ATLANTIC COAST CONSULTING, INC.

7 East Congress Street
Suite 801
Savannah, GA 31401
(912) 236-3471

www.atlcc.net

May 9, 2018

Mr. Chad Hall
Georgia Department of Natural Resources
Environmental Protection Division (EPD)
Solid Waste Management Program
4244 International Parkway, Suite 104
Atlanta, Georgia 30354

RE: Chesser Island Road MSW Landfill
Permit No. 024-006D(SL)
Annual Coal Combustion Residual (CCR) Management Plan and Dust Control Report

Dear Mr. Hall:

On behalf of Waste Management of North Florida, Atlantic Coast Consulting, Inc. (ACC) is submitting the enclosed annual update to the facility's CCR management and fugitive dust control plan. The current CCR management plan is authorized under a permit issued by Georgia EPD on May 19, 2017. As stated in the approval letter issued by EPD, this facility is allowed to accept CCR for a period of one (1) year or until May 21, 2018. The approval letter further states that the facility must submit an updated CCR Management Plan to EPD no later than March 1, 2018 if it plans to continue receiving CCR material. However, EPD decided to delay the plan submission deadline until it could conduct visits to sites accepting CCR material and determine the appropriate requirements for the CCR Management Plan updates. The deadline for submitting the annual reports was delayed on two occasions. These delays are documented in an email from you to Shawn Carroll of Waste Management on February 16, 2018 and from Rima Naji to myself on May 8, 2018. A copy of the emails are provided in the appendices of the attached Annual CCR Management Plan and Dust Control Report.

If you have any questions or need further information please call me at (912) 236-3471.

Sincerely,

ATLANTIC COAST CONSULTING, INC.

Marc Liverman, P.E.
Project Engineer

cc: Shawn Carroll, Elizabeth Foeller, Tim Bassett (WM)
Chris Klamke (ACC)

# WASTE MANAGEMENT OF NORTH FLORIDA, INC.

**HWY 121@ CHESSER ISLAND ROAD | FOLKSTON, GEORGIA 31537**

# CHESSER ISLAND ROAD MSW LANDFILL
# COAL COMBUSTION RESIDUALS (CCR) MANAGEMENT PLAN ANNUAL UPDATE

**PERMIT #: 024-006D(SL)**

# ANNUAL CCR MANAGEMENT PLAN AND DUST CONTROL REPORT

ATLANTIC COAST CONSULTING, INC.

**MAY 2018**

# Table of Contents


| *CCR Management Annual Report* | *Page* |
|---|---|
| SUMMARY | 2 |
| FACILITY LOCATION AND DESCRIPTION | 2 |
| CCR MANAGEMENT ACTIVITIES | 2 |
| CCR and Non-CCR Waste Volumes | 2 |
| CCR Source | 3 |
| CCR Characterization and Compatibility | 3 |
| CCR Placement, Compaction and Cover | 4 |
| Record Keeping | 4 |
| Fugitive Dust Control | 4 |
| Leachate Collection and Removal System | 5 |
| Stormwater Management System | 5 |
| Environmental Monitoring | 5 |
| Emergencies | 5 |
| Documentation of Notification of Local Governments | 5 |
| CONCLUSION | 5 |

*Appendices*

CCR Compatibility and Characterization Data

Report Submission Deadline Extensions

This CCR management and fugitive dust report was prepared in accordance with OCGA Solid Waste Management Rule 391-3-4-.07(5) and the Annual Coal Combustion Residuals (CCR) Management Plan and Dust Control Report Guidance Document dated May 2018.

## SUMMARY:

The Chesser Island Municipal Solid Waste (MSW) Landfill is comprised of an active Municipal Solid Waste (MSW) Landfill (LF) unit that is separated in two phases and an inactive MSWLF unit that is also contains two phases. The inactive areas are known as Phase 1 and Phase 2 while the active portions are deemed Phase 3 and Phase 4. The facility's current CCR Management Plan was established through a minor modification approved by Georgia's Environmental Protection Division (EPD) on May 19, 2017.

## FACILITY LOCATION AND DESCRIPTION:

The existing landfill is located west of the intersection of Hwy 23 and Willie Dixon Road south of Folkston, GA near the Georgia-Florida border. The facility is comprised of two active MSWLF phases known as Phase 3 and 4 with Phases 1 and 2 having been closed in 2005. Phase 4 was expanded to the west of Phase 3 in 2010 to form a contiguous 243 acre MSW landfill on the southern portion of the property.

## CCR MANAGEMENT ACTIVITIES:

### CCR and Non-CCR Waste Volumes:

Chesser Island currently receives CCR and non-CCR waste materials. The non-CCR waste materials may contain waste streams from municipal, industrial, commercial, and other special waste stream sources. All waste streams accepted at this facility are in accordance with OCGA Solid Waste Management Rule 391-3-4.

The facility is currently permitted to receive CCR under two separate scenarios. The first sets a near or short term CCR to non-CCR waste ratio (by weight) of 1 to 3.3 that is set to expire in April 2018. The second scenario governs the CCR limits beyond April 2018 (long term limits) and sets the CCR to non-CCR waste ratio (by weight) at 1 to 10. The short term limits translates into an estimated annual weight of 300,000 tons of CCR material with an estimated daily maximum of 1,150 tons. The long term limits equates to an estimated annual weight of 100,435 tons of CCR material with an estimated daily maximum of 385 tons.

These limits are defined in Section 1 of the current Operational Narrative shown on Sheet 26 of the Design and Operation (D&O) Plans. The CCR to non-CCR waste ratio limits were established by verifying that the facility's design is capable of withstanding the additional loads presented by the higher density CCR material. The basis of the design provided in the May 19, 2017 CCR Management Minor Modification was an overall waste mass density of 73 lb/CF (1,971 lb/CY). This density takes into account the elevated waste mass density with the introduction of the permitted upper limit of CCR into the waste stream.

The CCR material received at this facility between May 19, 2017 and December 31, 2017 had a total recorded weight of 100,000 tons. During this same period, the facility received 807,275 tons of non-CCR waste which translates into an overall CCR to non-CCR waste ratio (by weight) of 1 to 8.08. This ratio is below the upper limits established by the short term tonnage limits defined in the Operational Narrative and the facility's design calculations. The long term limits are expected to be in line with the permitted limits as well. Therefore, the presence of CCR material will not adversely affect the active LF's global stability, base liner stability, leachate collection system capabilities or cause excessive base grade settlement.

The maximum amount of CCR received on any given day between May 19, 2017 and December 31, 2017 was 2,500 tons. This exceeds the estimated max daily weight in tons for CCR shown in Section 1 of the Operational Narrative, but this single exceedance did not cause the overall ratios to exceed those used in the design verification. Therefore, no adjustments are needed to the plan or design components related to stability, leachate collection or base grade settlement.

## CCR Source:

The only CCR material received at the facility was sourced from Southern Company (Brunswick) and the Keystone Terminal that are identified in Section 3 of the facility's Operational Narrative on Sheet 26 of the current Design and Operation Plan. It should be noted that the CCR interned at the landfill is from the same two sources whose material was used as the basis of design for the original CCR Management Permit. Additionally, its 'as received' physical condition (i.e. moisture and grain size) has remained generally consistent throughout the disposal process and no new CCR waste streams were accepted by the facility during this reporting period. Additionally, the facility does not utilize CCR material in its solidification process.

## CCR Characterization and Compatibility:

Section 3 of the Operational Narrative on Sheet 26 requires all CCR waste streams entering the facility be tested for compatibility using the Toxicity Characteristic Leaching Procedure (TCLP) 8 RCRA Metals by SW-846 Method 1311 and a Paint Filter Test by SW-845 Method 9095.

As noted above, the material source and general physical characteristics have remained consistent since the CCR Management permit's initial issue date and the customer has not notified the facility of any significant process changes. Therefore, additional testing to verify characterization and compatibility have not been required. The original laboratory results upon which the CCR Management design is based are repeated in Appendix A for reference. Please note that this laboratory analysis, although specific for Superior Landfill, represents typical analytical data found in CCR material across all of Waste Management facilities in Georgia.

## CCR Placement, Compaction and Cover

The facility is permitted to operate a working face with a maximum area of 40,000 square feet. The maximum area of the working face and its management was conducted in accordance with Section 2 of the Operational Narrative on Sheet 26.

CCR material was placed in layers or 'block filled'. As required, in Section 5 of the Operational Narrative on Sheet 26 of the Design and Operation Plan, a test pad area was established to determine placement and compaction requirements necessary to obtain a minimum compaction of 90% standard proctor. This is only required for areas in which only CCR will be placed. Due to the consistent physical nature of the CCR material and sourcing, the original test pad results have been used to guide placement and compaction efforts to date. The results of the original test pad are contained in Appendix A for reference.

It should be noted that placement of CCR material that is co-mingled with non-CCR waste does not require construction of a test pad. These co-mingled materials are required to be placed in layers not exceeding five feet and compacted as required in Section 5 of the Operational Narrative on Sheet 26 of the Design and Operation Plan. No CCR and non-CCR wastes were co-mingled during this reporting period.

No leachate outbreaks were observed in layers of waste containing non-CCR wastes.

Additionally, no CCR was co-mingled with non-CCR waste or 'block filled' in the first eight feet of waste placed on the liner's protective cover, none of the previously placed CCR material was harvested for beneficial re-use and none of the CCR material was utilized in the facility's solidification process.

## Record Keeping:

Records of all waste transported to the site along with daily logs and operational records are retained at the facility's site office building. All record keeping is in accordance with the Georgia Rules for Solid Waste Management 391-3-4-.07(3)(u).

## Fugitive Dust Control:

The operators at the facility spread and compacted CCR material as it was received. If the CCR material was not spread during operating hours on the day it was received, the operator would use the on-site water truck to maintain the CCR's moisture levels. This procedure was determined to be an efficient and effective method to avoid fugitive dust generation.

The facility did not receive any complaints related to dust between May 19, 2017 and December 31, 2017 and has remained compliant with requirements established by Air Quality Rule 391-3-1-.02(2)(n)1.

## Leachate Collection and Removal System:

The facility's leachate collection, removal and storage system is in good working order with no known issues related to the disposal of co-mingled CCR/non-CCR wastes.

## Stormwater Management System:

The working face(s) were managed to ensure that surface water contacting CCR and non-CCR waste was not discharged into the stormwater management system. This was accomplished by placing and compacting material away from the side slopes, using soil diversion berms near side slopes and by sloping the working face into the waste mass.

## Environmental Monitoring:

The environmental monitoring program for the facility was modified during development of the CCR Management Plan to include appropriate Appendix III/IV analytical parameters in accordance with United States Environmental Protection Agency recommendations and Georgia Environmental Protection Division Regulations. The monitoring network (consisting of groundwater wells, surface water, underdrain, and leachate monitoring points) and extended parameter list, based on data collected to date, remains suitable for detection of CCR related constituents. Current data does not suggest confirmed impacts at these monitoring points as a result of handling CCR material. The facility will continue implementing the CCR monitoring program and documenting results to EPD in semi-annual monitoring reports.

## Emergencies:

The facility did not experience any events or circumstances that represented an operational or environmental emergency during this reporting period.

## Documentation of Notification to Local Governments:

The operation of CCR disposal activities during this reporting period have been in compliance with the currently approved CCR management plans and design parameters. Therefore, no plan modifications or local government notifications are required at this time

## Conclusion:

The current CCR Management routines required by the facility's Design and Operation Plan has proven to be effective in governing the proper handling and placement of CCR material as required by OCGA's Solid Waste Management Rule 391-3-4-.07(5) and the Guidance Document for Coal Combustion Residuals (CCR) Management Plans dated December 22, 2016.

## CCR Compatibility and Characterization

*IN THIS APPENDIX*:

- CCR Analytical Report
- Test Pad Results

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-138279-1
Client Project/Site: Superior Landfill Waste Char.

For:
Waste Management
1809 West Highway 80
Garden City, Georgia 31408

Attn: Ms. Sarah Rafalowski

Kathryn Smith

*Authorized for release by:*
*5/18/2017 12:54:49 PM*

Kathryn Smith, Manager of Project Management
(912)354-7858
kathy.smith@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| X | Surrogate is outside control limits |

### Metals

| Qualifier | Qualifier Description |
|---|---|
| F1 | MS and/or MSD Recovery is outside acceptance limits. |

### General Chemistry

| Qualifier | Qualifier Description |
|---|---|
| HF | Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

# Sample Summary

Client: Waste Management
Project/Site: Superior Landfill Waste Char.

TestAmerica Job ID: 680-138279-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | Solid | 05/02/17 14:55 | 05/03/17 08:54 |
| 680-138279-2 | Ash-Grumman | Solid | 05/02/17 14:35 | 05/03/17 08:54 |

## Job ID: 680-138279-1

**Laboratory: TestAmerica Savannah**

**Narrative**

# CASE NARRATIVE
# Client: Waste Management
# Project: Superior Landfill Waste Char.

## Report Number: 680-138279-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

**RECEIPT**
The samples were received on 05/03/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.8 C.

**TCLP VOLATILE ORGANIC COMPOUNDS (GC-MS)**
Samples Ash-Kraft (680-138279-1) and Ash-Grumman (680-138279-2) were analyzed for TCLP volatile organic compounds (GC-MS) in accordance with EPA SW-846 Methods 1311/8260B. The samples were leached on 05/11/2017 and analyzed on 05/14/2017.

4-Bromofluorobenzene (Surr) recovered low for LCSD 680-479788/4.

Samples Ash-Kraft (680-138279-1)[20X] and Ash-Grumman (680-138279-2)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**TCLP SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)**
Samples Ash-Kraft (680-138279-1) and Ash-Grumman (680-138279-2) were analyzed for TCLP semivolatile organic compounds (GC-MS) in accordance with EPA SW846 Methods 1311 / 8270D. The samples were leached on 05/11/2017, prepared on 05/15/2017 and analyzed on 05/17/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**METALS (ICP) - TCLP**
Samples Ash-Kraft (680-138279-1) and Ash-Grumman (680-138279-2) were analyzed for Metals (ICP) - TCLP in accordance with EPA SW-846 Methods 1311/6010C. The samples were leached on 05/11/2017, and prepared and analyzed on 05/12/2017.

Barium recovered high for the MS of sample Ash-Kraft (680-138279-1) in batch 680-479888.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**MERCURY - TCLP**
Samples Ash-Kraft (680-138279-1) and Ash-Grumman (680-138279-2) were analyzed for mercury - TCLP in accordance with EPA SW-846 Methods 1311/7470A. The samples were leached on 05/11/2017, prepared on 05/12/2017 and analyzed on 05/15/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**IGNITABILITY FOR SOLIDS**
Samples Ash-Kraft (680-138279-1) and Ash-Grumman (680-138279-2) were analyzed for ignitability for solids in accordance with EPA SW-846 Method 1030. The samples were analyzed on 05/10/2017.

The following sample did not ignite: Ash-Kraft (680-138279-1) and Ash-Grumman (680-138279-2); therefore, an ignitability value could not

## Job ID: 680-138279-1 (Continued)

### Laboratory: TestAmerica Savannah (Continued)

be obtained. The result has been reported as "No Burn" (NB).

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**REACTIVE CYANIDE**

Samples Ash-Kraft (680-138279-1) and Ash-Grumman (680-138279-2) were analyzed for reactive cyanide in accordance with EPA SW-846 Method 9014. The samples were prepared on 05/08/2017 and analyzed on 05/09/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**REACTIVE SULFIDE**

Samples Ash-Kraft (680-138279-1) and Ash-Grumman (680-138279-2) were analyzed for reactive sulfide in accordance with EPA SW-846 Method 9034. The samples were prepared on 05/08/2017 and analyzed on 05/09/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**CORROSIVITY (PH)**

Samples Ash-Kraft (680-138279-1) and Ash-Grumman (680-138279-2) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9045D. The samples were analyzed on 05/11/2017.

This analysis is considered a field test and is to be performed within 15 minutes of collection. This analysis was performed in the laboratory outside the 15 minute timeframe.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**GRAIN SIZE**

Samples Ash-Kraft (680-138279-1) and Ash-Grumman (680-138279-2) were analyzed for grain size in accordance with ASTM D422. The samples were analyzed on 05/04/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## Client Sample ID: Ash-Kraft

**Date Collected: 05/02/17 14:55**
**Date Received: 05/03/17 08:54**

**Lab Sample ID: 680-138279-1**
**Matrix: Solid**

### Method: 8260B - Volatile Organic Compounds (GC/MS) - TCLP

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:15 | 20 |
| 2-Butanone (MEK) | <0.20 | | 0.20 | | mg/L | | | 05/14/17 20:15 | 20 |
| Carbon tetrachloride | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:15 | 20 |
| Chlorobenzene | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:15 | 20 |
| Chloroform | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:15 | 20 |
| 1,2-Dichloroethane | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:15 | 20 |
| 1,1-Dichloroethene | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:15 | 20 |
| Tetrachloroethene | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:15 | 20 |
| Trichloroethene | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:15 | 20 |
| Vinyl chloride | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:15 | 20 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *112* | | *80 - 120* | | *05/14/17 20:15* | *20* |
| *Dibromofluoromethane (Surr)* | *96* | | *80 - 122* | | *05/14/17 20:15* | *20* |
| *1,2-Dichloroethane-d4 (Surr)* | *86* | | *73 - 131* | | *05/14/17 20:15* | *20* |
| *Toluene-d8 (Surr)* | *102* | | *80 - 120* | | *05/14/17 20:15* | *20* |

### Method: 8270D - Semivolatile Organic Compounds (GC/MS) - TCLP

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dichlorobenzene | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 19:27 | 1 |
| 2,4-Dinitrotoluene | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 19:27 | 1 |
| Hexachlorobenzene | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 19:27 | 1 |
| Hexachlorobutadiene | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 19:27 | 1 |
| Hexachloroethane | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 19:27 | 1 |
| 2-Methylphenol | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 19:27 | 1 |
| 3 & 4 Methylphenol | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 19:27 | 1 |
| Nitrobenzene | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 19:27 | 1 |
| Pentachlorophenol | <0.25 | | 0.25 | | mg/L | | 05/15/17 16:52 | 05/17/17 19:27 | 1 |
| Pyridine | <0.25 | | 0.25 | | mg/L | | 05/15/17 16:52 | 05/17/17 19:27 | 1 |
| 2,4,5-Trichlorophenol | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 19:27 | 1 |
| 2,4,6-Trichlorophenol | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 19:27 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Fluorobiphenyl (Surr)* | *77* | | *38 - 130* | *05/15/17 16:52* | *05/17/17 19:27* | *1* |
| *2-Fluorophenol (Surr)* | *66* | | *25 - 130* | *05/15/17 16:52* | *05/17/17 19:27* | *1* |
| *Nitrobenzene-d5 (Surr)* | *85* | | *39 - 130* | *05/15/17 16:52* | *05/17/17 19:27* | *1* |
| *Phenol-d5 (Surr)* | *70* | | *25 - 130* | *05/15/17 16:52* | *05/17/17 19:27* | *1* |
| *Terphenyl-d14 (Surr)* | *83* | | *10 - 143* | *05/15/17 16:52* | *05/17/17 19:27* | *1* |
| *2,4,6-Tribromophenol (Surr)* | *101* | | *31 - 141* | *05/15/17 16:52* | *05/17/17 19:27* | *1* |

### Method: 6010C - Metals (ICP) - TCLP

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | <0.20 | | 0.20 | | mg/L | | 05/12/17 12:11 | 05/12/17 19:13 | 1 |
| Barium | <1.0 | F1 | 1.0 | | mg/L | | 05/12/17 12:11 | 05/12/17 19:13 | 1 |
| Cadmium | <0.10 | | 0.10 | | mg/L | | 05/12/17 12:11 | 05/12/17 19:13 | 1 |
| Chromium | <0.20 | | 0.20 | | mg/L | | 05/12/17 12:11 | 05/12/17 19:13 | 1 |
| Lead | <0.20 | | 0.20 | | mg/L | | 05/12/17 12:11 | 05/12/17 19:13 | 1 |
| Selenium | <0.50 | | 0.50 | | mg/L | | 05/12/17 12:11 | 05/12/17 19:13 | 1 |
| Silver | <0.10 | | 0.10 | | mg/L | | 05/12/17 12:11 | 05/12/17 19:13 | 1 |

## Client Sample ID: Ash-Kraft

**Lab Sample ID: 680-138279-1**

**Date Collected: 05/02/17 14:55**

**Matrix: Solid**

**Date Received: 05/03/17 08:54**

### Method: 7470A - Mercury (CVAA) - TCLP

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | <0.020 | | 0.020 | | mg/L | | 05/12/17 14:02 | 05/15/17 11:18 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Ignitability** | **NB** | | | | mm/sec | | | 05/10/17 08:38 | 1 |
| Cyanide, Reactive | <0.25 | | 0.25 | | mg/Kg | | 05/08/17 14:03 | 05/09/17 14:45 | 1 |
| Sulfide, Reactive | <150 | | 150 | | mg/Kg | | 05/08/17 14:03 | 05/09/17 12:02 | 1 |
| **pH** | **6.0** | **HF** | | | SU | | | 05/11/17 15:19 | 1 |

### Method: D422 - Grain Size

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Gravel** | **2.7** | | | | % | | | 05/04/17 18:54 | 1 |
| **Sieve Size 3 inch - Percent Finer** | **100.0** | | | | % Passing | | | 05/04/17 18:54 | 1 |
| **Sand** | **57.2** | | | | % | | | 05/04/17 18:54 | 1 |
| **Sieve Size 2 inch - Percent Finer** | **100.0** | | | | % Passing | | | 05/04/17 18:54 | 1 |
| **Coarse Sand** | **4.1** | | | | % | | | 05/04/17 18:54 | 1 |
| **Sieve Size 1.5 inch - Percent Finer** | **100.0** | | | | % Passing | | | 05/04/17 18:54 | 1 |
| **Medium Sand** | **17.0** | | | | % | | | 05/04/17 18:54 | 1 |
| **Sieve Size 1 inch - Percent Finer** | **100.0** | | | | % Passing | | | 05/04/17 18:54 | 1 |
| **Fine Sand** | **36.1** | | | | % | | | 05/04/17 18:54 | 1 |
| **Sieve Size 0.75 inch - Percent Finer** | **100.0** | | | | % Passing | | | 05/04/17 18:54 | 1 |
| **Fines** | **40.1** | | | | % | | | 05/04/17 18:54 | 1 |
| **Sieve Size 0.375 inch - Percent Finer** | **100.0** | | | | % Passing | | | 05/04/17 18:54 | 1 |
| **Sieve Size #4 - Percent Finer** | **97.3** | | | | % Passing | | | 05/04/17 18:54 | 1 |
| **Sieve Size #10 - Percent Finer** | **93.2** | | | | % Passing | | | 05/04/17 18:54 | 1 |
| **Sieve Size #20 - Percent Finer** | **86.0** | | | | % Passing | | | 05/04/17 18:54 | 1 |
| **Sieve Size #40 - Percent Finer** | **76.2** | | | | % Passing | | | 05/04/17 18:54 | 1 |
| **Sieve Size #60 - Percent Finer** | **66.3** | | | | % Passing | | | 05/04/17 18:54 | 1 |
| **Sieve Size #80 - Percent Finer** | **60.1** | | | | % Passing | | | 05/04/17 18:54 | 1 |
| **Sieve Size #100 - Percent Finer** | **55.4** | | | | % Passing | | | 05/04/17 18:54 | 1 |
| **Sieve Size #200 - Percent Finer** | **40.1** | | | | % Passing | | | 05/04/17 18:54 | 1 |

## Client Sample ID: Ash-Grumman

**Lab Sample ID: 680-138279-2**

**Date Collected: 05/02/17 14:35**

**Matrix: Solid**

**Date Received: 05/03/17 08:54**

### Method: 8260B - Volatile Organic Compounds (GC/MS) - TCLP

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:40 | 20 |
| 2-Butanone (MEK) | <0.20 | | 0.20 | | mg/L | | | 05/14/17 20:40 | 20 |
| Carbon tetrachloride | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:40 | 20 |
| Chlorobenzene | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:40 | 20 |
| Chloroform | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:40 | 20 |
| 1,2-Dichloroethane | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:40 | 20 |
| 1,1-Dichloroethene | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:40 | 20 |
| Tetrachloroethene | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:40 | 20 |
| Trichloroethene | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:40 | 20 |
| Vinyl chloride | <0.020 | | 0.020 | | mg/L | | | 05/14/17 20:40 | 20 |

## Client Sample ID: Ash-Grumman

**Date Collected: 05/02/17 14:35**
**Date Received: 05/03/17 08:54**

## Lab Sample ID: 680-138279-2

**Matrix: Solid**

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *114* | | *80 - 120* | | *05/14/17 20:40* | *20* |
| *Dibromofluoromethane (Surr)* | *96* | | *80 - 122* | | *05/14/17 20:40* | *20* |
| *1,2-Dichloroethane-d4 (Surr)* | *87* | | *73 - 131* | | *05/14/17 20:40* | *20* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 120* | | *05/14/17 20:40* | *20* |

### Method: 8270D - Semivolatile Organic Compounds (GC/MS) - TCLP

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| 1,4-Dichlorobenzene | <0.049 | | 0.049 | mg/L | | 05/15/17 16:52 | 05/17/17 19:51 | 1 |
| 2,4-Dinitrotoluene | <0.049 | | 0.049 | mg/L | | 05/15/17 16:52 | 05/17/17 19:51 | 1 |
| Hexachlorobenzene | <0.049 | | 0.049 | mg/L | | 05/15/17 16:52 | 05/17/17 19:51 | 1 |
| Hexachlorobutadiene | <0.049 | | 0.049 | mg/L | | 05/15/17 16:52 | 05/17/17 19:51 | 1 |
| Hexachloroethane | <0.049 | | 0.049 | mg/L | | 05/15/17 16:52 | 05/17/17 19:51 | 1 |
| 2-Methylphenol | <0.049 | | 0.049 | mg/L | | 05/15/17 16:52 | 05/17/17 19:51 | 1 |
| 3 & 4 Methylphenol | <0.049 | | 0.049 | mg/L | | 05/15/17 16:52 | 05/17/17 19:51 | 1 |
| Nitrobenzene | <0.049 | | 0.049 | mg/L | | 05/15/17 16:52 | 05/17/17 19:51 | 1 |
| Pentachlorophenol | <0.25 | | 0.25 | mg/L | | 05/15/17 16:52 | 05/17/17 19:51 | 1 |
| Pyridine | <0.25 | | 0.25 | mg/L | | 05/15/17 16:52 | 05/17/17 19:51 | 1 |
| 2,4,5-Trichlorophenol | <0.049 | | 0.049 | mg/L | | 05/15/17 16:52 | 05/17/17 19:51 | 1 |
| 2,4,6-Trichlorophenol | <0.049 | | 0.049 | mg/L | | 05/15/17 16:52 | 05/17/17 19:51 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Fluorobiphenyl (Surr)* | *68* | | *38 - 130* | *05/15/17 16:52* | *05/17/17 19:51* | *1* |
| *2-Fluorophenol (Surr)* | *57* | | *25 - 130* | *05/15/17 16:52* | *05/17/17 19:51* | *1* |
| *Nitrobenzene-d5 (Surr)* | *73* | | *39 - 130* | *05/15/17 16:52* | *05/17/17 19:51* | *1* |
| *Phenol-d5 (Surr)* | *59* | | *25 - 130* | *05/15/17 16:52* | *05/17/17 19:51* | *1* |
| *Terphenyl-d14 (Surr)* | *69* | | *10 - 143* | *05/15/17 16:52* | *05/17/17 19:51* | *1* |
| *2,4,6-Tribromophenol (Surr)* | *86* | | *31 - 141* | *05/15/17 16:52* | *05/17/17 19:51* | *1* |

### Method: 6010C - Metals (ICP) - TCLP

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Arsenic | <0.20 | | 0.20 | mg/L | | 05/12/17 12:11 | 05/12/17 19:37 | 1 |
| **Barium** | **5.7** | | 1.0 | mg/L | | 05/12/17 12:11 | 05/12/17 19:37 | 1 |
| Cadmium | <0.10 | | 0.10 | mg/L | | 05/12/17 12:11 | 05/12/17 19:37 | 1 |
| Chromium | <0.20 | | 0.20 | mg/L | | 05/12/17 12:11 | 05/12/17 19:37 | 1 |
| **Lead** | **0.37** | | 0.20 | mg/L | | 05/12/17 12:11 | 05/12/17 19:37 | 1 |
| Selenium | <0.50 | | 0.50 | mg/L | | 05/12/17 12:11 | 05/12/17 19:37 | 1 |
| Silver | <0.10 | | 0.10 | mg/L | | 05/12/17 12:11 | 05/12/17 19:37 | 1 |

### Method: 7470A - Mercury (CVAA) - TCLP

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Mercury | <0.020 | | 0.020 | mg/L | | 05/12/17 14:02 | 05/15/17 11:28 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Ignitability** | **NB** | | | mm/sec | | | 05/10/17 08:38 | 1 |
| Cyanide, Reactive | <0.25 | | 0.25 | mg/Kg | | 05/08/17 15:20 | 05/09/17 14:45 | 1 |
| Sulfide, Reactive | <150 | | 150 | mg/Kg | | 05/08/17 15:20 | 05/09/17 12:02 | 1 |
| **pH** | **8.0** | **HF** | | SU | | | 05/11/17 15:19 | 1 |

Client: Waste Management
Project/Site: Superior Landfill Waste Char.

TestAmerica Job ID: 680-138279-1

**Client Sample ID: Ash-Grumman**
**Date Collected: 05/02/17 14:35**
**Date Received: 05/03/17 08:54**

**Lab Sample ID: 680-138279-2**
**Matrix: Solid**

**Method: D422 - Grain Size**

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gravel | 0.7 | | | | % | | | 05/04/17 18:57 | 1 |
| Sieve Size 3 inch - Percent Finer | 100.0 | | | | % Passing | | | 05/04/17 18:57 | 1 |
| Sand | 57.8 | | | | % | | | 05/04/17 18:57 | 1 |
| Sieve Size 2 inch - Percent Finer | 100.0 | | | | % Passing | | | 05/04/17 18:57 | 1 |
| Coarse Sand | 1.8 | | | | % | | | 05/04/17 18:57 | 1 |
| Sieve Size 1.5 inch - Percent Finer | 100.0 | | | | % Passing | | | 05/04/17 18:57 | 1 |
| Medium Sand | 15.3 | | | | % | | | 05/04/17 18:57 | 1 |
| Sieve Size 1 inch - Percent Finer | 100.0 | | | | % Passing | | | 05/04/17 18:57 | 1 |
| Fine Sand | 40.7 | | | | % | | | 05/04/17 18:57 | 1 |
| Sieve Size 0.75 inch - Percent Finer | 100.0 | | | | % Passing | | | 05/04/17 18:57 | 1 |
| Fines | 41.5 | | | | % | | | 05/04/17 18:57 | 1 |
| Sieve Size 0.375 inch - Percent Finer | 100.0 | | | | % Passing | | | 05/04/17 18:57 | 1 |
| Sieve Size #4 - Percent Finer | 99.3 | | | | % Passing | | | 05/04/17 18:57 | 1 |
| Sieve Size #10 - Percent Finer | 97.5 | | | | % Passing | | | 05/04/17 18:57 | 1 |
| Sieve Size #20 - Percent Finer | 94.1 | | | | % Passing | | | 05/04/17 18:57 | 1 |
| Sieve Size #40 - Percent Finer | 82.2 | | | | % Passing | | | 05/04/17 18:57 | 1 |
| Sieve Size #60 - Percent Finer | 70.4 | | | | % Passing | | | 05/04/17 18:57 | 1 |
| Sieve Size #80 - Percent Finer | 63.4 | | | | % Passing | | | 05/04/17 18:57 | 1 |
| Sieve Size #100 - Percent Finer | 57.4 | | | | % Passing | | | 05/04/17 18:57 | 1 |
| Sieve Size #200 - Percent Finer | 41.5 | | | | % Passing | | | 05/04/17 18:57 | 1 |

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 680-479788/8**
**Matrix: Solid**
**Analysis Batch: 479788**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.0010 | | 0.0010 | | mg/L | | | 05/14/17 14:42 | 1 |
| 2-Butanone (MEK) | <0.010 | | 0.010 | | mg/L | | | 05/14/17 14:42 | 1 |
| Carbon tetrachloride | <0.0010 | | 0.0010 | | mg/L | | | 05/14/17 14:42 | 1 |
| Chlorobenzene | <0.0010 | | 0.0010 | | mg/L | | | 05/14/17 14:42 | 1 |
| Chloroform | <0.0010 | | 0.0010 | | mg/L | | | 05/14/17 14:42 | 1 |
| 1,2-Dichloroethane | <0.0010 | | 0.0010 | | mg/L | | | 05/14/17 14:42 | 1 |
| 1,1-Dichloroethene | <0.0010 | | 0.0010 | | mg/L | | | 05/14/17 14:42 | 1 |
| Tetrachloroethene | <0.0010 | | 0.0010 | | mg/L | | | 05/14/17 14:42 | 1 |
| Trichloroethene | <0.0010 | | 0.0010 | | mg/L | | | 05/14/17 14:42 | 1 |
| Vinyl chloride | <0.0010 | | 0.0010 | | mg/L | | | 05/14/17 14:42 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *112* | | *80 - 120* | | *05/14/17 14:42* | *1* |
| *Dibromofluoromethane (Surr)* | *96* | | *80 - 122* | | *05/14/17 14:42* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *85* | | *73 - 131* | | *05/14/17 14:42* | *1* |
| *Toluene-d8 (Surr)* | *101* | | *80 - 120* | | *05/14/17 14:42* | *1* |

**Lab Sample ID: LCS 680-479788/3**
**Matrix: Solid**
**Analysis Batch: 479788**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.0500 | 0.0486 | | mg/L | | 97 | 80 - 120 | | |
| 2-Butanone (MEK) | | | 0.250 | 0.212 | | mg/L | | 85 | 79 - 125 | | |
| Carbon tetrachloride | | | 0.0500 | 0.0475 | | mg/L | | 95 | 67 - 125 | | |
| Chlorobenzene | | | 0.0500 | 0.0492 | | mg/L | | 98 | 80 - 120 | | |
| Chloroform | | | 0.0500 | 0.0454 | | mg/L | | 91 | 80 - 120 | | |
| 1,2-Dichloroethane | | | 0.0500 | 0.0445 | | mg/L | | 89 | 72 - 128 | | |
| 1,1-Dichloroethene | | | 0.0500 | 0.0459 | | mg/L | | 92 | 80 - 120 | | |
| Tetrachloroethene | | | 0.0500 | 0.0490 | | mg/L | | 98 | 71 - 123 | | |
| Trichloroethene | | | 0.0500 | 0.0485 | | mg/L | | 97 | 80 - 120 | | |
| Vinyl chloride | | | 0.0500 | 0.0498 | | mg/L | | 100 | 80 - 129 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *82* | | *80 - 120* |
| *Dibromofluoromethane (Surr)* | *96* | | *80 - 122* |
| *1,2-Dichloroethane-d4 (Surr)* | *85* | | *73 - 131* |
| *Toluene-d8 (Surr)* | *96* | | *80 - 120* |

**Lab Sample ID: LCSD 680-479788/4**
**Matrix: Solid**
**Analysis Batch: 479788**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.0500 | 0.0479 | | mg/L | | 96 | 80 - 120 | 1 | 20 |
| 2-Butanone (MEK) | | | 0.250 | 0.210 | | mg/L | | 84 | 79 - 125 | 1 | 20 |
| Carbon tetrachloride | | | 0.0500 | 0.0480 | | mg/L | | 96 | 67 - 125 | 1 | 20 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 680-479788/4**
**Matrix: Solid**
**Analysis Batch: 479788**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chlorobenzene | | | 0.0500 | 0.0498 | | mg/L | | 100 | 80 - 120 | 1 | 20 |
| Chloroform | | | 0.0500 | 0.0446 | | mg/L | | 89 | 80 - 120 | 2 | 20 |
| 1,2-Dichloroethane | | | 0.0500 | 0.0436 | | mg/L | | 87 | 72 - 128 | 2 | 50 |
| 1,1-Dichloroethene | | | 0.0500 | 0.0441 | | mg/L | | 88 | 80 - 120 | 4 | 20 |
| Tetrachloroethene | | | 0.0500 | 0.0495 | | mg/L | | 99 | 71 - 123 | 1 | 20 |
| Trichloroethene | | | 0.0500 | 0.0479 | | mg/L | | 96 | 80 - 120 | 1 | 20 |
| Vinyl chloride | | | 0.0500 | 0.0488 | | mg/L | | 98 | 80 - 129 | 2 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *79* | *X* | *80 - 120* |
| *Dibromofluoromethane (Surr)* | *94* | | *80 - 122* |
| *1,2-Dichloroethane-d4 (Surr)* | *83* | | *73 - 131* |
| *Toluene-d8 (Surr)* | *100* | | *80 - 120* |

**Lab Sample ID: LB 680-479494/1-A**
**Matrix: Solid**
**Analysis Batch: 479788**

**Client Sample ID: Method Blank**
**Prep Type: TCLP**

| Analyte | LB Result | LB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.020 | | 0.020 | | mg/L | | | 05/14/17 16:24 | 20 |
| 2-Butanone (MEK) | <0.20 | | 0.20 | | mg/L | | | 05/14/17 16:24 | 20 |
| Carbon tetrachloride | <0.020 | | 0.020 | | mg/L | | | 05/14/17 16:24 | 20 |
| Chlorobenzene | <0.020 | | 0.020 | | mg/L | | | 05/14/17 16:24 | 20 |
| Chloroform | <0.020 | | 0.020 | | mg/L | | | 05/14/17 16:24 | 20 |
| 1,2-Dichloroethane | <0.020 | | 0.020 | | mg/L | | | 05/14/17 16:24 | 20 |
| 1,1-Dichloroethene | <0.020 | | 0.020 | | mg/L | | | 05/14/17 16:24 | 20 |
| Tetrachloroethene | <0.020 | | 0.020 | | mg/L | | | 05/14/17 16:24 | 20 |
| Trichloroethene | <0.020 | | 0.020 | | mg/L | | | 05/14/17 16:24 | 20 |
| Vinyl chloride | <0.020 | | 0.020 | | mg/L | | | 05/14/17 16:24 | 20 |

| *Surrogate* | *LB %Recovery* | *LB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *111* | | *80 - 120* | | *05/14/17 16:24* | *20* |
| *Dibromofluoromethane (Surr)* | *99* | | *80 - 122* | | *05/14/17 16:24* | *20* |
| *1,2-Dichloroethane-d4 (Surr)* | *87* | | *73 - 131* | | *05/14/17 16:24* | *20* |
| *Toluene-d8 (Surr)* | *100* | | *80 - 120* | | *05/14/17 16:24* | *20* |

**Lab Sample ID: 680-138279-2 MS**
**Matrix: Solid**
**Analysis Batch: 479788**

**Client Sample ID: Ash-Grumman**
**Prep Type: TCLP**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.020 | | 1.00 | 1.00 | | mg/L | | 100 | 80 - 120 | | |
| 2-Butanone (MEK) | <0.20 | | 5.00 | 4.32 | | mg/L | | 86 | 79 - 125 | | |
| Carbon tetrachloride | <0.020 | | 1.00 | 1.03 | | mg/L | | 103 | 67 - 125 | | |
| Chlorobenzene | <0.020 | | 1.00 | 1.03 | | mg/L | | 103 | 80 - 120 | | |
| Chloroform | <0.020 | | 1.00 | 0.952 | | mg/L | | 95 | 80 - 120 | | |
| 1,2-Dichloroethane | <0.020 | | 1.00 | 0.921 | | mg/L | | 92 | 72 - 128 | | |
| 1,1-Dichloroethene | <0.020 | | 1.00 | 0.997 | | mg/L | | 100 | 80 - 120 | | |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 680-138279-2 MS**
**Matrix: Solid**
**Analysis Batch: 479788**

**Client Sample ID: Ash-Grumman**
**Prep Type: TCLP**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Tetrachloroethene | <0.020 | | 1.00 | 1.07 | | mg/L | | 107 | 71 - 123 |
| Trichloroethene | <0.020 | | 1.00 | 1.02 | | mg/L | | 102 | 80 - 120 |
| Vinyl chloride | <0.020 | | 1.00 | 1.08 | | mg/L | | 108 | 80 - 129 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *81* | | *80 - 120* |
| *Dibromofluoromethane (Surr)* | *97* | | *80 - 122* |
| *1,2-Dichloroethane-d4 (Surr)* | *87* | | *73 - 131* |
| *Toluene-d8 (Surr)* | *101* | | *80 - 120* |

**Lab Sample ID: 680-138279-2 MSD**
**Matrix: Solid**
**Analysis Batch: 479788**

**Client Sample ID: Ash-Grumman**
**Prep Type: TCLP**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.020 | | 1.00 | 0.986 | | mg/L | | 99 | 80 - 120 | 2 | 20 |
| 2-Butanone (MEK) | <0.20 | | 5.00 | 4.36 | | mg/L | | 87 | 79 - 125 | 1 | 20 |
| Carbon tetrachloride | <0.020 | | 1.00 | 1.01 | | mg/L | | 101 | 67 - 125 | 1 | 20 |
| Chlorobenzene | <0.020 | | 1.00 | 1.01 | | mg/L | | 101 | 80 - 120 | 2 | 20 |
| Chloroform | <0.020 | | 1.00 | 0.926 | | mg/L | | 93 | 80 - 120 | 3 | 20 |
| 1,2-Dichloroethane | <0.020 | | 1.00 | 0.905 | | mg/L | | 90 | 72 - 128 | 2 | 50 |
| 1,1-Dichloroethene | <0.020 | | 1.00 | 0.944 | | mg/L | | 94 | 80 - 120 | 5 | 20 |
| Tetrachloroethene | <0.020 | | 1.00 | 1.01 | | mg/L | | 101 | 71 - 123 | 5 | 20 |
| Trichloroethene | <0.020 | | 1.00 | 0.997 | | mg/L | | 100 | 80 - 120 | 2 | 20 |
| Vinyl chloride | <0.020 | | 1.00 | 1.07 | | mg/L | | 107 | 80 - 129 | 2 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *86* | | *80 - 120* |
| *Dibromofluoromethane (Surr)* | *97* | | *80 - 122* |
| *1,2-Dichloroethane-d4 (Surr)* | *86* | | *73 - 131* |
| *Toluene-d8 (Surr)* | *97* | | *80 - 120* |

## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 680-479935/20-A**
**Matrix: Solid**
**Analysis Batch: 480308**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 479935**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dichlorobenzene | <0.010 | | 0.010 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:21 | 1 |
| 2,4-Dinitrotoluene | <0.010 | | 0.010 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:21 | 1 |
| Hexachlorobenzene | <0.010 | | 0.010 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:21 | 1 |
| Hexachlorobutadiene | <0.010 | | 0.010 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:21 | 1 |
| Hexachloroethane | <0.010 | | 0.010 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:21 | 1 |
| 2-Methylphenol | <0.010 | | 0.010 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:21 | 1 |
| 3 & 4 Methylphenol | <0.010 | | 0.010 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:21 | 1 |
| Nitrobenzene | <0.010 | | 0.010 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:21 | 1 |

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 680-479935/20-A**
**Matrix: Solid**
**Analysis Batch: 480308**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 479935**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Pentachlorophenol | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:21 | 1 |
| Pyridine | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:21 | 1 |
| 2,4,5-Trichlorophenol | <0.010 | | 0.010 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:21 | 1 |
| 2,4,6-Trichlorophenol | <0.010 | | 0.010 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:21 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Fluorobiphenyl (Surr)* | *72* | | *38 - 130* | *05/15/17 16:52* | *05/17/17 16:21* | *1* |
| *2-Fluorophenol (Surr)* | *61* | | *25 - 130* | *05/15/17 16:52* | *05/17/17 16:21* | *1* |
| *Nitrobenzene-d5 (Surr)* | *73* | | *39 - 130* | *05/15/17 16:52* | *05/17/17 16:21* | *1* |
| *Phenol-d5 (Surr)* | *70* | | *25 - 130* | *05/15/17 16:52* | *05/17/17 16:21* | *1* |
| *Terphenyl-d14 (Surr)* | *95* | | *10 - 143* | *05/15/17 16:52* | *05/17/17 16:21* | *1* |
| *2,4,6-Tribromophenol (Surr)* | *99* | | *31 - 141* | *05/15/17 16:52* | *05/17/17 16:21* | *1* |

**Lab Sample ID: LCS 680-479935/21-A**
**Matrix: Solid**
**Analysis Batch: 480308**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 479935**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dichlorobenzene | | | 0.100 | 0.0669 | | mg/L | | 67 | 31 - 130 | | |
| 2,4-Dinitrotoluene | | | 0.100 | 0.0903 | | mg/L | | 90 | 52 - 130 | | |
| Hexachlorobenzene | | | 0.100 | 0.0909 | | mg/L | | 91 | 43 - 130 | | |
| Hexachlorobutadiene | | | 0.100 | 0.0732 | | mg/L | | 73 | 27 - 130 | | |
| Hexachloroethane | | | 0.100 | 0.0678 | | mg/L | | 68 | 29 - 130 | | |
| 2-Methylphenol | | | 0.100 | 0.0807 | | mg/L | | 81 | 40 - 130 | | |
| 3 & 4 Methylphenol | | | 0.100 | 0.0776 | | mg/L | | 78 | 42 - 130 | | |
| Nitrobenzene | | | 0.100 | 0.0796 | | mg/L | | 80 | 43 - 130 | | |
| Pentachlorophenol | | | 0.200 | 0.173 | | mg/L | | 86 | 33 - 130 | | |
| Pyridine | | | 0.100 | 0.0538 | | mg/L | | 54 | 10 - 130 | | |
| 2,4,5-Trichlorophenol | | | 0.100 | 0.0928 | | mg/L | | 93 | 48 - 130 | | |
| 2,4,6-Trichlorophenol | | | 0.100 | 0.0846 | | mg/L | | 85 | 47 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *2-Fluorobiphenyl (Surr)* | *73* | | *38 - 130* |
| *2-Fluorophenol (Surr)* | *62* | | *25 - 130* |
| *Nitrobenzene-d5 (Surr)* | *75* | | *39 - 130* |
| *Phenol-d5 (Surr)* | *70* | | *25 - 130* |
| *Terphenyl-d14 (Surr)* | *95* | | *10 - 143* |
| *2,4,6-Tribromophenol (Surr)* | *95* | | *31 - 141* |

**Lab Sample ID: LB 680-479476/1-D**
**Matrix: Solid**
**Analysis Batch: 480308**

**Client Sample ID: Method Blank**
**Prep Type: TCLP**
**Prep Batch: 479935**

| Analyte | LB Result | LB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dichlorobenzene | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:44 | 1 |
| 2,4-Dinitrotoluene | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:44 | 1 |
| Hexachlorobenzene | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:44 | 1 |
| Hexachlorobutadiene | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:44 | 1 |

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LB 680-479476/1-D**
**Matrix: Solid**
**Analysis Batch: 480308**

**Client Sample ID: Method Blank**
**Prep Type: TCLP**
**Prep Batch: 479935**

| Analyte | LB Result | LB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Hexachloroethane | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:44 | 1 |
| 2-Methylphenol | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:44 | 1 |
| 3 & 4 Methylphenol | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:44 | 1 |
| Nitrobenzene | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:44 | 1 |
| Pentachlorophenol | <0.25 | | 0.25 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:44 | 1 |
| Pyridine | <0.25 | | 0.25 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:44 | 1 |
| 2,4,5-Trichlorophenol | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:44 | 1 |
| 2,4,6-Trichlorophenol | <0.050 | | 0.050 | | mg/L | | 05/15/17 16:52 | 05/17/17 16:44 | 1 |

| *Surrogate* | *LB %Recovery* | *LB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2-Fluorobiphenyl (Surr)* | *74* | | *38 - 130* | *05/15/17 16:52* | *05/17/17 16:44* | *1* |
| *2-Fluorophenol (Surr)* | *66* | | *25 - 130* | *05/15/17 16:52* | *05/17/17 16:44* | *1* |
| *Nitrobenzene-d5 (Surr)* | *80* | | *39 - 130* | *05/15/17 16:52* | *05/17/17 16:44* | *1* |
| *Phenol-d5 (Surr)* | *68* | | *25 - 130* | *05/15/17 16:52* | *05/17/17 16:44* | *1* |
| *Terphenyl-d14 (Surr)* | *93* | | *10 - 143* | *05/15/17 16:52* | *05/17/17 16:44* | *1* |
| *2,4,6-Tribromophenol (Surr)* | *93* | | *31 - 141* | *05/15/17 16:52* | *05/17/17 16:44* | *1* |

**Lab Sample ID: 680-138279-2 MS**
**Matrix: Solid**
**Analysis Batch: 480308**

**Client Sample ID: Ash-Grumman**
**Prep Type: TCLP**
**Prep Batch: 479935**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dichlorobenzene | <0.049 | | 0.498 | 0.284 | | mg/L | | 57 | 31 - 130 |
| 2,4-Dinitrotoluene | <0.049 | | 0.498 | 0.354 | | mg/L | | 71 | 52 - 130 |
| Hexachlorobenzene | <0.049 | | 0.498 | 0.369 | | mg/L | | 74 | 43 - 130 |
| Hexachlorobutadiene | <0.049 | | 0.498 | 0.314 | | mg/L | | 63 | 27 - 130 |
| Hexachloroethane | <0.049 | | 0.498 | 0.279 | | mg/L | | 56 | 29 - 130 |
| 2-Methylphenol | <0.049 | | 0.498 | 0.326 | | mg/L | | 65 | 40 - 130 |
| 3 & 4 Methylphenol | <0.049 | | 0.498 | 0.286 | | mg/L | | 57 | 42 - 130 |
| Nitrobenzene | <0.049 | | 0.498 | 0.346 | | mg/L | | 70 | 43 - 130 |
| Pentachlorophenol | <0.25 | | 0.997 | 0.660 | | mg/L | | 66 | 33 - 130 |
| Pyridine | <0.25 | | 0.498 | <0.25 | | mg/L | | 43 | 10 - 130 |
| 2,4,5-Trichlorophenol | <0.049 | | 0.498 | 0.345 | | mg/L | | 69 | 48 - 130 |
| 2,4,6-Trichlorophenol | <0.049 | | 0.498 | 0.333 | | mg/L | | 67 | 47 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *2-Fluorobiphenyl (Surr)* | *58* | | *38 - 130* |
| *2-Fluorophenol (Surr)* | *52* | | *25 - 130* |
| *Nitrobenzene-d5 (Surr)* | *63* | | *39 - 130* |
| *Phenol-d5 (Surr)* | *57* | | *25 - 130* |
| *Terphenyl-d14 (Surr)* | *75* | | *10 - 143* |
| *2,4,6-Tribromophenol (Surr)* | *77* | | *31 - 141* |

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 680-138279-2 MSD**
**Matrix: Solid**
**Analysis Batch: 480308**

**Client Sample ID: Ash-Grumman**
**Prep Type: TCLP**
**Prep Batch: 479935**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dichlorobenzene | <0.049 | | 0.498 | 0.327 | | mg/L | | 66 | 31 - 130 | 14 | 50 |
| 2,4-Dinitrotoluene | <0.049 | | 0.498 | 0.477 | | mg/L | | 96 | 52 - 130 | 30 | 50 |
| Hexachlorobenzene | <0.049 | | 0.498 | 0.460 | | mg/L | | 92 | 43 - 130 | 22 | 50 |
| Hexachlorobutadiene | <0.049 | | 0.498 | 0.343 | | mg/L | | 69 | 27 - 130 | 9 | 50 |
| Hexachloroethane | <0.049 | | 0.498 | 0.303 | | mg/L | | 61 | 29 - 130 | 8 | 50 |
| 2-Methylphenol | <0.049 | | 0.498 | 0.379 | | mg/L | | 76 | 40 - 130 | 15 | 50 |
| 3 & 4 Methylphenol | <0.049 | | 0.498 | 0.369 | | mg/L | | 74 | 42 - 130 | 25 | 50 |
| Nitrobenzene | <0.049 | | 0.498 | 0.401 | | mg/L | | 80 | 43 - 130 | 15 | 50 |
| Pentachlorophenol | <0.25 | | 0.997 | 0.825 | | mg/L | | 83 | 33 - 130 | 22 | 50 |
| Pyridine | <0.25 | | 0.498 | 0.291 | | mg/L | | 58 | 10 - 130 | 29 | 50 |
| 2,4,5-Trichlorophenol | <0.049 | | 0.498 | 0.453 | | mg/L | | 91 | 48 - 130 | 27 | 50 |
| 2,4,6-Trichlorophenol | <0.049 | | 0.498 | 0.428 | | mg/L | | 86 | 47 - 130 | 25 | 50 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *2-Fluorobiphenyl (Surr)* | *74* | | *38 - 130* |
| *2-Fluorophenol (Surr)* | *62* | | *25 - 130* |
| *Nitrobenzene-d5 (Surr)* | *73* | | *39 - 130* |
| *Phenol-d5 (Surr)* | *68* | | *25 - 130* |
| *Terphenyl-d14 (Surr)* | *89* | | *10 - 143* |
| *2,4,6-Tribromophenol (Surr)* | *92* | | *31 - 141* |

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 680-479683/1-A**
**Matrix: Solid**
**Analysis Batch: 479888**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 479683**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | <0.020 | | 0.020 | | mg/L | | 05/12/17 12:11 | 05/12/17 18:59 | 1 |
| Barium | <0.10 | | 0.10 | | mg/L | | 05/12/17 12:11 | 05/12/17 18:59 | 1 |
| Cadmium | <0.010 | | 0.010 | | mg/L | | 05/12/17 12:11 | 05/12/17 18:59 | 1 |
| Chromium | <0.020 | | 0.020 | | mg/L | | 05/12/17 12:11 | 05/12/17 18:59 | 1 |
| Lead | <0.020 | | 0.020 | | mg/L | | 05/12/17 12:11 | 05/12/17 18:59 | 1 |
| Selenium | <0.050 | | 0.050 | | mg/L | | 05/12/17 12:11 | 05/12/17 18:59 | 1 |
| Silver | <0.010 | | 0.010 | | mg/L | | 05/12/17 12:11 | 05/12/17 18:59 | 1 |

**Lab Sample ID: LCS 680-479683/2-A**
**Matrix: Solid**
**Analysis Batch: 479888**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 479683**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | | | 2.00 | 1.87 | | mg/L | | 94 | 80 - 120 | | |
| Barium | | | 2.00 | 1.86 | | mg/L | | 93 | 80 - 120 | | |
| Cadmium | | | 1.00 | 0.927 | | mg/L | | 93 | 80 - 120 | | |
| Chromium | | | 2.00 | 1.90 | | mg/L | | 95 | 80 - 120 | | |
| Lead | | | 10.0 | 8.95 | | mg/L | | 90 | 80 - 120 | | |
| Selenium | | | 2.00 | 1.71 | | mg/L | | 85 | 80 - 120 | | |
| Silver | | | 1.00 | 0.875 | | mg/L | | 88 | 80 - 120 | | |

Client: Waste Management
Project/Site: Superior Landfill Waste Char.

TestAmerica Job ID: 680-138279-1

**Lab Sample ID: LB 680-479476/1-B**
**Matrix: Solid**
**Analysis Batch: 479888**

**Client Sample ID: Method Blank**
**Prep Type: TCLP**
**Prep Batch: 479683**

| Analyte | LB Result | LB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | <0.20 | | 0.20 | | mg/L | | 05/12/17 12:11 | 05/12/17 19:08 | 1 |
| Barium | <1.0 | | 1.0 | | mg/L | | 05/12/17 12:11 | 05/12/17 19:08 | 1 |
| Cadmium | <0.10 | | 0.10 | | mg/L | | 05/12/17 12:11 | 05/12/17 19:08 | 1 |
| Chromium | <0.20 | | 0.20 | | mg/L | | 05/12/17 12:11 | 05/12/17 19:08 | 1 |
| Lead | <0.20 | | 0.20 | | mg/L | | 05/12/17 12:11 | 05/12/17 19:08 | 1 |
| Selenium | <0.50 | | 0.50 | | mg/L | | 05/12/17 12:11 | 05/12/17 19:08 | 1 |
| Silver | <0.10 | | 0.10 | | mg/L | | 05/12/17 12:11 | 05/12/17 19:08 | 1 |

**Lab Sample ID: 680-138279-1 MS**
**Matrix: Solid**
**Analysis Batch: 479888**

**Client Sample ID: Ash-Kraft**
**Prep Type: TCLP**
**Prep Batch: 479683**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | <0.20 | | 1.60 | 1.42 | | mg/L | | 89 | 75 - 125 | | |
| Barium | <1.0 | F1 | 1.60 | 2.04 | F1 | mg/L | | 127 | 75 - 125 | | |
| Cadmium | <0.10 | | 1.60 | 1.43 | | mg/L | | 89 | 75 - 125 | | |
| Chromium | <0.20 | | 1.60 | 1.47 | | mg/L | | 92 | 75 - 125 | | |
| Lead | <0.20 | | 1.60 | 1.38 | | mg/L | | 86 | 75 - 125 | | |
| Selenium | <0.50 | | 1.60 | 1.27 | | mg/L | | 79 | 75 - 125 | | |
| Silver | <0.10 | | 1.60 | 1.47 | | mg/L | | 92 | 75 - 125 | | |

**Lab Sample ID: 680-138279-1 MSD**
**Matrix: Solid**
**Analysis Batch: 479888**

**Client Sample ID: Ash-Kraft**
**Prep Type: TCLP**
**Prep Batch: 479683**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | <0.20 | | 1.60 | 1.38 | | mg/L | | 86 | 75 - 125 | 3 | 20 |
| Barium | <1.0 | F1 | 1.60 | 1.99 | | mg/L | | 124 | 75 - 125 | 3 | 20 |
| Cadmium | <0.10 | | 1.60 | 1.39 | | mg/L | | 87 | 75 - 125 | 3 | 20 |
| Chromium | <0.20 | | 1.60 | 1.43 | | mg/L | | 89 | 75 - 125 | 3 | 20 |
| Lead | <0.20 | | 1.60 | 1.33 | | mg/L | | 83 | 75 - 125 | 3 | 20 |
| Selenium | <0.50 | | 1.60 | 1.25 | | mg/L | | 78 | 75 - 125 | 1 | 20 |
| Silver | <0.10 | | 1.60 | 1.42 | | mg/L | | 89 | 75 - 125 | 3 | 20 |

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 680-479700/1-A**
**Matrix: Solid**
**Analysis Batch: 479930**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 479700**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | <0.00020 | | 0.00020 | | mg/L | | 05/12/17 14:02 | 05/15/17 10:45 | 1 |

**Lab Sample ID: LCS 680-479700/2-A**
**Matrix: Solid**
**Analysis Batch: 479930**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 479700**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | | | 0.250 | 0.252 | | mg/L | | 101 | 80 - 120 | | |

## Method: 7470A - Mercury (CVAA) (Continued)

**Lab Sample ID: LB 680-479476/1-C**
**Matrix: Solid**
**Analysis Batch: 479930**

**Client Sample ID: Method Blank**
**Prep Type: TCLP**
**Prep Batch: 479700**

| Analyte | LB Result | LB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | <0.020 | | 0.020 | | mg/L | | 05/12/17 14:02 | 05/15/17 11:08 | 1 |

**Lab Sample ID: 680-138279-1 MS**
**Matrix: Solid**
**Analysis Batch: 479930**

**Client Sample ID: Ash-Kraft**
**Prep Type: TCLP**
**Prep Batch: 479700**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | <0.020 | | 0.0830 | 0.0742 | | mg/L | | 89 | 80 - 120 | | |

**Lab Sample ID: 680-138279-1 MSD**
**Matrix: Solid**
**Analysis Batch: 479930**

**Client Sample ID: Ash-Kraft**
**Prep Type: TCLP**
**Prep Batch: 479700**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | <0.020 | | 0.0830 | 0.0753 | | mg/L | | 91 | 80 - 120 | 1 | 20 |

## Method: 1030 - Ignitability, Solids

**Lab Sample ID: MB 680-479260/2**
**Matrix: Solid**
**Analysis Batch: 479260**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ignitability | NB | | | | mm/sec | | | 05/10/17 08:38 | 1 |

## Method: 9014 - Cyanide, Reactive

**Lab Sample ID: MB 400-352497/1-A**
**Matrix: Solid**
**Analysis Batch: 352951**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 352497**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Reactive | <0.25 | | 0.25 | | mg/Kg | | 05/08/17 14:03 | 05/09/17 14:45 | 1 |

**Lab Sample ID: LCS 400-352497/2-A**
**Matrix: Solid**
**Analysis Batch: 352951**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 352497**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Reactive | | | 1.00 | <0.25 | | mg/Kg | | 16 | 0 - 50 | | |

Client: Waste Management
Project/Site: Superior Landfill Waste Char.

TestAmerica Job ID: 680-138279-1

## Method: 9034 - Sulfide, Reactive

**Lab Sample ID: MB 400-352498/1-A**
**Matrix: Solid**
**Analysis Batch: 352921**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 352498**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sulfide, Reactive | <150 | | 150 | | mg/Kg | | 05/08/17 14:03 | 05/09/17 12:02 | 1 |

**Lab Sample ID: LCS 400-352498/2-A**
**Matrix: Solid**
**Analysis Batch: 352921**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 352498**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfide, Reactive | | | 1000 | 155 | | mg/Kg | | 15 | 0 - 80 | | |

## Method: 9045D - pH

**Lab Sample ID: LCS 680-479207/1**
**Matrix: Solid**
**Analysis Batch: 479207**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| pH | | | 7.00 | 7.1 | | S.U. | | 101 | 79 - 126 | | |

**Lab Sample ID: 680-138279-1 DU**
**Matrix: Solid**
**Analysis Batch: 479207**

**Client Sample ID: Ash-Kraft**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | | DU Result | DU Qualifier | Unit | D | | | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| pH | 6.0 | HF | | 6.1 | | SU | | | | 1 | 40 |

## GC/MS VOA

### Leach Batch: 479494

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | TCLP | Solid | 1311 | |
| 680-138279-2 | Ash-Grumman | TCLP | Solid | 1311 | |
| LB 680-479494/1-A | Method Blank | TCLP | Solid | 1311 | |
| 680-138279-2 MS | Ash-Grumman | TCLP | Solid | 1311 | |
| 680-138279-2 MSD | Ash-Grumman | TCLP | Solid | 1311 | |

### Analysis Batch: 479788

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | TCLP | Solid | 8260B | 479494 |
| 680-138279-2 | Ash-Grumman | TCLP | Solid | 8260B | 479494 |
| LB 680-479494/1-A | Method Blank | TCLP | Solid | 8260B | 479494 |
| MB 680-479788/8 | Method Blank | Total/NA | Solid | 8260B | |
| LCS 680-479788/3 | Lab Control Sample | Total/NA | Solid | 8260B | |
| LCSD 680-479788/4 | Lab Control Sample Dup | Total/NA | Solid | 8260B | |
| 680-138279-2 MS | Ash-Grumman | TCLP | Solid | 8260B | 479494 |
| 680-138279-2 MSD | Ash-Grumman | TCLP | Solid | 8260B | 479494 |

## GC/MS Semi VOA

### Leach Batch: 479476

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | TCLP | Solid | 1311 | |
| 680-138279-2 | Ash-Grumman | TCLP | Solid | 1311 | |
| LB 680-479476/1-D | Method Blank | TCLP | Solid | 1311 | |
| 680-138279-2 MS | Ash-Grumman | TCLP | Solid | 1311 | |
| 680-138279-2 MSD | Ash-Grumman | TCLP | Solid | 1311 | |

### Prep Batch: 479935

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | TCLP | Solid | 3520C | 479476 |
| 680-138279-2 | Ash-Grumman | TCLP | Solid | 3520C | 479476 |
| LB 680-479476/1-D | Method Blank | TCLP | Solid | 3520C | 479476 |
| MB 680-479935/20-A | Method Blank | Total/NA | Solid | 3520C | |
| LCS 680-479935/21-A | Lab Control Sample | Total/NA | Solid | 3520C | |
| 680-138279-2 MS | Ash-Grumman | TCLP | Solid | 3520C | 479476 |
| 680-138279-2 MSD | Ash-Grumman | TCLP | Solid | 3520C | 479476 |

### Analysis Batch: 480308

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | TCLP | Solid | 8270D | 479935 |
| 680-138279-2 | Ash-Grumman | TCLP | Solid | 8270D | 479935 |
| LB 680-479476/1-D | Method Blank | TCLP | Solid | 8270D | 479935 |
| MB 680-479935/20-A | Method Blank | Total/NA | Solid | 8270D | 479935 |
| LCS 680-479935/21-A | Lab Control Sample | Total/NA | Solid | 8270D | 479935 |
| 680-138279-2 MS | Ash-Grumman | TCLP | Solid | 8270D | 479935 |
| 680-138279-2 MSD | Ash-Grumman | TCLP | Solid | 8270D | 479935 |

## Metals

### Leach Batch: 479476

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | TCLP | Solid | 1311 | |
| 680-138279-2 | Ash-Grumman | TCLP | Solid | 1311 | |
| LB 680-479476/1-B | Method Blank | TCLP | Solid | 1311 | |
| LB 680-479476/1-C | Method Blank | TCLP | Solid | 1311 | |
| 680-138279-1 MS | Ash-Kraft | TCLP | Solid | 1311 | |
| 680-138279-1 MSD | Ash-Kraft | TCLP | Solid | 1311 | |

### Prep Batch: 479683

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | TCLP | Solid | 3010A | 479476 |
| 680-138279-2 | Ash-Grumman | TCLP | Solid | 3010A | 479476 |
| LB 680-479476/1-B | Method Blank | TCLP | Solid | 3010A | 479476 |
| MB 680-479683/1-A | Method Blank | Total/NA | Solid | 3010A | |
| LCS 680-479683/2-A | Lab Control Sample | Total/NA | Solid | 3010A | |
| 680-138279-1 MS | Ash-Kraft | TCLP | Solid | 3010A | 479476 |
| 680-138279-1 MSD | Ash-Kraft | TCLP | Solid | 3010A | 479476 |

### Prep Batch: 479700

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | TCLP | Solid | 7470A | 479476 |
| 680-138279-2 | Ash-Grumman | TCLP | Solid | 7470A | 479476 |
| LB 680-479476/1-C | Method Blank | TCLP | Solid | 7470A | 479476 |
| MB 680-479700/1-A | Method Blank | Total/NA | Solid | 7470A | |
| LCS 680-479700/2-A | Lab Control Sample | Total/NA | Solid | 7470A | |
| 680-138279-1 MS | Ash-Kraft | TCLP | Solid | 7470A | 479476 |
| 680-138279-1 MSD | Ash-Kraft | TCLP | Solid | 7470A | 479476 |

### Analysis Batch: 479888

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | TCLP | Solid | 6010C | 479683 |
| 680-138279-2 | Ash-Grumman | TCLP | Solid | 6010C | 479683 |
| LB 680-479476/1-B | Method Blank | TCLP | Solid | 6010C | 479683 |
| MB 680-479683/1-A | Method Blank | Total/NA | Solid | 6010C | 479683 |
| LCS 680-479683/2-A | Lab Control Sample | Total/NA | Solid | 6010C | 479683 |
| 680-138279-1 MS | Ash-Kraft | TCLP | Solid | 6010C | 479683 |
| 680-138279-1 MSD | Ash-Kraft | TCLP | Solid | 6010C | 479683 |

### Analysis Batch: 479930

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | TCLP | Solid | 7470A | 479700 |
| 680-138279-2 | Ash-Grumman | TCLP | Solid | 7470A | 479700 |
| LB 680-479476/1-C | Method Blank | TCLP | Solid | 7470A | 479700 |
| MB 680-479700/1-A | Method Blank | Total/NA | Solid | 7470A | 479700 |
| LCS 680-479700/2-A | Lab Control Sample | Total/NA | Solid | 7470A | 479700 |
| 680-138279-1 MS | Ash-Kraft | TCLP | Solid | 7470A | 479700 |
| 680-138279-1 MSD | Ash-Kraft | TCLP | Solid | 7470A | 479700 |

## General Chemistry

### Prep Batch: 352497

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | Total/NA | Solid | 7.3.3 | |
| 680-138279-2 | Ash-Grumman | Total/NA | Solid | 7.3.3 | |
| MB 400-352497/1-A | Method Blank | Total/NA | Solid | 7.3.3 | |
| LCS 400-352497/2-A | Lab Control Sample | Total/NA | Solid | 7.3.3 | |

### Prep Batch: 352498

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | Total/NA | Solid | 7.3.4 | |
| 680-138279-2 | Ash-Grumman | Total/NA | Solid | 7.3.4 | |
| MB 400-352498/1-A | Method Blank | Total/NA | Solid | 7.3.4 | |
| LCS 400-352498/2-A | Lab Control Sample | Total/NA | Solid | 7.3.4 | |

### Analysis Batch: 352921

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | Total/NA | Solid | 9034 | 352498 |
| 680-138279-2 | Ash-Grumman | Total/NA | Solid | 9034 | 352498 |
| MB 400-352498/1-A | Method Blank | Total/NA | Solid | 9034 | 352498 |
| LCS 400-352498/2-A | Lab Control Sample | Total/NA | Solid | 9034 | 352498 |

### Analysis Batch: 352951

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | Total/NA | Solid | 9014 | 352497 |
| 680-138279-2 | Ash-Grumman | Total/NA | Solid | 9014 | 352497 |
| MB 400-352497/1-A | Method Blank | Total/NA | Solid | 9014 | 352497 |
| LCS 400-352497/2-A | Lab Control Sample | Total/NA | Solid | 9014 | 352497 |

### Analysis Batch: 479207

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | Total/NA | Solid | 9045D | |
| 680-138279-2 | Ash-Grumman | Total/NA | Solid | 9045D | |
| LCS 680-479207/1 | Lab Control Sample | Total/NA | Solid | 9045D | |
| 680-138279-1 DU | Ash-Kraft | Total/NA | Solid | 9045D | |

### Analysis Batch: 479260

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | Total/NA | Solid | 1030 | |
| 680-138279-2 | Ash-Grumman | Total/NA | Solid | 1030 | |
| MB 680-479260/2 | Method Blank | Total/NA | Solid | 1030 | |

## Geotechnical

### Analysis Batch: 116526

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 680-138279-1 | Ash-Kraft | Total/NA | Solid | D422 | |
| 680-138279-2 | Ash-Grumman | Total/NA | Solid | D422 | |

# Lab Chronicle

Client: Waste Management
Project/Site: Superior Landfill Waste Char.

TestAmerica Job ID: 680-138279-1

## Client Sample ID: Ash-Kraft

**Lab Sample ID: 680-138279-1**

**Date Collected: 05/02/17 14:55**

**Matrix: Solid**

**Date Received: 05/03/17 08:54**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| TCLP | Leach | 1311 | | | 20.06 g | 400 mL | 479494 | 05/11/17 15:56 | EDE | TAL SAV |
| TCLP | Analysis | 8260B | | 20 | 5 mL | 5 mL | 479788 | 05/14/17 20:15 | CEJ | TAL SAV |
| | Instrument ID: CMSB | | | | | | | | | |
| TCLP | Leach | 1311 | | | 100.05 g | 2000 mL | 479476 | 05/11/17 15:57 | EDE | TAL SAV |
| TCLP | Prep | 3520C | | | 201.4 mL | 1 mL | 479935 | 05/15/17 16:52 | CEW | TAL SAV |
| TCLP | Analysis | 8270D | | 1 | | | 480308 | 05/17/17 19:27 | OK | TAL SAV |
| | Instrument ID: CMSE | | | | | | | | | |
| TCLP | Leach | 1311 | | | 100.05 g | 2000 mL | 479476 | 05/11/17 15:57 | EDE | TAL SAV |
| TCLP | Prep | 3010A | | | 5 mL | 50 mL | 479683 | 05/12/17 12:11 | AJR | TAL SAV |
| TCLP | Analysis | 6010C | | 1 | | | 479888 | 05/12/17 19:13 | BCB | TAL SAV |
| | Instrument ID: ICPE | | | | | | | | | |
| TCLP | Leach | 1311 | | | 100.05 g | 2000 mL | 479476 | 05/11/17 15:57 | EDE | TAL SAV |
| TCLP | Prep | 7470A | | | 0.5 mL | 50 mL | 479700 | 05/12/17 14:02 | JKL | TAL SAV |
| TCLP | Analysis | 7470A | | 1 | | | 479930 | 05/15/17 11:18 | JKL | TAL SAV |
| | Instrument ID: LEEMAN2 | | | | | | | | | |
| Total/NA | Analysis | 1030 | | 1 | | | 479260 | 05/10/17 08:38 | LWB | TAL SAV |
| | Instrument ID: NOEQUIP | | | | | | | | | |
| Total/NA | Prep | 7.3.3 | | | 10 g | 100 mL | 352497 | 05/08/17 14:03 | CLM | TAL PEN |
| Total/NA | Analysis | 9014 | | 1 | 10 mL | 10 mL | 352951 | 05/09/17 14:45 | CLM | TAL PEN |
| | Instrument ID: KONELAB | | | | | | | | | |
| Total/NA | Prep | 7.3.4 | | | 10 g | 100 mL | 352498 | 05/08/17 14:03 | CLM | TAL PEN |
| Total/NA | Analysis | 9034 | | 1 | 100 mL | 100 mL | 352921 | 05/09/17 12:02 | CLM | TAL PEN |
| | Instrument ID: NOEQUIP | | | | | | | | | |
| Total/NA | Analysis | 9045D | | 1 | 20.12 g | 20 mL | 479207 | 05/11/17 15:19 | LWB | TAL SAV |
| | Instrument ID: NOEQUIP | | | | | | | | | |
| Total/NA | Analysis | D422 | | 1 | | | 116526 | 05/04/17 18:54 | VTP | TAL BUR |
| | Instrument ID: D422_import | | | | | | | | | |

## Client Sample ID: Ash-Grumman

**Lab Sample ID: 680-138279-2**

**Date Collected: 05/02/17 14:35**

**Matrix: Solid**

**Date Received: 05/03/17 08:54**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| TCLP | Leach | 1311 | | | 20.05 g | 400 mL | 479494 | 05/11/17 15:56 | EDE | TAL SAV |
| TCLP | Analysis | 8260B | | 20 | 5 mL | 5 mL | 479788 | 05/14/17 20:40 | CEJ | TAL SAV |
| | Instrument ID: CMSB | | | | | | | | | |
| TCLP | Leach | 1311 | | | 100.10 g | 2000 mL | 479476 | 05/11/17 15:57 | EDE | TAL SAV |
| TCLP | Prep | 3520C | | | 203.1 mL | 1 mL | 479935 | 05/15/17 16:52 | CEW | TAL SAV |
| TCLP | Analysis | 8270D | | 1 | | | 480308 | 05/17/17 19:51 | OK | TAL SAV |
| | Instrument ID: CMSE | | | | | | | | | |
| TCLP | Leach | 1311 | | | 100.10 g | 2000 mL | 479476 | 05/11/17 15:57 | EDE | TAL SAV |
| TCLP | Prep | 3010A | | | 5 mL | 50 mL | 479683 | 05/12/17 12:11 | AJR | TAL SAV |
| TCLP | Analysis | 6010C | | 1 | | | 479888 | 05/12/17 19:37 | BCB | TAL SAV |
| | Instrument ID: ICPE | | | | | | | | | |

# Lab Chronicle

Client: Waste Management
Project/Site: Superior Landfill Waste Char.

TestAmerica Job ID: 680-138279-1

## Client Sample ID: Ash-Grumman

**Lab Sample ID: 680-138279-2**

**Date Collected: 05/02/17 14:35**

**Matrix: Solid**

**Date Received: 05/03/17 08:54**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| TCLP | Leach | 1311 | | | 100.10 g | 2000 mL | 479476 | 05/11/17 15:57 | EDE | TAL SAV |
| TCLP | Prep | 7470A | | | 0.5 mL | 50 mL | 479700 | 05/12/17 14:02 | JKL | TAL SAV |
| TCLP | Analysis | 7470A | | 1 | | | 479930 | 05/15/17 11:28 | JKL | TAL SAV |
| | Instrument ID: | LEEMAN2 | | | | | | | | |
| Total/NA | Analysis | 1030 | | 1 | | | 479260 | 05/10/17 08:38 | LWB | TAL SAV |
| | Instrument ID: | NOEQUIP | | | | | | | | |
| Total/NA | Prep | 7.3.3 | | | 10 g | 100 mL | 352497 | 05/08/17 15:20 | CLM | TAL PEN |
| Total/NA | Analysis | 9014 | | 1 | 10 mL | 10 mL | 352951 | 05/09/17 14:45 | CLM | TAL PEN |
| | Instrument ID: | KONELAB | | | | | | | | |
| Total/NA | Prep | 7.3.4 | | | 10 g | 100 mL | 352498 | 05/08/17 15:20 | CLM | TAL PEN |
| Total/NA | Analysis | 9034 | | 1 | 100 mL | 100 mL | 352921 | 05/09/17 12:02 | CLM | TAL PEN |
| | Instrument ID: | NOEQUIP | | | | | | | | |
| Total/NA | Analysis | 9045D | | 1 | 19.70 g | 20 mL | 479207 | 05/11/17 15:19 | LWB | TAL SAV |
| | Instrument ID: | NOEQUIP | | | | | | | | |
| Total/NA | Analysis | D422 | | 1 | | | 116526 | 05/04/17 18:57 | VTP | TAL BUR |
| | Instrument ID: | D422_import | | | | | | | | |

**Laboratory References:**

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

# Accreditation/Certification Summary

Client: Waste Management
Project/Site: Superior Landfill Waste Char.

TestAmerica Job ID: 680-138279-1

## Laboratory: TestAmerica Savannah

The accreditations/certifications listed below are applicable to this report.

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|---|---|---|---|---|
| Georgia | State Program | 4 | N/A | 06-30-17 * |

## Laboratory: TestAmerica Burlington

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|---|---|---|---|---|
| Connecticut | State Program | 1 | PH-0751 | 09-30-17 |
| DE Haz. Subst. Cleanup Act (HSCA) | State Program | 3 | NA | 02-02-18 |
| Florida | NELAP | 4 | E87467 | 06-30-17 * |
| L-A-B | DoD ELAP | | L2336 | 02-25-20 |
| Maine | State Program | 1 | VT00008 | 04-17-19 |
| Minnesota | NELAP | 5 | 050-999-436 | 12-31-17 |
| New Hampshire | NELAP | 1 | 2006 | 12-18-17 |
| New Jersey | NELAP | 2 | VT972 | 06-30-17 * |
| New York | NELAP | 2 | 10391 | 04-01-18 |
| Pennsylvania | NELAP | 3 | 68-00489 | 04-30-18 |
| Rhode Island | State Program | 1 | LAO00298 | 12-30-17 |
| US Fish & Wildlife | Federal | | LE-058448-0 | 10-31-17 |
| USDA | Federal | | P330-11-00093 | 12-05-19 |
| Vermont | State Program | 1 | VT-4000 | 12-31-17 |
| Virginia | NELAP | 3 | 460209 | 12-14-17 |

## Laboratory: TestAmerica Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|---|---|---|---|---|
| Alabama | State Program | 4 | 40150 | 06-30-17 |
| Arizona | State Program | 9 | AZ0710 | 01-11-18 |
| Arkansas DEQ | State Program | 6 | 88-0689 | 09-01-17 |
| California | ELAP | 9 | 2510 | 03-31-18 |
| Florida | NELAP | 4 | E81010 | 06-30-17 |
| Georgia | State Program | 4 | N/A | 06-30-17 |
| Illinois | NELAP | 5 | 200041 | 10-09-17 |
| Iowa | State Program | 7 | 367 | 08-01-18 |
| Kansas | NELAP | 7 | E-10253 | 10-31-17 |
| Kentucky (UST) | State Program | 4 | 53 | 06-30-17 |
| Kentucky (WW) | State Program | 4 | 98030 | 12-31-17 |
| L-A-B | ISO/IEC 17025 | | L2471 | 02-22-20 |
| Louisiana | NELAP | 6 | 30976 | 06-30-17 |
| Louisiana (DW) | NELAP Secondary AB | 6 | LA170005 | 12-31-17 |
| Maryland | State Program | 3 | 233 | 09-30-17 |
| Massachusetts | State Program | 1 | M-FL094 | 06-30-17 |
| Michigan | State Program | 5 | 9912 | 06-30-17 |
| New Jersey | NELAP | 2 | FL006 | 06-30-17 |
| North Carolina (WW/SW) | State Program | 4 | 314 | 12-31-17 |
| Oklahoma | State Program | 6 | 9810 | 08-31-17 |
| Pennsylvania | NELAP | 3 | 68-00467 | 01-31-18 |
| Rhode Island | State Program | 1 | LAO00307 | 12-30-17 |
| South Carolina | State Program | 4 | 96026 | 06-30-17 |
| Tennessee | State Program | 4 | TN02907 | 06-30-17 |
| Texas | NELAP | 6 | T104704286-16-10 | 09-30-17 |

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Accreditation/Certification Summary

Client: Waste Management
Project/Site: Superior Landfill Waste Char.

TestAmerica Job ID: 680-138279-1

## Laboratory: TestAmerica Pensacola (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|---|---|---|---|---|
| USDA | Federal | | P330-16-00172 | 05-24-19 |
| Virginia | NELAP | 3 | 460166 | 06-14-17 |
| Washington | State Program | 10 | C915 | 05-15-17 * |
| West Virginia DEP | State Program | 3 | 136 | 06-30-17 |

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Method Summary

Client: Waste Management
Project/Site: Superior Landfill Waste Char.

TestAmerica Job ID: 680-138279-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 8260B | Volatile Organic Compounds (GC/MS) | SW846 | TAL SAV |
| 8270D | Semivolatile Organic Compounds (GC/MS) | SW846 | TAL SAV |
| 6010C | Metals (ICP) | SW846 | TAL SAV |
| 7470A | Mercury (CVAA) | SW846 | TAL SAV |
| 1030 | Ignitability, Solids | SW846 | TAL SAV |
| 9014 | Cyanide, Reactive | SW846 | TAL PEN |
| 9034 | Sulfide, Reactive | SW846 | TAL PEN |
| 9045D | pH | SW846 | TAL SAV |
| D422 | Grain Size | ASTM | TAL BUR |

**Protocol References:**

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

# TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404
Phone: 912.354.7858 Fax:

## Chain of Custody Record

186584

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☒ RCRA ☐ Other:

| Client Contact | Project Manager: Sarah Rafalowski | Site Contact: | Date: 5/2/17 | COC No: |
|---|---|---|---|---|
| Company Name: WM-Superior | Tel/Fax: srafalow@wm.com | Lab Contact: Lisa Harvey | Carrier: Client | 1 of 1 COCs |
| Address: 3001 Little Neck Rd | Analysis Turnaround Time | | | Sampler: |
| City/State/Zip: Savannah, GA 31419 | ☒ CALENDAR DAYS ☐ WORKING DAYS | | | For Lab Use Only: |
| Phone: 770-545-0339 | TAT if different from Below _____ | | | Walk-in Client: |
| Fax: | ☐ 2 weeks | | | Lab Sampling: |
| Project Name: Ash Analysis | ☒ 1 week | | | |
| Site: Superior Landfill | ☐ 2 days | | | Job / SDG No.: |
| PO # | ☐ 1 day | | | |

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=Grab) | Matrix | # of Cont. | Filtered Sample (Y/N) | Perform MS / MSD (Y/N) | Reactive Cyanide | Reactive Sulfide | Ignitability | Sieve Analysis | Grain Size | Sample Specific Notes: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ash - Kraft | 5/2 | 2:55p | G | Ash | 3 | | | 1 | 1 | 1 | 1 | * | Need analysis of grain size. This is for WM & NOT GP. |
| Ash - Grumman | 5/2 | 2:35p | G | Ash | 3 | | | 1 | 1 | 1 | 1 | * | |

680-138279 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

**Possible Hazard Identification:**
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

**Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)**

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

**Special Instructions/QC Requirements & Comments:**
One week TAT, if possible.

4.0/2.8

| Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | | Therm ID No.: _____ |
|---|---|---|---|---|---|
| Relinquished by: | Company: WM | Date/Time: 5-3/8:54A | Received by: V-Jackson | Company: TA | Date/Time: 5-3-17 854 |
| Relinquished by: | Company: | Date/Time: | Received by: | Company: | Date/Time: |
| Relinquished by: | Company: | Date/Time: | Received in Laboratory by: | Company: | Date/Time: |

Page 27 of 33

5/18/2017

**TestAmerica Savannah**
5102 LaRoche Avenue
Savannah, GA 31404
Phone (912) 354-7858 Fax (912) 352-0165

# Chain of Custody Record

680-138279 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

| | | | |
|---|---|---|---|
| **Client Information (Sub Contract Lab)** | Sampler: | Lab PM: Smith, Kathryn E | COC No: 680-476579.1 |
| Client Contact: Shipping/Receiving | Phone: | E-Mail: kathy.smith@testamericainc.com | State of Origin: Georgia | Page: Page 1 of 1 |
| Company: TestAmerica Laboratories, Inc. | | Accreditations Required (See note): State Program - Georgia | Job #: 680-138279-1 |
| Address: 30 Community Drive, Suite 11, | Due Date Requested: 5/9/2017 | | |
| City: South Burlington | TAT Requested (days): | | |
| State, Zip: VT, 05403 | | | |
| Phone: 802-660-1990(Tel) 802-660-1919(Fax) | PO #: | | |
| Email: | WO #: | | |
| Project Name: Superior Landfill Waste Char. | Project #: 68018153 | | |
| Site: | SSOW#: | | |

**Preservation Codes:**

| | |
|---|---|
| A - HCL | M - Hexane |
| B - NaOH | N - None |
| C - Zn Acetate | O - AsNaO2 |
| D - Nitric Acid | P - Na2O4S |
| E - NaHSO4 | Q - Na2SO3 |
| F - MeOH | R - Na2S2O3 |
| G - Amchlor | S - H2SO4 |
| H - Ascorbic Acid | T - TSP Dodecahydrate |
| I - Ice | U - Acetone |
| J - DI Water | V - MCAA |
| K - EDTA | W - pH 4-5 |
| L - EDA | Z - other (specify) |

Other:

**Analysis Requested**

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | | D422/ (MOD) Sieve Only | D422/ (MOD) MOD Routine list with sieve #140 | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | |
| Ash-Kraft (680-138279-1) | 5/2/17 | 14:55 Eastern | | Solid | | | X | X | 1 | |
| Ash-Grumman (680-138279-2) | 5/2/17 | 14:35 Eastern | | Solid | | | X | X | 1 | |

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

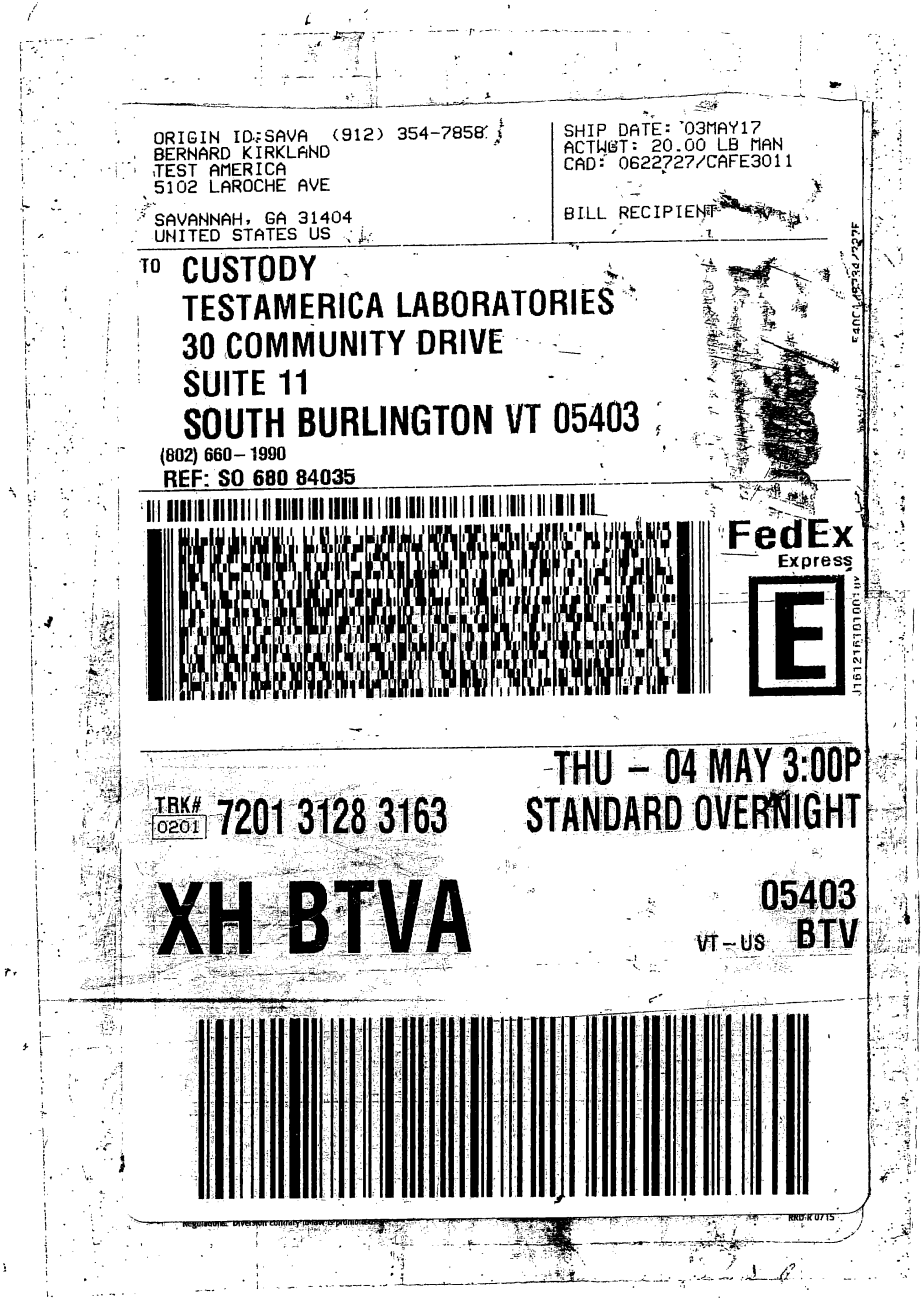
| | |
|---|---|
| ***Possible Hazard Identification*** *Unconfirmed* | ***Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months* |
| Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2 | Special Instructions/QC Requirements: |

| | | | |
|---|---|---|---|
| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
| Relinquished by: Jessica Edwards | Date/Time: 5/5/17 1621 | Company TAS AV | Received by: [illegible] | Date/Time: 5/04/17 @ 1030 | Company TAS BURL |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

| | | |
|---|---|---|
| Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: 836857 | Cooler Temperature(s) °C and Other Remarks: 1.3°C |



5/18/2017



ORIGIN ID:SAVA (912) 354-7858
BERNARD KIRKLAND
TEST AMERICA
5102 LAROCHE AVE

SAVANNAH, GA 31404
UNITED STATES US

SHIP DATE: 03MAY17
ACTWGT: 20.00 LB MAN
CAD: 0622727/CAFE3011

BILL RECIPIENT

TO CUSTODY
TESTAMERICA LABORATORIES
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403
(802) 660-1990
REF: SO 680 84035

FedEx Express

THU - 04 MAY 3:00P
STANDARD OVERNIGHT

TRK# 0201 7201 3128 3163

XH BTVA

05403
VT - US BTV

**TestAmerica Savannah**
5102 LaRoche Avenue
Savannah, GA 31404
Phone (912) 354-7858 Fax (912) 352-0165

# Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

| Client Information (Sub Contract Lab) | Sampler: | Lab PM: Smith, Kathryn E | Carrier Tracking No(s): | COC No: 680-476581.1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: | E-Mail: kathy.smith@testamericainc.com | State of Origin: Georgia | Page: Page 1 of 1 |
| Company: TestAmerica Laboratories, Inc. | | Accreditations Required (See note): State Program - Georgia | | Job #: 680-138279-1 |
| Address: 3355 McLemore Drive, , | Due Date Requested: 5/9/2017 | | | |
| City: Pensacola | TAT Requested (days): | | | |
| State, Zip: FL, 32514 | | | | |
| Phone: 850-474-1001(Tel) 850-478-2671(Fax) | PO #: | | | |
| Email: | WO #: | | | |
| Project Name: Superior Landfill Waste Char. | Project #: 68018153 | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes:**

| | |
|---|---|
| A - HCL | M - Hexane |
| B - NaOH | N - None |
| C - Zn Acetate | O - AsNaO2 |
| D - Nitric Acid | P - Na2O4S |
| E - NaHSO4 | Q - Na2SO3 |
| F - MeOH | R - Na2S2O3 |
| G - Amchlor | S - H2SO4 |
| H - Ascorbic Acid | T - TSP Dodecahydrate |
| I - Ice | U - Acetone |
| J - DI Water | V - MCAA |
| K - EDTA | W - pH 4-5 |
| L - EDA | Z - other (specify) |

Other:

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 9014_ReactiveCN/7.3.3 Cyanide, Reactive | 9034_Reactive/7.3.4 Sulfide, Reactive | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | |
| Ash-Kraft (680-138279-1) | 5/2/17 | 14:55 Eastern | | Solid | | | X | X | 1 | |
| Ash-Grumman (680-138279-2) | 5/2/17 | 14:35 Eastern | | Solid | | | X | X | 1 | |

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

| Possible Hazard Identification | Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) |
|---|---|
| Unconfirmed | ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months |
| Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2 | Special Instructions/QC Requirements: |

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|

| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|
| Jessica Edwards | 5/3/17 1621 | TASAV | | 5/4/17 0851 | |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

| Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 3.3 IR 2 |
|---|---|---|



5/18/2017

# Login Sample Receipt Checklist

Client: Waste Management

Job Number: 680-138279-1

**Login Number: 138279**

**List Source: TestAmerica Savannah**

**List Number: 1**

**Creator: Jackson, Victor L**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | N/A | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | N/A | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

# Login Sample Receipt Checklist

Client: Waste Management

Job Number: 680-138279-1

**Login Number: 138279**
**List Number: 3**
**Creator: Cota, Fred P**

**List Source: TestAmerica Burlington**
**List Creation: 05/04/17 01:30 PM**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True | Lab does not accept radioactive samples. |
| The cooler's custody seal, if present, is intact. | True | 856857 |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | 1.3ºC |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | N/A | Received project as a subcontract. |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | N/A | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | No analysis requiring residual chlorine check assigned. |

# Login Sample Receipt Checklist

Client: Waste Management

Job Number: 680-138279-1

**Login Number: 138279**
**List Number: 2**
**Creator: Smith, Demetrius A**

**List Source: TestAmerica Pensacola**
**List Creation: 05/04/17 11:51 AM**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | N/A | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | 3.3°C IR-2 |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | N/A | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

A-Sh.

# MOISTURE DENSITY TEST SHEET
## NUCLEAR DENSITY GAUGE METHOD
## ASTM D 3017 / 2922

PROJECT NUMBER: I014.122 DATE OF TEST: 10-1-16

PROJECT TITLE: Phase 4, Stage 7A TESTED BY: DD

PROJECT LOCATION: Folkston, Georgia

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| TEST NUMBER | | A-35 | A-36 | A-37 | | | | |
| TEST LOCATION | NORTH | See | ~ | ~ | | | | |
| | EAST | Map | ~ | ~ | | | | |
| TEST ELEVATION OR LIFT | | ~ | ~ | ~ | | | | |
| TEST DEPTH | | 12" | 12" | 12" | | | | |
| WET DENSITY (pcf) | | 101.5 | 95.9 | 88.6 | | | | |
| MOISTURE (%) | | 24.0 | 24.4 | 13.1 | | | | |
| DRY DENSITY (pcf) | | 81.9 | 77.1 | 78.4 | | | | |
| LABORATORY PROCTOR CURVE NUMBER | | Ash-3 | Ash-3 | Ash-3 | | | | |
| MAXIMUM DRY DENSITY (pcf) | | 84.5 | 84.5 | 84.5 | | | | |
| OPTIMUM MOISTURE (%) | | 14.6 | 14.6 | 14.6 | | | | |
| PERCENT COMPACTION (%) | | 96.4 | 91.2 | 92.7 | | | | |
| DIFFERENCE FROM OPTIMUM MOISTURE | | +9.4 | +9.8 | -1.5 | | | | |
| DENSITY RESULT PASS/FAIL (P/F) | | ~ | ~ | ~ | ~ | ~ | | |
| MOISTURE RESULT PASS/FAIL (P/F) | | ~ | ~ | ~ | ~ | ~ | | |

SPECIFICATIONS: DAILY STANDARD COUNT:

% STANDARD / MODIFIED PROCTOR: 90% DENSITYCOUNT: _____

% OF OPTIMUM MOISTURE CONTENT: NA MOISTURE COUNT: _____

CHECKED BY: _____ DATE: _____

ATLANTIC COAST CONSULTING, INC

Adm. 10-1-16


EX. LEACHATE STORAGE TANKS
WETLAND BUFFER
(SEE FACILITY OPERATING RECORD AND DESIGN AND OPERATIONAL PLAN FOR WETLANDS ON THE PROPERTY)
EXISTING PHASE 3 SEDIMENT POND
CONTRACTOR MATERIALS STORAGE/STOCKPILE AREA
EXISTING, ACTIVE PHASE 3 LANDFILL
STAGE 8A (6.2 AC)
STAGE 7A (15.3 AC)
PROPOSED PHASE 4, STAGE 7A AREA
PHASE 3 STAGE 3C
CONTRACTOR OFFICE TRAILER/EMPLOYEE PARKING
STAGE 6A (16.1 AC)
PHASE 3 STAGE 3D

## Report Submission Deadline Extension

*IN THIS APPENDIX*:

- EPD Deadline Extension Email – May 8, 2018
- EPD Deadline Extension Email – February, 16 2018

**From:** Naji, Rima
**To:** Marc Liverman
**Cc:** Bassett, Tim; Carroll, Shawn
**Subject:** RE: CCR Plan Update Submittal Date
**Date:** Tuesday, May 08, 2018 4:19:02 PM

---

Marc,

This email is to confirm that the Annual CCR Management and Dust Control Reports for WM sites can be submitted to EPD no later than May 11, 2018.

Thanks,

Rima Naji
Environmental Engineer
Solid Waste Management Program

4244 International Parkway Suite 104
Atlanta, GA 30354
Office: (404) 363-1584
Email: Rima.Naji@dnr.state.ga.us

---

**From:** Marc Liverman [mailto:MLiverman@atlcc.net]
**Sent:** Tuesday, May 08, 2018 3:59 PM
**To:** Naji, Rima
**Cc:** Bassett, Tim; Carroll, Shawn
**Subject:** CCR Plan Update Submittal Date

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Rima,

Per our discussion, please verify that we can submit the updates for WM sites no later than Friday May 11th, 2018. We will do everything we can to get them to you sooner.

Thanks,

Marc Liverman, P.E.
ATLANTIC COAST CONSULTING, INC.
7 E. Congress Street, Suite 801
Savannah, GA 31401
Mobile: 912-507-5755
Office: 912-236-3471

**From:** Hall, Chad
**To:** Carroll, Shawn
**Subject:** [EXTERNAL] RE: CCR management plans
**Date:** Friday, February 16, 2018 1:57:41 PM

---

Shawn,

Most important item: you are right the we fell behind schedule of making site visits to every site under a CCR management plan. I very much appreciate the early work you've put in to meet a 3/1 deadline, but you can dial that back. While I don't expect this, I would hate for our staff to see something on their final site visit that requires a change that makes ACC go back and re-do everything.

I spoke to John Workman on the phone after the first flurry of emails, not sure if you two connected afterward. I gave him notice of an discrepancy from last year where we realized that we had required some things of Waste Industries, with regards to sampling, that we hadn't asked of Waste Management. We'll be asking for WM's plans for sediment pond sampling to be more like those we approved for Taylor County. That said, you might want to (and have Chris / ACC) take a look here https://epd.georgia.gov/coal-combustion-residuals-ccr-management-plans to start getting a feel for what we approved there.

Thanks for helping get the word out and looking forward to meeting.

Chad Hall, PhD, PE
Manager
Solid Waste Permitting Unit

Georgia Environmental Protection Division
Solid Waste Management Program
Atlanta Tradeport, Suite 104
4244 International Parkway
Atlanta, GA 30354
(404) 362-4893

---

**From:** Carroll, Shawn [mailto:scarrol3@wm.com]
**Sent:** Friday, February 16, 2018 1:42 PM
**To:** Hall, Chad
**Subject:** RE: CCR management plans

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Ha, it has been a flurry of CCR activity this Friday!

As you may have heard from Rutu, we are well into the process of getting all the updates and annual reports prepared. We went ahead and started the process for all of our sites on February 1, planning to meet the March 1 deadline. GeoSyntec is doing Turkey Run, and ACC is covering

Superior, R&B and Pine Bluff. I actually reviewed the first ACC update/report this morning and Rutu was planning on submitting his draft next week.

I am trying to find a day the week of March 19 that ACC, GeoSyntec, and our folks can attend. Best if we can knock it out in one meeting to maintain consistency, and I will let you know. I just got off the phone with Workman, he said he would try to attend but to go ahead and schedule the meeting regardless.

In response to the email you sent Rutu at 12:42 this afternoon, I do offer the following comment followed by a request for clarification:

1. For each of the GA sites in our South Atlantic Area (Superior, Turkey Run, R&B and Pine Bluff), we will be reporting that the initial approved Plans were adequate and no changes are deemed necessary. For those four sites we have had no new waste streams, no changes in operational practices, no impacts to operations, no dust control challenges or complaints, and no environmental monitoring impacts due to CCR. As such, like you we feel that just submitted the Annual Report should meet the intent of the rule with no need to submit revised D&O Plan sheets.
2. In your email to Rutu, the second sentence indicates that EPD will not be expecting deliverables by March 1 and that we can hold off submitting until after our meeting the week of the 19th. Please confirm if we interpreted correctly.

Thanks Chad, appreciate you guidance, and I look forward to meeting you in March.

Regards,

Shawn

---

**From:** Hall, Chad [mailto:Chad.Hall@dnr.ga.gov]
**Sent:** Friday, February 16, 2018 12:40 PM
**To:** Carroll, Shawn <scarrol3@wm.com>; Bassett, Tim <tbassett@wm.com>; Workman, John <jworkman@wm.com>; Dolihite, Brian <Bdolihite@wm.com>
**Cc:** Cook, William <William.Cook@dnr.ga.gov>; Barnes, Gene(Atlanta GA) <GBarnes4@wm.com>
**Subject:** [EXTERNAL] RE: CCR management plans

Thanks and also see the attached from Geosyntec – their ears must have been burning. You guys can decide if it's easier to have Geosyntec at the same meeting with ACC, or if you want to handle Turkey Run at a separate meeting.

Chad Hall, PhD, PE
Manager
Solid Waste Permitting Unit

Georgia Environmental Protection Division
Solid Waste Management Program

Atlanta Tradeport, Suite 104
4244 International Parkway
Atlanta, GA 30354
(404) 362-4893

---

**From:** Carroll, Shawn [mailto:scarrol3@wm.com]
**Sent:** Friday, February 16, 2018 12:24 PM
**To:** Hall, Chad; Bassett, Tim; Workman, John; Dolihite, Brian
**Cc:** Cook, William; Chris Klamke; Barnes, Gene(Atlanta GA)
**Subject:** RE: CCR management plans

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Chad, thanks for being flexible. Let me reach out to our folks, see what works for everyone, then I will send you an email with some proposed times/dates.

Thanks, and have a great weekend.

Shawn

**Shawn P. Carroll**
Area Environmental Protection Manager
scarrol3@wm.com

**Waste Management -** South Atlantic Area
3920 River Road
Wilmington, NC 28412
Cell 910 274 8869

---

**From:** Hall, Chad [mailto:Chad.Hall@dnr.ga.gov]
**Sent:** Friday, February 16, 2018 11:25 AM
**To:** Carroll, Shawn <scarrol3@wm.com>; Bassett, Tim <tbassett@wm.com>; Workman, John <jworkman@wm.com>; Dolihite, Brian <Bdolihite@wm.com>
**Cc:** Cook, William <William.Cook@dnr.ga.gov>; Chris Klamke <cklamke@atlcc.net>; Barnes, Gene(Atlanta GA) <GBarnes4@wm.com>
**Subject:** [EXTERNAL] RE: CCR management plans

Shawn,

Absolutely, we can change weeks. I was just picking our first available dates after our visit to Superior. I think we're still in good shape bumping back one week.

That week is actually more open on our end, so we could probably find an open timeslot any day that week. Let us know one or two preferred dates/times and we can get this set.

Chad Hall, PhD, PE
Manager
Solid Waste Permitting Unit

Georgia Environmental Protection Division
Solid Waste Management Program
Atlanta Tradeport, Suite 104
4244 International Parkway
Atlanta, GA 30354
(404) 362-4893

---

**From:** Carroll, Shawn [mailto:scarrol3@wm.com]
**Sent:** Friday, February 16, 2018 11:14 AM
**To:** Hall, Chad; Bassett, Tim; Workman, John; Dolihite, Brian
**Cc:** Cook, William; Chris Klamke; Barnes, Gene(Atlanta GA)
**Subject:** RE: CCR management plans

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hey Chad, Shawn Carroll here.

John, Gene and I (and possibly Tim) have an Area staff meeting scheduled for the 14th and 15th of March.

Any chance we could do it during the week of March 19?

Thanks,

Shawn

**Shawn P. Carroll**
Area Environmental Protection Manager
scarrol3@wm.com

**Waste Management -** South Atlantic Area
3920 River Road
Wilmington, NC 28412
Cell 910 274 8869

---

**From:** Hall, Chad [mailto:Chad.Hall@dnr.ga.gov]
**Sent:** Friday, February 16, 2018 11:10 AM
**To:** Bassett, Tim <tbassett@wm.com>; Workman, John <jworkman@wm.com>; Dolihite, Brian <Bdolihite@wm.com>
**Cc:** Cook, William <William.Cook@dnr.ga.gov>; Carroll, Shawn <scarrol3@wm.com>; Chris Klamke

<cklamke@atlcc.net>; Barnes, Gene(Atlanta GA) <GBarnes4@wm.com>
**Subject:** [EXTERNAL] RE: CCR managment plans

Thanks Tim. I think we all agree we'd like to be under less time pressure this year, and I feel like a mid-March meeting puts us in a good position to get the reviews done by the late-May renewal dates.

Chad Hall, PhD, PE
Manager
Solid Waste Permitting Unit

Georgia Environmental Protection Division
Solid Waste Management Program
Atlanta Tradeport, Suite 104
4244 International Parkway
Atlanta, GA 30354
(404) 362-4893

---

**From:** Bassett, Tim [mailto:tbassett@wm.com]
**Sent:** Friday, February 16, 2018 11:01 AM
**To:** Hall, Chad; Workman, John; Dolihite, Brian
**Cc:** Cook, William; Carroll, Shawn; Chris Klamke; Barnes, Gene(Atlanta GA)
**Subject:** Re: CCR managment plans

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Chad,

You are correct - we will be renewing all 5 WM sites. The primary consultant for preparing the plans is ACC so we might want them in attendance. As for the 14th, I'm available but I need to check with John and ACC to make sure they can attend.

Tim Bassett, REM, CSEM
Environmental Protection Manager
Waste Management - Atlanta
Cell: 404-808-8098

---

**From:** Hall, Chad <Chad.Hall@dnr.ga.gov>
**Sent:** Friday, February 16, 2018 10:49:19 AM
**To:** Workman, John; Bassett, Tim; Dolihite, Brian
**Cc:** Cook, William
**Subject:** [EXTERNAL] CCR managment plans

John, Tim, and Brian,

Would you be available to talk about renewals of CCR management plans on March 15 (14th could

work too.) That would be about 10 weeks before the renewal deadline. We could meet the week before, but people from our Program are planning to see Superior on the 3/9. I'd like to have their feedback before discussing whether revisions are needed to Superior's plan.

I am assuming, correct me if I'm wrong, that all five Waste Management sites in Georgia will be seeking renewal. We wouldn't necessarily have to meet the same day for Waste's northern and southern representatives, I was just thinking it might be easiest that way. If we need to divide meetings based on which consultants are working on given sites, we can do that too.

Let me know what might work.

Thanks,

Chad Hall, PhD, PE
Manager
Solid Waste Permitting Unit

Georgia Environmental Protection Division
Solid Waste Management Program
Atlanta Tradeport, Suite 104
4244 International Parkway
Atlanta, GA 30354
(404) 362-4893

---

**Recycling is a good thing. Please recycle any printed emails.**