	10/18/00	---	110	317.0	130	76.00	108	Dry	---	---	---	---	---	---	---
	11/28/00	---	---	---	---	---	---	---	191.0	---	---	---	---	---	---
	01/03/01	---	---	---	---	---	---	---	7.3	---	---	---	---	---	---
	02/08/01	---	---	---	---	---	---	---	75.0	---	---	---	---	---	---
	04/19/01	---	106.0	284.0	130.0	---	125	Dry	5.8	---	---	---	---	---	---
	12/24/01	---	85.0	224.0	105.0	71.00	104	46.0	80.0	---	---	---	---	---	---
	04/23/02	---	112.0	282.0	136.0	84.00	131	62.0	156.0	---	---	---	---	---	---
	10/23/02	---	62.0	161.0	77.0	49.00	75	37.0	41.0	---	---	---	---	---	---
	04/01/03	---	71.0	131.0	86.0	54.00	72	43.0	83.0	---	---	---	---	---	---
	10/28/03	---	84.0	221.0	89.0	64.00	85	38.0	93.0	---	---	---	---	---	---
	04/27/04	---	99.0	227.0	108.0	82.00	102	53.0	118.0	---	---	---	---	---	---
	10/26/04	---	110.0	259.0	115.0	95.00	122	51.0	97.0	---	---	---	---	---	---
	03/15/05	---	108.0	223.0	94.0	79.00	97	47.0	91.0	---	---	---	---	---	---
	07/12/05	---	106.0	231.0	98.0	84.00	88	49.0	91.0	---	---	---	---	---	---
	01/19/06	---	103.0	214.0	100.0	66.00	98	47.0	89.0	---	---	---	---	---	---
	07/11/06	---	147.0	307.0	146.0	121.00	129	70.0	126.0	106	---	---	---	---	---
	10/31/06	---	---	---	---	---	---	---	---	90	---	---	---	---	---
	01/17/07	---	136.0	291.0	164.0	112.00	132	52.0	98.0	92	---	---	---	---	---
	07/09/07	---	134.0	268.0	133.0	115.00	109	54.0	89.0	92	---	---	---	---	---
	01/14/08	---	212.00	442.0	208.0	128.00	279	120.0	252.0	248	53.0	---	---	---	---
	04/30/08	---	---	---	---	---	---	---	---	---	---	77.0	---	---	---
	07/14/08	---	146.00	301.0	155.00	113.00	127	69.0	118.0	107	39.0	82.0	---	---	---
	10/03/08	---	---	---	---	---	---	---	---	---	---	79.0	---	---	---
	01/19/09	---	138.0	264.0	164.0	84.00	108	64.0	113.0	100	38.0	86.0	---	---	---
	07/20/09	---	138.0	266.0	161.0	122.0	119	67.0	113.0	100	33.0	77.0	198	26	---
	01/25/10	---	139.0	260.0	149.0	90.0	127	61.0	108.0	100	33.0	76.0	---	---	---
	07/06/10	---	134.0	233.0	145.0	138.0	123	61.0	97.0	134	33.0	76.0	---	---	---
	01/04/11	---	140.0	269.0	148.0	342.0	135	62.0	101.0	100	32.0	82.0	---	---	---
	07/05/11	---	143.0	251.0	145.0	205.0	135	71.0	111.0	100	33.0	78.0	---	---	---
	01/09/12	---	116.0	201.0	111.0	219.0	105	51.0	93.0	79	29.0	62.0	---	---	---
	07/09/12	---	123.9	220.2	136.3	220.9	133.2	63.6	127.4	91.5	36.5	75.7	---	---	---
	01/28/13	---	117.6	190.1	105.1	4.2	108.9	45.9	96.5	79.8	27.5	61.4	---	---	---
	07/17/13	---	104.8	208.1	121.3	220.1	98.7	49.7	92.0	83.9	34.3	69.9	---	---	---
	01/28/14	---	109.1	184.2	115.3	242.7	106.2	45.0	96.1	55.6	29.3	66.7	---	---	---
	05/31/14	---	---	---	---	---	---	---	---	---	---	---	145	22.3	---
	06/24/14	---	---	---	---	---	---	---	---	---	---	---	163.3	23.3	---
	07/24/14	---	131.1	182.1	118.4	251.6	128.2	53.2	102.8	93.8	45.2	79.0	164.5	23.7	---
	01/28/15	FIELD	175.3	202.9	102.8	233.0	111.1	42.5	98.0	83.1	38.3	65.2	129.4	22.4	---
	03/05/15	FIELD	---	---	---	---	---	---	---	---	---	64.9	---	---	---

TABLE 7
Historical Groundwater Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	SWSL	GW-2	GW-7	GW-8	GW-9	GW-10	GW-11/11R	GW-13	GW-15	GW-16R	GW-17	GW-18	GW-21	Blanks
Temperature	10/28/98	---	15.30	19.00	19.70	18.60	15.9	Dry	---	---	---	---	---	---	---
(°C)	04/07/99	---	16.70	17.30	17.30	15.60	17.6	Dry	---	---	---	---	---	---	---
	12/08/99	---	15.10	17.00	25.00	17.10	16.7	17.00	---	---	---	---	---	---	---
	04/27/00	---	15.60	13.10	14.40	13.70	12.9	Dry	---	---	---	---	---	---	---
	10/18/00	---	16.70	19.10	19.30	20.40	16.6	Dry	---	---	---	---	---	---	---
	11/28/00	---	---	---	---	---	---	---	15.60	---	---	---	---	---	---
	01/03/01	---	---	---	---	---	---	---	14.50	---	---	---	---	---	---
	02/08/01	---	---	---	---	---	---	---	16.90	---	---	---	---	---	---
	04/19/01	---	14.90	31.00	14.70	---	13.7	Dry	17.10	---	---	---	---	---	---
	12/24/01	---	17.90	20.20	20.70	20.80	17.7	20.10	21.60	---	---	---	---	---	---
	04/23/02	---	15.90	16.00	15.70	15.60	14.5	18.40	17.10	---	---	---	---	---	---
	10/23/02	---	15.80	19.10	19.40	20.30	17	17.80	15.70	---	---	---	---	---	---
	04/01/03	---	16.90	16.40	17.00	14.40	15.7	18.50	17.30	---	---	---	---	---	---
	10/28/03	---	16.50	19.10	18.00	18.10	15.9	16.60	18.30	---	---	---	---	---	---
	04/27/04	---	16.00	17.00	15.50	14.00	15	17.30	19.40	---	---	---	---	---	---
	10/26/04	---	16.80	18.80	19.10	19.70	17	18.00	15.90	---	---	---	---	---	---
	03/15/05	---	16.18	15.79	15.80	12.86	14.6	17.44	16.39	---	---	---	---	---	---
	07/12/05	---	16.32	16.80	16.56	18.09	15.97	17.78	17.92	---	---	---	---	---	---
	01/19/06	---	16.61	17.50	17.51	15.06	15.39	17.88	17.19	---	---	---	---	---	---
	07/11/06	---	16.10	16.80	17.00	18.20	15.7	17.70	17.30	19.9	---	---	---	---	---
	10/31/06	---	---	---	---	---	---	---	---	17.6	---	---	---	---	---
	01/17/07	---	15.60	15.60	15.80	14.50	15	16.60	16.00	14.9	---	---	---	---	---
	07/09/07	---	17.09	17.81	17.53	18.90	17	17.75	17.80	18.61	---	---	---	---	---
	01/14/08	---	16.26	17.88	15.93	15.44	14.32	16.65	17.53	16.65	16.6	---	---	---	---
	04/30/08	---	---	---	---	---	---	---	---	---	---	15.09	---	---	---
	07/14/08	---	17.17	19.03	18.84	20.55	18.13	19.59	18.67	18.44	18.38	16.22	---	---	---
	10/03/08	---	---	---	---	---	---	---	---	---	---	16.30	---	---	---
	01/19/09	---	15.32	14.69	15.59	13.80	13.94	16.71	15.22	15.18	13.25	12.81	---	---	---
	07/20/09	---	17.08	19.47	18.99	19.25	16.87	19.62	18.99	19.18	17.43	18.09	18.25	17.64	---
	01/25/10	---	16.60	16.99	16.89	14.08	14.52	18.16	17.10	16.5	15.94	15.68	---	---	---
	07/06/10	---	17.58	20.10	18.72	21.4	16.4	19.7	25.6	17.58	17.78	18.99	---	---	---
	01/04/11	---	16.52	17.09	16.38	14.2	14.7	17.5	16.5	15.5	15.51	15.44	---	---	---
	07/05/11	---	17.6	19.52	19.02	22.2	17.5	21.1	17.9	19.67	16.82	17.90	---	---	---
	01/09/12	---	15.4	15.82	14.83	13.7	13.8	16.0	15.8	13.81	16.40	14.89	---	---	---
	07/09/12	---	17.0	18.30	18.80	19.3	16.2	18.3	19.0	19.3	16.60	18.30	---	---	---
	01/28/13	---	16.7	16.60	16.50	13.20	14.6	17.30	16.90	14.8	16.60	17.00	---	---	---
	07/17/13	---	16.4	18.10	17.90	18.10	15.9	18.00	18.60	21.6	19.80	23.30	---	---	---
	01/28/14	---	14.3	13.30	16.90	10.30	14.6	14.60	14.40	14.4	14.30	14.40	---	---	---
	05/31/14	---	---	---	---	---	---	---	---	---	---	---	15.50	15.90	---
	06/24/14	---	---	---	---	---	---	---	---	---	---	---	16.20	16.60	---
	07/24/14	---	16.2	17.50	18.00	19.20	15.7	21.00	18.50	19.2	17.00	18.60	19.20	18.10	---
	01/28/15	FIELD	16.7	16.60	16.20	13.00	11.4	15.40	17.80	15.1	14.60	15.70	13.90	15.30	---
	03/05/15	FIELD	---	---	---	---	---	---	---	---	---	13.40	---	---	---
Turbidity	10/28/98	---	80.0	65.00	19.00	13.00	17	Dry	---	---	---	---	---	---	---
(NTU)	04/07/99	---	20.00	1.51	3.13	2.61	2.96	Dry	---	---	---	---	---	---	---
	12/08/99	---	20.00	9.46	5.04	2.24	26	19.00	---	---	---	---	---	---	---
	04/27/00	---	32.00	18.00	14.00	7.07	1.76	Dry	---	---	---	---	---	---	---
	10/18/00	---	20.40	38.10	9.20	6.39	1.6	Dry	15.90	---	---	---	---	---	---
	11/28/00	---	---	---	---	---	---	---	11.40	---	---	---	---	---	---
	01/03/01	---	---	---	---	---	---	---	11.00	---	---	---	---	---	---
	02/08/01	---	---	---	---	---	---	---	18.00	---	---	---	---	---	---
	04/19/01	---	169.00	31.00	11.00	---	11	Dry	16.00	---	---	---	---	---	---
	12/24/01	---	28.00	60.00	5.31	33.00	2.45	61.00	29.00	---	---	---	---	---	---
	04/23/02	---	27.00	26.00	2.08	290.00	450	11.00	4.28	---	---	---	---	---	---
	10/23/02	---	6.54	5.77	1.84	3.97	1.35	71.00	6.58	---	---	---	---	---	---
	04/01/03	---	44.00	23.00	2.63	15.00	91	44.00	10.00	---	---	---	---	---	---
	10/28/03	---	34.00	25.00	1.80	25.00	7.99	20.00	13.00	---	---	---	---	---	---
	04/27/04	---	32.00	13.00	0.85	33.00	34	20.00	2.37	---	---	---	---	---	---
	10/26/04	---	10.00	10.00	0.89	38.00	5.89	29.00	44.00	---	---	---	---	---	---
	03/15/05	---	68.60	17.90	15.40	43.50	45.1	50.30	26.30	---	---	---	---	---	---
	07/12/05	---	78.00	29.70	30.30	37.30	30.3	45.20	36.30	---	---	---	---	---	---
	01/19/06	---	39.20	0.00	0.00	0.00	0	0.00	0.00	---	---	---	---	---	---
	07/11/06	---	33.60	3.40	1.70	25.40	31	34.50	15.00	78.2	---	---	---	---	---
	10/31/06	---	---	---	---	---	---	---	---	193	---	---	---	---	---
	01/17/07	---	13.00	0.00	9.50	23.70	97.2	6.90	8.80	8.3	---	---	---	---	---
	07/09/07	---	0.00	0.00	0.00	0.00	65.8	0.00	0.00	0	---	---	---	---	---
	01/14/08	---	7.31	5.39	1.19	37.50	24	1.29	0.68	9.48	4.1	---	---	---	---
	04/30/08	---	---	---	---	---	---	---	---	---	---	>1000	---	---	---
	07/14/08	---	10.60	1.10	1.46	29.50	50.6	2.61	0.40	2.03	8.77	33.10	---	---	---
	10/03/08	---	---	---	---	---	---	---	---	---	---	9.54	---	---	---
	01/19/09	---	13.80	1.81	0.41	20.90	5.82	2.99	0.39	1.76	3.04	2.45	---	---	---
	07/20/09	---	8.53	1.50	21.00	36.20	7.84	2.22	1.45	1.67	6.42	45.90	92.0	85.2	---
	01/25/10	---	4.45	3.91	1.46	57.00	29	20.90	3.56	2.75	8.8	14.30	---	---	---
	07/06/10	---	7.74	2.34	0.87	34.90	40	3.37	1.26	7.74	11.3	1.73	---	---	---
	01/04/11	---	9.95	14.30	5.51	42.20	29.8	8.01	1.41	0.78	0.67	82.20	---	---	---
	07/05/11	---	12.90	74.40	1.22	87.50	41.9	29.40	0.94	2.23	0.77	30.60	---	---	---
	01/09/12	---	10.93	9.11	7.20	5.69	10.96	6.21	6.10	28.2	6.07	49.10	---	---	---
	07/09/12	---	15.30	18.70	4.74	19.70	42	4.16	10.10	14.7	7.80	11.50	---	---	---
	01/28/13	---	19.79	20.71	21.09	91.31	11.91	15.29	27.10	20.1	15.26	37.80	---	---	---
	07/17/13	---	7.24	9.71	8.43	11.23	8.61	8.09	7.92	20.92	7.42	8.98	---	---	---
	01/28/14	---	10.28	4.34	3.86	15.80	10.31	14.02	5.94	8.16	9.20	17.02	---	---	---
	05/31/14	---	---	---	---	---	---	---	---	---	---	---	7.26	29.9	---
	06/24/14	---	---	---	---	---	---	---	---	---	---	---	5.60	7.48	---
	07/24/14	---	5.10	6.50	2.77	3.31	3.9	8.70	3.81	3.76	3.78	18.70	4.12	---	---
	01/28/15	FIEL D	3.30	8.50	1.25	2.28	9.7	5.29	1.99	1.97	14.30	45.00	2.02	18.20	---
	03/05/15	FIELD	---	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 7
Historical Groundwater Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	SWSL	GW-2	GW-7	GW-8	GW-9	GW-10	GW-11/11R	GW-13	GW-15	GW-16R	GW-17	GW-18	GW-21	Blanks
Oxidation Reduction Potential	03/15/05	---	363.0	411.0	236.0	121.0	14.0	270.0	319.0	---	---	---	---	---	---
(mV)	07/12/05	---	407.0	412.0	234.0	173.0	5.0	279.0	375.0	---	---	---	---	---	---
	01/19/06	---	361.0	370.0	222.0	174.0	16.0	283.0	339.0	---	---	---	---	---	---
	07/11/06	---	382.0	309.0	312.0	216.0	115.0	317.0	363.0	290.0	---	---	---	---	---
	10/31/06	---	---	---	---	---	---	---	---	343.0	---	---	---	---	---
	01/17/07	---	347.0	391.0	306.0	153.0	32.0	290.0	318.0	305.0	---	---	---	---	---
	07/09/07	---	371.0	431.0	309.0	204.0	81.0	290.0	352.0	328.0	---	---	---	---	---
	01/14/08	---	363.0	403.0	342.0	166.0	147.0	317.0	336.0	317.0	308.0	---	---	---	---
	07/14/08	---	314.0	365.0	248.0	114.0	6.0	247.0	274.0	257.0	243.0	291.0	---	---	---
	10/03/08	---	---	---	---	---	---	---	---	---	---	260.0	---	---	---
	01/19/09	---	203.8	260.9	254.4	152.1	193.3	159.2	238.9	213.8	216.4	179.8	---	---	---
	07/20/09	---	302.4	289.1	245.3	122.3	110.0	238.0	223.1	202.5	253.0	285.4	285.2	251.8	---
	01/25/10	---	255.6	310.6	243.0	185.9	144.4	245.0	264.1	244.5	285.2	300.7	---	---	---
	07/06/10	---	76.9	101.1	48.2	151.4	-26.2	57.2	93.5	76.9	224.2	94.6	---	---	---
	01/04/11	---	163.4	274.2	211.4	-5.9	85.4	138.1	160.0	151.7	219.2	243.4	---	---	---
	07/05/11	---	224.2	273.0	245.9	131.1	151.5	207.3	261.7	231.9	260.7	271.0	---	---	---
	01/09/12	---	121.5	95.1	104.1	33.7	-4.9	76.8	99.9	94.0	35.6	63.9	---	---	---
	07/09/12	---	105.2	177.0	135.5	42.6	-41.2	75.7	116.0	103.8	53.1	127.1	---	---	---
	01/28/13	---	289.9	385.8	220.1	19.8	150.1	249.1	288.4	269.7	261.4	287.6	---	---	---
	07/17/13	---	253.1	263.7	100.6	77.3	58.6	214.6	267.1	187.4	196.1	155.3	---	---	---
	01/28/14	---	288.3	202.1	81.4	108.4	159.9	246.0	268.3	269.1	273.5	269.1	---	---	---
	05/31/14	---	---	---	---	---	---	---	---	---	---	---	180.3	171.9	---
	06/24/14	---	---	---	---	---	---	---	---	---	---	---	171.2	181.4	---
	07/24/14	---	137.5	166.1	146.0	93.8	109.2	84.0	126.4	98.0	145.3	122.9	153.2	171.5	---
	01/28/15	FIELD	145.9	132.1	150.7	88.7	160.4	177.0	180.8	162.6	190.8	184.3	200.7	170.5	---
	03/05/15	FIELD	---	---	---	---	---	---	---	---	---	134.87	---	---	---
Dissolved Oxygen	03/15/05	---	4.65	2.69	1.61	1.23	1.39	2.10	5.55	---	---	---	---	---	---
(mg/L)	07/12/05	---	6.22	3.06	0.53	1.83	1.12	2.48	6.90	---	---	---	---	---	---
	01/19/06	---	3.34	0.00	0.00	0.00	0	0.21	3.71	---	---	---	---	---	---
	07/11/06	---	9.31	5.50	3.00	3.32	1.6	3.52	7.88	8.05	---	---	---	---	---
	10/31/06	---	---	---	---	---	---	---	---	6.3	---	---	---	---	---
	01/17/07	---	8.80	3.90	1.70	2.70	2.1	4.60	7.80	7.9	---	---	---	---	---
	07/09/07	---	6.30	3.20	0.90	1.60	2.3	2.70	6.80	7	---	---	---	---	---
	01/14/08	---	8.12	4.09	4.87	2.56	3.44	3.96	8.25	8.66	6.37	---	---	---	---
	07/14/08	---	7.46	3.42	1.49	2.37	0.86	2.29	6.24	6.53	4.27	4.21	---	---	---
	10/03/08	---	---	---	---	---	---	---	---	---	---	5.07	---	---	---
	01/19/09	---	8.53	3.27	1.79	1.62	1.26	3.01	6.69	7.15	7.2	6.07	---	---	---
	07/20/09	---	7.63	4.89	3.50	2.99	0.99	2.63	6.76	6.81	3.9	4.76	4.97	6.19	---
	01/25/10	---	7.95	4.55	3.54	4.67	1.29	4.89	7.10	7.27	4.4	3.95	---	---	---
	07/06/10	---	7.26	4.86	3.50	0.30	4.04	5.37	5.72	7.26	2.7	3.33	---	---	---
	01/04/11	---	8.43	4.15	4.46	2.30	1.84	6.24	7.95	7.07	1.0	4.04	---	---	---
	07/05/11	---	6.37	3.11	1.25	3.58	0.64	1.84	7.27	7.08	2.4	5.20	---	---	---
	01/09/12	---	6.04	4.44	1.87	0.60	1.41	2.75	4.91	5.5	0.4	2.64	---	---	---
	07/09/12	---	0.45	4.99	3.12	0.52	0.32	1.10	2.62	1.03	0.4	3.18	---	---	---
	01/28/13	---	5.43	5.81	5.79	8.63	0.69	4.09	7.15	7.26	1.9	4.51	---	---	---
	07/17/13	---	5.27	1.64	2.31	0.40	0.18	1.79	5.91	4.95	1.06	3.49	---	---	---
	01/28/14	---	4.93	3.86	3.11	4.52	1.18	5.95	7.68	7.78	7.30	5.26	---	---	---
	05/31/14	---	---	---	---	---	---	---	---	---	---	---	6.57	5.48	---
	06/24/14	---	---	---	---	---	---	---	---	---	---	---	3.54	3.33	---
	07/24/14	---	4.32	4.40	3.18	1.49	1.61	4.03	4.12	4.34	1.33	3.47	4.51	4.44	---
	01/28/15	FIELD	7.07	3.51	4.96	1.39	5.07	2.98	5.44	6.05	3.77	4.34	7.66	6.95	---
	03/05/15	FIELD	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:
DL = Method Detection Limit.
RL = Reporting Limit = PQL prior to 2007 and SWSL starting January 2007.
PQL = Practical Quantitation Limit.
SWSL = NC-DENR Solid Waste Section Limit.
NC 2L = Groundwater Standard established in 15 A NCAC 2L.0202
GWPS = NC DENR Solid Waste Section Groundwater Protection Standard for constituents with no listed NC 2L.
ND = Not detected above the DL.
J = Estimated concentration below the RL.
B = Blank qualified data.
dry = insufficient water to sample.
--- = No data.
All inorganic and organic compunds are reported in µg/L
µg/L = micrograms per liter
S.U. = Standard Units.
NTU = Nephelometric Turbidity Units.
µS/cm= microsiemens per centimeter.
mV = Millivolts.
Bold = Concentrations above the NC 2L or Groundwater Protection standards (GWPS) have been bolded.
Blanks = field, trip and/or method blanks.
All data prior to 2012 taken from previous reports by Golder Associates NC, Inc.
GW-11 was abandonded and replaced with GW-11R on July 21, 2014.

TABLE 8
Historical Surface Water Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	SW-1	SW-2	SW-3	SW-4	Blanks
Inorganic Compounds								
Total Antimony	07/12/05	---	30.00	ND	ND	ND	ND	ND
No NC 2B Standard	01/19/06	---	30.00	ND	ND	ND	ND	ND
	07/12/06	---	30.00	ND	ND	ND	ND	ND
	01/17/07	---	6.00	ND	ND	ND	ND	ND
	01/15/08	---	6.00	ND	ND	---	ND	ND
	07/14/08	---	6.00	ND	---	ND	---	ND
	01/19/09	---	6.00	ND	---	ND	ND	ND
	07/20/09	---	6.00	---	---	ND	ND	ND
	01/26/10	---	6.00	ND	0.44 J	0.08 J	ND	ND
	07/06/10	---	6.00	---	---	---	---	ND
	01/04/11	---	6.00	ND	---	ND	ND	ND
	07/05/11	---	6.00	ND	---	---	---	ND
	01/10/12	---	6.00	ND	1.19 J	ND	ND	ND
	07/09/12	---	6.00	---	---	ND	---	ND
	01/28/13	---	6.00	ND	1.60 J	ND	ND	ND
	07/17/13	---	6.00	ND	---	ND	---	0.39 J
	01/28/14	---	6.00	ND	---	0.24 J	---	ND
	07/24/14	1.05	6.00	ND	---	ND	---	ND
	01/28/15	1.05	6.00	ND	---	ND	---	ND
Total Arsenic	07/12/05	---	10.0	ND	ND	ND	ND	ND
NC 2B = 50 µg/L	01/19/06	---	10.0	ND	ND	ND	ND	ND
	07/12/06	---	10.0	ND	ND	ND	ND	ND
	01/17/07	---	10.0	ND	ND	ND	ND	3.40 J
	01/15/08	---	10.0	ND	ND	---	2.60 J	ND
	07/14/08	---	10.0	ND	---	ND	---	ND
	01/19/09	---	10.0	7.90 B	---	ND	ND	3.60 J
	07/20/09	---	10.0	---	---	ND	6.32 J	ND
	01/26/10	---	10.0	ND	6.48 J	ND	7.95 J	ND
	01/04/11	---	10.0	5.15 J	---	ND	ND	ND
	07/05/11	---	10.0	ND	---	---	---	ND
	01/10/12	---	10.0	ND	ND	ND	ND	ND
	07/09/12	---	10.0	---	---	1.31 J	---	ND
	01/28/13	---	10.0	ND	ND	ND	ND	ND
	07/17/13	---	10.0	1.24 J	---	1.01 J	---	ND
	01/28/14	---	10.0	ND	---	ND	---	ND
	07/24/14	1.13	10.0	ND	---	2.28 J	---	ND
	01/28/15	1.13	10.0	ND	---	ND	---	ND

TABLE 8
Historical Surface Water Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	SW-1		SW-2		SW-3		SW-4		Blanks	
Total Barium	09/16/93	---	---	100		60.0		90.0		---		---	
No NC 2B Standard	09/20/93	---	---	80.0		50.0		120		---		---	
	09/22/93	---	---	50.0		60.0		140		---		---	
	09/24/93	---	---	210		50.0		230		---		---	
	10/04/93	---	---	40.0		70.0		70.0		---		---	
	01/20/94	---	---	50.0		130		60.0		40.0		---	
	07/28/94	---	---	40.0		---		60.0		50.0		---	
	01/26/95	---	---	80.0		80.0		100		10.0		---	
	07/26/95	---	---	ND		ND		ND		---		---	
	01/23/96	---	---	ND		ND		ND		---		---	
	10/10/96	---	---	ND		ND		ND		---		---	
	04/15/97	---	---	ND		ND		ND		---		---	
	10/23/97	---	---	ND		ND		ND		---		---	
	04/28/98	---	---	ND		ND		ND		ND		---	
	03/15/05	---	500	ND		ND		ND		ND		---	
	07/12/05	---	500	ND		ND		ND		ND		ND	
	01/19/06	---	500	ND		ND		ND		ND		ND	
	07/12/06	---	500	ND		ND		ND		ND		ND	
	01/17/07	---	100	35.5		44.80		51.90		34.90		0.30	J
	01/15/08	---	100	81.3	J	92.10	J	---		24.10	J	0.30	J
	07/14/08	---	100	60.5	J	---		78.8	J	---		ND	
	01/19/09	---	100	82.3	J	---		65.2	J	72.20	J	ND	
	07/20/09	---	100	---		---		112		159		ND	
	01/26/10	---	100	63.1	J	79.7	J	58.8	J	63.4	J	0.43	J
	01/04/11	---	100	56.9	J	---		59.60	J	87.60	J	1.11	J
	07/05/11	---	100	110		---		---		---		ND	
	01/10/12	---	100	47.4	J	82.1	J	65.0	J	112		0.24	J
	07/09/12	---	100	---		---		105		---		0.75	J
	01/28/13	---	100	124		49.60	J	72.6	J	92.70	J	ND	
	07/17/13	---	100	64.8	J	---		69.1	J	---		0.37	J
	01/28/14	---	100	74.5	J	---		73.3	J	---		ND	
	07/24/14	0.10	100	54.2	J	---		101		---		0.32	J
	01/28/15	0.10	100	46.5	J	---		45.8	J	---		0.12	J
Total Beryllium	07/12/05	---	2.00	ND		ND		ND		ND		ND	
NC 2B = 6.5 µg/L	01/19/06	---	2.00	ND		ND		ND		ND		ND	
	07/12/06	---	2.00	ND		ND		ND		ND		ND	
	01/17/07	---	1.00	ND		ND		ND		ND		ND	
	01/15/08	---	1.00	ND		ND		---		ND		ND	
	07/14/08	---	1.00	ND		---		ND		---		ND	
	01/19/09	---	1.00	0.10	J	---		ND		ND		ND	
	07/20/09	---	1.00	---		---		ND		1.0		0.08	J
	01/26/10	---	1.00	0.26	J	0.3	J	0.21	J	0.4	J	ND	
	01/04/11	---	1.00	0.21	J	---		0.18	J	0.2	J	ND	
	07/05/11	---	1.00	0.27	J	---		---		---		ND	
	01/10/12	---	1.00	0.15	J	ND		0.70	J	0.4	J	ND	
	07/09/12	---	1.00	---		---		ND		---		ND	
	01/28/13	---	1.00	0.25	J	ND		ND		0.2	J	ND	
	07/17/13	---	1.00	0.30	J	---		0.32	J	---		ND	
	01/28/14	---	1.00	0.25	J	---		ND		---		ND	
	07/24/14	0.05	1.00	0.24	J	---		0.21	J	---		ND	
	01/28/15	0.05	1.00	0.18	J	---		0.14	J	---		ND	

TABLE 8
Historical Surface Water Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	SW-1		SW-2		SW-3		SW-4		Blanks	
Total Cadmium	09/16/93	---	---	ND		ND		1.0		---		---	
NC 2B = 2 µg/L	09/20/93	---	---	1.0		ND		ND		---		---	
	09/22/93	---	---	ND		ND		ND		---		---	
	09/24/93	---	---	ND		ND		ND		---		---	
	10/04/93	---	---	ND		ND		ND		---		---	
	01/20/94	---	---	ND		ND		ND		ND		---	
	07/28/94	---	---	5.00		---		ND		ND		---	
	01/26/95	---	---	ND		---		ND		ND		---	
	07/26/95	---	---	ND		ND		ND		---		---	
	01/23/96	---	---	ND		ND		ND		---		---	
	10/10/96	---	---	ND		ND		ND		---		---	
	04/15/97	---	---	ND		ND		ND		---		---	
	10/23/97	---	---	ND		ND		ND		---		---	
	04/28/98	---	---	1.30		ND		ND		ND		---	
	03/15/05	---	1.00	ND		ND		ND		ND		---	
	07/12/05	---	1.00	ND		ND		ND		ND		ND	
	01/19/06	---	1.00	ND		ND		ND		ND		ND	
	07/12/06	---	1.00	ND		ND		ND		ND		ND	
	01/17/07	---	1.00	ND		ND		ND		ND		ND	
	01/15/08	---	1.00	ND		ND		---		ND		ND	
	07/14/08	---	1.00	ND		---		ND		---		ND	
	01/19/09	---	1.00	0.40	J	---		ND		ND		ND	
	07/20/09	---	1.00	---		---		ND		0.27	B	0.11	J
	01/26/10	---	1.00	0.35	B	0.41	B	0.24	B	0.69	B	0.28	J
	01/04/11	---	1.00	ND		---		ND		ND		ND	
	07/05/11	---	1.00	ND		---		---		---		ND	
	01/10/12	---	1.00	ND		ND		ND		ND		ND	
	07/09/12	---	1.00	---		---		ND		---		ND	
	01/28/13	---	1.00	ND		ND		ND		ND		ND	
	07/17/13	---	1.00	ND		---		0.6	J	---		ND	
	01/28/14	---	1.00	0.06	J	---		ND		---		ND	
	07/24/14	0.05	1.00	ND		---		ND		---		ND	
	01/28/15	0.05	1.00	ND		---		ND		---		ND	

TABLE 8
Historical Surface Water Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	SW-1		SW-2		SW-3		SW-4		Blanks	
Total Chromium	09/16/93	---	---	ND		ND		10		---		---	
NC 2B = 50 µg/L	09/20/93	---	---	ND		ND		ND		---		---	
	09/22/93	---	---	ND		ND		10.00		---		---	
	09/24/93	---	---	70.00		ND		70.00		---		---	
	10/04/93	---	---	1.00		ND		ND		---		---	
	01/20/94	---	---	ND		ND		ND		ND		---	
	07/28/94	---	---	ND		---		ND		ND		---	
	01/26/95	---	---	ND		ND		ND		ND		---	
	07/26/95	---	---	ND		ND		ND		---		---	
	01/23/96	---	---	ND		ND		ND		---		---	
	10/10/96	---	---	ND		ND		ND		---		---	
	04/15/97	---	---	ND		ND		ND		---		---	
	10/23/97	---	---	ND		ND		ND		---		---	
	04/28/98	---	---	ND		ND		ND		ND		---	
	10/28/98	---	10.0	ND		ND		---		---		---	
	04/07/99	---	10.0	ND		ND		ND		ND		---	
	12/08/99	---	10.0	ND		---		ND		ND		---	
	04/27/00	---	10.0	ND		ND		ND		ND		---	
	10/18/00	---	10.0	ND		---		ND		---		---	
	04/18/01	---	10.0	ND		ND		ND		ND		---	
	10/24/01	---	10.0	ND		ND		ND		ND		---	
	04/23/02	---	10.0	ND		ND		ND		ND		---	
	10/23/02	---	10.0	ND		ND		ND		ND		---	
	04/01/03	---	10.0	ND		ND		ND		ND		---	
	10/27/03	---	10.0	ND		40.00		ND		---		---	
	04/27/04	---	10.0	ND		40.00		ND		ND		---	
	10/26/04	---	10.0	ND		ND		ND		ND		---	
	03/15/05	---	10.0	ND		ND		ND		ND		ND	
	07/12/05	---	10.0	ND		ND		ND		ND		ND	
	01/19/06	---	10.0	ND		ND		ND		ND		ND	
	07/12/06	---	10.0	ND		ND		ND		ND		ND	
	01/17/07	---	10.0	ND		3.30	J	ND		ND		ND	
	01/15/08	---	10.0	ND		ND		---		ND		ND	
	07/14/08	---	10.0	1.6	J	---		ND		---		ND	
	01/19/09	---	10.0	2.90	J	---		ND		3.40	J	ND	
	07/20/09	---	10.0	---		---		ND		38.30		ND	
	01/26/10	---	10.0	ND		12.10		2.12	J	13.10		ND	
	01/04/11	---	10.0	1.10	J	---		1.40	J	5.21	J	ND	
	07/05/11	---	10.0	5.03	J	---		---		---		ND	
	01/10/12	---	10.0	2.60	J	1.63	J	0.63	J	8.60	J	ND	
	07/09/12	---	10.0	---		---		ND		---		ND	
	01/28/13	---	10.0	1.82	B	3.22	B	2.92	B	7.65	B	1.38	J
	07/17/13	---	10.0	2.99	J	---		4.30	J	---		ND	
	01/28/14	---	10.0	6.12	J	---		2.13	J	---		2.84	J
	07/24/14	0.73	10.0	1.00	J	---		2.49	J	---		ND	
	01/28/15	0.73	10.0	1.89	J	---		1.55	J	---		ND	

TABLE 8
Historical Surface Water Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	SW-1		SW-2		SW-3		SW-4		Blanks	
Total Cobalt	09/16/93	---	---	ND		ND		ND		---		---	
No NC 2B Standard	09/20/93	---	---	ND		ND		ND		---		---	
	09/22/93	---	---	ND		ND		ND		---		---	
	09/24/93	---	---	ND		ND		ND		---		---	
	10/04/93	---	---	ND		ND		ND		---		---	
	01/20/94	---	---	ND		ND		ND		ND		---	
	07/28/94	---	---	ND		---		ND		ND		---	
	01/26/95	---	---	ND		10.00		ND		ND		---	
	07/26/95	---	---	ND		ND		ND		---		---	
	01/23/96	---	---	ND		ND		ND		---		---	
	10/10/96	---	---	ND		ND		ND		---		---	
	04/15/97	---	---	ND		ND		ND		---		---	
	10/23/97	---	---	ND		ND		ND		---		---	
	04/28/98	---	---	ND		ND		ND		ND		---	
	10/28/98	---	10.0	ND		ND		---		---		---	
	04/07/99	---	10.0	ND		ND		ND		ND		---	
	12/08/99	---	10.0	ND		---		ND		ND		---	
	04/27/00	---	10.0	ND		ND		ND		ND		---	
	10/18/00	---	10.0	ND		---		ND		---		---	
	04/18/01	---	10.0	ND		ND		ND		ND		---	
	10/24/01	---	10.0	ND		ND		ND		ND		---	
	04/23/02	---	10.0	ND		ND		ND		ND		---	
	10/23/02	---	10.0	ND		ND		ND		ND		---	
	04/01/03	---	10.0	ND		ND		ND		ND		---	
	10/27/03	---	10.0	ND		10.00		ND		---		---	
	04/27/04	---	10.0	ND		ND		ND		ND		---	
	10/26/04	---	10.0	ND		ND		ND		ND		---	
	03/15/05	---	10.0	ND		ND		ND		ND		ND	
	07/12/05	---	10.0	ND		ND		ND		ND		ND	
	01/19/06	---	10.0	ND		ND		ND		ND		ND	
	07/12/06	---	10.0	ND		ND		ND		ND		ND	
	01/17/07	---	10.0	ND		ND		ND		ND		ND	
	01/15/08	---	10.0	ND		2.90	J	---		ND		ND	
	07/14/08	---	10.0	ND		---		ND		---		ND	
	01/19/09	---	10.0	4.40	J	---		ND		1.50	J	ND	
	07/20/09	---	10.0	---		---		0.97	J	5.81	J	ND	
	01/26/10	---	10.0	2.14	B	2.85	J	1.29	B	2.70	J	0.49	J
	01/04/11	---	10.0	1.51	J	---		ND		3.01	J	ND	
	07/05/11	---	10.0	ND		---		---		---		ND	
	01/10/12	---	10.0	1.50	J	0.69	J	0.86	J	5.03	J	ND	
	07/09/12	---	10.0	---		---		1.63	J	---		ND	
	01/28/13	---	10.0	2.30	J	1.03	J	1.32	J	3.34	J	ND	
	07/17/13	---	10.0	2.40	J	---		1.73	J	---		ND	
	01/28/14	---	10.0	1.77	J	---		0.77	J	---		ND	
	07/24/14	0.26	10.0	1.64	J	---		1.81	J	---		ND	
	01/28/15	0.26	10.0	1.46	J	---		0.85	J	---		ND	

TABLE 8
Historical Surface Water Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	SW-1		SW-2		SW-3		SW-4		Blanks	
Total Copper	09/16/93	---	---	ND		ND		ND		---		---	
NC 2B = 7 µg/L	09/20/93	---	---	ND		ND		30.0		---		---	
	09/22/93	---	---	ND		ND		30.0		---		---	
	09/24/93	---	---	20.0		ND		30.0		---		---	
	10/04/93	---	---	ND		ND		ND		---		---	
	01/20/94	---	---	ND		ND		ND		ND		---	
	07/28/94	---	---	ND		---		ND		ND		---	
	01/26/95	---	---	ND		ND		ND		ND		---	
	07/26/95	---	---	ND		ND		ND		---		---	
	01/23/96	---	---	ND		ND		ND		---		---	
	10/10/96	---	---	ND		ND		ND		---		---	
	04/15/97	---	---	ND		ND		ND		---		---	
	10/23/97	---	---	ND		50.0		ND		---		---	
	04/28/98	---	---	ND		ND		ND		ND		---	
	03/15/05	---	200	ND		ND		ND		ND		ND	
	07/12/05	---	200	ND		ND		ND		ND		ND	
	01/19/06	---	200	ND		ND		ND		ND		ND	
	07/12/06	---	200	ND		ND		ND		ND		ND	
	01/17/07	---	10.0	ND		4.50	J	ND		ND		ND	
	01/15/08	---	10.0	ND		ND		---		ND		0.70	J
	07/14/08	---	10.0	ND		---		ND		---		ND	
	01/19/09	---	10.0	3.20	J	---		ND		ND		ND	
	07/20/09	---	10.0	---		---		ND		6.67	J	1.25	J
	01/26/10	---	10.0	ND		3.19	J	ND		4.25	J	ND	
	01/04/11	---	10.0	ND		---		1.67	J	2.02	J	ND	
	07/05/11	---	10.0	1.83	J	---		---		---		ND	
	01/10/12	---	10.0	1.74	B	2.04	B	0.98	B	4.10	J	0.66	J
	07/09/12	---	10.0	---		---		ND		---		ND	
	01/28/13	---	10.0	1.27	B	6.90	J	1.30	B	3.79	J	0.26	J
	07/17/13	---	10.0	2.44	J	---		3.70	J	---		ND	
	01/28/14	---	10.0	2.34	J	---		**17.6**		---		ND	
	07/24/14	0.22	10.0	1.67	J	---		2.54	J	---		ND	
	01/28/15	0.22	10.0	0.86	J	---		2.47	J	---		ND	

TABLE 8
Historical Surface Water Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	SW-1		SW-2		SW-3		SW-4		Blanks	
Total Lead	09/16/93	---	---	ND		ND		31.0		---		---	
NC 2B = 25 µg/L	09/20/93	---	---	16.0		9.0		19.0		---		---	
	09/22/93	---	---	7.0		ND		33.0		---		---	
	09/24/93	---	---	36.0		ND		44.0		---		---	
	10/04/93	---	---	9.0		ND		ND		---		---	
	01/20/94	---	---	ND		ND		ND		ND		---	
	07/28/94	---	---	ND		---		ND		ND		---	
	01/26/95	---	---	ND		ND		ND		ND		---	
	07/26/95	---	---	ND		ND		ND		---		---	
	01/23/96	---	---	ND		ND		ND		---		---	
	10/10/96	---	---	ND		ND		ND		---		---	
	04/15/97	---	---	ND		ND		ND		---		---	
	10/23/97	---	---	ND		ND		ND		---		---	
	04/28/98	---	---	ND		ND		ND		ND		---	
	10/28/98	---	10.0	ND		ND		---		---		---	
	04/07/99	---	10.0	ND		ND		ND		ND		---	
	12/08/99	---	10.0	ND		---		ND		ND		---	
	04/27/00	---	10.0	ND		ND		ND		ND		---	
	10/18/00	---	10.0	ND		---		ND		---		---	
	04/18/01	---	10.0	ND		ND		ND		ND		---	
	10/24/01	---	10.0	ND		ND		ND		ND		---	
	04/23/02	---	10.0	ND		ND		ND		ND		---	
	10/23/02	---	10.0	ND		ND		ND		ND		---	
	04/01/03	---	10.0	ND		ND		ND		ND		---	
	10/27/03	---	10.0	ND		30.0		ND		---		---	
	04/27/04	---	10.0	ND		20.0		ND		ND		---	
	10/26/04	---	10.0	ND		ND		ND		ND		---	
	03/15/05	---	10.0	ND		ND		ND		ND		ND	
	07/12/05	---	10.0	ND		ND		ND		ND		ND	
	01/19/06	---	10.0	ND		ND		ND		ND		ND	
	07/12/06	---	10.0	ND		ND		ND		ND		ND	
	01/17/07	---	10.0	ND		ND		2.70	J	ND		ND	
	01/15/08	---	10.0	ND		ND		---		ND		ND	
	07/14/08	---	10.0	2.40	J	---		ND		---		ND	
	01/19/09	---	10.0	ND		---		ND		ND		ND	
	07/20/09	---	10.0	---		---		1.65	B	18.40		2.16	J
	01/26/10	---	10.0	ND		7.63	J	1.42	J	9.38	J	ND	
	01/04/11	---	10.0	ND		---		ND		ND		ND	
	07/05/11	---	10.0	10.3		---		---		---		ND	
	01/10/12	---	10.0	2.59	B	3.04	B	1.40	B	4.39	B	0.94	J
	07/09/12	---	10.0	---		---		0.41	J	---		ND	
	01/28/13	---	10.0	0.94	J	1.26	J	0.65	J	4.32	J	ND	
	07/17/13	---	10.0	3.02	J	---		2.60	J	---		ND	
	01/28/14	---	10.0	1.77	J	---		0.82	J	---		ND	
	07/24/14	0.05	10.0	1.98	J	---		1.93	J	---		ND	
	01/28/15	0.05	10.0	0.69	B	---		0.71	B	---		0.34	J

TABLE 8
Historical Surface Water Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	SW-1	SW-2	SW-3	SW-4	Blanks
Total Nickel	09/16/93	---	---	ND	ND	ND	---	---
NC 2B = 25 µg/L	09/20/93	---	---	ND	ND	ND	---	---
	09/22/93	---	---	ND	ND	ND	---	---
	09/24/93	---	---	ND	ND	ND	---	---
	10/04/93	---	---	30.0	ND	ND	---	---
	01/20/94	---	---	ND	ND	ND	ND	---
	07/28/94	---	---	ND	---	ND	ND	---
	01/26/95	---	---	ND	ND	ND	ND	---
	07/26/95	---	---	ND	ND	ND	---	---
	01/23/96	---	---	ND	ND	ND	---	---
	10/10/96	---	---	ND	ND	ND	---	---
	04/15/97	---	---	ND	ND	ND	---	---
	10/23/97	---	---	ND	ND	ND	---	---
	04/28/98	---	---	ND	ND	ND	ND	---
	10/28/98	---	50.0	ND	ND	---	---	---
	04/07/99	---	50.0	ND	ND	ND	ND	---
	12/08/99	---	50.0	50.0	---	ND	ND	---
	04/27/00	---	50.0	ND	ND	ND	ND	---
	10/18/00	---	50.0	ND	---	ND	---	---
	04/18/01	---	50.0	ND	ND	ND	ND	---
	10/24/01	---	50.0	ND	ND	ND	ND	---
	04/23/02	---	50.0	ND	ND	ND	ND	---
	10/23/02	---	50.0	ND	ND	ND	ND	---
	04/01/03	---	50.0	ND	ND	ND	ND	---
	10/27/03	---	50.0	ND	ND	ND	---	---
	04/27/04	---	50.0	ND	ND	ND	ND	---
	10/26/04	---	50.0	ND	ND	ND	ND	---
	03/15/05	---	50.0	ND	ND	ND	ND	ND
	07/12/05	---	50.0	ND	ND	ND	ND	ND
	01/19/06	---	50.0	ND	ND	ND	ND	ND
	07/12/06	---	50.0	ND	ND	ND	ND	ND
	01/17/07	---	50.0	ND	3.80 J	2.80 J	3.00 J	ND
	01/15/08	---	50.0	ND	2.40 J	---	ND	ND
	07/14/08	---	50.0	ND	---	ND	---	ND
	01/19/09	---	50.0	ND	---	2.10 B	4.00 B	2.20 J
	07/20/09	---	50.0	---	---	1.72 J	11.40 J	ND
	01/26/10	---	50.0	ND	2.83 J	ND	2.43 J	ND
	01/04/11	---	50.0	ND	---	ND	3.41 J	ND
	07/05/11	---	50.0	2.76 J	---	---	---	ND
	01/10/12	---	50.0	2.09 J	3.92 J	1.67 J	7.58 J	ND
	07/09/12	---	50.0	---	---	1.10 J	---	ND
	01/28/13	---	50.0	2.08 J	5.04 J	1.90 J	4.94 J	ND
	07/17/13	---	50.0	3.23 J	---	3.40 J	---	ND
	01/28/14	---	50.0	2.25 J	---	3.88 J	---	ND
	07/24/14	0.22	50.0	2.27 J	---	3.28 J	---	ND
	01/28/15	0.22	50.0	1.28 J	---	2.09 J	---	ND

TABLE 8
Historical Surface Water Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	SW-1	SW-2	SW-3	SW-4	Blanks
Total Selenium	07/12/05	---	20.00	ND	ND	ND	ND	ND
NC 2B = 5 µg/L	01/19/06	---	20.0	ND	ND	ND	ND	ND
	07/12/06	---	20.0	ND	ND	ND	ND	ND
	01/17/07	---	10.0	ND	ND	3.40 J	ND	ND
	01/15/08	---	10.0	ND	ND	---	ND	ND
	07/14/08	---	10.0	ND	---	ND	---	ND
	01/19/09	---	10.0	ND	---	ND	ND	ND
	07/20/09	---	10.0	---	---	ND	6.2 B	3.58 J
	01/26/10	---	10.0	ND	1.74 J	0.937 J	ND	ND
	01/04/11	---	10.0	ND	---	ND	ND	ND
	07/05/11	---	10.0	ND	---	---	---	ND
	01/10/12	---	10.0	ND	ND	ND	ND	ND
	07/09/12	---	10.0	---	---	ND	---	ND
	01/28/13	---	10.0	ND	0.99 J	ND	ND	ND
	07/17/13	---	10.0	ND	---	ND	---	ND
	01/28/14	---	10.0	ND	---	ND	---	ND
	07/24/14	1.01	10.0	ND	---	ND	---	ND
	01/28/15	1.01	10.0	ND	---	ND	---	ND
Total Silver	09/16/93	---	---	ND	ND	ND	---	---
NC 2B = 0.06 µg/L	09/20/93	---	---	ND	ND	ND	---	---
	09/22/93	---	---	ND	10.00	ND	---	---
	09/24/93	---	---	ND	ND	ND	---	---
	10/04/93	---	---	ND	ND	ND	---	---
	01/20/94	---	---	ND	ND	ND	ND	---
	07/28/94	---	---	ND	---	ND	ND	---
	01/26/95	---	---	ND	ND	ND	ND	---
	07/26/95	---	---	ND	ND	ND	---	---
	01/23/96	---	---	ND	ND	ND	---	---
	10/10/96	---	---	ND	ND	ND	---	---
	03/15/05	---	10.0	ND	ND	ND	ND	ND
	07/12/05	---	10.0	ND	ND	ND	ND	ND
	01/19/06	---	10.0	ND	ND	ND	ND	ND
	07/12/06	---	10.0	ND	ND	ND	ND	ND
	01/17/07	---	10.0	ND	ND	ND	ND	ND
	01/15/08	---	10.0	ND	ND	---	ND	ND
	07/14/08	---	10.0	ND	---	ND	---	ND
	01/19/09	---	10.0	2.40 J	---	ND	ND	ND
	07/20/09	---	10.0	---	---	ND	ND	ND
	01/26/10	---	10.0	1.93 B	2.43 B	1.68 B	2.19 B	1.25 J
	01/04/11	---	10.0	ND	---	ND	ND	ND
	07/05/11	---	10.0	ND	---	---	---	ND
	01/10/12	---	10.0	ND	ND	ND	ND	ND
	07/09/12	---	10.0	---	---	ND	---	ND
	01/28/13	---	10.0	ND	ND	ND	ND	ND
	07/17/13	---	10.0	ND	---	ND	---	ND
	01/28/14	---	10.0	ND	---	ND	---	ND
	07/24/14	0.17	10.0	ND	---	ND	---	ND
	01/28/15	0.17	10.0	ND	---	ND	---	ND

TABLE 8
Historical Surface Water Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	SW-1		SW-2		SW-3		SW-4		Blanks	
Total Thallium	07/12/05	---	10.0	ND		ND		ND		ND		ND	
No NC 2B Standard	01/19/06	---	10.0	ND		ND		ND		ND		ND	
	07/12/06	---	10.0	ND		ND		ND		ND		ND	
	01/17/07	---	5.5	ND		ND		ND		ND		ND	
	01/15/08	---	5.5	0.04	J	0.06	J	---		ND		ND	
	07/14/08	---	5.5	ND		---		ND		---		ND	
	01/19/09	---	5.5	ND		---		ND		ND		ND	
	07/20/09	---	5.5	---		---		ND		0.05	J	ND	
	01/26/10	---	5.5	ND		ND		ND		ND		ND	
	01/04/11	---	5.5	ND		---		ND		ND		ND	
	07/05/11	---	5.5	ND		---		---		---		ND	
	01/10/12	---	5.5	ND		ND		ND		0.08	J	ND	
	07/09/12	---	5.5	---		---		ND		---		ND	
	01/28/13	---	5.5	ND		ND		ND		ND		ND	
	07/17/13	---	5.5	ND		---		ND		---		ND	
	01/28/14	---	5.5	ND		---		ND		---		ND	
	07/24/14	0.09	5.5	ND		---		ND		---		ND	
	01/28/15	0.09	5.5	ND		---		ND		---		ND	
Total Vanadium	09/16/93	---	---	ND		ND		40.0		---		---	
No NC 2B Standard	09/20/93	---	---	ND		ND		70.0		---		---	
	09/22/93	---	---	30.0		ND		100		---		---	
	09/24/93	---	---	280		ND		200		---		---	
	10/04/93	---	---	ND		ND		ND		---		---	
	01/20/94	---	---	ND		ND		ND		ND		---	
	07/28/94	---	---	ND		---		ND		ND		---	
	01/26/95	---	---	ND		ND		ND		ND		---	
	07/26/95	---	---	ND		ND		ND		---		---	
	01/23/96	---	---	ND		ND		ND		---		---	
	10/10/96	---	---	ND		ND		ND		---		---	
	04/15/97	---	---	ND		ND		ND		---		---	
	10/23/97	---	---	ND		ND		ND		---		---	
	04/28/98	---	---	ND		ND		ND		ND		---	
	10/28/98	---	40.0	ND		ND		---		---		---	
	04/07/99	---	40.0	ND		ND		ND		ND		---	
	12/08/99	---	40.0	ND		---		ND		ND		---	
	04/27/00	---	40.0	ND		ND		ND		ND		---	
	10/18/00	---	40.0	ND		---		ND		---		---	
	04/18/01	---	40.0	ND		ND		ND		ND		---	
	10/24/01	---	40.0	ND		ND		ND		ND		---	
	04/23/02	---	40.0	ND		ND		ND		ND		---	
	10/23/02	---	40.0	ND		ND		ND		ND		---	
	04/01/03	---	40.0	ND		ND		ND		ND		---	
	10/27/03	---	40.0	ND		60.0		ND		---		---	
	04/27/04	---	40.0	ND		60.0		ND		ND		---	
	10/26/04	---	40.0	ND		ND		ND		ND		---	
	03/15/05	---	40.0	ND		ND		ND		ND		ND	
	07/12/05	---	40.0	ND		ND		ND		ND		ND	
	01/19/06	---	40.0	ND		ND		ND		ND		ND	
	07/12/06	---	40.0	ND		ND		ND		ND		ND	
	01/17/07	---	25.0	2.20	J	2.80	J	2.30	J	2.20	J	ND	
	01/15/08	---	25.0	4.10	J	ND		---		1.00	B	1.00	J
	07/14/08	---	25.0	6.30	J	---		ND		---		ND	
	01/19/09	---	25.0	2.30	J	---		ND		5.70	J	ND	
	07/20/09	---	25.0	---		---		2.11	B	69.00		0.80	J
	01/26/10	---	25.0	1.01	J	23.80	J	4.21	J	23.80	J	ND	
	01/04/11	---	25.0	1.51	J	---		2.02	J	10.00	J	ND	
	07/05/11	---	25.0	17.20	J	---		---		---		ND	
	01/10/12	---	25.0	7.62	J	3.93	J	ND		13.20	J	ND	
	07/09/12	---	25.0	---		---		ND		---		ND	
	01/28/13	---	25.0	3.62	B	9.56	B	3.68	B	10.60	B	2.7	J
	07/17/13	---	25.0	5.65	J	---		8.30	J	---		ND	
	01/28/14	---	25.0	2.37	J	---		3.11	J	---		ND	
	07/24/14	0.93	25.0	4.77	B	---		7.41	J	---		1.41	J
	01/28/15	0.93	25.0	1.03	J	---		1.97	J	---		ND	

TABLE 8
Historical Surface Water Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	SW-1		SW-2		SW-3		SW-4		Blanks	
Total Zinc	09/16/93	---	---	30.0		20.0		60.0		---		---	
NC 2B = 50 µg/L	09/20/93	---	---	130		40.0		120		---		---	
	09/22/93	---	---	100		60.0		340		---		---	
	09/24/93	---	---	240		70.0		420		---		---	
	10/04/93	---	---	1000		190		70		---		---	
	01/20/94	---	---	60.0		200		70		70.0		---	
	07/28/94	---	---	120		---		ND		30.0		---	
	01/26/95	---	---	ND		30		60		60.0		---	
	07/26/95	---	---	ND		ND		ND		---		---	
	01/23/96	---	---	ND		ND		ND		---		---	
	10/10/96	---	---	ND		ND		ND		---		---	
	04/15/97	---	---	80.0		60.0		60.0		---		---	
	10/23/97	---	---	100		60.0		30.0		---		---	
	04/28/98	---	---	50.0		ND		ND		ND		---	
	10/28/98	---	50.0	ND		ND		---		---		---	
	04/07/99	---	50.0	30.0		40.0		30.0		40.0		---	
	12/08/99	---	50.0	60.0		---		50.0		60.0		---	
	04/27/00	---	50.0	ND		70.0		60.0		ND		---	
	10/18/00	---	50.0	50.0		---		70.0		---		---	
	04/18/01	---	50.0	ND		ND		ND		ND		---	
	10/24/01	---	50.0	ND		ND		ND		ND		---	
	04/23/02	---	50.0	ND		50.0		ND		ND		---	
	10/23/02	---	50.0	ND		60.0		ND		ND		---	
	04/01/03	---	50.0	60.0		30.0		50		70.0		---	
	10/27/03	---	50.0	ND		130		70		---		---	
	04/27/04	---	50.0	ND		60.0		ND		ND		---	
	10/26/04	---	50.0	ND		ND		ND		ND		---	
	03/15/05	---	50.0	ND		ND		ND		ND		ND	
	07/12/05	---	50.0	100		ND		ND		ND		ND	
	01/19/06	---	50.0	ND		ND		79.0		ND		ND	
	07/12/06	---	50.0	ND		ND		ND		ND		ND	
	01/17/07	---	10.0	15.8	B	9.20	B	16.90	B	11.60	B	5.50	J
	01/15/08	---	10.0	8.7	J	13.60		---		5.70	B	1.30	J
	07/14/08	---	10.0	17.3	B	---		7.80	B	---		5.00	J
	01/19/09	---	10.0	17.0		---		14.00		33.20		ND	
	07/20/09	---	10.0	---		---		6.05	J	55.60		ND	
	01/26/10	---	10.0	8.1	J	17.40		9.78	J	35.20		ND	
	01/04/11	---	10.0	5.8	J	---		8.05	J	64.00		ND	
	07/05/11	---	10.0	10.5		---		---		---		ND	
	01/10/12	---	10.0	10.2	B	57.30	B	5.39	B	132.00		15.90	
	07/09/12	---	10.0	---		---		1.37	J	---		0.30	J
	01/28/13	---	10.0	10.9		5.11	B	4.93	B	86.50		0.57	J
	07/17/13	---	10.0	17.8		---		11.80		---		ND	
	01/28/14	---	10.0	15.7		---		4.51	J	---		ND	
	07/24/14	0.64	10.0	6.84	J	---		10.2		---		0.71	J
	01/28/15	0.64	10.0	6.30	B	---		6.99	J	---		1.38	J

TABLE 8
Historical Surface Water Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	SW-1	SW-2	SW-3	SW-4	Blanks
Organic Compounds								
Acetone	07/12/05	---	100	ND	ND	ND	ND	ND
No NC 2B Standard	01/19/06	---	100	ND	ND	ND	ND	ND
	07/12/06	---	100	ND	ND	ND	ND	ND
	01/17/07	---	100	ND	ND	ND	ND	ND
	01/15/08	---	100	ND	ND	---	ND	ND
	07/14/08	---	100	ND	---	8.90 J	---	ND
	01/19/09	---	100	ND	---	ND	ND	ND
	07/20/09	---	100	---	---	5.70 J	ND	ND
	01/26/10	---	100	ND	ND	ND	ND	ND
	01/04/11	---	100	ND	---	ND	ND	ND
	07/05/11	---	100	7.40 J	---	---	---	ND
	01/10/12	---	100	ND	ND	ND	ND	ND
	07/09/12	---	100	---	---	ND	---	ND
	01/28/13	---	100	ND	ND	ND	ND	ND
	07/17/13	---	100	ND	---	ND	---	ND
	01/28/14	---	100	ND	---	ND	---	5.80 J
	07/24/14	5.7	100	ND	---	5.8 J	---	ND
	01/28/15	5.7	100	ND	---	ND	---	ND
Benzene	01/28/15	0.2	1.0	0.2 J	---	ND	---	---
NC 2B = 51 µg/L								
4-Methyl-2-pentanone (MIBK)	09/24/93	---	---	150.00	ND	ND	---	---
NC 2B = 26 µg/L	03/15/05	---	100	ND	ND	ND	ND	---
	07/12/05	---	100	ND	ND	ND	ND	ND
	01/19/06	---	10	ND	ND	ND	ND	ND
	07/12/06	---	100	ND	ND	ND	ND	ND
	01/17/07	---	100	ND	ND	ND	ND	ND
	01/15/08	---	100	ND	ND	---	ND	ND
	07/14/08	---	100	ND	---	ND	---	ND
	01/19/09	---	100	ND	---	ND	ND	ND
	07/20/09	---	100	---	---	ND	ND	ND
	01/26/10	---	100	ND	ND	ND	ND	ND
	01/04/11	---	100	ND	---	ND	ND	ND
	07/05/11	---	100	ND	---	---	---	ND
	01/10/12	---	100	ND	ND	ND	ND	ND
	07/09/12	---	100	---	---	ND	---	ND
	01/28/13	---	100	ND	ND	ND	ND	ND
	07/17/13	---	100	ND	---	ND	---	ND
	01/28/14	---	100	ND	---	ND	---	ND
	07/24/14	1.4	100	ND	---	6.0 J	---	ND
	01/28/15	1.4	100	ND	---	ND	---	ND

TABLE 8
Historical Surface Water Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	SW-1	SW-2	SW-3	SW-4	Blanks
Toluene	10/23/97	---	---	ND	ND	20.0	---	---
NC 2B = 11 µg/L	10/28/98	---	5.0	ND	ND	---	---	---
	04/07/99	---	5.0	ND	ND	ND	ND	---
	12/08/99	---	5.0	ND	---	ND	ND	---
	04/27/00	---	5.0	ND	ND	ND	ND	---
	10/18/00	---	5.0	ND	---	ND	---	---
	04/18/01	---	5.0	ND	ND	ND	ND	---
	10/24/01	---	5.0	ND	ND	ND	ND	---
	04/23/02	---	5.0	ND	ND	ND	ND	---
	10/23/02	---	5.0	ND	ND	ND	ND	---
	04/01/03	---	5.0	ND	ND	ND	ND	---
	10/27/03	---	5.0	ND	ND	ND	---	---
	04/27/04	---	5.0	ND	ND	ND	ND	---
	10/26/04	---	5.0	ND	ND	ND	ND	---
	3/15/2005	---	5.0	ND	ND	ND	ND	ND
	07/12/05	---	5.0	ND	ND	ND	ND	ND
	01/19/06	---	5.0	ND	ND	ND	ND	ND
	07/12/06	---	5.0	ND	ND	ND	ND	ND
	01/17/07	---	5.0	ND	ND	ND	ND	ND
	01/15/08	---	1.0	ND	ND	---	ND	ND
	07/14/08	---	1.0	ND	---	ND	---	ND
	01/19/09	---	1.0	ND	---	ND	ND	ND
	07/20/09	---	1.0	---	---	ND	ND	0.44 J
	01/26/10	---	1.0	ND	ND	ND	ND	ND
	01/04/11	---	1.0	ND	---	ND	ND	ND
	07/05/11	---	1.0	ND	---	---	---	ND
	01/10/12	---	1.0	ND	ND	0.50 J	ND	ND
	07/09/12	---	1.0	---	---	ND	---	ND
	01/28/13	---	1.0	ND	ND	ND	ND	ND
	07/17/13	---	1.0	ND	---	0.40 J	---	ND
	01/28/14	---	1.0	ND	---	ND	---	ND
	07/24/14	0.2	1.0	ND	---	ND	---	ND
	01/28/15	0.2	1.0	ND	---	ND	---	ND
Xylenes, total	10/23/97	---	---	ND	ND	10.00	---	---
NC 2B = 670 µg/L	10/28/98	---	5.0	ND	ND	---	---	---
	04/07/99	---	5.0	ND	ND	ND	ND	---
	12/08/99	---	5.0	ND	---	ND	ND	---
	04/27/00	---	5.0	ND	ND	ND	ND	---
	10/18/00	---	5.0	ND	---	ND	---	---
	04/18/01	---	5.0	ND	ND	ND	ND	---
	10/24/01	---	5.0	ND	ND	ND	ND	---
	04/23/02	---	5.0	ND	ND	ND	ND	---
	10/23/02	---	5.0	ND	ND	ND	ND	---
	04/01/03	---	5.0	ND	ND	ND	ND	---
	10/27/03	---	5.0	ND	ND	ND	---	---
	04/27/04	---	5.0	ND	ND	ND	ND	---
	10/26/04	---	5.0	ND	ND	ND	ND	---
	03/15/05	---	5.0	ND	ND	ND	ND	ND
	07/12/05	---	5.0	ND	ND	ND	ND	ND
	01/19/06	---	5.0	ND	ND	ND	ND	ND
	07/12/06	---	5.0	ND	ND	ND	ND	ND
	01/17/07	---	5.0	ND	ND	ND	ND	ND
	07/14/08	---	5.0	ND	---	ND	---	ND
	01/19/09	---	5.0	ND	---	ND	ND	ND
	07/20/09	---	5.0	---	---	ND	ND	ND
	01/26/10	---	5.0	ND	ND	ND	ND	ND
	01/04/11	---	5.0	ND	---	ND	ND	ND
	01/10/12	---	5.0	ND	ND	ND	ND	ND
	07/09/12	---	5.0	---	---	ND	---	ND
	01/28/13	---	5.0	ND	ND	ND	ND	ND
	07/17/13	---	5.0	ND	---	ND	---	ND
	01/28/14	---	5.0	ND	---	ND	---	ND
	07/24/14	0.5	5.0	ND	---	ND	---	ND
	01/28/15	0.5	5.0	ND	---	ND	---	ND

TABLE 8
Historical Surface Water Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	SW-1	SW-2	SW-3	SW-4	Blanks
Field Parameters								
pH	10/28/98	---	---	7.05	5.47	---	---	---
(S.U.)	04/07/99	---	---	5.26	7.18	6.22	6.74	---
	12/08/99	---	---	5.04	---	5.56	5.24	---
	04/27/00	---	---	5.15	6.47	6.02	5.80	---
	10/18/00	---	---	8.28	---	6.07	---	---
	04/18/01	---	---	5.67	7.75	5.96	6.29	---
	10/24/01	---	---	6.64	6.27	6.39	6.02	---
	04/23/02	---	---	5.70	6.07	8.16	7.71	---
	10/23/02	---	---	4.03	6.31	4.78	5.19	---
	04/01/03	---	---	4.67	8.23	5.80	5.73	---
	10/27/03	---	---	4.57	5.20	5.55	---	---
	04/27/04	---	---	4.88	6.12	5.77	6.62	---
	10/26/04	---	---	5.82	6.04	5.62	5.57	---
	03/15/05	---	---	4.51	5.96	5.63	5.67	---
	07/13/05	---	---	5.55	6.18	5.83	5.38	---
	01/19/06	---	---	3.54	7.25	5.49	4.51	---
	07/12/06	---	---	7.10	6.07	5.88	5.65	---
	01/17/07	---	---	4.57	4.20	5.36	5.26	---
	01/15/08	---	---	5.63	5.42	---	5.56	---
	07/14/08	---	---	6.17	---	6.05	---	---
	01/19/09	---	---	5.46	---	4.38	4.42	---
	07/20/09	---	---	---	---	5.92	5.31	---
	01/26/10	---	---	3.67	6.56	6.49	7.01	---
	01/04/11	---	---	4.24	---	5.51	4.30	---
	07/05/11	---	---	7.26	---	---	---	---
	01/10/12	---	---	7.30	6.96	7.30	6.72	---
	07/09/12	---	---	---	---	6.74	---	---
	01/28/13	---	---	5.82	8.63	8.98	7.81	---
	07/17/13	---	---	4.71	---	5.68	---	---
	01/28/14	---	---	9.39	---	5.14	---	---
	07/24/14	---	---	5.26	---	6.00	---	---
	01/28/15	FIELD	FIELD	5.76	---	7.24	---	---
Conductivity	10/28/98	---	---	50.0	109.0	---	---	---
(µS/cm)	04/07/99	---	---	31.9	88.3	67.0	55.3	---
	12/08/99	---	---	29.0	---	32.0	24.0	---
	04/27/00	---	---	26.0	143.0	48.0	31.0	---
	10/18/00	---	---	72.0	---	136.0	---	---
	04/18/01	---	---	21.0	75.0	48.0	28.0	---
	10/24/01	---	---	41.0	99.0	72.0	51.0	---
	04/23/02	---	---	64.0	79.0	80.0	43.0	---
	10/23/02	---	---	39.0	87.0	50.0	26.0	---
	04/01/03	---	---	35.0	121.0	42.0	45.0	---
	10/27/03	---	---	31.0	48.0	50.0	---	---
	04/27/04	---	---	58.0	399.0	74.0	72.0	---
	10/26/04	---	---	62.0	190.0	88.0	40.0	---
	03/15/05	---	---	32.0	46.0	51.0	38.0	---
	07/13/05	---	---	64.0	155.0	141.0	76.0	---
	01/19/06	---	---	31.0	50.0	52.0	43.0	---
	07/12/06	---	---	50.0	200.0	97.0	101.0	---
	01/17/07	---	---	14.0	103.0	81.0	51.0	---
	01/15/08	---	---	108.0	353.0	---	65.0	---
	01/19/09	---	---	49.0	---	121.0	72.0	---
	07/20/09	---	---	---	---	149.0	85.0	---
	01/26/10	---	---	40.0	427.0	87.0	45.0	---
	01/04/11	---	---	34.0	---	126.0	87.0	---
	07/05/11	---	---	140.0	---	---	---	---
	01/10/12	---	---	80.7	510.0	153.0	97.8	---
	07/09/12	---	---	---	---	245.3	---	---
	01/28/13	---	---	136.3	567.4	191.5	85.8	---
	07/17/13	---	---	57.6	---	97.4	---	---
	01/28/14	---	---	98.4	---	154.2	---	---
	07/24/14	---	---	37.8	---	20.1	---	---
	01/28/15	FIELD	FIELD	220.0	---	73.5	---	---

TABLE 8
Historical Surface Water Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	SW-1	SW-2	SW-3	SW-4	Blanks
Temperature	10/28/98	---	---	13.00	20.30	---	---	---
(°C)	04/07/99	---	---	18.10	25.10	29.30	23.90	---
	12/08/99	---	---	8.50	---	11.50	10.60	---
	04/27/00	---	---	13.10	14.00	13.60	12.60	---
	10/18/00	---	---	18.10	---	20.10	---	---
	04/18/01	---	---	9.20	7.30	8.00	9.10	---
	10/24/01	---	---	19.30	23.80	25.90	24.90	---
	04/23/02	---	---	18.70	16.30	26.20	25.40	---
	10/23/02	---	---	13.50	12.20	12.00	12.00	---
	04/01/03	---	---	15.40	21.60	26.00	24.20	---
	10/27/03	---	---	18.60	20.10	20.80	---	---
	04/27/04	---	---	16.70	21.90	20.60	22.90	---
	10/26/04	---	---	15.60	17.40	18.10	17.60	---
	03/15/05	---	---	12.09	14.65	15.57	10.80	---
	07/13/05	---	---	25.58	25.31	26.40	24.82	---
	01/19/06	---	---	8.41	6.76	9.79	9.97	---
	07/12/06	---	---	24.50	29.70	27.40	25.50	---
	01/17/07	---	---	11.70	11.80	11.70	11.70	---
	07/17/08	---	---	23.97	---	27.12	---	---
	01/19/09	---	---	5.40	---	2.95	3.76	---
	07/20/09	---	---	---	---	24.00	21.65	---
	01/26/10	---	---	8.51	8.97	11.07	8.78	---
	01/04/11	---	---	4.82	---	6.06	6.16	---
	07/05/11	---	---	24.60	---	---	---	---
	01/10/12	---	---	8.90	9.20	8.00	8.70	---
	07/09/12	---	---	---	---	29.10	---	---
	01/28/13	---	---	5.40	5.00	2.00	4.70	---
	07/17/13	---	---	24.70	---	27.70	---	---
	01/28/14	---	---	2.80	---	5.00	---	---
	07/24/14	---	---	23.20	---	26.10	---	---
	01/28/15	FIELD	FIELD	4.30	---	4.40	---	---
Turbidity	10/28/98	---	---	93.0	99.0	---	---	---
(NTU)	04/07/99	---	---	4.4	16.0	58.0	20.0	---
	12/08/99	---	---	13.0	---	50.0	143.0	---
	04/27/00	---	---	25.0	202.0	148.0	80.0	---
	10/18/00	---	---	20.0	---	58.0	---	---
	04/18/01	---	---	16.1	183.0	23.0	192.0	---
	10/24/01	---	---	38.0	44.0	78.0	94.0	---
	04/23/02	---	---	20.0	38.0	34.0	9.3	---
	10/23/02	---	---	23.0	292.0	75.0	179.0	---
	04/01/03	---	---	3.0	75.0	16.0	153.0	---
	10/27/03	---	---	37.0	780.0	2.3	---	---
	04/27/04	---	---	18.0	750.0	16.0	11.0	---
	10/26/04	---	---	73.0	74.0	37.0	79.0	---
	03/15/05	---	---	24.8	64.3	41.7	274.0	---
	07/13/05	---	---	141.0	401.0	150.0	546.0	---
	01/19/06	---	---	62.5	33.2	0.0	242.0	---
	07/12/06	---	---	16.1	116.0	17.8	71.3	---
	01/17/07	---	---	1.5	32.8	28.0	121.0	---
	01/15/08	---	---	177.0	182.0	---	205.0	---
	07/17/08	---	---	264.0	---	13.3	---	---
	01/19/09	---	---	2.9	---	24.7	111.0	---
	07/20/09	---	---	---	---	25.4	465.0	---
	01/26/10	---	---	7.1	297.0	65.1	308.0	---
	01/04/11	---	---	1.5	---	12.9	40.4	---
	07/05/11	---	---	185.0	---	---	---	---
	01/10/12	---	---	13.2	28.7	10.2	53.3	---
	07/09/12	---	---	---	---	8.1	---	---
	01/28/13	---	---	27.9	32.4	21.2	116.0	---
	07/17/13	---	---	42.6	---	47.6	---	---
	01/28/14	---	---	12.8	---	48.1	---	---
	07/24/14	---	---	137.0	---	142.0	---	---
	01/28/15	FIELD	FIELD	16.8	---	5.2	---	---

TABLE 8
Historical Surface Water Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	SW-1	SW-2	SW-3	SW-4	Blanks
Oxidation Reduction Potential (mV)	03/15/05	---	---	345.0	139.0	160.0	152.0	---
	07/13/05	---	---	148.0	22.0	73.0	32.0	---
	01/19/06	---	---	338.0	107.0	122.0	186.0	---
	07/12/06	---	---	196.0	203.0	193.0	196.0	---
	01/15/08	---	---	186.0	163.0	---	218.0	---
	07/17/08	---	---	160.0	---	79.0	---	---
	01/19/09	---	---	360.3	---	196.3	131.0	---
	07/20/09	---	---	---	---	129.9	234.3	---
	01/26/10	---	---	322.8	203.4	203.6	205.7	---
	01/04/11	---	---	211.1	---	288.5	281.2	---
	07/05/11	---	---	63.8	---	---	---	---
	01/10/12	---	---	---	---	---	---	---
	07/09/12	---	---	---	---	108.5	---	---
	01/28/13	---	---	141.8	46.2	59.6	136.8	---
	07/17/13	---	---	323.9	---	69.5	---	---
	01/28/14	---	---	16.2	---	167.3	---	---
	07/24/14	---	---	122.8	---	38.7	---	---
	01/28/15	FIELD	FIELD	119.6	---	106.9	---	---
Dissolved Oxygen (mg/L)	03/15/05	---	---	6.9	6.9	6.1	7.4	---
	07/13/05	---	---	5.0	7.5	8.1	5.8	---
	01/19/06	---	---	5.1	5.9	5.2	6.3	---
	01/17/07	---	---	5.4	5.4	4.7	6.2	---
	01/15/08	---	---	11.3	6.0	---	13.5	---
	07/17/08	---	---	8.0	---	5.8	---	---
	01/19/09	---	---	10.0	---	13.1	12.7	---
	07/20/09	---	---	---	---	6.4	7.1	---
	01/26/10	---	---	8.74	10.77	9.52	10.49	---
	01/04/11	---	---	8.08	---	10.95	10.59	---
	07/05/11	---	---	3.16	---	---	---	---
	01/10/12	---	---	---	---	---	---	---
	07/09/12	---	---	---	---	6.7	---	---
	01/28/13	---	---	7.4	10.2	11.9	9.5	---
	07/17/13	---	---	3.2	---	69.5	---	---
	01/28/14	---	---	6.4	---	8.0	---	---
	07/24/14	---	---	2.7	---	0.3	---	---
	01/28/15	FIELD	FIELD	12.4	---	8.8	---	---

Notes:
DL = Method Detection Limit.
RL = Reporting Limit = PQL prior to 2007 and SWSL starting January 2007.
PQL = Practical Quantitation Limit.
SWSL = NC-DENR Solid Waste Section Limit.
NC 2B = Surface Water Standard established in 15A NCAC 2B (NC Freshwater Aquatic Life Standards)
ND = Not detected above the DL.
J = Estimated concentration below the RL.
B = Blank qualified data.
dry = Insufficient water flow for sampling.
--- = No data.
All inorganic and organic compunds are reported in µg/L
µg/L = micrograms per liter
S.U. = Standard Units.
NTU = Nephelometric Turbidity Units.
µS/cm= microsiemens per centimeter.
mV = Millivolts.
Bold = Concentrations above the NC 2B Standards.
Blanks = field, trip and/or method blanks.
All data prior to 2012 taken from previous reports by Golder Associates NC, Inc.

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks	
Inorganic Compounds							
Total Antimony	13-Jul-05	---	30	ND		ND	
	20-Jan-06	---	30	ND		ND	
	12-Jul-06	---	30	ND		ND	
	18-Jan-07	0.58	6.00	5.08		ND	
	10-Jul-07	0.68	6.00	3.07	J	ND	
	15-Jan-08	0.68	6.00	9.02		ND	
	15-Jul-08	0.68	6.00	4.20	J	ND	
	20-Jan-09	0.68	6.00	4.21	J	ND	
	21-Jul-09	0.680	6.00	4.05	J	ND	
	26-Jan-10	0.0730	6.00	5.00	J	ND	
	07-Jul-10	2.20	6.00	12.4	J	ND	
	05-Jan-11	2.20	6.00	20.0		ND	
	06-Jul-11	2.20	6.00	14.1	J	ND	
	10-Jan-12	---	6.00	16.0		ND	
	09-Jul-12	---	6.00	12.0		ND	
	29-Jan-13	---	6.00	31.1		ND	
	17-Jul-13	---	6.00	29.7	B	0.39	J
	29-Jan-14	0.22	6.00	26.2		ND	
	24-Jul-14	1.05	6.00	30.3		ND	
	28-Jan-15	5.26	6.00	24.6		---	
Total Arsenic	07-Apr-99	---	10.0	ND		---	
	08-Dec-99	---	10.0	10.0		---	
	27-Apr-00	---	10.0	10.0		---	
	15-Mar-05	---	10.0	21.0		ND	
	13-Jul-05	---	10.0	34		ND	
	20-Jan-06	---	10.0	24.0		ND	
	12-Jul-06	---	10.0	18.4		ND	
	18-Jan-07	2	10.0	ND		ND	
	10-Jul-07	2	10.0	ND		ND	
	15-Jan-08	2	10.0	21.8		ND	
	15-Jul-08	2.8	10.0	26.2		ND	
	20-Jan-09	2.8	10.0	5.7	B	3.6	J
	21-Jul-09	2.80	10.0	43.4		ND	
	26-Jan-10	3.90	10.0	38.6		---	
	07-Jul-10	2.80	10.0	92.6		ND	
	05-Jan-11	2.80	10.0	72.7		ND	
	06-Jul-11	2.80	10.0	146		ND	
	10-Jan-12	---	10.0	107		ND	
	09-Jul-12	---	10.0	109		ND	
	29-Jan-13	---	10.0	192		ND	
	17-Jul-13	---	10.0	175		ND	
	29-Jan-14	0.78	10.0	126		ND	
	24-Jul-14	1.13	10.0	222		ND	
	28-Jan-15	5.66	10.0	132		---	

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks	
Total Barium	07-Apr-99	---	500	ND		---	
	08-Dec-99	---	500	ND		---	
	27-Apr-00	---	500	ND		---	
	15-Mar-05	---	500	630		ND	
	13-Jul-05	---	500	510		ND	
	20-Jan-06	---	500	883		ND	
	12-Jul-06	---	500	678		ND	
	18-Jan-07	0.2	100	624		ND	
	10-Jul-07	0.2	100	547		ND	
	15-Jan-08	0.2	100	645		0.3	J
	15-Jul-08	1	100	303		ND	
	20-Jan-09	1	100	347		ND	
	21-Jul-09	4.20	100	100		ND	
	26-Jan-10	0.250	100	273		ND	
	07-Jul-10	1.00	100	392		ND	
	05-Jan-11	1.00	100	426		ND	
	06-Jul-11	1.00	100	496		ND	
	10-Jan-12	---	100	374		0.24	J
	09-Jul-12	---	100	449		0.75	J
	29-Jan-13	---	100	394		ND	
	17-Jul-13	---	100	391		ND	
	29-Jan-14	0.25	100	309		ND	
	24-Jul-14	0.10	100	571		0.32	J
	28-Jan-15	0.48	100	328		---	
Total Beryllium	10-Jan-12	---	1.00	0.10	J	ND	
	09-Jul-12	---	1.00	0.60	J	ND	
	29-Jan-13	---	1.00	ND		ND	
	17-Jul-13	---	1.00	ND		ND	
	29-Jan-14	0.11	1.00	ND		ND	
	24-Jul-14	0.05	1.00	0.20	J	ND	
	28-Jan-15	0.24	1.00	ND		---	

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks	
Total Cadmium	13-Jul-05	---	1.00	ND		ND	
	20-Jan-06	---	1.00	ND		ND	
	12-Jul-06	---	1.00	ND		ND	
	18-Jan-07	0.5	1.00	ND		ND	
	10-Jul-07	0.5	1.00	ND		ND	
	15-Jan-08	0.5	1.00	ND		ND	
	15-Jul-08	0.36	1.00	ND		ND	
	20-Jan-09	0.36	1.00	ND		ND	
	21-Jul-09	0.0870	1.00	0.126	J	ND	
	26-Jan-10	0.130	1.00	0.347	B	0.226	J
	07-Jul-10	0.360	1.00	ND		ND	
	05-Jan-11	0.360	1.00	ND		ND	
	06-Jul-11	0.360	1.00	ND		ND	
	10-Jan-12	---	1.00	ND		ND	
	09-Jul-12	---	1.00	0.34	J	ND	
	29-Jan-13	---	1.00	0.17	J	ND	
	17-Jul-13	---	1.00	ND		ND	
	29-Jan-14	0.060	1.00	0.15	J	ND	
	24-Jul-14	0.050	1.00	0.23	J	ND	
	28-Jan-15	0.23	1.00	0.25	J	---	
Total Chromium	13-Jul-05	---	10.0	ND		ND	
	20-Jan-06	---	10.0	ND		ND	
	12-Jul-06	---	10.0	ND		ND	
	18-Jan-07	2	10.0	ND		ND	
	10-Jul-07	2	10.0	ND		ND	
	15-Jan-08	2	10.0	ND		ND	
	15-Jul-08	1	10.0	ND		ND	
	20-Jan-09	1	10.0	ND		ND	
	21-Jul-09	0.710	10.0	57.7		ND	
	26-Jan-10	1.70	10.0	40.8		ND	
	07-Jul-10	1.00	10.0	70.5		ND	
	05-Jan-11	1.00	10.0	59.7		ND	
	06-Jul-11	1.00	10.0	108		ND	
	10-Jan-12	---	10.0	92.7		ND	
	09-Jul-12	---	10.0	168.0		ND	
	29-Jan-13	---	10.0	121.0		1.38	J
	17-Jul-13	---	50.0	132		ND	
	29-Jan-14	0.58	10.0	70		ND	
	24-Jul-14	0.73	10.0	103		ND	
	28-Jan-15	3.64	10.0	97.8		---	

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks	
Total Cobalt	07-Apr-99	---	10.0	10.0		---	
	08-Dec-99	---	10.0	60.0		---	
	27-Apr-00	---	10.0	10.0		---	
	15-Mar-05	---	10.0	43.0		ND	
	13-Jul-05	---	10.0	40		ND	
	20-Jan-06	---	10.0	60.0		ND	
	12-Jul-06	---	10.0	63.5		ND	
	18-Jan-07	2	10.0	16.1		ND	
	10-Jul-07	2	10.0	18.3		ND	
	15-Jan-08	2	10.0	23.0		ND	
	15-Jul-08	1.1	10.0	17.1		ND	
	20-Jan-09	1.1	10.0	13.3		1.1	J
	21-Jul-09	0.580	10.0	19.9		ND	
	26-Jan-10	0.410	10.0	14.8		0.468	J
	07-Jul-10	1.10	10.0	20.2		ND	
	05-Jan-11	1.10	10.0	19.8		ND	
	06-Jul-11	1.10	10.0	24.7		ND	
	10-Jan-12	---	10.0	23.0		ND	
	09-Jul-12	---	10.0	24.6		ND	
	29-Jan-13	---	10.0	21.0		ND	
	17-Jul-13	---	20.0	26.5		ND	
	29-Jan-14	---	10.0	26.2		ND	
	24-Jul-14	---	10.0	15.0		ND	
	28-Jan-15	1.29	10.0	15.5		---	
Total Copper	13-Jul-05	---	200	ND		ND	
	20-Jan-06	---	200	ND		ND	
	12-Jul-06	---	200	ND		ND	
	18-Jan-07	0.6	10.0	ND		ND	
	10-Jul-07	0.6	10.0	ND		ND	
	15-Jan-08	0.6	10.0	ND		ND	
	15-Jul-08	1.6	10.0	8.20	J	ND	
	20-Jan-09	1.6	10.0	ND		ND	
	21-Jul-09	0.810	10.0	ND		1.25	J
	26-Jan-10	1.90	10.0	ND		ND	
	07-Jul-10	1.60	10.0	ND		ND	
	05-Jan-11	1.60	10.0	2.57	J	ND	
	06-Jul-11	1.60	10.0	ND		ND	
	10-Jan-12	---	10.0	11.6		0.66	J
	09-Jul-12	---	10.0	53.7		ND	
	29-Jan-13	---	10.0	17.3		0.26	J
	17-Jul-13	---	10.0	16.4		ND	
	29-Jan-14	0.38	10.0	12.6		ND	
	24-Jul-14	0.22	10.0	18.0		ND	
	28-Jan-15	1.10	10.0	64.6		---	

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks	
Total Lead	13-Jul-05	---	10.0	ND		ND	
	20-Jan-06	---	10.0	ND		ND	
	15-Mar-06	---	10.0	ND		ND	
	12-Jul-06	---	10.0	13.0		ND	
	26-Oct-06	---	10.0	---		---	
	18-Jan-07	2	10.0	ND		ND	
	10-Jul-07	2	10.0	ND		ND	
	15-Jan-08	2	10.0	ND		ND	
	15-Jul-08	1.9	10.0	2.3	J	ND	
	20-Jan-09	1.9	10.0	ND		2.0	J
	21-Jul-09	1.60	10.0	5.28	B	2.16	J
	26-Jan-10	1.10	10.0	5.68	B	1.84	J
	07-Jul-10	1.90	10.0	3.84	J	ND	
	05-Jan-11	1.90	10.0	ND		ND	
	06-Jul-11	1.90	10.0	ND		ND	
	10-Jan-12	---	10.0	2.75	B	0.94	J
	09-Jul-12	---	10.0	45.2		ND	
	29-Jan-13	---	10.0	3.38	J	ND	
	17-Jul-13	---	10.0	0.51	J	ND	
	29-Jan-14	0.050	10.0	3.66	J	ND	
	24-Jul-14	0.050	10.0	5.53	J	ND	
	28-Jan-15	0.24	10.0	4.15	J	---	
Total Mercury	29-Jan-14	0.064	0.20	0.119	J	ND	
	24-Jul-14	0.064	0.20	0.203		ND	
	28-Jan-15	0.064	0.200	0.084	J	---	

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks	
Total Nickel	07-Apr-99	---	50.0	ND		---	
	08-Dec-99	---	50.0	30.0		---	
	27-Apr-00	---	50.0	50.0		---	
	15-Mar-05	---	50.0	85.0		ND	
	13-Jul-05	---	50.0	86		ND	
	20-Jan-06	---	50.0	74.0		ND	
	12-Jul-06	---	50.0	ND		ND	
	18-Jan-07	2	50.0	72.2		ND	
	10-Jul-07	2	50.0	75.8		ND	
	15-Jan-08	2	50.0	91.6		ND	
	15-Jul-08	1.8	50.0	55.6		ND	
	20-Jan-09	1.8	50.0	41.1	J	ND	
	21-Jul-09	0.650	50.0	84.2		ND	
	26-Jan-10	1.60	50.0	61.1		ND	
	07-Jul-10	1.80	50.0	89.0		ND	
	05-Jan-11	1.80	50.0	86.3		ND	
	06-Jul-11	1.80	50.0	95.0		ND	
	10-Jan-12	---	50.0	92.0		ND	
	09-Jul-12	---	50.0	114.0		ND	
	29-Jan-13	---	50.0	95.0		ND	
	17-Jul-13	---	100	108		ND	
	29-Jan-14	0.41	50.0	59.0		ND	
	24-Jul-14	0.22	50.0	60.7		ND	
	28-Jan-15	1.08	50.0	81.0		---	
Total Selenium	13-Jul-05	---	20.0	ND		ND	
	20-Jan-06	---	20.0	ND		ND	
	12-Jul-06	---	20.0	ND		ND	
	18-Jan-07	2	10.0	ND		ND	
	10-Jul-07	2	10.0	ND		ND	
	15-Jan-08	2	10.0	3.2	J	ND	
	15-Jul-08	2.7	10.0	ND		ND	
	20-Jan-09	2.7	10.0	ND		ND	
	21-Jul-09	3.40	10.0	5.82	B	3.58	J
	26-Jan-10	4.40	10.0	ND		ND	
	07-Jul-10	2.70	10.0	ND		ND	
	05-Jan-11	2.70	10.0	ND		ND	
	06-Jul-11	2.70	10.0	ND		ND	
	10-Jan-12	---	10.0	ND		ND	
	09-Jul-12	---	10.0	4.32		ND	
	29-Jan-13	---	10.0	1.41	J	ND	
	17-Jul-13	---	10.0	2.74		ND	
	29-Jan-14	0.77	10.0	3.65	J	ND	
	24-Jul-14	1.01	10.0	ND		ND	
	28-Jan-15	5.06	10.0	ND		---	

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks	
Total Silver	13-Jul-05	---	10.0	ND		ND	
	20-Jan-06	---	10.0	ND		ND	
	12-Jul-06	---	10.0	ND		ND	
	18-Jan-07	2	10.0	ND		ND	
	10-Jul-07	2	10.0	ND		ND	
	15-Jan-08	2	10.0	ND		ND	
	15-Jul-08	1.9	10.0	ND		ND	
	20-Jan-09	1.9	10.0	ND		ND	
	21-Jul-09	0.960	10.0	1.69	J	ND	
	26-Jan-10	0.480	10.0	2.33	B	1.36	J
	07-Jul-10	1.90	10.0	ND		ND	
	05-Jan-11	---	10.0	ND		ND	
	05-Jan-11	1.90	10.0	ND		ND	
	06-Jul-11	1.90	10.0	ND		ND	
	10-Jan-12	---	10.0	0.20	J	ND	
	09-Jul-12	---	10.0	0.47		ND	
	29-Jan-13	---	10.0	0.29	J	ND	
	17-Jul-13	---	10.0	0.37	J	ND	
	29-Jan-14	0.24	10.0	ND		ND	
	24-Jul-14	0.17	10.0	0.29	J	ND	
	28-Jan-15	0.84	10.0	ND		---	
Total Thallium	13-Jul-05	---	10.0	ND		ND	
	20-Jan-06	---	10.0	16.0		ND	
	15-Mar-06	---	10.0	ND		ND	
	12-Jul-06	---	10.0	22.0		ND	
	26-Oct-06	---	10.0	---		---	
	18-Jan-07	0.044	5.5	0.046	J	ND	
	10-Jul-07	0.036	5.5	ND		ND	
	15-Jan-08	0.036	5.5	ND		ND	
	15-Jul-08	0.036	5.5	ND		ND	
	20-Jan-09	0.036	5.5	ND		ND	
	21-Jul-09	0.0360	5.5	ND		ND	
	26-Jan-10	0.110	5.5	ND		ND	
	07-Jul-10	1.10	5.5	ND		ND	
	05-Jan-11	---	5.5	ND		ND	
	05-Jan-11	1.10	5.5	ND		ND	
	06-Jul-11	1.10	5.5	6.28	J	ND	
	10-Jan-12	---	5.5	ND		ND	
	09-Jul-12	---	5.5	ND		ND	
	29-Jan-13	---	5.5	ND		ND	
	17-Jul-13	---	5.5	ND		ND	
	29-Jan-14	0.06	5.5	ND		ND	
	24-Jul-14	0.09	5.5	ND		ND	
	28-Jan-15	0.46	5.50	ND		---	

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks	
Total Vanadium	13-Jul-05	---	40.0	ND		ND	
	20-Jan-06	---	40.0	ND		ND	
	12-Jul-06	---	40.0	ND		ND	
	18-Jan-07	1	25.0	24.6		ND	
	10-Jul-07	1	25.0	39.7		ND	
	15-Jan-08	1	25.0	55.4		ND	
	15-Jul-08	1.4	25.0	23.7	J	ND	
	20-Jan-09	1.4	25.0	ND		ND	
	21-Jul-09	0.680	25.0	638		0.803	J
	26-Jan-10	0.400	25.0	102		ND	
	07-Jul-10	1.40	25.0	189		ND	
	05-Jan-11	1.40	25.0	110		ND	
	06-Jul-11	1.40	25.0	87.5		ND	
	10-Jan-12	---	25.0	127		ND	
	09-Jul-12	---	25.0	199		ND	
	29-Jan-13	---	125	130		2.68	J
	17-Jul-13	---	25.0	123		ND	
	29-Jan-14	1.97	25.0	79.8		ND	
	24-Jul-14	0.93	25.0	88.8		1.41	J
	28-Jan-15	4.67	25.0	79.6		1.10	J
Total Zinc	07-Apr-99	---	50.0	50		---	
	08-Dec-99	---	50.0	160		---	
	27-Apr-00	---	50.0	30		---	
	15-Mar-05	---	50.0	120		ND	
	13-Jul-05	---	50.0	100		ND	
	20-Jan-06	---	50.0	63.0		ND	
	12-Jul-06	---	50.0	99.6		ND	
	18-Jan-07	1	10.0	22.1		4.8	J
	10-Jul-07	1	10.0	37.5		ND	
	15-Jan-08	1	10.0	15.2		1.3	J
	15-Jul-08	3.8	10.0	80.9		5.0	J
	20-Jan-09	3.8	10.0	17.7		ND	
	21-Jul-09	3.40	10.0	21.0		ND	
	26-Jan-10	1.60	10.0	14.5		ND	
	07-Jul-10	3.80	10.0	64.2		ND	
	05-Jan-11	3.80	10.0	34.9		ND	
	06-Jul-11	3.80	10.0	41.6		ND	
	10-Jan-12	---	10.0	62.4	B	ND	
	09-Jul-12	---	10.0	183.0		0.3	J
	29-Jan-13	---	10.0	39.9		0.57	J
	17-Jul-13	---	10.0	14.2		ND	
	29-Jan-14	0.87	10.0	40.1		ND	
	24-Jul-14	0.64	10.0	314		0.71	J
	28-Jan-15	3.20	10.0	120		3.15	J

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks	
Organic Compounds							
Acetone	07-Apr-99	---	100	830		---	
	08-Dec-99	---	100	4,300		---	
	27-Apr-00	---	100	2,000		---	
	15-Mar-05	---	100	28,000		ND	
	13-Jul-05	---	100	2000		ND	
	20-Jan-06	---	11,000	11,200		ND	
	12-Jul-06	---	100	4,810		ND	
	18-Jan-07	0.9	100	13,000		ND	
	10-Jul-07	4.5	100	27	J	ND	
	15-Jan-08	45	100	6,700		ND	
	15-Jul-08	6.2	100	980		ND	
	20-Jan-09	75	100	4,900		ND	
	21-Jul-09	15	100	580		ND	
	26-Jan-10	30	100	3,300		ND	
	07-Jul-10	30	100	2,800		ND	
	05-Jan-11	75	100	3,600		ND	
	06-Jul-11	120	100	12,000		ND	
	10-Jan-12	---	10,000	16,000	D	ND	
	09-Jul-12	---	5,000	11,000		ND	
	29-Jan-13	---	10,000	21,000		ND	
	17-Jul-13	---	2,500	5,800		ND	
	29-Jan-14	6	100	10,000		5.8	J
	24-Jul-14	6	100	13,000		ND	
	28-Jan-15	570	2,000	5,000		---	
Acrylonitrile	29-Jan-14	1	200	1.1	J	ND	
	24-Jul-14	1	200	ND		ND	
	28-Jan-15	0.6	200	ND		---	

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks	
Benzene	07-Apr-99	---	5.0	ND		---	
	08-Dec-99	---	5.0	5.0		---	
	27-Apr-00	---	5.0	ND		---	
	15-Mar-05	---	500	ND		ND	
	13-Jul-05	---	5.0	ND		ND	
	20-Jan-06	---	550	ND		ND	
	12-Jul-06	---	5.0	ND		ND	
	18-Jan-07	0.12	3.0	ND		ND	
	10-Jul-07	0.6	1.0	2.0	J	ND	
	15-Jan-08	6	1.0	ND		ND	
	15-Jul-08	2	1.0	ND		ND	
	20-Jan-09	10	1.0	ND		ND	
	21-Jul-09	2.0	1.0	ND		ND	
	26-Jan-10	1.0	1.0	ND		ND	
	07-Jul-10	4.0	1.0	ND		ND	
	05-Jan-11	10	1.0	ND		ND	
	06-Jul-11	68	1.0	ND		ND	
	10-Jan-12	---	1.0	2.9		ND	
	09-Jul-12	---	1.0	1.0		ND	
	29-Jan-13	---	1.0	2.4		ND	
	17-Jul-13	---	1.0	0.8	J	ND	
	29-Jan-14	0	1.0	3.5		ND	
	24-Jul-14	0	1.0	1.9		ND	
	28-Jan-15	0.2	1.0	2.6		---	
Carbon Disulfide	17-Jul-13	---	100	3.3	J	ND	
	29-Jan-14	0.8	100	ND		ND	
	24-Jul-14	0.8	100	ND		ND	
	28-Jan-15	0.8	100	ND		---	
Chlorobenzene	10-Jan-12	---	3.0	0.8	J	ND	
	09-Jul-12	---	3.0	3.0		ND	
	29-Jan-13	---	3.0	0.8	J	ND	
	17-Jul-13	---	3.0	ND		0.8	J
	29-Jan-14	0.2	3.0	0.9	J	ND	
	24-Jul-14	0.2	3.0	0.3	J	ND	
	28-Jan-15	0.2	3.0	0.3	J	---	

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks
1,2-Dichlorobenzene	29-Jan-13	---	5.0	0.4	J	ND
	17-Jul-13	---	5.0	ND		ND
	29-Jan-14	0.3	5.0	0.4	J	ND
	24-Jul-14	0.3	5.0	ND		ND
	28-Jan-15	0.3	5.0	ND		---
1,4-Dichlorobenzene	07-Apr-99	---	5.0	ND		---
	08-Dec-99	---	5.0	5.0		---
	27-Apr-00	---	5.0	7.0		---
	15-Mar-05	---	500	ND		ND
	13-Jul-05	---	5.0	ND		ND
	20-Jan-06	---	550	ND		ND
	12-Jul-06	---	5.0	ND		ND
	18-Jan-07	0.15	3.0	ND		ND
	10-Jul-07	0.75	1.0	6.6		ND
	15-Jan-08	7.5	1.0	ND		ND
	15-Jul-08	2	1.0	7.2	J	ND
	20-Jan-09	19	1.0	ND		ND
	21-Jul-09	3.8	1.0	ND		ND
	26-Jan-10	2.0	1.0	9.4	J	ND
	07-Jul-10	7.6	1.0	9.0	J	ND
	05-Jan-11	19	1.0	ND		ND
	06-Jul-11	79	1.0	ND		ND
	10-Jan-12	---	1.0	11		ND
	09-Jul-12	---	1.0	1.8		ND
	29-Jan-13	---	1.0	9.6		ND
	17-Jul-13	---	1.0	4.4		ND
	29-Jan-14	0.3	1.0	12		ND
	24-Jul-14	0.3	1.0	5.0		ND
	28-Jan-15	0.3	1.0	4.8		---
trans-1,4-Dichloro-2-butene	24-Jul-14	2	100	9.4	J	ND
	28-Jan-15	2	100	ND		---

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks
1,1-Dichloroethane	07-Apr-99	---	5.0	9.0		---
	08-Dec-99	---	5.0	9.0		---
	27-Apr-00	---	5.0	ND		---
	15-Mar-05	---	500	ND		ND
	13-Jul-05	---	5.0	ND		ND
	20-Jan-06	---	550	ND		ND
	12-Jul-06	---	5.0	ND		ND
	18-Jan-07	0.09	5.0	ND		ND
	10-Jul-07	0.45	5.0	ND		ND
	15-Jan-08	4.5	5.0	ND		ND
	15-Jul-08	3.3	5.0	ND		ND
	20-Jan-09	16	5.0	ND		ND
	21-Jul-09	3.3	5.0	ND		ND
	26-Jan-10	1.0	5.0	ND		ND
	07-Jul-10	6.6	5.0	ND		ND
	05-Jan-11	16	5.0	ND		ND
	06-Jul-11	8.0	5.0	ND		ND
	10-Jan-12	---	5.0	ND		ND
	09-Jul-12	---	5.0	ND		ND
	29-Jan-13	---	5.0	ND		ND
	17-Jul-13	---	5.0	ND		ND
	29-Jan-14	0.2	5.0	ND		ND
	24-Jul-14	0.2	5.0	ND		ND
	28-Jan-15	0.2	5.0	ND		---
1,2-Dichloroethane	10-Jan-12	---	1.0	1.3		ND
	09-Jul-12	---	1.0	0.6		ND
	29-Jan-13	---	1.0	1.7		ND
	17-Jul-13	---	1.0	ND		ND
	29-Jan-14	0.4	1.0	0.9	J	ND
	24-Jul-14	0.4	1.0	11		ND
	28-Jan-15	0.4	1.0	ND		---
cis-1,2-Dichloroethene	10-Jan-12	---	5.0	1.3	J	ND
	09-Jul-12	---	5.0	0.3		ND
	29-Jan-13	---	5.0	1.4	J	ND
	17-Jul-13	---	5.0	0.5	J	ND
	29-Jan-14	0.2	5.0	1.8	J	ND
	24-Jul-14	0.2	5.0	1.4	J	ND
	28-Jan-15	0.2	5.0	ND		---
1,2-Dichloropropane	29-Jan-14	0.2	1.0	0.8	J	ND
	24-Jul-14	0.2	1.0	ND		ND

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks
Ethylbenzene	07-Apr-99	---	5.0	26.0		---
	08-Dec-99	---	5.0	49.0		---
	27-Apr-00	---	5.0	35.0		---
	15-Mar-05	---	500	ND		ND
	13-Jul-05	---	5.0	ND		ND
	20-Jan-06	---	550	ND		ND
	12-Jul-06	---	5.0	ND		ND
	18-Jan-07	0.17	5.0	35.0	J	ND
	10-Jul-07	0.85	1.0	15.0		ND
	15-Jan-08	8.5	1.0	29.0	J	ND
	15-Jul-08	2	1.0	24.0		ND
	20-Jan-09	10	1.0	71.0		ND
	21-Jul-09	2.0	1.0	4.0	J	ND
	26-Jan-10	2.0	1.0	16.0	J	ND
	07-Jul-10	4.0	1.0	12.0	J	ND
	05-Jan-11	10	1.0	31.0	J	ND
	06-Jul-11	62	1.0	ND		ND
	10-Jan-12	---	1.0	25.0		ND
	09-Jul-12	---	1.0	4.1		ND
	29-Jan-13	---	1.0	31		ND
	17-Jul-13	---	1.0	6.4		ND
	29-Jan-14	0.2	1.0	38		ND
	24-Jul-14	0.2	1.0	17		ND
	28-Jan-15	0.2	1.0	17		---
Methyl Butyl Ketone (2-Hexanone)	13-Jul-05	---	50	ND		ND
	20-Jan-06	---	5500	ND		ND
	12-Jul-06	---	50	ND		ND
	18-Jan-07	0.24	50	17.0	J	ND
	10-Jul-07	1.2	50	ND		ND
	15-Jan-08	12	50	ND		ND
	15-Jul-08	6	50	ND		ND
	20-Jan-09	34	50	ND		ND
	21-Jul-09	6.9	50	ND		ND
	26-Jan-10	14	50	ND		ND
	07-Jul-10	14	50	ND		ND
	05-Jan-11	34	50	ND		ND
	06-Jul-11	88	50	ND		ND
	10-Jan-12	---	50	27.0	J	ND
	09-Jul-12	---	50	21.0		ND
	29-Jan-13	---	50	41	J	ND
	17-Jul-13	---	50	8.5	J	ND
	29-Jan-14	0.6	50	41	J	ND
	24-Jul-14	0.6	50	15	J	ND
	28-Jan-15	0.6	50	13	J	---

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks	
Methylene chloride	07-Apr-99	---	10	68.0		---	
	08-Dec-99	---	10	21.0		---	
	27-Apr-00	---	10	ND		---	
	15-Mar-05	---	1000	ND		ND	
	13-Jul-05	---	10	ND		ND	
	20-Jan-06	---	1100	ND		ND	
	12-Jul-06	---	10	ND		ND	
	18-Jan-07	0.088	5.5	ND		ND	
	10-Jul-07	0.44	1.0	ND		ND	
	15-Jan-08	4.4	1.0	ND		ND	
	15-Jul-08	2.4	1.0	ND		ND	
	20-Jan-09	26	1.0	30.0	J	ND	
	21-Jul-09	5.3	1.0	ND		ND	
	26-Jan-10	1.4	1.0	ND		ND	
	07-Jul-10	11	1.0	ND		ND	
	05-Jan-11	26	1.0	ND		ND	
	06-Jul-11	14	1.0	ND		ND	
	10-Jan-12	---	1.0	1.4	B	0.8	J
	09-Jul-12	---	1.0	0.2		ND	
	29-Jan-13	---	1.0	0.2	J	ND	
	17-Jul-13	---	1.0	ND		ND	
	29-Jan-14	0.2	1.0	ND		ND	
	24-Jul-14	0.6	1.0	9.6		ND	
	28-Jan-15	0.6	1.0	ND		---	
Methyl Ethyl Ketone (2-Butanone)	07-Apr-99	---	100	660		---	
	08-Dec-99	---	100	12,000		---	
	27-Apr-00	---	100	4,400		---	
	15-Mar-05	---	100	34,000		ND	
	13-Jul-05	---	100	1800		ND	
	20-Jan-06	---	11000	16,600		ND	
	12-Jul-06	---	100	7,870		ND	
	18-Jan-07	0.56	100	7,300		ND	
	10-Jul-07	2.8	100	ND		ND	
	15-Jan-08	28	100	7,800		ND	
	15-Jul-08	4.4	100	960		ND	
	20-Jan-09	50	100	6,500		ND	
	21-Jul-09	10	100	660		ND	
	26-Jan-10	20	100	3,800		ND	
	07-Jul-10	20	100	3,800		ND	
	05-Jan-11	50	100	3,900		ND	
	06-Jul-11	130	100	12,000		ND	
	10-Jan-12	---	20,000	26,000		ND	
	09-Jul-12	---	5,000	8,100		ND	
	29-Jan-13	---	20,000	47,000		ND	
	17-Jul-13	---	100	3,800		ND	
	29-Jan-14	0.8	100	14,000		ND	
	24-Jul-14	0.8	100	15,000		ND	
	28-Jan-15	85	5,000	5,000		---	

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks
4-Methyl-2-pentanone (MIBK)	07-Apr-99	---	100	ND		---
	08-Dec-99	---	100	ND		---
	27-Apr-00	---	100	110		---
	15-Mar-05	---	10000	ND		ND
	13-Jul-05	---	100	ND		ND
	20-Jan-06	---	11000	ND		ND
	12-Jul-06	---	100	ND		ND
	18-Jan-07	0.36	100	95	J	ND
	10-Jul-07	1.8	100	7.4	J	ND
	15-Jan-08	18	100	ND		ND
	15-Jul-08	5.6	100	ND		ND
	20-Jan-09	55	100	110	J	ND
	21-Jul-09	11	100	27.0	J	ND
	26-Jan-10	22	100	180		ND
	07-Jul-10	22	100	42.0	J	ND
	05-Jan-11	55	100	66.0	J	ND
	06-Jul-11	110	100	160	J	ND
	10-Jan-12	---	100	220		ND
	09-Jul-12	---	100	140		ND
	29-Jan-13	---	500	680		ND
	17-Jul-13	---	100	98		ND
	29-Jan-14	1.4	100	190		ND
	24-Jul-14	1.4	100	85	J	ND
	28-Jan-15	1.4	100	95	J	---
Styrene	29-Jan-13	---	1.0	2.4		ND
	17-Jul-13	---	1.0	ND		ND
	29-Jan-14	0.2	1.0	7.1		ND
	24-Jul-14	0.2	1.0	2.4		ND
	28-Jan-15	0.2	1.0	1.7		---

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks	
Toluene	07-Apr-99	---	5.0	100		---	
	08-Dec-99	---	5.0	150		---	
	27-Apr-00	---	5.0	120		---	
	15-Mar-05	---	500	ND		ND	
	13-Jul-05	---	5.0	ND		ND	
	20-Jan-06	---	550	ND		ND	
	12-Jul-06	---	5.0	255		ND	
	18-Jan-07	0.15	5.0	36.0	J	ND	
	10-Jul-07	0.75	1.0	9.0		ND	
	15-Jan-08	7.5	1.0	35.0	J	ND	
	15-Jul-08	2	1.0	23.0		ND	
	20-Jan-09	14	1.0	120		ND	
	21-Jul-09	2.7	1.0	ND		0.44	J
	26-Jan-10	1.1	1.0	24.0		ND	
	07-Jul-10	5.4	1.0	14.0	J	ND	
	05-Jan-11	14	1.0	26.0	J	ND	
	06-Jul-11	85	1.0	ND		ND	
	10-Jan-12	---	1.0	33.0		ND	
	09-Jul-12	---	1.0	7.1		ND	
	29-Jan-13	---	1.0	33		ND	
	17-Jul-13	---	1.0	8.7		ND	
	29-Jan-14	0.2	1.0	45		ND	
	24-Jul-14	0.2	1.0	35		ND	
	28-Jan-15	0.2	1.0	100		---	
Trichloroethene	29-Jan-13	---	1.0	0.2	J	ND	
	17-Jul-13	---	1.0	ND		0.4	J
	29-Jan-14	0.4	1.0	ND		ND	
	24-Jul-14	0.4	1.0	ND		ND	
	28-Jan-15	0.4	1.0	ND		---	
1,1,2-Trichloroethane	10-Jan-12	---	1.0	2.0		ND	
	09-Jul-12	---	1.0	ND		ND	
	29-Jan-13	---	1.0	ND		ND	
	17-Jul-13	---	1.0	ND		ND	
	29-Jan-14	0.3	1.0	ND		ND	
	24-Jul-14	0.3	1.0	ND		ND	
	28-Jan-15	0.3	1.0	ND		---	
Vinyl Chloride	29-Jan-13	---	1.0	0.2	J	ND	
	17-Jul-13	---	1.0	ND		ND	
	29-Jan-14	0.3	1.0	ND		ND	
	24-Jul-14	0.3	1.0	ND		ND	
	28-Jan-15	0.3	1.0	ND		---	

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks
Xylenes, total	07-Apr-99	---	5.0	30.0		---
	08-Dec-99	---	5.0	62.0		---
	27-Apr-00	---	5.0	56.0		---
	15-Mar-05	---	500	ND		ND
	13-Jul-05	---	5.0	ND		ND
	20-Jan-06	---	550	ND		ND
	12-Jul-06	---	5.0	ND		ND
	18-Jan-07	0.14	---	60.0	J	ND
	10-Jul-07	1	4.0	22.0		ND
	15-Jan-08	10	5.0	42.0	J	ND
	15-Jul-08	4	5.0	39.0		ND
	20-Jan-09	20	5.0	100		ND
	21-Jul-09	4.0	5.0	ND		ND
	26-Jan-10	4.4	5.0	31.0		ND
	07-Jul-10	8.0	5.0	29.0		ND
	05-Jan-11	20	5.0	39.0	J	ND
	06-Jul-11	210	5.0	ND		ND
	10-Jan-12	---	5.0	51.0		ND
	09-Jul-12	---	5.0	10.0		ND
	29-Jan-13	---	5.0	57.0		ND
	17-Jul-13	---	5.0	16		ND
	29-Jan-14	0.5	5.0	77		ND
	24-Jul-14	0.5	5.0	25		ND
	28-Jan-15	0.5	5.0	32		---

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks
Other Parameters						
Cyanide, Total	20-Jan-06	---	0.01	ND		ND
	12-Jul-06	---	0.05	ND		ND
	18-Jan-07	0.0058	10	ND		ND
	10-Jul-07	0.01	10	ND		ND
	15-Jan-08	0.004	10	ND		ND
	15-Jul-08	0.004	10	ND		ND
	20-Jan-09	0.004	10	0.0041	J	ND
	21-Jul-09	0.0047	10	ND		ND
	26-Jan-10	0.0047	10	0.0054	J	ND
	07-Jul-10	0.005	0.01	ND		ND
	05-Jan-11	0.005	0.01	0.0059	J	ND
	06-Jul-11	0.0039	0.01	ND		ND
	10-Jan-12	---	20	ND		ND
	09-Jul-12	---	10	ND		ND
	29-Jan-13	---	10	14.0		ND
	17-Jul-13	---	10	ND		ND
	29-Jan-14	10.0	10	10.0		ND
	24-Jul-14	10.0	10	ND		ND
	28-Jan-15	50.0	50.0	ND		---
Oil & Grease (HEM)	20-Jan-06	---	2	5		ND
	12-Jul-06	---	2	19		ND
	18-Jan-07	2	---	5		ND
	10-Jul-07	3	---	ND		ND
	15-Jan-08	3	---	9.15		ND
	15-Jul-08	3	---	3.00	J	ND
	20-Jan-09	3	---	5.11		ND
	21-Jul-09	3.00	---	5.29		ND
	26-Jan-10	3.00	---	ND		ND
	07-Jul-10	3.56	---	ND		ND
	05-Jan-11	3	---	7.34		ND
	06-Jul-11	3	---	4.82	J	ND
	10-Jan-12	---	5,200	10,000		ND
	09-Jul-12	---	5,700	13,000		ND
	29-Jan-13	---	5,400	6,600		ND
	17-Jul-13	---	5,300	9,800		ND
	29-Jan-14	6,600	6,600	7,300		ND
	24-Jul-14	5,800	5,800	17,000		ND
	28-Jan-15	6,200	6,200	8,100		---

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks	
Total Phenols as Phenol	15-Mar-05	---	0.05	0.84		ND	
	20-Jan-06	---	0.2	1		ND	
	12-Jul-06	---	0.1	1		ND	
	18-Jan-07	0.01	---	0.92		ND	
	10-Jul-07	0.02	---	0.03	J	ND	
	15-Jan-08	0.03	---	1.1		ND	
	15-Jul-08	0.02	---	0.20		ND	
	20-Jan-09	0.02	---	0.53		ND	
	21-Jul-09	0.02	---	0.23		ND	
	26-Jan-10	0.01	---	0.43		ND	
	07-Jul-10	0.01	---	0.56		ND	
	05-Jan-11	0.02	---	0.95		ND	
	06-Jul-11	0.12	---	2.60		ND	
	10-Jan-12	---	1,000	5,380		ND	
	09-Jul-12	---	50.0	1,480		ND	
	29-Jan-13	---	100	3,260		ND	
	17-Jul-13	---	50.0	448		ND	
	29-Jan-14	100	100	2,420		ND	
	24-Jul-14	250	250	4,340		ND	
	28-Jan-15	250	250	2,190		---	
Total Kjeldahl Nitrogen as N	15-Mar-05	---	0.05	480		ND	
	20-Jan-06	---	1	495		ND	
	12-Jul-06	---	0.05	396		ND	
	18-Jan-07	4	---	440		ND	
	10-Jul-07	22	---	570		ND	
	15-Jan-08	22	---	560		0.088	
	15-Jul-08	2.2	---	320		ND	
	20-Jan-09	3	---	340		ND	
	21-Jul-09	9.0	---	550		ND	
	26-Jan-10	9.0	---	460		ND	
	07-Jul-10	9	---	720		ND	
	05-Jan-11	14	---	720		ND	
	06-Jul-11	16	---	1,000	B	250	J
	10-Jan-12	---	40,000	593,000		ND	
	09-Jul-12	---	40.0	519,000		ND	
	29-Jan-13	---	80.0	840,000		ND	
	17-Jul-13	---	50.0	884,000		ND	
	29-Jan-14	8	8000	466,000		ND	
	24-Jul-14	80,000	80,000	700,000		ND	
	28-Jan-15	80,000	80,000	714,000		---	

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks	
Nitrate as N	13-Jul-05	---	0.1	ND		ND	
	05-Jan-11	0.025	10	0.072	J	ND	
	06-Jul-11	0.025	10	ND		ND	
	10-Jan-12	---	50.0	280		ND	
	09-Jul-12	---	50.0	ND		ND	
	29-Jan-13	---	500.0	ND		ND	
	17-Jul-13	---	100	120		ND	
	29-Jan-14	50	50	1500		ND	
	24-Jul-14	50	50	ND		ND	
	28-Jan-15	100	100	ND		---	
Nitrite as N	29-Jan-14	50	50	680		ND	
	24-Jul-14	50	50	340		ND	
	28-Jan-15	100	100	ND		---	
Nitrate/Nitrite as N	29-Jan-14	50	50	2200		ND	
	24-Jul-14	50	50	350		ND	
	28-Jan-15	100	100	ND		---	
Sulfate	13-Jul-05	---	2	ND		ND	
	20-Jan-06	---	2	ND		ND	
	12-Jul-06	---	2	6.23		ND	
	18-Jan-07	0.6	---	29.3		2.25	J
	10-Jul-07	0.6	---	34.0		1.1	
	15-Jan-08	0.06	250	5.6	J	ND	
	15-Jul-08	0.05	250	3.8	J	ND	
	20-Jan-09	0.05	250	2.5	J	ND	
	21-Jul-09	0.078	250	3.1	J	ND	
	26-Jan-10	0.18	250	1.6	B	1.1	J
	07-Jul-10	0.12	250	5.4	J	ND	
	05-Jan-11	0.12	250	10.0	J	ND	
	06-Jul-11	0.02	250	4.00	B	1.90	J
	10-Jan-12	---	5,000	2,900	J	ND	
	09-Jul-12	---	5,000	ND		ND	
	29-Jan-13	---	10,000	ND		ND	
	17-Jul-13	---	10,000	ND		ND	
	29-Jan-14	5,000	5,000	9100.0		ND	
	24-Jul-14	5,000	5,000	ND		ND	
	28-Jan-15	1,000	1,000	ND		---	

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks	
Biochemical Oxygen Demand	15-Mar-05	---	2	1,300		ND	
	13-Jul-05	---	2	220	J	ND	
	20-Jan-06	---	2	1,910		ND	
	12-Jul-06	---	2	1,770		ND	
	18-Jan-07	2	---	593		ND	
	10-Jul-07	2	---	97		ND	
	15-Jan-08	2	---	620		ND	
	15-Jul-08	2	---	110		ND	
	20-Jan-09	2	---	630		ND	
	21-Jul-09	2.0	---	130		ND	
	26-Jan-10	2.0	---	130		ND	
	07-Jul-10	2	---	420		ND	
	05-Jan-11	2	---	460		ND	
	06-Jul-11	2	---	890		ND	
	10-Jan-12	---	45,000	1,380,000		ND	
	09-Jul-12	---	32.0	560		ND	
	29-Jan-13	---	65.0	1,820		ND	
	17-Jul-13	---	25,000	513,000		130	
	29-Jan-14	2.0	32,000	1,470,000	D	ND	
	24-Jul-14	2.0	55,000	2,950,000	D	ND	
	28-Jan-15	2.0	19,000	375,000	D	120	J
Chemical Oxygen Demand	15-Mar-05	---	10	2,500.00		ND	
	13-Jul-05	---	10	1,120.00		ND	
	27-Feb-06	---	40	1,710.00		ND	
	12-Jul-06	---	10	2,990.00		ND	
	18-Jan-07	10	---	1,810.00		ND	
	10-Jul-07	10	---	980.00		ND	
	15-Jan-08	20	---	1,600.00		ND	
	15-Jul-08	41	---	950.00		ND	
	20-Jan-09	20	---	1,300.00		ND	
	21-Jul-09	6.2	---	990.00		ND	
	26-Jan-10	5.6	---	920.00		ND	
	07-Jul-10	28	---	1,700.00		ND	
	05-Jan-11	14	---	1,700.00		ND	
	06-Jul-11	100	---	2,500.00		ND	
	10-Jan-12	---	200,000	4,050,000		ND	
	09-Jul-12	---	200	3,050,000		ND	
	29-Jan-13	---	200	4,770,000		5830	
	17-Jul-13	---	200	2,590,000		ND	
	29-Jan-14	100	100	3,470,000		ND	
	24-Jul-14	200000	200,000	7,850,000		ND	
	28-Jan-15	100	10	2,270,000		---	

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate		Blanks
Total Suspended Solids	15-Mar-05	---	2	140		ND
	12-Jul-06	---	2	264		ND
	18-Jan-07	1	---	45.0		ND
	10-Jul-07	1	---	21.0		ND
	15-Jan-08	1	---	26.0		ND
	15-Jul-08	1	---	59.0		ND
	20-Jan-09	1	---	85.0		ND
	21-Jul-09	1.0	---	17.0		ND
	26-Jan-10	1.0	---	23.0		ND
	07-Jul-10	1	---	67.0		ND
	05-Jan-11	1	---	23.0		ND
	06-Jul-11	1	---	36.0		ND
	10-Jan-12	---	10,000	78,000		ND
	09-Jul-12	---	33	780,000		ND
	29-Jan-13	---	5	46,000		ND
	17-Jul-13	---	5,000	20,500		ND
	29-Jan-14	5,000	5,000	49,000		ND
	24-Jul-14	10,000	10,000	160,000	D	ND
	28-Jan-15	10,000	10,000	46,000	D	---
Phosphorus-Total	15-Mar-05	---	0.03	1.8		ND
	13-Jul-05	---	0.03	2.2		ND
	20-Jan-06	---	0.1	2.0		ND
	12-Jul-06	---	0.03	1.0		ND
	18-Jan-07	0.02	---	1.7		ND
	10-Jul-07	0.02	---	2.8		ND
	15-Jan-08	0.02	---	2.6		ND
	15-Jul-08	0.05	---	1.2		ND
	20-Jan-09	0.05	---	0.82		ND
	21-Jul-09	0.050	---	0.69		ND
	26-Jan-10	0.025	---	1.7		ND
	20-Jan-09	0.017	---	0.084	J	ND
	21-Jul-09	0.021	---	ND		ND
	26-Jan-10	0.021	---	0.059	B	0.021
	07-Jul-10	0.025	---	0.034	J	ND
	05-Jan-11	0.025	---	0.097	J	ND
	06-Jul-11	0.025	---	0.041	J	ND
	10-Jan-12	---	50	280		ND
	09-Jul-12	---	50	ND		ND
	29-Jan-13	---	500	ND		ND
	17-Jul-13	---	100	120		ND
	29-Jan-14	0.220	0.22	1240	D	ND
	24-Jul-14	222	222	1900	D	ND
	28-Jan-15	0.22	0.22	4030	D	---

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate	Blanks
Field Parameters					
pH	07-Apr-99	---	---	6.82	---
(S.U.)	15-Mar-05	---	---	6.34	---
	13-Jul-05	---	---	7.36	---
	20-Jan-06	---	---	9.48	---
	12-Jul-06	---	---	7.22	---
	18-Jan-07	---	---	6.00	---
	10-Jul-07	---	---	8.31	---
	15-Jan-08	---	---	7.53	---
	15-Jul-08	---	---	7.39	---
	20-Jan-09	---	---	6.97	---
	21-Jul-09	---	---	7.93	---
	26-Jan-10	---	---	7.03	---
	06-Jul-10	---	---	7.36	---
	05-Jan-11	---	---	7.50	---
	06-Jul-11	---	---	7.42	---
	10-Jan-12	---	---	7.60	---
	09-Jul-12	---	---	8.15	---
	29-Jan-13	---	---	7.67	---
	17-Jul-13	---	---	7.90	---
	29-Jan-14	---	---	7.84	---
	24-Jul-14	---	---	7.55	---
	28-Jan-15	FIELD	FIELD	---	
Conductivity	07-Apr-99	---	---	2,061	---
(µS/cm)	15-Mar-05	---	---	6,310	---
	13-Jul-05	---	---	14,500	---
	20-Jan-06	---	---	4,940	---
	12-Jul-06	---	---	7,940	---
	18-Jan-07	---	---	3,400	---
	10-Jul-07	---	---	9,800	---
	15-Jan-08	---	---	13,100	---
	15-Jul-08	---	---	5,700	---
	20-Jan-09	---	---	4,816	---
	21-Jul-09	---	---	10,430	---
	26-Jan-10	---	---	8,672	---
	06-Jul-10	---	---	11,900	---
	05-Jan-11	---	---	11,370	---
	06-Jul-11	---	---	12,810	---
	10-Jan-12	---	---	12,470	---
	09-Jul-12	---	---	13,336	---
	29-Jan-13	---	---	11,016	---
	17-Jul-13	---	---	14,908	---
	29-Jan-14	---	---	12,520	---
	24-Jul-14	---	---	11,310	---
	28-Jan-15	FIELD	FIELD	---	---

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate	Blanks
Temperature (°C)	15-Mar-05	---	---	12.8	---
	13-Jul-05	---	---	28.82	---
	20-Jan-06	---	---	16.07	---
	12-Jul-06	---	---	30.0	---
	18-Jan-07	---	---	7.0	---
	10-Jul-07	---	---	33.2	---
	15-Jan-08	---	---	9.95	---
	15-Jul-08	---	---	29.93	---
	20-Jan-09	---	---	6.96	---
	21-Jul-09	---	---	31.07	---
	26-Jan-10	---	---	13.84	---
	06-Jul-10	---	---	28.01	---
	05-Jan-11	---	---	13.21	---
	29-Jan-14	---	---	16.20	---
	24-Jul-14	---	---	32.70	---
	28-Jan-15	FIELD	FIELD	---	---
Turbidity (NTU)	18-Jan-07	---	---	71.7	---
	10-Jul-07	---	---	33.2	---
	15-Jan-08	---	---	800.7	---
	15-Jan-08	---	---	9.95	---
	15-Jul-08	---	---	294	---
	15-Jul-08	---	---	294	---
	20-Jan-09	---	---	212	---
	21-Jul-09	---	---	189	---
	06-Jul-11	---	---	27.02	---
	10-Jan-12	---	---	15.8	---
	09-Jul-12	---	---	29.6	---
	29-Jan-13	---	---	17.4	---
	17-Jul-13	---	---	37.1	---
	29-Jan-14	---	---	1000	---
	28-Jan-15	FIELD	FIELD	---	---

TABLE 9
Historical Leachate Constituents/Analytes
East Carolina Regional Landfill, Permit No. 08-03
Bertie County, North Carolina

Analyte	Sample Collection Date	DL	RL	Leachate	Blanks

Notes:
DL = Method Detection Limit.
RL = Reporting Limit = PQL prior to 2007 and SWSL starting January 2007.
PQL = Practical Quantitation Limit.
SWSL = NC-DENR Solid Waste Section Limit.
ND = Not detected above the DL.
J = Estimated concentration below the RL.
B = Blank qualified data.
--- = No data.
Prior to 2012 all "Other Parameters" were reported in mg/L. beginning with the 1/10/12 event they are reported in µg/L
mg/L = milligrams per liter
µg/L = micrograms per liter
S.U. = Standard Units.
NTU = Nephelometric Turbidity Units.
µS/cm= microsiemens per centimeter.
mV = Millivolts.
Bold = Concentrations above the NC 2L or Groundwater Protection standards (GWPS) have been bolded.
Blanks = field, trip and/or method blanks.
All data prior to 2012 taken from previous reports by Golder Associates NC, Inc.
R = Anomalous data.
*8260B analysis diluted by a factor of 10x for the July 2011 event.
*6020A analysis for Antimony and Thallium diluted by a factor of 10x for the July 2011 event.
*Acetone & MEK DF 50x; C.O.D. DF 10x for the January 2012 event.
Phosphorous, total DF 1.11x for Jan. & July 2012 events.

TABLE 10
Field Parameters by Location - January 2015

Sample ID	Sample Date	Parameter	Result	Units
GW-2	1/28/2015	Temperature	16.7	ºC
GW-2	1/28/2015	Dissolved oxygen	7.07	mg/L
GW-2	1/28/2015	Conductivity	175.3	µS
GW-2	1/28/2015	pH	5.46	S.U.
GW-2	1/28/2015	Oxidation Reduction Potential	145.9	mV
GW-2	1/28/2015	Turbidity	3.3	ntu
GW-2	1/28/2015	Static Water Level	17.25	ft
GW-2	1/28/2015	Well Depth	30	ft
GW-7	1/28/2015	Temperature	16.6	ºC
GW-7	1/28/2015	Dissolved oxygen	3.51	mg/L
GW-7	1/28/2015	Conductivity	202.9	µS
GW-7	1/28/2015	pH	3.85	S.U.
GW-7	1/28/2015	Oxidation Reduction Potential	132.1	mV
GW-7	1/28/2015	Turbidity	8.5	ntu
GW-7	1/28/2015	Static Water Level	11.75	ft
GW-7	1/28/2015	Well Depth	18	ft
GW-8	1/28/2015	Temperature	16.2	ºC
GW-8	1/28/2015	Dissolved oxygen	4.96	mg/L
GW-8	1/28/2015	Conductivity	102.8	µS
GW-8	1/28/2015	pH	4.62	S.U.
GW-8	1/28/2015	Oxidation Reduction Potential	150.7	mV
GW-8	1/28/2015	Turbidity	1.25	ntu
GW-8	1/28/2015	Static Water Level	12.92	ft
GW-8	1/28/2015	Well Depth	18	ft
GW-9	1/28/2015	Temperature	13	ºC
GW-9	1/28/2015	Dissolved oxygen	1.39	mg/L
GW-9	1/28/2015	Conductivity	233	µS
GW-9	1/28/2015	pH	4.88	S.U.
GW-9	1/28/2015	Oxidation Reduction Potential	88.7	mV
GW-9	1/28/2015	Turbidity	2.28	ntu
GW-9	1/28/2015	Static Water Level	5.34	ft
GW-9	1/28/2015	Well Depth	17	ft
GW-10	1/28/2015	Temperature	11.4	ºC
GW-10	1/28/2015	Dissolved oxygen	5.07	mg/L
GW-10	1/28/2015	Conductivity	111.1	µS
GW-10	1/28/2015	pH	4.83	S.U.
GW-10	1/28/2015	Oxidation Reduction Potential	160.4	mV
GW-10	1/28/2015	Turbidity	9.7	ntu
GW-10	1/28/2015	Static Water Level	8.44	ft
GW-10	1/28/2015	Well Depth	20.00	ft
GW-11R	1/28/2015	Temperature	15.4	ºC
GW-11R	1/28/2015	Dissolved oxygen	2.98	mg/L
GW-11R	1/28/2015	Conductivity	42.5	µS
GW-11R	1/28/2015	pH	5.42	S.U.
GW-11R	1/28/2015	Oxidation Reduction Potential	177.0	mV
GW-11R	1/28/2015	Turbidity	5.29	ntu
GW-11R	1/28/2015	Static Water Level	29.91	ft
GW-11R	1/28/2015	Well Depth	42.24	ft

TABLE 10
Field Parameters by Location - January 2015

Sample ID	Sample Date	Parameter	Result	Units
GW-13	1/28/2015	Temperature	17.8	ºC
GW-13	1/28/2015	Dissolved oxygen	5.44	mg/L
GW-13	1/28/2015	Conductivity	98.0	µS
GW-13	1/28/2015	pH	4.29	S.U.
GW-13	1/28/2015	Oxidation Reduction Potential	180.8	mV
GW-13	1/28/2015	Turbidity	1.99	ntu
GW-13	1/28/2015	Static Water Level	29.94	ft
GW-13	1/28/2015	Well Depth	41.6	ft
GW-15	1/28/2015	Temperature	15.1	ºC
GW-15	1/28/2015	Dissolved oxygen	6.05	mg/L
GW-15	1/28/2015	Conductivity	83.1	µS
GW-15	1/28/2015	pH	5.08	S.U.
GW-15	1/28/2015	Oxidation Reduction Potential	162.6	mV
GW-15	1/28/2015	Turbidity	1.97	ntu
GW-15	1/28/2015	Static Water Level	31.70	ft
GW-15	1/28/2015	Well Depth	39.05	ft
GW-16R	1/28/2015	Temperature	14.6	ºC
GW-16R	1/28/2015	Dissolved oxygen	3.77	mg/L
GW-16R	1/28/2015	Conductivity	38.3	µS
GW-16R	1/28/2015	pH	4.43	S.U.
GW-16R	1/28/2015	Oxidation Reduction Potential	190.8	mV
GW-16R	1/28/2015	Turbidity	14.3	ntu
GW-16R	1/28/2015	Static Water Level	11.31	ft
GW-16R	1/28/2015	Well Depth	27.2	ft
GW-17	1/28/2015	Temperature	15.7	ºC
GW-17	1/28/2015	Dissolved oxygen	4.34	mg/L
GW-17	1/28/2015	Conductivity	65.2	µS
GW-17	1/28/2015	pH	4.51	S.U.
GW-17	1/28/2015	Oxidation Reduction Potential	184.3	mV
GW-17	1/28/2015	Turbidity	45	ntu
GW-17	1/28/2015	Static Water Level	30.10	ft
GW-17	1/28/2015	Well Depth	44.3	ft
GW-18	1/28/2015	Temperature	13.9	ºC
GW-18	1/28/2015	Dissolved oxygen	7.66	mg/L
GW-18	1/28/2015	Conductivity	129.4	µS
GW-18	1/28/2015	pH	4.39	S.U.
GW-18	1/28/2015	Oxidation Reduction Potential	200.7	mV
GW-18	1/28/2015	Turbidity	2.02	ntu
GW-18	1/28/2015	Static Water Level	8.00	ft
GW-18	1/28/2015	Well Depth	29.6	ft
GW-21	1/28/2015	Temperature	15.3	ºC
GW-21	1/28/2015	Dissolved oxygen	6.95	mg/L
GW-21	1/28/2015	Conductivity	22.4	µS
GW-21	1/28/2015	pH	4.33	S.U.
GW-21	1/28/2015	Oxidation Reduction Potential	170.5	mV
GW-22	1/28/2015	Turbidity	18.2	ntu
GW-21	1/28/2015	Static Water Level	12.45	ft
GW-21	1/28/2015	Well Depth	29.95	ft

TABLE 10
Field Parameters by Location - January 2015

Sample ID	Sample Date	Parameter	Result	Units
PW-1	1/28/2015	Temperature	13.9	ºC
PW-1	1/28/2015	Dissolved oxygen	5.1	mg/L
PW-1	1/28/2015	Conductivity	389.8	µS
PW-1	1/28/2015	pH	7.63	S.U.
PW-1	1/28/2015	Oxidation Reduction Potential	68.1	mV
PW-1	1/28/2015	Turbidity	1.87	ntu
SW-1	1/28/2015	Temperature	4.3	ºC
SW-1	1/28/2015	Dissolved oxygen	12.39	mg/L
SW-1	1/28/2015	Conductivity	220	µS
SW-1	1/28/2015	pH	6	S.U.
SW-1	1/28/2015	Oxidation Reduction Potential	119.6	mV
SW-1	1/28/2015	Turbidity	16.8	ntu
SW-3	1/28/2015	Temperature	4.4	ºC
SW-3	1/28/2015	Dissolved oxygen	8.80	mg/L
SW-3	1/28/2015	Conductivity	73.5	µS
SW-3	1/28/2015	pH	7.24	S.U.
SW-3	1/28/2015	Oxidation Reduction Potential	106.9	mV
SW-3	1/28/2015	Turbidity	5.24	ntu

ºC = degrees Centigrade
mg/L = miligrams/Liter
µS = microsemans
S.U. = standard units
mV = millivolts
ntu = nephelometric turbidity units

Appendix B

Groundwater and Surface Water Field Data Logs

DATE: 1/28/15

JOYCE ENGINEERING

GROUNDWATER SAMPLING LOG

Project Name: Republic- East Carolina LF **Project No. /Task No.:** 894.1501.12.01
Well ID: GW-2 **Sampler(s):** H. Seaton/ A. Freeman
Well Diameter: 2.00 inches **Initial Depth to Water:** 17.25 feet
Depth to Bottom: 30.00 feet **Water Column Thickness** 12.75 feet
Well Location: NW corner of landfill, accessed from Republican rd. or landfill access road
Equipment: YSI-Pro, Geo Control Pro Compressor, Water Level Meter, Oakton turbidimeter
Flow rate: 150ml/min
System volume: 150ml

Time	Temp. °C	Dis. O_2 mg/l	Cond. µ.s.	pH s.u.	ORP mv	Turb. ntu	DTW feet
1222	16.6	8.04	149.9	6.01	159.1	5.89	18.00
1223	16.7	7.42	175.7	5.38	147.3	7.05	18.33
1224	16.7	7.19	176.8	5.41	147.9	3.70	18.27
1225	16.7	7.07	175.3	5.46	145.9	3.30	18.40

Comments (weather conditions, odor, color, silt, type of sample, etc.):

The weather was sunny with temperatures in the 30s on 1/28/15.

Signature: Haley Seath **Date:** 1/28/15
QA/QC Sign Off: Daniel Hudner **Date:** 3/20/15

DATE: 1/28/15

JOYCE ENGINEERING

GROUNDWATER SAMPLING LOG

Project Name: Republic- East Carolina LF
Project No. /Task No.: 894.1501.12.01
Well ID: GW-7
Sampler(s): H. Seaton/ A. Freeman
Well Diameter: 2.00 inches
Initial Depth to Water: 11.75 feet
Depth to Bottom: 18.00 feet
Water Column Thickness 6.25 feet
Well Location: next to leachate tanks
Equipment: YSI-Pro, Geo Control Pro Compressor, Water Level Meter, Oakton turbidimeter
Flow rate: 150ml/min
System volume: 150ml

Time	Temp. °C	Dis. O_2 mg/l	Cond. µ.s.	pH s.u.	ORP mv	Turb. ntu	DTW feet
1426	15.1	7.75	168.6	4.06	190.2	11.2	11.83
1427	15.7	6.16	185.8	3.97	190.2	34.4	11.80
1428	16.3	3.98	198.6	3.92	135.8	-	-
1429	16.5	3.65	202.9	3.87	185.3	-	-
1430	16.7	3.57	202.6	3.86	133.1	-	-
1431	16.6	3.51	202.9	3.85	132.1	18.5	11.96

Comments (weather conditions, odor, color, silt, type of sample, etc.):

The weather was sunny with temperatures in the 30s on 1/28/15.

Signature: Hayley Seaton **Date:** 1/28/15
QA/QC Sign Off: Daniel Fisher **Date:** 3/20/15

DATE: 1/28/15

JOYCE ENGINEERING

GROUNDWATER SAMPLING LOG

Project Name: Republic- East Carolina LF
Project No. /Task No.: 894.1501.12.01
Well ID: GW-15
Sampler(s): H. Seaton/ A. Freeman
Well Diameter: 2.00 inches
Initial Depth to Water: 31.70 feet
Depth to Bottom: 39.05 feet
Water Column Thickness 7.35 feet
Well Location: NW of LF behind container storage
Equipment: YSI-Pro, Geo Control Pro Compressor, Water Level Meter, Oakton turbidimeter
Flow rate: 150ml/min
System volume: 150ml

Time	Temp. °C	Dis. O_2 mg/l	Cond. µ.s.	pH s.u.	ORP mv	Turb. ntu	DTW feet
1238	12.9	9.42	84.3	6.03	130.6	5.61	31.80
1239	14.7	7.78	83.3	5.66	146.9	2.22	31.75
1240	15.1	6.17	82.9	5.27	161.1	2.09	31.80
1241	15.1	6.09	82.9	5.19	161.4	2.00	31.78
1242	15.1	6.05	83.1	5.08	162.6	1.97	31.78

Comments (weather conditions, odor, color, silt, type of sample, etc.):

The weather was sunny with temperatures in the 30s on 1/28/15.

Signature: Hayley Seaton **Date:** 1/28/15
QA/QC Sign Off: Daniel Gardner **Date:** 3/20/15

DATE: 1/28/15

JOYCE ENGINEERING

GROUNDWATER SAMPLING LOG

Project Name: Republic- East Carolina LF **Project No. /Task No.:** 894.1501.12.01
Well ID: GW-11R **Sampler(s):** H. Seaton/ A. Freeman
Well Diameter: 2.00 inches **Initial Depth to Water:** 29.91 feet
Depth to Bottom: 42.24 feet **Water Column Thickness** 12.33 feet
Well Location: West of landfill between perimeter road and constructed wetlands
Equipment: YSI-Pro, Geo Control Pro Compressor, Water Level Meter, Oakton turbidimeter
Flow rate: 150ml/min
System volume: 150ml

Time	Temp. °C	Dis. O_2 mg/l	Cond. µ.s.	pH s.u.	ORP mv	Turb. ntu	DTW feet
1045	15.3	3.15	42.9	5.64	170.2	20.6	30.0
1046	15.4	3.10	42.7	5.56	172.8	5.29	30.6
1047	15.9	2.98	42.5	5.42	177.0	-	30.2

Comments (weather conditions, odor, color, silt, type of sample, etc.):

The weather was sunny with temperatures in the 30s on 1/28/15.

Signature: Hadley Seaton **Date:** 1/28/15
QA/QC Sign Off: Daniel Andrews **Date:** 3/20/15

DATE: 1/28/15

JOYCE ENGINEERING

GROUNDWATER SAMPLING LOG

Project Name: Republic- East Carolina LF **Project No. /Task No.:** 894.1501.12.01
Well ID: GW-9 **Sampler(s):** H. Seaton/ A. Freeman
Well Diameter: 2.00 inches **Initial Depth to Water:** 5.34 feet
Depth to Bottom: 17.00 feet **Water Column Thickness** 11.66 feet
Well Location: next to wetland near maintenance building
Equipment: YSI-Pro, Geo Control Pro Compressor, Water Level Meter, Oakton turbidimeter
Flow rate: 150ml/min
System volume: 150ml

Time	Temp. °C	Dis. O_2 mg/l	Cond. µ.s.	pH s.u.	ORP mv	Turb. ntu	DTW feet
1352	12.6	3.36	216.5	4.88	158.3	3.47	6.10
1353	12.9	2.38	224.1	4.83	144.3	3.00	6.20
1354	13.0	1.72	226.6	4.89	118.3	2.49	6.26
1355	12.9	1.62	226.5	4.89	109.5	2.32	6.20
1356	12.8	1.49	221.9	4.90	96.5	2.56	6.20
1357	12.9	1.46	224.0	4.87	94.9	2.24	6.20
1358	13.0	1.39	223.3	4.88	88.7	2.28	6.20

Comments (weather conditions, odor, color, silt, type of sample, etc.):

The weather was sunny with temperatures in the 30s on 1/28/15.

Signature: Hailey Seaton **Date:** 1/28/15
QA/QC Sign Off: Daniel Hudkins **Date:** 3/20/15

DATE: 1/28/15

JOYCE ENGINEERING

GROUNDWATER SAMPLING LOG

Project Name: Republic- East Carolina LF **Project No. /Task No.:** 894.1501.12.01
Well ID: GW-13 **Sampler(s):** H. Seaton/ A. Freeman
Well Diameter: 2.00 inches **Initial Depth to Water:** 29.94 feet
Depth to Bottom: 41.60 feet **Water Column Thickness** 11.66 feet
Well Location: W of LF between perimeter road and constructed wetlands
Equipment: YSI-Pro, Geo Control Pro Compressor, Water Level Meter, Oakton turbidimeter
Flow rate: 150ml/min
System volume: 150ml

Time	Temp. °C	Dis. O_2 mg/l	Cond. µ.s.	pH s.u.	ORP mv	Turb. ntu	DTW feet
1532	17.1	6.11	93.2	4.22	137.2	6.22	30.17
1533	17.5	5.56	96.3	4.26	184.5	2.31	29.93
1534	17.5	5.52	97.5	4.27	182.3	1.67	30.02
1535	17.8	5.44	98.0	4.29	180.8	1.99	29.39

Comments (weather conditions, odor, color, silt, type of sample, etc.):

The weather was sunny with temperatures in the 30s on 1/28/15.

Signature: Hafley Seaton **Date:** 1/29/15
QA/QC Sign Off: Daniel Rudner **Date:** 3/20/15

DATE: 1/28/15

JOYCE ENGINEERING

GROUNDWATER SAMPLING LOG

Project Name: Republic- East Carolina LF **Project No. /Task No.:** 894.1501.12.01
Well ID: GW-16R **Sampler(s):** H. Seaton/ A. Freeman
Well Diameter: 2.00 inches **Initial Depth to Water:** 11.31 feet
Depth to Bottom: 27.20 feet **Water Column Thickness** 15.89 feet
Well Location: NE corner of LF along perimeter road
Equipment: YSI-Pro, Geo Control Pro Compressor, Water Level Meter, Oakton turbidimeter
Flow rate: 150ml/min
System volume: 150ml

Time	Temp. °C	Dis. O_2 mg/l	Cond. µ.s.	pH s.u.	ORP mv	Turb. ntu	DTW feet
1151	14.4	4.01	38.8	4.50	191.9	3.08	11.77
1152	14.6	3.89	38.4	4.49	191.9	17.8	11.81
1153	14.6	3.77	38.3	4.43	190.8	14.3	11.81

Comments (weather conditions, odor, color, silt, type of sample, etc.):

The weather was sunny with temperatures in the 30s on 1/28/15.

Signature: Haley Seaton **Date:** 1/28/15
QA/QC Sign Off: Daniel Gardner **Date:** 3/20/15

DATE: 1/28/15

JOYCE ENGINEERING

GROUNDWATER SAMPLING LOG

Project Name: Republic- East Carolina LF **Project No. /Task No.:** 894.1501.12.01
Well ID: GW-8 **Sampler(s):** H. Seaton/ A. Freeman
Well Diameter: 2.00 inches **Initial Depth to Water:** 12.92 feet
Depth to Bottom: 18.00 feet **Water Column Thickness** 4.40 feet
Well Location: next to maintenance building
Equipment: YSI-Pro, Geo Control Pro Compressor, Water Level Meter, Oakton turbidimeter
Flow rate: 150ml/min
System volume: 150ml

Time	Temp. °C	Dis. O_2 mg/l	Cond. µ.s.	pH s.u.	ORP mv	Turb. ntu	DTW feet
1410	16.1	5.42	102.9	4.72	146.5	2.49	13.18
1411	16.1	5.41	102.6	4.68	147.8	1.61	13.24
1412	16.2	4.96	102.8	4.62	150.7	1.25	13.23

Comments (weather conditions, odor, color, silt, type of sample, etc.):

The weather was sunny with temperatures in the 30s on 1/28/15.

Signature: Hailey Seaton **Date:** 1/28/15
QA/QC Sign Off: Daniel Mudner **Date:** 3/20/15

DATE: 1/28/15

JOYCE ENGINEERING

GROUNDWATER SAMPLING LOG

Project Name: Republic- East Carolina LF **Project No. /Task No.:** 894.1501.12.01
Well ID: GW-10 **Sampler(s):** H. Seaton/ A. Freeman
Well Diameter: 2.00 inches **Initial Depth to Water:** 8.44 feet
Depth to Bottom: 20.00 feet **Water Column Thickness** 11.56 feet
Well Location: SW of LF behind sed basin
Equipment: YSI-Pro, Geo Control Pro Compressor, Water Level Meter, Oakton turbidimeter
Flow rate: 150ml/min
System volume: 150ml

Time	Temp. °C	Dis. O_2 mg/l	Cond. µ.s.	pH s.u.	ORP mv	Turb. ntu	DTW feet
1336	12.2	5.12	112.4	4.79	160.8	12.2	8.46
1337	11.7	5.10	111.3	4.79	162.2	9.70	8.50
1338	11.4	5.07	111.1	4.83	160.4	-	8.54

Comments (weather conditions, odor, color, silt, type of sample, etc.):

The weather was sunny with temperatures in the 30s on 1/28/15.

Signature: Hadley Seaton **Date:** 1/28/15
QA/QC Sign Off: Daniel Kustner **Date:** 3/20/15

DATE: 1/28/15

JOYCE ENGINEERING

SURFACE WATER SAMPLING LOG

Project Name: Republic- East Carolina LF **Project/Task No.:** 894.1501.12.01

Surface Point ID: SW-2 **Sampler(s):** H. Seaton/ A. Freeman

Location: behind leachate tanks and sed. pond in trees

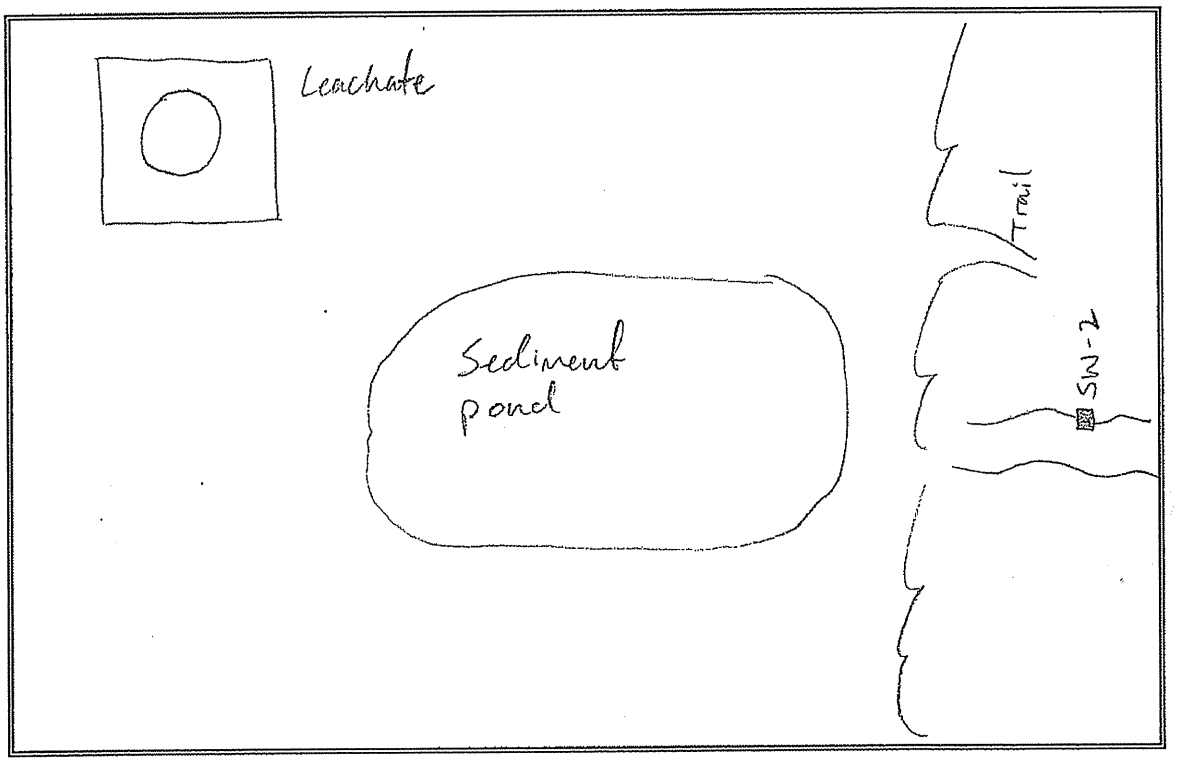
Field Parameters:

Time of Sampling:	-	
pH:	-	
Temperature:	-	(°C)
Conductivity:	-	(µS)
Turbidity:	-	(ntu)
DO :	-	(mg/l)
ORP :	-	(mV)

Comments/Sample Description (weather conditions, odor, color, silt, etc.):

The monitoring point was dry and not sampled.

The weather was sunny with temperatures in the 30s on 1/28/15.



Signature: Hadley Seaton **Date:** 1/28/15

QA/QC Sign Off: Daniel Mutter **Date:** 3/20/15

DATE: 1/28/15

JOYCE ENGINEERING

SURFACE WATER SAMPLING LOG

Project Name: Republic- East Carolina LF **Project/Task No.:** 894.1501.12.01

Surface Point ID: SW-4 **Sampler(s):** H. Seaton / A. Freeman

Location: returning to LF from SW-3, first right, along right side of road in trees

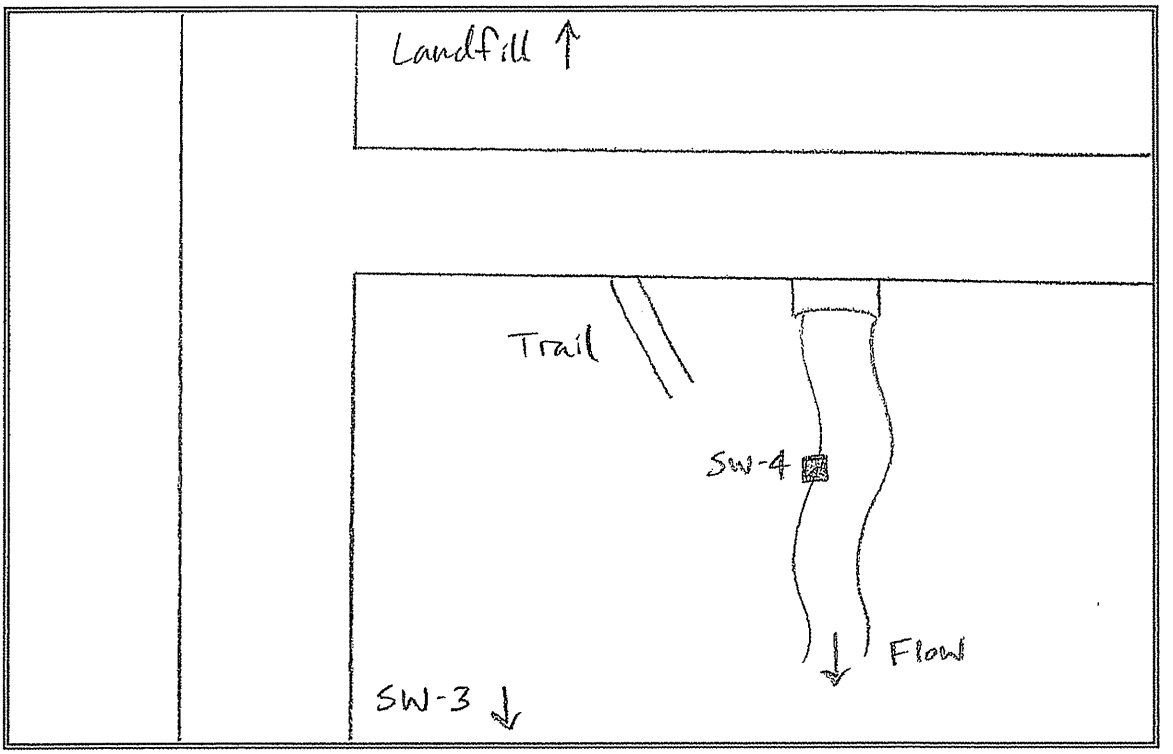
Field Parameters:

Time of Sampling:	-	
pH:	-	
Temperature:	-	**(°C)**
Conductivity:	-	**(µS)**
Turbidity:	-	**(ntu)**
DO :	-	**(mg/l)**
ORP :	-	**(mV)**

Comments/Sample Description (weather conditions, odor, color, silt, etc.):

The monitoring point was dry and not sampled.

The weather was sunny with temperatures in the 30s on 1/28/15.



Signature: Haley Seaton **Date:** 1/28/15

QA/QC Sign Off: Daniel Gardner **Date:** 3/20/15

Date: 7/24/14

JOYCE ENGINEERING

LEACHATE SAMPLING LOG

Project Name: Republic- East Carolina LF **Project/Task No.:** 894.1401.12.01

Surface Point ID: Leachate **Sampler(s):** D. Girdner / A. Freeman

Location: leachate tank located near methane flare

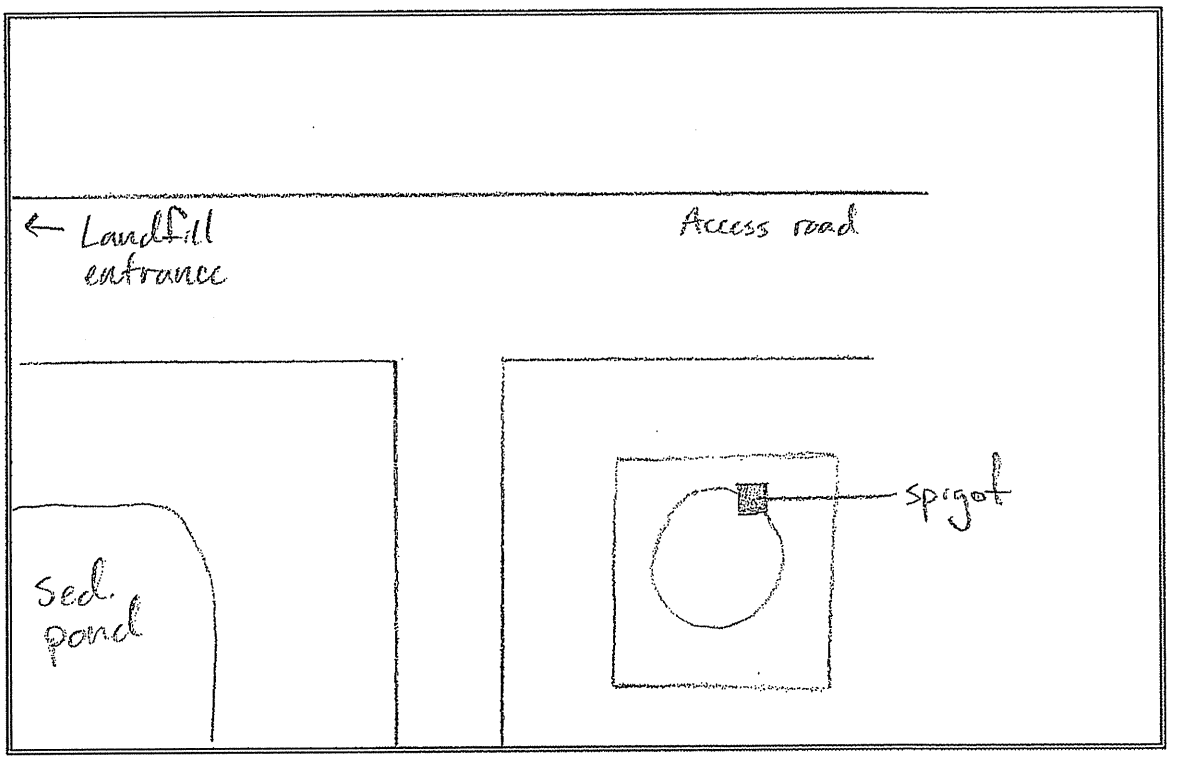
Field Parameters:

Time of Sampling:	1610	
pH:	7.55	
Temperature:	32.7	**(°C)**
Conductivity:	11310	**(µS)**
Turbidity:	-	**(ntu)**
DO:	0.54	**(mg/l)**
ORP:	280.8	**(mV)**

Comments/Sample Description (weather conditions, odor, color, silt, etc.):

The weather was cloudy with temperatures in the 80s.

The field blank was taken at 1625 on 7/24/14.



Signature: Hadley Seater **Date:** 1/29/15

QA/QC Sign Off: Daniel Bendrick **Date:** 3/20/15

DATE: 1/28/15

JOYCE ENGINEERING

GROUNDWATER SAMPLING LOG

Project Name: Republic- East Carolina LF **Project No. /Task No.:** 894.1501.12.01
Well ID: GW-21 **Sampler(s):** A. Freeman / H. Seaton
Well Diameter: 2.00 inches **Initial Depth to Water:** 12.45 feet
Depth to Bottom: 29.95 feet **Water Column Thickness** 17.50 feet
Well Location:
Equipment: YSI-Pro, QED MP15, Water Level Meter, Oakton turbidimeter
Flow rate: 175ml/min
System volume: 150ml

Time	Temp. °C	Dis. O_2 mg/l	Cond. µ.s.	pH s.u.	ORP mv	Turb. ntu	DTW feet
1505	15.4	7.15	22.9	4.33	170.3	9.77	12.47
1506	15.3	7.01	22.4	4.34	169.7	18.4	12.50
1507	15.3	6.95	22.4	4.33	170.5	18.2	12.48

Comments (weather conditions, odor, color, silt, type of sample, etc.):

The weather was sunny with temperatures in the 30s on 1/28/15.

Signature: Hayley Seaton **Date:** 1/28/15
QA/QC Sign Off: Daniel Hustner **Date:** 3/20/15

DATE: 1/28/15

JOYCE ENGINEERING

SURFACE WATER SAMPLING LOG

Project Name: Republic- East Carolina LF **Project/Task No.:** 894.1501.12.01

Surface Point ID: SW-3 **Sampler(s):** H. Seaton / A. Freeman

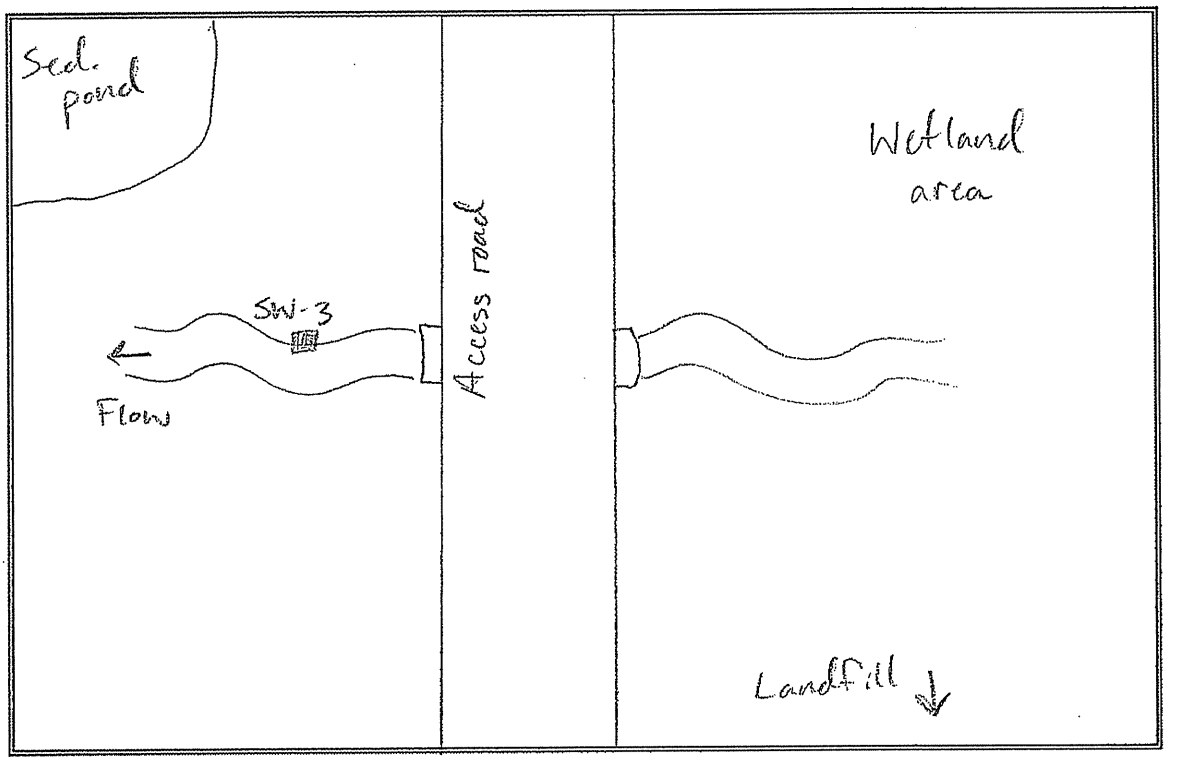
Location: off access road near wetland area

Field Parameters:

Time of Sampling:	1028	
pH:	7.24	
Temperature:	4.4	**(°C)**
Conductivity:	73.5	**(µS)**
Turbidity:	5.24	**(ntu)**
DO :	8.80	**(mg/l)**
ORP :	106.9	**(mV)**

Comments/Sample Description (weather conditions, odor, color, silt, etc.):

The weather was sunny with temperatures in the 30s on 1/28/15.



Signature: Haley Seaton **Date:** 1/28/15

QA/QC Sign Off: Daniel Gardner **Date:** 3/20/15

DATE: 1/28/15

JOYCE ENGINEERING

GROUNDWATER SAMPLING LOG

Project Name: Republic- East Carolina **Project No. /Task No.:** 894.1501.12.01
Well ID: PW-1 **Sampler(s):** H. Seaton / A. Freeman
Well Diameter: - inches **Initial Depth to Water:** - feet
Depth to Bottom: - feet **Water Column Thickness:** - feet
Well Location: spigot inside pump house back left corner
Equipment: YSI-Pro, Oakton turbidimeter
Flow rate: ml/min
System volume: ml

Time	Temp. °C	Dis. O_2 mg/l	Cond. µ.s.	pH s.u.	ORP mv	Turb. ntu
0945	12.2	5.41	367.5	6.68	77.2	6.43
0950	13.8	3.65	395.0	7.22	63.8	2.94
0955	14.0	4.75	401.7	7.47	73.0	2.92
1000	13.9	5.10	389.8	7.63	68.1	1.87

Comments (weather conditions, odor, color, silt, type of sample, etc.):

The weather was sunny with temperatures in the 30s on 1/28/15.

Ran pump for fifteen minutes then sampled at 1005.

Signature: Hayley Seaton **Date:** 1/28/15
QA/QC Sign Off: Daniel Mudrey **Date:** 3/26/15

DATE: 1/28/15

JOYCE ENGINEERING

GROUNDWATER SAMPLING LOG

Project Name: Republic- East Carolina LF **Project No. /Task No.:** 894.1501.12.01
Well ID: GW-17 **Sampler(s):** H. Seaton/ A. Freeman
Well Diameter: 2.00 inches **Initial Depth to Water:** 30.10 feet
Depth to Bottom: 44.30 feet **Water Column Thickness** 14.20 feet
Well Location: N of LF along perimeter road
Equipment: YSI-Pro, Geo Control Pro Compressor, Water Level Meter, Oakton turbidimeter
Flow rate: 150ml/min
System volume: 150ml

Time	Temp. °C	Dis. O_2 mg/l	Cond. µ.s.	pH s.u.	ORP mv	Turb. ntu	DTW feet
1202	15.0	4.64	65.6	4.54	157.7	30.4	30.40
1203	15.0	4.26	65.9	4.55	157.6	22.4	30.34
1204	15.7	4.29	66.4	4.52	185.4	39.5	30.40
1205	15.7	4.84	65.2	45.1	184.3	45.0	30.44

Comments (weather conditions, odor, color, silt, type of sample, etc.):

The weather was sunny with temperatures in the 30s on 1/28/15.

Signature: Haley Seaton **Date:** 1/28/15
QA/QC Sign Off: Daniel Hudson **Date:** 3/20/15

DATE: 1/28/15

JOYCE ENGINEERING

SURFACE WATER SAMPLING LOG

Project Name: Republic- East Carolina LF **Project/Task No.:** 00894.1501.12.01

Surface Point ID: SW-1 **Sampler(s):** A. Freeman / H. Seaton

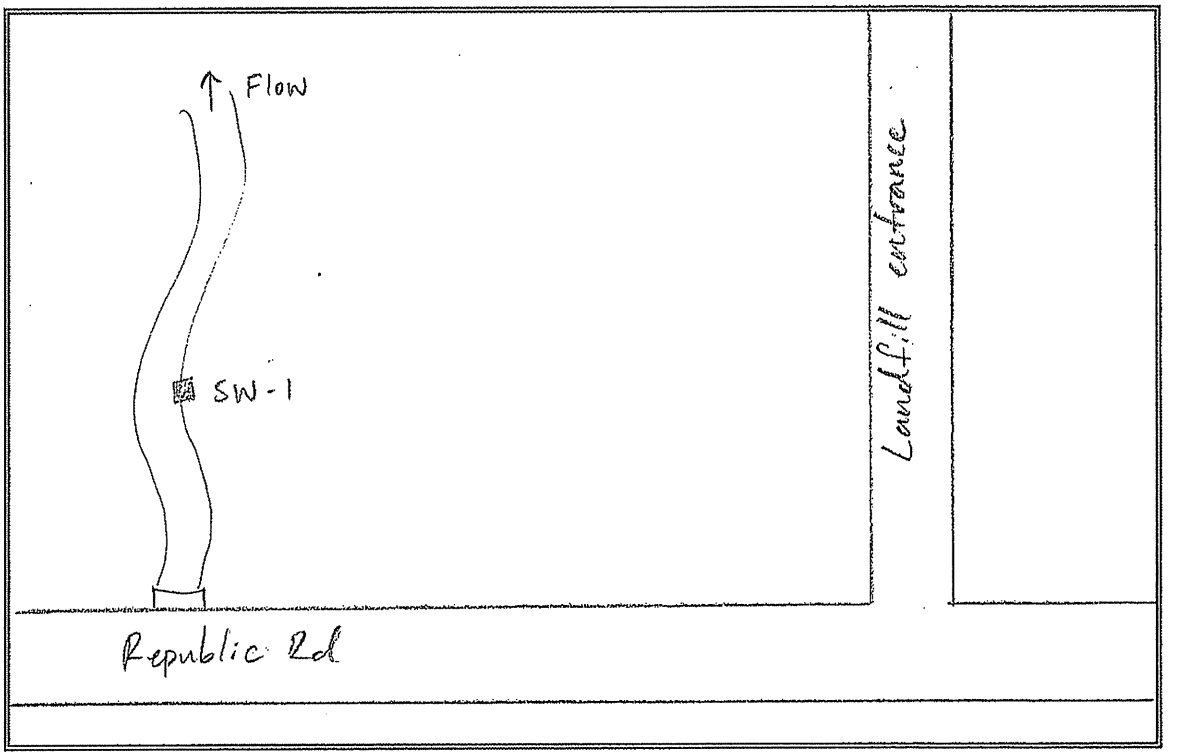
Location: stream along Republican rd. near LF entrance

Field Parameters:

Time of Sampling:	0937	
pH:	5.76	
Temperature:	4.3	**(°C)**
Conductivity:	220	**(µS)**
Turbidity:	16.8	**(ntu)**
DO :	12.39	**(mg/l)**
ORP :	119.6	**(mV)**

Comments/Sample Description (weather conditions, odor, color, silt, etc.):

The weather was sunny with temperatures in the 30s on 1/28/15.



Signature: Haley Seaton **Date:** 1/28/15

QA/QC Sign Off: Daniel Gudnir **Date:** 3/20/15

DATE: 1/28/15

JOYCE ENGINEERING

GROUNDWATER SAMPLING LOG

Project Name: Republic- East Carolina LF **Project No. /Task No.:** 894.1501.12.01
Well ID: GW-18 **Sampler(s):** A. Freeman / H. Seaton
Well Diameter: 2.00 inches **Initial Depth to Water:** 8.00 feet
Depth to Bottom: 29.60 feet **Water Column Thickness** 21.60 feet
Well Location: W of LF between perimeter road and constructed wetlands
Equipment: YSI-Pro, Geo Control Pro Compressor, Water Level Meter, Oakton turbidimeter
Flow rate: 250ml/min
System volume: 150ml

Time	Temp. °C	Dis. O_2 mg/l	Cond. µ.s.	pH s.u.	ORP mv	Turb. ntu	DTW feet
1112	12.1	6.09	117.9	4.65	201.0	3.67	8.02
1113	13.4	7.78	127.9	4.49	201.5	2.60	8.05
1114	13.8	7.69	128.5	4.47	201.2	2.27	8.05
1115	13.9	7.66	129.4	4.39	200.7	2.02	8.05

Comments (weather conditions, odor, color, silt, type of sample, etc.):

The weather was sunny with temperatures in the 30s on 1/28/15.

Signature: Haley Seaton **Date:** 1/28/15
QA/QC Sign Off: Daniel Hudson **Date:** 3/20/15

DATE: 3/05/15

JOYCE ENGINEERING

GROUNDWATER SAMPLING LOG

Project Name: Republic- East Carolina LF
Project No. /Task No.: 894.1501.12.01
Well ID: GW-17
Sampler(s): H. Seaton/ A. Freeman
Well Diameter: 2.00 inches
Initial Depth to Water: 29.15 feet
Depth to Bottom: 44.30 feet
Water Column Thickness 15.15 feet
Well Location: N of LF along perimeter road
Equipment: YSI-Pro, Geo Control Pro Compressor, Water Level Meter, Oakton turbidimeter
Flow rate: 150ml/min
System volume: 150ml

Time	Temp. °C	Dis. O_2 mg/l	Cond. µ.s.	pH s.u.	ORP mv	Turb. ntu	DTW feet
1214	11.1	*	69.3	6.57	104.9	1000	29.35
1215	11.4		68.2	6.03	124.6	1000	29.22
1216	12.4		68.8	5.68	132.0	500	29.22
1217	13.0		69.3	5.40	134.2	75	29.29
1218	12.8		66.5	5.20	137.1	22.0	29.37
1219	12.9		65.5	5.05	137.6	17.4	29.25
1220	13.0		67.2	4.92	134.6	11.9	29.35
1221	13.4		66.5	4.78	135.0	11.2	29.38
1222	13.0		66.3	4.68	134.9	11.4	29.38
1223	13.4		64.9	4.63	134.8	15.5	29.40

Comments (weather conditions, odor, color, silt, type of sample, etc.):

The weather was cloudy and rainy with temperatures in the 40s on 3/05/15.

*Dissolved Oxygen readings were not recorded because the instrument was in error and could not be recalibrated or reset to correct the problem.

Signature: Holley Seaton **Date:** 3/5/15
QA/QC Sign Off: Daniel Kirchner **Date:** 3/20/15

Appendix C

Laboratory Analytical Reports

ASI

ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

Laboratory Report

Report Number: AYA0703

Project: East Carolina Regional Landfill

Project #:08-03

Prepared For:
Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover, NC 28613

Attention: Mr. Matt Einsmann

February 13, 2015

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call. Analytical Services, Inc. certifies that the following analytical results meet all requirements of the National Environmental Laboratory Accreditation Conference(NELAC).All test results relate only to the samples analyzed.

Approved:

Project Manager

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
0803-GW2	AYA0703-01	Ground Water	01/28/15 12:25	01/29/15 10:45
0803-GW7	AYA0703-02	Ground Water	01/28/15 14:31	01/29/15 10:45
0803-GW8	AYA0703-03	Ground Water	01/28/15 14:12	01/29/15 10:45
0803-GW9	AYA0703-04	Ground Water	01/28/15 13:58	01/29/15 10:45
0803-GW10	AYA0703-05	Ground Water	01/28/15 13:38	01/29/15 10:45
0803-GW11R	AYA0703-06	Ground Water	01/28/15 10:47	01/29/15 10:45
0803-GW13	AYA0703-07	Ground Water	01/28/15 15:35	01/29/15 10:45
0803-GW15	AYA0703-08	Ground Water	01/28/15 12:42	01/29/15 10:45
0803-GW16R	AYA0703-09	Ground Water	01/28/15 11:53	01/29/15 10:45
0803-GW17	AYA0703-10	Ground Water	01/28/15 12:05	01/29/15 10:45
0803-GW18	AYA0703-11	Ground Water	01/28/15 11:15	01/29/15 10:45
0803-GW21	AYA0703-12	Ground Water	01/28/15 15:07	01/29/15 10:45
0803-PW1	AYA0703-13	Ground Water	01/28/15 10:00	01/29/15 10:45

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW2
Lab No: AYA0703-01
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 12:25
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Antimony	EPA 6020A	EPA 3005A	ND	6.00	1	ug/L		1.05	7440-36-0	02/06/15 08:15	02/06/15 14:23	5020134
Arsenic	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.13	7440-38-2	02/06/15 08:15	02/06/15 14:23	5020134
Barium	EPA 6020A	EPA 3005A	370	100	1	ug/L		0.10	7440-39-3	02/06/15 08:15	02/06/15 14:23	5020134
Beryllium	EPA 6020A	EPA 3005A	0.63	1.00	1	ug/L	J	0.05	7440-41-7	02/06/15 08:15	02/06/15 14:23	5020134
Cadmium	EPA 6020A	EPA 3005A	ND	1.00	1	ug/L		0.05	7440-43-9	02/06/15 08:15	02/06/15 14:23	5020134
Chromium	EPA 6020A	EPA 3005A	1.86	10.0	1	ug/L	J	0.73	7440-47-3	02/06/15 08:15	02/06/15 14:23	5020134
Cobalt	EPA 6020A	EPA 3005A	6.52	10.0	1	ug/L	J	0.26	7440-48-4	02/06/15 08:15	02/06/15 14:23	5020134
Copper	EPA 6020A	EPA 3005A	1.38	10.0	1	ug/L	J	0.22	7440-50-8	02/06/15 08:15	02/06/15 14:23	5020134
Lead	EPA 6020A	EPA 3005A	0.18	10.0	1	ug/L	J	0.05	7439-92-1	02/06/15 08:15	02/06/15 14:23	5020134
Nickel	EPA 6020A	EPA 3005A	6.07	50.0	1	ug/L	J	0.22	7440-02-0	02/06/15 08:15	02/06/15 14:23	5020134
Selenium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.01	7782-49-2	02/06/15 08:15	02/06/15 14:23	5020134
Silver	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.17	7440-22-4	02/06/15 08:15	02/06/15 14:23	5020134
Thallium	EPA 6020A	EPA 3005A	ND	5.50	1	ug/L		0.09	7440-28-0	02/06/15 08:15	02/06/15 14:23	5020134
Vanadium	EPA 6020A	EPA 3005A	1.11	25.0	1	ug/L	J	0.93	7440-62-2	02/06/15 08:15	02/06/15 14:23	5020134
Zinc	EPA 6020A	EPA 3005A	9.68	10.0	1	ug/L	B-01, J	0.64	7440-66-6	02/06/15 08:15	02/06/15 14:23	5020134
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	ND	100	1	ug/L		5.7	67-64-1	01/30/15 10:30	01/30/15 15:36	5010625
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L		0.6	107-13-1	01/30/15 10:30	01/30/15 15:36	5010625
Benzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	71-43-2	01/30/15 10:30	01/30/15 15:36	5010625
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	74-97-5	01/30/15 10:30	01/30/15 15:36	5010625
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.5	75-27-4	01/30/15 10:30	01/30/15 15:36	5010625

ASI

ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW2
Lab No: AYA0703-01
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 12:25
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.7	75-25-2	01/30/15 10:30	01/30/15 15:36	5010625
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.6	74-83-9	01/30/15 10:30	01/30/15 15:36	5010625
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	75-15-0	01/30/15 10:30	01/30/15 15:36	5010625
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	56-23-5	01/30/15 10:30	01/30/15 15:36	5010625
Chlorobenzene	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.2	108-90-7	01/30/15 10:30	01/30/15 15:36	5010625
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	75-00-3	01/30/15 10:30	01/30/15 15:36	5010625
Chloroform	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	67-66-3	01/30/15 10:30	01/30/15 15:36	5010625
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	74-87-3	01/30/15 10:30	01/30/15 15:36	5010625
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		1.1	124-48-1	01/30/15 10:30	01/30/15 15:36	5010625
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L		0.7	96-12-8	01/30/15 10:30	01/30/15 15:36	5010625
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-93-4	01/30/15 10:30	01/30/15 15:36	5010625
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	74-95-3	01/30/15 10:30	01/30/15 15:36	5010625
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.3	95-50-1	01/30/15 10:30	01/30/15 15:36	5010625
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-46-7	01/30/15 10:30	01/30/15 15:36	5010625
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.8	110-57-6	01/30/15 10:30	01/30/15 15:36	5010625
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-34-3	01/30/15 10:30	01/30/15 15:36	5010625
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	107-06-2	01/30/15 10:30	01/30/15 15:36	5010625
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-35-4	01/30/15 10:30	01/30/15 15:36	5010625
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-59-2	01/30/15 10:30	01/30/15 15:36	5010625
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-60-5	01/30/15 10:30	01/30/15 15:36	5010625
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	78-87-5	01/30/15 10:30	01/30/15 15:36	5010625
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.8	10061-01-5	01/30/15 10:30	01/30/15 15:36	5010625

ASI

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Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW2
Lab No: AYA0703-01
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 12:25
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	10061-02-6	01/30/15 10:30	01/30/15 15:36	5010625
Ethylbenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-41-4	01/30/15 10:30	01/30/15 15:36	5010625
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.5	74-88-4	01/30/15 10:30	01/30/15 15:36	5010625
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	ND	50	1	ug/L		0.6	591-78-6	01/30/15 10:30	01/30/15 15:36	5010625
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	75-09-2	01/30/15 10:30	01/30/15 15:36	5010625
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	78-93-3	01/30/15 10:30	01/30/15 15:36	5010625
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.4	108-10-1	01/30/15 10:30	01/30/15 15:36	5010625
Styrene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-42-5	01/30/15 10:30	01/30/15 15:36	5010625
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	630-20-6	01/30/15 10:30	01/30/15 15:36	5010625
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	79-34-5	01/30/15 10:30	01/30/15 15:36	5010625
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	127-18-4	01/30/15 10:30	01/30/15 15:36	5010625
Toluene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	108-88-3	01/30/15 10:30	01/30/15 15:36	5010625
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	71-55-6	01/30/15 10:30	01/30/15 15:36	5010625
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	79-00-5	01/30/15 10:30	01/30/15 15:36	5010625
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	79-01-6	01/30/15 10:30	01/30/15 15:36	5010625
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-69-4	01/30/15 10:30	01/30/15 15:36	5010625
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	96-18-4	01/30/15 10:30	01/30/15 15:36	5010625
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L		1.8	108-05-4	01/30/15 10:30	01/30/15 15:36	5010625
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-01-4	01/30/15 10:30	01/30/15 15:36	5010625
Xylenes, total	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	1330-20-7	01/30/15 10:30	01/30/15 15:36	5010625
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	97 %		80-120				1868-53-7	01/30/15 10:30	01/30/15 15:36	5010625

ASI

ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW2
Lab No: AYA0703-01
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 12:25
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	105 %		78-120				17060-07-0	01/30/15 10:30	01/30/15 15:36	5010625
Surr: Toluene-d8	EPA 8260B	EPA 5030B	101 %		80-120				2037-26-5	01/30/15 10:30	01/30/15 15:36	5010625
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	102 %		80-120				460-00-4	01/30/15 10:30	01/30/15 15:36	5010625

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110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW7
Lab No: AYA0703-02
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 14:31
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Antimony	EPA 6020A	EPA 3005A	ND	6.00	1	ug/L		1.05	7440-36-0	02/06/15 08:15	02/06/15 14:28	5020134
Arsenic	EPA 6020A	EPA 3005A	1.65	10.0	1	ug/L	J	1.13	7440-38-2	02/06/15 08:15	02/06/15 14:28	5020134
Barium	EPA 6020A	EPA 3005A	71.3	100	1	ug/L	J	0.10	7440-39-3	02/06/15 08:15	02/06/15 14:28	5020134
Beryllium	EPA 6020A	EPA 3005A	2.03	1.00	1	ug/L		0.05	7440-41-7	02/06/15 08:15	02/06/15 14:28	5020134
Cadmium	EPA 6020A	EPA 3005A	0.06	1.00	1	ug/L	J	0.05	7440-43-9	02/06/15 08:15	02/06/15 14:28	5020134
Chromium	EPA 6020A	EPA 3005A	2.84	10.0	1	ug/L	J	0.73	7440-47-3	02/06/15 08:15	02/06/15 14:28	5020134
Cobalt	EPA 6020A	EPA 3005A	34.3	10.0	1	ug/L		0.26	7440-48-4	02/06/15 08:15	02/06/15 14:28	5020134
Copper	EPA 6020A	EPA 3005A	1.68	10.0	1	ug/L	J	0.22	7440-50-8	02/06/15 08:15	02/06/15 14:28	5020134
Lead	EPA 6020A	EPA 3005A	1.94	10.0	1	ug/L	J	0.05	7439-92-1	02/06/15 08:15	02/06/15 14:28	5020134
Nickel	EPA 6020A	EPA 3005A	10.6	50.0	1	ug/L	J	0.22	7440-02-0	02/06/15 08:15	02/06/15 14:28	5020134
Selenium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.01	7782-49-2	02/06/15 08:15	02/06/15 14:28	5020134
Silver	EPA 6020A	EPA 3005A	3.68	10.0	1	ug/L	J	0.17	7440-22-4	02/06/15 08:15	02/06/15 14:28	5020134
Thallium	EPA 6020A	EPA 3005A	ND	5.50	1	ug/L		0.09	7440-28-0	02/06/15 08:15	02/06/15 14:28	5020134
Vanadium	EPA 6020A	EPA 3005A	2.35	25.0	1	ug/L	J	0.93	7440-62-2	02/06/15 08:15	02/06/15 14:28	5020134
Zinc	EPA 6020A	EPA 3005A	7.77	10.0	1	ug/L	B-01, J	0.64	7440-66-6	02/06/15 08:15	02/06/15 14:28	5020134
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	ND	100	1	ug/L		5.7	67-64-1	01/30/15 10:30	01/30/15 13:50	5010625
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L		0.6	107-13-1	01/30/15 10:30	01/30/15 13:50	5010625
Benzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	71-43-2	01/30/15 10:30	01/30/15 13:50	5010625
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	74-97-5	01/30/15 10:30	01/30/15 13:50	5010625
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.5	75-27-4	01/30/15 10:30	01/30/15 13:50	5010625

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Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW7
Lab No: AYA0703-02
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 14:31
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.7	75-25-2	01/30/15 10:30	01/30/15 13:50	5010625
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.6	74-83-9	01/30/15 10:30	01/30/15 13:50	5010625
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	75-15-0	01/30/15 10:30	01/30/15 13:50	5010625
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	56-23-5	01/30/15 10:30	01/30/15 13:50	5010625
Chlorobenzene	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.2	108-90-7	01/30/15 10:30	01/30/15 13:50	5010625
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	75-00-3	01/30/15 10:30	01/30/15 13:50	5010625
Chloroform	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	67-66-3	01/30/15 10:30	01/30/15 13:50	5010625
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	74-87-3	01/30/15 10:30	01/30/15 13:50	5010625
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		1.1	124-48-1	01/30/15 10:30	01/30/15 13:50	5010625
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L		0.7	96-12-8	01/30/15 10:30	01/30/15 13:50	5010625
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-93-4	01/30/15 10:30	01/30/15 13:50	5010625
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	74-95-3	01/30/15 10:30	01/30/15 13:50	5010625
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.3	95-50-1	01/30/15 10:30	01/30/15 13:50	5010625
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-46-7	01/30/15 10:30	01/30/15 13:50	5010625
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.8	110-57-6	01/30/15 10:30	01/30/15 13:50	5010625
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-34-3	01/30/15 10:30	01/30/15 13:50	5010625
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	107-06-2	01/30/15 10:30	01/30/15 13:50	5010625
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-35-4	01/30/15 10:30	01/30/15 13:50	5010625
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-59-2	01/30/15 10:30	01/30/15 13:50	5010625
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-60-5	01/30/15 10:30	01/30/15 13:50	5010625
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	78-87-5	01/30/15 10:30	01/30/15 13:50	5010625
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.8	10061-01-5	01/30/15 10:30	01/30/15 13:50	5010625

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110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW7
Lab No: AYA0703-02
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 14:31
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	10061-02-6	01/30/15 10:30	01/30/15 13:50	5010625
Ethylbenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-41-4	01/30/15 10:30	01/30/15 13:50	5010625
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.5	74-88-4	01/30/15 10:30	01/30/15 13:50	5010625
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	ND	50	1	ug/L		0.6	591-78-6	01/30/15 10:30	01/30/15 13:50	5010625
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	75-09-2	01/30/15 10:30	01/30/15 13:50	5010625
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	78-93-3	01/30/15 10:30	01/30/15 13:50	5010625
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.4	108-10-1	01/30/15 10:30	01/30/15 13:50	5010625
Styrene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-42-5	01/30/15 10:30	01/30/15 13:50	5010625
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	630-20-6	01/30/15 10:30	01/30/15 13:50	5010625
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	79-34-5	01/30/15 10:30	01/30/15 13:50	5010625
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	127-18-4	01/30/15 10:30	01/30/15 13:50	5010625
Toluene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	108-88-3	01/30/15 10:30	01/30/15 13:50	5010625
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	71-55-6	01/30/15 10:30	01/30/15 13:50	5010625
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	79-00-5	01/30/15 10:30	01/30/15 13:50	5010625
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	79-01-6	01/30/15 10:30	01/30/15 13:50	5010625
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-69-4	01/30/15 10:30	01/30/15 13:50	5010625
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	96-18-4	01/30/15 10:30	01/30/15 13:50	5010625
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L		1.8	108-05-4	01/30/15 10:30	01/30/15 13:50	5010625
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-01-4	01/30/15 10:30	01/30/15 13:50	5010625
Xylenes, total	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	1330-20-7	01/30/15 10:30	01/30/15 13:50	5010625
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	96 %		80-120				1868-53-7	01/30/15 10:30	01/30/15 13:50	5010625

ASI

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Environmental Monitoring & Laboratory Analysis
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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW7
Lab No: AYA0703-02
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 14:31
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	105 %		78-120				17060-07-0	01/30/15 10:30	01/30/15 13:50	5010625
Surr: Toluene-d8	EPA 8260B	EPA 5030B	101 %		80-120				2037-26-5	01/30/15 10:30	01/30/15 13:50	5010625
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	101 %		80-120				460-00-4	01/30/15 10:30	01/30/15 13:50	5010625

ASI

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Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW8
Lab No: AYA0703-03
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 14:12
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Antimony	EPA 6020A	EPA 3005A	ND	6.00	1	ug/L		1.05	7440-36-0	02/06/15 08:15	02/06/15 14:33	5020134
Arsenic	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.13	7440-38-2	02/06/15 08:15	02/06/15 14:33	5020134
Barium	EPA 6020A	EPA 3005A	83.0	100	1	ug/L	J	0.10	7440-39-3	02/06/15 08:15	02/06/15 14:33	5020134
Beryllium	EPA 6020A	EPA 3005A	0.53	1.00	1	ug/L	J	0.05	7440-41-7	02/06/15 08:15	02/06/15 14:33	5020134
Cadmium	EPA 6020A	EPA 3005A	0.08	1.00	1	ug/L	J	0.05	7440-43-9	02/06/15 08:15	02/06/15 14:33	5020134
Chromium	EPA 6020A	EPA 3005A	1.00	10.0	1	ug/L	J	0.73	7440-47-3	02/06/15 08:15	02/06/15 14:33	5020134
Cobalt	EPA 6020A	EPA 3005A	2.35	10.0	1	ug/L	J	0.26	7440-48-4	02/06/15 08:15	02/06/15 14:33	5020134
Copper	EPA 6020A	EPA 3005A	2.16	10.0	1	ug/L	J	0.22	7440-50-8	02/06/15 08:15	02/06/15 14:33	5020134
Lead	EPA 6020A	EPA 3005A	0.21	10.0	1	ug/L	J	0.05	7439-92-1	02/06/15 08:15	02/06/15 14:33	5020134
Nickel	EPA 6020A	EPA 3005A	2.55	50.0	1	ug/L	J	0.22	7440-02-0	02/06/15 08:15	02/06/15 14:33	5020134
Selenium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.01	7782-49-2	02/06/15 08:15	02/06/15 14:33	5020134
Silver	EPA 6020A	EPA 3005A	0.44	10.0	1	ug/L	J	0.17	7440-22-4	02/06/15 08:15	02/06/15 14:33	5020134
Thallium	EPA 6020A	EPA 3005A	ND	5.50	1	ug/L		0.09	7440-28-0	02/06/15 08:15	02/06/15 14:33	5020134
Vanadium	EPA 6020A	EPA 3005A	ND	25.0	1	ug/L		0.93	7440-62-2	02/06/15 08:15	02/06/15 14:33	5020134
Zinc	EPA 6020A	EPA 3005A	5.38	10.0	1	ug/L	B-01, J	0.64	7440-66-6	02/06/15 08:15	02/06/15 14:33	5020134
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	ND	100	1	ug/L		5.7	67-64-1	01/30/15 10:30	01/30/15 16:03	5010625
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L		0.6	107-13-1	01/30/15 10:30	01/30/15 16:03	5010625
Benzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	71-43-2	01/30/15 10:30	01/30/15 16:03	5010625
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	74-97-5	01/30/15 10:30	01/30/15 16:03	5010625
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.5	75-27-4	01/30/15 10:30	01/30/15 16:03	5010625

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW8
Lab No: AYA0703-03
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 14:12
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.7	75-25-2	01/30/15 10:30	01/30/15 16:03	5010625
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.6	74-83-9	01/30/15 10:30	01/30/15 16:03	5010625
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	75-15-0	01/30/15 10:30	01/30/15 16:03	5010625
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	56-23-5	01/30/15 10:30	01/30/15 16:03	5010625
Chlorobenzene	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.2	108-90-7	01/30/15 10:30	01/30/15 16:03	5010625
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	75-00-3	01/30/15 10:30	01/30/15 16:03	5010625
Chloroform	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	67-66-3	01/30/15 10:30	01/30/15 16:03	5010625
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	74-87-3	01/30/15 10:30	01/30/15 16:03	5010625
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		1.1	124-48-1	01/30/15 10:30	01/30/15 16:03	5010625
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L		0.7	96-12-8	01/30/15 10:30	01/30/15 16:03	5010625
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-93-4	01/30/15 10:30	01/30/15 16:03	5010625
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	74-95-3	01/30/15 10:30	01/30/15 16:03	5010625
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.3	95-50-1	01/30/15 10:30	01/30/15 16:03	5010625
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-46-7	01/30/15 10:30	01/30/15 16:03	5010625
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.8	110-57-6	01/30/15 10:30	01/30/15 16:03	5010625
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-34-3	01/30/15 10:30	01/30/15 16:03	5010625
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	107-06-2	01/30/15 10:30	01/30/15 16:03	5010625
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-35-4	01/30/15 10:30	01/30/15 16:03	5010625
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-59-2	01/30/15 10:30	01/30/15 16:03	5010625
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-60-5	01/30/15 10:30	01/30/15 16:03	5010625
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	78-87-5	01/30/15 10:30	01/30/15 16:03	5010625
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.8	10061-01-5	01/30/15 10:30	01/30/15 16:03	5010625

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110 Technology Parkway, Norcross, GA 30092

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW8
Lab No: AYA0703-03
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 14:12
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	10061-02-6	01/30/15 10:30	01/30/15 16:03	5010625
Ethylbenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-41-4	01/30/15 10:30	01/30/15 16:03	5010625
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.5	74-88-4	01/30/15 10:30	01/30/15 16:03	5010625
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	ND	50	1	ug/L		0.6	591-78-6	01/30/15 10:30	01/30/15 16:03	5010625
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	75-09-2	01/30/15 10:30	01/30/15 16:03	5010625
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	78-93-3	01/30/15 10:30	01/30/15 16:03	5010625
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.4	108-10-1	01/30/15 10:30	01/30/15 16:03	5010625
Styrene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-42-5	01/30/15 10:30	01/30/15 16:03	5010625
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	630-20-6	01/30/15 10:30	01/30/15 16:03	5010625
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	79-34-5	01/30/15 10:30	01/30/15 16:03	5010625
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	127-18-4	01/30/15 10:30	01/30/15 16:03	5010625
Toluene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	108-88-3	01/30/15 10:30	01/30/15 16:03	5010625
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	71-55-6	01/30/15 10:30	01/30/15 16:03	5010625
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	79-00-5	01/30/15 10:30	01/30/15 16:03	5010625
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	79-01-6	01/30/15 10:30	01/30/15 16:03	5010625
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-69-4	01/30/15 10:30	01/30/15 16:03	5010625
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	96-18-4	01/30/15 10:30	01/30/15 16:03	5010625
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L		1.8	108-05-4	01/30/15 10:30	01/30/15 16:03	5010625
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-01-4	01/30/15 10:30	01/30/15 16:03	5010625
Xylenes, total	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	1330-20-7	01/30/15 10:30	01/30/15 16:03	5010625
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	98 %		80-120				1868-53-7	01/30/15 10:30	01/30/15 16:03	5010625

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW8
Lab No: AYA0703-03
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 14:12
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	106 %		78-120				17060-07-0	01/30/15 10:30	01/30/15 16:03	5010625
Surr: Toluene-d8	EPA 8260B	EPA 5030B	102 %		80-120				2037-26-5	01/30/15 10:30	01/30/15 16:03	5010625
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	100 %		80-120				460-00-4	01/30/15 10:30	01/30/15 16:03	5010625

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW9
Lab No: AYA0703-04
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 13:58
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Antimony	EPA 6020A	EPA 3005A	ND	6.00	1	ug/L		1.05	7440-36-0	02/06/15 08:15	02/06/15 14:38	5020134
Arsenic	EPA 6020A	EPA 3005A	1.43	10.0	1	ug/L	J	1.13	7440-38-2	02/06/15 08:15	02/06/15 14:38	5020134
Barium	EPA 6020A	EPA 3005A	241	100	1	ug/L		0.10	7440-39-3	02/06/15 08:15	02/06/15 14:38	5020134
Beryllium	EPA 6020A	EPA 3005A	0.89	1.00	1	ug/L	J	0.05	7440-41-7	02/06/15 08:15	02/06/15 14:38	5020134
Cadmium	EPA 6020A	EPA 3005A	ND	1.00	1	ug/L		0.05	7440-43-9	02/06/15 08:15	02/06/15 14:38	5020134
Chromium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.73	7440-47-3	02/06/15 08:15	02/06/15 14:38	5020134
Cobalt	EPA 6020A	EPA 3005A	2.82	10.0	1	ug/L	J	0.26	7440-48-4	02/06/15 08:15	02/06/15 14:38	5020134
Copper	EPA 6020A	EPA 3005A	0.72	10.0	1	ug/L	J	0.22	7440-50-8	02/06/15 08:15	02/06/15 14:38	5020134
Lead	EPA 6020A	EPA 3005A	0.06	10.0	1	ug/L	J	0.05	7439-92-1	02/06/15 08:15	02/06/15 14:38	5020134
Nickel	EPA 6020A	EPA 3005A	9.41	50.0	1	ug/L	J	0.22	7440-02-0	02/06/15 08:15	02/06/15 14:38	5020134
Selenium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.01	7782-49-2	02/06/15 08:15	02/06/15 14:38	5020134
Silver	EPA 6020A	EPA 3005A	0.32	10.0	1	ug/L	J	0.17	7440-22-4	02/06/15 08:15	02/06/15 14:38	5020134
Thallium	EPA 6020A	EPA 3005A	ND	5.50	1	ug/L		0.09	7440-28-0	02/06/15 08:15	02/06/15 14:38	5020134
Vanadium	EPA 6020A	EPA 3005A	ND	25.0	1	ug/L		0.93	7440-62-2	02/06/15 08:15	02/06/15 14:38	5020134
Zinc	EPA 6020A	EPA 3005A	14.8	10.0	1	ug/L	B-01	0.64	7440-66-6	02/06/15 08:15	02/06/15 14:38	5020134
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	ND	100	1	ug/L		5.7	67-64-1	01/30/15 10:30	01/30/15 16:30	5010625
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L		0.6	107-13-1	01/30/15 10:30	01/30/15 16:30	5010625
Benzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	71-43-2	01/30/15 10:30	01/30/15 16:30	5010625
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	74-97-5	01/30/15 10:30	01/30/15 16:30	5010625
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.5	75-27-4	01/30/15 10:30	01/30/15 16:30	5010625

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW9
Lab No: AYA0703-04
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 13:58
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.7	75-25-2	01/30/15 10:30	01/30/15 16:30	5010625
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.6	74-83-9	01/30/15 10:30	01/30/15 16:30	5010625
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	75-15-0	01/30/15 10:30	01/30/15 16:30	5010625
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	56-23-5	01/30/15 10:30	01/30/15 16:30	5010625
Chlorobenzene	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.2	108-90-7	01/30/15 10:30	01/30/15 16:30	5010625
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	75-00-3	01/30/15 10:30	01/30/15 16:30	5010625
Chloroform	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	67-66-3	01/30/15 10:30	01/30/15 16:30	5010625
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	74-87-3	01/30/15 10:30	01/30/15 16:30	5010625
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		1.1	124-48-1	01/30/15 10:30	01/30/15 16:30	5010625
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L		0.7	96-12-8	01/30/15 10:30	01/30/15 16:30	5010625
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-93-4	01/30/15 10:30	01/30/15 16:30	5010625
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	74-95-3	01/30/15 10:30	01/30/15 16:30	5010625
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.3	95-50-1	01/30/15 10:30	01/30/15 16:30	5010625
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-46-7	01/30/15 10:30	01/30/15 16:30	5010625
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.8	110-57-6	01/30/15 10:30	01/30/15 16:30	5010625
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-34-3	01/30/15 10:30	01/30/15 16:30	5010625
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	107-06-2	01/30/15 10:30	01/30/15 16:30	5010625
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-35-4	01/30/15 10:30	01/30/15 16:30	5010625
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-59-2	01/30/15 10:30	01/30/15 16:30	5010625
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-60-5	01/30/15 10:30	01/30/15 16:30	5010625
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	78-87-5	01/30/15 10:30	01/30/15 16:30	5010625
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.8	10061-01-5	01/30/15 10:30	01/30/15 16:30	5010625

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW9
Lab No: AYA0703-04
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 13:58
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	10061-02-6	01/30/15 10:30	01/30/15 16:30	5010625
Ethylbenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-41-4	01/30/15 10:30	01/30/15 16:30	5010625
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.5	74-88-4	01/30/15 10:30	01/30/15 16:30	5010625
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	ND	50	1	ug/L		0.6	591-78-6	01/30/15 10:30	01/30/15 16:30	5010625
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	75-09-2	01/30/15 10:30	01/30/15 16:30	5010625
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	78-93-3	01/30/15 10:30	01/30/15 16:30	5010625
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.4	108-10-1	01/30/15 10:30	01/30/15 16:30	5010625
Styrene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-42-5	01/30/15 10:30	01/30/15 16:30	5010625
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	630-20-6	01/30/15 10:30	01/30/15 16:30	5010625
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	79-34-5	01/30/15 10:30	01/30/15 16:30	5010625
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	127-18-4	01/30/15 10:30	01/30/15 16:30	5010625
Toluene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	108-88-3	01/30/15 10:30	01/30/15 16:30	5010625
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	71-55-6	01/30/15 10:30	01/30/15 16:30	5010625
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	79-00-5	01/30/15 10:30	01/30/15 16:30	5010625
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	79-01-6	01/30/15 10:30	01/30/15 16:30	5010625
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-69-4	01/30/15 10:30	01/30/15 16:30	5010625
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	96-18-4	01/30/15 10:30	01/30/15 16:30	5010625
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L		1.8	108-05-4	01/30/15 10:30	01/30/15 16:30	5010625
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-01-4	01/30/15 10:30	01/30/15 16:30	5010625
Xylenes, total	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	1330-20-7	01/30/15 10:30	01/30/15 16:30	5010625
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	96 %		80-120				1868-53-7	01/30/15 10:30	01/30/15 16:30	5010625

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW9
Lab No: AYA0703-04
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 13:58
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	106 %		78-120				17060-07-0	01/30/15 10:30	01/30/15 16:30	5010625
Surr: Toluene-d8	EPA 8260B	EPA 5030B	100 %		80-120				2037-26-5	01/30/15 10:30	01/30/15 16:30	5010625
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	101 %		80-120				460-00-4	01/30/15 10:30	01/30/15 16:30	5010625

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110 Technology Parkway, Norcross, GA 30092

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW10
Lab No: AYA0703-05
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 13:38
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Antimony	EPA 6020A	EPA 3005A	ND	6.00	1	ug/L		1.05	7440-36-0	02/06/15 08:15	02/06/15 14:43	5020134
Arsenic	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.13	7440-38-2	02/06/15 08:15	02/06/15 14:43	5020134
Barium	EPA 6020A	EPA 3005A	124	100	1	ug/L		0.10	7440-39-3	02/06/15 08:15	02/06/15 14:43	5020134
Beryllium	EPA 6020A	EPA 3005A	0.51	1.00	1	ug/L	J	0.05	7440-41-7	02/06/15 08:15	02/06/15 14:43	5020134
Cadmium	EPA 6020A	EPA 3005A	0.06	1.00	1	ug/L	J	0.05	7440-43-9	02/06/15 08:15	02/06/15 14:43	5020134
Chromium	EPA 6020A	EPA 3005A	2.27	10.0	1	ug/L	J	0.73	7440-47-3	02/06/15 08:15	02/06/15 14:43	5020134
Cobalt	EPA 6020A	EPA 3005A	8.05	10.0	1	ug/L	J	0.26	7440-48-4	02/06/15 08:15	02/06/15 14:43	5020134
Copper	EPA 6020A	EPA 3005A	7.30	10.0	1	ug/L	J	0.22	7440-50-8	02/06/15 08:15	02/06/15 14:43	5020134
Lead	EPA 6020A	EPA 3005A	1.55	10.0	1	ug/L	J	0.05	7439-92-1	02/06/15 08:15	02/06/15 14:43	5020134
Nickel	EPA 6020A	EPA 3005A	5.19	50.0	1	ug/L	J	0.22	7440-02-0	02/06/15 08:15	02/06/15 14:43	5020134
Selenium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.01	7782-49-2	02/06/15 08:15	02/06/15 14:43	5020134
Silver	EPA 6020A	EPA 3005A	2.94	10.0	1	ug/L	J	0.17	7440-22-4	02/06/15 08:15	02/06/15 14:43	5020134
Thallium	EPA 6020A	EPA 3005A	ND	5.50	1	ug/L		0.09	7440-28-0	02/06/15 08:15	02/06/15 14:43	5020134
Vanadium	EPA 6020A	EPA 3005A	1.38	25.0	1	ug/L	J	0.93	7440-62-2	02/06/15 08:15	02/06/15 14:43	5020134
Zinc	EPA 6020A	EPA 3005A	24.8	10.0	1	ug/L	B-01	0.64	7440-66-6	02/06/15 08:15	02/06/15 14:43	5020134
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	ND	100	1	ug/L		5.7	67-64-1	01/30/15 10:30	01/30/15 16:56	5010625
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L		0.6	107-13-1	01/30/15 10:30	01/30/15 16:56	5010625
Benzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	71-43-2	01/30/15 10:30	01/30/15 16:56	5010625
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	74-97-5	01/30/15 10:30	01/30/15 16:56	5010625
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.5	75-27-4	01/30/15 10:30	01/30/15 16:56	5010625

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW10
Lab No: AYA0703-05
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 13:38
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.7	75-25-2	01/30/15 10:30	01/30/15 16:56	5010625
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.6	74-83-9	01/30/15 10:30	01/30/15 16:56	5010625
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	75-15-0	01/30/15 10:30	01/30/15 16:56	5010625
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	56-23-5	01/30/15 10:30	01/30/15 16:56	5010625
Chlorobenzene	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.2	108-90-7	01/30/15 10:30	01/30/15 16:56	5010625
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	75-00-3	01/30/15 10:30	01/30/15 16:56	5010625
Chloroform	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	67-66-3	01/30/15 10:30	01/30/15 16:56	5010625
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	74-87-3	01/30/15 10:30	01/30/15 16:56	5010625
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		1.1	124-48-1	01/30/15 10:30	01/30/15 16:56	5010625
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L		0.7	96-12-8	01/30/15 10:30	01/30/15 16:56	5010625
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-93-4	01/30/15 10:30	01/30/15 16:56	5010625
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	74-95-3	01/30/15 10:30	01/30/15 16:56	5010625
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.3	95-50-1	01/30/15 10:30	01/30/15 16:56	5010625
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-46-7	01/30/15 10:30	01/30/15 16:56	5010625
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.8	110-57-6	01/30/15 10:30	01/30/15 16:56	5010625
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-34-3	01/30/15 10:30	01/30/15 16:56	5010625
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	107-06-2	01/30/15 10:30	01/30/15 16:56	5010625
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-35-4	01/30/15 10:30	01/30/15 16:56	5010625
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-59-2	01/30/15 10:30	01/30/15 16:56	5010625
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-60-5	01/30/15 10:30	01/30/15 16:56	5010625
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	78-87-5	01/30/15 10:30	01/30/15 16:56	5010625
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.8	10061-01-5	01/30/15 10:30	01/30/15 16:56	5010625

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW10
Lab No: AYA0703-05
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 13:38
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	10061-02-6	01/30/15 10:30	01/30/15 16:56	5010625
Ethylbenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-41-4	01/30/15 10:30	01/30/15 16:56	5010625
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.5	74-88-4	01/30/15 10:30	01/30/15 16:56	5010625
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	ND	50	1	ug/L		0.6	591-78-6	01/30/15 10:30	01/30/15 16:56	5010625
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	75-09-2	01/30/15 10:30	01/30/15 16:56	5010625
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	78-93-3	01/30/15 10:30	01/30/15 16:56	5010625
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.4	108-10-1	01/30/15 10:30	01/30/15 16:56	5010625
Styrene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-42-5	01/30/15 10:30	01/30/15 16:56	5010625
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	630-20-6	01/30/15 10:30	01/30/15 16:56	5010625
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	79-34-5	01/30/15 10:30	01/30/15 16:56	5010625
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	127-18-4	01/30/15 10:30	01/30/15 16:56	5010625
Toluene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	108-88-3	01/30/15 10:30	01/30/15 16:56	5010625
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	71-55-6	01/30/15 10:30	01/30/15 16:56	5010625
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	79-00-5	01/30/15 10:30	01/30/15 16:56	5010625
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	79-01-6	01/30/15 10:30	01/30/15 16:56	5010625
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-69-4	01/30/15 10:30	01/30/15 16:56	5010625
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	96-18-4	01/30/15 10:30	01/30/15 16:56	5010625
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L		1.8	108-05-4	01/30/15 10:30	01/30/15 16:56	5010625
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-01-4	01/30/15 10:30	01/30/15 16:56	5010625
Xylenes, total	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	1330-20-7	01/30/15 10:30	01/30/15 16:56	5010625
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	98 %		80-120				1868-53-7	01/30/15 10:30	01/30/15 16:56	5010625

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW10
Lab No: AYA0703-05
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 13:38
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	104 %		78-120				17060-07-0	01/30/15 10:30	01/30/15 16:56	5010625
Surr: Toluene-d8	EPA 8260B	EPA 5030B	100 %		80-120				2037-26-5	01/30/15 10:30	01/30/15 16:56	5010625
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	99 %		80-120				460-00-4	01/30/15 10:30	01/30/15 16:56	5010625

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
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(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW11R
Lab No: AYA0703-06
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 10:47
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Antimony	EPA 6020A	EPA 3005A	ND	6.00	1	ug/L		1.05	7440-36-0	02/06/15 08:15	02/06/15 14:47	5020134
Arsenic	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.13	7440-38-2	02/06/15 08:15	02/06/15 14:47	5020134
Barium	EPA 6020A	EPA 3005A	30.7	100	1	ug/L	J	0.10	7440-39-3	02/06/15 08:15	02/06/15 14:47	5020134
Beryllium	EPA 6020A	EPA 3005A	0.12	1.00	1	ug/L	J	0.05	7440-41-7	02/06/15 08:15	02/06/15 14:47	5020134
Cadmium	EPA 6020A	EPA 3005A	ND	1.00	1	ug/L		0.05	7440-43-9	02/06/15 08:15	02/06/15 14:47	5020134
Chromium	EPA 6020A	EPA 3005A	1.78	10.0	1	ug/L	J	0.73	7440-47-3	02/06/15 08:15	02/06/15 14:47	5020134
Cobalt	EPA 6020A	EPA 3005A	2.81	10.0	1	ug/L	J	0.26	7440-48-4	02/06/15 08:15	02/06/15 14:47	5020134
Copper	EPA 6020A	EPA 3005A	4.40	10.0	1	ug/L	J	0.22	7440-50-8	02/06/15 08:15	02/06/15 14:47	5020134
Lead	EPA 6020A	EPA 3005A	0.10	10.0	1	ug/L	J	0.05	7439-92-1	02/06/15 08:15	02/06/15 14:47	5020134
Nickel	EPA 6020A	EPA 3005A	1.76	50.0	1	ug/L	J	0.22	7440-02-0	02/06/15 08:15	02/06/15 14:47	5020134
Selenium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.01	7782-49-2	02/06/15 08:15	02/06/15 14:47	5020134
Silver	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.17	7440-22-4	02/06/15 08:15	02/06/15 14:47	5020134
Thallium	EPA 6020A	EPA 3005A	ND	5.50	1	ug/L		0.09	7440-28-0	02/06/15 08:15	02/06/15 14:47	5020134
Vanadium	EPA 6020A	EPA 3005A	ND	25.0	1	ug/L		0.93	7440-62-2	02/06/15 08:15	02/06/15 14:47	5020134
Zinc	EPA 6020A	EPA 3005A	4.73	10.0	1	ug/L	B-01, J	0.64	7440-66-6	02/06/15 08:15	02/06/15 14:47	5020134
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	ND	100	1	ug/L		5.7	67-64-1	01/30/15 10:30	01/30/15 17:23	5010625
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L		0.6	107-13-1	01/30/15 10:30	01/30/15 17:23	5010625
Benzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	71-43-2	01/30/15 10:30	01/30/15 17:23	5010625
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	74-97-5	01/30/15 10:30	01/30/15 17:23	5010625
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.5	75-27-4	01/30/15 10:30	01/30/15 17:23	5010625

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW11R
Lab No: AYA0703-06
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 10:47
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.7	75-25-2	01/30/15 10:30	01/30/15 17:23	5010625
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.6	74-83-9	01/30/15 10:30	01/30/15 17:23	5010625
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	75-15-0	01/30/15 10:30	01/30/15 17:23	5010625
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	56-23-5	01/30/15 10:30	01/30/15 17:23	5010625
Chlorobenzene	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.2	108-90-7	01/30/15 10:30	01/30/15 17:23	5010625
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	75-00-3	01/30/15 10:30	01/30/15 17:23	5010625
Chloroform	EPA 8260B	EPA 5030B	0.2	5.0	1	ug/L	J	0.2	67-66-3	01/30/15 10:30	01/30/15 17:23	5010625
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	74-87-3	01/30/15 10:30	01/30/15 17:23	5010625
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		1.1	124-48-1	01/30/15 10:30	01/30/15 17:23	5010625
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L		0.7	96-12-8	01/30/15 10:30	01/30/15 17:23	5010625
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-93-4	01/30/15 10:30	01/30/15 17:23	5010625
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	74-95-3	01/30/15 10:30	01/30/15 17:23	5010625
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.3	95-50-1	01/30/15 10:30	01/30/15 17:23	5010625
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-46-7	01/30/15 10:30	01/30/15 17:23	5010625
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.8	110-57-6	01/30/15 10:30	01/30/15 17:23	5010625
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-34-3	01/30/15 10:30	01/30/15 17:23	5010625
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	107-06-2	01/30/15 10:30	01/30/15 17:23	5010625
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-35-4	01/30/15 10:30	01/30/15 17:23	5010625
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-59-2	01/30/15 10:30	01/30/15 17:23	5010625
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-60-5	01/30/15 10:30	01/30/15 17:23	5010625
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	78-87-5	01/30/15 10:30	01/30/15 17:23	5010625
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.8	10061-01-5	01/30/15 10:30	01/30/15 17:23	5010625

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110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW11R
Lab No: AYA0703-06
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 10:47
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	10061-02-6	01/30/15 10:30	01/30/15 17:23	5010625
Ethylbenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-41-4	01/30/15 10:30	01/30/15 17:23	5010625
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.5	74-88-4	01/30/15 10:30	01/30/15 17:23	5010625
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	ND	50	1	ug/L		0.6	591-78-6	01/30/15 10:30	01/30/15 17:23	5010625
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	75-09-2	01/30/15 10:30	01/30/15 17:23	5010625
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	78-93-3	01/30/15 10:30	01/30/15 17:23	5010625
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.4	108-10-1	01/30/15 10:30	01/30/15 17:23	5010625
Styrene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-42-5	01/30/15 10:30	01/30/15 17:23	5010625
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	630-20-6	01/30/15 10:30	01/30/15 17:23	5010625
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	79-34-5	01/30/15 10:30	01/30/15 17:23	5010625
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	127-18-4	01/30/15 10:30	01/30/15 17:23	5010625
Toluene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	108-88-3	01/30/15 10:30	01/30/15 17:23	5010625
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	71-55-6	01/30/15 10:30	01/30/15 17:23	5010625
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	79-00-5	01/30/15 10:30	01/30/15 17:23	5010625
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	79-01-6	01/30/15 10:30	01/30/15 17:23	5010625
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-69-4	01/30/15 10:30	01/30/15 17:23	5010625
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	96-18-4	01/30/15 10:30	01/30/15 17:23	5010625
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L		1.8	108-05-4	01/30/15 10:30	01/30/15 17:23	5010625
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-01-4	01/30/15 10:30	01/30/15 17:23	5010625
Xylenes, total	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	1330-20-7	01/30/15 10:30	01/30/15 17:23	5010625
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	95 %		80-120				1868-53-7	01/30/15 10:30	01/30/15 17:23	5010625

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Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW11R
Lab No: AYA0703-06
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 10:47
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	103 %		78-120				17060-07-0	01/30/15 10:30	01/30/15 17:23	5010625
Surr: Toluene-d8	EPA 8260B	EPA 5030B	101 %		80-120				2037-26-5	01/30/15 10:30	01/30/15 17:23	5010625
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	98 %		80-120				460-00-4	01/30/15 10:30	01/30/15 17:23	5010625

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW13
Lab No: AYA0703-07
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 15:35
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Antimony	EPA 6020A	EPA 3005A	ND	6.00	1	ug/L		1.05	7440-36-0	02/06/15 08:15	02/06/15 14:52	5020134
Arsenic	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.13	7440-38-2	02/06/15 08:15	02/06/15 14:52	5020134
Barium	EPA 6020A	EPA 3005A	332	100	1	ug/L		0.10	7440-39-3	02/06/15 08:15	02/06/15 14:52	5020134
Beryllium	EPA 6020A	EPA 3005A	0.60	1.00	1	ug/L	J	0.05	7440-41-7	02/06/15 08:15	02/06/15 14:52	5020134
Cadmium	EPA 6020A	EPA 3005A	0.05	1.00	1	ug/L	J	0.05	7440-43-9	02/06/15 08:15	02/06/15 14:52	5020134
Chromium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.73	7440-47-3	02/06/15 08:15	02/06/15 14:52	5020134
Cobalt	EPA 6020A	EPA 3005A	3.29	10.0	1	ug/L	J	0.26	7440-48-4	02/06/15 08:15	02/06/15 14:52	5020134
Copper	EPA 6020A	EPA 3005A	0.56	10.0	1	ug/L	J	0.22	7440-50-8	02/06/15 08:15	02/06/15 14:52	5020134
Lead	EPA 6020A	EPA 3005A	0.38	10.0	1	ug/L	J	0.05	7439-92-1	02/06/15 08:15	02/06/15 14:52	5020134
Nickel	EPA 6020A	EPA 3005A	3.13	50.0	1	ug/L	J	0.22	7440-02-0	02/06/15 08:15	02/06/15 14:52	5020134
Selenium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.01	7782-49-2	02/06/15 08:15	02/06/15 14:52	5020134
Silver	EPA 6020A	EPA 3005A	1.01	10.0	1	ug/L	J	0.17	7440-22-4	02/06/15 08:15	02/06/15 14:52	5020134
Thallium	EPA 6020A	EPA 3005A	ND	5.50	1	ug/L		0.09	7440-28-0	02/06/15 08:15	02/06/15 14:52	5020134
Vanadium	EPA 6020A	EPA 3005A	ND	25.0	1	ug/L		0.93	7440-62-2	02/06/15 08:15	02/06/15 14:52	5020134
Zinc	EPA 6020A	EPA 3005A	5.83	10.0	1	ug/L	B-01, J	0.64	7440-66-6	02/06/15 08:15	02/06/15 14:52	5020134
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	ND	100	1	ug/L		5.7	67-64-1	01/30/15 10:30	01/30/15 17:50	5010625
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L		0.6	107-13-1	01/30/15 10:30	01/30/15 17:50	5010625
Benzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	71-43-2	01/30/15 10:30	01/30/15 17:50	5010625
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	74-97-5	01/30/15 10:30	01/30/15 17:50	5010625
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.5	75-27-4	01/30/15 10:30	01/30/15 17:50	5010625

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Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW13
Lab No: AYA0703-07
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 15:35
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.7	75-25-2	01/30/15 10:30	01/30/15 17:50	5010625
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.6	74-83-9	01/30/15 10:30	01/30/15 17:50	5010625
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	75-15-0	01/30/15 10:30	01/30/15 17:50	5010625
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	56-23-5	01/30/15 10:30	01/30/15 17:50	5010625
Chlorobenzene	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.2	108-90-7	01/30/15 10:30	01/30/15 17:50	5010625
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	75-00-3	01/30/15 10:30	01/30/15 17:50	5010625
Chloroform	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	67-66-3	01/30/15 10:30	01/30/15 17:50	5010625
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	74-87-3	01/30/15 10:30	01/30/15 17:50	5010625
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		1.1	124-48-1	01/30/15 10:30	01/30/15 17:50	5010625
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L		0.7	96-12-8	01/30/15 10:30	01/30/15 17:50	5010625
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-93-4	01/30/15 10:30	01/30/15 17:50	5010625
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	74-95-3	01/30/15 10:30	01/30/15 17:50	5010625
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.3	95-50-1	01/30/15 10:30	01/30/15 17:50	5010625
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-46-7	01/30/15 10:30	01/30/15 17:50	5010625
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.8	110-57-6	01/30/15 10:30	01/30/15 17:50	5010625
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-34-3	01/30/15 10:30	01/30/15 17:50	5010625
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	107-06-2	01/30/15 10:30	01/30/15 17:50	5010625
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-35-4	01/30/15 10:30	01/30/15 17:50	5010625
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-59-2	01/30/15 10:30	01/30/15 17:50	5010625
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-60-5	01/30/15 10:30	01/30/15 17:50	5010625
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	78-87-5	01/30/15 10:30	01/30/15 17:50	5010625
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.8	10061-01-5	01/30/15 10:30	01/30/15 17:50	5010625

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW13
Lab No: AYA0703-07
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 15:35
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	10061-02-6	01/30/15 10:30	01/30/15 17:50	5010625
Ethylbenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-41-4	01/30/15 10:30	01/30/15 17:50	5010625
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.5	74-88-4	01/30/15 10:30	01/30/15 17:50	5010625
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	ND	50	1	ug/L		0.6	591-78-6	01/30/15 10:30	01/30/15 17:50	5010625
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	75-09-2	01/30/15 10:30	01/30/15 17:50	5010625
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	78-93-3	01/30/15 10:30	01/30/15 17:50	5010625
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.4	108-10-1	01/30/15 10:30	01/30/15 17:50	5010625
Styrene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-42-5	01/30/15 10:30	01/30/15 17:50	5010625
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	630-20-6	01/30/15 10:30	01/30/15 17:50	5010625
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	79-34-5	01/30/15 10:30	01/30/15 17:50	5010625
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	127-18-4	01/30/15 10:30	01/30/15 17:50	5010625
Toluene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	108-88-3	01/30/15 10:30	01/30/15 17:50	5010625
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	71-55-6	01/30/15 10:30	01/30/15 17:50	5010625
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	79-00-5	01/30/15 10:30	01/30/15 17:50	5010625
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	79-01-6	01/30/15 10:30	01/30/15 17:50	5010625
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-69-4	01/30/15 10:30	01/30/15 17:50	5010625
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	96-18-4	01/30/15 10:30	01/30/15 17:50	5010625
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L		1.8	108-05-4	01/30/15 10:30	01/30/15 17:50	5010625
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-01-4	01/30/15 10:30	01/30/15 17:50	5010625
Xylenes, total	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	1330-20-7	01/30/15 10:30	01/30/15 17:50	5010625
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	95 %		80-120				1868-53-7	01/30/15 10:30	01/30/15 17:50	5010625

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW13
Lab No: AYA0703-07
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 15:35
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	102 %		78-120				17060-07-0	01/30/15 10:30	01/30/15 17:50	5010625
Surr: Toluene-d8	EPA 8260B	EPA 5030B	102 %		80-120				2037-26-5	01/30/15 10:30	01/30/15 17:50	5010625
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	99 %		80-120				460-00-4	01/30/15 10:30	01/30/15 17:50	5010625

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110 Technology Parkway, Norcross, GA 30092

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW15
Lab No: AYA0703-08
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 12:42
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Antimony	EPA 6020A	EPA 3005A	ND	6.00	1	ug/L		1.05	7440-36-0	02/06/15 08:15	02/06/15 14:57	5020134
Arsenic	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.13	7440-38-2	02/06/15 08:15	02/06/15 14:57	5020134
Barium	EPA 6020A	EPA 3005A	127	100	1	ug/L		0.10	7440-39-3	02/06/15 08:15	02/06/15 14:57	5020134
Beryllium	EPA 6020A	EPA 3005A	0.35	1.00	1	ug/L	J	0.05	7440-41-7	02/06/15 08:15	02/06/15 14:57	5020134
Cadmium	EPA 6020A	EPA 3005A	ND	1.00	1	ug/L		0.05	7440-43-9	02/06/15 08:15	02/06/15 14:57	5020134
Chromium	EPA 6020A	EPA 3005A	1.98	10.0	1	ug/L	J	0.73	7440-47-3	02/06/15 08:15	02/06/15 14:57	5020134
Cobalt	EPA 6020A	EPA 3005A	3.25	10.0	1	ug/L	J	0.26	7440-48-4	02/06/15 08:15	02/06/15 14:57	5020134
Copper	EPA 6020A	EPA 3005A	0.73	10.0	1	ug/L	J	0.22	7440-50-8	02/06/15 08:15	02/06/15 14:57	5020134
Lead	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.05	7439-92-1	02/06/15 08:15	02/06/15 14:57	5020134
Nickel	EPA 6020A	EPA 3005A	3.68	50.0	1	ug/L	J	0.22	7440-02-0	02/06/15 08:15	02/06/15 14:57	5020134
Selenium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.01	7782-49-2	02/06/15 08:15	02/06/15 14:57	5020134
Silver	EPA 6020A	EPA 3005A	0.18	10.0	1	ug/L	J	0.17	7440-22-4	02/06/15 08:15	02/06/15 14:57	5020134
Thallium	EPA 6020A	EPA 3005A	ND	5.50	1	ug/L		0.09	7440-28-0	02/06/15 08:15	02/06/15 14:57	5020134
Vanadium	EPA 6020A	EPA 3005A	ND	25.0	1	ug/L		0.93	7440-62-2	02/06/15 08:15	02/06/15 14:57	5020134
Zinc	EPA 6020A	EPA 3005A	4.43	10.0	1	ug/L	J	0.64	7440-66-6	02/11/15 08:40	02/11/15 18:03	5020252
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	ND	100	1	ug/L		5.7	67-64-1	02/02/15 08:30	02/02/15 08:55	5010625
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L		0.6	107-13-1	02/02/15 08:30	02/02/15 08:55	5010625
Benzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	71-43-2	02/02/15 08:30	02/02/15 08:55	5010625
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	74-97-5	02/02/15 08:30	02/02/15 08:55	5010625
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.5	75-27-4	02/02/15 08:30	02/02/15 08:55	5010625

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110 Technology Parkway, Norcross, GA 30092

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW15
Lab No: AYA0703-08
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 12:42
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.7	75-25-2	02/02/15 08:30	02/02/15 08:55	5010625
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.6	74-83-9	02/02/15 08:30	02/02/15 08:55	5010625
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	75-15-0	02/02/15 08:30	02/02/15 08:55	5010625
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	56-23-5	02/02/15 08:30	02/02/15 08:55	5010625
Chlorobenzene	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.2	108-90-7	02/02/15 08:30	02/02/15 08:55	5010625
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	75-00-3	02/02/15 08:30	02/02/15 08:55	5010625
Chloroform	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	67-66-3	02/02/15 08:30	02/02/15 08:55	5010625
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	74-87-3	02/02/15 08:30	02/02/15 08:55	5010625
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		1.1	124-48-1	02/02/15 08:30	02/02/15 08:55	5010625
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L		0.7	96-12-8	02/02/15 08:30	02/02/15 08:55	5010625
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-93-4	02/02/15 08:30	02/02/15 08:55	5010625
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	74-95-3	02/02/15 08:30	02/02/15 08:55	5010625
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.3	95-50-1	02/02/15 08:30	02/02/15 08:55	5010625
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-46-7	02/02/15 08:30	02/02/15 08:55	5010625
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.8	110-57-6	02/02/15 08:30	02/02/15 08:55	5010625
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-34-3	02/02/15 08:30	02/02/15 08:55	5010625
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	107-06-2	02/02/15 08:30	02/02/15 08:55	5010625
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-35-4	02/02/15 08:30	02/02/15 08:55	5010625
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-59-2	02/02/15 08:30	02/02/15 08:55	5010625
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-60-5	02/02/15 08:30	02/02/15 08:55	5010625
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	78-87-5	02/02/15 08:30	02/02/15 08:55	5010625
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.8	10061-01-5	02/02/15 08:30	02/02/15 08:55	5010625

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110 Technology Parkway, Norcross, GA 30092

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW15
Lab No: AYA0703-08
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 12:42
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	10061-02-6	02/02/15 08:30	02/02/15 08:55	5010625
Ethylbenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-41-4	02/02/15 08:30	02/02/15 08:55	5010625
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.5	74-88-4	02/02/15 08:30	02/02/15 08:55	5010625
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	ND	50	1	ug/L		0.6	591-78-6	02/02/15 08:30	02/02/15 08:55	5010625
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	75-09-2	02/02/15 08:30	02/02/15 08:55	5010625
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	78-93-3	02/02/15 08:30	02/02/15 08:55	5010625
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.4	108-10-1	02/02/15 08:30	02/02/15 08:55	5010625
Styrene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-42-5	02/02/15 08:30	02/02/15 08:55	5010625
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	630-20-6	02/02/15 08:30	02/02/15 08:55	5010625
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	79-34-5	02/02/15 08:30	02/02/15 08:55	5010625
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	127-18-4	02/02/15 08:30	02/02/15 08:55	5010625
Toluene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	108-88-3	02/02/15 08:30	02/02/15 08:55	5010625
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	71-55-6	02/02/15 08:30	02/02/15 08:55	5010625
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	79-00-5	02/02/15 08:30	02/02/15 08:55	5010625
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	79-01-6	02/02/15 08:30	02/02/15 08:55	5010625
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-69-4	02/02/15 08:30	02/02/15 08:55	5010625
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	96-18-4	02/02/15 08:30	02/02/15 08:55	5010625
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L		1.8	108-05-4	02/02/15 08:30	02/02/15 08:55	5010625
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-01-4	02/02/15 08:30	02/02/15 08:55	5010625
Xylenes, total	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	1330-20-7	02/02/15 08:30	02/02/15 08:55	5010625
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	96 %		80-120				1868-53-7	02/02/15 08:30	02/02/15 08:55	5010625

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW15
Lab No: AYA0703-08
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 12:42
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	103 %		78-120				17060-07-0	02/02/15 08:30	02/02/15 08:55	5010625
Surr: Toluene-d8	EPA 8260B	EPA 5030B	100 %		80-120				2037-26-5	02/02/15 08:30	02/02/15 08:55	5010625
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	98 %		80-120				460-00-4	02/02/15 08:30	02/02/15 08:55	5010625

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW16R
Lab No: AYA0703-09
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 11:53
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Antimony	EPA 6020A	EPA 3005A	ND	6.00	1	ug/L		1.05	7440-36-0	02/06/15 08:15	02/06/15 15:02	5020134
Arsenic	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.13	7440-38-2	02/06/15 08:15	02/06/15 15:02	5020134
Barium	EPA 6020A	EPA 3005A	59.8	100	1	ug/L	J	0.10	7440-39-3	02/06/15 08:15	02/06/15 15:02	5020134
Beryllium	EPA 6020A	EPA 3005A	0.17	1.00	1	ug/L	J	0.05	7440-41-7	02/06/15 08:15	02/06/15 15:02	5020134
Cadmium	EPA 6020A	EPA 3005A	ND	1.00	1	ug/L		0.05	7440-43-9	02/06/15 08:15	02/06/15 15:02	5020134
Chromium	EPA 6020A	EPA 3005A	1.45	10.0	1	ug/L	J	0.73	7440-47-3	02/06/15 08:15	02/06/15 15:02	5020134
Cobalt	EPA 6020A	EPA 3005A	7.03	10.0	1	ug/L	J	0.26	7440-48-4	02/06/15 08:15	02/06/15 15:02	5020134
Copper	EPA 6020A	EPA 3005A	1.26	10.0	1	ug/L	J	0.22	7440-50-8	02/06/15 08:15	02/06/15 15:02	5020134
Lead	EPA 6020A	EPA 3005A	1.95	10.0	1	ug/L	J	0.05	7439-92-1	02/06/15 08:15	02/06/15 15:02	5020134
Nickel	EPA 6020A	EPA 3005A	1.41	50.0	1	ug/L	J	0.22	7440-02-0	02/06/15 08:15	02/06/15 15:02	5020134
Selenium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.01	7782-49-2	02/06/15 08:15	02/06/15 15:02	5020134
Silver	EPA 6020A	EPA 3005A	0.49	10.0	1	ug/L	J	0.17	7440-22-4	02/06/15 08:15	02/06/15 15:02	5020134
Thallium	EPA 6020A	EPA 3005A	ND	5.50	1	ug/L		0.09	7440-28-0	02/06/15 08:15	02/06/15 15:02	5020134
Vanadium	EPA 6020A	EPA 3005A	2.37	25.0	1	ug/L	J	0.93	7440-62-2	02/06/15 08:15	02/06/15 15:02	5020134
Zinc	EPA 6020A	EPA 3005A	5.89	10.0	1	ug/L	B-01, J	0.64	7440-66-6	02/06/15 08:15	02/06/15 15:02	5020134
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	ND	100	1	ug/L		5.7	67-64-1	01/30/15 10:30	01/30/15 19:17	5010625
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L		0.6	107-13-1	01/30/15 10:30	01/30/15 19:17	5010625
Benzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	71-43-2	01/30/15 10:30	01/30/15 19:17	5010625
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	74-97-5	01/30/15 10:30	01/30/15 19:17	5010625
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.5	75-27-4	01/30/15 10:30	01/30/15 19:17	5010625

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1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW16R
Lab No: AYA0703-09
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 11:53
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.7	75-25-2	01/30/15 10:30	01/30/15 19:17	5010625
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.6	74-83-9	01/30/15 10:30	01/30/15 19:17	5010625
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	75-15-0	01/30/15 10:30	01/30/15 19:17	5010625
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	56-23-5	01/30/15 10:30	01/30/15 19:17	5010625
Chlorobenzene	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.2	108-90-7	01/30/15 10:30	01/30/15 19:17	5010625
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	75-00-3	01/30/15 10:30	01/30/15 19:17	5010625
Chloroform	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	67-66-3	01/30/15 10:30	01/30/15 19:17	5010625
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	74-87-3	01/30/15 10:30	01/30/15 19:17	5010625
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		1.1	124-48-1	01/30/15 10:30	01/30/15 19:17	5010625
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L		0.7	96-12-8	01/30/15 10:30	01/30/15 19:17	5010625
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-93-4	01/30/15 10:30	01/30/15 19:17	5010625
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	74-95-3	01/30/15 10:30	01/30/15 19:17	5010625
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.3	95-50-1	01/30/15 10:30	01/30/15 19:17	5010625
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-46-7	01/30/15 10:30	01/30/15 19:17	5010625
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.8	110-57-6	01/30/15 10:30	01/30/15 19:17	5010625
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-34-3	01/30/15 10:30	01/30/15 19:17	5010625
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	107-06-2	01/30/15 10:30	01/30/15 19:17	5010625
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-35-4	01/30/15 10:30	01/30/15 19:17	5010625
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-59-2	01/30/15 10:30	01/30/15 19:17	5010625
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-60-5	01/30/15 10:30	01/30/15 19:17	5010625
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	78-87-5	01/30/15 10:30	01/30/15 19:17	5010625
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.8	10061-01-5	01/30/15 10:30	01/30/15 19:17	5010625

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW16R
Lab No: AYA0703-09
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 11:53
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	10061-02-6	01/30/15 10:30	01/30/15 19:17	5010625
Ethylbenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-41-4	01/30/15 10:30	01/30/15 19:17	5010625
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.5	74-88-4	01/30/15 10:30	01/30/15 19:17	5010625
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	ND	50	1	ug/L		0.6	591-78-6	01/30/15 10:30	01/30/15 19:17	5010625
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	75-09-2	01/30/15 10:30	01/30/15 19:17	5010625
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	78-93-3	01/30/15 10:30	01/30/15 19:17	5010625
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.4	108-10-1	01/30/15 10:30	01/30/15 19:17	5010625
Styrene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-42-5	01/30/15 10:30	01/30/15 19:17	5010625
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	630-20-6	01/30/15 10:30	01/30/15 19:17	5010625
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	79-34-5	01/30/15 10:30	01/30/15 19:17	5010625
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	127-18-4	01/30/15 10:30	01/30/15 19:17	5010625
Toluene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	108-88-3	01/30/15 10:30	01/30/15 19:17	5010625
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	71-55-6	01/30/15 10:30	01/30/15 19:17	5010625
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	79-00-5	01/30/15 10:30	01/30/15 19:17	5010625
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	79-01-6	01/30/15 10:30	01/30/15 19:17	5010625
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-69-4	01/30/15 10:30	01/30/15 19:17	5010625
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	96-18-4	01/30/15 10:30	01/30/15 19:17	5010625
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L		1.8	108-05-4	01/30/15 10:30	01/30/15 19:17	5010625
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-01-4	01/30/15 10:30	01/30/15 19:17	5010625
Xylenes, total	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	1330-20-7	01/30/15 10:30	01/30/15 19:17	5010625
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	97 %		80-120				1868-53-7	01/30/15 10:30	01/30/15 19:17	5010625

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Conover NC, 28613

February 13, 2015

Attention: Mr. Matt Einsmann

Client ID: 0803-GW16R
Lab No: AYA0703-09
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 11:53
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	103 %		78-120				17060-07-0	01/30/15 10:30	01/30/15 19:17	5010625
Surr: Toluene-d8	EPA 8260B	EPA 5030B	100 %		80-120				2037-26-5	01/30/15 10:30	01/30/15 19:17	5010625
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	102 %		80-120				460-00-4	01/30/15 10:30	01/30/15 19:17	5010625

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1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW17
Lab No: AYA0703-10
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 12:05
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Antimony	EPA 6020A	EPA 3005A	ND	6.00	1	ug/L		1.05	7440-36-0	02/06/15 08:15	02/06/15 15:07	5020134
Arsenic	EPA 6020A	EPA 3005A	2.98	10.0	1	ug/L	J	1.13	7440-38-2	02/06/15 08:15	02/06/15 15:07	5020134
Barium	EPA 6020A	EPA 3005A	340	100	1	ug/L		0.10	7440-39-3	02/06/15 08:15	02/06/15 15:07	5020134
Beryllium	EPA 6020A	EPA 3005A	1.78	1.00	1	ug/L		0.05	7440-41-7	02/06/15 08:15	02/06/15 15:07	5020134
Cadmium	EPA 6020A	EPA 3005A	0.05	1.00	1	ug/L	J	0.05	7440-43-9	02/06/15 08:15	02/06/15 15:07	5020134
Chromium	EPA 6020A	EPA 3005A	32.4	10.0	1	ug/L		0.73	7440-47-3	02/06/15 08:15	02/06/15 15:07	5020134
Cobalt	EPA 6020A	EPA 3005A	11.9	10.0	1	ug/L		0.26	7440-48-4	02/06/15 08:15	02/06/15 15:07	5020134
Copper	EPA 6020A	EPA 3005A	13.6	10.0	1	ug/L		0.22	7440-50-8	02/06/15 08:15	02/06/15 15:07	5020134
Lead	EPA 6020A	EPA 3005A	18.3	10.0	1	ug/L		0.05	7439-92-1	02/06/15 08:15	02/06/15 15:07	5020134
Nickel	EPA 6020A	EPA 3005A	5.89	50.0	1	ug/L	J	0.22	7440-02-0	02/06/15 08:15	02/06/15 15:07	5020134
Selenium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.01	7782-49-2	02/06/15 08:15	02/06/15 15:07	5020134
Silver	EPA 6020A	EPA 3005A	5.38	10.0	1	ug/L	J	0.17	7440-22-4	02/06/15 08:15	02/06/15 15:07	5020134
Thallium	EPA 6020A	EPA 3005A	ND	5.50	1	ug/L		0.09	7440-28-0	02/06/15 08:15	02/06/15 15:07	5020134
Vanadium	EPA 6020A	EPA 3005A	60.7	25.0	1	ug/L		0.93	7440-62-2	02/06/15 08:15	02/06/15 15:07	5020134
Zinc	EPA 6020A	EPA 3005A	34.9	10.0	1	ug/L	B-01	0.64	7440-66-6	02/06/15 08:15	02/06/15 15:07	5020134
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	ND	100	1	ug/L		5.7	67-64-1	01/30/15 10:30	01/30/15 19:43	5010625
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L		0.6	107-13-1	01/30/15 10:30	01/30/15 19:43	5010625
Benzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	71-43-2	01/30/15 10:30	01/30/15 19:43	5010625
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	74-97-5	01/30/15 10:30	01/30/15 19:43	5010625
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.5	75-27-4	01/30/15 10:30	01/30/15 19:43	5010625

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February 13, 2015

Client ID: 0803-GW17
Lab No: AYA0703-10
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 12:05
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.7	75-25-2	01/30/15 10:30	01/30/15 19:43	5010625
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.6	74-83-9	01/30/15 10:30	01/30/15 19:43	5010625
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	75-15-0	01/30/15 10:30	01/30/15 19:43	5010625
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	56-23-5	01/30/15 10:30	01/30/15 19:43	5010625
Chlorobenzene	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.2	108-90-7	01/30/15 10:30	01/30/15 19:43	5010625
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	75-00-3	01/30/15 10:30	01/30/15 19:43	5010625
Chloroform	EPA 8260B	EPA 5030B	0.6	5.0	1	ug/L	J	0.2	67-66-3	01/30/15 10:30	01/30/15 19:43	5010625
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	74-87-3	01/30/15 10:30	01/30/15 19:43	5010625
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		1.1	124-48-1	01/30/15 10:30	01/30/15 19:43	5010625
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L		0.7	96-12-8	01/30/15 10:30	01/30/15 19:43	5010625
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-93-4	01/30/15 10:30	01/30/15 19:43	5010625
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	74-95-3	01/30/15 10:30	01/30/15 19:43	5010625
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.3	95-50-1	01/30/15 10:30	01/30/15 19:43	5010625
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-46-7	01/30/15 10:30	01/30/15 19:43	5010625
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.8	110-57-6	01/30/15 10:30	01/30/15 19:43	5010625
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-34-3	01/30/15 10:30	01/30/15 19:43	5010625
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	107-06-2	01/30/15 10:30	01/30/15 19:43	5010625
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-35-4	01/30/15 10:30	01/30/15 19:43	5010625
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-59-2	01/30/15 10:30	01/30/15 19:43	5010625
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-60-5	01/30/15 10:30	01/30/15 19:43	5010625
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	78-87-5	01/30/15 10:30	01/30/15 19:43	5010625
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.8	10061-01-5	01/30/15 10:30	01/30/15 19:43	5010625

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Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW17
Lab No: AYA0703-10
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 12:05
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Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	10061-02-6	01/30/15 10:30	01/30/15 19:43	5010625
Ethylbenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-41-4	01/30/15 10:30	01/30/15 19:43	5010625
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.5	74-88-4	01/30/15 10:30	01/30/15 19:43	5010625
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	ND	50	1	ug/L		0.6	591-78-6	01/30/15 10:30	01/30/15 19:43	5010625
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	75-09-2	01/30/15 10:30	01/30/15 19:43	5010625
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	78-93-3	01/30/15 10:30	01/30/15 19:43	5010625
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.4	108-10-1	01/30/15 10:30	01/30/15 19:43	5010625
Styrene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-42-5	01/30/15 10:30	01/30/15 19:43	5010625
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	630-20-6	01/30/15 10:30	01/30/15 19:43	5010625
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	79-34-5	01/30/15 10:30	01/30/15 19:43	5010625
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	127-18-4	01/30/15 10:30	01/30/15 19:43	5010625
Toluene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	108-88-3	01/30/15 10:30	01/30/15 19:43	5010625
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	71-55-6	01/30/15 10:30	01/30/15 19:43	5010625
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	79-00-5	01/30/15 10:30	01/30/15 19:43	5010625
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	79-01-6	01/30/15 10:30	01/30/15 19:43	5010625
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-69-4	01/30/15 10:30	01/30/15 19:43	5010625
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	96-18-4	01/30/15 10:30	01/30/15 19:43	5010625
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L		1.8	108-05-4	01/30/15 10:30	01/30/15 19:43	5010625
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-01-4	01/30/15 10:30	01/30/15 19:43	5010625
Xylenes, total	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	1330-20-7	01/30/15 10:30	01/30/15 19:43	5010625
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	97 %		80-120				1868-53-7	01/30/15 10:30	01/30/15 19:43	5010625

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW17
Lab No: AYA0703-10
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 12:05
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	104 %		78-120				17060-07-0	01/30/15 10:30	01/30/15 19:43	5010625
Surr: Toluene-d8	EPA 8260B	EPA 5030B	101 %		80-120				2037-26-5	01/30/15 10:30	01/30/15 19:43	5010625
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	102 %		80-120				460-00-4	01/30/15 10:30	01/30/15 19:43	5010625

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW18
Lab No: AYA0703-11
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 11:15
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Antimony	EPA 6020A	EPA 3005A	ND	6.00	1	ug/L		1.05	7440-36-0	02/06/15 08:15	02/06/15 15:39	5020134
Arsenic	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.13	7440-38-2	02/06/15 08:15	02/06/15 15:39	5020134
Barium	EPA 6020A	EPA 3005A	237	100	1	ug/L		0.10	7440-39-3	02/06/15 08:15	02/06/15 15:39	5020134
Beryllium	EPA 6020A	EPA 3005A	0.97	1.00	1	ug/L	J	0.05	7440-41-7	02/06/15 08:15	02/06/15 15:39	5020134
Cadmium	EPA 6020A	EPA 3005A	ND	1.00	1	ug/L		0.05	7440-43-9	02/06/15 08:15	02/06/15 15:39	5020134
Chromium	EPA 6020A	EPA 3005A	1.34	10.0	1	ug/L	J	0.73	7440-47-3	02/06/15 08:15	02/06/15 15:39	5020134
Cobalt	EPA 6020A	EPA 3005A	4.83	10.0	1	ug/L	J	0.26	7440-48-4	02/06/15 08:15	02/06/15 15:39	5020134
Copper	EPA 6020A	EPA 3005A	0.64	10.0	1	ug/L	J	0.22	7440-50-8	02/06/15 08:15	02/06/15 15:39	5020134
Lead	EPA 6020A	EPA 3005A	2.35	10.0	1	ug/L	J	0.05	7439-92-1	02/06/15 08:15	02/06/15 15:39	5020134
Nickel	EPA 6020A	EPA 3005A	5.64	50.0	1	ug/L	J	0.22	7440-02-0	02/06/15 08:15	02/06/15 15:39	5020134
Selenium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.01	7782-49-2	02/06/15 08:15	02/06/15 15:39	5020134
Silver	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.17	7440-22-4	02/06/15 08:15	02/06/15 15:39	5020134
Thallium	EPA 6020A	EPA 3005A	ND	5.50	1	ug/L		0.09	7440-28-0	02/06/15 08:15	02/06/15 15:39	5020134
Vanadium	EPA 6020A	EPA 3005A	ND	25.0	1	ug/L		0.93	7440-62-2	02/06/15 08:15	02/06/15 15:39	5020134
Zinc	EPA 6020A	EPA 3005A	11.1	10.0	1	ug/L	B-01	0.64	7440-66-6	02/06/15 08:15	02/06/15 15:39	5020134
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	ND	100	1	ug/L		5.7	67-64-1	01/30/15 10:30	01/30/15 20:09	5010625
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L		0.6	107-13-1	01/30/15 10:30	01/30/15 20:09	5010625
Benzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	71-43-2	01/30/15 10:30	01/30/15 20:09	5010625
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	74-97-5	01/30/15 10:30	01/30/15 20:09	5010625
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.5	75-27-4	01/30/15 10:30	01/30/15 20:09	5010625

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW18
Lab No: AYA0703-11
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 11:15
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.7	75-25-2	01/30/15 10:30	01/30/15 20:09	5010625
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.6	74-83-9	01/30/15 10:30	01/30/15 20:09	5010625
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	75-15-0	01/30/15 10:30	01/30/15 20:09	5010625
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	56-23-5	01/30/15 10:30	01/30/15 20:09	5010625
Chlorobenzene	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.2	108-90-7	01/30/15 10:30	01/30/15 20:09	5010625
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	75-00-3	01/30/15 10:30	01/30/15 20:09	5010625
Chloroform	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	67-66-3	01/30/15 10:30	01/30/15 20:09	5010625
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	74-87-3	01/30/15 10:30	01/30/15 20:09	5010625
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		1.1	124-48-1	01/30/15 10:30	01/30/15 20:09	5010625
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L		0.7	96-12-8	01/30/15 10:30	01/30/15 20:09	5010625
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-93-4	01/30/15 10:30	01/30/15 20:09	5010625
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	74-95-3	01/30/15 10:30	01/30/15 20:09	5010625
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.3	95-50-1	01/30/15 10:30	01/30/15 20:09	5010625
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-46-7	01/30/15 10:30	01/30/15 20:09	5010625
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.8	110-57-6	01/30/15 10:30	01/30/15 20:09	5010625
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-34-3	01/30/15 10:30	01/30/15 20:09	5010625
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	107-06-2	01/30/15 10:30	01/30/15 20:09	5010625
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-35-4	01/30/15 10:30	01/30/15 20:09	5010625
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-59-2	01/30/15 10:30	01/30/15 20:09	5010625
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-60-5	01/30/15 10:30	01/30/15 20:09	5010625
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	78-87-5	01/30/15 10:30	01/30/15 20:09	5010625
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.8	10061-01-5	01/30/15 10:30	01/30/15 20:09	5010625

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW18
Lab No: AYA0703-11
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 11:15
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	10061-02-6	01/30/15 10:30	01/30/15 20:09	5010625
Ethylbenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-41-4	01/30/15 10:30	01/30/15 20:09	5010625
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.5	74-88-4	01/30/15 10:30	01/30/15 20:09	5010625
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	ND	50	1	ug/L		0.6	591-78-6	01/30/15 10:30	01/30/15 20:09	5010625
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	75-09-2	01/30/15 10:30	01/30/15 20:09	5010625
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	78-93-3	01/30/15 10:30	01/30/15 20:09	5010625
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.4	108-10-1	01/30/15 10:30	01/30/15 20:09	5010625
Styrene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-42-5	01/30/15 10:30	01/30/15 20:09	5010625
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	630-20-6	01/30/15 10:30	01/30/15 20:09	5010625
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	79-34-5	01/30/15 10:30	01/30/15 20:09	5010625
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	127-18-4	01/30/15 10:30	01/30/15 20:09	5010625
Toluene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	108-88-3	01/30/15 10:30	01/30/15 20:09	5010625
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	71-55-6	01/30/15 10:30	01/30/15 20:09	5010625
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	79-00-5	01/30/15 10:30	01/30/15 20:09	5010625
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	79-01-6	01/30/15 10:30	01/30/15 20:09	5010625
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-69-4	01/30/15 10:30	01/30/15 20:09	5010625
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	96-18-4	01/30/15 10:30	01/30/15 20:09	5010625
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L		1.8	108-05-4	01/30/15 10:30	01/30/15 20:09	5010625
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-01-4	01/30/15 10:30	01/30/15 20:09	5010625
Xylenes, total	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	1330-20-7	01/30/15 10:30	01/30/15 20:09	5010625
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	96 %		80-120				1868-53-7	01/30/15 10:30	01/30/15 20:09	5010625

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW18
Lab No: AYA0703-11
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 11:15
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	102 %		78-120				17060-07-0	01/30/15 10:30	01/30/15 20:09	5010625
Surr: Toluene-d8	EPA 8260B	EPA 5030B	100 %		80-120				2037-26-5	01/30/15 10:30	01/30/15 20:09	5010625
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	101 %		80-120				460-00-4	01/30/15 10:30	01/30/15 20:09	5010625

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(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW21
Lab No: AYA0703-12
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 15:07
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Antimony	EPA 6020A	EPA 3005A	ND	6.00	1	ug/L		1.05	7440-36-0	02/06/15 08:15	02/06/15 15:44	5020134
Arsenic	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.13	7440-38-2	02/06/15 08:15	02/06/15 15:44	5020134
Barium	EPA 6020A	EPA 3005A	28.6	100	1	ug/L	J	0.10	7440-39-3	02/06/15 08:15	02/06/15 15:44	5020134
Beryllium	EPA 6020A	EPA 3005A	0.07	1.00	1	ug/L	J	0.05	7440-41-7	02/06/15 08:15	02/06/15 15:44	5020134
Cadmium	EPA 6020A	EPA 3005A	ND	1.00	1	ug/L		0.05	7440-43-9	02/06/15 08:15	02/06/15 15:44	5020134
Chromium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.73	7440-47-3	02/06/15 08:15	02/06/15 15:44	5020134
Cobalt	EPA 6020A	EPA 3005A	0.33	10.0	1	ug/L	J	0.26	7440-48-4	02/06/15 08:15	02/06/15 15:44	5020134
Copper	EPA 6020A	EPA 3005A	0.49	10.0	1	ug/L	J	0.22	7440-50-8	02/06/15 08:15	02/06/15 15:44	5020134
Lead	EPA 6020A	EPA 3005A	1.35	10.0	1	ug/L	J	0.05	7439-92-1	02/06/15 08:15	02/06/15 15:44	5020134
Nickel	EPA 6020A	EPA 3005A	0.41	50.0	1	ug/L	J	0.22	7440-02-0	02/06/15 08:15	02/06/15 15:44	5020134
Selenium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.01	7782-49-2	02/06/15 08:15	02/06/15 15:44	5020134
Silver	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.17	7440-22-4	02/06/15 08:15	02/06/15 15:44	5020134
Thallium	EPA 6020A	EPA 3005A	ND	5.50	1	ug/L		0.09	7440-28-0	02/06/15 08:15	02/06/15 15:44	5020134
Vanadium	EPA 6020A	EPA 3005A	1.07	25.0	1	ug/L	J	0.93	7440-62-2	02/06/15 08:15	02/06/15 15:44	5020134
Zinc	EPA 6020A	EPA 3005A	3.41	10.0	1	ug/L	B-01, J	0.64	7440-66-6	02/06/15 08:15	02/06/15 15:44	5020134
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	ND	100	1	ug/L		5.7	67-64-1	01/30/15 10:30	01/30/15 20:36	5010625
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L		0.6	107-13-1	01/30/15 10:30	01/30/15 20:36	5010625
Benzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	71-43-2	01/30/15 10:30	01/30/15 20:36	5010625
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	74-97-5	01/30/15 10:30	01/30/15 20:36	5010625
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.5	75-27-4	01/30/15 10:30	01/30/15 20:36	5010625

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW21
Lab No: AYA0703-12
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 15:07
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.7	75-25-2	01/30/15 10:30	01/30/15 20:36	5010625
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.6	74-83-9	01/30/15 10:30	01/30/15 20:36	5010625
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	75-15-0	01/30/15 10:30	01/30/15 20:36	5010625
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	56-23-5	01/30/15 10:30	01/30/15 20:36	5010625
Chlorobenzene	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.2	108-90-7	01/30/15 10:30	01/30/15 20:36	5010625
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	75-00-3	01/30/15 10:30	01/30/15 20:36	5010625
Chloroform	EPA 8260B	EPA 5030B	4.7	5.0	1	ug/L	J	0.2	67-66-3	01/30/15 10:30	01/30/15 20:36	5010625
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	74-87-3	01/30/15 10:30	01/30/15 20:36	5010625
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		1.1	124-48-1	01/30/15 10:30	01/30/15 20:36	5010625
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L		0.7	96-12-8	01/30/15 10:30	01/30/15 20:36	5010625
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-93-4	01/30/15 10:30	01/30/15 20:36	5010625
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	74-95-3	01/30/15 10:30	01/30/15 20:36	5010625
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.3	95-50-1	01/30/15 10:30	01/30/15 20:36	5010625
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-46-7	01/30/15 10:30	01/30/15 20:36	5010625
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.8	110-57-6	01/30/15 10:30	01/30/15 20:36	5010625
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-34-3	01/30/15 10:30	01/30/15 20:36	5010625
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	107-06-2	01/30/15 10:30	01/30/15 20:36	5010625
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-35-4	01/30/15 10:30	01/30/15 20:36	5010625
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-59-2	01/30/15 10:30	01/30/15 20:36	5010625
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-60-5	01/30/15 10:30	01/30/15 20:36	5010625
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	78-87-5	01/30/15 10:30	01/30/15 20:36	5010625
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.8	10061-01-5	01/30/15 10:30	01/30/15 20:36	5010625

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW21
Lab No: AYA0703-12
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 15:07
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	10061-02-6	01/30/15 10:30	01/30/15 20:36	5010625
Ethylbenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-41-4	01/30/15 10:30	01/30/15 20:36	5010625
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.5	74-88-4	01/30/15 10:30	01/30/15 20:36	5010625
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	ND	50	1	ug/L		0.6	591-78-6	01/30/15 10:30	01/30/15 20:36	5010625
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	75-09-2	01/30/15 10:30	01/30/15 20:36	5010625
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	78-93-3	01/30/15 10:30	01/30/15 20:36	5010625
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.4	108-10-1	01/30/15 10:30	01/30/15 20:36	5010625
Styrene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-42-5	01/30/15 10:30	01/30/15 20:36	5010625
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	630-20-6	01/30/15 10:30	01/30/15 20:36	5010625
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	79-34-5	01/30/15 10:30	01/30/15 20:36	5010625
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	127-18-4	01/30/15 10:30	01/30/15 20:36	5010625
Toluene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	108-88-3	01/30/15 10:30	01/30/15 20:36	5010625
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	71-55-6	01/30/15 10:30	01/30/15 20:36	5010625
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	79-00-5	01/30/15 10:30	01/30/15 20:36	5010625
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	79-01-6	01/30/15 10:30	01/30/15 20:36	5010625
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-69-4	01/30/15 10:30	01/30/15 20:36	5010625
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	96-18-4	01/30/15 10:30	01/30/15 20:36	5010625
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L		1.8	108-05-4	01/30/15 10:30	01/30/15 20:36	5010625
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-01-4	01/30/15 10:30	01/30/15 20:36	5010625
Xylenes, total	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	1330-20-7	01/30/15 10:30	01/30/15 20:36	5010625
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	99 %		80-120				1868-53-7	01/30/15 10:30	01/30/15 20:36	5010625

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-GW21
Lab No: AYA0703-12
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 15:07
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	104 %		78-120				17060-07-0	01/30/15 10:30	01/30/15 20:36	5010625
Surr: Toluene-d8	EPA 8260B	EPA 5030B	99 %		80-120				2037-26-5	01/30/15 10:30	01/30/15 20:36	5010625
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	99 %		80-120				460-00-4	01/30/15 10:30	01/30/15 20:36	5010625

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1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-PW1
Lab No: AYA0703-13
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 10:00
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Antimony	EPA 6020A	EPA 3005A	ND	6.00	1	ug/L		1.05	7440-36-0	02/06/15 08:15	02/06/15 15:49	5020134
Arsenic	EPA 6020A	EPA 3005A	1.14	10.0	1	ug/L	J	1.13	7440-38-2	02/06/15 08:15	02/06/15 15:49	5020134
Barium	EPA 6020A	EPA 3005A	64.2	100	1	ug/L	J	0.10	7440-39-3	02/06/15 08:15	02/06/15 15:49	5020134
Beryllium	EPA 6020A	EPA 3005A	ND	1.00	1	ug/L		0.05	7440-41-7	02/06/15 08:15	02/06/15 15:49	5020134
Cadmium	EPA 6020A	EPA 3005A	ND	1.00	1	ug/L		0.05	7440-43-9	02/06/15 08:15	02/06/15 15:49	5020134
Chromium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.73	7440-47-3	02/06/15 08:15	02/06/15 15:49	5020134
Cobalt	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.26	7440-48-4	02/06/15 08:15	02/06/15 15:49	5020134
Copper	EPA 6020A	EPA 3005A	110	10.0	1	ug/L		0.22	7440-50-8	02/06/15 08:15	02/06/15 15:49	5020134
Lead	EPA 6020A	EPA 3005A	8.10	10.0	1	ug/L	J	0.05	7439-92-1	02/06/15 08:15	02/06/15 15:49	5020134
Nickel	EPA 6020A	EPA 3005A	8.85	50.0	1	ug/L	J	0.22	7440-02-0	02/06/15 08:15	02/06/15 15:49	5020134
Selenium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.01	7782-49-2	02/06/15 08:15	02/06/15 15:49	5020134
Silver	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.17	7440-22-4	02/06/15 08:15	02/06/15 15:49	5020134
Thallium	EPA 6020A	EPA 3005A	ND	5.50	1	ug/L		0.09	7440-28-0	02/06/15 08:15	02/06/15 15:49	5020134
Vanadium	EPA 6020A	EPA 3005A	ND	25.0	1	ug/L		0.93	7440-62-2	02/06/15 08:15	02/06/15 15:49	5020134
Zinc	EPA 6020A	EPA 3005A	159	10.0	1	ug/L	B-01	0.64	7440-66-6	02/06/15 08:15	02/06/15 15:49	5020134
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	ND	100	1	ug/L		5.7	67-64-1	01/30/15 10:30	01/30/15 21:02	5010625
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L		0.6	107-13-1	01/30/15 10:30	01/30/15 21:02	5010625
Benzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	71-43-2	01/30/15 10:30	01/30/15 21:02	5010625
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	74-97-5	01/30/15 10:30	01/30/15 21:02	5010625
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.5	75-27-4	01/30/15 10:30	01/30/15 21:02	5010625

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-PW1
Lab No: AYA0703-13
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 10:00
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.7	75-25-2	01/30/15 10:30	01/30/15 21:02	5010625
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.6	74-83-9	01/30/15 10:30	01/30/15 21:02	5010625
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	75-15-0	01/30/15 10:30	01/30/15 21:02	5010625
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	56-23-5	01/30/15 10:30	01/30/15 21:02	5010625
Chlorobenzene	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.2	108-90-7	01/30/15 10:30	01/30/15 21:02	5010625
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	75-00-3	01/30/15 10:30	01/30/15 21:02	5010625
Chloroform	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	67-66-3	01/30/15 10:30	01/30/15 21:02	5010625
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	74-87-3	01/30/15 10:30	01/30/15 21:02	5010625
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		1.1	124-48-1	01/30/15 10:30	01/30/15 21:02	5010625
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L		0.7	96-12-8	01/30/15 10:30	01/30/15 21:02	5010625
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-93-4	01/30/15 10:30	01/30/15 21:02	5010625
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	74-95-3	01/30/15 10:30	01/30/15 21:02	5010625
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.3	95-50-1	01/30/15 10:30	01/30/15 21:02	5010625
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-46-7	01/30/15 10:30	01/30/15 21:02	5010625
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.8	110-57-6	01/30/15 10:30	01/30/15 21:02	5010625
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-34-3	01/30/15 10:30	01/30/15 21:02	5010625
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	107-06-2	01/30/15 10:30	01/30/15 21:02	5010625
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-35-4	01/30/15 10:30	01/30/15 21:02	5010625
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-59-2	01/30/15 10:30	01/30/15 21:02	5010625
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-60-5	01/30/15 10:30	01/30/15 21:02	5010625
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	78-87-5	01/30/15 10:30	01/30/15 21:02	5010625
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.8	10061-01-5	01/30/15 10:30	01/30/15 21:02	5010625

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1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-PW1
Lab No: AYA0703-13
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 10:00
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	10061-02-6	01/30/15 10:30	01/30/15 21:02	5010625
Ethylbenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-41-4	01/30/15 10:30	01/30/15 21:02	5010625
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.5	74-88-4	01/30/15 10:30	01/30/15 21:02	5010625
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	ND	50	1	ug/L		0.6	591-78-6	01/30/15 10:30	01/30/15 21:02	5010625
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	75-09-2	01/30/15 10:30	01/30/15 21:02	5010625
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	78-93-3	01/30/15 10:30	01/30/15 21:02	5010625
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.4	108-10-1	01/30/15 10:30	01/30/15 21:02	5010625
Styrene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-42-5	01/30/15 10:30	01/30/15 21:02	5010625
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	630-20-6	01/30/15 10:30	01/30/15 21:02	5010625
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	79-34-5	01/30/15 10:30	01/30/15 21:02	5010625
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	127-18-4	01/30/15 10:30	01/30/15 21:02	5010625
Toluene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	108-88-3	01/30/15 10:30	01/30/15 21:02	5010625
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	71-55-6	01/30/15 10:30	01/30/15 21:02	5010625
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	79-00-5	01/30/15 10:30	01/30/15 21:02	5010625
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	79-01-6	01/30/15 10:30	01/30/15 21:02	5010625
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-69-4	01/30/15 10:30	01/30/15 21:02	5010625
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	96-18-4	01/30/15 10:30	01/30/15 21:02	5010625
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L		1.8	108-05-4	01/30/15 10:30	01/30/15 21:02	5010625
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-01-4	01/30/15 10:30	01/30/15 21:02	5010625
Xylenes, total	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	1330-20-7	01/30/15 10:30	01/30/15 21:02	5010625
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	98 %		80-120				1868-53-7	01/30/15 10:30	01/30/15 21:02	5010625

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110 Technology Parkway, Norcross, GA 30092

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-PW1
Lab No: AYA0703-13
Matrix: Ground Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 10:00
Date/Time Received: 01/29/15 10:45

Report No.: AYA0703

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	103 %		78-120				17060-07-0	01/30/15 10:30	01/30/15 21:02	5010625
Surr: Toluene-d8	EPA 8260B	EPA 5030B	100 %		80-120				2037-26-5	01/30/15 10:30	01/30/15 21:02	5010625
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	100 %		80-120				460-00-4	01/30/15 10:30	01/30/15 21:02	5010625

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February 13, 2015

Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020134 - EPA 3005A										
Blank (5020134-BLK1)							Prepared & Analyzed: 02/06/15			
Antimony	ND	6.00	ug/L							
Arsenic	ND	10.0	ug/L							
Barium	ND	100	ug/L							
Beryllium	ND	1.00	ug/L							
Cadmium	ND	1.00	ug/L							
Chromium	ND	10.0	ug/L							
Cobalt	ND	10.0	ug/L							
Copper	ND	10.0	ug/L							
Lead	ND	10.0	ug/L							
Nickel	ND	50.0	ug/L							
Selenium	ND	10.0	ug/L							
Silver	ND	10.0	ug/L							
Thallium	ND	5.50	ug/L							
Vanadium	ND	25.0	ug/L							
Zinc	1.12	10.0	ug/L							J
LCS (5020134-BS1)							Prepared & Analyzed: 02/06/15			
Antimony	103	6.00	ug/L	100.00		103	80-120			
Arsenic	106	10.0	ug/L	100.00		106	80-120			
Barium	100	100	ug/L	100.00		100	80-120			
Beryllium	102	1.00	ug/L	100.00		102	80-120			
Cadmium	104	1.00	ug/L	100.00		104	80-120			
Chromium	104	10.0	ug/L	100.00		104	80-120			
Cobalt	105	10.0	ug/L	100.00		105	80-120			
Copper	104	10.0	ug/L	100.00		104	80-120			
Lead	102	10.0	ug/L	100.00		102	80-120			
Nickel	105	50.0	ug/L	100.00		105	80-120			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020134 - EPA 3005A										
LCS (5020134-BS1)							Prepared & Analyzed: 02/06/15			
Selenium	104	10.0	ug/L	100.00		104	80-120			
Silver	102	10.0	ug/L	100.00		102	80-120			
Thallium	99.8	5.50	ug/L	100.00		100	80-120			
Vanadium	105	25.0	ug/L	100.00		105	80-120			
Zinc	103	10.0	ug/L	100.00		103	80-120			
Matrix Spike (5020134-MS1)	**Source: AYA0703-02**						Prepared & Analyzed: 02/06/15			
Antimony	103	6.00	ug/L	100.00	ND	103	75-125			
Arsenic	101	10.0	ug/L	100.00	1.65	99	75-125			
Barium	166	100	ug/L	100.00	71.3	95	75-125			
Beryllium	102	1.00	ug/L	100.00	2.03	100	75-125			
Cadmium	103	1.00	ug/L	100.00	0.06	103	75-125			
Chromium	101	10.0	ug/L	100.00	2.84	98	75-125			
Cobalt	130	10.0	ug/L	100.00	34.3	96	75-125			
Copper	97.9	10.0	ug/L	100.00	1.68	96	75-125			
Lead	103	10.0	ug/L	100.00	1.94	101	75-125			
Nickel	108	50.0	ug/L	100.00	10.6	97	75-125			
Selenium	99.7	10.0	ug/L	100.00	ND	100	75-125			
Silver	105	10.0	ug/L	100.00	3.68	101	75-125			
Thallium	100	5.50	ug/L	100.00	ND	100	75-125			
Vanadium	101	25.0	ug/L	100.00	2.35	99	75-125			
Zinc	103	10.0	ug/L	100.00	7.77	96	75-125			
Matrix Spike Dup (5020134-MSD1)	**Source: AYA0703-02**						Prepared & Analyzed: 02/06/15			
Antimony	105	6.00	ug/L	100.00	ND	105	75-125	2	20	
Arsenic	103	10.0	ug/L	100.00	1.65	101	75-125	2	20	
Barium	170	100	ug/L	100.00	71.3	99	75-125	3	20	

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Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020134 - EPA 3005A										
Matrix Spike Dup (5020134-MSD1)		**Source: AYA0703-02**					Prepared & Analyzed: 02/06/15			
Beryllium	102	1.00	ug/L	100.00	2.03	100	75-125	0.5	20	
Cadmium	104	1.00	ug/L	100.00	0.06	104	75-125	2	20	
Chromium	102	10.0	ug/L	100.00	2.84	100	75-125	2	20	
Cobalt	132	10.0	ug/L	100.00	34.3	97	75-125	1	20	
Copper	100	10.0	ug/L	100.00	1.68	98	75-125	2	20	
Lead	104	10.0	ug/L	100.00	1.94	102	75-125	1	20	
Nickel	110	50.0	ug/L	100.00	10.6	99	75-125	2	20	
Selenium	101	10.0	ug/L	100.00	ND	101	75-125	2	20	
Silver	106	10.0	ug/L	100.00	3.68	103	75-125	2	20	
Thallium	101	5.50	ug/L	100.00	ND	101	75-125	1	20	
Vanadium	104	25.0	ug/L	100.00	2.35	101	75-125	3	20	
Zinc	105	10.0	ug/L	100.00	7.77	98	75-125	2	20	
Post Spike (5020134-PS1)		**Source: AYA0703-02**					Prepared & Analyzed: 02/06/15			
Antimony	91.3		ug/L	100.00	0.02	91	80-120			
Arsenic	104		ug/L	100.00	1.65	102	80-120			
Barium	168		ug/L	100.00	71.3	96	80-120			
Beryllium	103		ug/L	100.00	2.03	100	80-120			
Cadmium	103		ug/L	100.00	0.06	103	80-120			
Chromium	106		ug/L	100.00	2.84	103	80-120			
Cobalt	134		ug/L	100.00	34.3	100	80-120			
Copper	101		ug/L	100.00	1.68	100	80-120			
Lead	103		ug/L	100.00	1.94	101	80-120			
Nickel	111		ug/L	100.00	10.6	101	80-120			
Selenium	103		ug/L	100.00	0.30	103	80-120			
Silver	105		ug/L	100.00	3.68	101	80-120			
Thallium	100		ug/L	100.00	0.09	100	80-120			

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Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020134 - EPA 3005A										
Post Spike (5020134-PS1)		**Source: AYA0703-02**					Prepared & Analyzed: 02/06/15			
Vanadium	109		ug/L	100.00	2.35	106	80-120			
Zinc	109		ug/L	100.00	7.77	101	80-120			
Batch 5020252 - EPA 3005A										
Blank (5020252-BLK1)							Prepared & Analyzed: 02/11/15			
Antimony	ND	6.00	ug/L							
Arsenic	ND	10.0	ug/L							
Barium	ND	100	ug/L							
Beryllium	ND	1.00	ug/L							
Cadmium	ND	1.00	ug/L							
Chromium	ND	10.0	ug/L							
Cobalt	ND	10.0	ug/L							
Copper	ND	10.0	ug/L							
Lead	0.34	10.0	ug/L							J
Nickel	ND	50.0	ug/L							
Selenium	ND	10.0	ug/L							
Silver	ND	10.0	ug/L							
Thallium	ND	5.50	ug/L							
Vanadium	ND	25.0	ug/L							
Zinc	ND	10.0	ug/L							
LCS (5020252-BS1)							Prepared & Analyzed: 02/11/15			
Antimony	106	6.00	ug/L	100.00		106	80-120			
Arsenic	103	10.0	ug/L	100.00		103	80-120			
Barium	99.8	100	ug/L	100.00		100	80-120			J
Beryllium	103	1.00	ug/L	100.00		103	80-120			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020252 - EPA 3005A										
LCS (5020252-BS1)							Prepared & Analyzed: 02/11/15			
Cadmium	102	1.00	ug/L	100.00		102	80-120			
Chromium	103	10.0	ug/L	100.00		103	80-120			
Cobalt	103	10.0	ug/L	100.00		103	80-120			
Copper	102	10.0	ug/L	100.00		102	80-120			
Lead	103	10.0	ug/L	100.00		103	80-120			
Nickel	102	50.0	ug/L	100.00		102	80-120			
Selenium	104	10.0	ug/L	100.00		104	80-120			
Silver	99.3	10.0	ug/L	100.00		99	80-120			
Thallium	102	5.50	ug/L	100.00		102	80-120			
Vanadium	105	25.0	ug/L	100.00		105	80-120			
Zinc	105	10.0	ug/L	100.00		105	80-120			
Duplicate (5020252-DUP1)		**Source: AYA0703-08RE1**					Prepared & Analyzed: 02/11/15			
Antimony	ND	6.00	ug/L		ND				20	
Arsenic	ND	10.0	ug/L		ND				20	
Barium	134	100	ug/L		130			4	20	
Beryllium	0.37	1.00	ug/L		0.34			8	20	J
Cadmium	ND	1.00	ug/L		ND				20	
Chromium	1.28	10.0	ug/L		1.18			8	20	J
Cobalt	3.22	10.0	ug/L		3.16			2	20	J
Copper	0.76	10.0	ug/L		0.65			16	20	J
Lead	ND	10.0	ug/L		ND				20	
Nickel	3.50	50.0	ug/L		3.57			2	20	J
Selenium	ND	10.0	ug/L		ND				20	
Silver	0.21	10.0	ug/L		0.43			69	20	QR-01, J
Thallium	0.16	5.50	ug/L		0.14			13	20	J
Vanadium	1.88	25.0	ug/L		ND				20	J

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Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020252 - EPA 3005A										
Duplicate (5020252-DUP1)		**Source: AYA0703-08RE1**					Prepared & Analyzed: 02/11/15			
Zinc	4.57	10.0	ug/L		4.43			3	20	J
Duplicate (5020252-DUP2)		**Source: AYA0703-11RE1**					Prepared & Analyzed: 02/11/15			
Antimony	ND	6.00	ug/L		ND				20	
Arsenic	ND	10.0	ug/L		ND				20	
Barium	229	100	ug/L		238			4	20	
Beryllium	0.94	1.00	ug/L		1.08			14	20	J
Cadmium	0.05	1.00	ug/L		ND				20	J
Chromium	0.82	10.0	ug/L		ND				20	J
Cobalt	4.66	10.0	ug/L		4.77			2	20	J
Copper	0.54	10.0	ug/L		0.46			16	20	J
Lead	2.35	10.0	ug/L		2.49			6	20	J
Nickel	5.29	50.0	ug/L		5.36			1	20	J
Selenium	ND	10.0	ug/L		ND				20	
Silver	ND	10.0	ug/L		ND				20	
Thallium	ND	5.50	ug/L		ND				20	
Vanadium	1.80	25.0	ug/L		ND				20	J
Zinc	10.4	10.0	ug/L		9.71			7	20	
Matrix Spike (5020252-MS1)		**Source: AYB0225-08**					Prepared & Analyzed: 02/11/15			
Antimony	108	6.00	ug/L	100.00	ND	108	75-125			
Arsenic	104	10.0	ug/L	100.00	4.24	100	75-125			
Barium	452	100	ug/L	100.00	359	94	75-125			
Beryllium	99.8	1.00	ug/L	100.00	0.11	100	75-125			
Cadmium	101	1.00	ug/L	100.00	ND	101	75-125			
Chromium	97.2	10.0	ug/L	100.00	ND	97	75-125			
Cobalt	128	10.0	ug/L	100.00	34.8	93	75-125			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020252 - EPA 3005A										
Matrix Spike (5020252-MS1)		**Source: AYB0225-08**					Prepared & Analyzed: 02/11/15			
Copper	95.7	10.0	ug/L	100.00	1.58	94	75-125			
Lead	101	10.0	ug/L	100.00	0.11	101	75-125			
Nickel	98.7	50.0	ug/L	100.00	4.88	94	75-125			
Selenium	103	10.0	ug/L	100.00	7.15	95	75-125			
Silver	97.4	10.0	ug/L	100.00	ND	97	75-125			
Thallium	98.5	5.50	ug/L	100.00	0.41	98	75-125			
Vanadium	98.1	25.0	ug/L	100.00	1.53	97	75-125			
Zinc	105	10.0	ug/L	100.00	10.3	95	75-125			
Matrix Spike Dup (5020252-MSD1)		**Source: AYB0225-08**					Prepared & Analyzed: 02/11/15			
Antimony	108	6.00	ug/L	100.00	ND	108	75-125	0.8	20	
Arsenic	105	10.0	ug/L	100.00	4.24	100	75-125	0.6	20	
Barium	467	100	ug/L	100.00	359	108	75-125	3	20	
Beryllium	100	1.00	ug/L	100.00	0.11	100	75-125	0.2	20	
Cadmium	101	1.00	ug/L	100.00	ND	101	75-125	0.3	20	
Chromium	98.6	10.0	ug/L	100.00	ND	99	75-125	2	20	
Cobalt	130	10.0	ug/L	100.00	34.8	96	75-125	2	20	
Copper	97.7	10.0	ug/L	100.00	1.58	96	75-125	2	20	
Lead	99.5	10.0	ug/L	100.00	0.11	99	75-125	2	20	
Nickel	101	50.0	ug/L	100.00	4.88	96	75-125	2	20	
Selenium	108	10.0	ug/L	100.00	7.15	101	75-125	5	20	
Silver	97.0	10.0	ug/L	100.00	ND	97	75-125	0.4	20	
Thallium	97.9	5.50	ug/L	100.00	0.41	97	75-125	0.6	20	
Vanadium	103	25.0	ug/L	100.00	1.53	102	75-125	5	20	
Zinc	108	10.0	ug/L	100.00	10.3	98	75-125	3	20	
Post Spike (5020252-PS1)		**Source: AYB0225-08**					Prepared & Analyzed: 02/11/15			

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Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020252 - EPA 3005A										
Post Spike (5020252-PS1)		**Source: AYB0225-08**					Prepared & Analyzed: 02/11/15			
Antimony	108		ug/L	100.00	-0.09	108	80-120			
Arsenic	104		ug/L	100.00	4.24	100	80-120			
Barium	462		ug/L	100.00	359	103	80-120			
Beryllium	98.9		ug/L	100.00	0.11	99	80-120			
Cadmium	100		ug/L	100.00	0.04	100	80-120			
Chromium	97.0		ug/L	100.00	0.13	97	80-120			
Cobalt	129		ug/L	100.00	34.8	94	80-120			
Copper	97.0		ug/L	100.00	1.58	95	80-120			
Lead	100		ug/L	100.00	0.11	100	80-120			
Nickel	99.2		ug/L	100.00	4.88	94	80-120			
Selenium	107		ug/L	100.00	7.15	100	80-120			
Silver	95.7		ug/L	100.00	0.07	96	80-120			
Thallium	98.1		ug/L	100.00	0.41	98	80-120			
Vanadium	101		ug/L	100.00	1.53	100	80-120			
Zinc	109		ug/L	100.00	10.3	98	80-120			

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Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010625 - EPA 5030B										
Blank (5010625-BLK1)							Prepared & Analyzed: 01/30/15			
Acetone	ND	100	ug/L							
Acrylonitrile	ND	200	ug/L							
Benzene	ND	1.0	ug/L							
Bromochloromethane	ND	3.0	ug/L							
Bromodichloromethane	ND	1.0	ug/L							
Bromoform	ND	3.0	ug/L							
Bromomethane	ND	10	ug/L							
Carbon Disulfide	ND	100	ug/L							
Carbon Tetrachloride	ND	1.0	ug/L							
Chlorobenzene	ND	3.0	ug/L							
Chloroethane	ND	10	ug/L							
Chloroform	ND	5.0	ug/L							
Chloromethane	ND	1.0	ug/L							
Dibromochloromethane	ND	3.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	13	ug/L							
1,2-Dibromoethane	ND	1.0	ug/L							
Dibromomethane	ND	10	ug/L							
1,2-Dichlorobenzene	ND	5.0	ug/L							
1,4-Dichlorobenzene	ND	1.0	ug/L							
trans-1,4-Dichloro-2-butene	ND	100	ug/L							
1,1-Dichloroethane	ND	5.0	ug/L							
1,2-Dichloroethane	ND	1.0	ug/L							
1,1-Dichloroethene	ND	5.0	ug/L							
cis-1,2-Dichloroethene	ND	5.0	ug/L							
trans-1,2-Dichloroethene	ND	5.0	ug/L							
1,2-Dichloropropane	ND	1.0	ug/L							
cis-1,3-Dichloropropene	ND	1.0	ug/L							

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Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010625 - EPA 5030B										
Blank (5010625-BLK1)							Prepared & Analyzed: 01/30/15			
trans-1,3-Dichloropropene	ND	1.0	ug/L							
Ethylbenzene	ND	1.0	ug/L							
Iodomethane	ND	10	ug/L							
Methyl Butyl Ketone (2-Hexanone)	ND	50	ug/L							
Methylene Chloride	ND	1.0	ug/L							
Methyl Ethyl Ketone (2-Butanone)	ND	100	ug/L							
4-Methyl-2-pentanone (MIBK)	ND	100	ug/L							
Styrene	ND	1.0	ug/L							
1,1,1,2-Tetrachloroethane	ND	5.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	3.0	ug/L							
Tetrachloroethene	ND	1.0	ug/L							
Toluene	ND	1.0	ug/L							
1,1,1-Trichloroethane	ND	1.0	ug/L							
1,1,2-Trichloroethane	ND	1.0	ug/L							
Trichloroethene	ND	1.0	ug/L							
Trichlorofluoromethane	ND	1.0	ug/L							
1,2,3-Trichloropropane	ND	1.0	ug/L							
Vinyl Acetate	ND	50	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Xylenes, total	ND	5.0	ug/L							
Surr: Dibromofluoromethane	*48*		*ug/L*	*50.000*		*97*	*80-120*			
Surr: 1,2-Dichloroethane-d4	*51*		*ug/L*	*50.000*		*102*	*78-120*			
Surr: Toluene-d8	*51*		*ug/L*	*50.000*		*102*	*80-120*			
Surr: 4-Bromofluorobenzene	*50*		*ug/L*	*50.000*		*100*	*80-120*			
Blank (5010625-BLK2)							Prepared & Analyzed: 02/02/15			

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010625 - EPA 5030B										
Blank (5010625-BLK2)							Prepared & Analyzed: 02/02/15			
Acetone	ND	100	ug/L							
Acrylonitrile	ND	200	ug/L							
Benzene	ND	1.0	ug/L							
Bromochloromethane	ND	3.0	ug/L							
Bromodichloromethane	ND	1.0	ug/L							
Bromoform	ND	3.0	ug/L							
Bromomethane	ND	10	ug/L							
Carbon Disulfide	ND	100	ug/L							
Carbon Tetrachloride	ND	1.0	ug/L							
Chlorobenzene	ND	3.0	ug/L							
Chloroethane	ND	10	ug/L							
Chloroform	ND	5.0	ug/L							
Chloromethane	ND	1.0	ug/L							
Dibromochloromethane	ND	3.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	13	ug/L							
1,2-Dibromoethane	ND	1.0	ug/L							
Dibromomethane	ND	10	ug/L							
1,2-Dichlorobenzene	ND	5.0	ug/L							
1,4-Dichlorobenzene	ND	1.0	ug/L							
trans-1,4-Dichloro-2-butene	ND	100	ug/L							
1,1-Dichloroethane	ND	5.0	ug/L							
1,2-Dichloroethane	ND	1.0	ug/L							
1,1-Dichloroethene	ND	5.0	ug/L							
cis-1,2-Dichloroethene	ND	5.0	ug/L							
trans-1,2-Dichloroethene	ND	5.0	ug/L							
1,2-Dichloropropane	ND	1.0	ug/L							
cis-1,3-Dichloropropene	ND	1.0	ug/L							

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February 13, 2015

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010625 - EPA 5030B										
Blank (5010625-BLK2)							Prepared & Analyzed: 02/02/15			
trans-1,3-Dichloropropene	ND	1.0	ug/L							
Ethylbenzene	ND	1.0	ug/L							
Iodomethane	ND	10	ug/L							
Methyl Butyl Ketone (2-Hexanone)	ND	50	ug/L							
Methylene Chloride	ND	1.0	ug/L							
Methyl Ethyl Ketone (2-Butanone)	ND	100	ug/L							
4-Methyl-2-pentanone (MIBK)	ND	100	ug/L							
Styrene	ND	1.0	ug/L							
1,1,1,2-Tetrachloroethane	ND	5.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	3.0	ug/L							
Tetrachloroethene	ND	1.0	ug/L							
Toluene	ND	1.0	ug/L							
1,1,1-Trichloroethane	ND	1.0	ug/L							
1,1,2-Trichloroethane	ND	1.0	ug/L							
Trichloroethene	ND	1.0	ug/L							
Trichlorofluoromethane	ND	1.0	ug/L							
1,2,3-Trichloropropane	ND	1.0	ug/L							
Vinyl Acetate	ND	50	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Xylenes, total	ND	5.0	ug/L							
Surr: Dibromofluoromethane	*49*		*ug/L*	*50.000*		*98*	*80-120*			
Surr: 1,2-Dichloroethane-d4	*51*		*ug/L*	*50.000*		*102*	*78-120*			
Surr: Toluene-d8	*50*		*ug/L*	*50.000*		*100*	*80-120*			
Surr: 4-Bromofluorobenzene	*50*		*ug/L*	*50.000*		*101*	*80-120*			
LCS (5010625-BS1)							Prepared & Analyzed: 01/30/15			

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February 13, 2015

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010625 - EPA 5030B										
LCS (5010625-BS1)							Prepared & Analyzed: 01/30/15			
Benzene	45		ug/L	50.000		89	67-134			
Chlorobenzene	48		ug/L	50.000		96	69-122			
1,1-Dichloroethene	47		ug/L	50.000		93	58-142			
Toluene	47		ug/L	50.000		93	68-127			
Trichloroethene	50		ug/L	50.000		100	72-132			
Surr: Dibromofluoromethane	*50*		*ug/L*	*50.000*		*99*	*80-120*			
Surr: 1,2-Dichloroethane-d4	*51*		*ug/L*	*50.000*		*103*	*78-120*			
Surr: Toluene-d8	*50*		*ug/L*	*50.000*		*100*	*80-120*			
Surr: 4-Bromofluorobenzene	*51*		*ug/L*	*50.000*		*101*	*80-120*			
Matrix Spike (5010625-MS1)		**Source: AYA0703-02**					Prepared & Analyzed: 01/30/15			
Benzene	46		ug/L	50.000	ND	93	67-134			
Chlorobenzene	49		ug/L	50.000	ND	99	69-122			
1,1-Dichloroethene	50		ug/L	50.000	ND	100	58-142			
Toluene	49		ug/L	50.000	ND	98	68-127			
Trichloroethene	52		ug/L	50.000	ND	104	72-132			
Surr: Dibromofluoromethane	*48*		*ug/L*	*50.000*		*97*	*80-120*			
Surr: 1,2-Dichloroethane-d4	*51*		*ug/L*	*50.000*		*103*	*78-120*			
Surr: Toluene-d8	*51*		*ug/L*	*50.000*		*101*	*80-120*			
Surr: 4-Bromofluorobenzene	*49*		*ug/L*	*50.000*		*99*	*80-120*			
Matrix Spike Dup (5010625-MSD1)		**Source: AYA0703-02**					Prepared & Analyzed: 01/30/15			
Benzene	44		ug/L	50.000	ND	89	67-134	4	9	
Chlorobenzene	47		ug/L	50.000	ND	94	69-122	5	13	
1,1-Dichloroethene	48		ug/L	50.000	ND	96	58-142	5	9	

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1220 Commerce Street, SW
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February 13, 2015

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010625 - EPA 5030B										
Matrix Spike Dup (5010625-MSD1)		**Source: AYA0703-02**					Prepared & Analyzed: 01/30/15			
Toluene	46		ug/L	50.000	ND	93	68-127	5	9	
Trichloroethene	49		ug/L	50.000	ND	98	72-132	5	11	
Surr: Dibromofluoromethane	*48*		*ug/L*	*50.000*		*97*	*80-120*			
Surr: 1,2-Dichloroethane-d4	*52*		*ug/L*	*50.000*		*105*	*78-120*			
Surr: Toluene-d8	*51*		*ug/L*	*50.000*		*101*	*80-120*			
Surr: 4-Bromofluorobenzene	*50*		*ug/L*	*50.000*		*100*	*80-120*			

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February 13, 2015

Laboratory Certifications

Code	Description	Number	Expires
LA	Louisiana	02069	06/30/2015
NC	North Carolina	381	12/31/2015
NELAC	FL DOH (Non-Pot. Water, Solids) Eff:: 07/01/2013	E87315	06/30/2015
SC	South Carolina	98011001	06/30/2015
TX	Texas	T104704397-08-TX	03/31/2015
VA	Virginia	1340	12/14/2015

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February 13, 2015

Legend

Defination of Laboratory Terms

ND - Not Detected at levels greater than or equal to SWSL/RL
SWSL/RL - NC DENR Solid Waste Section LImit/Reporting Limit (Adjusted for DF/Prep Factor)
DF - Dilution Factor
MDL - Method Detection Limit

Qualifiers

QR-01 RPD was outside acceptance limits due to sample concentrations near or below the reporting limit.

J Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).

B-01 Analyte was detected in the associated method blank at an estimated level equal to or greater than the MDL. Sample values reported as greater than the MDL and less than 10x the method blank value are reported as estimated values.

Note: Unless otherwise noted, all results are reported on an as received basis.

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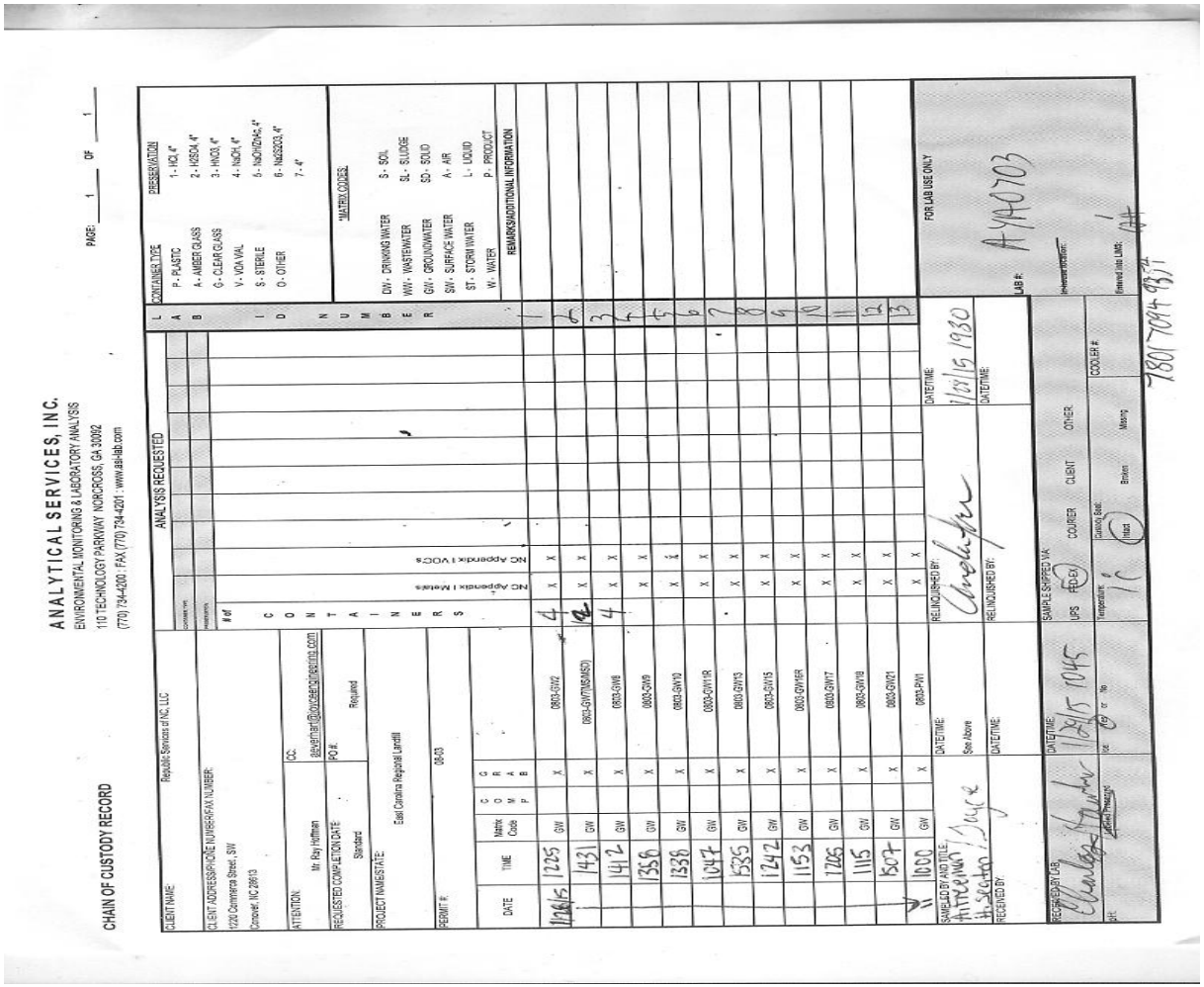
Attention: Mr. Matt Einsmann

February 13, 2015



ANALYTICAL SERVICES, INC.
ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS
110 TECHNOLOGY PARKWAY NORCROSS, GA 30092
(770) 734-4200 · FAX (770) 734-4201 · www.asi-lab.com

CHAIN OF CUSTODY RECORD

PAGE: 1 OF 1

CLIENT NAME: Republic Services of NC, LLC
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 1220 Commerce Street, SW Conover, NC 28613
ATTENTION: Mr. Ray Hoffman
CC: alexander.ray@republicservices.com
REQUESTED COMPLETION DATE: Standard
PO #: Required
PROJECT NAME/STATE: East Carolina Regional Landfill
PERMIT #: 08-03

ANALYSIS REQUESTED: NC Appendix I Metals; NC Appendix I VOCs

CONTAINER TYPE: P - PLASTIC; A - AMBER GLASS; G - CLEAR GLASS; V - VOA VIAL; S - STERILE; O - OTHER
PRESERVATION: 1 - HCL 4°; 2 - H2SO4 4°; 3 - HNO3 4°; 4 - NaOH 4°; 5 - NaOH/ZnAc 4°; 6 - Na2S2O3 4°; 7 - 4°
MATRIX CODES: DW - DRINKING WATER; WW - WASTEWATER; GW - GROUNDWATER; SW - SURFACE WATER; ST - STORM WATER; W - WATER; S - SOIL; SL - SLUDGE; SO - SOLID; A - AIR; L - LIQUID; P - PRODUCT
REMARKS/ADDITIONAL INFORMATION

DATE	TIME	Matrix Code	COMP	GRAB	# of containers	NC Appendix I Metals	NC Appendix I VOCs	LAB #
12/15	1205	GW		X	4	X	X	1
	1431	GW		X	14	X	X	2
	1412	GW		X	4	X	X	3
	1356	GW		X		X	X	4
	1338	GW		X		X	X	5
	1047	GW		X		X	X	6
	1535	GW		X		X	X	7
	1242	GW		X		X	X	8
	1153	GW		X		X	X	9
	1206	GW		X		X	X	10
	1115	GW		X		X	X	11
	1507	GW		X		X	X	12
	1000	GW		X		X	X	13

SAMPLED BY AND TITLE: A. Freeman / Intern
DATE/TIME: See Above
RELINQUISHED BY: Christopher
DATE/TIME: 12/15/15 1930
RECEIVED BY:
DATE/TIME:
RELINQUISHED BY:
DATE/TIME:
RECEIVED BY/LAB: Christopher Thomas
DATE/TIME: 12/15/15 1045
SAMPLE SHIPPED VIA: UPS FEDEX COURIER CLIENT OTHER
Airbill/Tracking #: 7801 7094 9371
ICE: Yes or No
Temperature: 1°
Custody Seal: Intact Broken Missing
COOLER #:
Received Date LIMS: 12/15
LAB #: A4A0703
FOR LAB USE ONLY
Inventory Location:

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Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

LOG-IN CHECKLIST **Printed: 2/13/2015 4:35:22PM**

Attn: Mr. Matt Einsmann

Client: Republic Services of North Carolina, LLC
Project: East Carolina Regional Landfill
Date Received: 01/29/15 10:45
Work Order: AYA0703
Logged In By: Charles Hawks

OBSERVATIONS

#Samples: 13 **#Containers:** 60

Minimum Temp(C): 1.0 **Maximum Temp(C):** 1.0 **Custody Seal(s) Used:** Yes

CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	YES
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

Comments:

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Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
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Laboratory Report

Report Number: AYA0702

Project: East Carolina Regional Landfill

Project #:08-03

Prepared For:
Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover, NC 28613

Attention: Mr. Matt Einsmann

February 13, 2015

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call. Analytical Services, Inc. certifies that the following analytical results meet all requirements of the National Environmental Laboratory Accreditation Conference(NELAC).All test results relate only to the samples analyzed.

Approved:

Project Manager

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
0803-SW1	AYA0702-01	Surface Water	01/28/15 09:37	01/29/15 10:45
0803-SW3	AYA0702-02	Surface Water	01/28/15 10:28	01/29/15 10:45

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-SW1
Lab No: AYA0702-01
Matrix: Surface Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 09:37
Date/Time Received: 01/29/15 10:45

Report No.: AYA0702

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Antimony	EPA 6020A	EPA 3005A	ND	6.00	1	ug/L		1.05	7440-36-0	02/06/15 08:15	02/06/15 13:55	5020134
Arsenic	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.13	7440-38-2	02/06/15 08:15	02/06/15 13:55	5020134
Barium	EPA 6020A	EPA 3005A	46.5	100	1	ug/L	J	0.10	7440-39-3	02/06/15 08:15	02/06/15 13:55	5020134
Beryllium	EPA 6020A	EPA 3005A	0.18	1.00	1	ug/L	J	0.05	7440-41-7	02/06/15 08:15	02/06/15 13:55	5020134
Cadmium	EPA 6020A	EPA 3005A	ND	1.00	1	ug/L		0.05	7440-43-9	02/06/15 08:15	02/06/15 13:55	5020134
Chromium	EPA 6020A	EPA 3005A	1.89	10.0	1	ug/L	J	0.73	7440-47-3	02/06/15 08:15	02/06/15 13:55	5020134
Cobalt	EPA 6020A	EPA 3005A	1.46	10.0	1	ug/L	J	0.26	7440-48-4	02/06/15 08:15	02/06/15 13:55	5020134
Copper	EPA 6020A	EPA 3005A	0.86	10.0	1	ug/L	J	0.22	7440-50-8	02/06/15 08:15	02/06/15 13:55	5020134
Lead	EPA 6020A	EPA 3005A	0.69	10.0	1	ug/L	J	0.05	7439-92-1	02/06/15 08:15	02/06/15 13:55	5020134
Nickel	EPA 6020A	EPA 3005A	1.28	50.0	1	ug/L	J	0.22	7440-02-0	02/06/15 08:15	02/06/15 13:55	5020134
Selenium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.01	7782-49-2	02/06/15 08:15	02/06/15 13:55	5020134
Silver	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.17	7440-22-4	02/06/15 08:15	02/06/15 13:55	5020134
Thallium	EPA 6020A	EPA 3005A	ND	5.50	1	ug/L		0.09	7440-28-0	02/06/15 08:15	02/06/15 13:55	5020134
Vanadium	EPA 6020A	EPA 3005A	1.03	25.0	1	ug/L	J	0.93	7440-62-2	02/06/15 08:15	02/06/15 13:55	5020134
Zinc	EPA 6020A	EPA 3005A	6.30	10.0	1	ug/L	B-01, J	0.64	7440-66-6	02/06/15 08:15	02/06/15 13:55	5020134
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	ND	100	1	ug/L		5.7	67-64-1	01/30/15 14:00	01/30/15 16:21	5010627
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L		0.6	107-13-1	01/30/15 14:00	01/30/15 16:21	5010627
Benzene	EPA 8260B	EPA 5030B	0.2	1.0	1	ug/L	J	0.2	71-43-2	01/30/15 14:00	01/30/15 16:21	5010627
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	74-97-5	01/30/15 14:00	01/30/15 16:21	5010627
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.5	75-27-4	01/30/15 14:00	01/30/15 16:21	5010627

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-SW1
Lab No: AYA0702-01
Matrix: Surface Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 09:37
Date/Time Received: 01/29/15 10:45

Report No.: AYA0702

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.7	75-25-2	01/30/15 14:00	01/30/15 16:21	5010627
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.6	74-83-9	01/30/15 14:00	01/30/15 16:21	5010627
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	75-15-0	01/30/15 14:00	01/30/15 16:21	5010627
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	56-23-5	01/30/15 14:00	01/30/15 16:21	5010627
Chlorobenzene	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.2	108-90-7	01/30/15 14:00	01/30/15 16:21	5010627
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	75-00-3	01/30/15 14:00	01/30/15 16:21	5010627
Chloroform	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	67-66-3	01/30/15 14:00	01/30/15 16:21	5010627
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	74-87-3	01/30/15 14:00	01/30/15 16:21	5010627
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		1.1	124-48-1	01/30/15 14:00	01/30/15 16:21	5010627
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L		0.7	96-12-8	01/30/15 14:00	01/30/15 16:21	5010627
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-93-4	01/30/15 14:00	01/30/15 16:21	5010627
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	74-95-3	01/30/15 14:00	01/30/15 16:21	5010627
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.3	95-50-1	01/30/15 14:00	01/30/15 16:21	5010627
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-46-7	01/30/15 14:00	01/30/15 16:21	5010627
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.8	110-57-6	01/30/15 14:00	01/30/15 16:21	5010627
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-34-3	01/30/15 14:00	01/30/15 16:21	5010627
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	107-06-2	01/30/15 14:00	01/30/15 16:21	5010627
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-35-4	01/30/15 14:00	01/30/15 16:21	5010627
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-59-2	01/30/15 14:00	01/30/15 16:21	5010627
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-60-5	01/30/15 14:00	01/30/15 16:21	5010627
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	78-87-5	01/30/15 14:00	01/30/15 16:21	5010627
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.8	10061-01-5	01/30/15 14:00	01/30/15 16:21	5010627

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-SW1
Lab No: AYA0702-01
Matrix: Surface Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 09:37
Date/Time Received: 01/29/15 10:45

Report No.: AYA0702

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	10061-02-6	01/30/15 14:00	01/30/15 16:21	5010627
Ethylbenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-41-4	01/30/15 14:00	01/30/15 16:21	5010627
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.5	74-88-4	01/30/15 14:00	01/30/15 16:21	5010627
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	ND	50	1	ug/L		0.6	591-78-6	01/30/15 14:00	01/30/15 16:21	5010627
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	75-09-2	01/30/15 14:00	01/30/15 16:21	5010627
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	78-93-3	01/30/15 14:00	01/30/15 16:21	5010627
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.4	108-10-1	01/30/15 14:00	01/30/15 16:21	5010627
Styrene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-42-5	01/30/15 14:00	01/30/15 16:21	5010627
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	630-20-6	01/30/15 14:00	01/30/15 16:21	5010627
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	79-34-5	01/30/15 14:00	01/30/15 16:21	5010627
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	127-18-4	01/30/15 14:00	01/30/15 16:21	5010627
Toluene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	108-88-3	01/30/15 14:00	01/30/15 16:21	5010627
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	71-55-6	01/30/15 14:00	01/30/15 16:21	5010627
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	79-00-5	01/30/15 14:00	01/30/15 16:21	5010627
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	79-01-6	01/30/15 14:00	01/30/15 16:21	5010627
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-69-4	01/30/15 14:00	01/30/15 16:21	5010627
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	96-18-4	01/30/15 14:00	01/30/15 16:21	5010627
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L		1.8	108-05-4	01/30/15 14:00	01/30/15 16:21	5010627
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-01-4	01/30/15 14:00	01/30/15 16:21	5010627
Xylenes, total	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	1330-20-7	01/30/15 14:00	01/30/15 16:21	5010627
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	89 %		80-120				1868-53-7	01/30/15 14:00	01/30/15 16:21	5010627

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Environmental Monitoring & Laboratory Analysis
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(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-SW1
Lab No: AYA0702-01
Matrix: Surface Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 09:37
Date/Time Received: 01/29/15 10:45

Report No.: AYA0702

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	98 %		78-120				17060-07-0	01/30/15 14:00	01/30/15 16:21	5010627
Surr: Toluene-d8	EPA 8260B	EPA 5030B	95 %		80-120				2037-26-5	01/30/15 14:00	01/30/15 16:21	5010627
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	85 %		80-120				460-00-4	01/30/15 14:00	01/30/15 16:21	5010627

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1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-SW3
Lab No: AYA0702-02
Matrix: Surface Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 10:28
Date/Time Received: 01/29/15 10:45

Report No.: AYA0702

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Antimony	EPA 6020A	EPA 3005A	ND	6.00	1	ug/L		1.05	7440-36-0	02/06/15 08:15	02/06/15 14:00	5020134
Arsenic	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.13	7440-38-2	02/06/15 08:15	02/06/15 14:00	5020134
Barium	EPA 6020A	EPA 3005A	45.8	100	1	ug/L	J	0.10	7440-39-3	02/06/15 08:15	02/06/15 14:00	5020134
Beryllium	EPA 6020A	EPA 3005A	0.14	1.00	1	ug/L	J	0.05	7440-41-7	02/06/15 08:15	02/06/15 14:00	5020134
Cadmium	EPA 6020A	EPA 3005A	ND	1.00	1	ug/L		0.05	7440-43-9	02/06/15 08:15	02/06/15 14:00	5020134
Chromium	EPA 6020A	EPA 3005A	1.55	10.0	1	ug/L	J	0.73	7440-47-3	02/06/15 08:15	02/06/15 14:00	5020134
Cobalt	EPA 6020A	EPA 3005A	0.85	10.0	1	ug/L	J	0.26	7440-48-4	02/06/15 08:15	02/06/15 14:00	5020134
Copper	EPA 6020A	EPA 3005A	2.47	10.0	1	ug/L	J	0.22	7440-50-8	02/06/15 08:15	02/06/15 14:00	5020134
Lead	EPA 6020A	EPA 3005A	0.71	10.0	1	ug/L	J	0.05	7439-92-1	02/06/15 08:15	02/06/15 14:00	5020134
Nickel	EPA 6020A	EPA 3005A	2.09	50.0	1	ug/L	J	0.22	7440-02-0	02/06/15 08:15	02/06/15 14:00	5020134
Selenium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.01	7782-49-2	02/06/15 08:15	02/06/15 14:00	5020134
Silver	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.17	7440-22-4	02/06/15 08:15	02/06/15 14:00	5020134
Thallium	EPA 6020A	EPA 3005A	ND	5.50	1	ug/L		0.09	7440-28-0	02/06/15 08:15	02/06/15 14:00	5020134
Vanadium	EPA 6020A	EPA 3005A	1.97	25.0	1	ug/L	J	0.93	7440-62-2	02/06/15 08:15	02/06/15 14:00	5020134
Zinc	EPA 6020A	EPA 3005A	6.99	10.0	1	ug/L	B-01, J	0.64	7440-66-6	02/06/15 08:15	02/06/15 14:00	5020134
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	ND	100	1	ug/L		5.7	67-64-1	01/30/15 14:00	01/30/15 17:50	5010627
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L		0.6	107-13-1	01/30/15 14:00	01/30/15 17:50	5010627
Benzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	71-43-2	01/30/15 14:00	01/30/15 17:50	5010627
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	74-97-5	01/30/15 14:00	01/30/15 17:50	5010627
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.5	75-27-4	01/30/15 14:00	01/30/15 17:50	5010627

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-SW3
Lab No: AYA0702-02
Matrix: Surface Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 10:28
Date/Time Received: 01/29/15 10:45

Report No.: AYA0702

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.7	75-25-2	01/30/15 14:00	01/30/15 17:50	5010627
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.6	74-83-9	01/30/15 14:00	01/30/15 17:50	5010627
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	75-15-0	01/30/15 14:00	01/30/15 17:50	5010627
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	56-23-5	01/30/15 14:00	01/30/15 17:50	5010627
Chlorobenzene	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.2	108-90-7	01/30/15 14:00	01/30/15 17:50	5010627
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	75-00-3	01/30/15 14:00	01/30/15 17:50	5010627
Chloroform	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	67-66-3	01/30/15 14:00	01/30/15 17:50	5010627
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	74-87-3	01/30/15 14:00	01/30/15 17:50	5010627
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		1.1	124-48-1	01/30/15 14:00	01/30/15 17:50	5010627
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L		0.7	96-12-8	01/30/15 14:00	01/30/15 17:50	5010627
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-93-4	01/30/15 14:00	01/30/15 17:50	5010627
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	74-95-3	01/30/15 14:00	01/30/15 17:50	5010627
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.3	95-50-1	01/30/15 14:00	01/30/15 17:50	5010627
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-46-7	01/30/15 14:00	01/30/15 17:50	5010627
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.8	110-57-6	01/30/15 14:00	01/30/15 17:50	5010627
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-34-3	01/30/15 14:00	01/30/15 17:50	5010627
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	107-06-2	01/30/15 14:00	01/30/15 17:50	5010627
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-35-4	01/30/15 14:00	01/30/15 17:50	5010627
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-59-2	01/30/15 14:00	01/30/15 17:50	5010627
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-60-5	01/30/15 14:00	01/30/15 17:50	5010627
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	78-87-5	01/30/15 14:00	01/30/15 17:50	5010627
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.8	10061-01-5	01/30/15 14:00	01/30/15 17:50	5010627

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1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-SW3
Lab No: AYA0702-02
Matrix: Surface Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 10:28
Date/Time Received: 01/29/15 10:45

Report No.: AYA0702

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	10061-02-6	01/30/15 14:00	01/30/15 17:50	5010627
Ethylbenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-41-4	01/30/15 14:00	01/30/15 17:50	5010627
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.5	74-88-4	01/30/15 14:00	01/30/15 17:50	5010627
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	ND	50	1	ug/L		0.6	591-78-6	01/30/15 14:00	01/30/15 17:50	5010627
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	75-09-2	01/30/15 14:00	01/30/15 17:50	5010627
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	78-93-3	01/30/15 14:00	01/30/15 17:50	5010627
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.4	108-10-1	01/30/15 14:00	01/30/15 17:50	5010627
Styrene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-42-5	01/30/15 14:00	01/30/15 17:50	5010627
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	630-20-6	01/30/15 14:00	01/30/15 17:50	5010627
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	79-34-5	01/30/15 14:00	01/30/15 17:50	5010627
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	127-18-4	01/30/15 14:00	01/30/15 17:50	5010627
Toluene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	108-88-3	01/30/15 14:00	01/30/15 17:50	5010627
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	71-55-6	01/30/15 14:00	01/30/15 17:50	5010627
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	79-00-5	01/30/15 14:00	01/30/15 17:50	5010627
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	79-01-6	01/30/15 14:00	01/30/15 17:50	5010627
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-69-4	01/30/15 14:00	01/30/15 17:50	5010627
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	96-18-4	01/30/15 14:00	01/30/15 17:50	5010627
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L		1.8	108-05-4	01/30/15 14:00	01/30/15 17:50	5010627
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-01-4	01/30/15 14:00	01/30/15 17:50	5010627
Xylenes, total	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	1330-20-7	01/30/15 14:00	01/30/15 17:50	5010627
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	93 %		80-120				1868-53-7	01/30/15 14:00	01/30/15 17:50	5010627

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Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-SW3
Lab No: AYA0702-02
Matrix: Surface Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 10:28
Date/Time Received: 01/29/15 10:45

Report No.: AYA0702

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	103 %		78-120				17060-07-0	01/30/15 14:00	01/30/15 17:50	5010627
Surr: Toluene-d8	EPA 8260B	EPA 5030B	101 %		80-120				2037-26-5	01/30/15 14:00	01/30/15 17:50	5010627
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	109 %		80-120				460-00-4	01/30/15 14:00	01/30/15 17:50	5010627

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020134 - EPA 3005A										
Blank (5020134-BLK1)							Prepared & Analyzed: 02/06/15			
Antimony	ND	6.00	ug/L							
Arsenic	ND	10.0	ug/L							
Barium	ND	100	ug/L							
Beryllium	ND	1.00	ug/L							
Cadmium	ND	1.00	ug/L							
Chromium	ND	10.0	ug/L							
Cobalt	ND	10.0	ug/L							
Copper	ND	10.0	ug/L							
Lead	ND	10.0	ug/L							
Nickel	ND	50.0	ug/L							
Selenium	ND	10.0	ug/L							
Silver	ND	10.0	ug/L							
Thallium	ND	5.50	ug/L							
Vanadium	ND	25.0	ug/L							
Zinc	1.12	10.0	ug/L							J
LCS (5020134-BS1)							Prepared & Analyzed: 02/06/15			
Antimony	103	6.00	ug/L	100.00		103	80-120			
Arsenic	106	10.0	ug/L	100.00		106	80-120			
Barium	100	100	ug/L	100.00		100	80-120			
Beryllium	102	1.00	ug/L	100.00		102	80-120			
Cadmium	104	1.00	ug/L	100.00		104	80-120			
Chromium	104	10.0	ug/L	100.00		104	80-120			
Cobalt	105	10.0	ug/L	100.00		105	80-120			
Copper	104	10.0	ug/L	100.00		104	80-120			
Lead	102	10.0	ug/L	100.00		102	80-120			
Nickel	105	50.0	ug/L	100.00		105	80-120			

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Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020134 - EPA 3005A										
LCS (5020134-BS1)							Prepared & Analyzed: 02/06/15			
Selenium	104	10.0	ug/L	100.00		104	80-120			
Silver	102	10.0	ug/L	100.00		102	80-120			
Thallium	99.8	5.50	ug/L	100.00		100	80-120			
Vanadium	105	25.0	ug/L	100.00		105	80-120			
Zinc	103	10.0	ug/L	100.00		103	80-120			
Matrix Spike (5020134-MS1)	**Source: AYA0703-02**						Prepared & Analyzed: 02/06/15			
Antimony	103	6.00	ug/L	100.00	ND	103	75-125			
Arsenic	101	10.0	ug/L	100.00	1.65	99	75-125			
Barium	166	100	ug/L	100.00	71.3	95	75-125			
Beryllium	102	1.00	ug/L	100.00	2.03	100	75-125			
Cadmium	103	1.00	ug/L	100.00	0.06	103	75-125			
Chromium	101	10.0	ug/L	100.00	2.84	98	75-125			
Cobalt	130	10.0	ug/L	100.00	34.3	96	75-125			
Copper	97.9	10.0	ug/L	100.00	1.68	96	75-125			
Lead	103	10.0	ug/L	100.00	1.94	101	75-125			
Nickel	108	50.0	ug/L	100.00	10.6	97	75-125			
Selenium	99.7	10.0	ug/L	100.00	ND	100	75-125			
Silver	105	10.0	ug/L	100.00	3.68	101	75-125			
Thallium	100	5.50	ug/L	100.00	ND	100	75-125			
Vanadium	101	25.0	ug/L	100.00	2.35	99	75-125			
Zinc	103	10.0	ug/L	100.00	7.77	96	75-125			
Matrix Spike Dup (5020134-MSD1)	**Source: AYA0703-02**						Prepared & Analyzed: 02/06/15			
Antimony	105	6.00	ug/L	100.00	ND	105	75-125	2	20	
Arsenic	103	10.0	ug/L	100.00	1.65	101	75-125	2	20	
Barium	170	100	ug/L	100.00	71.3	99	75-125	3	20	

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Attention: Mr. Matt Einsmann

February 13, 2015

Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020134 - EPA 3005A										
Matrix Spike Dup (5020134-MSD1)		**Source: AYA0703-02**					Prepared & Analyzed: 02/06/15			
Beryllium	102	1.00	ug/L	100.00	2.03	100	75-125	0.5	20	
Cadmium	104	1.00	ug/L	100.00	0.06	104	75-125	2	20	
Chromium	102	10.0	ug/L	100.00	2.84	100	75-125	2	20	
Cobalt	132	10.0	ug/L	100.00	34.3	97	75-125	1	20	
Copper	100	10.0	ug/L	100.00	1.68	98	75-125	2	20	
Lead	104	10.0	ug/L	100.00	1.94	102	75-125	1	20	
Nickel	110	50.0	ug/L	100.00	10.6	99	75-125	2	20	
Selenium	101	10.0	ug/L	100.00	ND	101	75-125	2	20	
Silver	106	10.0	ug/L	100.00	3.68	103	75-125	2	20	
Thallium	101	5.50	ug/L	100.00	ND	101	75-125	1	20	
Vanadium	104	25.0	ug/L	100.00	2.35	101	75-125	3	20	
Zinc	105	10.0	ug/L	100.00	7.77	98	75-125	2	20	
Post Spike (5020134-PS1)		**Source: AYA0703-02**					Prepared & Analyzed: 02/06/15			
Antimony	91.3		ug/L	100.00	0.02	91	80-120			
Arsenic	104		ug/L	100.00	1.65	102	80-120			
Barium	168		ug/L	100.00	71.3	96	80-120			
Beryllium	103		ug/L	100.00	2.03	100	80-120			
Cadmium	103		ug/L	100.00	0.06	103	80-120			
Chromium	106		ug/L	100.00	2.84	103	80-120			
Cobalt	134		ug/L	100.00	34.3	100	80-120			
Copper	101		ug/L	100.00	1.68	100	80-120			
Lead	103		ug/L	100.00	1.94	101	80-120			
Nickel	111		ug/L	100.00	10.6	101	80-120			
Selenium	103		ug/L	100.00	0.30	103	80-120			
Silver	105		ug/L	100.00	3.68	101	80-120			
Thallium	100		ug/L	100.00	0.09	100	80-120			

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Attention: Mr. Matt Einsmann

February 13, 2015

Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020134 - EPA 3005A										
Post Spike (5020134-PS1)		**Source: AYA0703-02**					Prepared & Analyzed: 02/06/15			
Vanadium	109		ug/L	100.00	2.35	106	80-120			
Zinc	109		ug/L	100.00	7.77	101	80-120			

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February 13, 2015

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010627 - EPA 5030B										
Blank (5010627-BLK1)							Prepared & Analyzed: 01/30/15			
Acetone	ND	100	ug/L							
Acrylonitrile	ND	200	ug/L							
Benzene	ND	1.0	ug/L							
Bromochloromethane	ND	3.0	ug/L							
Bromodichloromethane	ND	1.0	ug/L							
Bromoform	ND	3.0	ug/L							
Bromomethane	ND	10	ug/L							
Carbon Disulfide	ND	100	ug/L							
Carbon Tetrachloride	ND	1.0	ug/L							
Chlorobenzene	ND	3.0	ug/L							
Chloroethane	ND	10	ug/L							
Chloroform	ND	5.0	ug/L							
Chloromethane	ND	1.0	ug/L							
Dibromochloromethane	ND	3.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	13	ug/L							
1,2-Dibromoethane	ND	1.0	ug/L							
Dibromomethane	ND	10	ug/L							
1,2-Dichlorobenzene	ND	5.0	ug/L							
1,4-Dichlorobenzene	ND	1.0	ug/L							
trans-1,4-Dichloro-2-butene	ND	100	ug/L							
1,1-Dichloroethane	ND	5.0	ug/L							
1,2-Dichloroethane	ND	1.0	ug/L							
1,1-Dichloroethene	ND	5.0	ug/L							
cis-1,2-Dichloroethene	ND	5.0	ug/L							
trans-1,2-Dichloroethene	ND	5.0	ug/L							
1,2-Dichloropropane	ND	1.0	ug/L							
cis-1,3-Dichloropropene	ND	1.0	ug/L							

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Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010627 - EPA 5030B										
Blank (5010627-BLK1)							Prepared & Analyzed: 01/30/15			
trans-1,3-Dichloropropene	ND	1.0	ug/L							
Ethylbenzene	ND	1.0	ug/L							
Iodomethane	ND	10	ug/L							
Methyl Butyl Ketone (2-Hexanone)	ND	50	ug/L							
Methylene Chloride	ND	1.0	ug/L							
Methyl Ethyl Ketone (2-Butanone)	ND	100	ug/L							
4-Methyl-2-pentanone (MIBK)	ND	100	ug/L							
Styrene	ND	1.0	ug/L							
1,1,1,2-Tetrachloroethane	ND	5.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	3.0	ug/L							
Tetrachloroethene	ND	1.0	ug/L							
Toluene	ND	1.0	ug/L							
1,1,1-Trichloroethane	ND	1.0	ug/L							
1,1,2-Trichloroethane	ND	1.0	ug/L							
Trichloroethene	ND	1.0	ug/L							
Trichlorofluoromethane	ND	1.0	ug/L							
1,2,3-Trichloropropane	ND	1.0	ug/L							
Vinyl Acetate	ND	50	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Xylenes, total	ND	5.0	ug/L							
Surr: Dibromofluoromethane	*45*		*ug/L*	*50.000*		*90*	*80-120*			
Surr: 1,2-Dichloroethane-d4	*50*		*ug/L*	*50.000*		*99*	*78-120*			
Surr: Toluene-d8	*50*		*ug/L*	*50.000*		*101*	*80-120*			
Surr: 4-Bromofluorobenzene	*54*		*ug/L*	*50.000*		*108*	*80-120*			
LCS (5010627-BS1)							Prepared & Analyzed: 01/30/15			

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February 13, 2015

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010627 - EPA 5030B										
LCS (5010627-BS1)							Prepared & Analyzed: 01/30/15			
Benzene	50		ug/L	50.000		99	67-134			
Chlorobenzene	49		ug/L	50.000		98	69-122			
1,1-Dichloroethene	53		ug/L	50.000		105	58-142			
Toluene	52		ug/L	50.000		103	68-127			
Trichloroethene	56		ug/L	50.000		112	72-132			
Surr: Dibromofluoromethane	*48*		*ug/L*	*50.000*		*97*	*80-120*			
Surr: 1,2-Dichloroethane-d4	*49*		*ug/L*	*50.000*		*98*	*78-120*			
Surr: Toluene-d8	*53*		*ug/L*	*50.000*		*105*	*80-120*			
Surr: 4-Bromofluorobenzene	*50*		*ug/L*	*50.000*		*100*	*80-120*			
Matrix Spike (5010627-MS1)		**Source: AYA0702-01**					Prepared & Analyzed: 01/30/15			
Benzene	44		ug/L	50.000	0.2	88	67-134			
Chlorobenzene	46		ug/L	50.000	ND	91	69-122			
1,1-Dichloroethene	43		ug/L	50.000	ND	86	58-142			
Toluene	45		ug/L	50.000	ND	91	68-127			
Trichloroethene	48		ug/L	50.000	ND	96	72-132			
Surr: Dibromofluoromethane	*44*		*ug/L*	*50.000*		*88*	*80-120*			
Surr: 1,2-Dichloroethane-d4	*50*		*ug/L*	*50.000*		*99*	*78-120*			
Surr: Toluene-d8	*48*		*ug/L*	*50.000*		*96*	*80-120*			
Surr: 4-Bromofluorobenzene	*45*		*ug/L*	*50.000*		*89*	*80-120*			
Matrix Spike Dup (5010627-MSD1)		**Source: AYA0702-01**					Prepared & Analyzed: 01/30/15			
Benzene	49		ug/L	50.000	0.2	97	67-134	10	9	QR-02
Chlorobenzene	51		ug/L	50.000	ND	102	69-122	11	13	
1,1-Dichloroethene	47		ug/L	50.000	ND	94	58-142	9	9	

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Attention: Mr. Matt Einsmann

February 13, 2015

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010627 - EPA 5030B										
Matrix Spike Dup (5010627-MSD1)		**Source: AYA0702-01**					Prepared & Analyzed: 01/30/15			
Toluene	51		ug/L	50.000	ND	101	68-127	11	9	QR-02
Trichloroethene	54		ug/L	50.000	ND	108	72-132	12	11	QR-02
Surr: Dibromofluoromethane	*44*		*ug/L*	*50.000*		*88*	*80-120*			
Surr: 1,2-Dichloroethane-d4	*50*		*ug/L*	*50.000*		*100*	*78-120*			
Surr: Toluene-d8	*47*		*ug/L*	*50.000*		*94*	*80-120*			
Surr: 4-Bromofluorobenzene	*45*		*ug/L*	*50.000*		*90*	*80-120*			

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February 13, 2015

Laboratory Certifications

Code	Description	Number	Expires
LA	Louisiana	02069	06/30/2015
NC	North Carolina	381	12/31/2015
NELAC	FL DOH (Non-Pot. Water, Solids) Eff:: 07/01/2013	E87315	06/30/2015
SC	South Carolina	98011001	06/30/2015
TX	Texas	T104704397-08-TX	03/31/2015
VA	Virginia	1340	12/14/2015

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February 13, 2015

Legend

Defination of Laboratory Terms

ND - Not Detected at levels greater than or equal to SWSL/RL
SWSL/RL - NC DENR Solid Waste Section LImit/Reporting Limit (Adjusted for DF/Prep Factor)
DF - Dilution Factor
MDL - Method Detection Limit

Qualifiers

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries.

J Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).

B-01 Analyte was detected in the associated method blank at an estimated level equal to or greater than the MDL. Sample values reported as greater than the MDL and less than 10x the method blank value are reported as estimated values.

Note: Unless otherwise noted, all results are reported on an as received basis.

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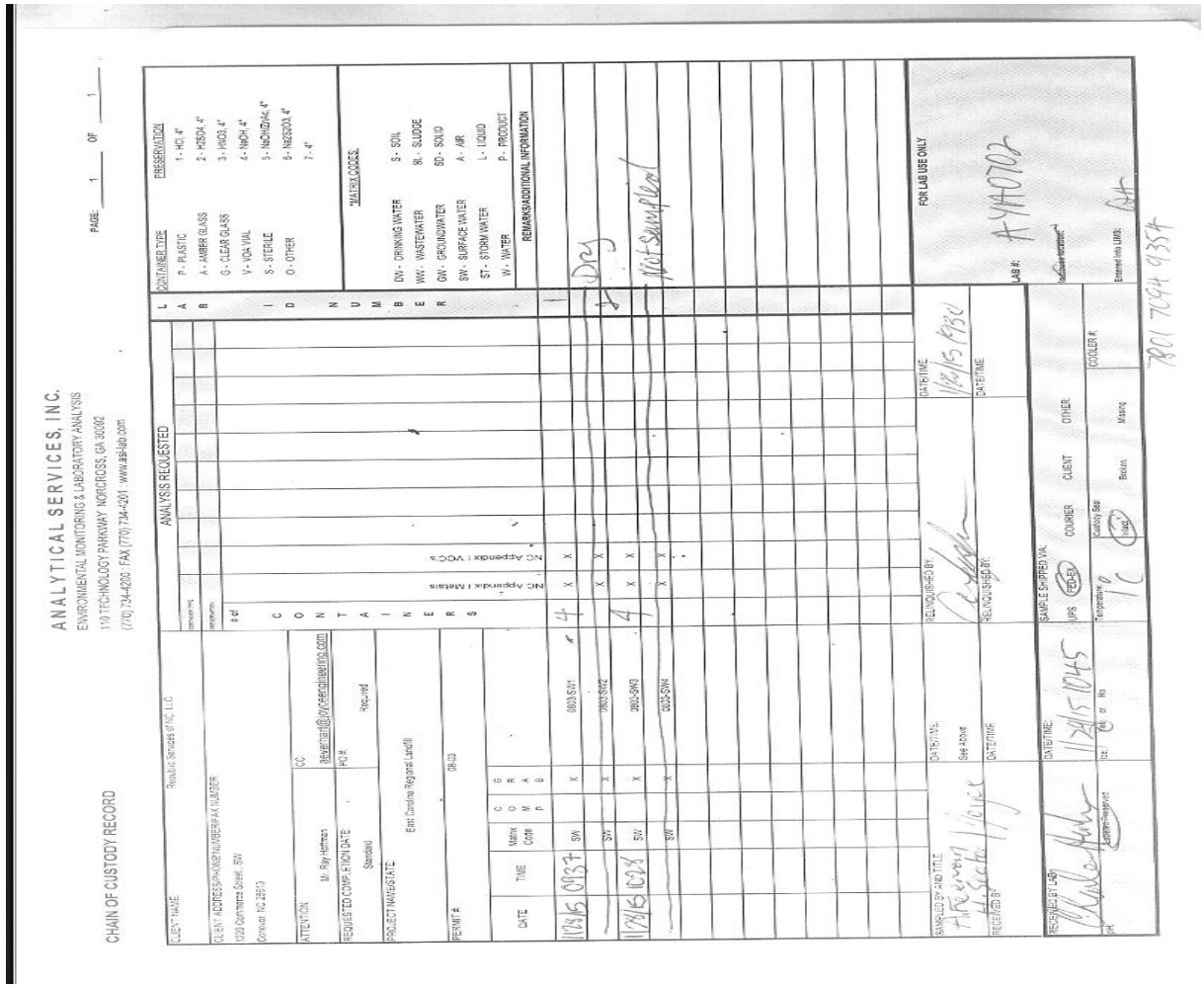
February 13, 2015



CHAIN OF CUSTODY RECORD

ANALYTICAL SERVICES, INC.
ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS
110 TECHNOLOGY PARKWAY NORCROSS, GA 30092
(770) 734-4200 · FAX (770) 734-4201 · www.asi-lab.com

PAGE: 1 OF 1

CLIENT NAME: Republic Services of NC, LLC
CLIENT ADDRESS/PHONE/NUMBER/FAX NUMBER: 1220 Commerce Street, SW, Conover, NC 28613
ATTENTION: Mr. Ray Hartman
CC: dsevernari@cityrecycledservices.com
REQUESTED COMPLETION DATE: Standard
PO #: Not Issued
PROJECT NAME/STATE: East Carolina Regional Landfill
PE/WF #: 08-03

ANALYSIS REQUESTED: NC Appendix I Metals; NC Appendix I VOCs

| DATE | TIME | Matrix | COMP | GRAB | | |

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110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

LOG-IN CHECKLIST **Printed: 2/13/2015 4:25:17PM**

Attn: Mr. Matt Einsmann

Client: Republic Services of North Carolina, LLC
Project: East Carolina Regional Landfill
Date Received: 01/29/15 10:45
Work Order: AYA0702
Logged In By: Charles Hawks

OBSERVATIONS

#Samples: 2 **#Containers:** 8

Minimum Temp(C): 1.0 **Maximum Temp(C):** 1.0 **Custody Seal(s) Used:** Yes

CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	YES
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

Comments:

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

Laboratory Report

Report Number: AYA0704

Project: East Carolina Regional Landfill

Project #:08-03

Prepared For:
Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover, NC 28613

Attention: Mr. Matt Einsmann

February 13, 2015

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call. Analytical Services, Inc. certifies that the following analytical results meet all requirements of the National Environmental Laboratory Accreditation Conference(NELAC).All test results relate only to the samples analyzed.

Approved:

Project Manager

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Attention: Mr. Matt Einsmann

February 13, 2015

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
0803-Field Blank	AYA0704-01	Water	01/28/15 16:30	01/29/15 10:45
0803-Trip Blank	AYA0704-02	Water	01/27/15 07:00	01/29/15 10:45

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Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-Field Blank
Lab No: AYA0704-01
Matrix: Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 16:30
Date/Time Received: 01/29/15 10:45

Report No.: AYA0704

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Antimony	EPA 6020A	EPA 3005A	ND	6.00	1	ug/L		1.05	7440-36-0	02/06/15 08:15	02/06/15 15:54	5020134
Arsenic	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.13	7440-38-2	02/06/15 08:15	02/06/15 15:54	5020134
Barium	EPA 6020A	EPA 3005A	0.12	100	1	ug/L	J	0.10	7440-39-3	02/06/15 08:15	02/06/15 15:54	5020134
Beryllium	EPA 6020A	EPA 3005A	ND	1.00	1	ug/L		0.05	7440-41-7	02/06/15 08:15	02/06/15 15:54	5020134
Cadmium	EPA 6020A	EPA 3005A	ND	1.00	1	ug/L		0.05	7440-43-9	02/06/15 08:15	02/06/15 15:54	5020134
Chromium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.73	7440-47-3	02/06/15 08:15	02/06/15 15:54	5020134
Cobalt	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.26	7440-48-4	02/06/15 08:15	02/06/15 15:54	5020134
Copper	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.22	7440-50-8	02/06/15 08:15	02/06/15 15:54	5020134
Lead	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.05	7439-92-1	02/06/15 08:15	02/06/15 15:54	5020134
Nickel	EPA 6020A	EPA 3005A	ND	50.0	1	ug/L		0.22	7440-02-0	02/06/15 08:15	02/06/15 15:54	5020134
Selenium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		1.01	7782-49-2	02/06/15 08:15	02/06/15 15:54	5020134
Silver	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.17	7440-22-4	02/06/15 08:15	02/06/15 15:54	5020134
Thallium	EPA 6020A	EPA 3005A	ND	5.50	1	ug/L		0.09	7440-28-0	02/06/15 08:15	02/06/15 15:54	5020134
Vanadium	EPA 6020A	EPA 3005A	ND	25.0	1	ug/L		0.93	7440-62-2	02/06/15 08:15	02/06/15 15:54	5020134
Zinc	EPA 6020A	EPA 3005A	1.38	10.0	1	ug/L	B-01, J	0.64	7440-66-6	02/06/15 08:15	02/06/15 15:54	5020134
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	ND	100	1	ug/L		5.7	67-64-1	01/30/15 14:00	01/30/15 18:20	5010627
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L		0.6	107-13-1	01/30/15 14:00	01/30/15 18:20	5010627
Benzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	71-43-2	01/30/15 14:00	01/30/15 18:20	5010627
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	74-97-5	01/30/15 14:00	01/30/15 18:20	5010627
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.5	75-27-4	01/30/15 14:00	01/30/15 18:20	5010627

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-Field Blank
Lab No: AYA0704-01
Matrix: Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 16:30
Date/Time Received: 01/29/15 10:45

Report No.: AYA0704

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.7	75-25-2	01/30/15 14:00	01/30/15 18:20	5010627
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.6	74-83-9	01/30/15 14:00	01/30/15 18:20	5010627
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	75-15-0	01/30/15 14:00	01/30/15 18:20	5010627
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	56-23-5	01/30/15 14:00	01/30/15 18:20	5010627
Chlorobenzene	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.2	108-90-7	01/30/15 14:00	01/30/15 18:20	5010627
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	75-00-3	01/30/15 14:00	01/30/15 18:20	5010627
Chloroform	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	67-66-3	01/30/15 14:00	01/30/15 18:20	5010627
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	74-87-3	01/30/15 14:00	01/30/15 18:20	5010627
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		1.1	124-48-1	01/30/15 14:00	01/30/15 18:20	5010627
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L		0.7	96-12-8	01/30/15 14:00	01/30/15 18:20	5010627
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-93-4	01/30/15 14:00	01/30/15 18:20	5010627
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	74-95-3	01/30/15 14:00	01/30/15 18:20	5010627
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.3	95-50-1	01/30/15 14:00	01/30/15 18:20	5010627
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-46-7	01/30/15 14:00	01/30/15 18:20	5010627
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.8	110-57-6	01/30/15 14:00	01/30/15 18:20	5010627
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-34-3	01/30/15 14:00	01/30/15 18:20	5010627
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	107-06-2	01/30/15 14:00	01/30/15 18:20	5010627
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-35-4	01/30/15 14:00	01/30/15 18:20	5010627
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-59-2	01/30/15 14:00	01/30/15 18:20	5010627
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-60-5	01/30/15 14:00	01/30/15 18:20	5010627
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	78-87-5	01/30/15 14:00	01/30/15 18:20	5010627
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.8	10061-01-5	01/30/15 14:00	01/30/15 18:20	5010627

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(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-Field Blank
Lab No: AYA0704-01
Matrix: Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 16:30
Date/Time Received: 01/29/15 10:45

Report No.: AYA0704

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	10061-02-6	01/30/15 14:00	01/30/15 18:20	5010627
Ethylbenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-41-4	01/30/15 14:00	01/30/15 18:20	5010627
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.5	74-88-4	01/30/15 14:00	01/30/15 18:20	5010627
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	ND	50	1	ug/L		0.6	591-78-6	01/30/15 14:00	01/30/15 18:20	5010627
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	75-09-2	01/30/15 14:00	01/30/15 18:20	5010627
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	78-93-3	01/30/15 14:00	01/30/15 18:20	5010627
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.4	108-10-1	01/30/15 14:00	01/30/15 18:20	5010627
Styrene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-42-5	01/30/15 14:00	01/30/15 18:20	5010627
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	630-20-6	01/30/15 14:00	01/30/15 18:20	5010627
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	79-34-5	01/30/15 14:00	01/30/15 18:20	5010627
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	127-18-4	01/30/15 14:00	01/30/15 18:20	5010627
Toluene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	108-88-3	01/30/15 14:00	01/30/15 18:20	5010627
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	71-55-6	01/30/15 14:00	01/30/15 18:20	5010627
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	79-00-5	01/30/15 14:00	01/30/15 18:20	5010627
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	79-01-6	01/30/15 14:00	01/30/15 18:20	5010627
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-69-4	01/30/15 14:00	01/30/15 18:20	5010627
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	96-18-4	01/30/15 14:00	01/30/15 18:20	5010627
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L		1.8	108-05-4	01/30/15 14:00	01/30/15 18:20	5010627
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-01-4	01/30/15 14:00	01/30/15 18:20	5010627
Xylenes, total	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	1330-20-7	01/30/15 14:00	01/30/15 18:20	5010627
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	93 %		80-120				1868-53-7	01/30/15 14:00	01/30/15 18:20	5010627

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-Field Blank
Lab No: AYA0704-01
Matrix: Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/28/15 16:30
Date/Time Received: 01/29/15 10:45

Report No.: AYA0704

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	105 %		78-120				17060-07-0	01/30/15 14:00	01/30/15 18:20	5010627
Surr: Toluene-d8	EPA 8260B	EPA 5030B	102 %		80-120				2037-26-5	01/30/15 14:00	01/30/15 18:20	5010627
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	105 %		80-120				460-00-4	01/30/15 14:00	01/30/15 18:20	5010627

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110 Technology Parkway, Norcross, GA 30092

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-Trip Blank
Lab No: AYA0704-02
Matrix: Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/27/15 07:00
Date/Time Received: 01/29/15 10:45

Report No.: AYA0704

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	ND	100	1	ug/L		5.7	67-64-1	01/30/15 14:00	01/30/15 18:50	5010627
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L		0.6	107-13-1	01/30/15 14:00	01/30/15 18:50	5010627
Benzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	71-43-2	01/30/15 14:00	01/30/15 18:50	5010627
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	74-97-5	01/30/15 14:00	01/30/15 18:50	5010627
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.5	75-27-4	01/30/15 14:00	01/30/15 18:50	5010627
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.7	75-25-2	01/30/15 14:00	01/30/15 18:50	5010627
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.6	74-83-9	01/30/15 14:00	01/30/15 18:50	5010627
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	75-15-0	01/30/15 14:00	01/30/15 18:50	5010627
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	56-23-5	01/30/15 14:00	01/30/15 18:50	5010627
Chlorobenzene	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.2	108-90-7	01/30/15 14:00	01/30/15 18:50	5010627
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	75-00-3	01/30/15 14:00	01/30/15 18:50	5010627
Chloroform	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	67-66-3	01/30/15 14:00	01/30/15 18:50	5010627
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	74-87-3	01/30/15 14:00	01/30/15 18:50	5010627
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		1.1	124-48-1	01/30/15 14:00	01/30/15 18:50	5010627
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L		0.7	96-12-8	01/30/15 14:00	01/30/15 18:50	5010627
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-93-4	01/30/15 14:00	01/30/15 18:50	5010627
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		0.3	74-95-3	01/30/15 14:00	01/30/15 18:50	5010627
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.3	95-50-1	01/30/15 14:00	01/30/15 18:50	5010627
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	106-46-7	01/30/15 14:00	01/30/15 18:50	5010627
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.8	110-57-6	01/30/15 14:00	01/30/15 18:50	5010627
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-34-3	01/30/15 14:00	01/30/15 18:50	5010627
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	107-06-2	01/30/15 14:00	01/30/15 18:50	5010627

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-Trip Blank
Lab No: AYA0704-02
Matrix: Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/27/15 07:00
Date/Time Received: 01/29/15 10:45

Report No.: AYA0704

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	75-35-4	01/30/15 14:00	01/30/15 18:50	5010627
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-59-2	01/30/15 14:00	01/30/15 18:50	5010627
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.2	156-60-5	01/30/15 14:00	01/30/15 18:50	5010627
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	78-87-5	01/30/15 14:00	01/30/15 18:50	5010627
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.8	10061-01-5	01/30/15 14:00	01/30/15 18:50	5010627
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	10061-02-6	01/30/15 14:00	01/30/15 18:50	5010627
Ethylbenzene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-41-4	01/30/15 14:00	01/30/15 18:50	5010627
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L		1.5	74-88-4	01/30/15 14:00	01/30/15 18:50	5010627
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	ND	50	1	ug/L		0.6	591-78-6	01/30/15 14:00	01/30/15 18:50	5010627
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.6	75-09-2	01/30/15 14:00	01/30/15 18:50	5010627
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		0.8	78-93-3	01/30/15 14:00	01/30/15 18:50	5010627
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	ND	100	1	ug/L		1.4	108-10-1	01/30/15 14:00	01/30/15 18:50	5010627
Styrene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	100-42-5	01/30/15 14:00	01/30/15 18:50	5010627
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	630-20-6	01/30/15 14:00	01/30/15 18:50	5010627
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L		0.3	79-34-5	01/30/15 14:00	01/30/15 18:50	5010627
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	127-18-4	01/30/15 14:00	01/30/15 18:50	5010627
Toluene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.2	108-88-3	01/30/15 14:00	01/30/15 18:50	5010627
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	71-55-6	01/30/15 14:00	01/30/15 18:50	5010627
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	79-00-5	01/30/15 14:00	01/30/15 18:50	5010627
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	79-01-6	01/30/15 14:00	01/30/15 18:50	5010627
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-69-4	01/30/15 14:00	01/30/15 18:50	5010627

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 13, 2015

Client ID: 0803-Trip Blank
Lab No: AYA0704-02
Matrix: Water

Project: East Carolina Regional Landfill
Date/Time Sampled: 01/27/15 07:00
Date/Time Received: 01/29/15 10:45

Report No.: AYA0704

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.4	96-18-4	01/30/15 14:00	01/30/15 18:50	5010627
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L		1.8	108-05-4	01/30/15 14:00	01/30/15 18:50	5010627
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L		0.3	75-01-4	01/30/15 14:00	01/30/15 18:50	5010627
Xylenes, total	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L		0.5	1330-20-7	01/30/15 14:00	01/30/15 18:50	5010627
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	95 %		80-120				1868-53-7	01/30/15 14:00	01/30/15 18:50	5010627
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	106 %		78-120				17060-07-0	01/30/15 14:00	01/30/15 18:50	5010627
Surr: Toluene-d8	EPA 8260B	EPA 5030B	100 %		80-120				2037-26-5	01/30/15 14:00	01/30/15 18:50	5010627
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	104 %		80-120				460-00-4	01/30/15 14:00	01/30/15 18:50	5010627

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February 13, 2015

Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020134 - EPA 3005A										
Blank (5020134-BLK1)							Prepared & Analyzed: 02/06/15			
Antimony	ND	6.00	ug/L							
Arsenic	ND	10.0	ug/L							
Barium	ND	100	ug/L							
Beryllium	ND	1.00	ug/L							
Cadmium	ND	1.00	ug/L							
Chromium	ND	10.0	ug/L							
Cobalt	ND	10.0	ug/L							
Copper	ND	10.0	ug/L							
Lead	ND	10.0	ug/L							
Nickel	ND	50.0	ug/L							
Selenium	ND	10.0	ug/L							
Silver	ND	10.0	ug/L							
Thallium	ND	5.50	ug/L							
Vanadium	ND	25.0	ug/L							
Zinc	1.12	10.0	ug/L							J
LCS (5020134-BS1)							Prepared & Analyzed: 02/06/15			
Antimony	103	6.00	ug/L	100.00		103	80-120			
Arsenic	106	10.0	ug/L	100.00		106	80-120			
Barium	100	100	ug/L	100.00		100	80-120			
Beryllium	102	1.00	ug/L	100.00		102	80-120			
Cadmium	104	1.00	ug/L	100.00		104	80-120			
Chromium	104	10.0	ug/L	100.00		104	80-120			
Cobalt	105	10.0	ug/L	100.00		105	80-120			
Copper	104	10.0	ug/L	100.00		104	80-120			
Lead	102	10.0	ug/L	100.00		102	80-120			
Nickel	105	50.0	ug/L	100.00		105	80-120			

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February 13, 2015

Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020134 - EPA 3005A										
LCS (5020134-BS1)							Prepared & Analyzed: 02/06/15			
Selenium	104	10.0	ug/L	100.00		104	80-120			
Silver	102	10.0	ug/L	100.00		102	80-120			
Thallium	99.8	5.50	ug/L	100.00		100	80-120			
Vanadium	105	25.0	ug/L	100.00		105	80-120			
Zinc	103	10.0	ug/L	100.00		103	80-120			
Matrix Spike (5020134-MS1)	**Source: AYA0703-02**						Prepared & Analyzed: 02/06/15			
Antimony	103	6.00	ug/L	100.00	ND	103	75-125			
Arsenic	101	10.0	ug/L	100.00	1.65	99	75-125			
Barium	166	100	ug/L	100.00	71.3	95	75-125			
Beryllium	102	1.00	ug/L	100.00	2.03	100	75-125			
Cadmium	103	1.00	ug/L	100.00	0.06	103	75-125			
Chromium	101	10.0	ug/L	100.00	2.84	98	75-125			
Cobalt	130	10.0	ug/L	100.00	34.3	96	75-125			
Copper	97.9	10.0	ug/L	100.00	1.68	96	75-125			
Lead	103	10.0	ug/L	100.00	1.94	101	75-125			
Nickel	108	50.0	ug/L	100.00	10.6	97	75-125			
Selenium	99.7	10.0	ug/L	100.00	ND	100	75-125			
Silver	105	10.0	ug/L	100.00	3.68	101	75-125			
Thallium	100	5.50	ug/L	100.00	ND	100	75-125			
Vanadium	101	25.0	ug/L	100.00	2.35	99	75-125			
Zinc	103	10.0	ug/L	100.00	7.77	96	75-125			
Matrix Spike Dup (5020134-MSD1)	**Source: AYA0703-02**						Prepared & Analyzed: 02/06/15			
Antimony	105	6.00	ug/L	100.00	ND	105	75-125	2	20	
Arsenic	103	10.0	ug/L	100.00	1.65	101	75-125	2	20	
Barium	170	100	ug/L	100.00	71.3	99	75-125	3	20	

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February 13, 2015

Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020134 - EPA 3005A										
Matrix Spike Dup (5020134-MSD1)		**Source: AYA0703-02**					Prepared & Analyzed: 02/06/15			
Beryllium	102	1.00	ug/L	100.00	2.03	100	75-125	0.5	20	
Cadmium	104	1.00	ug/L	100.00	0.06	104	75-125	2	20	
Chromium	102	10.0	ug/L	100.00	2.84	100	75-125	2	20	
Cobalt	132	10.0	ug/L	100.00	34.3	97	75-125	1	20	
Copper	100	10.0	ug/L	100.00	1.68	98	75-125	2	20	
Lead	104	10.0	ug/L	100.00	1.94	102	75-125	1	20	
Nickel	110	50.0	ug/L	100.00	10.6	99	75-125	2	20	
Selenium	101	10.0	ug/L	100.00	ND	101	75-125	2	20	
Silver	106	10.0	ug/L	100.00	3.68	103	75-125	2	20	
Thallium	101	5.50	ug/L	100.00	ND	101	75-125	1	20	
Vanadium	104	25.0	ug/L	100.00	2.35	101	75-125	3	20	
Zinc	105	10.0	ug/L	100.00	7.77	98	75-125	2	20	
Post Spike (5020134-PS1)		**Source: AYA0703-02**					Prepared & Analyzed: 02/06/15			
Antimony	91.3		ug/L	100.00	0.02	91	80-120			
Arsenic	104		ug/L	100.00	1.65	102	80-120			
Barium	168		ug/L	100.00	71.3	96	80-120			
Beryllium	103		ug/L	100.00	2.03	100	80-120			
Cadmium	103		ug/L	100.00	0.06	103	80-120			
Chromium	106		ug/L	100.00	2.84	103	80-120			
Cobalt	134		ug/L	100.00	34.3	100	80-120			
Copper	101		ug/L	100.00	1.68	100	80-120			
Lead	103		ug/L	100.00	1.94	101	80-120			
Nickel	111		ug/L	100.00	10.6	101	80-120			
Selenium	103		ug/L	100.00	0.30	103	80-120			
Silver	105		ug/L	100.00	3.68	101	80-120			
Thallium	100		ug/L	100.00	0.09	100	80-120			

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Attention: Mr. Matt Einsmann

February 13, 2015

Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020134 - EPA 3005A										
Post Spike (5020134-PS1)		**Source: AYA0703-02**					Prepared & Analyzed: 02/06/15			
Vanadium	109		ug/L	100.00	2.35	106	80-120			
Zinc	109		ug/L	100.00	7.77	101	80-120			

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February 13, 2015

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010627 - EPA 5030B										
Blank (5010627-BLK1)							Prepared & Analyzed: 01/30/15			
Acetone	ND	100	ug/L							
Acrylonitrile	ND	200	ug/L							
Benzene	ND	1.0	ug/L							
Bromochloromethane	ND	3.0	ug/L							
Bromodichloromethane	ND	1.0	ug/L							
Bromoform	ND	3.0	ug/L							
Bromomethane	ND	10	ug/L							
Carbon Disulfide	ND	100	ug/L							
Carbon Tetrachloride	ND	1.0	ug/L							
Chlorobenzene	ND	3.0	ug/L							
Chloroethane	ND	10	ug/L							
Chloroform	ND	5.0	ug/L							
Chloromethane	ND	1.0	ug/L							
Dibromochloromethane	ND	3.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	13	ug/L							
1,2-Dibromoethane	ND	1.0	ug/L							
Dibromomethane	ND	10	ug/L							
1,2-Dichlorobenzene	ND	5.0	ug/L							
1,4-Dichlorobenzene	ND	1.0	ug/L							
trans-1,4-Dichloro-2-butene	ND	100	ug/L							
1,1-Dichloroethane	ND	5.0	ug/L							
1,2-Dichloroethane	ND	1.0	ug/L							
1,1-Dichloroethene	ND	5.0	ug/L							
cis-1,2-Dichloroethene	ND	5.0	ug/L							
trans-1,2-Dichloroethene	ND	5.0	ug/L							
1,2-Dichloropropane	ND	1.0	ug/L							
cis-1,3-Dichloropropene	ND	1.0	ug/L							

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February 13, 2015

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010627 - EPA 5030B										
Blank (5010627-BLK1)							Prepared & Analyzed: 01/30/15			
trans-1,3-Dichloropropene	ND	1.0	ug/L							
Ethylbenzene	ND	1.0	ug/L							
Iodomethane	ND	10	ug/L							
Methyl Butyl Ketone (2-Hexanone)	ND	50	ug/L							
Methylene Chloride	ND	1.0	ug/L							
Methyl Ethyl Ketone (2-Butanone)	ND	100	ug/L							
4-Methyl-2-pentanone (MIBK)	ND	100	ug/L							
Styrene	ND	1.0	ug/L							
1,1,1,2-Tetrachloroethane	ND	5.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	3.0	ug/L							
Tetrachloroethene	ND	1.0	ug/L							
Toluene	ND	1.0	ug/L							
1,1,1-Trichloroethane	ND	1.0	ug/L							
1,1,2-Trichloroethane	ND	1.0	ug/L							
Trichloroethene	ND	1.0	ug/L							
Trichlorofluoromethane	ND	1.0	ug/L							
1,2,3-Trichloropropane	ND	1.0	ug/L							
Vinyl Acetate	ND	50	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Xylenes, total	ND	5.0	ug/L							
Surr: Dibromofluoromethane	*45*		*ug/L*	*50.000*		*90*	*80-120*			
Surr: 1,2-Dichloroethane-d4	*50*		*ug/L*	*50.000*		*99*	*78-120*			
Surr: Toluene-d8	*50*		*ug/L*	*50.000*		*101*	*80-120*			
Surr: 4-Bromofluorobenzene	*54*		*ug/L*	*50.000*		*108*	*80-120*			
LCS (5010627-BS1)							Prepared & Analyzed: 01/30/15			

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Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010627 - EPA 5030B										
LCS (5010627-BS1)							Prepared & Analyzed: 01/30/15			
Benzene	50		ug/L	50.000		99	67-134			
Chlorobenzene	49		ug/L	50.000		98	69-122			
1,1-Dichloroethene	53		ug/L	50.000		105	58-142			
Toluene	52		ug/L	50.000		103	68-127			
Trichloroethene	56		ug/L	50.000		112	72-132			
Surr: Dibromofluoromethane	*48*		*ug/L*	*50.000*		*97*	*80-120*			
Surr: 1,2-Dichloroethane-d4	*49*		*ug/L*	*50.000*		*98*	*78-120*			
Surr: Toluene-d8	*53*		*ug/L*	*50.000*		*105*	*80-120*			
Surr: 4-Bromofluorobenzene	*50*		*ug/L*	*50.000*		*100*	*80-120*			
Matrix Spike (5010627-MS1)		**Source: AYA0702-01**					Prepared & Analyzed: 01/30/15			
Benzene	44		ug/L	50.000	0.2	88	67-134			
Chlorobenzene	46		ug/L	50.000	ND	91	69-122			
1,1-Dichloroethene	43		ug/L	50.000	ND	86	58-142			
Toluene	45		ug/L	50.000	ND	91	68-127			
Trichloroethene	48		ug/L	50.000	ND	96	72-132			
Surr: Dibromofluoromethane	*44*		*ug/L*	*50.000*		*88*	*80-120*			
Surr: 1,2-Dichloroethane-d4	*50*		*ug/L*	*50.000*		*99*	*78-120*			
Surr: Toluene-d8	*48*		*ug/L*	*50.000*		*96*	*80-120*			
Surr: 4-Bromofluorobenzene	*45*		*ug/L*	*50.000*		*89*	*80-120*			
Matrix Spike Dup (5010627-MSD1)		**Source: AYA0702-01**					Prepared & Analyzed: 01/30/15			
Benzene	49		ug/L	50.000	0.2	97	67-134	10	9	QR-02
Chlorobenzene	51		ug/L	50.000	ND	102	69-122	11	13	
1,1-Dichloroethene	47		ug/L	50.000	ND	94	58-142	9	9	

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February 13, 2015

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010627 - EPA 5030B										
Matrix Spike Dup (5010627-MSD1)		**Source: AYA0702-01**					Prepared & Analyzed: 01/30/15			
Toluene	51		ug/L	50.000	ND	101	68-127	11	9	QR-02
Trichloroethene	54		ug/L	50.000	ND	108	72-132	12	11	QR-02
Surr: Dibromofluoromethane	*44*		*ug/L*	*50.000*		*88*	*80-120*			
Surr: 1,2-Dichloroethane-d4	*50*		*ug/L*	*50.000*		*100*	*78-120*			
Surr: Toluene-d8	*47*		*ug/L*	*50.000*		*94*	*80-120*			
Surr: 4-Bromofluorobenzene	*45*		*ug/L*	*50.000*		*90*	*80-120*			

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February 13, 2015

Laboratory Certifications

Code	Description	Number	Expires
LA	Louisiana	02069	06/30/2015
NC	North Carolina	381	12/31/2015
NELAC	FL DOH (Non-Pot. Water, Solids) Eff:: 07/01/2013	E87315	06/30/2015
SC	South Carolina	98011001	06/30/2015
TX	Texas	T104704397-08-TX	03/31/2015
VA	Virginia	1340	12/14/2015

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February 13, 2015

Legend

Defination of Laboratory Terms

ND - Not Detected at levels greater than or equal to SWSL/RL
SWSL/RL - NC DENR Solid Waste Section LImit/Reporting Limit (Adjusted for DF/Prep Factor)
DF - Dilution Factor
MDL - Method Detection Limit

Qualifiers

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries.

J Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).

B-01 Analyte was detected in the associated method blank at an estimated level equal to or greater than the MDL. Sample values reported as greater than the MDL and less than 10x the method blank value are reported as estimated values.

Note: Unless otherwise noted, all results are reported on an as received basis.

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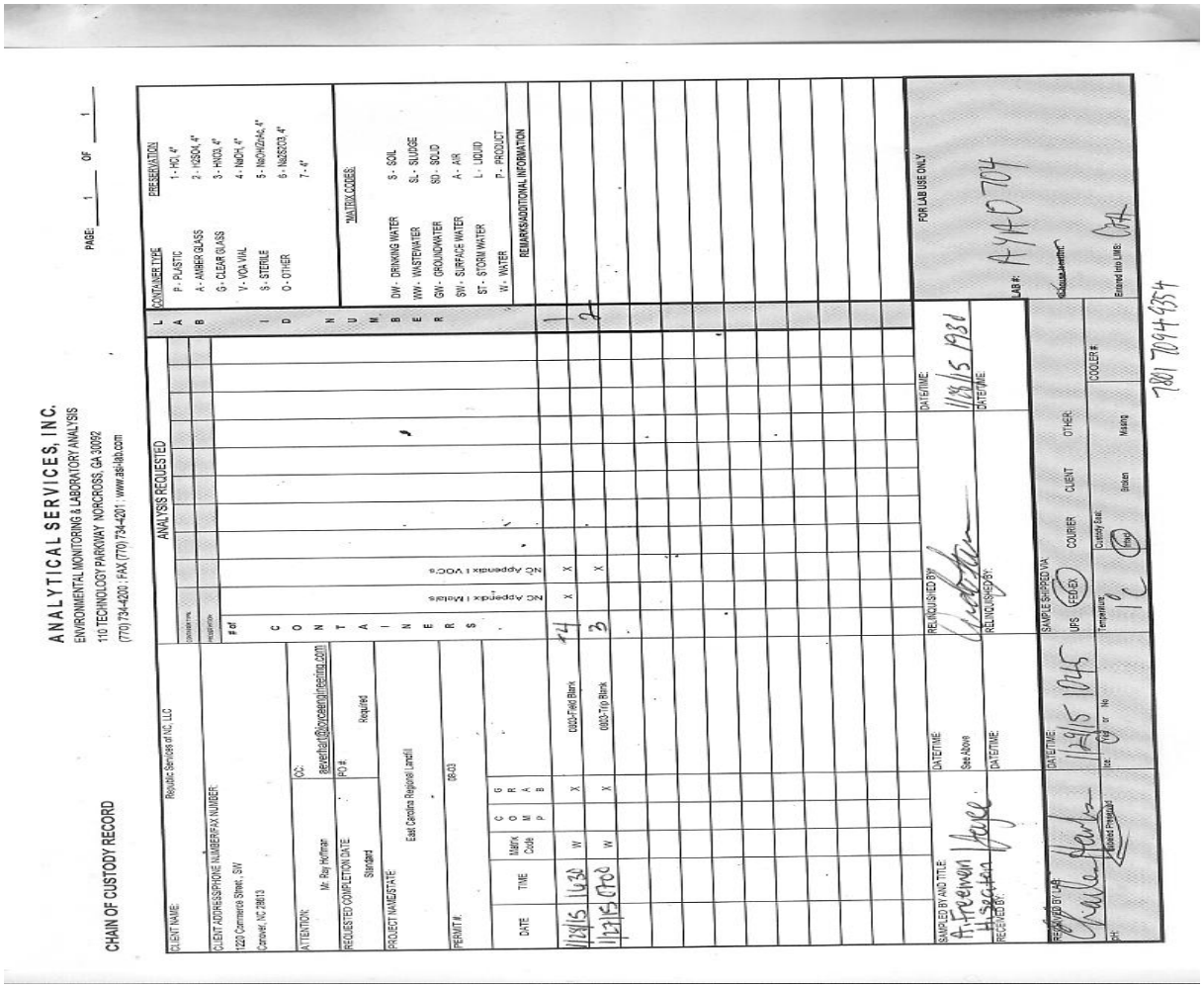

ANALYTICAL SERVICES, INC.
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(770) 734-4200 : FAX (770) 734-4201 : www.asilab.com

CHAIN OF CUSTODY RECORD

PAGE: 1 OF 1

CLIENT NAME: Republic Services of NC, LLC

CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 1220 Commerce Street, SW Conover, NC 28613

ATTENTION: Mr. Ray Hoffman CC: reverhart@bryceengineering.com

REQUESTED COMPLETION DATE: Standard PO #: Required

PROJECT NAME/DATE: East Carolina Regional Landfill

PERMIT #: 08-03

ANALYSIS REQUESTED

DATE	TIME	Matrix Code	GRAB	# of containers	NC Appendix I Metals	NC Appendix I VOC's
11/18/15	1632	W	X	4	X	X
11/21/15	0700	W	X	3	X	X

0003-Field Blank
0003-Trip Blank

CONTAINER TYPE: P - PLASTIC; A - AMBER GLASS; G - CLEAR GLASS; V - VOA VIAL; S - STERILE; O - OTHER

PRESERVATION: 1 - HCL 4°; 2 - H2SO4 4°; 3 - HNO3 4°; 4 - NaOH 4°; 5 - NaOH/ZnAc 4°; 6 - Na2S2O3 4°; 7 - 4°

MATRIX CODES: DW - DRINKING WATER; WW - WASTEWATER; GW - GROUNDWATER; SW - SURFACE WATER; ST - STORM WATER; W - WATER; S - SOIL; SL - SLUDGE; SOL - SOLID; A - AIR; L - LIQUID; P - PRODUCT

REMARKS/ADDITIONAL INFORMATION

SAMPLED BY AND TITLE: A. Freeman, H. Segars — DATE/TIME: See Above

RELINQUISHED BY: — DATE/TIME: 11/18/15 1938

RECEIVED BY: — DATE/TIME:

RELINQUISHED BY: — DATE/TIME:

RECEIVED BY LAB: — DATE/TIME: 11/19/15 1045

Blained Preserved: Yes / No

SAMPLE SHIPPED VIA: UPS, FEDEX, COURIER, CLIENT, OTHER:

Temperature: 1°C

Custody Seal: Intact, Broken, Missing

COOLER #:

FOR LAB USE ONLY

LAB #: A4A0704

Entered into LIMS:

7001 7094 4354

ASI

ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

LOG-IN CHECKLIST **Printed: 2/13/2015 4:38:11PM**

Attn: Mr. Matt Einsmann

Client: Republic Services of North Carolina, LLC
Project: East Carolina Regional Landfill
Date Received: 01/29/15 10:45
Work Order: AYA0704
Logged In By: Charles Hawks

OBSERVATIONS

#Samples: 2 **#Containers:** 7

Minimum Temp(C): 1.0 **Maximum Temp(C):** 1.0 **Custody Seal(s) Used:** Yes

CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	YES
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

Comments:

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

Laboratory Report

Report Number: AYA0699

Project: East Carolina Regional Landfill Leachate

Project #:08-03

Prepared For:
Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover, NC 28613

Attention: Mr. Matt Einsmann

February 19, 2015

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call. Analytical Services, Inc. certifies that the following analytical results meet all requirements of the National Environmental Laboratory Accreditation Conference(NELAC).All test results relate only to the samples analyzed.

Approved:

Project Manager

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 19, 2015

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
0803-Leachate	AYA0699-01	Water	01/28/15 16:00	01/29/15 10:45

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 19, 2015

Client ID: 0803-Leachate
Lab No: AYA0699-01
Matrix: Water

Project: East Carolina Regional Landfill Leachate
Date/Time Sampled: 01/28/15 16:00
Date/Time Received: 01/29/15 10:45

Report No.: AYA0699

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
General Chemistry												
Biochemical Oxygen Demand	SM 5210 B	SM 5210 B	375000	19000	2	ug/L		2.0	E-10106	01/29/15 11:52	02/03/15 12:20	5010603
Chemical Oxygen Demand	SM 5220 D	SM 5220 D	2270000	100	10	ug/L		100	E-10117	02/10/15 10:17	02/10/15 10:17	5020218
Cyanide, Total	EPA 9010/9014	SM 4500-CN G	ND	50.0	1	ug/L		50.0	57-12-5	02/02/15 09:00	02/02/15 14:30	5020003
Oil & Grease (HEM)	EPA 1664B	EPA 1664	8100	6200	1	ug/L		6200	C-007	02/12/15 09:06	02/12/15 09:06	5020307
Total Phenols as Phenol	EPA 420.1	EPA 420.1	2190	250	1	ug/L		250	E-10253	02/05/15 14:35	02/05/15 18:40	5020114
Phosphorus-Total	SM 4500-P B,E	SM 4500-P B	4030	0.22	1.11	ug/L		0.22	7723-14-0	02/02/15 09:45	02/04/15 19:55	5010656
Total Kjeldahl Nitrogen as N	EPA 351.2	EPA 351.2	714000	80000	10	ug/L		80000	E-10264	02/16/15 12:40	02/17/15 17:43	5020386
Total Suspended Solids	SM 2540 D	SM 2540 D	46000	10000	1	ug/L		10000	E-10162	02/02/15 11:30	02/02/15 11:30	5020020
Inorganic Anions												
Nitrate/Nitrite as N	EPA 9056A	EPA 300.0	ND	100	2	ug/L		100	E-10128	01/29/15 14:58	01/29/15 14:58	5010597
Nitrate as N	EPA 9056A	EPA 300.0	ND	100	2	ug/L		100	14797-55-8	01/29/15 14:58	01/29/15 14:58	5010597
Nitrite as N	EPA 9056A	EPA 300.0	ND	100	2	ug/L		100	1594-56-5	01/29/15 14:58	01/29/15 14:58	5010597
Sulfate	EPA 9056A	EPA 300.0	ND	10000	2	ug/L		10000	14808-79-8	01/29/15 14:58	01/29/15 14:58	5010597
Metals, Total												
Antimony	EPA 6020A	EPA 3005A	24.6	6.00	5	ug/L		5.26	7440-36-0	02/04/15 08:50	02/04/15 22:30	5020064
Arsenic	EPA 6020A	EPA 3005A	132	50.0	5	ug/L		5.66	7440-38-2	02/04/15 08:50	02/04/15 22:30	5020064
Barium	EPA 6020A	EPA 3005A	328	100	5	ug/L		0.48	7440-39-3	02/04/15 08:50	02/04/15 22:30	5020064
Beryllium	EPA 6020A	EPA 3005A	ND	1.00	5	ug/L		0.24	7440-41-7	02/04/15 08:50	02/04/15 22:30	5020064
Cadmium	EPA 6020A	EPA 3005A	0.25	1.00	5	ug/L	J	0.23	7440-43-9	02/04/15 08:50	02/04/15 22:30	5020064

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1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 19, 2015

Client ID: 0803-Leachate
Lab No: AYA0699-01
Matrix: Water

Project: East Carolina Regional Landfill Leachate
Date/Time Sampled: 01/28/15 16:00
Date/Time Received: 01/29/15 10:45

Report No.: AYA0699

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Chromium	EPA 6020A	EPA 3005A	97.8	50.0	5	ug/L		3.64	7440-47-3	02/04/15 08:50	02/04/15 22:30	5020064
Cobalt	EPA 6020A	EPA 3005A	15.5	10.0	5	ug/L		1.29	7440-48-4	02/04/15 08:50	02/04/15 22:30	5020064
Copper	EPA 6020A	EPA 3005A	64.6	50.0	5	ug/L		1.10	7440-50-8	02/04/15 08:50	02/04/15 22:30	5020064
Lead	EPA 6020A	EPA 3005A	4.15	10.0	5	ug/L	J	0.24	7439-92-1	02/04/15 08:50	02/04/15 22:30	5020064
Nickel	EPA 6020A	EPA 3005A	81.0	50.0	5	ug/L		1.08	7440-02-0	02/04/15 08:50	02/04/15 22:30	5020064
Selenium	EPA 6020A	EPA 3005A	ND	10.0	5	ug/L		5.06	7782-49-2	02/04/15 08:50	02/05/15 10:52	5020064
Silver	EPA 6020A	EPA 3005A	ND	10.0	5	ug/L		0.84	7440-22-4	02/04/15 08:50	02/04/15 22:30	5020064
Thallium	EPA 6020A	EPA 3005A	ND	5.50	5	ug/L		0.46	7440-28-0	02/04/15 08:50	02/04/15 22:30	5020064
Vanadium	EPA 6020A	EPA 3005A	79.6	25.0	5	ug/L	B-01	4.67	7440-62-2	02/04/15 08:50	02/04/15 22:30	5020064
Zinc	EPA 6020A	EPA 3005A	120	50.0	5	ug/L	B-01	3.20	7440-66-6	02/04/15 08:50	02/04/15 22:30	5020064
Mercury	EPA 7470A	EPA 7470A	0.084	0.200	1	ug/L	J	0.064	7439-97-6	02/03/15 13:45	02/04/15 14:04	5020033
Volatile Organic Compounds by EPA 8260												
Acetone	EPA 8260B	EPA 5030B	5000	2000	100	ug/L	HDSP	570	67-64-1	01/29/15 12:00	01/29/15 14:01	5010599
Acrylonitrile	EPA 8260B	EPA 5030B	ND	200	1	ug/L	HDSP	0.6	107-13-1	01/29/15 12:00	01/29/15 21:56	5010599
Benzene	EPA 8260B	EPA 5030B	2.6	1.0	1	ug/L	HDSP	0.2	71-43-2	01/29/15 12:00	01/29/15 21:56	5010599
Bromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L	HDSP	0.3	74-97-5	01/29/15 12:00	01/29/15 21:56	5010599
Bromodichloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L	HDSP	0.5	75-27-4	01/29/15 12:00	01/29/15 21:56	5010599
Bromoform	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L	HDSP	0.7	75-25-2	01/29/15 12:00	01/29/15 21:56	5010599
Bromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L	HDSP	1.6	74-83-9	01/29/15 12:00	01/29/15 21:56	5010599
Carbon Disulfide	EPA 8260B	EPA 5030B	ND	100	1	ug/L	HDSP	0.8	75-15-0	01/29/15 12:00	01/29/15 21:56	5010599
Carbon Tetrachloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L	HDSP	0.6	56-23-5	01/29/15 12:00	01/29/15 21:56	5010599

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1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 19, 2015

Client ID: 0803-Leachate
Lab No: AYA0699-01
Matrix: Water

Project: East Carolina Regional Landfill Leachate
Date/Time Sampled: 01/28/15 16:00
Date/Time Received: 01/29/15 10:45

Report No.: AYA0699

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Chlorobenzene	EPA 8260B	EPA 5030B	0.3	3.0	1	ug/L	J, HDSP	0.2	108-90-7	01/29/15 12:00	01/29/15 21:56	5010599
Chloroethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L	HDSP	0.3	75-00-3	01/29/15 12:00	01/29/15 21:56	5010599
Chloroform	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L	HDSP	0.2	67-66-3	01/29/15 12:00	01/29/15 21:56	5010599
Chloromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L	HDSP	0.2	74-87-3	01/29/15 12:00	01/29/15 21:56	5010599
Dibromochloromethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L	HDSP	1.1	124-48-1	01/29/15 12:00	01/29/15 21:56	5010599
1,2-Dibromo-3-chloropropane	EPA 8260B	EPA 5030B	ND	13	1	ug/L	HDSP	0.7	96-12-8	01/29/15 12:00	01/29/15 21:56	5010599
1,2-Dibromoethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L	HDSP	0.3	106-93-4	01/29/15 12:00	01/29/15 21:56	5010599
Dibromomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L	HDSP	0.3	74-95-3	01/29/15 12:00	01/29/15 21:56	5010599
1,2-Dichlorobenzene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L	HDSP	0.3	95-50-1	01/29/15 12:00	01/29/15 21:56	5010599
1,4-Dichlorobenzene	EPA 8260B	EPA 5030B	4.8	1.0	1	ug/L	HDSP	0.3	106-46-7	01/29/15 12:00	01/29/15 21:56	5010599
trans-1,4-Dichloro-2-butene	EPA 8260B	EPA 5030B	ND	100	1	ug/L	HDSP	1.8	110-57-6	01/29/15 12:00	01/29/15 21:56	5010599
1,1-Dichloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L	HDSP	0.2	75-34-3	01/29/15 12:00	01/29/15 21:56	5010599
1,2-Dichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L	HDSP	0.4	107-06-2	01/29/15 12:00	01/29/15 21:56	5010599
1,1-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L	HDSP	0.2	75-35-4	01/29/15 12:00	01/29/15 21:56	5010599
cis-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L	HDSP	0.2	156-59-2	01/29/15 12:00	01/29/15 21:56	5010599
trans-1,2-Dichloroethene	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L	HDSP	0.2	156-60-5	01/29/15 12:00	01/29/15 21:56	5010599
1,2-Dichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L	HDSP	0.2	78-87-5	01/29/15 12:00	01/29/15 21:56	5010599
cis-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L	HDSP	0.8	10061-01-5	01/29/15 12:00	01/29/15 21:56	5010599
trans-1,3-Dichloropropene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L	HDSP	0.6	10061-02-6	01/29/15 12:00	01/29/15 21:56	5010599
Ethylbenzene	EPA 8260B	EPA 5030B	17	1.0	1	ug/L	HDSP	0.2	100-41-4	01/29/15 12:00	01/29/15 21:56	5010599
Iodomethane	EPA 8260B	EPA 5030B	ND	10	1	ug/L	HDSP	1.5	74-88-4	01/29/15 12:00	01/29/15 21:56	5010599
Methyl Butyl Ketone (2-Hexanone)	EPA 8260B	EPA 5030B	13	50	1	ug/L	J, HDSP	0.6	591-78-6	01/29/15 12:00	01/29/15 21:56	5010599

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Conover NC, 28613

Attention: Mr. Matt Einsmann

February 19, 2015

Client ID: 0803-Leachate
Lab No: AYA0699-01
Matrix: Water

Project: East Carolina Regional Landfill Leachate
Date/Time Sampled: 01/28/15 16:00
Date/Time Received: 01/29/15 10:45

Report No.: AYA0699

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Methylene Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L	HDSP	0.6	75-09-2	01/29/15 12:00	01/29/15 21:56	5010599
Methyl Ethyl Ketone (2-Butanone)	EPA 8260B	EPA 5030B	5000	5000	100	ug/L	HDSP	85	78-93-3	01/29/15 12:00	01/29/15 14:01	5010599
4-Methyl-2-pentanone (MIBK)	EPA 8260B	EPA 5030B	95	100	1	ug/L	J, HDSP	1.4	108-10-1	01/29/15 12:00	01/29/15 21:56	5010599
Styrene	EPA 8260B	EPA 5030B	1.7	1.0	1	ug/L	HDSP	0.2	100-42-5	01/29/15 12:00	01/29/15 21:56	5010599
1,1,1,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	5.0	1	ug/L	HDSP	0.5	630-20-6	01/29/15 12:00	01/29/15 21:56	5010599
1,1,2,2-Tetrachloroethane	EPA 8260B	EPA 5030B	ND	3.0	1	ug/L	HDSP	0.3	79-34-5	01/29/15 12:00	01/29/15 21:56	5010599
Tetrachloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L	HDSP	0.4	127-18-4	01/29/15 12:00	01/29/15 21:56	5010599
Toluene	EPA 8260B	EPA 5030B	100	1.0	1	ug/L	HDSP	0.2	108-88-3	01/29/15 12:00	01/29/15 21:56	5010599
1,1,1-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L	HDSP	0.3	71-55-6	01/29/15 12:00	01/29/15 21:56	5010599
1,1,2-Trichloroethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L	HDSP	0.3	79-00-5	01/29/15 12:00	01/29/15 21:56	5010599
Trichloroethene	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L	HDSP	0.4	79-01-6	01/29/15 12:00	01/29/15 21:56	5010599
Trichlorofluoromethane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L	HDSP	0.3	75-69-4	01/29/15 12:00	01/29/15 21:56	5010599
1,2,3-Trichloropropane	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L	HDSP	0.4	96-18-4	01/29/15 12:00	01/29/15 21:56	5010599
Vinyl Acetate	EPA 8260B	EPA 5030B	ND	50	1	ug/L	HDSP	1.8	108-05-4	01/29/15 12:00	01/29/15 21:56	5010599
Vinyl Chloride	EPA 8260B	EPA 5030B	ND	1.0	1	ug/L	HDSP	0.3	75-01-4	01/29/15 12:00	01/29/15 21:56	5010599
Xylenes, total	EPA 8260B	EPA 5030B	32	5.0	1	ug/L	HDSP	0.5	1330-20-7	01/29/15 12:00	01/29/15 21:56	5010599
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	92 %		80-120				1868-53-7	01/29/15 12:00	01/29/15 14:01	5010599
Surr: Dibromofluoromethane	EPA 8260B	EPA 5030B	84 %		80-120				1868-53-7	01/29/15 12:00	01/29/15 21:56	5010599
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	103 %		78-120				17060-07-0	01/29/15 12:00	01/29/15 14:01	5010599
Surr: 1,2-Dichloroethane-d4	EPA 8260B	EPA 5030B	89 %		78-120				17060-07-0	01/29/15 12:00	01/29/15 21:56	5010599
Surr: Toluene-d8	EPA 8260B	EPA 5030B	103 %		80-120				2037-26-5	01/29/15 12:00	01/29/15 14:01	5010599

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Conover NC, 28613

Attention: Mr. Matt Einsmann

February 19, 2015

Client ID: 0803-Leachate
Lab No: AYA0699-01
Matrix: Water

Project: East Carolina Regional Landfill Leachate
Date/Time Sampled: 01/28/15 16:00
Date/Time Received: 01/29/15 10:45

Report No.: AYA0699

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Volatile Organic Compounds by EPA 8260												
Surr: Toluene-d8	EPA 8260B	EPA 5030B	100 %		80-120				2037-26-5	01/29/15 12:00	01/29/15 21:56	5010599
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	106 %		80-120				460-00-4	01/29/15 12:00	01/29/15 14:01	5010599
Surr: 4-Bromofluorobenzene	EPA 8260B	EPA 5030B	100 %		80-120				460-00-4	01/29/15 12:00	01/29/15 21:56	5010599

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Attention: Mr. Matt Einsmann

February 19, 2015

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010603 - SM 5210 B										
Blank (5010603-BLK1)							Prepared: 01/29/15 Analyzed: 02/03/15			
Biochemical Oxygen Demand	120	2000	ug/L							J
LCS (5010603-BS1)							Prepared: 01/29/15 Analyzed: 02/03/15			
Biochemical Oxygen Demand	182000	2000	ug/L	198000		92	85-115			
Duplicate (5010603-DUP1)		Source: AYA0699-01					Prepared: 01/29/15 Analyzed: 02/03/15			
Biochemical Oxygen Demand	379000	19000	ug/L		375000			1	20	
Duplicate (5010603-DUP2)		Source: AYA0523-02RE1					Prepared: 01/29/15 Analyzed: 02/03/15			
Biochemical Oxygen Demand	ND	2000	ug/L		ND				20	
Batch 5010656 - SM 4500-P B										
Blank (5010656-BLK1)							Prepared: 02/02/15 Analyzed: 02/04/15			
Phosphorus-Total	ND	0.02	ug/L							
LCS (5010656-BS1)							Prepared: 02/02/15 Analyzed: 02/04/15			
Phosphorus-Total	488	20.0	ug/L	500.00		98	88-110			
Matrix Spike (5010656-MS1)		Source: AYA0672-01					Prepared: 02/02/15 Analyzed: 02/04/15			
Phosphorus-Total	1280	20.0	ug/L	500.00	1290	0	72-123			QM-06
Matrix Spike Dup (5010656-MSD1)		Source: AYA0672-01					Prepared: 02/02/15 Analyzed: 02/04/15			
Phosphorus-Total	1500	20.0	ug/L	500.00	1290	43	72-123	16	11	QM-06
Batch 5020003 - SM 4500-CN G										
Blank (5020003-BLK1)							Prepared & Analyzed: 02/02/15			
Cyanide, Total	ND	10.0	ug/L							

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Attention: Mr. Matt Einsmann

February 19, 2015

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020003 - SM 4500-CN G										
LCS (5020003-BS1)							Prepared & Analyzed: 02/02/15			
Cyanide, Total	76.0	10.0	ug/L	80.000		95	85-115			
Matrix Spike (5020003-MS1)		Source: AYA0685-34					Prepared & Analyzed: 02/02/15			
Cyanide, Total	79.0	10.0	ug/L	80.000	ND	99	85-119			
Matrix Spike Dup (5020003-MSD1)		Source: AYA0685-34					Prepared & Analyzed: 02/02/15			
Cyanide, Total	79.0	10.0	ug/L	80.000	ND	99	85-119	0	13	
Batch 5020020 - SM 2540 D										
Blank (5020020-BLK1)							Prepared & Analyzed: 02/02/15			
Total Suspended Solids	ND	5000	ug/L							
LCS (5020020-BS1)							Prepared & Analyzed: 02/02/15			
Total Suspended Solids	95500	5000	ug/L	100000		96	90-110			
Duplicate (5020020-DUP1)		Source: AYA0699-01					Prepared & Analyzed: 02/02/15			
Total Suspended Solids	40000	10000	ug/L		46000			14	10	QR-03
Batch 5020114 - EPA 420.1										
Blank (5020114-BLK1)							Prepared & Analyzed: 02/05/15			
Total Phenols as Phenol	ND	50.0	ug/L							
LCS (5020114-BS1)							Prepared & Analyzed: 02/05/15			
Total Phenols as Phenol	495	50.0	ug/L	500.00		99	80-120			

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General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020114 - EPA 420.1										
Matrix Spike (5020114-MS1)		**Source: AYA0734-01**					Prepared & Analyzed: 02/05/15			
Total Phenols as Phenol	354	50.0	ug/L	500.00	ND	71	80-120			QM-02
Matrix Spike Dup (5020114-MSD1)		**Source: AYA0734-01**					Prepared & Analyzed: 02/05/15			
Total Phenols as Phenol	365	50.0	ug/L	500.00	ND	73	80-120	3	20	QM-02
Batch 5020218 - SM 5220 D										
Blank (5020218-BLK1)							Prepared & Analyzed: 02/10/15			
Chemical Oxygen Demand	ND	10	ug/L							
LCS (5020218-BS1)							Prepared & Analyzed: 02/10/15			
Chemical Oxygen Demand	201000	10000	ug/L	200000		100	90-110			
Duplicate (5020218-DUP1)		**Source: AYB0089-02**					Prepared & Analyzed: 02/10/15			
Chemical Oxygen Demand	1860000	50000	ug/L		1860000			0.2	10	
Matrix Spike (5020218-MS1)		**Source: AYB0063-15**					Prepared & Analyzed: 02/10/15			
Chemical Oxygen Demand	201000	10000	ug/L	200000	ND	100	90-110			
Matrix Spike (5020218-MS2)		**Source: AYB0063-16**					Prepared & Analyzed: 02/10/15			
Chemical Oxygen Demand	207000	10000	ug/L	200000	118000	45	90-110			QM-05
Matrix Spike Dup (5020218-MSD1)		**Source: AYB0063-15**					Prepared & Analyzed: 02/10/15			
Chemical Oxygen Demand	194000	10000	ug/L	200000	ND	97	90-110	3	10	
Batch 5020307 - EPA 1664										
Blank (5020307-BLK1)							Prepared & Analyzed: 02/12/15			
Oil & Grease (HEM)	ND	5000	ug/L							

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General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020307 - EPA 1664										
LCS (5020307-BS1)							Prepared & Analyzed: 02/12/15			
Oil & Grease (HEM)	36000	5000	ug/L	40000		91	78-114			
Duplicate (5020307-DUP1)		**Source: AYB0157-02**					Prepared & Analyzed: 02/12/15			
Oil & Grease (HEM)	ND	6000	ug/L		ND				75	
Matrix Spike (5020307-MS1)		**Source: AYB0201-01**					Prepared & Analyzed: 02/12/15			
Oil & Grease (HEM)	15000	5700	ug/L	45977	ND	34	78-114			QM-05
Batch 5020386 - EPA 351.2										
Blank (5020386-BLK1)							Prepared: 02/16/15 Analyzed: 02/17/15			
Total Kjeldahl Nitrogen as N	ND	400	ug/L							
LCS (5020386-BS1)							Prepared: 02/16/15 Analyzed: 02/17/15			
Total Kjeldahl Nitrogen as N	10100	400	ug/L	10000		101	90-110			
Matrix Spike (5020386-MS1)		**Source: AYB0070-01**					Prepared: 02/16/15 Analyzed: 02/17/15			
Total Kjeldahl Nitrogen as N	48100	400	ug/L	10000	44100	40	90-110			QM-02
Matrix Spike (5020386-MS2)		**Source: AYB0134-03**					Prepared: 02/16/15 Analyzed: 02/17/15			
Total Kjeldahl Nitrogen as N	11000	400	ug/L	10000	ND	110	90-110			

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Inorganic Anions - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010597 - EPA 300.0										
Blank (5010597-BLK1)							Prepared & Analyzed: 01/29/15			
Nitrate/Nitrite as N	ND	50	ug/L							
Nitrate as N	ND	50	ug/L							
Nitrite as N	ND	50	ug/L							
Sulfate	ND	5000	ug/L							
LCS (5010597-BS1)							Prepared & Analyzed: 01/29/15			
Nitrate/Nitrite as N	19800	50	ug/L	20000		99	90-110			
Nitrate as N	9770	50	ug/L	10000		98	90-110			
Nitrite as N	10100	50	ug/L	10000		101	90-110			
Sulfate	10200	5000	ug/L	10000		102	90-110			
Matrix Spike (5010597-MS1)	Source: AYA0693-02						Prepared & Analyzed: 01/29/15			
Nitrate/Nitrite as N	28200	50	ug/L	20000	7930	101	90-110			
Nitrate as N	17800	50	ug/L	10000	7930	99	90-110			
Nitrite as N	10300	50	ug/L	10000	ND	103	90-110			
Sulfate	11100	5000	ug/L	10000	ND	111	90-110			QM-05
Matrix Spike Dup (5010597-MSD1)	Source: AYA0693-02						Prepared & Analyzed: 01/29/15			
Nitrate/Nitrite as N	28200	50	ug/L	20000	7930	101	90-110	0.1	15	
Nitrate as N	17800	50	ug/L	10000	7930	99	90-110	0.04	15	
Nitrite as N	10300	50	ug/L	10000	ND	103	90-110	0.3	15	
Sulfate	11200	5000	ug/L	10000	ND	112	90-110	0.7	15	QM-05

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Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020033 - EPA 7470A										
Blank (5020033-BLK1)							Prepared: 02/03/15 Analyzed: 02/04/15			
Mercury	ND	0.200	ug/L							
LCS (5020033-BS1)							Prepared: 02/03/15 Analyzed: 02/04/15			
Mercury	2.39	0.200	ug/L	2.5000		96	80-120			
Duplicate (5020033-DUP1)		**Source: AYA0573-02RE1**					Prepared: 02/03/15 Analyzed: 02/04/15			
Mercury	0.281	0.200	ug/L		0.290			3	20	
Matrix Spike (5020033-MS1)		**Source: AYA0701-07**					Prepared: 02/03/15 Analyzed: 02/04/15			
Mercury	2.48	0.200	ug/L	2.5000	0.275	88	75-125			
Matrix Spike Dup (5020033-MSD1)		**Source: AYA0701-07**					Prepared: 02/03/15 Analyzed: 02/04/15			
Mercury	2.44	0.200	ug/L	2.5000	0.275	87	75-125	2	20	
Post Spike (5020033-PS1)		**Source: AYA0701-07**					Prepared: 02/03/15 Analyzed: 02/04/15			
Mercury	1.65		ug/L	1.6667	0.184	88	80-120			
Batch 5020064 - EPA 3005A										
Blank (5020064-BLK1)							Prepared & Analyzed: 02/04/15			
Antimony	ND	6.00	ug/L							
Arsenic	ND	10.0	ug/L							
Barium	ND	100	ug/L							
Beryllium	ND	1.00	ug/L							
Cadmium	ND	1.00	ug/L							
Chromium	ND	10.0	ug/L							
Cobalt	ND	10.0	ug/L							
Copper	ND	10.0	ug/L							

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Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020064 - EPA 3005A										
Blank (5020064-BLK1)							Prepared & Analyzed: 02/04/15			
Lead	ND	10.0	ug/L							
Nickel	ND	50.0	ug/L							
Selenium	ND	10.0	ug/L							
Silver	ND	10.0	ug/L							
Thallium	ND	5.50	ug/L							
Vanadium	1.10	25.0	ug/L							J
Zinc	3.15	10.0	ug/L							J
LCS (5020064-BS1)							Prepared & Analyzed: 02/04/15			
Antimony	104	6.00	ug/L	100.00		104	80-120			
Arsenic	105	10.0	ug/L	100.00		105	80-120			
Barium	101	100	ug/L	100.00		101	80-120			
Beryllium	107	1.00	ug/L	100.00		107	80-120			
Cadmium	105	1.00	ug/L	100.00		105	80-120			
Chromium	105	10.0	ug/L	100.00		105	80-120			
Cobalt	105	10.0	ug/L	100.00		105	80-120			
Copper	103	10.0	ug/L	100.00		103	80-120			
Lead	102	10.0	ug/L	100.00		102	80-120			
Nickel	105	50.0	ug/L	100.00		105	80-120			
Selenium	107	10.0	ug/L	100.00		107	80-120			
Silver	104	10.0	ug/L	100.00		104	80-120			
Thallium	102	5.50	ug/L	100.00		102	80-120			
Vanadium	108	25.0	ug/L	100.00		108	80-120			
Zinc	108	10.0	ug/L	100.00		108	80-120			
Matrix Spike (5020064-MS1)	**Source: AYA0701-07**						Prepared & Analyzed: 02/04/15			
Antimony	105	6.00	ug/L	100.00	ND	105	75-125			

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Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020064 - EPA 3005A										
Matrix Spike (5020064-MS1)		**Source: AYA0701-07**					Prepared & Analyzed: 02/04/15			
Arsenic	104	10.0	ug/L	100.00	1.83	102	75-125			
Barium	213	100	ug/L	100.00	112	101	75-125			
Beryllium	102	1.00	ug/L	100.00	ND	102	75-125			
Cadmium	103	1.00	ug/L	100.00	ND	103	75-125			
Chromium	100	10.0	ug/L	100.00	ND	100	75-125			
Cobalt	101	10.0	ug/L	100.00	0.44	100	75-125			
Copper	101	10.0	ug/L	100.00	1.95	99	75-125			
Lead	101	10.0	ug/L	100.00	ND	101	75-125			
Nickel	103	50.0	ug/L	100.00	1.85	101	75-125			
Selenium	103	10.0	ug/L	100.00	ND	103	75-125			
Silver	102	10.0	ug/L	100.00	ND	102	75-125			
Thallium	100	5.50	ug/L	100.00	ND	100	75-125			
Vanadium	103	25.0	ug/L	100.00	1.53	102	75-125			
Zinc	104	10.0	ug/L	100.00	2.79	101	75-125			
Matrix Spike Dup (5020064-MSD1)		**Source: AYA0701-07**					Prepared & Analyzed: 02/04/15			
Antimony	101	6.00	ug/L	100.00	ND	101	75-125	4	20	
Arsenic	104	10.0	ug/L	100.00	1.83	102	75-125	0.5	20	
Barium	207	100	ug/L	100.00	112	95	75-125	3	20	
Beryllium	99.0	1.00	ug/L	100.00	ND	99	75-125	3	20	
Cadmium	99.7	1.00	ug/L	100.00	ND	100	75-125	3	20	
Chromium	99.6	10.0	ug/L	100.00	ND	100	75-125	0.6	20	
Cobalt	100	10.0	ug/L	100.00	0.44	100	75-125	0.3	20	
Copper	101	10.0	ug/L	100.00	1.95	99	75-125	0.5	20	
Lead	100	10.0	ug/L	100.00	ND	100	75-125	1	20	
Nickel	101	50.0	ug/L	100.00	1.85	99	75-125	3	20	
Selenium	99.4	10.0	ug/L	100.00	ND	99	75-125	3	20	

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Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5020064 - EPA 3005A										
Matrix Spike Dup (5020064-MSD1)		**Source: AYA0701-07**					Prepared & Analyzed: 02/04/15			
Silver	98.9	10.0	ug/L	100.00	ND	99	75-125	4	20	
Thallium	99.7	5.50	ug/L	100.00	ND	100	75-125	0.8	20	
Vanadium	101	25.0	ug/L	100.00	1.53	100	75-125	2	20	
Zinc	103	10.0	ug/L	100.00	2.79	100	75-125	1	20	
Post Spike (5020064-PS1)		**Source: AYA0701-07**					Prepared & Analyzed: 02/04/15			
Antimony	101		ug/L	100.00	-0.03	101	80-120			
Arsenic	99.1		ug/L	100.00	1.83	97	80-120			
Barium	205		ug/L	100.00	112	94	80-120			
Beryllium	100		ug/L	100.00	0.01	100	80-120			
Cadmium	99.2		ug/L	100.00	ND	99	80-120			
Chromium	98.6		ug/L	100.00	-0.19	99	80-120			
Cobalt	98.5		ug/L	100.00	0.44	98	80-120			
Copper	97.0		ug/L	100.00	1.95	95	80-120			
Lead	99.2		ug/L	100.00	-0.13	99	80-120			
Nickel	101		ug/L	100.00	1.85	99	80-120			
Selenium	96.0		ug/L	100.00	0.59	95	80-120			
Silver	98.8		ug/L	100.00	0.07	99	80-120			
Thallium	99.4		ug/L	100.00	0.01	99	80-120			
Vanadium	98.8		ug/L	100.00	1.53	97	80-120			
Zinc	100		ug/L	100.00	2.79	97	80-120			

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Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010599 - EPA 5030B										
Blank (5010599-BLK1)							Prepared & Analyzed: 01/29/15			
Acetone	ND	20	ug/L							
Acrylonitrile	ND	200	ug/L							
Benzene	ND	1.0	ug/L							
Bromochloromethane	ND	3.0	ug/L							
Bromodichloromethane	ND	1.0	ug/L							
Bromoform	ND	3.0	ug/L							
Bromomethane	ND	10	ug/L							
Carbon Disulfide	ND	100	ug/L							
Carbon Tetrachloride	ND	1.0	ug/L							
Chlorobenzene	ND	3.0	ug/L							
Chloroethane	ND	10	ug/L							
Chloroform	ND	5.0	ug/L							
Chloromethane	ND	1.0	ug/L							
Dibromochloromethane	ND	3.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	13	ug/L							
1,2-Dibromoethane	ND	1.0	ug/L							
Dibromomethane	ND	10	ug/L							
1,2-Dichlorobenzene	ND	5.0	ug/L							
1,4-Dichlorobenzene	ND	1.0	ug/L							
trans-1,4-Dichloro-2-butene	ND	100	ug/L							
1,1-Dichloroethane	ND	5.0	ug/L							
1,2-Dichloroethane	ND	1.0	ug/L							
1,1-Dichloroethene	ND	5.0	ug/L							
cis-1,2-Dichloroethene	ND	5.0	ug/L							
trans-1,2-Dichloroethene	ND	5.0	ug/L							
1,2-Dichloropropane	ND	1.0	ug/L							
cis-1,3-Dichloropropene	ND	1.0	ug/L							

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Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010599 - EPA 5030B										
Blank (5010599-BLK1)							Prepared & Analyzed: 01/29/15			
trans-1,3-Dichloropropene	ND	1.0	ug/L							
Ethylbenzene	ND	1.0	ug/L							
Iodomethane	ND	10	ug/L							
Methyl Butyl Ketone (2-Hexanone)	ND	50	ug/L							
Methylene Chloride	ND	1.0	ug/L							
Methyl Ethyl Ketone (2-Butanone)	ND	50	ug/L							
4-Methyl-2-pentanone (MIBK)	ND	100	ug/L							
Styrene	ND	1.0	ug/L							
1,1,1,2-Tetrachloroethane	ND	5.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	3.0	ug/L							
Tetrachloroethene	ND	1.0	ug/L							
Toluene	ND	1.0	ug/L							
1,1,1-Trichloroethane	ND	1.0	ug/L							
1,1,2-Trichloroethane	ND	1.0	ug/L							
Trichloroethene	ND	1.0	ug/L							
Trichlorofluoromethane	ND	1.0	ug/L							
1,2,3-Trichloropropane	ND	1.0	ug/L							
Vinyl Acetate	ND	50	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Xylenes, total	ND	5.0	ug/L							
Surr: Dibromofluoromethane	*45*		*ug/L*	*50.000*		*89*	*80-120*			
Surr: 1,2-Dichloroethane-d4	*48*		*ug/L*	*50.000*		*97*	*78-120*			
Surr: Toluene-d8	*51*		*ug/L*	*50.000*		*102*	*80-120*			
Surr: 4-Bromofluorobenzene	*53*		*ug/L*	*50.000*		*105*	*80-120*			
LCS (5010599-BS1)							Prepared & Analyzed: 01/29/15			

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Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010599 - EPA 5030B										
LCS (5010599-BS1)							Prepared & Analyzed: 01/29/15			
Benzene	44		ug/L	50.000		89	67-134			
Chlorobenzene	49		ug/L	50.000		98	69-122			
1,1-Dichloroethene	42		ug/L	50.000		84	58-142			
Toluene	47		ug/L	50.000		94	68-127			
Trichloroethene	50		ug/L	50.000		99	72-132			
Surr: Dibromofluoromethane	*44*		*ug/L*	*50.000*		*88*	*80-120*			
Surr: 1,2-Dichloroethane-d4	*48*		*ug/L*	*50.000*		*96*	*78-120*			
Surr: Toluene-d8	*51*		*ug/L*	*50.000*		*102*	*80-120*			
Surr: 4-Bromofluorobenzene	*52*		*ug/L*	*50.000*		*105*	*80-120*			
Matrix Spike (5010599-MS1)		**Source: AYA0682-01**					Prepared & Analyzed: 01/29/15			
Benzene	41		ug/L	50.000	ND	83	67-134			
Chlorobenzene	46		ug/L	50.000	ND	92	69-122			
1,1-Dichloroethene	40		ug/L	50.000	ND	81	58-142			
Toluene	44		ug/L	50.000	ND	88	68-127			
Trichloroethene	46		ug/L	50.000	ND	93	72-132			
Surr: Dibromofluoromethane	*46*		*ug/L*	*50.000*		*91*	*80-120*			
Surr: 1,2-Dichloroethane-d4	*54*		*ug/L*	*50.000*		*109*	*78-120*			
Surr: Toluene-d8	*51*		*ug/L*	*50.000*		*101*	*80-120*			
Surr: 4-Bromofluorobenzene	*53*		*ug/L*	*50.000*		*105*	*80-120*			
Matrix Spike Dup (5010599-MSD1)		**Source: AYA0682-01**					Prepared & Analyzed: 01/29/15			
Benzene	48		ug/L	50.000	ND	96	67-134	15	9	QR-02
Chlorobenzene	53		ug/L	50.000	ND	106	69-122	14	13	QR-02
1,1-Dichloroethene	47		ug/L	50.000	ND	95	58-142	16	9	QR-02

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092

(770) 734-4200 FAX (770) 734-4201

Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

February 19, 2015

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5010599 - EPA 5030B										
Matrix Spike Dup (5010599-MSD1)		**Source: AYA0682-01**					Prepared & Analyzed: 01/29/15			
Toluene	52		ug/L	50.000	ND	103	68-127	16	9	QR-02
Trichloroethene	54		ug/L	50.000	ND	107	72-132	15	11	QR-02
Surr: Dibromofluoromethane	*46*		*ug/L*	*50.000*		*93*	*80-120*			
Surr: 1,2-Dichloroethane-d4	*53*		*ug/L*	*50.000*		*105*	*78-120*			
Surr: Toluene-d8	*50*		*ug/L*	*50.000*		*101*	*80-120*			
Surr: 4-Bromofluorobenzene	*53*		*ug/L*	*50.000*		*106*	*80-120*			

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Attention: Mr. Matt Einsmann

February 19, 2015

Laboratory Certifications

Code	Description	Number	Expires
LA	Louisiana	02069	06/30/2015
NC	North Carolina	381	12/31/2015
NELAC	FL DOH (Non-Pot. Water, Solids) Eff:: 07/01/2013	E87315	06/30/2015
SC	South Carolina	98011001	06/30/2015
TX	Texas	T104704397-08-TX	03/31/2015
VA	Virginia	1340	12/14/2015

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Attention: Mr. Matt Einsmann

February 19, 2015

Legend

Defination of Laboratory Terms

ND - Not Detected at levels greater than or equal to SWSL/RL
SWSL/RL - NC DENR Solid Waste Section LImit/Reporting Limit (Adjusted for DF/Prep Factor)
DF - Dilution Factor
MDL - Method Detection Limit

Qualifiers

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to suspected matrix interference and/or non-homogeneous sample matrix.

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries.

QM-06 Due to suspected matrix interference, RPD and Percent Recovery values for the MS and/or MSD were outside control limits. Sample results for the QC batch were accepted based on acceptable LCS recoveries.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD and/or PDS due to suspected matrix interference. Sample results for the QC batch were accepted based on acceptable LCS recoveries.

QM-02 The spike recovery is outside acceptance limits due to insignificant spike amount as compared to sample concentration.

J Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).

HDSP Sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).

B-01 Analyte was detected in the associated method blank at an estimated level equal to or greater than the MDL. Sample values reported as greater than the MDL and less than 10x the method blank value are reported as estimated values.

Note: Unless otherwise noted, all results are reported on an as received basis.

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February 19, 2015

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Attention: Mr. Matt Einsmann

February 19, 2015

ANALYTICAL SERVICES, INC.
ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS
110 TECHNOLOGY PARKWAY NORCROSS, GA 30092
(770) 734-4200 : FAX (770) 734-4201 : www.asi-lab.com

CHAIN OF CUSTODY RECORD

PAGE: 1 OF 1

CLIENT NAME: Republic Services of NC, LLC

CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:
1220 Commerce Street, SW
Conover, NC 28613

ATTENTION: Mr. Ray Huffman

CC: davehart@dyceeonlinerinfo.com

REQUESTED COMPLETION DATE: Standard

PO #: Required

PROJECT NAME/STATE: East Carolina Regional Landfill

PERMIT #: 08-03

DATE	TIME	Matrix Code	# of containers	NC Appendix II Metals	NC Appendix I VOC's	BOD, TSS	COD, Nitrate-Nitrite	Cyanide	Nitrate, Nitrite, Sulfate	Phosphorus, TKN	Oil & Grease	Phenols	Mercury	REMARKS/ADDITIONAL INFORMATION
1/28/15	1400	W	13	X	X	X	X	X	X	X	X	X	X	

SAMPLED BY AND TITLE: Hinkemann
RELINQUISHED BY: Same Above — DATE/TIME: 1/28/15
RECEIVED BY: — DATE/TIME:
RELINQUISHED BY: — DATE/TIME: 1/28/15 1930
RECEIVED BY LAB: — DATE/TIME: 1/29/15 1045
SAMPLE SHIPPED VIA: UPS FED EX COURIER CLIENT OTHER:
Temperature: 1°C (Intact) Broken Missing
Custody Seal: Intact
COOLER #:
Received Intact: (Y)
LAB #: AYA0699
FOR LAB USE ONLY

CONTAINER TYPE: P - PLASTIC; A - AMBER GLASS; G - CLEAR GLASS; V - VOA VIAL; S - STERILE; O - OTHER

PRESERVATION: 1 - HCL 4°; 2 - H2SO4, 4°; 3 - HNO3, 4°; 4 - NaOH, 4°; 5 - NaOH/ZnAc, 4°; 6 - Na2S2O3, 4°; 7 - 4°

MATRIX CODES: DW - DRINKING WATER; WW - WASTEWATER; GW - GROUNDWATER; SW - SURFACE WATER; ST - STORM WATER; W - WATER; S - SOIL; SL - SLUDGE; SO - SOLID; A - AIR; L - LIQUID; P - PRODUCT

8064 1228871

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(770) 734-4200 FAX (770) 734-4201

LOG-IN CHECKLIST **Printed: 2/19/2015 3:55:08PM**

Attn: Mr. Matt Einsmann

Client: Republic Services of North Carolina, LLC
Project: East Carolina Regional Landfill Leachate
Date Received: 01/29/15 10:45
Work Order: AYA0699
Logged In By: Charles Hawks

OBSERVATIONS

#Samples: 1 **#Containers:** 13

Minimum Temp(C): 1.0 **Maximum Temp(C):** 1.0 **Custody Seal(s) Used:** Yes

CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	YES
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	NO
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

Comments:

The O/G and COD/NO3+NO2/P/TKN/Phenols were pH adjusted from 5 to <2 with HCL and H2SO4 respectively. CFH

All VOA vials had an air bubble. BMcD

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Laboratory Report

Report Number: AYC0209

Project: East Carolina Regional Landfill Resample

Project #:GW-17

Prepared For:
Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover, NC 28613

Attention: Mr. Matt Einsmann

March 19, 2015

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call. Analytical Services, Inc. certifies that the following analytical results meet all requirements of the National Environmental Laboratory Accreditation Conference(NELAC).All test results relate only to the samples analyzed.

Approved:

Project Manager

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

March 19, 2015

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
0803-GW17	AYC0209-01	Water	03/05/15 12:23	03/06/15 11:00
0803-Field Blank	AYC0209-02	Water	03/05/15 12:30	03/06/15 11:00

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Republic Services of North Carolina, LLC
1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

March 19, 2015

Client ID: 0803-GW17
Lab No: AYC0209-01
Matrix: Water

Project: East Carolina Regional Landfill Resample
Date/Time Sampled: 03/05/15 12:23
Date/Time Received: 03/06/15 11:00

Report No.: AYC0209

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Chromium	EPA 6020A	EPA 3005A	9.28	10.0	1	ug/L	J	0.73	7440-47-3	03/16/15 08:30	03/16/15 15:58	5030370
Lead	EPA 6020A	EPA 3005A	3.39	10.0	1	ug/L	J	0.05	7439-92-1	03/16/15 08:30	03/16/15 15:58	5030370
Vanadium	EPA 6020A	EPA 3005A	15.3	25.0	1	ug/L	B-01, J	0.93	7440-62-2	03/16/15 08:30	03/16/15 15:58	5030370
Metals, Dissolved												
Chromium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.73	7440-47-3	03/12/15 08:45	03/12/15 17:08	5030290
Lead	EPA 6020A	EPA 3005A	0.09	10.0	1	ug/L	J	0.05	7439-92-1	03/12/15 08:45	03/12/15 17:08	5030290
Vanadium	EPA 6020A	EPA 3005A	ND	25.0	1	ug/L		0.93	7440-62-2	03/12/15 08:45	03/12/15 17:08	5030290

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1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

March 19, 2015

Client ID: 0803-Field Blank
Lab No: AYC0209-02
Matrix: Water

Project: East Carolina Regional Landfill Resample
Date/Time Sampled: 03/05/15 12:30
Date/Time Received: 03/06/15 11:00

Report No.: AYC0209

Analyte	Analytical Method	Prep Method	Result	SWSL/ RL	DF	Units	Qual	MDL	CAS #	Prep Date/Time	Analysis Date/Time	Batch
Metals, Total												
Chromium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.73	7440-47-3	03/16/15 08:30	03/16/15 16:04	5030370
Lead	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.05	7439-92-1	03/16/15 08:30	03/16/15 16:04	5030370
Vanadium	EPA 6020A	EPA 3005A	ND	25.0	1	ug/L		0.93	7440-62-2	03/16/15 08:30	03/16/15 16:04	5030370
Metals, Dissolved												
Chromium	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.73	7440-47-3	03/12/15 08:45	03/12/15 17:15	5030290
Lead	EPA 6020A	EPA 3005A	ND	10.0	1	ug/L		0.05	7439-92-1	03/12/15 08:45	03/12/15 17:15	5030290
Vanadium	EPA 6020A	EPA 3005A	ND	25.0	1	ug/L		0.93	7440-62-2	03/12/15 08:45	03/12/15 17:15	5030290

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Attention: Mr. Matt Einsmann

March 19, 2015

Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030370 - EPA 3005A										
Blank (5030370-BLK1)							Prepared & Analyzed: 03/16/15			
Chromium	ND	10.0	ug/L							
Lead	ND	10.0	ug/L							
Vanadium	1.40	25.0	ug/L							J
LCS (5030370-BS1)							Prepared & Analyzed: 03/16/15			
Chromium	101	10.0	ug/L	100.00		101	80-120			
Lead	96.6	10.0	ug/L	100.00		97	80-120			
Vanadium	100	25.0	ug/L	100.00		100	80-120			
Matrix Spike (5030370-MS1)		Source: AYC0211-10					Prepared & Analyzed: 03/16/15			
Chromium	97.7	10.0	ug/L	100.00	ND	98	75-125			
Lead	98.8	10.0	ug/L	100.00	1.41	97	75-125			
Vanadium	98.1	25.0	ug/L	100.00	1.33	97	75-125			
Matrix Spike Dup (5030370-MSD1)		Source: AYC0211-10					Prepared & Analyzed: 03/16/15			
Chromium	100	10.0	ug/L	100.00	ND	100	75-125	3	20	
Lead	98.9	10.0	ug/L	100.00	1.41	97	75-125	0.1	20	
Vanadium	101	25.0	ug/L	100.00	1.33	99	75-125	2	20	
Post Spike (5030370-PS1)		Source: AYC0211-10					Prepared & Analyzed: 03/16/15			
Chromium	101		ug/L	100.00	-0.02	101	80-120			
Lead	101		ug/L	100.00	1.41	99	80-120			
Vanadium	101		ug/L	100.00	1.33	100	80-120			

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Attention: Mr. Matt Einsmann

March 19, 2015

Metals, Dissolved - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030290 - EPA 3005A										
Blank (5030290-BLK1)							Prepared & Analyzed: 03/12/15			
Chromium	ND	10.0	ug/L							
Lead	ND	10.0	ug/L							
Vanadium	ND	25.0	ug/L							
Blank (5030290-BLK2)							Prepared & Analyzed: 03/12/15			
Chromium	ND	10.0	ug/L							
Lead	ND	10.0	ug/L							
Vanadium	ND	25.0	ug/L							
LCS (5030290-BS1)							Prepared & Analyzed: 03/12/15			
Chromium	99.6	10.0	ug/L	100.00		100	80-120			
Lead	103	10.0	ug/L	100.00		103	80-120			
Vanadium	100	25.0	ug/L	100.00		100	80-120			
LCS (5030290-BS2)							Prepared & Analyzed: 03/12/15			
Chromium	100	10.0	ug/L	100.00		100	80-120			
Lead	101	10.0	ug/L	100.00		101	80-120			
Vanadium	101	25.0	ug/L	100.00		101	80-120			
Matrix Spike (5030290-MS1)	**Source: AYC0118-48**						Prepared & Analyzed: 03/12/15			
Chromium	97.4	10.0	ug/L	100.00	ND	97	75-125			
Lead	99.2	10.0	ug/L	100.00	ND	99	75-125			
Vanadium	101	25.0	ug/L	100.00	ND	101	75-125			
Matrix Spike Dup (5030290-MSD1)	**Source: AYC0118-48**						Prepared & Analyzed: 03/12/15			
Chromium	100	10.0	ug/L	100.00	ND	100	75-125	3	20	
Lead	103	10.0	ug/L	100.00	ND	103	75-125	4	20	
Vanadium	102	25.0	ug/L	100.00	ND	102	75-125	1	20	

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Attention: Mr. Matt Einsmann

March 19, 2015

Metals, Dissolved - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030290 - EPA 3005A										
Post Spike (5030290-PS1)		**Source: AYC0118-48**					Prepared & Analyzed: 03/12/15			
Chromium	102		ug/L	100.00	-1.36	103	80-120			
Lead	104		ug/L	100.00	0.02	104	80-120			
Vanadium	106		ug/L	100.00	0.71	105	80-120			

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1220 Commerce Street, SW
Conover NC, 28613

Attention: Mr. Matt Einsmann

March 19, 2015

Laboratory Certifications

Code	Description	Number	Expires
LA	Louisiana	02069	06/30/2015
NC	North Carolina	381	12/31/2015
NELAC	FL DOH (Non-Pot. Water, Solids) Eff:: 07/01/2013	E87315	06/30/2015
SC	South Carolina	98011001	06/30/2015
TX	Texas	T104704397-08-TX	03/31/2015
VA	Virginia	1340	12/14/2015

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Conover NC, 28613

Attention: Mr. Matt Einsmann

March 19, 2015

Legend

Defination of Laboratory Terms

ND - Not Detected at levels greater than or equal to SWSL/RL
SWSL/RL - NC DENR Solid Waste Section LImit/Reporting Limit (Adjusted for DF/Prep Factor)
DF - Dilution Factor
MDL - Method Detection Limit

Qualifiers

J Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).

B-01 Analyte was detected in the associated method blank at an estimated level equal to or greater than the MDL. Sample values reported as greater than the MDL and less than 10x the method blank value are reported as estimated values.

Note: Unless otherwise noted, all results are reported on an as received basis.

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Attention: Mr. Matt Einsmann

March 19, 2015

239595

CHAIN OF CUSTODY RECORD

ASI ANALYTICAL SERVICES, INC.
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110 TECHNOLOGY PARKWAY NORCROSS, GA 30092
(770) 734-4200 : FAX (770) 734-4201 : www.asi-lab.com

PAGE: 1 OF 1

CLIENT NAME: Mr. Jim Einsmann Republic Services LLC.
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 1220 Commerce St SW Conover, NC 28613
REPORT TO: Mr. Ray Hoffman
REQUESTED COMPLETION DATE: Standard
PO #: Required
PROJECT NAME/STATE: Republic Services of North Carolina-East Carolina
~~Project Mgr~~ # 08-03 Republic Services East Carolina Regional

ANALYSIS REQUESTED

DATE	TIME	MATRIX CODE* (C G O R M A P B)	SAMPLE IDENTIFICATION	CONTAINER TYPE: P	PRESERVATION: 3	# of CONTAINERS	Total Lead, Arsenic, Chromium	Dissolved Lead, Arsenic, Chromium	REMARKS/ADDITIONAL INFORMATION
3/5/15	1230	WT	GW-17	X		2	X	X	resample
3/5/15	1230	WT	Field Blank	X		2	X	X	

CONTAINER TYPE: L A B I D N U M B E R S
P - PLASTIC; A - AMBER GLASS; G - CLEAR GLASS; V - VOA VIAL; S - STERILE; O - OTHER

PRESERVATION: 1 - HCl, ≤6°C; 2 - H_2SO_4, ≤6°C; 3 - HNO_3; 4 - NaOH, ≤6°C; 5 - $NaOH/ZnAc_2$, ≤6°C; 6 - $Na_2S_2O_3$, ≤6°C; 7 - ≤6°C not frozen

"MATRIX CODES:"
DW - DRINKING WATER; WW - WASTEWATER; GW - GROUNDWATER; SW - SURFACE WATER; ST - STORM WATER; W - WATER; S - SOIL; SL - SLUDGE; SD - SOLID; A - AIR; L - LIQUID; P - PRODUCT

SAMPLED BY AND TITLE: Matthew H Sachs / Tyco — DATE/TIME: See above
RELINQUISHED BY: — DATE/TIME: 3/6/15 1410
RECEIVED BY: — DATE/TIME:
RELINQUISHED BY: — DATE/TIME:
RECEIVED BY/LAB: — DATE/TIME: 3/6/15 1100
SAMPLE SHIPPED VIA: UPS FEDEX USPS COURIER CLIENT OTHER
pH Checked: No N/A; Preservative Added: Yes No N/A; Temp Blank: Yes No; Temp Blank Temp: Min. 12 Max.; Custody Seal: Intact Broken Not Present; # of Coolers: 1; Cooler ID:

FOR LAB USE ONLY
LAB #: A4C0209
Entered into LIMS: CAH

L2404410 7498

Revised 2013-10-31

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

LOG-IN CHECKLIST **Printed: 3/19/2015 3:56:42PM**

Attn: Mr. Matt Einsmann

Client: Republic Services of North Carolina, LLC
Project: East Carolina Regional Landfill Resample
Date Received: 03/06/15 11:00

Work Order: AYC0209
Logged In By: Charles Hawks

OBSERVATIONS

#Samples: 2 **#Containers:** 4

Minimum Temp(C): 1.0 **Maximum Temp(C):** 1.0 **Custody Seal(s) Used:** Yes

CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	YES
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

Comments:

Appendix D

Statistical Analyses Worksheets and Summary Table

Joyce Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Analyte: **Chromium**

Sample No.	Sample Date	Location	Concentration (µg/L)		QL	Sorted Concentration (µg/L)	
1	30-Apr-08	GW-17	8.8		10	1.58	8.8
2	14-Jul-08	GW-17	2		10	1.6	7.4
3	03-Oct-08	GW-17	1.6		10	1.6	5.21
4	19-Jan-09	GW-17	1.6		10	2	5
5	20-Jul-09	GW-17	7.4		10	5	2
6	25-Jan-10	GW-17	5	1/2 QL	10	5.21	1.6
7	06-Jul-10	GW-17	1.58		10	7.4	1.6
8	04-Jan-11	GW-17	5.21		10	8.8	1.58

Number of Data: 8
Number of Truncated Data: 1
Percentage of Truncated Data: 13%

UTL: 13.3 µg/L

All concentrations in micrograms per liter (µg/L).
B = Blank qualified data not used in statistical calculations.
J = Estimated concentration below quantification limit.
ND = Not detected above the detection limit (truncated).

JEI Project: **East Carolina Regional Landfill**
Project No: **894.1501.12**
Task No: **02**
Date: **28-Jan-15**

Shapiro Wilk Test Statistic (W) for normality of total **Chromium**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	1.58	8.8	7.22	0.6052	4.3695
2	1.60	7.4	5.80	0.3164	1.8351
3	1.60	5.2	3.61	0.1743	0.6292
4	2.00	5.0	3.00	0.0561	0.1683
5	5.00	2.0	-3.00		
6	5.21	1.6	-3.61		
7	7.40	1.6	-5.80		
8	8.80	1.6	-7.22		

The test statistic W can be found using:

W = SQR[B/(SD x SQRT(n-1))]

where:

B =	summation of (X(n-i+1)-X(i))A(n-i+1)	=	7.00
SD =	standard deviation of the data group	=	2.89
n =	number of samples	=	8

W = 0.842

Compare this value to the critical value in Table A-2 of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.818
and the calculated W = 0.842

Therefore the data set is Normal

JEI Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Shapiro Wilk Test Statistic (W) for log normality of **Chromium**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	0.457	2.175	1.717	0.6052	1.039
2	0.470	2.001	1.531	0.3164	0.485
3	0.470	1.651	1.181	0.1743	0.206
4	0.693	1.609	0.916	0.0561	0.051
5	1.609	0.693	-0.916		
6	1.651	0.470	-1.181		
7	2.001	0.470	-1.531		
8	2.175	0.457	-1.717		

The test statistic W can be found using:

W = SQR((B/SD x SQRT(n-1))

where:
B = summation of (X(n-i+1)-X(i))A(n-i+1) = 1.781
SD = standard deviation of the data group = 0.740
n = number of samples = 8

W = 0.827

Compare this value to the critical value in Table A-2 of Statistical Analysisof Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.818
and the calculated W = 0.827

Therefore the data set is Log-Normal.

JOYCE Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Probability Plots to determine the distribution of **Chromium**

Complete the following table where

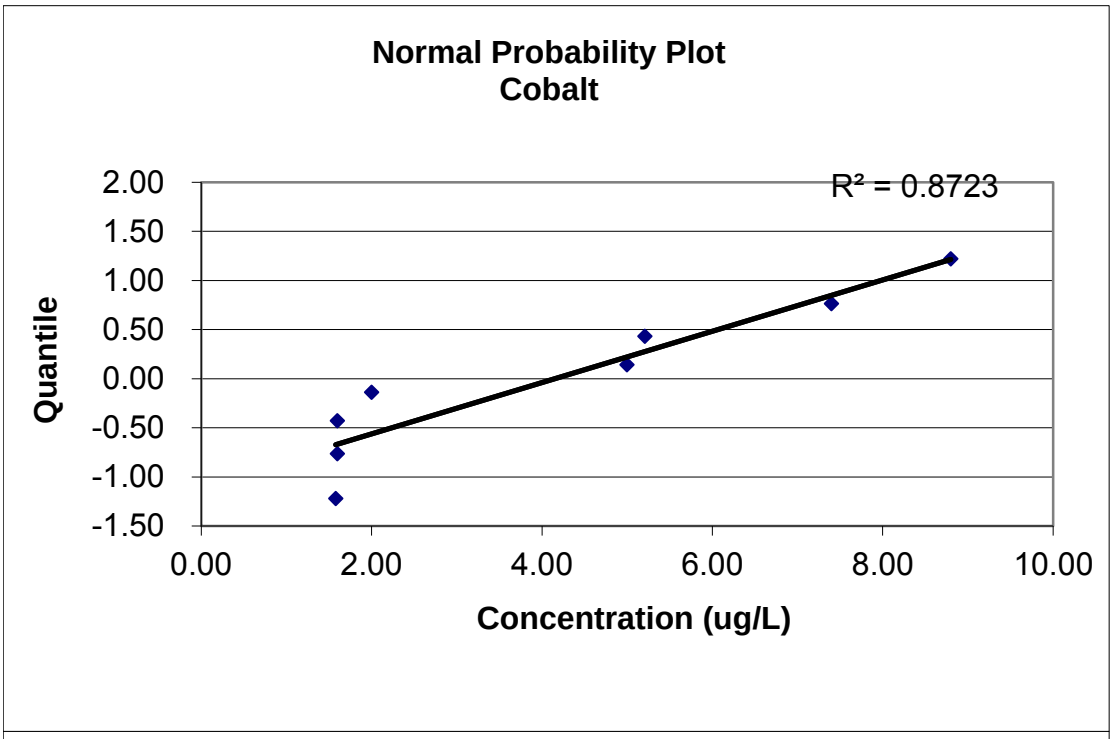
i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
LN[X(i)] = Natural Log Value of sample concentrations arranged from smallest to largest
[i/(n+1)] = Cumulative probability
n = number of samples = 8

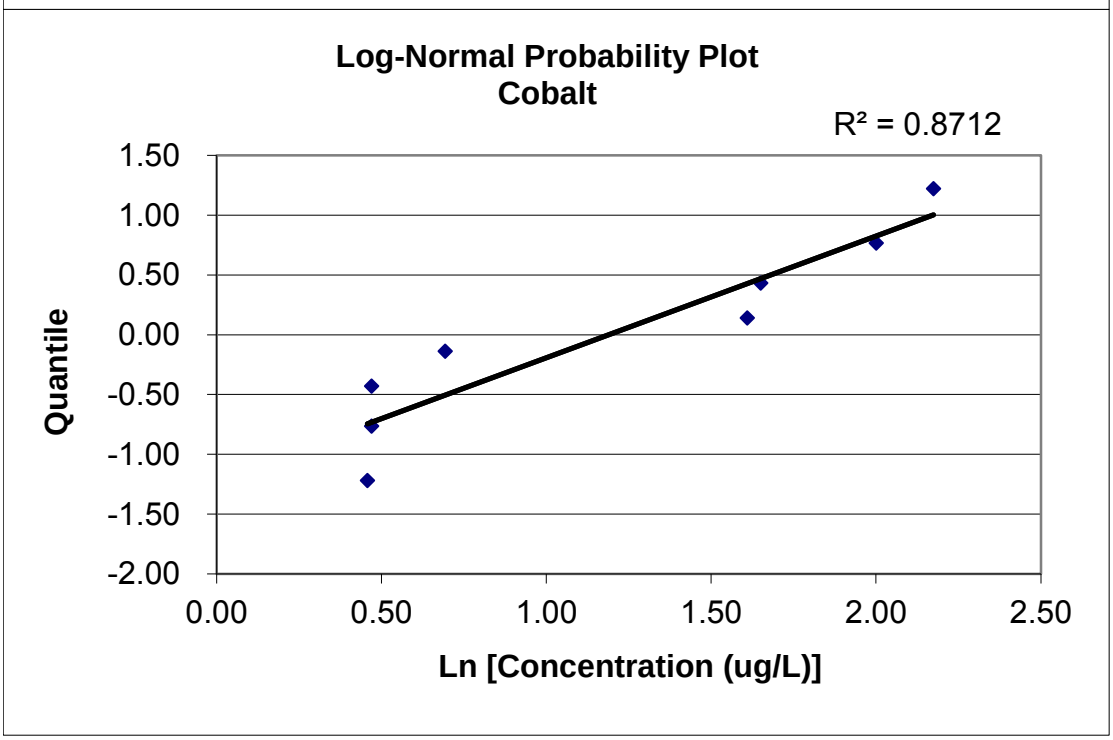
X(i)	LN[X(i)]	i	Rank	[Rank/(n+1)]	Quantiles
1.58	0.46	1	1	0.111	-1.22
1.60	0.47	2	2	0.222	-0.76
1.60	0.47	3	3	0.333	-0.43
2.00	0.69	4	4	0.444	-0.14
5.00	1.61	5	5	0.556	0.14
5.21	1.65	6	6	0.667	0.43
7.40	2.00	7	7	0.778	0.76
8.80	2.17	8	8	0.889	1.22

Plot analysis indicates that the data more closely follow a log-normal distribution.

JEI Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Probability Plots to determine the distribution of **Chromium**





JEI Project: **East Carolina Regional Landfill**
Project No: **894.1501.12**
Task No: **02**
Date: **28-Jan-15**

Determination of reported background value as an outlier

Analyte: **Chromium**

Background Data

Sample No.	Sample Date	Location	Concentration (ug/L)
1	30-Apr-08	GW-17	8.8
2	14-Jul-08	GW-17	2.0
3	03-Oct-08	GW-17	1.6
4	19-Jan-09	GW-17	1.6
5	20-Jul-09	GW-17	7.4
6	25-Jan-10	GW-17	5.0
7	06-Jul-10	GW-17	1.6
8	04-Jan-11	GW-17	5.2
		Mean =	4.1
		STD =	2.9

Note: All concentrations are in ug/L.

Using the data listed above, form the statisitc Tn:

Tn = (Xn - mean) / STD

where: Xn = largest observed sample value
mean = mean of the background values
STD = standard deviation of the background values

For Xn = 8.8
mean = 4.1
STD = 2.9

Tn = 1.612

From Table 8 included in the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance, the critical value for the given sample group is

Number of samples = 8
Tc = 2.032

Since Tc>Tn, the sample result is not considered to be an outlier

JEI Project: East Carolina Regional Landfill
Project No: 894.1501.12
Date: 28-Jan-15

Parametric Tolerance Interval for normally distributed data

Analyte: Chromium

Background Data

Sample No.	Sample Date	Location	Concentration (µg/L)
1	04/30/08	GW-17	8.80
2	07/14/08	GW-17	2.00
3	10/03/08	GW-17	1.60
4	01/19/09	GW-17	1.60
5	07/20/09	GW-17	7.40
6	01/25/10	GW-17	5.00
7	07/06/10	GW-17	1.58
8	01/04/11	GW-17	5.21

Using the background data, the upper Tolerance Limit can be determined using:

Upper Tolerance Limit = (Mean Concentration) + K x (Standard Deviation Samples)

where: Mean Conc = mean concentration background samples
K = factor for constructing one sided normal tolerance limit taken from table 4-2, page 87, Statistical Methods for Groundwater Monitoring, Gibbons, 1994
n = number of background samples
STDS = Standard Deviation Samples

For:

n =	8
K =	3.188
Mean Conc =	4.15
STDS =	2.89
UTL =	**13.35**

Joyce Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Analyte: **Chromium**

Sample No.	Sample Date	Location	Concentration (µg/L)		QL	Sorted Concentration (µg/L)	
1	30-Apr-08	GW-17	8.8		10	1.58	8.8
2	14-Jul-08	GW-17	2		10	1.6	7.4
3	03-Oct-08	GW-17	1.6		10	1.6	5.21
4	19-Jan-09	GW-17	1.6		10	2	5
5	20-Jul-09	GW-17	7.4		10	5	2
6	25-Jan-10	GW-17	5	1/2 QL	10	5.21	1.6
7	06-Jul-10	GW-17	1.58		10	7.4	1.6
8	04-Jan-11	GW-17	5.21		10	8.8	1.58

Number of Data: 8
Number of Truncated Data: 1
Percentage of Truncated Data: 13%

UTL: 13.3 µg/L

All concentrations in micrograms per liter (µg/L).
B = Blank qualified data not used in statistical calculations.
J = Estimated concentration below quantification limit.
ND = Not detected above the detection limit (truncated).

JEI Project: **East Carolina Regional Landfill**
Project No: **894.1501.12**
Task No: **02**
Date: **28-Jan-15**

Shapiro Wilk Test Statistic (W) for normality of total **Chromium**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	1.58	8.8	7.22	0.6052	4.3695
2	1.60	7.4	5.80	0.3164	1.8351
3	1.60	5.2	3.61	0.1743	0.6292
4	2.00	5.0	3.00	0.0561	0.1683
5	5.00	2.0	-3.00		
6	5.21	1.6	-3.61		
7	7.40	1.6	-5.80		
8	8.80	1.6	-7.22		

The test statistic W can be found using:

W = SQR[B/(SD x SQRT(n-1))]

where:

B =	summation of (X(n-i+1)-X(i))A(n-i+1)	=	7.00
SD =	standard deviation of the data group	=	2.89
n =	number of samples	=	8

W = 0.842

Compare this value to the critical value in Table A-2 of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.818
and the calculated W = 0.842

Therefore the data set is Normal

JEI Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Shapiro Wilk Test Statistic (W) for log normality of **Chromium**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	0.457	2.175	1.717	0.6052	1.039
2	0.470	2.001	1.531	0.3164	0.485
3	0.470	1.651	1.181	0.1743	0.206
4	0.693	1.609	0.916	0.0561	0.051
5	1.609	0.693	-0.916		
6	1.651	0.470	-1.181		
7	2.001	0.470	-1.531		
8	2.175	0.457	-1.717		

The test statistic W can be found using:

W = SQR((B/SD x SQRT(n-1))

where:
B = summation of (X(n-i+1)-X(i))A(n-i+1) = 1.781
SD = standard deviation of the data group = 0.740
n = number of samples = 8

W = 0.827

Compare this value to the critical value in Table A-2 of Statistical Analysisof Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.818
and the calculated W = 0.827

Therefore the data set is Log-Normal.

JOYCE Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Probability Plots to determine the distribution of **Chromium**

Complete the following table where

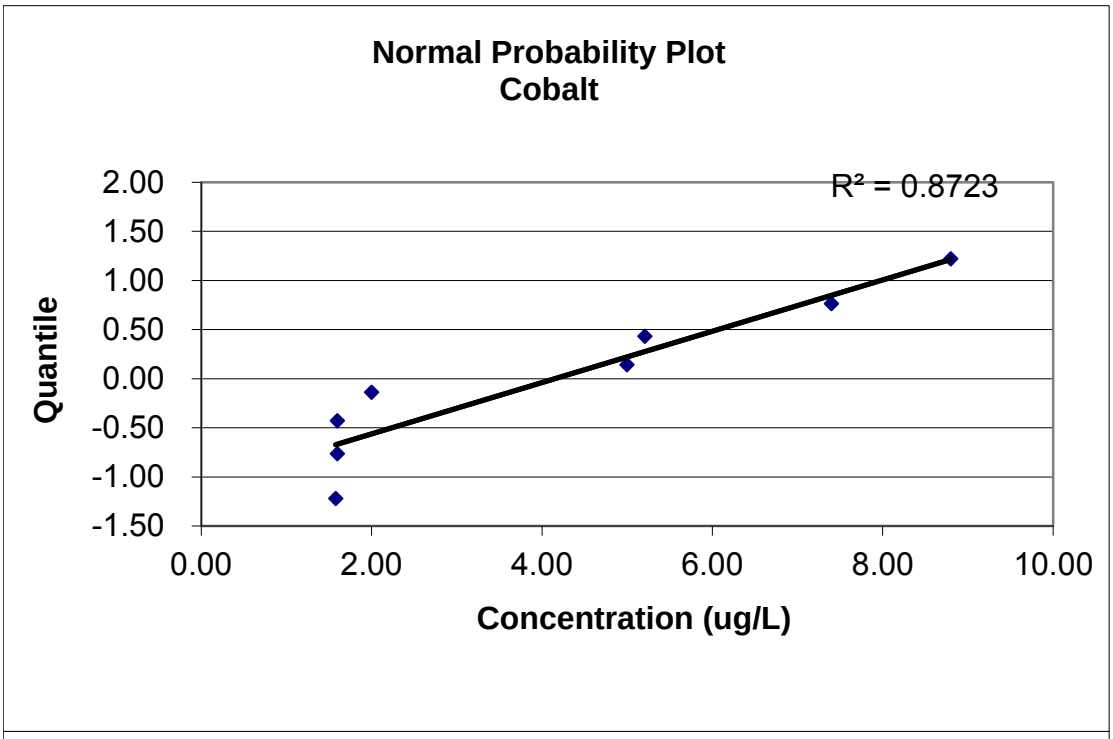
i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
LN[X(i)] = Natural Log Value of sample concentrations arranged from smallest to largest
[i/(n+1)] = Cumulative probability
n = number of samples = 8

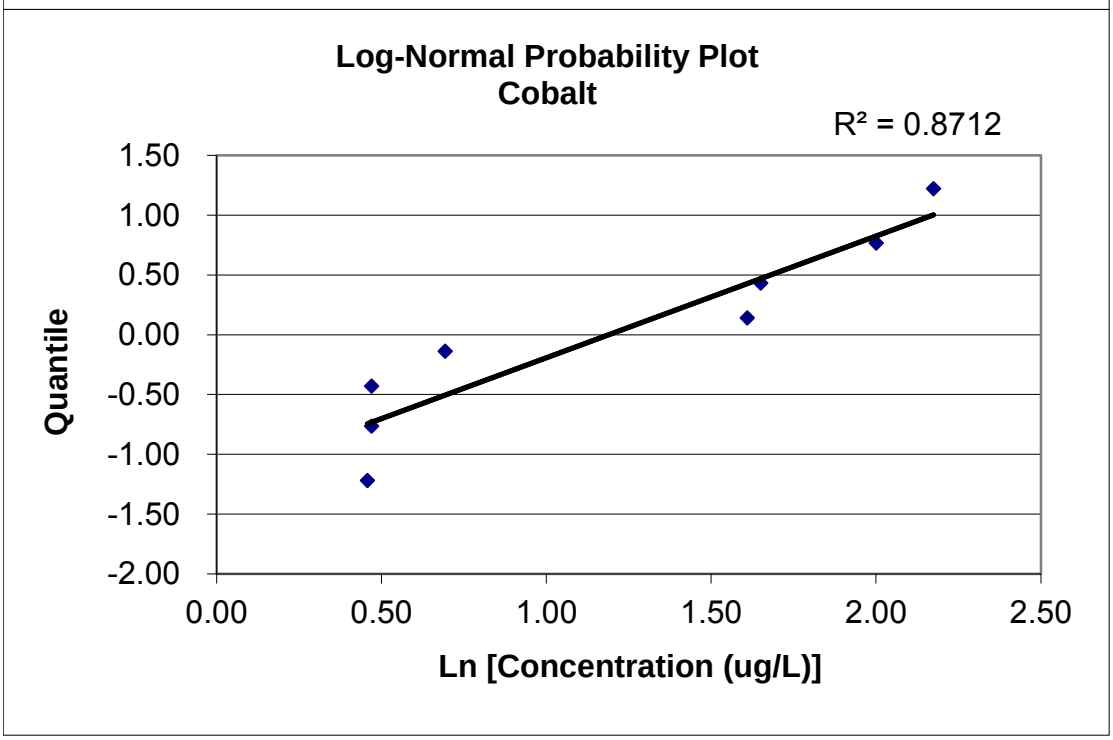
X(i)	LN[X(i)]	i	Rank	[Rank/(n+1)]	Quantiles
1.58	0.46	1	1	0.111	-1.22
1.60	0.47	2	2	0.222	-0.76
1.60	0.47	3	3	0.333	-0.43
2.00	0.69	4	4	0.444	-0.14
5.00	1.61	5	5	0.556	0.14
5.21	1.65	6	6	0.667	0.43
7.40	2.00	7	7	0.778	0.76
8.80	2.17	8	8	0.889	1.22

Plot analysis indicates that the data more closely follow a log-normal distribution.

JEI Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Probability Plots to determine the distribution of **Chromium**





JEI Project: **East Carolina Regional Landfill**
Project No: **894.1501.12**
Task No: **02**
Date: **28-Jan-15**

Determination of reported background value as an outlier

Analyte: **Chromium**

Background Data

Sample No.	Sample Date	Location	Concentration (ug/L)
1	30-Apr-08	GW-17	8.8
2	14-Jul-08	GW-17	2.0
3	03-Oct-08	GW-17	1.6
4	19-Jan-09	GW-17	1.6
5	20-Jul-09	GW-17	7.4
6	25-Jan-10	GW-17	5.0
7	06-Jul-10	GW-17	1.6
8	04-Jan-11	GW-17	5.2
		Mean =	4.1
		STD =	2.9

Note: All concentrations are in ug/L.

Using the data listed above, form the statisitc Tn:

Tn = (Xn - mean) / STD

where: Xn = largest observed sample value
mean = mean of the background values
STD = standard deviation of the background values

For Xn = 8.8
mean = 4.1
STD = 2.9

Tn = 1.612

From Table 8 included in the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance, the critical value for the given sample group is

Number of samples = 8
Tc = 2.032

Since Tc>Tn, the sample result is not considered to be an outlier

JEI Project: East Carolina Regional Landfill
Project No: 894.1501.12
Date: 28-Jan-15

Parametric Tolerance Interval for normally distributed data

Analyte: Chromium

Background Data

Sample No.	Sample Date	Location	Concentration (µg/L)
1	04/30/08	GW-17	8.80
2	07/14/08	GW-17	2.00
3	10/03/08	GW-17	1.60
4	01/19/09	GW-17	1.60
5	07/20/09	GW-17	7.40
6	01/25/10	GW-17	5.00
7	07/06/10	GW-17	1.58
8	01/04/11	GW-17	5.21

Using the background data, the upper Tolerance Limit can be determined using:

Upper Tolerance Limit = (Mean Concentration) + K x (Standard Deviation Samples)

where: Mean Conc = mean concentration background samples
K = factor for constructing one sided normal tolerance limit taken from table 4-2, page 87, Statistical Methods for Groundwater Monitoring, Gibbons, 1994
n = number of background samples
STDS = Standard Deviation Samples

For:

n =	8
K =	3.188
Mean Conc =	4.15
STDS =	2.89
UTL =	**13.35**

Joyce Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Analyte: **Cobalt**

Sample No.	Sample Date	Location	Concentration (µg/L)		QL	Sorted Concentration (µg/L)	
1	28-Oct-98	GW-2	ND			6.52	12.60
2	07-Apr-99	GW-2	ND			8.59	12.50
3	08-Dec-99	GW-2	10			9.08	12.00
4	27-Apr-00	GW-2	ND			9.50	11.90
5	18-Oct-00	GW-2	ND			9.53	11.40
6	19-Apr-01	GW-2	ND			9.65	11.30
7	24-Dec-01	GW-2	ND			9.72	10.80
8	23-Apr-02	GW-2	ND			9.76	10.40
9	23-Oct-02	GW-2	ND			10.00	10.30
10	01-Apr-03	GW-2	10			10.00	10.10
11	28-Oct-03	GW-2	ND			10.00	10.00
12	27-Apr-04	GW-2	ND			10.00	10.00
13	26-Oct-04	GW-2	ND			10.10	10.00
14	15-Mar-05	GW-2	10			10.30	10.00
15	12-Jul-05	GW-2	ND			10.40	9.76
16	19-Jan-06	GW-2	11.9			10.80	9.72
17	11-Jul-06	GW-2	12.5			11.30	9.65
18	17-Jan-07	GW-2	10.3			11.40	9.53
19	09-Jul-07	GW-2	10.0			11.90	9.50
20	14-Jan-08	GW-2	11.3			12.00	9.08
21	14-Jul-08	GW-2	10.1			12.50	8.59
22	19-Jan-09	GW-2	12.0			12.60	6.52
23	20-Jul-09	GW-2	11.4				
24	25-Jan-10	GW-2	12.6				
25	06-Jul-10	GW-2	8.59	J			
26	04-Jan-11	GW-2	9.65	J			
27	05-Jul-11	GW-2	10.4				
28	09-Jan-12	GW-2	9.51	J			
29	09-Jul-12	GW-2	9.76	J			
30	28-Jan-13	GW-2	9.53	J			
31	17-Jul-13	GW-2	10.8				
32	28-Jan-14	GW-2	9.72	J			
33	24-Jul-14	GW-2	9.08	J			
34	28-Jan-15	GW-2	6.52	J			

Number of Data: 34
Number of Truncated Data: 12
Percentage of Truncated Data: 35%

Upper Tolerance Limit 17.7 µg/L

All concentrations in micrograms per liter (µg/L).
B = Blank qualified data not used in statistical calculations.
J = Estimated concentration below quantification limit.
ND = Not detected above the detection limit (truncated).

JEI Project: **East Carolina Regional Landfill**
Project No: **894.1501.12**
Task No: **02**
Date: **28-Jan-15**

Shapiro Wilk Test Statistic (W) for normality of total **Cobalt**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	6.52	12.6	6.08	0.4590	2.7907
2	8.59	12.5	3.91	0.3156	1.2340
3	9.08	12.0	2.92	0.2571	0.7507
4	9.50	11.9	2.40	0.2131	0.5114
5	9.53	11.4	1.87	0.1746	0.3265
6	9.65	11.3	1.65	0.1443	0.2381
7	9.72	10.8	1.08	0.1150	0.1242
8	9.76	10.4	0.64	0.0878	0.0562
9	10.00	10.3	0.30	0.0618	0.0185
10	10.00	10.1	0.10	0.0368	0.0037
11	10.00	10.0	0.00	0.0122	0.0000
12	10.00	10.0	0.00		
13	10.10	10.0	-0.10		
14	10.30	10.0	-0.30		
15	10.40	9.8	-0.64		
16	10.80	9.7	-1.08		
17	11.30	9.7	-1.65		
18	11.40	9.5	-1.87		
19	11.90	9.5	-2.40		
20	12.00	9.1	-2.92		
21	12.50	8.6	-3.91		
22	12.60	6.5	-6.08		

The test statistic W can be found using:

W = SQR[B/(SD x SQRT(n-1))]

where:
B = summation of (X(n-i+1)-X(i))A(n-i+1) = 6.05
SD = standard deviation of the data group = 1.37
n = number of samples = 22

W = 0.930

Compare this value to the critical value in Table A-2 of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.911
and the calculated W = 0.930

Therefore the data set is Normal

JOYCE Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Probability Plots to determine the distribution of **Cobalt**

Complete the following table where

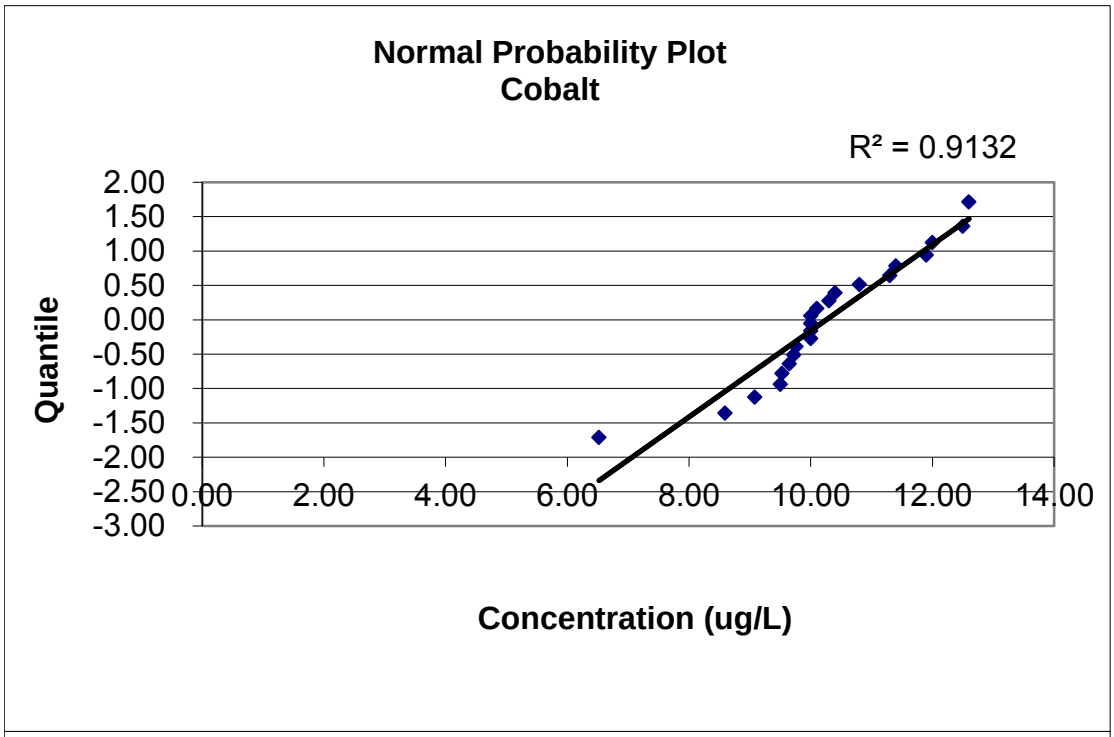
i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
LN[X(i)] = Natural Log Value of sample concentrations arranged from smallest to largest
[i/(n+1)] = Cumulative probability
n = number of samples = 22

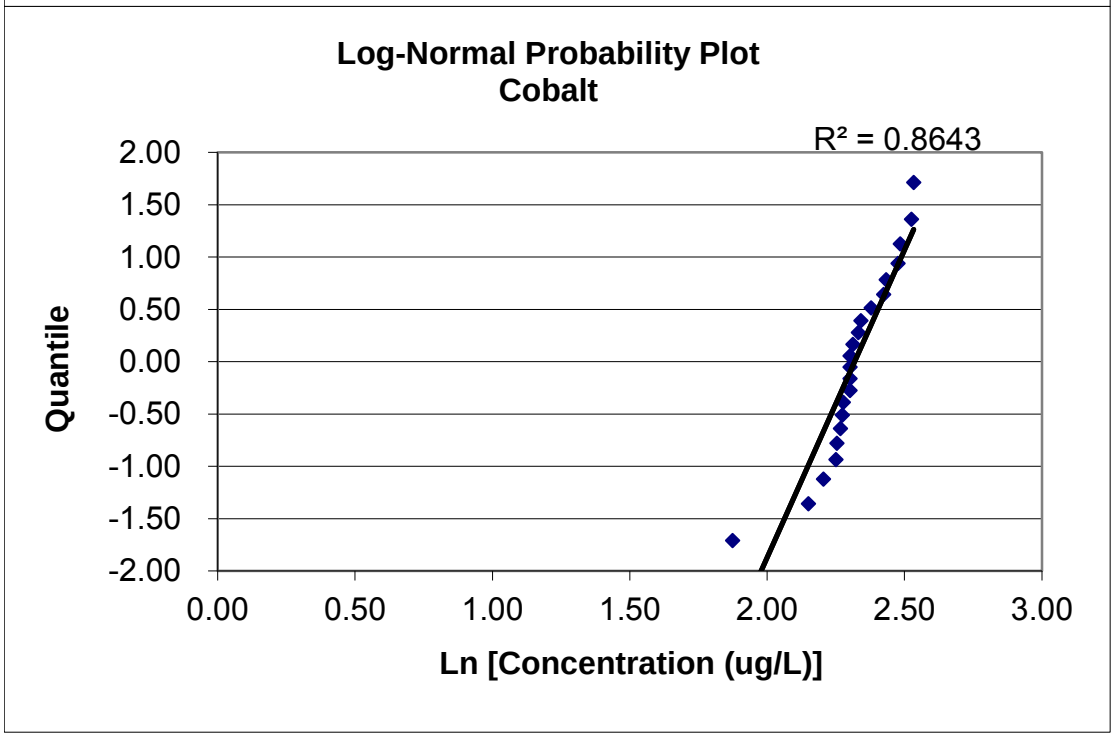
X(i)	LN[X(i)]	i	Rank	[Rank/(n+1)]	Quantiles
6.52	1.87	1	1	0.043	-1.71
8.59	2.15	2	2	0.087	-1.36
9.08	2.21	3	3	0.130	-1.12
9.50	2.25	4	4	0.174	-0.94
9.53	2.25	5	5	0.217	-0.78
9.65	2.27	6	6	0.261	-0.64
9.72	2.27	7	7	0.304	-0.51
9.76	2.28	8	8	0.348	-0.39
10.00	2.30	9	9	0.391	-0.28
10.00	2.30	10	10	0.435	-0.16
10.00	2.30	11	11	0.478	-0.05
10.00	2.30	12	12	0.522	0.05
10.10	2.31	13	13	0.565	0.16
10.30	2.33	14	14	0.609	0.28
10.40	2.34	15	15	0.652	0.39
10.80	2.38	16	16	0.696	0.51
11.30	2.42	17	17	0.739	0.64
11.40	2.43	18	18	0.783	0.78
11.90	2.48	19	19	0.826	0.94
12.00	2.48	20	20	0.870	1.12
12.50	2.53	21	21	0.913	1.36
12.60	2.53	22	22	0.957	1.71

Plot analysis indicates that the data more closely follow a log-normal distribution.

JEI Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Probability Plots to determine the distribution of **Cobalt**





JEI Project: **East Carolina Regional Landfill**
Project No: **894.1501.12**
Task No: **02**
Date: **28-Jan-15**

Determination of reported background value as an outlier

Analyte: **Cobalt**

Background Data

Sample No.	Sample Date	Location	Concentration (ug/L)	
1	28-Oct-98	GW-2	ND	
2	07-Apr-99	GW-2	ND	
3	08-Dec-99	GW-2	10.0	
4	27-Apr-00	GW-2	ND	
5	18-Oct-00	GW-2	ND	
6	19-Apr-01	GW-2	ND	
7	24-Dec-01	GW-2	ND	
8	23-Apr-02	GW-2	ND	
9	23-Oct-02	GW-2	ND	
10	01-Apr-03	GW-2	10.0	J
11	28-Oct-03	GW-2	ND	J
12	27-Apr-04	GW-2	ND	
13	26-Oct-04	GW-2	ND	
14	15-Mar-05	GW-2	10.0	
15	12-Jul-05	GW-2	ND	
16	19-Jan-06	GW-2	11.9	
17	11-Jul-06	GW-2	12.5	
18	17-Jan-07	GW-2	10.3	
19	09-Jul-07	GW-2	10.0	
20	14-Jan-08	GW-2	11.3	
21	14-Jul-08	GW-2	10.1	
22	19-Jan-09	GW-2	12.0	
23	20-Jul-09	GW-2	11.4	
24	25-Jan-10	GW-2	12.6	
25	06-Jul-10	GW-2	8.6	J
26	04-Jan-11	GW-2	9.7	J
27	05-Jul-11	GW-2	10.4	
28	09-Jan-12	GW-2	9.5	J
29	09-Jul-12	GW-2	9.76	J
30	28-Jan-13	GW-2	9.53	J
31	17-Jul-13	GW-2	10.80	
32	28-Jan-14	GW-2	9.72	J
33	24-Jul-14	GW-2	9.08	J
34	28-Jan-15	GW-2	6.52	J
		Mean =	10.3	
		STD =	1.4	

Note: All concentrations are in ug/L.

Using the data listed above, form the statisitc Tn:

Tn = (Xn - mean) / STD

where: Xn = largest observed sample value
mean = mean of the background values
STD = standard deviation of the background values

For Xn = 12.6
mean = 10.3
STD = 1.4

Tn = 1.711

From Table 8 included in the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance, the critical value for the given sample group is

Number of samples = 34
Tc = 2.779

Since Tc>Tn, the sample result is not considered to be an outlier

JOYCE Projec **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Aitchison's Adjustment for **Cobalt**

Background Values (positive detects only)

Sample No.	Sample Date	Location	Concentration (µg/l)
1	28-Oct-98	GW-2	ND
2	7-Apr-99	GW-2	ND
3	8-Dec-99	GW-2	10.00
4	27-Apr-00	GW-2	ND
5	18-Oct-00	GW-2	ND
6	19-Apr-01	GW-2	ND
7	24-Dec-01	GW-2	ND
8	23-Apr-02	GW-2	ND
9	23-Oct-02	GW-2	ND
10	1-Apr-03	GW-2	10.00
11	28-Oct-03	GW-2	ND
12	27-Apr-04	GW-2	ND
13	26-Oct-04	GW-2	ND
14	15-Mar-05	GW-2	10.00
15	12-Jul-05	GW-2	ND
16	19-Jan-06	GW-2	11.90
17	11-Jul-06	GW-2	12.50
18	17-Jan-07	GW-2	10.30
19	9-Jul-07	GW-2	10.00
20	14-Jan-08	GW-2	11.30
21	14-Jul-08	GW-2	10.10
22	19-Jan-09	GW-2	12.00
23	20-Jul-09	GW-2	11.40
24	25-Jan-10	GW-2	12.60
25	6-Jul-10	GW-2	8.59
26	4-Jan-11	GW-2	9.65
27	5-Jul-11	GW-2	10.40
28	9-Jan-12	GW-2	9.51
29	9-Jul-12	GW-2	9.76
30	28-Jan-13	GW-2	9.53
31	17-Jul-13	GW-2	10.80
32	28-Jan-14	GW-2	9.72
33	24-Jul-14	GW-2	9.08
34	28-Jan-15	GW-2	6.52

Mean of detected values = 10.26
Standard Deviation of detected values = 1.37

The adjusted mean can be found using

$$M(a) = (1-d/n) \times M$$

where:	d =	number non-detected values	=	12
	n =	total number samples	=	34
	M =	mean detected values	=	10.26
		M(a)	**=**	**6.64**

The adjusted standard deviation squared may be found using

$$STD(a) = [(n-(d+1))/(n-1)]\ S + d/n((n-d)/(n-1))MM$$

where:	n =	total number samples	=	34
	d =	number non-detected values	=	12
	S =	std deviation of detected values squared	=	1.88
	MM =	mean of detected values squared	=	105.21
		STD(a)	=	25.95

and the adjusted standard deviation is then

S(a) = SQRT(STD(a)) = 5.09

Joyce Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Parametric Tolerance Interval for Aitchison's adjusted data

Analyte: **Cobalt**

Background Data

Sample No.	Sample Date	Location	Concentration (µg/l)	Quantitation Limit (µg/l)
1	28-Oct-98	GW-2	ND	10
2	7-Apr-99	GW-2	ND	10
3	8-Dec-99	GW-2	10.00	10
4	27-Apr-00	GW-2	ND	10
5	18-Oct-00	GW-2	ND	10
6	19-Apr-01	GW-2	ND	10
7	24-Dec-01	GW-2	ND	10
8	23-Apr-02	GW-2	ND	10
9	23-Oct-02	GW-2	ND	10
10	1-Apr-03	GW-2	10.00	10
11	28-Oct-03	GW-2	ND	10
12	27-Apr-04	GW-2	ND	10
13	26-Oct-04	GW-2	ND	10
14	15-Mar-05	GW-2	10.00	10
15	12-Jul-05	GW-2	ND	10
16	19-Jan-06	GW-2	11.90	10
17	11-Jul-06	GW-2	12.50	10
18	17-Jan-07	GW-2	10.30	10
19	9-Jul-07	GW-2	10.00	10
20	14-Jan-08	GW-2	11.30	10
21	14-Jul-08	GW-2	10.10	10
22	19-Jan-09	GW-2	12.00	10
23	20-Jul-09	GW-2	11.40	10
24	25-Jan-10	GW-2	12.60	10
25	6-Jul-10	GW-2	8.59	10
26	4-Jan-11	GW-2	9.65	10
27	5-Jul-11	GW-2	10.40	10
28	9-Jan-12	GW-2	9.51	10
29	9-Jul-12	GW-2	9.76	10
30	28-Jan-13	GW-2	9.53	10
31	17-Jul-13	GW-2	10.80	10
32	28-Jan-14	GW-2	9.72	10
33	24-Jul-14	GW-2	9.08	10

Note: All sample concentrations are micrograms per liter

The background mean and standard deviation were modified using Aitchison's Adjustment.
The adjusted mean and standard deviation are as follows:

The adjusted mean and standard deviation are

adjusted mean = 6.64
adjusted standard deviation = 5.09

Using the background data, the upper Tolerance Limit can be determined using

Upper Tolerance Limit = (Mean Concentration) + K x (Standard Deviation Samples)

where: K = factor for constructing one sided normal tolerance limit taken from table 4-2, page 87, Statistical Methods for Groundwater Monitoring, Gibbons, 1994
n = number of background samples

For: K = 2.177
n = 34

UTL = 17.73 µg/L

Joyce Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Analyte: **Cobalt**

Sample No.	Sample Date	Location	Concentration (µg/L)	QL	Sorted Concentration (µg/L)	
1	28-Oct-98	GW-7	30		20	50
2	07-Apr-99	GW-7	20		20	50
3	08-Dec-99	GW-7	20		21.5	40
4	27-Apr-00	GW-7	30		23.7	40
5	18-Oct-00	GW-7	30		26.6	40
6	19-Apr-01	GW-7	30		29.8	37.5
7	24-Dec-01	GW-7	30		30	37.3
8	23-Apr-02	GW-7	30		30	36
9	23-Oct-02	GW-7	50		30	35.4
10	01-Apr-03	GW-7	40		30	35.1
11	28-Oct-03	GW-7	50		30	34.9
12	27-Apr-04	GW-7	30		30	31.6
13	26-Oct-04	GW-7	40		30	30
14	15-Mar-05	GW-7	36		30.0	30
15	12-Jul-05	GW-7	40		31.6	30
16	19-Jan-06	GW-7	30.0		34.9	30
17	11-Jul-06	GW-7	31.6		35.1	30
18	17-Jan-07	GW-7	34.9		35.4	30
19	09-Jul-07	GW-7	37.5		36	30
20	14-Jan-08	GW-7	35.1		37.3	30.0
21	14-Jul-08	GW-7	37.3		37.5	29.8
22	19-Jan-09	GW-7	23.7		40	26.6
23	20-Jul-09	GW-7	35.4		40	23.7
24	25-Jan-10	GW-7	21.5		40	21.5
25	06-Jul-10	GW-7	26.6		50	20
26	04-Jan-11	GW-7	29.8		50	20

Number of Data: 26
Number of Truncated Data: 0
Percentage of Truncated Data: 0%

Upper Tolerance Limit 49.7 µg/L

All concentrations in micrograms per liter (µg/L).
B = Blank qualified data not used in statistical calculations.
J = Estimated concentration below quantification limit.
ND = Not detected above the detection limit (truncated).

JEI Project: **East Carolina Regional Landfill**
Project No: **894.1501.12**
Task No: **02**
Date: **28-Jan-15**

Shapiro Wilk Test Statistic (W) for normality of total **Cobalt**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	20.00	50.0	30.00	0.4407	13.2210
2	20.00	50.0	30.00	0.3043	9.1290
3	21.50	40.0	18.50	0.2533	4.6861
4	23.70	40.0	16.30	0.2151	3.5061
5	26.60	40.0	13.40	0.1836	2.4602
6	29.80	37.5	7.70	0.1563	1.2035
7	30.00	37.3	7.30	0.1316	0.9607
8	30.00	36.0	6.00	0.1089	0.6534
9	30.00	35.4	5.40	0.0876	0.4730
10	30.00	35.1	5.10	0.0672	0.3427
11	30.00	34.9	4.90	0.0476	0.2332
12	30.00	31.6	1.60	0.0284	0.0454
13	30.00	30.0	0.00	0.0094	0.0000
14	30.00	30.0	0.00		
15	31.60	30.0	-1.60		
16	34.90	30.0	-4.90		
17	35.10	30.0	-5.10		
18	35.40	30.0	-5.40		
19	36.00	30.0	-6.00		
20	37.30	30.0	-7.30		
21	37.50	29.8	-7.70		
22	40.00	26.6	-13.40		
23	40.00	23.7	-16.30		
24	40.00	21.5	-18.50		
25	50.00	20.0	-30.00		
26	50.00	20.0	-30.00		

The test statistic W can be found using:

W = SQR[B/(SD x SQRT(n-1))]

where:

B =	summation of (X(n-i+1)-X(i))A(n-i+1)	=	36.91
SD =	standard deviation of the data group	=	7.66
n =	number of samples	=	26

W = 0.930

Compare this value to the critical value in Table A-2 of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.920
and the calculated W = 0.930

Therefore the data set is Normal

JOYCE Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Probability Plots to determine the distribution of **Cobalt**

Complete the following table where

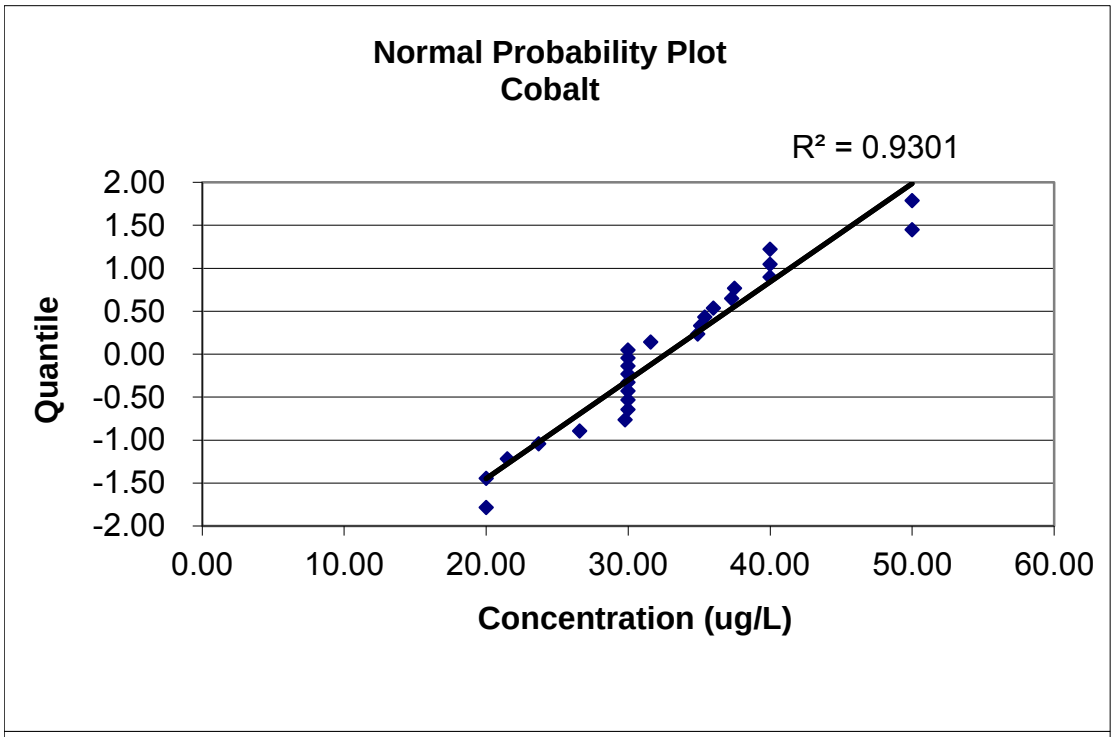
i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
LN[X(i)] = Natural Log Value of sample concentrations arranged from smallest to largest
[i/(n+1)] = Cumulative probability
n = number of samples = 26

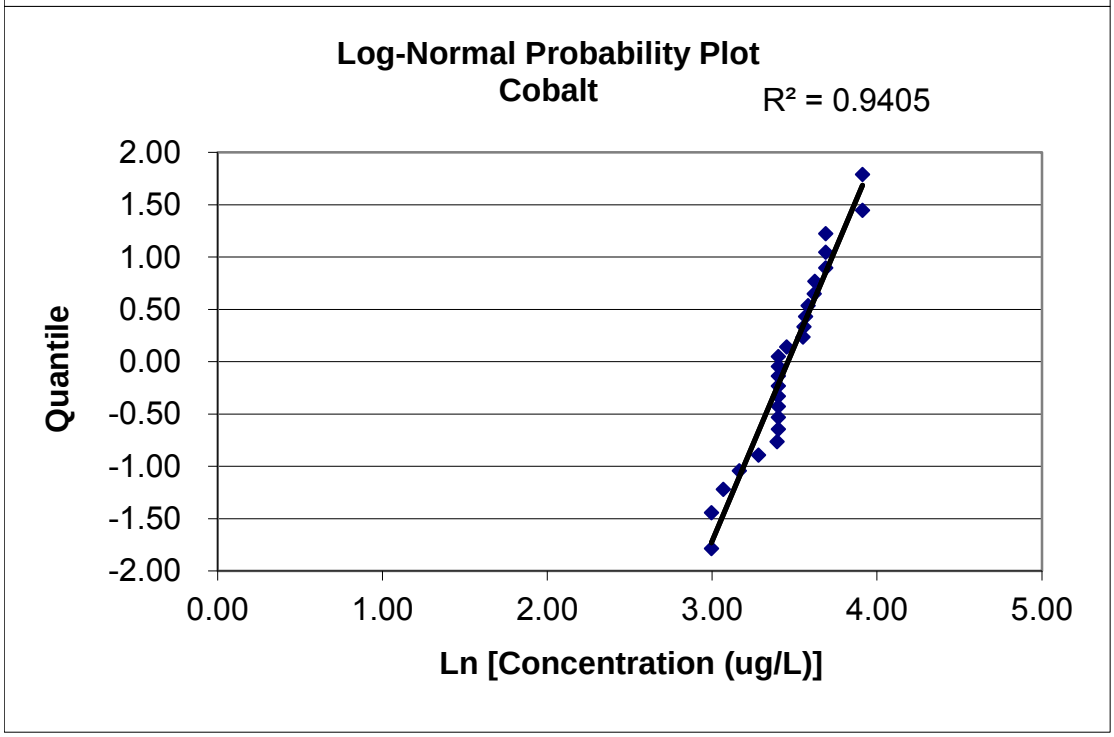
X(i)	LN[X(i)]	i	Rank	[Rank/(n+1)]	Quantiles
20.00	3.00	1	1	0.037	-1.79
20.00	3.00	2	2	0.074	-1.45
21.50	3.07	3	3	0.111	-1.22
23.70	3.17	4	4	0.148	-1.04
26.60	3.28	5	5	0.185	-0.90
29.80	3.39	6	6	0.222	-0.76
30.00	3.40	7	7	0.259	-0.65
30.00	3.40	8	8	0.296	-0.54
30.00	3.40	9	9	0.333	-0.43
30.00	3.40	10	10	0.370	-0.33
30.00	3.40	11	11	0.407	-0.23
30.00	3.40	12	12	0.444	-0.14
30.00	3.40	13	13	0.481	-0.05
30.00	3.40	14	14	0.519	0.05
31.60	3.45	15	15	0.556	0.14
34.90	3.55	16	16	0.593	0.23
35.10	3.56	17	17	0.630	0.33
35.40	3.57	18	18	0.667	0.43
36.00	3.58	19	19	0.704	0.54
37.30	3.62	20	20	0.741	0.65
37.50	3.62	21	21	0.778	0.76
40.00	3.69	22	22	0.815	0.90
40.00	3.69	23	23	0.852	1.04
40.00	3.69	24	24	0.889	1.22
50.00	3.91	25	25	0.926	1.45
50.00	3.91	26	26	0.963	1.79

Plot analysis indicates that the data more closely follow a log-normal distribution.

JEI Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Probability Plots to determine the distribution of **Cobalt**





JEI Project: **East Carolina Regional Landfill**
Project No: **894.1501.12**
Task No: **02**
Date: **28-Jan-15**

Determination of reported background value as an outlier

Analyte: **Cobalt**

Background Data

Sample No.	Sample Date	Location	Concentration (ug/L)	
1	28-Oct-98	GW-7	30.0	
2	07-Apr-99	GW-7	20.0	
3	08-Dec-99	GW-7	20.0	
4	27-Apr-00	GW-7	30.0	
5	18-Oct-00	GW-7	30.0	
6	19-Apr-01	GW-7	30.0	
7	24-Dec-01	GW-7	30.0	
8	23-Apr-02	GW-7	30.0	
9	23-Oct-02	GW-7	50.0	
10	01-Apr-03	GW-7	40.0	J
11	28-Oct-03	GW-7	50.0	J
12	27-Apr-04	GW-7	30.0	
13	26-Oct-04	GW-7	40.0	
14	15-Mar-05	GW-7	36.0	
15	12-Jul-05	GW-7	40.0	
16	19-Jan-06	GW-7	30.0	
17	11-Jul-06	GW-7	31.6	
18	17-Jan-07	GW-7	34.9	
19	09-Jul-07	GW-7	37.5	
20	14-Jan-08	GW-7	35.1	
21	14-Jul-08	GW-7	37.3	
22	19-Jan-09	GW-7	23.7	
23	20-Jul-09	GW-7	35.4	
24	25-Jan-10	GW-7	21.5	
25	06-Jul-10	GW-7	26.6	J
26	04-Jan-11	GW-7	29.8	J
0	00-Jan-00	0	0.0	
#REF!	#REF!	#REF!	#REF!	##
#REF!	#REF!	#REF!	#REF!	##
#REF!	#REF!	#REF!	#REF!	##
#REF!	#REF!	#REF!	#REF!	
#REF!	#REF!	#REF!	#REF!	##
#REF!	#REF!	#REF!	#REF!	##
#REF!	#REF!	#REF!	#REF!	##
		Mean =	#REF!	
		STD =	#REF!	

Note: All concentrations are in ug/L.

Using the data listed above, form the statisitc Tn:

Tn = (Xn - mean) / STD

where: Xn = largest observed sample value
mean = mean of the background values
STD = standard deviation of the background values

For Xn = #REF!
mean = #REF!
STD = #REF!

Tn = #REF!

From Table 8 included in the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance, the critical value for the given sample group is

Number of samples = 34
Tc = 2.779

#REF!

JOYCE Project **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Determination of reported background value as an outlier

Analyte: **Cobalt**

Background Data

Sample No.	Sample Date	Location	ln(Concentration) (µg/L)
1	28-Oct-98	GW-7	3.40
2	07-Apr-99	GW-7	3.00
3	08-Dec-99	GW-7	3.00
4	27-Apr-00	GW-7	3.40
5	18-Oct-00	GW-7	3.40
6	19-Apr-01	GW-7	3.40
7	24-Dec-01	GW-7	3.40
8	23-Apr-02	GW-7	3.40
9	23-Oct-02	GW-7	3.91
10	01-Apr-03	GW-7	3.69
11	28-Oct-03	GW-7	3.91
12	27-Apr-04	GW-7	3.40
13	26-Oct-04	GW-7	3.69
14	15-Mar-05	GW-7	3.58
15	12-Jul-05	GW-7	3.69
16	19-Jan-06	GW-7	3.40
17	11-Jul-06	GW-7	3.45
18	17-Jan-07	GW-7	3.55
19	09-Jul-07	GW-7	3.62
20	14-Jan-08	GW-7	3.56
21	14-Jul-08	GW-7	3.62
22	19-Jan-09	GW-7	3.17
23	20-Jul-09	GW-7	3.57
24	25-Jan-10	GW-7	3.07
25	06-Jul-10	GW-7	3.28
26	04-Jan-11	GW-7	3.39
		Mean =	3.460
		STD =	0.237

Note: All concentrations are in ug/L.

Using the data listed above, form the statisitc Tn:

Tn = (Xn - mean) / STD

where: Xn = largest observed sample value
mean = mean of the background values
STD = standard deviation of the background values

For Xn = 3.912
mean = 3.460
STD = 0.237

Tn = 1.912

From Table 8 included in the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance, the critical value for the given sample group is

Number of samples = 26
Tc = 2.681

Since Tc>Tn, the sample result is not considered to be an outlier.

JEI Project: East Carolina Regional Landfill
Project No: 894.1501.12
Date: 28-Jan-15

Parametric Tolerance Interval for normally distributed data

Analyte: Cobalt

Background Data

Sample No.	Sample Date	Location	Concentration Concentration
1	10/28/98	GW-7	30.00
2	04/07/99	GW-7	20.00
3	12/08/99	GW-7	20.00
4	04/27/00	GW-7	30.00
5	10/18/00	GW-7	30.00
6	04/19/01	GW-7	30.00
7	12/24/01	GW-7	30.00
8	04/23/02	GW-7	30.00
9	10/23/02	GW-7	50.00
10	04/01/03	GW-7	40.00
11	10/28/03	GW-7	50.00
12	04/27/04	GW-7	30.00
13	10/26/04	GW-7	40.00
14	03/15/05	GW-7	36.00
15	07/12/05	GW-7	40.00
16	01/19/06	GW-7	30.00
17	07/11/06	GW-7	31.60
18	01/17/07	GW-7	34.90
19	07/09/07	GW-7	37.50
20	01/14/08	GW-7	35.10
21	07/14/08	GW-7	37.30
22	01/19/09	GW-7	23.70
23	07/20/09	GW-7	35.40
24	01/25/10	GW-7	21.50
25	07/06/10	GW-7	26.60
26	01/04/11	GW-7	29.80

Using the background data, the upper Tolerance Limit can be determined using:

Upper Tolerance Limit = (Mean Concentration) + K x (Standard Deviation Samples)

where: Mean Conc = mean concentration background samples
K = factor for constructing one sided normal tolerance limit taken from table 4-2, page 87, Statistical Methods for Groundwater Monitoring, Gibbons, 1994
n = number of background samples
STDS = Standard Deviation Samples

For: n = 26
K = 2.220
Mean Conc = 32.67
STDS = 7.66

UTL = 49.67

Joyce Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Analyte: **Lead**

Sample No.	Sample Date	Location	Concentration (µg/L)	QL	Sorted Concentration (µg/L)	
1	30-Apr-08	GW-17	4.3	10	2.06	4.3
2	14-Jul-08	GW-17	2.1	10	2.1	2.2
3	03-Oct-08	GW-17	2.2	10	2.2	2.1
4	19-Jan-09	GW-17	ND	10	4.3	2.06
5	25-Jan-10	GW-17	2.06	10		
6	06-Jul-10	GW-17	ND	10		
7	04-Jan-11	GW-17	ND	10		

Number of Data: 7
Number of Truncated Data: 3
Percentage of Truncated Data: 43%

NPPL: 4.3 µg/L

All concentrations in micrograms per liter (µg/L).
B = Blank qualified data not used in statistical calculations.
J = Estimated concentration below quantification limit.
ND = Not detected above the detection limit (truncated).

JEI Project: **East Carolina Regional Landfill**
Project No: **894.1401.12**
Task No: **02**
Date: **25-Feb-14**

Shapiro Wilk Test Statistic (W) for normality of total **Lead**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	2.06	4.3	2.24	0.6872	1.5393
2	2.10	2.2	0.10	0.1677	0.0168
3	2.20	2.1	-0.10		
4	4.30	2.1	-2.24		

The test statistic W can be found using:

W = SQR[B/(SD x SQRT(n-1))]

where:

B =	summation of (X(n-i+1)-X(i))A(n-i+1)	=	1.56
SD =	standard deviation of the data group	=	1.09
n =	number of samples	=	4

W = 0.677

Compare this value to the critical value in Table A-2 of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.748
and the calculated W = 0.677

Therefore the data is Non Normal

JEI Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Shapiro Wilk Test Statistic (W) for log normality of **Lead**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	0.723	1.459	0.736	0.6872	0.506
2	0.742	0.788	0.047	0.1677	0.008
3	0.788	0.742	-0.047		
4	1.459	0.723	-0.736		

The test statistic W can be found using:

W = SQR((B/SD x SQRT(n-1))

where:

B =	summation of (X(n-i+1)-X(i))A(n-i+1)	=	0.514
SD =	standard deviation of the data group	=	0.355
n =	number of samples	=	4
		W =	0.698

Compare this value to the critical value in Table A-2 of Statistical Analysisof Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.748
and the calculated W = 0.698

Therefore the data is Non-Normal.

JOYCE Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Probability Plots to determine the distribution of **Lead**

Complete the following table where

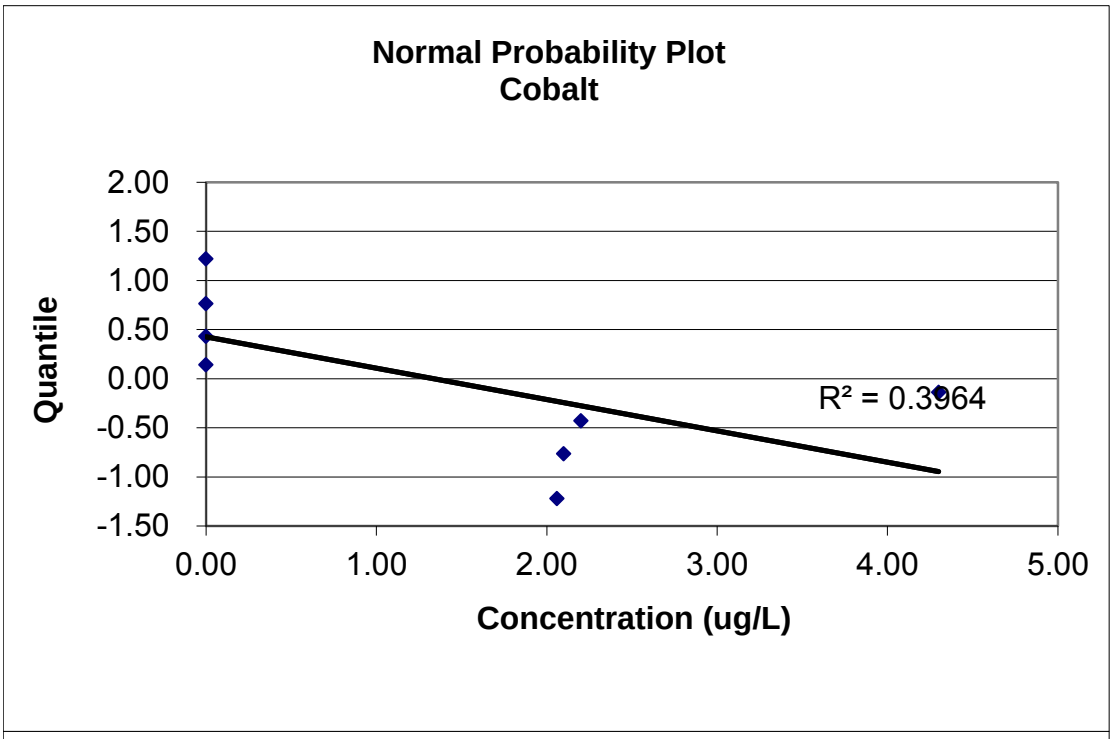
i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
LN[X(i)] = Natural Log Value of sample concentrations arranged from smallest to largest
[i/(n+1)] = Cumulative probability
n = number of samples = 8

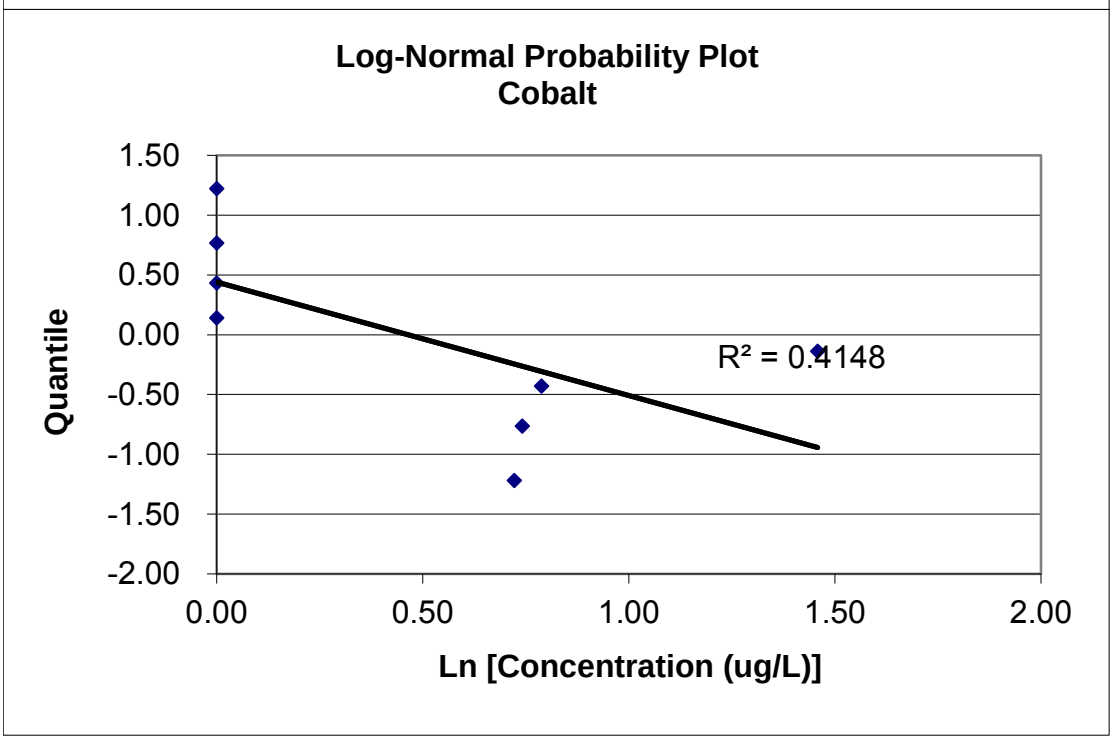
X(i)	LN[X(i)]	i	Rank	[Rank/(n+1)]	Quantiles
2.06	0.72	1	1	0.111	-1.22
2.10	0.74	2	2	0.222	-0.76
2.20	0.79	3	3	0.333	-0.43
4.30	1.46	4	4	0.444	-0.14
0.00	#NUM!	5	5	0.556	0.14
0.00	#NUM!	6	6	0.667	0.43
0.00	#NUM!	7	7	0.778	0.76
#REF!	#REF!	8	8	0.889	1.22

Plot analysis indicates that the data more closely follow a log-normal distribution.

JEI Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Probability Plots to determine the distribution of **Lead**





JOYCE Project **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Determination of reported background value as an outlier

Analyte: **Lead**

Background Data

Sample No.	Sample Date	Location	ln(Concentration) (µg/L)
1	30-Apr-08	GW-17	4.30
2	14-Jul-08	GW-17	2.10
3	03-Oct-08	GW-17	2.20
4	19-Jan-09	GW-17	ND
5	25-Jan-10	GW-17	2.06
6	06-Jul-10	GW-17	ND

Mean = 2.665
STD = 1.092

Note: All concentrations are in ug/L.

Using the data listed above, form the statisitc Tn:

Tn = (Xn - mean) / STD

where: Xn = largest observed sample value
mean = mean of the background values
STD = standard deviation of the background values

For Xn = 4.300
mean = 2.665
STD = 1.092

Tn = 1.498

From Table 8 included in the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance, the critical value for the given sample group is

Number of samples = 6
Tc = 1.822

Since Tc>Tn, the sample result is not considered to be an outlier.

JOYCE Projec **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Aitchison's Adjustment for **Lead**

Background Values (positive detects only)

Sample No.	Sample Date	Location	Concentration (µg/l)	ln(conc)
1	30-Apr-08	GW-17	4.30	1.459
2	14-Jul-08	GW-17	2.10	0.742
3	3-Oct-08	GW-17	2.20	0.788
4	19-Jan-09	GW-17	ND	#NUM!
5	25-Jan-10	GW-17	2.06	0.723
6	6-Jul-10	GW-17	ND	

Mean of detected values = #NUM!
Standard Deviation of detected values = #NUM!

The adjusted mean can be found using

$$M(a) = (1-d/n) \times M$$

where:	d =	number non-detected values	=	1
	n =	total number samples	=	6
	M =	mean detected values	=	#NUM!
		M(a)	**=**	**#NUM!**

The adjusted standard deviation squared may be found using

$$STD(a) = [(n-(d+1))/(n-1)]\ S + d/n((n-d)/(n-1))MM$$

where:	n =	total number samples	=	6
	d =	number non-detected values	=	1
	S =	std deviation of detected values squared	=	#NUM!
	MM =	mean of detected values squared	=	#NUM!
		STD(a)	=	#NUM!

and the adjusted standard deviation is then

S(a) = SQRT(STD(a)) = #NUM!

Joyce Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Parametric Tolerance Interval for Aitchison's adjusted data

Analyte: **Lead**

Background Data

Sample No.	Sample Date	Location	Concentration (µg/l)	Quantitation Limit (µg/l)	ln(Concentration) (µg/l)
1	30-Apr-08	GW-17	4.30	10	1.459
2	14-Jul-08	GW-17	2.10	10	0.742
3	3-Oct-08	GW-17	2.20	10	0.788
4	19-Jan-09	GW-17	ND	10	#NUM!
5	25-Jan-10	GW-17	2.06	10	0.723
6	6-Jul-10	GW-17	ND	10	

Note: All sample concentrations are micrograms per liter

The background mean and standard deviation were modified using Aitchison's Adjustment.
The adjusted mean and standard deviation are as follows:

The ln(adjusted mean) and ln(standard deviation) are

ln(adjusted mean) = #NUM!
ln(adjusted standard deviation) = #NUM!

Using the background data, the upper Tolerance Limit can be determined using

Upper Tolerance Limit = (Mean Concentration) + K x (Standard Deviation Samples)

where: K = factor for constructing one sided normal tolerance limit taken from table 4-2, page 87, Statistical Methods for Groundwater Monitoring, Gibbons, 1994
n = number of background samples

For: K = 3.707
n = 6

UTL = #NUM! µg/L

Joyce Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Analyte: **Vanadium**

Sample No.	Sample Date	Location	Concentration (µg/L)	QL	Sorted Concentration (µg/L)	
1	30-Apr-08	GW-17	13.7	25	0.51	13.7
2	14-Jul-08	GW-17	2	25	2	10.4
3	03-Oct-08	GW-17	ND	25	8.25	8.25
4	19-Jan-09	GW-17	ND	25	10.4	2
5	20-Jul-09	GW-17	10.4	25	13.7	0.51
6	25-Jan-10	GW-17	0.51	25		
7	06-Jul-10	GW-17	ND	25		
8	04-Jan-11	GW-17	8.25	25		

Number of Data: 8
Number of Truncated Data: 3
Percentage of Truncated Data: 38%

NPPL: 8.8 µg/L

All concentrations in micrograms per liter (µg/L).
B = Blank qualified data not used in statistical calculations.
J = Estimated concentration below quantification limit.
ND = Not detected above the detection limit (truncated).

JEI Project: **East Carolina Regional Landfill**
Project No: **894.1401.12**
Task No: **02**
Date: **25-Feb-14**

Shapiro Wilk Test Statistic (W) for normality of total **Vanadium**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	0.51	13.7	13.19	0.6646	8.7661
2	2.00	10.4	8.40	0.2413	2.0269
3	8.25	8.3	0.00	0.0000	0.0000
4	10.40	2.0	-8.40		
5	13.70	0.5	-13.19		

The test statistic W can be found using:

W = SQR[B/(SD x SQRT(n-1))]

where:

B =	summation of (X(n-i+1)-X(i))A(n-i+1)	=	10.79
SD =	standard deviation of the data group	=	5.59
n =	number of samples	=	5

W = 0.931

Compare this value to the critical value in Table A-2 of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.762
and the calculated W = 0.931

Therefore the data set is Normal

JEI Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Shapiro Wilk Test Statistic (W) for log normality of **Vanadium**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	-0.673	2.617	3.291	0.6646	2.187
2	0.693	2.342	1.649	0.2413	0.398
3	2.110	2.110	0.000	0.0000	0.000
4	2.342	0.693	-1.649		
5	2.617	-0.673	-3.291		

The test statistic W can be found using:

W = SQR((B/SD x SQRT(n-1))

where:

B =	summation of (X(n-i+1)-X(i))A(n-i+1)	=	2.585
SD =	standard deviation of the data group	=	1.385
n =	number of samples	=	5

W = 0.871

Compare this value to the critical value in Table A-2 of Statistical Analysisof Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.762
and the calculated W = 0.871

Therefore the data set is Log-Normal.

JOYCE Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Probability Plots to determine the distribution of **Vanadium**

Complete the following table where

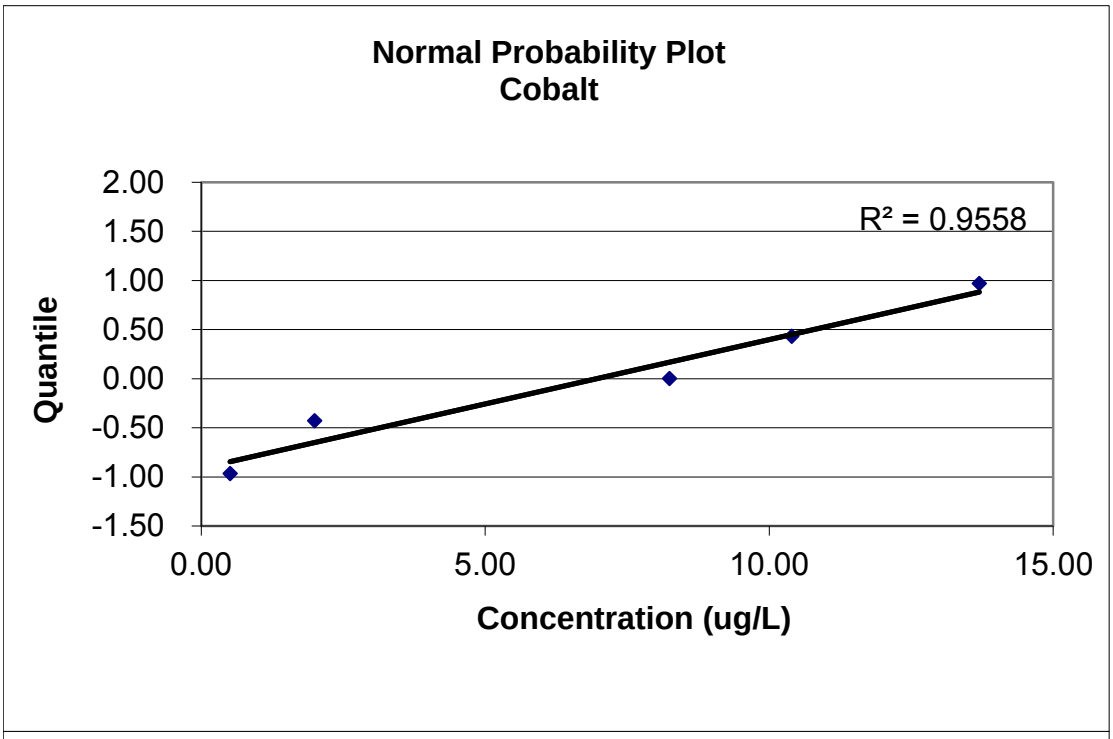
i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
LN[X(i)] = Natural Log Value of sample concentrations arranged from smallest to largest
[i/(n+1)] = Cumulative probability
n = number of samples = 5

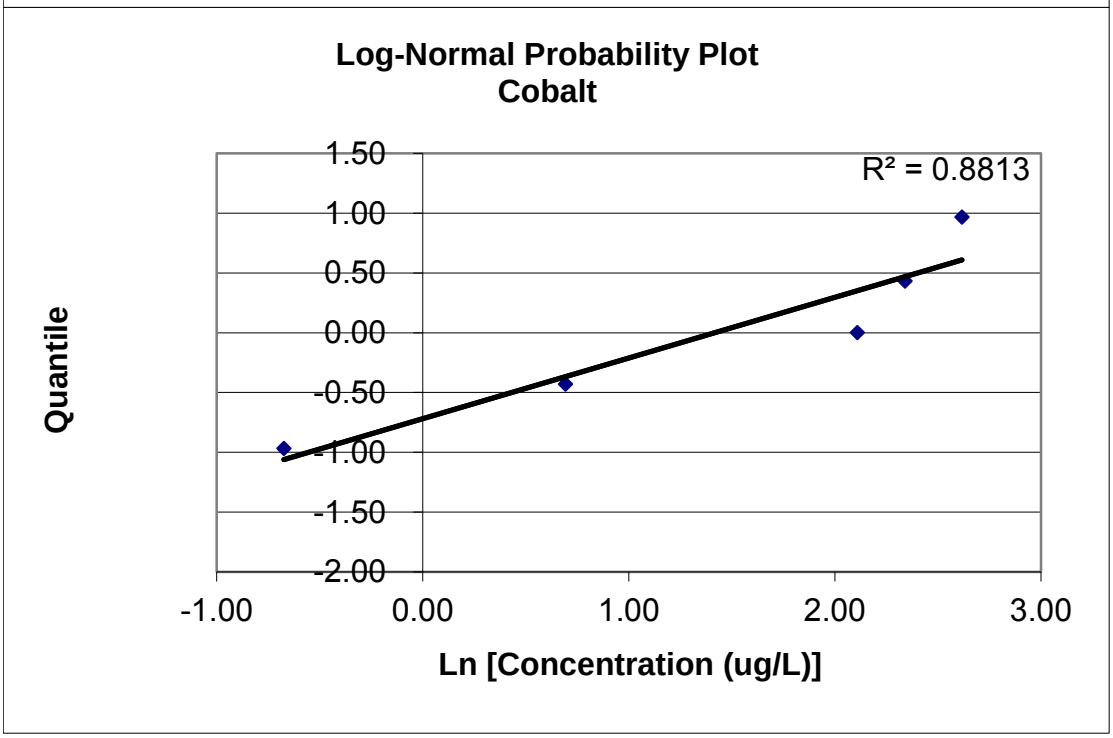
X(i)	LN[X(i)]	i	Rank	[Rank/(n+1)]	Quantiles
0.51	-0.67	1	1	0.167	-0.97
2.00	0.69	2	2	0.333	-0.43
8.25	2.11	3	3	0.500	0.00
10.40	2.34	4	4	0.667	0.43
13.70	2.62	5	5	0.833	0.97

Plot analysis indicates that the data more closely follow a log-normal distribution.

JEI Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Probability Plots to determine the distribution of **Vanadium**





JEI Project: **East Carolina Regional Landfill**
Project No: **894.1401.12**
Task No: **02**
Date: **25-Feb-14**

Determination of reported background value as an outlier

Analyte: **Vanadium**

Background Data

Sample No.	Sample Date	Location	Concentration (ug/L)
1	30-Apr-08	GW-17	13.7
2	14-Jul-08	GW-17	2.0
3	03-Oct-08	GW-17	ND
4	19-Jan-09	GW-17	ND
5	20-Jul-09	GW-17	10.4
6	25-Jan-10	GW-17	0.5
7	06-Jul-10	GW-17	ND
8	04-Jan-11	GW-17	8.3
		Mean =	7.0
		STD =	5.6

Note: All concentrations are in ug/L.

Using the data listed above, form the statisitc Tn:

Tn = (Xn - mean) / STD

where: Xn = largest observed sample value
mean = mean of the background values
STD = standard deviation of the background values

For Xn = 13.7
mean = 7.0
STD = 5.6

Tn = 1.203

From Table 8 included in the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance, the critical value for the given sample group is

Number of samples = 8
Tc = 2.032

Since Tc>Tn, the sample result is not considered to be an outlier

JOYCE Projec **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Aitchison's Adjustment for **Vanadium**

Background Values (positive detects only)

Sample No.	Sample Date	Location	Concentration (µg/l)
1	30-Apr-08	GW-17	13.70
2	14-Jul-08	GW-17	2.00
3	3-Oct-08	GW-17	ND
4	19-Jan-09	GW-17	ND
5	20-Jul-09	GW-17	10.40
6	25-Jan-10	GW-17	0.51
7	6-Jul-10	GW-17	ND
8	4-Jan-11	GW-17	8.25

Mean of detected values = 6.97
Standard Deviation of detected values = 5.59

The adjusted mean can be found using

$$M(a) = (1-d/n) \times M$$

where:	d =	number non-detected values	=	2
	n =	total number samples	=	8
	M =	mean detected values	=	6.97
		M(a)	**=**	**5.23**

The adjusted standard deviation squared may be found using

$$STD(a) = [(n-(d+1))/(n-1)]\ S + d/n((n-d)/(n-1))MM$$

where:	n =	total number samples	=	8
	d =	number non-detected values	=	2
	S =	std deviation of detected values squared	=	31.28
	MM =	mean of detected values squared	=	48.61
		STD(a)	=	32.76

and the adjusted standard deviation is then

S(a) = SQRT(STD(a)) = 5.72

Joyce Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Parametric Tolerance Interval for Aitchison's adjusted data

Analyte: **Vanadium**

Background Data

Sample No.	Sample Date	Location	Concentration (µg/l)	Quantitation Limit (µg/l)
1	30-Apr-08	GW-17	13.70	10
2	14-Jul-08	GW-17	2.00	10
3	3-Oct-08	GW-17	ND	10
4	19-Jan-09	GW-17	ND	10
5	20-Jul-09	GW-17	10.40	10
6	25-Jan-10	GW-17	0.51	10
7	6-Jul-10	GW-17	ND	11
8	4-Jan-11	GW-17	8.25	12

Note: All sample concentrations are micrograms per liter

The background mean and standard deviation were modified using Aitchison's Adjustment.
The adjusted mean and standard deviation are as follows:

The adjusted mean and standard deviation are

adjusted mean = 5.23
adjusted standard deviation = 5.72

Using the background data, the upper Tolerance Limit can be determined using

Upper Tolerance Limit = (Mean Concentration) + K x (Standard Deviation Samples)

where: K = factor for constructing one sided normal tolerance limit taken from table 4-2, page 87, Statistical Methods for Groundwater Monitoring, Gibbons, 1994
n = number of background samples

For: K = 3.188
n = 8

UTL = 23.48 µg/L

Joyce Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Analyte: **Cobalt**

Sample No.	Sample Date	Location	Concentration (µg/L)		QL	Sorted Concentration (µg/L)	
1	28-Oct-98	GW-2	ND			6.52	12.60
2	07-Apr-99	GW-2	ND			8.59	12.50
3	08-Dec-99	GW-2	10			9.08	12.00
4	27-Apr-00	GW-2	ND			9.50	11.90
5	18-Oct-00	GW-2	ND			9.53	11.40
6	19-Apr-01	GW-2	ND			9.65	11.30
7	24-Dec-01	GW-2	ND			9.72	10.80
8	23-Apr-02	GW-2	ND			9.76	10.40
9	23-Oct-02	GW-2	ND			10.00	10.30
10	01-Apr-03	GW-2	10			10.00	10.10
11	28-Oct-03	GW-2	ND			10.00	10.00
12	27-Apr-04	GW-2	ND			10.00	10.00
13	26-Oct-04	GW-2	ND			10.10	10.00
14	15-Mar-05	GW-2	10			10.30	10.00
15	12-Jul-05	GW-2	ND			10.40	9.76
16	19-Jan-06	GW-2	11.9			10.80	9.72
17	11-Jul-06	GW-2	12.5			11.30	9.65
18	17-Jan-07	GW-2	10.3			11.40	9.53
19	09-Jul-07	GW-2	10.0			11.90	9.50
20	14-Jan-08	GW-2	11.3			12.00	9.08
21	14-Jul-08	GW-2	10.1			12.50	8.59
22	19-Jan-09	GW-2	12.0			12.60	6.52
23	20-Jul-09	GW-2	11.4				
24	25-Jan-10	GW-2	12.6				
25	06-Jul-10	GW-2	8.59	J			
26	04-Jan-11	GW-2	9.65	J			
27	05-Jul-11	GW-2	10.4				
28	09-Jan-12	GW-2	9.51	J			
29	09-Jul-12	GW-2	9.76	J			
30	28-Jan-13	GW-2	9.53	J			
31	17-Jul-13	GW-2	10.8				
32	28-Jan-14	GW-2	9.72	J			
33	24-Jul-14	GW-2	9.08	J			
34	28-Jan-15	GW-2	6.52	J			

Number of Data: 34
Number of Truncated Data: 12
Percentage of Truncated Data: 35%

Upper Tolerance Limit 17.7 µg/L

All concentrations in micrograms per liter (µg/L).
B = Blank qualified data not used in statistical calculations.
J = Estimated concentration below quantification limit.
ND = Not detected above the detection limit (truncated).

JEI Project: **East Carolina Regional Landfill**
Project No: **894.1501.12**
Task No: **02**
Date: **28-Jan-15**

Shapiro Wilk Test Statistic (W) for normality of total **Cobalt**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	6.52	12.6	6.08	0.4590	2.7907
2	8.59	12.5	3.91	0.3156	1.2340
3	9.08	12.0	2.92	0.2571	0.7507
4	9.50	11.9	2.40	0.2131	0.5114
5	9.53	11.4	1.87	0.1746	0.3265
6	9.65	11.3	1.65	0.1443	0.2381
7	9.72	10.8	1.08	0.1150	0.1242
8	9.76	10.4	0.64	0.0878	0.0562
9	10.00	10.3	0.30	0.0618	0.0185
10	10.00	10.1	0.10	0.0368	0.0037
11	10.00	10.0	0.00	0.0122	0.0000
12	10.00	10.0	0.00		
13	10.10	10.0	-0.10		
14	10.30	10.0	-0.30		
15	10.40	9.8	-0.64		
16	10.80	9.7	-1.08		
17	11.30	9.7	-1.65		
18	11.40	9.5	-1.87		
19	11.90	9.5	-2.40		
20	12.00	9.1	-2.92		
21	12.50	8.6	-3.91		
22	12.60	6.5	-6.08		

The test statistic W can be found using:

W = SQR[B/(SD x SQRT(n-1))]

where:
B = summation of (X(n-i+1)-X(i))A(n-i+1) = 6.05
SD = standard deviation of the data group = 1.37
n = number of samples = 22

W = 0.930

Compare this value to the critical value in Table A-2 of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.911
and the calculated W = 0.930

Therefore the data set is Normal

JOYCE Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Probability Plots to determine the distribution of **Cobalt**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
LN[X(i)] = Natural Log Value of sample concentrations arranged from smallest to largest
[i/(n+1)] = Cumulative probability
n = number of samples = 22

X(i)	LN[X(i)]	i	Rank	[Rank/(n+1)]	Quantiles
6.52	1.87	1	1	0.043	-1.71
8.59	2.15	2	2	0.087	-1.36
9.08	2.21	3	3	0.130	-1.12
9.50	2.25	4	4	0.174	-0.94
9.53	2.25	5	5	0.217	-0.78
9.65	2.27	6	6	0.261	-0.64
9.72	2.27	7	7	0.304	-0.51
9.76	2.28	8	8	0.348	-0.39
10.00	2.30	9	9	0.391	-0.28
10.00	2.30	10	10	0.435	-0.16
10.00	2.30	11	11	0.478	-0.05
10.00	2.30	12	12	0.522	0.05
10.10	2.31	13	13	0.565	0.16
10.30	2.33	14	14	0.609	0.28
10.40	2.34	15	15	0.652	0.39
10.80	2.38	16	16	0.696	0.51
11.30	2.42	17	17	0.739	0.64
11.40	2.43	18	18	0.783	0.78
11.90	2.48	19	19	0.826	0.94
12.00	2.48	20	20	0.870	1.12
12.50	2.53	21	21	0.913	1.36
12.60	2.53	22	22	0.957	1.71

Plot analysis indicates that the data more closely follow a log-normal distribution.

JEI Project: **East Carolina Regional Landfill**
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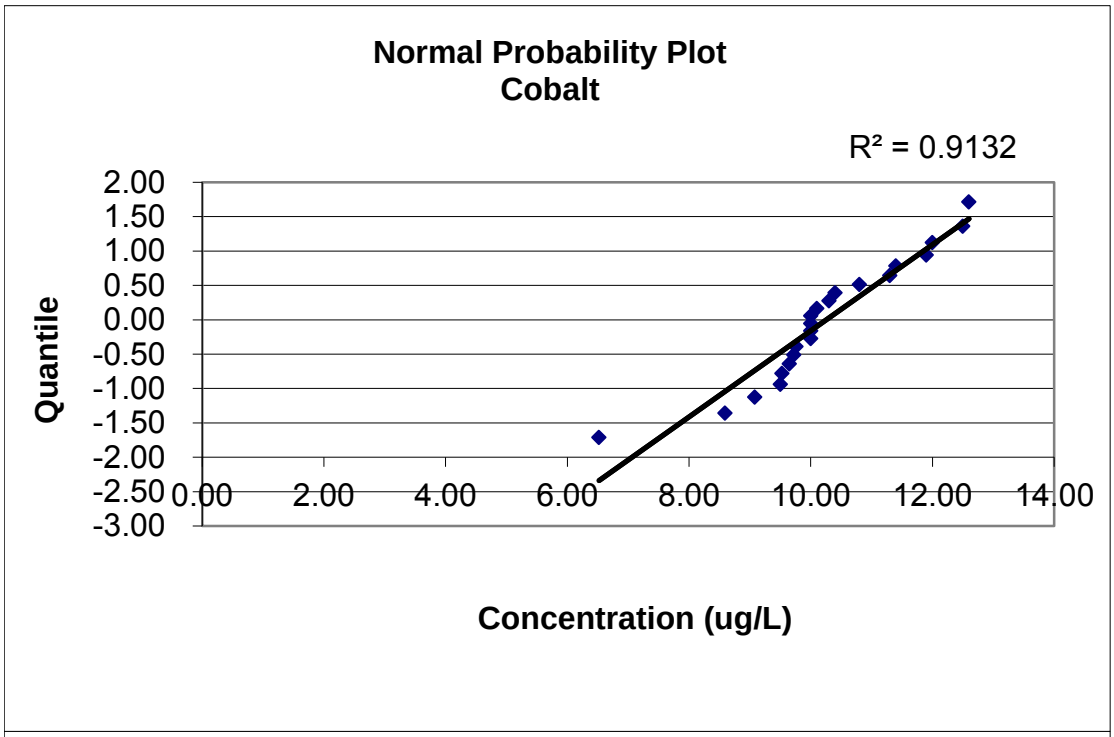
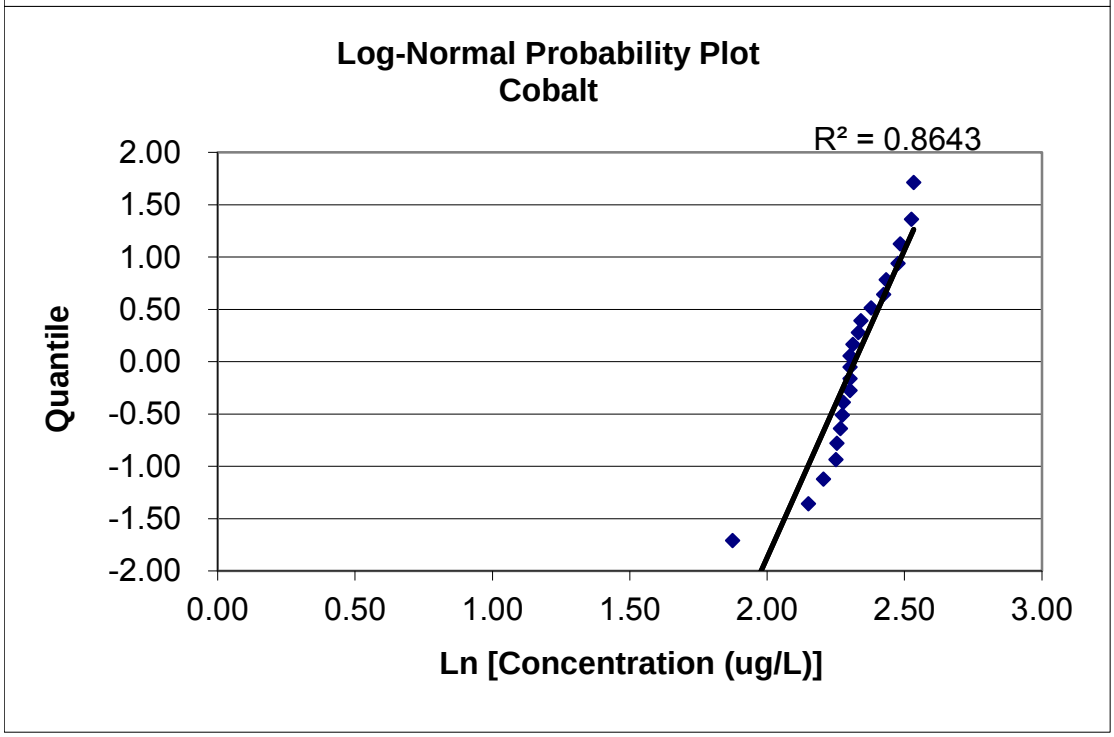
Probability Plots to determine the distribution of **Cobalt**





JEI Project: **East Carolina Regional Landfill**
Project No: **894.1501.12**
Task No: **02**
Date: **28-Jan-15**

Determination of reported background value as an outlier

Analyte: **Cobalt**

Background Data

Sample No.	Sample Date	Location	Concentration (ug/L)	
1	28-Oct-98	GW-2	ND	
2	07-Apr-99	GW-2	ND	
3	08-Dec-99	GW-2	10.0	
4	27-Apr-00	GW-2	ND	
5	18-Oct-00	GW-2	ND	
6	19-Apr-01	GW-2	ND	
7	24-Dec-01	GW-2	ND	
8	23-Apr-02	GW-2	ND	
9	23-Oct-02	GW-2	ND	
10	01-Apr-03	GW-2	10.0	J
11	28-Oct-03	GW-2	ND	J
12	27-Apr-04	GW-2	ND	
13	26-Oct-04	GW-2	ND	
14	15-Mar-05	GW-2	10.0	
15	12-Jul-05	GW-2	ND	
16	19-Jan-06	GW-2	11.9	
17	11-Jul-06	GW-2	12.5	
18	17-Jan-07	GW-2	10.3	
19	09-Jul-07	GW-2	10.0	
20	14-Jan-08	GW-2	11.3	
21	14-Jul-08	GW-2	10.1	
22	19-Jan-09	GW-2	12.0	
23	20-Jul-09	GW-2	11.4	
24	25-Jan-10	GW-2	12.6	
25	06-Jul-10	GW-2	8.6	J
26	04-Jan-11	GW-2	9.7	J
27	05-Jul-11	GW-2	10.4	
28	09-Jan-12	GW-2	9.5	J
29	09-Jul-12	GW-2	9.76	J
30	28-Jan-13	GW-2	9.53	J
31	17-Jul-13	GW-2	10.80	
32	28-Jan-14	GW-2	9.72	J
33	24-Jul-14	GW-2	9.08	J
34	28-Jan-15	GW-2	6.52	J
		Mean =	10.3	
		STD =	1.4	

Note: All concentrations are in ug/L.

Using the data listed above, form the statisitc Tn:

Tn = (Xn - mean) / STD

where: Xn = largest observed sample value
mean = mean of the background values
STD = standard deviation of the background values

For Xn = 12.6
mean = 10.3
STD = 1.4

Tn = 1.711

From Table 8 included in the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance, the critical value for the given sample group is

Number of samples = 34
Tc = 2.779

Since Tc>Tn, the sample result is not considered to be an outlier

JOYCE Projec **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Aitchison's Adjustment for **Cobalt**

Background Values (positive detects only)

Sample No.	Sample Date	Location	Concentration (µg/l)
1	28-Oct-98	GW-2	ND
2	7-Apr-99	GW-2	ND
3	8-Dec-99	GW-2	10.00
4	27-Apr-00	GW-2	ND
5	18-Oct-00	GW-2	ND
6	19-Apr-01	GW-2	ND
7	24-Dec-01	GW-2	ND
8	23-Apr-02	GW-2	ND
9	23-Oct-02	GW-2	ND
10	1-Apr-03	GW-2	10.00
11	28-Oct-03	GW-2	ND
12	27-Apr-04	GW-2	ND
13	26-Oct-04	GW-2	ND
14	15-Mar-05	GW-2	10.00
15	12-Jul-05	GW-2	ND
16	19-Jan-06	GW-2	11.90
17	11-Jul-06	GW-2	12.50
18	17-Jan-07	GW-2	10.30
19	9-Jul-07	GW-2	10.00
20	14-Jan-08	GW-2	11.30
21	14-Jul-08	GW-2	10.10
22	19-Jan-09	GW-2	12.00
23	20-Jul-09	GW-2	11.40
24	25-Jan-10	GW-2	12.60
25	6-Jul-10	GW-2	8.59
26	4-Jan-11	GW-2	9.65
27	5-Jul-11	GW-2	10.40
28	9-Jan-12	GW-2	9.51
29	9-Jul-12	GW-2	9.76
30	28-Jan-13	GW-2	9.53
31	17-Jul-13	GW-2	10.80
32	28-Jan-14	GW-2	9.72
33	24-Jul-14	GW-2	9.08
34	28-Jan-15	GW-2	6.52

Mean of detected values = 10.26
Standard Deviation of detected values = 1.37

The adjusted mean can be found using

$$M(a) = (1-d/n) \times M$$

where:	d =	number non-detected values	=	12
	n =	total number samples	=	34
	M =	mean detected values	=	10.26
		M(a)	**=**	**6.64**

The adjusted standard deviation squared may be found using

$$STD(a) = [(n-(d+1))/(n-1)]\ S + d/n((n-d)/(n-1))MM$$

where:	n =	total number samples	=	34
	d =	number non-detected values	=	12
	S =	std deviation of detected values squared	=	1.88
	MM =	mean of detected values squared	=	105.21
		STD(a)	=	25.95

and the adjusted standard deviation is then

S(a) = SQRT(STD(a)) = 5.09

Joyce Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
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Date: 28-Jan-15

Parametric Tolerance Interval for Aitchison's adjusted data

Analyte: **Cobalt**

Background Data

Sample No.	Sample Date	Location	Concentration (µg/l)	Quantitation Limit (µg/l)
1	28-Oct-98	GW-2	ND	10
2	7-Apr-99	GW-2	ND	10
3	8-Dec-99	GW-2	10.00	10
4	27-Apr-00	GW-2	ND	10
5	18-Oct-00	GW-2	ND	10
6	19-Apr-01	GW-2	ND	10
7	24-Dec-01	GW-2	ND	10
8	23-Apr-02	GW-2	ND	10
9	23-Oct-02	GW-2	ND	10
10	1-Apr-03	GW-2	10.00	10
11	28-Oct-03	GW-2	ND	10
12	27-Apr-04	GW-2	ND	10
13	26-Oct-04	GW-2	ND	10
14	15-Mar-05	GW-2	10.00	10
15	12-Jul-05	GW-2	ND	10
16	19-Jan-06	GW-2	11.90	10
17	11-Jul-06	GW-2	12.50	10
18	17-Jan-07	GW-2	10.30	10
19	9-Jul-07	GW-2	10.00	10
20	14-Jan-08	GW-2	11.30	10
21	14-Jul-08	GW-2	10.10	10
22	19-Jan-09	GW-2	12.00	10
23	20-Jul-09	GW-2	11.40	10
24	25-Jan-10	GW-2	12.60	10
25	6-Jul-10	GW-2	8.59	10
26	4-Jan-11	GW-2	9.65	10
27	5-Jul-11	GW-2	10.40	10
28	9-Jan-12	GW-2	9.51	10
29	9-Jul-12	GW-2	9.76	10
30	28-Jan-13	GW-2	9.53	10
31	17-Jul-13	GW-2	10.80	10
32	28-Jan-14	GW-2	9.72	10
33	24-Jul-14	GW-2	9.08	10

Note: All sample concentrations are micrograms per liter

The background mean and standard deviation were modified using Aitchison's Adjustment.
The adjusted mean and standard deviation are as follows:

The adjusted mean and standard deviation are

adjusted mean = 6.64
adjusted standard deviation = 5.09

Using the background data, the upper Tolerance Limit can be determined using

Upper Tolerance Limit = (Mean Concentration) + K x (Standard Deviation Samples)

where: K = factor for constructing one sided normal tolerance limit taken from table 4-2, page 87, Statistical Methods for Groundwater Monitoring, Gibbons, 1994
n = number of background samples

For: K = 2.177
n = 34

UTL = 17.73 µg/L

Joyce Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
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Analyte: **Cobalt**

Sample No.	Sample Date	Location	Concentration (µg/L)	QL	Sorted Concentration (µg/L)	
1	28-Oct-98	GW-7	30		20	50
2	07-Apr-99	GW-7	20		20	50
3	08-Dec-99	GW-7	20		21.5	40
4	27-Apr-00	GW-7	30		23.7	40
5	18-Oct-00	GW-7	30		26.6	40
6	19-Apr-01	GW-7	30		29.8	37.5
7	24-Dec-01	GW-7	30		30	37.3
8	23-Apr-02	GW-7	30		30	36
9	23-Oct-02	GW-7	50		30	35.4
10	01-Apr-03	GW-7	40		30	35.1
11	28-Oct-03	GW-7	50		30	34.9
12	27-Apr-04	GW-7	30		30	31.6
13	26-Oct-04	GW-7	40		30	30
14	15-Mar-05	GW-7	36		30.0	30
15	12-Jul-05	GW-7	40		31.6	30
16	19-Jan-06	GW-7	30.0		34.9	30
17	11-Jul-06	GW-7	31.6		35.1	30
18	17-Jan-07	GW-7	34.9		35.4	30
19	09-Jul-07	GW-7	37.5		36	30
20	14-Jan-08	GW-7	35.1		37.3	30.0
21	14-Jul-08	GW-7	37.3		37.5	29.8
22	19-Jan-09	GW-7	23.7		40	26.6
23	20-Jul-09	GW-7	35.4		40	23.7
24	25-Jan-10	GW-7	21.5		40	21.5
25	06-Jul-10	GW-7	26.6		50	20
26	04-Jan-11	GW-7	29.8		50	20

Number of Data: 26
Number of Truncated Data: 0
Percentage of Truncated Data: 0%

Upper Tolerance Limit 49.7 µg/L

All concentrations in micrograms per liter (µg/L).
B = Blank qualified data not used in statistical calculations.
J = Estimated concentration below quantification limit.
ND = Not detected above the detection limit (truncated).

JEI Project: **East Carolina Regional Landfill**
Project No: **894.1501.12**
Task No: **02**
Date: **28-Jan-15**

Shapiro Wilk Test Statistic (W) for normality of total **Cobalt**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	20.00	50.0	30.00	0.4407	13.2210
2	20.00	50.0	30.00	0.3043	9.1290
3	21.50	40.0	18.50	0.2533	4.6861
4	23.70	40.0	16.30	0.2151	3.5061
5	26.60	40.0	13.40	0.1836	2.4602
6	29.80	37.5	7.70	0.1563	1.2035
7	30.00	37.3	7.30	0.1316	0.9607
8	30.00	36.0	6.00	0.1089	0.6534
9	30.00	35.4	5.40	0.0876	0.4730
10	30.00	35.1	5.10	0.0672	0.3427
11	30.00	34.9	4.90	0.0476	0.2332
12	30.00	31.6	1.60	0.0284	0.0454
13	30.00	30.0	0.00	0.0094	0.0000
14	30.00	30.0	0.00		
15	31.60	30.0	-1.60		
16	34.90	30.0	-4.90		
17	35.10	30.0	-5.10		
18	35.40	30.0	-5.40		
19	36.00	30.0	-6.00		
20	37.30	30.0	-7.30		
21	37.50	29.8	-7.70		
22	40.00	26.6	-13.40		
23	40.00	23.7	-16.30		
24	40.00	21.5	-18.50		
25	50.00	20.0	-30.00		
26	50.00	20.0	-30.00		

The test statistic W can be found using:

W = SQR[B/(SD x SQRT(n-1))]

where:

B =	summation of (X(n-i+1)-X(i))A(n-i+1)	=	36.91
SD =	standard deviation of the data group	=	7.66
n =	number of samples	=	26

W = 0.930

Compare this value to the critical value in Table A-2 of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.920
and the calculated W = 0.930

Therefore the data set is Normal

JOYCE Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Probability Plots to determine the distribution of **Cobalt**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
LN[X(i)] = Natural Log Value of sample concentrations arranged from smallest to largest
[i/(n+1)] = Cumulative probability
n = number of samples = 26

X(i)	LN[X(i)]	i	Rank	[Rank/(n+1)]	Quantiles
20.00	3.00	1	1	0.037	-1.79
20.00	3.00	2	2	0.074	-1.45
21.50	3.07	3	3	0.111	-1.22
23.70	3.17	4	4	0.148	-1.04
26.60	3.28	5	5	0.185	-0.90
29.80	3.39	6	6	0.222	-0.76
30.00	3.40	7	7	0.259	-0.65
30.00	3.40	8	8	0.296	-0.54
30.00	3.40	9	9	0.333	-0.43
30.00	3.40	10	10	0.370	-0.33
30.00	3.40	11	11	0.407	-0.23
30.00	3.40	12	12	0.444	-0.14
30.00	3.40	13	13	0.481	-0.05
30.00	3.40	14	14	0.519	0.05
31.60	3.45	15	15	0.556	0.14
34.90	3.55	16	16	0.593	0.23
35.10	3.56	17	17	0.630	0.33
35.40	3.57	18	18	0.667	0.43
36.00	3.58	19	19	0.704	0.54
37.30	3.62	20	20	0.741	0.65
37.50	3.62	21	21	0.778	0.76
40.00	3.69	22	22	0.815	0.90
40.00	3.69	23	23	0.852	1.04
40.00	3.69	24	24	0.889	1.22
50.00	3.91	25	25	0.926	1.45
50.00	3.91	26	26	0.963	1.79

Plot analysis indicates that the data more closely follow a log-normal distribution.

JEI Project: **East Carolina Regional Landfill**
Project No: 894.1501.12
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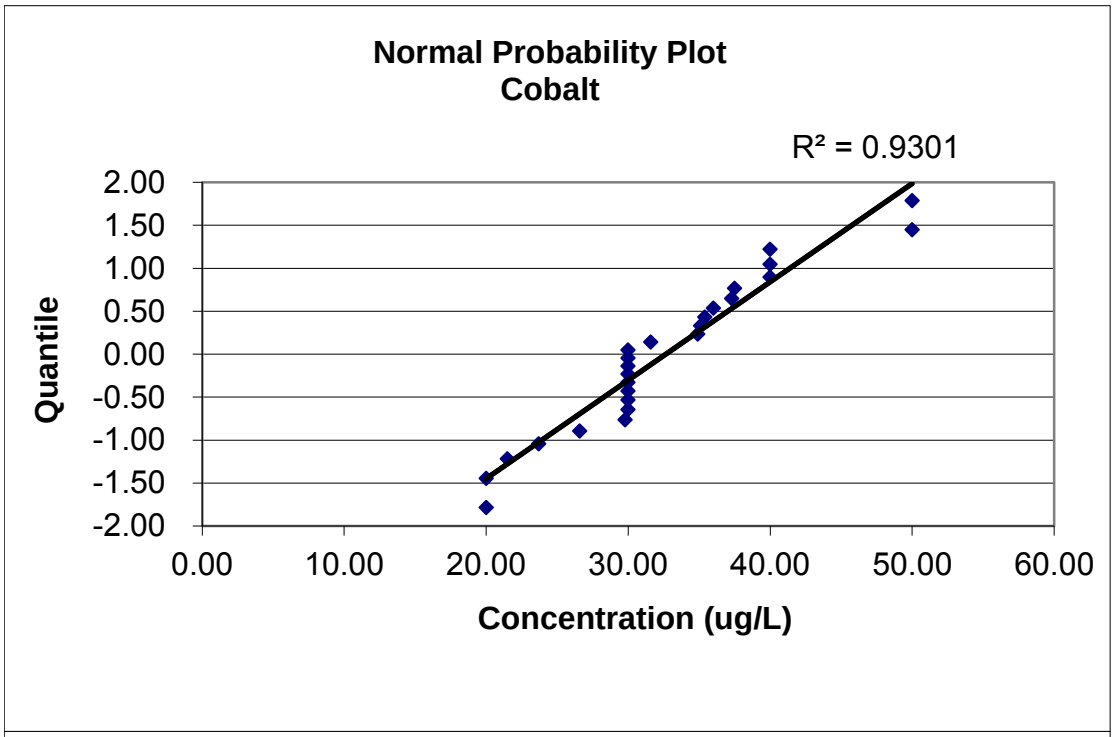
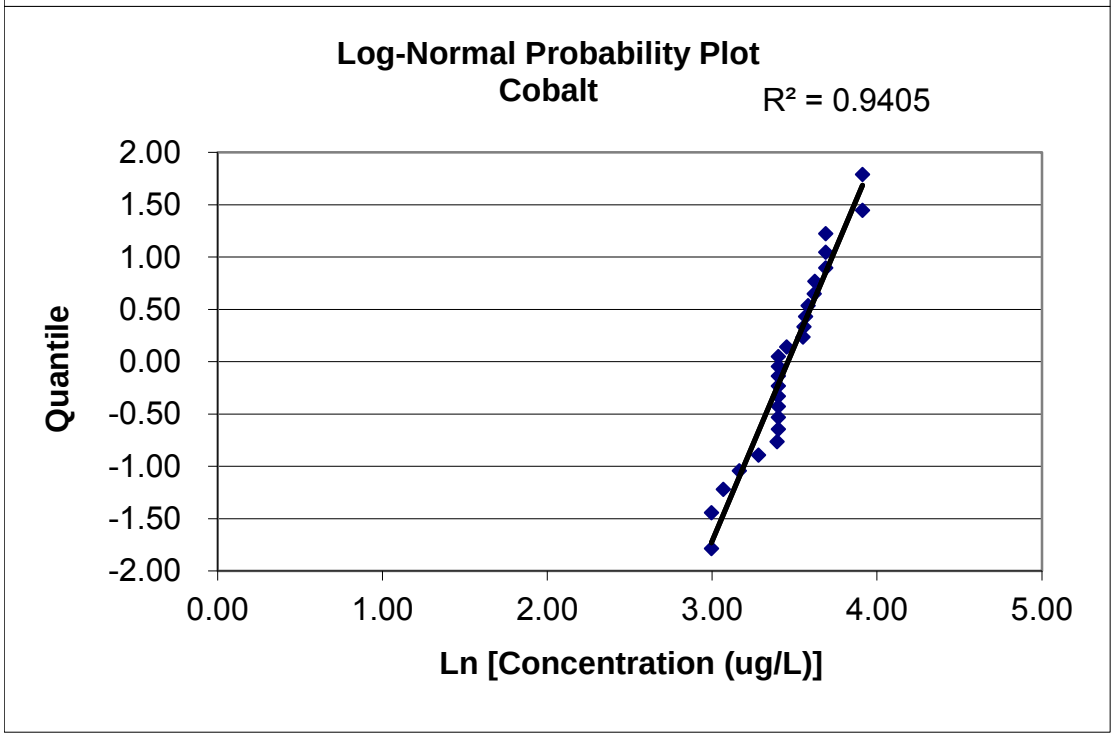
Probability Plots to determine the distribution of **Cobalt**





JEI Project: **East Carolina Regional Landfill**
Project No: **894.1501.12**
Task No: **02**
Date: **28-Jan-15**

Determination of reported background value as an outlier

Analyte: **Cobalt**

Background Data

Sample No.	Sample Date	Location	Concentration (ug/L)	
1	28-Oct-98	GW-7	30.0	
2	07-Apr-99	GW-7	20.0	
3	08-Dec-99	GW-7	20.0	
4	27-Apr-00	GW-7	30.0	
5	18-Oct-00	GW-7	30.0	
6	19-Apr-01	GW-7	30.0	
7	24-Dec-01	GW-7	30.0	
8	23-Apr-02	GW-7	30.0	
9	23-Oct-02	GW-7	50.0	
10	01-Apr-03	GW-7	40.0	J
11	28-Oct-03	GW-7	50.0	J
12	27-Apr-04	GW-7	30.0	
13	26-Oct-04	GW-7	40.0	
14	15-Mar-05	GW-7	36.0	
15	12-Jul-05	GW-7	40.0	
16	19-Jan-06	GW-7	30.0	
17	11-Jul-06	GW-7	31.6	
18	17-Jan-07	GW-7	34.9	
19	09-Jul-07	GW-7	37.5	
20	14-Jan-08	GW-7	35.1	
21	14-Jul-08	GW-7	37.3	
22	19-Jan-09	GW-7	23.7	
23	20-Jul-09	GW-7	35.4	
24	25-Jan-10	GW-7	21.5	
25	06-Jul-10	GW-7	26.6	J
26	04-Jan-11	GW-7	29.8	J
0	00-Jan-00	0	0.0	
#REF!	#REF!	#REF!	#REF!	##
#REF!	#REF!	#REF!	#REF!	##
#REF!	#REF!	#REF!	#REF!	##
#REF!	#REF!	#REF!	#REF!	
#REF!	#REF!	#REF!	#REF!	##
#REF!	#REF!	#REF!	#REF!	##
#REF!	#REF!	#REF!	#REF!	##
		Mean =	#REF!	
		STD =	#REF!	

Note: All concentrations are in ug/L.

Using the data listed above, form the statisitc Tn:

Tn = (Xn - mean) / STD

where: Xn = largest observed sample value
mean = mean of the background values
STD = standard deviation of the background values

For Xn = #REF!
mean = #REF!
STD = #REF!

Tn = #REF!

From Table 8 included in the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance, the critical value for the given sample group is

Number of samples = 34
Tc = 2.779

#REF!

JOYCE Project **East Carolina Regional Landfill**
Project No: 894.1501.12
Task No: 02
Date: 28-Jan-15

Determination of reported background value as an outlier

Analyte: **Cobalt**

Background Data

Sample No.	Sample Date	Location	ln(Concentration) (µg/L)
1	28-Oct-98	GW-7	3.40
2	07-Apr-99	GW-7	3.00
3	08-Dec-99	GW-7	3.00
4	27-Apr-00	GW-7	3.40
5	18-Oct-00	GW-7	3.40
6	19-Apr-01	GW-7	3.40
7	24-Dec-01	GW-7	3.40
8	23-Apr-02	GW-7	3.40
9	23-Oct-02	GW-7	3.91
10	01-Apr-03	GW-7	3.69
11	28-Oct-03	GW-7	3.91
12	27-Apr-04	GW-7	3.40
13	26-Oct-04	GW-7	3.69
14	15-Mar-05	GW-7	3.58
15	12-Jul-05	GW-7	3.69
16	19-Jan-06	GW-7	3.40
17	11-Jul-06	GW-7	3.45
18	17-Jan-07	GW-7	3.55
19	09-Jul-07	GW-7	3.62
20	14-Jan-08	GW-7	3.56
21	14-Jul-08	GW-7	3.62
22	19-Jan-09	GW-7	3.17
23	20-Jul-09	GW-7	3.57
24	25-Jan-10	GW-7	3.07
25	06-Jul-10	GW-7	3.28
26	04-Jan-11	GW-7	3.39
		Mean =	3.460
		STD =	0.237

Note: All concentrations are in ug/L.

Using the data listed above, form the statisitc Tn:

Tn = (Xn - mean) / STD

where: Xn = largest observed sample value
mean = mean of the background values
STD = standard deviation of the background values

For Xn = 3.912
mean = 3.460
STD = 0.237

Tn = 1.912

From Table 8 included in the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance, the critical value for the given sample group is

Number of samples = 26
Tc = 2.681

Since Tc>Tn, the sample result is not considered to be an outlier.

JEI Project: East Carolina Regional Landfill
Project No: 894.1501.12
Date: 28-Jan-15

Parametric Tolerance Interval for normally distributed data

Analyte: Cobalt

Background Data

Sample No.	Sample Date	Location	Concentration Concentration
1	10/28/98	GW-7	30.00
2	04/07/99	GW-7	20.00
3	12/08/99	GW-7	20.00
4	04/27/00	GW-7	30.00
5	10/18/00	GW-7	30.00
6	04/19/01	GW-7	30.00
7	12/24/01	GW-7	30.00
8	04/23/02	GW-7	30.00
9	10/23/02	GW-7	50.00
10	04/01/03	GW-7	40.00
11	10/28/03	GW-7	50.00
12	04/27/04	GW-7	30.00
13	10/26/04	GW-7	40.00
14	03/15/05	GW-7	36.00
15	07/12/05	GW-7	40.00
16	01/19/06	GW-7	30.00
17	07/11/06	GW-7	31.60
18	01/17/07	GW-7	34.90
19	07/09/07	GW-7	37.50
20	01/14/08	GW-7	35.10
21	07/14/08	GW-7	37.30
22	01/19/09	GW-7	23.70
23	07/20/09	GW-7	35.40
24	01/25/10	GW-7	21.50
25	07/06/10	GW-7	26.60
26	01/04/11	GW-7	29.80

Using the background data, the upper Tolerance Limit can be determined using:

Upper Tolerance Limit = (Mean Concentration) + K x (Standard Deviation Samples)

where: Mean Conc = mean concentration background samples
K = factor for constructing one sided normal tolerance limit taken from table 4-2, page 87, Statistical Methods for Groundwater Monitoring, Gibbons, 1994
n = number of background samples
STDS = Standard Deviation Samples

For: n = 26
K = 2.220
Mean Conc = 32.67
STDS = 7.66

UTL = 49.67

Joyce Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Analyte: **Lead**

Sample No.	Sample Date	Location	Concentration (µg/L)	QL	Sorted Concentration (µg/L)	
1	30-Apr-08	GW-17	4.3	10	2.06	4.3
2	14-Jul-08	GW-17	2.1	10	2.1	2.2
3	03-Oct-08	GW-17	2.2	10	2.2	2.1
4	19-Jan-09	GW-17	ND	10	4.3	2.06
5	25-Jan-10	GW-17	2.06	10		
6	06-Jul-10	GW-17	ND	10		
7	04-Jan-11	GW-17	ND	10		

Number of Data: 7
Number of Truncated Data: 3
Percentage of Truncated Data: 43%

NPPL: 4.3 µg/L

All concentrations in micrograms per liter (µg/L).
B = Blank qualified data not used in statistical calculations.
J = Estimated concentration below quantification limit.
ND = Not detected above the detection limit (truncated).

JEI Project: **East Carolina Regional Landfill**
Project No: **894.1401.12**
Task No: **02**
Date: **25-Feb-14**

Shapiro Wilk Test Statistic (W) for normality of total **Lead**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	2.06	4.3	2.24	0.6872	1.5393
2	2.10	2.2	0.10	0.1677	0.0168
3	2.20	2.1	-0.10		
4	4.30	2.1	-2.24		

The test statistic W can be found using:

W = SQR[B/(SD x SQRT(n-1))]

where:

B =	summation of (X(n-i+1)-X(i))A(n-i+1)	=	1.56
SD =	standard deviation of the data group	=	1.09
n =	number of samples	=	4

W = 0.677

Compare this value to the critical value in Table A-2 of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.748
and the calculated W = 0.677

Therefore the data is Non Normal

JEI Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Shapiro Wilk Test Statistic (W) for log normality of **Lead**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	0.723	1.459	0.736	0.6872	0.506
2	0.742	0.788	0.047	0.1677	0.008
3	0.788	0.742	-0.047		
4	1.459	0.723	-0.736		

The test statistic W can be found using:

W = SQR((B/SD x SQRT(n-1))

where:

B =	summation of (X(n-i+1)-X(i))A(n-i+1)	=	0.514
SD =	standard deviation of the data group	=	0.355
n =	number of samples	=	4
		W =	0.698

Compare this value to the critical value in Table A-2 of Statistical Analysisof Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.748
and the calculated W = 0.698

Therefore the data is Non-Normal.

JOYCE Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Probability Plots to determine the distribution of **Lead**

Complete the following table where

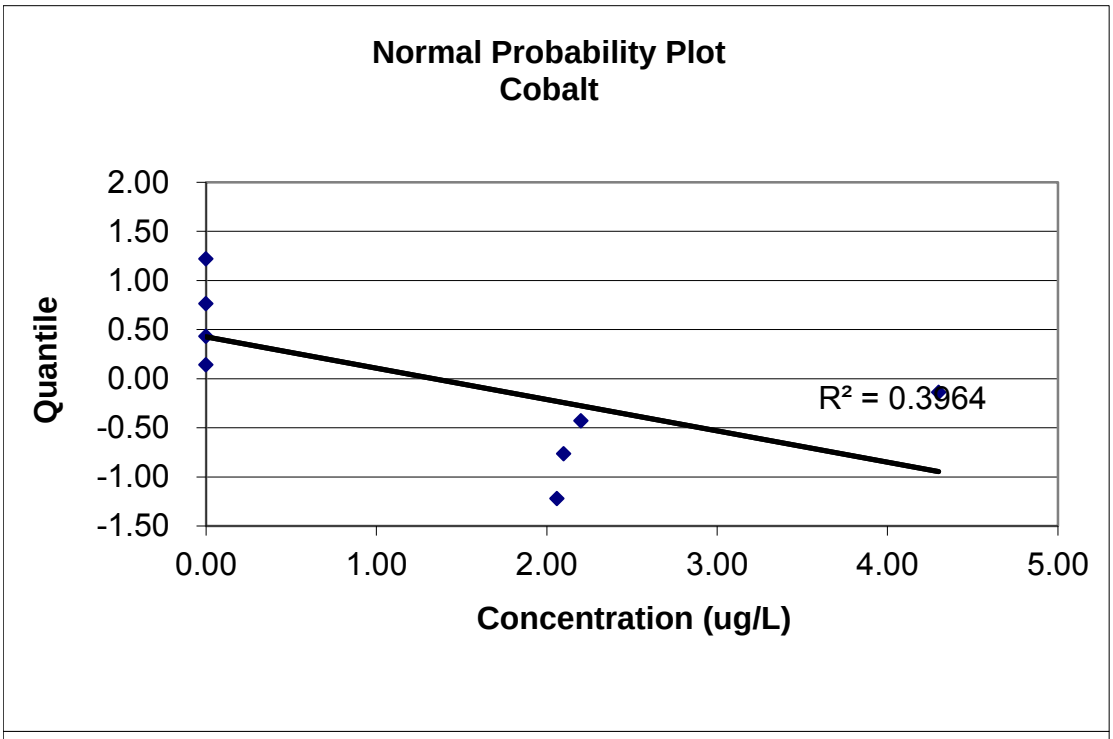
i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
LN[X(i)] = Natural Log Value of sample concentrations arranged from smallest to largest
[i/(n+1)] = Cumulative probability
n = number of samples = 8

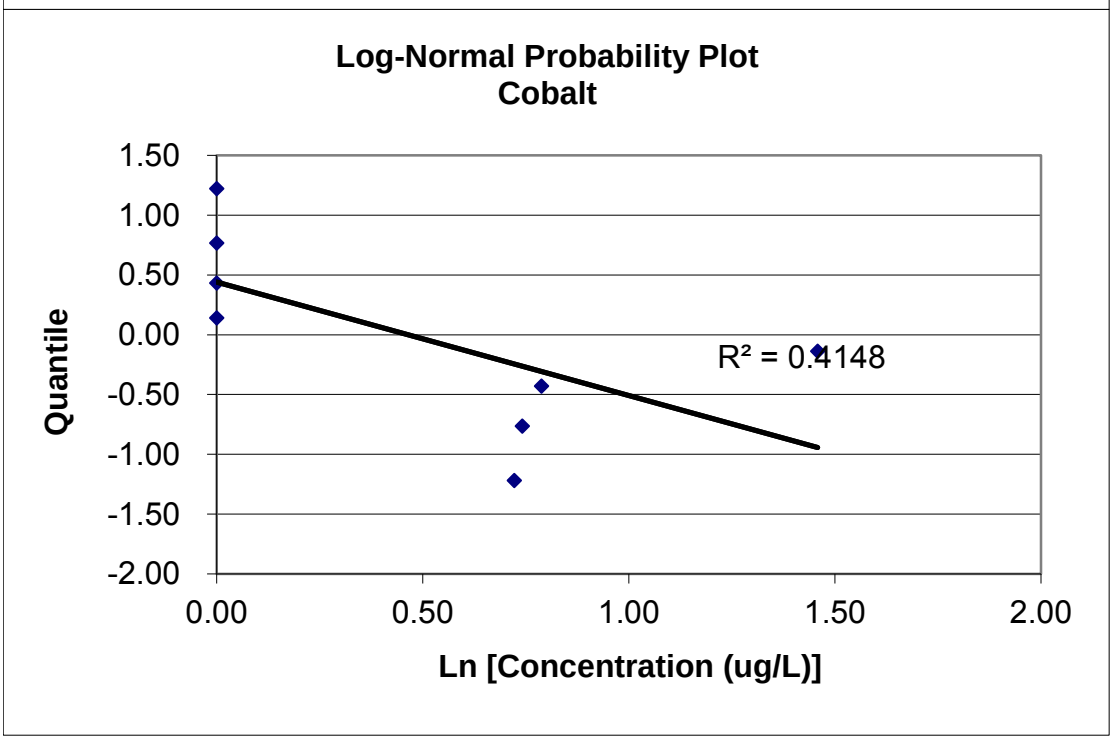
X(i)	LN[X(i)]	i	Rank	[Rank/(n+1)]	Quantiles
2.06	0.72	1	1	0.111	-1.22
2.10	0.74	2	2	0.222	-0.76
2.20	0.79	3	3	0.333	-0.43
4.30	1.46	4	4	0.444	-0.14
0.00	#NUM!	5	5	0.556	0.14
0.00	#NUM!	6	6	0.667	0.43
0.00	#NUM!	7	7	0.778	0.76
#REF!	#REF!	8	8	0.889	1.22

Plot analysis indicates that the data more closely follow a log-normal distribution.

JEI Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Probability Plots to determine the distribution of **Lead**





JOYCE Project **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Determination of reported background value as an outlier

Analyte: **Lead**

Background Data

Sample No.	Sample Date	Location	ln(Concentration) (µg/L)
1	30-Apr-08	GW-17	4.30
2	14-Jul-08	GW-17	2.10
3	03-Oct-08	GW-17	2.20
4	19-Jan-09	GW-17	ND
5	25-Jan-10	GW-17	2.06
6	06-Jul-10	GW-17	ND

Mean = 2.665
STD = 1.092

Note: All concentrations are in ug/L.

Using the data listed above, form the statisitc Tn:

Tn = (Xn - mean) / STD

where: Xn = largest observed sample value
mean = mean of the background values
STD = standard deviation of the background values

For Xn = 4.300
mean = 2.665
STD = 1.092

Tn = 1.498

From Table 8 included in the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance, the critical value for the given sample group is

Number of samples = 6
Tc = 1.822

Since Tc>Tn, the sample result is not considered to be an outlier.

JOYCE Projec **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Aitchison's Adjustment for **Lead**

Background Values (positive detects only)

Sample No.	Sample Date	Location	Concentration (µg/l)	ln(conc)
1	30-Apr-08	GW-17	4.30	1.459
2	14-Jul-08	GW-17	2.10	0.742
3	3-Oct-08	GW-17	2.20	0.788
4	19-Jan-09	GW-17	ND	#NUM!
5	25-Jan-10	GW-17	2.06	0.723
6	6-Jul-10	GW-17	ND	

Mean of detected values = #NUM!
Standard Deviation of detected values = #NUM!

The adjusted mean can be found using

$$M(a) = (1-d/n) \times M$$

where:	d =	number non-detected values	=	1
	n =	total number samples	=	6
	M =	mean detected values	=	#NUM!
		M(a)	**=**	**#NUM!**

The adjusted standard deviation squared may be found using

$$STD(a) = [(n-(d+1))/(n-1)]\ S + d/n((n-d)/(n-1))MM$$

where:	n =	total number samples	=	6
	d =	number non-detected values	=	1
	S =	std deviation of detected values squared	=	#NUM!
	MM =	mean of detected values squared	=	#NUM!
		STD(a)	=	#NUM!

and the adjusted standard deviation is then

S(a) = SQRT(STD(a)) = #NUM!

Joyce Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Parametric Tolerance Interval for Aitchison's adjusted data

Analyte: **Lead**

Background Data

Sample No.	Sample Date	Location	Concentration (µg/l)	Quantitation Limit (µg/l)	ln(Concentration) (µg/l)
1	30-Apr-08	GW-17	4.30	10	1.459
2	14-Jul-08	GW-17	2.10	10	0.742
3	3-Oct-08	GW-17	2.20	10	0.788
4	19-Jan-09	GW-17	ND	10	#NUM!
5	25-Jan-10	GW-17	2.06	10	0.723
6	6-Jul-10	GW-17	ND	10	

Note: All sample concentrations are micrograms per liter

The background mean and standard deviation were modified using Aitchison's Adjustment.
The adjusted mean and standard deviation are as follows:

The ln(adjusted mean) and ln(standard deviation) are

ln(adjusted mean) = #NUM!
ln(adjusted standard deviation) = #NUM!

Using the background data, the upper Tolerance Limit can be determined using

Upper Tolerance Limit = (Mean Concentration) + K x (Standard Deviation Samples)

where: K = factor for constructing one sided normal tolerance limit taken from table 4-2, page 87, Statistical Methods for Groundwater Monitoring, Gibbons, 1994
n = number of background samples

For: K = 3.707
n = 6

UTL = #NUM! µg/L

Joyce Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Analyte: **Vanadium**

Sample No.	Sample Date	Location	Concentration (µg/L)	QL	Sorted Concentration (µg/L)	
1	30-Apr-08	GW-17	13.7	25	0.51	13.7
2	14-Jul-08	GW-17	2	25	2	10.4
3	03-Oct-08	GW-17	ND	25	8.25	8.25
4	19-Jan-09	GW-17	ND	25	10.4	2
5	20-Jul-09	GW-17	10.4	25	13.7	0.51
6	25-Jan-10	GW-17	0.51	25		
7	06-Jul-10	GW-17	ND	25		
8	04-Jan-11	GW-17	8.25	25		

Number of Data: 8
Number of Truncated Data: 3
Percentage of Truncated Data: 38%

NPPL: 8.8 µg/L

All concentrations in micrograms per liter (µg/L).
B = Blank qualified data not used in statistical calculations.
J = Estimated concentration below quantification limit.
ND = Not detected above the detection limit (truncated).

JEI Project: **East Carolina Regional Landfill**
Project No: **894.1401.12**
Task No: **02**
Date: **25-Feb-14**

Shapiro Wilk Test Statistic (W) for normality of total **Vanadium**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	0.51	13.7	13.19	0.6646	8.7661
2	2.00	10.4	8.40	0.2413	2.0269
3	8.25	8.3	0.00	0.0000	0.0000
4	10.40	2.0	-8.40		
5	13.70	0.5	-13.19		

The test statistic W can be found using:

W = SQR[B/(SD x SQRT(n-1))]

where:

B =	summation of (X(n-i+1)-X(i))A(n-i+1)	=	10.79
SD =	standard deviation of the data group	=	5.59
n =	number of samples	=	5

W = 0.931

Compare this value to the critical value in Table A-2 of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.762
and the calculated W = 0.931

Therefore the data set is Normal

JEI Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Shapiro Wilk Test Statistic (W) for log normality of **Vanadium**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	-0.673	2.617	3.291	0.6646	2.187
2	0.693	2.342	1.649	0.2413	0.398
3	2.110	2.110	0.000	0.0000	0.000
4	2.342	0.693	-1.649		
5	2.617	-0.673	-3.291		

The test statistic W can be found using:

W = SQR((B/SD x SQRT(n-1))

where:

B =	summation of (X(n-i+1)-X(i))A(n-i+1)	=	2.585
SD =	standard deviation of the data group	=	1.385
n =	number of samples	=	5

W = 0.871

Compare this value to the critical value in Table A-2 of Statistical Analysisof Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.762
and the calculated W = 0.871

Therefore the data set is Log-Normal.

JOYCE Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Probability Plots to determine the distribution of **Vanadium**

Complete the following table where

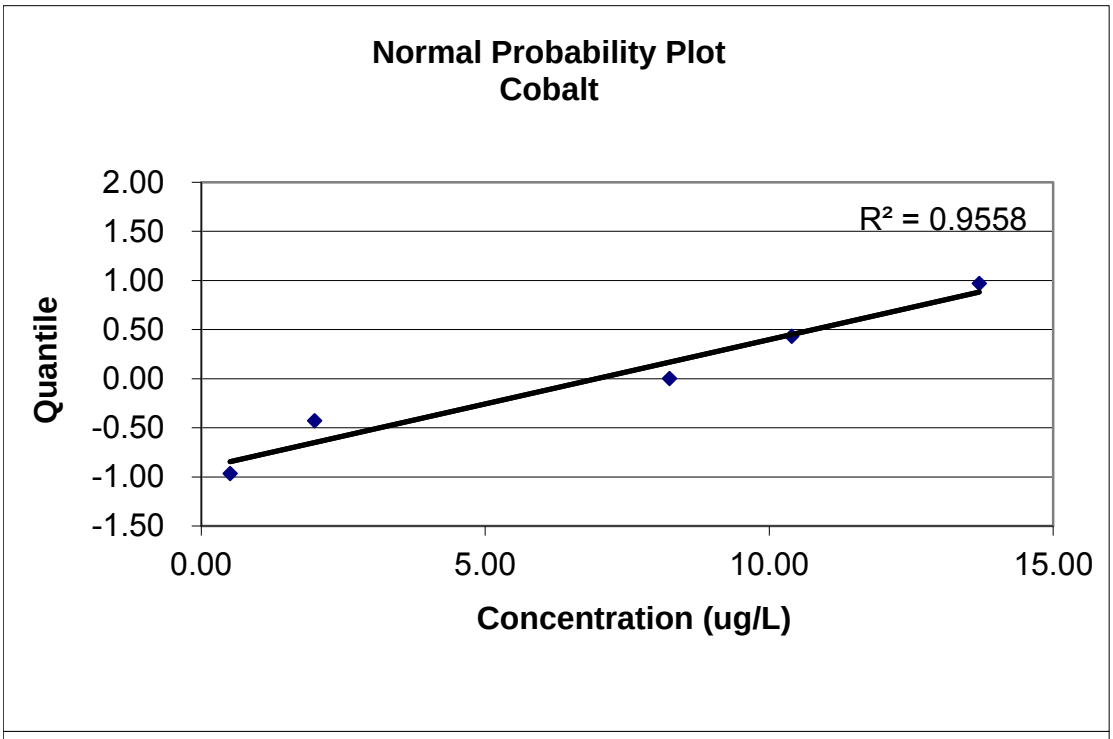
i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
LN[X(i)] = Natural Log Value of sample concentrations arranged from smallest to largest
[i/(n+1)] = Cumulative probability
n = number of samples = 5

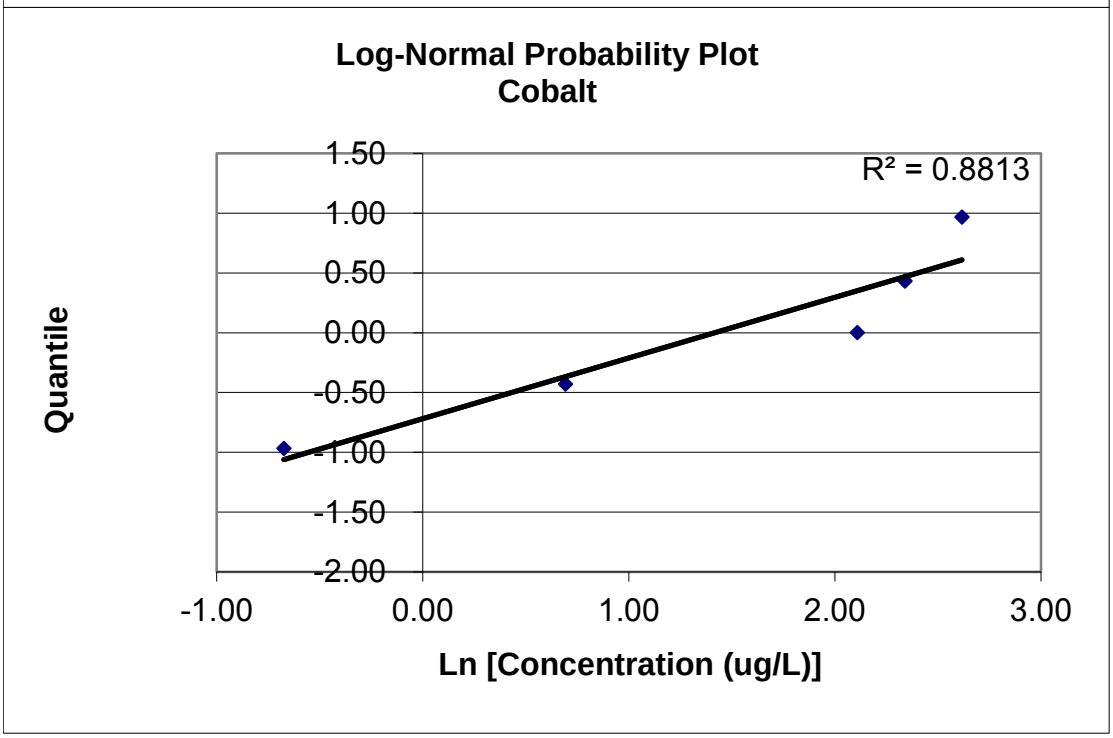
X(i)	LN[X(i)]	i	Rank	[Rank/(n+1)]	Quantiles
0.51	-0.67	1	1	0.167	-0.97
2.00	0.69	2	2	0.333	-0.43
8.25	2.11	3	3	0.500	0.00
10.40	2.34	4	4	0.667	0.43
13.70	2.62	5	5	0.833	0.97

Plot analysis indicates that the data more closely follow a log-normal distribution.

JEI Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Probability Plots to determine the distribution of **Vanadium**





JEI Project: **East Carolina Regional Landfill**
Project No: **894.1401.12**
Task No: **02**
Date: **25-Feb-14**

Determination of reported background value as an outlier

Analyte: **Vanadium**

Background Data

Sample No.	Sample Date	Location	Concentration (ug/L)
1	30-Apr-08	GW-17	13.7
2	14-Jul-08	GW-17	2.0
3	03-Oct-08	GW-17	ND
4	19-Jan-09	GW-17	ND
5	20-Jul-09	GW-17	10.4
6	25-Jan-10	GW-17	0.5
7	06-Jul-10	GW-17	ND
8	04-Jan-11	GW-17	8.3
		Mean =	7.0
		STD =	5.6

Note: All concentrations are in ug/L.

Using the data listed above, form the statisitc Tn:

Tn = (Xn - mean) / STD

where: Xn = largest observed sample value
mean = mean of the background values
STD = standard deviation of the background values

For Xn = 13.7
mean = 7.0
STD = 5.6

Tn = 1.203

From Table 8 included in the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance, the critical value for the given sample group is

Number of samples = 8
Tc = 2.032

Since Tc>Tn, the sample result is not considered to be an outlier

JOYCE Projec **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Aitchison's Adjustment for **Vanadium**

Background Values (positive detects only)

Sample No.	Sample Date	Location	Concentration (µg/l)
1	30-Apr-08	GW-17	13.70
2	14-Jul-08	GW-17	2.00
3	3-Oct-08	GW-17	ND
4	19-Jan-09	GW-17	ND
5	20-Jul-09	GW-17	10.40
6	25-Jan-10	GW-17	0.51
7	6-Jul-10	GW-17	ND
8	4-Jan-11	GW-17	8.25

Mean of detected values = 6.97
Standard Deviation of detected values = 5.59

The adjusted mean can be found using

$$M(a) = (1-d/n) \times M$$

where:	d =	number non-detected values	=	2
	n =	total number samples	=	8
	M =	mean detected values	=	6.97
		M(a)	**=**	**5.23**

The adjusted standard deviation squared may be found using

$$STD(a) = [(n-(d+1))/(n-1)]\ S + d/n((n-d)/(n-1))MM$$

where:	n =	total number samples	=	8
	d =	number non-detected values	=	2
	S =	std deviation of detected values squared	=	31.28
	MM =	mean of detected values squared	=	48.61
		STD(a)	=	32.76

and the adjusted standard deviation is then

S(a) = SQRT(STD(a)) = 5.72

Joyce Project: **East Carolina Regional Landfill**
Project No: 894.1401.12
Task No: 02
Date: 25-Feb-14

Parametric Tolerance Interval for Aitchison's adjusted data

Analyte: **Vanadium**

Background Data

Sample No.	Sample Date	Location	Concentration (µg/l)	Quantitation Limit (µg/l)
1	30-Apr-08	GW-17	13.70	10
2	14-Jul-08	GW-17	2.00	10
3	3-Oct-08	GW-17	ND	10
4	19-Jan-09	GW-17	ND	10
5	20-Jul-09	GW-17	10.40	10
6	25-Jan-10	GW-17	0.51	10
7	6-Jul-10	GW-17	ND	11
8	4-Jan-11	GW-17	8.25	12

Note: All sample concentrations are micrograms per liter

The background mean and standard deviation were modified using Aitchison's Adjustment.
The adjusted mean and standard deviation are as follows:

The adjusted mean and standard deviation are

adjusted mean = 5.23
adjusted standard deviation = 5.72

Using the background data, the upper Tolerance Limit can be determined using

Upper Tolerance Limit = (Mean Concentration) + K x (Standard Deviation Samples)

where: K = factor for constructing one sided normal tolerance limit taken from table 4-2, page 87, Statistical Methods for Groundwater Monitoring, Gibbons, 1994
n = number of background samples

For: K = 3.188
n = 8

UTL = 23.48 µg/L