



LANIER
ENGINEERING INC.

RECEIVED

OCT 04 2018

**SOLID WASTE
MANAGEMENT PROGRAM**

October 1, 2018

Dr. Chad Hall, PhD, P.E.
Georgia EPD - Solid Waste
Atlanta Tradeport, Suite 104
4244 International Parkway
Atlanta, GA 30354

**Re: Crisp County US41S MSW Landfill
Modification – CCR Management Plan
Permit No. 040-008D(MSWL)
LE 08525.16**

Dear Dr. Hall:

On behalf of the Crisp County Board of Commissioners we are submitting a copy of the Request for Minor Modification to the Solid Waste Handling Permit for the subject facility. We have attached a copy of the minor mod request form, a copy of the supporting demonstration documents, and two (2) sets of plan sheets for your review. The plans include revised narrative sheets impacted by the addition of the CCR Management Plan, as well as the revised Water Monitoring Plan. In addition, we are attaching copies of the required notification letters.

It should be noted that the post-closure care cost estimate updated August 2018, and previously submitted to Georgia EPD, includes budgeted amounts to cover the actual costs of adding Appendix III monitoring, and other updates reflected in the revised water monitoring plan. No changes to the estimated post-closure costs are required at this time.

If you have any questions or need additional information, please call.

Sincerely,

Tod Lanier, PE
President

Cc: Carl Gamble, Crisp County
Jeff Browne, P.E.
Darrell Webb, P.G.

FACILITY Crisp County US41S MSW Landfill PERMIT NO. 040-008D(MSWL)

Pursuant to the requirements of the Georgia Comprehensive Solid Waste Management Act, O.C.G.A. § 12-8-20, et seq. and the Rules of the Georgia Department of Natural Resources, Chapter 391-3-4-.02(4), Solid Waste Management, both as amended, the undersigned hereby:

1. Requests a minor modification as represented in the attached modified D&O Plan, and/or supporting documents; and
2. Certifies that the Permittee is the rightful owner of the facility and can verify that this proposed modification shall conform to all local zoning/land use ordinances; and
3. Certifies that the information is provided in or submitted by the facility Permittee as a part of this request form and modified D&O Plan is true and correct, and if approved, the facility Permittee agrees to comply with provisions of this minor modification to the D&O Plan, provisions of the Act and Rules, and conditions of the Permit.

PERMITTEE Crisp County Board of Commissioners

ADDRESS 210 Seventh Street, South PHONE 229-276-2672

CITY Cordele STATE GA ZIP 31015

AUTHORIZED OFFICIAL Carl Gamble

SIGNATURE  DATE September 27, 2018

TITLE Public Works Director

MAILING ADDRESS 125 Eddie Road

CITY Cordele STATE GA ZIP 31015

- II. Briefly describe the exact change to be made to the permit conditions and explain why the change is needed:

- Change: Allow disposal of CCR material originating at Crisp County Power.

- Why: To accept CCR, EPD requires the addition of a CCR Management Plan, in accordance with the rules and guidance document, to include modifying the D&O plans and providing supporting demonstrations.

- III. Attached Documents Include:

- cover letter
- plan sheets revised or added by the addition of the CCR Management Plan [Sheets 1, 22, 22A, 31, 32, 33 and 35 of 35] to amend the current set
- a report with the demonstration narrative, calculations, and supporting documents



THE BOARD OF COMMISSIONERS OF CRISP COUNTY

PHONE
229.276.2673

210 SOUTH 7TH STREET
CORDELE, GEORGIA 31015

FAX
229.276.2639

RECEIVED

www.crispcounty.com

October 01, 2018

Honorable Sam. N. Farrow, Chairman
Crisp County Board of Commissioners
210 S 7th Street
Cordele, Georgia 31015

OCT 04 2018
SOLID WASTE
MANAGEMENT PROGRAM

**Subject: Crisp County US41S MSW Landfill
CCR Management Plan**

Dear Commissioner Farrow:

The Rules of Georgia Department of Natural Resources, Environmental Protection Division for Solid Waste Management, 391-3-4-.07 (5) state in part that *"The owner or operator shall notify the local governing authorities of any city and county in which the landfill is located upon the submittal of the CCR Management Plan to EPD."*

The Crisp County US41S MSW Landfill is located within Crisp County, so in accordance with this requirement, we are providing notice that we have submitted a CCR Management Plan to EPD for their review and approval.

Sincerely,

Carl Gamble
Public Works Director

Cc: Landfill Operating Record
Gregg Bacon, Lanier Engineering
Tom Patton, County Administrator



THE BOARD OF COMMISSIONERS OF CRISP COUNTY

PHONE
229.276.2673

210 SOUTH 7TH STREET
CORDELE, GEORGIA 31015

FAX
229.276.2639

www.crispcounty.com

RECEIVED

OCT 04 2018

**SOLID WASTE
MANAGEMENT PROGRAM**

October 01, 2018

Honorable John Wiggins, Commission Chairman
City of Cordele
501 North 7th Street
Cordele, Georgia 31015

**Subject: Crisp County US41S MSW Landfill
CCR Management Plan**

Dear Commissioner Wiggins:

The Rules of Georgia Department of Natural Resources, Environmental Protection Division (EPD) for Solid Waste Management, 391-3-4-.07 (5) state in part that *"The owner or operator shall notify the local governing authorities of any city and county in which the landfill is located upon the submittal of the CCR Management Plan to EPD."* Furthermore, EPD has prepared a guidance document for CCR Management which states, *"The owner or operator shall notify the local governing authorities of the county, and any city within the county, in which the landfill is located upon initial submittal of a CCR Management Plan to EPD."*

The Crisp County US41S MSW Landfill is located within Crisp County, and the City of Cordele is also in Crisp County, so in accordance with this requirement, we are providing notice that we have submitted a CCR Management Plan to EPD for their review and approval.

Sincerely,

Carl Gamble
Public Works Director
Crisp County

Cc: Landfill Operating Record
Sam N. Farrow
Gregg Bacon, Lanier Engineering
Tom Patton, County Administrator



THE BOARD OF COMMISSIONERS OF CRISP COUNTY

PHONE
229.276.2673

210 SOUTH 7TH STREET
CORDELE, GEORGIA 31015

FAX
229.276.2639

RECEIVED

www.crispcounty.com

October 01, 2018

Honorable Craig Huckaby, Mayor
City of Arabi
PO Box 177
Arabi, Georgia 31712

OCT 04 2018
**SOLID WASTE
MANAGEMENT PROGRAM**

**Subject: Crisp County US41S MSW Landfill
CCR Management Plan**

Dear Mayor Huckaby:

The Rules of Georgia Department of Natural Resources, Environmental Protection Division (EPD) for Solid Waste Management, 391-3-4-.07 (5) state in part that *"The owner or operator shall notify the local governing authorities of any city and county in which the landfill is located upon the submittal of the CCR Management Plan to EPD."* Furthermore, EPD has prepared a guidance document for CCR Management which states, *"The owner or operator shall notify the local governing authorities of the county, and any city within the county, in which the landfill is located upon initial submittal of a CCR Management Plan to EPD."*

The Crisp County US41S MSW Landfill is located within Crisp County, and the City of Arabi is also in Crisp County, so in accordance with this requirement, we are providing notice that we have submitted a CCR Management Plan to EPD for their review and approval.

Sincerely,

Carl Gamble
Public Works Director

Cc: Landfill Operating Record
Sam N. Farrow
Gregg Bacon, Lanier Engineering
Tom Patton, County Administrator

Report – Design Consistency

Landfill Design Considerations Crisp County US41S Landfill

Prepared for:

Browne and Company, LLC
Macon, Georgia

S+G Project No: BROWNECRISP-18-1



John M. Gardner, P.E.
Senior Project Manager

September 2018

Prepared by:

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577



PRINTED ON 100% RECYCLED PAPER

© 2018 Smith Gardner, Inc.

*This document is intended for the sole use of the client for which it was prepared and
for the purpose agreed upon by the client and Smith Gardner, Inc.*

Crisp County US 41S Landfill – MSW Cells 10 and 11

The following information supplements the CCR Management Plan shown on Sheets 22 and 22A of 35 of the D&O Plans for the Crisp County US 41S Landfill, as required by the Georgia Department of Natural Resources, Environmental Protection Division (GA EPD)¹. More specifically, the following addresses those requirements related to Design Consistency, Items 4.I.a through 4.I.e for the existing MSW disposal area at the subject site.

4. Design Consistency

a) A demonstration that the design grades of the landfill are stable (i.e., for short operations and long-term static and seismic conditions).

This demonstration [that the design grades of the landfill are stable (i.e., for short-term operations and long-term static and seismic conditions)] addresses the currently constructed Cells 10 and 11 and is presented as an updated analysis.

Site Design History

GA EPD issued the “original” Solid Waste Handling Permit (No. 040-008D (MSW)) for the Crisp County US41S Landfill to Crisp County Board of Commissioners in April 1989.

A revised design of the Crisp Co. US 41S Landfill was performed by Hodges, Harbin, Newberry & Tribble, Inc. (HHNT), Macon, Georgia, and approved by EPD in 2001². The revised permit applications included a slope stability analysis³ performed by Bunnell Lammons Engineering (BLE) for the landfill (lateral) expansion included in the permit application design calculations⁴.

The BLE stability analysis addressed design components such as the landfill cap, the landfill base liner, and the overall slope stability of the (then) proposed facility. Based on BLE’s analysis as presented in the report, the following results were summarized:

Criteria

Minimum Factor of Safety

Cap Stability:

- | | |
|-------------------------------|------|
| • Static Infinite Slope (wet) | 1.5 |
| • Static Infinite Slope (dry) | 2.0 |
| • Cover Soil Interface | 1.5 |
| • Shear of Geocomposite | 18.5 |

Base Liner Stability:

1.5

¹ Document titled, “Guidance Document for Coal Combustion Residuals (CCR) Management Plans”, dated December 22, 2016.

² GA EPD issued a Major Modification to Permit No. 040-008D(MSWL) on September 5, 2001, for a lateral expansion, Crisp County Board of Commissioners.

³ D.B. Bunnell, P.E., G.L. Weekly, P.E. (Bunnell-Lammons Engineering, Inc.). *Report of Geotechnical Analysis, Demonstration of Cap and Base Liner Stability & Settlement Estimate. Dated September 28, 2000.*

⁴ *Design Calculation for Crisp County U.S. 41S MSW Landfill Expansion*, prepared by Hodges, Harbin, Newberry & Tribble, Inc., Macon, Georgia. Dated October 2000, revised March 20, 2001.

Results

Slope Stability:

Failure through Foundation (Global):	
• Static, Circular	2.5
• Static, Block	2.7
Failure through waste (4H:1V):	
• Static, Circular	2.5
• Static, Block	2.7
Failure through Fill Embankment (3H:1V):	
• Static, Circular	1.5
• Static, Block	1.5
Side Slope Berm Stability:	
• Static, Circular	1.9
• Static, Block	1.9

BLE conclusions, as reported at the time were as follows:

“The resulting factors of safety were computed to equal or exceed 1.5 for static loading conditions. The site is not in a seismic impact zone. The results of the specific analyses are summarized in the attached table [above] and specific analyses are also attached.

In conclusion, the above analyses indicate that the landfill configuration will be stable and provide appropriate factors of safety against slope instability.”

Relevant Site Operations

According to facility records, no CCR waste has been disposed to date at the facility. The facility has accepted only MSW or C&D in the constructed cells. CCR waste will be block disposed within the limits of Cells 10 and 11, which are the only cells evaluated in this Design Consistency Report.

Should future cells receive CCR waste, the CCR Management Plan, and Design Consistency Report will be revised, as required.

CCR Disposal (Cells 10 and 11)

The quantity of the source CCR material has been estimated at 50,000 tons (TN). The landfill intends to receive all 50,000 TN of CCR, upon approval of this minor modification, to be disposed in currently constructed Cells 10 and 11. The CCR material received at the landfill will be sourced from the Crisp County Power Commission. The material will be placed in an isolated “block” separate from MSW landfilling activities; therefore, the material will be isolated within the landfill, and not co-mingled with MSW waste.

It is planned that the CCR waste will be placed within Cells 10 and 11 in an area approximately 400 feet by 200 feet (oriented east west) in lifts totaling approximately 20 feet thick, as shown in **Figures 1A** through **1C**. This will provide approximately 50,000 tons of capacity, located on the interior portion of the landfill several hundred feet from final outer slope areas. CCR will be placed above the existing “fluff” layer (first lift) of

Cell 11 (approximately 20 feet thick) and will “layover” onto previously constructed Cell 10. Therefore, CCR material will not be placed directly on the constructed leachate collection system. The disposal practice will not create layer of compacted coal ash, and therefore prevent the increased occurrence of leachate outbreaks due to reduced infiltration rates.

With respect to landfill operations (i.e. starting upon approval of the CCR Management Plan), the total permitted capacity within Cells 10 and 11 is about 1.8 million cubic yards (MCY). Under the proposed CCR acceptance of 50,000 TN (assumed 50,000 cubic yards (CY)), the total quantity of CCR disposed would comprise about 2.7% of Cells 10 and 11 constructed capacity (50,000CY/1.8MCY).

Updated Analysis

This section summarizes evaluations of the stability of the overall waste mass as it relates to placement of CCR waste in Cells 10 and 11 (deep-seated failure surfaces). The minimum acceptable factors of safety for long-term slope stability were selected to be 1.5 for static conditions. For interim conditions, the minimum acceptable factors of safety were selected to be 1.3 for static conditions.

Critical Sections

Based on inspection of the proposed placement of CCR material in Cells 10 and 11, two (2) potential areas of stability concern were selected (**Figures 1A** through **1C**). Section A-A was selected as an interim (short-term) condition as Cells 10 and 11 reached design elevation. Section B-B was selected for the final condition. In both cases the selected sections evaluated a “block” of CCR material approximately 330 feet from exterior (final) slopes and 100 feet from interim slopes.

Based on the Final Cover System Grading Plan, the final slopes and interim slopes will be constructed at a 4:1 (horizontal:vertical) slope. Our analysis assumed the CCR block will also be constructed at 4:1 slopes.

Material Properties

A summary of material properties used in the stability evaluation is presented in **Table 1**. A discussion of these values is as follows:

Perimeter Berms/Subgrade

The assumed material properties for the perimeter berms and subgrade:

Unit Weight:	120	PCF
Cohesion:	0	PSF
Angle of Internal Friction:	28	Degrees

These material properties were selected based on published data⁵ for “slow” (drained) consolidated loading, as in the subbase will be loaded over many years as waste is placed.

Upon our review of boring logs, presented in the BLE geotechnical analysis, we identified a weaker clay layer in boring GWC-16S, approximately five (5) feet thick. This layer was identified by low (standard) blow counts and was conservatively analyzed as “quick” (undrained) consolidated clay. The assumed material properties for this in-situ clay layer:

Unit Weight:	120	PCF
Cohesion:	0	PSF
Angle of Internal Friction:	20	Degrees

MSW Waste

The assumed material properties for the MSW:

Unit Weight:	75	PCF
Cohesion:	500	PSF
Angle of Internal Friction:	30	Degrees

The assumed shear strength envelope (cohesion and friction angle values) was based on EPA guidance and summarized strength properties for MSW waste by Kavazanjian et. al. (1995) and Eid et. al. (2000). This data references published laboratory and field tests on MSW wastes and from values back -calculated from steep landfill slopes. Kavazanjian et. al. (1995) recommend a bilinear strength envelope for MSW materials as shown on **Figure 2**. This envelope represents a lower bound to the MSW strength data collected in that study. Also shown on **Figure 2** is the strength envelope recommended by Eid et. al and the strength envelope used in this evaluation. Note that the strength envelope used in this evaluation ranges between the Kavazanjian and Eid values for a normal stress up to approximately 300 kPa ($\pm 6,260$ psf or ± 90 feet of waste @ 70 pcf) and is more conservative than the two for greater waste thicknesses.

CCR Waste

The assumed material properties for the CCR:

Unit Weight:	40	PCF
Cohesion:	0	PSF
Angle of Internal Friction:	21	Degrees

These properties were conservatively chosen based on laboratory testing in August 2018 by TTL, Inc. on material in the existing CCR pond (**Appendix B**) that will be disposed at the facility.

⁵ Bowles, Joseph E. (1968) *Foundation Analysis and Design*. New York, NY: McGraw-Hill Book Company.

Liner

The assumed material properties for the CCR:

Unit Weight:	60	PCF
Cohesion:	0	PSF
Angle of Internal Friction:	14	Degrees (interface value)

The assumed unit weight is not critical as the liner system is very thin relative to the cross sections analyzed. The assumed shear strength envelope for the liner system is judged to be conservative of the geosynthetic/soil interfaces involved.

Table 1. Material Properties

Material/Zone	Unit Weight (pcf)	Cohesion (psf)	Friction Angle (phi)
In-situ Soil	120	0	28
In-situ (Soft) Clay	120	0	20
Soil Liner (CCL)	120	0	24
Geosynthetics	60	0	14
MSW Waste	70	500	30
CCR Waste	40	0	21

Methodology

The stability of deep-seated failure surfaces was evaluated using the computer program *Slide* (v. 6.0) developed by Roc Science (Toronto, Ontario). Both block (translational along liner) and circular (rotational within waste mass) failure surfaces were analyzed. The factor of safety was determined using Spencer's Method which satisfies force and moment equilibrium. Spencer's Method provides a more exact solution than the more conservative modified Janbu Method (US Army).

Results

Table 3 provides a summary of the results of the stability analyses for deep-seated failure surfaces. The results demonstrate that minimum factors of safety for static (seismic not evaluated, as discussed below) conditions meet or exceed the minimum criteria (1.5 for final static conditions and 1.3 for interim static conditions) for the stability of MSW cells and CCR "block". These analyses are presented in **Appendix A**.

Seismic stability analysis is required (per 40 CFR Part 258.14) if a facility is located within a seismic impact zone, defined as having a maximum horizontal acceleration exceeding 0.10 g based on a 10% probability of being exceeded in a 250 year time period (equivalent of 2% probability of being exceeded in 50 years). The peak ground acceleration at the project site was obtained from 2014 USGS information⁶ (tabulated

⁶ Petersen, M.D., Moschetti, M.P., Powers, P.M., Mueller, C.S., Haller, K.M., Frankel, A.D., Zeng, Yuehua, Rezaeian, Sanaz, Harmsen, S.C., Boyd, O.S., Field, Ned, Chen, Rui, Rukstales, K.S., Luco, Nico, Wheeler, R.L., Williams, R.A., and Olsen, A.H., 2014, Documentation for the 2014 update of the United States national seismic hazard maps: U.S. Geological Survey Open-File Report 2014-1091, 243 p., <http://dx.doi.org/10.3133/ofr20141091>.

projected ground acceleration -- 2% probability of being exceeded in 50 years). This indicates that a peak ground acceleration (PGA) of 0.054 g can be assigned to the site based on the site longitude (-83.75 degrees) and latitude (31.86 degrees). Therefore, no seismic stability analysis is required.

Table 2. Summary of Results

Condition Analyzed	Factor of Safety	Comment
Circular, Static (Final)	2.47	acceptable
Block, Static (Final)	1.74	acceptable
Circular, Static (Interim)	2.23	acceptable
Block, Static (Interim)	2.22	acceptable

b) A demonstration that the liner system is designed to account for chemical exposure to CCR-generated leachate.

Cells 10 and 11 have been constructed with a composite liner consisting of the following: 24 inches of compacted clay liner (CCL) comprised of on-site soils required to have a tested, in-place hydraulic conductivity of not more than 1×10^{-7} cm/sec, subsequently overlain by a 60-mil HDPE Geomembrane and 24 inches of protective cover to have a tested hydraulic conductivity not less than 1×10^{-2} cm/sec.

Based on this general configuration, the most susceptible components of the liner system to degradation from exposure to CCR leachate is the HDPE Geomembrane, evaluated below. The impact of site leachate (from MSW leachate and CCR-generated leachate) on the CCL is not included in this analysis. This is based in part on the fact that geomembrane overlies and protects the CCL from direct contact with leachate.

HDPE Evaluation

High Density Polyethylene (HDPE) used in the manufacture of geomembrane liners, including those previously installed at the subject site in Cells 10 and 11 is commonly known to be chemically inert in that its physical properties that are relied upon for containment are unaffected by (i.e. non-reactant to) chemicals. More specifically, HDPE's relevant properties (i.e. those impacting containment performance) have been shown to be substantially unaffected by acidic/basic conditions, petroleum hydrocarbons, solvents, salts, and metals. Although some solvents (including trichloroethylene and benzene) have been shown to cause some swelling in HDPE geomembranes, the concentration that causes swelling is reportedly much higher than is seen in typical MSW or CCR leachates, as well as in the Crisp County leachate, as summarized below.

Based on leachate quality analyses from the Crisp County site in 2018, benzene levels were reported as not exceeding about 5 µg/l. Sampling was not conducted for trichloroethylene. The pH (field) of Crisp County landfill leachate (as sampled most recently in May 2018) was reported at 7.6, however the pH has varied from 6.9 to 8.5 since May 2015 (7 reporting periods).

Source-specific testing (TCLP) was performed on CCR material in May 2017 and June 2018 (**Appendix C**). In general, the CCR material has somewhat elevated levels of metals and sulfate, however HDPE is not reactive with these CCR constituents.

Regarding relevant properties, solvent (i.e., benzene and trichloroethylene) levels in the CCR were not-detected (ND) in the laboratory testing and should not increase the current levels observed in the MSW leachate testing. Although the pH was observed between 4.9 and 6.7 in laboratory testing, it is not expected to affect the existing landfill leachate based on the relatively small quantity of CCR as compared to MSW for the entire site.

In summary, under the proposed maximum CCR acceptance of 50,000 TN or 2.7% of the capacity of the constructed Cells 10 and 11, the leachate quality is not expected to be impacted by CCR-generated leachate and therefore the impact of (predominantly) MSW leachate on the HDPE liners is not expected.

Based on this evaluation of the TCLP and site-specific leachate analyses, it is our professional opinion that the leachate quality at the site will have no potential impact on the performance of the HDPE geomembrane liners previously installed in Cells 10 and 11 at the site.

- c) **The cell floor grading and construction plans shall account for settlement caused by the weight of the CCR or the comingled waste. Cell floor subsidence and leachate collection pipe crushing shall be evaluated, and a demonstration of adequate post-settlement cell floor grades, leachate pipe grades, and resistance to crushing shall be provided in the design calculations.**

The following demonstration addresses the currently constructed Cells 10 and 11 and is presented as a comparative analysis between the previous (HHNT and BLE) “input” parameters and design/analysis assumptions with those same parameters and assumptions for those cell areas that will receive CCR subsequent to the previous HHNT and BLE analyses.

Leachate collection pipe crushing was previously evaluated by HHNT in their design calculations for landfill expansion, referenced above (a copy is on file with Georgia EPD in the previously approved design documents supporting the D&O Plan submittal). Cell floor subsidence and a demonstration of adequate post-settlement cell floor grades and leachate pipe grades were previously evaluated by BLE in their geotechnical analysis report, referenced above (a copy is on file with Georgia EPD in the previously approved design documents supporting the D&O Plan submittal).

Comparative Analysis

HHNT’s and BLE’s analyses included a number of assumptions which are itemized below with a comparison with current site data and S+G’s evaluation, by inspection, of these same assumptions with considering that the anticipated CCR acceptance:

Waste Properties

Unit Weight:	60 Pounds per Cubic Foot (PCF)
Height of Waste:	236 feet (maximum)

These load assumptions (height of waste and unit weight of waste/cover) are the most critical “input” parameter when evaluating loading and resultant strains and settlements. The subsurface conditions (with respect to consolidation characteristics) would be unchanged from the original analyses. As reported in the previous analyses, HHNT estimated that the Factor of Safety against leachate pipe crushing was about 2.9 and BLE estimated maximum subgrade settlements of about 5 inches (4 inches in Cells 10 and 11).

Based on historical data collected to-date including the total volume of in-place waste/cover and total tons received at the facility, the current in-place waste/cover density is about 0.5 Tons per Cubic Yard (TCY), or about 37 PCF. The maximum height of the landfill that resulted in the design case for loading (236 feet) has not changed and represents the currently approved design.

Laboratory testing of the CCR measured compacted densities of about 43 PCF. Therefore, the CCR material is not anticipated to increase the waste/cover density over the HHNT design value of 60 PCF (0.8 TCY).

By inspection, the actual waste/cover density value including the CCR is lower than was assumed in the original analyses by HHNT and BLE (results as used in the design by HHNT and BLE), these analyses are not only still valid, but are also somewhat conservative.

Consequently, with respect to settlements and pipe crushing, the CCR addition will not impact the previous design, which is, based on actual field and laboratory data, conservatively designed.

- d) The Leachate Collection and Removal System (LCRS) shall continue to maintain its functionality and limit the head of leachate on the liner system to a maximum of 30 centimeters. Drainage nets, filter fabrics, and other features of the LCRS must be demonstrated to be compatible with CCR. Pipes must be able to support the weight of the CCR without damage.**

The existing leachate collection system is incised within the protective cover and generally consists of the following:

- 8-inch DIA. perforated HDPE piping;
- The piping is surrounded with GA DOT #57 stone; and
- A zone of “transition filter media” is placed between the #57 stone and the protective cover material.

Per the approved D&O Plans, leachate is removed from Cells 10 and 11 through gravity penetrations of the liner system into a combined gravity/forcemain piping system that conveys leachate to the on-site leachate storage tanks.

The small contribution of CCR to the site (about 2.7% of the capacity to be placed in Cells 10 and 11) in our opinion will not result in impacts to the leachate collection and removal system.

Comparative Analysis

LCRS Pipe Crushing

As discussed above in response to Item 4.c., the proposed waste-plus-cover soil unit weight (MSW and CCR) is less than the unit weight that was assumed in the original design analysis of the LCRS system, and therefore the weight due to the CCR is acceptable.

LCRS Flow Capacity

The pumping station design in the currently approved D&O Plans, based on HELP model analyses is about 8 gpm (or about 423 gpad). The impact on the LCRS due to a “block” of CCR material is expected to be low due to:

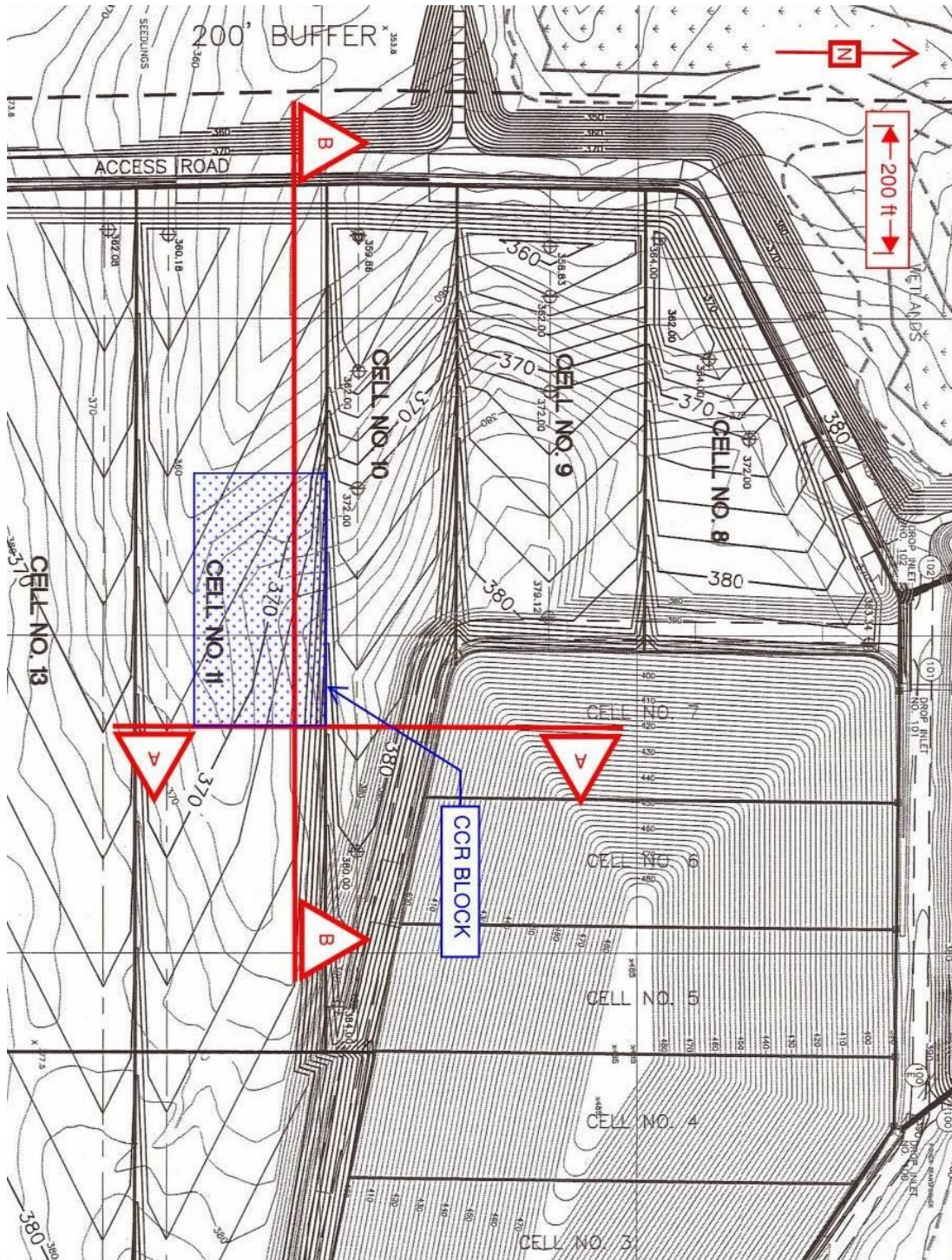
1. The vertical distance between the LCRS and the disposed CCR; and,
2. The relatively small quantity of CCR accepted and disposed in Cells 10 and 11 (about 2.7%).

e) The landfill gas collection system design shall account for comingling of MSW and CCR waste.

The facility is permitted to install passive landfill gas (LFG) vents, which may be converted to an active extraction well should the facility be required to comply with Title V regulations. In general, this system includes a series of vertical wells drilled approximately 6 feet above the landfill liner system (i.e., top of protective cover).

The “block” of CCR shall be surveyed during installation, in these areas it may be determined by the engineer to drill through the CCR material to install the LFG well, or stop the well above the “block”.

It is our opinion that the presence of CCR material will have no impact to this system.



LOCATION OF SLOPE STABILITY
CROSS SECTIONS
(BASE GRADES)

SMITH+GARDNER

SCALE:

AS SHOWN

DRAWN BY:

OTHERS

CHECKED BY:

JRF

DATE:

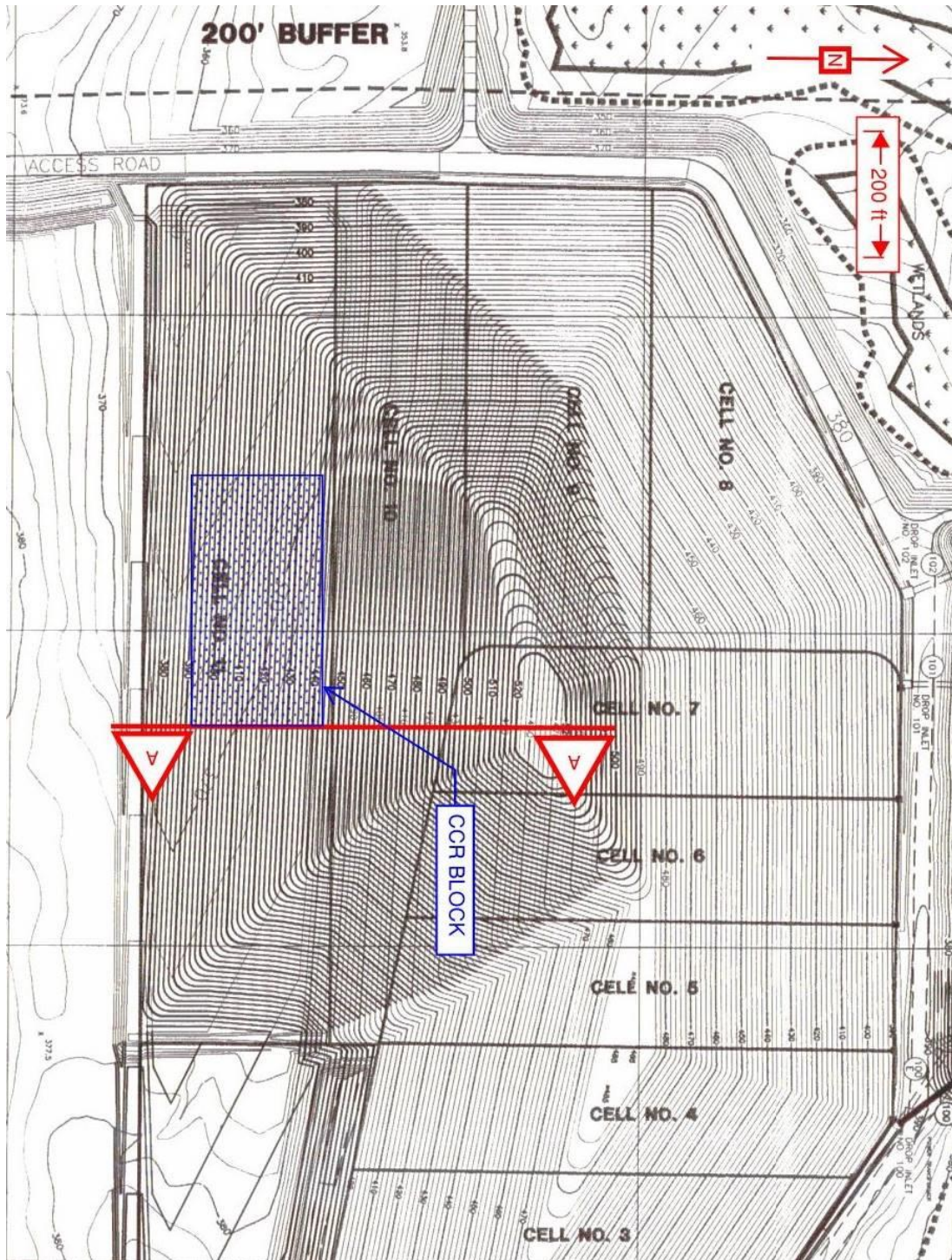
SEPTEMBER 2018

PROJECT NO.

BROWNECRISP-18-1

FIGURE NO.

1A



LOCATION OF SLOPE STABILITY
CROSS SECTIONS
(INTERIM GRADES)

SMITH+GARDNER

SCALE:

AS SHOWN

DRAWN BY:

OTHERS

CHECKED BY:

JRF

DATE:

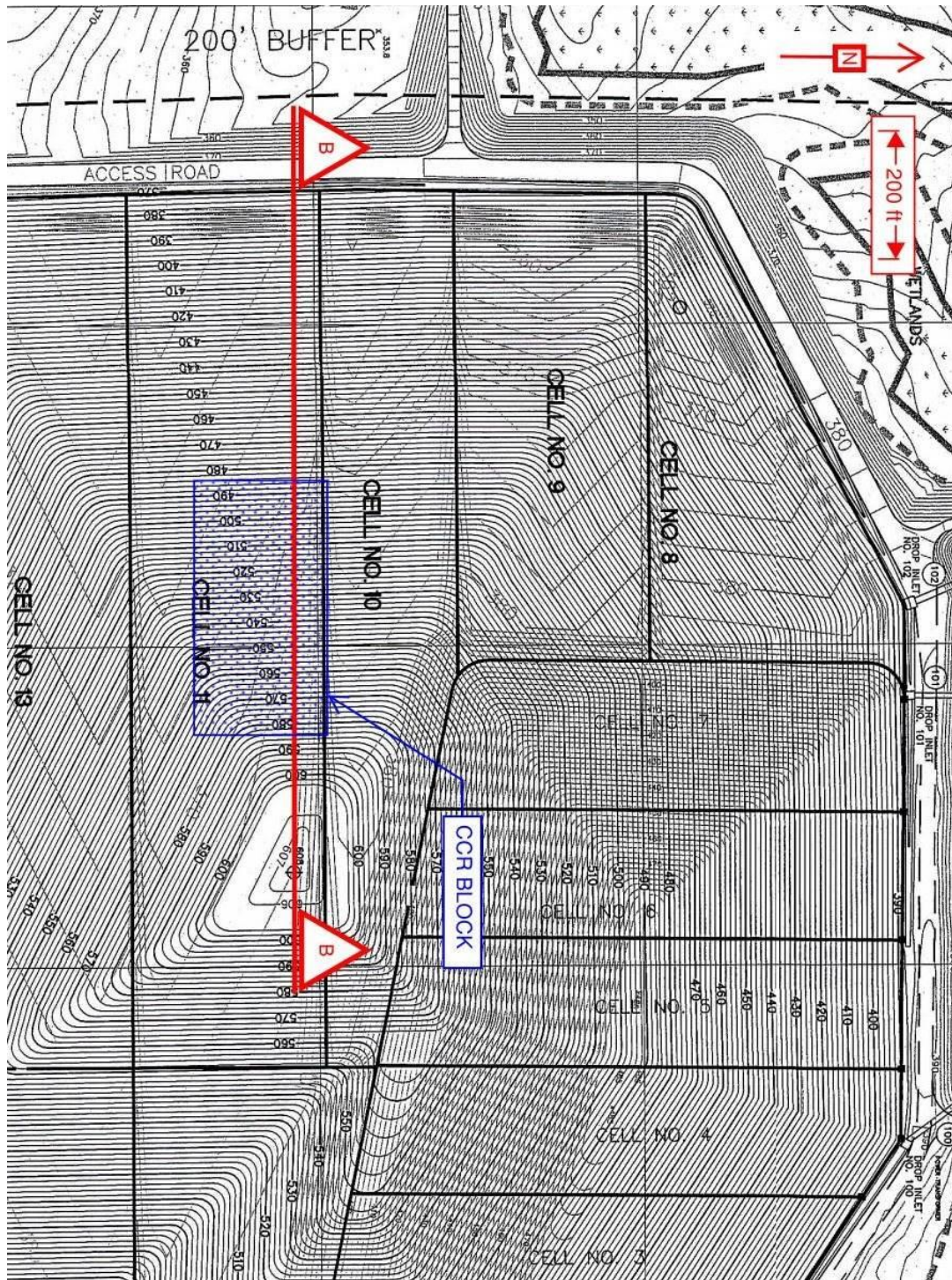
SEPTEMBER 2018

PROJECT NO.

BROWNECRISP-18-1

FIGURE NO.

1B



LOCATION OF SLOPE STABILITY
CROSS SECTIONS
(FINAL COVER GRADES)

SMITH+GARDNER

SCALE:

AS SHOWN

DRAWN BY:

OTHERS

CHECKED BY:

JRF

DATE:

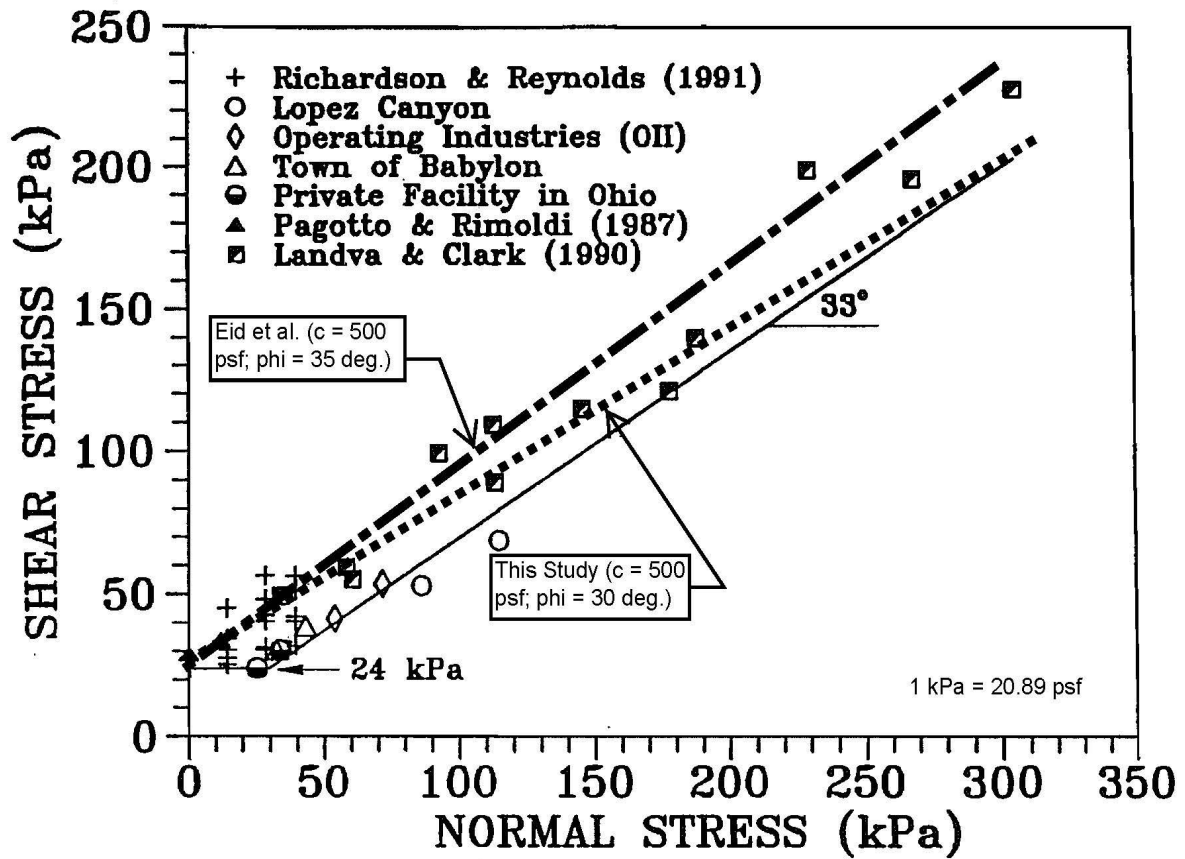
SEPTEMBER 2018

PROJECT NO.

BROWNECRISP-18-1

FIGURE NO.

1C



**SHEAR STRENGTH OF
MUNICIPAL SOLID WASTE**

SMITH+GARDNER

SCALE:

NOT TO SCALE

DRAWN BY:

OTHERS

CHECKED BY:

JRF

DATE:

SEPTEMBER 2018

PROJECT NO.

BROWNECRISP-18-1

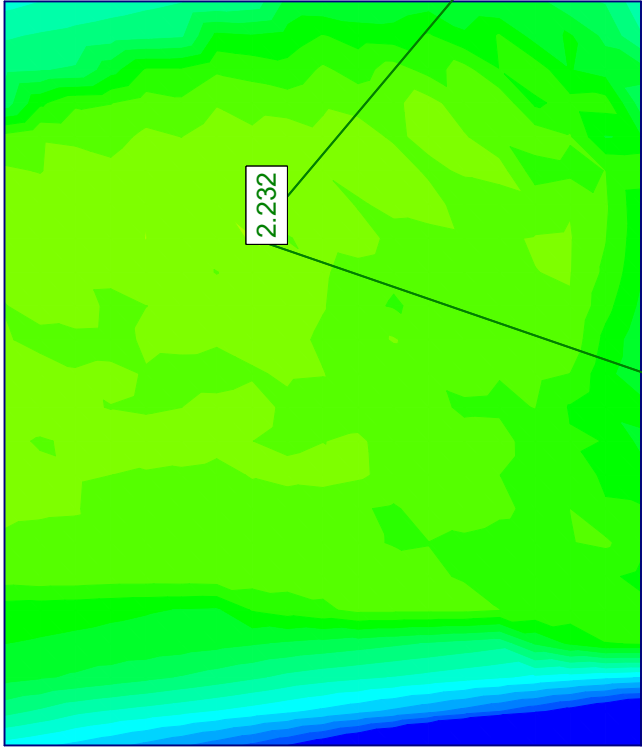
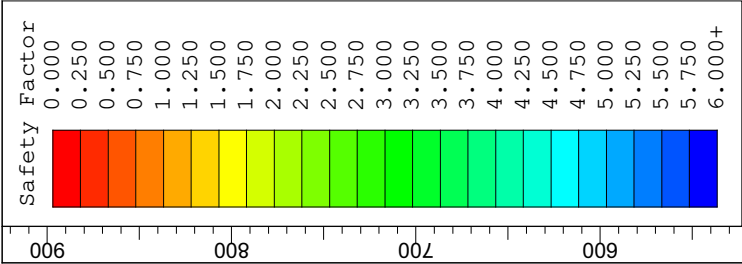
FIGURE NO.

2

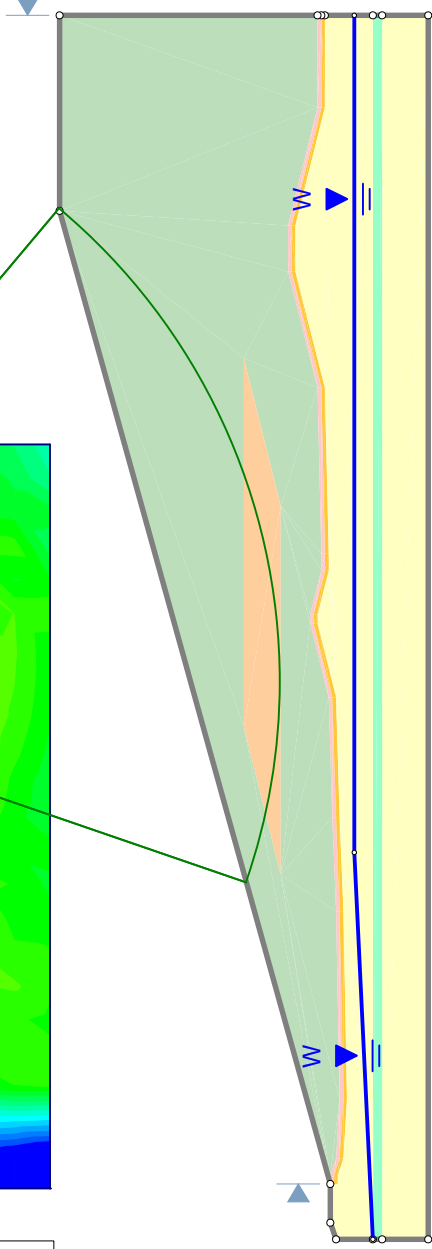
APPENDIX A

Slope Stability Calculations

**Design Consistency
Crisp County Landfill
Cordele, Georgia**



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Subgrade		120	Mohr-Coulomb	0	28
MSW		70	Mohr-Coulomb	500	30
CCR		40	Mohr-Coulomb	0	21
Soil Liner		120	Mohr-Coulomb	0	24
Base Geosynthetics		60	Mohr-Coulomb	0	14
In-Situ Clay		120	Mohr-Coulomb	0	20



Project			Crisp Co. CCR Mgmt		
Analysis Description			Spencer's Method - Circular Section A-A (Interim)		
Drawn By	John R. Fearrington	Scale	1:1250	Company	Smith Gardner, Inc
Date	7/25/2018, 2:49:49 PM		File Name		Cell 11.Interim(A-A).Circular.slim

Slide Analysis Information

Crisp Co. CCR Mgmt

Project Summary

File Name: Cell 11.Interim(A-A).Circular.slim
Slide Modeler Version: 6.015
Project Title: Crisp Co. CCR Mgmt
Analysis: Spencer's Method - Circular Section A-A (Interim)
Author: John R. Fearington
Company: Smith Gardner, Inc
Date Created: 7/25/2018, 2:49:49 PM

General Settings

Units of Measurement: Imperial Units
Time Units: days
Permeability Units: feet/second
Failure Direction: Right to Left
Data Output: Standard
Maximum Material Properties: 20
Maximum Support Properties: 20

Analysis Options

Analysis Methods Used

Spencer

Number of slices: 25
Tolerance: 0.005
Maximum number of iterations: 50
Check malpha < 0.2: Yes
Initial trial value of FS: 1
Steffensen Iteration: Yes

Groundwater Analysis

Groundwater Method: Water Surfaces
Pore Fluid Unit Weight: 62.4 lbs/ft³
Advanced Groundwater Method: None

Random Numbers







Pseudo-random Seed: 10116

Random Number Generation Method: Park and Miller v.3

Surface Options

Surface Type: Circular
 Search Method: Grid Search
 Radius Increment: 10
 Composite Surfaces: Disabled
 Reverse Curvature: Create Tension Crack
 Minimum Elevation: Not Defined
 Minimum Depth: Not Defined

Material Properties

Property	Subgrade	MSW	CCR	Soil Liner	Base Geosynthetics	In-Situ Clay
Color						
Strength Type	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb
Unit Weight [lbs/ft3]	120	70	40	120	60	120
Cohesion [psf]	0	500	0	0	0	0
Friction Angle [deg]	28	30	21	24	14	20
Water Surface	Water Table	Water Table	Water Table	Water Table	Water Table	Water Table
Hu Value	1	1	1	1	1	1

Probabilistic Analysis Input

General Settings

Sensitivity Analysis: On
 Probabilistic Analysis: Off

Variables

Material	Property	Distribution	Mean	Min	Max
CCR	Phi	Normal	21	0	30

Global Minimums

Method: spencer

FS: 2.231970
 Center: 302.780, 736.121
 Radius: 335.810
 Left Slip Surface Endpoint: 193.611, 418.551
 Right Slip Surface Endpoint: 559.802, 520.000
 Resisting Moment=1.89606e+008 lb-ft

Driving Moment=8.495e+007 lb-ft
 Resisting Horizontal Force=512765 lb
 Driving Horizontal Force=229737 lb

Valid / Invalid Surfaces

Method: spencer

Number of Valid Surfaces: 4537
 Number of Invalid Surfaces: 270

Error Codes:

Error Code -103 reported for 268 surfaces
 Error Code -108 reported for 2 surfaces

Error Codes

The following errors were encountered during the computation:

-103 = Two surface / slope intersections, but one or more surface / nonslope external polygon intersections lie between them. This usually occurs when the slip surface extends past the bottom of the soil region, but may also occur on a benched slope model with two sets of Slope Limits.

-108 = Total driving moment or total driving force < 0.1. This is to limit the calculation of extremely high safety factors if the driving force is very small (0.1 is an arbitrary number).

Slice Data

Global Minimum Query (spencer) - Safety Factor: 2.23197

Slice Number	Width [ft]	Weight [lbs]	Base Material	Base Cohesion [psf]	Base Friction Angle [degrees]	Shear Stress [psf]	Shear Strength [psf]	Base Normal Stress [psf]	Pore Pressure [psf]	Effective Normal Stress [psf]
1	12.3364	3199.81	MSW	500	30	345.252	770.591	468.678	0	468.678
2	12.3364	9376.42	MSW	500	30	497.276	1109.9	1056.39	0	1056.39
3	12.3364	15114.1	MSW	500	30	631.866	1410.31	1576.7	0	1576.7
4	15.4548	24759.3	CCR	0	21	308.401	688.342	1793.19	0	1793.19
5	15.4548	29261.4	CCR	0	21	357.385	797.672	2078.01	0	2078.01
6	15.4548	33308.7	CCR	0	21	399.191	890.982	2321.09	0	2321.09
7	15.4548	37690.9	CCR	0	21	443.497	989.873	2578.7	0	2578.7
8	15.4548	42636.5	CCR	0	21	492.789	1099.89	2865.3	0	2865.3
9	15.4548	47145.7	CCR	0	21	535.401	1195	3113.08	0	3113.08
10	15.4548	51213.6	CCR	0	21	571.571	1275.73	3323.39	0	3323.39
11	15.4548	54836.5	CCR	0	21	601.505	1342.54	3497.45	0	3497.45
12	15.4548	58007.6	CCR	0	21	625.362	1395.79	3636.16	0	3636.16
13	15.4548	60717	CCR	0	21	643.239	1435.69	3740.1	0	3740.1
14	15.4548	62951.1	CCR	0	21	655.197	1462.38	3809.63	0	3809.63
15	15.4548	64692.3	CCR	0	21	661.241	1475.87	3844.77	0	3844.77
16	14.3725	60087.9	MSW	500	30	1176.06	2624.92	3680.47	0	3680.47
17	14.3725	58162.5	MSW	500	30	1122.62	2505.65	3473.89	0	3473.89

18	14.3725	55429.2	MSW	500	30	1057.78	2360.93	3223.22	0	3223.22
19	14.3725	51832.4	MSW	500	30	981.429	2190.52	2928.07	0	2928.07
20	14.3725	47302.7	MSW	500	30	893.413	1994.07	2587.81	0	2587.81
21	14.3725	41753.4	MSW	500	30	793.501	1771.07	2201.55	0	2201.55
22	14.3725	35073.8	MSW	500	30	681.394	1520.85	1768.15	0	1768.15
23	14.3725	27120.2	MSW	500	30	556.74	1242.63	1286.27	0	1286.27
24	14.3725	17700.9	MSW	500	30	419.155	935.541	754.38	0	754.38
25	14.3725	6519.36	MSW	500	30	268.078	598.342	170.334	0	170.334

Interslice Data

Global Minimum Query (spencer) - Safety Factor: 2.23197

Slice Number	X coordinate [ft]	Y coordinate - Bottom [ft]	Interslice Normal Force [lbs]	Interslice Shear Force [lbs]	Interslice Force Angle [degrees]
1	193.611	418.551	0	0	0
2	205.947	414.574	6128.39	1219.78	11.2569
3	218.284	411.115	15926	3169.86	11.2569
4	230.62	408.155	28397.7	5652.19	11.2569
5	246.075	405.133	38589.9	7680.81	11.2569
6	261.53	402.854	48856.4	9724.23	11.2569
7	276.984	401.303	58633.9	11670.3	11.2569
8	292.439	400.47	67645.1	13463.9	11.2569
9	307.894	400.349	75615.8	15050.3	11.2568
10	323.349	400.941	82059.7	16332.9	11.2569
11	338.803	402.248	86560.4	17228.7	11.2569
12	354.258	404.28	88764.2	17667.4	11.2569
13	369.713	407.048	88373.6	17589.6	11.2569
14	385.168	410.574	85143	16946.6	11.2569
15	400.622	414.88	78876	15699.2	11.2568
16	416.077	420	69424.7	13818.1	11.2569
17	430.45	425.526	66011.3	13138.7	11.2569
18	444.822	431.83	60266.9	11995.3	11.2568
19	459.195	438.962	52501.7	10449.8	11.2569
20	473.567	446.984	43139.8	8586.41	11.2569
21	487.94	455.97	32742.3	6516.92	11.2569
22	502.312	466.018	22040.6	4386.89	11.2569
23	516.685	477.251	11984.6	2385.37	11.2568
24	531.057	489.832	3814.71	759.268	11.2569
25	545.43	503.979	-825.285	-164.262	11.2569
26	559.802	520	0	0	0

List Of Coordinates

Water Table

X	Y
0	350
210	360
664	360

External Boundary

X	Y
664	320
664	345
664	350
664	376
664	378
664	380
664	520
558	520
30	373
9	373
0	370
0	350
0	345
0	320

Material Boundary

X	Y
30	373
35	373
44	370
76	368
178	370
229	372
294	374
334	384
339	384

Material Boundary

X	Y
30	373
30	371
30	369
35	369
44	366
76	364

178	366
229	368
294	370
334	380

Material Boundary

X	Y
398	400
478	420

Material Boundary

X	Y
334	380
339	380

Material Boundary

X	Y
339	380
363	374
372	374
462	376
525	392
550	392
614	376
664	376

Material Boundary

X	Y
339	384
363	378
372	378

Material Boundary

X	Y
372	378
462	380
525	396
550	396
614	380
664	380

Material Boundary

X	Y
198	400
398	400

Material Boundary

X	Y
198	400
278	420
478	420

Material Boundary

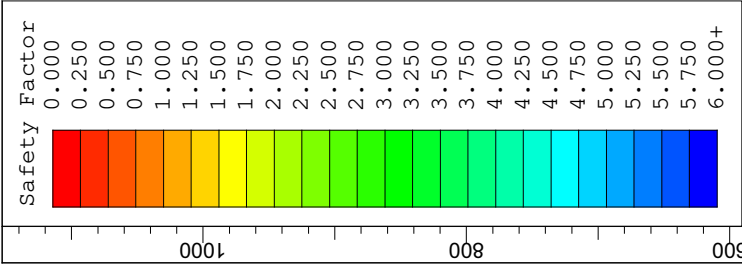
X	Y
30	371
35	371
44	368
76	366
178	368
229	370
294	372
334	382
339	382
363	376
372	376
462	378
525	394
550	394
614	378
664	378

Material Boundary

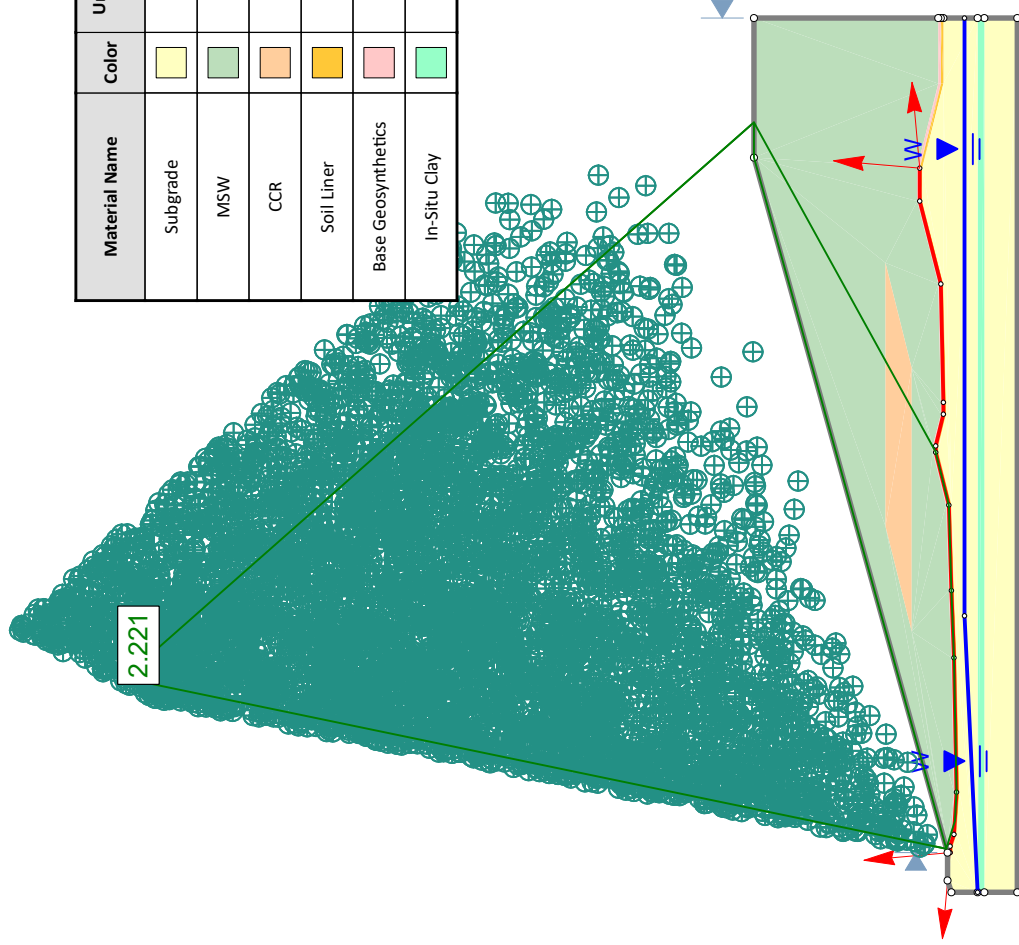
X	Y
0	345
664	345

Material Boundary

X	Y
0	350
664	350



Material Name	Color	Unit Weight (lbs/ft ³)	Strength Type	Cohesion (psf)	Phi (deg)
Subgrade		120	Mohr-Coulomb	0	28
MSW		70	Mohr-Coulomb	500	30
CCR		40	Mohr-Coulomb	0	21
Soil Liner		120	Mohr-Coulomb	0	24
Base Geosynthetics		60	Mohr-Coulomb	0	14
In-Situ Clay		120	Mohr-Coulomb	0	20



Project		Crisp Co. CCR Mgmt	
Analysis Description		Spencer's Method - Block Section A-A (Interim)	
Drawn By	John R. Fearrington	Scale	1:1750
Date		Company	Smith Gardner, Inc
7/25/2018, 2:49:49 PM		File Name	Cell 11.Interim(A-A).Block.slm

Slide Analysis Information

Crisp Co. CCR Mgmt

Project Summary

File Name: Cell 11.Interim(A-A).Block.slim
Slide Modeler Version: 6.015
Project Title: Crisp Co. CCR Mgmt
Analysis: Spencer's Method - Block Section A-A (Interim)
Author: John R. Fearington
Company: Smith Gardner, Inc
Date Created: 7/25/2018, 2:49:49 PM

General Settings

Units of Measurement: Imperial Units
Time Units: days
Permeability Units: feet/second
Failure Direction: Right to Left
Data Output: Standard
Maximum Material Properties: 20
Maximum Support Properties: 20

Analysis Options

Analysis Methods Used

Spencer

Number of slices: 25
Tolerance: 0.005
Maximum number of iterations: 50
Check malpha < 0.2: Yes
Initial trial value of FS: 1
Steffensen Iteration: Yes

Groundwater Analysis

Groundwater Method: Water Surfaces
Pore Fluid Unit Weight: 62.4 lbs/ft³
Advanced Groundwater Method: None

Random Numbers







Pseudo-random Seed: 10116

Random Number Generation Method: Park and Miller v.3

Surface Options

Surface Type: Non-Circular Block Search
 Number of Surfaces: 5000
 Pseudo-Random Surfaces: Enabled
 Convex Surfaces Only: Disabled
 Left Projection Angle (Start Angle): 175
 Left Projection Angle (End Angle): 95
 Right Projection Angle (Start Angle): 85
 Right Projection Angle (End Angle): 5
 Minimum Elevation: Not Defined
 Minimum Depth: Not Defined

Material Properties

Property	Subgrade	MSW	CCR	Soil Liner	Base Geosynthetics	In-Situ Clay
Color						
Strength Type	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb
Unit Weight [lbs/ft3]	120	70	40	120	60	120
Cohesion [psf]	0	500	0	0	0	0
Friction Angle [deg]	28	30	21	24	14	20
Water Surface	Water Table	Water Table	Water Table	Water Table	Water Table	Water Table
Hu Value	1	1	1	1	1	1

Global Minimums

Method: spencer

FS: 2.221060
 Axis Location: 162.553, 998.567
 Left Slip Surface Endpoint: 32.911, 373.811
 Right Slip Surface Endpoint: 584.573, 520.000
 Resisting Moment=5.51723e+008 lb-ft
 Driving Moment=2.48405e+008 lb-ft
 Resisting Horizontal Force=818922 lb
 Driving Horizontal Force=368707 lb

Global Minimum Coordinates

Method: spencer

X	Y
32.9114	373.811
54.1921	367.363

76	366
178	368
229	370
294	372
334	382
334.399	382
584.573	520

Valid / Invalid Surfaces

Method: spencer

Number of Valid Surfaces: 2833
 Number of Invalid Surfaces: 2167

Error Codes:

Error Code -108 reported for 1020 surfaces
 Error Code -111 reported for 64 surfaces
 Error Code -112 reported for 1083 surfaces

Error Codes

The following errors were encountered during the computation:

- 108 = Total driving moment or total driving force < 0.1. This is to limit the calculation of extremely high safety factors if the driving force is very small (0.1 is an arbitrary number).
- 111 = safety factor equation did not converge
- 112 = The coefficient $M\text{-}\alpha = \cos(\alpha)(1 + \tan(\alpha)\tan(\phi)/F) < 0.2$ for the final iteration of the safety factor calculation. This screens out some slip surfaces which may not be valid in the context of the analysis, in particular, deep seated slip surfaces with many high negative base angle slices in the passive zone.

Slice Data

Global Minimum Query (spencer) - Safety Factor: 2.22106

Slice Number	Width [ft]	Weight [lbs]	Base Material	Base Cohesion [psf]	Base Friction Angle [degrees]	Shear Stress [psf]	Shear Strength [psf]	Base Normal Stress [psf]	Pore Pressure [psf]	Effective Normal Stress [psf]
1	12.9639	3419.83	MSW	500	30	350.328	778.099	481.681	0	481.681
2	8.31682	5712.21	Base Geosynthetics	0	14	88.4213	196.389	787.674	0	787.674
3	21.8079	24125.4	Soil Liner	0	24	239.075	530.999	1192.64	0	1192.64
4	25.5	40735.2	Soil Liner	0	24	332.643	738.819	1659.41	0	1659.41
5	25.5	52515.1	Soil Liner	0	24	428.838	952.475	2139.29	0	2139.29
6	25.5	64295.1	Soil Liner	0	24	525.033	1166.13	2619.17	0	2619.17
7	25.5	76075.1	Soil Liner	0	24	621.23	1379.79	3099.05	0	3099.05
8	25.5	87295.4	Soil Liner	0	24	706.694	1569.61	3525.39	0	3525.39
9	25.5	94806	Soil Liner	0	24	767.494	1704.65	3828.7	0	3828.7

10	21.6667	85416.1	Soil Liner	0	24	816.858	1814.29	4074.97	0	4074.97
11	21.6667	90033	Soil Liner	0	24	861.012	1912.36	4295.22	0	4295.22
12	21.6667	95609.9	Soil Liner	0	24	914.343	2030.81	4561.28	0	4561.28
13	20	92297.7	Soil Liner	0	24	871.543	1935.75	4347.77	0	4347.77
14	20	93093.2	Soil Liner	0	24	879.053	1952.43	4385.24	0	4385.24
15	0.399002	1866.7	Soil Liner	0	24	982.765	2182.78	4902.61	0	4902.61
16	3.62571	16887.3	Base Geosynthetics	0	14	450.213	999.949	4010.58	0	4010.58
17	29.0057	126338	MSW	500	30	1145.22	2543.6	3539.61	0	3539.61
18	36.2571	146173	CCR	0	21	589.804	1309.99	3412.65	0	3412.65
19	25.8979	96786.4	MSW	500	30	1012.35	2248.5	3028.49	0	3028.49
20	25.8979	83959.5	MSW	500	30	905.941	2012.15	2619.12	0	2619.12
21	25.8979	71132.7	MSW	500	30	799.528	1775.8	2209.76	0	2209.76
22	25.8979	58305.8	MSW	500	30	693.115	1539.45	1800.39	0	1800.39
23	25.8979	45479	MSW	500	30	586.704	1303.11	1391.02	0	1391.02
24	25.8979	32647.7	MSW	500	30	480.255	1066.68	981.51	0	981.51
25	25.8979	12949	MSW	500	30	316.86	703.766	352.932	0	352.932

Interslice Data

Global Minimum Query (spencer) - Safety Factor: 2.22106

Slice Number	X coordinate [ft]	Y coordinate - Bottom [ft]	Interslice Normal Force [lbs]	Interslice Shear Force [lbs]	Interslice Force Angle [degrees]
1	32.9114	373.811	0	0	0
2	45.8753	369.883	6433.4	1468.09	12.8547
3	54.1921	367.363	9153.54	2088.82	12.8547
4	76	366	15992.6	3649.49	12.8547
5	101.5	366.5	23645	5395.76	12.8547
6	127	367	33510.4	7647.02	12.8547
7	152.5	367.5	45588.7	10403.3	12.8547
8	178	368	59880	13664.5	12.8547
9	203.5	369	74374.7	16972.2	12.8547
10	229	370	90116.4	20564.4	12.8547
11	250.667	370.667	105098	23983.1	12.8546
12	272.333	371.333	120889	27586.7	12.8547
13	294	372	137658	31413.4	12.8547
14	314	377	133350	30430.2	12.8547
15	334	382	129004	29438.5	12.8547
16	334.399	382	129396	29528	12.8547
17	338.025	384	123007	28070.1	12.8547
18	367.03	400	99590.2	22726.3	12.8547
19	403.288	420	52721.2	12030.9	12.8547
20	429.185	434.286	35674	8140.76	12.8547
21	455.083	448.571	21719.3	4956.3	12.8547
22	480.981	462.857	10856.8	2477.51	12.8547

23	506.879	477.143	3086.73	704.387	12.8547
24	532.777	491.429	-1591.04	-363.072	12.8547
25	558.675	505.714	-3175.4	-724.622	12.8547
26	584.573	520	0	0	0

List Of Coordinates

Water Table

X	Y
0	350
210	360
664	360

Block Search Polyline

X	Y
30	371
35	371
44	368
76	366
178	368
229	370
294	372
334	382
339	382
363	376
372	376
462	378
525	394
550	394

External Boundary

X	Y
664	320
664	345
664	350
664	376
664	378
664	380
664	520
558	520
30	373
9	373
0	370

0	350
0	345
0	320

Material Boundary

X	Y
30	373
35	373
44	370
76	368
178	370
229	372
294	374
334	384
339	384

Material Boundary

X	Y
30	373
30	371
30	369
35	369
44	366
76	364
178	366
229	368
294	370
334	380

Material Boundary

X	Y
398	400
478	420

Material Boundary

X	Y
334	380
339	380

Material Boundary

X	Y
---	---

339	380
363	374
372	374
462	376
525	392
550	392
614	376
664	376

Material Boundary

X	Y
339	384
363	378
372	378

Material Boundary

X	Y
372	378
462	380
525	396
550	396
614	380
664	380

Material Boundary

X	Y
198	400
398	400

Material Boundary

X	Y
198	400
278	420
478	420

Material Boundary

X	Y
30	371
35	371
44	368
76	366

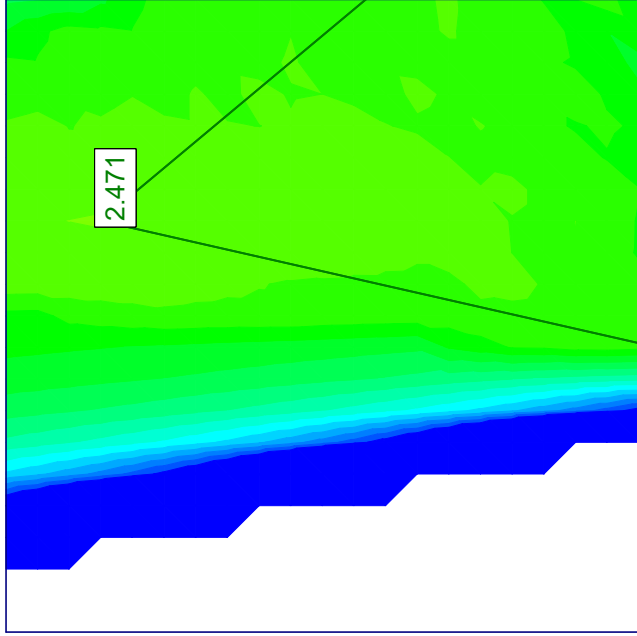
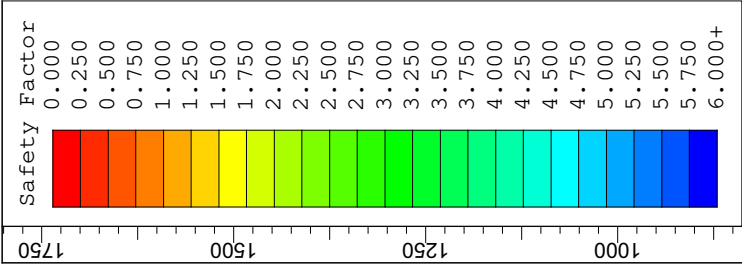
178	368
229	370
294	372
334	382
339	382
363	376
372	376
462	378
525	394
550	394
614	378
664	378

Material Boundary

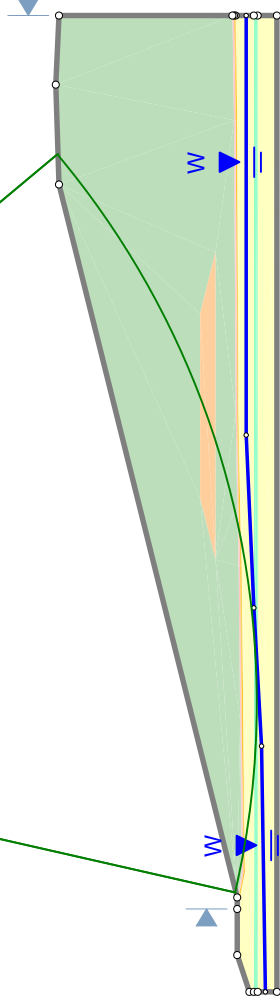
X	Y
0	345
664	345

Material Boundary

X	Y
0	350
664	350



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Subgrade		120	Mohr-Coulomb	0	28
MSW		70	Mohr-Coulomb	500	30
CCR		40	Mohr-Coulomb	0	21
Soil Liner		120	Mohr-Coulomb	0	24
Base Geosynthetics		60	Mohr-Coulomb	0	14
In-Situ Clay		120	Mohr-Coulomb	0	20



Project

Crisp Co. CCR Mgmt

Analysis Description

Spencer's Method - Circular Section B-B (Final)

Drawn By

John R. Fearrington

Company

Smith Gardner, Inc

Date

7/25/2018, 2:49:49 PM

File Name

Cell 11.Final(B-B).Circular.slm

Slide Analysis Information

Crisp Co. CCR Mgmt

Project Summary

File Name: Cell 11.Final(B-B).Circular.slim
Slide Modeler Version: 6.015
Project Title: Crisp Co. CCR Mgmt
Analysis: Spencer's Method - Circular Section B-B (Final)
Author: John R. Fearington
Company: Smith Gardner, Inc
Date Created: 7/25/2018, 2:49:49 PM

General Settings

Units of Measurement: Imperial Units
Time Units: days
Permeability Units: feet/second
Failure Direction: Right to Left
Data Output: Standard
Maximum Material Properties: 20
Maximum Support Properties: 20

Analysis Options

Analysis Methods Used

Spencer

Number of slices: 25
Tolerance: 0.005
Maximum number of iterations: 50
Check malpha < 0.2: Yes
Initial trial value of FS: 1
Steffensen Iteration: Yes

Groundwater Analysis

Groundwater Method: Water Surfaces
Pore Fluid Unit Weight: 62.4 lbs/ft³
Advanced Groundwater Method: None

Random Numbers







Pseudo-random Seed: 10116

Random Number Generation Method: Park and Miller v.3

Surface Options

Surface Type: Circular
 Search Method: Grid Search
 Radius Increment: 10
 Composite Surfaces: Disabled
 Reverse Curvature: Create Tension Crack
 Minimum Elevation: Not Defined
 Minimum Depth: Not Defined

Material Properties

Property	Subgrade	MSW	CCR	Soil Liner	Base Geosynthetics	In-Situ Clay
Color						
Strength Type	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb
Unit Weight [lbs/ft3]	120	70	40	120	60	120
Cohesion [psf]	0	500	0	0	0	0
Friction Angle [deg]	28	30	21	24	14	20
Water Surface	Water Table	Water Table	Water Table	Water Table	Water Table	Water Table
Hu Value	1	1	1	1	1	1

Global Minimums

Method: spencer

FS: 2.471320
 Center: 376.249, 1460.821
 Radius: 1115.054
 Left Slip Surface Endpoint: 129.052, 373.513
 Right Slip Surface Endpoint: 1091.321, 605.241
 Resisting Moment=3.47607e+009 lb-ft
 Driving Moment=1.40656e+009 lb-ft
 Resisting Horizontal Force=2.95282e+006 lb
 Driving Horizontal Force=1.19483e+006 lb

Valid / Invalid Surfaces

Method: spencer

Number of Valid Surfaces: 3636
 Number of Invalid Surfaces: 1215

Error Codes:

Error Code -103 reported for 261 surfaces

Error Code -108 reported for 30 surfaces
Error Code -1000 reported for 924 surfaces

Error Codes

The following errors were encountered during the computation:

- 103 = Two surface / slope intersections, but one or more surface / nonslope external polygon intersections lie between them. This usually occurs when the slip surface extends past the bottom of the soil region, but may also occur on a benched slope model with two sets of Slope Limits.
- 108 = Total driving moment or total driving force < 0.1. This is to limit the calculation of extremely high safety factors if the driving force is very small (0.1 is an arbitrary number).
- 1000 = No valid slip surfaces are generated at a grid center. Unable to draw a surface.

Slice Data

Global Minimum Query (spencer) - Safety Factor: 2.47132

Slice Number	Width [ft]	Weight [lbs]	Base Material	Base Cohesion [psf]	Base Friction Angle [degrees]	Shear Stress [psf]	Shear Strength [psf]	Base Normal Stress [psf]	Pore Pressure [psf]	Effective Normal Stress [psf]
1	35.2637	20038.8	MSW	500	30	380.889	941.299	764.353	0	764.353
2	10.0585	12885	Base Geosynthetics	0	14	140.675	347.653	1394.36	0	1394.36
3	10.5758	17284.4	Soil Liner	0	24	330.583	816.977	1834.96	0	1834.96
4	47.1174	127099	Subgrade	0	28	653.238	1614.36	3036.17	0	3036.17
5	47.1174	201831	Subgrade	0	28	1016.14	2511.2	4722.88	0	4722.88
6	38.8256	214605	In-Situ Clay	0	20	863.288	2133.46	5861.62	0	5861.62
7	38.8256	251205	In-Situ Clay	0	20	997.135	2464.24	6770.47	0	6770.47
8	38.8256	281491	In-Situ Clay	0	20	1102.79	2725.34	7487.82	0	7487.82
9	38.8256	305473	In-Situ Clay	0	20	1181.33	2919.44	8021.1	0	8021.1
10	38.8256	323140	In-Situ Clay	0	20	1233.7	3048.86	8376.67	0	8376.67
11	39.7282	342291	Subgrade	0	28	1855.51	4585.56	8624.19	0	8624.19
12	39.7282	347274	Subgrade	0	28	1853.39	4580.31	8614.31	0	8614.31
13	39.7282	342561	Subgrade	0	28	1799.94	4448.22	8365.9	0	8365.9
14	11.2337	93865.6	Soil Liner	0	24	1445.34	3571.91	8022.64	0	8022.64
15	10.6115	87712.5	Base Geosynthetics	0	14	797.4	1970.63	7903.79	0	7903.79
16	52.7113	427160	MSW	500	30	1988.2	4913.48	7644.36	0	7644.36
17	52.7113	420094	MSW	500	30	1918.01	4740.01	7343.91	0	7343.91
18	56.5291	450991	CCR	0	21	1128.9	2789.88	7267.89	0	7267.89
19	45.0037	351986	MSW	500	30	1806.01	4463.22	6864.51	0	6864.51
20	45.0037	325644	MSW	500	30	1653.1	4085.34	6209.98	0	6209.98
21	45.0037	291634	MSW	500	30	1470.86	3634.96	5429.91	0	5429.91
22	45.0037	249431	MSW	500	30	1259.19	3111.86	4523.87	0	4523.87
23	45.0037	198385	MSW	500	30	1017.89	2515.54	3491.02	0	3491.02
24	45.0037	137692	MSW	500	30	746.678	1845.28	2330.11	0	2330.11
25	45.0037	53859.3	MSW	500	30	395.604	977.664	827.338	0	827.338

Interslice Data

Global Minimum Query (spencer) - Safety Factor: 2.47132

Slice Number	X coordinate [ft]	Y coordinate - Bottom [ft]	Interslice Normal Force [lbs]	Interslice Shear Force [lbs]	Interslice Force Angle [degrees]
1	129.052	373.513	0	0	0
2	164.316	366.093	19104.3	4116.78	12.1607
3	174.375	364.194	23167.9	4992.44	12.1607
4	184.951	362.3	30140.3	6494.92	12.1607
5	232.068	355.128	82695.2	17820	12.1607
6	279.185	350	154798	33357.3	12.1607
7	318.011	347.289	204208	44004.8	12.1607
8	356.837	345.936	252086	54322	12.1607
9	395.662	345.936	294906	63549.4	12.1607
10	434.488	347.289	329925	71095.5	12.1607
11	473.313	350	355121	76525	12.1607
12	513.042	354.19	392710	84625.2	12.1607
13	552.77	359.828	417779	90027.1	12.1607
14	592.498	366.937	429818	92621.5	12.1607
15	603.732	369.218	427758	92177.6	12.1607
16	614.343	371.484	418316	90142.9	12.1607
17	667.055	384.356	424726	91524.1	12.1607
18	719.766	400	410947	88554.9	12.1607
19	776.295	420	329411	70984.7	12.1607
20	821.299	438.434	284158	61233.2	12.1607
21	866.302	459.226	229441	49442.3	12.1607
22	911.306	482.527	169118	36443.3	12.1607
23	956.31	508.521	108197	23315.4	12.1607
24	1001.31	537.436	53068.5	11435.7	12.1607
25	1046.32	569.556	11833.3	2549.96	12.1607
26	1091.32	605.241	0	0	0

List Of Coordinates

Water Table

X	Y
0	335
320	340
500	350
725	360
1271	360

External Boundary

X	Y
1271	320
1271	345
1271	350
1271	374
1271	376
1271	378
1271	604
1181	608
1051	604
123	372
108	372
48	372
0	356
0	350
0	345
0	320

Material Boundary

X	Y
108	372
108	370
123	370
155	364
355	366
555	368
635	370
755	372
1135	374
1271	376

Material Boundary

X	Y
123	372
155	366
355	368
555	370
635	372
755	374
1135	376
1271	378

Material Boundary

X	Y
108	370
108	368
123	368
155	362
355	364
555	366
635	368
755	370
1135	372
1271	374

Material Boundary

X	Y
563	400
963	400
883	420
643	420

Material Boundary

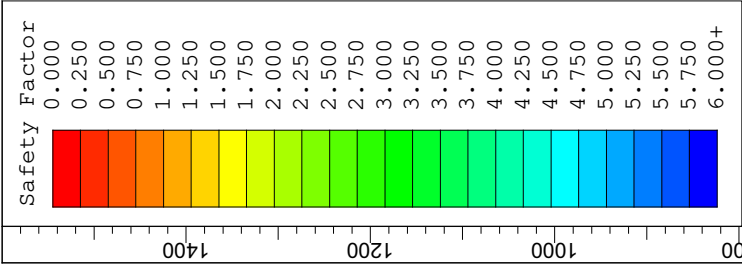
X	Y
563	400
643	420

Material Boundary

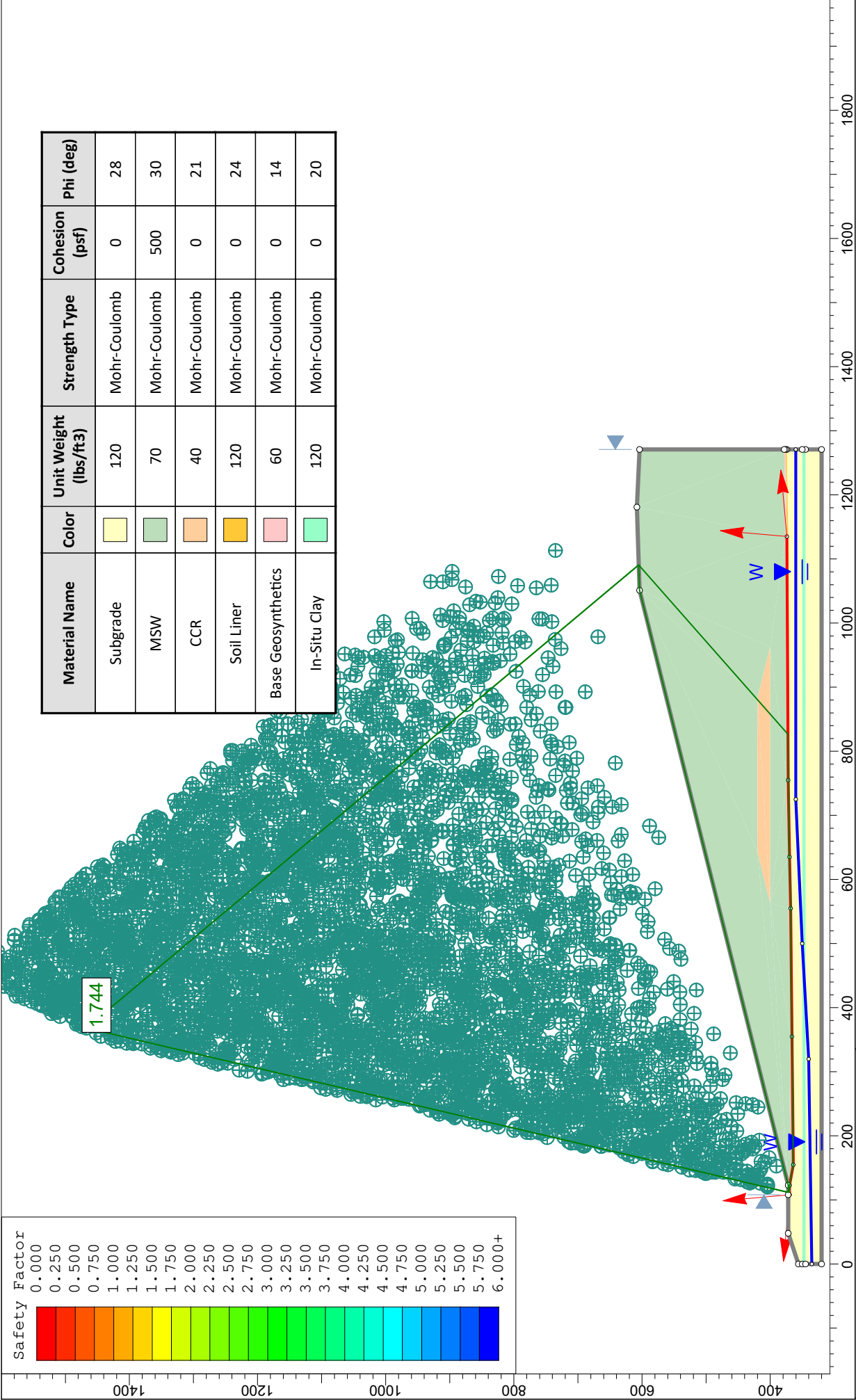
X	Y
0	345
1271	345

Material Boundary

X	Y
0	350
1271	350



Material Name	Color	Unit Weight (lbs/ft ³)	Strength Type	Cohesion (psf)	Phi (deg)
Subgrade		120	Mohr-Coulomb	0	28
MSW		70	Mohr-Coulomb	500	30
CCR		40	Mohr-Coulomb	0	21
Soil Liner		120	Mohr-Coulomb	0	24
Base Geosynthetics		60	Mohr-Coulomb	0	14
In-Situ Clay		120	Mohr-Coulomb	0	20



Analysis Description		
Spencer's Method - Block Section B-B (Final)		
Drawn By	John R. Fearrington	Company Smith Gardner, Inc
Date	7/25/2018, 2:49:49 PM	File Name Cell 11.Final(B-B).Block.slm

Slide Analysis Information

Crisp Co. CCR Mgmt

Project Summary

File Name: Cell 11.Final(B-B).Block.slim
Slide Modeler Version: 6.015
Project Title: Crisp Co. CCR Mgmt
Analysis: Spencer's Method - Block Section B-B (Final)
Author: John R. Fearington
Company: Smith Gardner, Inc
Date Created: 7/25/2018, 2:49:49 PM

General Settings

Units of Measurement: Imperial Units
Time Units: days
Permeability Units: feet/second
Failure Direction: Right to Left
Data Output: Standard
Maximum Material Properties: 20
Maximum Support Properties: 20

Analysis Options

Analysis Methods Used

Spencer

Number of slices: 25
Tolerance: 0.005
Maximum number of iterations: 50
Check malpha < 0.2: Yes
Initial trial value of FS: 1
Steffensen Iteration: Yes

Groundwater Analysis

Groundwater Method: Water Surfaces
Pore Fluid Unit Weight: 62.4 lbs/ft³
Advanced Groundwater Method: None

Random Numbers







Pseudo-random Seed: 10116

Random Number Generation Method: Park and Miller v.3

Surface Options

Surface Type: Non-Circular Block Search
 Number of Surfaces: 5000
 Pseudo-Random Surfaces: Enabled
 Convex Surfaces Only: Disabled
 Left Projection Angle (Start Angle): 175
 Left Projection Angle (End Angle): 95
 Right Projection Angle (Start Angle): 85
 Right Projection Angle (End Angle): 5
 Minimum Elevation: Not Defined
 Minimum Depth: Not Defined

Material Properties

Property	Subgrade	MSW	CCR	Soil Liner	Base Geosynthetics	In-Situ Clay
Color						
Strength Type	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb	Mohr-Coulomb
Unit Weight [lbs/ft3]	120	70	40	120	60	120
Cohesion [psf]	0	500	0	0	0	0
Friction Angle [deg]	28	30	21	24	14	20
Water Surface	Water Table	Water Table	Water Table	Water Table	Water Table	Water Table
Hu Value	1	1	1	1	1	1

Global Minimums

Method: spencer

FS: 1.743900
 Axis Location: 368.040, 1467.203
 Left Slip Surface Endpoint: 111.960, 372.000
 Right Slip Surface Endpoint: 1090.554, 605.217
 Resisting Moment=2.3563e+009 lb-ft
 Driving Moment=1.35117e+009 lb-ft
 Resisting Horizontal Force=1.87121e+006 lb
 Driving Horizontal Force=1.073e+006 lb

Global Minimum Coordinates

Method: spencer

X	Y
111.96	372
116.107	370

123	370
155	364
355	366
555	368
635	370
755	372
826.484	372.376
1090.55	605.217

Valid / Invalid Surfaces

Method: spencer

Number of Valid Surfaces: 2718

Number of Invalid Surfaces: 2282

Error Codes:

Error Code -108 reported for 1127 surfaces

Error Code -111 reported for 66 surfaces

Error Code -112 reported for 1089 surfaces

Error Codes

The following errors were encountered during the computation:

-108 = Total driving moment or total driving force < 0.1. This is to limit the calculation of extremely high safety factors if the driving force is very small (0.1 is an arbitrary number).

-111 = safety factor equation did not converge

-112 = The coefficient $M\text{-}\alpha = \cos(\alpha)(1 + \tan(\alpha)\tan(\phi)/F) < 0.2$ for the final iteration of the safety factor calculation. This screens out some slip surfaces which may not be valid in the context of the analysis, in particular, deep seated slip surfaces with many high negative base angle slices in the passive zone.

Slice Data

Global Minimum Query (spencer) - Safety Factor: 1.7439

Slice Number	Width [ft]	Weight [lbs]	Base Material	Base Cohesion [psf]	Base Friction Angle [degrees]	Shear Stress [psf]	Shear Strength [psf]	Base Normal Stress [psf]	Pore Pressure [psf]	Effective Normal Stress [psf]
1	4.14697	248.818	Base Geosynthetics	0	14	10.8106	18.8526	75.6135	0	75.6135
2	6.89345	827.215	Base Geosynthetics	0	14	17.723	30.9072	123.962	0	123.962
3	32	19520	Base Geosynthetics	0	14	96.9545	169.079	678.142	0	678.142
4	50	76000	Base Geosynthetics	0	14	223.644	390.013	1564.26	0	1564.26
5	50	118000	Base Geosynthetics	0	14	347.237	605.547	2428.72	0	2428.72

6	50	160000	Base Geosynthetics	0	14	470.83	821.081	3293.18	0	3293.18
7	50	202000	Base Geosynthetics	0	14	594.421	1036.61	4157.63	0	4157.63
8	50	244000	Base Geosynthetics	0	14	718.017	1252.15	5022.09	0	5022.09
9	50	286000	Base Geosynthetics	0	14	841.608	1467.68	5886.55	0	5886.55
10	50	328000	Base Geosynthetics	0	14	965.204	1683.22	6751	0	6751
11	50	370000	Base Geosynthetics	0	14	1088.8	1898.75	7615.48	0	7615.48
12	40	321560	Base Geosynthetics	0	14	1176.15	2051.09	8226.48	0	8226.48
13	40	335000	Base Geosynthetics	0	14	1225.31	2136.82	8570.32	0	8570.32
14	60	538440	Base Geosynthetics	0	14	1317.07	2296.84	9212.12	0	9212.12
15	60	597000	Base Geosynthetics	0	14	1460.31	2546.64	10214	0	10214
16	35.7422	384092	Base Geosynthetics	0	14	1583.96	2762.27	11078.9	0	11078.9
17	35.7422	405977	Base Geosynthetics	0	14	1674.22	2919.67	11710.2	0	11710.2
18	2.28186	26524.7	Base Geosynthetics	0	14	1290.07	2249.76	9023.3	0	9023.3
19	29.0468	317815	MSW	500	30	2801.89	4886.22	7597.16	0	7597.16
20	22.6824	229040	CCR	0	21	1657.82	2891.08	7531.55	0	7531.55
21	42.0116	376729	MSW	500	30	2340.04	4080.79	6202.11	0	6202.11
22	42.0116	298678	MSW	500	30	1905.41	3322.85	4889.32	0	4889.32
23	42.0116	220628	MSW	500	30	1470.79	2564.91	3576.52	0	3576.52
24	42.0116	142577	MSW	500	30	1036.16	1806.96	2263.73	0	2263.73
25	42.0116	52521.8	MSW	500	30	535.037	933.051	750.067	0	750.067

Interslice Data

Global Minimum Query (spencer) - Safety Factor: 1.7439

Slice Number	X coordinate [ft]	Y coordinate - Bottom [ft]	Interslice Normal Force [lbs]	Interslice Shear Force [lbs]	Interslice Force Angle [degrees]
1	111.96	372	0	0	0
2	116.107	370	196.079	43.9079	12.622
3	123	370	318.309	71.2789	12.622
4	155	364	7491.16	1677.49	12.622
5	205	364.5	17896.5	4007.55	12.622
6	255	365	34052.1	7625.27	12.622
7	305	365.5	55958.1	12530.7	12.622
8	355	366	83614.4	18723.7	12.622

9	405	366.5	117021	26204.4	12.622
10	455	367	156178	34972.8	12.622
11	505	367.5	201085	45028.9	12.622
12	555	368	251743	56372.6	12.622
13	595	369	290584	65070.4	12.622
14	635	370	331049	74131.7	12.622
15	695	371	400898	89773	12.622
16	755	372	478344	107115	12.622
17	790.742	372.188	532901	119332	12.622
18	826.484	372.376	590566	132245	12.622
19	828.766	374.388	575357	128839	12.622
20	857.813	400	462204	103501	12.622
21	880.495	420	349195	78194.9	12.622
22	922.507	457.043	217802	48772.3	12.622
23	964.519	494.087	116772	26148.7	12.622
24	1006.53	531.13	46104.6	10324.2	12.622
25	1048.54	568.174	5799.75	1298.74	12.622
26	1090.55	605.217	0	0	0

List Of Coordinates

Water Table

X	Y
0	335
320	340
500	350
725	360
1271	360

Block Search Polyline

X	Y
108	370
123	370
155	364
355	366
555	368
635	370
755	372
1135	374

External Boundary

X	Y
1271	320

1271	345
1271	350
1271	374
1271	376
1271	378
1271	604
1181	608
1051	604
123	372
108	372
48	372
0	356
0	350
0	345
0	320

Material Boundary

X	Y
108	372
108	370
123	370
155	364
355	366
555	368
635	370
755	372
1135	374
1271	376

Material Boundary

X	Y
123	372
155	366
355	368
555	370
635	372
755	374
1135	376
1271	378

Material Boundary

X	Y
108	370

108	368
123	368
155	362
355	364
555	366
635	368
755	370
1135	372
1271	374

Material Boundary

X	Y
563	400
963	400
883	420
643	420

Material Boundary

X	Y
563	400
643	420

Material Boundary

X	Y
0	345
1271	345

Material Boundary

X	Y
0	350
1271	350

APPENDIX B

CCR Material Testing

**Design Consistency
Crisp County Landfill
Cordele, Georgia**

Proctor Density No.
Description of Material

Ash No. 1
SANDY SILT (ML)

Test Method
Sampled by:
Date:
Sample Location

ASTM D 698 Method A
TTL, Inc.
8/17/2018
Ash Sample

DRY DENSITY, pcf

69
67
65
63
59
57
55
53
51
49
47
45
43
41
39

Maximum Dry Density **42.9 PCF**
Optimum Water Content **68.0 %**

CURVES OF 100% SATURATION
FOR SPECIFIC GRAVITY EQUAL TO:

2.90
2.80
2.70
2.60

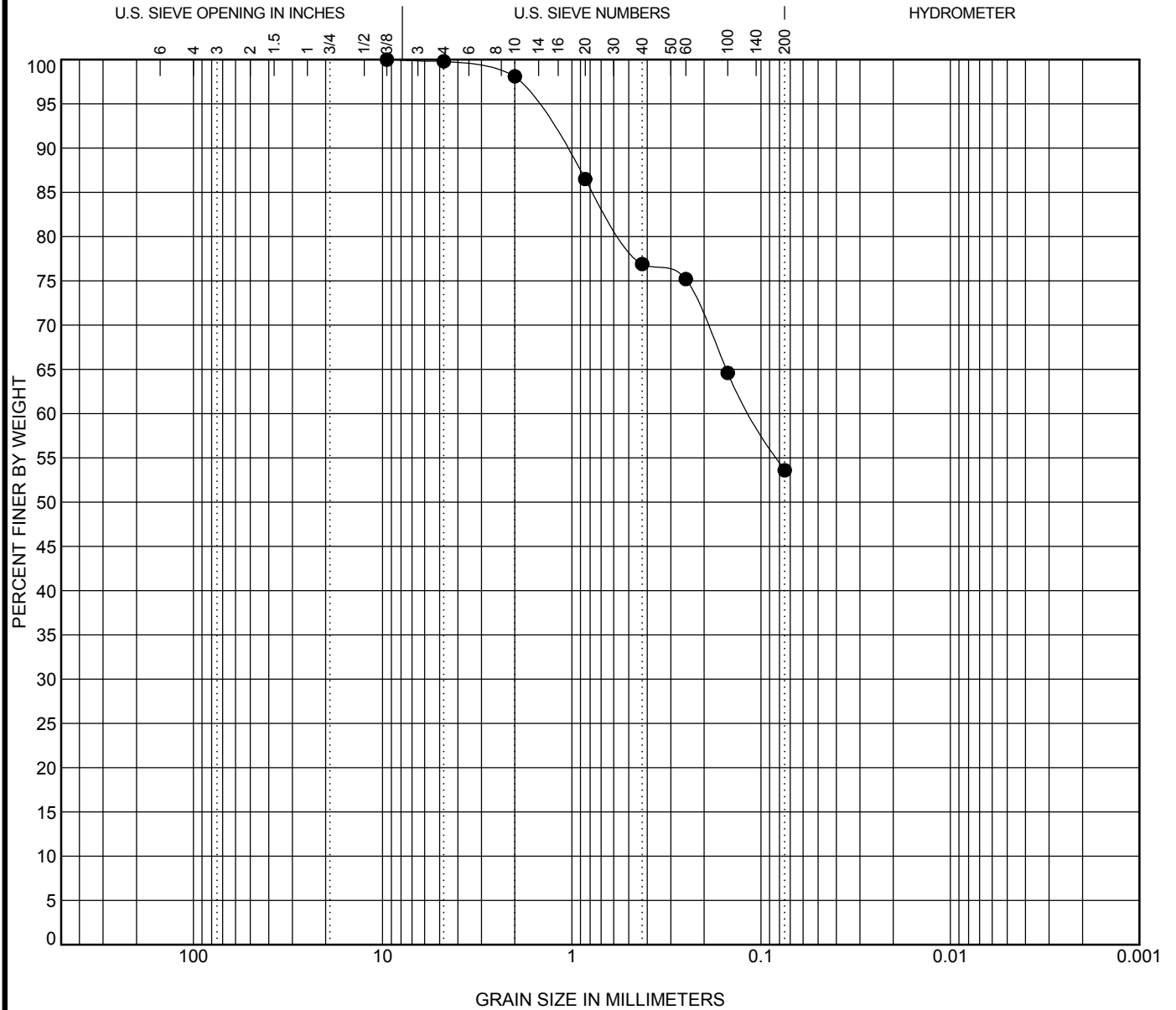
WATER CONTENT, %

TTL

PROCTOR MOISTURE-DENSITY RELATIONSHIP

Client: Lanier Engineering
Project: Crisp County Landfill - Cordele
Location: Cordele Georgia
Project Number: 000180602482.00

GRAIN SIZE DISTRIBUTION



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

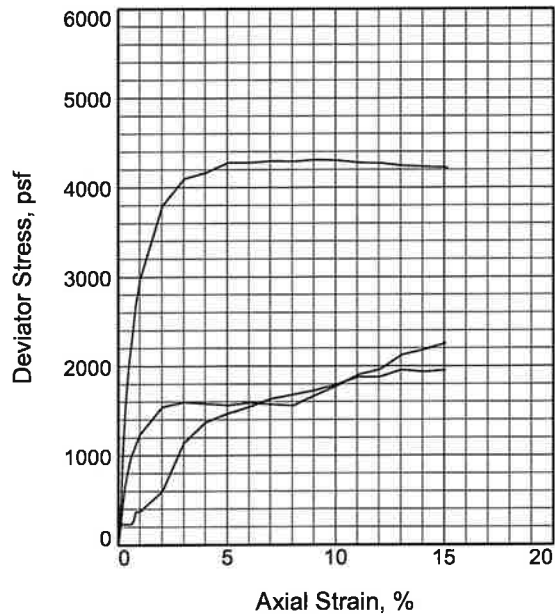
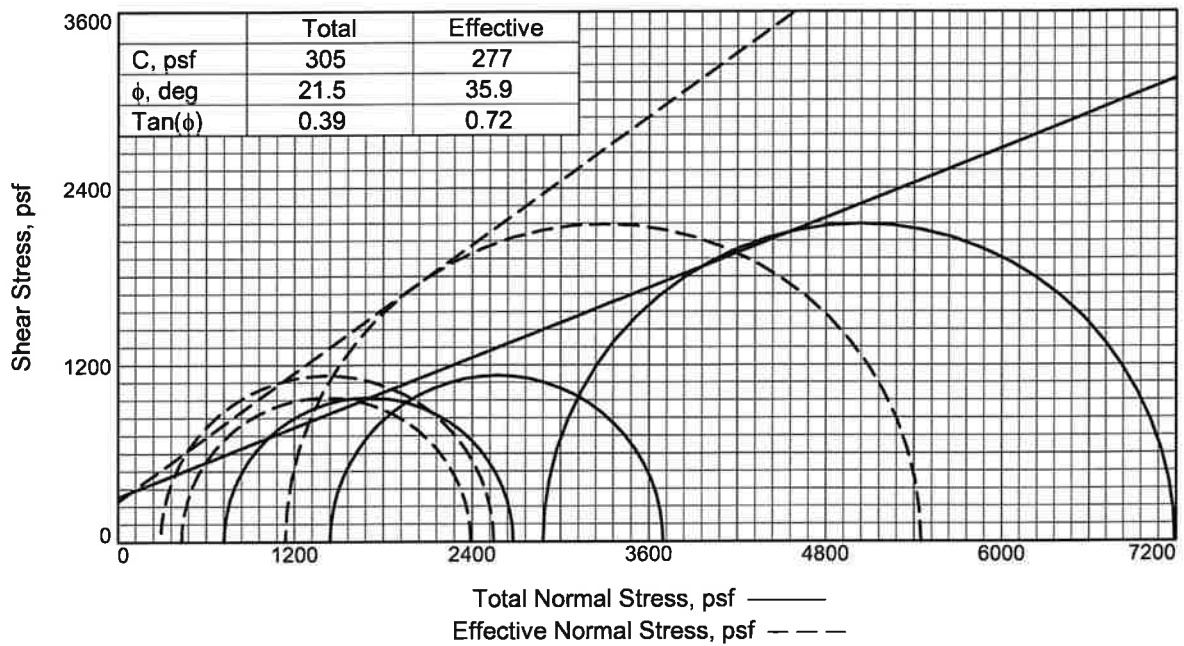
Sample ID		Ash No. 1											
Description		SANDY SILT (ML)											
Sampled by:		TTL, Inc.											
Sample Location:		Ash Sample											
Date Sampled:		8/17/2018											
wc (%)	LL	PL	PI	Cc	Cu	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
	NP	NP	NP			9.5	0.1			0.2	46.2	53.6	

TTL

geotechnical • analytical • materials • environmental

SIEVE ANALYSIS RESULTS

Client: Lanier Engineering
 Project: Crisp County Landfill - Cordele
 Location: Cordele, Georgia
 Project Number: 000180602482.00



Sample No.		1	2	3
Initial	Water Content, %	70.0	70.0	70.0
	Dry Density, pcf	38.9	38.9	38.9
	Saturation, %	64.6	64.6	64.6
	Void Ratio	2.0855	2.0855	2.0855
	Diameter, in.	2.80	2.80	2.80
	Height, in.	5.60	5.60	5.60
At Test	Water Content, %	117.3	116.0	108.2
	Dry Density, pcf	39.2	39.4	39.5
	Saturation, %	109.2	108.8	102.1
	Void Ratio	2.0684	2.0527	2.0390
	Diameter, in.	2.80	2.79	2.79
	Height, in.	5.58	5.57	5.54
Strain rate, in./min.		0.005	0.005	0.005
Back Pressure, psf		9360	9360	9360
Cell Pressure, psf		10080	10800	12240
Fail. Stress, psf		1957	2257	4311
Total Pore Pr., psf		9648	10512	11102
Ult. Stress, psf				
Total Pore Pr., psf				
$\bar{\sigma}_1$ Failure, psf		2389	2545	5448
$\bar{\sigma}_3$ Failure, psf		432	288	1138

Type of Test:

CU with Pore Pressures

Sample Type: Remolded

Description: Ash

Specific Gravity= 1.925

Remarks: Samples remolded to 95% of maximum standard Proctor density and at optimum moisture content. Proctor data: 40 pcf @ 70% moisture.

Figure 1

Client:

Project: Crisp County PC

Location: Crisp Co., GA

Sample Number: Bulk Sample

Proj. No.:

Date Sampled:

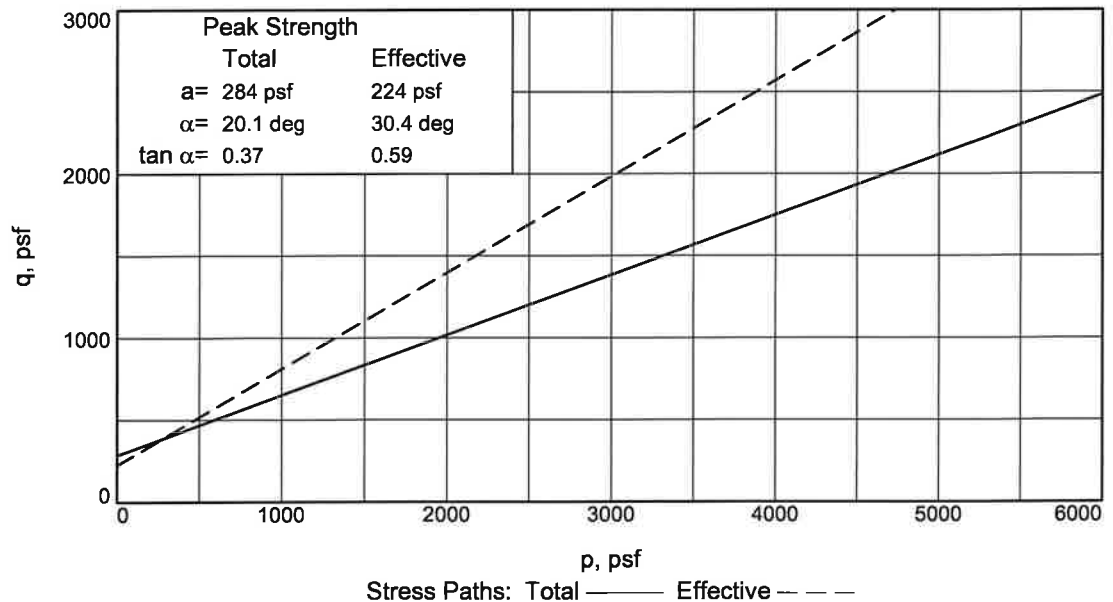
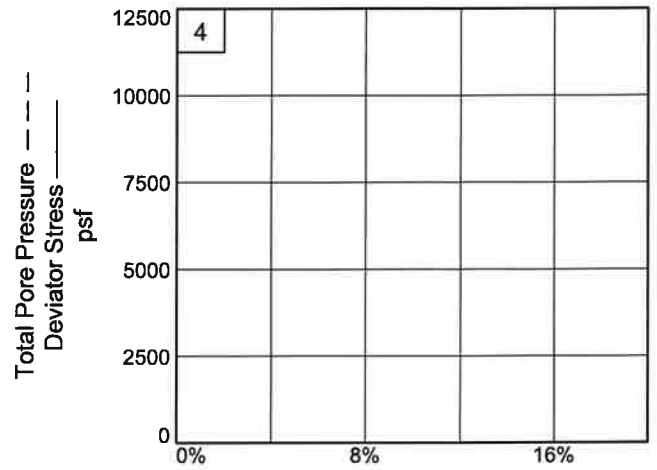
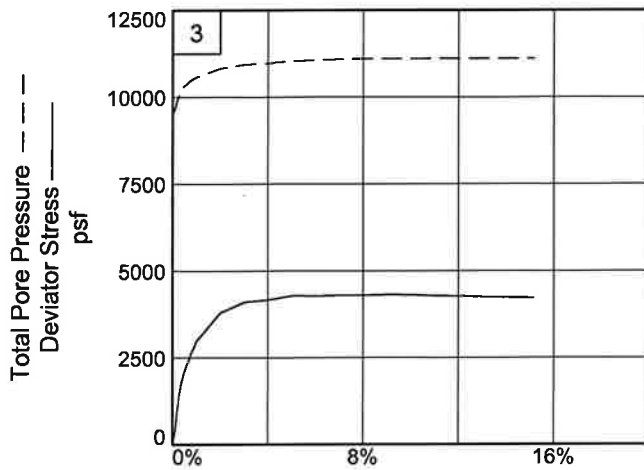
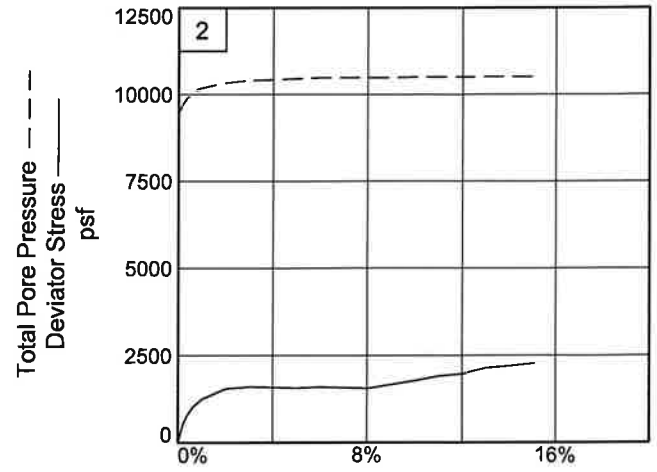
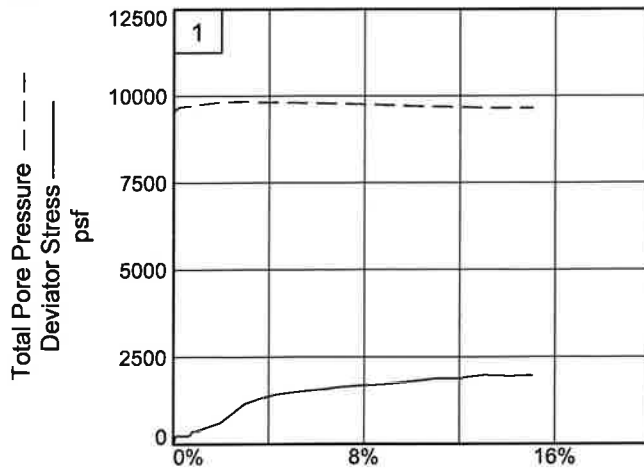
TRIAXIAL SHEAR TEST REPORT

TTL, Inc.

Tuscaloosa, AL

Tested By: MC

Checked By: JJH



Client: Lanier Engineering

Project: Crisp County PC

Location: Crisp Co., GA

Project No.:

Sample Number: Bulk Sample

Figure 2

TTL, Inc.

Tested By: MC

Checked By: JJH

APPENDIX C

CCR TCLP Testing

**Design Consistency
Crisp County Landfill
Cordele, Georgia**

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-134933-1

Client Project/Site: CCR Testing for Landfill Disposal

Revision: 1

For:

Geosyntec Consultants, Inc.

1255 Roberts Blvd, NW

Suite 200

Kennesaw, Georgia 30144

Attn: Jeremy Gasser



Authorized for release by:

3/31/2017 12:24:25 PM

Cheyenne Whitmire, Project Manager II

(850)471-6222

cheyenne.whitmire@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



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.

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Detection Summary	4
Method Summary	6
Sample Summary	7
Client Sample Results	8
Definitions	12
Chronicle	13
QC Association	16
QC Sample Results	20
Chain of Custody	27
Receipt Checklists	28
Certification Summary	29



Case Narrative

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Job ID: 400-134933-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-134933-1

General Chemistry

Method(s) 1010: Solid Flashpoint: SW-846 Chapter 7, Section 7.1: HA-3 (400-134933-3), (400-134933-A-3 DU), HA-1 (400-134933-1), HA-2 (400-134933-2) and HA-4 (400-134933-4).

Metals

Method(s) 6020: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 347500 and analytical batch 347683 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 6020: The native sample, and post digestion spike (PDS) associated with preparation batch 347500 and analytical batch 347683 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Molybdenum in the PDS was above the instrument calibration range. The data has been reported and qualified.

Method(s) 6020: The post digestion spike % recovery for Molybdenum associated with batch 347683 was outside of control limits.

Method(s) 6020: The serial dilution performed for the following sample associated with batch 347683 was outside control limits for Lead: (400-134933-B-1-E SD)

Method(s) 6020: The absolute response for Boron was greater than the method reporting limit (RL) in the following sample: HA-1 (400-134933-1). The instrument raw data has been manually reviewed and the result can be reported as U. Further dilution will only elevate the RL beyond the action limit for the project.

Detection Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Client Sample ID: HA-1

Lab Sample ID: 400-134933-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	12	F1 F2	0.93	0.20	mg/Kg	10	☼	6020	Total/NA
Barium	110		0.93	0.20	mg/Kg	10	☼	6020	Total/NA
Beryllium	0.84	J	0.93	0.056	mg/Kg	10	☼	6020	Total/NA
Calcium	620		93	43	mg/Kg	10	☼	6020	Total/NA
Chromium	16		0.93	0.35	mg/Kg	10	☼	6020	Total/NA
Cobalt	4.4		0.93	0.14	mg/Kg	10	☼	6020	Total/NA
Molybdenum	2.9	J	5.6	0.74	mg/Kg	10	☼	6020	Total/NA
Lead	7.6		0.46	0.14	mg/Kg	10	☼	6020	Total/NA
Antimony	0.54	J F1	0.93	0.22	mg/Kg	10	☼	6020	Total/NA
Thallium	0.35		0.19	0.17	mg/Kg	10	☼	6020	Total/NA
Selenium	5.0		0.93	0.13	mg/Kg	10	☼	6020	Total/NA
Lithium	7.9	F1	0.93	0.93	mg/Kg	10	☼	6020	Total/NA
Mercury	0.10		0.031	0.019	mg/Kg	1	☼	7471B	Total/NA
Flashpoint	>212				Degrees F	1		1010	Total/NA
Corrosivity	5.0	HF			SU	1		9045C	Soluble
Temperature	20.6	HF			Degrees C	1		9045C	Soluble
Fluoride	1.2	J	4.1	0.98	mg/Kg	1	☼	SM 4500 F C	Soluble
Sulfate	57	J	100	28	mg/L	1		SM 4500 SO4 E	Soluble

Client Sample ID: HA-2

Lab Sample ID: 400-134933-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	44		1.4	0.30	mg/Kg	10	☼	6020	Total/NA
Boron	6.2	J	27	1.8	mg/Kg	10	☼	6020	Total/NA
Barium	150		1.4	0.30	mg/Kg	10	☼	6020	Total/NA
Beryllium	2.0		1.4	0.082	mg/Kg	10	☼	6020	Total/NA
Calcium	1900		140	63	mg/Kg	10	☼	6020	Total/NA
Chromium	24		1.4	0.52	mg/Kg	10	☼	6020	Total/NA
Cobalt	9.6		1.4	0.21	mg/Kg	10	☼	6020	Total/NA
Molybdenum	5.2	J	8.2	1.1	mg/Kg	10	☼	6020	Total/NA
Lead	14		0.69	0.20	mg/Kg	10	☼	6020	Total/NA
Antimony	0.48	J	1.4	0.33	mg/Kg	10	☼	6020	Total/NA
Thallium	0.98		0.27	0.25	mg/Kg	10	☼	6020	Total/NA
Selenium	7.1		1.4	0.19	mg/Kg	10	☼	6020	Total/NA
Lithium	32		1.4	1.4	mg/Kg	10	☼	6020	Total/NA
Mercury	0.33		0.044	0.027	mg/Kg	1	☼	7471B	Total/NA
Flashpoint	>212				Degrees F	1		1010	Total/NA
Corrosivity	5.6	HF			SU	1		9045C	Soluble
Temperature	20.9	HF			Degrees C	1		9045C	Soluble
Chloride	180		120	89	mg/Kg	1	☼	9251	Soluble
Fluoride	7.5		5.8	1.4	mg/Kg	1	☼	SM 4500 F C	Soluble
Sulfate	120		100	28	mg/L	1		SM 4500 SO4 E	Soluble

Client Sample ID: HA-3

Lab Sample ID: 400-134933-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	40		1.8	0.40	mg/Kg	10	☼	6020	Total/NA
Boron	11	J	37	2.4	mg/Kg	10	☼	6020	Total/NA
Barium	310		1.8	0.40	mg/Kg	10	☼	6020	Total/NA
Beryllium	4.0		1.8	0.11	mg/Kg	10	☼	6020	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Detection Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Client Sample ID: HA-3 (Continued)

Lab Sample ID: 400-134933-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Calcium	2800		180	84	mg/Kg	10		✱	6020	Total/NA
Chromium	25		1.8	0.70	mg/Kg	10		✱	6020	Total/NA
Cobalt	19		1.8	0.28	mg/Kg	10		✱	6020	Total/NA
Molybdenum	3.8	J	11	1.5	mg/Kg	10		✱	6020	Total/NA
Lead	18		0.92	0.27	mg/Kg	10		✱	6020	Total/NA
Antimony	1.6	J	1.8	0.44	mg/Kg	10		✱	6020	Total/NA
Thallium	1.4		0.37	0.33	mg/Kg	10		✱	6020	Total/NA
Selenium	13		1.8	0.25	mg/Kg	10		✱	6020	Total/NA
Lithium	19		1.8	1.8	mg/Kg	10		✱	6020	Total/NA
Mercury	0.38		0.053	0.032	mg/Kg	1		✱	7471B	Total/NA
Flashpoint	>212				Degrees F	1			1010	Total/NA
Corrosivity	5.5	HF			SU	1			9045C	Soluble
Temperature	20.9	HF			Degrees C	1			9045C	Soluble
Fluoride	6.4	J	7.1	1.7	mg/Kg	1		✱	SM 4500 F C	Soluble
Sulfate	60	J	100	28	mg/L	1			SM 4500 SO4 E	Soluble

Client Sample ID: HA-4

Lab Sample ID: 400-134933-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Arsenic	66		1.4	0.30	mg/Kg	10		✱	6020	Total/NA
Boron	10	J	27	1.8	mg/Kg	10		✱	6020	Total/NA
Barium	360		1.4	0.30	mg/Kg	10		✱	6020	Total/NA
Beryllium	3.3		1.4	0.081	mg/Kg	10		✱	6020	Total/NA
Calcium	3100		140	62	mg/Kg	10		✱	6020	Total/NA
Chromium	20		1.4	0.51	mg/Kg	10		✱	6020	Total/NA
Cobalt	14		1.4	0.21	mg/Kg	10		✱	6020	Total/NA
Molybdenum	2.6	J	8.1	1.1	mg/Kg	10		✱	6020	Total/NA
Lead	16		0.68	0.20	mg/Kg	10		✱	6020	Total/NA
Antimony	1.1	J	1.4	0.32	mg/Kg	10		✱	6020	Total/NA
Thallium	2.1		0.27	0.24	mg/Kg	10		✱	6020	Total/NA
Selenium	12		1.4	0.19	mg/Kg	10		✱	6020	Total/NA
Lithium	28		1.4	1.4	mg/Kg	10		✱	6020	Total/NA
Mercury	0.47		0.039	0.024	mg/Kg	1		✱	7471B	Total/NA
Flashpoint	>212				Degrees F	1			1010	Total/NA
Free Liquid	5.0		0.10	0.10	mL/100g	1			9095A	Total/NA
Corrosivity	5.7	HF			SU	1			9045C	Soluble
Temperature	20.6	HF			Degrees C	1			9045C	Soluble
Chloride	260		110	85	mg/Kg	1		✱	9251	Soluble
Fluoride	7.7		5.5	1.3	mg/Kg	1		✱	SM 4500 F C	Soluble
Sulfate	210		100	28	mg/L	1			SM 4500 SO4 E	Soluble

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Method Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL PEN
7471B	Mercury (CVAA)	SW846	TAL PEN
1010	Ignitability, Pensky-Martens Closed-Cup Method	SW846	TAL PEN
9014	Cyanide, Reactive	SW846	TAL PEN
9034	Sulfide, Reactive	SW846	TAL PEN
9045C	pH	SW846	TAL PEN
9095A	Paint Filter	SW846	TAL PEN
9251	Chloride	SW846	TAL PEN
Moisture	Percent Moisture	EPA	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

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

Laboratory References:

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

Sample Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-134933-1	HA-1	Solid	03/08/17 10:15	03/09/17 08:30
400-134933-2	HA-2	Solid	03/08/17 10:45	03/09/17 08:30
400-134933-3	HA-3	Solid	03/08/17 11:45	03/09/17 08:30
400-134933-4	HA-4	Solid	03/08/17 12:15	03/09/17 08:30

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Client Sample ID: HA-1

Date Collected: 03/08/17 10:15

Date Received: 03/09/17 08:30

Lab Sample ID: 400-134933-1

Matrix: Solid

Percent Solids: 48.8

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	12	F1 F2	0.93	0.20	mg/Kg	☼	03/28/17 17:17	03/29/17 12:33	10
Boron	1.2	U L	19	1.2	mg/Kg	☼	03/28/17 17:17	03/29/17 12:33	10
Barium	110		0.93	0.20	mg/Kg	☼	03/28/17 17:17	03/29/17 12:33	10
Beryllium	0.84	J	0.93	0.056	mg/Kg	☼	03/28/17 17:17	03/29/17 12:33	10
Calcium	620		93	43	mg/Kg	☼	03/28/17 17:17	03/29/17 12:33	10
Cadmium	0.37	U	0.93	0.37	mg/Kg	☼	03/28/17 17:17	03/29/17 12:33	10
Chromium	16		0.93	0.35	mg/Kg	☼	03/28/17 17:17	03/29/17 12:33	10
Cobalt	4.4		0.93	0.14	mg/Kg	☼	03/28/17 17:17	03/29/17 12:33	10
Molybdenum	2.9	J	5.6	0.74	mg/Kg	☼	03/28/17 17:17	03/29/17 12:33	10
Lead	7.6		0.46	0.14	mg/Kg	☼	03/28/17 17:17	03/29/17 12:33	10
Antimony	0.54	J F1	0.93	0.22	mg/Kg	☼	03/28/17 17:17	03/29/17 12:33	10
Thallium	0.35		0.19	0.17	mg/Kg	☼	03/28/17 17:17	03/29/17 12:33	10
Selenium	5.0		0.93	0.13	mg/Kg	☼	03/28/17 17:17	03/29/17 12:33	10
Lithium	7.9	F1	0.93	0.93	mg/Kg	☼	03/28/17 17:17	03/29/17 12:33	10

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.10		0.031	0.019	mg/Kg	☼	03/30/17 10:58	03/31/17 09:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>212				Degrees F	—		03/14/17 08:36	1
Cyanide, Reactive	0.25	U	0.25	0.25	mg/Kg		03/23/17 15:00	03/27/17 11:06	1
Sulfide, Reactive	150	U	150	150	mg/Kg		03/23/17 15:00	03/24/17 16:10	1
Free Liquid	0.10	U	0.10	0.10	mL/100g			03/15/17 11:25	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Corrosivity	5.0	HF			SU	—		03/16/17 12:09	1
Temperature	20.6	HF			Degrees C			03/16/17 12:09	1
Chloride	64	U	82	64	mg/Kg	☼		03/22/17 17:07	1
Fluoride	1.2	J	4.1	0.98	mg/Kg	☼		03/20/17 14:39	1
Sulfate	57	J	100	28	mg/L			03/22/17 17:13	1

TestAmerica Pensacola

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Client Sample ID: HA-2

Date Collected: 03/08/17 10:45

Date Received: 03/09/17 08:30

Lab Sample ID: 400-134933-2

Matrix: Solid

Percent Solids: 34.7

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	44		1.4	0.30	mg/Kg	☼	03/28/17 17:17	03/29/17 13:18	10
Boron	6.2	J	27	1.8	mg/Kg	☼	03/28/17 17:17	03/29/17 13:18	10
Barium	150		1.4	0.30	mg/Kg	☼	03/28/17 17:17	03/29/17 13:18	10
Beryllium	2.0		1.4	0.082	mg/Kg	☼	03/28/17 17:17	03/29/17 13:18	10
Calcium	1900		140	63	mg/Kg	☼	03/28/17 17:17	03/29/17 13:18	10
Cadmium	0.55	U	1.4	0.55	mg/Kg	☼	03/28/17 17:17	03/29/17 13:18	10
Chromium	24		1.4	0.52	mg/Kg	☼	03/28/17 17:17	03/29/17 13:18	10
Cobalt	9.6		1.4	0.21	mg/Kg	☼	03/28/17 17:17	03/29/17 13:18	10
Molybdenum	5.2	J	8.2	1.1	mg/Kg	☼	03/28/17 17:17	03/29/17 13:18	10
Lead	14		0.69	0.20	mg/Kg	☼	03/28/17 17:17	03/29/17 13:18	10
Antimony	0.48	J	1.4	0.33	mg/Kg	☼	03/28/17 17:17	03/29/17 13:18	10
Thallium	0.98		0.27	0.25	mg/Kg	☼	03/28/17 17:17	03/29/17 13:18	10
Selenium	7.1		1.4	0.19	mg/Kg	☼	03/28/17 17:17	03/29/17 13:18	10
Lithium	32		1.4	1.4	mg/Kg	☼	03/28/17 17:17	03/29/17 13:18	10

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.33		0.044	0.027	mg/Kg	☼	03/30/17 10:58	03/31/17 10:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>212				Degrees F	—		03/14/17 08:36	1
Cyanide, Reactive	0.25	U	0.25	0.25	mg/Kg		03/23/17 16:10	03/27/17 11:06	1
Sulfide, Reactive	150	U	150	150	mg/Kg		03/23/17 16:10	03/24/17 16:10	1
Free Liquid	0.10	U	0.10	0.10	mL/100g			03/15/17 11:25	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Corrosivity	5.6	HF			SU	—		03/16/17 12:09	1
Temperature	20.9	HF			Degrees C			03/16/17 12:09	1
Chloride	180		120	89	mg/Kg	☼		03/22/17 17:07	1
Fluoride	7.5		5.8	1.4	mg/Kg	☼		03/20/17 14:47	1
Sulfate	120		100	28	mg/L			03/22/17 17:13	1

TestAmerica Pensacola

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Client Sample ID: HA-3

Date Collected: 03/08/17 11:45

Date Received: 03/09/17 08:30

Lab Sample ID: 400-134933-3

Matrix: Solid

Percent Solids: 28.3

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	40		1.8	0.40	mg/Kg	☼	03/28/17 17:17	03/29/17 13:23	10
Boron	11	J	37	2.4	mg/Kg	☼	03/28/17 17:17	03/29/17 13:23	10
Barium	310		1.8	0.40	mg/Kg	☼	03/28/17 17:17	03/29/17 13:23	10
Beryllium	4.0		1.8	0.11	mg/Kg	☼	03/28/17 17:17	03/29/17 13:23	10
Calcium	2800		180	84	mg/Kg	☼	03/28/17 17:17	03/29/17 13:23	10
Cadmium	0.73	U	1.8	0.73	mg/Kg	☼	03/28/17 17:17	03/29/17 13:23	10
Chromium	25		1.8	0.70	mg/Kg	☼	03/28/17 17:17	03/29/17 13:23	10
Cobalt	19		1.8	0.28	mg/Kg	☼	03/28/17 17:17	03/29/17 13:23	10
Molybdenum	3.8	J	11	1.5	mg/Kg	☼	03/28/17 17:17	03/29/17 13:23	10
Lead	18		0.92	0.27	mg/Kg	☼	03/28/17 17:17	03/29/17 13:23	10
Antimony	1.6	J	1.8	0.44	mg/Kg	☼	03/28/17 17:17	03/29/17 13:23	10
Thallium	1.4		0.37	0.33	mg/Kg	☼	03/28/17 17:17	03/29/17 13:23	10
Selenium	13		1.8	0.25	mg/Kg	☼	03/28/17 17:17	03/29/17 13:23	10
Lithium	19		1.8	1.8	mg/Kg	☼	03/28/17 17:17	03/29/17 13:23	10

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.38		0.053	0.032	mg/Kg	☼	03/30/17 10:58	03/31/17 10:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>212				Degrees F			03/09/17 16:05	1
Cyanide, Reactive	0.25	U	0.25	0.25	mg/Kg		03/23/17 16:10	03/27/17 11:06	1
Sulfide, Reactive	150	U	150	150	mg/Kg		03/23/17 16:10	03/24/17 16:10	1
Free Liquid	0.10	U	0.10	0.10	mL/100g			03/15/17 11:25	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Corrosivity	5.5	HF			SU			03/16/17 12:09	1
Temperature	20.9	HF			Degrees C			03/16/17 12:09	1
Chloride	110	U	140	110	mg/Kg	☼		03/22/17 17:07	1
Fluoride	6.4	J	7.1	1.7	mg/Kg	☼		03/20/17 14:49	1
Sulfate	60	J	100	28	mg/L			03/22/17 17:13	1

TestAmerica Pensacola

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Client Sample ID: HA-4

Date Collected: 03/08/17 12:15

Date Received: 03/09/17 08:30

Lab Sample ID: 400-134933-4

Matrix: Solid

Percent Solids: 36.3

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	66		1.4	0.30	mg/Kg	☼	03/28/17 17:17	03/29/17 13:27	10
Boron	10	J	27	1.8	mg/Kg	☼	03/28/17 17:17	03/29/17 13:27	10
Barium	360		1.4	0.30	mg/Kg	☼	03/28/17 17:17	03/29/17 13:27	10
Beryllium	3.3		1.4	0.081	mg/Kg	☼	03/28/17 17:17	03/29/17 13:27	10
Calcium	3100		140	62	mg/Kg	☼	03/28/17 17:17	03/29/17 13:27	10
Cadmium	0.54	U	1.4	0.54	mg/Kg	☼	03/28/17 17:17	03/29/17 13:27	10
Chromium	20		1.4	0.51	mg/Kg	☼	03/28/17 17:17	03/29/17 13:27	10
Cobalt	14		1.4	0.21	mg/Kg	☼	03/28/17 17:17	03/29/17 13:27	10
Molybdenum	2.6	J	8.1	1.1	mg/Kg	☼	03/28/17 17:17	03/29/17 13:27	10
Lead	16		0.68	0.20	mg/Kg	☼	03/28/17 17:17	03/29/17 13:27	10
Antimony	1.1	J	1.4	0.32	mg/Kg	☼	03/28/17 17:17	03/29/17 13:27	10
Thallium	2.1		0.27	0.24	mg/Kg	☼	03/28/17 17:17	03/29/17 13:27	10
Selenium	12		1.4	0.19	mg/Kg	☼	03/28/17 17:17	03/29/17 13:27	10
Lithium	28		1.4	1.4	mg/Kg	☼	03/28/17 17:17	03/29/17 13:27	10

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.47		0.039	0.024	mg/Kg	☼	03/30/17 10:58	03/31/17 10:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>212				Degrees F			03/14/17 08:36	1
Cyanide, Reactive	0.25	U	0.25	0.25	mg/Kg		03/23/17 16:10	03/27/17 11:06	1
Sulfide, Reactive	150	U	150	150	mg/Kg		03/23/17 16:10	03/24/17 16:10	1
Free Liquid	5.0		0.10	0.10	mL/100g			03/15/17 11:25	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Corrosivity	5.7	HF			SU			03/16/17 12:09	1
Temperature	20.6	HF			Degrees C			03/16/17 12:09	1
Chloride	260		110	85	mg/Kg	☼		03/22/17 17:07	1
Fluoride	7.7		5.5	1.3	mg/Kg	☼		03/20/17 14:51	1
Sulfate	210		100	28	mg/L			03/22/17 17:13	1

TestAmerica Pensacola

Definitions/Glossary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Qualifiers

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F2	MS/MSD RPD exceeds control limits
L	A negative instrument reading had an absolute value greater than the reporting limit
U	Indicates the analyte was analyzed for but not detected.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Client Sample ID: HA-1

Date Collected: 03/08/17 10:15

Date Received: 03/09/17 08:30

Lab Sample ID: 400-134933-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	1010		1	345645	03/14/17 08:36	KJR	TAL PEN
Total/NA	Prep	7.3.3			346972	03/23/17 15:00	CLM	TAL PEN
Total/NA	Analysis	9014		1	347251	03/27/17 11:06	CLM	TAL PEN
Total/NA	Prep	7.3.4			346905	03/23/17 15:00	CLM	TAL PEN
Total/NA	Analysis	9034		1	347084	03/24/17 16:10	CLM	TAL PEN
Soluble	Leach	DI Leach			345907	03/15/17 16:30	JLB	TAL PEN
Soluble	Analysis	9045C		1	346009	03/16/17 12:09	JLB	TAL PEN
Total/NA	Analysis	9095A		1	345901	03/15/17 11:25	BAB	TAL PEN
Total/NA	Analysis	Moisture		1	345694	03/14/17 13:43	DAS	TAL PEN
Soluble	Leach	DI Leach			346662	03/20/17 10:30	BJB	TAL PEN
Soluble	Analysis	SM 4500 SO4 E		1	346789	03/22/17 17:13	BJB	TAL PEN

Client Sample ID: HA-1

Date Collected: 03/08/17 10:15

Date Received: 03/09/17 08:30

Lab Sample ID: 400-134933-1

Matrix: Solid

Percent Solids: 48.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			347500	03/28/17 17:17	DRE	TAL PEN
Total/NA	Analysis	6020		10	347683	03/29/17 12:33	DRE	TAL PEN
Total/NA	Prep	7471B			347750	03/30/17 10:58	JAP	TAL PEN
Total/NA	Analysis	7471B		1	347892	03/31/17 09:57	JAP	TAL PEN
Soluble	Leach	DI Leach			346656	03/20/17 10:30	BJB	TAL PEN
Soluble	Analysis	9251		1	346788	03/22/17 17:07	BJB	TAL PEN
Soluble	Leach	DI Leach			346504	03/20/17 10:30	SLT	TAL PEN
Soluble	Analysis	SM 4500 F C		1	346465	03/20/17 14:39	SLT	TAL PEN

Client Sample ID: HA-2

Date Collected: 03/08/17 10:45

Date Received: 03/09/17 08:30

Lab Sample ID: 400-134933-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	1010		1	345645	03/14/17 08:36	KJR	TAL PEN
Total/NA	Prep	7.3.3			346972	03/23/17 16:10	CLM	TAL PEN
Total/NA	Analysis	9014		1	347251	03/27/17 11:06	CLM	TAL PEN
Total/NA	Prep	7.3.4			346905	03/23/17 16:10	CLM	TAL PEN
Total/NA	Analysis	9034		1	347084	03/24/17 16:10	CLM	TAL PEN
Soluble	Leach	DI Leach			345907	03/15/17 16:30	JLB	TAL PEN
Soluble	Analysis	9045C		1	346009	03/16/17 12:09	JLB	TAL PEN
Total/NA	Analysis	9095A		1	345901	03/15/17 11:25	BAB	TAL PEN
Total/NA	Analysis	Moisture		1	345694	03/14/17 13:43	DAS	TAL PEN
Soluble	Leach	DI Leach			346662	03/20/17 10:30	BJB	TAL PEN
Soluble	Analysis	SM 4500 SO4 E		1	346789	03/22/17 17:13	BJB	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Client Sample ID: HA-2

Date Collected: 03/08/17 10:45

Date Received: 03/09/17 08:30

Lab Sample ID: 400-134933-2

Matrix: Solid

Percent Solids: 34.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			347500	03/28/17 17:17	DRE	TAL PEN
Total/NA	Analysis	6020		10	347683	03/29/17 13:18	DRE	TAL PEN
Total/NA	Prep	7471B			347750	03/30/17 10:58	JAP	TAL PEN
Total/NA	Analysis	7471B		1	347892	03/31/17 10:03	JAP	TAL PEN
Soluble	Leach	DI Leach			346656	03/20/17 10:30	BJB	TAL PEN
Soluble	Analysis	9251		1	346788	03/22/17 17:07	BJB	TAL PEN
Soluble	Leach	DI Leach			346504	03/20/17 10:30	SLT	TAL PEN
Soluble	Analysis	SM 4500 F C		1	346465	03/20/17 14:47	SLT	TAL PEN

Client Sample ID: HA-3

Date Collected: 03/08/17 11:45

Date Received: 03/09/17 08:30

Lab Sample ID: 400-134933-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	1010		1	345196	03/09/17 16:05	KJR	TAL PEN
Total/NA	Prep	7.3.3			346972	03/23/17 16:10	CLM	TAL PEN
Total/NA	Analysis	9014		1	347251	03/27/17 11:06	CLM	TAL PEN
Total/NA	Prep	7.3.4			346905	03/23/17 16:10	CLM	TAL PEN
Total/NA	Analysis	9034		1	347084	03/24/17 16:10	CLM	TAL PEN
Soluble	Leach	DI Leach			345907	03/15/17 16:30	JLB	TAL PEN
Soluble	Analysis	9045C		1	346009	03/16/17 12:09	JLB	TAL PEN
Total/NA	Analysis	9095A		1	345901	03/15/17 11:25	BAB	TAL PEN
Total/NA	Analysis	Moisture		1	345694	03/14/17 16:21	DAS	TAL PEN
Soluble	Leach	DI Leach			346662	03/20/17 10:30	BJB	TAL PEN
Soluble	Analysis	SM 4500 SO4 E		1	346789	03/22/17 17:13	BJB	TAL PEN

Client Sample ID: HA-3

Date Collected: 03/08/17 11:45

Date Received: 03/09/17 08:30

Lab Sample ID: 400-134933-3

Matrix: Solid

Percent Solids: 28.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			347500	03/28/17 17:17	DRE	TAL PEN
Total/NA	Analysis	6020		10	347683	03/29/17 13:23	DRE	TAL PEN
Total/NA	Prep	7471B			347750	03/30/17 10:58	JAP	TAL PEN
Total/NA	Analysis	7471B		1	347892	03/31/17 10:05	JAP	TAL PEN
Soluble	Leach	DI Leach			346656	03/20/17 10:30	BJB	TAL PEN
Soluble	Analysis	9251		1	346788	03/22/17 17:07	BJB	TAL PEN
Soluble	Leach	DI Leach			346504	03/20/17 10:30	SLT	TAL PEN
Soluble	Analysis	SM 4500 F C		1	346465	03/20/17 14:49	SLT	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Client Sample ID: HA-4

Date Collected: 03/08/17 12:15

Date Received: 03/09/17 08:30

Lab Sample ID: 400-134933-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	1010		1	345645	03/14/17 08:36	KJR	TAL PEN
Total/NA	Prep	7.3.3			346972	03/23/17 16:10	CLM	TAL PEN
Total/NA	Analysis	9014		1	347251	03/27/17 11:06	CLM	TAL PEN
Total/NA	Prep	7.3.4			346905	03/23/17 16:10	CLM	TAL PEN
Total/NA	Analysis	9034		1	347084	03/24/17 16:10	CLM	TAL PEN
Soluble	Leach	DI Leach			345907	03/15/17 16:30	JLB	TAL PEN
Soluble	Analysis	9045C		1	346009	03/16/17 12:09	JLB	TAL PEN
Total/NA	Analysis	9095A		1	345901	03/15/17 11:25	BAB	TAL PEN
Total/NA	Analysis	Moisture		1	345694	03/14/17 16:21	DAS	TAL PEN
Soluble	Leach	DI Leach			346662	03/20/17 10:30	BJB	TAL PEN
Soluble	Analysis	SM 4500 SO4 E		1	346789	03/22/17 17:13	BJB	TAL PEN

Client Sample ID: HA-4

Date Collected: 03/08/17 12:15

Date Received: 03/09/17 08:30

Lab Sample ID: 400-134933-4

Matrix: Solid

Percent Solids: 36.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			347500	03/28/17 17:17	DRE	TAL PEN
Total/NA	Analysis	6020		10	347683	03/29/17 13:27	DRE	TAL PEN
Total/NA	Prep	7471B			347750	03/30/17 10:58	JAP	TAL PEN
Total/NA	Analysis	7471B		1	347892	03/31/17 10:06	JAP	TAL PEN
Soluble	Leach	DI Leach			346656	03/20/17 10:30	BJB	TAL PEN
Soluble	Analysis	9251		1	346788	03/22/17 17:07	BJB	TAL PEN
Soluble	Leach	DI Leach			346504	03/20/17 10:30	SLT	TAL PEN
Soluble	Analysis	SM 4500 F C		1	346465	03/20/17 14:51	SLT	TAL PEN

Laboratory References:

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

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Metals

Prep Batch: 347500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Total/NA	Solid	3050B	
400-134933-2	HA-2	Total/NA	Solid	3050B	
400-134933-3	HA-3	Total/NA	Solid	3050B	
400-134933-4	HA-4	Total/NA	Solid	3050B	
MB 400-347500/1-A ^10	Method Blank	Total/NA	Solid	3050B	
LCS 400-347500/2-A ^5	Lab Control Sample	Total/NA	Solid	3050B	
400-134933-1 MS	HA-1	Total/NA	Solid	3050B	
400-134933-1 MSD	HA-1	Total/NA	Solid	3050B	

Analysis Batch: 347683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Total/NA	Solid	6020	347500
400-134933-2	HA-2	Total/NA	Solid	6020	347500
400-134933-3	HA-3	Total/NA	Solid	6020	347500
400-134933-4	HA-4	Total/NA	Solid	6020	347500
MB 400-347500/1-A ^10	Method Blank	Total/NA	Solid	6020	347500
LCS 400-347500/2-A ^5	Lab Control Sample	Total/NA	Solid	6020	347500
400-134933-1 MS	HA-1	Total/NA	Solid	6020	347500
400-134933-1 MSD	HA-1	Total/NA	Solid	6020	347500

Prep Batch: 347750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Total/NA	Solid	7471B	
400-134933-2	HA-2	Total/NA	Solid	7471B	
400-134933-3	HA-3	Total/NA	Solid	7471B	
400-134933-4	HA-4	Total/NA	Solid	7471B	
MB 400-347750/14-A	Method Blank	Total/NA	Solid	7471B	
LCS 400-347750/15-A	Lab Control Sample	Total/NA	Solid	7471B	
400-134933-1 MS	HA-1	Total/NA	Solid	7471B	
400-134933-1 MSD	HA-1	Total/NA	Solid	7471B	

Analysis Batch: 347892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Total/NA	Solid	7471B	347750
400-134933-2	HA-2	Total/NA	Solid	7471B	347750
400-134933-3	HA-3	Total/NA	Solid	7471B	347750
400-134933-4	HA-4	Total/NA	Solid	7471B	347750
MB 400-347750/14-A	Method Blank	Total/NA	Solid	7471B	347750
LCS 400-347750/15-A	Lab Control Sample	Total/NA	Solid	7471B	347750
400-134933-1 MS	HA-1	Total/NA	Solid	7471B	347750
400-134933-1 MSD	HA-1	Total/NA	Solid	7471B	347750

General Chemistry

Analysis Batch: 345196

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-3	HA-3	Total/NA	Solid	1010	
MB 400-345196/1	Method Blank	Total/NA	Solid	1010	
400-134933-3 DU	HA-3	Total/NA	Solid	1010	

TestAmerica Pensacola

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

General Chemistry (Continued)

Analysis Batch: 345645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Total/NA	Solid	1010	
400-134933-2	HA-2	Total/NA	Solid	1010	
400-134933-4	HA-4	Total/NA	Solid	1010	
MB 400-345645/1	Method Blank	Total/NA	Solid	1010	
400-134471-A-1 DU	Duplicate	Total/NA	Solid	1010	

Analysis Batch: 345694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Total/NA	Solid	Moisture	
400-134933-2	HA-2	Total/NA	Solid	Moisture	
400-134933-3	HA-3	Total/NA	Solid	Moisture	
400-134933-4	HA-4	Total/NA	Solid	Moisture	
400-134956-A-4 MS	Matrix Spike	Total/NA	Solid	Moisture	
400-134956-A-4 MSD	Matrix Spike Duplicate	Total/NA	Solid	Moisture	
400-134933-2 DU	HA-2	Total/NA	Solid	Moisture	

Analysis Batch: 345901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Total/NA	Solid	9095A	
400-134933-2	HA-2	Total/NA	Solid	9095A	
400-134933-3	HA-3	Total/NA	Solid	9095A	
400-134933-4	HA-4	Total/NA	Solid	9095A	
MB 400-345901/1	Method Blank	Total/NA	Solid	9095A	
400-134918-A-1 DU	Duplicate	Total/NA	Solid	9095A	

Leach Batch: 345907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Soluble	Solid	DI Leach	
400-134933-2	HA-2	Soluble	Solid	DI Leach	
400-134933-3	HA-3	Soluble	Solid	DI Leach	
400-134933-4	HA-4	Soluble	Solid	DI Leach	
400-134471-A-1-B DU	Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 346009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Soluble	Solid	9045C	345907
400-134933-2	HA-2	Soluble	Solid	9045C	345907
400-134933-3	HA-3	Soluble	Solid	9045C	345907
400-134933-4	HA-4	Soluble	Solid	9045C	345907
LCS 400-346009/4	Lab Control Sample	Total/NA	Solid	9045C	
400-134471-A-1-B DU	Duplicate	Soluble	Solid	9045C	345907

Analysis Batch: 346465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Soluble	Solid	SM 4500 F C	346504
400-134933-2	HA-2	Soluble	Solid	SM 4500 F C	346504
400-134933-3	HA-3	Soluble	Solid	SM 4500 F C	346504
400-134933-4	HA-4	Soluble	Solid	SM 4500 F C	346504
MB 400-346504/1-A	Method Blank	Soluble	Solid	SM 4500 F C	346504
LCS 400-346465/4	Lab Control Sample	Total/NA	Solid	SM 4500 F C	
400-134933-1 MS	HA-1	Soluble	Solid	SM 4500 F C	346504

TestAmerica Pensacola

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

General Chemistry (Continued)

Analysis Batch: 346465 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1 MSD	HA-1	Soluble	Solid	SM 4500 F C	346504

Leach Batch: 346504

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Soluble	Solid	DI Leach	
400-134933-2	HA-2	Soluble	Solid	DI Leach	
400-134933-3	HA-3	Soluble	Solid	DI Leach	
400-134933-4	HA-4	Soluble	Solid	DI Leach	
MB 400-346504/1-A	Method Blank	Soluble	Solid	DI Leach	
400-134933-1 MS	HA-1	Soluble	Solid	DI Leach	
400-134933-1 MSD	HA-1	Soluble	Solid	DI Leach	

Leach Batch: 346656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Soluble	Solid	DI Leach	
400-134933-2	HA-2	Soluble	Solid	DI Leach	
400-134933-3	HA-3	Soluble	Solid	DI Leach	
400-134933-4	HA-4	Soluble	Solid	DI Leach	
MB 400-346656/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 400-346656/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
400-134933-1 MS	HA-1	Soluble	Solid	DI Leach	
400-134933-1 MSD	HA-1	Soluble	Solid	DI Leach	

Leach Batch: 346662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Soluble	Solid	DI Leach	
400-134933-2	HA-2	Soluble	Solid	DI Leach	
400-134933-3	HA-3	Soluble	Solid	DI Leach	
400-134933-4	HA-4	Soluble	Solid	DI Leach	
MB 400-346662/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 400-346662/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
400-134933-1 MS	HA-1	Soluble	Solid	DI Leach	
400-134933-1 MSD	HA-1	Soluble	Solid	DI Leach	

Analysis Batch: 346788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Soluble	Solid	9251	346656
400-134933-2	HA-2	Soluble	Solid	9251	346656
400-134933-3	HA-3	Soluble	Solid	9251	346656
400-134933-4	HA-4	Soluble	Solid	9251	346656
MB 400-346656/1-A	Method Blank	Soluble	Solid	9251	346656
LCS 400-346656/2-A	Lab Control Sample	Soluble	Solid	9251	346656
MRL 400-346788/3	Lab Control Sample	Total/NA	Solid	9251	
400-134933-1 MS	HA-1	Soluble	Solid	9251	346656
400-134933-1 MSD	HA-1	Soluble	Solid	9251	346656

Analysis Batch: 346789

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Soluble	Solid	SM 4500 SO4 E	346662
400-134933-2	HA-2	Soluble	Solid	SM 4500 SO4 E	346662
400-134933-3	HA-3	Soluble	Solid	SM 4500 SO4 E	346662

TestAmerica Pensacola

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

General Chemistry (Continued)

Analysis Batch: 346789 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-4	HA-4	Soluble	Solid	SM 4500 SO4 E	346662
MB 400-346662/1-A	Method Blank	Soluble	Solid	SM 4500 SO4 E	346662
LCS 400-346662/2-A	Lab Control Sample	Soluble	Solid	SM 4500 SO4 E	346662
MRL 400-346789/3	Lab Control Sample	Total/NA	Solid	SM 4500 SO4 E	
400-134933-1 MS	HA-1	Soluble	Solid	SM 4500 SO4 E	346662
400-134933-1 MSD	HA-1	Soluble	Solid	SM 4500 SO4 E	346662

Prep Batch: 346905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Total/NA	Solid	7.3.4	
400-134933-2	HA-2	Total/NA	Solid	7.3.4	
400-134933-3	HA-3	Total/NA	Solid	7.3.4	
400-134933-4	HA-4	Total/NA	Solid	7.3.4	
MB 400-346905/1-A	Method Blank	Total/NA	Solid	7.3.4	
LCS 400-346905/2-A	Lab Control Sample	Total/NA	Solid	7.3.4	
400-135376-B-1-B DU	Duplicate	Total/NA	Solid	7.3.4	
490-123899-A-1-B DU	Duplicate	Total/NA	Solid	7.3.4	

Prep Batch: 346972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Total/NA	Solid	7.3.3	
400-134933-2	HA-2	Total/NA	Solid	7.3.3	
400-134933-3	HA-3	Total/NA	Solid	7.3.3	
400-134933-4	HA-4	Total/NA	Solid	7.3.3	
MB 400-346972/1-A	Method Blank	Total/NA	Solid	7.3.3	
LCS 400-346972/2-A	Lab Control Sample	Total/NA	Solid	7.3.3	
490-123899-A-1-D DU	Duplicate	Total/NA	Solid	7.3.3	

Analysis Batch: 347084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Total/NA	Solid	9034	346905
400-134933-2	HA-2	Total/NA	Solid	9034	346905
400-134933-3	HA-3	Total/NA	Solid	9034	346905
400-134933-4	HA-4	Total/NA	Solid	9034	346905
MB 400-346905/1-A	Method Blank	Total/NA	Solid	9034	346905
LCS 400-346905/2-A	Lab Control Sample	Total/NA	Solid	9034	346905
400-135376-B-1-B DU	Duplicate	Total/NA	Solid	9034	346905
490-123899-A-1-B DU	Duplicate	Total/NA	Solid	9034	346905

Analysis Batch: 347251

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Total/NA	Solid	9014	346972
400-134933-2	HA-2	Total/NA	Solid	9014	346972
400-134933-3	HA-3	Total/NA	Solid	9014	346972
400-134933-4	HA-4	Total/NA	Solid	9014	346972
MB 400-346972/1-A	Method Blank	Total/NA	Solid	9014	346972
LCS 400-346972/2-A	Lab Control Sample	Total/NA	Solid	9014	346972
490-123899-A-1-D DU	Duplicate	Total/NA	Solid	9014	346972

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-347500/1-A ^10

Matrix: Solid

Analysis Batch: 347683

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 347500

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.11	U	0.50	0.11	mg/Kg		03/28/17 17:17	03/29/17 12:24	10
Boron	0.65	U	10	0.65	mg/Kg		03/28/17 17:17	03/29/17 12:24	10
Barium	0.11	U	0.50	0.11	mg/Kg		03/28/17 17:17	03/29/17 12:24	10
Beryllium	0.030	U	0.50	0.030	mg/Kg		03/28/17 17:17	03/29/17 12:24	10
Calcium	23	U	50	23	mg/Kg		03/28/17 17:17	03/29/17 12:24	10
Cadmium	0.20	U	0.50	0.20	mg/Kg		03/28/17 17:17	03/29/17 12:24	10
Chromium	0.19	U	0.50	0.19	mg/Kg		03/28/17 17:17	03/29/17 12:24	10
Cobalt	0.076	U	0.50	0.076	mg/Kg		03/28/17 17:17	03/29/17 12:24	10
Molybdenum	0.40	U	3.0	0.40	mg/Kg		03/28/17 17:17	03/29/17 12:24	10
Lead	0.074	U	0.25	0.074	mg/Kg		03/28/17 17:17	03/29/17 12:24	10
Antimony	0.12	U	0.50	0.12	mg/Kg		03/28/17 17:17	03/29/17 12:24	10
Thallium	0.090	U	0.10	0.090	mg/Kg		03/28/17 17:17	03/29/17 12:24	10
Selenium	0.069	U	0.50	0.069	mg/Kg		03/28/17 17:17	03/29/17 12:24	10
Lithium	0.50	U	0.50	0.50	mg/Kg		03/28/17 17:17	03/29/17 12:24	10

Lab Sample ID: LCS 400-347500/2-A ^5

Matrix: Solid

Analysis Batch: 347683

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 347500

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	5.00	5.36		mg/Kg		107	80 - 120
Boron	10.0	11.5		mg/Kg		115	80 - 120
Barium	5.00	5.60		mg/Kg		112	80 - 120
Beryllium	5.00	4.57		mg/Kg		91	80 - 120
Calcium	500	499		mg/Kg		100	80 - 120
Cadmium	5.00	5.54		mg/Kg		111	80 - 120
Chromium	5.00	5.28		mg/Kg		106	80 - 120
Cobalt	5.00	5.57		mg/Kg		111	80 - 120
Molybdenum	10.0	11.3		mg/Kg		113	80 - 120
Lead	5.00	4.76		mg/Kg		95	80 - 120
Antimony	5.00	5.67		mg/Kg		113	80 - 120
Thallium	1.00	1.11		mg/Kg		111	80 - 120
Selenium	5.00	5.95		mg/Kg		119	80 - 120
Lithium	5.00	5.89		mg/Kg		118	80 - 120

Lab Sample ID: 400-134933-1 MS

Matrix: Solid

Analysis Batch: 347683

Client Sample ID: HA-1

Prep Type: Total/NA

Prep Batch: 347500

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	12	F1 F2	10.0	26.1	F1	mg/Kg	☼	139	75 - 125
Boron	1.2	U L	20.1	21.9		mg/Kg	☼	109	75 - 125
Barium	110		10.0	140	4	mg/Kg	☼	316	75 - 125
Beryllium	0.84	J	10.0	10.8		mg/Kg	☼	99	75 - 125
Calcium	620		1000	1630		mg/Kg	☼	101	75 - 125
Cadmium	0.37	U	10.0	11.2		mg/Kg	☼	111	75 - 125
Chromium	16		10.0	26.6		mg/Kg	☼	101	75 - 125
Cobalt	4.4		10.0	15.5		mg/Kg	☼	111	75 - 125

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-134933-1 MS

Matrix: Solid

Analysis Batch: 347683

Client Sample ID: HA-1

Prep Type: Total/NA

Prep Batch: 347500

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Molybdenum	2.9	J	20.1	25.0		mg/Kg	☼	110	75 - 125
Lead	7.6		10.0	18.2		mg/Kg	☼	106	75 - 125
Antimony	0.54	J F1	10.0	8.13		mg/Kg	☼	76	75 - 125
Thallium	0.35		2.01	2.54		mg/Kg	☼	109	75 - 125
Selenium	5.0		10.0	16.8		mg/Kg	☼	117	75 - 125
Lithium	7.9	F1	10.0	21.4	F1	mg/Kg	☼	134	75 - 125

Lab Sample ID: 400-134933-1 MSD

Matrix: Solid

Analysis Batch: 347683

Client Sample ID: HA-1

Prep Type: Total/NA

Prep Batch: 347500

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	12	F1 F2	9.86	20.6	F2	mg/Kg	☼	85	75 - 125	24	20
Boron	1.2	U L	19.7	21.7		mg/Kg	☼	110	75 - 125	1	20
Barium	110		9.86	127	4	mg/Kg	☼	199	75 - 125	9	20
Beryllium	0.84	J	9.86	10.0		mg/Kg	☼	93	75 - 125	7	20
Calcium	620		986	1490		mg/Kg	☼	88	75 - 125	9	20
Cadmium	0.37	U	9.86	10.8		mg/Kg	☼	110	75 - 125	3	20
Chromium	16		9.86	25.5		mg/Kg	☼	92	75 - 125	4	20
Cobalt	4.4		9.86	14.7		mg/Kg	☼	105	75 - 125	5	20
Molybdenum	2.9	J	19.7	23.3		mg/Kg	☼	104	75 - 125	7	20
Lead	7.6		9.86	16.3		mg/Kg	☼	88	75 - 125	11	20
Antimony	0.54	J F1	9.86	7.83	F1	mg/Kg	☼	74	75 - 125	4	20
Thallium	0.35		1.97	2.42		mg/Kg	☼	105	75 - 125	5	20
Selenium	5.0		9.86	14.6		mg/Kg	☼	97	75 - 125	14	20
Lithium	7.9	F1	9.86	18.7		mg/Kg	☼	109	75 - 125	13	

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 400-347750/14-A

Matrix: Solid

Analysis Batch: 347892

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 347750

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0075	U	0.012	0.0075	mg/Kg		03/30/17 10:58	03/31/17 10:08	1

Lab Sample ID: LCS 400-347750/15-A

Matrix: Solid

Analysis Batch: 347892

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 347750

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.0628	0.0691		mg/Kg		110	80 - 120

Lab Sample ID: 400-134933-1 MS

Matrix: Solid

Analysis Batch: 347892

Client Sample ID: HA-1

Prep Type: Total/NA

Prep Batch: 347750

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.10		0.295	0.392		mg/Kg	☼	99	80 - 120

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Lab Sample ID: 400-134933-1 MSD

Matrix: Solid

Analysis Batch: 347892

Client Sample ID: HA-1

Prep Type: Total/NA

Prep Batch: 347750

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.10		0.292	0.383		mg/Kg	☼	97	80 - 120	2	20

Method: 1010 - Ignitability, Pensky-Martens Closed-Cup Method

Lab Sample ID: MB 400-345196/1

Matrix: Solid

Analysis Batch: 345196

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>212				Degrees F			03/09/17 16:05	1

Lab Sample ID: 400-134933-3 DU

Matrix: Solid

Analysis Batch: 345196

Client Sample ID: HA-3

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	Prepared	RPD	RPD Limit
Flashpoint	>212		>212		Degrees F			NC	4

Lab Sample ID: MB 400-345645/1

Matrix: Solid

Analysis Batch: 345645

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>212				Degrees F			03/14/17 08:36	1

Lab Sample ID: 400-134471-A-1 DU

Matrix: Solid

Analysis Batch: 345645

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	Prepared	RPD	RPD Limit
Flashpoint	>212		>212		Degrees F			NC	4

Method: 9014 - Cyanide, Reactive

Lab Sample ID: MB 400-346972/1-A

Matrix: Solid

Analysis Batch: 347251

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 346972

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Reactive	0.25	U	0.25	0.25	mg/Kg		03/23/17 15:00	03/27/17 11:06	1

Lab Sample ID: LCS 400-346972/2-A

Matrix: Solid

Analysis Batch: 347251

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 346972

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Reactive	1.00	0.25	U	mg/Kg		10	0 - 50

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Method: 9014 - Cyanide, Reactive (Continued)

Lab Sample ID: 490-123899-A-1-D DU
Matrix: Solid
Analysis Batch: 347251

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 346972

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Cyanide, Reactive	0.25	U	0.25	U	mg/Kg	-	NC	20

Method: 9034 - Sulfide, Reactive

Lab Sample ID: MB 400-346905/1-A
Matrix: Solid
Analysis Batch: 347084

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346905

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide, Reactive	150	U	150	150	mg/Kg	-	03/23/17 15:00	03/24/17 16:10	1

Lab Sample ID: LCS 400-346905/2-A
Matrix: Solid
Analysis Batch: 347084

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 346905
%Rec. Limits

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Sulfide, Reactive	1000	235		mg/Kg	-	24	0 - 80

Lab Sample ID: 400-135376-B-1-B DU
Matrix: Solid
Analysis Batch: 347084

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 346905

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Sulfide, Reactive	150	U	150	U	mg/Kg	-	NC	20

Lab Sample ID: 490-123899-A-1-B DU
Matrix: Solid
Analysis Batch: 347084

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 346905

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Sulfide, Reactive	150	U	150	U	mg/Kg	-	NC	20

Method: 9045C - pH

Lab Sample ID: LCS 400-346009/4
Matrix: Solid
Analysis Batch: 346009

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Corrosivity	7.00	7.1		SU	-	101	96 - 106

Lab Sample ID: 400-134471-A-1-B DU
Matrix: Solid
Analysis Batch: 346009

Client Sample ID: Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Corrosivity	7.7		8.0		SU	-	4	30
Temperature	20.9		20.8		Degrees C	-	0.5	30

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Method: 9095A - Paint Filter

Lab Sample ID: MB 400-345901/1
Matrix: Solid
Analysis Batch: 345901

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Free Liquid	0.10	U	0.10	0.10	mL/100g	-		03/15/17 11:25	1

Lab Sample ID: 400-134918-A-1 DU
Matrix: Solid
Analysis Batch: 345901

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Free Liquid	0.10	U	0.10	U	mL/100g	-	NC	20

Method: 9251 - Chloride

Lab Sample ID: MRL 400-346788/3
Matrix: Solid
Analysis Batch: 346788

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	2.08	J	mg/Kg	-	104	

Lab Sample ID: MB 400-346656/1-A
Matrix: Solid
Analysis Batch: 346788

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31	U	40	31	mg/Kg	-		03/22/17 16:41	1

Lab Sample ID: LCS 400-346656/2-A
Matrix: Solid
Analysis Batch: 346788

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	618	663		mg/Kg	-	107	90 - 110

Lab Sample ID: 400-134933-1 MS
Matrix: Solid
Analysis Batch: 346788

Client Sample ID: HA-1
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	64	U	410	457		mg/Kg	☼	111	75 - 125

Lab Sample ID: 400-134933-1 MSD
Matrix: Solid
Analysis Batch: 346788

Client Sample ID: HA-1
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	64	U	410	461		mg/Kg	☼	112	75 - 125	1	20

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Method: SM 4500 F C - Fluoride

Lab Sample ID: LCS 400-346465/4

Matrix: Solid

Analysis Batch: 346465

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.05		mg/Kg		101	90 - 110

Lab Sample ID: MB 400-346504/1-A

Matrix: Solid

Analysis Batch: 346465

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.48	U	2.0	0.48	mg/Kg			03/20/17 14:31	1

Lab Sample ID: 400-134933-1 MS

Matrix: Solid

Analysis Batch: 346465

Client Sample ID: HA-1

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.2	J	41.0	43.4		mg/Kg	☼	103	74 - 125

Lab Sample ID: 400-134933-1 MSD

Matrix: Solid

Analysis Batch: 346465

Client Sample ID: HA-1

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.2	J	41.0	44.3		mg/Kg	☼	105	74 - 125	2	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MRL 400-346789/3

Matrix: Solid

Analysis Batch: 346789

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.85	J	mg/L		97	50 - 150

Lab Sample ID: MB 400-346662/1-A

Matrix: Solid

Analysis Batch: 346789

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	28	U	100	28	mg/L			03/22/17 16:43	1

Lab Sample ID: LCS 400-346662/2-A

Matrix: Solid

Analysis Batch: 346789

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	305	302		mg/L		99	90 - 110

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Method: SM 4500 SO4 E - Sulfate, Total (Continued)

Lab Sample ID: 400-134933-1 MS

Matrix: Solid

Analysis Batch: 346789

Client Sample ID: HA-1

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	57	J	200	280		mg/L		112	77 - 128

Lab Sample ID: 400-134933-1 MSD

Matrix: Solid

Analysis Batch: 346789

Client Sample ID: HA-1

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	57	J	200	280		mg/L		112	77 - 128	0	5

Chain of Custody Record

TestAmerica

[illegible][illegible]

Login Sample Receipt Checklist

Client: Geosyntec Consultants, Inc.

Job Number: 400-134933-1

Login Number: 134933

List Source: TestAmerica Pensacola

List Number: 1

Creator: Siddoway, Benjamin

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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	2.7°C, 2.7°C IR-7
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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-1

Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Certification ID	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	05-06-17
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
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

Definitions/Glossary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-2

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-2

Client Sample ID: HA-1

Date Collected: 03/08/17 10:15

Date Received: 03/09/17 08:30

Lab Sample ID: 400-134933-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			297931	03/15/17 16:03	DRO	TAL SL
Total/NA	Prep	DPS-21			298230	03/17/17 15:53	JCC	TAL SL
Total/NA	Analysis	9315		1	302769	04/11/17 08:35	RTM	TAL SL
Total/NA	Leach	Dry and Grind			297931	03/15/17 16:03	DRO	TAL SL
Total/NA	Prep	DPS-0			298236	03/17/17 16:19	JCC	TAL SL
Total/NA	Analysis	9320		1	301212	04/04/17 10:59	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	303287	04/12/17 14:19	MLK	TAL SL

Client Sample ID: HA-2

Date Collected: 03/08/17 10:45

Date Received: 03/09/17 08:30

Lab Sample ID: 400-134933-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			297931	03/15/17 16:03	DRO	TAL SL
Total/NA	Prep	DPS-21			298230	03/17/17 15:53	JCC	TAL SL
Total/NA	Analysis	9315		1	302769	04/11/17 08:35	RTM	TAL SL
Total/NA	Leach	Dry and Grind			297931	03/15/17 16:03	DRO	TAL SL
Total/NA	Prep	DPS-0			298236	03/17/17 16:19	JCC	TAL SL
Total/NA	Analysis	9320		1	301212	04/04/17 10:59	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	303287	04/12/17 14:19	MLK	TAL SL

Client Sample ID: HA-3

Date Collected: 03/08/17 11:45

Date Received: 03/09/17 08:30

Lab Sample ID: 400-134933-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			297931	03/15/17 16:03	DRO	TAL SL
Total/NA	Prep	DPS-21			298230	03/17/17 15:53	JCC	TAL SL
Total/NA	Analysis	9315		1	302769	04/11/17 08:35	RTM	TAL SL
Total/NA	Leach	Dry and Grind			297931	03/15/17 16:03	DRO	TAL SL
Total/NA	Prep	DPS-0			298236	03/17/17 16:19	JCC	TAL SL
Total/NA	Analysis	9320		1	301212	04/04/17 10:59	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	303287	04/12/17 14:19	MLK	TAL SL

Client Sample ID: HA-4

Date Collected: 03/08/17 12:15

Date Received: 03/09/17 08:30

Lab Sample ID: 400-134933-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Leach	Dry and Grind			297931	03/15/17 16:03	DRO	TAL SL
Total/NA	Prep	DPS-21			298230	03/17/17 15:53	JCC	TAL SL
Total/NA	Analysis	9315		1	302769	04/11/17 08:35	RTM	TAL SL
Total/NA	Leach	Dry and Grind			297931	03/15/17 16:03	DRO	TAL SL

TestAmerica Pensacola

Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-2

Client Sample ID: HA-4

Date Collected: 03/08/17 12:15

Date Received: 03/09/17 08:30

Lab Sample ID: 400-134933-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	DPS-0			298236	03/17/17 16:19	JCC	TAL SL
Total/NA	Analysis	9320		1	301212	04/04/17 10:59	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	303287	04/12/17 14:19	MLK	TAL SL

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-2

Rad

Leach Batch: 297864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-179456-F-30-C DU	Duplicate	Total/NA	Solid	Dry and Grind	
440-179456-F-30-E DU	Duplicate	Total/NA	Solid	Dry and Grind	

Leach Batch: 297931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Total/NA	Solid	Dry and Grind	
400-134933-2	HA-2	Total/NA	Solid	Dry and Grind	
400-134933-3	HA-3	Total/NA	Solid	Dry and Grind	
400-134933-4	HA-4	Total/NA	Solid	Dry and Grind	

Prep Batch: 298230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Total/NA	Solid	DPS-21	297931
400-134933-2	HA-2	Total/NA	Solid	DPS-21	297931
400-134933-3	HA-3	Total/NA	Solid	DPS-21	297931
400-134933-4	HA-4	Total/NA	Solid	DPS-21	297931
MB 160-298230/1-A	Method Blank	Total/NA	Solid	DPS-21	
LCS 160-298230/2-A	Lab Control Sample	Total/NA	Solid	DPS-21	
440-179456-F-30-C DU	Duplicate	Total/NA	Solid	DPS-21	297864

Prep Batch: 298236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-134933-1	HA-1	Total/NA	Solid	DPS-0	297931
400-134933-2	HA-2	Total/NA	Solid	DPS-0	297931
400-134933-3	HA-3	Total/NA	Solid	DPS-0	297931
400-134933-4	HA-4	Total/NA	Solid	DPS-0	297931
MB 160-298236/1-A	Method Blank	Total/NA	Solid	DPS-0	
LCS 160-298236/2-A	Lab Control Sample	Total/NA	Solid	DPS-0	
440-179456-F-30-E DU	Duplicate	Total/NA	Solid	DPS-0	297864

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-2

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-298230/1-A

Matrix: Solid

Analysis Batch: 302769

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 298230

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.01931	U	0.0566	0.0566	1.00	0.122	pCi/g	03/17/17 15:53	04/11/17 08:34	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.1		40 - 110					03/17/17 15:53	04/11/17 08:34	1

Lab Sample ID: LCS 160-298230/2-A

Matrix: Solid

Analysis Batch: 302769

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 298230

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226	11.4	9.317		0.981	1.00	0.100	pCi/g	82	65 - 140		
Carrier	LCS %Yield	LCS Qualifier	Limits								
Ba Carrier	101		40 - 110								

Lab Sample ID: 440-179456-F-30-C DU

Matrix: Solid

Analysis Batch: 302769

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 298230

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.836		0.7082		0.168	1.00	0.120	pCi/g	0.37	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	101		40 - 110							

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-298236/1-A

Matrix: Solid

Analysis Batch: 301212

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 298236

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.3253	U	0.219	0.221	1.00	0.441	pCi/g	03/17/17 16:19	04/04/17 10:56	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.1		40 - 110					03/17/17 16:19	04/04/17 10:56	1
Y Carrier	81.9		40 - 110					03/17/17 16:19	04/04/17 10:56	1

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-2

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-298236/2-A

Matrix: Solid

Analysis Batch: 301212

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 298236

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	13.6	14.90		1.59	1.00	0.411	pCi/g	109	61 - 139

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	101		40 - 110
Y Carrier	84.9		40 - 110

Lab Sample ID: 440-179456-F-30-E DU

Matrix: Solid

Analysis Batch: 301212

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 298236

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	1.73		1.137		0.306	1.00	0.352	pCi/g	0.87	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	101		40 - 110
Y Carrier	89.7		40 - 110

Chain of Custody Record

[illegible]

Login Sample Receipt Checklist

Client: Geosyntec Consultants, Inc.

Job Number: 400-134933-2

Login Number: 134933

List Source: TestAmerica Pensacola

List Number: 1

Creator: Siddoway, Benjamin

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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	2.7°C, 2.7°C IR-7
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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-2

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	05-06-17
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
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

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-17 *
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-17
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542017-1	07-31-17
New Jersey	NELAP	2	MO002	06-30-17 *
New York	NELAP	2	11616	03-31-17 *

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

TestAmerica Pensacola

Accreditation/Certification Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-134933-2

Laboratory: TestAmerica St. Louis (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
North Dakota	State Program	8	R207	06-30-17
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-17
Pennsylvania	NELAP	3	68-00540	02-28-18
South Carolina	State Program	4	85002001	06-30-17
Texas	NELAP	6	T104704193-16-10	07-31-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-17
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-17
West Virginia DEP	State Program	3	381	08-31-17 *

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

TestAmerica Pensacola

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-138523-1

Client Project/Site: CCR Testing for Landfill Disposal

Revision: 1

For:

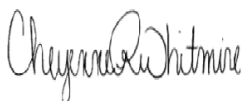
Geosyntec Consultants, Inc.

1255 Roberts Blvd, NW

Suite 200

Kennesaw, Georgia 30144

Attn: Chris Livingston



Authorized for release by:

7/12/2017 4:55:26 PM

Cheyenne Whitmire, Project Manager II

(850)471-6222

cheyenne.whitmire@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



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.

1
2
3
4
5
6
7
8
9
10
11
12
13
14



Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Detection Summary	4
Method Summary	5
Sample Summary	6
Client Sample Results	7
Definitions	15
Chronicle	16
QC Association	18
QC Sample Results	22
Chain of Custody	31
Receipt Checklists	32
Certification Summary	33

Case Narrative

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Job ID: 400-138523-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-138523-1

GC/MS VOA

Method(s) 8260B: The leachate blank for preparation batch 355952 and analytical batch 356103 contained 1,2-Dichloroethane, Chloroform, Tetrachloroethene and Trichloroethene above the method detection limit (MDL) and 2-Butanone (MEK) above the reporting limit (RL) but below the TCLP discharge limit. The associated samples were non-detect for these analytes. Therefore, the data have been reported.

GC/MS Semi VOA

Method(s) 8270D: Six surrogates are used for this analysis. The laboratory's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following sample contained an allowable number of surrogate compounds outside limits: HA-1-CCR (400-138523-1). These results have been reported and qualified.

GC Semi VOA

Method(s) 8081B: Two surrogates are used for this analysis. The laboratory's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following samples contained an allowable number of surrogate compounds outside limits: HA-1-CCR (400-138523-1), HA-4-CCR (400-138523-4) and (LCSD 400-355947/4-A). These results have been reported and qualified.

Method(s) 8151A: The continuing calibration verification (CCV) associated with batch 356501 recovered above the upper control limit for Silvex (2,4,5-TP) and 2,4-D. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: HA-1-CCR (400-138523-1), HA-2-CCR (400-138523-2), HA-3-CCR (400-138523-3) and HA-4-CCR (400-138523-4).

Method(s) 8151A: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for 356501 recovered outside control limits for the following analytes: Silvex (2,4,5-TP). These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Detection Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Client Sample ID: HA-1-CCR

Lab Sample ID: 400-138523-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.38	J	5.0	0.050	mg/L	1		6010C	TCLP
Boron	0.11	J B	0.50	0.075	mg/L	1		6010C	TCLP
Calcium	11	B	2.5	0.15	mg/L	1		6010C	TCLP
Copper	0.020	J	0.050	0.010	mg/L	1		6010C	TCLP
Lithium	0.019	J B	0.25	0.0050	mg/L	1		6010C	TCLP
Nickel	0.026		0.025	0.015	mg/L	1		6010C	TCLP
Zinc	0.046	J B	0.20	0.040	mg/L	1		6010C	TCLP

Client Sample ID: HA-2-CCR

Lab Sample ID: 400-138523-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.51	J	5.0	0.050	mg/L	1		6010C	TCLP
Boron	0.11	J B	0.50	0.075	mg/L	1		6010C	TCLP
Calcium	4.5	B	2.5	0.15	mg/L	1		6010C	TCLP
Lead	0.018	J	0.050	0.010	mg/L	1		6010C	TCLP
Lithium	0.020	J B	0.25	0.0050	mg/L	1		6010C	TCLP
Vanadium	0.017	J	0.10	0.010	mg/L	1		6010C	TCLP
Zinc	0.057	J B	0.20	0.040	mg/L	1		6010C	TCLP

Client Sample ID: HA-3-CCR

Lab Sample ID: 400-138523-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.54	J	5.0	0.050	mg/L	1		6010C	TCLP
Boron	0.075	J B	0.50	0.075	mg/L	1		6010C	TCLP
Calcium	16	B	2.5	0.15	mg/L	1		6010C	TCLP
Copper	0.012	J	0.050	0.010	mg/L	1		6010C	TCLP
Lead	0.013	J	0.050	0.010	mg/L	1		6010C	TCLP
Lithium	0.027	J B	0.25	0.0050	mg/L	1		6010C	TCLP
Vanadium	0.027	J	0.10	0.010	mg/L	1		6010C	TCLP
Zinc	0.043	J B	0.20	0.040	mg/L	1		6010C	TCLP

Client Sample ID: HA-4-CCR

Lab Sample ID: 400-138523-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.21	J	5.0	0.050	mg/L	1		6010C	TCLP
Boron	0.10	J B	0.50	0.075	mg/L	1		6010C	TCLP
Calcium	12	B	2.5	0.15	mg/L	1		6010C	TCLP
Lithium	0.022	J B	0.25	0.0050	mg/L	1		6010C	TCLP
Nickel	0.015	J	0.025	0.015	mg/L	1		6010C	TCLP
Vanadium	0.014	J	0.10	0.010	mg/L	1		6010C	TCLP
Zinc	0.077	J B	0.20	0.040	mg/L	1		6010C	TCLP

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Method Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PEN
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL PEN
8081B	Organochlorine Pesticides (GC)	SW846	TAL PEN
8151A	Herbicides (GC)	SW846	TAL PEN
6010C	Metals (ICP)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-138523-1	HA-1-CCR	Solid	05/26/17 13:10	05/27/17 08:34
400-138523-2	HA-2-CCR	Solid	05/26/17 13:30	05/27/17 08:34
400-138523-3	HA-3-CCR	Solid	05/26/17 12:30	05/27/17 08:34
400-138523-4	HA-4-CCR	Solid	05/26/17 12:05	05/27/17 08:34

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Client Sample ID: HA-1-CCR

Date Collected: 05/26/17 13:10

Date Received: 05/27/17 08:34

Lab Sample ID: 400-138523-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	0.0017	mg/L			06/07/17 12:07	5
Carbon tetrachloride	ND		0.025	0.0025	mg/L			06/07/17 12:07	5
Chlorobenzene	ND		0.025	0.0025	mg/L			06/07/17 12:07	5
Chloroform	ND		0.025	0.0030	mg/L			06/07/17 12:07	5
1,4-Dichlorobenzene	ND		0.025	0.0032	mg/L			06/07/17 12:07	5
1,2-Dichloroethane	ND		0.025	0.0025	mg/L			06/07/17 12:07	5
1,1-Dichloroethene	ND		0.025	0.0025	mg/L			06/07/17 12:07	5
2-Butanone (MEK)	ND		0.13	0.013	mg/L			06/07/17 12:07	5
Tetrachloroethene	ND		0.025	0.0029	mg/L			06/07/17 12:07	5
Trichloroethene	ND		0.025	0.0025	mg/L			06/07/17 12:07	5
Vinyl chloride	ND		0.025	0.0025	mg/L			06/07/17 12:07	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	93		78 - 118		06/07/17 12:07	5
Dibromofluoromethane	102		81 - 121		06/07/17 12:07	5
Toluene-d8 (Surr)	96		80 - 120		06/07/17 12:07	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		0.050	0.0090	mg/L		06/05/17 11:38	06/06/17 21:34	1
3 & 4 Methylphenol	ND		0.10	0.0052	mg/L		06/05/17 11:38	06/06/17 21:34	1
2,4-Dinitrotoluene	ND		0.050	0.0095	mg/L		06/05/17 11:38	06/06/17 21:34	1
Hexachloroethane	ND		0.050	0.021	mg/L		06/05/17 11:38	06/06/17 21:34	1
Hexachlorobutadiene	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 21:34	1
Hexachlorobenzene	ND		0.050	0.0013	mg/L		06/05/17 11:38	06/06/17 21:34	1
Nitrobenzene	ND		0.050	0.0028	mg/L		06/05/17 11:38	06/06/17 21:34	1
Pentachlorophenol	ND		0.10	0.0091	mg/L		06/05/17 11:38	06/06/17 21:34	1
2,4,5-Trichlorophenol	ND		0.050	0.019	mg/L		06/05/17 11:38	06/06/17 21:34	1
2,4,6-Trichlorophenol	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 21:34	1
Pyridine	ND		0.050	0.016	mg/L		06/05/17 11:38	06/06/17 21:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	36		15 - 135	06/05/17 11:38	06/06/17 21:34	1
2-Fluorobiphenyl	45		34 - 120	06/05/17 11:38	06/06/17 21:34	1
2-Fluorophenol (Surr)	9 X		10 - 120	06/05/17 11:38	06/06/17 21:34	1
Nitrobenzene-d5 (Surr)	52		27 - 120	06/05/17 11:38	06/06/17 21:34	1
Phenol-d5 (Surr)	24		10 - 120	06/05/17 11:38	06/06/17 21:34	1
Terphenyl-d14 (Surr)	72		53 - 125	06/05/17 11:38	06/06/17 21:34	1

Method: 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.025	0.0065	mg/L		06/05/17 16:24	06/07/17 16:47	1
Endrin	ND		0.0010	0.00015	mg/L		06/05/17 16:24	06/07/17 16:47	1
Heptachlor	ND		0.0010	0.00016	mg/L		06/05/17 16:24	06/07/17 16:47	1
Heptachlor epoxide	ND		0.0010	0.00016	mg/L		06/05/17 16:24	06/07/17 16:47	1
Methoxychlor	ND		0.0010	0.00021	mg/L		06/05/17 16:24	06/08/17 21:30	1
Toxaphene	ND		0.15	0.020	mg/L		06/05/17 16:24	06/07/17 16:47	1
gamma-BHC (Lindane)	ND		0.0025	0.0013	mg/L		06/05/17 16:24	06/07/17 16:47	1

TestAmerica Pensacola

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Client Sample ID: HA-1-CCR

Date Collected: 05/26/17 13:10

Date Received: 05/27/17 08:34

Lab Sample ID: 400-138523-1

Matrix: Solid

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	138	X	10 - 130	06/05/17 16:24	06/07/17 16:47	1
Tetrachloro-m-xylene	104		43 - 130	06/05/17 16:24	06/07/17 16:47	1

Method: 8151A - Herbicides (GC) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		0.50	0.0065	mg/L		06/07/17 13:26	06/10/17 12:53	1
Silvex (2,4,5-TP)	ND	*	0.10	0.00046	mg/L		06/07/17 13:26	06/10/17 12:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	71		30 - 142	06/07/17 13:26	06/10/17 12:53	1

Method: 6010C - Metals (ICP) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.25	0.050	mg/L		06/05/17 11:08	06/06/17 14:18	1
Arsenic	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 14:18	1
Barium	0.38	J	5.0	0.050	mg/L		06/05/17 11:08	06/06/17 14:18	1
Beryllium	ND		0.015	0.0050	mg/L		06/05/17 11:08	06/06/17 14:18	1
Boron	0.11	J B	0.50	0.075	mg/L		06/05/17 11:08	06/06/17 14:18	1
Cadmium	ND		0.025	0.0050	mg/L		06/05/17 11:08	06/06/17 14:18	1
Calcium	11	B	2.5	0.15	mg/L		06/05/17 11:08	06/06/17 14:18	1
Chromium	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:18	1
Cobalt	ND		0.050	0.015	mg/L		06/05/17 11:08	06/06/17 14:18	1
Copper	0.020	J	0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:18	1
Lead	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:18	1
Lithium	0.019	J B	0.25	0.0050	mg/L		06/05/17 11:08	06/06/17 14:18	1
Molybdenum	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:18	1
Nickel	0.026		0.025	0.015	mg/L		06/05/17 11:08	06/06/17 14:18	1
Selenium	ND		0.10	0.020	mg/L		06/05/17 11:08	06/06/17 14:18	1
Silver	ND		0.025	0.010	mg/L		06/05/17 11:08	06/06/17 14:18	1
Thallium	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 14:18	1
Tin	ND		0.050	0.025	mg/L		06/05/17 11:08	06/06/17 14:18	1
Vanadium	ND		0.10	0.010	mg/L		06/05/17 11:08	06/06/17 14:18	1
Zinc	0.046	J B	0.20	0.040	mg/L		06/05/17 11:08	06/06/17 14:18	1

Method: 7470A - Mercury (CVAA) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0016	0.00056	mg/L		06/05/17 12:06	06/07/17 13:02	1

TestAmerica Pensacola

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Client Sample ID: HA-2-CCR

Date Collected: 05/26/17 13:30

Date Received: 05/27/17 08:34

Lab Sample ID: 400-138523-2

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	0.0017	mg/L			06/07/17 12:33	5
Carbon tetrachloride	ND		0.025	0.0025	mg/L			06/07/17 12:33	5
Chlorobenzene	ND		0.025	0.0025	mg/L			06/07/17 12:33	5
Chloroform	ND		0.025	0.0030	mg/L			06/07/17 12:33	5
1,4-Dichlorobenzene	ND		0.025	0.0032	mg/L			06/07/17 12:33	5
1,2-Dichloroethane	ND		0.025	0.0025	mg/L			06/07/17 12:33	5
1,1-Dichloroethene	ND		0.025	0.0025	mg/L			06/07/17 12:33	5
2-Butanone (MEK)	ND		0.13	0.013	mg/L			06/07/17 12:33	5
Tetrachloroethene	ND		0.025	0.0029	mg/L			06/07/17 12:33	5
Trichloroethene	ND		0.025	0.0025	mg/L			06/07/17 12:33	5
Vinyl chloride	ND		0.025	0.0025	mg/L			06/07/17 12:33	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	93		78 - 118		06/07/17 12:33	5
Dibromofluoromethane	102		81 - 121		06/07/17 12:33	5
Toluene-d8 (Surr)	94		80 - 120		06/07/17 12:33	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		0.050	0.0090	mg/L		06/05/17 11:38	06/06/17 22:05	1
3 & 4 Methylphenol	ND		0.10	0.0052	mg/L		06/05/17 11:38	06/06/17 22:05	1
2,4-Dinitrotoluene	ND		0.050	0.0095	mg/L		06/05/17 11:38	06/06/17 22:05	1
Hexachloroethane	ND		0.050	0.021	mg/L		06/05/17 11:38	06/06/17 22:05	1
Hexachlorobutadiene	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 22:05	1
Hexachlorobenzene	ND		0.050	0.0013	mg/L		06/05/17 11:38	06/06/17 22:05	1
Nitrobenzene	ND		0.050	0.0028	mg/L		06/05/17 11:38	06/06/17 22:05	1
Pentachlorophenol	ND		0.10	0.0091	mg/L		06/05/17 11:38	06/06/17 22:05	1
2,4,5-Trichlorophenol	ND		0.050	0.019	mg/L		06/05/17 11:38	06/06/17 22:05	1
2,4,6-Trichlorophenol	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 22:05	1
Pyridine	ND		0.050	0.016	mg/L		06/05/17 11:38	06/06/17 22:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	59		15 - 135	06/05/17 11:38	06/06/17 22:05	1
2-Fluorobiphenyl	61		34 - 120	06/05/17 11:38	06/06/17 22:05	1
2-Fluorophenol (Surr)	16		10 - 120	06/05/17 11:38	06/06/17 22:05	1
Nitrobenzene-d5 (Surr)	73		27 - 120	06/05/17 11:38	06/06/17 22:05	1
Phenol-d5 (Surr)	39		10 - 120	06/05/17 11:38	06/06/17 22:05	1
Terphenyl-d14 (Surr)	86		53 - 125	06/05/17 11:38	06/06/17 22:05	1

Method: 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.025	0.0065	mg/L		06/05/17 16:24	06/07/17 17:13	1
Endrin	ND		0.0010	0.00015	mg/L		06/05/17 16:24	06/07/17 17:13	1
Heptachlor	ND		0.0010	0.00016	mg/L		06/05/17 16:24	06/07/17 17:13	1
Heptachlor epoxide	ND		0.0010	0.00016	mg/L		06/05/17 16:24	06/07/17 17:13	1
Methoxychlor	ND		0.0010	0.00021	mg/L		06/05/17 16:24	06/07/17 17:13	1
Toxaphene	ND		0.15	0.020	mg/L		06/05/17 16:24	06/07/17 17:13	1
gamma-BHC (Lindane)	ND		0.0025	0.0013	mg/L		06/05/17 16:24	06/07/17 17:13	1

TestAmerica Pensacola

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Client Sample ID: HA-2-CCR

Lab Sample ID: 400-138523-2

Date Collected: 05/26/17 13:30

Matrix: Solid

Date Received: 05/27/17 08:34

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	66		10 - 130	06/05/17 16:24	06/07/17 17:13	1
Tetrachloro-m-xylene	48		43 - 130	06/05/17 16:24	06/07/17 17:13	1

Method: 8151A - Herbicides (GC) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		0.50	0.0065	mg/L		06/07/17 13:26	06/10/17 13:22	1
Silvex (2,4,5-TP)	ND	*	0.10	0.00046	mg/L		06/07/17 13:26	06/10/17 13:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	59		30 - 142	06/07/17 13:26	06/10/17 13:22	1

Method: 6010C - Metals (ICP) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.25	0.050	mg/L		06/05/17 11:08	06/06/17 14:21	1
Arsenic	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 14:21	1
Barium	0.51	J	5.0	0.050	mg/L		06/05/17 11:08	06/06/17 14:21	1
Beryllium	ND		0.015	0.0050	mg/L		06/05/17 11:08	06/06/17 14:21	1
Boron	0.11	J B	0.50	0.075	mg/L		06/05/17 11:08	06/06/17 14:21	1
Cadmium	ND		0.025	0.0050	mg/L		06/05/17 11:08	06/06/17 14:21	1
Calcium	4.5	B	2.5	0.15	mg/L		06/05/17 11:08	06/06/17 14:21	1
Chromium	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:21	1
Cobalt	ND		0.050	0.015	mg/L		06/05/17 11:08	06/06/17 14:21	1
Copper	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:21	1
Lead	0.018	J	0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:21	1
Lithium	0.020	J B	0.25	0.0050	mg/L		06/05/17 11:08	06/06/17 14:21	1
Molybdenum	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:21	1
Nickel	ND		0.025	0.015	mg/L		06/05/17 11:08	06/06/17 14:21	1
Selenium	ND		0.10	0.020	mg/L		06/05/17 11:08	06/06/17 14:21	1
Silver	ND		0.025	0.010	mg/L		06/05/17 11:08	06/06/17 14:21	1
Thallium	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 14:21	1
Tin	ND		0.050	0.025	mg/L		06/05/17 11:08	06/06/17 14:21	1
Vanadium	0.017	J	0.10	0.010	mg/L		06/05/17 11:08	06/06/17 14:21	1
Zinc	0.057	J B	0.20	0.040	mg/L		06/05/17 11:08	06/06/17 14:21	1

Method: 7470A - Mercury (CVAA) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0016	0.00056	mg/L		06/05/17 12:06	06/07/17 13:19	1

TestAmerica Pensacola

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Client Sample ID: HA-3-CCR

Date Collected: 05/26/17 12:30

Date Received: 05/27/17 08:34

Lab Sample ID: 400-138523-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	0.0017	mg/L			06/07/17 12:57	5
Carbon tetrachloride	ND		0.025	0.0025	mg/L			06/07/17 12:57	5
Chlorobenzene	ND		0.025	0.0025	mg/L			06/07/17 12:57	5
Chloroform	ND		0.025	0.0030	mg/L			06/07/17 12:57	5
1,4-Dichlorobenzene	ND		0.025	0.0032	mg/L			06/07/17 12:57	5
1,2-Dichloroethane	ND		0.025	0.0025	mg/L			06/07/17 12:57	5
1,1-Dichloroethene	ND		0.025	0.0025	mg/L			06/07/17 12:57	5
2-Butanone (MEK)	ND		0.13	0.013	mg/L			06/07/17 12:57	5
Tetrachloroethene	ND		0.025	0.0029	mg/L			06/07/17 12:57	5
Trichloroethene	ND		0.025	0.0025	mg/L			06/07/17 12:57	5
Vinyl chloride	ND		0.025	0.0025	mg/L			06/07/17 12:57	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		78 - 118		06/07/17 12:57	5
Dibromofluoromethane	104		81 - 121		06/07/17 12:57	5
Toluene-d8 (Surr)	95		80 - 120		06/07/17 12:57	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		0.050	0.0090	mg/L		06/05/17 11:38	06/06/17 22:35	1
3 & 4 Methylphenol	ND		0.10	0.0052	mg/L		06/05/17 11:38	06/06/17 22:35	1
2,4-Dinitrotoluene	ND		0.050	0.0095	mg/L		06/05/17 11:38	06/06/17 22:35	1
Hexachloroethane	ND		0.050	0.021	mg/L		06/05/17 11:38	06/06/17 22:35	1
Hexachlorobutadiene	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 22:35	1
Hexachlorobenzene	ND		0.050	0.0013	mg/L		06/05/17 11:38	06/06/17 22:35	1
Nitrobenzene	ND		0.050	0.0028	mg/L		06/05/17 11:38	06/06/17 22:35	1
Pentachlorophenol	ND		0.10	0.0091	mg/L		06/05/17 11:38	06/06/17 22:35	1
2,4,5-Trichlorophenol	ND		0.050	0.019	mg/L		06/05/17 11:38	06/06/17 22:35	1
2,4,6-Trichlorophenol	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 22:35	1
Pyridine	ND		0.050	0.016	mg/L		06/05/17 11:38	06/06/17 22:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	67		15 - 135	06/05/17 11:38	06/06/17 22:35	1
2-Fluorobiphenyl	67		34 - 120	06/05/17 11:38	06/06/17 22:35	1
2-Fluorophenol (Surr)	45		10 - 120	06/05/17 11:38	06/06/17 22:35	1
Nitrobenzene-d5 (Surr)	79		27 - 120	06/05/17 11:38	06/06/17 22:35	1
Phenol-d5 (Surr)	66		10 - 120	06/05/17 11:38	06/06/17 22:35	1
Terphenyl-d14 (Surr)	89		53 - 125	06/05/17 11:38	06/06/17 22:35	1

Method: 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.025	0.0065	mg/L		06/05/17 16:24	06/07/17 17:38	1
Endrin	ND		0.0010	0.00015	mg/L		06/05/17 16:24	06/07/17 17:38	1
Heptachlor	ND		0.0010	0.00016	mg/L		06/05/17 16:24	06/07/17 17:38	1
Heptachlor epoxide	ND		0.0010	0.00016	mg/L		06/05/17 16:24	06/07/17 17:38	1
Methoxychlor	ND		0.0010	0.00021	mg/L		06/05/17 16:24	06/07/17 17:38	1
Toxaphene	ND		0.15	0.020	mg/L		06/05/17 16:24	06/07/17 17:38	1
gamma-BHC (Lindane)	ND		0.0025	0.0013	mg/L		06/05/17 16:24	06/07/17 17:38	1

TestAmerica Pensacola

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Client Sample ID: HA-3-CCR

Lab Sample ID: 400-138523-3

Date Collected: 05/26/17 12:30

Matrix: Solid

Date Received: 05/27/17 08:34

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	67		10 - 130	06/05/17 16:24	06/07/17 17:38	1
Tetrachloro-m-xylene	55		43 - 130	06/05/17 16:24	06/07/17 17:38	1

Method: 8151A - Herbicides (GC) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		0.50	0.0065	mg/L		06/07/17 13:26	06/10/17 13:50	1
Silvex (2,4,5-TP)	ND	*	0.10	0.00046	mg/L		06/07/17 13:26	06/10/17 13:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	85		30 - 142	06/07/17 13:26	06/10/17 13:50	1

Method: 6010C - Metals (ICP) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.25	0.050	mg/L		06/05/17 11:08	06/06/17 14:25	1
Arsenic	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 14:25	1
Barium	0.54	J	5.0	0.050	mg/L		06/05/17 11:08	06/06/17 14:25	1
Beryllium	ND		0.015	0.0050	mg/L		06/05/17 11:08	06/06/17 14:25	1
Boron	0.075	J B	0.50	0.075	mg/L		06/05/17 11:08	06/06/17 14:25	1
Cadmium	ND		0.025	0.0050	mg/L		06/05/17 11:08	06/06/17 14:25	1
Calcium	16	B	2.5	0.15	mg/L		06/05/17 11:08	06/06/17 14:25	1
Chromium	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:25	1
Cobalt	ND		0.050	0.015	mg/L		06/05/17 11:08	06/06/17 14:25	1
Copper	0.012	J	0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:25	1
Lead	0.013	J	0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:25	1
Lithium	0.027	J B	0.25	0.0050	mg/L		06/05/17 11:08	06/06/17 14:25	1
Molybdenum	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:25	1
Nickel	ND		0.025	0.015	mg/L		06/05/17 11:08	06/06/17 14:25	1
Selenium	ND		0.10	0.020	mg/L		06/05/17 11:08	06/06/17 14:25	1
Silver	ND		0.025	0.010	mg/L		06/05/17 11:08	06/06/17 14:25	1
Thallium	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 14:25	1
Tin	ND		0.050	0.025	mg/L		06/05/17 11:08	06/06/17 14:25	1
Vanadium	0.027	J	0.10	0.010	mg/L		06/05/17 11:08	06/06/17 14:25	1
Zinc	0.043	J B	0.20	0.040	mg/L		06/05/17 11:08	06/06/17 14:25	1

Method: 7470A - Mercury (CVAA) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0016	0.00056	mg/L		06/05/17 12:06	06/07/17 13:21	1

TestAmerica Pensacola

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Client Sample ID: HA-4-CCR

Date Collected: 05/26/17 12:05

Date Received: 05/27/17 08:34

Lab Sample ID: 400-138523-4

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	0.0017	mg/L			06/07/17 13:23	5
Carbon tetrachloride	ND		0.025	0.0025	mg/L			06/07/17 13:23	5
Chlorobenzene	ND		0.025	0.0025	mg/L			06/07/17 13:23	5
Chloroform	ND		0.025	0.0030	mg/L			06/07/17 13:23	5
1,4-Dichlorobenzene	ND		0.025	0.0032	mg/L			06/07/17 13:23	5
1,2-Dichloroethane	ND		0.025	0.0025	mg/L			06/07/17 13:23	5
1,1-Dichloroethene	ND		0.025	0.0025	mg/L			06/07/17 13:23	5
2-Butanone (MEK)	ND		0.13	0.013	mg/L			06/07/17 13:23	5
Tetrachloroethene	ND		0.025	0.0029	mg/L			06/07/17 13:23	5
Trichloroethene	ND		0.025	0.0025	mg/L			06/07/17 13:23	5
Vinyl chloride	ND		0.025	0.0025	mg/L			06/07/17 13:23	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	93		78 - 118		06/07/17 13:23	5
Dibromofluoromethane	103		81 - 121		06/07/17 13:23	5
Toluene-d8 (Surr)	94		80 - 120		06/07/17 13:23	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		0.050	0.0090	mg/L		06/05/17 11:38	06/06/17 23:05	1
3 & 4 Methylphenol	ND		0.10	0.0052	mg/L		06/05/17 11:38	06/06/17 23:05	1
2,4-Dinitrotoluene	ND		0.050	0.0095	mg/L		06/05/17 11:38	06/06/17 23:05	1
Hexachloroethane	ND		0.050	0.021	mg/L		06/05/17 11:38	06/06/17 23:05	1
Hexachlorobutadiene	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 23:05	1
Hexachlorobenzene	ND		0.050	0.0013	mg/L		06/05/17 11:38	06/06/17 23:05	1
Nitrobenzene	ND		0.050	0.0028	mg/L		06/05/17 11:38	06/06/17 23:05	1
Pentachlorophenol	ND		0.10	0.0091	mg/L		06/05/17 11:38	06/06/17 23:05	1
2,4,5-Trichlorophenol	ND		0.050	0.019	mg/L		06/05/17 11:38	06/06/17 23:05	1
2,4,6-Trichlorophenol	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 23:05	1
Pyridine	ND		0.050	0.016	mg/L		06/05/17 11:38	06/06/17 23:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	42		15 - 135	06/05/17 11:38	06/06/17 23:05	1
2-Fluorobiphenyl	61		34 - 120	06/05/17 11:38	06/06/17 23:05	1
2-Fluorophenol (Surr)	10		10 - 120	06/05/17 11:38	06/06/17 23:05	1
Nitrobenzene-d5 (Surr)	72		27 - 120	06/05/17 11:38	06/06/17 23:05	1
Phenol-d5 (Surr)	28		10 - 120	06/05/17 11:38	06/06/17 23:05	1
Terphenyl-d14 (Surr)	88		53 - 125	06/05/17 11:38	06/06/17 23:05	1

Method: 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.025	0.0065	mg/L		06/05/17 16:24	06/07/17 18:04	1
Endrin	ND		0.0010	0.00015	mg/L		06/05/17 16:24	06/07/17 18:04	1
Heptachlor	ND		0.0010	0.00016	mg/L		06/05/17 16:24	06/07/17 18:04	1
Heptachlor epoxide	ND		0.0010	0.00016	mg/L		06/05/17 16:24	06/07/17 18:04	1
Methoxychlor	ND		0.0010	0.00021	mg/L		06/05/17 16:24	06/07/17 18:04	1
Toxaphene	ND		0.15	0.020	mg/L		06/05/17 16:24	06/07/17 18:04	1
gamma-BHC (Lindane)	ND		0.0025	0.0013	mg/L		06/05/17 16:24	06/07/17 18:04	1

TestAmerica Pensacola

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Client Sample ID: HA-4-CCR

Lab Sample ID: 400-138523-4

Date Collected: 05/26/17 12:05

Matrix: Solid

Date Received: 05/27/17 08:34

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	51		10 - 130	06/05/17 16:24	06/07/17 18:04	1
Tetrachloro-m-xylene	37	X	43 - 130	06/05/17 16:24	06/07/17 18:04	1

Method: 8151A - Herbicides (GC) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		0.50	0.0065	mg/L		06/07/17 13:26	06/10/17 14:18	1
Silvex (2,4,5-TP)	ND	*	0.10	0.00046	mg/L		06/07/17 13:26	06/10/17 14:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	91		30 - 142	06/07/17 13:26	06/10/17 14:18	1

Method: 6010C - Metals (ICP) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.25	0.050	mg/L		06/05/17 11:08	06/06/17 14:28	1
Arsenic	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 14:28	1
Barium	0.21	J	5.0	0.050	mg/L		06/05/17 11:08	06/06/17 14:28	1
Beryllium	ND		0.015	0.0050	mg/L		06/05/17 11:08	06/06/17 14:28	1
Boron	0.10	J B	0.50	0.075	mg/L		06/05/17 11:08	06/06/17 14:28	1
Cadmium	ND		0.025	0.0050	mg/L		06/05/17 11:08	06/06/17 14:28	1
Calcium	12	B	2.5	0.15	mg/L		06/05/17 11:08	06/06/17 14:28	1
Chromium	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:28	1
Cobalt	ND		0.050	0.015	mg/L		06/05/17 11:08	06/06/17 14:28	1
Copper	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:28	1
Lead	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:28	1
Lithium	0.022	J B	0.25	0.0050	mg/L		06/05/17 11:08	06/06/17 14:28	1
Molybdenum	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:28	1
Nickel	0.015	J	0.025	0.015	mg/L		06/05/17 11:08	06/06/17 14:28	1
Selenium	ND		0.10	0.020	mg/L		06/05/17 11:08	06/06/17 14:28	1
Silver	ND		0.025	0.010	mg/L		06/05/17 11:08	06/06/17 14:28	1
Thallium	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 14:28	1
Tin	ND		0.050	0.025	mg/L		06/05/17 11:08	06/06/17 14:28	1
Vanadium	0.014	J	0.10	0.010	mg/L		06/05/17 11:08	06/06/17 14:28	1
Zinc	0.077	J B	0.20	0.040	mg/L		06/05/17 11:08	06/06/17 14:28	1

Method: 7470A - Mercury (CVAA) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0016	0.00056	mg/L		06/05/17 12:06	06/07/17 13:22	1

TestAmerica Pensacola

Definitions/Glossary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

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)

Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Client Sample ID: HA-1-CCR

Date Collected: 05/26/17 13:10

Date Received: 05/27/17 08:34

Lab Sample ID: 400-138523-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			355952	06/05/17 16:52	RMC	TAL PEN
TCLP	Analysis	8260B		5	356103	06/07/17 12:07	WPD	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3520C			355900	06/05/17 11:38	NDB	TAL PEN
TCLP	Analysis	8270D		1	356049	06/06/17 21:34	KJA	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3520C			355947	06/05/17 16:24	NDB	TAL PEN
TCLP	Analysis	8081B		1	356321	06/08/17 21:30	KH1	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3520C			355947	06/05/17 16:24	NDB	TAL PEN
TCLP	Analysis	8081B		1	356148	06/07/17 16:47	DS	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	8151A			356046	06/07/17 13:26	NDB	TAL PEN
TCLP	Analysis	8151A		1	356501	06/10/17 12:53	DS	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3010A			355893	06/05/17 11:08	KWN	TAL PEN
TCLP	Analysis	6010C		1	356130	06/06/17 14:18	SEH	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	7470A			355903	06/05/17 12:06	JAP	TAL PEN
TCLP	Analysis	7470A		1	356189	06/07/17 13:02	JAP	TAL PEN

Client Sample ID: HA-2-CCR

Date Collected: 05/26/17 13:30

Date Received: 05/27/17 08:34

Lab Sample ID: 400-138523-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			355952	06/05/17 16:52	RMC	TAL PEN
TCLP	Analysis	8260B		5	356103	06/07/17 12:33	WPD	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3520C			355900	06/05/17 11:38	NDB	TAL PEN
TCLP	Analysis	8270D		1	356049	06/06/17 22:05	KJA	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3520C			355947	06/05/17 16:24	NDB	TAL PEN
TCLP	Analysis	8081B		1	356148	06/07/17 17:13	DS	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	8151A			356046	06/07/17 13:26	NDB	TAL PEN
TCLP	Analysis	8151A		1	356501	06/10/17 13:22	DS	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3010A			355893	06/05/17 11:08	KWN	TAL PEN
TCLP	Analysis	6010C		1	356130	06/06/17 14:21	SEH	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	7470A			355903	06/05/17 12:06	JAP	TAL PEN
TCLP	Analysis	7470A		1	356189	06/07/17 13:19	JAP	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Client Sample ID: HA-3-CCR

Lab Sample ID: 400-138523-3

Date Collected: 05/26/17 12:30

Matrix: Solid

Date Received: 05/27/17 08:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			355952	06/05/17 16:52	RMC	TAL PEN
TCLP	Analysis	8260B		5	356103	06/07/17 12:57	WPD	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3520C			355900	06/05/17 11:38	NDB	TAL PEN
TCLP	Analysis	8270D		1	356049	06/06/17 22:35	KJA	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3520C			355947	06/05/17 16:24	NDB	TAL PEN
TCLP	Analysis	8081B		1	356148	06/07/17 17:38	DS	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	8151A			356046	06/07/17 13:26	NDB	TAL PEN
TCLP	Analysis	8151A		1	356501	06/10/17 13:50	DS	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3010A			355893	06/05/17 11:08	KWN	TAL PEN
TCLP	Analysis	6010C		1	356130	06/06/17 14:25	SEH	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	7470A			355903	06/05/17 12:06	JAP	TAL PEN
TCLP	Analysis	7470A		1	356189	06/07/17 13:21	JAP	TAL PEN

Client Sample ID: HA-4-CCR

Lab Sample ID: 400-138523-4

Date Collected: 05/26/17 12:05

Matrix: Solid

Date Received: 05/27/17 08:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			355952	06/05/17 16:52	RMC	TAL PEN
TCLP	Analysis	8260B		5	356103	06/07/17 13:23	WPD	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3520C			355900	06/05/17 11:38	NDB	TAL PEN
TCLP	Analysis	8270D		1	356049	06/06/17 23:05	KJA	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3520C			355947	06/05/17 16:24	NDB	TAL PEN
TCLP	Analysis	8081B		1	356148	06/07/17 18:04	DS	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	8151A			356046	06/07/17 13:26	NDB	TAL PEN
TCLP	Analysis	8151A		1	356501	06/10/17 14:18	DS	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3010A			355893	06/05/17 11:08	KWN	TAL PEN
TCLP	Analysis	6010C		1	356130	06/06/17 14:28	SEH	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	7470A			355903	06/05/17 12:06	JAP	TAL PEN
TCLP	Analysis	7470A		1	356189	06/07/17 13:22	JAP	TAL PEN

Laboratory References:

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

TestAmerica Pensacola

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

GC/MS VOA

Leach Batch: 355952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138523-1	HA-1-CCR	TCLP	Solid	1311	
400-138523-2	HA-2-CCR	TCLP	Solid	1311	
400-138523-3	HA-3-CCR	TCLP	Solid	1311	
400-138523-4	HA-4-CCR	TCLP	Solid	1311	
LB 400-355952/1-A	Method Blank	TCLP	Solid	1311	

Analysis Batch: 356103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138523-1	HA-1-CCR	TCLP	Solid	8260B	355952
400-138523-2	HA-2-CCR	TCLP	Solid	8260B	355952
400-138523-3	HA-3-CCR	TCLP	Solid	8260B	355952
400-138523-4	HA-4-CCR	TCLP	Solid	8260B	355952
LB 400-355952/1-A	Method Blank	TCLP	Solid	8260B	355952
LCS 400-356103/1002	Lab Control Sample	Total/NA	Solid	8260B	
400-138634-D-7 MS	Matrix Spike	Total/NA	Solid	8260B	
400-138634-D-7 MSD	Matrix Spike Duplicate	Total/NA	Solid	8260B	

GC/MS Semi VOA

Leach Batch: 355609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138523-1	HA-1-CCR	TCLP	Solid	1311	
400-138523-2	HA-2-CCR	TCLP	Solid	1311	
400-138523-3	HA-3-CCR	TCLP	Solid	1311	
400-138523-4	HA-4-CCR	TCLP	Solid	1311	
LB 400-355609/1-C	Method Blank	TCLP	Solid	1311	

Prep Batch: 355900

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138523-1	HA-1-CCR	TCLP	Solid	3520C	355609
400-138523-2	HA-2-CCR	TCLP	Solid	3520C	355609
400-138523-3	HA-3-CCR	TCLP	Solid	3520C	355609
400-138523-4	HA-4-CCR	TCLP	Solid	3520C	355609
LB 400-355609/1-C	Method Blank	TCLP	Solid	3520C	355609
LCS 400-355900/2-A	Lab Control Sample	Total/NA	Solid	3520C	

Analysis Batch: 356049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138523-1	HA-1-CCR	TCLP	Solid	8270D	355900
400-138523-2	HA-2-CCR	TCLP	Solid	8270D	355900
400-138523-3	HA-3-CCR	TCLP	Solid	8270D	355900
400-138523-4	HA-4-CCR	TCLP	Solid	8270D	355900
LB 400-355609/1-C	Method Blank	TCLP	Solid	8270D	355900

Analysis Batch: 356123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 400-355900/2-A	Lab Control Sample	Total/NA	Solid	8270D	355900

TestAmerica Pensacola

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

GC Semi VOA

Leach Batch: 355609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138523-1	HA-1-CCR	TCLP	Solid	1311	
400-138523-2	HA-2-CCR	TCLP	Solid	1311	
400-138523-3	HA-3-CCR	TCLP	Solid	1311	
400-138523-4	HA-4-CCR	TCLP	Solid	1311	
LB 400-355609/1-E	Method Blank	TCLP	Solid	1311	
LB 400-355609/1-F	Method Blank	TCLP	Solid	1311	
400-138522-A-1-M MS	Matrix Spike	TCLP	Solid	1311	
400-138522-A-1-N MSD	Matrix Spike Duplicate	TCLP	Solid	1311	
400-138522-A-1-P MS	Matrix Spike	TCLP	Solid	1311	
400-138522-A-1-Q MSD	Matrix Spike Duplicate	TCLP	Solid	1311	

Prep Batch: 355947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138523-1	HA-1-CCR	TCLP	Solid	3520C	355609
400-138523-2	HA-2-CCR	TCLP	Solid	3520C	355609
400-138523-3	HA-3-CCR	TCLP	Solid	3520C	355609
400-138523-4	HA-4-CCR	TCLP	Solid	3520C	355609
LB 400-355609/1-E	Method Blank	TCLP	Solid	3520C	355609
LCS 400-355947/3-A	Lab Control Sample	Total/NA	Solid	3520C	
LCSD 400-355947/4-A	Lab Control Sample Dup	Total/NA	Solid	3520C	
400-138522-A-1-M MS	Matrix Spike	TCLP	Solid	3520C	355609
400-138522-A-1-N MSD	Matrix Spike Duplicate	TCLP	Solid	3520C	355609

Prep Batch: 356046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138523-1	HA-1-CCR	TCLP	Solid	8151A	355609
400-138523-2	HA-2-CCR	TCLP	Solid	8151A	355609
400-138523-3	HA-3-CCR	TCLP	Solid	8151A	355609
400-138523-4	HA-4-CCR	TCLP	Solid	8151A	355609
LB 400-355609/1-F	Method Blank	TCLP	Solid	8151A	355609
LCS 400-356046/2-A	Lab Control Sample	Total/NA	Solid	8151A	
400-138522-A-1-P MS	Matrix Spike	TCLP	Solid	8151A	355609
400-138522-A-1-Q MSD	Matrix Spike Duplicate	TCLP	Solid	8151A	355609

Analysis Batch: 356148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138523-1	HA-1-CCR	TCLP	Solid	8081B	355947
400-138523-2	HA-2-CCR	TCLP	Solid	8081B	355947
400-138523-3	HA-3-CCR	TCLP	Solid	8081B	355947
400-138523-4	HA-4-CCR	TCLP	Solid	8081B	355947
LB 400-355609/1-E	Method Blank	TCLP	Solid	8081B	355947
LCS 400-355947/3-A	Lab Control Sample	Total/NA	Solid	8081B	355947
LCSD 400-355947/4-A	Lab Control Sample Dup	Total/NA	Solid	8081B	355947
400-138522-A-1-M MS	Matrix Spike	TCLP	Solid	8081B	355947
400-138522-A-1-N MSD	Matrix Spike Duplicate	TCLP	Solid	8081B	355947

Analysis Batch: 356321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138523-1	HA-1-CCR	TCLP	Solid	8081B	355947

TestAmerica Pensacola

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

GC Semi VOA (Continued)

Analysis Batch: 356501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138523-1	HA-1-CCR	TCLP	Solid	8151A	356046
400-138523-2	HA-2-CCR	TCLP	Solid	8151A	356046
400-138523-3	HA-3-CCR	TCLP	Solid	8151A	356046
400-138523-4	HA-4-CCR	TCLP	Solid	8151A	356046
LB 400-355609/1-F	Method Blank	TCLP	Solid	8151A	356046
LCS 400-356046/2-A	Lab Control Sample	Total/NA	Solid	8151A	356046
400-138522-A-1-P MS	Matrix Spike	TCLP	Solid	8151A	356046
400-138522-A-1-Q MSD	Matrix Spike Duplicate	TCLP	Solid	8151A	356046

Metals

Leach Batch: 355609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138523-1	HA-1-CCR	TCLP	Solid	1311	
400-138523-2	HA-2-CCR	TCLP	Solid	1311	
400-138523-3	HA-3-CCR	TCLP	Solid	1311	
400-138523-4	HA-4-CCR	TCLP	Solid	1311	
LB 400-355609/1-B	Method Blank	TCLP	Solid	1311	
LB 400-355609/1-D	Method Blank	TCLP	Solid	1311	
400-138522-A-1-D MS	Matrix Spike	TCLP	Solid	1311	
400-138522-A-1-E MSD	Matrix Spike Duplicate	TCLP	Solid	1311	
400-138522-A-1-H MS	Matrix Spike	TCLP	Solid	1311	
400-138522-A-1-I MSD	Matrix Spike Duplicate	TCLP	Solid	1311	

Prep Batch: 355893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138523-1	HA-1-CCR	TCLP	Solid	3010A	355609
400-138523-2	HA-2-CCR	TCLP	Solid	3010A	355609
400-138523-3	HA-3-CCR	TCLP	Solid	3010A	355609
400-138523-4	HA-4-CCR	TCLP	Solid	3010A	355609
LB 400-355609/1-B	Method Blank	TCLP	Solid	3010A	355609
LCS 400-355893/2-A	Lab Control Sample	Total/NA	Solid	3010A	
400-138522-A-1-D MS	Matrix Spike	TCLP	Solid	3010A	355609
400-138522-A-1-E MSD	Matrix Spike Duplicate	TCLP	Solid	3010A	355609

Prep Batch: 355903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138523-1	HA-1-CCR	TCLP	Solid	7470A	355609
400-138523-2	HA-2-CCR	TCLP	Solid	7470A	355609
400-138523-3	HA-3-CCR	TCLP	Solid	7470A	355609
400-138523-4	HA-4-CCR	TCLP	Solid	7470A	355609
LB 400-355609/1-D	Method Blank	TCLP	Solid	7470A	355609
LCS 400-355903/14-A	Lab Control Sample	Total/NA	Solid	7470A	
400-138522-A-1-H MS	Matrix Spike	TCLP	Solid	7470A	355609
400-138522-A-1-I MSD	Matrix Spike Duplicate	TCLP	Solid	7470A	355609

Analysis Batch: 356130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138523-1	HA-1-CCR	TCLP	Solid	6010C	355893
400-138523-2	HA-2-CCR	TCLP	Solid	6010C	355893

TestAmerica Pensacola

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Metals (Continued)

Analysis Batch: 356130 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138523-3	HA-3-CCR	TCLP	Solid	6010C	355893
400-138523-4	HA-4-CCR	TCLP	Solid	6010C	355893
LB 400-355609/1-B	Method Blank	TCLP	Solid	6010C	355893
LCS 400-355893/2-A	Lab Control Sample	Total/NA	Solid	6010C	355893
400-138522-A-1-D MS	Matrix Spike	TCLP	Solid	6010C	355893
400-138522-A-1-E MSD	Matrix Spike Duplicate	TCLP	Solid	6010C	355893

Analysis Batch: 356189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138523-1	HA-1-CCR	TCLP	Solid	7470A	355903
400-138523-2	HA-2-CCR	TCLP	Solid	7470A	355903
400-138523-3	HA-3-CCR	TCLP	Solid	7470A	355903
400-138523-4	HA-4-CCR	TCLP	Solid	7470A	355903
LB 400-355609/1-D	Method Blank	TCLP	Solid	7470A	355903
LCS 400-355903/14-A	Lab Control Sample	Total/NA	Solid	7470A	355903
400-138522-A-1-H MS	Matrix Spike	TCLP	Solid	7470A	355903
400-138522-A-1-I MSD	Matrix Spike Duplicate	TCLP	Solid	7470A	355903

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

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

Lab Sample ID: LCS 400-356103/1002

Matrix: Solid

Analysis Batch: 356103

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	0.0492		mg/L		98	70 - 130
Carbon tetrachloride	0.0500	0.0563		mg/L		113	61 - 137
Chlorobenzene	0.0500	0.0584		mg/L		117	70 - 130
Chloroform	0.0500	0.0503		mg/L		101	69 - 130
1,4-Dichlorobenzene	0.0500	0.0610		mg/L		122	70 - 130
1,2-Dichloroethane	0.0500	0.0529		mg/L		106	69 - 130
1,1-Dichloroethene	0.0500	0.0493		mg/L		99	63 - 134
2-Butanone (MEK)	0.200	0.218		mg/L		109	61 - 145
Tetrachloroethene	0.0500	0.0548		mg/L		110	65 - 130
Trichloroethene	0.0500	0.0521		mg/L		104	70 - 130
Vinyl chloride	0.0500	0.0402		mg/L		80	59 - 136

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	101		78 - 118
Dibromofluoromethane	98		81 - 121
Toluene-d8 (Surr)	104		80 - 120

Lab Sample ID: 400-138634-D-7 MS

Matrix: Solid

Analysis Batch: 356103

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.041		0.0500	0.0803		mg/L		78	56 - 142
Carbon tetrachloride	ND		0.0500	0.0494		mg/L		99	55 - 145
Chlorobenzene	ND		0.0500	0.0519		mg/L		104	64 - 130
Chloroform	ND		0.0500	0.0484		mg/L		97	60 - 141
1,4-Dichlorobenzene	ND		0.0500	0.0505		mg/L		101	53 - 135
1,2-Dichloroethane	ND		0.0500	0.0487		mg/L		97	60 - 141
1,1-Dichloroethene	ND		0.0500	0.0453		mg/L		91	54 - 147
2-Butanone (MEK)	ND		0.200	0.189		mg/L		94	55 - 150
Tetrachloroethene	ND		0.0500	0.0486		mg/L		97	52 - 133
Trichloroethene	ND		0.0500	0.0469		mg/L		94	64 - 136
Vinyl chloride	ND		0.0500	0.0428		mg/L		86	46 - 152

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene	101		78 - 118
Dibromofluoromethane	96		81 - 121
Toluene-d8 (Surr)	101		80 - 120

Lab Sample ID: 400-138634-D-7 MSD

Matrix: Solid

Analysis Batch: 356103

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	0.041		0.0500	0.0793		mg/L		76	56 - 142	1	30
Carbon tetrachloride	ND		0.0500	0.0489		mg/L		98	55 - 145	1	30
Chlorobenzene	ND		0.0500	0.0520		mg/L		104	64 - 130	0	30

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

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

Lab Sample ID: 400-138634-D-7 MSD

Matrix: Solid

Analysis Batch: 356103

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloroform	ND		0.0500	0.0471		mg/L		94	60 - 141	3	30
1,4-Dichlorobenzene	ND		0.0500	0.0490		mg/L		98	53 - 135	3	30
1,2-Dichloroethane	ND		0.0500	0.0478		mg/L		96	60 - 141	2	30
1,1-Dichloroethene	ND		0.0500	0.0446		mg/L		89	54 - 147	2	30
2-Butanone (MEK)	ND		0.200	0.186		mg/L		93	55 - 150	2	30
Tetrachloroethene	ND		0.0500	0.0480		mg/L		96	52 - 133	1	30
Trichloroethene	ND		0.0500	0.0456		mg/L		91	64 - 136	3	30
Vinyl chloride	ND		0.0500	0.0410		mg/L		82	46 - 152	4	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene	102		78 - 118
Dibromofluoromethane	98		81 - 121
Toluene-d8 (Surr)	104		80 - 120

Lab Sample ID: LB 400-355952/1-A

Matrix: Solid

Analysis Batch: 356103

Client Sample ID: Method Blank

Prep Type: TCLP

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0050	0.00034	mg/L			06/07/17 09:16	1
Carbon tetrachloride	ND		0.0050	0.00050	mg/L			06/07/17 09:16	1
Chlorobenzene	ND		0.0050	0.00050	mg/L			06/07/17 09:16	1
Chloroform	0.00160	J	0.0050	0.00060	mg/L			06/07/17 09:16	1
1,4-Dichlorobenzene	ND		0.0050	0.00064	mg/L			06/07/17 09:16	1
1,2-Dichloroethane	0.00239	J	0.0050	0.00050	mg/L			06/07/17 09:16	1
1,1-Dichloroethene	ND		0.0050	0.00050	mg/L			06/07/17 09:16	1
2-Butanone (MEK)	0.230		0.025	0.0026	mg/L			06/07/17 09:16	1
Tetrachloroethene	0.00170	J	0.0050	0.00058	mg/L			06/07/17 09:16	1
Trichloroethene	0.00496	J	0.0050	0.00050	mg/L			06/07/17 09:16	1
Vinyl chloride	ND		0.0050	0.00050	mg/L			06/07/17 09:16	1

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	93		78 - 118		06/07/17 09:16	1
Dibromofluoromethane	94		81 - 121		06/07/17 09:16	1
Toluene-d8 (Surr)	98		80 - 120		06/07/17 09:16	1

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

Lab Sample ID: LCS 400-355900/2-A

Matrix: Solid

Analysis Batch: 356123

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 355900

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylphenol	0.0300	0.0194		mg/L		65	39 - 123
3 & 4 Methylphenol	0.0300	0.0189	J	mg/L		63	38 - 121
2,4-Dinitrotoluene	0.0300	0.0282		mg/L		94	58 - 140
Hexachloroethane	0.0300	0.0154		mg/L		51	41 - 120

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

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

Lab Sample ID: LCS 400-355900/2-A

Matrix: Solid

Analysis Batch: 356123

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 355900

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hexachlorobutadiene	0.0300	0.0166		mg/L		55	48 - 120
Hexachlorobenzene	0.0300	0.0239		mg/L		80	52 - 131
Nitrobenzene	0.0300	0.0211		mg/L		70	47 - 120
Pentachlorophenol	0.0600	0.0268		mg/L		45	15 - 141
2,4,5-Trichlorophenol	0.0300	0.0219		mg/L		73	38 - 147
2,4,6-Trichlorophenol	0.0300	0.0219		mg/L		73	36 - 139
Pyridine	0.0300	0.0188		mg/L		63	26 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	90		15 - 135
2-Fluorobiphenyl	79		34 - 120
2-Fluorophenol (Surr)	31		10 - 120
Nitrobenzene-d5 (Surr)	72		27 - 120
Phenol-d5 (Surr)	52		10 - 120
Terphenyl-d14 (Surr)	93		53 - 125

Lab Sample ID: LB 400-355609/1-C

Matrix: Solid

Analysis Batch: 356049

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 355900

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		0.050	0.0090	mg/L		06/05/17 11:38	06/06/17 19:03	1
3 & 4 Methylphenol	ND		0.10	0.0052	mg/L		06/05/17 11:38	06/06/17 19:03	1
2,4-Dinitrotoluene	ND		0.050	0.0095	mg/L		06/05/17 11:38	06/06/17 19:03	1
Hexachloroethane	ND		0.050	0.021	mg/L		06/05/17 11:38	06/06/17 19:03	1
Hexachlorobutadiene	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 19:03	1
Hexachlorobenzene	ND		0.050	0.0013	mg/L		06/05/17 11:38	06/06/17 19:03	1
Nitrobenzene	ND		0.050	0.0028	mg/L		06/05/17 11:38	06/06/17 19:03	1
Pentachlorophenol	ND		0.10	0.0091	mg/L		06/05/17 11:38	06/06/17 19:03	1
2,4,5-Trichlorophenol	ND		0.050	0.019	mg/L		06/05/17 11:38	06/06/17 19:03	1
2,4,6-Trichlorophenol	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 19:03	1
Pyridine	ND		0.050	0.016	mg/L		06/05/17 11:38	06/06/17 19:03	1

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	73		15 - 135	06/05/17 11:38	06/06/17 19:03	1
2-Fluorobiphenyl	67		34 - 120	06/05/17 11:38	06/06/17 19:03	1
2-Fluorophenol (Surr)	41		10 - 120	06/05/17 11:38	06/06/17 19:03	1
Nitrobenzene-d5 (Surr)	68		27 - 120	06/05/17 11:38	06/06/17 19:03	1
Phenol-d5 (Surr)	65		10 - 120	06/05/17 11:38	06/06/17 19:03	1
Terphenyl-d14 (Surr)	82		53 - 125	06/05/17 11:38	06/06/17 19:03	1

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: LCS 400-355947/3-A

Matrix: Solid

Analysis Batch: 356148

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 355947

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Endrin	0.00200	0.00176		mg/L		88	36 - 173
Heptachlor	0.00200	0.00172		mg/L		86	31 - 172
Heptachlor epoxide	0.00200	0.00176		mg/L		88	38 - 156
Methoxychlor	0.00200	0.00169		mg/L		84	36 - 161
gamma-BHC (Lindane)	0.00200	0.00193		mg/L		96	29 - 160

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	75		10 - 130
Tetrachloro-m-xylene	58		43 - 130

Lab Sample ID: LCSD 400-355947/4-A

Matrix: Solid

Analysis Batch: 356148

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 355947

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Endrin	0.00200	0.00148		mg/L		74	36 - 173	17	40
Heptachlor	0.00200	0.00140		mg/L		70	31 - 172	21	40
Heptachlor epoxide	0.00200	0.00150		mg/L		75	38 - 156	16	40
Methoxychlor	0.00200	0.00131		mg/L		66	36 - 161	25	40
gamma-BHC (Lindane)	0.00200	0.00152		mg/L		76	29 - 160	23	40

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl	58		10 - 130
Tetrachloro-m-xylene	41	X	43 - 130

Lab Sample ID: LB 400-355609/1-E

Matrix: Solid

Analysis Batch: 356148

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 355947

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.025	0.0065	mg/L		06/05/17 16:22	06/07/17 12:23	1
Endrin	ND		0.0010	0.00015	mg/L		06/05/17 16:22	06/07/17 12:23	1
Heptachlor	ND		0.0010	0.00016	mg/L		06/05/17 16:22	06/07/17 12:23	1
Heptachlor epoxide	ND		0.0010	0.00016	mg/L		06/05/17 16:22	06/07/17 12:23	1
Methoxychlor	ND		0.0010	0.00021	mg/L		06/05/17 16:22	06/07/17 12:23	1
Toxaphene	ND		0.15	0.020	mg/L		06/05/17 16:22	06/07/17 12:23	1
gamma-BHC (Lindane)	ND		0.0025	0.0013	mg/L		06/05/17 16:22	06/07/17 12:23	1

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	63		10 - 130	06/05/17 16:22	06/07/17 12:23	1
Tetrachloro-m-xylene	61		43 - 130	06/05/17 16:22	06/07/17 12:23	1

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 400-138522-A-1-M MS

Matrix: Solid

Analysis Batch: 356148

Client Sample ID: Matrix Spike

Prep Type: TCLP

Prep Batch: 355947

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Endrin	ND		0.0250	0.0155		mg/L		62	10 - 150
Heptachlor	ND		0.0250	0.0143		mg/L		57	10 - 150
Heptachlor epoxide	ND		0.0250	0.0165		mg/L		66	10 - 150
Methoxychlor	ND		0.0250	0.0133		mg/L		53	10 - 150
gamma-BHC (Lindane)	ND		0.0250	0.0167		mg/L		67	10 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
DCB Decachlorobiphenyl	62		10 - 130
Tetrachloro-m-xylene	42	X	43 - 130

Lab Sample ID: 400-138522-A-1-N MSD

Matrix: Solid

Analysis Batch: 356148

Client Sample ID: Matrix Spike Duplicate

Prep Type: TCLP

Prep Batch: 355947

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Endrin	ND		0.0250	0.0121		mg/L		48	10 - 150	25	42
Heptachlor	ND		0.0250	0.0115		mg/L		46	10 - 150	22	31
Heptachlor epoxide	ND		0.0250	0.0130		mg/L		52	10 - 150	23	38
Methoxychlor	ND		0.0250	0.0112		mg/L		45	10 - 150	17	53
gamma-BHC (Lindane)	ND		0.0250	0.0127		mg/L		51	10 - 150	27	33

Surrogate	MSD %Recovery	MSD Qualifier	Limits
DCB Decachlorobiphenyl	58		10 - 130
Tetrachloro-m-xylene	31	X	43 - 130

Method: 8151A - Herbicides (GC)

Lab Sample ID: LCS 400-356046/2-A

Matrix: Solid

Analysis Batch: 356501

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 356046

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2,4-D	0.0100	0.0119	J	mg/L		119	38 - 120
Silvex (2,4,5-TP)	0.0100	0.0122	*	mg/L		122	32 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4-Dichlorophenylacetic acid	133		30 - 142

Lab Sample ID: LB 400-355609/1-F

Matrix: Solid

Analysis Batch: 356501

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 356046

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		0.50	0.0065	mg/L		06/07/17 13:26	06/10/17 09:07	1
Silvex (2,4,5-TP)	ND		0.10	0.00046	mg/L		06/07/17 13:26	06/10/17 09:07	1

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LB 400-355609/1-F
Matrix: Solid
Analysis Batch: 356501

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 356046

Surrogate	LB LB %Recovery	Qualifier	Limits
2,4-Dichlorophenylacetic acid	107		30 - 142

Prepared	Analyzed	Dil Fac
06/07/17 13:26	06/10/17 09:07	1

Lab Sample ID: 400-138522-A-1-P MS
Matrix: Solid
Analysis Batch: 356501

Client Sample ID: Matrix Spike
Prep Type: TCLP
Prep Batch: 356046

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-D	ND		0.125	0.128	J	mg/L		103	10 - 150
Silvex (2,4,5-TP)	ND	*	0.125	0.130		mg/L		104	16 - 137
Surrogate	MS %Recovery	MS Qualifier	Limits						
2,4-Dichlorophenylacetic acid	115		30 - 142						

Lab Sample ID: 400-138522-A-1-Q MSD
Matrix: Solid
Analysis Batch: 356501

Client Sample ID: Matrix Spike Duplicate
Prep Type: TCLP
Prep Batch: 356046

Report Date: 05/05/2017											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4-D	ND		0.125	0.116	J	mg/L		93	10 - 150	10	34
Silvex (2,4,5-TP)	ND	*	0.125	0.109		mg/L		87	16 - 137	18	41
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
2,4-Dichlorophenylacetic acid	95		30 - 142								

Method: 6010C - Metals (ICP)

Lab Sample ID: LCS 400-355893/2-A
Matrix: Solid
Analysis Batch: 356130

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355893

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	5.00	4.99		mg/L		100	80 - 120
Arsenic	5.00	5.16		mg/L		103	80 - 120
Barium	15.0	17.1		mg/L		114	80 - 120
Beryllium	2.50	2.58		mg/L		103	80 - 120
Boron	5.00	5.44		mg/L		109	80 - 120
Cadmium	2.50	2.52		mg/L		101	80 - 120
Calcium	50.0	55.0		mg/L		110	80 - 120
Chromium	5.00	5.14		mg/L		103	80 - 120
Cobalt	5.00	5.12		mg/L		102	80 - 120
Copper	5.00	5.13		mg/L		103	80 - 120
Lead	5.00	5.12		mg/L		102	80 - 120
Lithium	5.00	5.29		mg/L		106	80 - 120
Molybdenum	5.00	5.07		mg/L		101	80 - 120
Nickel	5.00	5.15		mg/L		103	80 - 120
Selenium	5.00	4.89		mg/L		98	80 - 120
Silver	2.50	2.58		mg/L		103	80 - 120

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 400-355893/2-A

Matrix: Solid

Analysis Batch: 356130

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 355893

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Thallium	5.00	4.98		mg/L		100	80 - 120
Tin	5.00	5.27		mg/L		105	80 - 120
Vanadium	5.00	5.14		mg/L		103	80 - 120
Zinc	5.00	5.25		mg/L		105	80 - 120

Lab Sample ID: LB 400-355609/1-B

Matrix: Solid

Analysis Batch: 356130

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 355893

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.25	0.050	mg/L		06/05/17 11:08	06/06/17 13:34	1
Arsenic	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 13:34	1
Barium	ND		5.0	0.050	mg/L		06/05/17 11:08	06/06/17 13:34	1
Beryllium	ND		0.015	0.0050	mg/L		06/05/17 11:08	06/06/17 13:34	1
Boron	0.603		0.50	0.075	mg/L		06/05/17 11:08	06/06/17 13:34	1
Cadmium	ND		0.025	0.0050	mg/L		06/05/17 11:08	06/06/17 13:34	1
Calcium	1.89	J	2.5	0.15	mg/L		06/05/17 11:08	06/06/17 13:34	1
Chromium	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 13:34	1
Cobalt	ND		0.050	0.015	mg/L		06/05/17 11:08	06/06/17 13:34	1
Copper	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 13:34	1
Lead	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 13:34	1
Lithium	0.00765	J	0.25	0.0050	mg/L		06/05/17 11:08	06/06/17 13:34	1
Molybdenum	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 13:34	1
Nickel	ND		0.025	0.015	mg/L		06/05/17 11:08	06/06/17 13:34	1
Selenium	ND		0.10	0.020	mg/L		06/05/17 11:08	06/06/17 13:34	1
Silver	ND		0.025	0.010	mg/L		06/05/17 11:08	06/06/17 13:34	1
Thallium	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 13:34	1
Tin	ND		0.050	0.025	mg/L		06/05/17 11:08	06/06/17 13:34	1
Vanadium	ND		0.10	0.010	mg/L		06/05/17 11:08	06/06/17 13:34	1
Zinc	0.114	J	0.20	0.040	mg/L		06/05/17 11:08	06/06/17 13:34	1

Lab Sample ID: 400-138522-A-1-D MS

Matrix: Solid

Analysis Batch: 356130

Client Sample ID: Matrix Spike

Prep Type: TCLP

Prep Batch: 355893

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		5.00	4.62		mg/L		92	75 - 125
Arsenic	ND		5.00	4.77		mg/L		95	75 - 125
Barium	0.28	J	15.0	14.4		mg/L		94	75 - 125
Beryllium	ND		2.50	2.38		mg/L		95	75 - 125
Boron	0.12	J B	5.00	4.62		mg/L		90	75 - 125
Cadmium	ND		2.50	2.34		mg/L		94	75 - 125
Calcium	7.3	B	50.0	56.4		mg/L		98	75 - 125
Chromium	ND		5.00	4.81		mg/L		96	75 - 125
Cobalt	ND		5.00	4.78		mg/L		96	75 - 125
Copper	0.011	J	5.00	4.73		mg/L		94	75 - 125
Lead	0.017	J	5.00	4.79		mg/L		95	75 - 125
Lithium	0.020	J B	5.00	4.89		mg/L		97	75 - 125
Molybdenum	ND		5.00	4.71		mg/L		94	75 - 125

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 400-138522-A-1-D MS

Matrix: Solid

Analysis Batch: 356130

Client Sample ID: Matrix Spike

Prep Type: TCLP

Prep Batch: 355893

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nickel	ND		5.00	4.81		mg/L		96	75 - 125
Selenium	ND		5.00	4.50		mg/L		90	75 - 125
Silver	ND		2.50	2.41		mg/L		96	75 - 125
Thallium	ND		5.00	4.66		mg/L		93	75 - 125
Tin	ND		5.00	4.91		mg/L		98	75 - 125
Vanadium	0.010	J	5.00	4.79		mg/L		96	75 - 125
Zinc	ND		5.00	4.84		mg/L		97	75 - 125

Lab Sample ID: 400-138522-A-1-E MSD

Matrix: Solid

Analysis Batch: 356130

Client Sample ID: Matrix Spike Duplicate

Prep Type: TCLP

Prep Batch: 355893

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Antimony	ND		5.00	4.73		mg/L		95	75 - 125	2	20
Arsenic	ND		5.00	4.87		mg/L		97	75 - 125	2	20
Barium	0.28	J	15.0	14.5		mg/L		95	75 - 125	0	20
Beryllium	ND		2.50	2.46		mg/L		98	75 - 125	3	20
Boron	0.12	J B	5.00	4.73		mg/L		92	75 - 125	2	20
Cadmium	ND		2.50	2.40		mg/L		96	75 - 125	3	20
Calcium	7.3	B	50.0	57.9		mg/L		101	75 - 125	3	20
Chromium	ND		5.00	4.91		mg/L		98	75 - 125	2	20
Cobalt	ND		5.00	4.94		mg/L		99	75 - 125	3	20
Copper	0.011	J	5.00	4.88		mg/L		97	75 - 125	3	20
Lead	0.017	J	5.00	4.94		mg/L		98	75 - 125	3	20
Lithium	0.020	J B	5.00	5.03		mg/L		100	75 - 125	3	20
Molybdenum	ND		5.00	4.85		mg/L		97	75 - 125	3	20
Nickel	ND		5.00	4.97		mg/L		99	75 - 125	3	20
Selenium	ND		5.00	4.61		mg/L		92	75 - 125	2	20
Silver	ND		2.50	2.47		mg/L		99	75 - 125	3	20
Thallium	ND		5.00	4.78		mg/L		96	75 - 125	2	20
Tin	ND		5.00	5.11		mg/L		102	75 - 125	4	20
Vanadium	0.010	J	5.00	4.89		mg/L		98	75 - 125	2	20
Zinc	ND		5.00	5.05		mg/L		101	75 - 125	4	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: LCS 400-355903/14-A

Matrix: Solid

Analysis Batch: 356189

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 355903

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00806	0.00762		mg/L		95	80 - 120

Lab Sample ID: LB 400-355609/1-D

Matrix: Solid

Analysis Batch: 356189

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 355903

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0016	0.00056	mg/L		06/05/17 12:06	06/07/17 12:48	1

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

Lab Sample ID: 400-138522-A-1-H MS

Matrix: Solid

Analysis Batch: 356189

Client Sample ID: Matrix Spike

Prep Type: TCLP

Prep Batch: 355903

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		0.0161	0.0154		mg/L		96	80 - 120

Lab Sample ID: 400-138522-A-1-I MSD

Matrix: Solid

Analysis Batch: 356189

Client Sample ID: Matrix Spike Duplicate

Prep Type: TCLP

Prep Batch: 355903

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Mercury	ND		0.0161	0.0158		mg/L		98	80 - 120	3	20

TestAmerica Pensacola

TestAmerica Pensacola

3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record



TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

400-138523 COC

Client Information Client Contact: Chris Livingston Company: Geosyntec Consultants, Inc. Address: 1255 Roberts Blvd, NW Suite 200 City: Kennesaw State: GA, Zip: 30144 Phone: 678-202-9583 (Tel) Email: clivl@geosyntec.com Project Name: CCR Testing for Landfill Disposal Site:		Sampler: <u>CL</u> Lab PM: Whitmire, Cheyenne R Phone: <u>5209093409</u> E-Mail: cheyenne.whitmire@testamericainc.com		Carrier Tracking No(s): COC No: 400-65846-26926.1 Page: Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): PO #: Purchase Order Requested WO #: Project #: SSOW#:		Analysis Requested			
Sample Identification HA-1-CCR HA-2-CCR HA-3-CCR HA-4-CCR		Sample Date 5/26 1/130 1/130 1/1205	Sample Type (C=Comp, G=grab) C C C C	Matrix (W=water, S=solid, O=oil, A=air) Solid Solid Solid Solid	Field Filtered Sample (Yes or No) N X X X
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months			
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:			
Empty Kit Relinquished by: <u>CL</u>		Method of Shipment:			
Relinquished by: <u>CL</u>		Date/Time: <u>5/26/17 1400</u> Company: <u>Geosyntec</u>			
Relinquished by:		Date/Time: <u>5/27/17 0834</u> Company: <u>THA P6</u>			
Relinquished by:		Date/Time: Company:			
Custody Seals Intact: Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks: <u>5.8°C JPR2</u>			

Login Sample Receipt Checklist

Client: Geosyntec Consultants, Inc.

Job Number: 400-138523-1

Login Number: 138523

List Number: 1

Creator: Perez, Trina M

List Source: TestAmerica Pensacola

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	5.8°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.	False	Received broken. Transferred to new containers with minimal or no sample loss.
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	

Accreditation/Certification Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138523-1

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	06-30-18
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	06-30-18
Georgia	State Program	4	N/A	06-30-18
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	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-17
Maryland	State Program	3	233	09-30-17
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-17 *
New Jersey	NELAP	2	FL006	06-30-18
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	06-30-18
Texas	NELAP	6	T104704286-16-10	09-30-17
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

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

TestAmerica Pensacola

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-138522-1

Client Project/Site: CCR Testing for Landfill Disposal

Revision: 1

For:

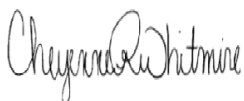
Geosyntec Consultants, Inc.

1255 Roberts Blvd, NW

Suite 200

Kennesaw, Georgia 30144

Attn: Chris Livingston



Authorized for release by:

7/12/2017 4:53:15 PM

Cheyenne Whitmire, Project Manager II

(850)471-6222

cheyenne.whitmire@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



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.

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Detection Summary	4
Method Summary	5
Sample Summary	6
Client Sample Results	7
Definitions	15
Chronicle	16
QC Association	18
QC Sample Results	22
Chain of Custody	32
Receipt Checklists	33
Certification Summary	34



Case Narrative

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Job ID: 400-138522-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-138522-1

GC/MS VOA

Method(s) 8260B: The leachate blank for preparation batch 355628 and analytical batch 356078 contained chloroform above the method detection limit (MDL) but below the reporting limit (RL) and the TCLP discharge limit. The associated samples were non-detect for this analyte. Therefore, the data have been reported.

GC Semi VOA

Method(s) 8081B: Two surrogates are used for this analysis. The laboratory's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following samples contained an allowable number of surrogate compounds outside limits: (LCSD 400-355947/4-A), (400-138522-A-1-M MS) and (400-138522-A-1-N MSD). These results have been reported and qualified.

Method(s) 8151A: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 356046 and analytical batch 356501 recovered outside control limits for the following analytes: Silvex (2,4,5-TP). These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method(s) 8151A: The continuing calibration verification (CCV) associated with batch 356501 recovered above the upper control limit for 2,4-D and Silvex (2,4,5-TP). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: HA-1-SOIL (400-138522-1), HA-2-SOIL (400-138522-2), HA-3-SOIL (400-138522-3) and HA-4-SOIL (400-138522-4).

Detection Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Client Sample ID: HA-1-SOIL

Lab Sample ID: 400-138522-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.28	J	5.0	0.050	mg/L	1		6010C	TCLP
Boron	0.12	J B	0.50	0.075	mg/L	1		6010C	TCLP
Calcium	7.3	B	2.5	0.15	mg/L	1		6010C	TCLP
Copper	0.011	J	0.050	0.010	mg/L	1		6010C	TCLP
Lead	0.017	J	0.050	0.010	mg/L	1		6010C	TCLP
Lithium	0.020	J B	0.25	0.0050	mg/L	1		6010C	TCLP
Vanadium	0.010	J	0.10	0.010	mg/L	1		6010C	TCLP

Client Sample ID: HA-2-SOIL

Lab Sample ID: 400-138522-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.033	J	0.050	0.020	mg/L	1		6010C	TCLP
Barium	0.18	J	5.0	0.050	mg/L	1		6010C	TCLP
Boron	0.15	J B	0.50	0.075	mg/L	1		6010C	TCLP
Calcium	11	B	2.5	0.15	mg/L	1		6010C	TCLP
Copper	0.012	J	0.050	0.010	mg/L	1		6010C	TCLP
Lead	0.021	J	0.050	0.010	mg/L	1		6010C	TCLP
Lithium	0.046	J B	0.25	0.0050	mg/L	1		6010C	TCLP

Client Sample ID: HA-3-SOIL

Lab Sample ID: 400-138522-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.30	J	5.0	0.050	mg/L	1		6010C	TCLP
Boron	0.13	J B	0.50	0.075	mg/L	1		6010C	TCLP
Calcium	11	B	2.5	0.15	mg/L	1		6010C	TCLP
Copper	0.012	J	0.050	0.010	mg/L	1		6010C	TCLP
Lead	0.035	J	0.050	0.010	mg/L	1		6010C	TCLP
Lithium	0.015	J B	0.25	0.0050	mg/L	1		6010C	TCLP
Nickel	0.016	J	0.025	0.015	mg/L	1		6010C	TCLP
Vanadium	0.014	J	0.10	0.010	mg/L	1		6010C	TCLP

Client Sample ID: HA-4-SOIL

Lab Sample ID: 400-138522-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.32	J	5.0	0.050	mg/L	1		6010C	TCLP
Boron	0.17	J B	0.50	0.075	mg/L	1		6010C	TCLP
Calcium	13	B	2.5	0.15	mg/L	1		6010C	TCLP
Copper	0.011	J	0.050	0.010	mg/L	1		6010C	TCLP
Lithium	0.023	J B	0.25	0.0050	mg/L	1		6010C	TCLP
Nickel	0.024	J	0.025	0.015	mg/L	1		6010C	TCLP
Zinc	0.068	J B	0.20	0.040	mg/L	1		6010C	TCLP

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Method Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PEN
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL PEN
8081B	Organochlorine Pesticides (GC)	SW846	TAL PEN
8151A	Herbicides (GC)	SW846	TAL PEN
6010C	Metals (ICP)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-138522-1	HA-1-SOIL	Solid	05/26/17 13:10	05/27/17 08:34
400-138522-2	HA-2-SOIL	Solid	05/26/17 13:30	05/27/17 08:34
400-138522-3	HA-3-SOIL	Solid	05/26/17 12:30	05/27/17 08:34
400-138522-4	HA-4-SOIL	Solid	05/26/17 12:05	05/27/17 08:34

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Client Sample ID: HA-1-SOIL

Date Collected: 05/26/17 13:10

Date Received: 05/27/17 08:34

Lab Sample ID: 400-138522-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	0.0017	mg/L			06/06/17 22:34	5
Carbon tetrachloride	ND		0.025	0.0025	mg/L			06/06/17 22:34	5
Chlorobenzene	ND		0.025	0.0025	mg/L			06/06/17 22:34	5
Chloroform	ND		0.025	0.0030	mg/L			06/06/17 22:34	5
1,4-Dichlorobenzene	ND		0.025	0.0032	mg/L			06/06/17 22:34	5
1,2-Dichloroethane	ND		0.025	0.0025	mg/L			06/06/17 22:34	5
1,1-Dichloroethene	ND		0.025	0.0025	mg/L			06/06/17 22:34	5
2-Butanone (MEK)	ND		0.13	0.013	mg/L			06/06/17 22:34	5
Tetrachloroethene	ND		0.025	0.0029	mg/L			06/06/17 22:34	5
Trichloroethene	ND		0.025	0.0025	mg/L			06/06/17 22:34	5
Vinyl chloride	ND		0.025	0.0025	mg/L			06/06/17 22:34	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	100		78 - 118		06/06/17 22:34	5
Dibromofluoromethane	107		81 - 121		06/06/17 22:34	5
Toluene-d8 (Surr)	98		80 - 120		06/06/17 22:34	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		0.050	0.0090	mg/L		06/05/17 11:38	06/06/17 19:34	1
3 & 4 Methylphenol	ND		0.10	0.0052	mg/L		06/05/17 11:38	06/06/17 19:34	1
2,4-Dinitrotoluene	ND		0.050	0.0095	mg/L		06/05/17 11:38	06/06/17 19:34	1
Hexachloroethane	ND		0.050	0.021	mg/L		06/05/17 11:38	06/06/17 19:34	1
Hexachlorobutadiene	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 19:34	1
Hexachlorobenzene	ND		0.050	0.0013	mg/L		06/05/17 11:38	06/06/17 19:34	1
Nitrobenzene	ND		0.050	0.0028	mg/L		06/05/17 11:38	06/06/17 19:34	1
Pentachlorophenol	ND		0.10	0.0091	mg/L		06/05/17 11:38	06/06/17 19:34	1
2,4,5-Trichlorophenol	ND		0.050	0.019	mg/L		06/05/17 11:38	06/06/17 19:34	1
2,4,6-Trichlorophenol	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 19:34	1
Pyridine	ND		0.050	0.016	mg/L		06/05/17 11:38	06/06/17 19:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	48		15 - 135	06/05/17 11:38	06/06/17 19:34	1
2-Fluorobiphenyl	54		34 - 120	06/05/17 11:38	06/06/17 19:34	1
2-Fluorophenol (Surr)	32		10 - 120	06/05/17 11:38	06/06/17 19:34	1
Nitrobenzene-d5 (Surr)	55		27 - 120	06/05/17 11:38	06/06/17 19:34	1
Phenol-d5 (Surr)	51		10 - 120	06/05/17 11:38	06/06/17 19:34	1
Terphenyl-d14 (Surr)	74		53 - 125	06/05/17 11:38	06/06/17 19:34	1

Method: 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.025	0.0065	mg/L		06/05/17 16:22	06/07/17 15:05	1
Endrin	ND		0.0010	0.00015	mg/L		06/05/17 16:22	06/07/17 15:05	1
Heptachlor	ND		0.0010	0.00016	mg/L		06/05/17 16:22	06/07/17 15:05	1
Heptachlor epoxide	ND		0.0010	0.00016	mg/L		06/05/17 16:22	06/07/17 15:05	1
Methoxychlor	ND		0.0010	0.00021	mg/L		06/05/17 16:22	06/07/17 15:05	1
Toxaphene	ND		0.15	0.020	mg/L		06/05/17 16:22	06/07/17 15:05	1
gamma-BHC (Lindane)	ND		0.0025	0.0013	mg/L		06/05/17 16:22	06/07/17 15:05	1

TestAmerica Pensacola

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Client Sample ID: HA-1-SOIL

Lab Sample ID: 400-138522-1

Date Collected: 05/26/17 13:10

Matrix: Solid

Date Received: 05/27/17 08:34

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	50		10 - 130	06/05/17 16:22	06/07/17 15:05	1
Tetrachloro-m-xylene	43		43 - 130	06/05/17 16:22	06/07/17 15:05	1

Method: 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		0.50	0.0065	mg/L		06/07/17 13:26	06/10/17 11:00	1
Silvex (2,4,5-TP)	ND	*	0.10	0.00046	mg/L		06/07/17 13:26	06/10/17 11:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	79		30 - 142	06/07/17 13:26	06/10/17 11:00	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.25	0.050	mg/L		06/05/17 11:08	06/06/17 13:41	1
Arsenic	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 13:41	1
Barium	0.28	J	5.0	0.050	mg/L		06/05/17 11:08	06/06/17 13:41	1
Beryllium	ND		0.015	0.0050	mg/L		06/05/17 11:08	06/06/17 13:41	1
Boron	0.12	J B	0.50	0.075	mg/L		06/05/17 11:08	06/06/17 13:41	1
Cadmium	ND		0.025	0.0050	mg/L		06/05/17 11:08	06/06/17 13:41	1
Calcium	7.3	B	2.5	0.15	mg/L		06/05/17 11:08	06/06/17 13:41	1
Chromium	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 13:41	1
Cobalt	ND		0.050	0.015	mg/L		06/05/17 11:08	06/06/17 13:41	1
Copper	0.011	J	0.050	0.010	mg/L		06/05/17 11:08	06/06/17 13:41	1
Lead	0.017	J	0.050	0.010	mg/L		06/05/17 11:08	06/06/17 13:41	1
Lithium	0.020	J B	0.25	0.0050	mg/L		06/05/17 11:08	06/06/17 13:41	1
Molybdenum	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 13:41	1
Nickel	ND		0.025	0.015	mg/L		06/05/17 11:08	06/06/17 13:41	1
Selenium	ND		0.10	0.020	mg/L		06/05/17 11:08	06/06/17 13:41	1
Silver	ND		0.025	0.010	mg/L		06/05/17 11:08	06/06/17 13:41	1
Thallium	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 13:41	1
Tin	ND		0.050	0.025	mg/L		06/05/17 11:08	06/06/17 13:41	1
Vanadium	0.010	J	0.10	0.010	mg/L		06/05/17 11:08	06/06/17 13:41	1
Zinc	ND		0.20	0.040	mg/L		06/05/17 11:08	06/06/17 13:41	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0016	0.00056	mg/L		06/05/17 12:06	06/07/17 12:50	1

TestAmerica Pensacola

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Client Sample ID: HA-2-SOIL

Date Collected: 05/26/17 13:30

Date Received: 05/27/17 08:34

Lab Sample ID: 400-138522-2

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	0.0017	mg/L			06/06/17 23:03	5
Carbon tetrachloride	ND		0.025	0.0025	mg/L			06/06/17 23:03	5
Chlorobenzene	ND		0.025	0.0025	mg/L			06/06/17 23:03	5
Chloroform	ND		0.025	0.0030	mg/L			06/06/17 23:03	5
1,4-Dichlorobenzene	ND		0.025	0.0032	mg/L			06/06/17 23:03	5
1,2-Dichloroethane	ND		0.025	0.0025	mg/L			06/06/17 23:03	5
1,1-Dichloroethene	ND		0.025	0.0025	mg/L			06/06/17 23:03	5
2-Butanone (MEK)	ND		0.13	0.013	mg/L			06/06/17 23:03	5
Tetrachloroethene	ND		0.025	0.0029	mg/L			06/06/17 23:03	5
Trichloroethene	ND		0.025	0.0025	mg/L			06/06/17 23:03	5
Vinyl chloride	ND		0.025	0.0025	mg/L			06/06/17 23:03	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	100		78 - 118		06/06/17 23:03	5
Dibromofluoromethane	106		81 - 121		06/06/17 23:03	5
Toluene-d8 (Surr)	96		80 - 120		06/06/17 23:03	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		0.050	0.0090	mg/L		06/05/17 11:38	06/06/17 20:04	1
3 & 4 Methylphenol	ND		0.10	0.0052	mg/L		06/05/17 11:38	06/06/17 20:04	1
2,4-Dinitrotoluene	ND		0.050	0.0095	mg/L		06/05/17 11:38	06/06/17 20:04	1
Hexachloroethane	ND		0.050	0.021	mg/L		06/05/17 11:38	06/06/17 20:04	1
Hexachlorobutadiene	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 20:04	1
Hexachlorobenzene	ND		0.050	0.0013	mg/L		06/05/17 11:38	06/06/17 20:04	1
Nitrobenzene	ND		0.050	0.0028	mg/L		06/05/17 11:38	06/06/17 20:04	1
Pentachlorophenol	ND		0.10	0.0091	mg/L		06/05/17 11:38	06/06/17 20:04	1
2,4,5-Trichlorophenol	ND		0.050	0.019	mg/L		06/05/17 11:38	06/06/17 20:04	1
2,4,6-Trichlorophenol	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 20:04	1
Pyridine	ND		0.050	0.016	mg/L		06/05/17 11:38	06/06/17 20:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	56		15 - 135	06/05/17 11:38	06/06/17 20:04	1
2-Fluorobiphenyl	57		34 - 120	06/05/17 11:38	06/06/17 20:04	1
2-Fluorophenol (Surr)	33		10 - 120	06/05/17 11:38	06/06/17 20:04	1
Nitrobenzene-d5 (Surr)	66		27 - 120	06/05/17 11:38	06/06/17 20:04	1
Phenol-d5 (Surr)	56		10 - 120	06/05/17 11:38	06/06/17 20:04	1
Terphenyl-d14 (Surr)	81		53 - 125	06/05/17 11:38	06/06/17 20:04	1

Method: 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.025	0.0065	mg/L		06/05/17 16:22	06/07/17 15:31	1
Endrin	ND		0.0010	0.00015	mg/L		06/05/17 16:22	06/07/17 15:31	1
Heptachlor	ND		0.0010	0.00016	mg/L		06/05/17 16:22	06/07/17 15:31	1
Heptachlor epoxide	ND		0.0010	0.00016	mg/L		06/05/17 16:22	06/07/17 15:31	1
Methoxychlor	ND		0.0010	0.00021	mg/L		06/05/17 16:22	06/07/17 15:31	1
Toxaphene	ND		0.15	0.020	mg/L		06/05/17 16:22	06/07/17 15:31	1
gamma-BHC (Lindane)	ND		0.0025	0.0013	mg/L		06/05/17 16:22	06/07/17 15:31	1

TestAmerica Pensacola

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Client Sample ID: HA-2-SOIL

Lab Sample ID: 400-138522-2

Date Collected: 05/26/17 13:30

Matrix: Solid

Date Received: 05/27/17 08:34

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	101		10 - 130	06/05/17 16:22	06/07/17 15:31	1
Tetrachloro-m-xylene	74		43 - 130	06/05/17 16:22	06/07/17 15:31	1

Method: 8151A - Herbicides (GC) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		0.50	0.0065	mg/L		06/07/17 13:26	06/10/17 11:28	1
Silvex (2,4,5-TP)	ND	*	0.10	0.00046	mg/L		06/07/17 13:26	06/10/17 11:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	96		30 - 142	06/07/17 13:26	06/10/17 11:28	1

Method: 6010C - Metals (ICP) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.25	0.050	mg/L		06/05/17 11:08	06/06/17 13:57	1
Arsenic	0.033	J	0.050	0.020	mg/L		06/05/17 11:08	06/06/17 13:57	1
Barium	0.18	J	5.0	0.050	mg/L		06/05/17 11:08	06/06/17 13:57	1
Beryllium	ND		0.015	0.0050	mg/L		06/05/17 11:08	06/06/17 13:57	1
Boron	0.15	J B	0.50	0.075	mg/L		06/05/17 11:08	06/06/17 13:57	1
Cadmium	ND		0.025	0.0050	mg/L		06/05/17 11:08	06/06/17 13:57	1
Calcium	11	B	2.5	0.15	mg/L		06/05/17 11:08	06/06/17 13:57	1
Chromium	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 13:57	1
Cobalt	ND		0.050	0.015	mg/L		06/05/17 11:08	06/06/17 13:57	1
Copper	0.012	J	0.050	0.010	mg/L		06/05/17 11:08	06/06/17 13:57	1
Lead	0.021	J	0.050	0.010	mg/L		06/05/17 11:08	06/06/17 13:57	1
Lithium	0.046	J B	0.25	0.0050	mg/L		06/05/17 11:08	06/06/17 13:57	1
Molybdenum	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 13:57	1
Nickel	ND		0.025	0.015	mg/L		06/05/17 11:08	06/06/17 13:57	1
Selenium	ND		0.10	0.020	mg/L		06/05/17 11:08	06/06/17 13:57	1
Silver	ND		0.025	0.010	mg/L		06/05/17 11:08	06/06/17 13:57	1
Thallium	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 13:57	1
Tin	ND		0.050	0.025	mg/L		06/05/17 11:08	06/06/17 13:57	1
Vanadium	ND		0.10	0.010	mg/L		06/05/17 11:08	06/06/17 13:57	1
Zinc	ND		0.20	0.040	mg/L		06/05/17 11:08	06/06/17 13:57	1

Method: 7470A - Mercury (CVAA) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0016	0.00056	mg/L		06/05/17 12:06	06/07/17 12:57	1

TestAmerica Pensacola

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Client Sample ID: HA-3-SOIL

Date Collected: 05/26/17 12:30

Date Received: 05/27/17 08:34

Lab Sample ID: 400-138522-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	0.0017	mg/L			06/06/17 23:29	5
Carbon tetrachloride	ND		0.025	0.0025	mg/L			06/06/17 23:29	5
Chlorobenzene	ND		0.025	0.0025	mg/L			06/06/17 23:29	5
Chloroform	ND		0.025	0.0030	mg/L			06/06/17 23:29	5
1,4-Dichlorobenzene	ND		0.025	0.0032	mg/L			06/06/17 23:29	5
1,2-Dichloroethane	ND		0.025	0.0025	mg/L			06/06/17 23:29	5
1,1-Dichloroethene	ND		0.025	0.0025	mg/L			06/06/17 23:29	5
2-Butanone (MEK)	ND		0.13	0.013	mg/L			06/06/17 23:29	5
Tetrachloroethene	ND		0.025	0.0029	mg/L			06/06/17 23:29	5
Trichloroethene	ND		0.025	0.0025	mg/L			06/06/17 23:29	5
Vinyl chloride	ND		0.025	0.0025	mg/L			06/06/17 23:29	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	101		78 - 118		06/06/17 23:29	5
Dibromofluoromethane	105		81 - 121		06/06/17 23:29	5
Toluene-d8 (Surr)	96		80 - 120		06/06/17 23:29	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		0.050	0.0090	mg/L		06/05/17 11:38	06/06/17 20:34	1
3 & 4 Methylphenol	ND		0.10	0.0052	mg/L		06/05/17 11:38	06/06/17 20:34	1
2,4-Dinitrotoluene	ND		0.050	0.0095	mg/L		06/05/17 11:38	06/06/17 20:34	1
Hexachloroethane	ND		0.050	0.021	mg/L		06/05/17 11:38	06/06/17 20:34	1
Hexachlorobutadiene	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 20:34	1
Hexachlorobenzene	ND		0.050	0.0013	mg/L		06/05/17 11:38	06/06/17 20:34	1
Nitrobenzene	ND		0.050	0.0028	mg/L		06/05/17 11:38	06/06/17 20:34	1
Pentachlorophenol	ND		0.10	0.0091	mg/L		06/05/17 11:38	06/06/17 20:34	1
2,4,5-Trichlorophenol	ND		0.050	0.019	mg/L		06/05/17 11:38	06/06/17 20:34	1
2,4,6-Trichlorophenol	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 20:34	1
Pyridine	ND		0.050	0.016	mg/L		06/05/17 11:38	06/06/17 20:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	47		15 - 135	06/05/17 11:38	06/06/17 20:34	1
2-Fluorobiphenyl	56		34 - 120	06/05/17 11:38	06/06/17 20:34	1
2-Fluorophenol (Surr)	17		10 - 120	06/05/17 11:38	06/06/17 20:34	1
Nitrobenzene-d5 (Surr)	64		27 - 120	06/05/17 11:38	06/06/17 20:34	1
Phenol-d5 (Surr)	44		10 - 120	06/05/17 11:38	06/06/17 20:34	1
Terphenyl-d14 (Surr)	78		53 - 125	06/05/17 11:38	06/06/17 20:34	1

Method: 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.025	0.0065	mg/L		06/05/17 16:22	06/07/17 15:56	1
Endrin	ND		0.0010	0.00015	mg/L		06/05/17 16:22	06/07/17 15:56	1
Heptachlor	ND		0.0010	0.00016	mg/L		06/05/17 16:22	06/07/17 15:56	1
Heptachlor epoxide	ND		0.0010	0.00016	mg/L		06/05/17 16:22	06/07/17 15:56	1
Methoxychlor	ND		0.0010	0.00021	mg/L		06/05/17 16:22	06/07/17 15:56	1
Toxaphene	ND		0.15	0.020	mg/L		06/05/17 16:22	06/07/17 15:56	1
gamma-BHC (Lindane)	ND		0.0025	0.0013	mg/L		06/05/17 16:22	06/07/17 15:56	1

TestAmerica Pensacola

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Client Sample ID: HA-3-SOIL

Lab Sample ID: 400-138522-3

Date Collected: 05/26/17 12:30

Matrix: Solid

Date Received: 05/27/17 08:34

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	68		10 - 130	06/05/17 16:22	06/07/17 15:56	1
Tetrachloro-m-xylene	50		43 - 130	06/05/17 16:22	06/07/17 15:56	1

Method: 8151A - Herbicides (GC) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		0.50	0.0065	mg/L		06/07/17 13:26	06/10/17 11:57	1
Silvex (2,4,5-TP)	ND	*	0.10	0.00046	mg/L		06/07/17 13:26	06/10/17 11:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	91		30 - 142	06/07/17 13:26	06/10/17 11:57	1

Method: 6010C - Metals (ICP) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.25	0.050	mg/L		06/05/17 11:08	06/06/17 14:01	1
Arsenic	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 14:01	1
Barium	0.30	J	5.0	0.050	mg/L		06/05/17 11:08	06/06/17 14:01	1
Beryllium	ND		0.015	0.0050	mg/L		06/05/17 11:08	06/06/17 14:01	1
Boron	0.13	J B	0.50	0.075	mg/L		06/05/17 11:08	06/06/17 14:01	1
Cadmium	ND		0.025	0.0050	mg/L		06/05/17 11:08	06/06/17 14:01	1
Calcium	11	B	2.5	0.15	mg/L		06/05/17 11:08	06/06/17 14:01	1
Chromium	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:01	1
Cobalt	ND		0.050	0.015	mg/L		06/05/17 11:08	06/06/17 14:01	1
Copper	0.012	J	0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:01	1
Lead	0.035	J	0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:01	1
Lithium	0.015	J B	0.25	0.0050	mg/L		06/05/17 11:08	06/06/17 14:01	1
Molybdenum	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:01	1
Nickel	0.016	J	0.025	0.015	mg/L		06/05/17 11:08	06/06/17 14:01	1
Selenium	ND		0.10	0.020	mg/L		06/05/17 11:08	06/06/17 14:01	1
Silver	ND		0.025	0.010	mg/L		06/05/17 11:08	06/06/17 14:01	1
Thallium	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 14:01	1
Tin	ND		0.050	0.025	mg/L		06/05/17 11:08	06/06/17 14:01	1
Vanadium	0.014	J	0.10	0.010	mg/L		06/05/17 11:08	06/06/17 14:01	1
Zinc	ND		0.20	0.040	mg/L		06/05/17 11:08	06/06/17 14:01	1

Method: 7470A - Mercury (CVAA) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0016	0.00056	mg/L		06/05/17 12:06	06/07/17 12:58	1

TestAmerica Pensacola

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Client Sample ID: HA-4-SOIL

Date Collected: 05/26/17 12:05

Date Received: 05/27/17 08:34

Lab Sample ID: 400-138522-4

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025	0.0017	mg/L			06/06/17 23:56	5
Carbon tetrachloride	ND		0.025	0.0025	mg/L			06/06/17 23:56	5
Chlorobenzene	ND		0.025	0.0025	mg/L			06/06/17 23:56	5
Chloroform	ND		0.025	0.0030	mg/L			06/06/17 23:56	5
1,4-Dichlorobenzene	ND		0.025	0.0032	mg/L			06/06/17 23:56	5
1,2-Dichloroethane	ND		0.025	0.0025	mg/L			06/06/17 23:56	5
1,1-Dichloroethene	ND		0.025	0.0025	mg/L			06/06/17 23:56	5
2-Butanone (MEK)	ND		0.13	0.013	mg/L			06/06/17 23:56	5
Tetrachloroethene	ND		0.025	0.0029	mg/L			06/06/17 23:56	5
Trichloroethene	ND		0.025	0.0025	mg/L			06/06/17 23:56	5
Vinyl chloride	ND		0.025	0.0025	mg/L			06/06/17 23:56	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	101		78 - 118		06/06/17 23:56	5
Dibromofluoromethane	101		81 - 121		06/06/17 23:56	5
Toluene-d8 (Surr)	98		80 - 120		06/06/17 23:56	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		0.050	0.0090	mg/L		06/05/17 11:38	06/06/17 21:04	1
3 & 4 Methylphenol	ND		0.10	0.0052	mg/L		06/05/17 11:38	06/06/17 21:04	1
2,4-Dinitrotoluene	ND		0.050	0.0095	mg/L		06/05/17 11:38	06/06/17 21:04	1
Hexachloroethane	ND		0.050	0.021	mg/L		06/05/17 11:38	06/06/17 21:04	1
Hexachlorobutadiene	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 21:04	1
Hexachlorobenzene	ND		0.050	0.0013	mg/L		06/05/17 11:38	06/06/17 21:04	1
Nitrobenzene	ND		0.050	0.0028	mg/L		06/05/17 11:38	06/06/17 21:04	1
Pentachlorophenol	ND		0.10	0.0091	mg/L		06/05/17 11:38	06/06/17 21:04	1
2,4,5-Trichlorophenol	ND		0.050	0.019	mg/L		06/05/17 11:38	06/06/17 21:04	1
2,4,6-Trichlorophenol	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 21:04	1
Pyridine	ND		0.050	0.016	mg/L		06/05/17 11:38	06/06/17 21:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	63		15 - 135	06/05/17 11:38	06/06/17 21:04	1
2-Fluorobiphenyl	66		34 - 120	06/05/17 11:38	06/06/17 21:04	1
2-Fluorophenol (Surr)	47		10 - 120	06/05/17 11:38	06/06/17 21:04	1
Nitrobenzene-d5 (Surr)	80		27 - 120	06/05/17 11:38	06/06/17 21:04	1
Phenol-d5 (Surr)	67		10 - 120	06/05/17 11:38	06/06/17 21:04	1
Terphenyl-d14 (Surr)	84		53 - 125	06/05/17 11:38	06/06/17 21:04	1

Method: 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.025	0.0065	mg/L		06/05/17 16:24	06/07/17 16:22	1
Endrin	ND		0.0010	0.00015	mg/L		06/05/17 16:24	06/07/17 16:22	1
Heptachlor	ND		0.0010	0.00016	mg/L		06/05/17 16:24	06/07/17 16:22	1
Heptachlor epoxide	ND		0.0010	0.00016	mg/L		06/05/17 16:24	06/07/17 16:22	1
Methoxychlor	ND		0.0010	0.00021	mg/L		06/05/17 16:24	06/07/17 16:22	1
Toxaphene	ND		0.15	0.020	mg/L		06/05/17 16:24	06/07/17 16:22	1
gamma-BHC (Lindane)	ND		0.0025	0.0013	mg/L		06/05/17 16:24	06/07/17 16:22	1

TestAmerica Pensacola

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Client Sample ID: HA-4-SOIL

Lab Sample ID: 400-138522-4

Date Collected: 05/26/17 12:05

Matrix: Solid

Date Received: 05/27/17 08:34

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	78		10 - 130	06/05/17 16:24	06/07/17 16:22	1
Tetrachloro-m-xylene	55		43 - 130	06/05/17 16:24	06/07/17 16:22	1

Method: 8151A - Herbicides (GC) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		0.50	0.0065	mg/L		06/07/17 13:26	06/10/17 12:25	1
Silvex (2,4,5-TP)	ND	*	0.10	0.00046	mg/L		06/07/17 13:26	06/10/17 12:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	99		30 - 142	06/07/17 13:26	06/10/17 12:25	1

Method: 6010C - Metals (ICP) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.25	0.050	mg/L		06/05/17 11:08	06/06/17 14:04	1
Arsenic	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 14:04	1
Barium	0.32	J	5.0	0.050	mg/L		06/05/17 11:08	06/06/17 14:04	1
Beryllium	ND		0.015	0.0050	mg/L		06/05/17 11:08	06/06/17 14:04	1
Boron	0.17	J B	0.50	0.075	mg/L		06/05/17 11:08	06/06/17 14:04	1
Cadmium	ND		0.025	0.0050	mg/L		06/05/17 11:08	06/06/17 14:04	1
Calcium	13	B	2.5	0.15	mg/L		06/05/17 11:08	06/06/17 14:04	1
Chromium	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:04	1
Cobalt	ND		0.050	0.015	mg/L		06/05/17 11:08	06/06/17 14:04	1
Copper	0.011	J	0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:04	1
Lead	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:04	1
Lithium	0.023	J B	0.25	0.0050	mg/L		06/05/17 11:08	06/06/17 14:04	1
Molybdenum	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 14:04	1
Nickel	0.024	J	0.025	0.015	mg/L		06/05/17 11:08	06/06/17 14:04	1
Selenium	ND		0.10	0.020	mg/L		06/05/17 11:08	06/06/17 14:04	1
Silver	ND		0.025	0.010	mg/L		06/05/17 11:08	06/06/17 14:04	1
Thallium	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 14:04	1
Tin	ND		0.050	0.025	mg/L		06/05/17 11:08	06/06/17 14:04	1
Vanadium	ND		0.10	0.010	mg/L		06/05/17 11:08	06/06/17 14:04	1
Zinc	0.068	J B	0.20	0.040	mg/L		06/05/17 11:08	06/06/17 14:04	1

Method: 7470A - Mercury (CVAA) - TCLP									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0016	0.00056	mg/L		06/05/17 12:06	06/07/17 13:00	1

TestAmerica Pensacola

Definitions/Glossary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

GC Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

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)

Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Client Sample ID: HA-1-SOIL

Date Collected: 05/26/17 13:10

Date Received: 05/27/17 08:34

Lab Sample ID: 400-138522-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			355628	06/01/17 17:15	RMC	TAL PEN
TCLP	Analysis	8260B		5	356078	06/06/17 22:34	PP1	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3520C			355900	06/05/17 11:38	NDB	TAL PEN
TCLP	Analysis	8270D		1	356049	06/06/17 19:34	KJA	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3520C			355947	06/05/17 16:22	NDB	TAL PEN
TCLP	Analysis	8081B		1	356148	06/07/17 15:05	DS	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	8151A			356046	06/07/17 13:26	NDB	TAL PEN
TCLP	Analysis	8151A		1	356501	06/10/17 11:00	DS	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3010A			355893	06/05/17 11:08	KWN	TAL PEN
TCLP	Analysis	6010C		1	356130	06/06/17 13:41	SEH	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	7470A			355903	06/05/17 12:06	JAP	TAL PEN
TCLP	Analysis	7470A		1	356189	06/07/17 12:50	JAP	TAL PEN

Client Sample ID: HA-2-SOIL

Date Collected: 05/26/17 13:30

Date Received: 05/27/17 08:34

Lab Sample ID: 400-138522-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			355628	06/01/17 17:15	RMC	TAL PEN
TCLP	Analysis	8260B		5	356078	06/06/17 23:03	PP1	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3520C			355900	06/05/17 11:38	NDB	TAL PEN
TCLP	Analysis	8270D		1	356049	06/06/17 20:04	KJA	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3520C			355947	06/05/17 16:22	NDB	TAL PEN
TCLP	Analysis	8081B		1	356148	06/07/17 15:31	DS	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	8151A			356046	06/07/17 13:26	NDB	TAL PEN
TCLP	Analysis	8151A		1	356501	06/10/17 11:28	DS	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3010A			355893	06/05/17 11:08	KWN	TAL PEN
TCLP	Analysis	6010C		1	356130	06/06/17 13:57	SEH	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	7470A			355903	06/05/17 12:06	JAP	TAL PEN
TCLP	Analysis	7470A		1	356189	06/07/17 12:57	JAP	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Client Sample ID: HA-3-SOIL

Lab Sample ID: 400-138522-3

Date Collected: 05/26/17 12:30

Matrix: Solid

Date Received: 05/27/17 08:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			355628	06/01/17 17:15	RMC	TAL PEN
TCLP	Analysis	8260B		5	356078	06/06/17 23:29	PP1	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3520C			355900	06/05/17 11:38	NDB	TAL PEN
TCLP	Analysis	8270D		1	356049	06/06/17 20:34	KJA	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3520C			355947	06/05/17 16:22	NDB	TAL PEN
TCLP	Analysis	8081B		1	356148	06/07/17 15:56	DS	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	8151A			356046	06/07/17 13:26	NDB	TAL PEN
TCLP	Analysis	8151A		1	356501	06/10/17 11:57	DS	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3010A			355893	06/05/17 11:08	KWN	TAL PEN
TCLP	Analysis	6010C		1	356130	06/06/17 14:01	SEH	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	7470A			355903	06/05/17 12:06	JAP	TAL PEN
TCLP	Analysis	7470A		1	356189	06/07/17 12:58	JAP	TAL PEN

Client Sample ID: HA-4-SOIL

Lab Sample ID: 400-138522-4

Date Collected: 05/26/17 12:05

Matrix: Solid

Date Received: 05/27/17 08:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			355628	06/01/17 17:15	RMC	TAL PEN
TCLP	Analysis	8260B		5	356078	06/06/17 23:56	PP1	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3520C			355900	06/05/17 11:38	NDB	TAL PEN
TCLP	Analysis	8270D		1	356049	06/06/17 21:04	KJA	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3520C			355947	06/05/17 16:24	NDB	TAL PEN
TCLP	Analysis	8081B		1	356148	06/07/17 16:22	DS	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	8151A			356046	06/07/17 13:26	NDB	TAL PEN
TCLP	Analysis	8151A		1	356501	06/10/17 12:25	DS	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	3010A			355893	06/05/17 11:08	KWN	TAL PEN
TCLP	Analysis	6010C		1	356130	06/06/17 14:04	SEH	TAL PEN
TCLP	Leach	1311			355609	06/01/17 15:24	RMC	TAL PEN
TCLP	Prep	7470A			355903	06/05/17 12:06	JAP	TAL PEN
TCLP	Analysis	7470A		1	356189	06/07/17 13:00	JAP	TAL PEN

Laboratory References:

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

TestAmerica Pensacola

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

GC/MS VOA

Leach Batch: 355628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138522-1	HA-1-SOIL	TCLP	Solid	1311	
400-138522-2	HA-2-SOIL	TCLP	Solid	1311	
400-138522-3	HA-3-SOIL	TCLP	Solid	1311	
400-138522-4	HA-4-SOIL	TCLP	Solid	1311	
LB 400-355628/1-A	Method Blank	TCLP	Solid	1311	

Analysis Batch: 356078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138522-1	HA-1-SOIL	TCLP	Solid	8260B	355628
400-138522-2	HA-2-SOIL	TCLP	Solid	8260B	355628
400-138522-3	HA-3-SOIL	TCLP	Solid	8260B	355628
400-138522-4	HA-4-SOIL	TCLP	Solid	8260B	355628
LB 400-355628/1-A	Method Blank	TCLP	Solid	8260B	355628
LCS 400-356078/1002	Lab Control Sample	Total/NA	Solid	8260B	
400-138737-A-2 MS	Matrix Spike	Total/NA	Solid	8260B	
400-138737-A-2 MSD	Matrix Spike Duplicate	Total/NA	Solid	8260B	

GC/MS Semi VOA

Leach Batch: 355609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138522-1	HA-1-SOIL	TCLP	Solid	1311	
400-138522-2	HA-2-SOIL	TCLP	Solid	1311	
400-138522-3	HA-3-SOIL	TCLP	Solid	1311	
400-138522-4	HA-4-SOIL	TCLP	Solid	1311	
LB 400-355609/1-C	Method Blank	TCLP	Solid	1311	

Prep Batch: 355900

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138522-1	HA-1-SOIL	TCLP	Solid	3520C	355609
400-138522-2	HA-2-SOIL	TCLP	Solid	3520C	355609
400-138522-3	HA-3-SOIL	TCLP	Solid	3520C	355609
400-138522-4	HA-4-SOIL	TCLP	Solid	3520C	355609
LB 400-355609/1-C	Method Blank	TCLP	Solid	3520C	355609
LCS 400-355900/2-A	Lab Control Sample	Total/NA	Solid	3520C	
400-138736-H-1-A MS	Matrix Spike	TCLP	Solid	3520C	
400-138736-H-1-B MSD	Matrix Spike Duplicate	TCLP	Solid	3520C	

Analysis Batch: 356049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138522-1	HA-1-SOIL	TCLP	Solid	8270D	355900
400-138522-2	HA-2-SOIL	TCLP	Solid	8270D	355900
400-138522-3	HA-3-SOIL	TCLP	Solid	8270D	355900
400-138522-4	HA-4-SOIL	TCLP	Solid	8270D	355900
LB 400-355609/1-C	Method Blank	TCLP	Solid	8270D	355900

Analysis Batch: 356123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 400-355900/2-A	Lab Control Sample	Total/NA	Solid	8270D	355900
400-138736-H-1-A MS	Matrix Spike	TCLP	Solid	8270D	355900

TestAmerica Pensacola

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

GC/MS Semi VOA (Continued)

Analysis Batch: 356123 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138736-H-1-B MSD	Matrix Spike Duplicate	TCLP	Solid	8270D	355900

GC Semi VOA

Leach Batch: 355609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138522-1	HA-1-SOIL	TCLP	Solid	1311	
400-138522-2	HA-2-SOIL	TCLP	Solid	1311	
400-138522-3	HA-3-SOIL	TCLP	Solid	1311	
400-138522-4	HA-4-SOIL	TCLP	Solid	1311	
LB 400-355609/1-E	Method Blank	TCLP	Solid	1311	
LB 400-355609/1-F	Method Blank	TCLP	Solid	1311	
400-138522-1 MS	HA-1-SOIL	TCLP	Solid	1311	
400-138522-1 MSD	HA-1-SOIL	TCLP	Solid	1311	

Prep Batch: 355947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138522-1	HA-1-SOIL	TCLP	Solid	3520C	355609
400-138522-2	HA-2-SOIL	TCLP	Solid	3520C	355609
400-138522-3	HA-3-SOIL	TCLP	Solid	3520C	355609
400-138522-4	HA-4-SOIL	TCLP	Solid	3520C	355609
LB 400-355609/1-E	Method Blank	TCLP	Solid	3520C	355609
LCS 400-355947/3-A	Lab Control Sample	Total/NA	Solid	3520C	
LCSD 400-355947/4-A	Lab Control Sample Dup	Total/NA	Solid	3520C	
400-138522-1 MS	HA-1-SOIL	TCLP	Solid	3520C	355609
400-138522-1 MSD	HA-1-SOIL	TCLP	Solid	3520C	355609

Prep Batch: 356046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138522-1	HA-1-SOIL	TCLP	Solid	8151A	355609
400-138522-2	HA-2-SOIL	TCLP	Solid	8151A	355609
400-138522-3	HA-3-SOIL	TCLP	Solid	8151A	355609
400-138522-4	HA-4-SOIL	TCLP	Solid	8151A	355609
LB 400-355609/1-F	Method Blank	TCLP	Solid	8151A	355609
LCS 400-356046/2-A	Lab Control Sample	Total/NA	Solid	8151A	
400-138522-1 MS	HA-1-SOIL	TCLP	Solid	8151A	355609
400-138522-1 MSD	HA-1-SOIL	TCLP	Solid	8151A	355609

Analysis Batch: 356148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138522-1	HA-1-SOIL	TCLP	Solid	8081B	355947
400-138522-2	HA-2-SOIL	TCLP	Solid	8081B	355947
400-138522-3	HA-3-SOIL	TCLP	Solid	8081B	355947
400-138522-4	HA-4-SOIL	TCLP	Solid	8081B	355947
LB 400-355609/1-E	Method Blank	TCLP	Solid	8081B	355947
LCS 400-355947/3-A	Lab Control Sample	Total/NA	Solid	8081B	355947
LCSD 400-355947/4-A	Lab Control Sample Dup	Total/NA	Solid	8081B	355947
400-138522-1 MS	HA-1-SOIL	TCLP	Solid	8081B	355947
400-138522-1 MSD	HA-1-SOIL	TCLP	Solid	8081B	355947

TestAmerica Pensacola

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

GC Semi VOA (Continued)

Analysis Batch: 356501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138522-1	HA-1-SOIL	TCLP	Solid	8151A	356046
400-138522-2	HA-2-SOIL	TCLP	Solid	8151A	356046
400-138522-3	HA-3-SOIL	TCLP	Solid	8151A	356046
400-138522-4	HA-4-SOIL	TCLP	Solid	8151A	356046
LB 400-355609/1-F	Method Blank	TCLP	Solid	8151A	356046
LCS 400-356046/2-A	Lab Control Sample	Total/NA	Solid	8151A	356046
400-138522-1 MS	HA-1-SOIL	TCLP	Solid	8151A	356046
400-138522-1 MSD	HA-1-SOIL	TCLP	Solid	8151A	356046

Metals

Leach Batch: 355609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138522-1	HA-1-SOIL	TCLP	Solid	1311	
400-138522-2	HA-2-SOIL	TCLP	Solid	1311	
400-138522-3	HA-3-SOIL	TCLP	Solid	1311	
400-138522-4	HA-4-SOIL	TCLP	Solid	1311	
LB 400-355609/1-B	Method Blank	TCLP	Solid	1311	
LB 400-355609/1-D	Method Blank	TCLP	Solid	1311	
400-138522-1 MS	HA-1-SOIL	TCLP	Solid	1311	
400-138522-1 MSD	HA-1-SOIL	TCLP	Solid	1311	

Prep Batch: 355893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138522-1	HA-1-SOIL	TCLP	Solid	3010A	355609
400-138522-2	HA-2-SOIL	TCLP	Solid	3010A	355609
400-138522-3	HA-3-SOIL	TCLP	Solid	3010A	355609
400-138522-4	HA-4-SOIL	TCLP	Solid	3010A	355609
LB 400-355609/1-B	Method Blank	TCLP	Solid	3010A	355609
LCS 400-355893/2-A	Lab Control Sample	Total/NA	Solid	3010A	
400-138522-1 MS	HA-1-SOIL	TCLP	Solid	3010A	355609
400-138522-1 MSD	HA-1-SOIL	TCLP	Solid	3010A	355609

Prep Batch: 355903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138522-1	HA-1-SOIL	TCLP	Solid	7470A	355609
400-138522-2	HA-2-SOIL	TCLP	Solid	7470A	355609
400-138522-3	HA-3-SOIL	TCLP	Solid	7470A	355609
400-138522-4	HA-4-SOIL	TCLP	Solid	7470A	355609
LB 400-355609/1-D	Method Blank	TCLP	Solid	7470A	355609
LCS 400-355903/14-A	Lab Control Sample	Total/NA	Solid	7470A	
400-138522-1 MS	HA-1-SOIL	TCLP	Solid	7470A	355609
400-138522-1 MSD	HA-1-SOIL	TCLP	Solid	7470A	355609

Analysis Batch: 356130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138522-1	HA-1-SOIL	TCLP	Solid	6010C	355893
400-138522-2	HA-2-SOIL	TCLP	Solid	6010C	355893
400-138522-3	HA-3-SOIL	TCLP	Solid	6010C	355893
400-138522-4	HA-4-SOIL	TCLP	Solid	6010C	355893

TestAmerica Pensacola

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Metals (Continued)

Analysis Batch: 356130 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 400-355609/1-B	Method Blank	TCLP	Solid	6010C	355893
LCS 400-355893/2-A	Lab Control Sample	Total/NA	Solid	6010C	355893
400-138522-1 MS	HA-1-SOIL	TCLP	Solid	6010C	355893
400-138522-1 MSD	HA-1-SOIL	TCLP	Solid	6010C	355893

Analysis Batch: 356189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-138522-1	HA-1-SOIL	TCLP	Solid	7470A	355903
400-138522-2	HA-2-SOIL	TCLP	Solid	7470A	355903
400-138522-3	HA-3-SOIL	TCLP	Solid	7470A	355903
400-138522-4	HA-4-SOIL	TCLP	Solid	7470A	355903
LB 400-355609/1-D	Method Blank	TCLP	Solid	7470A	355903
LCS 400-355903/14-A	Lab Control Sample	Total/NA	Solid	7470A	355903
400-138522-1 MS	HA-1-SOIL	TCLP	Solid	7470A	355903
400-138522-1 MSD	HA-1-SOIL	TCLP	Solid	7470A	355903

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

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

Lab Sample ID: LCS 400-356078/1002

Matrix: Solid

Analysis Batch: 356078

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	0.0455		mg/L		91	70 - 130
Carbon tetrachloride	0.0500	0.0445		mg/L		89	61 - 137
Chlorobenzene	0.0500	0.0424		mg/L		85	70 - 130
Chloroform	0.0500	0.0432		mg/L		86	69 - 130
1,4-Dichlorobenzene	0.0500	0.0411		mg/L		82	70 - 130
1,2-Dichloroethane	0.0500	0.0431		mg/L		86	69 - 130
1,1-Dichloroethene	0.0500	0.0481		mg/L		96	63 - 134
2-Butanone (MEK)	0.200	0.177		mg/L		88	61 - 145
Tetrachloroethene	0.0500	0.0407		mg/L		81	65 - 130
Trichloroethene	0.0500	0.0457		mg/L		91	70 - 130
Vinyl chloride	0.0500	0.0440		mg/L		88	59 - 136

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	103		78 - 118
Dibromofluoromethane	102		81 - 121
Toluene-d8 (Surr)	96		80 - 120

Lab Sample ID: 400-138737-A-2 MS

Matrix: Solid

Analysis Batch: 356078

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		0.0500	0.0468		mg/L		94	56 - 142
Carbon tetrachloride	ND		0.0500	0.0447		mg/L		89	55 - 145
Chlorobenzene	ND		0.0500	0.0441		mg/L		88	64 - 130
Chloroform	ND		0.0500	0.0451		mg/L		90	60 - 141
1,4-Dichlorobenzene	ND		0.0500	0.0419		mg/L		84	53 - 135
1,2-Dichloroethane	ND		0.0500	0.0462		mg/L		92	60 - 141
1,1-Dichloroethene	ND		0.0500	0.0486		mg/L		97	54 - 147
2-Butanone (MEK)	ND		0.200	0.198		mg/L		99	55 - 150
Tetrachloroethene	ND		0.0500	0.0410		mg/L		82	52 - 133
Trichloroethene	ND		0.0500	0.0465		mg/L		93	64 - 136
Vinyl chloride	ND		0.0500	0.0438		mg/L		88	46 - 152

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene	101		78 - 118
Dibromofluoromethane	102		81 - 121
Toluene-d8 (Surr)	96		80 - 120

Lab Sample ID: 400-138737-A-2 MSD

Matrix: Solid

Analysis Batch: 356078

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	ND		0.0500	0.0403		mg/L		81	56 - 142	15	30
Carbon tetrachloride	ND		0.0500	0.0391		mg/L		78	55 - 145	13	30
Chlorobenzene	ND		0.0500	0.0377		mg/L		75	64 - 130	16	30

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

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

Lab Sample ID: 400-138737-A-2 MSD

Matrix: Solid

Analysis Batch: 356078

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloroform	ND		0.0500	0.0397		mg/L		79	60 - 141	13	30
1,4-Dichlorobenzene	ND		0.0500	0.0360		mg/L		72	53 - 135	15	30
1,2-Dichloroethane	ND		0.0500	0.0390		mg/L		78	60 - 141	17	30
1,1-Dichloroethene	ND		0.0500	0.0427		mg/L		85	54 - 147	13	30
2-Butanone (MEK)	ND		0.200	0.172		mg/L		86	55 - 150	14	30
Tetrachloroethene	ND		0.0500	0.0346		mg/L		69	52 - 133	17	30
Trichloroethene	ND		0.0500	0.0416		mg/L		83	64 - 136	11	30
Vinyl chloride	ND		0.0500	0.0414		mg/L		83	46 - 152	6	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene	102		78 - 118								
Dibromofluoromethane	101		81 - 121								
Toluene-d8 (Surr)	93		80 - 120								

Lab Sample ID: LB 400-355628/1-A

Matrix: Solid

Analysis Batch: 356078

Client Sample ID: Method Blank

Prep Type: TCLP

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.0050	0.00034	mg/L			06/06/17 17:20	1
Carbon tetrachloride	ND		0.0050	0.00050	mg/L			06/06/17 17:20	1
Chlorobenzene	ND		0.0050	0.00050	mg/L			06/06/17 17:20	1
Chloroform	0.00110	J	0.0050	0.00060	mg/L			06/06/17 17:20	1
1,4-Dichlorobenzene	ND		0.0050	0.00064	mg/L			06/06/17 17:20	1
1,2-Dichloroethane	ND		0.0050	0.00050	mg/L			06/06/17 17:20	1
1,1-Dichloroethene	ND		0.0050	0.00050	mg/L			06/06/17 17:20	1
2-Butanone (MEK)	ND		0.025	0.0026	mg/L			06/06/17 17:20	1
Tetrachloroethene	ND		0.0050	0.00058	mg/L			06/06/17 17:20	1
Trichloroethene	ND		0.0050	0.00050	mg/L			06/06/17 17:20	1
Vinyl chloride	ND		0.0050	0.00050	mg/L			06/06/17 17:20	1
Surrogate	LB %Recovery	LB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	100		78 - 118					06/06/17 17:20	1
Dibromofluoromethane	104		81 - 121					06/06/17 17:20	1
Toluene-d8 (Surr)	94		80 - 120					06/06/17 17:20	1

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

Lab Sample ID: LCS 400-355900/2-A

Matrix: Solid

Analysis Batch: 356123

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 355900

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylphenol	0.0300	0.0194		mg/L		65	39 - 123
3 & 4 Methylphenol	0.0300	0.0189	J	mg/L		63	38 - 121
2,4-Dinitrotoluene	0.0300	0.0282		mg/L		94	58 - 140
Hexachloroethane	0.0300	0.0154		mg/L		51	41 - 120

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

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

Lab Sample ID: LCS 400-355900/2-A

Matrix: Solid

Analysis Batch: 356123

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 355900

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hexachlorobutadiene	0.0300	0.0166		mg/L		55	48 - 120
Hexachlorobenzene	0.0300	0.0239		mg/L		80	52 - 131
Nitrobenzene	0.0300	0.0211		mg/L		70	47 - 120
Pentachlorophenol	0.0600	0.0268		mg/L		45	15 - 141
2,4,5-Trichlorophenol	0.0300	0.0219		mg/L		73	38 - 147
2,4,6-Trichlorophenol	0.0300	0.0219		mg/L		73	36 - 139
Pyridine	0.0300	0.0188		mg/L		63	26 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	90		15 - 135
2-Fluorobiphenyl	79		34 - 120
2-Fluorophenol (Surr)	31		10 - 120
Nitrobenzene-d5 (Surr)	72		27 - 120
Phenol-d5 (Surr)	52		10 - 120
Terphenyl-d14 (Surr)	93		53 - 125

Lab Sample ID: LB 400-355609/1-C

Matrix: Solid

Analysis Batch: 356049

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 355900

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		0.050	0.0090	mg/L		06/05/17 11:38	06/06/17 19:03	1
3 & 4 Methylphenol	ND		0.10	0.0052	mg/L		06/05/17 11:38	06/06/17 19:03	1
2,4-Dinitrotoluene	ND		0.050	0.0095	mg/L		06/05/17 11:38	06/06/17 19:03	1
Hexachloroethane	ND		0.050	0.021	mg/L		06/05/17 11:38	06/06/17 19:03	1
Hexachlorobutadiene	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 19:03	1
Hexachlorobenzene	ND		0.050	0.0013	mg/L		06/05/17 11:38	06/06/17 19:03	1
Nitrobenzene	ND		0.050	0.0028	mg/L		06/05/17 11:38	06/06/17 19:03	1
Pentachlorophenol	ND		0.10	0.0091	mg/L		06/05/17 11:38	06/06/17 19:03	1
2,4,5-Trichlorophenol	ND		0.050	0.019	mg/L		06/05/17 11:38	06/06/17 19:03	1
2,4,6-Trichlorophenol	ND		0.050	0.018	mg/L		06/05/17 11:38	06/06/17 19:03	1
Pyridine	ND		0.050	0.016	mg/L		06/05/17 11:38	06/06/17 19:03	1

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	73		15 - 135	06/05/17 11:38	06/06/17 19:03	1
2-Fluorobiphenyl	67		34 - 120	06/05/17 11:38	06/06/17 19:03	1
2-Fluorophenol (Surr)	41		10 - 120	06/05/17 11:38	06/06/17 19:03	1
Nitrobenzene-d5 (Surr)	68		27 - 120	06/05/17 11:38	06/06/17 19:03	1
Phenol-d5 (Surr)	65		10 - 120	06/05/17 11:38	06/06/17 19:03	1
Terphenyl-d14 (Surr)	82		53 - 125	06/05/17 11:38	06/06/17 19:03	1

Lab Sample ID: 400-138736-H-1-A MS

Matrix: Solid

Analysis Batch: 356123

Client Sample ID: Matrix Spike

Prep Type: TCLP

Prep Batch: 355900

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylphenol	ND		0.0287	0.0167		mg/L		58	22 - 130
3 & 4 Methylphenol	ND		0.0287	0.0156	J	mg/L		54	31 - 130

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

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

Lab Sample ID: 400-138736-H-1-A MS

Matrix: Solid

Analysis Batch: 356123

Client Sample ID: Matrix Spike

Prep Type: TCLP

Prep Batch: 355900

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-Dinitrotoluene	ND		0.0287	0.0257		mg/L		89	26 - 158
Hexachloroethane	ND		0.0287	0.0156		mg/L		54	29 - 130
Hexachlorobutadiene	ND		0.0287	0.0172		mg/L		60	41 - 130
Hexachlorobenzene	ND		0.0287	0.0228		mg/L		79	45 - 145
Nitrobenzene	ND		0.0287	0.0203		mg/L		71	34 - 135
Pentachlorophenol	ND		0.0573	0.0274		mg/L		48	10 - 180
2,4,5-Trichlorophenol	ND		0.0287	0.0167		mg/L		58	43 - 137
2,4,6-Trichlorophenol	ND		0.0287	0.0166		mg/L		58	42 - 135
Pyridine	ND		0.0287	0.0179		mg/L		62	10 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	65		15 - 135
2-Fluorobiphenyl	77		34 - 120
2-Fluorophenol (Surr)	27		10 - 120
Nitrobenzene-d5 (Surr)	70		27 - 120
Phenol-d5 (Surr)	44		10 - 120
Terphenyl-d14 (Surr)	68		53 - 125

Lab Sample ID: 400-138736-H-1-B MSD

Matrix: Solid

Analysis Batch: 356123

Client Sample ID: Matrix Spike Duplicate

Prep Type: TCLP

Prep Batch: 355900

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Methylphenol	ND		0.0287	0.0152		mg/L		53	22 - 130	10	47
3 & 4 Methylphenol	ND		0.0287	0.0152	J	mg/L		53	31 - 130	3	47
2,4-Dinitrotoluene	ND		0.0287	0.0255		mg/L		89	26 - 158	1	28
Hexachloroethane	ND		0.0287	0.0143		mg/L		50	29 - 130	9	41
Hexachlorobutadiene	ND		0.0287	0.0145		mg/L		51	41 - 130	17	36
Hexachlorobenzene	ND		0.0287	0.0165		mg/L		57	45 - 145	32	33
Nitrobenzene	ND		0.0287	0.0183		mg/L		64	34 - 135	10	35
Pentachlorophenol	ND		0.0574	0.0287		mg/L		50	10 - 180	5	42
2,4,5-Trichlorophenol	ND		0.0287	0.0184		mg/L		64	43 - 137	10	42
2,4,6-Trichlorophenol	ND		0.0287	0.0182		mg/L		64	42 - 135	10	44
Pyridine	ND		0.0287	0.0112		mg/L		39	10 - 130	46	55

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	74		15 - 135
2-Fluorobiphenyl	68		34 - 120
2-Fluorophenol (Surr)	38		10 - 120
Nitrobenzene-d5 (Surr)	63		27 - 120
Phenol-d5 (Surr)	47		10 - 120
Terphenyl-d14 (Surr)	41	X	53 - 125

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: LCS 400-355947/3-A

Matrix: Solid

Analysis Batch: 356148

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 355947

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Endrin	0.00200	0.00176		mg/L		88	36 - 173
Heptachlor	0.00200	0.00172		mg/L		86	31 - 172
Heptachlor epoxide	0.00200	0.00176		mg/L		88	38 - 156
Methoxychlor	0.00200	0.00169		mg/L		84	36 - 161
gamma-BHC (Lindane)	0.00200	0.00193		mg/L		96	29 - 160

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	75		10 - 130
Tetrachloro-m-xylene	58		43 - 130

Lab Sample ID: LCSD 400-355947/4-A

Matrix: Solid

Analysis Batch: 356148

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 355947

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Endrin	0.00200	0.00148		mg/L		74	36 - 173	17	40
Heptachlor	0.00200	0.00140		mg/L		70	31 - 172	21	40
Heptachlor epoxide	0.00200	0.00150		mg/L		75	38 - 156	16	40
Methoxychlor	0.00200	0.00131		mg/L		66	36 - 161	25	40
gamma-BHC (Lindane)	0.00200	0.00152		mg/L		76	29 - 160	23	40

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl	58		10 - 130
Tetrachloro-m-xylene	41	X	43 - 130

Lab Sample ID: LB 400-355609/1-E

Matrix: Solid

Analysis Batch: 356148

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 355947

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.025	0.0065	mg/L		06/05/17 16:22	06/07/17 12:23	1
Endrin	ND		0.0010	0.00015	mg/L		06/05/17 16:22	06/07/17 12:23	1
Heptachlor	ND		0.0010	0.00016	mg/L		06/05/17 16:22	06/07/17 12:23	1
Heptachlor epoxide	ND		0.0010	0.00016	mg/L		06/05/17 16:22	06/07/17 12:23	1
Methoxychlor	ND		0.0010	0.00021	mg/L		06/05/17 16:22	06/07/17 12:23	1
Toxaphene	ND		0.15	0.020	mg/L		06/05/17 16:22	06/07/17 12:23	1
gamma-BHC (Lindane)	ND		0.0025	0.0013	mg/L		06/05/17 16:22	06/07/17 12:23	1

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	63		10 - 130	06/05/17 16:22	06/07/17 12:23	1
Tetrachloro-m-xylene	61		43 - 130	06/05/17 16:22	06/07/17 12:23	1

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 400-138522-1 MS

Matrix: Solid

Analysis Batch: 356148

Client Sample ID: HA-1-SOIL

Prep Type: TCLP

Prep Batch: 355947

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin	ND		0.0250	0.0155		mg/L		62	10 - 150
Heptachlor	ND		0.0250	0.0143		mg/L		57	10 - 150
Heptachlor epoxide	ND		0.0250	0.0165		mg/L		66	10 - 150
Methoxychlor	ND		0.0250	0.0133		mg/L		53	10 - 150
gamma-BHC (Lindane)	ND		0.0250	0.0167		mg/L		67	10 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
DCB Decachlorobiphenyl	62		10 - 130
Tetrachloro-m-xylene	42	X	43 - 130

Lab Sample ID: 400-138522-1 MSD

Matrix: Solid

Analysis Batch: 356148

Client Sample ID: HA-1-SOIL

Prep Type: TCLP

Prep Batch: 355947

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Endrin	ND		0.0250	0.0121		mg/L		48	10 - 150	25	42
Heptachlor	ND		0.0250	0.0115		mg/L		46	10 - 150	22	31
Heptachlor epoxide	ND		0.0250	0.0130		mg/L		52	10 - 150	23	38
Methoxychlor	ND		0.0250	0.0112		mg/L		45	10 - 150	17	53
gamma-BHC (Lindane)	ND		0.0250	0.0127		mg/L		51	10 - 150	27	33

Surrogate	MSD %Recovery	MSD Qualifier	Limits
DCB Decachlorobiphenyl	58		10 - 130
Tetrachloro-m-xylene	31	X	43 - 130

Method: 8151A - Herbicides (GC)

Lab Sample ID: LCS 400-356046/2-A

Matrix: Solid

Analysis Batch: 356501

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 356046

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-D	0.0100	0.0119	J	mg/L		119	38 - 120
Silvex (2,4,5-TP)	0.0100	0.0122	*	mg/L		122	32 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4-Dichlorophenylacetic acid	133		30 - 142

Lab Sample ID: LB 400-355609/1-F

Matrix: Solid

Analysis Batch: 356501

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 356046

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		0.50	0.0065	mg/L		06/07/17 13:26	06/10/17 09:07	1
Silvex (2,4,5-TP)	ND		0.10	0.00046	mg/L		06/07/17 13:26	06/10/17 09:07	1

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LB 400-355609/1-F
Matrix: Solid
Analysis Batch: 356501

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 356046

Surrogate	LB LB %Recovery	Qualifier	Limits
2,4-Dichlorophenylacetic acid	107		30 - 142

Prepared	Analyzed	Dil Fac
06/07/17 13:26	06/10/17 09:07	1

Lab Sample ID: 400-138522-1 MS
Matrix: Solid
Analysis Batch: 356501

Client Sample ID: HA-1-SOIL
Prep Type: TCLP
Prep Batch: 356046

Analysis Date: 050507										Rep Date: 050507	
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
2,4-D	ND		0.125	0.128	J	mg/L		103	10 - 150		
Silvex (2,4,5-TP)	ND	*	0.125	0.130		mg/L		104	16 - 137		
Surrogate	MS %Recovery	MS Qualifier	Limits								
2,4-Dichlorophenylacetic acid	115		30 - 142								

Lab Sample ID: 400-138522-1 MSD
Matrix: Solid
Analysis Batch: 356501

Client Sample ID: HA-1-SOIL
Prep Type: TCLP
Prep Batch: 356046

Analysis Date: 080607

Top Date: 080607

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4-D	ND		0.125	0.116	J	mg/L		93	10 - 150	10	34
Silvex (2,4,5-TP)	ND	*	0.125	0.109		mg/L		87	16 - 137	18	41
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
2,4-Dichlorophenylacetic acid	95		30 - 142								

Method: 6010C - Metals (ICP)

Lab Sample ID: LCS 400-355893/2-A
Matrix: Solid
Analysis Batch: 356130

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355893

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	5.00	4.99		mg/L		100	80 - 120
Arsenic	5.00	5.16		mg/L		103	80 - 120
Barium	15.0	17.1		mg/L		114	80 - 120
Beryllium	2.50	2.58		mg/L		103	80 - 120
Boron	5.00	5.44		mg/L		109	80 - 120
Cadmium	2.50	2.52		mg/L		101	80 - 120
Calcium	50.0	55.0		mg/L		110	80 - 120
Chromium	5.00	5.14		mg/L		103	80 - 120
Cobalt	5.00	5.12		mg/L		102	80 - 120
Copper	5.00	5.13		mg/L		103	80 - 120
Lead	5.00	5.12		mg/L		102	80 - 120
Lithium	5.00	5.29		mg/L		106	80 - 120
Molybdenum	5.00	5.07		mg/L		101	80 - 120
Nickel	5.00	5.15		mg/L		103	80 - 120
Selenium	5.00	4.89		mg/L		98	80 - 120
Silver	2.50	2.58		mg/L		103	80 - 120

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 400-355893/2-A

Matrix: Solid

Analysis Batch: 356130

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 355893

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Thallium	5.00	4.98		mg/L		100	80 - 120
Tin	5.00	5.27		mg/L		105	80 - 120
Vanadium	5.00	5.14		mg/L		103	80 - 120
Zinc	5.00	5.25		mg/L		105	80 - 120

Lab Sample ID: LB 400-355609/1-B

Matrix: Solid

Analysis Batch: 356130

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 355893

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.25	0.050	mg/L		06/05/17 11:08	06/06/17 13:34	1
Arsenic	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 13:34	1
Barium	ND		5.0	0.050	mg/L		06/05/17 11:08	06/06/17 13:34	1
Beryllium	ND		0.015	0.0050	mg/L		06/05/17 11:08	06/06/17 13:34	1
Boron	0.603		0.50	0.075	mg/L		06/05/17 11:08	06/06/17 13:34	1
Cadmium	ND		0.025	0.0050	mg/L		06/05/17 11:08	06/06/17 13:34	1
Calcium	1.89	J	2.5	0.15	mg/L		06/05/17 11:08	06/06/17 13:34	1
Chromium	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 13:34	1
Cobalt	ND		0.050	0.015	mg/L		06/05/17 11:08	06/06/17 13:34	1
Copper	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 13:34	1
Lead	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 13:34	1
Lithium	0.00765	J	0.25	0.0050	mg/L		06/05/17 11:08	06/06/17 13:34	1
Molybdenum	ND		0.050	0.010	mg/L		06/05/17 11:08	06/06/17 13:34	1
Nickel	ND		0.025	0.015	mg/L		06/05/17 11:08	06/06/17 13:34	1
Selenium	ND		0.10	0.020	mg/L		06/05/17 11:08	06/06/17 13:34	1
Silver	ND		0.025	0.010	mg/L		06/05/17 11:08	06/06/17 13:34	1
Thallium	ND		0.050	0.020	mg/L		06/05/17 11:08	06/06/17 13:34	1
Tin	ND		0.050	0.025	mg/L		06/05/17 11:08	06/06/17 13:34	1
Vanadium	ND		0.10	0.010	mg/L		06/05/17 11:08	06/06/17 13:34	1
Zinc	0.114	J	0.20	0.040	mg/L		06/05/17 11:08	06/06/17 13:34	1

Lab Sample ID: 400-138522-1 MS

Matrix: Solid

Analysis Batch: 356130

Client Sample ID: HA-1-SOIL

Prep Type: TCLP

Prep Batch: 355893

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		5.00	4.62		mg/L		92	75 - 125
Arsenic	ND		5.00	4.77		mg/L		95	75 - 125
Barium	0.28	J	15.0	14.4		mg/L		94	75 - 125
Beryllium	ND		2.50	2.38		mg/L		95	75 - 125
Boron	0.12	J B	5.00	4.62		mg/L		90	75 - 125
Cadmium	ND		2.50	2.34		mg/L		94	75 - 125
Calcium	7.3	B	50.0	56.4		mg/L		98	75 - 125
Chromium	ND		5.00	4.81		mg/L		96	75 - 125
Cobalt	ND		5.00	4.78		mg/L		96	75 - 125
Copper	0.011	J	5.00	4.73		mg/L		94	75 - 125
Lead	0.017	J	5.00	4.79		mg/L		95	75 - 125
Lithium	0.020	J B	5.00	4.89		mg/L		97	75 - 125
Molybdenum	ND		5.00	4.71		mg/L		94	75 - 125

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 400-138522-1 MS

Matrix: Solid

Analysis Batch: 356130

Client Sample ID: HA-1-SOIL

Prep Type: TCLP

Prep Batch: 355893

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nickel	ND		5.00	4.81		mg/L		96	75 - 125
Selenium	ND		5.00	4.50		mg/L		90	75 - 125
Silver	ND		2.50	2.41		mg/L		96	75 - 125
Thallium	ND		5.00	4.66		mg/L		93	75 - 125
Tin	ND		5.00	4.91		mg/L		98	75 - 125
Vanadium	0.010	J	5.00	4.79		mg/L		96	75 - 125
Zinc	ND		5.00	4.84		mg/L		97	75 - 125

Lab Sample ID: 400-138522-1 MSD

Matrix: Solid

Analysis Batch: 356130

Client Sample ID: HA-1-SOIL

Prep Type: TCLP

Prep Batch: 355893

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Antimony	ND		5.00	4.73		mg/L		95	75 - 125	2	20
Arsenic	ND		5.00	4.87		mg/L		97	75 - 125	2	20
Barium	0.28	J	15.0	14.5		mg/L		95	75 - 125	0	20
Beryllium	ND		2.50	2.46		mg/L		98	75 - 125	3	20
Boron	0.12	J B	5.00	4.73		mg/L		92	75 - 125	2	20
Cadmium	ND		2.50	2.40		mg/L		96	75 - 125	3	20
Calcium	7.3	B	50.0	57.9		mg/L		101	75 - 125	3	20
Chromium	ND		5.00	4.91		mg/L		98	75 - 125	2	20
Cobalt	ND		5.00	4.94		mg/L		99	75 - 125	3	20
Copper	0.011	J	5.00	4.88		mg/L		97	75 - 125	3	20
Lead	0.017	J	5.00	4.94		mg/L		98	75 - 125	3	20
Lithium	0.020	J B	5.00	5.03		mg/L		100	75 - 125	3	20
Molybdenum	ND		5.00	4.85		mg/L		97	75 - 125	3	20
Nickel	ND		5.00	4.97		mg/L		99	75 - 125	3	20
Selenium	ND		5.00	4.61		mg/L		92	75 - 125	2	20
Silver	ND		2.50	2.47		mg/L		99	75 - 125	3	20
Thallium	ND		5.00	4.78		mg/L		96	75 - 125	2	20
Tin	ND		5.00	5.11		mg/L		102	75 - 125	4	20
Vanadium	0.010	J	5.00	4.89		mg/L		98	75 - 125	2	20
Zinc	ND		5.00	5.05		mg/L		101	75 - 125	4	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: LCS 400-355903/14-A

Matrix: Solid

Analysis Batch: 356189

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 355903

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00806	0.00762		mg/L		95	80 - 120

Lab Sample ID: LB 400-355609/1-D

Matrix: Solid

Analysis Batch: 356189

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 355903

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0016	0.00056	mg/L		06/05/17 12:06	06/07/17 12:48	1

TestAmerica Pensacola

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

Lab Sample ID: 400-138522-1 MS

Matrix: Solid

Analysis Batch: 356189

Client Sample ID: HA-1-SOIL

Prep Type: TCLP

Prep Batch: 355903

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		0.0161	0.0154		mg/L		96	80 - 120

Lab Sample ID: 400-138522-1 MSD

Matrix: Solid

Analysis Batch: 356189

Client Sample ID: HA-1-SOIL

Prep Type: TCLP

Prep Batch: 355903

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Mercury	ND		0.0161	0.0158		mg/L		98	80 - 120	3	20


TestAmerica Pensacola

TestAmerica Pensacola

3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information Client Contact: Chris Livingston Company: Geosyntec Consultants, Inc. Address: 1255 Roberts Blvd. NW Suite 200 City: Kennesaw State: GA, Zip: 30144 Phone: 678-202-9583 (Tel) Email: clivingston@geosyntec.com Project Name: CCR Testing for Landfill Disposal Site:		Sampler: <u>CL</u> Lab PM: Whitmire, Cheyenne R. E-Mail: cheyenne.whitmire@testamerica.com Carrier Tracking No(s): 400-65846-26926.1 Page: Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): PO #: Purchase Order Requested WO #: Project # 40008026 SSOW#:		Analysis Requested <div style="border: 1px solid black; padding: 5px; text-align: center;">  400-138522 COC </div>	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months	
Empty Kit Relinquished by: <u>CL</u> Relinquished by: <u>CL</u> Relinquished by:		Special Instructions/QC Requirements: Date: 5/26/17 1400 Date: 5/26/17 1400 Date:	
Custody Seal No.: Δ Yes Δ No		Method of Shipment: Date: 5/26/17 0834 Date: 5/26/17 0834 Date:	
Sample Identification HA-2-Soil HA-2-Soil HA-3-Soil HA-4-Soil		Total Number of Containers Special Instructions/Note: HOLD HOLD HOLD HOLD	

Login Sample Receipt Checklist

Client: Geosyntec Consultants, Inc.

Job Number: 400-138522-1

Login Number: 138522

List Number: 1

Creator: Perez, Trina M

List Source: TestAmerica Pensacola

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	5.8°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.	False	Received broken. Transferred to new containers with minimal or no sample loss.
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	

Accreditation/Certification Summary

Client: Geosyntec Consultants, Inc.
Project/Site: CCR Testing for Landfill Disposal

TestAmerica Job ID: 400-138522-1

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	06-30-18
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	06-30-18
Georgia	State Program	4	N/A	06-30-18
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	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-17
Maryland	State Program	3	233	09-30-17
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-17 *
New Jersey	NELAP	2	FL006	06-30-18
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	06-30-18
Texas	NELAP	6	T104704286-16-10	09-30-17
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

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

TestAmerica Pensacola