Data Usability Summary
Test America Work Orders: 600-88989-1, 600-88989-2, 600-88989-3, 600-89052-1, 600-89052-2, 600-89052-3

Sample Dates:	March 18, 2014	**Project No.:**	1302086
Laboratory:	Test America (Houston TLAP Certification T104704223) (Savannah TLAP Certification T104704185-13-6)	**Client:**	Exide Technologies Inc.
Work Orders:	600-88989-1, 600-88989-2, 600-88989-3, 600-89052-1, 600-89052-2, 600-89052-3		
Intended Use	Affected Property Assessment Report (APAR)		
Site:	Former Operating Plant (FOP), 7471 5th Street, Frisco, TX (Stewart Creek)		

TESTS/ METHODS:

Total Metals by SW-846 6010B - Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP) completed by Test America-Houston, TX laboratory
Dissolved Metals by SW-846 6020A - Inductively Coupled Plasma-Mass Spectrometry (ICP-MS); completed by Test America- Savannah, GA laboratory
Total Organic Carbon by WALKLEY BLACK
Grain Size by ASTM Method D422; completed by Test America – Burlington, VT Laboratory

SAMPLES:

14 sediment samples, 2 surface water samples, 4 equipment blank samples, 1 field blank sample, 2 field duplicates, and 1 field MS/MSD pair were collected. See Table 1 for a complete cross-referenced listing of samples.

Golder completed a review of the above chemical analysis data for conformance with the requirements of the Texas Risk Reduction Program (TRRP) guidance document, Review and Reporting of COC Concentration Data (RGG-366/TRRP-13 Revised May 2010) and for adherence to project objectives. The results of the review are discussed in this data usability summary (DUS).

Golder completed the review using the following laboratory and project submittals:

- Laboratory reportable data as defined in TRRP-13;
- Laboratory review checklists (LRC) with the associated exception reports;
- Laboratory Electronic Data Deliverable (EDD); and
- Project field notes from the sampling event.

The review of the reportable data included the quality control (QC) parameters listed below, as required per TRRP-13, using the applicable analytical method and project requirements:

- Data Completeness
- Chain-of-Custody Procedures
- Sample Condition - Holding Time, Preservation, and Containers
- Field Procedures

- Results Reporting Procedures
- Laboratory and Field QC Blanks
- Laboratory Control Spike and Matrix Spike Recoveries
- Surrogate Recoveries
- Laboratory and Field Duplicate Precision

Additionally, Golder used the LRC to evaluate the following QC parameters:

- Method Quantitation Limits (MQLs)
- Method Detection Limits (MDLs)
- Instrument Tuning, Calibration, and Performance
- Internal Standards

Criteria used for this data usability review are as follows:

- Inorganics: 70-130% spike recovery (and not less than 30% or data is rejected) and +MQL difference or 30% RPD (for laboratory duplicates) as recommended in TRRP-13

- Soil Samples: + 3x MQL difference (if either result is less than 5x MQL) or 50% RPD (for field duplicates) as recommended in TRRP-13

- Aqueous Samples: + 2x MQL difference (if either result is less than 5x MQL) or 30% RPD (for field duplicates) as recommended in TRRP-13

If an item was found outside of the review criteria, the reviewer applied a data qualifier (DQ) and bias code to the results for the affected samples in accordance with TRRP-13. A list of all qualified results and definitions of the qualifier and bias codes are given in Table 2.

GLOSSARY OF TERMS

The following definitions apply for terms related to analyte reporting limits:

MDL (Method Detection Limit) – the minimum concentration of an analyte that the laboratory can measure and report with 99% confidence that the analyte concentration is greater than zero. The MDL is determined by the laboratory for each analyte in a given reagent matrix (water or soil) generally using the procedures specified in 40 CFR Part 136, Appendix B. It is a measure of the concentration an instrument can detect or 'see' in a given reagent matrix. TRRP-13 requires that the laboratory routinely check the MDL for reasonableness.

SDL (Sample Detection Limit) – the MDL adjusted to reflect sample-specific actions, such as dilution or use of smaller aliquot sizes than prescribed in the analytical method, and taking into account sample characteristics, sample preparation, and analytical adjustments including dry-weight adjustments. It is a measure of the concentration an instrument can detect or 'see' in a given sample. For TRRP, non-detects are reported using the SDL. This term was originally called the SQL (Sample Quantitation Limit) before the TRRP rule revisions effective March 19, 2007.

Unadjusted MQL (Method Quantitation Limit) – the lowest non-zero concentration standard in the laboratory's initial calibration curve calculated using the normal aliquot sizes and final volumes prescribed in the analytical method. The unadjusted MQL is reported by the laboratory for each analyte in a given matrix (water or soil). It is a measure of the concentration an instrument can accurately measure in a typical sample. Per TRRP, the Unadjusted MQLs should be below the Levels of Required Performance (LORPs) for purposes of assessment as well as demonstration of conformance with critical Protective Concentration Levels (PCLs).

MQL – the unadjusted MQL adjusted to reflect sample-specific actions, such as dilution or use of smaller aliquot sizes than prescribed in the analytical method, and takes into account sample characteristics, sample preparation, and analytical adjustments including dry-weight adjustments. It is a measure of the concentration an instrument can accurately measure in a given sample. Analytes with concentrations above the SDL but below the MQL, though present in the sample, may not be accurately measured and are thus flagged as estimated (J).

LABORATORY CERTIFICATION

At the time the laboratory data were generated for this project, the laboratory was NELAC accredited under the Texas Laboratory Accreditation Program (TLAP) for the matrices, methods and parameters of analysis requested on the chain-of-custody forms. A copy of the applicable pages of the laboratory's National Environmental Laboratory Accreditation Program (NELAP) certificate valid during the period in which the laboratory generated the data in this report is included in Appendix 10.6 to this DUS. The TCEQ does not offer certification for Grain Size by ASTM Method D422.

USABILITY SUMMARY

1. Usability of Unqualified Non-Detects – Non-detects are reported at the sample detection limit (SDL) as required per TRRP. Additionally, according to the LRC, an MDL study was performed for each analyte and the MDLs were checked for reasonableness for each applicable analyte. The levels of required performance (LORPs) have been established by Golder/PBW as the TRRP Residential Assessment Levels (RALs), which include ecological criteria for sediment and surface water. As needed per TRRP, the Unadjusted MQL stated by the laboratory is at or below the LORP for each applicable analyte. Thus, the analytical methods are appropriate and the results can be used to demonstrate conformance with the criteria.

2. Usability of Qualified Data – There are no major QC deficiencies, and thus all data is usable as qualified for the intended use. As shown in Table 2, the reviewer qualified some detects as estimated (J) due to minor QC deficiencies. Detects that are biased high can be used; however, the reported concentration may be high. Detects that are estimated may be either low or high. Results with a laboratory J-flag (i.e., at a concentration between the SDL and MQL) should be considered estimates. The actual value is not expected to exceed the sample MQL.

Reviewer: Christina Higginbotham 4/28/14

QUALITY CONTROL PARAMETERS AND OUTCOMES

Data Completeness
The laboratory data packages contain all necessary data (i.e., the laboratory reportable data per TRRP-13) and the EDD contain all sample results in acceptable format.

Chain-of-Custody
Proper sample custody procedures were used, which confirms that the integrity of the samples was maintained. Additionally, the information on the custody records is complete and agrees with that in the field notes and laboratory reports, except as follows:

- For 88989-2, containers for analysis of TOC for Equipment blank bowl (600-88989-11) and Equipment blank dredge (600-88989-10) were received incorrectly preserved with nitric acid, and were therefore not analyzed.
- DUP-07 (600-88989-14) was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC). Per conversation with the laboratory via telephone, this sample was not analyzed.

Sample Condition
Samples were collected in appropriate containers, properly preserved in the field, and prepared and analyzed within the holding times as required in the analytical methods:

- For 600-88989, the temperature of the cooler at receipt was 4.3°C.
- For 600-89052, the temperature of the cooler at receipt was 1.8°C.

Sediment samples were collected for grain size analyses and shipped separately to Test America – Burlington, VT. A report with soil particle size by ASTM D422 was generated, but a TRRP Format report was unavailable for grain size analysis.

Field Procedures
The samples were collected and placed immediately into sterilized jars provided by the laboratory and then into a cooler with ice for overnight delivery to the laboratory.

14 sediment samples, 4 surface water samples, 4 equipment blank samples, 2 field blank samples, 3 field duplicates, and 3 field MS/MSD pair were collected.

Results Reporting Procedures
The hardcopy analytical results include a Result, MQL (adjusted), and SDL. The EDD includes the MDL, SDL (under the SQL column per previously used terminology) and the MQL, which is not adjusted for sample specific factors.

Results are reported in mg/kg with dry-weight correction for the metals. Non-detects are reported using the SDL as specified per TRRP and detects between the SDL and MQL are reported with a laboratory J-flag. The concentration reported for detects between the SDL and MQL is below the calibration range and thus is considered estimated.

MQLs- The LORPs have been established by Golder/PBW as the TRRP Residential Assessment Levels (RALs), which include ecological criteria for sediment and surface water. The unadjusted MQLs for the laboratory are at or below the LORPs for each applicable analyte.

MDLs- According to the LRCs, an MDL study was performed for each analyte, and the MDLs were checked for reasonableness and either adjusted or supported by the analysis of detectability check standards (DCS) for each applicable analyte as required per TRRP-13. Results for the DCS are included in the data packages.

Laboratory Blanks – Results for samples prepared in the same QC batch as a contaminated method blank may be affected by laboratory contamination. No analytes were detected in the laboratory blanks.

Field QC Blanks
2 field blank and 4 equipment rinsate blanks were collected to document sufficient field decontamination procedures for sediment sampling devices and filters. No analytes were detected in the field QC blanks, except for the Field Blank collected on 3-18-2014. The field blank was collected by pouring laboratory supplied deionized water directly into sample containers. Total cadmium was detected at a low concentration of 0.0000955 J mg/L. Five times the field blank concentration is 0.0004775 mg/L. Affected samples with total cadmium concentrations less than 0.0004775 mg/L are qualified as non-detect in Table 2.

Laboratory Control Sample
The laboratory prepared one laboratory control sample (LCS) for each analytical batch and reported recoveries for all of the analytes for each test. The LCS recoveries are within the TRRP recommended criteria, which indicates good accuracy for the preparation and analysis technique on a sample, free of matrix effects.

Matrix Spike Recovery
The laboratory prepared one or more matrix spike (MS) and matrix spike duplicate (MSD) with each analytical batch. MS/MSD recoveries are reported for the same analytes as the LCS for MS/MSD prepared using a sample from the site, which includes 3 MS/MSD for Total Metals, as shown in Table 1. According to the LRC, laboratory-designated MS/MSDs were run for each batch where a site-specific MS/MSD was not provided. However Test America does not include MS/MSD data in the lab packages that do not pertain to the Site.

PDS outcomes are given on the LRC for each job package; however PDS data are not reportable data per TRRP-13. According to the LRC, the PDS met method requirements, which indicates good accuracy for the analysis technique on the given sample matrix.

The MS/MSD recoveries are within the TRRP recommended criteria, which indicates good accuracy for the preparation and analysis technique on a sample free of matrix effects.

Surrogate Recovery
Since organic analyses were not requested for these data packages, surrogate recoveries were not applicable.

Laboratory Duplicate Precision
The laboratory prepared one or more Matrix Spike Duplicate (MSD) with each analytical batch for each test. Additionally, the laboratory prepared one Matrix Duplicate (MD) with each metals analytical batch. RPDs are reported for the same analytes as the LCS for MSD/MD prepared using a sample from the site, which includes 3 MS/MSD and MD for Total Metals. The laboratory indicated in the ER that 600-88989-4 MSD failed the RPD criteria for lead of 22%. This is marginally outside of the laboratory control limits but within acceptable TRRP criteria.

The MSD and MD RPDs are within the TRRP recommended criteria, which indicates good precision for the preparation and analysis technique for the given sample matrix.

Field Duplicate Precision

Two field duplicates were collected with the samples and analyzed. Results are summarized in Table 3. The RPDs (or the absolute difference between results for concentrations <5x MQL and for non-detects) are within the TRRP criteria, which indicates good precision for the sampling, preparation, and analysis technique on the given sample matrix, except as follows:

- The results for Total cadmium, total lead, and TOC are outside the criteria for the pair collected at DUP-9/2014-SED-049. The parent sample is qualified as "estimated" in Table 2 (J).

Instrument Tuning

According to the LRC, instrument tuning was not applicable for these data packages.

Instrument Calibration

According to the LRC, initial and continuing calibration data met method requirements for all reported results, which indicates the instruments were properly calibrated to measure analyte concentrations.

Instrument Performance

According to the LRC, the serial dilution and ICP interference check samples met method requirements, which indicates that no significant matrix interference exists.

Internal Standards

According to the LRC, area counts and retention times were not applicable for this data package.

TABLE 1
CROSS REFERENCE OF FIELD SAMPLE IDENTIFICATIONS AND LABORATORY IDENTIFICATIONS

Lab Sample ID	Field Sample ID	Prep Batch / Analysis Batch (Houston)	Prep Batch / Analysis Batch (Savannah)	Sample Date	Matrix	Comments
600-88989-1	2014-SED-036	130367/130417, 130049,	NA	3/18/2014	sediment	
600-88989-2	2014-SED-037	130367/130417, 130049,	NA	3/18/2014	sediment	
600-88989-3	2014-SED-038	130367/130417, 130049,	NA	3/18/2014	sediment	
600-88989-4	2014-SED-039	130367/130417, 130049,	NA	3/18/2014	sediment	site specific MS/MSD
600-88989-5	2014-SED-040	130367/130417, 130049,	NA	3/18/2014	sediment	
600-88989-6	2014-SED-041	130367/130417, 130049,	NA	3/18/2014	sediment	
600-88989-7	2014-SED-042	130367/130417, 130049,	NA	3/18/2014	sediment	
600-88989-8	2014-SED-043	130367/130417, 130049,	NA	3/18/2014	sediment	
600-88989-9	2014-SED-044	130367/130417, 130049,	NA	3/18/2014	sediment	
600-88989-10	Equipment Blank Dredge	129995/130289	NA	3/18/2014	water	sediment equipment blank
600-88989-11	Equipment Blank Bowl	129995/130289	NA	3/18/2014	water	sediment equipment blank
600-88989-12	2014-SED-045	130367/130417, 130049,	NA	3/18/2014	sediment	
600-88989-13	2014-SED-046	130367/130417, 130049,	NA	3/18/2014	sediment	
600-88989-14	DUP-07	NA	NA	3/18/2014	sediment	Field duplicate not analysed
600-88989-15	2014-SW-022	NA	320569/320950	3/18/2014	surface water	
600-88989-16	2014-SW-023	NA	320569/320950	3/18/2014	surface water	
600-88989-17	Field Blank	NA	320569/320950	3/18/2014	water	field blank
600-89052-1	2014-Sed-047	30428/130490, 130049, 13040	NA	3/19/2014	sediment	
600-89052-2	2014-Sed-048	30428/130490, 130049, 13040	NA	3/19/2014	sediment	
600-89052-3	2014-Sed-049	30428/130490, 130049, 13040	NA	3/19/2014	sediment	
600-89052-4	DUP-08	30428/130490, 130049, 13040	NA	3/19/2014	sediment	duplicate of 2014-SED-047
600-89052-5	DUP-09	30428/130490, 130049, 13040	NA	3/19/2014	sediment	duplicate of 2014-SED-049
600-89052-6	Equipment Blank-Dredge	130115/130346	NA	3/19/2014	water	equipment blank
600-89052-7	Equipment Blank-Bowl	130115/130346	NA	3/19/2014	water	equipment blank
600-89052-8	2014-SW-024	NA	321171/321395	3/19/2014	water	site specific MS/MSD
600-89052-11	2014-SW-025	NA	321171/321395	3/19/2014	water	site specific MS/MSD
600-89052-14	DUP-06	NA	320916/321196	3/19/2014	water	duplicate of 2014-SW-025
600-89052-15	Field Blank	NA	320916/321196	3/19/2014	water	field blank

NA - Not analyzed

TABLE 2 - QUALIFIED DATA

Lab Sample ID	Field Sample ID	Analyte	Result	Units	Qualifer	Explanation
600-88989-15	2014-SW-022	Cadmium	0.000142 J	mg/L	< 0.0004775 U	Non-detect due to field blank concentration
600-88989-15	2014-SW-022	Lead	0.000812 J	mg/L	J	Estimated concentration between SDL and MQL
600-88989-15	2014-SW-022	Dissolved Cadmium	0.000217 J	mg/L	J	Estimated concentration between SDL and MQL
600-88989-16	2014-SW-023	Cadmium	0.000161 J	mg/L	< 0.0004775 U	Non-detect due to field blank concentration
600-88989-16	2014-SW-023	Dissolved Cadmium	0.000204 J	mg/L	J	Estimated concentration between SDL and MQL
600-88989-16	2014-SW-023	Dissolved Lead	0.000247 J	mg/L	J	Estimated concentration between SDL and MQL
600-88989-17	Field Blank	Cadmium	0.0000955 J	mg/L	J	Estimated concentration between SDL and MQL
600-88989-2	2014-SED-037	Cadmium	0.246 J	mg/kg	J	Estimated concentration between SDL and MQL
600-89052-1	2014-Sed-047	Cadmium	0.239 J	mg/kg	J	Estimated concentration between SDL and MQL
600-89052-3	2014-Sed-049	Cadmium	0.166 J	mg/kg	J	Estimated concentration between SDL and MQL; field duplicate RPD outside specifications
		Lead	17.2	mg/kg	J	Field duplicate RPD outside specifications
		TOC	2.37	mg/kg	J	Field duplicate RPD outside specifications
600-89052-4	DUP-08	Cadmium	0.22 J	mg/kg	J	Estimated concentration between SDL and MQL
600-89052-8	2014-SW-024	Lead	0.000286 J	mg/L	J	Estimated concentration between SDL and MQL
600-89052-11	2014-SW-025	Lead	0.000421 J	mg/L	J	Estimated concentration between SDL and MQL

Note:

Detected results between the SDL and MQL (i.e., results with a laboratory J-flag) have been included in the above table since the reported concentration is below the calibration range.

J Estimated data; The analyte was detected and identified. The associated numerical value (i.e., the reported sample concentration) is the approximate concentration of the analyte in the sample.

NJ Tentatively identified, estimated data; The analysis indicates the presence of the analyte for which there is presumptive evidence to make a tentative identification and the associated numerical value represents its approximate concentration.

NS Not selected; Another result (from a secondary dilution, different analytical method, re-sampling, etc.) is selected for use based on QC outcomes and/or reported concentrations.

R Rejected data; The data is unusable. Serious QC deficiencies make it impossible to verify the absence or presence of this analyte.

U Not detected; The analyte was not detected >5x (10x for common contaminants) the level in an associated blank and thus should be considered not detected above the level of the associated numerical value (i.e., the reported sample concentration).

UJ Estimated data; The analyte was not detected above the reported sample detection limit (SDL). The numerical value of the SDL is estimated and may be inaccurate.

H Bias in sample result is likely to be high

L Bias in sample result is likely to be low

TABLE 3 - FIELD DUPLICATE PRECISION CALCULATIONS

Duplicate and Parent Sample Field Identification	Analyte	Sample Result	Duplicate Result	RPD[a]	Accept or Reject	Qualifier Added
DUP-6/2014-SW-025	Cadmium	<0.0000950 U	<0.0000950 U	NC	A	-
	Lead	0.000421 J	<0.000200 U	NC	A	-
	Arsenic	<0.00130 U	<0.00130 U	NC	A	-
	Dissolved Cadmium	<0.0000950 U	<0.0000950 U	NC	A	-
	Dissolved Lead	<0.000200 U	<0.000200 U	NC	A	-
	Dissolved Arsenic	<0.00130 U	<0.00130 U	NC	A	-
DUP-8/2014-SED-047	Cadmium	0.239	0.220	8.3	A	-
	Lead	15.5	14.8	4.6	A	-
	Arsenic	15.4	11.4	29.9	A	-
	TOC	1.39	1.02	30.7	A	-
DUP-9/2014-SED-049	Cadmium	0.166	1.96	168.8	A	J
	Lead	17.2	45.6	90.4	A	J
	Arsenic	12.7	18	34.5	A	-
	TOC	2.37	0.674	111.4	A	J

[a] RPD = ((SR - DR)*200)/(SR + DR)

A - Acceptable Data

NA - Not Analyzed

NC - RPD not calculated

The RPD test (>50% for soil or >30% for aqueous) applies if both results are greater than 5x MQL. Otherwise, the absolute difference test (< 3x MQL for soil or < 2x MQL for aqueous) applies.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-88989-1
Client Project/Site: Stewart Creek

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
3/26/2014 4:08:59 PM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

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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.

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-88989-1 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☑ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☑ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton		3/26/2014
Name (printed)	Signature	Date

Project Management Asst II
Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	3/26/2014
Project Name:	Stewart Creek	Laboratory Job Number:	600-88989-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X			R01A
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?		X			R07D
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	3/26/2014
Project Name:	Stewart Creek	Laboratory Job Number:	600-88989-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	3/26/2014
Project Name:	Stewart Creek	Laboratory Job Number:	600-88989-1
Reviewer Name:	Dean A Joiner		

ER #[1]	Description
R01A	The following sample(s) was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): DUP-07 (600-88989-14). Per conversation with the client via telephone, this sample will not be analyzed. The following sample(s) was improperly preserved in the field: Equipment blank bowl (600-88989-11), Equipment blank dredge (600-88989-10). The preservative used is not compatible with the analyte (TOC) requested.
R07D	Method 6010B: 600-88989-4 MSD failed the RPD criteria for the following analyte(s): Lead. Non-homogeneity is suspected.

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

Detection Check Standard

Matrix:	Soil
Method:	90.3 Walkley-Black
Preparation:	NA
Date Analyzed:	12/7/2013
Date Prepared:	12/7/2013
TALs Batches:	122871
Units:	% Carbon

Analyte	MDL	DCS Spike	Measured Result	MQL
TOC Walkley Black	0.0415	0.05	0.036	0.1

Detection Check Standard

Matrix:	Water
Method:	200.7/6010
Preparation:	200.7P/3010
Date Analyzed:	12/31/2013
Date Prepared:	12/27/2013
Instrument:	Spectro01
TALs Batches:	124030, 123788p
Units:	mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.006	0.02	0.028176	0.5
Antimony	0.0063	0.01	0.010016	0.05
Arsenic	0.0033	0.01	0.008253	0.01
Barium	0.0022	0.005	0.004098	0.02
Beryllium	0.00134	0.002	0.004019	0.005
Boron	0.0077	0.02	0.019829	0.2
Cadmium	0.00073	0.001	0.001	0.005
Calcium	0.022	0.05	0.060829	1
Chromium	0.0016	0.002	0.003835	0.01
Cobalt	0.00063	0.001	0.000965	0.01
Copper	0.0014	0.002	0.002451	0.01
Iron	0.087	0.1	0.002258	0.4
Lithium	0.0024	0.005	0.006107	0.2
Lead	0.0029	0.005	0.005478	0.01
Selenium	0.0042	0.01	0.009953	0.04
Manganese	0.00084	0.002	0.001988	0.01
Molybdenum	0.0027	0.005	0.005867	0.01
Nickel	0.00179	0.005	0.005669	0.01
Silver	0.0012	0.0025	0.001901	0.01
Sodium	0.02	0.05	0.088115	1
Strontium	0.0005	0.001	0.000897	0.005
Thallium	0.0078	0.02	0.021503	0.03
Tin	0.0028	0.005	0.005708	0.01
Titanium	0.0011	0.002	0.001905	0.01
Vanadium	0.0017	0.002	0.003578	0.01
Zinc	0.0022	0.005	0.004189	0.01

Detection Check Standard

Matrix:	Soil
Method:	6010B
Preparation:	3050
Date Analyzed:	12/30/2013
Date Prepared:	12/27/2013
Instrument:	Thermo 6500
TALS Batches:	123949, 123775p
Prep/Reagent Factor =	50
Units:	mg/kg

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.299654	0.5	0.36	25
Antimony	0.231553	0.45	0.5	2.5
Arsenic	0.217923	0.5	0.53	1
Barium	0.011322	0.03	0.04	1
Beryllium	0.014513	0.02	0.015	0.25
Boron	0.385535	0.6	0.56	20
Cadmium	0.025642	0.05	0.05	0.25
Calcium	0.86399	1.5	2.185	100
Chromium	0.050606	0.1	0.135	0.5
Cobalt	0.067622	0.1	0.09	0.5
Copper	0.173703	0.5	0.64	0.5
Iron	2.534007	4	3.76	20
Lead	0.104832	0.2	0.215	0.5
Selenium	0.258884	0.5	0.465	2
Manganese	0.038111	0.05	0.085	1.5
Molybdenum	0.136448	0.35	0.38	0.5
Nickel	0.116599	0.15	0.2	1
Silver	0.118848	0.2	0.15	0.5
Sodium	0.885548	2.4	3.135	100
Thallium	0.276988	0.7	0.73	1.5
Tin	0.08729	0.15	0.19	1
Titanium	0.014529	0.03	0.01	0.5
Vanadium	0.079068	0.15	0.125	0.5
Zinc	0.108432	0.2	0.305	1.5

Job ID: 600-88989-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-88989-1

Comments
No additional comments.

Receipt
The samples were received on 3/19/2014 10:01 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.3º C.

Except:

The following sample(s) was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): DUP-07 (600-88989-14). Per conversation with the client via telephone, this sample will not be analyzed.

The following sample(s) was improperly preserved in the field: Equipment blank bowl (600-88989-11), Equipment blank dredge (600-88989-10). The preservative used is not compatible with the analytes requested.

Method Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL HOU
Moisture	Percent Moisture	EPA	TAL HOU
WALKLEY BLACK	Organic Carbon, Total (TOC)	MSA	TAL HOU

Protocol References:

EPA = US Environmental Protection Agency

MSA = "Methods Of Soil Analysis, Chemical And Microbiological Properties", Part 2, 2nd Ed., 1982 And Subsequent Revisions.

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

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-88989-1	2014-SED-036	Solid	03/18/14 09:38	03/19/14 10:01
600-88989-2	2014-SED-037	Solid	03/18/14 10:08	03/19/14 10:01
600-88989-3	2014-SED-038	Solid	03/18/14 10:58	03/19/14 10:01
600-88989-4	2014-SED-039	Solid	03/18/14 11:50	03/19/14 10:01
600-88989-5	2014-SED-040	Solid	03/18/14 12:32	03/19/14 10:01
600-88989-6	2014-SED-041	Solid	03/18/14 13:20	03/19/14 10:01
600-88989-7	2014-SED-042	Solid	03/18/14 14:00	03/19/14 10:01
600-88989-8	2014-SED-043	Solid	03/18/14 14:34	03/19/14 10:01
600-88989-9	2014-SED-044	Solid	03/18/14 15:12	03/19/14 10:01
600-88989-10	Equipment blank dredge	Water	03/18/14 17:12	03/19/14 10:01
600-88989-11	Equipment blank bowl	Water	03/18/14 17:18	03/19/14 10:01
600-88989-12	2014-SED-045	Solid	03/18/14 15:47	03/19/14 10:01
600-88989-13	2014-SED-046	Solid	03/18/14 16:26	03/19/14 10:01

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-1

Client Sample ID: 2014-SED-036

Lab Sample ID: 600-88989-1
Date Collected: 03/18/14 09:38
Matrix: Solid
Date Received: 03/19/14 10:01
Percent Solids: 67.2

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	42.8		1.35	0.295	mg/Kg	☼	03/25/14 09:16	03/25/14 14:03	1
Cadmium	0.690		0.338	0.0347	mg/Kg	☼	03/25/14 09:16	03/25/14 14:03	1
Lead	34.2		0.676	0.142	mg/Kg	☼	03/25/14 09:16	03/25/14 14:03	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	33		1.0	1.0	%			03/19/14 13:48	1
Percent Solids	67		1.0	1.0	%			03/19/14 13:48	1
TOC	3.02		0.100	0.0415	%			03/25/14 08:30	1

Client Sample ID: 2014-SED-037

Lab Sample ID: 600-88989-2
Date Collected: 03/18/14 10:08
Matrix: Solid
Date Received: 03/19/14 10:01
Percent Solids: 64.7

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	10.6		1.37	0.298	mg/Kg	☼	03/25/14 09:16	03/25/14 14:06	1
Cadmium	0.246	J	0.342	0.0351	mg/Kg	☼	03/25/14 09:16	03/25/14 14:06	1
Lead	17.3		0.684	0.143	mg/Kg	☼	03/25/14 09:16	03/25/14 14:06	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	35		1.0	1.0	%			03/19/14 13:48	1
Percent Solids	65		1.0	1.0	%			03/19/14 13:48	1
TOC	1.86		0.100	0.0415	%			03/25/14 08:30	1

Client Sample ID: 2014-SED-038

Lab Sample ID: 600-88989-3
Date Collected: 03/18/14 10:58
Matrix: Solid
Date Received: 03/19/14 10:01
Percent Solids: 70.3

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	11.6		1.26	0.274	mg/Kg	☼	03/25/14 09:16	03/25/14 14:08	1
Cadmium	0.378		0.315	0.0323	mg/Kg	☼	03/25/14 09:16	03/25/14 14:08	1
Lead	21.4		0.630	0.132	mg/Kg	☼	03/25/14 09:16	03/25/14 14:08	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	30		1.0	1.0	%			03/19/14 13:48	1
Percent Solids	70		1.0	1.0	%			03/19/14 13:48	1
TOC	0.894		0.100	0.0415	%			03/25/14 08:30	1

Client Sample ID: 2014-SED-039

Lab Sample ID: 600-88989-4
Date Collected: 03/18/14 11:50
Matrix: Solid
Date Received: 03/19/14 10:01
Percent Solids: 79.6

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	25.0		1.07	0.232	mg/Kg	☼	03/25/14 09:16	03/25/14 14:10	1
Cadmium	1.90		0.266	0.0273	mg/Kg	☼	03/25/14 09:16	03/25/14 14:10	1
Lead	18.7		0.533	0.112	mg/Kg	☼	03/25/14 09:16	03/25/14 14:10	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-1

Client Sample ID: 2014-SED-039

Lab Sample ID: 600-88989-4
Date Collected: 03/18/14 11:50
Matrix: Solid
Date Received: 03/19/14 10:01

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20		1.0	1.0	%			03/19/14 13:48	1
Percent Solids	80		1.0	1.0	%			03/19/14 13:48	1
TOC	0.231		0.100	0.0415	%			03/25/14 08:30	1

Client Sample ID: 2014-SED-040

Lab Sample ID: 600-88989-5
Date Collected: 03/18/14 12:32
Matrix: Solid
Date Received: 03/19/14 10:01
Percent Solids: 80.4

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	49.2		1.06	0.232	mg/Kg	☼	03/25/14 09:16	03/25/14 14:18	1
Cadmium	1.01		0.266	0.0272	mg/Kg	☼	03/25/14 09:16	03/25/14 14:18	1
Lead	17.5		0.531	0.111	mg/Kg	☼	03/25/14 09:16	03/25/14 14:18	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20		1.0	1.0	%			03/19/14 13:48	1
Percent Solids	80		1.0	1.0	%			03/19/14 13:48	1
TOC	0.401		0.100	0.0415	%			03/25/14 08:30	1

Client Sample ID: 2014-SED-041

Lab Sample ID: 600-88989-6
Date Collected: 03/18/14 13:20
Matrix: Solid
Date Received: 03/19/14 10:01
Percent Solids: 85.9

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	41.8		1.13	0.246	mg/Kg	☼	03/25/14 09:16	03/25/14 14:21	1
Cadmium	1.13		0.283	0.0290	mg/Kg	☼	03/25/14 09:16	03/25/14 14:21	1
Lead	19.0		0.565	0.119	mg/Kg	☼	03/25/14 09:16	03/25/14 14:21	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14		1.0	1.0	%			03/19/14 13:48	1
Percent Solids	86		1.0	1.0	%			03/19/14 13:48	1
TOC	0.287		0.100	0.0415	%			03/25/14 08:30	1

Client Sample ID: 2014-SED-042

Lab Sample ID: 600-88989-7
Date Collected: 03/18/14 14:00
Matrix: Solid
Date Received: 03/19/14 10:01
Percent Solids: 90.6

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	31.4		0.935	0.204	mg/Kg	☼	03/25/14 09:16	03/25/14 14:31	1
Cadmium	0.870		0.234	0.0240	mg/Kg	☼	03/25/14 09:16	03/25/14 14:31	1
Lead	20.7		0.468	0.0981	mg/Kg	☼	03/25/14 09:16	03/25/14 14:31	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.4		1.0	1.0	%			03/19/14 13:48	1
Percent Solids	91		1.0	1.0	%			03/19/14 13:48	1
TOC	0.193		0.100	0.0415	%			03/25/14 08:30	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-1

Client Sample ID: 2014-SED-043

Lab Sample ID: 600-88989-8
Date Collected: 03/18/14 14:34
Matrix: Solid
Date Received: 03/19/14 10:01
Percent Solids: 72.6

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	28.2		1.15	0.250	mg/Kg	☼	03/25/14 09:16	03/25/14 14:33	1
Cadmium	0.895		0.287	0.0294	mg/Kg	☼	03/25/14 09:16	03/25/14 14:33	1
Lead	28.6		0.574	0.120	mg/Kg	☼	03/25/14 09:16	03/25/14 14:33	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	27		1.0	1.0	%			03/20/14 13:21	1
Percent Solids	73		1.0	1.0	%			03/20/14 13:21	1
TOC	0.556		0.100	0.0415	%			03/25/14 08:30	1

Client Sample ID: 2014-SED-044

Lab Sample ID: 600-88989-9
Date Collected: 03/18/14 15:12
Matrix: Solid
Date Received: 03/19/14 10:01
Percent Solids: 65.9

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	11.3		1.52	0.331	mg/Kg	☼	03/25/14 09:16	03/25/14 14:36	1
Cadmium	0.501		0.380	0.0389	mg/Kg	☼	03/25/14 09:16	03/25/14 14:36	1
Lead	24.8		0.759	0.159	mg/Kg	☼	03/25/14 09:16	03/25/14 14:36	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	34		1.0	1.0	%			03/20/14 13:21	1
Percent Solids	66		1.0	1.0	%			03/20/14 13:21	1
TOC	1.79		0.100	0.0415	%			03/25/14 08:30	1

Client Sample ID: Equipment blank dredge

Lab Sample ID: 600-88989-10
Date Collected: 03/18/14 17:12
Matrix: Water
Date Received: 03/19/14 10:01

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		03/20/14 05:50	03/24/14 16:48	1
Lead	0.00290	U	0.0100	0.00290	mg/L		03/20/14 05:50	03/24/14 16:48	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		03/20/14 05:50	03/24/14 16:48	1

Client Sample ID: Equipment blank bowl

Lab Sample ID: 600-88989-11
Date Collected: 03/18/14 17:18
Matrix: Water
Date Received: 03/19/14 10:01

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		03/20/14 05:50	03/24/14 16:51	1
Lead	0.00290	U	0.0100	0.00290	mg/L		03/20/14 05:50	03/24/14 16:51	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		03/20/14 05:50	03/24/14 16:51	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-1

Client Sample ID: 2014-SED-045

Lab Sample ID: 600-88989-12

Date Collected: 03/18/14 15:47
Matrix: Solid
Date Received: 03/19/14 10:01
Percent Solids: 77.2

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	19.2		1.13	0.245	mg/Kg	☼	03/25/14 09:16	03/25/14 14:39	1
Cadmium	1.01		0.282	0.0289	mg/Kg	☼	03/25/14 09:16	03/25/14 14:39	1
Lead	19.1		0.563	0.118	mg/Kg	☼	03/25/14 09:16	03/25/14 14:39	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23		1.0	1.0	%			03/19/14 13:48	1
Percent Solids	77		1.0	1.0	%			03/19/14 13:48	1
TOC	0.433		0.100	0.0415	%			03/25/14 08:30	1

Client Sample ID: 2014-SED-046

Lab Sample ID: 600-88989-13

Date Collected: 03/18/14 16:26
Matrix: Solid
Date Received: 03/19/14 10:01
Percent Solids: 85.1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	26.6		1.10	0.239	mg/Kg	☼	03/25/14 09:16	03/25/14 14:41	1
Cadmium	4.47		0.275	0.0282	mg/Kg	☼	03/25/14 09:16	03/25/14 14:41	1
Lead	19.6		0.549	0.115	mg/Kg	☼	03/25/14 09:16	03/25/14 14:41	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15		1.0	1.0	%			03/19/14 13:48	1
Percent Solids	85		1.0	1.0	%			03/19/14 13:48	1
TOC	0.273		0.100	0.0415	%			03/25/14 08:30	1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
N2	RPD of the MS and MSD exceeds the control limits

General Chemistry

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

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
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)

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-129995/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 130289 — **Prep Batch: 129995**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		03/20/14 05:50	03/24/14 16:04	1
Lead	0.00290	U	0.0100	0.00290	mg/L		03/20/14 05:50	03/24/14 16:04	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		03/20/14 05:50	03/24/14 16:04	1

Lab Sample ID: LCS 600-129995/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 130289 — **Prep Batch: 129995**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.500	0.5008		mg/L		100	80 - 120
Lead	1.00	0.9739		mg/L		97	80 - 120
Arsenic	1.00	0.9803		mg/L		98	80 - 120

Lab Sample ID: MB 600-130367/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 130417 — **Prep Batch: 130367**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0256	U	0.250	0.0256	mg/Kg		03/25/14 09:16	03/25/14 13:29	1
Lead	0.105	U	0.500	0.105	mg/Kg		03/25/14 09:16	03/25/14 13:29	1
Arsenic	0.218	U	1.00	0.218	mg/Kg		03/25/14 09:16	03/25/14 13:29	1

Lab Sample ID: LCSSRM 600-130367/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 130417 — **Prep Batch: 130367**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	182	171.2		mg/Kg		94.1	81.9 - 118.1
Lead	115	112.9		mg/Kg		98.2	81.8 - 119.1
Arsenic	99.6	95.75		mg/Kg		96.1	80.8 - 119.5

Lab Sample ID: 600-88989-4 MS — **Client Sample ID: 2014-SED-039**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 130417 — **Prep Batch: 130367**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	25.0		56.6	81.33		mg/Kg	☼	99	75 - 125
Cadmium	1.90		28.3	26.92		mg/Kg	☼	88	75 - 125
Lead	18.7		56.6	80.20		mg/Kg	☼	109	75 - 125

Lab Sample ID: 600-88989-4 MSD — **Client Sample ID: 2014-SED-039**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 130417 — **Prep Batch: 130367**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	25.0		48.9	76.05		mg/Kg	☼	104	75 - 125	7	20
Cadmium	1.90		24.4	26.24		mg/Kg	☼	100	75 - 125	3	20

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

Lab Sample ID: 600-88989-4 MSD — **Client Sample ID: 2014-SED-039**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 130417 — **Prep Batch: 130367**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	18.7		48.9	64.22	N2	mg/Kg	☼	93	75 - 125	22	20

Method: Moisture - Percent Moisture

Lab Sample ID: 600-88989-5 DU — **Client Sample ID: 2014-SED-040**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 129945

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	20			22		%				10	20
Percent Solids	80			78		%				3	20

Method: WALKLEY BLACK - Organic Carbon, Total (TOC)

Lab Sample ID: MB 600-130407/1 — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 130407

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
TOC	0.0415	U	0.100	0.0415	%			03/25/14 08:30	1

Lab Sample ID: LCS 600-130407/2 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 130407

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
TOC			2.34	2.405		%		103	80 - 120		

Lab Sample ID: 600-88989-1 DU — **Client Sample ID: 2014-SED-036**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 130407

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
TOC	3.02			2.952		%				2	20

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-1

Method: 6010B - Metals (ICP)

Analyte	MQL	MDL	Units	Method
Arsenic	1.00	0.218	mg/Kg	6010B
Arsenic	0.0100	0.00328	mg/L	6010B
Cadmium	0.250	0.0256	mg/Kg	6010B
Cadmium	0.00500	0.000350	mg/L	6010B
Lead	0.500	0.105	mg/Kg	6010B
Lead	0.0100	0.00290	mg/L	6010B

General Chemistry

Analyte	MQL	MDL	Units	Method
Percent Moisture	1.0	1.0	%	Moisture
Percent Solids	1.0	1.0	%	Moisture
TOC	0.100	0.0415	%	WALKLEY BLACK

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-1

Metals

Prep Batch: 129995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-88989-10	Equipment blank dredge	Total/NA	Water	3010A	
600-88989-11	Equipment blank bowl	Total/NA	Water	3010A	
LCS 600-129995/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-129995/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 130289

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-88989-10	Equipment blank dredge	Total/NA	Water	6010B	129995
600-88989-11	Equipment blank bowl	Total/NA	Water	6010B	129995
LCS 600-129995/2-A	Lab Control Sample	Total/NA	Water	6010B	129995
MB 600-129995/1-A	Method Blank	Total/NA	Water	6010B	129995

Prep Batch: 130367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-88989-1	2014-SED-036	Total/NA	Solid	3050B	
600-88989-2	2014-SED-037	Total/NA	Solid	3050B	
600-88989-3	2014-SED-038	Total/NA	Solid	3050B	
600-88989-4	2014-SED-039	Total/NA	Solid	3050B	
600-88989-4 MS	2014-SED-039	Total/NA	Solid	3050B	
600-88989-4 MSD	2014-SED-039	Total/NA	Solid	3050B	
600-88989-5	2014-SED-040	Total/NA	Solid	3050B	
600-88989-6	2014-SED-041	Total/NA	Solid	3050B	
600-88989-7	2014-SED-042	Total/NA	Solid	3050B	
600-88989-8	2014-SED-043	Total/NA	Solid	3050B	
600-88989-9	2014-SED-044	Total/NA	Solid	3050B	
600-88989-12	2014-SED-045	Total/NA	Solid	3050B	
600-88989-13	2014-SED-046	Total/NA	Solid	3050B	
LCSSRM 600-130367/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 600-130367/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 130417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-88989-1	2014-SED-036	Total/NA	Solid	6010B	130367
600-88989-2	2014-SED-037	Total/NA	Solid	6010B	130367
600-88989-3	2014-SED-038	Total/NA	Solid	6010B	130367
600-88989-4	2014-SED-039	Total/NA	Solid	6010B	130367
600-88989-4 MS	2014-SED-039	Total/NA	Solid	6010B	130367
600-88989-4 MSD	2014-SED-039	Total/NA	Solid	6010B	130367
600-88989-5	2014-SED-040	Total/NA	Solid	6010B	130367
600-88989-6	2014-SED-041	Total/NA	Solid	6010B	130367
600-88989-7	2014-SED-042	Total/NA	Solid	6010B	130367
600-88989-8	2014-SED-043	Total/NA	Solid	6010B	130367
600-88989-9	2014-SED-044	Total/NA	Solid	6010B	130367
600-88989-12	2014-SED-045	Total/NA	Solid	6010B	130367
600-88989-13	2014-SED-046	Total/NA	Solid	6010B	130367
LCSSRM 600-130367/2-A	Lab Control Sample	Total/NA	Solid	6010B	130367
MB 600-130367/1-A	Method Blank	Total/NA	Solid	6010B	130367

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-1

General Chemistry

Analysis Batch: 129945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-88989-1	2014-SED-036	Total/NA	Solid	Moisture	
600-88989-2	2014-SED-037	Total/NA	Solid	Moisture	
600-88989-3	2014-SED-038	Total/NA	Solid	Moisture	
600-88989-4	2014-SED-039	Total/NA	Solid	Moisture	
600-88989-4 MS	2014-SED-039	Total/NA	Solid	Moisture	
600-88989-4 MSD	2014-SED-039	Total/NA	Solid	Moisture	
600-88989-5	2014-SED-040	Total/NA	Solid	Moisture	
600-88989-5 DU	2014-SED-040	Total/NA	Solid	Moisture	
600-88989-6	2014-SED-041	Total/NA	Solid	Moisture	
600-88989-7	2014-SED-042	Total/NA	Solid	Moisture	
600-88989-12	2014-SED-045	Total/NA	Solid	Moisture	
600-88989-13	2014-SED-046	Total/NA	Solid	Moisture	

Analysis Batch: 130049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-88989-8	2014-SED-043	Total/NA	Solid	Moisture	
600-88989-9	2014-SED-044	Total/NA	Solid	Moisture	

Analysis Batch: 130407

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-88989-1	2014-SED-036	Total/NA	Solid	WALKLEY BLACK	
600-88989-1 DU	2014-SED-036	Total/NA	Solid	WALKLEY BLACK	
600-88989-2	2014-SED-037	Total/NA	Solid	WALKLEY BLACK	
600-88989-3	2014-SED-038	Total/NA	Solid	WALKLEY BLACK	
600-88989-4	2014-SED-039	Total/NA	Solid	WALKLEY BLACK	
600-88989-5	2014-SED-040	Total/NA	Solid	WALKLEY BLACK	
600-88989-6	2014-SED-041	Total/NA	Solid	WALKLEY BLACK	
600-88989-7	2014-SED-042	Total/NA	Solid	WALKLEY BLACK	
600-88989-8	2014-SED-043	Total/NA	Solid	WALKLEY BLACK	
600-88989-9	2014-SED-044	Total/NA	Solid	WALKLEY BLACK	
600-88989-12	2014-SED-045	Total/NA	Solid	WALKLEY BLACK	
600-88989-13	2014-SED-046	Total/NA	Solid	WALKLEY BLACK	
LCS 600-130407/2	Lab Control Sample	Total/NA	Solid	WALKLEY BLACK	
MB 600-130407/1	Method Blank	Total/NA	Solid	WALKLEY BLACK	

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-1

Client Sample ID: 2014-SED-036 — Lab Sample ID: 600-88989-1

Date Collected: 03/18/14 09:38 — **Matrix: Solid**
Date Received: 03/19/14 10:01 — **Percent Solids: 67.2**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.10 g	50 mL	130367	03/25/14 09:16	DCL	TAL HOU
Total/NA	Analysis	6010B		1	1.10 g	50 mL	130417	03/25/14 14:03	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			129945	03/19/14 13:48	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	0.5000 g	0.5000 g	130407	03/25/14 08:30	EC1	TAL HOU

Client Sample ID: 2014-SED-037 — Lab Sample ID: 600-88989-2

Date Collected: 03/18/14 10:08 — **Matrix: Solid**
Date Received: 03/19/14 10:01 — **Percent Solids: 64.7**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.13 g	50 mL	130367	03/25/14 09:16	DCL	TAL HOU
Total/NA	Analysis	6010B		1	1.13 g	50 mL	130417	03/25/14 14:06	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			129945	03/19/14 13:48	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	0.5200 g	0.5200 g	130407	03/25/14 08:30	EC1	TAL HOU

Client Sample ID: 2014-SED-038 — Lab Sample ID: 600-88989-3

Date Collected: 03/18/14 10:58 — **Matrix: Solid**
Date Received: 03/19/14 10:01 — **Percent Solids: 70.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.13 g	50 mL	130367	03/25/14 09:16	DCL	TAL HOU
Total/NA	Analysis	6010B		1	1.13 g	50 mL	130417	03/25/14 14:08	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			129945	03/19/14 13:48	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	1.0600 g	1.0600 g	130407	03/25/14 08:30	EC1	TAL HOU

Client Sample ID: 2014-SED-039 — Lab Sample ID: 600-88989-4

Date Collected: 03/18/14 11:50 — **Matrix: Solid**
Date Received: 03/19/14 10:01 — **Percent Solids: 79.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.18 g	50 mL	130367	03/25/14 09:16	DCL	TAL HOU
Total/NA	Analysis	6010B		1	1.18 g	50 mL	130417	03/25/14 14:10	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			129945	03/19/14 13:48	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0500 g	2.0500 g	130407	03/25/14 08:30	EC1	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-1

Client Sample ID: 2014-SED-040 — Lab Sample ID: 600-88989-5

Date Collected: 03/18/14 12:32 — **Matrix: Solid**
Date Received: 03/19/14 10:01 — **Percent Solids: 80.4**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.17 g	50 mL	130367	03/25/14 09:16	DCL	TAL HOU
Total/NA	Analysis	6010B		1	1.17 g	50 mL	130417	03/25/14 14:18	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			129945	03/19/14 13:48	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0000 g	2.0000 g	130407	03/25/14 08:30	EC1	TAL HOU

Client Sample ID: 2014-SED-041 — Lab Sample ID: 600-88989-6

Date Collected: 03/18/14 13:20 — **Matrix: Solid**
Date Received: 03/19/14 10:01 — **Percent Solids: 85.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.03 g	50 mL	130367	03/25/14 09:16	DCL	TAL HOU
Total/NA	Analysis	6010B		1	1.03 g	50 mL	130417	03/25/14 14:21	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			129945	03/19/14 13:48	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0300 g	2.0300 g	130407	03/25/14 08:30	EC1	TAL HOU

Client Sample ID: 2014-SED-042 — Lab Sample ID: 600-88989-7

Date Collected: 03/18/14 14:00 — **Matrix: Solid**
Date Received: 03/19/14 10:01 — **Percent Solids: 90.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.18 g	50 mL	130367	03/25/14 09:16	DCL	TAL HOU
Total/NA	Analysis	6010B		1	1.18 g	50 mL	130417	03/25/14 14:31	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			129945	03/19/14 13:48	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.1700 g	2.1700 g	130407	03/25/14 08:30	EC1	TAL HOU

Client Sample ID: 2014-SED-043 — Lab Sample ID: 600-88989-8

Date Collected: 03/18/14 14:34 — **Matrix: Solid**
Date Received: 03/19/14 10:01 — **Percent Solids: 72.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.20 g	50 mL	130367	03/25/14 09:16	DCL	TAL HOU
Total/NA	Analysis	6010B		1	1.20 g	50 mL	130417	03/25/14 14:33	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			130049	03/20/14 13:21	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0000 g	2.0000 g	130407	03/25/14 08:30	EC1	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-1

Client Sample ID: 2014-SED-044 — Lab Sample ID: 600-88989-9

Date Collected: 03/18/14 15:12 — **Matrix: Solid**
Date Received: 03/19/14 10:01 — **Percent Solids: 65.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.00 g	50 mL	130367	03/25/14 09:16	DCL	TAL HOU
Total/NA	Analysis	6010B		1	1.00 g	50 mL	130417	03/25/14 14:36	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			130049	03/20/14 13:21	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	0.5200 g	0.5200 g	130407	03/25/14 08:30	EC1	TAL HOU

Client Sample ID: Equipment blank dredge — Lab Sample ID: 600-88989-10

Date Collected: 03/18/14 17:12 — **Matrix: Water**
Date Received: 03/19/14 10:01

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	129995	03/20/14 05:50	DCL	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	130289	03/24/14 16:48	DCL	TAL HOU

Client Sample ID: Equipment blank bowl — Lab Sample ID: 600-88989-11

Date Collected: 03/18/14 17:18 — **Matrix: Water**
Date Received: 03/19/14 10:01

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	129995	03/20/14 05:50	DCL	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	130289	03/24/14 16:51	DCL	TAL HOU

Client Sample ID: 2014-SED-045 — Lab Sample ID: 600-88989-12

Date Collected: 03/18/14 15:47 — **Matrix: Solid**
Date Received: 03/19/14 10:01 — **Percent Solids: 77.2**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.15 g	50 mL	130367	03/25/14 09:16	DCL	TAL HOU
Total/NA	Analysis	6010B		1	1.15 g	50 mL	130417	03/25/14 14:39	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			129945	03/19/14 13:48	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0200 g	2.0200 g	130407	03/25/14 08:30	EC1	TAL HOU

Client Sample ID: 2014-SED-046 — Lab Sample ID: 600-88989-13

Date Collected: 03/18/14 16:26 — **Matrix: Solid**
Date Received: 03/19/14 10:01 — **Percent Solids: 85.1**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.07 g	50 mL	130367	03/25/14 09:16	DCL	TAL HOU
Total/NA	Analysis	6010B		1	1.07 g	50 mL	130417	03/25/14 14:41	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			129945	03/19/14 13:48	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0000 g	2.0000 g	130407	03/25/14 08:30	EC1	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-1

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-1

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	TX00083	10-31-14

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Abby Marlow/Chris Trevino	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-27110-9386.5
Client Contact: Christina Higginbotham	Phone: 281-821-6868	E-Mail: dean.joiner@testamericainc.com		Page: Page 2 of 2
Company: Golder Associates Inc.				Job #: 1302086
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 DAYS			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide Recycling Center, Frisco TX Projec	Project #: 60004831			
Site: Stewart Creek	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	WALKLEY_BLACK - Walkley Black (TOC)	6010B As, Cd, Pb	Moisture	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	N		
Equipment blank dredge	3-18-14	1712	G	~~Solid~~ water			X	X			As, Cd, Pb on final report
Equipment blank Bowl	3-18-14	1718	G	~~Solid~~ water			X	X			
2014-SED-045	3-18-14	1547	C	Solid			X	X	X		
2014-SED-046	3-18-14	1626	C	Solid			X	X	X		
			C	Solid							
			C	Solid							
			C	Solid							
			C	Solid							
			C	Solid							
			C	Solid							
			C	Solid							

600-88989 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☒ Archive client approval needed for disposal

Deliverable Requested: I, II, III, IV, Other (specify) TRRP

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Chris Trevino	03/18/14 - 2027	Golder			
				3/19/14 1001	

Custody Seals Intact: Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

3/26/2014

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Abby Marlow/Chris Trevino	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-27110-9386.5
Client Contact: Christina Higginbotham	Phone: 281-821-6868	E-Mail: dean.joiner@testamericainc.com		Page: Page 1 of 2
Company: Golder Associates Inc.				Job #: 13020 86
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 DAYS			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide Recycling Center, Frisco TX Projec	Project #: 60004831			
Site: Stewart Creek	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	WALKLEY_BLACK - Walkley Black (TOC)	6010B As, Cd, Pb	Moisture	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	N		
2014 - Sed - 036	3-18-14	0938	C	Solid			X	X	X		As, Cd, Pb on final report
2014 - Sed - 037	3-18-14	1008	C	Solid			X	X	X		
2014 - Sed - 038	3-18-14	1058	C	Solid			X	X	X		
2014 - Sed - 039	3-18-14	1150	C	Solid			X	X	X		
2014 - Sed - 039 MS	3-18-14	1150	C	Solid		X	X	X	X		
2014 - Sed - 039 MSD	3-18-14	1150	C	Solid		X	X	X	X		
2014 - Sed - 040	3-18-14	1232	C	Solid			X	X	X		
2014 - Sed - 041	3-18-14	1320	C	Solid			X	X	X		
2014 - Sed - 042	3-18-14	1400	C	Solid			X	X	X		
2014 - Sed - 043	3-18-14	1434	C	Solid			X	X	X		
2014 - Sed - 044	3-18-14	1512	C	Solid			X	X	X		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☒ Archive client approval needed for disposal

Deliverable Requested: I, II, III, IV, Other (specify) TRRP

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Chris Trevino	03/18/14 - 2027	Golder			
				3/19/14 1001	

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

3/26/2014

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-88989-1

Login Number: 88989

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.3
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-88989-2
Client Project/Site: Stewart Creek

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
3/26/2014 3:50:46 PM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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

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

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

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-88989-2 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☐ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton		3/26/2014
Name (printed)	Signature	Date

Project Management Asst II

Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	3/26/2014
Project Name:	Stewart Creek	Laboratory Job Number:	600-88989-2
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?			X		
		Were MS/MSD analyzed at the appropriate frequency?			X		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
		Were MS/MSD RPDs within laboratory QC limits?			X		
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	3/26/2014
Project Name:	Stewart Creek	Laboratory Job Number:	600-88989-2
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	3/26/2014
Project Name:	Stewart Creek	Laboratory Job Number:	600-88989-2
Reviewer Name:	Dean A Joiner		

ER #[1]	Description

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Dept	Matrix	Client Sample ID	Analyte	Result	Unit	Spike Amount	MDL	RL	Percent Recovery	Prep Method	Analysis Method	Instrument ID	CAS	Prep Batch	Analysis Batch
ME	Water	Q4 2013 AQ MDLV ICPMSC	Aluminum	56.4	ug/L	50	23	50	113	3005A	6020A	ICPMSC	7429-90-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Antimony	2.875	ug/L	2.5	2.3	5	115	3005A	6020A	ICPMSC	7440-36-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Arsenic	2.375	ug/L	2	1.3	2.5	119	3005A	6020A	ICPMSC	7440-38-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Barium	1.965	ug/L	2	1.3	5	98	3005A	6020A	ICPMSC	7440-39-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Beryllium	0.52	ug/L	0.5	0.25	0.5	104	3005A	6020A	ICPMSC	7440-41-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Boron	51.24	ug/L	50	40	100	102	3005A	6020A	ICPMSC	7440-42-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cadmium	0.195	ug/L	0.2	0.095	0.5	98	3005A	6020A	ICPMSC	7440-43-9	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Calcium	294.73	ug/L	250	130	250	118	3005A	6020A	ICPMSC	7440-70-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Chromium	5.49	ug/L	5	2.5	5	110	3005A	6020A	ICPMSC	7440-47-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cobalt	0.21	ug/L	0.2	0.15	0.5	105	3005A	6020A	ICPMSC	7440-48-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Copper	2.02	ug/L	2	1.1	5	101	3005A	6020A	ICPMSC	7440-50-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Iron	54.13	ug/L	50	33	100	108	3005A	6020A	ICPMSC	7439-89-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Lead	0.355	ug/L	0.3	0.2	1.5	118	3005A	6020A	ICPMSC	7439-92-1	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Magnesium	78.42	ug/L	80	43	250	98	3005A	6020A	ICPMSC	7439-95-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Manganese	1.955	ug/L	2	1	5	98	3005A	6020A	ICPMSC	7439-96-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Mercury	0.625	ug/L	0.5	0.4	0.8	125	3005A	6020A	ICPMSC	7439-97-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Molybdenum	2.205	ug/L	2	1.5	5	110	3005A	6020A	ICPMSC	7439-98-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Nickel	4.86	ug/L	4	2	5	122	3005A	6020A	ICPMSC	7440-02-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Potassium	219.45	ug/L	200	170	500	110	3005A	6020A	ICPMSC	9/7/7440	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Selenium	1.855	ug/L	2	1	2.5	93	3005A	6020A	ICPMSC	7782-49-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Silver	0.435	ug/L	0.4	0.25	1	109	3005A	6020A	ICPMSC	7440-22-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Sodium	457.985	ug/L	400	250	500	114	3005A	6020A	ICPMSC	7440-23-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Strontium	0.945	ug/L	1	0.5	1	95	3005A	6020A	ICPMSC	7440-24-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Thallium	0.98	ug/L	1	0.5	1	98	3005A	6020A	ICPMSC	7440-28-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Tin	2.47	ug/L	2	1.3	5	124	3005A	6020A	ICPMSC	7440-31-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Titanium	3.17	ug/L	2.5	1.3	5	127	3005A	6020A	ICPMSC	7440-32-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Vanadium	5.55	ug/L	5	3.8	10	111	3005A	6020A	ICPMSC	7440-62-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Zinc	10.095	ug/L	10	8.3	20	101	3005A	6020A	ICPMSC	7440-66-6	680-297813	680-298498

Job ID: 600-88989-2

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-88989-2

Comments
No additional comments.

Receipt
The samples were received on 3/19/2014 10:01 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.3º C.

Method Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-2

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SAV

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-88989-15	2014-SW-022	Water	03/18/14 10:21	03/19/14 10:01
600-88989-16	2014-SW-023	Water	03/18/14 03:58	03/19/14 10:01
600-88989-17	Field Blank	Water	03/18/14 17:08	03/19/14 10:01

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-2

Client Sample ID: 2014-SW-022

Lab Sample ID: 600-88989-15

Date Collected: 03/18/14 10:21
Matrix: Water
Date Received: 03/19/14 10:01

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		03/20/14 13:18	03/21/14 23:49	1
Cadmium	**0.000142**	**J**	0.000500	0.0000950	mg/L		03/20/14 13:18	03/21/14 23:49	1
Lead	**0.000812**	**J**	0.00150	0.000200	mg/L		03/20/14 13:18	03/21/14 23:49	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		03/20/14 13:18	03/21/14 23:42	1
Cadmium	**0.000217**	**J**	0.000500	0.0000950	mg/L		03/20/14 13:18	03/21/14 23:42	1
Lead	0.000200	U	0.00150	0.000200	mg/L		03/20/14 13:18	03/21/14 23:42	1

Client Sample ID: 2014-SW-023

Lab Sample ID: 600-88989-16

Date Collected: 03/18/14 03:58
Matrix: Water
Date Received: 03/19/14 10:01

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		03/20/14 13:18	03/22/14 00:04	1
Cadmium	**0.000161**	**J**	0.000500	0.0000950	mg/L		03/20/14 13:18	03/22/14 00:04	1
Lead	0.000200	U	0.00150	0.000200	mg/L		03/20/14 13:18	03/22/14 00:04	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		03/20/14 13:18	03/21/14 23:57	1
Cadmium	**0.000204**	**J**	0.000500	0.0000950	mg/L		03/20/14 13:18	03/21/14 23:57	1
Lead	**0.000247**	**J**	0.00150	0.000200	mg/L		03/20/14 13:18	03/21/14 23:57	1

Client Sample ID: Field Blank

Lab Sample ID: 600-88989-17

Date Collected: 03/18/14 17:08
Matrix: Water
Date Received: 03/19/14 10:01

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		03/20/14 13:18	03/22/14 00:11	1
Cadmium	**0.0000955**	**J**	0.000500	0.0000950	mg/L		03/20/14 13:18	03/22/14 00:11	1
Lead	0.000200	U	0.00150	0.000200	mg/L		03/20/14 13:18	03/22/14 00:11	1

Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-2

Qualifiers

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated 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
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)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-320569/1-A
Matrix: Water
Analysis Batch: 320795

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 320569

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		03/20/14 13:18	03/21/14 13:15	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		03/20/14 13:18	03/21/14 13:15	1
Lead	0.000200	U	0.00150	0.000200	mg/L		03/20/14 13:18	03/21/14 13:15	1

Lab Sample ID: LCS 680-320569/2-A
Matrix: Water
Analysis Batch: 320795

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 320569

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.09855		mg/L		99	75 - 125
Cadmium	0.0500	0.04840		mg/L		97	75 - 125
Lead	0.0500	0.04888		mg/L		98	75 - 125

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-2

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	MQL	MDL	Units	Method
Arsenic	0.00250	0.00130	mg/L	6020A
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	MQL	MDL	Units	Method
Arsenic	0.00250	0.00130	mg/L	6020A
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-2

Metals

Prep Batch: 320569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-88989-15	2014-SW-022	Dissolved	Water	3005A	
600-88989-15	2014-SW-022	Total Recoverable	Water	3005A	
600-88989-16	2014-SW-023	Dissolved	Water	3005A	
600-88989-16	2014-SW-023	Total Recoverable	Water	3005A	
600-88989-17	Field Blank	Total Recoverable	Water	3005A	
LCS 680-320569/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-320569/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 320795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-320569/2-A	Lab Control Sample	Total Recoverable	Water	6020A	320569
MB 680-320569/1-A	Method Blank	Total Recoverable	Water	6020A	320569

Analysis Batch: 320950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-88989-15	2014-SW-022	Dissolved	Water	6020A	320569
600-88989-15	2014-SW-022	Total Recoverable	Water	6020A	320569
600-88989-16	2014-SW-023	Dissolved	Water	6020A	320569
600-88989-16	2014-SW-023	Total Recoverable	Water	6020A	320569
600-88989-17	Field Blank	Total Recoverable	Water	6020A	320569

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-2

Client Sample ID: 2014-SW-022

Lab Sample ID: 600-88989-15

Date Collected: 03/18/14 10:21

Matrix: Water

Date Received: 03/19/14 10:01

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	320569	03/20/14 13:18	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	320950	03/21/14 23:42	BWR	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	320569	03/20/14 13:18	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	320950	03/21/14 23:49	BWR	TAL SAV

Client Sample ID: 2014-SW-023

Lab Sample ID: 600-88989-16

Date Collected: 03/18/14 03:58

Matrix: Water

Date Received: 03/19/14 10:01

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	320569	03/20/14 13:18	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	320950	03/21/14 23:57	BWR	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	320569	03/20/14 13:18	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	320950	03/22/14 00:04	BWR	TAL SAV

Client Sample ID: Field Blank

Lab Sample ID: 600-88989-17

Date Collected: 03/18/14 17:08

Matrix: Water

Date Received: 03/19/14 10:01

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	320569	03/20/14 13:18	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	320950	03/22/14 00:11	BWR	TAL SAV

Laboratory References:

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

Certification Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-88989-2

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	TX00083	10-31-14

Laboratory: TestAmerica Savannah

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

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14 *
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14 *
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14 *

* Expired certification is currently pending renewal and is considered valid.

Laboratory: TestAmerica Savannah (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

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

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Abby Marlow/Chris Trevino	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-27100-9382.2
Client Contact: Christina Higginbotham	Phone: 281-821-6868	E-Mail: dean.joiner@testamericainc.com		Page: Page 1 of 1
Company: Golder Associates Inc.				Job #: 130-2086
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 DAYS			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide Recycling Center, 6020- Water	Project #: 60004831			
Site: Stewart Creek	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A - Total As, Cd, Pb	6020A - Dissolved - As, Cd, Pb	TOC									Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	D										
2014-SW-022	3-18-14	1021	G	Water	X		X	X		Filtered	for	Dissolved	only						Golder*** : Ship Directly to:
2014-SW-023	3-18-14	0358	G	Water	X		X	X		"			"						TestAmerica Savannah 5102 LaRoch Avenue
Field Blank	3-18-14	1708	G	Water			X												Savannah, GA 31404 Phone (912) 354-7858
Field Blank	3-18-14	1708	G	Water					X										
			G	Water															
			G	Water															Attn: Sample Receiving
			G	Water															!!!!

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-88989-2

Login Number: 88989

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.3
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-88989-2

Login Number: 88989
List Number: 1
Creator: Conner, Keaton

List Source: TestAmerica Savannah
List Creation: 03/19/14 03:32 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received a HNO3 container for Field Blank requesting TOC
Samples are received within Holding Time.	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.	False	Incorrect container for TOC received
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	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 600-88989-3

Job Description: Stewart Creek

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, TX 77073

Attention: Christina Higginbotham

Approved for release.
Cathy L Upton
Project Management Assistant II
3/26/2014 4:15 PM

Designee for
Dean A Joiner, Project Manager II
6310 Rothway Street, Houston, TX, 77040
(713)690-4444
dean.joiner@testamericainc.com
03/26/2014

cc: Brett Forthaus
Mr. Jim Thomas

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Project Manager.

TestAmerica Houston Certifications and Approvals: TX NELAP T104704223-09A-TX, ARDEQ 88-0759, LADEQ 01967, OKDEQ 9503, UT DOH GULF

Comments
No additional comments.

Receipt
The samples were received on 3/19/2014 10:01 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.3º C.

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

METHOD SUMMARY

Client: Golder Associates Inc. Job Number: 600-88989-3

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Grain Size	TAL BUR	ASTM D422	

Lab References:

TAL BUR = TestAmerica Burlington

Method References:

ASTM = ASTM International

METHOD / ANALYST SUMMARY

Client: Golder Associates Inc.

Job Number: 600-88989-3

Method	Analyst	Analyst ID
ASTM D422	Degree, Steven L	SLD

SAMPLE SUMMARY

Client: Golder Associates Inc. Job Number: 600-88989-3

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
600-88989-1	2014-SED-036	Solid	03/18/2014 0938	03/19/2014 1001
600-88989-2	2014-SED-037	Solid	03/18/2014 1008	03/19/2014 1001
600-88989-3	2014-SED-038	Solid	03/18/2014 1058	03/19/2014 1001
600-88989-4	2014-SED-039	Solid	03/18/2014 1150	03/19/2014 1001
600-88989-5	2014-SED-040	Solid	03/18/2014 1232	03/19/2014 1001
600-88989-6	2014-SED-041	Solid	03/18/2014 1320	03/19/2014 1001
600-88989-7	2014-SED-042	Solid	03/18/2014 1400	03/19/2014 1001
600-88989-8	2014-SED-043	Solid	03/18/2014 1434	03/19/2014 1001
600-88989-9	2014-SED-044	Solid	03/18/2014 1512	03/19/2014 1001
600-88989-12	2014-SED-045	Solid	03/18/2014 1547	03/19/2014 1001
600-88989-13	2014-SED-046	Solid	03/18/2014 1626	03/19/2014 1001

SAMPLE RESULTS

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-036

Lab Sample ID: 600-88989-1
Client Matrix: Solid

Date Sampled: 03/18/2014 09:38
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	12.8						%	69927	03/19/2014 15:36	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	27.8						um	69927	03/19/2014 15:36	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	69927	03/19/2014 15:36	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	18.5						um	69927	03/19/2014 15:36	1	SLD
Sand	STL00582	21.0						%	69927	03/19/2014 15:36	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	69927	03/19/2014 15:36	1	SLD
Coarse Sand	STL00583	3.9						%	69927	03/19/2014 15:36	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	10.9						um	69927	03/19/2014 15:36	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	69927	03/19/2014 15:36	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	7.9						um	69927	03/19/2014 15:36	1	SLD
Medium Sand	STL00584	3.2						%	69927	03/19/2014 15:36	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	69927	03/19/2014 15:36	1	SLD
Fine Sand	STL00585	13.9						%	69927	03/19/2014 15:36	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.7						um	69927	03/19/2014 15:36	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	69927	03/19/2014 15:36	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	2.8						um	69927	03/19/2014 15:36	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	95.4						% Passing	69927	03/19/2014 15:36	1	SLD
Silt	STL00586	27.7						%	69927	03/19/2014 15:36	1	SLD
Clay	STL00587	38.5						%	69927	03/19/2014 15:36	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.2						um	69927	03/19/2014 15:36	1	SLD
Sieve Size #4 - Percent Finer	STL01274	87.2						% Passing	69927	03/19/2014 15:36	1	SLD
Sieve Size #10 - Percent Finer	STL01268	83.3						% Passing	69927	03/19/2014 15:36	1	SLD
Sieve Size #20 - Percent Finer	STL01271	81.3						% Passing	69927	03/19/2014 15:36	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-036

Lab Sample ID: 600-88989-1
Client Matrix: Solid

Date Sampled: 03/18/2014 09:38
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	80.1						% Passing	69927	03/19/2014 15:36	1	SLD
Sieve Size #60 - Percent Finer	STL01276	78.5						% Passing	69927	03/19/2014 15:36	1	SLD
Sieve Size #80 - Percent Finer	STL01277	76.4						% Passing	69927	03/19/2014 15:36	1	SLD
Sieve Size #100 - Percent Finer	STL01269	74.3						% Passing	69927	03/19/2014 15:36	1	SLD
Sieve Size #200 - Percent Finer	STL01272	66.2						% Passing	69927	03/19/2014 15:36	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	56.3						% Passing	69927	03/19/2014 15:36	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	48.5						% Passing	69927	03/19/2014 15:36	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	45.2						% Passing	69927	03/19/2014 15:36	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	40.7						% Passing	69927	03/19/2014 15:36	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	38.5						% Passing	69927	03/19/2014 15:36	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	33.8						% Passing	69927	03/19/2014 15:36	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	26.0						% Passing	69927	03/19/2014 15:36	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-037

Lab Sample ID: 600-88989-2
Client Matrix: Solid

Date Sampled: 03/18/2014 10:08
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	1.4						%	69927	03/19/2014 15:42	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	23.9						um	69927	03/19/2014 15:42	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	69927	03/19/2014 15:42	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	16.3						um	69927	03/19/2014 15:42	1	SLD
Sand	STL00582	23.1						%	69927	03/19/2014 15:42	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	69927	03/19/2014 15:42	1	SLD
Coarse Sand	STL00583	14.7						%	69927	03/19/2014 15:42	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	9.8						um	69927	03/19/2014 15:42	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	69927	03/19/2014 15:42	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	7.3						um	69927	03/19/2014 15:42	1	SLD
Medium Sand	STL00584	4.0						%	69927	03/19/2014 15:42	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	69927	03/19/2014 15:42	1	SLD
Fine Sand	STL00585	4.4						%	69927	03/19/2014 15:42	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.4						um	69927	03/19/2014 15:42	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	69927	03/19/2014 15:42	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	2.7						um	69927	03/19/2014 15:42	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	100.0						% Passing	69927	03/19/2014 15:42	1	SLD
Silt	STL00586	27.6						%	69927	03/19/2014 15:42	1	SLD
Clay	STL00587	47.9						%	69927	03/19/2014 15:42	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.2						um	69927	03/19/2014 15:42	1	SLD
Sieve Size #4 - Percent Finer	STL01274	98.6						% Passing	69927	03/19/2014 15:42	1	SLD
Sieve Size #10 - Percent Finer	STL01268	83.9						% Passing	69927	03/19/2014 15:42	1	SLD
Sieve Size #20 - Percent Finer	STL01271	80.5						% Passing	69927	03/19/2014 15:42	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-037

Lab Sample ID: 600-88989-2
Client Matrix: Solid

Date Sampled: 03/18/2014 10:08
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	79.9						% Passing	69927	03/19/2014 15:42	1	SLD
Sieve Size #60 - Percent Finer	STL01276	79.2						% Passing	69927	03/19/2014 15:42	1	SLD
Sieve Size #80 - Percent Finer	STL01277	78.7						% Passing	69927	03/19/2014 15:42	1	SLD
Sieve Size #100 - Percent Finer	STL01269	78.0						% Passing	69927	03/19/2014 15:42	1	SLD
Sieve Size #200 - Percent Finer	STL01272	75.5						% Passing	69927	03/19/2014 15:42	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	72.7						% Passing	69927	03/19/2014 15:42	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	64.0						% Passing	69927	03/19/2014 15:42	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	58.7						% Passing	69927	03/19/2014 15:42	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	52.2						% Passing	69927	03/19/2014 15:42	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	47.9						% Passing	69927	03/19/2014 15:42	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	41.3						% Passing	69927	03/19/2014 15:42	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	32.7						% Passing	69927	03/19/2014 15:42	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-038

Lab Sample ID: 600-88989-3
Client Matrix: Solid

Date Sampled: 03/18/2014 10:58
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	11.2						%	69927	03/19/2014 15:45	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	27.8						um	69927	03/19/2014 15:45	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	69927	03/19/2014 15:45	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	18.4						um	69927	03/19/2014 15:45	1	SLD
Sand	STL00582	28.1						%	69927	03/19/2014 15:45	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	69927	03/19/2014 15:45	1	SLD
Coarse Sand	STL00583	9.4						%	69927	03/19/2014 15:45	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	11.4						um	69927	03/19/2014 15:45	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	69927	03/19/2014 15:45	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.4						um	69927	03/19/2014 15:45	1	SLD
Medium Sand	STL00584	4.6						%	69927	03/19/2014 15:45	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	69927	03/19/2014 15:45	1	SLD
Fine Sand	STL00585	14.1						%	69927	03/19/2014 15:45	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.0						um	69927	03/19/2014 15:45	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	69927	03/19/2014 15:45	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.0						um	69927	03/19/2014 15:45	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	98.5						% Passing	69927	03/19/2014 15:45	1	SLD
Silt	STL00586	35.1						%	69927	03/19/2014 15:45	1	SLD
Clay	STL00587	25.6						%	69927	03/19/2014 15:45	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	69927	03/19/2014 15:45	1	SLD
Sieve Size #4 - Percent Finer	STL01274	88.8						% Passing	69927	03/19/2014 15:45	1	SLD
Sieve Size #10 - Percent Finer	STL01268	79.4						% Passing	69927	03/19/2014 15:45	1	SLD
Sieve Size #20 - Percent Finer	STL01271	76.7						% Passing	69927	03/19/2014 15:45	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-038

Lab Sample ID: 600-88989-3
Client Matrix: Solid

Date Sampled: 03/18/2014 10:58
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	74.8						% Passing	69927	03/19/2014 15:45	1	SLD
Sieve Size #60 - Percent Finer	STL01276	72.0						% Passing	69927	03/19/2014 15:45	1	SLD
Sieve Size #80 - Percent Finer	STL01277	69.4						% Passing	69927	03/19/2014 15:45	1	SLD
Sieve Size #100 - Percent Finer	STL01269	67.3						% Passing	69927	03/19/2014 15:45	1	SLD
Sieve Size #200 - Percent Finer	STL01272	60.7						% Passing	69927	03/19/2014 15:45	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	47.0						% Passing	69927	03/19/2014 15:45	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	41.5						% Passing	69927	03/19/2014 15:45	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	31.2						% Passing	69927	03/19/2014 15:45	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	27.5						% Passing	69927	03/19/2014 15:45	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	25.6						% Passing	69927	03/19/2014 15:45	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	22.7						% Passing	69927	03/19/2014 15:45	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	18.0						% Passing	69927	03/19/2014 15:45	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-039

Lab Sample ID: 600-88989-4
Client Matrix: Solid

Date Sampled: 03/18/2014 11:50
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	42.0						%	69927	03/19/2014 15:48	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	36.7						um	69927	03/19/2014 15:48	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	69927	03/19/2014 15:48	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	23.2						um	69927	03/19/2014 15:48	1	SLD
Sand	STL00582	49.5						%	69927	03/19/2014 15:48	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	69927	03/19/2014 15:48	1	SLD
Coarse Sand	STL00583	35.6						%	69927	03/19/2014 15:48	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	13.4						um	69927	03/19/2014 15:48	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	69927	03/19/2014 15:48	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.6						um	69927	03/19/2014 15:48	1	SLD
Medium Sand	STL00584	13.6						%	69927	03/19/2014 15:48	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	69927	03/19/2014 15:48	1	SLD
Fine Sand	STL00585	0.2						%	69927	03/19/2014 15:48	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.5						um	69927	03/19/2014 15:48	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	69927	03/19/2014 15:48	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.3						um	69927	03/19/2014 15:48	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	89.5						% Passing	69927	03/19/2014 15:48	1	SLD
Silt	STL00586	7.5						%	69927	03/19/2014 15:48	1	SLD
Clay	STL00587	1.1						%	69927	03/19/2014 15:48	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	69927	03/19/2014 15:48	1	SLD
Sieve Size #4 - Percent Finer	STL01274	58.0						% Passing	69927	03/19/2014 15:48	1	SLD
Sieve Size #10 - Percent Finer	STL01268	22.4						% Passing	69927	03/19/2014 15:48	1	SLD
Sieve Size #20 - Percent Finer	STL01271	10.1						% Passing	69927	03/19/2014 15:48	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-039

Lab Sample ID: 600-88989-4
Client Matrix: Solid

Date Sampled: 03/18/2014 11:50
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	8.8						% Passing	69927	03/19/2014 15:48	1	SLD
Sieve Size #60 - Percent Finer	STL01276	8.6						% Passing	69927	03/19/2014 15:48	1	SLD
Sieve Size #80 - Percent Finer	STL01277	8.6						% Passing	69927	03/19/2014 15:48	1	SLD
Sieve Size #100 - Percent Finer	STL01269	8.6						% Passing	69927	03/19/2014 15:48	1	SLD
Sieve Size #200 - Percent Finer	STL01272	8.6						% Passing	69927	03/19/2014 15:48	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	1.1						% Passing	69927	03/19/2014 15:48	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	1.1						% Passing	69927	03/19/2014 15:48	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	1.1						% Passing	69927	03/19/2014 15:48	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	1.1						% Passing	69927	03/19/2014 15:48	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	1.1						% Passing	69927	03/19/2014 15:48	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	1.0						% Passing	69927	03/19/2014 15:48	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	1.0						% Passing	69927	03/19/2014 15:48	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-040

Lab Sample ID: 600-88989-5
Client Matrix: Solid

Date Sampled: 03/18/2014 12:32
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	39.5						%	69927	03/19/2014 15:51	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	30.9						um	69927	03/19/2014 15:51	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	69927	03/19/2014 15:51	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	19.6						um	69927	03/19/2014 15:51	1	SLD
Sand	STL00582	32.3						%	69927	03/19/2014 15:51	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	69927	03/19/2014 15:51	1	SLD
Coarse Sand	STL00583	19.6						%	69927	03/19/2014 15:51	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	11.5						um	69927	03/19/2014 15:51	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	69927	03/19/2014 15:51	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.2						um	69927	03/19/2014 15:51	1	SLD
Medium Sand	STL00584	7.1						%	69927	03/19/2014 15:51	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	69927	03/19/2014 15:51	1	SLD
Fine Sand	STL00585	5.6						%	69927	03/19/2014 15:51	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.9						um	69927	03/19/2014 15:51	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	69927	03/19/2014 15:51	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.0						um	69927	03/19/2014 15:51	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	89.7						% Passing	69927	03/19/2014 15:51	1	SLD
Silt	STL00586	7.6						%	69927	03/19/2014 15:51	1	SLD
Clay	STL00587	20.6						%	69927	03/19/2014 15:51	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	69927	03/19/2014 15:51	1	SLD
Sieve Size #4 - Percent Finer	STL01274	60.5						% Passing	69927	03/19/2014 15:51	1	SLD
Sieve Size #10 - Percent Finer	STL01268	40.9						% Passing	69927	03/19/2014 15:51	1	SLD
Sieve Size #20 - Percent Finer	STL01271	35.3						% Passing	69927	03/19/2014 15:51	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-040

Lab Sample ID: 600-88989-5
Client Matrix: Solid

Date Sampled: 03/18/2014 12:32
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	33.8						% Passing	69927	03/19/2014 15:51	1	SLD
Sieve Size #60 - Percent Finer	STL01276	32.8						% Passing	69927	03/19/2014 15:51	1	SLD
Sieve Size #80 - Percent Finer	STL01277	31.2						% Passing	69927	03/19/2014 15:51	1	SLD
Sieve Size #100 - Percent Finer	STL01269	30.1						% Passing	69927	03/19/2014 15:51	1	SLD
Sieve Size #200 - Percent Finer	STL01272	28.2						% Passing	69927	03/19/2014 15:51	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	26.6						% Passing	69927	03/19/2014 15:51	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	25.9						% Passing	69927	03/19/2014 15:51	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	24.4						% Passing	69927	03/19/2014 15:51	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	21.4						% Passing	69927	03/19/2014 15:51	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	20.6						% Passing	69927	03/19/2014 15:51	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	18.3						% Passing	69927	03/19/2014 15:51	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	13.0						% Passing	69927	03/19/2014 15:51	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-041

Lab Sample ID: 600-88989-6
Client Matrix: Solid

Date Sampled: 03/18/2014 13:20
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	19.0						%	69927	03/19/2014 15:54	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	36.0						um	69927	03/19/2014 15:54	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	69927	03/19/2014 15:54	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	22.8						um	69927	03/19/2014 15:54	1	SLD
Sand	STL00582	53.0						%	69927	03/19/2014 15:54	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	69927	03/19/2014 15:54	1	SLD
Coarse Sand	STL00583	35.1						%	69927	03/19/2014 15:54	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	13.2						um	69927	03/19/2014 15:54	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	69927	03/19/2014 15:54	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.2						um	69927	03/19/2014 15:54	1	SLD
Medium Sand	STL00584	17.6						%	69927	03/19/2014 15:54	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	69927	03/19/2014 15:54	1	SLD
Fine Sand	STL00585	0.3						%	69927	03/19/2014 15:54	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.7						um	69927	03/19/2014 15:54	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	69927	03/19/2014 15:54	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.4						um	69927	03/19/2014 15:54	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	97.7						% Passing	69927	03/19/2014 15:54	1	SLD
Silt	STL00586	26.0						%	69927	03/19/2014 15:54	1	SLD
Clay	STL00587	2.0						%	69927	03/19/2014 15:54	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	69927	03/19/2014 15:54	1	SLD
Sieve Size #4 - Percent Finer	STL01274	81.0						% Passing	69927	03/19/2014 15:54	1	SLD
Sieve Size #10 - Percent Finer	STL01268	45.9						% Passing	69927	03/19/2014 15:54	1	SLD
Sieve Size #20 - Percent Finer	STL01271	30.3						% Passing	69927	03/19/2014 15:54	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-041

Lab Sample ID: 600-88989-6
Client Matrix: Solid

Date Sampled: 03/18/2014 13:20
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	28.3						% Passing	69927	03/19/2014 15:54	1	SLD
Sieve Size #60 - Percent Finer	STL01276	28.2						% Passing	69927	03/19/2014 15:54	1	SLD
Sieve Size #80 - Percent Finer	STL01277	28.1						% Passing	69927	03/19/2014 15:54	1	SLD
Sieve Size #100 - Percent Finer	STL01269	28.1						% Passing	69927	03/19/2014 15:54	1	SLD
Sieve Size #200 - Percent Finer	STL01272	28.0						% Passing	69927	03/19/2014 15:54	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	3.0						% Passing	69927	03/19/2014 15:54	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	3.0						% Passing	69927	03/19/2014 15:54	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	3.0						% Passing	69927	03/19/2014 15:54	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	2.5						% Passing	69927	03/19/2014 15:54	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	2.0						% Passing	69927	03/19/2014 15:54	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	1.5						% Passing	69927	03/19/2014 15:54	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	1.1						% Passing	69927	03/19/2014 15:54	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-042

Lab Sample ID: 600-88989-7
Client Matrix: Solid

Date Sampled: 03/18/2014 14:00
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	46.6						%	69927	03/19/2014 15:56	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	36.0						um	69927	03/19/2014 15:56	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	69927	03/19/2014 15:56	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	22.8						um	69927	03/19/2014 15:56	1	SLD
Sand	STL00582	42.6						%	69927	03/19/2014 15:56	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	69927	03/19/2014 15:56	1	SLD
Coarse Sand	STL00583	30.3						%	69927	03/19/2014 15:56	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	13.2						um	69927	03/19/2014 15:56	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	69927	03/19/2014 15:56	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.2						um	69927	03/19/2014 15:56	1	SLD
Medium Sand	STL00584	11.4						%	69927	03/19/2014 15:56	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	69927	03/19/2014 15:56	1	SLD
Fine Sand	STL00585	0.9						%	69927	03/19/2014 15:56	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.7						um	69927	03/19/2014 15:56	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	69927	03/19/2014 15:56	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.2						um	69927	03/19/2014 15:56	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	86.3						% Passing	69927	03/19/2014 15:56	1	SLD
Silt	STL00586	9.0						%	69927	03/19/2014 15:56	1	SLD
Clay	STL00587	1.8						%	69927	03/19/2014 15:56	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	69927	03/19/2014 15:56	1	SLD
Sieve Size #4 - Percent Finer	STL01274	53.4						% Passing	69927	03/19/2014 15:56	1	SLD
Sieve Size #10 - Percent Finer	STL01268	23.1						% Passing	69927	03/19/2014 15:56	1	SLD
Sieve Size #20 - Percent Finer	STL01271	13.7						% Passing	69927	03/19/2014 15:56	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-042

Lab Sample ID: 600-88989-7
Client Matrix: Solid

Date Sampled: 03/18/2014 14:00
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	11.7						% Passing	69927	03/19/2014 15:56	1	SLD
Sieve Size #60 - Percent Finer	STL01276	11.5						% Passing	69927	03/19/2014 15:56	1	SLD
Sieve Size #80 - Percent Finer	STL01277	11.4						% Passing	69927	03/19/2014 15:56	1	SLD
Sieve Size #100 - Percent Finer	STL01269	11.3						% Passing	69927	03/19/2014 15:56	1	SLD
Sieve Size #200 - Percent Finer	STL01272	10.8						% Passing	69927	03/19/2014 15:56	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	2.7						% Passing	69927	03/19/2014 15:56	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	2.7						% Passing	69927	03/19/2014 15:56	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	2.3						% Passing	69927	03/19/2014 15:56	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	2.3						% Passing	69927	03/19/2014 15:56	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	1.9						% Passing	69927	03/19/2014 15:56	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	1.4						% Passing	69927	03/19/2014 15:56	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	1						% Passing	69927	03/19/2014 15:56	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-043

Lab Sample ID: 600-88989-8
Client Matrix: Solid

Date Sampled: 03/18/2014 14:34
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	2.9						%	69927	03/19/2014 15:58	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	31.1						um	69927	03/19/2014 15:58	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	69927	03/19/2014 15:58	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	19.9						um	69927	03/19/2014 15:58	1	SLD
Sand	STL00582	63.9						%	69927	03/19/2014 15:58	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	69927	03/19/2014 15:58	1	SLD
Coarse Sand	STL00583	20.2						%	69927	03/19/2014 15:58	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	11.6						um	69927	03/19/2014 15:58	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	69927	03/19/2014 15:58	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.0						um	69927	03/19/2014 15:58	1	SLD
Medium Sand	STL00584	31.0						%	69927	03/19/2014 15:58	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	69927	03/19/2014 15:58	1	SLD
Fine Sand	STL00585	12.7						%	69927	03/19/2014 15:58	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.9						um	69927	03/19/2014 15:58	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	69927	03/19/2014 15:58	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	2.9						um	69927	03/19/2014 15:58	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	100.0						% Passing	69927	03/19/2014 15:58	1	SLD
Silt	STL00586	9.1						%	69927	03/19/2014 15:58	1	SLD
Clay	STL00587	24.1						%	69927	03/19/2014 15:58	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	69927	03/19/2014 15:58	1	SLD
Sieve Size #4 - Percent Finer	STL01274	97.1						% Passing	69927	03/19/2014 15:58	1	SLD
Sieve Size #10 - Percent Finer	STL01268	76.9						% Passing	69927	03/19/2014 15:58	1	SLD
Sieve Size #20 - Percent Finer	STL01271	57.2						% Passing	69927	03/19/2014 15:58	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-043

Lab Sample ID: 600-88989-8
Client Matrix: Solid

Date Sampled: 03/18/2014 14:34
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	45.9						% Passing	69927	03/19/2014 15:58	1	SLD
Sieve Size #60 - Percent Finer	STL01276	39.7						% Passing	69927	03/19/2014 15:58	1	SLD
Sieve Size #80 - Percent Finer	STL01277	37.4						% Passing	69927	03/19/2014 15:58	1	SLD
Sieve Size #100 - Percent Finer	STL01269	35.9						% Passing	69927	03/19/2014 15:58	1	SLD
Sieve Size #200 - Percent Finer	STL01272	33.2						% Passing	69927	03/19/2014 15:58	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	31.3						% Passing	69927	03/19/2014 15:58	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	29.5						% Passing	69927	03/19/2014 15:58	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	27.7						% Passing	69927	03/19/2014 15:58	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	25.9						% Passing	69927	03/19/2014 15:58	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	24.1						% Passing	69927	03/19/2014 15:58	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	20.3						% Passing	69927	03/19/2014 15:58	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	15.7						% Passing	69927	03/19/2014 15:58	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-044

Lab Sample ID: 600-88989-9
Client Matrix: Solid

Date Sampled: 03/18/2014 15:12
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	0.6						%	69927	03/19/2014 16:01	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	24.7						um	69927	03/19/2014 16:01	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	69927	03/19/2014 16:01	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	16.0						um	69927	03/19/2014 16:01	1	SLD
Sand	STL00582	25.2						%	69927	03/19/2014 16:01	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	69927	03/19/2014 16:01	1	SLD
Coarse Sand	STL00583	0.3						%	69927	03/19/2014 16:01	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	9.7						um	69927	03/19/2014 16:01	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	69927	03/19/2014 16:01	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	7.1						um	69927	03/19/2014 16:01	1	SLD
Medium Sand	STL00584	2.5						%	69927	03/19/2014 16:01	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	69927	03/19/2014 16:01	1	SLD
Fine Sand	STL00585	22.4						%	69927	03/19/2014 16:01	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.0						um	69927	03/19/2014 16:01	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	69927	03/19/2014 16:01	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	2.7						um	69927	03/19/2014 16:01	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	100.0						% Passing	69927	03/19/2014 16:01	1	SLD
Silt	STL00586	30.8						%	69927	03/19/2014 16:01	1	SLD
Clay	STL00587	43.4						%	69927	03/19/2014 16:01	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.2						um	69927	03/19/2014 16:01	1	SLD
Sieve Size #4 - Percent Finer	STL01274	99.4						% Passing	69927	03/19/2014 16:01	1	SLD
Sieve Size #10 - Percent Finer	STL01268	99.1						% Passing	69927	03/19/2014 16:01	1	SLD
Sieve Size #20 - Percent Finer	STL01271	98.1						% Passing	69927	03/19/2014 16:01	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-044

Lab Sample ID: 600-88989-9
Client Matrix: Solid

Date Sampled: 03/18/2014 15:12
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	96.6						% Passing	69927	03/19/2014 16:01	1	SLD
Sieve Size #60 - Percent Finer	STL01276	93.0						% Passing	69927	03/19/2014 16:01	1	SLD
Sieve Size #80 - Percent Finer	STL01277	86.9						% Passing	69927	03/19/2014 16:01	1	SLD
Sieve Size #100 - Percent Finer	STL01269	82.2						% Passing	69927	03/19/2014 16:01	1	SLD
Sieve Size #200 - Percent Finer	STL01272	74.2						% Passing	69927	03/19/2014 16:01	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	57.7						% Passing	69927	03/19/2014 16:01	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	55.0						% Passing	69927	03/19/2014 16:01	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	50.5						% Passing	69927	03/19/2014 16:01	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	46.9						% Passing	69927	03/19/2014 16:01	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	43.4						% Passing	69927	03/19/2014 16:01	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	37.0						% Passing	69927	03/19/2014 16:01	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	28.9						% Passing	69927	03/19/2014 16:01	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-045

Lab Sample ID: 600-88989-12
Client Matrix: Solid

Date Sampled: 03/18/2014 15:47
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	20.4						%	69927	03/19/2014 16:06	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	32.9						um	69927	03/19/2014 16:06	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	69927	03/19/2014 16:06	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	20.9						um	69927	03/19/2014 16:06	1	SLD
Sand	STL00582	51.3						%	69927	03/19/2014 16:06	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	69927	03/19/2014 16:06	1	SLD
Coarse Sand	STL00583	26.3						%	69927	03/19/2014 16:06	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.3						um	69927	03/19/2014 16:06	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	69927	03/19/2014 16:06	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.7						um	69927	03/19/2014 16:06	1	SLD
Medium Sand	STL00584	22.8						%	69927	03/19/2014 16:06	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	69927	03/19/2014 16:06	1	SLD
Fine Sand	STL00585	2.2						%	69927	03/19/2014 16:06	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.4						um	69927	03/19/2014 16:06	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	69927	03/19/2014 16:06	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.1						um	69927	03/19/2014 16:06	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	94.3						% Passing	69927	03/19/2014 16:06	1	SLD
Silt	STL00586	19.6						%	69927	03/19/2014 16:06	1	SLD
Clay	STL00587	8.7						%	69927	03/19/2014 16:06	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	69927	03/19/2014 16:06	1	SLD
Sieve Size #4 - Percent Finer	STL01274	79.6						% Passing	69927	03/19/2014 16:06	1	SLD
Sieve Size #10 - Percent Finer	STL01268	53.3						% Passing	69927	03/19/2014 16:06	1	SLD
Sieve Size #20 - Percent Finer	STL01271	37.9						% Passing	69927	03/19/2014 16:06	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-045

Lab Sample ID: 600-88989-12
Client Matrix: Solid

Date Sampled: 03/18/2014 15:47
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	30.5						% Passing	69927	03/19/2014 16:06	1	SLD
Sieve Size #60 - Percent Finer	STL01276	29.2						% Passing	69927	03/19/2014 16:06	1	SLD
Sieve Size #80 - Percent Finer	STL01277	28.9						% Passing	69927	03/19/2014 16:06	1	SLD
Sieve Size #100 - Percent Finer	STL01269	28.7						% Passing	69927	03/19/2014 16:06	1	SLD
Sieve Size #200 - Percent Finer	STL01272	28.3						% Passing	69927	03/19/2014 16:06	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	12.1						% Passing	69927	03/19/2014 16:06	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	11.6						% Passing	69927	03/19/2014 16:06	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	10.2						% Passing	69927	03/19/2014 16:06	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	9.7						% Passing	69927	03/19/2014 16:06	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	8.7						% Passing	69927	03/19/2014 16:06	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	7.1						% Passing	69927	03/19/2014 16:06	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	5.1						% Passing	69927	03/19/2014 16:06	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-046

Lab Sample ID: 600-88989-13
Client Matrix: Solid

Date Sampled: 03/18/2014 16:26
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	37.0						%	69927	03/19/2014 16:09	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	34.3						um	69927	03/19/2014 16:09	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	69927	03/19/2014 16:09	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	21.8						um	69927	03/19/2014 16:09	1	SLD
Sand	STL00582	32.8						%	69927	03/19/2014 16:09	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	69927	03/19/2014 16:09	1	SLD
Coarse Sand	STL00583	21.8						%	69927	03/19/2014 16:09	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.7						um	69927	03/19/2014 16:09	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	69927	03/19/2014 16:09	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.0						um	69927	03/19/2014 16:09	1	SLD
Medium Sand	STL00584	9.5						%	69927	03/19/2014 16:09	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	69927	03/19/2014 16:09	1	SLD
Fine Sand	STL00585	1.5						%	69927	03/19/2014 16:09	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.3						um	69927	03/19/2014 16:09	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	69927	03/19/2014 16:09	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.3						um	69927	03/19/2014 16:09	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	87.9						% Passing	69927	03/19/2014 16:09	1	SLD
Silt	STL00586	25.8						%	69927	03/19/2014 16:09	1	SLD
Clay	STL00587	4.4						%	69927	03/19/2014 16:09	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	69927	03/19/2014 16:09	1	SLD
Sieve Size #4 - Percent Finer	STL01274	63.0						% Passing	69927	03/19/2014 16:09	1	SLD
Sieve Size #10 - Percent Finer	STL01268	41.2						% Passing	69927	03/19/2014 16:09	1	SLD
Sieve Size #20 - Percent Finer	STL01271	33.0						% Passing	69927	03/19/2014 16:09	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-88989-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek

Client Sample ID: 2014-SED-046

Lab Sample ID: 600-88989-13
Client Matrix: Solid

Date Sampled: 03/18/2014 16:26
Date Received: 03/19/2014 10:01

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	31.7						% Passing	69927	03/19/2014 16:09	1	SLD
Sieve Size #60 - Percent Finer	STL01276	31.4						% Passing	69927	03/19/2014 16:09	1	SLD
Sieve Size #80 - Percent Finer	STL01277	31.0						% Passing	69927	03/19/2014 16:09	1	SLD
Sieve Size #100 - Percent Finer	STL01269	30.7						% Passing	69927	03/19/2014 16:09	1	SLD
Sieve Size #200 - Percent Finer	STL01272	30.2						% Passing	69927	03/19/2014 16:09	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	6.9						% Passing	69927	03/19/2014 16:09	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	6.5						% Passing	69927	03/19/2014 16:09	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	5.7						% Passing	69927	03/19/2014 16:09	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	5.3						% Passing	69927	03/19/2014 16:09	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	4.4						% Passing	69927	03/19/2014 16:09	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	3.9						% Passing	69927	03/19/2014 16:09	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	2.7						% Passing	69927	03/19/2014 16:09	1	SLD

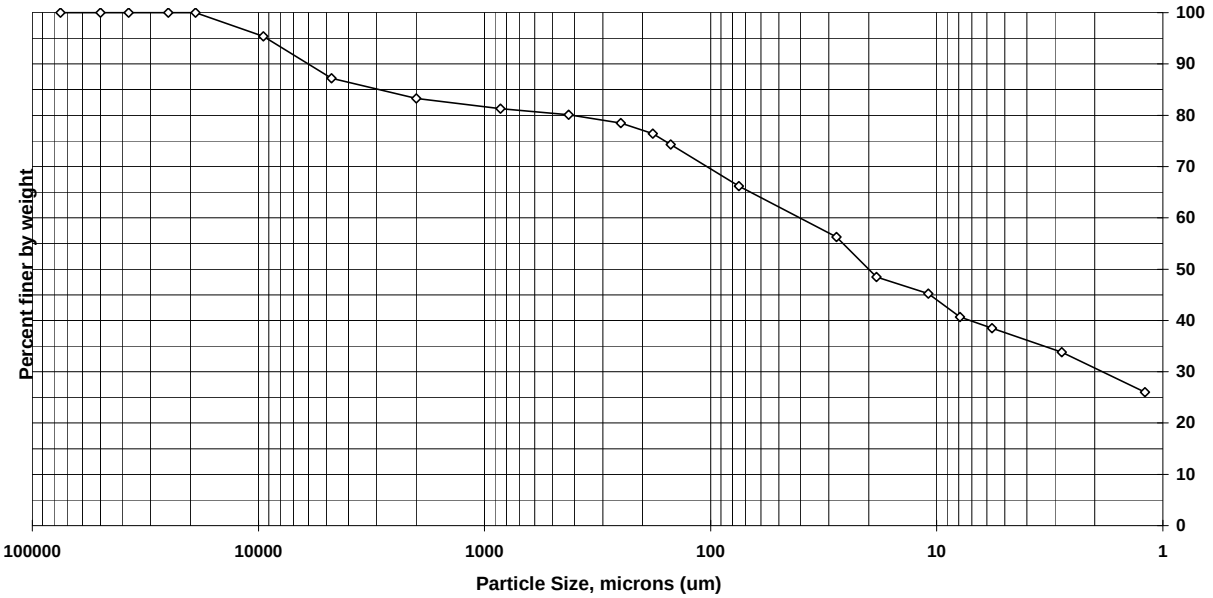
Particle Size of Soils by ASTM D422

				Date Received:	3/19/2014
Sample ID:	2014-SED-036	**Percent Solids:**	62.1%	**Start Date:**	3/19/2014
Lab ID:	600-88989-C-1	**Specific Gravity:**	2.650	**End Date:**	3/26/2014

Shape (> #10): sub angular

Non-soil material: plant,wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	95.4	4.6
#4	4750	87.2	8.2
#10	2000	83.3	3.9
#20	850	81.3	2.0
#40	425	80.1	1.2
#60	250	78.5	1.6
#80	180	76.4	2.1
#100	150	74.3	2.1
#200	75	66.2	8.1
Hyd1	27.8	56.3	9.9
Hyd2	18.5	48.5	7.8
Hyd3	10.9	45.2	3.3
Hyd4	7.9	40.7	4.5
Hyd5	5.7	38.5	2.2
Hyd6	2.8	33.8	4.7
Hyd7	1.2	26.0	7.8

Soil Classification	Percent of sample
Gravel	12.8
Sand	21.0
Coarse Sand	3.9
Medium Sand	3.2
Fine Sand	13.9
Silt	27.7
Clay	38.5

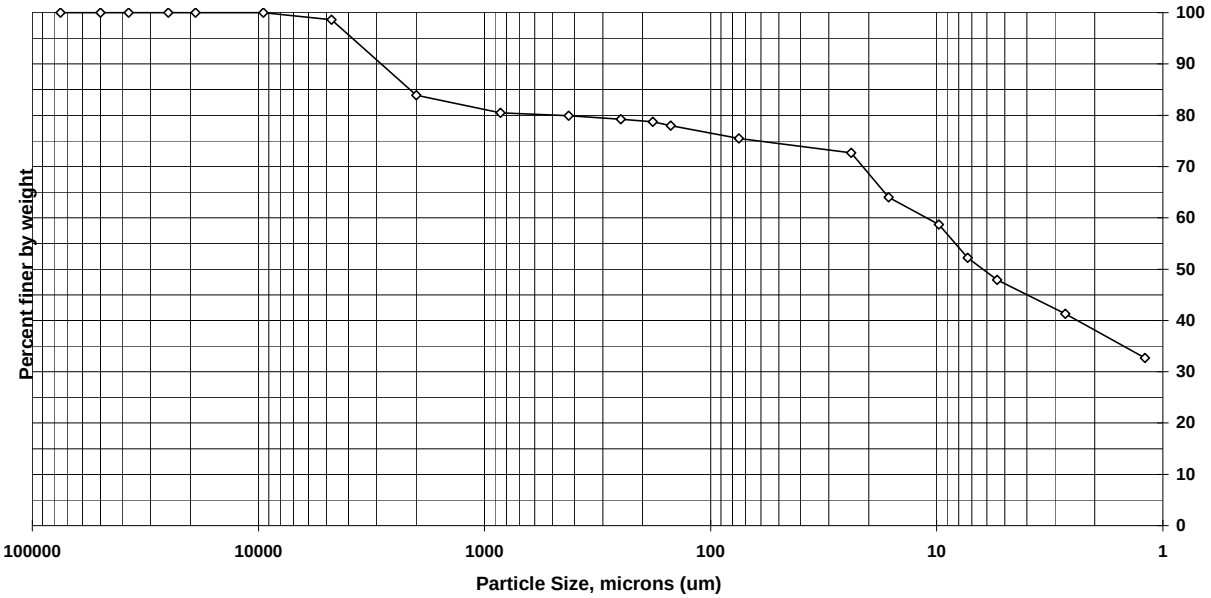
Particle Size of Soils by ASTM D422

				Date Received:	3/19/2014
Sample ID:	2014-SED-037	**Percent Solids:**	61.9%	**Start Date:**	3/19/2014
Lab ID:	600-88989-C-2	**Specific Gravity:**	2.650	**End Date:**	3/26/2014

Shape (> #10): rounded

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	98.6	1.4
#10	2000	83.9	14.7
#20	850	80.5	3.4
#40	425	79.9	0.6
#60	250	79.2	0.7
#80	180	78.7	0.5
#100	150	78.0	0.7
#200	75	75.5	2.5
Hyd1	23.9	72.7	2.8
Hyd2	16.3	64.0	8.7
Hyd3	9.8	58.7	5.3
Hyd4	7.3	52.2	6.5
Hyd5	5.4	47.9	4.3
Hyd6	2.7	41.3	6.6
Hyd7	1.2	32.7	8.6

Soil Classification	Percent of sample
Gravel	1.4
Sand	23.1
Coarse Sand	14.7
Medium Sand	4.0
Fine Sand	4.4
Silt	27.6
Clay	47.9

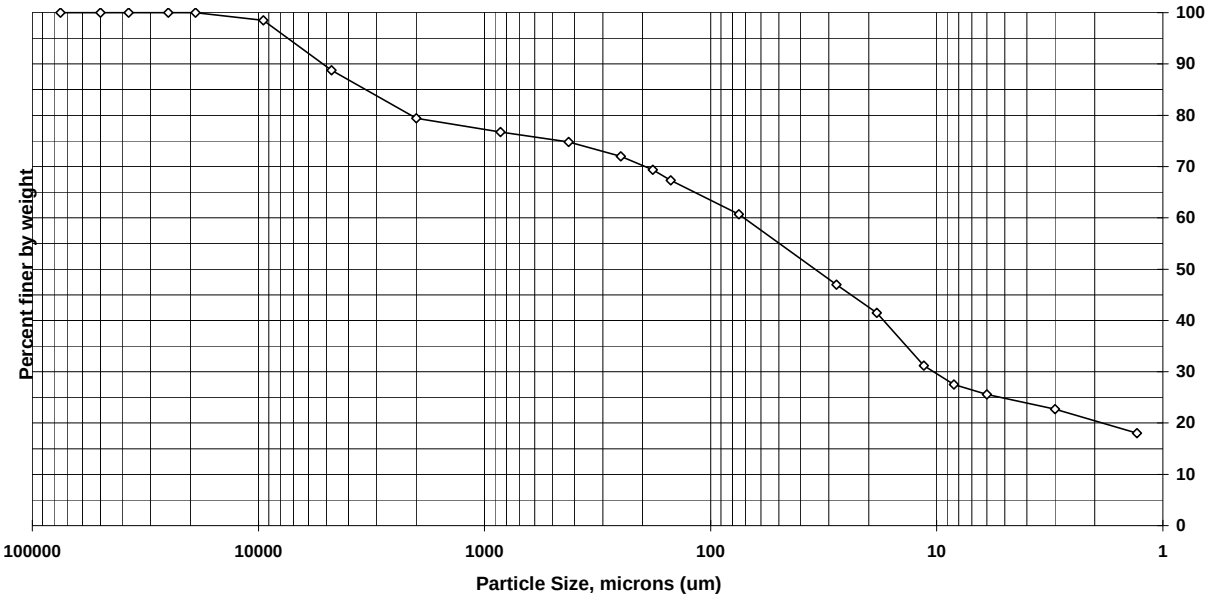
Particle Size of Soils by ASTM D422

				Date Received:	3/19/2014
Sample ID:	2014-SED-038	**Percent Solids:**	70.5%	**Start Date:**	3/19/2014
Lab ID:	600-88989-C-3	**Specific Gravity:**	2.650	**End Date:**	3/26/2014

Shape (> #10): rounded

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	98.5	1.5
#4	4750	88.8	9.7
#10	2000	79.4	9.4
#20	850	76.7	2.7
#40	425	74.8	1.9
#60	250	72.0	2.8
#80	180	69.4	2.6
#100	150	67.3	2.1
#200	75	60.7	6.6
Hyd1	27.8	47.0	13.7
Hyd2	18.4	41.5	5.5
Hyd3	11.4	31.2	10.3
Hyd4	8.4	27.5	3.7
Hyd5	6	25.6	1.9
Hyd6	3	22.7	2.9
Hyd7	1.3	18.0	4.7

Soil Classification	Percent of sample
Gravel	11.2
Sand	28.1
Coarse Sand	9.4
Medium Sand	4.6
Fine Sand	14.1
Silt	35.1
Clay	25.6

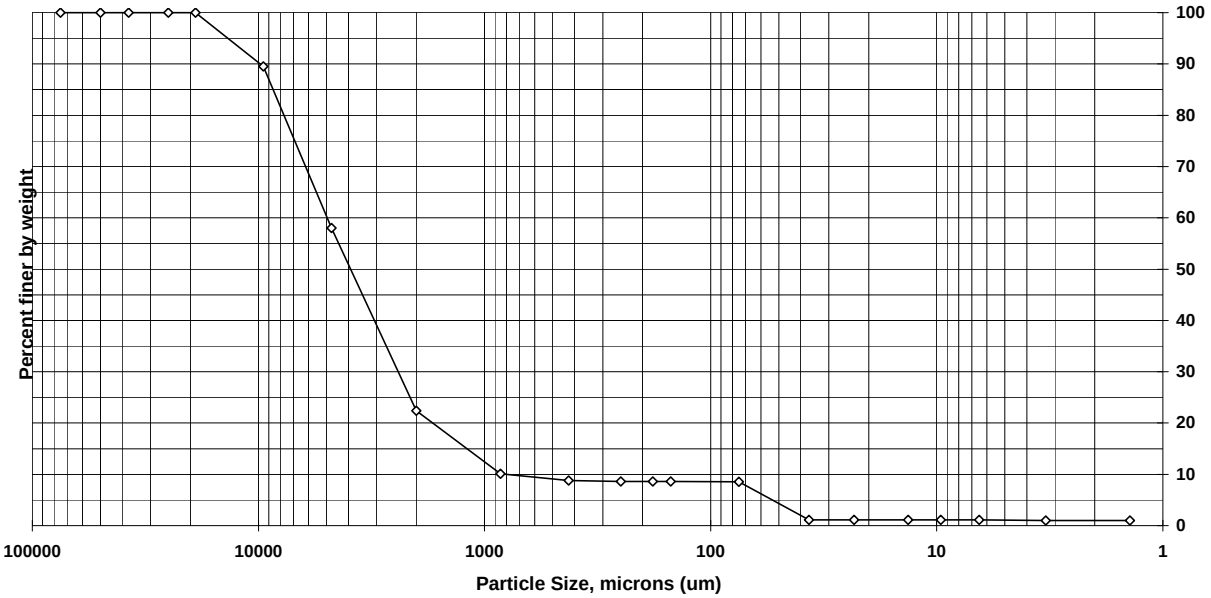
Particle Size of Soils by ASTM D422

				Date Received:	3/19/2014
Sample ID:	2014-SED-039	**Percent Solids:**	93.0%	**Start Date:**	3/19/2014
Lab ID:	600-88989-C-4	**Specific Gravity:**	2.650	**End Date:**	3/26/2014

Shape (> #10): subangular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	89.5	10.5
#4	4750	58.0	31.5
#10	2000	22.4	35.6
#20	850	10.1	12.3
#40	425	8.8	1.3
#60	250	8.6	0.1
#80	180	8.6	0.0
#100	150	8.6	0.0
#200	75	8.6	0.0
Hyd1	36.7	1.1	7.5
Hyd2	23.2	1.1	0.0
Hyd3	13.4	1.1	0.0
Hyd4	9.6	1.1	0.0
Hyd5	6.5	1.1	0.0
Hyd6	3.3	1.0	0.1
Hyd7	1.4	1.0	0.0

Soil Classification	Percent of sample
Gravel	42.0
Sand	49.5
Coarse Sand	35.6
Medium Sand	13.6
Fine Sand	0.2
Silt	7.5
Clay	1.1

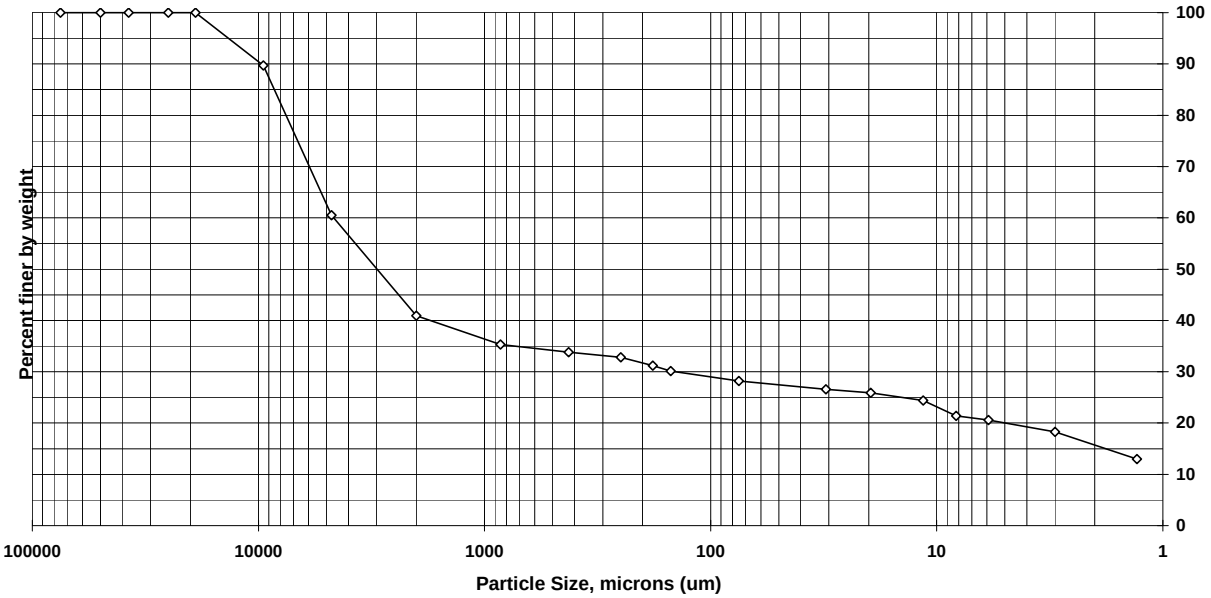
Particle Size of Soils by ASTM D422

				Date Received:	3/19/2014
Sample ID:	2014-SED-040	**Percent Solids:**	72.9%	**Start Date:**	3/19/2014
Lab ID:	600-88989-C-5	**Specific Gravity:**	2.650	**End Date:**	3/26/2014

Shape (> #10): angular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	89.7	10.3
#4	4750	60.5	29.2
#10	2000	40.9	19.6
#20	850	35.3	5.6
#40	425	33.8	1.5
#60	250	32.8	1.0
#80	180	31.2	1.6
#100	150	30.1	1.1
#200	75	28.2	1.9
Hyd1	30.9	26.6	1.6
Hyd2	19.6	25.9	0.7
Hyd3	11.5	24.4	1.5
Hyd4	8.2	21.4	3.0
Hyd5	5.9	20.6	0.8
Hyd6	3	18.3	2.3
Hyd7	1.3	13.0	5.3

Soil Classification	Percent of sample
Gravel	39.5
Sand	32.3
Coarse Sand	19.6
Medium Sand	7.1
Fine Sand	5.6
Silt	7.6
Clay	20.6

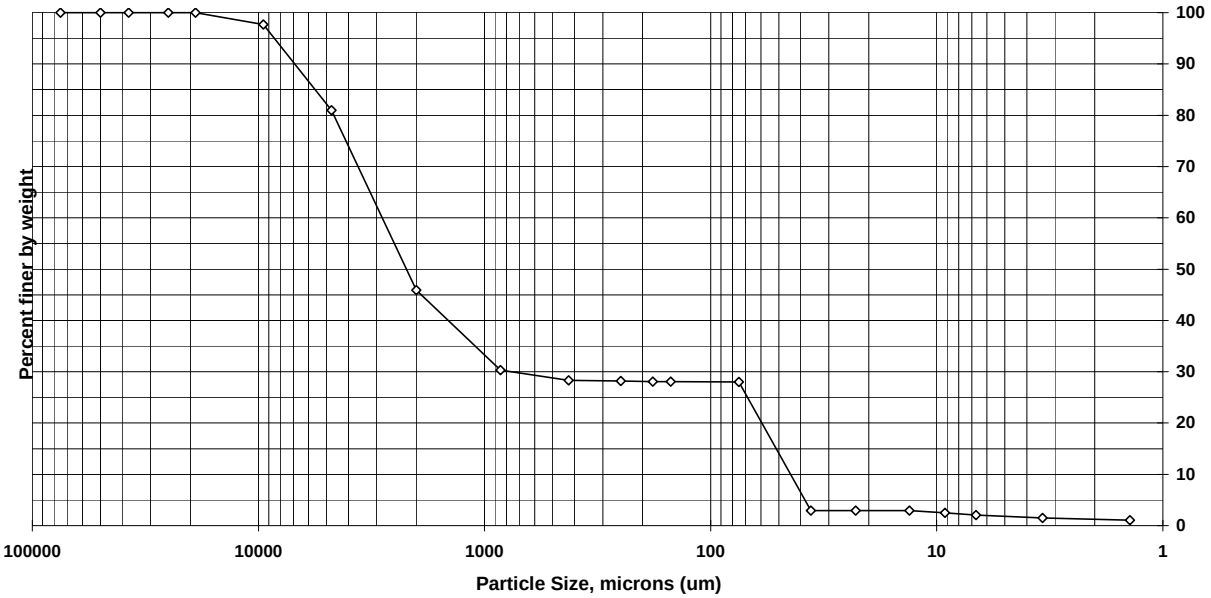
Particle Size of Soils by ASTM D422

				Date Received:	3/19/2014
Sample ID:	2014-SED-041	**Percent Solids:**	86.9%	**Start Date:**	3/19/2014
Lab ID:	600-88989-C-6	**Specific Gravity:**	2.650	**End Date:**	3/26/2014

Shape (> #10): angular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	97.7	2.3
#4	4750	81.0	16.7
#10	2000	45.9	35.1
#20	850	30.3	15.6
#40	425	28.3	2.0
#60	250	28.2	0.1
#80	180	28.1	0.1
#100	150	28.1	0.0
#200	75	28.0	0.1
Hyd1	36	3.0	25.1
Hyd2	22.8	3.0	0.0
Hyd3	13.2	3.0	0.0
Hyd4	9.2	2.5	0.5
Hyd5	6.7	2.0	0.5
Hyd6	3.4	1.5	0.5
Hyd7	1.4	1.1	0.5

Soil Classification	Percent of sample
Gravel	19.0
Sand	53.0
Coarse Sand	35.1
Medium Sand	17.6
Fine Sand	0.3
Silt	26.0
Clay	2.0

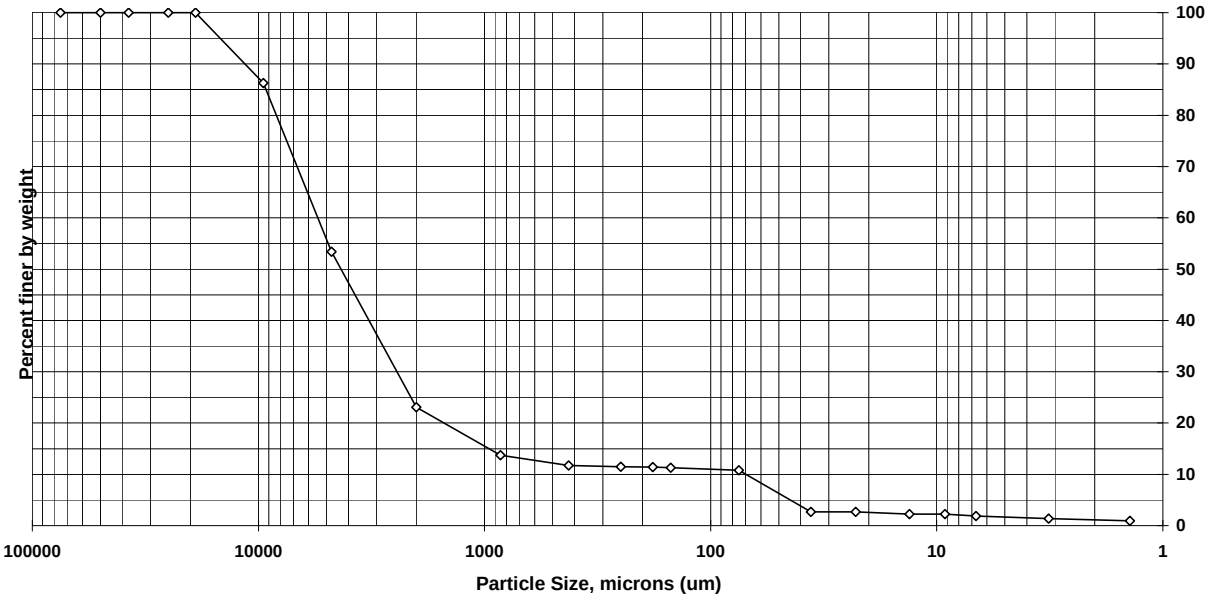
Particle Size of Soils by ASTM D422

				Date Received:	3/19/2014
Sample ID:	2014-SED-042	**Percent Solids:**	92.6%	**Start Date:**	3/19/2014
Lab ID:	600-88989-C-7	**Specific Gravity:**	2.650	**End Date:**	3/26/2014

Shape (> #10): angular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	86.3	13.7
#4	4750	53.4	32.9
#10	2000	23.1	30.3
#20	850	13.7	9.4
#40	425	11.7	2.0
#60	250	11.5	0.2
#80	180	11.4	0.1
#100	150	11.3	0.1
#200	75	10.8	0.5
Hyd1	36	2.7	8.1
Hyd2	22.8	2.7	0.0
Hyd3	13.2	2.3	0.4
Hyd4	9.2	2.3	0.0
Hyd5	6.7	1.9	0.4
Hyd6	3.2	1.4	0.5
Hyd7	1.4	1.0	0.4

Soil Classification	Percent of sample
Gravel	46.6
Sand	42.6
Coarse Sand	30.3
Medium Sand	11.4
Fine Sand	0.9
Silt	9.0
Clay	1.8

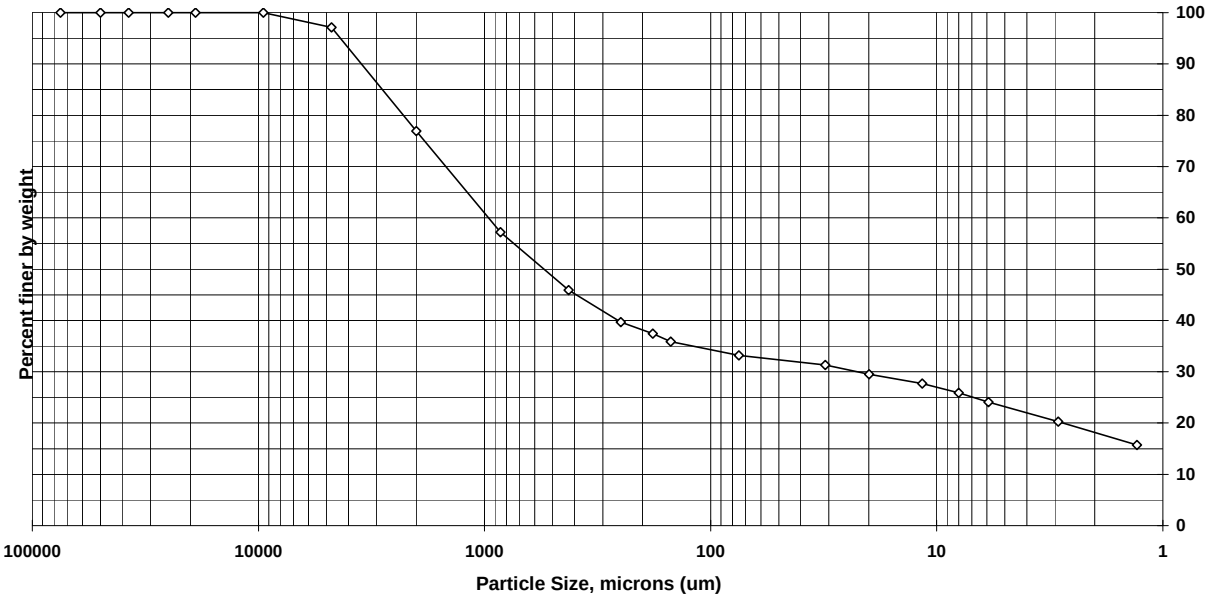
Particle Size of Soils by ASTM D422

				Date Received:	3/19/2014
Sample ID:	2014-SED-043	**Percent Solids:**	67.7%	**Start Date:**	3/19/2014
Lab ID:	600-88989-C-8	**Specific Gravity:**	2.650	**End Date:**	3/26/2014

Shape (> #10): angular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	97.1	2.9
#10	2000	76.9	20.2
#20	850	57.2	19.7
#40	425	45.9	11.3
#60	250	39.7	6.2
#80	180	37.4	2.3
#100	150	35.9	1.5
#200	75	33.2	2.7
Hyd1	31.1	31.3	1.9
Hyd2	19.9	29.5	1.8
Hyd3	11.6	27.7	1.8
Hyd4	8	25.9	1.8
Hyd5	5.9	24.1	1.8
Hyd6	2.9	20.3	3.8
Hyd7	1.3	15.7	4.6

Soil Classification	Percent of sample
Gravel	2.9
Sand	63.9
Coarse Sand	20.2
Medium Sand	31.0
Fine Sand	12.7
Silt	9.1
Clay	24.1

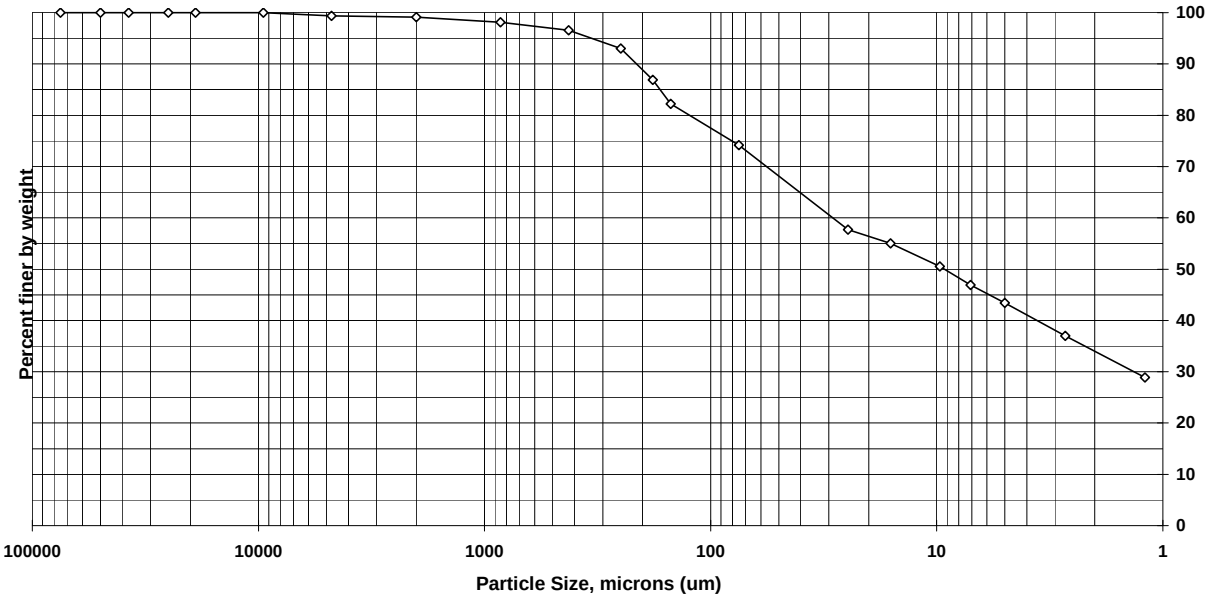
Particle Size of Soils by ASTM D422

				Date Received:	3/19/2014
Sample ID:	2014-SED-044	**Percent Solids:**	65.1%	**Start Date:**	3/19/2014
Lab ID:	600-88989-C-9	**Specific Gravity:**	2.650	**End Date:**	3/26/2014

Shape (> #10): n/a

Non-soil material: shell, wood

Hardness (> #10): n/a



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	99.4	0.6
#10	2000	99.1	0.3
#20	850	98.1	1.0
#40	425	96.6	1.5
#60	250	93.0	3.6
#80	180	86.9	6.1
#100	150	82.2	4.7
#200	75	74.2	8.0
Hyd1	24.7	57.7	16.5
Hyd2	16	55.0	2.7
Hyd3	9.7	50.5	4.5
Hyd4	7.1	46.9	3.6
Hyd5	5	43.4	3.5
Hyd6	2.7	37.0	6.4
Hyd7	1.2	28.9	8.1

Soil Classification	Percent of sample
Gravel	0.6
Sand	25.2
Coarse Sand	0.3
Medium Sand	2.5
Fine Sand	22.4
Silt	30.8
Clay	43.4

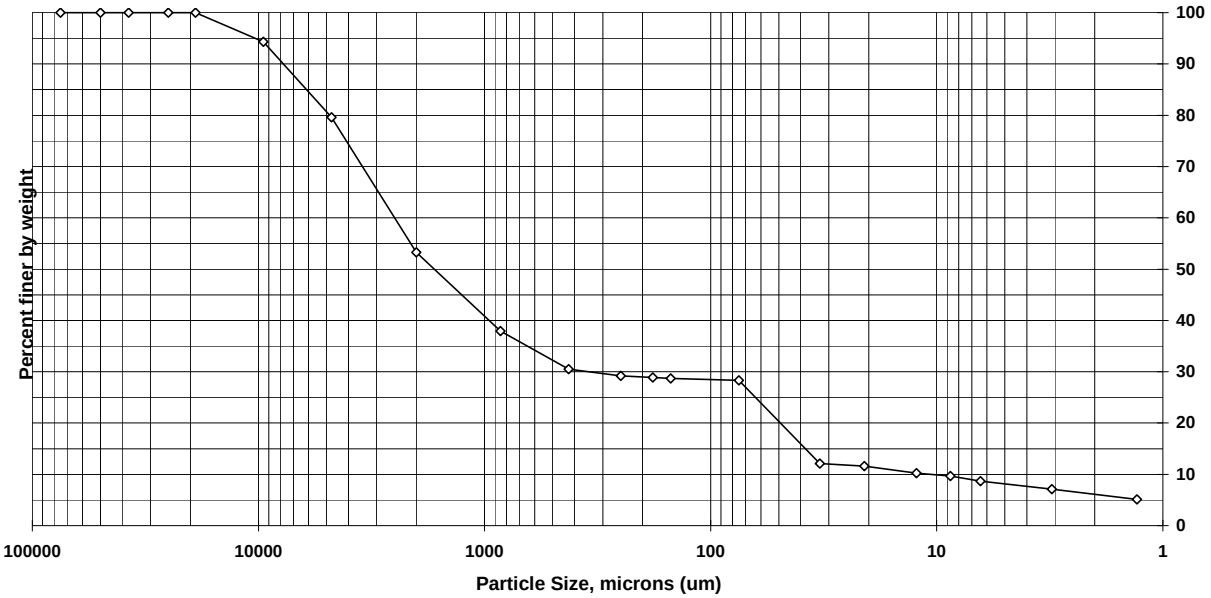
Particle Size of Soils by ASTM D422

				Date Received:	3/19/2014
Sample ID:	2014-SED-045	**Percent Solids:**	81.2%	**Start Date:**	3/19/2014
Lab ID:	600-88989-C-12	**Specific Gravity:**	2.650	**End Date:**	3/26/2014

Shape (> #10): angular

Non-soil material: shell

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	94.3	5.7
#4	4750	79.6	14.7
#10	2000	53.3	26.3
#20	850	37.9	15.4
#40	425	30.5	7.4
#60	250	29.2	1.3
#80	180	28.9	0.3
#100	150	28.7	0.2
#200	75	28.3	0.4
Hyd1	32.9	12.1	16.2
Hyd2	20.9	11.6	0.5
Hyd3	12.3	10.2	1.4
Hyd4	8.7	9.7	0.5
Hyd5	6.4	8.7	1.0
Hyd6	3.1	7.1	1.6
Hyd7	1.3	5.1	2.0

Soil Classification	Percent of sample
Gravel	20.4
Sand	51.3
Coarse Sand	26.3
Medium Sand	22.8
Fine Sand	2.2
Silt	19.6
Clay	8.7

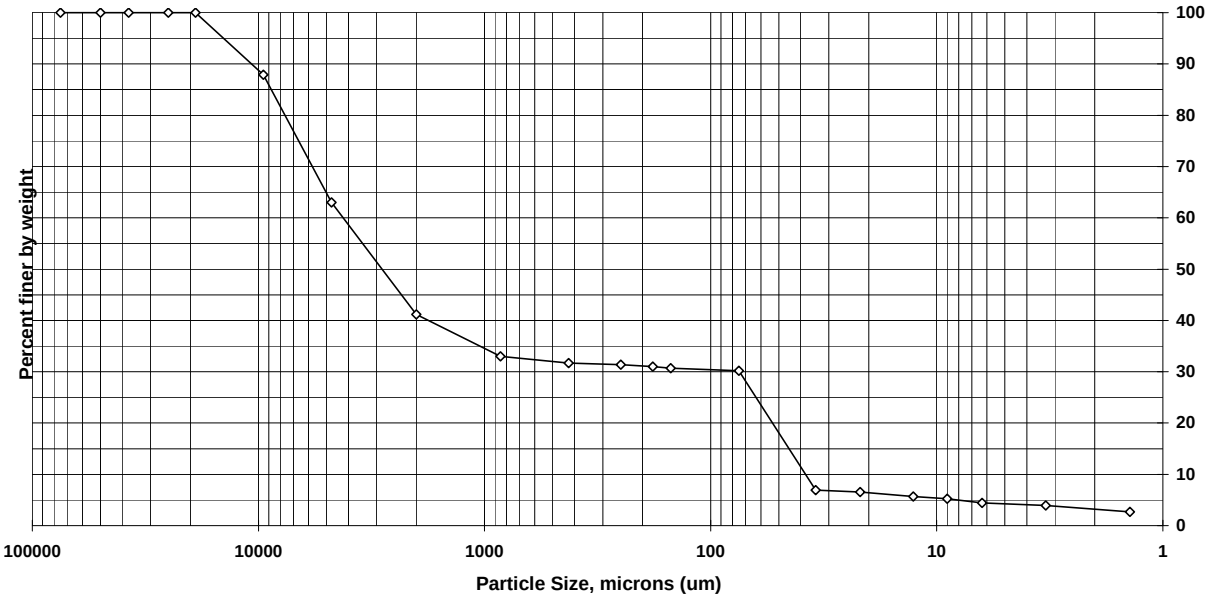
Particle Size of Soils by ASTM D422

				Date Received:	3/19/2014
Sample ID:	2014-SED-046	**Percent Solids:**	92.6%	**Start Date:**	3/19/2014
Lab ID:	600-88989-C-13	**Specific Gravity:**	2.650	**End Date:**	3/26/2014

Shape (> #10): amgular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	87.9	12.1
#4	4750	63.0	24.9
#10	2000	41.2	21.8
#20	850	33.0	8.2
#40	425	31.7	1.3
#60	250	31.4	0.3
#80	180	31.0	0.4
#100	150	30.7	0.3
#200	75	30.2	0.5
Hyd1	34.3	6.9	23.3
Hyd2	21.8	6.5	0.4
Hyd3	12.7	5.7	0.8
Hyd4	9	5.3	0.4
Hyd5	6.3	4.4	0.9
Hyd6	3.3	3.9	0.5
Hyd7	1.4	2.7	1.3

Soil Classification	Percent of sample
Gravel	37.0
Sand	32.8
Coarse Sand	21.8
Medium Sand	9.5
Fine Sand	1.5
Silt	25.8
Clay	4.4

TestAmerica Burlington

Sediment Grain Size - D422

Client		Date Received	3/19/2014
Client Sample ID	2014-SED-036	Start Date	03/19/2014 15:36
Lab Sample ID	600-88989-C-1	End Date	03/26/2014 10:32

Dry Weight Determination

Tin Weight	1.03	g
Wet Sample + Tin	32.27	g
Dry Sample + Tin	20.43	g
% Moisture	37.90	%

Non-soil material:	plant,wood
Shape (> #10):	sub angular
Hardness (> #10):	hard

Date/Time in oven	03/19/2014 15:41
Date/Time out of oven	03/20/2014 19:35

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		115.99	115.99
Sample Weight (Oven Dried)			72

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			12
Sample <#10			60
% Passing #10			51.7

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	450.63	3.29	g	95.4	Gravel	
#4	4750	488.13	494.05	5.92	g	87.2	Gravel	
#10	2000	462.82	465.60	2.78	g	83.3	Sand	Coarse
#20	850	380.87	382.30	1.43	g	81.3	Sand	Medium
#40	425	353.80	354.67	0.87	g	80.1	Sand	Medium
#60	250	350.48	351.64	1.16	g	78.5	Sand	Fine
#80	180	338.64	340.13	1.49	g	76.4	Sand	Fine
#100	150	330.31	331.83	1.52	g	74.3	Sand	Fine
#200	75	320.52	326.35	5.83	g	66.2	Sand	Fine
				0.00	g	66.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	72

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0290	21.5	27.8	56.3	Silt	
5	5	1.0255	21.5	18.5	48.5	Silt	
15	15	1.0240	21.5	10.9	45.2	Silt	
30	30	1.0220	21.5	7.9	40.7	Silt	
60	59	1.0210	21.5	5.7	38.5	Silt	
250	256	1.0190	21.0	2.8	33.8	Clay	
1440	1440	1.0155	21.0	1.2	26	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client		Date Received	3/19/2014
Client Sample ID	2014-SED-037	Start Date	03/19/2014 15:42
Lab Sample ID	600-88989-C-2	End Date	03/26/2014 11:04

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	21.15	g
Dry Sample + Tin	13.47	g
% Moisture	38.13	%

Non-soil material:	plant
Shape (> #10):	rounded
Hardness (> #10):	hard

Date/Time in oven	03/19/2014 15:45
Date/Time out of oven	03/20/2014 19:35

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		120.62	120.62
Sample Weight (Oven Dried)			74.6

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			12
Sample <#10			62.6
% Passing #10			51.9

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.13	489.18	1.05	g	98.6	Gravel	
#10	2000	462.82	473.78	10.96	g	83.9	Sand	Coarse
#20	850	389.73	392.25	2.52	g	80.5	Sand	Medium
#40	425	367.07	367.51	0.44	g	79.9	Sand	Medium
#60	250	345.82	346.32	0.50	g	79.2	Sand	Fine
#80	180	331.73	332.13	0.40	g	78.7	Sand	Fine
#100	150	335.53	336.02	0.49	g	78.0	Sand	Fine
#200	75	320.58	322.46	1.88	g	75.5	Sand	Fine
				0.00	g	75.5		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	74.6

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0375	21.5	23.9	72.7	Silt	
5	5	1.0335	21.5	16.3	64	Silt	
15	15	1.0310	21.5	9.8	58.7	Silt	
30	30	1.0280	21.5	7.3	52.2	Silt	
60	58	1.0260	21.5	5.4	47.9	Silt	
250	256	1.0230	21.0	2.7	41.3	Clay	
1440	1440	1.0190	21.0	1.2	32.7	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-038
Lab Sample ID	600-88989-C-3

Date Received	3/19/2014
Start Date	03/19/2014 15:45
End Date	03/26/2014 11:18

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	23.67	g
Dry Sample + Tin	16.99	g
% Moisture	29.48	%

Non-soil material:	plant
Shape (> #10):	rounded
Hardness (> #10):	hard

Date/Time in oven	03/19/2014 15:45
Date/Time out of oven	03/20/2014 19:36

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		122.25	122.25
Sample Weight (Oven Dried)			86.2

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			17.8
Sample <#10			68.4
% Passing #10			56

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	448.65	1.31	g	98.5	Gravel	
#4	4750	488.13	496.52	8.39	g	88.8	Gravel	
#10	2000	462.82	470.93	8.11	g	79.4	Sand	Coarse
#20	850	380.87	383.21	2.34	g	76.7	Sand	Medium
#40	425	353.80	355.45	1.65	g	74.8	Sand	Medium
#60	250	350.48	352.92	2.44	g	72.0	Sand	Fine
#80	180	338.64	340.90	2.26	g	69.4	Sand	Fine
#100	150	330.31	332.12	1.81	g	67.3	Sand	Fine
#200	75	320.52	326.17	5.65	g	60.7	Sand	Fine
				0.00	g	60.7		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	86.2

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0290	21.5	27.8	47	Silt	
5	5	1.0260	21.5	18.4	41.5	Silt	
15	15	1.0205	21.5	11.4	31.2	Silt	
30	29	1.0185	21.5	8.4	27.5	Silt	
60	58	1.0175	21.5	6	25.6	Silt	
250	250	1.0160	21.0	3	22.7	Clay	
1440	1434	1.0135	21.0	1.3	18	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-039
Lab Sample ID	600-88989-C-4

Date Received	3/19/2014
Start Date	03/19/2014 15:48
End Date	03/26/2014 11:38

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	28.64	g
Dry Sample + Tin	26.71	g
% Moisture	6.99	%

Non-soil material:	n/a
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	03/19/2014 15:49
Date/Time out of oven	03/20/2014 19:36

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		196.80	196.8
Sample Weight (Oven Dried)			183

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			142
Sample <#10			41
% Passing #10			20.8

Hydrometer Data	
Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	466.60	19.26	g	89.5	Gravel	
#4	4750	488.13	545.70	57.57	g	58.0	Gravel	
#10	2000	462.82	527.89	65.07	g	22.4	Sand	Coarse
#20	850	389.73	412.16	22.43	g	10.1	Sand	Medium
#40	425	367.07	369.51	2.44	g	8.8	Sand	Medium
#60	250	345.82	346.05	0.23	g	8.6	Sand	Fine
#80	180	331.73	331.75	0.02	g	8.6	Sand	Fine
#100	150	335.53	335.58	0.05	g	8.6	Sand	Fine
#200	75	320.58	320.68	0.10	g	8.6	Sand	Fine
				0.00	g	8.6		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	183

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0050	21.5	36.7	1.1	Silt	
5	5	1.0050	21.5	23.2	1.1	Silt	
15	15	1.0050	21.5	13.4	1.1	Silt	
30	29	1.0050	21.5	9.6	1.1	Silt	
60	63	1.0050	21.5	6.5	1.1	Silt	
250	250	1.0050	21.0	3.3	1.02	Clay	
1440	1434	1.0050	21.0	1.4	1.02	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-040
Lab Sample ID	600-88989-C-5

Date Received	3/19/2014
Start Date	03/19/2014 15:51
End Date	03/26/2014 11:25

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	32.71	g
Dry Sample + Tin	24.12	g
% Moisture	27.11	%

Non-soil material:	n/a
Shape (> #10):	angular
Hardness (> #10):	hard

Date/Time in oven	03/19/2014 15:54
Date/Time out of oven	03/20/2014 19:36

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		146.62	146.62
Sample Weight (Oven Dried)			107

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			63.3
Sample <#10			43.7
% Passing #10			29.8

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	458.35	11.01	g	89.7	Gravel	
#4	4750	488.13	519.40	31.27	g	60.5	Gravel	
#10	2000	462.82	483.84	21.02	g	40.9	Sand	Coarse
#20	850	380.87	386.84	5.97	g	35.3	Sand	Medium
#40	425	353.80	355.42	1.62	g	33.8	Sand	Medium
#60	250	350.48	351.59	1.11	g	32.8	Sand	Fine
#80	180	338.64	340.36	1.72	g	31.2	Sand	Fine
#100	150	330.31	331.49	1.18	g	30.1	Sand	Fine
#200	75	320.52	322.58	2.06	g	28.2	Sand	Fine
				0.00	g	28.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	107

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0215	21.5	30.9	26.6	Silt	
5	5	1.0210	21.5	19.6	25.9	Silt	
15	15	1.0200	21.5	11.5	24.4	Silt	
30	31	1.0180	21.5	8.2	21.4	Silt	
60	60	1.0175	21.5	5.9	20.6	Silt	
250	240	1.0160	21.0	3	18.3	Clay	
1440	1424	1.0125	21.0	1.3	13	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-041
Lab Sample ID	600-88989-C-6

Date Received	3/19/2014
Start Date	03/19/2014 15:54
End Date	03/26/2014 12:09

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	35.55	g
Dry Sample + Tin	31.02	g
% Moisture	13.12	%

Non-soil material:	n/a
Shape (> #10):	angular
Hardness (> #10):	hard

Date/Time in oven	03/19/2014 15:54
Date/Time out of oven	03/20/2014 19:37

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		203.85	203.85
Sample Weight (Oven Dried)			177

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			95.9
Sample <#10			81.1
% Passing #10			39.8

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	451.47	4.13	g	97.7	Gravel	
#4	4750	488.13	517.75	29.62	g	81.0	Gravel	
#10	2000	462.82	524.95	62.13	g	45.9	Sand	Coarse
#20	850	389.73	417.34	27.61	g	30.3	Sand	Medium
#40	425	367.07	370.63	3.56	g	28.3	Sand	Medium
#60	250	345.82	346.08	0.26	g	28.2	Sand	Fine
#80	180	331.73	331.83	0.10	g	28.1	Sand	Fine
#100	150	335.53	335.58	0.05	g	28.1	Sand	Fine
#200	75	320.58	320.82	0.24	g	28.0	Sand	Fine
				0.00	g	28.0		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	177

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0070	21.5	36	2.95	Silt	
5	5	1.0070	21.5	22.8	2.95	Silt	
15	15	1.0070	21.5	13.2	2.95	Silt	
30	31	1.0065	21.5	9.2	2.5	Silt	
60	59	1.0060	21.5	6.7	2.04	Silt	
250	234	1.0055	21.0	3.4	1.51	Clay	
1440	1418	1.0050	21.0	1.4	1.06	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client		Date Received	3/19/2014
Client Sample ID	2014-SED-042	Start Date	03/19/2014 15:56
Lab Sample ID	600-88989-C-7	End Date	03/26/2014 12:13

Dry Weight Determination

Tin Weight	1.03	g
Wet Sample + Tin	36.72	g
Dry Sample + Tin	34.07	g
% Moisture	7.43	%

Non-soil material:	n/a
Shape (> #10):	angular
Hardness (> #10):	hard

Date/Time in oven	03/19/2014 15:56
Date/Time out of oven	03/20/2014 19:37

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		211.03	211.03
Sample Weight (Oven Dried)			195

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			150
Sample <#10			45
% Passing #10			21.3

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	474.13	26.79	g	86.3	Gravel	
#4	4750	488.13	552.29	64.16	g	53.4	Gravel	
#10	2000	462.82	521.91	59.09	g	23.1	Sand	Coarse
#20	850	380.87	399.28	18.41	g	13.7	Sand	Medium
#40	425	353.80	357.73	3.93	g	11.7	Sand	Medium
#60	250	350.48	350.89	0.41	g	11.5	Sand	Fine
#80	180	338.64	338.87	0.23	g	11.4	Sand	Fine
#100	150	330.31	330.51	0.20	g	11.3	Sand	Fine
#200	75	320.52	321.47	0.95	g	10.8	Sand	Fine
				0.00	g	10.8		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	195

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0070	21.5	36	2.68	Silt	
5	5	1.0070	21.5	22.8	2.68	Silt	
15	15	1.0065	21.5	13.2	2.26	Silt	
30	31	1.0065	21.5	9.2	2.26	Silt	
60	59	1.0060	21.5	6.7	1.85	Silt	
250	265	1.0055	21.0	3.2	1.37	Clay	
1440	1412	1.0050	21.0	1.4	0.961	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-043
Lab Sample ID	600-88989-C-8

Date Received	3/19/2014
Start Date	03/19/2014 15:58
End Date	03/26/2014 13:22

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	33.30	g
Dry Sample + Tin	22.88	g
% Moisture	32.27	%

Non-soil material:	n/a
Shape (> #10):	angular
Hardness (> #10):	hard

Date/Time in oven	03/19/2014 15:58
Date/Time out of oven	03/20/2014 19:37

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		130.49	130.49
Sample Weight (Oven Dried)			88.4

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			20.4
Sample <#10			68
% Passing #10			52.1

Hydrometer Data	
Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.13	490.69	2.56	g	97.1	Gravel	
#10	2000	462.82	480.66	17.84	g	76.9	Sand	Coarse
#20	850	389.73	407.17	17.44	g	57.2	Sand	Medium
#40	425	367.07	377.04	9.97	g	45.9	Sand	Medium
#60	250	345.82	351.28	5.46	g	39.7	Sand	Fine
#80	180	331.73	333.80	2.07	g	37.4	Sand	Fine
#100	150	335.53	336.84	1.31	g	35.9	Sand	Fine
#200	75	320.58	323.01	2.43	g	33.2	Sand	Fine
				0.00	g	33.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	88.4

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0210	21.5	31.1	31.3	Silt	
5	5	1.0200	21.5	19.9	29.5	Silt	
15	15	1.0190	21.5	11.6	27.7	Silt	
30	32	1.0180	21.5	8	25.9	Silt	
60	60	1.0170	21.5	5.9	24.1	Silt	
250	259	1.0150	21.0	2.9	20.3	Clay	
1440	1406	1.0125	21.0	1.3	15.7	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-044
Lab Sample ID	600-88989-C-9

Date Received	3/19/2014
Start Date	03/19/2014 16:01
End Date	03/26/2014 13:59

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	37.40	g
Dry Sample + Tin	24.71	g
% Moisture	34.88	%

Non-soil material:	shell, wood
Shape (> #10):	n/a
Hardness (> #10):	n/a

Date/Time in oven	03/19/2014 16:06
Date/Time out of oven	03/20/2014 19:38

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		137.87	137.87
Sample Weight (Oven Dried)			89.8

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			0.8
Sample <#10			89
% Passing #10			64.6

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.13	488.70	0.57	g	99.4	Gravel	
#10	2000	462.82	463.05	0.23	g	99.1	Sand	Coarse
#20	850	380.87	381.80	0.93	g	98.1	Sand	Medium
#40	425	353.80	355.17	1.37	g	96.6	Sand	Medium
#60	250	350.48	353.70	3.22	g	93.0	Sand	Fine
#80	180	338.64	344.15	5.51	g	86.9	Sand	Fine
#100	150	330.31	334.55	4.24	g	82.2	Sand	Fine
#200	75	320.52	327.69	7.17	g	74.2	Sand	Fine
				0.00	g	74.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	89.8

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0360	21.5	24.7	57.7	Silt	
5	5	1.0345	21.5	16	55	Silt	
15	15	1.0320	21.5	9.7	50.5	Silt	
30	30	1.0300	21.5	7.1	46.9	Silt	
60	63	1.0280	21.5	5	43.4	Silt	
250	253	1.0245	21.0	2.7	37	Clay	
1440	1400	1.0200	21.0	1.2	28.9	Clay	

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Sediment Grain Size - D422

Client		Date Received	3/19/2014
Client Sample ID	2014-SED-045	Start Date	03/19/2014 16:06
Lab Sample ID	600-88989-C-12	End Date	03/26/2014 13:51

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	31.21	g
Dry Sample + Tin	25.52	g
% Moisture	18.84	%

Non-soil material:	shell
Shape (> #10):	angular
Hardness (> #10):	hard

Date/Time in oven	03/19/2014 16:09
Date/Time out of oven	03/20/2014 19:38

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		200.13	200.13
Sample Weight (Oven Dried)			162

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			75.5
Sample <#10			86.5
% Passing #10			43.2

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	456.51	9.17	g	94.3	Gravel	
#4	4750	488.13	511.89	23.76	g	79.6	Gravel	
#10	2000	462.82	505.37	42.55	g	53.3	Sand	Coarse
#20	850	389.73	414.73	25.00	g	37.9	Sand	Medium
#40	425	367.07	379.01	11.94	g	30.5	Sand	Medium
#60	250	345.82	347.99	2.17	g	29.2	Sand	Fine
#80	180	331.73	332.24	0.51	g	28.9	Sand	Fine
#100	150	335.53	335.86	0.33	g	28.7	Sand	Fine
#200	75	320.58	321.17	0.59	g	28.3	Sand	Fine
				0.00	g	28.3		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	162

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0160	21.5	32.9	12.1	Silt	
5	5	1.0155	21.5	20.9	11.6	Silt	
15	15	1.0140	21.5	12.3	10.2	Silt	
30	30	1.0135	21.5	8.7	9.67	Silt	
60	57	1.0125	21.5	6.4	8.67	Silt	
250	247	1.0110	21.0	3.1	7.11	Clay	
1440	1394	1.0090	21.0	1.3	5.12	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-046
Lab Sample ID	600-88989-C-13

Date Received	3/19/2014
Start Date	03/19/2014 16:09
End Date	03/26/2014 13:51

Dry Weight Determination

Tin Weight	1.03	g
Wet Sample + Tin	30.78	g
Dry Sample + Tin	28.59	g
% Moisture	7.36	%

Non-soil material:	n/a
Shape (> #10):	amgular
Hardness (> #10):	hard

Date/Time in oven	03/19/2014 16:25
Date/Time out of oven	03/20/2014 19:38

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		206.52	206.52
Sample Weight (Oven Dried)			191

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			112
Sample <#10			79
% Passing #10			38.3

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	470.49	23.15	g	87.9	Gravel	
#4	4750	488.13	535.66	47.53	g	63.0	Gravel	
#10	2000	462.82	504.46	41.64	g	41.2	Sand	Coarse
#20	850	380.87	396.45	15.58	g	33.0	Sand	Medium
#40	425	353.80	356.25	2.45	g	31.7	Sand	Medium
#60	250	350.48	351.06	0.58	g	31.4	Sand	Fine
#80	180	338.64	339.45	0.81	g	31.0	Sand	Fine
#100	150	330.31	330.89	0.58	g	30.7	Sand	Fine
#200	75	320.52	321.40	0.88	g	30.2	Sand	Fine
				0.00	g	30.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	191

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0120	21.5	34.3	6.94	Silt	
5	5	1.0115	21.5	21.8	6.52	Silt	
15	15	1.0105	21.5	12.7	5.68	Silt	
30	30	1.0100	21.5	9	5.26	Silt	
60	63	1.0090	21.5	6.3	4.41	Silt	
250	241	1.0085	21.0	3.3	3.92	Clay	
1440	1388	1.0070	21.0	1.4	2.66	Clay	

DATA REPORTING QUALIFIERS

Lab Section	Qualifier	Description

QUALITY CONTROL RESULTS

Client: Golder Associates Inc.

Job Number: 600-88989-3

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Geotechnical					
Analysis Batch:200-69927					
600-88989-1	2014-SED-036	T	Solid	D422	
600-88989-2	2014-SED-037	T	Solid	D422	
600-88989-3	2014-SED-038	T	Solid	D422	
600-88989-4	2014-SED-039	T	Solid	D422	
600-88989-5	2014-SED-040	T	Solid	D422	
600-88989-6	2014-SED-041	T	Solid	D422	
600-88989-7	2014-SED-042	T	Solid	D422	
600-88989-8	2014-SED-043	T	Solid	D422	
600-88989-9	2014-SED-044	T	Solid	D422	
600-88989-12	2014-SED-045	T	Solid	D422	
600-88989-13	2014-SED-046	T	Solid	D422	

Report Basis

T = Total

TestAmerica Burlington
30 Community Drive Ste 11
South Burlington, VT 05403
(802) 660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Abby Marlow/Chris Trevino	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-27103-9383.2
Client Contact: Christina Higginbotham	Phone: 281-821-6868	E-Mail: dean.joiner@testamericainc.com		Page: Page 1 of 1
Company: Golder Associates Inc.				Job #: 1302086
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 Days			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide, Grain Size - Soil	Project #: 60004831			
Site: Stewart Creek	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - % Passing Routine List	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
2014-SED-036	3-18-14	0938	C	Solid			X		Golder*** : Ship Directly to:
2014-SED-037		1008	C	Solid			X		TestAmerica Burlington
2014-SED-038		1058	C	Solid			X		
2014-SED-039		1150	C	Solid			X		
2014-SED-040		1232	C	Solid			X		!!!!

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-88989-3

Login Number: 88989

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.3
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-88989-3

Login Number: 88989
List Number: 1
Creator: Marion, Greg T

List Source: TestAmerica Burlington
List Creation: 03/19/14 03:15 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	Not present
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	2.6ºc ir gun id 181/cf=-0.1
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-89052-1
Client Project/Site: Exide Recycling Center, Frisco TX Projec

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
3/27/2014 4:54:24 PM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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

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

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

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-89052-1 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☐ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☑ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton		3/27/2014
Name (printed)	Signature	Date

Project Management Asst II
Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	3/26/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-89052-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?			X		
		Were MS/MSD analyzed at the appropriate frequency?			X		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
		Were MS/MSD RPDs within laboratory QC limits?			X		
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	3/26/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-89052-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	3/26/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-89052-1
Reviewer Name:	Dean A Joiner		

ER #[1]	Description

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Detection Check Standard

Matrix:	Soil
Method:	90.3 Walkley-Black
Preparation:	NA
Date Analyzed:	12/7/2013
Date Prepared:	12/7/2013
TALs Batches:	122871
Units:	% Carbon

Analyte	MDL	DCS Spike	Measured Result	MQL
TOC Walkley Black	0.0415	0.05	0.036	0.1

Detection Check Standard

Matrix:	Water
Method:	200.7/6010
Preparation:	200.7P/3010
Date Analyzed:	12/31/2013
Date Prepared:	12/27/2013
Instrument:	Spectro01
TALs Batches:	124030, 123788p
Units:	mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.006	0.02	0.028176	0.5
Antimony	0.0063	0.01	0.010016	0.05
Arsenic	0.0033	0.01	0.008253	0.01
Barium	0.0022	0.005	0.004098	0.02
Beryllium	0.00134	0.002	0.004019	0.005
Boron	0.0077	0.02	0.019829	0.2
Cadmium	0.00073	0.001	0.001	0.005
Calcium	0.022	0.05	0.060829	1
Chromium	0.0016	0.002	0.003835	0.01
Cobalt	0.00063	0.001	0.000965	0.01
Copper	0.0014	0.002	0.002451	0.01
Iron	0.087	0.1	0.002258	0.4
Lithium	0.0024	0.005	0.006107	0.2
Lead	0.0029	0.005	0.005478	0.01
Selenium	0.0042	0.01	0.009953	0.04
Manganese	0.00084	0.002	0.001988	0.01
Molybdenum	0.0027	0.005	0.005867	0.01
Nickel	0.00179	0.005	0.005669	0.01
Silver	0.0012	0.0025	0.001901	0.01
Sodium	0.02	0.05	0.088115	1
Strontium	0.0005	0.001	0.000897	0.005
Thallium	0.0078	0.02	0.021503	0.03
Tin	0.0028	0.005	0.005708	0.01
Titanium	0.0011	0.002	0.001905	0.01
Vanadium	0.0017	0.002	0.003578	0.01
Zinc	0.0022	0.005	0.004189	0.01

Detection Check Standard

Matrix:	Soil
Method:	6010B
Preparation:	3050
Date Analyzed:	12/30/2013
Date Prepared:	12/27/2013
Instrument:	Thermo 6500
TALS Batches:	123949, 123775p
Prep/Reagent Factor =	50
Units:	mg/kg

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.299654	0.5	0.36	25
Antimony	0.231553	0.45	0.5	2.5
Arsenic	0.217923	0.5	0.53	1
Barium	0.011322	0.03	0.04	1
Beryllium	0.014513	0.02	0.015	0.25
Boron	0.385535	0.6	0.56	20
Cadmium	0.025642	0.05	0.05	0.25
Calcium	0.86399	1.5	2.185	100
Chromium	0.050606	0.1	0.135	0.5
Cobalt	0.067622	0.1	0.09	0.5
Copper	0.173703	0.5	0.64	0.5
Iron	2.534007	4	3.76	20
Lead	0.104832	0.2	0.215	0.5
Selenium	0.258884	0.5	0.465	2
Manganese	0.038111	0.05	0.085	1.5
Molybdenum	0.136448	0.35	0.38	0.5
Nickel	0.116599	0.15	0.2	1
Silver	0.118848	0.2	0.15	0.5
Sodium	0.885548	2.4	3.135	100
Thallium	0.276988	0.7	0.73	1.5
Tin	0.08729	0.15	0.19	1
Titanium	0.014529	0.03	0.01	0.5
Vanadium	0.079068	0.15	0.125	0.5
Zinc	0.108432	0.2	0.305	1.5

Job ID: 600-89052-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-89052-1

Comments
No additional comments.

Receipt
The samples were received on 3/20/2014 10:21 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.8º C.

Method Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL HOU
Moisture	Percent Moisture	EPA	TAL HOU
WALKLEY BLACK	Organic Carbon, Total (TOC)	MSA	TAL HOU

Protocol References:

EPA = US Environmental Protection Agency

MSA = "Methods Of Soil Analysis, Chemical And Microbiological Properties", Part 2, 2nd Ed., 1982 And Subsequent Revisions.

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

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-89052-1	2014-Sed-047	Solid	03/19/14 09:29	03/20/14 10:21
600-89052-2	2014-Sed-048	Solid	03/19/14 11:02	03/20/14 10:21
600-89052-3	2014-Sed-049	Solid	03/19/14 11:55	03/20/14 10:21
600-89052-4	DUP-08	Solid	03/19/14 00:00	03/20/14 10:21
600-89052-5	DUP-09	Solid	03/19/14 00:00	03/20/14 10:21
600-89052-6	Equipment Blank-Dredge	Water	03/19/14 14:15	03/20/14 10:21
600-89052-7	Equipment Blank-Bowl	Water	03/19/14 14:20	03/20/14 10:21

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-1

Client Sample ID: 2014-Sed-047

Lab Sample ID: 600-89052-1
Date Collected: 03/19/14 09:29
Matrix: Solid
Date Received: 03/20/14 10:21
Percent Solids: 79.1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	15.4		1.06	0.231	mg/Kg	☼	03/25/14 15:56	03/26/14 13:42	1
Cadmium	0.239	J	0.265	0.0272	mg/Kg	☼	03/25/14 15:56	03/26/14 13:42	1
Lead	15.4		0.531	0.111	mg/Kg	☼	03/25/14 15:56	03/26/14 13:42	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	21		1.0	1.0	%			03/20/14 13:21	1
Percent Solids	79		1.0	1.0	%			03/20/14 13:21	1
TOC	1.39		0.100	0.0415	%			03/25/14 08:30	1

Client Sample ID: 2014-Sed-048

Lab Sample ID: 600-89052-2
Date Collected: 03/19/14 11:02
Matrix: Solid
Date Received: 03/20/14 10:21
Percent Solids: 82.8

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	26.6		1.02	0.223	mg/Kg	☼	03/25/14 15:56	03/26/14 13:44	1
Cadmium	1.61		0.256	0.0262	mg/Kg	☼	03/25/14 15:56	03/26/14 13:44	1
Lead	31.8		0.512	0.107	mg/Kg	☼	03/25/14 15:56	03/26/14 13:44	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17		1.0	1.0	%			03/20/14 13:21	1
Percent Solids	83		1.0	1.0	%			03/20/14 13:21	1
TOC	0.441		0.100	0.0415	%			03/25/14 08:30	1

Client Sample ID: 2014-Sed-049

Lab Sample ID: 600-89052-3
Date Collected: 03/19/14 11:55
Matrix: Solid
Date Received: 03/20/14 10:21
Percent Solids: 59.6

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	12.7		1.51	0.329	mg/Kg	☼	03/25/14 15:56	03/26/14 13:47	1
Cadmium	0.166	J	0.378	0.0388	mg/Kg	☼	03/25/14 15:56	03/26/14 13:47	1
Lead	17.2		0.756	0.158	mg/Kg	☼	03/25/14 15:56	03/26/14 13:47	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	40		1.0	1.0	%			03/20/14 13:21	1
Percent Solids	60		1.0	1.0	%			03/20/14 13:21	1
TOC	2.37		0.100	0.0415	%			03/25/14 08:30	1

Client Sample ID: DUP-08

Lab Sample ID: 600-89052-4
Date Collected: 03/19/14 00:00
Matrix: Solid
Date Received: 03/20/14 10:21
Percent Solids: 75.6

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	11.4		1.03	0.223	mg/Kg	☼	03/25/14 15:56	03/26/14 13:50	1
Cadmium	0.220	J	0.256	0.0263	mg/Kg	☼	03/25/14 15:56	03/26/14 13:50	1
Lead	14.8		0.513	0.107	mg/Kg	☼	03/25/14 15:56	03/26/14 13:50	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-1

Client Sample ID: DUP-08

Lab Sample ID: 600-89052-4
Date Collected: 03/19/14 00:00
Matrix: Solid
Date Received: 03/20/14 10:21

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	24		1.0	1.0	%			03/20/14 13:21	1
Percent Solids	76		1.0	1.0	%			03/20/14 13:21	1
TOC	1.02		0.100	0.0415	%			03/25/14 08:30	1

Client Sample ID: DUP-09

Lab Sample ID: 600-89052-5
Date Collected: 03/19/14 00:00
Matrix: Solid
Date Received: 03/20/14 10:21
Percent Solids: 86.6

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	18.0		0.987	0.215	mg/Kg	☼	03/25/14 15:56	03/26/14 13:59	1
Cadmium	1.96		0.247	0.0253	mg/Kg	☼	03/25/14 15:56	03/26/14 13:59	1
Lead	45.9		0.493	0.103	mg/Kg	☼	03/25/14 15:56	03/26/14 13:59	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	13		1.0	1.0	%			03/20/14 13:21	1
Percent Solids	87		1.0	1.0	%			03/20/14 13:21	1
TOC	0.674		0.100	0.0415	%			03/25/14 08:30	1

Client Sample ID: Equipment Blank-Dredge

Lab Sample ID: 600-89052-6
Date Collected: 03/19/14 14:15
Matrix: Water
Date Received: 03/20/14 10:21

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		03/21/14 08:55	03/24/14 16:55	1
Lead	0.00290	U	0.0100	0.00290	mg/L		03/21/14 08:55	03/24/14 16:55	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		03/21/14 08:55	03/24/14 16:55	1

Client Sample ID: Equipment Blank-Bowl

Lab Sample ID: 600-89052-7
Date Collected: 03/19/14 14:20
Matrix: Water
Date Received: 03/20/14 10:21

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		03/21/14 08:55	03/24/14 16:57	1
Lead	0.00290	U	0.0100	0.00290	mg/L		03/21/14 08:55	03/24/14 16:57	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		03/21/14 08:55	03/24/14 16:57	1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
U	Analyte was not detected at or above the SDL.

General Chemistry

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

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
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)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-130115/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 130346 — **Prep Batch: 130115**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		03/21/14 08:55	03/24/14 16:20	1
Lead	0.00290	U	0.0100	0.00290	mg/L		03/21/14 08:55	03/24/14 16:20	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		03/21/14 08:55	03/24/14 16:20	1

Lab Sample ID: LCS 600-130115/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 130346 — **Prep Batch: 130115**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.500	0.5090		mg/L		102	80 - 120
Lead	1.00	1.022		mg/L		102	80 - 120
Arsenic	1.00	1.019		mg/L		102	80 - 120

Lab Sample ID: MB 600-130428/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 130490 — **Prep Batch: 130428**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0256	U	0.250	0.0256	mg/Kg		03/25/14 15:56	03/26/14 12:59	1
Lead	0.105	U	0.500	0.105	mg/Kg		03/25/14 15:56	03/26/14 12:59	1
Arsenic	0.218	U	1.00	0.218	mg/Kg		03/25/14 15:56	03/26/14 12:59	1

Lab Sample ID: LCSSRM 600-130428/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 130490 — **Prep Batch: 130428**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	182	170.6		mg/Kg		93.7	81.9 - 118.1
Lead	115	111.7		mg/Kg		97.1	81.8 - 119.1
Arsenic	99.6	98.04		mg/Kg		98.4	80.8 - 119.5

Method: Moisture - Percent Moisture

Lab Sample ID: 600-89052-1 DU — **Client Sample ID: 2014-Sed-047**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 130049

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	21		25		%		16	20
Percent Solids	79		75		%		5	20

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-1

Method: WALKLEY BLACK - Organic Carbon, Total (TOC)

Lab Sample ID: MB 600-130407/1
Matrix: Solid
Analysis Batch: 130407

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

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
TOC	0.0415	U	0.100	0.0415	%			03/25/14 08:30	1

Lab Sample ID: LCS 600-130407/2
Matrix: Solid
Analysis Batch: 130407

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
TOC			2.34	2.405		%		103	80 - 120		

Lab Sample ID: 600-89052-1 DU
Matrix: Solid
Analysis Batch: 130407

Client Sample ID: 2014-Sed-047
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
TOC	1.39			1.325		%				5	20

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-1

Method: 6010B - Metals (ICP)

Analyte	MQL	MDL	Units	Method
Arsenic	1.00	0.218	mg/Kg	6010B
Arsenic	0.0100	0.00328	mg/L	6010B
Cadmium	0.250	0.0256	mg/Kg	6010B
Cadmium	0.00500	0.000350	mg/L	6010B
Lead	0.500	0.105	mg/Kg	6010B
Lead	0.0100	0.00290	mg/L	6010B

General Chemistry

Analyte	MQL	MDL	Units	Method
Percent Moisture	1.0	1.0	%	Moisture
Percent Solids	1.0	1.0	%	Moisture
TOC	0.100	0.0415	%	WALKLEY BLACK

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-1

Metals

Prep Batch: 130115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-89052-6	Equipment Blank-Dredge	Total/NA	Water	3010A	
600-89052-7	Equipment Blank-Bowl	Total/NA	Water	3010A	
LCS 600-130115/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-130115/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 130346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-89052-6	Equipment Blank-Dredge	Total/NA	Water	6010B	130115
600-89052-7	Equipment Blank-Bowl	Total/NA	Water	6010B	130115
LCS 600-130115/2-A	Lab Control Sample	Total/NA	Water	6010B	130115
MB 600-130115/1-A	Method Blank	Total/NA	Water	6010B	130115

Prep Batch: 130428

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-89052-1	2014-Sed-047	Total/NA	Solid	3050B	
600-89052-2	2014-Sed-048	Total/NA	Solid	3050B	
600-89052-3	2014-Sed-049	Total/NA	Solid	3050B	
600-89052-4	DUP-08	Total/NA	Solid	3050B	
600-89052-5	DUP-09	Total/NA	Solid	3050B	
LCSSRM 600-130428/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 600-130428/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 130490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-89052-1	2014-Sed-047	Total/NA	Solid	6010B	130428
600-89052-2	2014-Sed-048	Total/NA	Solid	6010B	130428
600-89052-3	2014-Sed-049	Total/NA	Solid	6010B	130428
600-89052-4	DUP-08	Total/NA	Solid	6010B	130428
600-89052-5	DUP-09	Total/NA	Solid	6010B	130428
LCSSRM 600-130428/2-A	Lab Control Sample	Total/NA	Solid	6010B	130428
MB 600-130428/1-A	Method Blank	Total/NA	Solid	6010B	130428

General Chemistry

Analysis Batch: 130049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-89052-1	2014-Sed-047	Total/NA	Solid	Moisture	
600-89052-1 DU	2014-Sed-047	Total/NA	Solid	Moisture	
600-89052-2	2014-Sed-048	Total/NA	Solid	Moisture	
600-89052-3	2014-Sed-049	Total/NA	Solid	Moisture	
600-89052-4	DUP-08	Total/NA	Solid	Moisture	
600-89052-5	DUP-09	Total/NA	Solid	Moisture	

Analysis Batch: 130407

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-89052-1	2014-Sed-047	Total/NA	Solid	WALKLEY BLACK	
600-89052-1 DU	2014-Sed-047	Total/NA	Solid	WALKLEY BLACK	
600-89052-2	2014-Sed-048	Total/NA	Solid	WALKLEY BLACK	

General Chemistry (Continued)

Analysis Batch: 130407 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-89052-3	2014-Sed-049	Total/NA	Solid	WALKLEY BLACK	
600-89052-4	DUP-08	Total/NA	Solid	WALKLEY BLACK	
600-89052-5	DUP-09	Total/NA	Solid	WALKLEY BLACK	
LCS 600-130407/2	Lab Control Sample	Total/NA	Solid	WALKLEY BLACK	
MB 600-130407/1	Method Blank	Total/NA	Solid	WALKLEY BLACK	

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-1

Client Sample ID: 2014-Sed-047

Lab Sample ID: 600-89052-1
Date Collected: 03/19/14 09:29
Matrix: Solid
Date Received: 03/20/14 10:21
Percent Solids: 79.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.19 g	50 mL	130428	03/25/14 15:56	TWR	TAL HOU
Total/NA	Analysis	6010B		1	1.19 g	50 mL	130490	03/26/14 13:42	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			130049	03/20/14 13:21	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	0.5500 g	0.5500 g	130407	03/25/14 08:30	EC1	TAL HOU

Client Sample ID: 2014-Sed-048

Lab Sample ID: 600-89052-2
Date Collected: 03/19/14 11:02
Matrix: Solid
Date Received: 03/20/14 10:21
Percent Solids: 82.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.18 g	50 mL	130428	03/25/14 15:56	TWR	TAL HOU
Total/NA	Analysis	6010B		1	1.18 g	50 mL	130490	03/26/14 13:44	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			130049	03/20/14 13:21	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	1.5300 g	1.5300 g	130407	03/25/14 08:30	EC1	TAL HOU

Client Sample ID: 2014-Sed-049

Lab Sample ID: 600-89052-3
Date Collected: 03/19/14 11:55
Matrix: Solid
Date Received: 03/20/14 10:21
Percent Solids: 59.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.11 g	50 mL	130428	03/25/14 15:56	TWR	TAL HOU
Total/NA	Analysis	6010B		1	1.11 g	50 mL	130490	03/26/14 13:47	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			130049	03/20/14 13:21	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	0.5300 g	0.5300 g	130407	03/25/14 08:30	EC1	TAL HOU

Client Sample ID: DUP-08

Lab Sample ID: 600-89052-4
Date Collected: 03/19/14 00:00
Matrix: Solid
Date Received: 03/20/14 10:21
Percent Solids: 75.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.29 g	50 mL	130428	03/25/14 15:56	TWR	TAL HOU
Total/NA	Analysis	6010B		1	1.29 g	50 mL	130490	03/26/14 13:50	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			130049	03/20/14 13:21	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	0.5200 g	0.5200 g	130407	03/25/14 08:30	EC1	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-1

Client Sample ID: DUP-09

Lab Sample ID: 600-89052-5

Date Collected: 03/19/14 00:00
Matrix: Solid
Date Received: 03/20/14 10:21
Percent Solids: 86.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.17 g	50 mL	130428	03/25/14 15:56	TWR	TAL HOU
Total/NA	Analysis	6010B		1	1.17 g	50 mL	130490	03/26/14 13:59	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			130049	03/20/14 13:21	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	1.0000 g	1.0000 g	130407	03/25/14 08:30	EC1	TAL HOU

Client Sample ID: Equipment Blank-Dredge

Lab Sample ID: 600-89052-6

Date Collected: 03/19/14 14:15
Matrix: Water
Date Received: 03/20/14 10:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	130115	03/21/14 08:55	DCL	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	130346	03/24/14 16:55	DCL	TAL HOU

Client Sample ID: Equipment Blank-Bowl

Lab Sample ID: 600-89052-7

Date Collected: 03/19/14 14:20
Matrix: Water
Date Received: 03/20/14 10:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	130115	03/21/14 08:55	DCL	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	130346	03/24/14 16:57	DCL	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-1

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	TX00083	10-31-14

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Abby Marlow/Chris Trevino	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No. 600-27110-9386.5
Client Contact: Christina Higginbotham	Phone: 281-821-6868	E-Mail: dean.joiner@testamericainc.com		Page: Page 1 of 1
Company: Golder Associates Inc.				Job #: 130-2086

Address: 500 Century Plaza Drive Suite 190	Due Date Requested:
City: Houston	TAT Requested (days): 5 DAYS
State, Zip: TX, 77073	
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested
Email: Christina_Higginbotham@golder.com	WO #:
Project Name: Exide Recycling Center, Frisco TX Projec	Project #: 60004831
Site:	SSOW#:

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	WALKLEY_BLACK - Walkley Black (TOC)	6010B As, Cd, Pb	Moisture	5310 - TOC	Total Number of containers	Special Instructions/Note:
			Preservation Codes:				N	N	N	D		
2014-Sed-047	03/19/14	0929	C	Solid			X	X	X			As, Cd, Pb on final report
2014-Sed-048	03/19/14	1102	C	Solid			X	X	X			
2014-Sed-049	03/19/14	1155	C	Solid			X	X	X			
DUP-08	03/19/14	—	C	Solid			X	X	X			
DUP-09	03/19/14	—	C	Solid			X	X	X			
Equipment Blank - Dredge	03/19/14	1415	C	~~Solid~~ Water				X		X		
Equipment Blank - Bowl	03/19/14	1420	C	~~Solid~~ Water				X		X		
			C	Solid								
			C	Solid								
			C	Solid								
			C	Solid								

600-89052 Chain of Custody

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☒ Archive client approval needed for disposal

Deliverable Requested: I, II, III, IV, Other (specify) TRRP

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Chris Trevino	Date/Time: 03/19/14 –	Company: Golder	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 3/20/14 1021	Company

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-89052-1

Login Number: 89052
List Number: 1
Creator: Lopez, Sandro R

List Source: TestAmerica Houston

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-89052-2
Client Project/Site: Exide Recycling Center, Frisco TX Projec

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
3/27/2014 1:54:41 PM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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

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

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

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-89052-2 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☑ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton		3/27/2014
Name (printed)	Signature	Date

Project Management Asst II
Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	3/26/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-89052-2
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			R07C
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	3/26/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-89052-2
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
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4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	3/26/2014
Project Name:	Exide Recycling Center, Frisco TX Projec	Laboratory Job Number:	600-89052-2
Reviewer Name:	Dean A Joiner		

ER #[1]	Description
R07C	Method 6020A: 600-89052-8 MSD failed the recovery criteria for the following analyte(s): Cadmium. Matrix interference is suspected.

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

Dept	Matrix	Client Sample ID	Analyte	Result	Unit	Spike Amount	MDL	RL	Percent Recovery	Prep Method	Analysis Method	Instrument ID	CAS	Prep Batch	Analysis Batch
ME	Water	Q4 2013 AQ MDLV ICPMSC	Aluminum	56.4	ug/L	50	23	50	113	3005A	6020A	ICPMSC	7429-90-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Antimony	2.875	ug/L	2.5	2.3	5	115	3005A	6020A	ICPMSC	7440-36-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Arsenic	2.375	ug/L	2	1.3	2.5	119	3005A	6020A	ICPMSC	7440-38-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Barium	1.965	ug/L	2	1.3	5	98	3005A	6020A	ICPMSC	7440-39-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Beryllium	0.52	ug/L	0.5	0.25	0.5	104	3005A	6020A	ICPMSC	7440-41-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Boron	51.24	ug/L	50	40	100	102	3005A	6020A	ICPMSC	7440-42-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cadmium	0.195	ug/L	0.2	0.095	0.5	98	3005A	6020A	ICPMSC	7440-43-9	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Calcium	294.73	ug/L	250	130	250	118	3005A	6020A	ICPMSC	7440-70-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Chromium	5.49	ug/L	5	2.5	5	110	3005A	6020A	ICPMSC	7440-47-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cobalt	0.21	ug/L	0.2	0.15	0.5	105	3005A	6020A	ICPMSC	7440-48-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Copper	2.02	ug/L	2	1.1	5	101	3005A	6020A	ICPMSC	7440-50-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Iron	54.13	ug/L	50	33	100	108	3005A	6020A	ICPMSC	7439-89-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Lead	0.355	ug/L	0.3	0.2	1.5	118	3005A	6020A	ICPMSC	7439-92-1	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Magnesium	78.42	ug/L	80	43	250	98	3005A	6020A	ICPMSC	7439-95-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Manganese	1.955	ug/L	2	1	5	98	3005A	6020A	ICPMSC	7439-96-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Mercury	0.625	ug/L	0.5	0.4	0.8	125	3005A	6020A	ICPMSC	7439-97-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Molybdenum	2.205	ug/L	2	1.5	5	110	3005A	6020A	ICPMSC	7439-98-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Nickel	4.86	ug/L	4	2	5	122	3005A	6020A	ICPMSC	7440-02-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Potassium	219.45	ug/L	200	170	500	110	3005A	6020A	ICPMSC	9/7/7440	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Selenium	1.855	ug/L	2	1	2.5	93	3005A	6020A	ICPMSC	7782-49-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Silver	0.435	ug/L	0.4	0.25	1	109	3005A	6020A	ICPMSC	7440-22-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Sodium	457.985	ug/L	400	250	500	114	3005A	6020A	ICPMSC	7440-23-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Strontium	0.945	ug/L	1	0.5	1	95	3005A	6020A	ICPMSC	7440-24-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Thallium	0.98	ug/L	1	0.5	1	98	3005A	6020A	ICPMSC	7440-28-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Tin	2.47	ug/L	2	1.3	5	124	3005A	6020A	ICPMSC	7440-31-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Titanium	3.17	ug/L	2.5	1.3	5	127	3005A	6020A	ICPMSC	7440-32-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Vanadium	5.55	ug/L	5	3.8	10	111	3005A	6020A	ICPMSC	7440-62-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Zinc	10.095	ug/L	10	8.3	20	101	3005A	6020A	ICPMSC	7440-66-6	680-297813	680-298498

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-2

Job ID: 600-89052-2

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-89052-2

Comments
No additional comments.

Receipt
The samples were received on 3/20/2014 10:21 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.8º C.

Method Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-2

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SAV

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-89052-8	2014-SW-024	Water	03/19/14 09:13	03/20/14 10:21
600-89052-11	2014-SW-025	Water	03/19/14 11:45	03/20/14 10:21
600-89052-14	DUP-06	Water	03/19/14 00:00	03/20/14 10:21
600-89052-15	Field Blank	Water	03/19/14 10:10	03/20/14 10:21

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-2

Client Sample ID: 2014-SW-024

Lab Sample ID: 600-89052-8
Date Collected: 03/19/14 09:13
Matrix: Water
Date Received: 03/20/14 10:21

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		03/25/14 11:31	03/26/14 02:31	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		03/25/14 11:31	03/26/14 02:31	1
Lead	**0.000286**	**J**	0.00150	0.000200	mg/L		03/25/14 11:31	03/26/14 02:31	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		03/25/14 11:31	03/26/14 01:57	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		03/25/14 11:31	03/26/14 01:57	1
Lead	0.000200	U	0.00150	0.000200	mg/L		03/25/14 11:31	03/26/14 01:57	1

Client Sample ID: 2014-SW-025

Lab Sample ID: 600-89052-11
Date Collected: 03/19/14 11:45
Matrix: Water
Date Received: 03/20/14 10:21

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		03/25/14 11:31	03/26/14 03:26	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		03/25/14 11:31	03/26/14 03:26	1
Lead	**0.000421**	**J**	0.00150	0.000200	mg/L		03/25/14 11:31	03/26/14 03:26	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		03/25/14 11:31	03/26/14 03:05	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		03/25/14 11:31	03/26/14 03:05	1
Lead	0.000200	U	0.00150	0.000200	mg/L		03/25/14 11:31	03/26/14 03:05	1

Client Sample ID: DUP-06

Lab Sample ID: 600-89052-14
Date Collected: 03/19/14 00:00
Matrix: Water
Date Received: 03/20/14 10:21

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		03/24/14 09:17	03/25/14 00:23	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		03/24/14 09:17	03/25/14 00:23	1
Lead	0.000200	U	0.00150	0.000200	mg/L		03/24/14 09:17	03/25/14 00:23	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		03/24/14 09:17	03/25/14 00:16	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		03/24/14 09:17	03/25/14 00:16	1
Lead	0.000200	U	0.00150	0.000200	mg/L		03/24/14 09:17	03/25/14 00:16	1

Client Sample ID: Field Blank

Lab Sample ID: 600-89052-15
Date Collected: 03/19/14 10:10
Matrix: Water
Date Received: 03/20/14 10:21

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		03/24/14 09:17	03/25/14 00:31	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		03/24/14 09:17	03/25/14 00:31	1
Lead	0.000200	U	0.00150	0.000200	mg/L		03/24/14 09:17	03/25/14 00:31	1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
N1	MS, MSD: Spike recovery exceeds upper or lower control limits.

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
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)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-320916/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 321196 — **Prep Batch: 320916**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		03/24/14 09:17	03/25/14 11:16	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		03/24/14 09:17	03/25/14 11:16	1
Lead	0.000200	U	0.00150	0.000200	mg/L		03/24/14 09:17	03/25/14 11:16	1

Lab Sample ID: LCS 680-320916/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 321196 — **Prep Batch: 320916**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.1075		mg/L		108	75 - 125
Cadmium	0.0500	0.05230		mg/L		105	75 - 125
Lead	0.0500	0.05210		mg/L		104	75 - 125

Lab Sample ID: MB 680-321171/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 321395 — **Prep Batch: 321171**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		03/25/14 11:31	03/26/14 01:29	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		03/25/14 11:31	03/26/14 01:29	1
Lead	0.000200	U	0.00150	0.000200	mg/L		03/25/14 11:31	03/26/14 01:29	1

Lab Sample ID: LCS 680-321171/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 321395 — **Prep Batch: 321171**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.08840		mg/L		88	75 - 125
Cadmium	0.0500	0.04053		mg/L		81	75 - 125
Lead	0.0500	0.04176		mg/L		84	75 - 125

Lab Sample ID: 600-89052-8 MS — **Client Sample ID: 2014-SW-024**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 321395 — **Prep Batch: 321171**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.00130	U	0.100	0.09000		mg/L		90	75 - 125
Cadmium	0.0000950	U	0.0500	0.03881		mg/L		78	75 - 125
Lead	0.000286	J	0.0500	0.04062		mg/L		81	75 - 125

Lab Sample ID: 600-89052-8 MSD — **Client Sample ID: 2014-SW-024**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 321395 — **Prep Batch: 321171**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.00130	U	0.100	0.09310		mg/L		93	75 - 125	3	20
Cadmium	0.0000950	U	0.0500	0.04042		mg/L		81	75 - 125	4	20
Lead	0.000286	J	0.0500	0.04262		mg/L		85	75 - 125	5	20

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

Lab Sample ID: 600-89052-11 MS — **Client Sample ID: 2014-SW-025**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 321395 — **Prep Batch: 321171**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.00130	U	0.100	0.09365		mg/L		94	75 - 125
Cadmium	0.0000950	U	0.0500	0.03976		mg/L		80	75 - 125
Lead	0.000421	J	0.0500	0.04251		mg/L		84	75 - 125

Lab Sample ID: 600-89052-11 MSD — **Client Sample ID: 2014-SW-025**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 321395 — **Prep Batch: 321171**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.00130	U	0.100	0.09420		mg/L		94	75 - 125	1	20
Cadmium	0.0000950	U	0.0500	0.04098		mg/L		82	75 - 125	3	20
Lead	0.000421	J	0.0500	0.04355		mg/L		86	75 - 125	2	20

Lab Sample ID: 600-89052-8 MS — **Client Sample ID: 2014-SW-024**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 321395 — **Prep Batch: 321171**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.00130	U	0.100	0.09000		mg/L		90	75 - 125
Cadmium	0.0000950	U	0.0500	0.03978		mg/L		80	75 - 125
Lead	0.000200	U	0.0500	0.04138		mg/L		83	75 - 125

Lab Sample ID: 600-89052-8 MSD — **Client Sample ID: 2014-SW-024**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 321395 — **Prep Batch: 321171**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.00130	U	0.100	0.08515		mg/L		85	75 - 125	6	20
Cadmium	0.0000950	U	0.0500	0.03717	N1	mg/L		74	75 - 125	7	20
Lead	0.000200	U	0.0500	0.03825		mg/L		76	75 - 125	8	20

Lab Sample ID: 600-89052-11 MS — **Client Sample ID: 2014-SW-025**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 321395 — **Prep Batch: 321171**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.00130	U	0.100	0.08755		mg/L		88	75 - 125
Cadmium	0.0000950	U	0.0500	0.03834		mg/L		77	75 - 125
Lead	0.000200	U	0.0500	0.04035		mg/L		81	75 - 125

Lab Sample ID: 600-89052-11 MSD — **Client Sample ID: 2014-SW-025**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 321395 — **Prep Batch: 321171**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.00130	U	0.100	0.08830		mg/L		88	75 - 125	1	20
Cadmium	0.0000950	U	0.0500	0.03756		mg/L		75	75 - 125	2	20
Lead	0.000200	U	0.0500	0.03994		mg/L		80	75 - 125	1	20

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-2

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	MQL	MDL	Units	Method
Arsenic	0.00250	0.00130	mg/L	6020A
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	MQL	MDL	Units	Method
Arsenic	0.00250	0.00130	mg/L	6020A
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-2

Metals

Prep Batch: 320916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-89052-14	DUP-06	Dissolved	Water	3005A	
600-89052-14	DUP-06	Total Recoverable	Water	3005A	
600-89052-15	Field Blank	Total Recoverable	Water	3005A	
LCS 680-320916/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-320916/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 321171

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-89052-8	2014-SW-024	Dissolved	Water	3005A	
600-89052-8	2014-SW-024	Total Recoverable	Water	3005A	
600-89052-8 MS	2014-SW-024	Dissolved	Water	3005A	
600-89052-8 MS	2014-SW-024	Total Recoverable	Water	3005A	
600-89052-8 MSD	2014-SW-024	Dissolved	Water	3005A	
600-89052-8 MSD	2014-SW-024	Total Recoverable	Water	3005A	
600-89052-11	2014-SW-025	Dissolved	Water	3005A	
600-89052-11	2014-SW-025	Total Recoverable	Water	3005A	
600-89052-11 MS	2014-SW-025	Dissolved	Water	3005A	
600-89052-11 MS	2014-SW-025	Total Recoverable	Water	3005A	
600-89052-11 MSD	2014-SW-025	Dissolved	Water	3005A	
600-89052-11 MSD	2014-SW-025	Total Recoverable	Water	3005A	
LCS 680-321171/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-321171/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 321196

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-89052-14	DUP-06	Dissolved	Water	6020A	320916
600-89052-14	DUP-06	Total Recoverable	Water	6020A	320916
600-89052-15	Field Blank	Total Recoverable	Water	6020A	320916
LCS 680-320916/2-A	Lab Control Sample	Total Recoverable	Water	6020A	320916
MB 680-320916/1-A	Method Blank	Total Recoverable	Water	6020A	320916

Analysis Batch: 321395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-89052-8	2014-SW-024	Dissolved	Water	6020A	321171
600-89052-8	2014-SW-024	Total Recoverable	Water	6020A	321171
600-89052-8 MS	2014-SW-024	Dissolved	Water	6020A	321171
600-89052-8 MS	2014-SW-024	Total Recoverable	Water	6020A	321171
600-89052-8 MSD	2014-SW-024	Dissolved	Water	6020A	321171
600-89052-8 MSD	2014-SW-024	Total Recoverable	Water	6020A	321171
600-89052-11	2014-SW-025	Dissolved	Water	6020A	321171
600-89052-11	2014-SW-025	Total Recoverable	Water	6020A	321171
600-89052-11 MS	2014-SW-025	Dissolved	Water	6020A	321171
600-89052-11 MS	2014-SW-025	Total Recoverable	Water	6020A	321171
600-89052-11 MSD	2014-SW-025	Dissolved	Water	6020A	321171
600-89052-11 MSD	2014-SW-025	Total Recoverable	Water	6020A	321171
LCS 680-321171/2-A	Lab Control Sample	Total Recoverable	Water	6020A	321171
MB 680-321171/1-A	Method Blank	Total Recoverable	Water	6020A	321171

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-2

Client Sample ID: 2014-SW-024

Lab Sample ID: 600-89052-8
Date Collected: 03/19/14 09:13
Matrix: Water
Date Received: 03/20/14 10:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	321171	03/25/14 11:31	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	321395	03/26/14 01:57	BWR	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	321171	03/25/14 11:31	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	321395	03/26/14 02:31	BWR	TAL SAV

Client Sample ID: 2014-SW-025

Lab Sample ID: 600-89052-11
Date Collected: 03/19/14 11:45
Matrix: Water
Date Received: 03/20/14 10:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	321171	03/25/14 11:31	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	321395	03/26/14 03:05	BWR	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	321171	03/25/14 11:31	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	321395	03/26/14 03:26	BWR	TAL SAV

Client Sample ID: DUP-06

Lab Sample ID: 600-89052-14
Date Collected: 03/19/14 00:00
Matrix: Water
Date Received: 03/20/14 10:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	320916	03/24/14 09:17	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	321196	03/25/14 00:16	BWR	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	320916	03/24/14 09:17	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	321196	03/25/14 00:23	BWR	TAL SAV

Client Sample ID: Field Blank

Lab Sample ID: 600-89052-15
Date Collected: 03/19/14 10:10
Matrix: Water
Date Received: 03/20/14 10:21

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	320916	03/24/14 09:17	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	321196	03/25/14 00:31	BWR	TAL SAV

Laboratory References:

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

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-2

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	TX00083	10-31-14

Laboratory: TestAmerica Savannah

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

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14 *
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14 *
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14 *

* Expired certification is currently pending renewal and is considered valid.

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Frisco TX Projec

TestAmerica Job ID: 600-89052-2

Laboratory: TestAmerica Savannah (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

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

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Abby Marlow/Chris Trevino	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-27100-9382.2
Client Contact: Christina Higginbotham	Phone:	E-Mail: dean.joiner@testamericainc.com		Page: Page 1 of 1
Company: Golder Associates Inc.				Job #: 1302086
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 DAYS			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide Recycling Center, 6020- Water	Project #: 60004831			
Site: Stewart Creek	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A - Total As, Cd, Pb	6020A - Dissolved - As, Cd, Pb	5310 - TOC									Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	D	D										X	
2014-SW-024	03/19/14	0913	G	Water	X		X	X		Filtered for dissolved metals only									Golder*** : Ship Directly to:
2014-SW-024 MS	03/19/14	0913	G	Water	X	X		X											TestAmerica Savannah 5102 LaRoch Avenue
2014-SW-024 MSD	03/19/14	0913	G	Water	X	X		X											Savannah, GA 31404 Phone (912) 354-7858
2014-SW-025	03/19/14	1145	G	Water	X		X	X		"						"			
2014-SW-025 MS	03/19/14	1145	G	Water		X	X												
2014-SW-025 MSD	03/19/14	1145	G	Water		X	X												Attn: Sample Receiving
DUP-06	03/19/14	—	G	Water	X		X	X		"						"			!!!!

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-89052-2

Login Number: 89052

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-89052-2

Login Number: 89052
List Number: 1
Creator: Banda, Christy S

List Source: TestAmerica Savannah
List Creation: 03/20/14 03:27 PM

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

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-89052-2

Login Number: 89052
List Number: 2
Creator: Eaton, Cliff M

List Source: TestAmerica Savannah
List Creation: 03/25/14 11:05 AM

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

ANALYTICAL REPORT

Job Number: 600-89052-3

Job Description: Exide Recycling Center, Frisco TX Projec

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, TX 77073

Attention: Christina Higginbotham

Approved for release.
Cathy L Upton
Project Management Assistant II
3/27/2014 1:45 PM

Designee for
Dean A Joiner, Project Manager II
6310 Rothway Street, Houston, TX, 77040
(713)690-4444
dean.joiner@testamericainc.com
03/27/2014

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Project Manager.

TestAmerica Houston Certifications and Approvals: TX NELAP T104704223-09A-TX, ARDEQ 88-0759, LADEQ 01967, OKDEQ 9503, UT DOH GULF

Job Narrative
600-89052-3

Comments
No additional comments.

Receipt
The samples were received on 3/20/2014 10:21 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.8º C.

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

METHOD SUMMARY

Client: Golder Associates Inc. Job Number: 600-89052-3

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Grain Size	TAL BUR	ASTM D422	

Lab References:

TAL BUR = TestAmerica Burlington

Method References:

ASTM = ASTM International

METHOD / ANALYST SUMMARY

Client: Golder Associates Inc.

Job Number: 600-89052-3

Method	Analyst	Analyst ID
ASTM D422	Degree, Steven L	SLD

SAMPLE SUMMARY

Client: Golder Associates Inc.

Job Number: 600-89052-3

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
600-89052-1	2014-Sed-047	Solid	03/19/2014 0929	03/20/2014 1021
600-89052-2	2014-Sed-048	Solid	03/19/2014 1102	03/20/2014 1021
600-89052-3	2014-Sed-049	Solid	03/19/2014 1155	03/20/2014 1021

SAMPLE RESULTS

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-89052-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Frisco TX Projec

Client Sample ID: 2014-Sed-047

Lab Sample ID: 600-89052-1
Client Matrix: Solid

Date Sampled: 03/19/2014 09:29
Date Received: 03/20/2014 10:21

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	6.0						%	69792	03/20/2014 16:32	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	24.9						um	69792	03/20/2014 16:32	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	69792	03/20/2014 16:32	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	16.6						um	69792	03/20/2014 16:32	1	SLD
Sand	STL00582	20.0						%	69792	03/20/2014 16:32	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	69792	03/20/2014 16:32	1	SLD
Coarse Sand	STL00583	6.9						%	69792	03/20/2014 16:32	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	10.0						um	69792	03/20/2014 16:32	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	69792	03/20/2014 16:32	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	7.1						um	69792	03/20/2014 16:32	1	SLD
Medium Sand	STL00584	6.6						%	69792	03/20/2014 16:32	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	69792	03/20/2014 16:32	1	SLD
Fine Sand	STL00585	6.5						%	69792	03/20/2014 16:32	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.4						um	69792	03/20/2014 16:32	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	69792	03/20/2014 16:32	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	2.8						um	69792	03/20/2014 16:32	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	100.0						% Passing	69792	03/20/2014 16:32	1	SLD
Silt	STL00586	30.5						%	69792	03/20/2014 16:32	1	SLD
Clay	STL00587	43.5						%	69792	03/20/2014 16:32	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.2						um	69792	03/20/2014 16:32	1	SLD
Sieve Size #4 - Percent Finer	STL01274	94.0						% Passing	69792	03/20/2014 16:32	1	SLD
Sieve Size #10 - Percent Finer	STL01268	87.1						% Passing	69792	03/20/2014 16:32	1	SLD
Sieve Size #20 - Percent Finer	STL01271	82.4						% Passing	69792	03/20/2014 16:32	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-89052-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Frisco TX Projec

Client Sample ID: 2014-Sed-047

Lab Sample ID: 600-89052-1
Client Matrix: Solid

Date Sampled: 03/19/2014 09:29
Date Received: 03/20/2014 10:21

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	80.5						% Passing	69792	03/20/2014 16:32	1	SLD
Sieve Size #60 - Percent Finer	STL01276	79.2						% Passing	69792	03/20/2014 16:32	1	SLD
Sieve Size #80 - Percent Finer	STL01277	78.2						% Passing	69792	03/20/2014 16:32	1	SLD
Sieve Size #100 - Percent Finer	STL01269	77.4						% Passing	69792	03/20/2014 16:32	1	SLD
Sieve Size #200 - Percent Finer	STL01272	74.0						% Passing	69792	03/20/2014 16:32	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	59.4						% Passing	69792	03/20/2014 16:32	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	53.8						% Passing	69792	03/20/2014 16:32	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	49.1						% Passing	69792	03/20/2014 16:32	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	46.3						% Passing	69792	03/20/2014 16:32	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	43.5						% Passing	69792	03/20/2014 16:32	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	38.5						% Passing	69792	03/20/2014 16:32	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	32.9						% Passing	69792	03/20/2014 16:32	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-89052-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Frisco TX Projec

Client Sample ID: 2014-Sed-048

Lab Sample ID: 600-89052-2
Client Matrix: Solid

Date Sampled: 03/19/2014 11:02
Date Received: 03/20/2014 10:21

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	37.4						%	69792	03/20/2014 16:38	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	35.0						um	69792	03/20/2014 16:38	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	69792	03/20/2014 16:38	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	22.1						um	69792	03/20/2014 16:38	1	SLD
Sand	STL00582	52.5						%	69792	03/20/2014 16:38	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	69792	03/20/2014 16:38	1	SLD
Coarse Sand	STL00583	21.2						%	69792	03/20/2014 16:38	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.9						um	69792	03/20/2014 16:38	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	69792	03/20/2014 16:38	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.2						um	69792	03/20/2014 16:38	1	SLD
Medium Sand	STL00584	19.8						%	69792	03/20/2014 16:38	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	69792	03/20/2014 16:38	1	SLD
Fine Sand	STL00585	11.5						%	69792	03/20/2014 16:38	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.6						um	69792	03/20/2014 16:38	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	69792	03/20/2014 16:38	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.2						um	69792	03/20/2014 16:38	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	83.8						% Passing	69792	03/20/2014 16:38	1	SLD
Silt	STL00586	6.2						%	69792	03/20/2014 16:38	1	SLD
Clay	STL00587	3.9						%	69792	03/20/2014 16:38	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	69792	03/20/2014 16:38	1	SLD
Sieve Size #4 - Percent Finer	STL01274	62.6						% Passing	69792	03/20/2014 16:38	1	SLD
Sieve Size #10 - Percent Finer	STL01268	41.4						% Passing	69792	03/20/2014 16:38	1	SLD
Sieve Size #20 - Percent Finer	STL01271	33.0						% Passing	69792	03/20/2014 16:38	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-89052-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Frisco TX Projec

Client Sample ID: 2014-Sed-048

Lab Sample ID: 600-89052-2
Client Matrix: Solid

Date Sampled: 03/19/2014 11:02
Date Received: 03/20/2014 10:21

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	21.6						% Passing	69792	03/20/2014 16:38	1	SLD
Sieve Size #60 - Percent Finer	STL01276	13.6						% Passing	69792	03/20/2014 16:38	1	SLD
Sieve Size #80 - Percent Finer	STL01277	11.8						% Passing	69792	03/20/2014 16:38	1	SLD
Sieve Size #100 - Percent Finer	STL01269	11.1						% Passing	69792	03/20/2014 16:38	1	SLD
Sieve Size #200 - Percent Finer	STL01272	10.1						% Passing	69792	03/20/2014 16:38	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	5.7						% Passing	69792	03/20/2014 16:38	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	5.7						% Passing	69792	03/20/2014 16:38	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	4.8						% Passing	69792	03/20/2014 16:38	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	4.3						% Passing	69792	03/20/2014 16:38	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	3.9						% Passing	69792	03/20/2014 16:38	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	3.3						% Passing	69792	03/20/2014 16:38	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	2.8						% Passing	69792	03/20/2014 16:38	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-89052-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Frisco TX Projec

Client Sample ID: 2014-Sed-049

Lab Sample ID: 600-89052-3
Client Matrix: Solid

Date Sampled: 03/19/2014 11:55
Date Received: 03/20/2014 10:21

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	4.4						%	69792	03/20/2014 16:40	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	22.9						um	69792	03/20/2014 16:40	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	69792	03/20/2014 16:40	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	15.4						um	69792	03/20/2014 16:40	1	SLD
Sand	STL00582	11.4						%	69792	03/20/2014 16:40	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	69792	03/20/2014 16:40	1	SLD
Coarse Sand	STL00583	0.9						%	69792	03/20/2014 16:40	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	10.0						um	69792	03/20/2014 16:40	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	69792	03/20/2014 16:40	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	7.5						um	69792	03/20/2014 16:40	1	SLD
Medium Sand	STL00584	0.7						%	69792	03/20/2014 16:40	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	69792	03/20/2014 16:40	1	SLD
Fine Sand	STL00585	9.8						%	69792	03/20/2014 16:40	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.5						um	69792	03/20/2014 16:40	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	69792	03/20/2014 16:40	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	2.7						um	69792	03/20/2014 16:40	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	97.4						% Passing	69792	03/20/2014 16:40	1	SLD
Silt	STL00586	49.5						%	69792	03/20/2014 16:40	1	SLD
Clay	STL00587	34.7						%	69792	03/20/2014 16:40	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.2						um	69792	03/20/2014 16:40	1	SLD
Sieve Size #4 - Percent Finer	STL01274	95.6						% Passing	69792	03/20/2014 16:40	1	SLD
Sieve Size #10 - Percent Finer	STL01268	94.7						% Passing	69792	03/20/2014 16:40	1	SLD
Sieve Size #20 - Percent Finer	STL01271	94.5						% Passing	69792	03/20/2014 16:40	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-89052-3
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Frisco TX Projec

Client Sample ID: 2014-Sed-049

Lab Sample ID: 600-89052-3
Client Matrix: Solid

Date Sampled: 03/19/2014 11:55
Date Received: 03/20/2014 10:21

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	94.0						% Passing	69792	03/20/2014 16:40	1	SLD
Sieve Size #60 - Percent Finer	STL01276	93.3						% Passing	69792	03/20/2014 16:40	1	SLD
Sieve Size #80 - Percent Finer	STL01277	92.6						% Passing	69792	03/20/2014 16:40	1	SLD
Sieve Size #100 - Percent Finer	STL01269	91.7						% Passing	69792	03/20/2014 16:40	1	SLD
Sieve Size #200 - Percent Finer	STL01272	84.2						% Passing	69792	03/20/2014 16:40	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	59.7						% Passing	69792	03/20/2014 16:40	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	54.7						% Passing	69792	03/20/2014 16:40	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	43.9						% Passing	69792	03/20/2014 16:40	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	37.2						% Passing	69792	03/20/2014 16:40	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	34.7						% Passing	69792	03/20/2014 16:40	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	30.2						% Passing	69792	03/20/2014 16:40	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	25.2						% Passing	69792	03/20/2014 16:40	1	SLD

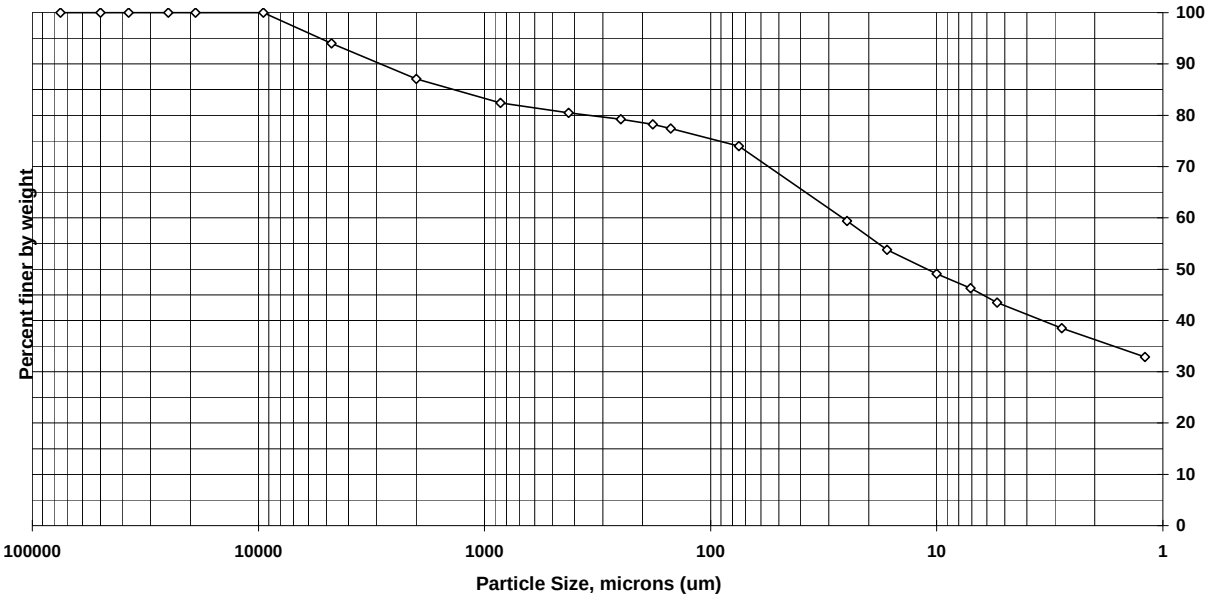
Particle Size of Soils by ASTM D422

				Date Received:	3/20/2014
Sample ID:	2014-Sed-047	**Percent Solids:**	76.3%	**Start Date:**	3/20/2014
Lab ID:	600-89052-C-1	**Specific Gravity:**	2.650	**End Date:**	3/24/2014

Shape (> #10): subangular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	94.0	6.0
#10	2000	87.1	6.9
#20	850	82.4	4.7
#40	425	80.5	1.9
#60	250	79.2	1.3
#80	180	78.2	1.0
#100	150	77.4	0.8
#200	75	74.0	3.4
Hyd1	24.9	59.4	14.6
Hyd2	16.6	53.8	5.6
Hyd3	10	49.1	4.7
Hyd4	7.1	46.3	2.8
Hyd5	5.4	43.5	2.8
Hyd6	2.8	38.5	5.0
Hyd7	1.2	32.9	5.6

Soil Classification	Percent of sample
Gravel	6.0
Sand	20.0
Coarse Sand	6.9
Medium Sand	6.6
Fine Sand	6.5
Silt	30.5
Clay	43.5

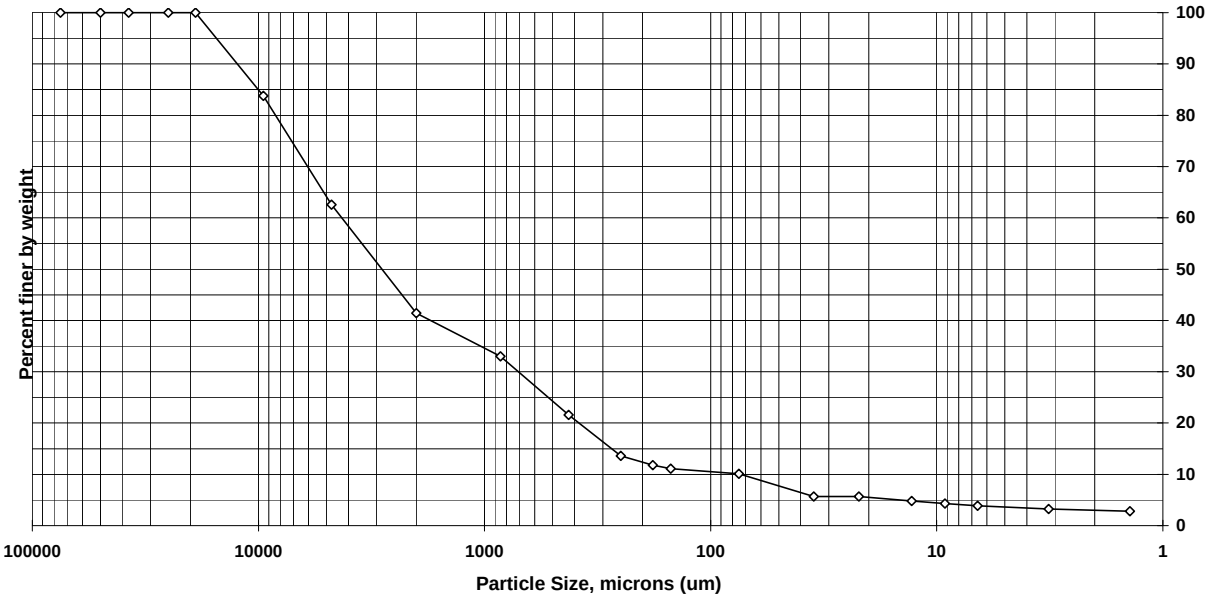
Particle Size of Soils by ASTM D422

				Date Received:	3/20/2014
Sample ID:	2014-Sed-048	**Percent Solids:**	82.5%	**Start Date:**	3/20/2014
Lab ID:	600-89052-C-2	**Specific Gravity:**	2.650	**End Date:**	3/24/2014

Shape (> #10): subangular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	83.8	16.2
#4	4750	62.6	21.2
#10	2000	41.4	21.2
#20	850	33.0	8.4
#40	425	21.6	11.4
#60	250	13.6	8.0
#80	180	11.8	1.8
#100	150	11.1	0.7
#200	75	10.1	1.0
Hyd1	35	5.7	4.4
Hyd2	22.1	5.7	0.0
Hyd3	12.9	4.8	0.9
Hyd4	9.2	4.3	0.5
Hyd5	6.6	3.9	0.5
Hyd6	3.2	3.3	0.6
Hyd7	1.4	2.8	0.5

Soil Classification	Percent of sample
Gravel	37.4
Sand	52.5
Coarse Sand	21.2
Medium Sand	19.8
Fine Sand	11.5
Silt	6.2
Clay	3.9

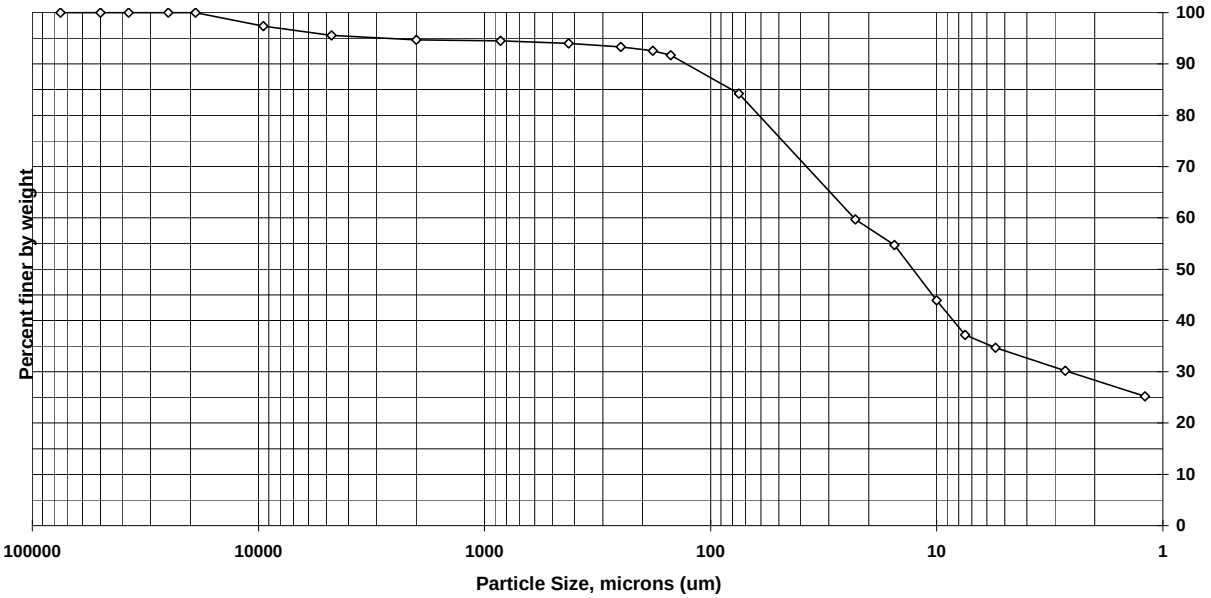
Particle Size of Soils by ASTM D422

				Date Received:	3/20/2014
Sample ID:	2014-Sed-049	**Percent Solids:**	54.5%	**Start Date:**	3/20/2014
Lab ID:	600-89052-C-3	**Specific Gravity:**	2.650	**End Date:**	3/24/2014

Shape (> #10): n/a

Non-soil material: plant, wood, shell

Hardness (> #10): n/a



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	97.4	2.6
#4	4750	95.6	1.8
#10	2000	94.7	0.9
#20	850	94.5	0.2
#40	425	94.0	0.5
#60	250	93.3	0.7
#80	180	92.6	0.7
#100	150	91.7	0.9
#200	75	84.2	7.5
Hyd1	22.9	59.7	24.5
Hyd2	15.4	54.7	5.0
Hyd3	10	43.9	10.8
Hyd4	7.5	37.2	6.7
Hyd5	5.5	34.7	2.5
Hyd6	2.7	30.2	4.5
Hyd7	1.2	25.2	5.0

Soil Classification	Percent of sample
Gravel	4.4
Sand	11.4
Coarse Sand	0.9
Medium Sand	0.7
Fine Sand	9.8
Silt	49.5
Clay	34.7

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-Sed-047
Lab Sample ID	600-89052-C-1

Date Received	3/20/2014
Start Date	03/20/2014 16:32
End Date	03/24/2014 9:30

Dry Weight Determination

Tin Weight	0.99	g
Wet Sample + Tin	34.63	g
Dry Sample + Tin	26.64	g
% Moisture	23.75	%

Non-soil material:	n/a
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	03/20/2014 16:34
Date/Time out of oven	03/21/2014 15:03

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		112.64	112.64
Sample Weight (Oven Dried)			85.9

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			11.1
Sample <#10			74.8
% Passing #10			66.4

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.17	493.34	5.17	g	94.0	Gravel	
#10	2000	462.87	468.78	5.91	g	87.1	Sand	Coarse
#20	850	380.87	384.94	4.07	g	82.4	Sand	Medium
#40	425	353.87	355.53	1.66	g	80.5	Sand	Medium
#60	250	350.51	351.60	1.09	g	79.2	Sand	Fine
#80	180	338.67	339.49	0.82	g	78.2	Sand	Fine
#100	150	330.31	331.02	0.71	g	77.4	Sand	Fine
#200	75	320.63	323.51	2.88	g	74.0	Sand	Fine
				0.00	g	74.0		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	85.9

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0355	21.5	24.9	59.4	Silt	
5	5	1.0325	21.5	16.6	53.8	Silt	
15	15	1.0300	21.5	10	49.1	Silt	
30	31	1.0285	21.5	7.1	46.3	Silt	
60	57	1.0270	21.5	5.4	43.5	Silt	
250	235	1.0245	20.5	2.8	38.5	Clay	
1440	1382	1.0215	20.5	1.2	32.9	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-Sed-048
Lab Sample ID	600-89052-C-2

Date Received	3/20/2014
Start Date	03/20/2014 16:38
End Date	03/24/2014 9:31

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	37.26	g
Dry Sample + Tin	30.92	g
% Moisture	17.49	%

Non-soil material:	n/a
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	03/20/2014 16:40
Date/Time out of oven	03/21/2014 15:03

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		213.25	213.25
Sample Weight (Oven Dried)			176

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			103
Sample <#10			73
% Passing #10			34.2

Hydrometer Data	
Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.30	475.77	28.47	g	83.8	Gravel	
#4	4750	488.17	525.54	37.37	g	62.6	Gravel	
#10	2000	462.87	500.19	37.32	g	41.4	Sand	Coarse
#20	850	389.66	404.48	14.82	g	33.0	Sand	Medium
#40	425	367.05	387.09	20.04	g	21.6	Sand	Medium
#60	250	345.78	359.94	14.16	g	13.6	Sand	Fine
#80	180	331.80	334.97	3.17	g	11.8	Sand	Fine
#100	150	335.55	336.78	1.23	g	11.1	Sand	Fine
#200	75	320.54	322.30	1.76	g	10.1	Sand	Fine
				0.00	g	10.1		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	176

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0100	21.5	35	5.7	Silt	
5	5	1.0100	21.5	22.1	5.7	Silt	
15	15	1.0090	21.5	12.9	4.79	Silt	
30	30	1.0085	21.5	9.2	4.33	Silt	
60	59	1.0080	21.5	6.6	3.88	Silt	
250	256	1.0075	20.5	3.2	3.27	Clay	
1440	1440	1.0070	20.5	1.4	2.81	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-Sed-049
Lab Sample ID	600-89052-C-3

Date Received	3/20/2014
Start Date	03/20/2014 16:40
End Date	03/24/2014 9:43

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	63.49	g
Dry Sample + Tin	35.08	g
% Moisture	45.48	%

Non-soil material:	plant, wood, shell
Shape (> #10):	n/a
Hardness (> #10):	n/a

Date/Time in oven	03/20/2014 16:42
Date/Time out of oven	03/21/2014 15:04

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		176.34	176.34
Sample Weight (Oven Dried)			96.1

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			5.12
Sample <#10			91
% Passing #10			51.6

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.30	449.84	2.54	g	97.4	Gravel	
#4	4750	488.17	489.88	1.71	g	95.6	Gravel	
#10	2000	462.87	463.74	0.87	g	94.7	Sand	Coarse
#20	850	380.87	381.10	0.23	g	94.5	Sand	Medium
#40	425	353.87	354.38	0.51	g	94.0	Sand	Medium
#60	250	350.51	351.15	0.64	g	93.3	Sand	Fine
#80	180	338.67	339.33	0.66	g	92.6	Sand	Fine
#100	150	330.31	331.20	0.89	g	91.7	Sand	Fine
#200	75	320.63	327.87	7.24	g	84.2	Sand	Fine
				0.00	g	84.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	96.1

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0395	21.5	22.9	59.7	Silt	
5	5	1.0365	21.5	15.4	54.7	Silt	
15	15	1.0300	21.5	10	43.9	Silt	
30	30	1.0260	21.5	7.5	37.2	Silt	
60	58	1.0245	21.5	5.5	34.7	Silt	
250	256	1.0220	20.5	2.7	30.2	Clay	
1440	1440	1.0190	20.5	1.2	25.2	Clay	

DATA REPORTING QUALIFIERS

Lab Section	Qualifier	Description

QUALITY CONTROL RESULTS

Client: Golder Associates Inc.

Job Number: 600-89052-3

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Geotechnical					
Analysis Batch:200-69792					
600-89052-1	2014-Sed-047	T	Solid	D422	
600-89052-2	2014-Sed-048	T	Solid	D422	
600-89052-3	2014-Sed-049	T	Solid	D422	

Report Basis

T = Total

30 Community Drive Ste 11
South Burlington, VT 05403
(802) 660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Abby Marlow/Chris Trevino	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-27103-9383.2
Client Contact: Christina Higginbotham	Phone: 281-821-6868	E-Mail: dean.joiner@testamericainc.com		Page: Page 1 of 1
Company: Golder Associates Inc.				Job #: 1302086
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 Days			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide, Grain Size - Soil	Project #: 60004831			
Site: Stewart Creek	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	D422 - % Passing Routine List	Total Number of containers	Special Instructions/Note:
			Preservation Code:			N		
2014-SED-047	3-19-14	0929	C	Solid		X		Golder*** : Ship Directly to:
2014-SED-048	↓	1102	C	Solid		X		TestAmerica Burlington
2014-SED-049	↓	1155	C	Solid		X		
			C	Solid		X		
			C	Solid		X		!!!!

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-89052-3

Login Number: 89052

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-89052-3

Login Number: 89052
List Number: 1
Creator: Gagne, Eric M

List Source: TestAmerica Burlington
List Creation: 03/20/14 03:52 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	927925
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.5ºC. IR GUN ID 181. CF -0.1
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Data Usability Summary
Test America Work Orders: 600-90543-1, 600-90549-1, 600-90579-1, 600-90647-1, 600-90653-1, 600-90671-1

Sample Dates:	April 15 to 16, 2014	**Project No.:**	1302086
Laboratory:	Test America (Houston TLAP Certification T104704223) (Savannah TLAP Certification T104704185-13-6) (Burlington – No TLAP Certification Required for Grain Size by ASTM Method D422)	**Client:**	Exide Technologies Inc.
Work Orders:	600-90543-1, 600-90549-1, 600-90579-1, 600-90647-1, 600-90653-1, 600-90671-1		
Intended Use	Affected Property Assessment Report (APAR)		
Site:	Former Operating Plant (FOP), 7471 5th Street, Frisco, TX (Stewart Creek, USACE)		

TESTS/ METHODS:

Total and dissolved Metals by SW-846 6010B - Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP) completed by Test America-Houston, TX laboratory
Total and dissolved Metals by SW-846 6020A - Inductively Coupled Plasma-Mass Spectrometry (ICP-MS); completed by Test America- Savannah, GA laboratory
Total Organic Carbon by WALKLEY BLACK
Grain Size by ASTM Method D422; completed by Test America – Burlington, VT Laboratory

SAMPLES:

14 sediment samples, 4 surface water samples, 3 field duplicates (1 surface water and two sediment), 2 field blanks, 2 equipment blanks, and 2 field MS/MSD pairs. See Table 1 for a complete cross-referenced listing of samples.

Golder completed a review of the above chemical analysis data for conformance with the requirements of the Texas Risk Reduction Program (TRRP) guidance document, Review and Reporting of COC Concentration Data (RGG-366/TRRP-13 Revised May 2010) and for adherence to project objectives. The results of the review are discussed in this data usability summary (DUS).

Golder completed the review using the following laboratory and project submittals:

- Laboratory reportable data as defined in TRRP-13;
- Laboratory review checklists (LRC) with the associated exception reports;
- Laboratory Electronic Data Deliverable (EDD); and
- Project field notes from the sampling event.

The review of the reportable data included the quality control (QC) parameters listed below, as required per TRRP-13, using the applicable analytical method and project requirements:

- Data Completeness
- Chain-of-Custody Procedures
- Sample Condition - Holding Time, Preservation, and Containers

- Field Procedures
- Results Reporting Procedures
- Laboratory and Field QC Blanks
- Laboratory Control Spike and Matrix Spike Recoveries
- Surrogate Recoveries
- Laboratory and Field Duplicate Precision

Additionally, Golder used the LRC to evaluate the following QC parameters:

- Method Quantitation Limits (MQLs)
- Method Detection Limits (MDLs)
- Instrument Tuning, Calibration, and Performance
- Internal Standards

Criteria used for this data usability review are as follows:

- Inorganics: 70-130% spike recovery (and not less than 30% or data is rejected) and +MQL difference or 30% RPD (for laboratory duplicates) as recommended in TRRP-13

- Soil Samples: + 3x MQL difference (if either result is less than 5x MQL) or 50% RPD (for field duplicates) as recommended in TRRP-13

- Aqueous Samples: + 2x MQL difference (if either result is less than 5x MQL) or 30% RPD (for field duplicates) as recommended in TRRP-13

If an item was found outside of the review criteria, the reviewer applied a data qualifier (DQ) and bias code to the results for the affected samples in accordance with TRRP-13. A list of all qualified results and definitions of the qualifier and bias codes are given in Table 2.

GLOSSARY OF TERMS

The following definitions apply for terms related to analyte reporting limits:

MDL (Method Detection Limit) – the minimum concentration of an analyte that the laboratory can measure and report with 99% confidence that the analyte concentration is greater than zero. The MDL is determined by the laboratory for each analyte in a given reagent matrix (water or soil) generally using the procedures specified in 40 CFR Part 136, Appendix B. It is a measure of the concentration an instrument can detect or 'see' in a given reagent matrix. TRRP-13 requires that the laboratory routinely check the MDL for reasonableness.

SDL (Sample Detection Limit) – the MDL adjusted to reflect sample-specific actions, such as dilution or use of smaller aliquot sizes than prescribed in the analytical method, and taking into account sample characteristics, sample preparation, and analytical adjustments including dry-weight adjustments. It is a measure of the concentration an instrument can detect or 'see' in a given sample. For TRRP, non-detects are reported using the SDL. This term was originally called the SQL (Sample Quantitation Limit) before the TRRP rule revisions effective March 19, 2007.

Unadjusted MQL (Method Quantitation Limit) – the lowest non-zero concentration standard in the laboratory's initial calibration curve calculated using the normal aliquot sizes and final volumes prescribed in the analytical method. The unadjusted MQL is reported by the laboratory for each analyte in a given matrix (water or soil). It is a measure of the concentration an instrument can accurately measure in a typical sample. Per TRRP, the Unadjusted MQLs should be below the Levels of Required Performance (LORPs) for purposes of assessment as well as demonstration of conformance with critical Protective Concentration Levels (PCLs).

MQL – the unadjusted MQL adjusted to reflect sample-specific actions, such as dilution or use of smaller aliquot sizes than prescribed in the analytical method, and takes into account sample characteristics, sample preparation, and analytical adjustments including dry-weight adjustments. It is a measure of the concentration an instrument can accurately measure in a given sample. Analytes with concentrations above the SDL but below the MQL, though present in the sample, may not be accurately measured and are thus flagged as estimated (J).

LABORATORY CERTIFICATION

At the time the laboratory data were generated for this project, the laboratory was NELAC accredited under the Texas Laboratory Accreditation Program (TLAP) for the matrices, methods and parameters of analysis requested on the chain-of-custody forms. A copy of the applicable pages of the laboratory's National Environmental Laboratory Accreditation Program (NELAP) certificate valid during the period in which the laboratory generated the data in this report is included in Appendix 10.5 to this DUS. The TCEQ does not offer certification for Grain Size by ASTM Method D422.

USABILITY SUMMARY

1. Usability of Unqualified Non-Detects – Non-detects are reported at the sample detection limit (SDL) as required per TRRP. Additionally, according to the LRC, an MDL study was performed for each analyte and the MDLs were checked for reasonableness for each applicable analyte. The levels of required performance (LORPs) have been established by Golder/PBW as the TRRP Residential Assessment Levels (RALs), which include ecological criteria for sediment and surface water. As needed per TRRP, the Unadjusted MQL stated by the laboratory is at or below the LORP for each applicable analyte, except for dissolved metals in surface water run by Method 6010B. Further analysis by Method 6020A was completed in an effort to meet applicable ecological criteria for dissolved metals in surface water. Thus, the analytical methods are appropriate and the results can be used to demonstrate conformance with the criteria. except for dissolved metals in surface water run by Method 6010B.

2. Usability of Qualified Data – There are no major QC deficiencies, and thus all data is usable as qualified for the intended use. As shown in Table 2, the reviewer qualified some detects as estimated (J) due to minor QC deficiencies. Detects that are biased high can be used; however, the reported concentration may be high. Detects that are estimated may be either low or high. Results with a laboratory J-flag (i.e., at a concentration between the SDL and MQL) should be considered estimates. The actual value is not expected to exceed the sample MQL.

Reviewer: Jing Song Xi 4/28/14

QUALITY CONTROL PARAMETERS AND OUTCOMES

Data Completeness

The laboratory data packages contain all necessary data (i.e., the laboratory reportable data per TRRP-13) and the EDD contain all sample results in acceptable format.

Chain-of-Custody

Proper sample custody procedures were used, which confirms that the integrity of the samples was maintained. Additionally, the information on the custody records is complete and agrees with that in the field notes and laboratory reports, with the following exceptions:

- For 600-90579, one sample container listed 2014-SED- but this sample was identified as 2014-SED-053 by the sample time and date.

Sample Condition

Samples were collected in appropriate containers, properly preserved in the field, and prepared and analyzed within the holding times as required in the analytical methods:

- For 600-90543, the temperature of the cooler at receipt was 3.6°C.
- For 600-90579, the temperature of the cooler at receipt was 4.0°C.
- For 600-90653, the temperature of the cooler at receipt was 3.0°C.
- For 600-90671, the temperature of the cooler at receipt was 2.2°C.

Sediment samples were collected for grain size analyses and shipped separately to Test America – Burlington. A report with soil particle size by ASTM D422 was generated, but a TRRP Format report was unavailable for grain size analysis.

Field Procedures

The samples were collected and placed immediately into sterilized jars provided by the laboratory and then into a cooler with ice for overnight delivery to the laboratory.

3 field duplicates, 2 field blanks, 2 equipment blanks, and 2 field MS/MSD pairs were collected with the 18 investigative samples.

Results Reporting Procedures

The hardcopy analytical results include a Result, MQL (adjusted), and SDL. The EDD includes the MDL, SDL (under the SQL column per previously used terminology) and the MQL, which is not adjusted for sample specific factors.

Results are reported in mg/kg with dry-weight correction for the metals. Non-detects are reported using the SDL as specified per TRRP and detects between the SDL and MQL are reported with a laboratory J-flag. The concentration reported for detects between the SDL and MQL is below the calibration range and thus is considered estimated.

MQLs- The LORPs have been established by Golder/PBW as the TRRP Residential Assessment Levels (RALs), which include ecological criteria for sediment and surface water. The unadjusted MQLs for the laboratory are at or below the LORPs for each applicable analyte, except for dissolved metals in surface water run by Method 6010B. Further analysis by Method 6020A was completed in an effort to meet applicable ecological criteria for dissolved metals in surface water.

MDLs- According to the LRCs, an MDL study was performed for each analyte, and the MDLs were checked for reasonableness and either adjusted or supported by the analysis of detectability check standards (DCS) for each applicable analyte as required per TRRP-13. Results for the DCS are included in the data packages.

Laboratory Blanks – Results for samples prepared in the same QC batch as a contaminated method blank may be affected by laboratory contamination. No analytes were detected in the laboratory blanks, except for the following:

- For 600-90579 batch 132572, lead was detected in the method blank at 0.1250 mg/kg. Associated sediment samples had concentrations greater than 5 times the method blank concentration, therefore samples were unaffected.

Field QC Blanks

2 field blanks and 2 equipment rinsate blanks were collected to document sufficient field decontamination procedures for sediment sampling devices and filters. No analytes were detected in the field blanks. Results for sediment samples collected with a contaminated rinsate blank (dredge sampling equipment) may be affected by field contamination. Detected concentrations in the equipment rinsate blanks were as follows:

Lab Package	Field Sample ID	Sample Date	Analyte	Blank Concentration (mg/L)
600-90543-2	Equipment Blank	4/15/2014	Lead	0.000699 J
600-90653-5	Equipment Blank Dredge	4/16/2014	Lead	0.000259 J

Sediment samples collected on 4/15/2014 (600-90579-1 through 600-90579-7) and 4/16/2014 (90671-1 through 600-90671-9) exhibited detections of lead; however, a direct correlation from an aqueous matrix to a soil matrix cannot be made. Additionally, based on the lead concentrations in the sediment samples, the rinsate blank detections are unlikely to affect sample results. Therefore, results for the above mentioned samples were not qualified.

Laboratory Control Sample

The laboratory prepared one laboratory control sample (LCS) for each analytical batch and reported recoveries for all of the analytes for each test. The LCS recoveries are within the TRRP recommended criteria, which indicates good accuracy for the preparation and analysis technique on a sample, free of matrix effects.

Matrix Spike Recovery

The laboratory prepared one or more matrix spike (MS) and matrix spike duplicate (MSD) with each analytical batch plus a Post Digestion Spike (PDS) with each metals analytical batch. MS/MSD recoveries are reported for the same analytes as the LCS for MS/MSD prepared using a sample from the site, which includes 2 MS/MSD for Total Metals, as shown in Table 1. According to the LRC, laboratory-designated MS/MSDs were run for each batch where a site-specific MS/MSD (such as in the case for those surface water samples resubmitted for 6020 analyses in Savannah). Test America does not include MS/MSD data in the lab packages that do not pertain to the Site. Therefore, MS/MSD data is not reported in the QC section of the lab data for 6020 samples. A site-specific MS/MSD sample was collected once per every 10 field samples and is included in reports where applicable.

PDS outcomes are given on the LRC for each job package; however PDS data are not reportable data per TRRP-13. According to the LRC, the PDS met method requirements, which indicates good accuracy for the analysis technique on the given sample matrix.

The MS/MSD recoveries are within the TRRP recommended criteria, which indicates good accuracy for the preparation and analysis technique on a sample free of matrix effects.

Surrogate Recovery

Since organic analyses were not requested for these data packages, surrogate recoveries were not applicable.

Laboratory Duplicate Precision

The laboratory prepared one or more Matrix Spike Duplicate (MSD) with each analytical batch for each test. Additionally, the laboratory prepared one Matrix Duplicate (MD) with each metals and pH analytical batch. RPDs are reported for the same analytes as the LCS for MSD/MD prepared using a sample from the site, which includes 2 MS/MSD and MD for Total Metals, as shown in Table 1.

The MSD and MD RPDs are within the TRRP recommended criteria, which indicates good precision for the preparation and analysis technique for the given sample matrix.

Field Duplicate Precision

Three field duplicates were collected with the samples and analyzed. Results are summarized in Table 3. The RPDs (or the absolute difference between results for concentrations <5x MQL and for non-detects) are within the TRRP criteria, which indicates good precision for the sampling, preparation, and analysis technique on the given sample matrix.

Instrument Tuning

According to the LRC, instrument tuning met method requirements for the samples, which indicates the GC/MS instrument was properly set up to identify analytes.

Instrument Calibration

According to the LRC, initial and continuing calibration data met method requirements for all reported results, which indicates the instruments were properly calibrated to measure analyte concentrations.

Instrument Performance

According to the LRC, the serial dilution and ICP interference check samples met method requirements, which indicates that no significant matrix interference exists.

Internal Standards

According to the LRC, area counts and retention times were within method requirements.

TABLE 1
CROSS REFERENCE OF FIELD SAMPLE IDENTIFICATIONS AND LABORATORY IDENTIFICATIONS

Lab Sample ID	Field Sample ID	Prep Batch/ Analysis Batch (Houston)	Prep Batch/ Analysis Batch (Savannah)	Sample Date	Matrix	Comments
600-90543-1	Field Blank	NA	325779/325409	4/15/2014	water	Field Blank
600-90543-2	Equipment Blank	NA	325779/325409	4/15/2014	water	Rinsate Blank (dredge)
600-90543-3	2014-SW-026	NA	325779/325409	4/15/2014	surface water	
600-90543-4	2014-SW-027	NA	325779/325409	4/15/2014	surface water	
600-90579-1	2014-SED-050	132572/132626	NA	4/15/2014	sediment	
600-90579-2	2014-SED-051	132572/132626	NA	4/15/2014	sediment	
600-90579-3	2014-SED-052	132572/132626	NA	4/15/2014	sediment	
600-90579-4	2014-SED-053	132572/132626	NA	4/15/2014	sediment	
600-90579-5	Dup-1	132572/132626	NA	4/15/2014	sediment	Duplicate of 2014-SED-052
600-90579-6	2014-SED-054	132572/132626	NA	4/15/2014	sediment	site-specific MS/MSD
600-90579-7	2014-SED-055	132572/132626	NA	4/15/2014	sediment	
600-90653-1	2014-SW-028	NA	325409/325779	4/16/2014	surface water	
600-90653-2	2014-SW-029	NA	325409/325779	4/16/2014	surface water	site-specific MS/MSD
600-90653-3	DUP-1	NA	325410/326049	4/16/2014	surface water	Duplicate of 2014-SW-029
600-90653-4	Field Blank	NA	325410/326049	4/16/2014	water	Field Blank
600-90653-5	Equipment Blank Dredge	NA	325410/326049	4/16/2014	water	Rinsate Blank (dredge)
600-90671-1	2014-SED-056	132653/132730	NA	4/16/2014	sediment	
600-90671-2	2014-SED-057	132653/132730	NA	4/16/2014	sediment	
600-90671-3	2014-SED-058	132653/132730	NA	4/16/2014	sediment	
600-90671-4	2014-SED-059	132653/132730	NA	4/16/2014	sediment	
600-90671-5	2014-SED-060	132653/132730	NA	4/16/2014	sediment	
600-90671-6	2014-SED-061	132653/132730	NA	4/16/2014	sediment	
600-90671-7	Dup-2	132653/132730	NA	4/16/2014	sediment	Duplicate of 2014-SED-059
600-90671-8	2014-SED-062	132653/132730	NA	4/16/2014	sediment	
600-90671-9	2014-SED-063	132653/132730	NA	4/16/2014	sediment	

NA - Not applicable

TABLE 2 - QUALIFIED DATA

Lab Sample ID	Field Sample ID	Analyte	Result	Units	Qualifer	Explanation
600-90543-2	Equipment Blank	Lead (Total)	0.000699 J	mg/L	J	Detected results between the SDL and MQL
600-90543-3	2014-SW-026	Arsenic (Total)	0.00168 J	mg/L	J	Detected results between the SDL and MQL
		Cadmium (Total)	0.000107 J	mg/L	J	Detected results between the SDL and MQL
		Lead (Total)	0.000530 J	mg/L	J	Detected results between the SDL and MQL
		Arsenic (Dissolved)	0.00171 J	mg/L	J	Detected results between the SDL and MQL
		Cadmium (Dissolved)	0.0000998 J	mg/L	J	Detected results between the SDL and MQL
600-90543-4	2014-SW-027	Lead	0.00105 J	mg/L	J	Detected results between the SDL and MQL
600-90579-2	2014-SED-051	Cadmium	0.273 J	mg/kg	J	Detected results between the SDL and MQL
600-90579-7	2014-SED-055	Cadmium	0.344 J	mg/kg	J	Detected results between the SDL and MQL
600-90653-1	2014-SW-028	Arsenic (Total)	0.00130 J	mg/L	J	Detected results between the SDL and MQL
		Cadmium (Total)	0.000136 J	mg/L	J	Detected results between the SDL and MQL
		Lead (Total)	0.000324 J	mg/L	J	Detected results between the SDL and MQL
		Arsenic (Dissolved)	0.00151 J	mg/L	J	Detected results between the SDL and MQL
600-90653-2	2014-SW-029	Arsenic (Total)	0.00185 J	mg/L	J	Detected results between the SDL and MQL
		Lead (Total)	0.000279 J	mg/L	J	Detected results between the SDL and MQL
		Arsenic (Dissolved)	0.00194 J	mg/L	J	Detected results between the SDL and MQL
		Lead (Dissolved)	0.000475 J	mg/L	J	Detected results between the SDL and MQL
600-90653-3	DUP-1	Arsenic (Total)	0.00189 J	mg/L	J	Detected results between the SDL and MQL
		Lead (Total)	0.000209 J	mg/L	J	Detected results between the SDL and MQL
		Arsenic (Dissolved)	0.00178 J	mg/L	J	Detected results between the SDL and MQL
600-90653-5	Equipment Blank (Dredge)	Lead (Total)	0.00259 J	mg/L	J	Detected results between the SDL and MQL
600-90671-5	2014-SED-060	Cadmium	0.161 J	mg/kg	J	Detected results between the SDL and MQL
600-90671-7	Dup-2	Cadmium	0.358 J	mg/kg	J	Detected results between the SDL and MQL

Note:

Detected results between the SDL and MQL (i.e., results with a laboratory J-flag) have been included in the above table since the reported concentration is below the calibration range.

J Estimated data; The analyte was detected and identified. The associated numerical value (i.e., the reported sample concentration) is the approximate concentration of the analyte in the sample.

NJ Tentatively identified, estimated data; The analysis indicates the presence of the analyte for which there is presumptive evidence to make a tentative identification and the associated numerical value represents its approximate concentration.

NS Not selected; Another result (from a secondary dilution, different analytical method, re-sampling, etc.) is selected for use based on QC outcomes and/or reported concentrations.

R Rejected data; The data is unusable. Serious QC deficiencies make it impossible to verify the absence or presence of this analyte.

U Not detected; The analyte was not detected >5x (10x for common contaminants) the level in an associated blank and thus should be considered not detected above the level of the associated numerical value (i.e., the reported sample concentration).

UJ Estimated data; The analyte was not detected above the reported sample detection limit (SDL). The numerical value of the SDL is estimated and may be inaccurate.

H Bias in sample result is likely to be high

L Bias in sample result is likely to be low

TABLE 3 - FIELD DUPLICATE PRECISION CALCULATIONS

Duplicate and Parent Sample Field Identification	Analyte	Sample Result	Duplicate Result	RPD[a]	Accept or Reject	Qualifier Added
Dup-1/2014-SED-052	Arsenic	8.02	7.95	0.9	A	-
	Cadmium	0.774	0.764	1.3	A	-
	Lead	22.2	23.8	7.0	A	-
Dup-2/2014-SED-059	Arsenic	19.6	18.2	7.4	A	-
	Cadmium	0.377	0.358	5.2	A	-
	Lead	13.2	11	18.2	A	-
DUP-1/2014-SW-029	Arsenic	0.00185	0.00189	2.1	A	-
	Lead	0.000279	0.000209	28.7	A	-

* DUP-2/2014-SW-021 parent and duplicate sample concentrations were "J" flagged according to lab analysis

[a] RPD = ((SR - DR)*200)/(SR + DR)

A - Acceptable Data

NA - Not Analyzed

The RPD test (<50%) applies if both results are greater than 5x MQL. Otherwise, the absolute difference test (< 3x MQL) applies.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-90543-1
Client Project/Site: Stewart Creek - 6020

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
4/24/2014 11:59:00 AM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

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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.

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-90543-1 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☑ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☑ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton		4/23/2014
Name (printed)	Signature	Date

Project Management Asst II
Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/23/2014
Project Name:	Stewart Creek - 6020	Laboratory Job Number:	600-90543-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/23/2014
Project Name:	Stewart Creek - 6020	Laboratory Job Number:	600-90543-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/23/2014
Project Name:	Stewart Creek - 6020	Laboratory Job Number:	600-90543-1
Reviewer Name:	Dean A Joiner		

ER #[1]	Description

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
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5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

MDLV Evaluation

Dept	Matrix	Analyte	Result	Unit	Spike Amount	MDL	RL	Percent Recovery	Analysis Method	Instrument ID	Analysis Date
GE	Water	Total Organic Carbon	0.69	mg/L	0.750	0.50	1.0	92	9060A/SM5310B	TOC3	02/24/2014 20:12

Dept	Matrix	Client Sample ID	Analyte	Result	Unit	Spike Amount	MDL	RL	Percent Recovery	Prep Method	Analysis Method	Instrument ID	CAS	Prep Batch	Analysis Batch
ME	Water	Q4 2013 AQ MDLV ICPMSC	Aluminum	56.4	ug/L	50	23	50	113	3005A	6020A	ICPMSC	7429-90-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Antimony	2.875	ug/L	2.5	2.3	5	115	3005A	6020A	ICPMSC	7440-36-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Arsenic	2.375	ug/L	2	1.3	2.5	119	3005A	6020A	ICPMSC	7440-38-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Barium	1.965	ug/L	2	1.3	5	98	3005A	6020A	ICPMSC	7440-39-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Beryllium	0.52	ug/L	0.5	0.25	0.5	104	3005A	6020A	ICPMSC	7440-41-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Boron	51.24	ug/L	50	40	100	102	3005A	6020A	ICPMSC	7440-42-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cadmium	0.195	ug/L	0.2	0.095	0.5	98	3005A	6020A	ICPMSC	7440-43-9	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Calcium	294.73	ug/L	250	130	250	118	3005A	6020A	ICPMSC	7440-70-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Chromium	5.49	ug/L	5	2.5	5	110	3005A	6020A	ICPMSC	7440-47-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cobalt	0.21	ug/L	0.2	0.15	0.5	105	3005A	6020A	ICPMSC	7440-48-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Copper	2.02	ug/L	2	1.1	5	101	3005A	6020A	ICPMSC	7440-50-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Iron	54.13	ug/L	50	33	100	108	3005A	6020A	ICPMSC	7439-89-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Lead	0.355	ug/L	0.3	0.2	1.5	118	3005A	6020A	ICPMSC	7439-92-1	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Magnesium	78.42	ug/L	80	43	250	98	3005A	6020A	ICPMSC	7439-95-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Manganese	1.955	ug/L	2	1	5	98	3005A	6020A	ICPMSC	7439-96-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Mercury	0.625	ug/L	0.5	0.4	0.8	125	3005A	6020A	ICPMSC	7439-97-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Molybdenum	2.205	ug/L	2	1.5	5	110	3005A	6020A	ICPMSC	7439-98-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Nickel	4.86	ug/L	4	2	5	122	3005A	6020A	ICPMSC	7440-02-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Potassium	219.45	ug/L	200	170	500	110	3005A	6020A	ICPMSC	9/7/7440	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Selenium	1.855	ug/L	2	1	2.5	93	3005A	6020A	ICPMSC	7782-49-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Silver	0.435	ug/L	0.4	0.25	1	109	3005A	6020A	ICPMSC	7440-22-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Sodium	457.985	ug/L	400	250	500	114	3005A	6020A	ICPMSC	7440-23-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Strontium	0.945	ug/L	1	0.5	1	95	3005A	6020A	ICPMSC	7440-24-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Thallium	0.98	ug/L	1	0.5	1	98	3005A	6020A	ICPMSC	7440-28-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Tin	2.47	ug/L	2	1.3	5	124	3005A	6020A	ICPMSC	7440-31-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Titanium	3.17	ug/L	2.5	1.3	5	127	3005A	6020A	ICPMSC	7440-32-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Vanadium	5.55	ug/L	5	3.8	10	111	3005A	6020A	ICPMSC	7440-62-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Zinc	10.095	ug/L	10	8.3	20	101	3005A	6020A	ICPMSC	7440-66-6	680-297813	680-298498

Case Narrative

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90543-1

Job ID: 600-90543-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-90543-1

Comments
No additional comments.

Receipt
The samples were received on 4/16/2014 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice.
The temperature of the cooler at receipt was 3.6º C.

Method Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90543-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SAV
5310 B-2011	Organic Carbon, Total (TOC)	SM	TAL SAV

Protocol References:

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

Sample Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90543-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-90543-1	Field Blank	Water	04/15/14 17:29	04/16/14 09:45
600-90543-2	Equipment Blank	Water	04/15/14 17:32	04/16/14 09:45
600-90543-3	2014-SW-026	Water	04/15/14 12:16	04/16/14 09:45
600-90543-4	2014-SW-027	Water	04/15/14 13:17	04/16/14 09:45

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90543-1

Client Sample ID: Field Blank — Lab Sample ID: 600-90543-1

Date Collected: 04/15/14 17:29 — **Matrix: Water**
Date Received: 04/16/14 09:45

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		04/21/14 13:05	04/22/14 19:00	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		04/21/14 13:05	04/22/14 19:00	1
Lead	0.000200	U	0.00150	0.000200	mg/L		04/21/14 13:05	04/22/14 19:00	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.500	U	1.00	0.500	mg/L			04/21/14 20:59	1

Client Sample ID: Equipment Blank — Lab Sample ID: 600-90543-2

Date Collected: 04/15/14 17:32 — **Matrix: Water**
Date Received: 04/16/14 09:45

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		04/21/14 13:05	04/22/14 19:06	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		04/21/14 13:05	04/22/14 19:06	1
Lead	**0.000699**	**J**	0.00150	0.000200	mg/L		04/21/14 13:05	04/22/14 19:06	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.500	U	1.00	0.500	mg/L			04/21/14 21:39	1

Client Sample ID: 2014-SW-026 — Lab Sample ID: 600-90543-3

Date Collected: 04/15/14 12:16 — **Matrix: Water**
Date Received: 04/16/14 09:45

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00168**	**J**	0.00250	0.00130	mg/L		04/21/14 13:05	04/22/14 19:13	1
Cadmium	**0.000107**	**J**	0.000500	0.0000950	mg/L		04/21/14 13:05	04/22/14 19:13	1
Lead	**0.000530**	**J**	0.00150	0.000200	mg/L		04/21/14 13:05	04/22/14 19:13	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00171**	**J**	0.00250	0.00130	mg/L		04/21/14 13:05	04/22/14 19:20	1
Cadmium	**0.0000998**	**J**	0.000500	0.0000950	mg/L		04/21/14 13:05	04/22/14 19:20	1
Lead	0.000200	U	0.00150	0.000200	mg/L		04/21/14 13:05	04/22/14 19:20	1

Client Sample ID: 2014-SW-027 — Lab Sample ID: 600-90543-4

Date Collected: 04/15/14 13:17 — **Matrix: Water**
Date Received: 04/16/14 09:45

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00393**		0.00250	0.00130	mg/L		04/21/14 13:05	04/22/14 19:27	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		04/21/14 13:05	04/22/14 19:27	1
Lead	**0.00105**	**J**	0.00150	0.000200	mg/L		04/21/14 13:05	04/22/14 19:27	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00311**		0.00250	0.00130	mg/L		04/21/14 13:05	04/22/14 19:34	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90543-1

Client Sample ID: 2014-SW-027

Lab Sample ID: 600-90543-4

Date Collected: 04/15/14 13:17

Matrix: Water

Date Received: 04/16/14 09:45

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

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		04/21/14 13:05	04/22/14 19:34	1
Lead	0.000200	U	0.00150	0.000200	mg/L		04/21/14 13:05	04/22/14 19:34	1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.

General Chemistry

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

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
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)

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-325409/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 325779 — **Prep Batch: 325409**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		04/21/14 13:05	04/22/14 17:52	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		04/21/14 13:05	04/22/14 17:52	1
Lead	0.000200	U	0.00150	0.000200	mg/L		04/21/14 13:05	04/22/14 17:52	1

Lab Sample ID: LCS 680-325409/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 325779 — **Prep Batch: 325409**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.1096		mg/L		110	75 - 125
Cadmium	0.0500	0.05125		mg/L		103	75 - 125
Lead	0.0500	0.04958		mg/L		99	75 - 125

Lab Sample ID: 600-90653-A-2-B MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 325779 — **Prep Batch: 325409**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.00185	J	0.100	0.1155		mg/L		114	75 - 125	7	20
Cadmium	0.0000950	U	0.0500	0.05260		mg/L		105	75 - 125	6	20
Lead	0.000279	J	0.0500	0.05040		mg/L		100	75 - 125	8	20

Lab Sample ID: 600-90653-B-2-A MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 325779 — **Prep Batch: 325409**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.00185	J	0.100	0.1077		mg/L		106	75 - 125
Cadmium	0.0000950	U	0.0500	0.04931		mg/L		99	75 - 125
Lead	0.000279	J	0.0500	0.04648		mg/L		92	75 - 125

Lab Sample ID: 600-90653-A-2-C MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 325779 — **Prep Batch: 325409**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.00194	J	0.100	0.1174		mg/L		115	75 - 125
Cadmium	0.0000950	U	0.0500	0.05425		mg/L		109	75 - 125
Lead	0.000475	J	0.0500	0.05085		mg/L		101	75 - 125

Lab Sample ID: 600-90653-B-2-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 325779 — **Prep Batch: 325409**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.00194	J	0.100	0.1181		mg/L		116	75 - 125	1	20
Cadmium	0.0000950	U	0.0500	0.05355		mg/L		107	75 - 125	1	20
Lead	0.000475	J	0.0500	0.05075		mg/L		101	75 - 125	0	20

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90543-1

Method: 5310 B-2011 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 680-325712/26 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 325712

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.500	U	1.00	0.500	mg/L			04/21/14 19:29	1

Lab Sample ID: LCS 680-325712/31 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 325712

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			20.0	18.38		mg/L		92	80 - 120		

Lab Sample ID: 600-90543-1 MS — **Client Sample ID: Field Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 325712

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	0.500	U	20.0	17.90		mg/L		89	80 - 120		

Lab Sample ID: 600-90543-1 MSD — **Client Sample ID: Field Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 325712

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	0.500	U	20.0	17.99		mg/L		90	80 - 120	1	25

Lab Sample ID: 600-90653-A-5 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 325712

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	0.500	U		0.500	U	mg/L				NC	25

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90543-1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	MQL	MDL	Units	Method
Arsenic	0.00250	0.00130	mg/L	6020A
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	MQL	MDL	Units	Method
Arsenic	0.00250	0.00130	mg/L	6020A
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

General Chemistry

Analyte	MQL	MDL	Units	Method
Total Organic Carbon	1.00	0.500	mg/L	5310 B-2011

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90543-1

Metals

Prep Batch: 325409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90543-1	Field Blank	Total Recoverable	Water	3005A	
600-90543-2	Equipment Blank	Total Recoverable	Water	3005A	
600-90543-3	2014-SW-026	Dissolved	Water	3005A	
600-90543-3	2014-SW-026	Total Recoverable	Water	3005A	
600-90543-4	2014-SW-027	Dissolved	Water	3005A	
600-90543-4	2014-SW-027	Total Recoverable	Water	3005A	
600-90653-A-2-B MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	
600-90653-A-2-C MS	Matrix Spike	Dissolved	Water	3005A	
600-90653-B-2-A MS	Matrix Spike	Total Recoverable	Water	3005A	
600-90653-B-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	
LCS 680-325409/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-325409/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 325779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90543-1	Field Blank	Total Recoverable	Water	6020A	325409
600-90543-2	Equipment Blank	Total Recoverable	Water	6020A	325409
600-90543-3	2014-SW-026	Dissolved	Water	6020A	325409
600-90543-3	2014-SW-026	Total Recoverable	Water	6020A	325409
600-90543-4	2014-SW-027	Dissolved	Water	6020A	325409
600-90543-4	2014-SW-027	Total Recoverable	Water	6020A	325409
600-90653-A-2-B MSD	Matrix Spike Duplicate	Total Recoverable	Water	6020A	325409
600-90653-A-2-C MS	Matrix Spike	Dissolved	Water	6020A	325409
600-90653-B-2-A MS	Matrix Spike	Total Recoverable	Water	6020A	325409
600-90653-B-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	6020A	325409
LCS 680-325409/2-A	Lab Control Sample	Total Recoverable	Water	6020A	325409
MB 680-325409/1-A	Method Blank	Total Recoverable	Water	6020A	325409

General Chemistry

Analysis Batch: 325712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90543-1	Field Blank	Total/NA	Water	5310 B-2011	
600-90543-1 MS	Field Blank	Total/NA	Water	5310 B-2011	
600-90543-1 MSD	Field Blank	Total/NA	Water	5310 B-2011	
600-90543-2	Equipment Blank	Total/NA	Water	5310 B-2011	
600-90653-A-5 DU	Duplicate	Total/NA	Water	5310 B-2011	
LCS 680-325712/31	Lab Control Sample	Total/NA	Water	5310 B-2011	
MB 680-325712/26	Method Blank	Total/NA	Water	5310 B-2011	

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90543-1

Client Sample ID: Field Blank — Lab Sample ID: 600-90543-1

Date Collected: 04/15/14 17:29 — **Matrix: Water**
Date Received: 04/16/14 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	325409	04/21/14 13:05	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	325779	04/22/14 19:00	CME	TAL SAV
Total/NA	Analysis	5310 B-2011		1	25 mL	25 mL	325712	04/21/14 20:59	CMP	TAL SAV

Client Sample ID: Equipment Blank — Lab Sample ID: 600-90543-2

Date Collected: 04/15/14 17:32 — **Matrix: Water**
Date Received: 04/16/14 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	325409	04/21/14 13:05	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	325779	04/22/14 19:06	CME	TAL SAV
Total/NA	Analysis	5310 B-2011		1	25 mL	25 mL	325712	04/21/14 21:39	CMP	TAL SAV

Client Sample ID: 2014-SW-026 — Lab Sample ID: 600-90543-3

Date Collected: 04/15/14 12:16 — **Matrix: Water**
Date Received: 04/16/14 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	325409	04/21/14 13:05	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	325779	04/22/14 19:20	CME	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	325409	04/21/14 13:05	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	325779	04/22/14 19:13	CME	TAL SAV

Client Sample ID: 2014-SW-027 — Lab Sample ID: 600-90543-4

Date Collected: 04/15/14 13:17 — **Matrix: Water**
Date Received: 04/16/14 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	325409	04/21/14 13:05	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	325779	04/22/14 19:34	CME	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	325409	04/21/14 13:05	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	325779	04/22/14 19:27	CME	TAL SAV

Laboratory References:

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

Certification Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90543-1

Laboratory: TestAmerica Houston

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Texas	NELAP	6	T104704223	10-31-14

Laboratory: TestAmerica Savannah

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

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14 *
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-15
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14 *
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-14
Wisconsin	State Program	5	999819810	08-31-14

* Expired certification is currently pending renewal and is considered valid.

Laboratory: TestAmerica Savannah (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Wyoming	State Program	8	8TMS-L	06-30-14

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

Chain of Custody Record

TestAmerica

Client Information	Sampler: Abby Marler	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-27100-9382.1
Client Contact: Christina Higginbotham	Phone: 281-821-6869	E-Mail: dean.joiner@testamericainc.com		Page: Page 1 of 1
Company: Golder Associates Inc.				Job #:
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 day			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide Recycling Center, 6020- Water	Project #: 60004831			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A - Total Metals - As, Cd, Pb, Se, Sb	6020A - Diss Metals - As, Cd, Pb, Se, Sb	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D		
Field Blank	4-15-14	1729		Water			X	X		
Equipment Blank	↓	1732		Water			X	X		
2014-SW-026	↓	1216		Water			X	X		
2014-SW-027	↓	1317		Water			X	X		
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☒ Archive For until client authorizes Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Abby Marler	Date/Time: 4-15-14	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 04/16/14 0945	Company TA SAV

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 3.6°C 600—

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-90543-1

Login Number: 90543
List Number: 1
Creator: Upton, Cathy L

List Source: TestAmerica Houston

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

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-90543-1

Login Number: 90543
List Number: 1
Creator: Conner, Keaton

List Source: TestAmerica Savannah
List Creation: 04/16/14 05:14 PM

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

ANALYTICAL REPORT

Job Number: 600-90549-1

Job Description: Stewart Creek - Grain Size

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, TX 77073

Attention: Christina Higginbotham

Approved for release.
Cathy L Upton
Project Management Assistant II
4/23/2014 3:00 PM

Designee for
Dean A Joiner, Project Manager II
6310 Rothway Street, Houston, TX, 77040
(713)690-4444
dean.joiner@testamericainc.com
04/23/2014

cc: Anne Faeth-Boyd
Brett Forthaus
Joshua Janzen
Jing Song Xi

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Project Manager.

TestAmerica Houston Certifications and Approvals: TX NELAP T104704223-09A-TX, ARDEQ 88-0759, LADEQ 01967, OKDEQ 9503, UT DOH GULF

Comments
No additional comments.

Receipt
The samples were received on 4/16/2014 10:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice.

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

METHOD SUMMARY

Client: Golder Associates Inc. Job Number: 600-90549-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Grain Size	TAL BUR	ASTM D422	

Lab References:

TAL BUR = TestAmerica Burlington

Method References:

ASTM = ASTM International

METHOD / ANALYST SUMMARY

Client: Golder Associates Inc.

Job Number: 600-90549-1

Method	Analyst	Analyst ID
ASTM D422	Degree, Steven L	SLD

SAMPLE SUMMARY

Client: Golder Associates Inc. Job Number: 600-90549-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
600-90549-1	2014-SED-050	Solid	04/15/2014 1125	04/16/2014 1010
600-90549-2	2014-SED-051	Solid	04/15/2014 1221	04/16/2014 1010
600-90549-3	2014-SED-052	Solid	04/15/2014 1333	04/16/2014 1010
600-90549-4	2014-SED-053	Solid	04/15/2014 1420	04/16/2014 1010
600-90549-5	2014-SED-054	Solid	04/15/2014 1512	04/16/2014 1010
600-90549-6	2014-SED-055	Solid	04/15/2014 1611	04/16/2014 1010

SAMPLE RESULTS

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90549-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-050

Lab Sample ID: 600-90549-1
Client Matrix: Solid

Date Sampled: 04/15/2014 11:25
Date Received: 04/16/2014 10:10

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	56.1						%	71070	04/16/2014 16:36	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	36.7						um	71070	04/16/2014 16:36	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	71070	04/16/2014 16:36	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	23.2						um	71070	04/16/2014 16:36	1	SLD
Sand	STL00582	39.2						%	71070	04/16/2014 16:36	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	71070	04/16/2014 16:36	1	SLD
Coarse Sand	STL00583	35.6						%	71070	04/16/2014 16:36	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	13.4						um	71070	04/16/2014 16:36	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	71070	04/16/2014 16:36	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.4						um	71070	04/16/2014 16:36	1	SLD
Medium Sand	STL00584	2.9						%	71070	04/16/2014 16:36	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	71070	04/16/2014 16:36	1	SLD
Fine Sand	STL00585	0.6						%	71070	04/16/2014 16:36	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.7						um	71070	04/16/2014 16:36	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	71070	04/16/2014 16:36	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.4						um	71070	04/16/2014 16:36	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	84.4						% Passing	71070	04/16/2014 16:36	1	SLD
Silt	STL00586	3.8						%	71070	04/16/2014 16:36	1	SLD
Clay	STL00587	0.9						%	71070	04/16/2014 16:36	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	71070	04/16/2014 16:36	1	SLD
Sieve Size #4 - Percent Finer	STL01274	43.9						% Passing	71070	04/16/2014 16:36	1	SLD
Sieve Size #10 - Percent Finer	STL01268	8.3						% Passing	71070	04/16/2014 16:36	1	SLD
Sieve Size #20 - Percent Finer	STL01271	5.7						% Passing	71070	04/16/2014 16:36	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90549-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-050

Lab Sample ID: 600-90549-1
Client Matrix: Solid

Date Sampled: 04/15/2014 11:25
Date Received: 04/16/2014 10:10

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	5.4						% Passing	71070	04/16/2014 16:36	1	SLD
Sieve Size #60 - Percent Finer	STL01276	4.8						% Passing	71070	04/16/2014 16:36	1	SLD
Sieve Size #80 - Percent Finer	STL01277	4.7						% Passing	71070	04/16/2014 16:36	1	SLD
Sieve Size #100 - Percent Finer	STL01269	4.7						% Passing	71070	04/16/2014 16:36	1	SLD
Sieve Size #200 - Percent Finer	STL01272	4.7						% Passing	71070	04/16/2014 16:36	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	1.2						% Passing	71070	04/16/2014 16:36	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	1.2						% Passing	71070	04/16/2014 16:36	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	1.2						% Passing	71070	04/16/2014 16:36	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	0.9						% Passing	71070	04/16/2014 16:36	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	0.9						% Passing	71070	04/16/2014 16:36	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	0.5						% Passing	71070	04/16/2014 16:36	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	0.2						% Passing	71070	04/16/2014 16:36	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90549-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-051

Lab Sample ID: 600-90549-2
Client Matrix: Solid

Date Sampled: 04/15/2014 12:21
Date Received: 04/16/2014 10:10

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	42.5						%	71070	04/16/2014 16:38	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	34.9						um	71070	04/16/2014 16:38	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	71070	04/16/2014 16:38	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	22.2						um	71070	04/16/2014 16:38	1	SLD
Sand	STL00582	45.5						%	71070	04/16/2014 16:38	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	71070	04/16/2014 16:38	1	SLD
Coarse Sand	STL00583	31.8						%	71070	04/16/2014 16:38	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.9						um	71070	04/16/2014 16:38	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	71070	04/16/2014 16:38	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.1						um	71070	04/16/2014 16:38	1	SLD
Medium Sand	STL00584	11.3						%	71070	04/16/2014 16:38	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	71070	04/16/2014 16:38	1	SLD
Fine Sand	STL00585	2.4						%	71070	04/16/2014 16:38	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.7						um	71070	04/16/2014 16:38	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	97.8						% Passing	71070	04/16/2014 16:38	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.4						um	71070	04/16/2014 16:38	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	86.1						% Passing	71070	04/16/2014 16:38	1	SLD
Silt	STL00586	9.0						%	71070	04/16/2014 16:38	1	SLD
Clay	STL00587	3.0						%	71070	04/16/2014 16:38	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	71070	04/16/2014 16:38	1	SLD
Sieve Size #4 - Percent Finer	STL01274	57.5						% Passing	71070	04/16/2014 16:38	1	SLD
Sieve Size #10 - Percent Finer	STL01268	25.7						% Passing	71070	04/16/2014 16:38	1	SLD
Sieve Size #20 - Percent Finer	STL01271	18.3						% Passing	71070	04/16/2014 16:38	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90549-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-051

Lab Sample ID: 600-90549-2
Client Matrix: Solid

Date Sampled: 04/15/2014 12:21
Date Received: 04/16/2014 10:10

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	14.4						% Passing	71070	04/16/2014 16:38	1	SLD
Sieve Size #60 - Percent Finer	STL01276	12.7						% Passing	71070	04/16/2014 16:38	1	SLD
Sieve Size #80 - Percent Finer	STL01277	12.5						% Passing	71070	04/16/2014 16:38	1	SLD
Sieve Size #100 - Percent Finer	STL01269	12.4						% Passing	71070	04/16/2014 16:38	1	SLD
Sieve Size #200 - Percent Finer	STL01272	12.0						% Passing	71070	04/16/2014 16:38	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	5.2						% Passing	71070	04/16/2014 16:38	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	4.8						% Passing	71070	04/16/2014 16:38	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	4.5						% Passing	71070	04/16/2014 16:38	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	3.4						% Passing	71070	04/16/2014 16:38	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	3.0						% Passing	71070	04/16/2014 16:38	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	2.2						% Passing	71070	04/16/2014 16:38	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	1.2						% Passing	71070	04/16/2014 16:38	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90549-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-052

Lab Sample ID: 600-90549-3
Client Matrix: Solid

Date Sampled: 04/15/2014 13:33
Date Received: 04/16/2014 10:10

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	0.0						%	71070	04/16/2014 16:40	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	23.8						um	71070	04/16/2014 16:40	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	71070	04/16/2014 16:40	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	16.6						um	71070	04/16/2014 16:40	1	SLD
Sand	STL00582	15.3						%	71070	04/16/2014 16:40	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	71070	04/16/2014 16:40	1	SLD
Coarse Sand	STL00583	3.2						%	71070	04/16/2014 16:40	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	10.7						um	71070	04/16/2014 16:40	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	71070	04/16/2014 16:40	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.1						um	71070	04/16/2014 16:40	1	SLD
Medium Sand	STL00584	0.4						%	71070	04/16/2014 16:40	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	71070	04/16/2014 16:40	1	SLD
Fine Sand	STL00585	11.7						%	71070	04/16/2014 16:40	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.0						um	71070	04/16/2014 16:40	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	71070	04/16/2014 16:40	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	2.9						um	71070	04/16/2014 16:40	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	100.0						% Passing	71070	04/16/2014 16:40	1	SLD
Silt	STL00586	61.4						%	71070	04/16/2014 16:40	1	SLD
Clay	STL00587	23.3						%	71070	04/16/2014 16:40	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	71070	04/16/2014 16:40	1	SLD
Sieve Size #4 - Percent Finer	STL01274	100.0						% Passing	71070	04/16/2014 16:40	1	SLD
Sieve Size #10 - Percent Finer	STL01268	96.8						% Passing	71070	04/16/2014 16:40	1	SLD
Sieve Size #20 - Percent Finer	STL01271	96.7						% Passing	71070	04/16/2014 16:40	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90549-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-052

Lab Sample ID: 600-90549-3
Client Matrix: Solid

Date Sampled: 04/15/2014 13:33
Date Received: 04/16/2014 10:10

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	96.4						% Passing	71070	04/16/2014 16:40	1	SLD
Sieve Size #60 - Percent Finer	STL01276	95.4						% Passing	71070	04/16/2014 16:40	1	SLD
Sieve Size #80 - Percent Finer	STL01277	95.1						% Passing	71070	04/16/2014 16:40	1	SLD
Sieve Size #100 - Percent Finer	STL01269	93.9						% Passing	71070	04/16/2014 16:40	1	SLD
Sieve Size #200 - Percent Finer	STL01272	84.7						% Passing	71070	04/16/2014 16:40	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	56.0						% Passing	71070	04/16/2014 16:40	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	47.9						% Passing	71070	04/16/2014 16:40	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	36.5						% Passing	71070	04/16/2014 16:40	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	25.2						% Passing	71070	04/16/2014 16:40	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	23.3						% Passing	71070	04/16/2014 16:40	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	20.9						% Passing	71070	04/16/2014 16:40	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	17.5						% Passing	71070	04/16/2014 16:40	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90549-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-053

Lab Sample ID: 600-90549-4
Client Matrix: Solid

Date Sampled: 04/15/2014 14:20
Date Received: 04/16/2014 10:10

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	51.6						%	71070	04/16/2014 16:43	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	34.0						um	71070	04/16/2014 16:43	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	71070	04/16/2014 16:43	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	21.7						um	71070	04/16/2014 16:43	1	SLD
Sand	STL00582	34.4						%	71070	04/16/2014 16:43	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	71070	04/16/2014 16:43	1	SLD
Coarse Sand	STL00583	24.8						%	71070	04/16/2014 16:43	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.7						um	71070	04/16/2014 16:43	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	71070	04/16/2014 16:43	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.7						um	71070	04/16/2014 16:43	1	SLD
Medium Sand	STL00584	8.3						%	71070	04/16/2014 16:43	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	71070	04/16/2014 16:43	1	SLD
Fine Sand	STL00585	1.3						%	71070	04/16/2014 16:43	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.5						um	71070	04/16/2014 16:43	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	71070	04/16/2014 16:43	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.2						um	71070	04/16/2014 16:43	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	83.4						% Passing	71070	04/16/2014 16:43	1	SLD
Silt	STL00586	9.3						%	71070	04/16/2014 16:43	1	SLD
Clay	STL00587	4.7						%	71070	04/16/2014 16:43	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	71070	04/16/2014 16:43	1	SLD
Sieve Size #4 - Percent Finer	STL01274	48.4						% Passing	71070	04/16/2014 16:43	1	SLD
Sieve Size #10 - Percent Finer	STL01268	23.6						% Passing	71070	04/16/2014 16:43	1	SLD
Sieve Size #20 - Percent Finer	STL01271	17.3						% Passing	71070	04/16/2014 16:43	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90549-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-053

Lab Sample ID: 600-90549-4
Client Matrix: Solid

Date Sampled: 04/15/2014 14:20
Date Received: 04/16/2014 10:10

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	15.3						% Passing	71070	04/16/2014 16:43	1	SLD
Sieve Size #60 - Percent Finer	STL01276	14.6						% Passing	71070	04/16/2014 16:43	1	SLD
Sieve Size #80 - Percent Finer	STL01277	14.6						% Passing	71070	04/16/2014 16:43	1	SLD
Sieve Size #100 - Percent Finer	STL01269	14.5						% Passing	71070	04/16/2014 16:43	1	SLD
Sieve Size #200 - Percent Finer	STL01272	14.0						% Passing	71070	04/16/2014 16:43	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	7.4						% Passing	71070	04/16/2014 16:43	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	6.7						% Passing	71070	04/16/2014 16:43	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	5.9						% Passing	71070	04/16/2014 16:43	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	5.6						% Passing	71070	04/16/2014 16:43	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	4.7						% Passing	71070	04/16/2014 16:43	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	3.2						% Passing	71070	04/16/2014 16:43	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	2.4						% Passing	71070	04/16/2014 16:43	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90549-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-054

Lab Sample ID: 600-90549-5
Client Matrix: Solid

Date Sampled: 04/15/2014 15:12
Date Received: 04/16/2014 10:10

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	21.0						%	71070	04/16/2014 16:45	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	31.6						um	71070	04/16/2014 16:45	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	71070	04/16/2014 16:45	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	20.2						um	71070	04/16/2014 16:45	1	SLD
Sand	STL00582	61.0						%	71070	04/16/2014 16:45	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	71070	04/16/2014 16:45	1	SLD
Coarse Sand	STL00583	39.4						%	71070	04/16/2014 16:45	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	11.8						um	71070	04/16/2014 16:45	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	71070	04/16/2014 16:45	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.5						um	71070	04/16/2014 16:45	1	SLD
Medium Sand	STL00584	18.0						%	71070	04/16/2014 16:45	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	71070	04/16/2014 16:45	1	SLD
Fine Sand	STL00585	3.6						%	71070	04/16/2014 16:45	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.9						um	71070	04/16/2014 16:45	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	71070	04/16/2014 16:45	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.0						um	71070	04/16/2014 16:45	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	94.2						% Passing	71070	04/16/2014 16:45	1	SLD
Silt	STL00586	7.3						%	71070	04/16/2014 16:45	1	SLD
Clay	STL00587	10.7						%	71070	04/16/2014 16:45	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	71070	04/16/2014 16:45	1	SLD
Sieve Size #4 - Percent Finer	STL01274	79.0						% Passing	71070	04/16/2014 16:45	1	SLD
Sieve Size #10 - Percent Finer	STL01268	39.6						% Passing	71070	04/16/2014 16:45	1	SLD
Sieve Size #20 - Percent Finer	STL01271	24.7						% Passing	71070	04/16/2014 16:45	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90549-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-054

Lab Sample ID: 600-90549-5
Client Matrix: Solid

Date Sampled: 04/15/2014 15:12
Date Received: 04/16/2014 10:10

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	21.6						% Passing	71070	04/16/2014 16:45	1	SLD
Sieve Size #60 - Percent Finer	STL01276	20.3						% Passing	71070	04/16/2014 16:45	1	SLD
Sieve Size #80 - Percent Finer	STL01277	19.8						% Passing	71070	04/16/2014 16:45	1	SLD
Sieve Size #100 - Percent Finer	STL01269	19.3						% Passing	71070	04/16/2014 16:45	1	SLD
Sieve Size #200 - Percent Finer	STL01272	18.0						% Passing	71070	04/16/2014 16:45	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	14.2						% Passing	71070	04/16/2014 16:45	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	13.4						% Passing	71070	04/16/2014 16:45	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	12.5						% Passing	71070	04/16/2014 16:45	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	11.2						% Passing	71070	04/16/2014 16:45	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	10.7						% Passing	71070	04/16/2014 16:45	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	9.0						% Passing	71070	04/16/2014 16:45	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	7.1						% Passing	71070	04/16/2014 16:45	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90549-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-055

Lab Sample ID: 600-90549-6
Client Matrix: Solid

Date Sampled: 04/15/2014 16:11
Date Received: 04/16/2014 10:10

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	7.9						%	71070	04/16/2014 16:47	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	28.6						um	71070	04/16/2014 16:47	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	71070	04/16/2014 16:47	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	18.5						um	71070	04/16/2014 16:47	1	SLD
Sand	STL00582	52.9						%	71070	04/16/2014 16:47	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	71070	04/16/2014 16:47	1	SLD
Coarse Sand	STL00583	14.1						%	71070	04/16/2014 16:47	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	10.8						um	71070	04/16/2014 16:47	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	71070	04/16/2014 16:47	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	7.9						um	71070	04/16/2014 16:47	1	SLD
Medium Sand	STL00584	28.6						%	71070	04/16/2014 16:47	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	71070	04/16/2014 16:47	1	SLD
Fine Sand	STL00585	10.2						%	71070	04/16/2014 16:47	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.9						um	71070	04/16/2014 16:47	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	71070	04/16/2014 16:47	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	2.9						um	71070	04/16/2014 16:47	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	100.0						% Passing	71070	04/16/2014 16:47	1	SLD
Silt	STL00586	18.5						%	71070	04/16/2014 16:47	1	SLD
Clay	STL00587	20.7						%	71070	04/16/2014 16:47	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	71070	04/16/2014 16:47	1	SLD
Sieve Size #4 - Percent Finer	STL01274	92.1						% Passing	71070	04/16/2014 16:47	1	SLD
Sieve Size #10 - Percent Finer	STL01268	78.0						% Passing	71070	04/16/2014 16:47	1	SLD
Sieve Size #20 - Percent Finer	STL01271	65.5						% Passing	71070	04/16/2014 16:47	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90549-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-055

Lab Sample ID: 600-90549-6
Client Matrix: Solid

Date Sampled: 04/15/2014 16:11
Date Received: 04/16/2014 10:10

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	49.4						% Passing	71070	04/16/2014 16:47	1	SLD
Sieve Size #60 - Percent Finer	STL01276	43.1						% Passing	71070	04/16/2014 16:47	1	SLD
Sieve Size #80 - Percent Finer	STL01277	41.6						% Passing	71070	04/16/2014 16:47	1	SLD
Sieve Size #100 - Percent Finer	STL01269	40.7						% Passing	71070	04/16/2014 16:47	1	SLD
Sieve Size #200 - Percent Finer	STL01272	39.2						% Passing	71070	04/16/2014 16:47	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	27.7						% Passing	71070	04/16/2014 16:47	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	26.0						% Passing	71070	04/16/2014 16:47	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	24.8						% Passing	71070	04/16/2014 16:47	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	22.5						% Passing	71070	04/16/2014 16:47	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	20.7						% Passing	71070	04/16/2014 16:47	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	16.6						% Passing	71070	04/16/2014 16:47	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	13.0						% Passing	71070	04/16/2014 16:47	1	SLD

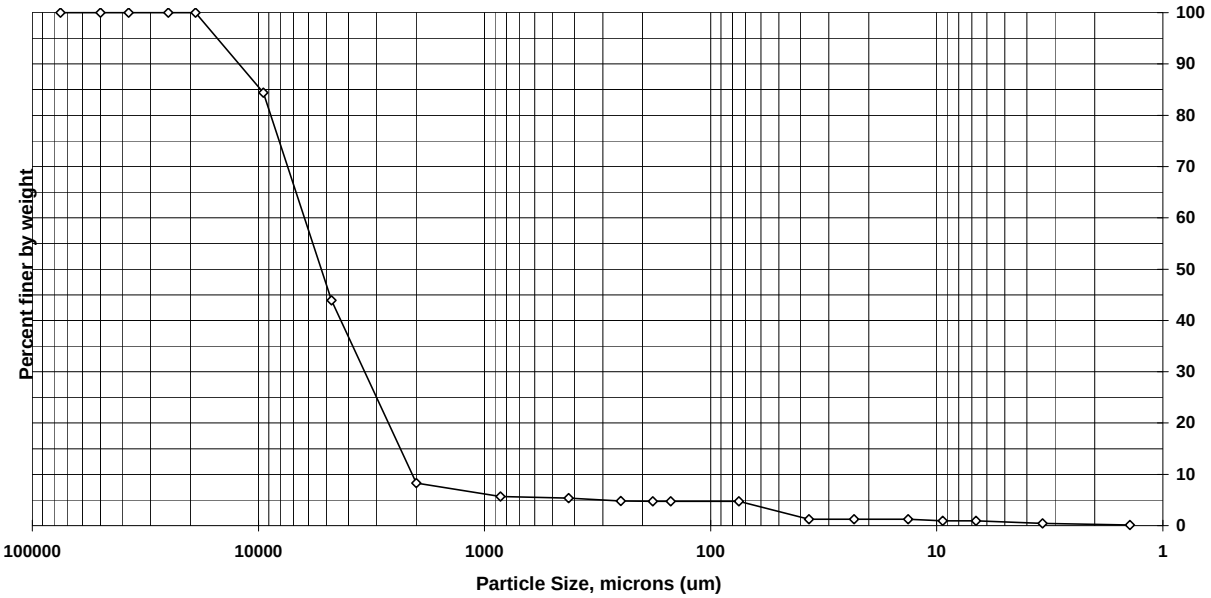
Particle Size of Soils by ASTM D422

				Date Received:	4/16/2014
Sample ID:	2014-SED-050	**Percent Solids:**	90.9%	**Start Date:**	4/16/2014
Lab ID:	600-90549-A-1	**Specific Gravity:**	2.650	**End Date:**	4/22/2014

Shape (> #10): subangular

Non-soil material: plant,wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	84.4	15.6
#4	4750	43.9	40.5
#10	2000	8.3	35.6
#20	850	5.7	2.6
#40	425	5.4	0.3
#60	250	4.8	0.6
#80	180	4.7	0.1
#100	150	4.7	0.0
#200	75	4.7	0.0
Hyd1	36.7	1.2	3.5
Hyd2	23.2	1.2	0.0
Hyd3	13.4	1.2	0.0
Hyd4	9.4	0.9	0.3
Hyd5	6.7	0.9	0.0
Hyd6	3.4	0.5	0.5
Hyd7	1.4	0.2	0.3

Soil Classification	Percent of sample
Gravel	56.1
Sand	39.2
Coarse Sand	35.6
Medium Sand	2.9
Fine Sand	0.6
Silt	3.8
Clay	0.9

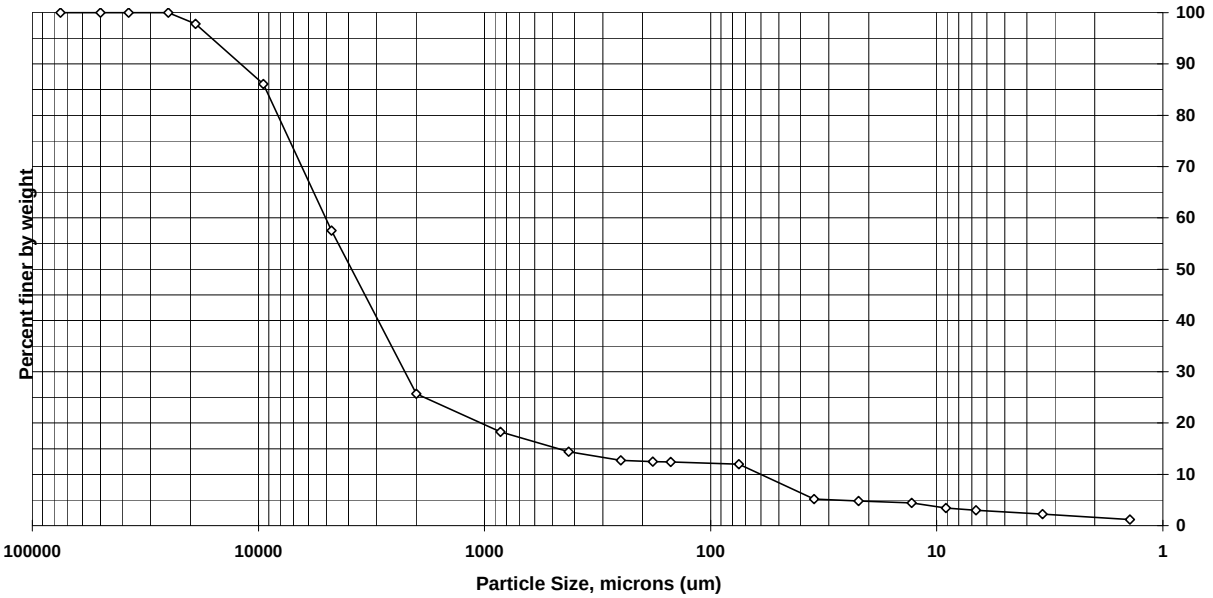
Particle Size of Soils by ASTM D422

				Date Received:	4/16/2014
Sample ID:	2014-SED-051	**Percent Solids:**	84.4%	**Start Date:**	4/16/2014
Lab ID:	600-90549-A-2	**Specific Gravity:**	2.650	**End Date:**	4/22/2014

Shape (> #10): subangular

Non-soil material: plant,wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	97.8	2.2
3/8 inch	9500	86.1	11.7
#4	4750	57.5	28.6
#10	2000	25.7	31.8
#20	850	18.3	7.4
#40	425	14.4	3.9
#60	250	12.7	1.7
#80	180	12.5	0.2
#100	150	12.4	0.1
#200	75	12.0	0.4
Hyd1	34.9	5.2	6.8
Hyd2	22.2	4.8	0.4
Hyd3	12.9	4.5	0.3
Hyd4	9.1	3.4	1.0
Hyd5	6.7	3.0	0.4
Hyd6	3.4	2.2	0.8
Hyd7	1.4	1.2	1.0

Soil Classification	Percent of sample
Gravel	42.5
Sand	45.5
Coarse Sand	31.8
Medium Sand	11.3
Fine Sand	2.4
Silt	9.0
Clay	3.0

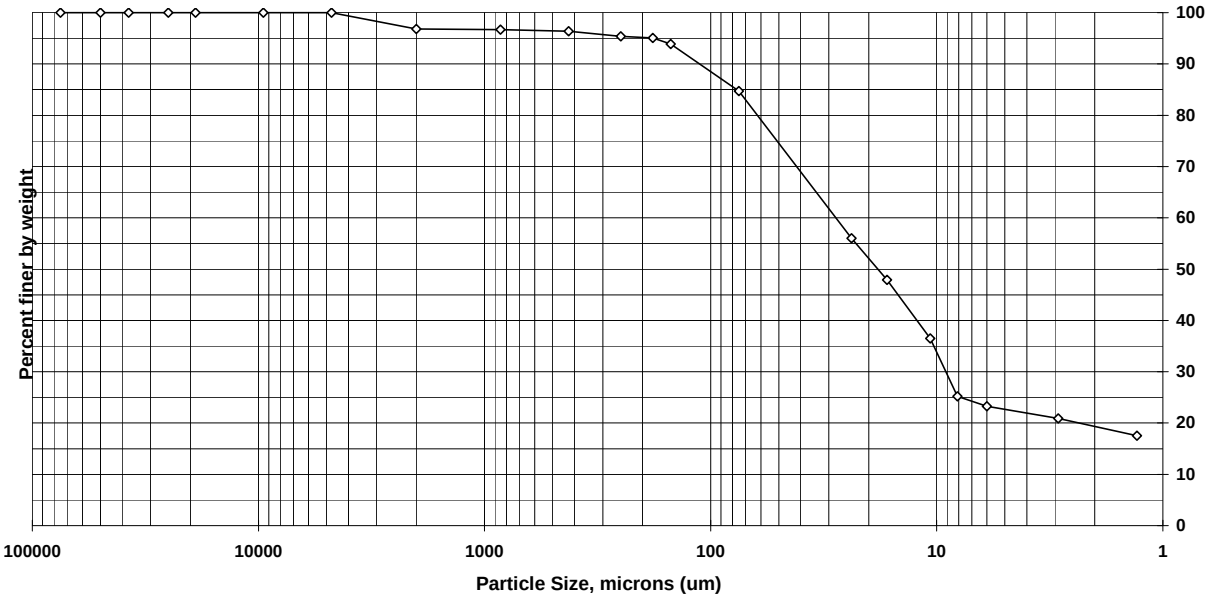
Particle Size of Soils by ASTM D422

				Date Received:	4/16/2014
Sample ID:	2014-SED-052	**Percent Solids:**	52.2%	**Start Date:**	4/16/2014
Lab ID:	600-90549-A-3	**Specific Gravity:**	2.650	**End Date:**	4/22/2014

Shape (> #10): na

Non-soil material: plant,wood

Hardness (> #10): na



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	96.8	3.2
#20	850	96.7	0.1
#40	425	96.4	0.3
#60	250	95.4	1.0
#80	180	95.1	0.3
#100	150	93.9	1.2
#200	75	84.7	9.2
Hyd1	23.8	56.0	28.7
Hyd2	16.6	47.9	8.1
Hyd3	10.7	36.5	11.4
Hyd4	8.1	25.2	11.3
Hyd5	6	23.3	1.9
Hyd6	2.9	20.9	2.4
Hyd7	1.3	17.5	3.4

Soil Classification	Percent of sample
Gravel	0.0
Sand	15.3
Coarse Sand	3.2
Medium Sand	0.4
Fine Sand	11.7
Silt	61.4
Clay	23.3

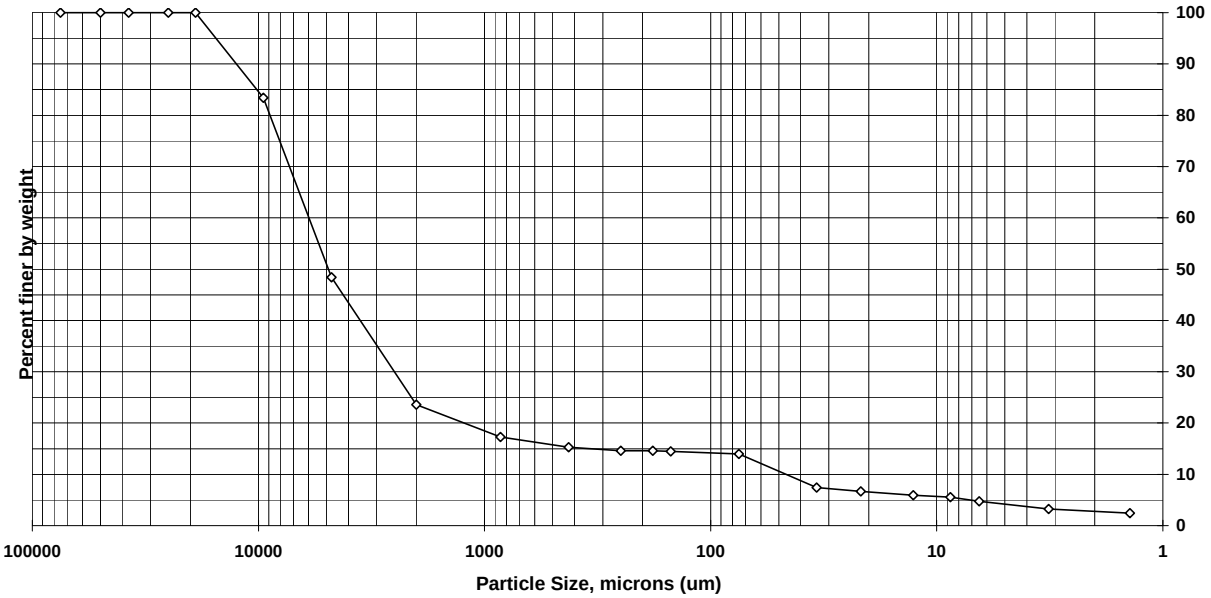
Particle Size of Soils by ASTM D422

				Date Received:	4/16/2014
Sample ID:	2014-SED-053	**Percent Solids:**	80.8%	**Start Date:**	4/16/2014
Lab ID:	600-90549-A-4	**Specific Gravity:**	2.650	**End Date:**	4/22/2014

Shape (> #10): subangular

Non-soil material: plant,wood,shell

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	83.4	16.6
#4	4750	48.4	35.0
#10	2000	23.6	24.8
#20	850	17.3	6.3
#40	425	15.3	2.0
#60	250	14.6	0.7
#80	180	14.6	0.0
#100	150	14.5	0.1
#200	75	14.0	0.5
Hyd1	34	7.4	6.6
Hyd2	21.7	6.7	0.7
Hyd3	12.7	5.9	0.7
Hyd4	8.7	5.6	0.4
Hyd5	6.5	4.7	0.8
Hyd6	3.2	3.2	1.5
Hyd7	1.4	2.4	0.8

Soil Classification	Percent of sample
Gravel	51.6
Sand	34.4
Coarse Sand	24.8
Medium Sand	8.3
Fine Sand	1.3
Silt	9.3
Clay	4.7

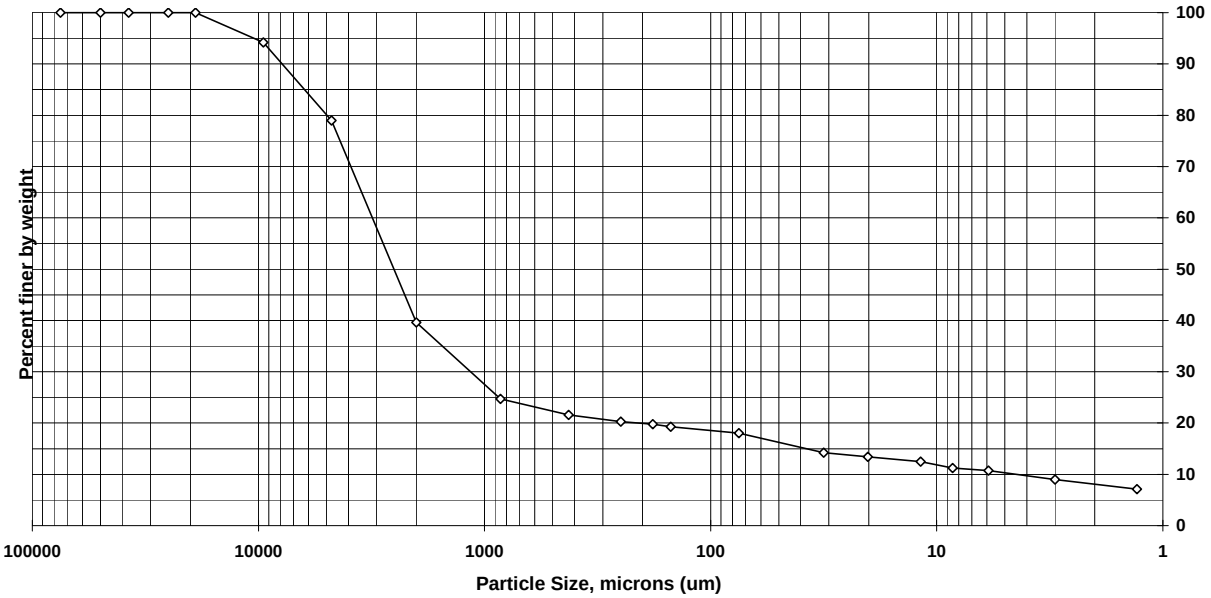
Particle Size of Soils by ASTM D422

				Date Received:	4/16/2014
Sample ID:	2014-SED-054	**Percent Solids:**	81.6%	**Start Date:**	4/16/2014
Lab ID:	600-90549-A-5	**Specific Gravity:**	2.650	**End Date:**	4/22/2014

Shape (> #10): subrounded

Non-soil material: na

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	94.2	5.8
#4	4750	79.0	15.2
#10	2000	39.6	39.4
#20	850	24.7	14.9
#40	425	21.6	3.1
#60	250	20.3	1.3
#80	180	19.8	0.5
#100	150	19.3	0.5
#200	75	18.0	1.3
Hyd1	31.6	14.2	3.8
Hyd2	20.2	13.4	0.8
Hyd3	11.8	12.5	0.9
Hyd4	8.5	11.2	1.3
Hyd5	5.9	10.7	0.5
Hyd6	3	9.0	1.7
Hyd7	1.3	7.1	1.8

Soil Classification	Percent of sample
Gravel	21.0
Sand	61.0
Coarse Sand	39.4
Medium Sand	18.0
Fine Sand	3.6
Silt	7.3
Clay	10.7

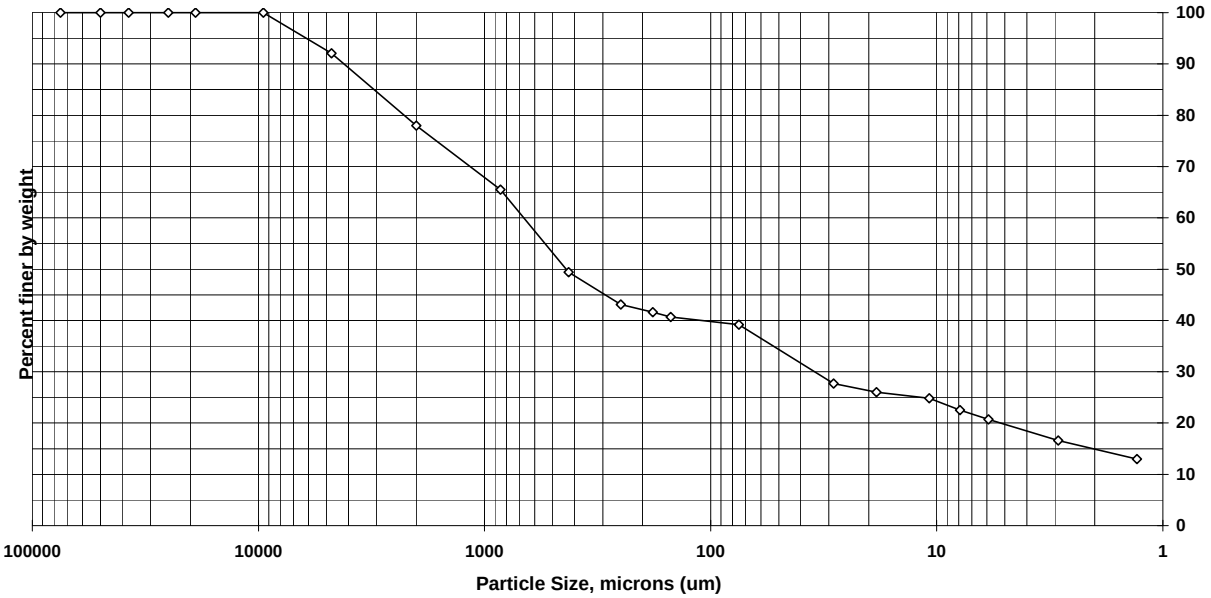
Particle Size of Soils by ASTM D422

				Date Received:	4/16/2014
Sample ID:	2014-SED-055	**Percent Solids:**	64.1%	**Start Date:**	4/16/2014
Lab ID:	600-90549-A-6	**Specific Gravity:**	2.650	**End Date:**	4/22/2014

Shape (> #10): subangular

Non-soil material: na

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	92.1	7.9
#10	2000	78.0	14.1
#20	850	65.5	12.5
#40	425	49.4	16.1
#60	250	43.1	6.3
#80	180	41.6	1.5
#100	150	40.7	0.9
#200	75	39.2	1.5
Hyd1	28.6	27.7	11.5
Hyd2	18.5	26.0	1.7
Hyd3	10.8	24.8	1.2
Hyd4	7.9	22.5	2.3
Hyd5	5.9	20.7	1.8
Hyd6	2.9	16.6	4.1
Hyd7	1.3	13.0	3.6

Soil Classification	Percent of sample
Gravel	7.9
Sand	52.9
Coarse Sand	14.1
Medium Sand	28.6
Fine Sand	10.2
Silt	18.5
Clay	20.7

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-050
Lab Sample ID	600-90549-A-1

Date Received	4/16/2014
Start Date	04/16/2014 16:36
End Date	04/22/2014 11:28

Dry Weight Determination

Tin Weight	1.03	g
Wet Sample + Tin	32.55	g
Dry Sample + Tin	29.69	g
% Moisture	9.07	%

Non-soil material:	plant,wood
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	04/16/2014 16:37
Date/Time out of oven	04/17/2014 14:59

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		289.28	289.28
Sample Weight (Oven Dried)			263

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			241
Sample <#10			22
% Passing #10			7.61

Hydrometer Data	
Serial Number	265739
Calib. Date (mm/dd/yyyy)	01/07/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0030
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00875
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.32	488.39	41.07	g	84.4	Gravel	
#4	4750	488.12	594.76	106.64	g	43.9	Gravel	
#10	2000	462.79	556.43	93.64	g	8.3	Sand	Coarse
#20	850	389.67	396.55	6.88	g	5.7	Sand	Medium
#40	425	367.19	368.00	0.81	g	5.4	Sand	Medium
#60	250	345.89	347.41	1.52	g	4.8	Sand	Fine
#80	180	332.57	332.73	0.16	g	4.7	Sand	Fine
#100	150	335.70	335.70	0.00	g	4.7	Sand	Fine
#200	75	320.55	320.55	0.00	g	4.7	Sand	Fine
				0.00	g	4.7		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	263

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0055	21.0	36.7	1.22	Silt	
5	5	1.0055	21.0	23.2	1.22	Silt	
15	15	1.0055	21.0	13.4	1.22	Silt	
30	31	1.0050	21.0	9.4	0.916	Silt	
60	60	1.0050	21.0	6.7	0.916	Silt	
250	240	1.0045	20.0	3.4	0.458	Clay	
1440	1424	1.0040	20.0	1.4	0.153	Clay	

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Sediment Grain Size - D422

Client		Date Received	4/16/2014
Client Sample ID	2014-SED-051	Start Date	04/16/2014 16:38
Lab Sample ID	600-90549-A-2	End Date	04/22/2014 11:42

Dry Weight Determination

Tin Weight	1.00	g
Wet Sample + Tin	46.60	g
Dry Sample + Tin	39.48	g
% Moisture	15.61	%

Non-soil material:	plant,wood
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	04/16/2014 16:39
Date/Time out of oven	04/17/2014 14:59

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		276.82	276.82
Sample Weight (Oven Dried)			234

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			174
Sample <#10			60
% Passing #10			21.7

Hydrometer Data

Serial Number	265739
Calib. Date (mm/dd/yyyy)	01/07/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0030
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00875
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000	457.79	463.05	5.26	g	97.8	Gravel	
3/8 inch	9500	447.32	474.71	27.39	g	86.1	Gravel	
#4	4750	488.12	554.93	66.81	g	57.5	Gravel	
#10	2000	462.79	537.30	74.51	g	25.7	Sand	Coarse
#20	850	389.67	407.03	17.36	g	18.3	Sand	Medium
#40	425	367.19	376.34	9.15	g	14.4	Sand	Medium
#60	250	345.89	349.83	3.94	g	12.7	Sand	Fine
#80	180	332.57	333.07	0.50	g	12.5	Sand	Fine
#100	150	335.70	336.03	0.33	g	12.4	Sand	Fine
#200	75	320.55	321.37	0.82	g	12.0	Sand	Fine
				0.00	g	12.0		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	234

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0110	21.0	34.9	5.15	Silt	
5	5	1.0105	21.0	22.2	4.8	Silt	
15	15	1.0100	21.0	12.9	4.46	Silt	
30	31	1.0085	21.0	9.1	3.43	Silt	
60	59	1.0080	20.5	6.7	3	Silt	
250	234	1.0070	20.0	3.4	2.23	Clay	
1440	1418	1.0055	20.0	1.4	1.2	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-052
Lab Sample ID	600-90549-A-3

Date Received	4/16/2014
Start Date	04/16/2014 16:40
End Date	04/22/2014 12:00

Dry Weight Determination

Tin Weight	0.99	g
Wet Sample + Tin	34.01	g
Dry Sample + Tin	18.24	g
% Moisture	47.76	%

Non-soil material:	plant,wood
Shape (> #10):	na
Hardness (> #10):	na

Date/Time in oven	04/16/2014 16:42
Date/Time out of oven	04/17/2014 15:00

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		189.34	189.34
Sample Weight (Oven Dried)			98.9

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			3.13
Sample <#10			95.8
% Passing #10			50.6

Hydrometer Data	
Serial Number	265739
Calib. Date (mm/dd/yyyy)	01/07/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0030
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00875
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000	462.79	465.92	3.13	g	96.8	Sand	Coarse
#20	850	389.67	389.81	0.14	g	96.7	Sand	Medium
#40	425	367.19	367.51	0.32	g	96.4	Sand	Medium
#60	250	345.89	346.85	0.96	g	95.4	Sand	Fine
#80	180	332.57	332.85	0.28	g	95.1	Sand	Fine
#100	150	335.70	336.87	1.17	g	93.9	Sand	Fine
#200	75	320.55	329.61	9.06	g	84.7	Sand	Fine
				0.00	g	84.7		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	98.9

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0380	21.0	23.8	56	Silt	
5	5	1.0330	21.0	16.6	47.9	Silt	
15	15	1.0260	21.0	10.7	36.5	Silt	
30	31	1.0190	21.0	8.1	25.2	Silt	
60	59	1.0180	20.5	6	23.3	Silt	
250	265	1.0165	20.5	2.9	20.9	Clay	
1440	1412	1.0145	20.0	1.3	17.5	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-053
Lab Sample ID	600-90549-A-4

Date Received	4/16/2014
Start Date	04/16/2014 16:43
End Date	04/22/2014 12:16

Dry Weight Determination

Tin Weight	1.00	g
Wet Sample + Tin	43.71	g
Dry Sample + Tin	35.49	g
% Moisture	19.25	%

Non-soil material:	plant,wood,shell
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	04/16/2014 16:44
Date/Time out of oven	04/17/2014 15:01

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		268.65	268.65
Sample Weight (Oven Dried)			217

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			166
Sample <#10			51
% Passing #10			19

Hydrometer Data

Serial Number	265739
Calib. Date (mm/dd/yyyy)	01/07/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0030
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00875
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.32	483.44	36.12	g	83.4	Gravel	
#4	4750	488.12	564.11	75.99	g	48.4	Gravel	
#10	2000	462.79	516.71	53.92	g	23.6	Sand	Coarse
#20	850	389.67	403.40	13.73	g	17.3	Sand	Medium
#40	425	367.19	371.47	4.28	g	15.3	Sand	Medium
#60	250	345.89	347.42	1.53	g	14.6	Sand	Fine
#80	180	332.57	332.64	0.07	g	14.6	Sand	Fine
#100	150	335.70	335.94	0.24	g	14.5	Sand	Fine
#200	75	320.55	321.71	1.16	g	14.0	Sand	Fine
				0.00	g	14.0		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	217

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0135	21.0	34	7.4	Silt	
5	5	1.0125	21.0	21.7	6.66	Silt	
15	15	1.0115	21.0	12.7	5.92	Silt	
30	32	1.0110	21.0	8.7	5.55	Silt	
60	60	1.0100	20.5	6.5	4.72	Silt	
250	259	1.0080	20.5	3.2	3.24	Clay	
1440	1406	1.0070	20.0	1.4	2.41	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-054
Lab Sample ID	600-90549-A-5

Date Received	4/16/2014
Start Date	04/16/2014 16:45
End Date	04/22/2014 12:30

Dry Weight Determination

Tin Weight	1.07	g
Wet Sample + Tin	51.43	g
Dry Sample + Tin	42.16	g
% Moisture	18.41	%

Non-soil material:	na
Shape (> #10):	subrounded
Hardness (> #10):	hard

Date/Time in oven	04/16/2014 16:47
Date/Time out of oven	04/17/2014 15:01

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		227.69	227.69
Sample Weight (Oven Dried)			186

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			112
Sample <#10			74
% Passing #10			32.5

Hydrometer Data

Serial Number	265739
Calib. Date (mm/dd/yyyy)	01/07/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0030
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00875
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.32	458.16	10.84	g	94.2	Gravel	
#4	4750	488.12	516.33	28.21	g	79.0	Gravel	
#10	2000	462.79	536.02	73.23	g	39.6	Sand	Coarse
#20	850	389.67	417.44	27.77	g	24.7	Sand	Medium
#40	425	367.19	372.88	5.69	g	21.6	Sand	Medium
#60	250	345.89	348.32	2.43	g	20.3	Sand	Fine
#80	180	332.57	333.51	0.94	g	19.8	Sand	Fine
#100	150	335.70	336.66	0.96	g	19.3	Sand	Fine
#200	75	320.55	323.02	2.47	g	18.0	Sand	Fine
				0.00	g	18.0		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	186

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0200	21.0	31.6	14.2	Silt	
5	5	1.0190	21.0	20.2	13.4	Silt	
15	15	1.0180	21.0	11.8	12.5	Silt	
30	30	1.0165	21.0	8.5	11.2	Silt	
60	63	1.0160	20.5	5.9	10.7	Silt	
250	253	1.0140	20.5	3	8.96	Clay	
1440	1400	1.0120	20.0	1.3	7.12	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-055
Lab Sample ID	600-90549-A-6

Date Received	4/16/2014
Start Date	04/16/2014 16:47
End Date	04/22/2014 12:45

Dry Weight Determination

Tin Weight	1.05	g
Wet Sample + Tin	37.35	g
Dry Sample + Tin	24.33	g
% Moisture	35.87	%

Non-soil material:	na
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	04/16/2014 16:49
Date/Time out of oven	04/17/2014 15:01

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		216.02	216.02
Sample Weight (Oven Dried)			139

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			30.5
Sample <#10			109
% Passing #10			50.5

Hydrometer Data	
Serial Number	265739
Calib. Date (mm/dd/yyyy)	01/07/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0030
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00875
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.12	499.06	10.94	g	92.1	Gravel	
#10	2000	462.79	482.36	19.57	g	78.0	Sand	Coarse
#20	850	389.67	407.04	17.37	g	65.5	Sand	Medium
#40	425	367.19	389.60	22.41	g	49.4	Sand	Medium
#60	250	345.89	354.68	8.79	g	43.1	Sand	Fine
#80	180	332.57	334.61	2.04	g	41.6	Sand	Fine
#100	150	335.70	336.99	1.29	g	40.7	Sand	Fine
#200	75	320.55	322.67	2.12	g	39.2	Sand	Fine
				0.00	g	39.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	139

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0275	21.0	28.6	27.7	Silt	
5	5	1.0260	21.0	18.5	26	Silt	
15	15	1.0250	21.0	10.8	24.8	Silt	
30	30	1.0230	21.0	7.9	22.5	Silt	
60	57	1.0215	20.5	5.9	20.7	Silt	
250	247	1.0180	20.5	2.9	16.6	Clay	
1440	1394	1.0150	20.0	1.3	13	Clay	

DATA REPORTING QUALIFIERS

Lab Section	Qualifier	Description

QUALITY CONTROL RESULTS

Client: Golder Associates Inc.

Job Number: 600-90549-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Geotechnical					
Analysis Batch:200-71070					
600-90549-1	2014-SED-050	T	Solid	D422	
600-90549-2	2014-SED-051	T	Solid	D422	
600-90549-3	2014-SED-052	T	Solid	D422	
600-90549-4	2014-SED-053	T	Solid	D422	
600-90549-5	2014-SED-054	T	Solid	D422	
600-90549-6	2014-SED-055	T	Solid	D422	

Report Basis

T = Total

TestAmerica Burlington
30 Community Drive Ste 11
South Burlington, VT 05403
(802) 660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Abby Marlow/Chris Trevino	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-27103-9383.2
Client Contact: Christina Higginbotham	Phone: 281-821-6868	E-Mail: dean.joiner@testamericainc.com		Page: Page 1 of 1
Company: Golder Associates Inc.				Job #: 1302086
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 Days			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide, Grain Size - Soil	Project #: 60004831			
Site: Stewart Creek	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	D422 - % Passing Routine List	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
2014-SED-050	4-15-14	1128	C	Solid			X		Golder*** : Ship Directly to:
2014-SED-051		1221	C	Solid			X		TestAmerica Burlington
2014-SED-052		1337	C	Solid			X		
2014-SED-053		1420	C	Solid			X		
2014-SED-054		1512	C	Solid			X		!!!!

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-90549-1

Login Number: 90549

List Source: TestAmerica Houston

List Number: 1

Creator: Upton, Cathy L

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-90579-1
Client Project/Site: Stewart Creek
Revision: 1

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
5/15/2014 7:13:08 PM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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

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

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

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-90579-1 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☑ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☑ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton		4/23/2014
Name (printed)	Signature	Date

Project Management Asst II

Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/23/2014
Project Name:	Stewart Creek	Laboratory Job Number:	600-90579-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X			R01A
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				R05D
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?		X			R07D
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?		X			R08C
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/23/2014
Project Name:	Stewart Creek	Laboratory Job Number:	600-90579-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?		X			S09A
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
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4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/23/2014
Project Name:	Stewart Creek	Laboratory Job Number:	600-90579-1
Reviewer Name:	Dean A Joiner		

ER #[1]	Description
R05D	Method 6010B: The method blank for batch 132572 contained lead above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.
R07D/ R08C	Method 6010B: 600-90579-6 DU failed the RPD criteria for the following analyte(s): Lead. Non-homogeneity is suspected. Method 6010B: 600-90579-6 MSD failed the RPD criteria for the following analyte(s): Cadmium. Non-homogeneity is suspected.
S09A	Method 6010B: The serial dilution performed for the following sample(s) associated with batch 132572 was outside control limits for arsenic: 600-90579-6 SD.
R01A	One sample container lists 2014-SED-. Identified as 2014-SED-053 by sample time and date.

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

Detection Check Standard

Matrix:	Soil
Method:	90.3 Walkley-Black
Preparation:	NA
Date Analyzed:	3/31/2014
Date Prepared:	3/31/2014
TALs Batches:	
Units:	% Carbon

Analyte	MDL	DCS Spike	Measured Result	MQL
TOC Walkley Black	0.0415	0.004	0.004	0.1

Detection Check Standard

Matrix:	Soil
Method:	6010B
Preparation:	3050
Date Analyzed:	3/28/2014
Date Prepared:	3/27/2014
Instrument:	Thermo 6500
TALS Batches:	130577p, 130672
Prep/Reagent Factor =	50
Units:	mg/kg

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.299654	0.5	0.36	25
Antimony	0.231553	0.45	0.31	2.5
Arsenic	0.217923	0.5	0.57	1
Barium	0.011322	0.03	0.03	1
Beryllium	0.014513	0.02	0.02	0.25
Boron	0.385535	0.6	0.49	20
Cadmium	0.025642	0.05	0.045	0.25
Calcium	0.86399	1.5	2.07	100
Chromium	0.050606	0.1	0.11	0.5
Cobalt	0.067622	0.1	0.105	0.5
Copper	0.173703	0.5	0.535	0.5
Iron	2.534007	4	4.035	20
Lead	0.104832	0.2	0.18	0.5
Selenium	0.258884	0.5	0.505	2
Manganese	0.038111	0.05	0.05	1.5
Molybdenum	0.136448	0.35	0.325	0.5
Nickel	0.116599	0.15	0.145	1
Silver	0.118848	0.2	0.22	0.5
Sodium	0.885548	2.4	2.13	100
Thallium	0.276988	0.7	0.615	1.5
Tin	0.08729	0.15	0.13	1
Titanium	0.014529	0.03	0.035	0.5
Vanadium	0.079068	0.15	0.165	0.5
Zinc	0.108432	0.2	0.285	1.5

Job ID: 600-90579-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-90579-1

Comments
The report was revised on 05/15/14 to correct the results for the Walkley Black method, replacing the final report generated on 04/23/14.

Receipt
The samples were received on 4/16/2014 10:34 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.0º C.

Except:

One sample container lists 2014-SED-. Identified as 2014-SED-053 by sample time and date.

Method Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90579-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL HOU
Moisture	Percent Moisture	EPA	TAL HOU
WALKLEY BLACK	Organic Carbon, Total (TOC)	MSA	TAL HOU

Protocol References:

EPA = US Environmental Protection Agency

MSA = "Methods Of Soil Analysis, Chemical And Microbiological Properties", Part 2, 2nd Ed., 1982 And Subsequent Revisions.

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

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90579-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-90579-1	2014-SED-050	Solid	04/15/14 11:28	04/16/14 10:34
600-90579-2	2014-SED-051	Solid	04/15/14 12:21	04/16/14 10:34
600-90579-3	2014-SED-052	Solid	04/15/14 13:33	04/16/14 10:34
600-90579-4	2014-SED-053	Solid	04/15/14 14:20	04/16/14 10:34
600-90579-5	Dup-1	Solid	04/15/14 00:00	04/16/14 10:34
600-90579-6	2014-SED-054	Solid	04/15/14 15:12	04/16/14 10:34
600-90579-7	2014-SED-055	Solid	04/15/14 16:11	04/16/14 10:34

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90579-1

Client Sample ID: 2014-SED-050 — Lab Sample ID: 600-90579-1

Date Collected: 04/15/14 11:28
Date Received: 04/16/14 10:34
Matrix: Solid
Percent Solids: 88.6

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	29.6		1.05	0.230	mg/Kg	☼	04/21/14 16:24	04/22/14 12:55	1
Cadmium	1.07		0.264	0.0270	mg/Kg	☼	04/21/14 16:24	04/22/14 12:55	1
Lead	21.2	b	0.527	0.111	mg/Kg	☼	04/21/14 16:24	04/22/14 12:55	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	11		1.0	1.0	%			04/17/14 14:26	1
Percent Solids	89		1.0	1.0	%			04/17/14 14:26	1
TOC	0.316		0.100	0.0415	%			04/22/14 08:00	1

Client Sample ID: 2014-SED-051 — Lab Sample ID: 600-90579-2

Date Collected: 04/15/14 12:21
Date Received: 04/16/14 10:34
Matrix: Solid
Percent Solids: 76.0

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	49.9		1.24	0.270	mg/Kg	☼	04/21/14 16:24	04/22/14 12:58	1
Cadmium	0.273	J	0.310	0.0318	mg/Kg	☼	04/21/14 16:24	04/22/14 12:58	1
Lead	18.5	b	0.620	0.130	mg/Kg	☼	04/21/14 16:24	04/22/14 12:58	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	24		1.0	1.0	%			04/17/14 14:26	1
Percent Solids	76		1.0	1.0	%			04/17/14 14:26	1
TOC	0.311		0.100	0.0415	%			04/22/14 08:00	1

Client Sample ID: 2014-SED-052 — Lab Sample ID: 600-90579-3

Date Collected: 04/15/14 13:33
Date Received: 04/16/14 10:34
Matrix: Solid
Percent Solids: 49.5

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	8.02		1.89	0.411	mg/Kg	☼	04/21/14 16:24	04/22/14 13:07	1
Cadmium	0.774		0.472	0.0484	mg/Kg	☼	04/21/14 16:24	04/22/14 13:07	1
Lead	22.2	b	0.943	0.198	mg/Kg	☼	04/21/14 16:24	04/22/14 13:07	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	50		1.0	1.0	%			04/17/14 14:26	1
Percent Solids	50		1.0	1.0	%			04/17/14 14:26	1
TOC	2.57		0.100	0.0415	%			04/22/14 08:00	1

Client Sample ID: 2014-SED-053 — Lab Sample ID: 600-90579-4

Date Collected: 04/15/14 14:20
Date Received: 04/16/14 10:34
Matrix: Solid
Percent Solids: 90.3

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	41.4		1.06	0.232	mg/Kg	☼	04/21/14 16:24	04/22/14 13:10	1
Cadmium	0.351		0.266	0.0273	mg/Kg	☼	04/21/14 16:24	04/22/14 13:10	1
Lead	16.3	b	0.532	0.112	mg/Kg	☼	04/21/14 16:24	04/22/14 13:10	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90579-1

Client Sample ID: 2014-SED-053 — Lab Sample ID: 600-90579-4

Date Collected: 04/15/14 14:20 — **Matrix: Solid**
Date Received: 04/16/14 10:34

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.7		1.0	1.0	%			04/17/14 14:26	1
Percent Solids	90		1.0	1.0	%			04/17/14 14:26	1
TOC	0.464		0.100	0.0415	%			04/22/14 08:00	1

Client Sample ID: Dup-1 — Lab Sample ID: 600-90579-5

Date Collected: 04/15/14 00:00 — **Matrix: Solid**
Date Received: 04/16/14 10:34 — **Percent Solids: 56.3**

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.95		1.78	0.387	mg/Kg	☼	04/21/14 16:24	04/22/14 13:12	1
Cadmium	0.764		0.444	0.0456	mg/Kg	☼	04/21/14 16:24	04/22/14 13:12	1
Lead	23.8	b	0.889	0.186	mg/Kg	☼	04/21/14 16:24	04/22/14 13:12	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	44		1.0	1.0	%			04/17/14 14:26	1
Percent Solids	56		1.0	1.0	%			04/17/14 14:26	1
TOC	2.39		0.100	0.0415	%			04/22/14 08:00	1

Client Sample ID: 2014-SED-054 — Lab Sample ID: 600-90579-6

Date Collected: 04/15/14 15:12 — **Matrix: Solid**
Date Received: 04/16/14 10:34 — **Percent Solids: 82.5**

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	22.3		1.21	0.264	mg/Kg	☼	04/21/14 16:24	04/22/14 13:15	1
Cadmium	0.824		0.303	0.0311	mg/Kg	☼	04/21/14 16:24	04/22/14 13:15	1
Lead	21.0	b	0.606	0.127	mg/Kg	☼	04/21/14 16:24	04/22/14 13:15	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17		1.0	1.0	%			04/17/14 14:26	1
Percent Solids	83		1.0	1.0	%			04/17/14 14:26	1
TOC	0.451		0.100	0.0415	%			04/22/14 08:00	1

Client Sample ID: 2014-SED-055 — Lab Sample ID: 600-90579-7

Date Collected: 04/15/14 16:11 — **Matrix: Solid**
Date Received: 04/16/14 10:34 — **Percent Solids: 67.0**

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	15.1		1.46	0.319	mg/Kg	☼	04/21/14 16:24	04/22/14 13:25	1
Cadmium	0.344	J	0.366	0.0375	mg/Kg	☼	04/21/14 16:24	04/22/14 13:25	1
Lead	20.8	b	0.731	0.153	mg/Kg	☼	04/21/14 16:24	04/22/14 13:25	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	33		1.0	1.0	%			04/17/14 14:26	1
Percent Solids	67		1.0	1.0	%			04/17/14 14:26	1
TOC	0.587		0.100	0.0415	%			04/22/14 08:00	1

Qualifiers

Metals

Qualifier	Qualifier Description
b	The compound was found in the blank and sample
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
F	Duplicate RPD exceeds the control limit
N2	RPD of the MS and MSD exceeds the control limits
U	Analyte was not detected at or above the SDL.

General Chemistry

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

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
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)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90579-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-132572/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132626 — **Prep Batch: 132572**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.218	U	1.00	0.218	mg/Kg		04/21/14 16:24	04/22/14 12:37	1
Cadmium	0.0256	U	0.250	0.0256	mg/Kg		04/21/14 16:24	04/22/14 12:37	1
Lead	0.1250	J	0.500	0.105	mg/Kg		04/21/14 16:24	04/22/14 12:37	1

Lab Sample ID: LCSSRM 600-132572/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132626 — **Prep Batch: 132572**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	99.6	104.0		mg/Kg		104.4	80.8 - 119.5
Cadmium	182	205.2		mg/Kg		112.7	81.9 - 118.1
Lead	115	126.9		mg/Kg		110.3	81.8 - 119.1

Lab Sample ID: 600-90579-6 MS — **Client Sample ID: 2014-SED-054 MS**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132626 — **Prep Batch: 132572**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	22.3		62.4	91.53		mg/Kg	☼	111	75 - 125
Cadmium	0.824		31.2	29.67		mg/Kg	☼	93	75 - 125
Lead	21.0	b	62.4	80.87		mg/Kg	☼	96	75 - 125

Lab Sample ID: 600-90579-6 MSD — **Client Sample ID: 2014-SED-054 MSD**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132626 — **Prep Batch: 132572**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	22.3		56.9	93.31		mg/Kg	☼	125	75 - 125	2	20
Cadmium	0.824		28.4	23.73	N2	mg/Kg	☼	81	75 - 125	22	20
Lead	21.0	b	56.9	80.34		mg/Kg	☼	104	75 - 125	1	20

Lab Sample ID: 600-90579-6 DU — **Client Sample ID: 2014-SED-054**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132626 — **Prep Batch: 132572**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	22.3		23.57		mg/Kg	☼	6	20
Cadmium	0.824		0.6797		mg/Kg	☼	19	20
Lead	21.0	b	25.98	F	mg/Kg	☼	21	20

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90579-1

Method: Moisture - Percent Moisture

Lab Sample ID: 600-90560-A-12 DU — **Client Sample ID: Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132331

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	14			13		%				7	20
Percent Solids	86			87		%				1	20

Method: WALKLEY BLACK - Organic Carbon, Total (TOC)

Lab Sample ID: MB 600-132642/1 — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132642

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
TOC	0.0415	U	0.100	0.0415	%			04/22/14 08:00	1

Lab Sample ID: LCS 600-132642/2 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132642

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
TOC			2.34	2.552		%		109	80 - 120		

Lab Sample ID: 600-90579-1 DU — **Client Sample ID: 2014-SED-050**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132642

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
TOC	0.316			0.2950		%				7	20

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90579-1

Method: 6010B - Metals (ICP)

Analyte	MQL	MDL	Units	Method
Arsenic	1.00	0.218	mg/Kg	6010B
Cadmium	0.250	0.0256	mg/Kg	6010B
Lead	0.500	0.105	mg/Kg	6010B

General Chemistry

Analyte	MQL	MDL	Units	Method
Percent Moisture	1.0	1.0	%	Moisture
Percent Solids	1.0	1.0	%	Moisture
TOC	0.100	0.0415	%	WALKLEY BLACK

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90579-1

Metals

Prep Batch: 132572

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90579-1	2014-SED-050	Total/NA	Solid	3050B	
600-90579-2	2014-SED-051	Total/NA	Solid	3050B	
600-90579-3	2014-SED-052	Total/NA	Solid	3050B	
600-90579-4	2014-SED-053	Total/NA	Solid	3050B	
600-90579-5	Dup-1	Total/NA	Solid	3050B	
600-90579-6	2014-SED-054	Total/NA	Solid	3050B	
600-90579-6 DU	2014-SED-054	Total/NA	Solid	3050B	
600-90579-6 MS	2014-SED-054 MS	Total/NA	Solid	3050B	
600-90579-6 MSD	2014-SED-054 MSD	Total/NA	Solid	3050B	
600-90579-7	2014-SED-055	Total/NA	Solid	3050B	
LCSSRM 600-132572/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 600-132572/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 132626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90579-1	2014-SED-050	Total/NA	Solid	6010B	132572
600-90579-2	2014-SED-051	Total/NA	Solid	6010B	132572
600-90579-3	2014-SED-052	Total/NA	Solid	6010B	132572
600-90579-4	2014-SED-053	Total/NA	Solid	6010B	132572
600-90579-5	Dup-1	Total/NA	Solid	6010B	132572
600-90579-6	2014-SED-054	Total/NA	Solid	6010B	132572
600-90579-6 DU	2014-SED-054	Total/NA	Solid	6010B	132572
600-90579-6 MS	2014-SED-054 MS	Total/NA	Solid	6010B	132572
600-90579-6 MSD	2014-SED-054 MSD	Total/NA	Solid	6010B	132572
600-90579-7	2014-SED-055	Total/NA	Solid	6010B	132572
LCSSRM 600-132572/2-A	Lab Control Sample	Total/NA	Solid	6010B	132572
MB 600-132572/1-A	Method Blank	Total/NA	Solid	6010B	132572

General Chemistry

Analysis Batch: 132331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90560-A-12 DU	Duplicate	Total/NA	Solid	Moisture	
600-90579-1	2014-SED-050	Total/NA	Solid	Moisture	
600-90579-2	2014-SED-051	Total/NA	Solid	Moisture	
600-90579-3	2014-SED-052	Total/NA	Solid	Moisture	
600-90579-4	2014-SED-053	Total/NA	Solid	Moisture	
600-90579-5	Dup-1	Total/NA	Solid	Moisture	
600-90579-6	2014-SED-054	Total/NA	Solid	Moisture	
600-90579-6 MS	2014-SED-054 MS	Total/NA	Solid	Moisture	
600-90579-6 MSD	2014-SED-054 MSD	Total/NA	Solid	Moisture	
600-90579-7	2014-SED-055	Total/NA	Solid	Moisture	

Analysis Batch: 132642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90579-1	2014-SED-050	Total/NA	Solid	WALKLEY BLACK	
600-90579-1 DU	2014-SED-050	Total/NA	Solid	WALKLEY BLACK	
600-90579-2	2014-SED-051	Total/NA	Solid	WALKLEY BLACK	

General Chemistry (Continued)

Analysis Batch: 132642 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90579-3	2014-SED-052	Total/NA	Solid	WALKLEY BLACK	
600-90579-4	2014-SED-053	Total/NA	Solid	WALKLEY BLACK	
600-90579-5	Dup-1	Total/NA	Solid	WALKLEY BLACK	
600-90579-6	2014-SED-054	Total/NA	Solid	WALKLEY BLACK	
600-90579-7	2014-SED-055	Total/NA	Solid	WALKLEY BLACK	
LCS 600-132642/2	Lab Control Sample	Total/NA	Solid	WALKLEY BLACK	
MB 600-132642/1	Method Blank	Total/NA	Solid	WALKLEY BLACK	

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90579-1

Client Sample ID: 2014-SED-050 — Lab Sample ID: 600-90579-1

Date Collected: 04/15/14 11:28 — **Matrix: Solid**
Date Received: 04/16/14 10:34 — **Percent Solids: 88.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.07 g	50 mL	132572	04/21/14 16:24	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.07 g	50 mL	132626	04/22/14 12:55	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			132331	04/17/14 14:26	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.5000 g	2.5000 g	132642	04/22/14 08:00	EC1	TAL HOU

Client Sample ID: 2014-SED-051 — Lab Sample ID: 600-90579-2

Date Collected: 04/15/14 12:21 — **Matrix: Solid**
Date Received: 04/16/14 10:34 — **Percent Solids: 76.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.06 g	50 mL	132572	04/21/14 16:24	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.06 g	50 mL	132626	04/22/14 12:58	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			132331	04/17/14 14:26	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.5400 g	2.5400 g	132642	04/22/14 08:00	EC1	TAL HOU

Client Sample ID: 2014-SED-052 — Lab Sample ID: 600-90579-3

Date Collected: 04/15/14 13:33 — **Matrix: Solid**
Date Received: 04/16/14 10:34 — **Percent Solids: 49.5**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.07 g	50 mL	132572	04/21/14 16:24	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.07 g	50 mL	132626	04/22/14 13:07	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			132331	04/17/14 14:26	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	0.5100 g	0.5100 g	132642	04/22/14 08:00	EC1	TAL HOU

Client Sample ID: 2014-SED-053 — Lab Sample ID: 600-90579-4

Date Collected: 04/15/14 14:20 — **Matrix: Solid**
Date Received: 04/16/14 10:34 — **Percent Solids: 90.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.04 g	50 mL	132572	04/21/14 16:24	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.04 g	50 mL	132626	04/22/14 13:10	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			132331	04/17/14 14:26	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.5200 g	2.5200 g	132642	04/22/14 08:00	EC1	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90579-1

Client Sample ID: Dup-1

Lab Sample ID: 600-90579-5

Date Collected: 04/15/14 00:00
Matrix: Solid
Date Received: 04/16/14 10:34
Percent Solids: 56.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.00 g	50 mL	132572	04/21/14 16:24	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.00 g	50 mL	132626	04/22/14 13:12	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			132331	04/17/14 14:26	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	0.5500 g	0.5500 g	132642	04/22/14 08:00	EC1	TAL HOU

Client Sample ID: 2014-SED-054

Lab Sample ID: 600-90579-6

Date Collected: 04/15/14 15:12
Matrix: Solid
Date Received: 04/16/14 10:34
Percent Solids: 82.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.00 g	50 mL	132572	04/21/14 16:24	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.00 g	50 mL	132626	04/22/14 13:15	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			132331	04/17/14 14:26	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.5500 g	2.5500 g	132642	04/22/14 08:00	EC1	TAL HOU

Client Sample ID: 2014-SED-055

Lab Sample ID: 600-90579-7

Date Collected: 04/15/14 16:11
Matrix: Solid
Date Received: 04/16/14 10:34
Percent Solids: 67.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.02 g	50 mL	132572	04/21/14 16:24	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.02 g	50 mL	132626	04/22/14 13:25	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			132331	04/17/14 14:26	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.5700 g	2.5700 g	132642	04/22/14 08:00	EC1	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90579-1

Laboratory: TestAmerica Houston

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Texas	NELAP	6	T104704223	10-31-14

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

5/15/2014

Client Information	Sampler: A. Maslow / C. Trevino	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No.: 600-27110-9386.5
Client Contact: Christina Higginbotham	Phone: 281-821-6868	E-Mail: dean.joiner@testamericainc.com		Page: Page 1 of 1
Company: Golder Associates Inc.				Job #: 1302086
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 day			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #			
Project Name: Exide Recycling Center, Frisco TX Projec	Project #: 60004831			
Site: Stewart Creek	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	WALKLEY_BLACK - Walkley Black (TOC)	6010B As, Se, Sb, Cd, Pb	Moisture	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	N		
2014-SED-050	4-15-14	1128	C	Solid			X	X	X		As, Cd, Pb on final report
2014-SED-051		1221	C	Solid			X	X	X		
2014-SED-052		1333	C	Solid			X	X	X		
2014-SED-053		1420	C	Solid			X	X	X		
Dup-1		–	C	Solid			X	X	X		
2014-SED-054		1512	C	Solid		X	X	X	X		
2014-SED-054 MS		1512	C	Solid		X	X	X	X		
2014-SED-054 MSD		1512	C	Solid		X	X	X	X		
2014-SED-055		1611	C	Solid			X	X	X		
			C	Solid							
			C	Solid							

600-90579 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months client approval needed for disposal

Deliverable Requested: I, II, III, IV, Other (specify) TRRP

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time	Method of Shipment:		
Relinquished by: Abby Maslow	Date/Time: 4-15-14 1850	Company	Received by	Date/Time	Company
Relinquished by:	Date/Time	Company	Received by	Date/Time	Company
Relinquished by:	Date/Time	Company	Received by: [signature]	Date/Time: 4/16/14 10:34	Company: TA
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks		

TestAmerica Houston

Sample Receipt Checklist

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Date/Time Received: _____

UNPACKED BY: DL CLIENT: Golder Associates

JOB NUMBER: _____ CARRIER/DRIVER: Fed Ex

Custody Seal Present: ☑ YES ☐ NO Number of Coolers Received: 1

IR THERMOMETER #: 545 THERMOMETER CORRECTION FACTOR : 0.1

Temperature of the samples(s):
Temp taken by: TB = Temp. Blank and/or SC = Sample Container

Cooler ID	BW								
Temp	TB SC 3.9	TB SC	TB SC	TB SC	TB SC	TB SC	TB SC	TB SC	TB SC
Corrected Temp	4.0								

Loc: 600
90579

Samples received on ice? ☑ YES ☐ NO

LABORATORY PRESERVATION OF SAMPLES REQUIRED: ☑ NO ☐ YES

Base samples are>pH 12: NA ☐ YES ☐ NO Acid preserved are<pH 2: NA ☐ YES ☐ NO
Lot #_____ Lot #_____

VOA headspace acceptable: NA ☐ YES ☐ NO VOA trip blanks included: NA ☐ YES ☐ NO

	YES	NO
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		

COMMENTS:

Standard

TB not on COC yet received.

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-90579-1

Login Number: 90579

List Source: TestAmerica Houston

List Number: 1

Creator: Culik, Marie E

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
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	4.0
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.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time.	True	
Sample containers have legible labels.	False	Refer to Job Narrative for details.
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

ANALYTICAL REPORT

Job Number: 600-90647-1

Job Description: Stewart Creek - Grain Size

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, TX 77073

Attention: Christina Higginbotham

Approved for release.
Cathy L Upton
Project Management Assistant II
4/24/2014 1:08 PM

Designee for
Dean A Joiner, Project Manager II
6310 Rothway Street, Houston, TX, 77040
(713)690-4444
dean.joiner@testamericainc.com
04/24/2014

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Project Manager.

TestAmerica Houston Certifications and Approvals: TX NELAP T104704223-09A-TX, ARDEQ 88-0759, LADEQ 01967, OKDEQ 9503, UT DOH GULF

Comments
No additional comments.

Receipt
The samples were received on 4/17/2014 10:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.8º C.

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

METHOD SUMMARY

Client: Golder Associates Inc. Job Number: 600-90647-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Grain Size	TAL BUR	ASTM D422	

Lab References:

TAL BUR = TestAmerica Burlington

Method References:

ASTM = ASTM International

METHOD / ANALYST SUMMARY

Client: Golder Associates Inc.

Job Number: 600-90647-1

Method	Analyst	Analyst ID
ASTM D422	Degree, Steven L	SLD

SAMPLE SUMMARY

Client: Golder Associates Inc. Job Number: 600-90647-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
600-90647-1	2014-SED-056	Solid	04/16/2014 1043	04/17/2014 1030
600-90647-2	2014-SED-057	Solid	04/16/2014 1132	04/17/2014 1030
600-90647-3	2014-SED-058	Solid	04/16/2014 1215	04/17/2014 1030
600-90647-4	2014-SED-059	Solid	04/16/2014 1320	04/17/2014 1030
600-90647-5	2014-SED-060	Solid	04/16/2014 1444	04/17/2014 1030
600-90647-6	2014-SED-061	Solid	04/16/2014 1530	04/17/2014 1030
600-90647-7	2014-SED-062	Solid	04/16/2014 1610	04/17/2014 1030
600-90647-8	2014-SED-063	Solid	04/16/2014 1632	04/17/2014 1030

SAMPLE RESULTS

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90647-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-056

Lab Sample ID: 600-90647-1
Client Matrix: Solid

Date Sampled: 04/16/2014 10:43
Date Received: 04/17/2014 10:30

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	0.6						%	71104	04/17/2014 15:14	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	26.5						um	71104	04/17/2014 15:14	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	71104	04/17/2014 15:14	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	17.0						um	71104	04/17/2014 15:14	1	SLD
Sand	STL00582	9.0						%	71104	04/17/2014 15:14	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	71104	04/17/2014 15:14	1	SLD
Coarse Sand	STL00583	4.6						%	71104	04/17/2014 15:14	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	10.4						um	71104	04/17/2014 15:14	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	71104	04/17/2014 15:14	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	7.6						um	71104	04/17/2014 15:14	1	SLD
Medium Sand	STL00584	1.4						%	71104	04/17/2014 15:14	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	71104	04/17/2014 15:14	1	SLD
Fine Sand	STL00585	3.0						%	71104	04/17/2014 15:14	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.5						um	71104	04/17/2014 15:14	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	71104	04/17/2014 15:14	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	2.7						um	71104	04/17/2014 15:14	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	100.0						% Passing	71104	04/17/2014 15:14	1	SLD
Silt	STL00586	42.4						%	71104	04/17/2014 15:14	1	SLD
Clay	STL00587	48.0						%	71104	04/17/2014 15:14	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.2						um	71104	04/17/2014 15:14	1	SLD
Sieve Size #4 - Percent Finer	STL01274	99.4						% Passing	71104	04/17/2014 15:14	1	SLD
Sieve Size #10 - Percent Finer	STL01268	94.8						% Passing	71104	04/17/2014 15:14	1	SLD
Sieve Size #20 - Percent Finer	STL01271	94.2						% Passing	71104	04/17/2014 15:14	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90647-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-056

Lab Sample ID: 600-90647-1
Client Matrix: Solid

Date Sampled: 04/16/2014 10:43
Date Received: 04/17/2014 10:30

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	93.4						% Passing	71104	04/17/2014 15:14	1	SLD
Sieve Size #60 - Percent Finer	STL01276	92.9						% Passing	71104	04/17/2014 15:14	1	SLD
Sieve Size #80 - Percent Finer	STL01277	92.7						% Passing	71104	04/17/2014 15:14	1	SLD
Sieve Size #100 - Percent Finer	STL01269	92.5						% Passing	71104	04/17/2014 15:14	1	SLD
Sieve Size #200 - Percent Finer	STL01272	90.4						% Passing	71104	04/17/2014 15:14	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	67.0						% Passing	71104	04/17/2014 15:14	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	64.6						% Passing	71104	04/17/2014 15:14	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	56.3						% Passing	71104	04/17/2014 15:14	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	51.6						% Passing	71104	04/17/2014 15:14	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	48.0						% Passing	71104	04/17/2014 15:14	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	40.9						% Passing	71104	04/17/2014 15:14	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	31.4						% Passing	71104	04/17/2014 15:14	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90647-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-057

Lab Sample ID: 600-90647-2
Client Matrix: Solid

Date Sampled: 04/16/2014 11:32
Date Received: 04/17/2014 10:30

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	32.1						%	71104	04/17/2014 15:16	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	34.0						um	71104	04/17/2014 15:16	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	71104	04/17/2014 15:16	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	21.6						um	71104	04/17/2014 15:16	1	SLD
Sand	STL00582	58.5						%	71104	04/17/2014 15:16	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	71104	04/17/2014 15:16	1	SLD
Coarse Sand	STL00583	37.9						%	71104	04/17/2014 15:16	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.5						um	71104	04/17/2014 15:16	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	71104	04/17/2014 15:16	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.9						um	71104	04/17/2014 15:16	1	SLD
Medium Sand	STL00584	18.1						%	71104	04/17/2014 15:16	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	71104	04/17/2014 15:16	1	SLD
Fine Sand	STL00585	2.5						%	71104	04/17/2014 15:16	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.5						um	71104	04/17/2014 15:16	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	93.4						% Passing	71104	04/17/2014 15:16	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.1						um	71104	04/17/2014 15:16	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	88.3						% Passing	71104	04/17/2014 15:16	1	SLD
Silt	STL00586	4.4						%	71104	04/17/2014 15:16	1	SLD
Clay	STL00587	5.0						%	71104	04/17/2014 15:16	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	71104	04/17/2014 15:16	1	SLD
Sieve Size #4 - Percent Finer	STL01274	67.9						% Passing	71104	04/17/2014 15:16	1	SLD
Sieve Size #10 - Percent Finer	STL01268	30.0						% Passing	71104	04/17/2014 15:16	1	SLD
Sieve Size #20 - Percent Finer	STL01271	18.4						% Passing	71104	04/17/2014 15:16	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90647-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-057

Lab Sample ID: 600-90647-2
Client Matrix: Solid

Date Sampled: 04/16/2014 11:32
Date Received: 04/17/2014 10:30

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	11.9						% Passing	71104	04/17/2014 15:16	1	SLD
Sieve Size #60 - Percent Finer	STL01276	10.3						% Passing	71104	04/17/2014 15:16	1	SLD
Sieve Size #80 - Percent Finer	STL01277	10						% Passing	71104	04/17/2014 15:16	1	SLD
Sieve Size #100 - Percent Finer	STL01269	9.7						% Passing	71104	04/17/2014 15:16	1	SLD
Sieve Size #200 - Percent Finer	STL01272	9.4						% Passing	71104	04/17/2014 15:16	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	6.9						% Passing	71104	04/17/2014 15:16	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	6.5						% Passing	71104	04/17/2014 15:16	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	6.1						% Passing	71104	04/17/2014 15:16	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	5.8						% Passing	71104	04/17/2014 15:16	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	5.0						% Passing	71104	04/17/2014 15:16	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	3.9						% Passing	71104	04/17/2014 15:16	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	3.2						% Passing	71104	04/17/2014 15:16	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90647-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-058

Lab Sample ID: 600-90647-3
Client Matrix: Solid

Date Sampled: 04/16/2014 12:15
Date Received: 04/17/2014 10:30

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	27.7						%	71104	04/17/2014 15:18	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	31.8						um	71104	04/17/2014 15:18	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	71104	04/17/2014 15:18	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	20.5						um	71104	04/17/2014 15:18	1	SLD
Sand	STL00582	58.2						%	71104	04/17/2014 15:18	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	71104	04/17/2014 15:18	1	SLD
Coarse Sand	STL00583	34.0						%	71104	04/17/2014 15:18	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.0						um	71104	04/17/2014 15:18	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	71104	04/17/2014 15:18	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.7						um	71104	04/17/2014 15:18	1	SLD
Medium Sand	STL00584	18.0						%	71104	04/17/2014 15:18	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	71104	04/17/2014 15:18	1	SLD
Fine Sand	STL00585	6.2						%	71104	04/17/2014 15:18	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.2						um	71104	04/17/2014 15:18	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	97.8						% Passing	71104	04/17/2014 15:18	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.1						um	71104	04/17/2014 15:18	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	94.1						% Passing	71104	04/17/2014 15:18	1	SLD
Silt	STL00586	6.3						%	71104	04/17/2014 15:18	1	SLD
Clay	STL00587	7.8						%	71104	04/17/2014 15:18	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	71104	04/17/2014 15:18	1	SLD
Sieve Size #4 - Percent Finer	STL01274	72.3						% Passing	71104	04/17/2014 15:18	1	SLD
Sieve Size #10 - Percent Finer	STL01268	38.3						% Passing	71104	04/17/2014 15:18	1	SLD
Sieve Size #20 - Percent Finer	STL01271	26.8						% Passing	71104	04/17/2014 15:18	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90647-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-058

Lab Sample ID: 600-90647-3
Client Matrix: Solid

Date Sampled: 04/16/2014 12:15
Date Received: 04/17/2014 10:30

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	20.3						% Passing	71104	04/17/2014 15:18	1	SLD
Sieve Size #60 - Percent Finer	STL01276	16.8						% Passing	71104	04/17/2014 15:18	1	SLD
Sieve Size #80 - Percent Finer	STL01277	15.7						% Passing	71104	04/17/2014 15:18	1	SLD
Sieve Size #100 - Percent Finer	STL01269	15.1						% Passing	71104	04/17/2014 15:18	1	SLD
Sieve Size #200 - Percent Finer	STL01272	14.1						% Passing	71104	04/17/2014 15:18	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	11.6						% Passing	71104	04/17/2014 15:18	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	10.4						% Passing	71104	04/17/2014 15:18	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	9.3						% Passing	71104	04/17/2014 15:18	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	8.5						% Passing	71104	04/17/2014 15:18	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	7.8						% Passing	71104	04/17/2014 15:18	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	6.3						% Passing	71104	04/17/2014 15:18	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	4.7						% Passing	71104	04/17/2014 15:18	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90647-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-059

Lab Sample ID: 600-90647-4
Client Matrix: Solid

Date Sampled: 04/16/2014 13:20
Date Received: 04/17/2014 10:30

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	5.1						%	71104	04/17/2014 15:20	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	31.2						um	71104	04/17/2014 15:20	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	71104	04/17/2014 15:20	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	20.1						um	71104	04/17/2014 15:20	1	SLD
Sand	STL00582	57.6						%	71104	04/17/2014 15:20	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	71104	04/17/2014 15:20	1	SLD
Coarse Sand	STL00583	16.5						%	71104	04/17/2014 15:20	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	11.8						um	71104	04/17/2014 15:20	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	71104	04/17/2014 15:20	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.6						um	71104	04/17/2014 15:20	1	SLD
Medium Sand	STL00584	19.4						%	71104	04/17/2014 15:20	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	71104	04/17/2014 15:20	1	SLD
Fine Sand	STL00585	21.7						%	71104	04/17/2014 15:20	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.9						um	71104	04/17/2014 15:20	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	71104	04/17/2014 15:20	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.0						um	71104	04/17/2014 15:20	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	100.0						% Passing	71104	04/17/2014 15:20	1	SLD
Silt	STL00586	18.7						%	71104	04/17/2014 15:20	1	SLD
Clay	STL00587	18.6						%	71104	04/17/2014 15:20	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	71104	04/17/2014 15:20	1	SLD
Sieve Size #4 - Percent Finer	STL01274	94.9						% Passing	71104	04/17/2014 15:20	1	SLD
Sieve Size #10 - Percent Finer	STL01268	78.4						% Passing	71104	04/17/2014 15:20	1	SLD
Sieve Size #20 - Percent Finer	STL01271	69.2						% Passing	71104	04/17/2014 15:20	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90647-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-059

Lab Sample ID: 600-90647-4
Client Matrix: Solid

Date Sampled: 04/16/2014 13:20
Date Received: 04/17/2014 10:30

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	59.0						% Passing	71104	04/17/2014 15:20	1	SLD
Sieve Size #60 - Percent Finer	STL01276	49.4						% Passing	71104	04/17/2014 15:20	1	SLD
Sieve Size #80 - Percent Finer	STL01277	44.4						% Passing	71104	04/17/2014 15:20	1	SLD
Sieve Size #100 - Percent Finer	STL01269	41.3						% Passing	71104	04/17/2014 15:20	1	SLD
Sieve Size #200 - Percent Finer	STL01272	37.3						% Passing	71104	04/17/2014 15:20	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	27.6						% Passing	71104	04/17/2014 15:20	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	25.2						% Passing	71104	04/17/2014 15:20	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	23.5						% Passing	71104	04/17/2014 15:20	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	21.0						% Passing	71104	04/17/2014 15:20	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	18.6						% Passing	71104	04/17/2014 15:20	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	15.3						% Passing	71104	04/17/2014 15:20	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	12.0						% Passing	71104	04/17/2014 15:20	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90647-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-060

Lab Sample ID: 600-90647-5
Client Matrix: Solid

Date Sampled: 04/16/2014 14:44
Date Received: 04/17/2014 10:30

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	0.0						%	71104	04/17/2014 15:23	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	27.4						um	71104	04/17/2014 15:23	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	71104	04/17/2014 15:23	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	17.9						um	71104	04/17/2014 15:23	1	SLD
Sand	STL00582	48.1						%	71104	04/17/2014 15:23	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	71104	04/17/2014 15:23	1	SLD
Coarse Sand	STL00583	2.5						%	71104	04/17/2014 15:23	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	10.7						um	71104	04/17/2014 15:23	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	71104	04/17/2014 15:23	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	7.6						um	71104	04/17/2014 15:23	1	SLD
Medium Sand	STL00584	15.7						%	71104	04/17/2014 15:23	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	71104	04/17/2014 15:23	1	SLD
Fine Sand	STL00585	29.9						%	71104	04/17/2014 15:23	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.6						um	71104	04/17/2014 15:23	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	71104	04/17/2014 15:23	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	2.9						um	71104	04/17/2014 15:23	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	100.0						% Passing	71104	04/17/2014 15:23	1	SLD
Silt	STL00586	20.6						%	71104	04/17/2014 15:23	1	SLD
Clay	STL00587	31.3						%	71104	04/17/2014 15:23	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.2						um	71104	04/17/2014 15:23	1	SLD
Sieve Size #4 - Percent Finer	STL01274	100.0						% Passing	71104	04/17/2014 15:23	1	SLD
Sieve Size #10 - Percent Finer	STL01268	97.5						% Passing	71104	04/17/2014 15:23	1	SLD
Sieve Size #20 - Percent Finer	STL01271	93.1						% Passing	71104	04/17/2014 15:23	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90647-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-060

Lab Sample ID: 600-90647-5
Client Matrix: Solid

Date Sampled: 04/16/2014 14:44
Date Received: 04/17/2014 10:30

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	81.8						% Passing	71104	04/17/2014 15:23	1	SLD
Sieve Size #60 - Percent Finer	STL01276	71.0						% Passing	71104	04/17/2014 15:23	1	SLD
Sieve Size #80 - Percent Finer	STL01277	65.2						% Passing	71104	04/17/2014 15:23	1	SLD
Sieve Size #100 - Percent Finer	STL01269	60.3						% Passing	71104	04/17/2014 15:23	1	SLD
Sieve Size #200 - Percent Finer	STL01272	51.9						% Passing	71104	04/17/2014 15:23	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	43.9						% Passing	71104	04/17/2014 15:23	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	40.5						% Passing	71104	04/17/2014 15:23	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	36.3						% Passing	71104	04/17/2014 15:23	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	33.8						% Passing	71104	04/17/2014 15:23	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	31.3						% Passing	71104	04/17/2014 15:23	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	27.2						% Passing	71104	04/17/2014 15:23	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	22.1						% Passing	71104	04/17/2014 15:23	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90647-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-061

Lab Sample ID: 600-90647-6
Client Matrix: Solid

Date Sampled: 04/16/2014 15:30
Date Received: 04/17/2014 10:30

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	7.8						%	71104	04/17/2014 15:52	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	31.4						um	71104	04/17/2014 15:52	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	71104	04/17/2014 15:52	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	20.1						um	71104	04/17/2014 15:52	1	SLD
Sand	STL00582	58.0						%	71104	04/17/2014 15:52	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	71104	04/17/2014 15:52	1	SLD
Coarse Sand	STL00583	20.6						%	71104	04/17/2014 15:52	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	11.8						um	71104	04/17/2014 15:52	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	71104	04/17/2014 15:52	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.4						um	71104	04/17/2014 15:52	1	SLD
Medium Sand	STL00584	26.6						%	71104	04/17/2014 15:52	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	71104	04/17/2014 15:52	1	SLD
Fine Sand	STL00585	10.8						%	71104	04/17/2014 15:52	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.1						um	71104	04/17/2014 15:52	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	71104	04/17/2014 15:52	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.1						um	71104	04/17/2014 15:52	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	100.0						% Passing	71104	04/17/2014 15:52	1	SLD
Silt	STL00586	13.8						%	71104	04/17/2014 15:52	1	SLD
Clay	STL00587	20.4						%	71104	04/17/2014 15:52	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	71104	04/17/2014 15:52	1	SLD
Sieve Size #4 - Percent Finer	STL01274	92.2						% Passing	71104	04/17/2014 15:52	1	SLD
Sieve Size #10 - Percent Finer	STL01268	71.6						% Passing	71104	04/17/2014 15:52	1	SLD
Sieve Size #20 - Percent Finer	STL01271	57.1						% Passing	71104	04/17/2014 15:52	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90647-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-061

Lab Sample ID: 600-90647-6
Client Matrix: Solid

Date Sampled: 04/16/2014 15:30
Date Received: 04/17/2014 10:30

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	45.0						% Passing	71104	04/17/2014 15:52	1	SLD
Sieve Size #60 - Percent Finer	STL01276	40.1						% Passing	71104	04/17/2014 15:52	1	SLD
Sieve Size #80 - Percent Finer	STL01277	38.1						% Passing	71104	04/17/2014 15:52	1	SLD
Sieve Size #100 - Percent Finer	STL01269	36.7						% Passing	71104	04/17/2014 15:52	1	SLD
Sieve Size #200 - Percent Finer	STL01272	34.2						% Passing	71104	04/17/2014 15:52	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	29.4						% Passing	71104	04/17/2014 15:52	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	27.6						% Passing	71104	04/17/2014 15:52	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	24.9						% Passing	71104	04/17/2014 15:52	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	22.2						% Passing	71104	04/17/2014 15:52	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	20.4						% Passing	71104	04/17/2014 15:52	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	16.7						% Passing	71104	04/17/2014 15:52	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	12.2						% Passing	71104	04/17/2014 15:52	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90647-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-062

Lab Sample ID: 600-90647-7
Client Matrix: Solid

Date Sampled: 04/16/2014 16:10
Date Received: 04/17/2014 10:30

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	19.8						%	71104	04/17/2014 15:56	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	32.2						um	71104	04/17/2014 15:56	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	71104	04/17/2014 15:56	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	20.6						um	71104	04/17/2014 15:56	1	SLD
Sand	STL00582	64.1						%	71104	04/17/2014 15:56	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	71104	04/17/2014 15:56	1	SLD
Coarse Sand	STL00583	34.5						%	71104	04/17/2014 15:56	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.1						um	71104	04/17/2014 15:56	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	71104	04/17/2014 15:56	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.5						um	71104	04/17/2014 15:56	1	SLD
Medium Sand	STL00584	26.3						%	71104	04/17/2014 15:56	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	71104	04/17/2014 15:56	1	SLD
Fine Sand	STL00585	3.3						%	71104	04/17/2014 15:56	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.3						um	71104	04/17/2014 15:56	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	71104	04/17/2014 15:56	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.0						um	71104	04/17/2014 15:56	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	99.3						% Passing	71104	04/17/2014 15:56	1	SLD
Silt	STL00586	7.7						%	71104	04/17/2014 15:56	1	SLD
Clay	STL00587	8.4						%	71104	04/17/2014 15:56	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	71104	04/17/2014 15:56	1	SLD
Sieve Size #4 - Percent Finer	STL01274	80.2						% Passing	71104	04/17/2014 15:56	1	SLD
Sieve Size #10 - Percent Finer	STL01268	45.7						% Passing	71104	04/17/2014 15:56	1	SLD
Sieve Size #20 - Percent Finer	STL01271	28.8						% Passing	71104	04/17/2014 15:56	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90647-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-062

Lab Sample ID: 600-90647-7
Client Matrix: Solid

Date Sampled: 04/16/2014 16:10
Date Received: 04/17/2014 10:30

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	19.4						% Passing	71104	04/17/2014 15:56	1	SLD
Sieve Size #60 - Percent Finer	STL01276	17.6						% Passing	71104	04/17/2014 15:56	1	SLD
Sieve Size #80 - Percent Finer	STL01277	17.1						% Passing	71104	04/17/2014 15:56	1	SLD
Sieve Size #100 - Percent Finer	STL01269	16.8						% Passing	71104	04/17/2014 15:56	1	SLD
Sieve Size #200 - Percent Finer	STL01272	16.1						% Passing	71104	04/17/2014 15:56	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	12.9						% Passing	71104	04/17/2014 15:56	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	12.0						% Passing	71104	04/17/2014 15:56	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	10.2						% Passing	71104	04/17/2014 15:56	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	9.3						% Passing	71104	04/17/2014 15:56	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	8.4						% Passing	71104	04/17/2014 15:56	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	7.0						% Passing	71104	04/17/2014 15:56	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	5.7						% Passing	71104	04/17/2014 15:56	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90647-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-063

Lab Sample ID: 600-90647-8
Client Matrix: Solid

Date Sampled: 04/16/2014 16:32
Date Received: 04/17/2014 10:30

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	11.2						%	71104	04/17/2014 15:58	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	29.5						um	71104	04/17/2014 15:58	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	71104	04/17/2014 15:58	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	19.1						um	71104	04/17/2014 15:58	1	SLD
Sand	STL00582	67.8						%	71104	04/17/2014 15:58	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	71104	04/17/2014 15:58	1	SLD
Coarse Sand	STL00583	23.1						%	71104	04/17/2014 15:58	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	11.3						um	71104	04/17/2014 15:58	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	71104	04/17/2014 15:58	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	7.9						um	71104	04/17/2014 15:58	1	SLD
Medium Sand	STL00584	39.2						%	71104	04/17/2014 15:58	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	71104	04/17/2014 15:58	1	SLD
Fine Sand	STL00585	5.5						%	71104	04/17/2014 15:58	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.8						um	71104	04/17/2014 15:58	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	71104	04/17/2014 15:58	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	2.9						um	71104	04/17/2014 15:58	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	96.8						% Passing	71104	04/17/2014 15:58	1	SLD
Silt	STL00586	7.6						%	71104	04/17/2014 15:58	1	SLD
Clay	STL00587	13.4						%	71104	04/17/2014 15:58	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	71104	04/17/2014 15:58	1	SLD
Sieve Size #4 - Percent Finer	STL01274	88.8						% Passing	71104	04/17/2014 15:58	1	SLD
Sieve Size #10 - Percent Finer	STL01268	65.7						% Passing	71104	04/17/2014 15:58	1	SLD
Sieve Size #20 - Percent Finer	STL01271	46.2						% Passing	71104	04/17/2014 15:58	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-90647-1
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Stewart Creek - Grain Size

Client Sample ID: 2014-SED-063

Lab Sample ID: 600-90647-8
Client Matrix: Solid

Date Sampled: 04/16/2014 16:32
Date Received: 04/17/2014 10:30

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	26.5						% Passing	71104	04/17/2014 15:58	1	SLD
Sieve Size #60 - Percent Finer	STL01276	22.9						% Passing	71104	04/17/2014 15:58	1	SLD
Sieve Size #80 - Percent Finer	STL01277	22.2						% Passing	71104	04/17/2014 15:58	1	SLD
Sieve Size #100 - Percent Finer	STL01269	21.7						% Passing	71104	04/17/2014 15:58	1	SLD
Sieve Size #200 - Percent Finer	STL01272	21.0						% Passing	71104	04/17/2014 15:58	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	19.3						% Passing	71104	04/17/2014 15:58	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	17.5						% Passing	71104	04/17/2014 15:58	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	15.7						% Passing	71104	04/17/2014 15:58	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	14.7						% Passing	71104	04/17/2014 15:58	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	13.4						% Passing	71104	04/17/2014 15:58	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	11.1						% Passing	71104	04/17/2014 15:58	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	8.4						% Passing	71104	04/17/2014 15:58	1	SLD

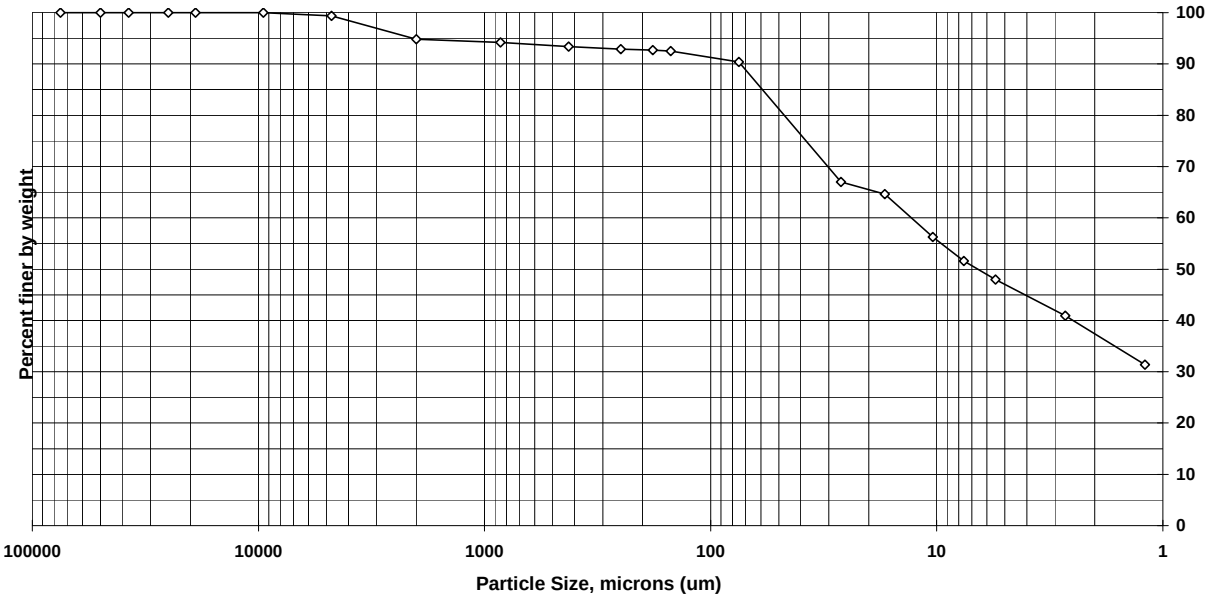
Particle Size of Soils by ASTM D422

				Date Received:	4/17/2014
Sample ID:	2014-SED-056	**Percent Solids:**	52.8%	**Start Date:**	4/17/2014
Lab ID:	600-90647-A-1	**Specific Gravity:**	2.650	**End Date:**	4/23/2014

Shape (> #10): subrounded

Non-soil material: plant,wood,shell

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	99.4	0.6
#10	2000	94.8	4.6
#20	850	94.2	0.6
#40	425	93.4	0.8
#60	250	92.9	0.5
#80	180	92.7	0.2
#100	150	92.5	0.2
#200	75	90.4	2.1
Hyd1	26.5	67.0	23.4
Hyd2	17	64.6	2.4
Hyd3	10.4	56.3	8.3
Hyd4	7.6	51.6	4.7
Hyd5	5.5	48.0	3.6
Hyd6	2.7	40.9	7.1
Hyd7	1.2	31.4	9.5

Soil Classification	Percent of sample
Gravel	0.6
Sand	9.0
Coarse Sand	4.6
Medium Sand	1.4
Fine Sand	3.0
Silt	42.4
Clay	48.0

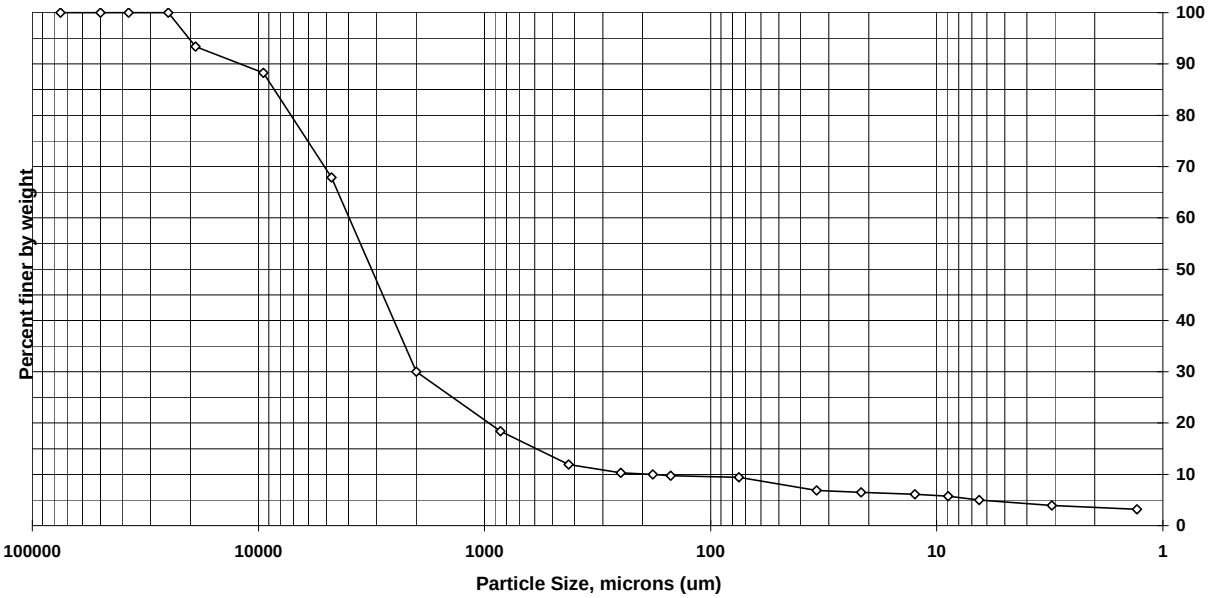
Particle Size of Soils by ASTM D422

				Date Received:	4/17/2014
Sample ID:	2014-SED-057	**Percent Solids:**	82.5%	**Start Date:**	4/17/2014
Lab ID:	600-90647-A-2	**Specific Gravity:**	2.650	**End Date:**	4/23/2014

Shape (> #10): subrounded

Non-soil material: shell

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	93.4	6.6
3/8 inch	9500	88.3	5.1
#4	4750	67.9	20.4
#10	2000	30.0	37.9
#20	850	18.4	11.6
#40	425	11.9	6.5
#60	250	10.3	1.6
#80	180	10.0	0.3
#100	150	9.7	0.2
#200	75	9.4	0.3
Hyd1	34	6.9	2.6
Hyd2	21.6	6.5	0.4
Hyd3	12.5	6.1	0.4
Hyd4	8.9	5.8	0.4
Hyd5	6.5	5.0	0.7
Hyd6	3.1	3.9	1.1
Hyd7	1.3	3.2	0.7

Soil Classification	Percent of sample
Gravel	32.1
Sand	58.5
Coarse Sand	37.9
Medium Sand	18.1
Fine Sand	2.5
Silt	4.4
Clay	5.0

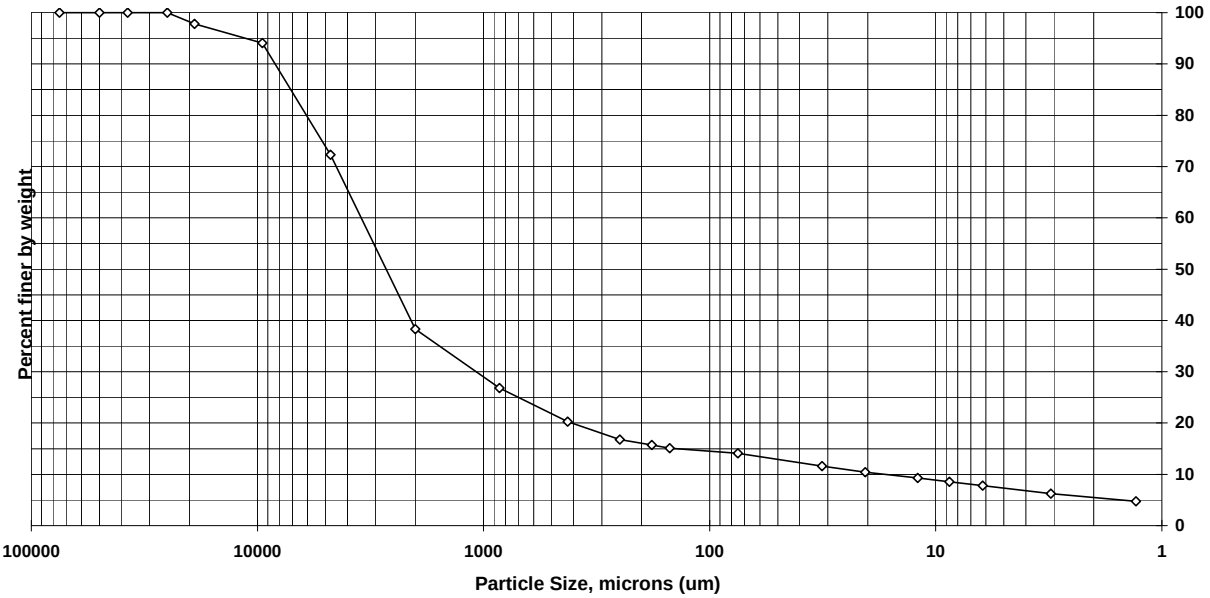
Particle Size of Soils by ASTM D422

				Date Received:	4/17/2014
Sample ID:	2014-SED-058	**Percent Solids:**	82.6%	**Start Date:**	4/17/2014
Lab ID:	600-90647-A-3	**Specific Gravity:**	2.650	**End Date:**	4/23/2014

Shape (> #10): subrounded

Non-soil material: shell

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	97.8	2.2
3/8 inch	9500	94.1	3.7
#4	4750	72.3	21.8
#10	2000	38.3	34.0
#20	850	26.8	11.5
#40	425	20.3	6.5
#60	250	16.8	3.5
#80	180	15.7	1.1
#100	150	15.1	0.6
#200	75	14.1	1.0
Hyd1	31.8	11.6	2.5
Hyd2	20.5	10.4	1.2
Hyd3	12	9.3	1.1
Hyd4	8.7	8.5	0.8
Hyd5	6.2	7.8	0.8
Hyd6	3.1	6.3	1.5
Hyd7	1.3	4.7	1.5

Soil Classification	Percent of sample
Gravel	27.7
Sand	58.2
Coarse Sand	34.0
Medium Sand	18.0
Fine Sand	6.2
Silt	6.3
Clay	7.8

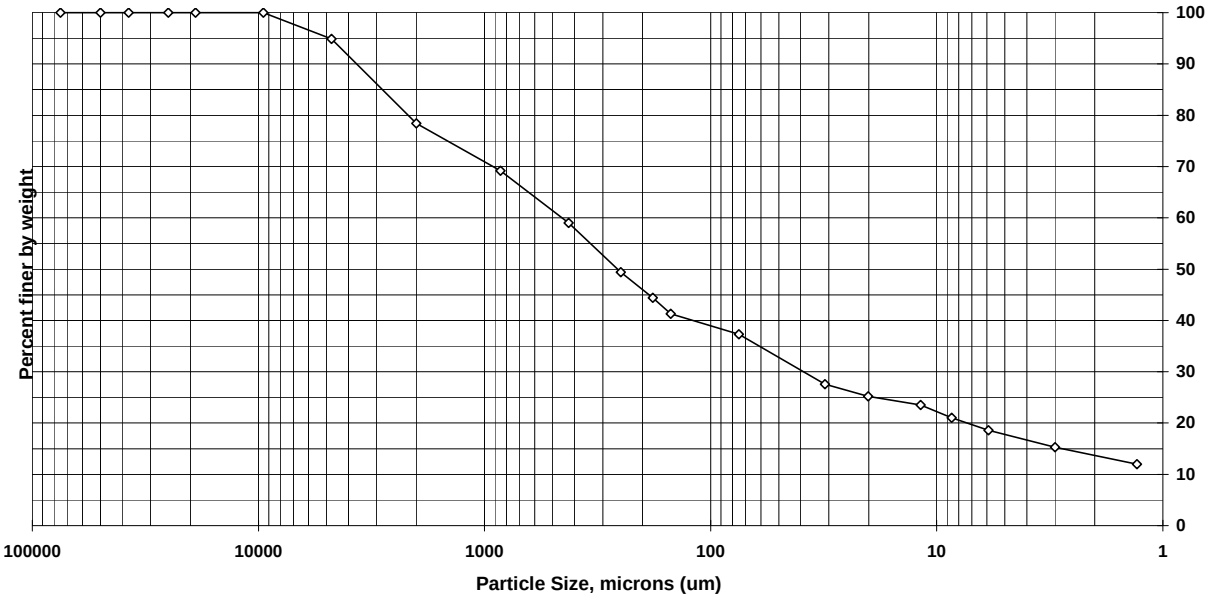
Particle Size of Soils by ASTM D422

				Date Received:	4/17/2014
Sample ID:	2014-SED-059	**Percent Solids:**	69.8%	**Start Date:**	4/17/2014
Lab ID:	600-90647-A-4	**Specific Gravity:**	2.650	**End Date:**	4/23/2014

Shape (> #10): subangular

Non-soil material: plant,wood,shell

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	94.9	5.1
#10	2000	78.4	16.5
#20	850	69.2	9.2
#40	425	59.0	10.2
#60	250	49.4	9.6
#80	180	44.4	5.0
#100	150	41.3	3.1
#200	75	37.3	4.0
Hyd1	31.2	27.6	9.7
Hyd2	20.1	25.2	2.4
Hyd3	11.8	23.5	1.7
Hyd4	8.6	21.0	2.5
Hyd5	5.9	18.6	2.4
Hyd6	3	15.3	3.3
Hyd7	1.3	12.0	3.3

Soil Classification	Percent of sample
Gravel	5.1
Sand	57.6
Coarse Sand	16.5
Medium Sand	19.4
Fine Sand	21.7
Silt	18.7
Clay	18.6

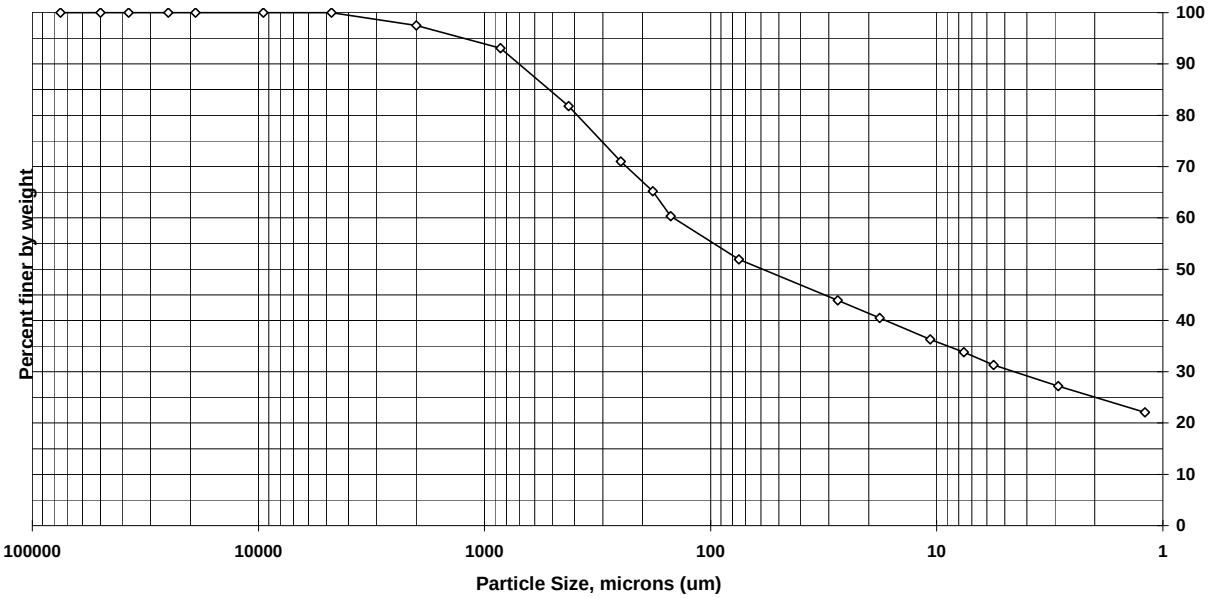
Particle Size of Soils by ASTM D422

				Date Received:	4/17/2014
Sample ID:	2014-SED-060	**Percent Solids:**	65.2%	**Start Date:**	4/17/2014
Lab ID:	600-90647-A-5	**Specific Gravity:**	2.650	**End Date:**	4/23/2014

Shape (> #10): subangular

Non-soil material: plant,wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	97.5	2.5
#20	850	93.1	4.4
#40	425	81.8	11.3
#60	250	71.0	10.8
#80	180	65.2	5.8
#100	150	60.3	4.9
#200	75	51.9	8.4
Hyd1	27.4	43.9	8.0
Hyd2	17.9	40.5	3.4
Hyd3	10.7	36.3	4.2
Hyd4	7.6	33.8	2.5
Hyd5	5.6	31.3	2.5
Hyd6	2.9	27.2	4.1
Hyd7	1.2	22.1	5.1

Soil Classification	Percent of sample
Gravel	0.0
Sand	48.1
Coarse Sand	2.5
Medium Sand	15.7
Fine Sand	29.9
Silt	20.6
Clay	31.3

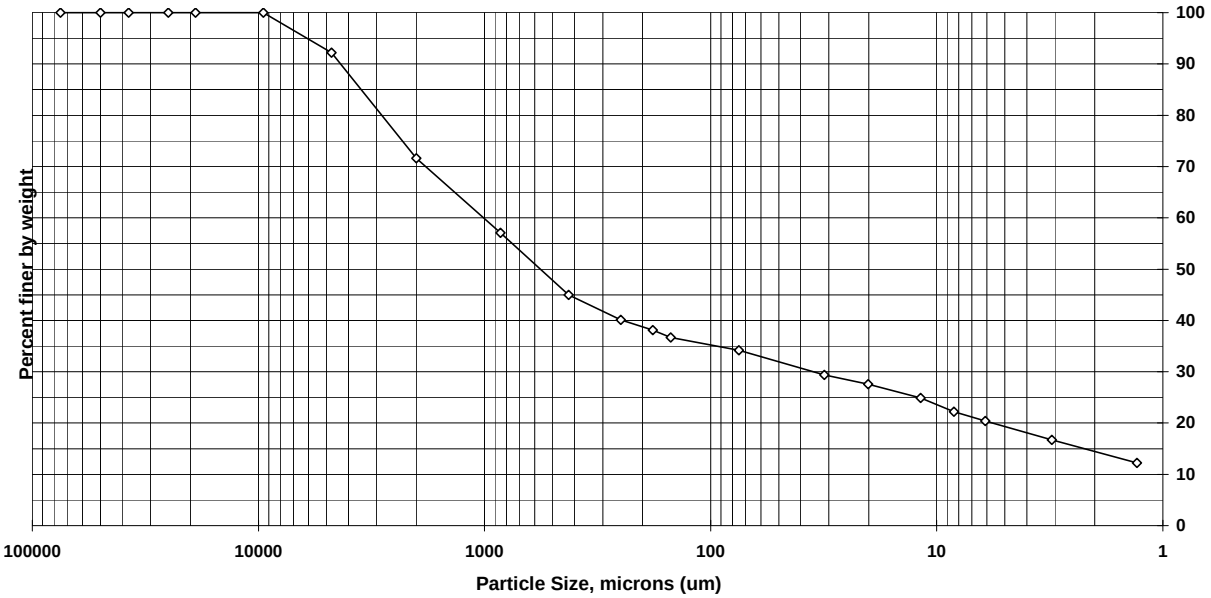
Particle Size of Soils by ASTM D422

				Date Received:	4/17/2014
Sample ID:	2014-SED-061	**Percent Solids:**	65.7%	**Start Date:**	4/17/2014
Lab ID:	600-90647-A-6	**Specific Gravity:**	2.650	**End Date:**	4/23/2014

Shape (> #10): subangular

Non-soil material: na

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	92.2	7.8
#10	2000	71.6	20.6
#20	850	57.1	14.5
#40	425	45.0	12.1
#60	250	40.1	4.9
#80	180	38.1	2.0
#100	150	36.7	1.4
#200	75	34.2	2.5
Hyd1	31.4	29.4	4.8
Hyd2	20.1	27.6	1.8
Hyd3	11.8	24.9	2.7
Hyd4	8.4	22.2	2.7
Hyd5	6.1	20.4	1.8
Hyd6	3.1	16.7	3.7
Hyd7	1.3	12.2	4.5

Soil Classification	Percent of sample
Gravel	7.8
Sand	58.0
Coarse Sand	20.6
Medium Sand	26.6
Fine Sand	10.8
Silt	13.8
Clay	20.4

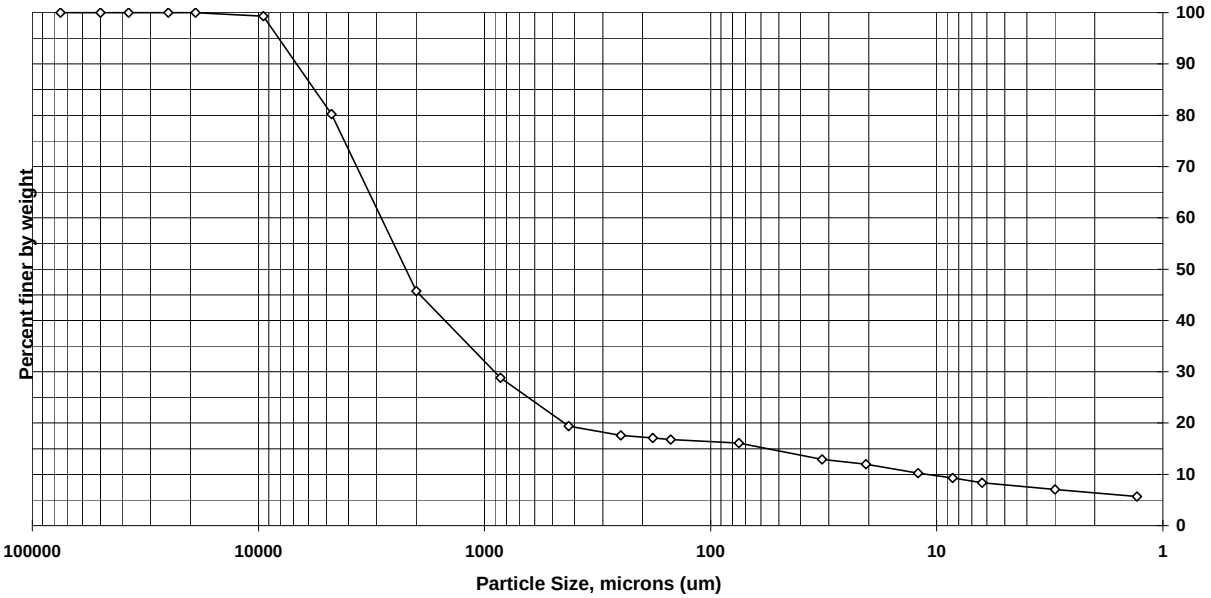
Particle Size of Soils by ASTM D422

				Date Received:	4/17/2014
Sample ID:	2014-SED-062	**Percent Solids:**	77.9%	**Start Date:**	4/17/2014
Lab ID:	600-90647-A-7	**Specific Gravity:**	2.650	**End Date:**	4/23/2014

Shape (> #10): subangular

Non-soil material: na

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	99.3	0.7
#4	4750	80.2	19.1
#10	2000	45.7	34.5
#20	850	28.8	16.9
#40	425	19.4	9.4
#60	250	17.6	1.8
#80	180	17.1	0.5
#100	150	16.8	0.3
#200	75	16.1	0.7
Hyd1	32.2	12.9	3.2
Hyd2	20.6	12.0	0.9
Hyd3	12.1	10.2	1.8
Hyd4	8.5	9.3	0.9
Hyd5	6.3	8.4	0.9
Hyd6	3	7.0	1.4
Hyd7	1.3	5.7	1.4

Soil Classification	Percent of sample
Gravel	19.8
Sand	64.1
Coarse Sand	34.5
Medium Sand	26.3
Fine Sand	3.3
Silt	7.7
Clay	8.4

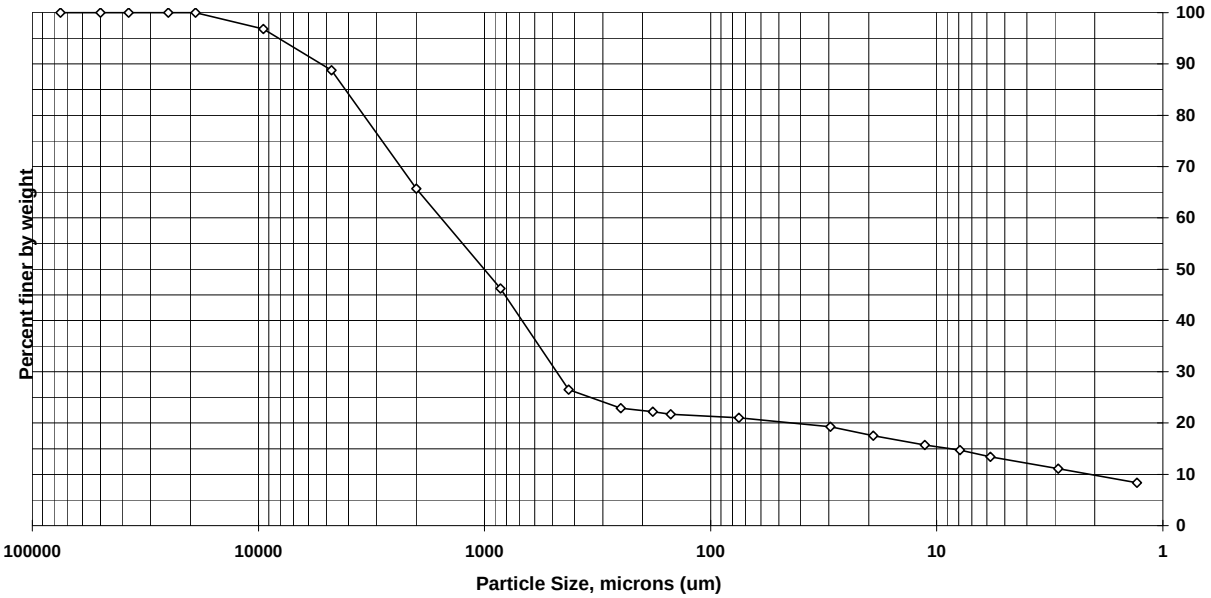
Particle Size of Soils by ASTM D422

				Date Received:	4/17/2014
Sample ID:	2014-SED-063	**Percent Solids:**	73.5%	**Start Date:**	4/17/2014
Lab ID:	600-90647-A-8	**Specific Gravity:**	2.650	**End Date:**	4/23/2014

Shape (> #10): subangular

Non-soil material: wood,plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	96.8	3.2
#4	4750	88.8	8.0
#10	2000	65.7	23.1
#20	850	46.2	19.5
#40	425	26.5	19.7
#60	250	22.9	3.6
#80	180	22.2	0.7
#100	150	21.7	0.5
#200	75	21.0	0.7
Hyd1	29.5	19.3	1.7
Hyd2	19.1	17.5	1.8
Hyd3	11.3	15.7	1.8
Hyd4	7.9	14.7	1.0
Hyd5	5.8	13.4	1.3
Hyd6	2.9	11.1	2.3
Hyd7	1.3	8.4	2.7

Soil Classification	Percent of sample
Gravel	11.2
Sand	67.8
Coarse Sand	23.1
Medium Sand	39.2
Fine Sand	5.5
Silt	7.6
Clay	13.4

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-056
Lab Sample ID	600-90647-A-1

Date Received	4/17/2014
Start Date	04/17/2014 15:14
End Date	04/23/2014 9:38

Dry Weight Determination

Tin Weight	0.97	g
Wet Sample + Tin	42.56	g
Dry Sample + Tin	22.91	g
% Moisture	47.25	%

Non-soil material:	plant,wood,shell
Shape (> #10):	subrounded
Hardness (> #10):	hard

Date/Time in oven	04/17/2014 15:16
Date/Time out of oven	04/18/2014 15:21

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		128.27	128.27
Sample Weight (Oven Dried)			67.7

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			3.54
Sample <#10			64.2
% Passing #10			50.1

Hydrometer Data	
Serial Number	277319
Calib. Date (mm/dd/yyyy)	01/07/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.17	488.58	0.41	g	99.4	Gravel	
#10	2000	462.83	465.96	3.13	g	94.8	Sand	Coarse
#20	850	389.57	390.00	0.43	g	94.2	Sand	Medium
#40	425	367.31	367.86	0.55	g	93.4	Sand	Medium
#60	250	346.24	346.58	0.34	g	92.9	Sand	Fine
#80	180	332.06	332.19	0.13	g	92.7	Sand	Fine
#100	150	335.48	335.59	0.11	g	92.5	Sand	Fine
#200	75	320.39	321.81	1.42	g	90.4	Sand	Fine
				0.00	g	90.4		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	67.7

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0320	21.5	26.5	67	Silt	
5	5	1.0310	21.5	17	64.6	Silt	
15	15	1.0275	21.5	10.4	56.3	Silt	
30	30	1.0255	21.5	7.6	51.6	Silt	
60	59	1.0240	21.5	5.5	48	Silt	
250	256	1.0210	21.5	2.7	40.9	Clay	
1440	1440	1.0170	21.5	1.2	31.4	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-057
Lab Sample ID	600-90647-A-2

Date Received	4/17/2014
Start Date	04/17/2014 15:16
End Date	04/23/2014 9:56

Dry Weight Determination

Tin Weight	0.98	g
Wet Sample + Tin	43.99	g
Dry Sample + Tin	36.46	g
% Moisture	17.51	%

Non-soil material:	shell
Shape (> #10):	subrounded
Hardness (> #10):	hard

Date/Time in oven	04/17/2014 15:18
Date/Time out of oven	04/18/2014 15:21

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		261.33	261.33
Sample Weight (Oven Dried)			216

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			151
Sample <#10			65
% Passing #10			24.9

Hydrometer Data	
Serial Number	277319
Calib. Date (mm/dd/yyyy)	01/07/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000	457.83	471.99	14.16	g	93.4	Gravel	
3/8 inch	9500	447.32	458.33	11.01	g	88.3	Gravel	
#4	4750	488.17	532.23	44.06	g	67.9	Gravel	
#10	2000	462.83	544.63	81.80	g	30.0	Sand	Coarse
#20	850	389.57	414.55	24.98	g	18.4	Sand	Medium
#40	425	367.31	381.45	14.14	g	11.9	Sand	Medium
#60	250	346.24	349.74	3.50	g	10.3	Sand	Fine
#80	180	332.06	332.77	0.71	g	10.0	Sand	Fine
#100	150	335.48	336.00	0.52	g	9.7	Sand	Fine
#200	75	320.39	321.03	0.64	g	9.4	Sand	Fine
				0.00	g	9.4		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	216

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0130	21.5	34	6.88	Silt	
5	5	1.0125	21.5	21.6	6.51	Silt	
15	15	1.0120	21.5	12.5	6.13	Silt	
30	30	1.0115	21.5	8.9	5.76	Silt	
60	58	1.0105	21.5	6.5	5.02	Silt	
250	256	1.0090	21.5	3.1	3.9	Clay	
1440	1440	1.0080	21.5	1.3	3.16	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-058
Lab Sample ID	600-90647-A-3

Date Received	4/17/2014
Start Date	04/17/2014 15:18
End Date	04/23/2014 10:11

Dry Weight Determination

Tin Weight	0.99	g
Wet Sample + Tin	52.04	g
Dry Sample + Tin	43.17	g
% Moisture	17.38	%

Non-soil material:	shell
Shape (> #10):	subrounded
Hardness (> #10):	hard

Date/Time in oven	04/17/2014 15:20
Date/Time out of oven	04/18/2014 15:21

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		256.05	256.05
Sample Weight (Oven Dried)			212

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			131
Sample <#10			81
% Passing #10			31.6

Hydrometer Data	
Serial Number	277319
Calib. Date (mm/dd/yyyy)	01/07/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000	457.84	462.49	4.65	g	97.8	Gravel	
3/8 inch	9500	447.32	455.14	7.82	g	94.1	Gravel	
#4	4750	488.17	534.43	46.26	g	72.3	Gravel	
#10	2000	462.83	534.93	72.10	g	38.3	Sand	Coarse
#20	850	389.57	413.86	24.29	g	26.8	Sand	Medium
#40	425	367.31	381.12	13.81	g	20.3	Sand	Medium
#60	250	346.24	353.64	7.40	g	16.8	Sand	Fine
#80	180	332.06	334.39	2.33	g	15.7	Sand	Fine
#100	150	335.48	336.81	1.33	g	15.1	Sand	Fine
#200	75	320.39	322.58	2.19	g	14.1	Sand	Fine
				0.00	g	14.1		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	212

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0190	21.5	31.8	11.6	Silt	
5	5	1.0175	21.5	20.5	10.4	Silt	
15	15	1.0160	21.5	12	9.28	Silt	
30	29	1.0150	21.5	8.7	8.52	Silt	
60	58	1.0140	21.5	6.2	7.77	Silt	
250	250	1.0120	21.5	3.1	6.25	Clay	
1440	1434	1.0100	21.5	1.3	4.73	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-059
Lab Sample ID	600-90647-A-4

Date Received	4/17/2014
Start Date	04/17/2014 15:20
End Date	04/23/2014 10:26

Dry Weight Determination

Tin Weight	0.98	g
Wet Sample + Tin	32.98	g
Dry Sample + Tin	23.31	g
% Moisture	30.22	%

Non-soil material:	plant,wood,shell
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	04/17/2014 15:23
Date/Time out of oven	04/18/2014 15:21

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		139.42	139.42
Sample Weight (Oven Dried)			97.3

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			21.1
Sample <#10			76.2
% Passing #10			54.7

Hydrometer Data	
Serial Number	277319
Calib. Date (mm/dd/yyyy)	01/07/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.17	493.12	4.95	g	94.9	Gravel	
#10	2000	462.83	478.93	16.10	g	78.4	Sand	Coarse
#20	850	389.57	398.52	8.95	g	69.2	Sand	Medium
#40	425	367.31	377.26	9.95	g	59.0	Sand	Medium
#60	250	346.24	355.56	9.32	g	49.4	Sand	Fine
#80	180	332.06	336.97	4.91	g	44.4	Sand	Fine
#100	150	335.48	338.53	3.05	g	41.3	Sand	Fine
#200	75	320.39	324.25	3.86	g	37.3	Sand	Fine
				0.00	g	37.3		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	97.3

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0205	21.5	31.2	27.6	Silt	
5	5	1.0190	21.5	20.1	25.2	Silt	
15	15	1.0180	21.5	11.8	23.5	Silt	
30	29	1.0165	21.5	8.6	21	Silt	
60	63	1.0150	21.5	5.9	18.6	Silt	
250	250	1.0130	21.5	3	15.3	Clay	
1440	1434	1.0110	21.5	1.3	12	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-060
Lab Sample ID	600-90647-A-5

Date Received	4/17/2014
Start Date	04/17/2014 15:23
End Date	04/23/2014 10:43

Dry Weight Determination

Tin Weight	1.00	g
Wet Sample + Tin	32.38	g
Dry Sample + Tin	21.46	g
% Moisture	34.80	%

Non-soil material:	plant,wood
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	04/17/2014 15:52
Date/Time out of oven	04/18/2014 15:22

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		147.40	147.4
Sample Weight (Oven Dried)			96.1

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			2.41
Sample <#10			93.7
% Passing #10			63.6

Hydrometer Data	
Serial Number	277319
Calib. Date (mm/dd/yyyy)	01/07/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000	462.83	465.24	2.41	g	97.5	Sand	Coarse
#20	850	389.57	393.82	4.25	g	93.1	Sand	Medium
#40	425	367.31	378.16	10.85	g	81.8	Sand	Medium
#60	250	346.24	356.66	10.42	g	71.0	Sand	Fine
#80	180	332.06	337.61	5.55	g	65.2	Sand	Fine
#100	150	335.48	340.17	4.69	g	60.3	Sand	Fine
#200	75	320.39	328.49	8.10	g	51.9	Sand	Fine
				0.00	g	51.9		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	96.1

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0300	21.5	27.4	43.9	Silt	
5	5	1.0280	21.5	17.9	40.5	Silt	
15	15	1.0255	21.5	10.7	36.3	Silt	
30	31	1.0240	21.5	7.6	33.8	Silt	
60	60	1.0225	21.5	5.6	31.3	Silt	
250	240	1.0200	21.5	2.9	27.2	Clay	
1440	1424	1.0170	21.5	1.2	22.1	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-061
Lab Sample ID	600-90647-A-6

Date Received	4/17/2014
Start Date	04/17/2014 15:52
End Date	04/23/2014 10:59

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	42.91	g
Dry Sample + Tin	28.52	g
% Moisture	34.35	%

Non-soil material:	na
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	04/17/2014 15:55
Date/Time out of oven	04/18/2014 15:22

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		135.16	135.16
Sample Weight (Oven Dried)			88.7

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			25.2
Sample <#10			63.5
% Passing #10			47

Hydrometer Data	
Serial Number	277319
Calib. Date (mm/dd/yyyy)	01/07/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.17	495.07	6.90	g	92.2	Gravel	
#10	2000	462.83	481.14	18.31	g	71.6	Sand	Coarse
#20	850	389.57	402.44	12.87	g	57.1	Sand	Medium
#40	425	367.31	378.07	10.76	g	45.0	Sand	Medium
#60	250	346.24	350.57	4.33	g	40.1	Sand	Fine
#80	180	332.06	333.84	1.78	g	38.1	Sand	Fine
#100	150	335.48	336.74	1.26	g	36.7	Sand	Fine
#200	75	320.39	322.58	2.19	g	34.2	Sand	Fine
				0.00	g	34.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	88.7

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0200	21.5	31.4	29.4	Silt	
5	5	1.0190	21.5	20.1	27.6	Silt	
15	15	1.0175	21.5	11.8	24.9	Silt	
30	31	1.0160	21.5	8.4	22.2	Silt	
60	59	1.0150	21.5	6.1	20.4	Silt	
250	234	1.0130	21.5	3.1	16.7	Clay	
1440	1418	1.0105	21.5	1.3	12.2	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-062
Lab Sample ID	600-90647-A-7

Date Received	4/17/2014
Start Date	04/17/2014 15:56
End Date	04/23/2014 11:25

Dry Weight Determination

Tin Weight	1.05	g
Wet Sample + Tin	39.51	g
Dry Sample + Tin	30.99	g
% Moisture	22.15	%

Non-soil material:	na
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	04/17/2014 15:58
Date/Time out of oven	04/18/2014 15:22

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		227.67	227.67
Sample Weight (Oven Dried)			177

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			96.2
Sample <#10			80.8
% Passing #10			35.5

Hydrometer Data

Serial Number	277319
Calib. Date (mm/dd/yyyy)	01/07/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.32	448.63	1.31	g	99.3	Gravel	
#4	4750	488.17	521.96	33.79	g	80.2	Gravel	
#10	2000	462.83	523.94	61.11	g	45.7	Sand	Coarse
#20	850	389.57	419.41	29.84	g	28.8	Sand	Medium
#40	425	367.31	383.92	16.61	g	19.4	Sand	Medium
#60	250	346.24	349.37	3.13	g	17.6	Sand	Fine
#80	180	332.06	332.98	0.92	g	17.1	Sand	Fine
#100	150	335.48	336.02	0.54	g	16.8	Sand	Fine
#200	75	320.39	321.59	1.20	g	16.1	Sand	Fine
				0.00	g	16.1		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	177

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0180	21.5	32.2	12.9	Silt	
5	5	1.0170	21.5	20.6	12	Silt	
15	15	1.0150	21.5	12.1	10.2	Silt	
30	31	1.0140	21.5	8.5	9.3	Silt	
60	59	1.0130	21.5	6.3	8.39	Silt	
250	265	1.0115	21.5	3	7.03	Clay	
1440	1412	1.0100	21.5	1.3	5.67	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-063
Lab Sample ID	600-90647-A-8

Date Received	4/17/2014
Start Date	04/17/2014 15:58
End Date	04/23/2014 11:51

Dry Weight Determination

Tin Weight	0.99	g
Wet Sample + Tin	55.20	g
Dry Sample + Tin	40.81	g
% Moisture	26.54	%

Non-soil material:	wood,plant
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	04/17/2014 15:59
Date/Time out of oven	04/18/2014 15:23

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		241.05	241.05
Sample Weight (Oven Dried)			177

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			60.7
Sample <#10			116
% Passing #10			48.1

Hydrometer Data	
Serial Number	277319
Calib. Date (mm/dd/yyyy)	01/07/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.32	452.92	5.60	g	96.8	Gravel	
#4	4750	488.17	502.34	14.17	g	88.8	Gravel	
#10	2000	462.83	503.73	40.90	g	65.7	Sand	Coarse
#20	850	389.57	424.15	34.58	g	46.2	Sand	Medium
#40	425	367.31	402.14	34.83	g	26.5	Sand	Medium
#60	250	346.24	352.67	6.43	g	22.9	Sand	Fine
#80	180	332.06	333.30	1.24	g	22.2	Sand	Fine
#100	150	335.48	336.30	0.82	g	21.7	Sand	Fine
#200	75	320.39	321.61	1.22	g	21.0	Sand	Fine
				0.00	g	21.0		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	177

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0250	21.5	29.5	19.3	Silt	
5	5	1.0230	21.5	19.1	17.5	Silt	
15	15	1.0210	21.5	11.3	15.7	Silt	
30	32	1.0200	21.5	7.9	14.7	Silt	
60	60	1.0185	21.5	5.8	13.4	Silt	
250	259	1.0160	21.5	2.9	11.1	Clay	
1440	1406	1.0130	21.5	1.3	8.39	Clay	

DATA REPORTING QUALIFIERS

Lab Section	Qualifier	Description

QUALITY CONTROL RESULTS

Client: Golder Associates Inc.

Job Number: 600-90647-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Geotechnical					
Analysis Batch:200-71104					
600-90647-1	2014-SED-056	T	Solid	D422	
600-90647-2	2014-SED-057	T	Solid	D422	
600-90647-3	2014-SED-058	T	Solid	D422	
600-90647-4	2014-SED-059	T	Solid	D422	
600-90647-5	2014-SED-060	T	Solid	D422	
600-90647-6	2014-SED-061	T	Solid	D422	
600-90647-7	2014-SED-062	T	Solid	D422	
600-90647-8	2014-SED-063	T	Solid	D422	

Report Basis

T = Total

TestAmerica Burlington
30 Community Drive Ste 11
South Burlington, VT 05403
(802) 660-1990

Chain of Custo

600-90647 Chain of Custody

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Client Information	Sampler: Abby Marlow/Chris Trevino	Lab PM: Joiner, Dean A	COC No: 600-27103-9383.2
Client Contact: Christina Higginbotham	Phone: 281-821-6868	E-Mail: dean.joiner@testamericainc.com	Page: Page 1 of 1
Company: Golder Associates Inc.			Job #: 1302086
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:		
City: Houston	TAT Requested (days): 5 Days		
State, Zip: TX 77073			
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested		
Email: Christina_Higginbotham@golder.com	WO #:		
Project Name: Exide, Grain Size - Soil	Project #: 60004831		
Site: Stewart Creek	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	D422 - % Passing Routine List	Total Number of containers	Special Instructions/Note:
			Preservation Code:					
2014-SED-056	4-16-14	1043	C	Solid		X		Golder*** : Ship Directly to:
2014-SED-057		1132	C	Solid		X		TestAmerica Burlington
2014-SED-058		1215	C	Solid		X		
2014-SED-059		1320	C	Solid		X		
2014-SED-060		1444	C	Solid		X		!!!!

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-90647-1

Login Number: 90647

List Source: TestAmerica Houston

List Number: 1

Creator: Allen, Jodi L

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.8
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-90653-1
Client Project/Site: Stewart Creek - 6020

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
4/25/2014 11:55:14 AM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

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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.

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-90653-1 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☑ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☑ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton		4/25/2014
Name (printed)	Signature	Date

Project Management Asst II
Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/24/2014
Project Name:	Stewart Creek - 6020	Laboratory Job Number:	600-90653-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/24/2014
Project Name:	Stewart Creek - 6020	Laboratory Job Number:	600-90653-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

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Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/24/2014
Project Name:	Stewart Creek - 6020	Laboratory Job Number:	600-90653-1
Reviewer Name:	Dean A Joiner		

ER #[1]	Description

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
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4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

MDLV Evaluation

Dept	Matrix	Analyte	Result	Unit	Spike Amount	MDL	RL	Percent Recovery	Analysis Method	Instrument ID	Analysis Date
GE	Water	Total Organic Carbon	0.69	mg/L	0.750	0.50	1.0	92	9060A/SM5310B	TOC3	02/24/2014 20:12

Dept	Matrix	Client Sample ID	Analyte	Result	Unit	Spike Amount	MDL	RL	Percent Recovery	Prep Method	Analysis Method	Instrument ID	CAS	Prep Batch	Analysis Batch
ME	Water	Q4 2013 AQ MDLV ICPMSC	Aluminum	56.4	ug/L	50	23	50	113	3005A	6020A	ICPMSC	7429-90-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Antimony	2.875	ug/L	2.5	2.3	5	115	3005A	6020A	ICPMSC	7440-36-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Arsenic	2.375	ug/L	2	1.3	2.5	119	3005A	6020A	ICPMSC	7440-38-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Barium	1.965	ug/L	2	1.3	5	98	3005A	6020A	ICPMSC	7440-39-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Beryllium	0.52	ug/L	0.5	0.25	0.5	104	3005A	6020A	ICPMSC	7440-41-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Boron	51.24	ug/L	50	40	100	102	3005A	6020A	ICPMSC	7440-42-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cadmium	0.195	ug/L	0.2	0.095	0.5	98	3005A	6020A	ICPMSC	7440-43-9	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Calcium	294.73	ug/L	250	130	250	118	3005A	6020A	ICPMSC	7440-70-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Chromium	5.49	ug/L	5	2.5	5	110	3005A	6020A	ICPMSC	7440-47-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cobalt	0.21	ug/L	0.2	0.15	0.5	105	3005A	6020A	ICPMSC	7440-48-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Copper	2.02	ug/L	2	1.1	5	101	3005A	6020A	ICPMSC	7440-50-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Iron	54.13	ug/L	50	33	100	108	3005A	6020A	ICPMSC	7439-89-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Lead	0.355	ug/L	0.3	0.2	1.5	118	3005A	6020A	ICPMSC	7439-92-1	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Magnesium	78.42	ug/L	80	43	250	98	3005A	6020A	ICPMSC	7439-95-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Manganese	1.955	ug/L	2	1	5	98	3005A	6020A	ICPMSC	7439-96-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Mercury	0.625	ug/L	0.5	0.4	0.8	125	3005A	6020A	ICPMSC	7439-97-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Molybdenum	2.205	ug/L	2	1.5	5	110	3005A	6020A	ICPMSC	7439-98-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Nickel	4.86	ug/L	4	2	5	122	3005A	6020A	ICPMSC	7440-02-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Potassium	219.45	ug/L	200	170	500	110	3005A	6020A	ICPMSC	9/7/7440	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Selenium	1.855	ug/L	2	1	2.5	93	3005A	6020A	ICPMSC	7782-49-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Silver	0.435	ug/L	0.4	0.25	1	109	3005A	6020A	ICPMSC	7440-22-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Sodium	457.985	ug/L	400	250	500	114	3005A	6020A	ICPMSC	7440-23-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Strontium	0.945	ug/L	1	0.5	1	95	3005A	6020A	ICPMSC	7440-24-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Thallium	0.98	ug/L	1	0.5	1	98	3005A	6020A	ICPMSC	7440-28-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Tin	2.47	ug/L	2	1.3	5	124	3005A	6020A	ICPMSC	7440-31-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Titanium	3.17	ug/L	2.5	1.3	5	127	3005A	6020A	ICPMSC	7440-32-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Vanadium	5.55	ug/L	5	3.8	10	111	3005A	6020A	ICPMSC	7440-62-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Zinc	10.095	ug/L	10	8.3	20	101	3005A	6020A	ICPMSC	7440-66-6	680-297813	680-298498

Case Narrative

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90653-1

Job ID: 600-90653-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-90653-1

Comments
No additional comments.

Receipt
The samples were received on 4/17/2014 9:35 AM; the samples arrived in good condition, properly preserved and, where required, on ice.
The temperature of the cooler at receipt was 3.0º C.

Method Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90653-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SAV
5310 B-2011	Organic Carbon, Total (TOC)	SM	TAL SAV

Protocol References:

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

Sample Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90653-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-90653-1	2014-SW-028	Water	04/16/14 11:22	04/17/14 09:35
600-90653-2	2014-SW-029	Water	04/16/14 14:09	04/17/14 09:35
600-90653-3	DUP-1	Water	04/16/14 00:00	04/17/14 09:35
600-90653-4	Field Blank	Water	04/16/14 17:35	04/17/14 09:35
600-90653-5	Equipment Blank Dredge	Water	04/16/14 17:38	04/17/14 09:35

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90653-1

Client Sample ID: 2014-SW-028

Lab Sample ID: 600-90653-1
Date Collected: 04/16/14 11:22
Matrix: Water
Date Received: 04/17/14 09:35

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	J	0.00250	0.00130	mg/L		04/21/14 13:05	04/22/14 20:14	1
Cadmium	0.000136	J	0.000500	0.0000950	mg/L		04/21/14 13:05	04/22/14 20:14	1
Lead	0.000324	J	0.00150	0.000200	mg/L		04/21/14 13:05	04/22/14 20:14	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00151	J	0.00250	0.00130	mg/L		04/21/14 13:05	04/22/14 19:54	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		04/21/14 13:05	04/22/14 19:54	1
Lead	0.000200	U	0.00150	0.000200	mg/L		04/21/14 13:05	04/22/14 19:54	1

Client Sample ID: 2014-SW-029

Lab Sample ID: 600-90653-2
Date Collected: 04/16/14 14:09
Matrix: Water
Date Received: 04/17/14 09:35

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00185	J	0.00250	0.00130	mg/L		04/21/14 13:05	04/22/14 20:21	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		04/21/14 13:05	04/22/14 20:21	1
Lead	0.000279	J	0.00150	0.000200	mg/L		04/21/14 13:05	04/22/14 20:21	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00194	J	0.00250	0.00130	mg/L		04/21/14 13:05	04/22/14 20:55	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		04/21/14 13:05	04/22/14 20:55	1
Lead	0.000475	J	0.00150	0.000200	mg/L		04/21/14 13:05	04/22/14 20:55	1

Client Sample ID: DUP-1

Lab Sample ID: 600-90653-3
Date Collected: 04/16/14 00:00
Matrix: Water
Date Received: 04/17/14 09:35

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00189	J	0.00250	0.00130	mg/L		04/21/14 13:09	04/24/14 02:32	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		04/21/14 13:09	04/24/14 02:32	1
Lead	0.000209	J b	0.00150	0.000200	mg/L		04/21/14 13:09	04/24/14 02:32	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00178	J	0.00250	0.00130	mg/L		04/21/14 13:09	04/24/14 02:39	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		04/21/14 13:09	04/24/14 02:39	1
Lead	0.000200	U	0.00150	0.000200	mg/L		04/21/14 13:09	04/24/14 02:39	1

Client Sample ID: Field Blank

Lab Sample ID: 600-90653-4
Date Collected: 04/16/14 17:35
Matrix: Water
Date Received: 04/17/14 09:35

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		04/21/14 13:09	04/24/14 02:46	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		04/21/14 13:09	04/24/14 02:46	1
Lead	0.000200	U	0.00150	0.000200	mg/L		04/21/14 13:09	04/24/14 02:46	1

Client Sample ID: Field Blank

Lab Sample ID: 600-90653-4

Date Collected: 04/16/14 17:35

Matrix: Water

Date Received: 04/17/14 09:35

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.500	U	1.00	0.500	mg/L			04/21/14 21:53	1

Client Sample ID: Equipment Blank Dredge

Lab Sample ID: 600-90653-5

Date Collected: 04/16/14 17:38

Matrix: Water

Date Received: 04/17/14 09:35

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		04/21/14 13:09	04/24/14 02:53	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		04/21/14 13:09	04/24/14 02:53	1
Lead	**0.000259**	**J b**	0.00150	0.000200	mg/L		04/21/14 13:09	04/24/14 02:53	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.500	U	1.00	0.500	mg/L			04/21/14 22:41	1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
U	Analyte was not detected at or above the SDL.
b	The compound was found in the blank and sample

General Chemistry

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

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
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)

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-325409/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 325779 — **Prep Batch: 325409**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		04/21/14 13:05	04/22/14 17:52	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		04/21/14 13:05	04/22/14 17:52	1
Lead	0.000200	U	0.00150	0.000200	mg/L		04/21/14 13:05	04/22/14 17:52	1

Lab Sample ID: LCS 680-325409/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 325779 — **Prep Batch: 325409**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.1096		mg/L		110	75 - 125
Cadmium	0.0500	0.05125		mg/L		103	75 - 125
Lead	0.0500	0.04958		mg/L		99	75 - 125

Lab Sample ID: 600-90653-2 MS — **Client Sample ID: 2014-SW-029**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 325779 — **Prep Batch: 325409**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.00185	J	0.100	0.1077		mg/L		106	75 - 125
Cadmium	0.0000950	U	0.0500	0.04931		mg/L		99	75 - 125
Lead	0.000279	J	0.0500	0.04648		mg/L		92	75 - 125

Lab Sample ID: 600-90653-2 MSD — **Client Sample ID: 2014-SW-029**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 325779 — **Prep Batch: 325409**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.00185	J	0.100	0.1155		mg/L		114	75 - 125	7	20
Cadmium	0.0000950	U	0.0500	0.05260		mg/L		105	75 - 125	6	20
Lead	0.000279	J	0.0500	0.05040		mg/L		100	75 - 125	8	20

Lab Sample ID: MB 680-325410/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 326049 — **Prep Batch: 325410**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		04/21/14 13:09	04/24/14 02:12	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		04/21/14 13:09	04/24/14 02:12	1
Lead	0.0002157	J	0.00150	0.000200	mg/L		04/21/14 13:09	04/24/14 02:12	1

Lab Sample ID: LCS 680-325410/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 326049 — **Prep Batch: 325410**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.1034		mg/L		103	75 - 125
Cadmium	0.0500	0.05135		mg/L		103	75 - 125
Lead	0.0500	0.05475		mg/L		110	75 - 125

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

Lab Sample ID: 640-47594-A-28-B MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 326049 — **Prep Batch: 325410**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic	0.00130	U	0.100	0.1068		mg/L		107	75 - 125		
Cadmium	0.0000950	U	0.0500	0.05310		mg/L		106	75 - 125		
Lead	0.00156	b	0.0500	0.05720		mg/L		111	75 - 125		

Lab Sample ID: 640-47594-A-28-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 326049 — **Prep Batch: 325410**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.00130	U	0.100	0.1084		mg/L		108	75 - 125	2	20
Cadmium	0.0000950	U	0.0500	0.05315		mg/L		106	75 - 125	0	20
Lead	0.00156	b	0.0500	0.05790		mg/L		113	75 - 125	1	20

Lab Sample ID: 600-90653-2 MS — **Client Sample ID: 2014-SW-029**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 325779 — **Prep Batch: 325409**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic	0.00194	J	0.100	0.1174		mg/L		115	75 - 125		
Cadmium	0.0000950	U	0.0500	0.05425		mg/L		109	75 - 125		
Lead	0.000475	J	0.0500	0.05085		mg/L		101	75 - 125		

Lab Sample ID: 600-90653-2 MSD — **Client Sample ID: 2014-SW-029**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 325779 — **Prep Batch: 325409**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.00194	J	0.100	0.1181		mg/L		116	75 - 125	1	20
Cadmium	0.0000950	U	0.0500	0.05355		mg/L		107	75 - 125	1	20
Lead	0.000475	J	0.0500	0.05075		mg/L		101	75 - 125	0	20

Method: 5310 B-2011 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 680-325712/26 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 325712

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.500	U	1.00	0.500	mg/L			04/21/14 19:29	1

Lab Sample ID: LCS 680-325712/31 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 325712

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	18.38		mg/L		92	80 - 120

Method: 5310 B-2011 - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 600-90543-A-1 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 325712

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	0.500	U	20.0	17.90		mg/L		89	80 - 120		

Lab Sample ID: 600-90543-A-1 MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 325712

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	0.500	U	20.0	17.99		mg/L		90	80 - 120	1	25

Lab Sample ID: 600-90653-5 DU — **Client Sample ID: Equipment Blank Dredge**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 325712

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	0.500	U		0.500	U	mg/L				NC	25

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90653-1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	MQL	MDL	Units	Method
Arsenic	0.00250	0.00130	mg/L	6020A
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	MQL	MDL	Units	Method
Arsenic	0.00250	0.00130	mg/L	6020A
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

General Chemistry

Analyte	MQL	MDL	Units	Method
Total Organic Carbon	1.00	0.500	mg/L	5310 B-2011

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90653-1

Metals

Prep Batch: 325409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90653-1	2014-SW-028	Dissolved	Water	3005A	
600-90653-1	2014-SW-028	Total Recoverable	Water	3005A	
600-90653-2	2014-SW-029	Dissolved	Water	3005A	
600-90653-2	2014-SW-029	Total Recoverable	Water	3005A	
600-90653-2 MS	2014-SW-029	Dissolved	Water	3005A	
600-90653-2 MS	2014-SW-029	Total Recoverable	Water	3005A	
600-90653-2 MSD	2014-SW-029	Dissolved	Water	3005A	
600-90653-2 MSD	2014-SW-029	Total Recoverable	Water	3005A	
LCS 680-325409/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-325409/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 325410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90653-3	DUP-1	Dissolved	Water	3005A	
600-90653-3	DUP-1	Total Recoverable	Water	3005A	
600-90653-4	Field Blank	Total Recoverable	Water	3005A	
600-90653-5	Equipment Blank Dredge	Total Recoverable	Water	3005A	
640-47594-A-28-B MS	Matrix Spike	Total Recoverable	Water	3005A	
640-47594-A-28-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	
LCS 680-325410/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-325410/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 325779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90653-1	2014-SW-028	Dissolved	Water	6020A	325409
600-90653-1	2014-SW-028	Total Recoverable	Water	6020A	325409
600-90653-2	2014-SW-029	Dissolved	Water	6020A	325409
600-90653-2	2014-SW-029	Total Recoverable	Water	6020A	325409
600-90653-2 MS	2014-SW-029	Dissolved	Water	6020A	325409
600-90653-2 MS	2014-SW-029	Total Recoverable	Water	6020A	325409
600-90653-2 MSD	2014-SW-029	Dissolved	Water	6020A	325409
600-90653-2 MSD	2014-SW-029	Total Recoverable	Water	6020A	325409
LCS 680-325409/2-A	Lab Control Sample	Total Recoverable	Water	6020A	325409
MB 680-325409/1-A	Method Blank	Total Recoverable	Water	6020A	325409

Analysis Batch: 326049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90653-3	DUP-1	Dissolved	Water	6020A	325410
600-90653-3	DUP-1	Total Recoverable	Water	6020A	325410
600-90653-4	Field Blank	Total Recoverable	Water	6020A	325410
600-90653-5	Equipment Blank Dredge	Total Recoverable	Water	6020A	325410
640-47594-A-28-B MS	Matrix Spike	Total Recoverable	Water	6020A	325410
640-47594-A-28-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6020A	325410
LCS 680-325410/2-A	Lab Control Sample	Total Recoverable	Water	6020A	325410
MB 680-325410/1-A	Method Blank	Total Recoverable	Water	6020A	325410

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90653-1

General Chemistry

Analysis Batch: 325712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90543-A-1 MS	Matrix Spike	Total/NA	Water	5310 B-2011	
600-90543-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	5310 B-2011	
600-90653-4	Field Blank	Total/NA	Water	5310 B-2011	
600-90653-5	Equipment Blank Dredge	Total/NA	Water	5310 B-2011	
600-90653-5 DU	Equipment Blank Dredge	Total/NA	Water	5310 B-2011	
LCS 680-325712/31	Lab Control Sample	Total/NA	Water	5310 B-2011	
MB 680-325712/26	Method Blank	Total/NA	Water	5310 B-2011	

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90653-1

Client Sample ID: 2014-SW-028 — Lab Sample ID: 600-90653-1

Date Collected: 04/16/14 11:22 — **Matrix: Water**
Date Received: 04/17/14 09:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	325409	04/21/14 13:05	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	325779	04/22/14 19:54	CME	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	325409	04/21/14 13:05	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	325779	04/22/14 20:14	CME	TAL SAV

Client Sample ID: 2014-SW-029 — Lab Sample ID: 600-90653-2

Date Collected: 04/16/14 14:09 — **Matrix: Water**
Date Received: 04/17/14 09:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	325409	04/21/14 13:05	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	325779	04/22/14 20:55	CME	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	325409	04/21/14 13:05	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	325779	04/22/14 20:21	CME	TAL SAV

Client Sample ID: DUP-1 — Lab Sample ID: 600-90653-3

Date Collected: 04/16/14 00:00 — **Matrix: Water**
Date Received: 04/17/14 09:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	325410	04/21/14 13:09	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	326049	04/24/14 02:39	BWR	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	325410	04/21/14 13:09	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	326049	04/24/14 02:32	BWR	TAL SAV

Client Sample ID: Field Blank — Lab Sample ID: 600-90653-4

Date Collected: 04/16/14 17:35 — **Matrix: Water**
Date Received: 04/17/14 09:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	325410	04/21/14 13:09	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	326049	04/24/14 02:46	BWR	TAL SAV
Total/NA	Analysis	5310 B-2011		1	25 mL	25 mL	325712	04/21/14 21:53	CMP	TAL SAV

Client Sample ID: Equipment Blank Dredge — Lab Sample ID: 600-90653-5

Date Collected: 04/16/14 17:38 — **Matrix: Water**
Date Received: 04/17/14 09:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	325410	04/21/14 13:09	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	326049	04/24/14 02:53	BWR	TAL SAV
Total/NA	Analysis	5310 B-2011		1	25 mL	25 mL	325712	04/21/14 22:41	CMP	TAL SAV

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90653-1

Laboratory References:

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

Certification Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek - 6020

TestAmerica Job ID: 600-90653-1

Laboratory: TestAmerica Houston

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Texas	NELAP	6	T104704223	10-31-14

Laboratory: TestAmerica Savannah

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

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14 *
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-15
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14 *
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-14
Wisconsin	State Program	5	999819810	08-31-14

* Expired certification is currently pending renewal and is considered valid.

Laboratory: TestAmerica Savannah (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Wyoming	State Program	8	8TMS-L	06-30-14

90653 gn

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

Chain of C

TestAmerica

600-90653 Chain of Custody

Client Information	Sampler: Kay Martin/Chris Tapulo	Lab PM: Joiner, Dea	COC No: 600-27100-9382.2
Client Contact: Christina Higginbotham	Phone: 281-821-6963	E-Mail: dean.joiner	Page: Page 1 of 1
Company: Golder Associates Inc			Job #: 1302086
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:		
City: Houston	TAT Requested (days): 5 Day		
State, Zip: TX, 77073			
Phone: 281-821-6858(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested		
Email: Christina_Higginbotham@golder.com	WO #:		
Project Name: Exide Recycling Center, 6020- Water	Project #: 60004831		
Site:	SSOW#:		

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A - Total Metals - As, Cd, Pb, Se, Sb	6020A - Diss Metals - As, Cd, Ph, Se, Sb	TOC SM5310D	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	D	D		X	
2014-SW-028	4-16-14			Water	X		X	X			
2014-SW-029	↓	1409		Water	X		X	X			
2014-SW-029 MS	↓	1409		Water	X	X	X	X			
2014-SW-029 MSD	↓	1409		Water	X	X	X	X			
DupB1	↓	–		Water	X		X	X			
Field Blank		1735					X		X		
Equipment Blank Dredge		1738					X		X		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☒ Archive For 1 Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 4-16-14	Company: Golder	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 04/17/14 0935	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 3.0°C 600-

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-90653-1

Login Number: 90653
List Number: 1
Creator: Allen, Jodi L

List Source: TestAmerica Houston

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.0
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	False	No date or time on COC, logged in per container labels for Sample ID 2014-SW-02
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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-90653-1

Login Number: 90653
List Number: 1
Creator: Conner, Keaton

List Source: TestAmerica Savannah
List Creation: 04/17/14 02:41 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	-1 time on label 1122
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	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-90671-1
Client Project/Site: Stewart Creek

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
4/24/2014 6:46:06 PM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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

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

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

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-90671-1 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☑ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☑ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton		4/24/2014
Name (printed)	Signature	Date

Project Management Asst II
Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/24/2014
Project Name:	Stewart Creek	Laboratory Job Number:	600-90671-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/24/2014
Project Name:	Stewart Creek	Laboratory Job Number:	600-90671-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
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4. NR = Not reviewed;
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Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	4/24/2014
Project Name:	Stewart Creek	Laboratory Job Number:	600-90671-1
Reviewer Name:	Dean A Joiner		

ER #[1]	Description

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Detection Check Standard

Matrix:	Soil
Method:	90.3 Walkley-Black
Preparation:	NA
Date Analyzed:	3/31/2014
Date Prepared:	3/31/2014
TALs Batches:	
Units:	% Carbon

Analyte	MDL	DCS Spike	Measured Result	MQL
TOC Walkley Black	0.0415	0.004	0.004	0.1

Detection Check Standard

Matrix:	Soil
Method:	6010B
Preparation:	3050
Date Analyzed:	3/28/2014
Date Prepared:	3/27/2014
Instrument:	Thermo 6500
TALS Batches:	130577p, 130672
Prep/Reagent Factor =	50
Units:	mg/kg

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.299654	0.5	0.36	25
Antimony	0.231553	0.45	0.31	2.5
Arsenic	0.217923	0.5	0.57	1
Barium	0.011322	0.03	0.03	1
Beryllium	0.014513	0.02	0.02	0.25
Boron	0.385535	0.6	0.49	20
Cadmium	0.025642	0.05	0.045	0.25
Calcium	0.86399	1.5	2.07	100
Chromium	0.050606	0.1	0.11	0.5
Cobalt	0.067622	0.1	0.105	0.5
Copper	0.173703	0.5	0.535	0.5
Iron	2.534007	4	4.035	20
Lead	0.104832	0.2	0.18	0.5
Selenium	0.258884	0.5	0.505	2
Manganese	0.038111	0.05	0.05	1.5
Molybdenum	0.136448	0.35	0.325	0.5
Nickel	0.116599	0.15	0.145	1
Silver	0.118848	0.2	0.22	0.5
Sodium	0.885548	2.4	2.13	100
Thallium	0.276988	0.7	0.615	1.5
Tin	0.08729	0.15	0.13	1
Titanium	0.014529	0.03	0.035	0.5
Vanadium	0.079068	0.15	0.165	0.5
Zinc	0.108432	0.2	0.285	1.5

Job ID: 600-90671-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-90671-1

Comments
No additional comments.

Receipt
The samples were received on 4/17/2014 10:08 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.2º C.

Method Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90671-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL HOU
Moisture	Percent Moisture	EPA	TAL HOU
WALKLEY BLACK	Organic Carbon, Total (TOC)	MSA	TAL HOU

Protocol References:

EPA = US Environmental Protection Agency

MSA = "Methods Of Soil Analysis, Chemical And Microbiological Properties", Part 2, 2nd Ed., 1982 And Subsequent Revisions.

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

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90671-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-90671-1	2014-SED-056	Solid	04/16/14 10:43	04/17/14 10:08
600-90671-2	2014-SED-057	Solid	04/16/14 11:32	04/17/14 10:08
600-90671-3	2014-SED-058	Solid	04/16/14 12:15	04/17/14 10:08
600-90671-4	2014-SED-059	Solid	04/16/14 13:20	04/17/14 10:08
600-90671-5	2014-SED-060	Solid	04/16/14 14:44	04/17/14 10:08
600-90671-6	2014-SED-061	Solid	04/16/14 15:30	04/17/14 10:08
600-90671-7	Dup-2	Solid	04/16/14 00:00	04/17/14 10:08
600-90671-8	2014-SED-062	Solid	04/16/14 16:10	04/17/14 10:08
600-90671-9	2014-SED-063	Solid	04/16/14 16:32	04/17/14 10:08

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90671-1

Client Sample ID: 2014-SED-056

Lab Sample ID: 600-90671-1
Date Collected: 04/16/14 10:43
Matrix: Solid
Date Received: 04/17/14 10:08
Percent Solids: 52.9

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	21.6		0.892	0.187	mg/Kg	☼	04/22/14 15:23	04/23/14 11:31	1
Cadmium	0.464		0.446	0.0457	mg/Kg	☼	04/22/14 15:23	04/23/14 11:31	1
Arsenic	9.81		1.78	0.389	mg/Kg	☼	04/22/14 15:23	04/23/14 11:31	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	47		1.0	1.0	%			04/18/14 13:46	1
Percent Solids	53		1.0	1.0	%			04/18/14 13:46	1
TOC	2.09		0.100	0.0415	%			04/23/14 08:00	1

Client Sample ID: 2014-SED-057

Lab Sample ID: 600-90671-2
Date Collected: 04/16/14 11:32
Matrix: Solid
Date Received: 04/17/14 10:08
Percent Solids: 84.2

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	17.7		0.545	0.114	mg/Kg	☼	04/22/14 15:23	04/23/14 11:34	1
Cadmium	0.534		0.272	0.0279	mg/Kg	☼	04/22/14 15:23	04/23/14 11:34	1
Arsenic	17.2		1.09	0.237	mg/Kg	☼	04/22/14 15:23	04/23/14 11:34	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16		1.0	1.0	%			04/18/14 13:46	1
Percent Solids	84		1.0	1.0	%			04/18/14 13:46	1
TOC	0.170		0.100	0.0415	%			04/23/14 08:00	1

Client Sample ID: 2014-SED-058

Lab Sample ID: 600-90671-3
Date Collected: 04/16/14 12:15
Matrix: Solid
Date Received: 04/17/14 10:08
Percent Solids: 80.1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	15.0		0.618	0.130	mg/Kg	☼	04/22/14 15:23	04/23/14 11:36	1
Cadmium	0.785		0.309	0.0317	mg/Kg	☼	04/22/14 15:23	04/23/14 11:36	1
Arsenic	18.6		1.24	0.269	mg/Kg	☼	04/22/14 15:23	04/23/14 11:36	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20		1.0	1.0	%			04/18/14 13:46	1
Percent Solids	80		1.0	1.0	%			04/18/14 13:46	1
TOC	0.486		0.100	0.0415	%			04/23/14 08:00	1

Client Sample ID: 2014-SED-059

Lab Sample ID: 600-90671-4
Date Collected: 04/16/14 13:20
Matrix: Solid
Date Received: 04/17/14 10:08
Percent Solids: 68.9

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	19.6		0.711	0.149	mg/Kg	☼	04/22/14 15:23	04/23/14 11:39	1
Cadmium	0.377		0.355	0.0365	mg/Kg	☼	04/22/14 15:23	04/23/14 11:39	1
Arsenic	13.2		1.42	0.310	mg/Kg	☼	04/22/14 15:23	04/23/14 11:39	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90671-1

Client Sample ID: 2014-SED-059 — Lab Sample ID: 600-90671-4

Date Collected: 04/16/14 13:20
Date Received: 04/17/14 10:08
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	31		1.0	1.0	%			04/18/14 13:46	1
Percent Solids	69		1.0	1.0	%			04/18/14 13:46	1
TOC	0.919		0.100	0.0415	%			04/23/14 08:00	1

Client Sample ID: 2014-SED-060 — Lab Sample ID: 600-90671-5

Date Collected: 04/16/14 14:44
Date Received: 04/17/14 10:08
Matrix: Solid
Percent Solids: 72.0

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	11.6		0.643	0.135	mg/Kg	☼	04/22/14 15:23	04/23/14 11:41	1
Cadmium	0.161	J	0.322	0.0330	mg/Kg	☼	04/22/14 15:23	04/23/14 11:41	1
Arsenic	9.12		1.29	0.280	mg/Kg	☼	04/22/14 15:23	04/23/14 11:41	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	28		1.0	1.0	%			04/18/14 13:46	1
Percent Solids	72		1.0	1.0	%			04/18/14 13:46	1
TOC	1.26		0.100	0.0415	%			04/23/14 08:00	1

Client Sample ID: 2014-SED-061 — Lab Sample ID: 600-90671-6

Date Collected: 04/16/14 15:30
Date Received: 04/17/14 10:08
Matrix: Solid
Percent Solids: 65.9

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	17.9		0.752	0.158	mg/Kg	☼	04/22/14 15:23	04/23/14 11:44	1
Cadmium	0.421		0.376	0.0385	mg/Kg	☼	04/22/14 15:23	04/23/14 11:44	1
Arsenic	13.2		1.50	0.328	mg/Kg	☼	04/22/14 15:23	04/23/14 11:44	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	34		1.0	1.0	%			04/18/14 13:46	1
Percent Solids	66		1.0	1.0	%			04/18/14 13:46	1
TOC	0.566		0.100	0.0415	%			04/23/14 08:00	1

Client Sample ID: Dup-2 — Lab Sample ID: 600-90671-7

Date Collected: 04/16/14 00:00
Date Received: 04/17/14 10:08
Matrix: Solid
Percent Solids: 67.8

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	18.2		0.731	0.153	mg/Kg	☼	04/22/14 15:23	04/23/14 11:46	1
Cadmium	0.358	J	0.365	0.0375	mg/Kg	☼	04/22/14 15:23	04/23/14 11:46	1
Arsenic	11.0		1.46	0.318	mg/Kg	☼	04/22/14 15:23	04/23/14 11:46	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	32		1.0	1.0	%			04/18/14 13:46	1
Percent Solids	68		1.0	1.0	%			04/18/14 13:46	1
TOC	0.861		0.100	0.0415	%			04/23/14 08:00	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90671-1

Client Sample ID: 2014-SED-062

Lab Sample ID: 600-90671-8

Date Collected: 04/16/14 16:10
Matrix: Solid
Date Received: 04/17/14 10:08
Percent Solids: 76.0

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	21.2		0.658	0.138	mg/Kg	☼	04/22/14 15:23	04/23/14 11:55	1
Cadmium	0.612		0.329	0.0337	mg/Kg	☼	04/22/14 15:23	04/23/14 11:55	1
Arsenic	18.0		1.32	0.287	mg/Kg	☼	04/22/14 15:23	04/23/14 11:55	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	24		1.0	1.0	%			04/18/14 13:46	1
Percent Solids	76		1.0	1.0	%			04/18/14 13:46	1
TOC	0.497		0.100	0.0415	%			04/23/14 08:00	1

Client Sample ID: 2014-SED-063

Lab Sample ID: 600-90671-9

Date Collected: 04/16/14 16:32
Matrix: Solid
Date Received: 04/17/14 10:08
Percent Solids: 74.2

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	29.0		0.618	0.130	mg/Kg	☼	04/22/14 15:23	04/23/14 11:58	1
Cadmium	0.630		0.309	0.0317	mg/Kg	☼	04/22/14 15:23	04/23/14 11:58	1
Arsenic	19.6		1.24	0.269	mg/Kg	☼	04/22/14 15:23	04/23/14 11:58	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	26		1.0	1.0	%			04/18/14 13:46	1
Percent Solids	74		1.0	1.0	%			04/18/14 13:46	1
TOC	0.677		0.100	0.0415	%			04/23/14 08:00	1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
U	Analyte was not detected at or above the SDL.

General Chemistry

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

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
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)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90671-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-132653/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132730 — **Prep Batch: 132653**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.105	U	0.500	0.105	mg/Kg		04/22/14 15:23	04/23/14 11:25	1
Cadmium	0.0256	U	0.250	0.0256	mg/Kg		04/22/14 15:23	04/23/14 11:25	1
Arsenic	0.218	U	1.00	0.218	mg/Kg		04/22/14 15:23	04/23/14 11:25	1

Lab Sample ID: LCSSRM 600-132653/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132730 — **Prep Batch: 132653**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	115	117.7		mg/Kg		102.3	81.8 - 119.1
Cadmium	182	189.7		mg/Kg		104.2	81.9 - 118.1
Arsenic	99.6	99.79		mg/Kg		100.2	80.8 - 119.5

Lab Sample ID: 600-90689-A-1-D MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132730 — **Prep Batch: 132653**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	4.94		52.7	57.47		mg/Kg	☼	100	75 - 125
Cadmium	0.101	J	26.4	28.85		mg/Kg	☼	109	75 - 125
Arsenic	2.69		52.7	55.36		mg/Kg	☼	100	75 - 125

Lab Sample ID: 600-90689-A-1-E MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132730 — **Prep Batch: 132653**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	4.94		56.4	61.26		mg/Kg	☼	100	75 - 125	6	20
Cadmium	0.101	J	28.2	30.85		mg/Kg	☼	109	75 - 125	7	20
Arsenic	2.69		56.4	59.23		mg/Kg	☼	100	75 - 125	7	20

Lab Sample ID: 600-90689-A-1-C DU — **Client Sample ID: Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132730 — **Prep Batch: 132653**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	4.94		5.192		mg/Kg	☼	5	20
Cadmium	0.101	J	0.08880	J	mg/Kg	☼	13	20
Arsenic	2.69		2.413		mg/Kg	☼	11	20

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90671-1

Method: Moisture - Percent Moisture

Lab Sample ID: 600-90671-9 DU — **Client Sample ID: 2014-SED-063**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132429

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	26			24		%				8	20
Percent Solids	74			76		%				3	20

Method: WALKLEY BLACK - Organic Carbon, Total (TOC)

Lab Sample ID: MB 600-132733/1 — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132733

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
TOC	0.0415	U	0.100	0.0415	%			04/23/14 08:00	1

Lab Sample ID: LCS 600-132733/2 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132733

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
TOC			2.34	2.564		%		110	80 - 120		

Lab Sample ID: 600-90671-1 DU — **Client Sample ID: 2014-SED-056**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 132733

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
TOC	2.09			1.986		%				5	20

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90671-1

Method: 6010B - Metals (ICP)

Analyte	MQL	MDL	Units	Method
Arsenic	1.00	0.218	mg/Kg	6010B
Cadmium	0.250	0.0256	mg/Kg	6010B
Lead	0.500	0.105	mg/Kg	6010B

General Chemistry

Analyte	MQL	MDL	Units	Method
Percent Moisture	1.0	1.0	%	Moisture
Percent Solids	1.0	1.0	%	Moisture
TOC	0.100	0.0415	%	WALKLEY BLACK

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90671-1

Metals

Prep Batch: 132653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90671-1	2014-SED-056	Total/NA	Solid	3050B	
600-90671-2	2014-SED-057	Total/NA	Solid	3050B	
600-90671-3	2014-SED-058	Total/NA	Solid	3050B	
600-90671-4	2014-SED-059	Total/NA	Solid	3050B	
600-90671-5	2014-SED-060	Total/NA	Solid	3050B	
600-90671-6	2014-SED-061	Total/NA	Solid	3050B	
600-90671-7	Dup-2	Total/NA	Solid	3050B	
600-90671-8	2014-SED-062	Total/NA	Solid	3050B	
600-90671-9	2014-SED-063	Total/NA	Solid	3050B	
600-90689-A-1-C DU	Duplicate	Total/NA	Solid	3050B	
600-90689-A-1-D MS	Matrix Spike	Total/NA	Solid	3050B	
600-90689-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	3050B	
LCSSRM 600-132653/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 600-132653/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 132730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90671-1	2014-SED-056	Total/NA	Solid	6010B	132653
600-90671-2	2014-SED-057	Total/NA	Solid	6010B	132653
600-90671-3	2014-SED-058	Total/NA	Solid	6010B	132653
600-90671-4	2014-SED-059	Total/NA	Solid	6010B	132653
600-90671-5	2014-SED-060	Total/NA	Solid	6010B	132653
600-90671-6	2014-SED-061	Total/NA	Solid	6010B	132653
600-90671-7	Dup-2	Total/NA	Solid	6010B	132653
600-90671-8	2014-SED-062	Total/NA	Solid	6010B	132653
600-90671-9	2014-SED-063	Total/NA	Solid	6010B	132653
600-90689-A-1-C DU	Duplicate	Total/NA	Solid	6010B	132653
600-90689-A-1-D MS	Matrix Spike	Total/NA	Solid	6010B	132653
600-90689-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	6010B	132653
LCSSRM 600-132653/2-A	Lab Control Sample	Total/NA	Solid	6010B	132653
MB 600-132653/1-A	Method Blank	Total/NA	Solid	6010B	132653

General Chemistry

Analysis Batch: 132429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90671-1	2014-SED-056	Total/NA	Solid	Moisture	
600-90671-2	2014-SED-057	Total/NA	Solid	Moisture	
600-90671-3	2014-SED-058	Total/NA	Solid	Moisture	
600-90671-4	2014-SED-059	Total/NA	Solid	Moisture	
600-90671-5	2014-SED-060	Total/NA	Solid	Moisture	
600-90671-6	2014-SED-061	Total/NA	Solid	Moisture	
600-90671-7	Dup-2	Total/NA	Solid	Moisture	
600-90671-8	2014-SED-062	Total/NA	Solid	Moisture	
600-90671-9	2014-SED-063	Total/NA	Solid	Moisture	
600-90671-9 DU	2014-SED-063	Total/NA	Solid	Moisture	

Analysis Batch: 132733

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90671-1	2014-SED-056	Total/NA	Solid	WALKLEY BLACK	

General Chemistry (Continued)

Analysis Batch: 132733 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-90671-1 DU	2014-SED-056	Total/NA	Solid	WALKLEY BLACK	
600-90671-2	2014-SED-057	Total/NA	Solid	WALKLEY BLACK	
600-90671-3	2014-SED-058	Total/NA	Solid	WALKLEY BLACK	
600-90671-4	2014-SED-059	Total/NA	Solid	WALKLEY BLACK	
600-90671-5	2014-SED-060	Total/NA	Solid	WALKLEY BLACK	
600-90671-6	2014-SED-061	Total/NA	Solid	WALKLEY BLACK	
600-90671-7	Dup-2	Total/NA	Solid	WALKLEY BLACK	
600-90671-8	2014-SED-062	Total/NA	Solid	WALKLEY BLACK	
600-90671-9	2014-SED-063	Total/NA	Solid	WALKLEY BLACK	
LCS 600-132733/2	Lab Control Sample	Total/NA	Solid	WALKLEY BLACK	
MB 600-132733/1	Method Blank	Total/NA	Solid	WALKLEY BLACK	

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90671-1

Client Sample ID: 2014-SED-056 — Lab Sample ID: 600-90671-1

Date Collected: 04/16/14 10:43 — **Matrix: Solid**
Date Received: 04/17/14 10:08 — **Percent Solids: 52.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.06 g	50 mL	132653	04/22/14 15:23	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.06 g	50 mL	132730	04/23/14 11:31	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			132429	04/18/14 13:46	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	0.5000 g	0.5000 g	132733	04/23/14 08:00	EC1	TAL HOU

Client Sample ID: 2014-SED-057 — Lab Sample ID: 600-90671-2

Date Collected: 04/16/14 11:32 — **Matrix: Solid**
Date Received: 04/17/14 10:08 — **Percent Solids: 84.2**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.09 g	50 mL	132653	04/22/14 15:23	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.09 g	50 mL	132730	04/23/14 11:34	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			132429	04/18/14 13:46	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	5.0000 g	5.0000 g	132733	04/23/14 08:00	EC1	TAL HOU

Client Sample ID: 2014-SED-058 — Lab Sample ID: 600-90671-3

Date Collected: 04/16/14 12:15 — **Matrix: Solid**
Date Received: 04/17/14 10:08 — **Percent Solids: 80.1**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.01 g	50 mL	132653	04/22/14 15:23	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.01 g	50 mL	132730	04/23/14 11:36	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			132429	04/18/14 13:46	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	1.3000 g	1.3000 g	132733	04/23/14 08:00	EC1	TAL HOU

Client Sample ID: 2014-SED-059 — Lab Sample ID: 600-90671-4

Date Collected: 04/16/14 13:20 — **Matrix: Solid**
Date Received: 04/17/14 10:08 — **Percent Solids: 68.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.02 g	50 mL	132653	04/22/14 15:23	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.02 g	50 mL	132730	04/23/14 11:39	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			132429	04/18/14 13:46	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	1.0800 g	1.0800 g	132733	04/23/14 08:00	EC1	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90671-1

Client Sample ID: 2014-SED-060 — Lab Sample ID: 600-90671-5

Date Collected: 04/16/14 14:44 — **Matrix: Solid**
Date Received: 04/17/14 10:08 — **Percent Solids: 72.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.08 g	50 mL	132653	04/22/14 15:23	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.08 g	50 mL	132730	04/23/14 11:41	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			132429	04/18/14 13:46	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	1.0000 g	1.0000 g	132733	04/23/14 08:00	EC1	TAL HOU

Client Sample ID: 2014-SED-061 — Lab Sample ID: 600-90671-6

Date Collected: 04/16/14 15:30 — **Matrix: Solid**
Date Received: 04/17/14 10:08 — **Percent Solids: 65.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.01 g	50 mL	132653	04/22/14 15:23	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.01 g	50 mL	132730	04/23/14 11:44	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			132429	04/18/14 13:46	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	1.0200 g	1.0200 g	132733	04/23/14 08:00	EC1	TAL HOU

Client Sample ID: Dup-2 — Lab Sample ID: 600-90671-7

Date Collected: 04/16/14 00:00 — **Matrix: Solid**
Date Received: 04/17/14 10:08 — **Percent Solids: 67.8**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.01 g	50 mL	132653	04/22/14 15:23	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.01 g	50 mL	132730	04/23/14 11:46	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			132429	04/18/14 13:46	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	1.0900 g	1.0900 g	132733	04/23/14 08:00	EC1	TAL HOU

Client Sample ID: 2014-SED-062 — Lab Sample ID: 600-90671-8

Date Collected: 04/16/14 16:10 — **Matrix: Solid**
Date Received: 04/17/14 10:08 — **Percent Solids: 76.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.00 g	50 mL	132653	04/22/14 15:23	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.00 g	50 mL	132730	04/23/14 11:55	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			132429	04/18/14 13:46	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	1.0900 g	1.0900 g	132733	04/23/14 08:00	EC1	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90671-1

Client Sample ID: 2014-SED-063

Date Collected: 04/16/14 16:32
Date Received: 04/17/14 10:08

Lab Sample ID: 600-90671-9

Matrix: Solid
Percent Solids: 74.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.09 g	50 mL	132653	04/22/14 15:23	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.09 g	50 mL	132730	04/23/14 11:58	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			132429	04/18/14 13:46	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	1.2000 g	1.2000 g	132733	04/23/14 08:00	EC1	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek

TestAmerica Job ID: 600-90671-1

Laboratory: TestAmerica Houston

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Texas	NELAP	6	T104704223	10-31-14

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody

600-90671 Chain of Custody

Client Information	Sampler: A. Marlow / C. Trevino	Tracking No(s):	COC No. 600-27110-9386.5
Client Contact: Christina Higginbotham	Phone: 281-821-6868		Page. Page 1 of 1
Company: Golder Associates Inc.			Job #: 1302096
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:		
City: Houston	TAT Requested (days): 5 Day		
State, Zip: TX, 77073			
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested		
Email: Christina_Higginbotham@golder.com	WO #:		
Project Name: Exide Recycling Center, Frisco TX Projec	Project #: 60004831		
Site: Stewart Creek	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	WALKLEY_BLACK - Walkley Black (TOC)	6010B As, Se, Sb, Cd, Pb	Moisture	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	N		
2014-SED-056		1043	C	Solid			X	X	X		As, Cd, Pb on final report ONLY
2014-SED-057		1132	C	Solid			X	X	X		
2014-SED-058		1215	C	Solid			X	X	X		
2014-SED-059		1320	C	Solid			X	X	X		
2014-SED-060		1444	C	Solid			X	X	X		
2014-SED-061		1530	C	Solid			X	X	X		
Dup-2		—	C	Solid			X	X	X		
2014-SED-062		1610	C	Solid			X	X	X		
2014-SED-063		1632	C	Solid			X	X	X		
			C	Solid							
			C	Solid							

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☒ Client approval needed for disposal Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify) TRRP

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 4-16-14	Company: Golder	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 4/17/14 10:08	Company: TA
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

TestAmerica Houston

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Receipt Checklist

Date/Time Received: _____

UNPACKED BY: DL CLIENT: Golder Associates

JOB NUMBER: _____ CARRIER/DRIVER: Fed Ex

Custody Seal Present: ☑ YES ☐ NO Number of Coolers Received: 1

IR THERMOMETER #: 545 THERMOMETER CORRECTION FACTOR : 0.1

Temperature of the samples(s):
Temp taken by: TB = Temp. Blank and/or SC = Sample Container

Cooler ID	BW								
Temp	TB SC 2.1	TB SC	TB SC	TB SC	TB SC	TB SC	Loc: 600 90671		TB SC
Corrected Temp	2.2								

Samples received on ice? ☑ YES ☐ NO

LABORATORY PRESERVATION OF SAMPLES REQUIRED: ☐ NO ☑ YES

Base samples are>pH 12: ☑ YES ☐ NO Acid preserved are<pH 2: ☑ YES ☐ NO

Lot #_____ Lot #_____

VOA headspace acceptable: ☐ YES ☑ NO VOA trip blanks included: ☐ YES ☑ NO

	YES	NO
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	✓	

COMMENTS:

Standard

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-90671-1

Login Number: 90671

List Source: TestAmerica Houston

List Number: 1

Creator: Lockett, DuJuan D

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.2
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Data Usability Summary
Test America Work Orders: 600-86336-1, 600-86336-2, 600-86414-1, 600-86414-2, 600-86414-3, 600-86414-4, 600-86414-5, 600-86449-1, 600-86459-1, 600-86459-2, 600-86460-1, 600-86460-2, 600-86460-3

Sample Dates:	January 28 to 31, 2014	**Project No.:**	1302086
Laboratory:	Test America (Houston TLAP Certification T104704223) (Savannah TLAP Certification T104704185-13-6)	**Client:**	Exide Technologies Inc.
Work Orders:	600-86336-1, 600-86336-2, 600-86414-1, 600-86414-2, 600-86414-3, 600-86414-4, 600-86414-5, 600-86449-1, 600-86459-1, 600-86459-2, 600-86460-1, 600-86460-2, 600-86460-3		
Intended Use	Affected Property Assessment Report (APAR)		
Site:	Former Operating Plant (FOP), 7471 5th Street, Frisco, TX (Stewart Creek)		

TESTS/ METHODS:

Total and dissolved Metals by SW-846 6010B - Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP) completed by Test America-Houston, TX laboratory
Total and dissolved Metals by SW-846 6020A - Inductively Coupled Plasma-Mass Spectrometry (ICP-MS); completed by Test America- Savannah, GA laboratory
Total Organic Carbon by WALKLEY BLACK
Grain Size by ASTM Method D422; completed by Test America – Burlington, VT Laboratory

SAMPLES:

35 sediment samples, 22 water samples, 7 field duplicates, 3 field blanks, 9 equipment blanks, and 5 field MS/MSD pairs. See Table 1 for a complete cross-referenced listing of samples.

Golder completed a review of the above chemical analysis data for conformance with the requirements of the Texas Risk Reduction Program (TRRP) guidance document, Review and Reporting of COC Concentration Data (RGG-366/TRRP-13 Revised May 2010) and for adherence to project objectives. The results of the review are discussed in this data usability summary (DUS).

Golder completed the review using the following laboratory and project submittals:

- Laboratory reportable data as defined in TRRP-13;
- Laboratory review checklists (LRC) with the associated exception reports;
- Laboratory Electronic Data Deliverable (EDD); and
- Project field notes from the sampling event.

The review of the reportable data included the quality control (QC) parameters listed below, as required per TRRP-13, using the applicable analytical method and project requirements:

- Data Completeness
- Chain-of-Custody Procedures
- Sample Condition - Holding Time, Preservation, and Containers

- Field Procedures
- Results Reporting Procedures
- Laboratory and Field QC Blanks
- Laboratory Control Spike and Matrix Spike Recoveries
- Surrogate Recoveries
- Laboratory and Field Duplicate Precision

Additionally, Golder used the LRC to evaluate the following QC parameters:

- Method Quantitation Limits (MQLs)
- Method Detection Limits (MDLs)
- Instrument Tuning, Calibration, and Performance
- Internal Standards

Criteria used for this data usability review are as follows:

- Inorganics: 70-130% spike recovery (and not less than 30% or data is rejected) and +MQL difference or 30% RPD (for laboratory duplicates) as recommended in TRRP-13

- Soil Samples: + 3x MQL difference (if either result is less than 5x MQL) or 50% RPD (for field duplicates) as recommended in TRRP-13

- Aqueous Samples: + 2x MQL difference (if either result is less than 5x MQL) or 30% RPD (for field duplicates) as recommended in TRRP-13

If an item was found outside of the review criteria, the reviewer applied a data qualifier (DQ) and bias code to the results for the affected samples in accordance with TRRP-13. A list of all qualified results and definitions of the qualifier and bias codes are given in Table 2.

GLOSSARY OF TERMS

The following definitions apply for terms related to analyte reporting limits:

MDL (Method Detection Limit) – the minimum concentration of an analyte that the laboratory can measure and report with 99% confidence that the analyte concentration is greater than zero. The MDL is determined by the laboratory for each analyte in a given reagent matrix (water or soil) generally using the procedures specified in 40 CFR Part 136, Appendix B. It is a measure of the concentration an instrument can detect or 'see' in a given reagent matrix. TRRP-13 requires that the laboratory routinely check the MDL for reasonableness.

SDL (Sample Detection Limit) – the MDL adjusted to reflect sample-specific actions, such as dilution or use of smaller aliquot sizes than prescribed in the analytical method, and taking into account sample characteristics, sample preparation, and analytical adjustments including dry-weight adjustments. It is a measure of the concentration an instrument can detect or 'see' in a given sample. For TRRP, non-detects

are reported using the SDL. This term was originally called the SQL (Sample Quantitation Limit) before the TRRP rule revisions effective March 19, 2007.

Unadjusted MQL (Method Quantitation Limit) – the lowest non-zero concentration standard in the laboratory's initial calibration curve calculated using the normal aliquot sizes and final volumes prescribed in the analytical method. The unadjusted MQL is reported by the laboratory for each analyte in a given matrix (water or soil). It is a measure of the concentration an instrument can accurately measure in a typical sample. Per TRRP, the Unadjusted MQLs should be below the Levels of Required Performance (LORPs) for purposes of assessment as well as demonstration of conformance with critical Protective Concentration Levels (PCLs).

MQL – the unadjusted MQL adjusted to reflect sample-specific actions, such as dilution or use of smaller aliquot sizes than prescribed in the analytical method, and takes into account sample characteristics, sample preparation, and analytical adjustments including dry-weight adjustments. It is a measure of the concentration an instrument can accurately measure in a given sample. Analytes with concentrations above the SDL but below the MQL, though present in the sample, may not be accurately measured and are thus flagged as estimated (J).

LABORATORY CERTIFICATION

At the time the laboratory data were generated for this project, the laboratory was NELAC accredited under the Texas Laboratory Accreditation Program (TLAP) for the matrices, methods and parameters of analysis requested on the chain-of-custody forms. A copy of the applicable pages of the laboratory's National Environmental Laboratory Accreditation Program (NELAP) certificate valid during the period in which the laboratory generated the data in this report is included in Appendix 10.5 to this DUS. The TCEQ does not offer certification for Grain Size by ASTM Method D422.

USABILITY SUMMARY

1. Usability of Unqualified Non-Detects – Non-detects are reported at the sample detection limit (SDL) as required per TRRP. Additionally, according to the LRC, an MDL study was performed for each analyte and the MDLs were checked for reasonableness for each applicable analyte. The levels of required performance (LORPs) have been established by Golder/PBW as the TRRP Residential Assessment Levels (RALs), which include ecological criteria for sediment and surface water. As needed per TRRP, the Unadjusted MQL stated by the laboratory is at or below the LORP for each applicable analyte, except for dissolved metals in surface water run by Method 6010B. Further analysis by Method 6020A was completed in an effort to meet applicable ecological criteria for dissolved metals in surface water. Thus, the analytical methods are appropriate and the results can be used to demonstrate conformance with the criteria. except for dissolved metals in surface water run by Method 6010B.

2. Usability of Qualified Data – There are no major QC deficiencies, and thus all data is usable as qualified for the intended use. As shown in Table 2, the reviewer qualified some detects as estimated (J) due to minor QC deficiencies. Detects that are biased high can be used; however, the reported concentration may be high. Detects that are estimated may be either low or high. Results with a laboratory J-flag (i.e., at a concentration between the SDL and MQL) should be considered estimates. The actual value is not expected to exceed the sample MQL.

Reviewer: Jing Song Xi 5/16/14

QUALITY CONTROL PARAMETERS AND OUTCOMES

Data Completeness

The laboratory data packages contain all necessary data (i.e., the laboratory reportable data per TRRP-13) and the EDD contain all sample results in acceptable format. Minor revisions were required for work orders 600-86414-1, 600-86414-3, 600-86414-4, 600-86449-1, 600-86459-1, 600-86459-2, and 600-86460-1. Revisions were required for work orders 600-86336-1, 600-86449-1, 600-86414-5, and 600-86460-1 where Total Organic Carbon was double dry weight reported in error, and the data was recalled. All revisions are detailed in the laboratory narrative.

Chain-of-Custody

Proper sample custody procedures were used, which confirms that the integrity of the samples was maintained. Additionally, the information on the custody records is complete and agrees with that in the field notes and laboratory reports, except as follows:

- Sample 600-86336-5 was received broken or leaking; however, based on conversations with the laboratory, this did not affect lab results.
- Minor inconsistencies were noted on some of the COCs. These have been addressed with the laboratory and do not affect results.
- For 86414-1, extra samples were received that were not on the COC. These samples were determined to be Equipment Blank 1, Equipment Blank 2, Equipment Bowl, Equipment Dredge, and DUPLICATE-1 (originally incorrectly labeled as SED-014) have been addressed with the laboratory and do not affect results.
- For 600-86414, 600-86449, and 600-86459, the analysis requested on the COCs should have reflected three metals only (arsenic cadmium and lead only). Revisions were issued to these three reports.
- Originally, Method 6010 was requested for all surface water and sediment samples. Remaining aliquot was submitted for all surface water samples (where available) for re-analysis by Method 6020 at the Savannah, GA laboratory in effort to meet applicable PCLs.
- Chains of Custody were not provided in laboratory reports for Grain Size analysis via ASTM Method D422. Scans of the chains of custody are appended to the applicable laboratory data pacakage.

Sample Condition

Samples were collected in appropriate containers, properly preserved in the field, and prepared and analyzed within the holding times as required in the analytical methods:

- For 600-86336, the temperature of the cooler at receipt was 3.7°C.
- For 600-86414, the temperatures of the coolers at receipt were 1.3°C and 2.4°C.
  - For 600-86414 samples shipped to Savannah for Method 6020 analysis, the temperatures of the coolers at receipt were 1.8°C.
- For 600-86449, the temperature of the cooler at receipt was 4.8°C.
- For 600-86459, the temperature of the cooler at receipt was 3.3°C.

- For 600-86459 samples shipped to Savannah for Method 6020 analysis, the temperatures of the coolers at receipt were 1.8°C and 2.6°C.

- For 600-86460, the temperature of the cooler at receipt was 2.2°C.
  - For 600-86460 samples shipped to Savannah for Method 6020 analysis, the temperature of the cooler at receipt was 1.8°C.

Sediment samples were collected for grain size analyses and shipped separately to Test America – Burlington. A report with soil particle size by ASTM D422 was generated, but a TRRP Format report was unavailable for grain size analysis.

Field Procedures
The samples were collected and placed immediately into sterilized jars provided by the laboratory and then into a cooler with ice for overnight delivery to the laboratory.

Seven field duplicates, 3 field blanks, 9 equipment blanks, 5 field MS/MSD pairs were collected with the 57 investigative samples.

Results Reporting Procedures
The hardcopy analytical results include a Result, MQL (adjusted), and SDL. The EDD includes the MDL, SDL (under the SQL column per previously used terminology) and the MQL, which is not adjusted for sample specific factors.

Results are reported in mg/kg with dry-weight correction for the metals. Non-detects are reported using the SDL as specified per TRRP and detects between the SDL and MQL are reported with a laboratory J-flag. The concentration reported for detects between the SDL and MQL is below the calibration range and thus is considered estimated.

MQLs- The LORPs have been established by Golder/PBW as the TRRP Residential Assessment Levels (RALs), which include ecological criteria for sediment and surface water. The Unadjusted MQLs for the laboratory are at or below the LORPs for each applicable analyte, except for dissolved metals in surface water run by Method 6010B. Further analysis by Method 6020A was completed in an effort to meet applicable ecological criteria for dissolved metals in surface water.

MDLs- According to the LRCs, an MDL study was performed for each analyte, and the MDLs were checked for reasonableness and either adjusted or supported by the analysis of detectability check standards (DCS) for each applicable analyte as required per TRRP-13. Results for the DCS are included in the data packages.

Laboratory Blanks – Results for samples prepared in the same QC batch as a contaminated method blank may be affected by laboratory contamination. No analytes were detected in the laboratory blanks, except for the following:

- For 600-86414-4, lead was detected in the method blank at 0.1050 mg/kg. Associated sediment samples had concentrations greater than 5 times the method blank concentration, therefore samples were unaffected.

Field QC Blanks

2 field blanks and 5 equipment rinsate blanks were collected to document sufficient field decontamination procedures for sediment sampling devices and filters. No analytes were detected in the field QC blanks. Results for samples collected with a contaminated rinsate blank may be affected by field contamination. However, these analytes were not detected in the rinsate blanks, and thus there is no effect on data quality.

Laboratory Control Sample

The laboratory prepared one laboratory control sample (LCS) for each analytical batch and reported recoveries for all of the analytes for each test. The LCS recoveries are within the TRRP recommended criteria, which indicates good accuracy for the preparation and analysis technique on a sample, free of matrix effects.

Matrix Spike Recovery

The laboratory prepared one or more matrix spike (MS) and matrix spike duplicate (MSD) with each analytical batch plus a Post Digestion Spike (PDS) with each metals analytical batch. MS/MSD recoveries are reported for the same analytes as the LCS for MS/MSD prepared using a sample from the site, which includes 5 MS/MSD for Total Metals, as shown in Table 1. According to the LRC, laboratory-designated MS/MSDs were run for each batch where a site-specific MS/MSD (such as in the case for those surface water samples resubmitted for 6020 analyses in Savannah). Test America does not include MS/MSD data in the lab packages that do not pertain to the Site. Therefore, MS/MSD data is not reported in the QC section of the lab data for 6020 samples. A site-specific MS/MSD sample was collected once per every 10 field samples and is included in reports where applicable.

PDS outcomes are given on the LRC for each job package; however PDS data are not reportable data per TRRP-13. According to the LRC, the PDS met method requirements, which indicates good accuracy for the analysis technique on the given sample matrix.

The MS/MSD recoveries are within the TRRP recommended criteria, which indicates good accuracy for the preparation and analysis technique on a sample free of matrix effects.

Surrogate Recovery

Since organic analyses were not requested for these data packages, surrogate recoveries were not applicable.

Laboratory Duplicate Precision

The laboratory prepared one or more Matrix Spike Duplicate (MSD) with each analytical batch for each test. Additionally, the laboratory prepared one Matrix Duplicate (MD) with each metals and pH analytical batch. RPDs are reported for the same analytes as the LCS for MSD/MD prepared using a sample from the site, which includes 5 MS/MSD and MD for Total Metals, as shown in Table 1.

The MSD and MD RPDs are within the TRRP recommended criteria, which indicates good precision for the preparation and analysis technique for the given sample matrix, except as follows:

QC Batch	Lab Sample ID	Client ID	Analyte	Parent Amount (mg/kg)	MSD RPD	MD RPD	Qual
126333	600-86336-5	2014-SED-005	Arsenic	27.2	24	37	J

Arsenic samples associated with the prep batch 126333 were qualified as “J” accordingly.

Field Duplicate Precision

Seven field duplicates were collected with the samples and analyzed. Results are summarized in Table 3. The RPDs (or the absolute difference between results for concentrations <5x MQL and for non-detects) are within the TRRP criteria, which indicates good precision for the sampling, preparation, and analysis technique on the given sample matrix, except as follows:

- The results for Total cadmium and Total arsenic are outside the criteria for the pair collected at 2014-SED-014. The parent sample is qualified as estimated in Table 2 (J).
- The results for Total cadmium and Total lead are outside the criteria for the pair collected at 2014-SED-019. The parent sample is qualified as estimated in Table 2 (J).

Instrument Tuning

According to the LRC, instrument tuning met method requirements for the samples, which indicates the GC/MS instrument was properly set up to identify analytes.

Instrument Calibration

According to the LRC, initial and continuing calibration data met method requirements for all reported results, which indicates the instruments were properly calibrated to measure analyte concentrations.

Instrument Performance

According to the LRC, the serial dilution and ICP interference check samples met method requirements, which indicates that no significant matrix interference exists.

Internal Standards

According to the LRC, area counts and retention times were within method requirements.

TABLE 1
CROSS REFERENCE OF FIELD SAMPLE IDENTIFICATIONS AND LABORATORY IDENTIFICATIONS

Lab Sample ID	Field Sample ID	Prep Batch/ Analysis Batch (Houston)	Prep Batch/ Analysis Batch (Savannah)	Sample Date	Matrix	Comments
600-86336-1	2014-SED-001	126333/126527	NA	1/28/2014	sediment	
600-86336-2	2014-SED-002	126333/126527	NA	1/28/2014	sediment	
600-86336-3	2014-SED-003	126333/126527	NA	1/28/2014	sediment	
600-86336-4	2014-SED-004	126333/126527	NA	1/28/2014	sediment	
600-86336-5	2014-SED-005	126333/126411	NA	1/28/2014	sediment	
600-86336-6	2014-SED-006	126333/126527	NA	1/28/2014	sediment	
600-86336-7	2014-SED-007	126333/126527	NA	1/28/2014	sediment	
600-86336-8	2014-SED-008	126333/126527	NA	1/28/2014	sediment	
600-86336-9	2014-SED-009	126333/126527	NA	1/28/2014	sediment	
600-86336-10	2014-SED-0010	126333/126527	NA	1/28/2014	sediment	
600-86336-11	2014-SED-0011	126333/126527	NA	1/28/2014	sediment	
600-86336-12	2014-SED-0012	126333/126527	NA	1/28/2014	sediment	
600-86336-13	2014-SED-0013	126333/126527	NA	1/28/2014	sediment	
600-86336-14	2014-SW-001	126300/126515	NA	1/28/2014	surface water	
600-86336-15	DUP-1	126333/126527	NA	1/28/2014	sediment	Duplicate of 2014-SED-009
600-86414-1	2014-SW-002	126709/126774	315722/316063 316087/316226	1/29/2014	surface water	site-specific MS/MSD
600-86414-2	DUPLICATE-1	126709/126774	315722/316063	1/29/2014	surface water	Duplicate of dissolved aliquot for 2014-SW-002
600-86414-5	Field Blank	126709/126774	NA	1/29/2014	surface water	Field Blank
600-86414-6	2014-SED-015	126557/126636	NA	1/29/2014	sediment	
600-86414-7	2014-SED-014	126557/126636	NA	1/29/2014	sediment	site-specific MS/MSD
600-86414-8	2014-SED-016	126557/126636	NA	1/29/2014	sediment	site-specific MS/MSD
600-86414-9	2014-SW-003	126709/126774	315722/316063 316226/316899	1/29/2014	surface water	
600-86414-11	2014-SW-004	126709/126774	315722/316063 315919/316126	1/29/2014	surface water	
600-86414-13	DUPLICATE-2	126557/126636	NA	1/29/2014	sediment	Duplicate of 2014-SED-014
600-86414-14	2014-SW-05	126709/126774	315722/316063 315919/316126	1/29/2014	surface water	
600-86414-15	Equipment Blank 1	126709/126774	NA	1/29/2014	surface water	Rinsate Blank (dredge)
600-86414-16	Equipment Blank 2	126709/126774	NA	1/29/2014	surface water	Rinsate Blank (bowl)
600-86414-17	Equipment Bowl	126709/126774	NA	1/29/2014	surface water	Rinsate Blank
600-86414-18	Equipment Dredge	126709/126774	NA	1/29/2014	surface water	Rinsate Blank
600-86414-19	DUPLICATE-1	126709/126774	315722/316063	1/29/2014	surface water	Duplicate of total aliquot of 2014 SW-002; associated with 600-86414-2 (Originally incorrectly labeled SED-014)
600-86449-1	2014-SED-029	126557/126636	NA	1/31/2014	sediment	
600-86449-2	2014-SW-010	126633/126755,126774,126888	NA	1/31/2014	surface water	
600-86449-3	2014-SED-030	126557/126636	NA	1/31/2014	sediment	
600-86449-4	2014-SW-011	126633/126755,126774,126888	NA	1/31/2014	surface water	
600-86449-5	2014-SED-031	126557/126636	NA	1/31/2014	sediment	
600-86449-6	2014-SW-012	126633/126755,126774,126888	NA	1/31/2014	surface water	
600-86449-7	2014-SED-032	126557/126636	NA	1/31/2014	sediment	
600-86449-8	2014-SW-013	126633/126755,126774,126888	NA	1/31/2014	surface water	
600-86449-9	2014-SED-033	126557/126636	NA	1/31/2014	sediment	
600-86449-10	2014-SW-014	126633/126755,126774,126888	NA	1/31/2014	surface water	
600-86449-11	2014-SED-034	126557/126636	NA	1/31/2014	sediment	

TABLE 1
CROSS REFERENCE OF FIELD SAMPLE IDENTIFICATIONS AND LABORATORY IDENTIFICATIONS

Lab Sample ID	Field Sample ID	Prep Batch/ Analysis Batch (Houston)	Prep Batch/ Analysis Batch (Savannah)	Sample Date	Matrix	Comments
600-86449-12	Field Blank	126633/126755,126774,126888	NA	1/31/2014	surface water	Field Blank
600-86449-13	Equipment Blank-Filter	126633/126755,126774,126888	NA	1/31/2014	water	Rinsate Blank
600-86449-14	Equipment Blank-Dredge	126633/126755,126774,126888	NA	1/31/2014	water	Rinsate Blank
600-86449-15	Equipment Blank-Bowl	126633/126755,126774,126888	NA	1/31/2014	water	Rinsate Blank
600-86449-16	Duplicate-05	126557/126636	NA	1/31/2014	sediment	Duplicate of 2014-SED-030
600-86449-17	2014-SED-026	126557/126636	NA	1/31/2014	sediment	
600-86449-18	2014-SW-007	126633/126755,126774,126888	NA	1/31/2014	surface water	
600-86449-19	2014-SED-027	126557/126636	NA	1/31/2014	sediment	
600-86449-20	2014-SED-028	126557/126636	NA	1/31/2014	sediment	
600-86449-21	2014-SW-008	126633/126755,126774,126888	NA	1/31/2014	surface water	
600-86449-22	2014-SW-009	126633/126755,126774,126888	NA	1/31/2014	surface water	
600-86449-23	2014-SW-015	126633/126755,126774,126888	NA	1/31/2014	surface water	
600-86449-24	2014-SED-035	126557/126636	NA	1/31/2014	sediment	
600-86459-1	2014-SW-016	126633/126774 (Houston);	NA	1/31/2014	surface water	site-specific MS/MSD
600-86459-2	2014-SW-017	126633/126774	NA	1/31/2014	surface water	
600-86459-3	2014-SW-018	126633/126774	NA	1/31/2014	surface water	
600-86459-4	2014-SW-019	126633/126774126643/126789	NA	1/31/2014	surface water	
600-86459-5	2014-SW-020	126633/126774126643/126789	NA	1/31/2014	surface water	
600-86459-6	2014-SW-021	126633/126774126643/126789	NA	1/31/2014	surface water	site-specific MS/MSD
600-86459-7	DUP-2	126633/126774126643/126789	NA	1/31/2014	surface water	Duplicate of 2014-SW-021
600-86459-8	DUP-3	126633/126774	NA	1/31/2014	surface water	Duplicate of 2014-SW-016
600-86460-1	2014-SW-006	126643/126789	315722/316063 315753/316063	1/30/2014	surface water	
600-86460-2	Field Blank	126535/126636	315722/316063	1/30/2014	surface water	Field Blank
600-86460-3	Equipment Blank-Dredge	126535/126636	NA	1/30/2014	surface water	Rinsate Blank
600-86460-4	Equipment Blank-Bowl	126535/126636	NA	1/30/2014	surface water	Rinsate Blank
600-86460-5	2014-SED-019	126557/126636	NA	1/30/2014	sediment	
600-86460-6	2014-SED-020	126557/126636	NA	1/30/2014	sediment	
600-86460-7	2014-SED-021	126557/126636	NA	1/30/2014	sediment	
600-86460-8	2014-SED-022	126661/126737	NA	1/30/2014	sediment	
600-86460-9	2014-SED-023	126661/126737	NA	1/30/2014	sediment	
600-86460-10	DUPLICATE-04	126661/126737	NA	1/30/2014	sediment	Duplicate of 2014-SED-019
600-86460-11	2014-SED-024	126661/126737	NA	1/30/2014	sediment	
600-86460-12	2014-SED-025	126661/126737	NA	1/30/2014	sediment	

NA - Not applicable

TABLE 2 - QUALIFIED DATA

Lab Sample ID	Field Sample ID	Analyte	Result	Units	Qualifer	Explanation
600-86336-1	2014-SED-001	Arsenic	10.2	mg/kg	J	Matrix duplicate RPD >30%; all samples in prep batch are qualified as "J"
600-86336-2	2014-SED-002	Arsenic	8.31	mg/kg	J	Matrix duplicate RPD >30%; all samples in prep batch are qualified as "J"
600-86336-3	2014-SED-003	Arsenic	57.7	mg/kg	J	Matrix duplicate RPD >30%; all samples in prep batch are qualified as "J"
600-86336-4	2014-SED-004	Arsenic	29.7	mg/kg	J	Matrix duplicate RPD >30%; all samples in prep batch are qualified as "J"
600-86336-5	2014-SED-005	Arsenic	27.2	mg/kg	J	Matrix duplicate RPD >30%; all samples in prep batch are qualified as "J"
600-86336-6	2014-SED-006	Arsenic	11.2	mg/kg	J	Matrix duplicate RPD >30%; all samples in prep batch are qualified as "J"
600-86336-7	2014-SED-007	Arsenic	20.4	mg/kg	J	Matrix duplicate RPD >30%; all samples in prep batch are qualified as "J"
600-86336-8	2014-SED-008	Arsenic	47.5	mg/kg	J	Matrix duplicate RPD >30%; all samples in prep batch are qualified as "J"
600-86336-9	2014-SED-009	Arsenic	42.9	mg/kg	J	Matrix duplicate RPD >30%; all samples in prep batch are qualified as "J"
600-86336-10	2014-SED-0010	Arsenic	31.1	mg/kg	J	Matrix duplicate RPD >30%; all samples in prep batch are qualified as "J"
600-86336-11	2014-SED-0011	Arsenic	37.4	mg/kg	J	Matrix duplicate RPD >30%; all samples in prep batch are qualified as "J"
600-86336-12	2014-SED-0012	Arsenic	22.0	mg/kg	J	Matrix duplicate RPD >30%; all samples in prep batch are qualified as "J"
600-86336-13	2014-SED-0013	Arsenic	12.0	mg/kg	J	Matrix duplicate RPD >30%; all samples in prep batch are qualified as "J"
600-86336-15	DUP-1	Arsenic	33.2	mg/kg	J	Matrix duplicate RPD >30%; all samples in prep batch are qualified as "J"
		Cadmium	0.439	mg/kg	J	Field Duplicate RPD >30%
600-86414-5	2014-SED-014	Arsenic	12	mg/kg	J	Field Duplicate RPD >30%
600-86449-3	2014-SED-030	Cadmium	0.691	mg/kg	J	Field Duplicate RPD >30%
600-86460-5	2014-SED-019	Arsenic	10	mg/kg	J	Field Duplicate RPD >30%
600-86459-6	2014-SW-021	Dissolved Lead	0.00850 J	mg/kg	J	Field Duplicate RPD >30% (sample was already qualified as estimated)

Note:

Detected results between the SDL and MQL (i.e., results with a laboratory J-flag) have been included in the above table since the reported concentration is below the calibration range.

J Estimated data; The analyte was detected and identified. The associated numerical value (i.e., the reported sample concentration) is the approximate concentration of the analyte in the sample.

NJ Tentatively identified, estimated data; The analysis indicates the presence of the analyte for which there is presumptive evidence to make a tentative identification and the associated numerical value represents its approximate concentration.

NS Not selected; Another result (from a secondary dilution, different analytical method, re-sampling, etc.) is selected for use based on QC outcomes and/or reported concentrations.

R Rejected data; The data is unusable. Serious QC deficiencies make it impossible to verify the absence or presence of this analyte.

U Not detected; The analyte was not detected >5x (10x for common contaminants) the level in an associated blank and thus should be considered not detected above the level of the associated numerical value (i.e., the reported sample concentration).

UJ Estimated data; The analyte was not detected above the reported sample detection limit (SDL). The numerical value of the SDL is estimated and may be inaccurate.

H Bias in sample result is likely to be high

L Bias in sample result is likely to be low

TABLE 3 - FIELD DUPLICATE PRECISION CALCULATIONS

Duplicate and Parent Sample Field Identification	Analyte	Sample Result	Duplicate Result	RPD[a]	Accept or Reject	Qualifier Added
DUP-1/2014-SED-009	Cadmium	0.92	0.823	11.1	A	-
	Lead	20.5	14.9	31.6	A	-
	Arsenic	42.9	33.2	25.5	A	-
DUPLICATE-2/2014-SED-014	Cadmium	0.439	1	78.0	A	J
	Lead	25	25.2	0.8	A	-
	Arsenic	12	57.9	131.3	A	J
DUPLICATE-04/2014-SED-019	Cadmium	1.25	1.31	4.7	A	-
	Lead	47.3	48.2	1.9	A	-
	Arsenic	10	14.2	34.7	A	J
Duplicate-5/2014-SED-030	Cadmium	0.691	0.425	47.7	A	J
	Lead	14	12.2	13.7	A	-
	Arsenic	20.3	17.3	16.0	A	-
DUPLICATE-1/2014-SW-002	No analytes detected					
DUP-2/2014-SW-021	No analytes detected					
DUP-3/2014-SW-016	Sulfate	125	128	2.4	A	-
DUPLICATE-1/2014-SW-002 (6020)	No analytes detected					
DUP-2/2014-SW-021 (6020)	Total Lead*	0.000635	0.000595	6.5	A	-
	Dissolved Lead*	0.00085	0.000395	73.1	A	J

* DUP-2/2014-SW-021 parent and duplicate sample concentrations were "J" flagged according to lab analysis

[a] RPD = ((SR - DR)*200)/(SR + DR)

A - Acceptable Data

NA - Not Analyzed

The RPD test (<50%) applies if both results are greater than 5x MQL. Otherwise, the absolute difference test (< 3x MQL) applies.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-86336-1
Client Project/Site: Exide Recycling Center, Stewart Creek
Revision: 1

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
5/15/2014 7:16:49 PM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

Review your project results through TotalAccess

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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.

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-86336-1 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☑ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☑ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Sophia Shah		2/7/2014
Name (printed)	Signature	Date

Project Management Assistant
Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/7/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86336-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X			R01A
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?		X			R07D
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/7/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86336-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?		X			S09A
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

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Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/7/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86336-1
Reviewer Name:	Dean A Joiner		

ER #[1]	Description
R01A	One or more containers for the following sample(s) was received broken or leaking: 600-86336-5.
R07D	Method 6010B: 600-86336-13 DU failed the RPD criteria for the following analyte(s): Arsenic. Matrix interference is suspected. Method 6010B: 600-86336-13 MSD failed the RPD criteria for the following analyte(s): Arsenic. Matrix interference is suspected. Method 6010B: 600-86336-5 DU failed the RPD criteria for the following analyte(s): Arsenic, Cadmium. Matrix interference is suspected.
S09A	Method 6010B: The serial dilution performed for the following sample(s) associated with batch 126333 was outside control limits for Arsenic: 600-86336-5 SD. Matrix interference is suspected.

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

Detection Check Standard

Matrix:	Soil
Method:	6010B
Preparation:	3050
Date Analyzed:	12/30/2013
Date Prepared:	12/27/2013
Instrument:	Thermo 6500
TALS Batches:	123949, 123775p
Prep/Reagent Factor =	50
Units:	mg/kg

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.299654	0.5	0.36	25
Antimony	0.231553	0.45	0.5	2.5
Arsenic	0.217923	0.5	0.53	1
Barium	0.011322	0.03	0.04	1
Beryllium	0.014513	0.02	0.015	0.25
Boron	0.385535	0.6	0.56	20
Cadmium	0.025642	0.05	0.05	0.25
Calcium	0.86399	1.5	2.185	100
Chromium	0.050606	0.1	0.135	0.5
Cobalt	0.067622	0.1	0.09	0.5
Copper	0.173703	0.5	0.64	0.5
Iron	2.534007	4	3.76	20
Lead	0.104832	0.2	0.215	0.5
Selenium	0.258884	0.5	0.465	2
Manganese	0.038111	0.05	0.085	1.5
Molybdenum	0.136448	0.35	0.38	0.5
Nickel	0.116599	0.15	0.2	1
Silver	0.118848	0.2	0.15	0.5
Sodium	0.885548	2.4	3.135	100
Thallium	0.276988	0.7	0.73	1.5
Tin	0.08729	0.15	0.19	1
Titanium	0.014529	0.03	0.01	0.5
Vanadium	0.079068	0.15	0.125	0.5
Zinc	0.108432	0.2	0.305	1.5

Detection Check Standard

Matrix:	Water
Method:	200.7/6010
Preparation:	200.7P/3010
Date Analyzed:	12/31/2013
Date Prepared:	12/27/2013
Instrument:	Spectro01
TALs Batches:	124030, 123788p
Units:	mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.006	0.02	0.028176	0.5
Antimony	0.0063	0.01	0.010016	0.05
Arsenic	0.0033	0.01	0.008253	0.01
Barium	0.0022	0.005	0.004098	0.02
Beryllium	0.00134	0.002	0.004019	0.005
Boron	0.0077	0.02	0.019829	0.2
Cadmium	0.00073	0.001	0.001	0.005
Calcium	0.022	0.05	0.060829	1
Chromium	0.0016	0.002	0.003835	0.01
Cobalt	0.00063	0.001	0.000965	0.01
Copper	0.0014	0.002	0.002451	0.01
Iron	0.087	0.1	0.002258	0.4
Lithium	0.0024	0.005	0.006107	0.2
Lead	0.0029	0.005	0.005478	0.01
Selenium	0.0042	0.01	0.009953	0.04
Manganese	0.00084	0.002	0.001988	0.01
Molybdenum	0.0027	0.005	0.005867	0.01
Nickel	0.00179	0.005	0.005669	0.01
Silver	0.0012	0.0025	0.001901	0.01
Sodium	0.02	0.05	0.088115	1
Strontium	0.0005	0.001	0.000897	0.005
Thallium	0.0078	0.02	0.021503	0.03
Tin	0.0028	0.005	0.005708	0.01
Titanium	0.0011	0.002	0.001905	0.01
Vanadium	0.0017	0.002	0.003578	0.01
Zinc	0.0022	0.005	0.004189	0.01

Detection Check Standard

Matrix:	Soil
Method:	90.3 Walkley-Black
Preparation:	NA
Date Analyzed:	12/7/2013
Date Prepared:	12/7/2013
TALs Batches:	122871
Units:	% Carbon

Analyte	MDL	DCS Spike	Measured Result	MQL
TOC Walkley Black	0.0415	0.05	0.036	0.1

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86336-1

Job ID: 600-86336-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-86336-1

Comments
The report was revised on 05/15/14 to correct the results for the Walkley Black method, replacing the final report generated on 02/07/14.

Receipt
The samples were received on 1/30/2014 10:11 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.7º C.

Method Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86336-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL HOU
Moisture	Percent Moisture	EPA	TAL HOU
WALKLEY BLACK	Organic Carbon, Total (TOC)	MSA	TAL HOU

Protocol References:

EPA = US Environmental Protection Agency

MSA = "Methods Of Soil Analysis, Chemical And Microbiological Properties", Part 2, 2nd Ed., 1982 And Subsequent Revisions.

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

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86336-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-86336-1	2014-SED-001	Solid	01/28/14 09:42	01/30/14 10:11
600-86336-2	2014-SED-002	Solid	01/28/14 10:21	01/30/14 10:11
600-86336-3	2014-SED-003	Solid	01/28/14 10:50	01/30/14 10:11
600-86336-4	2014-SED-004	Solid	01/28/14 11:30	01/30/14 10:11
600-86336-5	2014-SED-005	Solid	01/28/14 11:56	01/30/14 10:11
600-86336-6	2014-SED-006	Solid	01/28/14 12:25	01/30/14 10:11
600-86336-7	2014-SED-007	Solid	01/28/14 13:00	01/30/14 10:11
600-86336-8	2014-SED-008	Solid	01/28/14 13:46	01/30/14 10:11
600-86336-9	2014-SED-009	Solid	01/28/14 14:10	01/30/14 10:11
600-86336-10	2014-SED-0010	Solid	01/28/14 14:43	01/30/14 10:11
600-86336-11	2014-SED-0011	Solid	01/28/14 15:22	01/30/14 10:11
600-86336-12	2014-SED-0012	Solid	01/28/14 15:43	01/30/14 10:11
600-86336-13	2014-SED-0013	Solid	01/28/14 15:00	01/30/14 10:11
600-86336-14	2014-SW-001	Water	01/28/14 13:20	01/30/14 10:11
600-86336-15	DUP-1	Solid	01/28/14 00:00	01/30/14 10:11

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86336-1

Client Sample ID: 2014-SED-001

Lab Sample ID: 600-86336-1
Date Collected: 01/28/14 09:42
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 66.1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	15.8		0.728	0.153	mg/Kg	☼	01/31/14 14:08	02/04/14 14:18	1
Arsenic	10.2		1.46	0.317	mg/Kg	☼	01/31/14 14:08	02/04/14 14:18	1
Cadmium	0.298	J	0.364	0.0373	mg/Kg	☼	01/31/14 14:08	02/04/14 14:18	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	34		1.0	1.0	%			01/30/14 13:45	1
Percent Solids	66		1.0	1.0	%			01/30/14 13:45	1
TOC	1.49		0.100	0.0415	%			02/07/14 10:00	1

Client Sample ID: 2014-SED-002

Lab Sample ID: 600-86336-2
Date Collected: 01/28/14 10:21
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 61.0

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	20.5		0.811	0.170	mg/Kg	☼	01/31/14 14:08	02/04/14 14:21	1
Arsenic	8.31		1.62	0.353	mg/Kg	☼	01/31/14 14:08	02/04/14 14:21	1
Cadmium	0.503		0.405	0.0416	mg/Kg	☼	01/31/14 14:08	02/04/14 14:21	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	39		1.0	1.0	%			01/30/14 13:45	1
Percent Solids	61		1.0	1.0	%			01/30/14 13:45	1
TOC	1.97		0.100	0.0415	%			02/07/14 10:00	1

Client Sample ID: 2014-SED-003

Lab Sample ID: 600-86336-3
Date Collected: 01/28/14 10:50
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 81.0

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	19.5		0.605	0.127	mg/Kg	☼	01/31/14 14:08	02/04/14 14:23	1
Arsenic	57.7		1.21	0.264	mg/Kg	☼	01/31/14 14:08	02/04/14 14:23	1
Cadmium	0.956		0.303	0.0310	mg/Kg	☼	01/31/14 14:08	02/04/14 14:23	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19		1.0	1.0	%			01/30/14 13:45	1
Percent Solids	81		1.0	1.0	%			01/30/14 13:45	1
TOC	0.460		0.100	0.0415	%			02/07/14 10:00	1

Client Sample ID: 2014-SED-004

Lab Sample ID: 600-86336-4
Date Collected: 01/28/14 11:30
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 82.9

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	28.2		0.597	0.125	mg/Kg	☼	01/31/14 14:08	02/04/14 14:26	1
Arsenic	29.7		1.19	0.260	mg/Kg	☼	01/31/14 14:08	02/04/14 14:26	1
Cadmium	1.03		0.299	0.0306	mg/Kg	☼	01/31/14 14:08	02/04/14 14:26	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86336-1

Client Sample ID: 2014-SED-004

Lab Sample ID: 600-86336-4
Date Collected: 01/28/14 11:30
Matrix: Solid
Date Received: 01/30/14 10:11

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17		1.0	1.0	%			01/30/14 13:45	1
Percent Solids	83		1.0	1.0	%			01/30/14 13:45	1
TOC	0.392		0.100	0.0415	%			02/07/14 10:00	1

Client Sample ID: 2014-SED-005

Lab Sample ID: 600-86336-5
Date Collected: 01/28/14 11:56
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 77.9

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	25.3		0.617	0.129	mg/Kg	☼	01/31/14 14:08	02/03/14 13:22	1
Arsenic	27.2		1.23	0.269	mg/Kg	☼	01/31/14 14:08	02/03/14 13:22	1
Cadmium	0.981		0.308	0.0316	mg/Kg	☼	01/31/14 14:08	02/03/14 13:22	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	22		1.0	1.0	%			01/30/14 13:45	1
Percent Solids	78		1.0	1.0	%			01/30/14 13:45	1
TOC	0.628		0.100	0.0415	%			02/07/14 10:00	1

Client Sample ID: 2014-SED-006

Lab Sample ID: 600-86336-6
Date Collected: 01/28/14 12:25
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 84.1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	11.3		0.571	0.120	mg/Kg	☼	01/31/14 14:08	02/04/14 14:29	1
Arsenic	11.2		1.14	0.249	mg/Kg	☼	01/31/14 14:08	02/04/14 14:29	1
Cadmium	0.371		0.286	0.0293	mg/Kg	☼	01/31/14 14:08	02/04/14 14:29	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16		1.0	1.0	%			01/30/14 13:45	1
Percent Solids	84		1.0	1.0	%			01/30/14 13:45	1
TOC	0.417		0.100	0.0415	%			02/07/14 10:00	1

Client Sample ID: 2014-SED-007

Lab Sample ID: 600-86336-7
Date Collected: 01/28/14 13:00
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 79.5

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	16.0		0.599	0.126	mg/Kg	☼	01/31/14 14:08	02/04/14 14:31	1
Arsenic	20.4		1.20	0.261	mg/Kg	☼	01/31/14 14:08	02/04/14 14:31	1
Cadmium	0.892		0.299	0.0307	mg/Kg	☼	01/31/14 14:08	02/04/14 14:31	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20		1.0	1.0	%			01/30/14 13:45	1
Percent Solids	80		1.0	1.0	%			01/30/14 13:45	1
TOC	0.679		0.100	0.0415	%			02/07/14 10:00	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86336-1

Client Sample ID: 2014-SED-008

Lab Sample ID: 600-86336-8
Date Collected: 01/28/14 13:46
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 78.0

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	23.8		0.616	0.129	mg/Kg	☼	01/31/14 14:08	02/04/14 14:34	1
Arsenic	47.5		1.23	0.269	mg/Kg	☼	01/31/14 14:08	02/04/14 14:34	1
Cadmium	1.05		0.308	0.0316	mg/Kg	☼	01/31/14 14:08	02/04/14 14:34	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	22		1.0	1.0	%			01/30/14 13:45	1
Percent Solids	78		1.0	1.0	%			01/30/14 13:45	1
TOC	0.468		0.100	0.0415	%			02/07/14 10:00	1

Client Sample ID: 2014-SED-009

Lab Sample ID: 600-86336-9
Date Collected: 01/28/14 14:10
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 84.3

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	20.5		0.565	0.118	mg/Kg	☼	01/31/14 14:08	02/04/14 14:36	1
Arsenic	42.9		1.13	0.246	mg/Kg	☼	01/31/14 14:08	02/04/14 14:36	1
Cadmium	0.920		0.282	0.0290	mg/Kg	☼	01/31/14 14:08	02/04/14 14:36	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16		1.0	1.0	%			01/30/14 13:45	1
Percent Solids	84		1.0	1.0	%			01/30/14 13:45	1
TOC	0.301		0.100	0.0415	%			02/07/14 10:00	1

Client Sample ID: 2014-SED-0010

Lab Sample ID: 600-86336-10
Date Collected: 01/28/14 14:43
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 77.7

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	16.3		0.625	0.131	mg/Kg	☼	01/31/14 14:08	02/04/14 14:46	1
Arsenic	31.1		1.25	0.272	mg/Kg	☼	01/31/14 14:08	02/04/14 14:46	1
Cadmium	1.00		0.312	0.0320	mg/Kg	☼	01/31/14 14:08	02/04/14 14:46	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	22		1.0	1.0	%			01/30/14 13:45	1
Percent Solids	78		1.0	1.0	%			01/30/14 13:45	1
TOC	0.745		0.100	0.0415	%			02/07/14 10:00	1

Client Sample ID: 2014-SED-0011

Lab Sample ID: 600-86336-11
Date Collected: 01/28/14 15:22
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 83.7

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	17.0		0.563	0.118	mg/Kg	☼	01/31/14 14:08	02/04/14 14:49	1
Arsenic	37.4		1.13	0.246	mg/Kg	☼	01/31/14 14:08	02/04/14 14:49	1
Cadmium	2.42		0.282	0.0289	mg/Kg	☼	01/31/14 14:08	02/04/14 14:49	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86336-1

Client Sample ID: 2014-SED-0011 — Lab Sample ID: 600-86336-11

Date Collected: 01/28/14 15:22
Date Received: 01/30/14 10:11
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16		1.0	1.0	%			01/30/14 13:45	1
Percent Solids	84		1.0	1.0	%			01/30/14 13:45	1
TOC	0.512		0.100	0.0415	%			02/07/14 10:00	1

Client Sample ID: 2014-SED-0012 — Lab Sample ID: 600-86336-12

Date Collected: 01/28/14 15:43
Date Received: 01/30/14 10:11
Matrix: Solid
Percent Solids: 81.2

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	15.9		0.598	0.125	mg/Kg	☼	01/31/14 14:08	02/04/14 14:52	1
Arsenic	22.0		1.20	0.261	mg/Kg	☼	01/31/14 14:08	02/04/14 14:52	1
Cadmium	1.03		0.299	0.0307	mg/Kg	☼	01/31/14 14:08	02/04/14 14:52	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19		1.0	1.0	%			01/30/14 13:45	1
Percent Solids	81		1.0	1.0	%			01/30/14 13:45	1
TOC	0.480		0.100	0.0415	%			02/07/14 10:00	1

Client Sample ID: 2014-SED-0013 — Lab Sample ID: 600-86336-13

Date Collected: 01/28/14 15:00
Date Received: 01/30/14 10:11
Matrix: Solid
Percent Solids: 77.4

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	16.0		0.646	0.135	mg/Kg	☼	01/31/14 14:08	02/04/14 14:54	1
Arsenic	12.0		1.29	0.282	mg/Kg	☼	01/31/14 14:08	02/04/14 14:54	1
Cadmium	0.510		0.323	0.0331	mg/Kg	☼	01/31/14 14:08	02/04/14 14:54	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23		1.0	1.0	%			01/30/14 13:45	1
Percent Solids	77		1.0	1.0	%			01/30/14 13:45	1
TOC	0.911		0.100	0.0415	%			02/07/14 10:00	1

Client Sample ID: 2014-SW-001 — Lab Sample ID: 600-86336-14

Date Collected: 01/28/14 13:20
Date Received: 01/30/14 10:11
Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		01/31/14 08:37	02/03/14 17:37	1
Lead	0.00290	U	0.0100	0.00290	mg/L		01/31/14 08:37	02/03/14 17:37	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		01/31/14 08:37	02/03/14 17:37	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		01/31/14 08:37	02/03/14 17:40	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		01/31/14 08:37	02/03/14 17:40	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		01/31/14 08:37	02/03/14 17:40	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86336-1

Client Sample ID: DUP-1

Date Collected: 01/28/14 00:00
Date Received: 01/30/14 10:11

Lab Sample ID: 600-86336-15

Matrix: Solid
Percent Solids: 83.4

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	14.9		0.560	0.117	mg/Kg	☼	01/31/14 14:08	02/04/14 15:04	1
Arsenic	33.2		1.12	0.244	mg/Kg	☼	01/31/14 14:08	02/04/14 15:04	1
Cadmium	0.823		0.280	0.0287	mg/Kg	☼	01/31/14 14:08	02/04/14 15:04	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17		1.0	1.0	%			01/30/14 13:45	1
Percent Solids	83		1.0	1.0	%			01/30/14 13:45	1
TOC	0.528		0.100	0.0415	%			02/07/14 10:00	1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
F	Duplicate RPD exceeds the control limit
N	RPD of the MS and MSD exceeds the control limits
U	Analyte was not detected at or above the SDL.

General Chemistry

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

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
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)

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-126300/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126515 — **Prep Batch: 126300**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.00290	U	0.0100	0.00290	mg/L		01/31/14 08:37	02/03/14 17:03	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		01/31/14 08:37	02/03/14 17:03	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		01/31/14 08:37	02/03/14 17:03	1
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		01/31/14 08:37	02/03/14 17:03	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		01/31/14 08:37	02/03/14 17:03	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		01/31/14 08:37	02/03/14 17:03	1

Lab Sample ID: LCS 600-126300/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126515 — **Prep Batch: 126300**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	1.00	0.9652		mg/L		97	80 - 120
Lead, Dissolved	1.00	0.9652		mg/L		97	80 - 120
Arsenic	1.00	0.9904		mg/L		99	80 - 120
Arsenic, Dissolved	1.00	0.9904		mg/L		99	80 - 120
Cadmium	0.500	0.5061		mg/L		101	80 - 120
Cadmium, Dissolved	0.500	0.5061		mg/L		101	80 - 120

Lab Sample ID: MB 600-126333/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126411 — **Prep Batch: 126333**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.105	U	0.500	0.105	mg/Kg		01/31/14 14:08	02/03/14 13:06	1
Arsenic	0.218	U	1.00	0.218	mg/Kg		01/31/14 14:08	02/03/14 13:06	1
Cadmium	0.0256	U	0.250	0.0256	mg/Kg		01/31/14 14:08	02/03/14 13:06	1

Lab Sample ID: MB 600-126333/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126527 — **Prep Batch: 126333**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.105	U	0.500	0.105	mg/Kg		01/31/14 14:08	02/04/14 14:14	1
Arsenic	0.218	U	1.00	0.218	mg/Kg		01/31/14 14:08	02/04/14 14:14	1
Cadmium	0.0256	U	0.250	0.0256	mg/Kg		01/31/14 14:08	02/04/14 14:14	1

Lab Sample ID: LCSSRM 600-126333/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126411 — **Prep Batch: 126333**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	115	118.6		mg/Kg		103.1	81.8 - 119.1
Arsenic	99.6	108.9		mg/Kg		109.3	80.8 - 119.5
Cadmium	182	197.9		mg/Kg		108.7	81.9 - 118.1

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

Lab Sample ID: LCSSRM 600-126333/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126527 — **Prep Batch: 126333**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	115	120.8		mg/Kg		105.0	81.8 - 119.1
Arsenic	99.6	102.2		mg/Kg		102.6	80.8 - 119.5
Cadmium	182	192.1		mg/Kg		105.5	81.9 - 118.1

Lab Sample ID: 600-86336-5 MS — **Client Sample ID: 2014-SED-005**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126411 — **Prep Batch: 126333**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	25.3		63.5	82.95		mg/Kg	☼	91	75 - 125
Arsenic	27.2		63.5	74.57		mg/Kg	☼	75	75 - 125
Cadmium	0.981		31.8	30.00		mg/Kg	☼	91	75 - 125

Lab Sample ID: 600-86336-5 MSD — **Client Sample ID: 2014-SED-005**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126411 — **Prep Batch: 126333**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	25.3		61.1	81.62		mg/Kg	☼	92	75 - 125	2	20
Arsenic	27.2		61.1	75.09		mg/Kg	☼	78	75 - 125	1	20
Cadmium	0.981		30.5	29.06		mg/Kg	☼	92	75 - 125	3	20

Lab Sample ID: 600-86336-13 MS — **Client Sample ID: 2014-SED-0013**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126527 — **Prep Batch: 126333**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	16.0		62.1	78.53		mg/Kg	☼	101	75 - 125
Arsenic	12.0		62.1	81.20		mg/Kg	☼	111	75 - 125
Cadmium	0.510		31.1	29.56		mg/Kg	☼	94	75 - 125

Lab Sample ID: 600-86336-13 MSD — **Client Sample ID: 2014-SED-0013**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126527 — **Prep Batch: 126333**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	16.0		59.8	75.20		mg/Kg	☼	99	75 - 125	4	20
Arsenic	12.0		59.8	63.66	N	mg/Kg	☼	86	75 - 125	24	20
Cadmium	0.510		29.9	28.11		mg/Kg	☼	92	75 - 125	5	20

Lab Sample ID: 600-86336-5 DU — **Client Sample ID: 2014-SED-005**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126411 — **Prep Batch: 126333**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	25.3		22.79		mg/Kg	☼	10	20
Arsenic	27.2		18.62	F	mg/Kg	☼	37	20

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

Lab Sample ID: 600-86336-5 DU — **Client Sample ID: 2014-SED-005**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126411 — **Prep Batch: 126333**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Cadmium	0.981			0.7826		mg/Kg	☼			22	20

Lab Sample ID: 600-86336-13 DU — **Client Sample ID: 2014-SED-0013**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126527 — **Prep Batch: 126333**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Lead	16.0			16.57		mg/Kg	☼			4	20
Arsenic	12.0			14.93	F	mg/Kg	☼			22	20
Cadmium	0.510			0.5205		mg/Kg	☼			2	20

Method: Moisture - Percent Moisture

Lab Sample ID: 600-86336-10 DU — **Client Sample ID: 2014-SED-0010**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126243

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	22			25		%				13	20
Percent Solids	78			75		%				4	20

Method: WALKLEY BLACK - Organic Carbon, Total (TOC)

Lab Sample ID: MB 600-126859/1 — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126859

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
TOC	0.0415	U	0.100	0.0415	%			02/07/14 10:00	1

Lab Sample ID: LCS 600-126859/2 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126859

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
TOC			2.34	2.150		%		92	80 - 120		

Lab Sample ID: 600-86336-1 DU — **Client Sample ID: 2014-SED-001**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126859

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
TOC	1.49			1.467		%				2	20

Method: WALKLEY BLACK - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 600-86336-11 DU
Matrix: Solid
Analysis Batch: 126859

Client Sample ID: 2014-SED-0011
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
TOC	0.512			0.5300		%				3	20

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86336-1

Method: 6010B - Metals (ICP)

Analyte	MQL	MDL	Units	Method
Arsenic	1.00	0.218	mg/Kg	6010B
Arsenic	0.0100	0.00328	mg/L	6010B
Cadmium	0.250	0.0256	mg/Kg	6010B
Cadmium	0.00500	0.000350	mg/L	6010B
Lead	0.500	0.105	mg/Kg	6010B
Lead	0.0100	0.00290	mg/L	6010B

Method: 6010B - Metals (ICP) - Dissolved

Analyte	MQL	MDL	Units	Method
Arsenic, Dissolved	0.0100	0.00328	mg/L	6010B
Cadmium, Dissolved	0.00500	0.000350	mg/L	6010B
Lead, Dissolved	0.0100	0.00290	mg/L	6010B

General Chemistry

Analyte	MQL	MDL	Units	Method
Percent Moisture	1.0	1.0	%	Moisture
Percent Solids	1.0	1.0	%	Moisture
TOC	0.100	0.0415	%	WALKLEY BLACK

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86336-1

Metals

Prep Batch: 126300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86336-14	2014-SW-001	Dissolved	Water	3010A	
600-86336-14	2014-SW-001	Total/NA	Water	3010A	
LCS 600-126300/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-126300/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 126333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86336-1	2014-SED-001	Total/NA	Solid	3050B	
600-86336-2	2014-SED-002	Total/NA	Solid	3050B	
600-86336-3	2014-SED-003	Total/NA	Solid	3050B	
600-86336-4	2014-SED-004	Total/NA	Solid	3050B	
600-86336-5	2014-SED-005	Total/NA	Solid	3050B	
600-86336-5 DU	2014-SED-005	Total/NA	Solid	3050B	
600-86336-5 MS	2014-SED-005	Total/NA	Solid	3050B	
600-86336-5 MSD	2014-SED-005	Total/NA	Solid	3050B	
600-86336-6	2014-SED-006	Total/NA	Solid	3050B	
600-86336-7	2014-SED-007	Total/NA	Solid	3050B	
600-86336-8	2014-SED-008	Total/NA	Solid	3050B	
600-86336-9	2014-SED-009	Total/NA	Solid	3050B	
600-86336-10	2014-SED-0010	Total/NA	Solid	3050B	
600-86336-11	2014-SED-0011	Total/NA	Solid	3050B	
600-86336-12	2014-SED-0012	Total/NA	Solid	3050B	
600-86336-13	2014-SED-0013	Total/NA	Solid	3050B	
600-86336-13 DU	2014-SED-0013	Total/NA	Solid	3050B	
600-86336-13 MS	2014-SED-0013	Total/NA	Solid	3050B	
600-86336-13 MSD	2014-SED-0013	Total/NA	Solid	3050B	
600-86336-15	DUP-1	Total/NA	Solid	3050B	
LCSSRM 600-126333/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 600-126333/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 126411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86336-5	2014-SED-005	Total/NA	Solid	6010B	126333
600-86336-5 DU	2014-SED-005	Total/NA	Solid	6010B	126333
600-86336-5 MS	2014-SED-005	Total/NA	Solid	6010B	126333
600-86336-5 MSD	2014-SED-005	Total/NA	Solid	6010B	126333
LCSSRM 600-126333/2-A	Lab Control Sample	Total/NA	Solid	6010B	126333
MB 600-126333/1-A	Method Blank	Total/NA	Solid	6010B	126333

Analysis Batch: 126515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86336-14	2014-SW-001	Dissolved	Water	6010B	126300
600-86336-14	2014-SW-001	Total/NA	Water	6010B	126300
LCS 600-126300/2-A	Lab Control Sample	Total/NA	Water	6010B	126300
MB 600-126300/1-A	Method Blank	Total/NA	Water	6010B	126300

Analysis Batch: 126527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86336-1	2014-SED-001	Total/NA	Solid	6010B	126333
600-86336-2	2014-SED-002	Total/NA	Solid	6010B	126333
600-86336-3	2014-SED-003	Total/NA	Solid	6010B	126333

Metals (Continued)

Analysis Batch: 126527 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86336-4	2014-SED-004	Total/NA	Solid	6010B	126333
600-86336-6	2014-SED-006	Total/NA	Solid	6010B	126333
600-86336-7	2014-SED-007	Total/NA	Solid	6010B	126333
600-86336-8	2014-SED-008	Total/NA	Solid	6010B	126333
600-86336-9	2014-SED-009	Total/NA	Solid	6010B	126333
600-86336-10	2014-SED-0010	Total/NA	Solid	6010B	126333
600-86336-11	2014-SED-0011	Total/NA	Solid	6010B	126333
600-86336-12	2014-SED-0012	Total/NA	Solid	6010B	126333
600-86336-13	2014-SED-0013	Total/NA	Solid	6010B	126333
600-86336-13 DU	2014-SED-0013	Total/NA	Solid	6010B	126333
600-86336-13 MS	2014-SED-0013	Total/NA	Solid	6010B	126333
600-86336-13 MSD	2014-SED-0013	Total/NA	Solid	6010B	126333
600-86336-15	DUP-1	Total/NA	Solid	6010B	126333
LCSSRM 600-126333/2-A	Lab Control Sample	Total/NA	Solid	6010B	126333
MB 600-126333/1-A	Method Blank	Total/NA	Solid	6010B	126333

General Chemistry

Analysis Batch: 126243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86336-1	2014-SED-001	Total/NA	Solid	Moisture	
600-86336-2	2014-SED-002	Total/NA	Solid	Moisture	
600-86336-3	2014-SED-003	Total/NA	Solid	Moisture	
600-86336-4	2014-SED-004	Total/NA	Solid	Moisture	
600-86336-5	2014-SED-005	Total/NA	Solid	Moisture	
600-86336-6	2014-SED-006	Total/NA	Solid	Moisture	
600-86336-7	2014-SED-007	Total/NA	Solid	Moisture	
600-86336-8	2014-SED-008	Total/NA	Solid	Moisture	
600-86336-9	2014-SED-009	Total/NA	Solid	Moisture	
600-86336-10	2014-SED-0010	Total/NA	Solid	Moisture	
600-86336-10 DU	2014-SED-0010	Total/NA	Solid	Moisture	
600-86336-11	2014-SED-0011	Total/NA	Solid	Moisture	
600-86336-12	2014-SED-0012	Total/NA	Solid	Moisture	
600-86336-13	2014-SED-0013	Total/NA	Solid	Moisture	
600-86336-15	DUP-1	Total/NA	Solid	Moisture	

Analysis Batch: 126859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86336-1	2014-SED-001	Total/NA	Solid	WALKLEY BLACK	
600-86336-1 DU	2014-SED-001	Total/NA	Solid	WALKLEY BLACK	
600-86336-2	2014-SED-002	Total/NA	Solid	WALKLEY BLACK	
600-86336-3	2014-SED-003	Total/NA	Solid	WALKLEY BLACK	
600-86336-4	2014-SED-004	Total/NA	Solid	WALKLEY BLACK	
600-86336-5	2014-SED-005	Total/NA	Solid	WALKLEY BLACK	
600-86336-6	2014-SED-006	Total/NA	Solid	WALKLEY BLACK	

General Chemistry (Continued)

Analysis Batch: 126859 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86336-7	2014-SED-007	Total/NA	Solid	WALKLEY BLACK	
600-86336-8	2014-SED-008	Total/NA	Solid	WALKLEY BLACK	
600-86336-9	2014-SED-009	Total/NA	Solid	WALKLEY BLACK	
600-86336-10	2014-SED-0010	Total/NA	Solid	WALKLEY BLACK	
600-86336-11	2014-SED-0011	Total/NA	Solid	WALKLEY BLACK	
600-86336-11 DU	2014-SED-0011	Total/NA	Solid	WALKLEY BLACK	
600-86336-12	2014-SED-0012	Total/NA	Solid	WALKLEY BLACK	
600-86336-13	2014-SED-0013	Total/NA	Solid	WALKLEY BLACK	
600-86336-15	DUP-1	Total/NA	Solid	WALKLEY BLACK	
LCS 600-126859/2	Lab Control Sample	Total/NA	Solid	WALKLEY BLACK	
MB 600-126859/1	Method Blank	Total/NA	Solid	WALKLEY BLACK	

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86336-1

Client Sample ID: 2014-SED-001 — Lab Sample ID: 600-86336-1

Date Collected: 01/28/14 09:42 — **Matrix: Solid**
Date Received: 01/30/14 10:11 — **Percent Solids: 66.1**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.04 g	50 mL	126333	01/31/14 14:08	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.04 g	50 mL	126527	02/04/14 14:18	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126243	01/30/14 13:45	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0000 g	2.0000 g	126859	02/07/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-002 — Lab Sample ID: 600-86336-2

Date Collected: 01/28/14 10:21 — **Matrix: Solid**
Date Received: 01/30/14 10:11 — **Percent Solids: 61.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.01 g	50 mL	126333	01/31/14 14:08	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.01 g	50 mL	126527	02/04/14 14:21	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126243	01/30/14 13:45	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	0.5000 g	0.5000 g	126859	02/07/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-003 — Lab Sample ID: 600-86336-3

Date Collected: 01/28/14 10:50 — **Matrix: Solid**
Date Received: 01/30/14 10:11 — **Percent Solids: 81.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.02 g	50 mL	126333	01/31/14 14:08	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.02 g	50 mL	126527	02/04/14 14:23	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126243	01/30/14 13:45	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0200 g	2.0200 g	126859	02/07/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-004 — Lab Sample ID: 600-86336-4

Date Collected: 01/28/14 11:30 — **Matrix: Solid**
Date Received: 01/30/14 10:11 — **Percent Solids: 82.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.01 g	50 mL	126333	01/31/14 14:08	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.01 g	50 mL	126527	02/04/14 14:26	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126243	01/30/14 13:45	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0000 g	2.0000 g	126859	02/07/14 10:00	EC1	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86336-1

Client Sample ID: 2014-SED-005

Lab Sample ID: 600-86336-5

Date Collected: 01/28/14 11:56
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 77.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.04 g	50 mL	126333	01/31/14 14:08	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.04 g	50 mL	126411	02/03/14 13:22	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126243	01/30/14 13:45	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0300 g	2.0300 g	126859	02/07/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-006

Lab Sample ID: 600-86336-6

Date Collected: 01/28/14 12:25
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 84.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.04 g	50 mL	126333	01/31/14 14:08	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.04 g	50 mL	126527	02/04/14 14:29	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126243	01/30/14 13:45	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0100 g	2.0100 g	126859	02/07/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-007

Lab Sample ID: 600-86336-7

Date Collected: 01/28/14 13:00
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 79.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.05 g	50 mL	126333	01/31/14 14:08	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.05 g	50 mL	126527	02/04/14 14:31	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126243	01/30/14 13:45	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0400 g	2.0400 g	126859	02/07/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-008

Lab Sample ID: 600-86336-8

Date Collected: 01/28/14 13:46
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 78.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.04 g	50 mL	126333	01/31/14 14:08	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.04 g	50 mL	126527	02/04/14 14:34	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126243	01/30/14 13:45	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.2200 g	2.2200 g	126859	02/07/14 10:00	EC1	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86336-1

Client Sample ID: 2014-SED-009

Lab Sample ID: 600-86336-9
Date Collected: 01/28/14 14:10
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 84.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.05 g	50 mL	126333	01/31/14 14:08	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.05 g	50 mL	126527	02/04/14 14:36	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126243	01/30/14 13:45	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0000 g	2.0000 g	126859	02/07/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-0010

Lab Sample ID: 600-86336-10
Date Collected: 01/28/14 14:43
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 77.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.03 g	50 mL	126333	01/31/14 14:08	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.03 g	50 mL	126527	02/04/14 14:46	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126243	01/30/14 13:45	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0300 g	2.0300 g	126859	02/07/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-0011

Lab Sample ID: 600-86336-11
Date Collected: 01/28/14 15:22
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 83.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.06 g	50 mL	126333	01/31/14 14:08	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.06 g	50 mL	126527	02/04/14 14:49	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126243	01/30/14 13:45	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0300 g	2.0300 g	126859	02/07/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-0012

Lab Sample ID: 600-86336-12
Date Collected: 01/28/14 15:43
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 81.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.03 g	50 mL	126333	01/31/14 14:08	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.03 g	50 mL	126527	02/04/14 14:52	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126243	01/30/14 13:45	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0100 g	2.0100 g	126859	02/07/14 10:00	EC1	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86336-1

Client Sample ID: 2014-SED-0013

Lab Sample ID: 600-86336-13
Date Collected: 01/28/14 15:00
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 77.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.00 g	50 mL	126333	01/31/14 14:08	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.00 g	50 mL	126527	02/04/14 14:54	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126243	01/30/14 13:45	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0200 g	2.0200 g	126859	02/07/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SW-001

Lab Sample ID: 600-86336-14
Date Collected: 01/28/14 13:20
Matrix: Water
Date Received: 01/30/14 10:11

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	126300	01/31/14 08:37	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126515	02/03/14 17:40	DCL	TAL HOU
Total/NA	Prep	3010A			50 mL	50 mL	126300	01/31/14 08:37	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126515	02/03/14 17:37	DCL	TAL HOU

Client Sample ID: DUP-1

Lab Sample ID: 600-86336-15
Date Collected: 01/28/14 00:00
Matrix: Solid
Date Received: 01/30/14 10:11
Percent Solids: 83.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.07 g	50 mL	126333	01/31/14 14:08	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.07 g	50 mL	126527	02/04/14 15:04	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126243	01/30/14 13:45	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0000 g	2.0000 g	126859	02/07/14 10:00	EC1	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86336-1

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14 *
Utah	NELAP	8	TX00083	10-31-14

* Expired certification is currently pending renewal and is considered valid.

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: Golder	Project Manager: Anne Faeth-Boyd	Date: 01/28/14	Chain of Custody Number: 255223
Address: 820 South Main St. Ste 100	Telephone Number (Area Code)/Fax Number:	Lab Number:	Page 1 of 2
City: St. Louis; State: MO; Zip Code: 63301	Site Contact:	Lab Contact:	
Project Name and Location (State): Eagle Ford, TX - Stevens Creek	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

Analysis (Attach list if more space is needed): TOC; Pb, As, Cr

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	TOC	Pb, As, Cr
2014-SED-001	01/28/14	0942			X		X						X	X
2014-SED-002	"	1021			X		X						X	X
2014-SED-003	"	1050			X		X						X	X
2014-SED-004	"	1130			X		X						X	X
2014-SED-005	"	1156			X		X						X	X
2014-SED-006	"	1225			X		X						X	X
2014-SED-007	"	1300			X		X						X	X
2014-SED-008	"	1346			X		X						X	X
2014-SED-009	"	1410			X		X						X	X
2014-SED-010	"	1443			X		X						X	X
2014-SED-011	"	1522			X		X						X	X
2014-SED-012	"	1543			X		X						X	X

600-86336 Chain of Custody

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other 5 day

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: Chris Trevino	1/28/14	2300	1. Received By:	1/28/14	2300
2. Relinquished By:	1/29/14	1105	2. Received By: McConner	1/29/14	1105
3. Relinquished By: McConner	1/29/14	1530	3. Received By:	1/30/14	1011

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Golder	Anne Fueth-Boyd	01/28/14	255224
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 2 of 2**
820 South Main St. Ste. 100			

City	State	Zip Code	Site Contact	Lab Contact
St Louis	MO	63301		

Project Name and Location (State)	Carrier/Waybill Number
Exide Frisco, TX - Stewart Creek	

Contract/Purchase Order/Quote No.

Analysis (Attach list if more space is needed): TCL; Pb, As, Ca; Total Metals - Pb, As, Ca; Dissolved Metals - Pb, As, Ca

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TCL	Pb, As, Ca	Total Metals - Pb, As, Ca	Dissolved Metals - Pb, As, Ca	Special Instructions/ Conditions of Receipt
2014-SED-013	01/28/14	1500			X		X						X	X			
2014-SW-001	01/28/14	1320		X					X						X	X	
DUP-1	01/28/14				X								X	X			

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other 5 day

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Chris Trevino	1/28/14	2300	1. Received By: [signature]	1/28/14	2300
2. Relinquished By: [signature]	1/29/14	1105	2. Received By: McCowen	1/29/14	1105
3. Relinquished By: McCowen	1/29/14	1530	3. Received By: [signature]	1/30/14	1011

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86336-1

Login Number: 86336

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.7
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

ANALYTICAL REPORT

Job Number: 600-86336-2

Job Description: Exide Recycling Center, Stewart Creek

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, TX 77073

Attention: Christina Higginbotham

Approved for release.
Cathy L Upton
Project Management Assistant II
2/11/2014 4:32 PM

Designee for
Dean A Joiner, Project Manager II
6310 Rothway Street, Houston, TX, 77040
(713)690-4444
dean.joiner@testamericainc.com
02/11/2014

cc: Brett Forthaus
Mr. Jim Thomas

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Project Manager.

TestAmerica Houston Certifications and Approvals: TX NELAP T104704223-09A-TX, ARDEQ 88-0759, LADEQ 01967, OKDEQ 9503, UT DOH GULF

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Job Narrative
600-86336-2

Comments
No additional comments.

Receipt
The samples were received on 1/30/2014 10:11 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.7º C.

Except:

One or more containers for the following sample(s) was received broken or leaking: 2014-SED-005 (600-86336-5).

Geotechnical
No analytical or quality issues were noted.

METHOD SUMMARY

Client: Golder Associates Inc. Job Number: 600-86336-2

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Grain Size	TAL BUR	ASTM D422	

Lab References:

TAL BUR = TestAmerica Burlington

Method References:

ASTM = ASTM International

METHOD / ANALYST SUMMARY

Client: Golder Associates Inc.

Job Number: 600-86336-2

Method	Analyst	Analyst ID
ASTM D422	Degree, Steven L	SLD

SAMPLE SUMMARY

Client: Golder Associates Inc. Job Number: 600-86336-2

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
600-86336-1	2014-SED-001	Solid	01/28/2014 0942	01/30/2014 1011
600-86336-2	2014-SED-002	Solid	01/28/2014 1021	01/30/2014 1011
600-86336-3	2014-SED-003	Solid	01/28/2014 1050	01/30/2014 1011
600-86336-4	2014-SED-004	Solid	01/28/2014 1130	01/30/2014 1011
600-86336-5	2014-SED-005	Solid	01/28/2014 1156	01/30/2014 1011
600-86336-6	2014-SED-006	Solid	01/28/2014 1225	01/30/2014 1011
600-86336-7	2014-SED-007	Solid	01/28/2014 1300	01/30/2014 1011
600-86336-8	2014-SED-008	Solid	01/28/2014 1346	01/30/2014 1011
600-86336-9	2014-SED-009	Solid	01/28/2014 1410	01/30/2014 1011
600-86336-10	2014-SED-0010	Solid	01/28/2014 1443	01/30/2014 1011
600-86336-11	2014-SED-0011	Solid	01/28/2014 1522	01/30/2014 1011
600-86336-12	2014-SED-0012	Solid	01/28/2014 1543	01/30/2014 1011
600-86336-13	2014-SED-0013	Solid	01/28/2014 1500	01/30/2014 1011
600-86336-15	DUP-1	Solid	01/28/2014 0000	01/30/2014 1011

SAMPLE RESULTS

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-001

Lab Sample ID: 600-86336-1
Client Matrix: Solid

Date Sampled: 01/28/2014 09:42
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	0.0						%	68042	02/04/2014 15:12	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	26.2						um	68042	02/04/2014 15:12	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68042	02/04/2014 15:12	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	17.4						um	68042	02/04/2014 15:12	1	SLD
Sand	STL00582	14.5						%	68042	02/04/2014 15:12	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68042	02/04/2014 15:12	1	SLD
Coarse Sand	STL00583	0.6						%	68042	02/04/2014 15:12	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	10.4						um	68042	02/04/2014 15:12	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68042	02/04/2014 15:12	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	7.5						um	68042	02/04/2014 15:12	1	SLD
Medium Sand	STL00584	4.2						%	68042	02/04/2014 15:12	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68042	02/04/2014 15:12	1	SLD
Fine Sand	STL00585	9.7						%	68042	02/04/2014 15:12	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.5						um	68042	02/04/2014 15:12	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68042	02/04/2014 15:12	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	2.7						um	68042	02/04/2014 15:12	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	100.0						% Passing	68042	02/04/2014 15:12	1	SLD
Silt	STL00586	24.2						%	68042	02/04/2014 15:12	1	SLD
Clay	STL00587	61.3						%	68042	02/04/2014 15:12	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.2						um	68042	02/04/2014 15:12	1	SLD
Sieve Size #4 - Percent Finer	STL01274	100.0						% Passing	68042	02/04/2014 15:12	1	SLD
Sieve Size #10 - Percent Finer	STL01268	99.4						% Passing	68042	02/04/2014 15:12	1	SLD
Sieve Size #20 - Percent Finer	STL01271	96.9						% Passing	68042	02/04/2014 15:12	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-001

Lab Sample ID: 600-86336-1
Client Matrix: Solid

Date Sampled: 01/28/2014 09:42
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	95.2						% Passing	68042	02/04/2014 15:12	1	SLD
Sieve Size #60 - Percent Finer	STL01276	93.1						% Passing	68042	02/04/2014 15:12	1	SLD
Sieve Size #80 - Percent Finer	STL01277	91.2						% Passing	68042	02/04/2014 15:12	1	SLD
Sieve Size #100 - Percent Finer	STL01269	89.7						% Passing	68042	02/04/2014 15:12	1	SLD
Sieve Size #200 - Percent Finer	STL01272	85.5						% Passing	68042	02/04/2014 15:12	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	84.4						% Passing	68042	02/04/2014 15:12	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	75.7						% Passing	68042	02/04/2014 15:12	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	69.9						% Passing	68042	02/04/2014 15:12	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	65.6						% Passing	68042	02/04/2014 15:12	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	61.3						% Passing	68042	02/04/2014 15:12	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	55.2						% Passing	68042	02/04/2014 15:12	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	46.3						% Passing	68042	02/04/2014 15:12	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-002

Lab Sample ID: 600-86336-2
Client Matrix: Solid

Date Sampled: 01/28/2014 10:21
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	2.6						%	68042	02/04/2014 15:15	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	25.6						um	68042	02/04/2014 15:15	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68042	02/04/2014 15:15	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	16.9						um	68042	02/04/2014 15:15	1	SLD
Sand	STL00582	21.3						%	68042	02/04/2014 15:15	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68042	02/04/2014 15:15	1	SLD
Coarse Sand	STL00583	3.7						%	68042	02/04/2014 15:15	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	10.4						um	68042	02/04/2014 15:15	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68042	02/04/2014 15:15	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	7.6						um	68042	02/04/2014 15:15	1	SLD
Medium Sand	STL00584	4.7						%	68042	02/04/2014 15:15	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68042	02/04/2014 15:15	1	SLD
Fine Sand	STL00585	12.9						%	68042	02/04/2014 15:15	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.6						um	68042	02/04/2014 15:15	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68042	02/04/2014 15:15	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	2.8						um	68042	02/04/2014 15:15	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	99.7						% Passing	68042	02/04/2014 15:15	1	SLD
Silt	STL00586	54.9						%	68042	02/04/2014 15:15	1	SLD
Clay	STL00587	21.2						%	68042	02/04/2014 15:15	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.2						um	68042	02/04/2014 15:15	1	SLD
Sieve Size #4 - Percent Finer	STL01274	97.4						% Passing	68042	02/04/2014 15:15	1	SLD
Sieve Size #10 - Percent Finer	STL01268	93.7						% Passing	68042	02/04/2014 15:15	1	SLD
Sieve Size #20 - Percent Finer	STL01271	91.3						% Passing	68042	02/04/2014 15:15	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-002

Lab Sample ID: 600-86336-2
Client Matrix: Solid

Date Sampled: 01/28/2014 10:21
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	89.0						% Passing	68042	02/04/2014 15:15	1	SLD
Sieve Size #60 - Percent Finer	STL01276	86.3						% Passing	68042	02/04/2014 15:15	1	SLD
Sieve Size #80 - Percent Finer	STL01277	84.4						% Passing	68042	02/04/2014 15:15	1	SLD
Sieve Size #100 - Percent Finer	STL01269	82.9						% Passing	68042	02/04/2014 15:15	1	SLD
Sieve Size #200 - Percent Finer	STL01272	76.1						% Passing	68042	02/04/2014 15:15	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	33.6						% Passing	68042	02/04/2014 15:15	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	30.8						% Passing	68042	02/04/2014 15:15	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	26.3						% Passing	68042	02/04/2014 15:15	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	23.5						% Passing	68042	02/04/2014 15:15	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	21.2						% Passing	68042	02/04/2014 15:15	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	18.3						% Passing	68042	02/04/2014 15:15	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	14.3						% Passing	68042	02/04/2014 15:15	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-003

Lab Sample ID: 600-86336-3
Client Matrix: Solid

Date Sampled: 01/28/2014 10:50
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	25.3						%	68042	02/04/2014 15:17	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	34.0						um	68042	02/04/2014 15:17	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68042	02/04/2014 15:17	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	21.6						um	68042	02/04/2014 15:17	1	SLD
Sand	STL00582	57.1						%	68042	02/04/2014 15:17	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68042	02/04/2014 15:17	1	SLD
Coarse Sand	STL00583	27.1						%	68042	02/04/2014 15:17	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.6						um	68042	02/04/2014 15:17	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68042	02/04/2014 15:17	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.1						um	68042	02/04/2014 15:17	1	SLD
Medium Sand	STL00584	27.5						%	68042	02/04/2014 15:17	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68042	02/04/2014 15:17	1	SLD
Fine Sand	STL00585	2.5						%	68042	02/04/2014 15:17	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.5						um	68042	02/04/2014 15:17	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68042	02/04/2014 15:17	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.2						um	68042	02/04/2014 15:17	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	91.5						% Passing	68042	02/04/2014 15:17	1	SLD
Silt	STL00586	12.0						%	68042	02/04/2014 15:17	1	SLD
Clay	STL00587	5.6						%	68042	02/04/2014 15:17	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	68042	02/04/2014 15:17	1	SLD
Sieve Size #4 - Percent Finer	STL01274	74.7						% Passing	68042	02/04/2014 15:17	1	SLD
Sieve Size #10 - Percent Finer	STL01268	47.6						% Passing	68042	02/04/2014 15:17	1	SLD
Sieve Size #20 - Percent Finer	STL01271	29.0						% Passing	68042	02/04/2014 15:17	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-003

Lab Sample ID: 600-86336-3
Client Matrix: Solid

Date Sampled: 01/28/2014 10:50
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	20.1						% Passing	68042	02/04/2014 15:17	1	SLD
Sieve Size #60 - Percent Finer	STL01276	18.8						% Passing	68042	02/04/2014 15:17	1	SLD
Sieve Size #80 - Percent Finer	STL01277	18.4						% Passing	68042	02/04/2014 15:17	1	SLD
Sieve Size #100 - Percent Finer	STL01269	18.2						% Passing	68042	02/04/2014 15:17	1	SLD
Sieve Size #200 - Percent Finer	STL01272	17.6						% Passing	68042	02/04/2014 15:17	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	8.6						% Passing	68042	02/04/2014 15:17	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	8.1						% Passing	68042	02/04/2014 15:17	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	7.1						% Passing	68042	02/04/2014 15:17	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	6.1						% Passing	68042	02/04/2014 15:17	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	5.6						% Passing	68042	02/04/2014 15:17	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	4.6						% Passing	68042	02/04/2014 15:17	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	3.6						% Passing	68042	02/04/2014 15:17	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-004

Lab Sample ID: 600-86336-4
Client Matrix: Solid

Date Sampled: 01/28/2014 11:30
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	35.4						%	68042	02/04/2014 15:20	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	36.2						um	68042	02/04/2014 15:20	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68042	02/04/2014 15:20	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	23.0						um	68042	02/04/2014 15:20	1	SLD
Sand	STL00582	54.0						%	68042	02/04/2014 15:20	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68042	02/04/2014 15:20	1	SLD
Coarse Sand	STL00583	39.6						%	68042	02/04/2014 15:20	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	13.3						um	68042	02/04/2014 15:20	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68042	02/04/2014 15:20	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.6						um	68042	02/04/2014 15:20	1	SLD
Medium Sand	STL00584	13.7						%	68042	02/04/2014 15:20	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68042	02/04/2014 15:20	1	SLD
Fine Sand	STL00585	0.7						%	68042	02/04/2014 15:20	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.5						um	68042	02/04/2014 15:20	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68042	02/04/2014 15:20	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.3						um	68042	02/04/2014 15:20	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	92.7						% Passing	68042	02/04/2014 15:20	1	SLD
Silt	STL00586	10.0						%	68042	02/04/2014 15:20	1	SLD
Clay	STL00587	0.6						%	68042	02/04/2014 15:20	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	68042	02/04/2014 15:20	1	SLD
Sieve Size #4 - Percent Finer	STL01274	64.6						% Passing	68042	02/04/2014 15:20	1	SLD
Sieve Size #10 - Percent Finer	STL01268	25.0						% Passing	68042	02/04/2014 15:20	1	SLD
Sieve Size #20 - Percent Finer	STL01271	14.0						% Passing	68042	02/04/2014 15:20	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-004

Lab Sample ID: 600-86336-4
Client Matrix: Solid

Date Sampled: 01/28/2014 11:30
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	11.3						% Passing	68042	02/04/2014 15:20	1	SLD
Sieve Size #60 - Percent Finer	STL01276	11.0						% Passing	68042	02/04/2014 15:20	1	SLD
Sieve Size #80 - Percent Finer	STL01277	10.9						% Passing	68042	02/04/2014 15:20	1	SLD
Sieve Size #100 - Percent Finer	STL01269	10.8						% Passing	68042	02/04/2014 15:20	1	SLD
Sieve Size #200 - Percent Finer	STL01272	10.6						% Passing	68042	02/04/2014 15:20	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	1.8						% Passing	68042	02/04/2014 15:20	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	1.4						% Passing	68042	02/04/2014 15:20	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	1.4						% Passing	68042	02/04/2014 15:20	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	1						% Passing	68042	02/04/2014 15:20	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	0.6						% Passing	68042	02/04/2014 15:20	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	0.5						% Passing	68042	02/04/2014 15:20	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	0.5						% Passing	68042	02/04/2014 15:20	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-005

Lab Sample ID: 600-86336-5
Client Matrix: Solid

Date Sampled: 01/28/2014 11:56
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	21.3						%	68042	02/04/2014 15:22	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	33.6						um	68042	02/04/2014 15:22	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68042	02/04/2014 15:22	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	21.5						um	68042	02/04/2014 15:22	1	SLD
Sand	STL00582	57.1						%	68042	02/04/2014 15:22	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68042	02/04/2014 15:22	1	SLD
Coarse Sand	STL00583	25.0						%	68042	02/04/2014 15:22	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.5						um	68042	02/04/2014 15:22	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68042	02/04/2014 15:22	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.8						um	68042	02/04/2014 15:22	1	SLD
Medium Sand	STL00584	20.7						%	68042	02/04/2014 15:22	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68042	02/04/2014 15:22	1	SLD
Fine Sand	STL00585	11.4						%	68042	02/04/2014 15:22	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.4						um	68042	02/04/2014 15:22	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68042	02/04/2014 15:22	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.2						um	68042	02/04/2014 15:22	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	96.4						% Passing	68042	02/04/2014 15:22	1	SLD
Silt	STL00586	15.0						%	68042	02/04/2014 15:22	1	SLD
Clay	STL00587	6.6						%	68042	02/04/2014 15:22	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	68042	02/04/2014 15:22	1	SLD
Sieve Size #4 - Percent Finer	STL01274	78.7						% Passing	68042	02/04/2014 15:22	1	SLD
Sieve Size #10 - Percent Finer	STL01268	53.7						% Passing	68042	02/04/2014 15:22	1	SLD
Sieve Size #20 - Percent Finer	STL01271	41.0						% Passing	68042	02/04/2014 15:22	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-005

Lab Sample ID: 600-86336-5
Client Matrix: Solid

Date Sampled: 01/28/2014 11:56
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	33.0						% Passing	68042	02/04/2014 15:22	1	SLD
Sieve Size #60 - Percent Finer	STL01276	28.7						% Passing	68042	02/04/2014 15:22	1	SLD
Sieve Size #80 - Percent Finer	STL01277	26.2						% Passing	68042	02/04/2014 15:22	1	SLD
Sieve Size #100 - Percent Finer	STL01269	24.7						% Passing	68042	02/04/2014 15:22	1	SLD
Sieve Size #200 - Percent Finer	STL01272	21.6						% Passing	68042	02/04/2014 15:22	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	11.2						% Passing	68042	02/04/2014 15:22	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	10.0						% Passing	68042	02/04/2014 15:22	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	8.9						% Passing	68042	02/04/2014 15:22	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	7.7						% Passing	68042	02/04/2014 15:22	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	6.6						% Passing	68042	02/04/2014 15:22	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	5.9						% Passing	68042	02/04/2014 15:22	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	4.8						% Passing	68042	02/04/2014 15:22	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-006

Lab Sample ID: 600-86336-6
Client Matrix: Solid

Date Sampled: 01/28/2014 12:25
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	47.0						%	68042	02/04/2014 15:24	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	36.5						um	68042	02/04/2014 15:24	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68042	02/04/2014 15:24	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	23.1						um	68042	02/04/2014 15:24	1	SLD
Sand	STL00582	45.2						%	68042	02/04/2014 15:24	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68042	02/04/2014 15:24	1	SLD
Coarse Sand	STL00583	40.8						%	68042	02/04/2014 15:24	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	13.3						um	68042	02/04/2014 15:24	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68042	02/04/2014 15:24	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.3						um	68042	02/04/2014 15:24	1	SLD
Medium Sand	STL00584	4.0						%	68042	02/04/2014 15:24	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68042	02/04/2014 15:24	1	SLD
Fine Sand	STL00585	0.4						%	68042	02/04/2014 15:24	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.8						um	68042	02/04/2014 15:24	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	94.4						% Passing	68042	02/04/2014 15:24	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.4						um	68042	02/04/2014 15:24	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	89.5						% Passing	68042	02/04/2014 15:24	1	SLD
Silt	STL00586	7.3						%	68042	02/04/2014 15:24	1	SLD
Clay	STL00587	0.6						%	68042	02/04/2014 15:24	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	68042	02/04/2014 15:24	1	SLD
Sieve Size #4 - Percent Finer	STL01274	53.0						% Passing	68042	02/04/2014 15:24	1	SLD
Sieve Size #10 - Percent Finer	STL01268	12.2						% Passing	68042	02/04/2014 15:24	1	SLD
Sieve Size #20 - Percent Finer	STL01271	8.5						% Passing	68042	02/04/2014 15:24	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-006

Lab Sample ID: 600-86336-6
Client Matrix: Solid

Date Sampled: 01/28/2014 12:25
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	8.2						% Passing	68042	02/04/2014 15:24	1	SLD
Sieve Size #60 - Percent Finer	STL01276	8.1						% Passing	68042	02/04/2014 15:24	1	SLD
Sieve Size #80 - Percent Finer	STL01277	8.1						% Passing	68042	02/04/2014 15:24	1	SLD
Sieve Size #100 - Percent Finer	STL01269	8.0						% Passing	68042	02/04/2014 15:24	1	SLD
Sieve Size #200 - Percent Finer	STL01272	7.9						% Passing	68042	02/04/2014 15:24	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	1						% Passing	68042	02/04/2014 15:24	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	1						% Passing	68042	02/04/2014 15:24	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	1						% Passing	68042	02/04/2014 15:24	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	0.6						% Passing	68042	02/04/2014 15:24	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	0.6						% Passing	68042	02/04/2014 15:24	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	0.5						% Passing	68042	02/04/2014 15:24	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	0.5						% Passing	68042	02/04/2014 15:24	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-007

Lab Sample ID: 600-86336-7
Client Matrix: Solid

Date Sampled: 01/28/2014 13:00
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	40.8						%	68042	02/04/2014 15:30	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	35.7						um	68042	02/04/2014 15:30	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68042	02/04/2014 15:30	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	22.6						um	68042	02/04/2014 15:30	1	SLD
Sand	STL00582	48.5						%	68042	02/04/2014 15:30	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68042	02/04/2014 15:30	1	SLD
Coarse Sand	STL00583	37.1						%	68042	02/04/2014 15:30	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	13.1						um	68042	02/04/2014 15:30	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68042	02/04/2014 15:30	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.1						um	68042	02/04/2014 15:30	1	SLD
Medium Sand	STL00584	9.9						%	68042	02/04/2014 15:30	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68042	02/04/2014 15:30	1	SLD
Fine Sand	STL00585	1.5						%	68042	02/04/2014 15:30	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.7						um	68042	02/04/2014 15:30	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68042	02/04/2014 15:30	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.2						um	68042	02/04/2014 15:30	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	96.3						% Passing	68042	02/04/2014 15:30	1	SLD
Silt	STL00586	8.9						%	68042	02/04/2014 15:30	1	SLD
Clay	STL00587	1.8						%	68042	02/04/2014 15:30	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	68042	02/04/2014 15:30	1	SLD
Sieve Size #4 - Percent Finer	STL01274	59.2						% Passing	68042	02/04/2014 15:30	1	SLD
Sieve Size #10 - Percent Finer	STL01268	22.1						% Passing	68042	02/04/2014 15:30	1	SLD
Sieve Size #20 - Percent Finer	STL01271	14.4						% Passing	68042	02/04/2014 15:30	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-007

Lab Sample ID: 600-86336-7
Client Matrix: Solid

Date Sampled: 01/28/2014 13:00
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	12.2						% Passing	68042	02/04/2014 15:30	1	SLD
Sieve Size #60 - Percent Finer	STL01276	11.5						% Passing	68042	02/04/2014 15:30	1	SLD
Sieve Size #80 - Percent Finer	STL01277	11.2						% Passing	68042	02/04/2014 15:30	1	SLD
Sieve Size #100 - Percent Finer	STL01269	11.0						% Passing	68042	02/04/2014 15:30	1	SLD
Sieve Size #200 - Percent Finer	STL01272	10.7						% Passing	68042	02/04/2014 15:30	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	3.0						% Passing	68042	02/04/2014 15:30	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	3.0						% Passing	68042	02/04/2014 15:30	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	2.6						% Passing	68042	02/04/2014 15:30	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	2.2						% Passing	68042	02/04/2014 15:30	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	1.8						% Passing	68042	02/04/2014 15:30	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	1.3						% Passing	68042	02/04/2014 15:30	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	1.3						% Passing	68042	02/04/2014 15:30	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-008

Lab Sample ID: 600-86336-8
Client Matrix: Solid

Date Sampled: 01/28/2014 13:46
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	39.1						%	68042	02/04/2014 15:35	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	36.3						um	68042	02/04/2014 15:35	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68042	02/04/2014 15:35	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	23.0						um	68042	02/04/2014 15:35	1	SLD
Sand	STL00582	51.6						%	68042	02/04/2014 15:35	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68042	02/04/2014 15:35	1	SLD
Coarse Sand	STL00583	37.3						%	68042	02/04/2014 15:35	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	13.3						um	68042	02/04/2014 15:35	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68042	02/04/2014 15:35	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.1						um	68042	02/04/2014 15:35	1	SLD
Medium Sand	STL00584	13.8						%	68042	02/04/2014 15:35	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68042	02/04/2014 15:35	1	SLD
Fine Sand	STL00585	0.4						%	68042	02/04/2014 15:35	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.7						um	68042	02/04/2014 15:35	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68042	02/04/2014 15:35	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.2						um	68042	02/04/2014 15:35	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	89.7						% Passing	68042	02/04/2014 15:35	1	SLD
Silt	STL00586	8.6						%	68042	02/04/2014 15:35	1	SLD
Clay	STL00587	0.7						%	68042	02/04/2014 15:35	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	68042	02/04/2014 15:35	1	SLD
Sieve Size #4 - Percent Finer	STL01274	60.9						% Passing	68042	02/04/2014 15:35	1	SLD
Sieve Size #10 - Percent Finer	STL01268	23.6						% Passing	68042	02/04/2014 15:35	1	SLD
Sieve Size #20 - Percent Finer	STL01271	12.5						% Passing	68042	02/04/2014 15:35	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-008

Lab Sample ID: 600-86336-8
Client Matrix: Solid

Date Sampled: 01/28/2014 13:46
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	9.8						% Passing	68042	02/04/2014 15:35	1	SLD
Sieve Size #60 - Percent Finer	STL01276	9.5						% Passing	68042	02/04/2014 15:35	1	SLD
Sieve Size #80 - Percent Finer	STL01277	9.4						% Passing	68042	02/04/2014 15:35	1	SLD
Sieve Size #100 - Percent Finer	STL01269	9.4						% Passing	68042	02/04/2014 15:35	1	SLD
Sieve Size #200 - Percent Finer	STL01272	9.3						% Passing	68042	02/04/2014 15:35	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	1.7						% Passing	68042	02/04/2014 15:35	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	1.7						% Passing	68042	02/04/2014 15:35	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	1.7						% Passing	68042	02/04/2014 15:35	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	1.2						% Passing	68042	02/04/2014 15:35	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	0.7						% Passing	68042	02/04/2014 15:35	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	0.7						% Passing	68042	02/04/2014 15:35	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	0.7						% Passing	68042	02/04/2014 15:35	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-009

Lab Sample ID: 600-86336-9
Client Matrix: Solid

Date Sampled: 01/28/2014 14:10
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	42.6						%	68042	02/04/2014 15:37	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	34.0						um	68042	02/04/2014 15:37	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68042	02/04/2014 15:37	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	21.6						um	68042	02/04/2014 15:37	1	SLD
Sand	STL00582	44.2						%	68042	02/04/2014 15:37	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68042	02/04/2014 15:37	1	SLD
Coarse Sand	STL00583	26.5						%	68042	02/04/2014 15:37	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.6						um	68042	02/04/2014 15:37	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68042	02/04/2014 15:37	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.0						um	68042	02/04/2014 15:37	1	SLD
Medium Sand	STL00584	14.0						%	68042	02/04/2014 15:37	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68042	02/04/2014 15:37	1	SLD
Fine Sand	STL00585	3.7						%	68042	02/04/2014 15:37	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.2						um	68042	02/04/2014 15:37	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68042	02/04/2014 15:37	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.2						um	68042	02/04/2014 15:37	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	86.0						% Passing	68042	02/04/2014 15:37	1	SLD
Silt	STL00586	8.1						%	68042	02/04/2014 15:37	1	SLD
Clay	STL00587	5.1						%	68042	02/04/2014 15:37	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	68042	02/04/2014 15:37	1	SLD
Sieve Size #4 - Percent Finer	STL01274	57.4						% Passing	68042	02/04/2014 15:37	1	SLD
Sieve Size #10 - Percent Finer	STL01268	30.9						% Passing	68042	02/04/2014 15:37	1	SLD
Sieve Size #20 - Percent Finer	STL01271	22.0						% Passing	68042	02/04/2014 15:37	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-009

Lab Sample ID: 600-86336-9
Client Matrix: Solid

Date Sampled: 01/28/2014 14:10
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	16.9						% Passing	68042	02/04/2014 15:37	1	SLD
Sieve Size #60 - Percent Finer	STL01276	15.2						% Passing	68042	02/04/2014 15:37	1	SLD
Sieve Size #80 - Percent Finer	STL01277	14.6						% Passing	68042	02/04/2014 15:37	1	SLD
Sieve Size #100 - Percent Finer	STL01269	14.2						% Passing	68042	02/04/2014 15:37	1	SLD
Sieve Size #200 - Percent Finer	STL01272	13.2						% Passing	68042	02/04/2014 15:37	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	7.1						% Passing	68042	02/04/2014 15:37	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	6.7						% Passing	68042	02/04/2014 15:37	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	5.9						% Passing	68042	02/04/2014 15:37	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	5.5						% Passing	68042	02/04/2014 15:37	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	5.1						% Passing	68042	02/04/2014 15:37	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	3.8						% Passing	68042	02/04/2014 15:37	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	3.0						% Passing	68042	02/04/2014 15:37	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-0010

Lab Sample ID: 600-86336-10
Client Matrix: Solid

Date Sampled: 01/28/2014 14:43
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	40.0						%	68042	02/04/2014 15:39	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	35.0						um	68042	02/04/2014 15:39	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68042	02/04/2014 15:39	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	22.1						um	68042	02/04/2014 15:39	1	SLD
Sand	STL00582	47.7						%	68042	02/04/2014 15:39	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68042	02/04/2014 15:39	1	SLD
Coarse Sand	STL00583	33.2						%	68042	02/04/2014 15:39	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.8						um	68042	02/04/2014 15:39	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68042	02/04/2014 15:39	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.1						um	68042	02/04/2014 15:39	1	SLD
Medium Sand	STL00584	13.5						%	68042	02/04/2014 15:39	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68042	02/04/2014 15:39	1	SLD
Fine Sand	STL00585	1.0						%	68042	02/04/2014 15:39	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.7						um	68042	02/04/2014 15:39	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68042	02/04/2014 15:39	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.2						um	68042	02/04/2014 15:39	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	92.7						% Passing	68042	02/04/2014 15:39	1	SLD
Silt	STL00586	8.8						%	68042	02/04/2014 15:39	1	SLD
Clay	STL00587	3.5						%	68042	02/04/2014 15:39	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	68042	02/04/2014 15:39	1	SLD
Sieve Size #4 - Percent Finer	STL01274	60.0						% Passing	68042	02/04/2014 15:39	1	SLD
Sieve Size #10 - Percent Finer	STL01268	26.8						% Passing	68042	02/04/2014 15:39	1	SLD
Sieve Size #20 - Percent Finer	STL01271	16.7						% Passing	68042	02/04/2014 15:39	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-0010

Lab Sample ID: 600-86336-10
Client Matrix: Solid

Date Sampled: 01/28/2014 14:43
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	13.3						% Passing	68042	02/04/2014 15:39	1	SLD
Sieve Size #60 - Percent Finer	STL01276	12.7						% Passing	68042	02/04/2014 15:39	1	SLD
Sieve Size #80 - Percent Finer	STL01277	12.6						% Passing	68042	02/04/2014 15:39	1	SLD
Sieve Size #100 - Percent Finer	STL01269	12.5						% Passing	68042	02/04/2014 15:39	1	SLD
Sieve Size #200 - Percent Finer	STL01272	12.3						% Passing	68042	02/04/2014 15:39	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	5.3						% Passing	68042	02/04/2014 15:39	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	5.3						% Passing	68042	02/04/2014 15:39	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	5.3						% Passing	68042	02/04/2014 15:39	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	4.4						% Passing	68042	02/04/2014 15:39	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	3.5						% Passing	68042	02/04/2014 15:39	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	2.9						% Passing	68042	02/04/2014 15:39	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	2.0						% Passing	68042	02/04/2014 15:39	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-0011

Lab Sample ID: 600-86336-11
Client Matrix: Solid

Date Sampled: 01/28/2014 15:22
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	36.6						%	68042	02/04/2014 15:41	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	34.5						um	68042	02/04/2014 15:41	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68042	02/04/2014 15:41	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	21.9						um	68042	02/04/2014 15:41	1	SLD
Sand	STL00582	34.9						%	68042	02/04/2014 15:41	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68042	02/04/2014 15:41	1	SLD
Coarse Sand	STL00583	29.4						%	68042	02/04/2014 15:41	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.7						um	68042	02/04/2014 15:41	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68042	02/04/2014 15:41	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.0						um	68042	02/04/2014 15:41	1	SLD
Medium Sand	STL00584	5.3						%	68042	02/04/2014 15:41	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68042	02/04/2014 15:41	1	SLD
Fine Sand	STL00585	0.2						%	68042	02/04/2014 15:41	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.3						um	68042	02/04/2014 15:41	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68042	02/04/2014 15:41	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.3						um	68042	02/04/2014 15:41	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	93.9						% Passing	68042	02/04/2014 15:41	1	SLD
Silt	STL00586	25.1						%	68042	02/04/2014 15:41	1	SLD
Clay	STL00587	3.4						%	68042	02/04/2014 15:41	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	68042	02/04/2014 15:41	1	SLD
Sieve Size #4 - Percent Finer	STL01274	63.4						% Passing	68042	02/04/2014 15:41	1	SLD
Sieve Size #10 - Percent Finer	STL01268	34.0						% Passing	68042	02/04/2014 15:41	1	SLD
Sieve Size #20 - Percent Finer	STL01271	29.2						% Passing	68042	02/04/2014 15:41	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-0011

Lab Sample ID: 600-86336-11
Client Matrix: Solid

Date Sampled: 01/28/2014 15:22
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	28.7						% Passing	68042	02/04/2014 15:41	1	SLD
Sieve Size #60 - Percent Finer	STL01276	28.6						% Passing	68042	02/04/2014 15:41	1	SLD
Sieve Size #80 - Percent Finer	STL01277	28.6						% Passing	68042	02/04/2014 15:41	1	SLD
Sieve Size #100 - Percent Finer	STL01269	28.6						% Passing	68042	02/04/2014 15:41	1	SLD
Sieve Size #200 - Percent Finer	STL01272	28.5						% Passing	68042	02/04/2014 15:41	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	5.2						% Passing	68042	02/04/2014 15:41	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	4.8						% Passing	68042	02/04/2014 15:41	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	4.5						% Passing	68042	02/04/2014 15:41	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	4.1						% Passing	68042	02/04/2014 15:41	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	3.4						% Passing	68042	02/04/2014 15:41	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	2.6						% Passing	68042	02/04/2014 15:41	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	1.9						% Passing	68042	02/04/2014 15:41	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-0012

Lab Sample ID: 600-86336-12
Client Matrix: Solid

Date Sampled: 01/28/2014 15:43
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	37.4						%	68042	02/04/2014 15:44	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	31.1						um	68042	02/04/2014 15:44	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68042	02/04/2014 15:44	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	19.9						um	68042	02/04/2014 15:44	1	SLD
Sand	STL00582	34.2						%	68042	02/04/2014 15:44	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68042	02/04/2014 15:44	1	SLD
Coarse Sand	STL00583	23.0						%	68042	02/04/2014 15:44	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	11.8						um	68042	02/04/2014 15:44	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68042	02/04/2014 15:44	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.3						um	68042	02/04/2014 15:44	1	SLD
Medium Sand	STL00584	8.8						%	68042	02/04/2014 15:44	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68042	02/04/2014 15:44	1	SLD
Fine Sand	STL00585	2.4						%	68042	02/04/2014 15:44	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.2						um	68042	02/04/2014 15:44	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68042	02/04/2014 15:44	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.1						um	68042	02/04/2014 15:44	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	88.1						% Passing	68042	02/04/2014 15:44	1	SLD
Silt	STL00586	18.9						%	68042	02/04/2014 15:44	1	SLD
Clay	STL00587	9.5						%	68042	02/04/2014 15:44	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	68042	02/04/2014 15:44	1	SLD
Sieve Size #4 - Percent Finer	STL01274	62.6						% Passing	68042	02/04/2014 15:44	1	SLD
Sieve Size #10 - Percent Finer	STL01268	39.6						% Passing	68042	02/04/2014 15:44	1	SLD
Sieve Size #20 - Percent Finer	STL01271	32.9						% Passing	68042	02/04/2014 15:44	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-0012

Lab Sample ID: 600-86336-12
Client Matrix: Solid

Date Sampled: 01/28/2014 15:43
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	30.8						% Passing	68042	02/04/2014 15:44	1	SLD
Sieve Size #60 - Percent Finer	STL01276	29.9						% Passing	68042	02/04/2014 15:44	1	SLD
Sieve Size #80 - Percent Finer	STL01277	29.5						% Passing	68042	02/04/2014 15:44	1	SLD
Sieve Size #100 - Percent Finer	STL01269	29.2						% Passing	68042	02/04/2014 15:44	1	SLD
Sieve Size #200 - Percent Finer	STL01272	28.4						% Passing	68042	02/04/2014 15:44	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	13.6						% Passing	68042	02/04/2014 15:44	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	12.8						% Passing	68042	02/04/2014 15:44	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	11.2						% Passing	68042	02/04/2014 15:44	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	9.9						% Passing	68042	02/04/2014 15:44	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	9.5						% Passing	68042	02/04/2014 15:44	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	7.8						% Passing	68042	02/04/2014 15:44	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	6.2						% Passing	68042	02/04/2014 15:44	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-0013

Lab Sample ID: 600-86336-13
Client Matrix: Solid

Date Sampled: 01/28/2014 15:00
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	21.2						%	68042	02/04/2014 16:15	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	27.6						um	68042	02/04/2014 16:15	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68042	02/04/2014 16:15	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	18.0						um	68042	02/04/2014 16:15	1	SLD
Sand	STL00582	28.0						%	68042	02/04/2014 16:15	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68042	02/04/2014 16:15	1	SLD
Coarse Sand	STL00583	10.4						%	68042	02/04/2014 16:15	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	10.8						um	68042	02/04/2014 16:15	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68042	02/04/2014 16:15	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	7.8						um	68042	02/04/2014 16:15	1	SLD
Medium Sand	STL00584	14.2						%	68042	02/04/2014 16:15	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68042	02/04/2014 16:15	1	SLD
Fine Sand	STL00585	3.4						%	68042	02/04/2014 16:15	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.7						um	68042	02/04/2014 16:15	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68042	02/04/2014 16:15	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	2.8						um	68042	02/04/2014 16:15	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	95.6						% Passing	68042	02/04/2014 16:15	1	SLD
Silt	STL00586	26.2						%	68042	02/04/2014 16:15	1	SLD
Clay	STL00587	24.6						%	68042	02/04/2014 16:15	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	68042	02/04/2014 16:15	1	SLD
Sieve Size #4 - Percent Finer	STL01274	78.8						% Passing	68042	02/04/2014 16:15	1	SLD
Sieve Size #10 - Percent Finer	STL01268	68.4						% Passing	68042	02/04/2014 16:15	1	SLD
Sieve Size #20 - Percent Finer	STL01271	58.7						% Passing	68042	02/04/2014 16:15	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-0013

Lab Sample ID: 600-86336-13
Client Matrix: Solid

Date Sampled: 01/28/2014 15:00
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	54.2						% Passing	68042	02/04/2014 16:15	1	SLD
Sieve Size #60 - Percent Finer	STL01276	53.3						% Passing	68042	02/04/2014 16:15	1	SLD
Sieve Size #80 - Percent Finer	STL01277	52.8						% Passing	68042	02/04/2014 16:15	1	SLD
Sieve Size #100 - Percent Finer	STL01269	52.3						% Passing	68042	02/04/2014 16:15	1	SLD
Sieve Size #200 - Percent Finer	STL01272	50.8						% Passing	68042	02/04/2014 16:15	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	34.4						% Passing	68042	02/04/2014 16:15	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	31.8						% Passing	68042	02/04/2014 16:15	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	27.9						% Passing	68042	02/04/2014 16:15	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	26.5						% Passing	68042	02/04/2014 16:15	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	24.6						% Passing	68042	02/04/2014 16:15	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	19.9						% Passing	68042	02/04/2014 16:15	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	15.1						% Passing	68042	02/04/2014 16:15	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: DUP-1

Lab Sample ID: 600-86336-15
Client Matrix: Solid

Date Sampled: 01/28/2014 00:00
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	51.7						%	68042	02/04/2014 16:20	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	35.2						um	68042	02/04/2014 16:20	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68042	02/04/2014 16:20	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	22.5						um	68042	02/04/2014 16:20	1	SLD
Sand	STL00582	27.0						%	68042	02/04/2014 16:20	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68042	02/04/2014 16:20	1	SLD
Coarse Sand	STL00583	19.1						%	68042	02/04/2014 16:20	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	13.0						um	68042	02/04/2014 16:20	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68042	02/04/2014 16:20	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.4						um	68042	02/04/2014 16:20	1	SLD
Medium Sand	STL00584	6.0						%	68042	02/04/2014 16:20	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68042	02/04/2014 16:20	1	SLD
Fine Sand	STL00585	1.9						%	68042	02/04/2014 16:20	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.7						um	68042	02/04/2014 16:20	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68042	02/04/2014 16:20	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.2						um	68042	02/04/2014 16:20	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	79.5						% Passing	68042	02/04/2014 16:20	1	SLD
Silt	STL00586	16.8						%	68042	02/04/2014 16:20	1	SLD
Clay	STL00587	4.5						%	68042	02/04/2014 16:20	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	68042	02/04/2014 16:20	1	SLD
Sieve Size #4 - Percent Finer	STL01274	48.3						% Passing	68042	02/04/2014 16:20	1	SLD
Sieve Size #10 - Percent Finer	STL01268	29.2						% Passing	68042	02/04/2014 16:20	1	SLD
Sieve Size #20 - Percent Finer	STL01271	25.4						% Passing	68042	02/04/2014 16:20	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86336-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: DUP-1

Lab Sample ID: 600-86336-15
Client Matrix: Solid

Date Sampled: 01/28/2014 00:00
Date Received: 01/30/2014 10:11

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	23.2						% Passing	68042	02/04/2014 16:20	1	SLD
Sieve Size #60 - Percent Finer	STL01276	22.4						% Passing	68042	02/04/2014 16:20	1	SLD
Sieve Size #80 - Percent Finer	STL01277	22.1						% Passing	68042	02/04/2014 16:20	1	SLD
Sieve Size #100 - Percent Finer	STL01269	21.9						% Passing	68042	02/04/2014 16:20	1	SLD
Sieve Size #200 - Percent Finer	STL01272	21.3						% Passing	68042	02/04/2014 16:20	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	6.7						% Passing	68042	02/04/2014 16:20	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	5.6						% Passing	68042	02/04/2014 16:20	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	5.6						% Passing	68042	02/04/2014 16:20	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	5.0						% Passing	68042	02/04/2014 16:20	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	4.5						% Passing	68042	02/04/2014 16:20	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	3.9						% Passing	68042	02/04/2014 16:20	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	3.2						% Passing	68042	02/04/2014 16:20	1	SLD

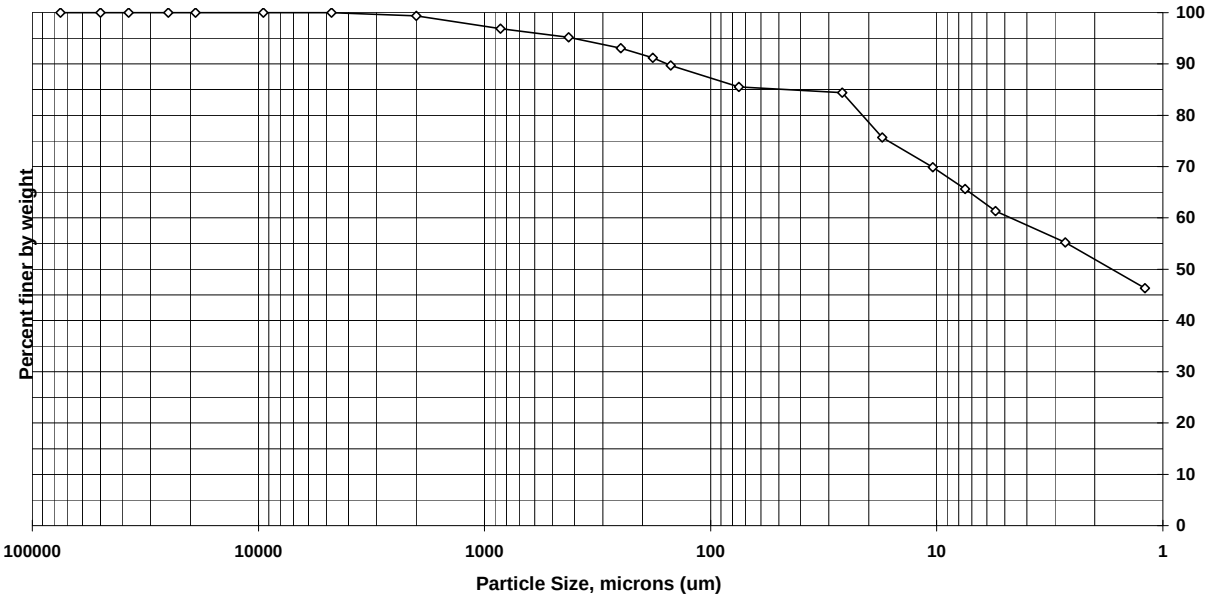
Particle Size of Soils by ASTM D422

				Date Received:	1/30/2014
Sample ID:	2014-SED-001	**Percent Solids:**	61.7%	**Start Date:**	2/4/2014
Lab ID:	600-86336-C-1	**Specific Gravity:**	2.650	**End Date:**	2/7/2014

Shape (> #10): angular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	99.4	0.6
#20	850	96.9	2.5
#40	425	95.2	1.7
#60	250	93.1	2.1
#80	180	91.2	1.9
#100	150	89.7	1.5
#200	75	85.5	4.2
Hyd1	26.2	84.4	1.1
Hyd2	17.4	75.7	8.7
Hyd3	10.4	69.9	5.8
Hyd4	7.5	65.6	4.3
Hyd5	5.5	61.3	4.3
Hyd6	2.7	55.2	6.1
Hyd7	1.2	46.3	8.9

Soil Classification	Percent of sample
Gravel	0.0
Sand	14.5
Coarse Sand	0.6
Medium Sand	4.2
Fine Sand	9.7
Silt	24.2
Clay	61.3

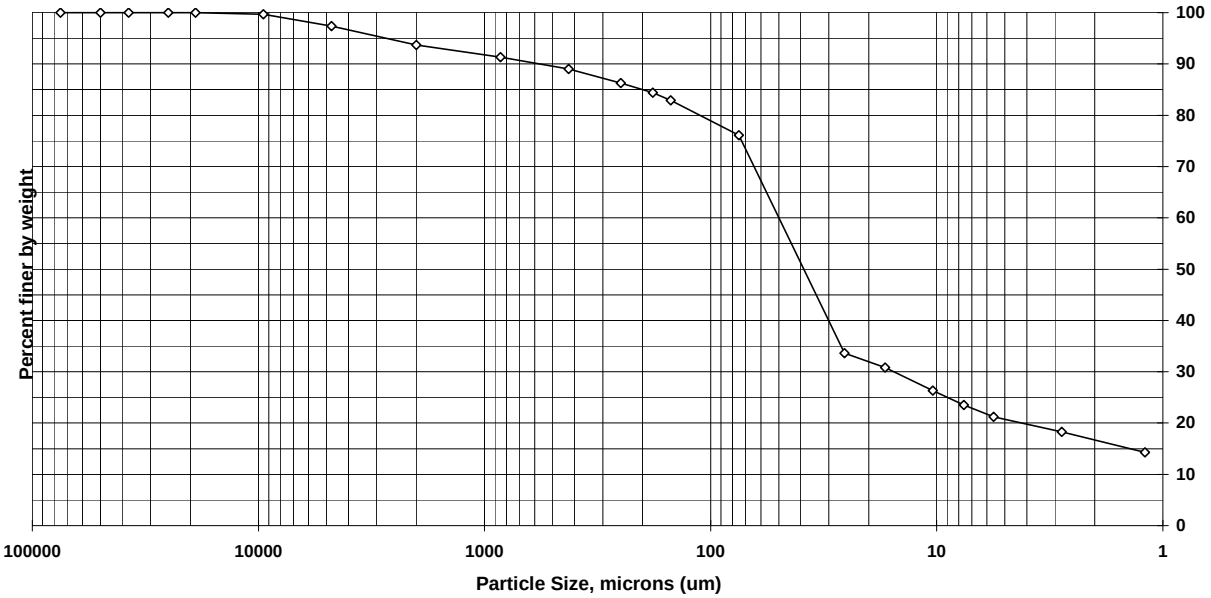
Particle Size of Soils by ASTM D422

				Date Received:	1/30/2014
Sample ID:	2014-SED-002	**Percent Solids:**	64.8%	**Start Date:**	2/4/2014
Lab ID:	600-86336-C-2	**Specific Gravity:**	2.650	**End Date:**	2/6/2014

Shape (> #10): angular

Non-soil material: plant, wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	99.7	0.3
#4	4750	97.4	2.3
#10	2000	93.7	3.7
#20	850	91.3	2.4
#40	425	89.0	2.3
#60	250	86.3	2.7
#80	180	84.4	1.9
#100	150	82.9	1.5
#200	75	76.1	6.8
Hyd1	25.6	33.6	42.5
Hyd2	16.9	30.8	2.8
Hyd3	10.4	26.3	4.5
Hyd4	7.6	23.5	2.8
Hyd5	5.6	21.2	2.3
Hyd6	2.8	18.3	2.9
Hyd7	1.2	14.3	4.0

Soil Classification	Percent of sample
Gravel	2.6
Sand	21.3
Coarse Sand	3.7
Medium Sand	4.7
Fine Sand	12.9
Silt	54.9
Clay	21.2

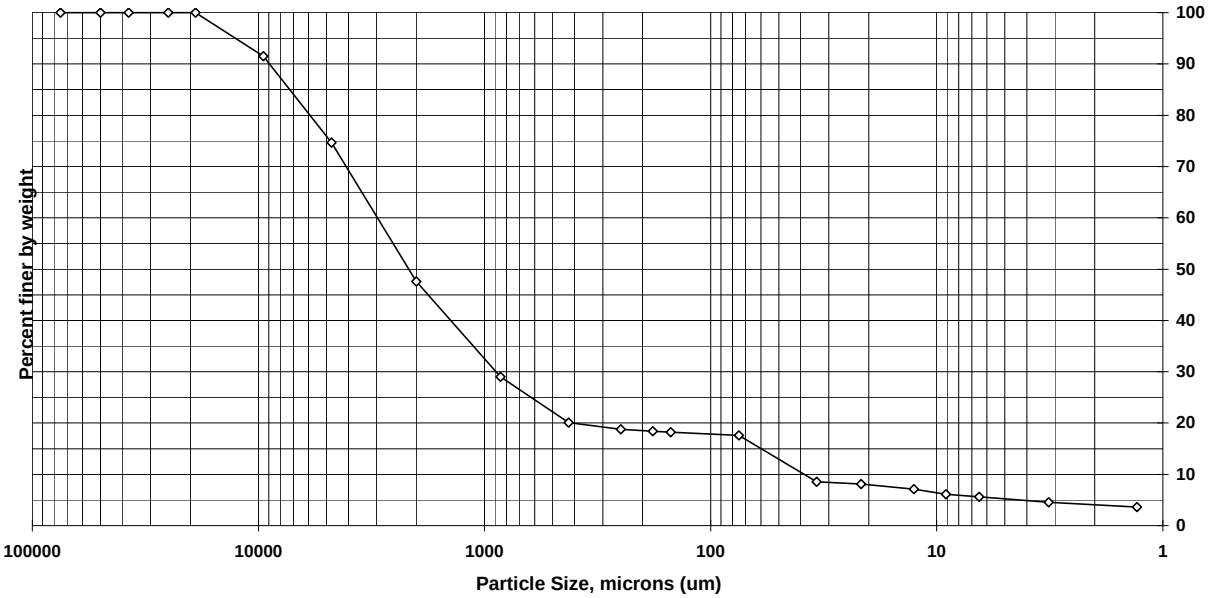
Particle Size of Soils by ASTM D422

				Date Received:	1/30/2014
Sample ID:	2014-SED-003	**Percent Solids:**	81.7%	**Start Date:**	2/4/2014
Lab ID:	600-86336-C-3	**Specific Gravity:**	2.650	**End Date:**	2/6/2014

Shape (> #10): subangular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	91.5	8.5
#4	4750	74.7	16.8
#10	2000	47.6	27.1
#20	850	29.0	18.6
#40	425	20.1	8.9
#60	250	18.8	1.3
#80	180	18.4	0.4
#100	150	18.2	0.2
#200	75	17.6	0.6
Hyd1	34	8.6	9.0
Hyd2	21.6	8.1	0.5
Hyd3	12.6	7.1	1.0
Hyd4	9.1	6.1	1.0
Hyd5	6.5	5.6	0.5
Hyd6	3.2	4.6	1.1
Hyd7	1.3	3.6	1.0

Soil Classification	Percent of sample
Gravel	25.3
Sand	57.1
Coarse Sand	27.1
Medium Sand	27.5
Fine Sand	2.5
Silt	12.0
Clay	5.6

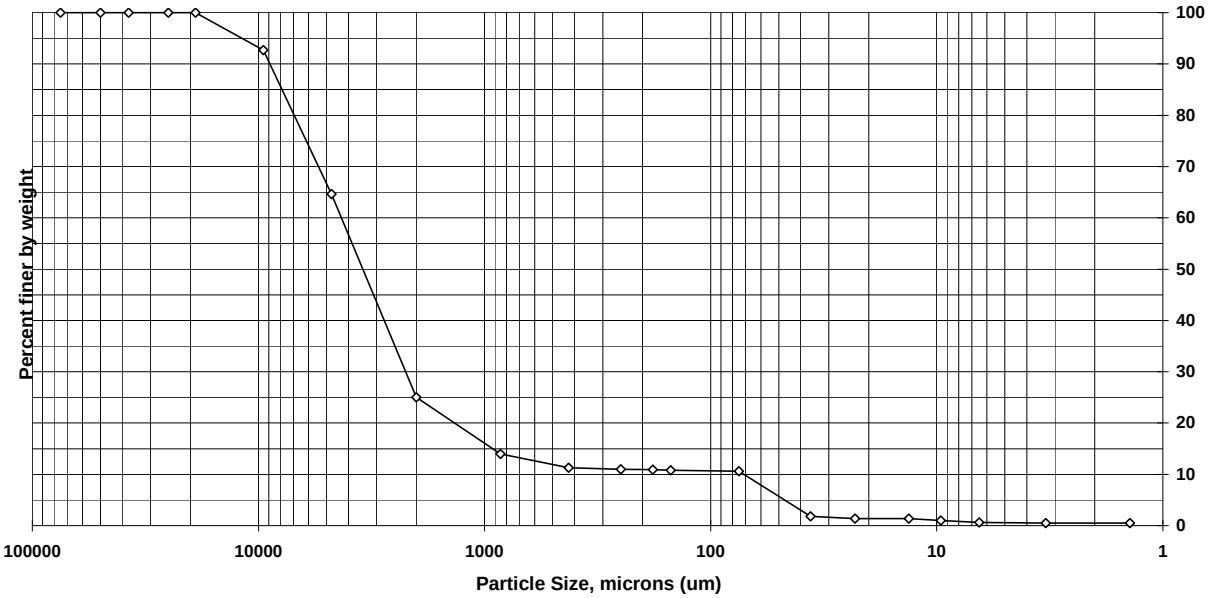
Particle Size of Soils by ASTM D422

				Date Received:	1/30/2014
Sample ID:	2014-SED-004	**Percent Solids:**	91.8%	**Start Date:**	2/4/2014
Lab ID:	600-86336-C-4	**Specific Gravity:**	2.650	**End Date:**	2/6/2014

Shape (> #10): subangular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	92.7	7.3
#4	4750	64.6	28.1
#10	2000	25.0	39.6
#20	850	14.0	11.0
#40	425	11.3	2.7
#60	250	11.0	0.3
#80	180	10.9	0.1
#100	150	10.8	0.1
#200	75	10.6	0.2
Hyd1	36.2	1.8	8.8
Hyd2	23	1.4	0.4
Hyd3	13.3	1.4	0.0
Hyd4	9.6	1.0	0.4
Hyd5	6.5	0.6	0.4
Hyd6	3.3	0.5	0.1
Hyd7	1.4	0.5	0.0

Soil Classification	Percent of sample
Gravel	35.4
Sand	54.0
Coarse Sand	39.6
Medium Sand	13.7
Fine Sand	0.7
Silt	10.0
Clay	0.6

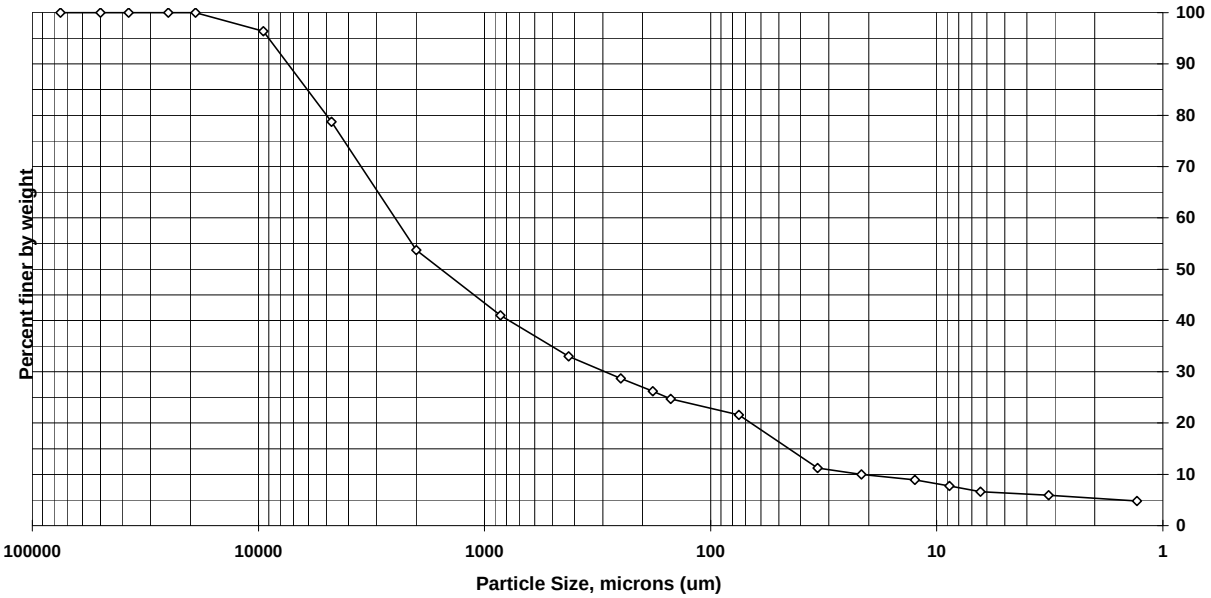
Particle Size of Soils by ASTM D422

				Date Received:	1/30/2014
Sample ID:	2014-SED-005	**Percent Solids:**	84.2%	**Start Date:**	2/4/2014
Lab ID:	600-86336-C-5	**Specific Gravity:**	2.650	**End Date:**	2/6/2014

Shape (> #10): subangular

Non-soil material: wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	96.4	3.6
#4	4750	78.7	17.7
#10	2000	53.7	25.0
#20	850	41.0	12.7
#40	425	33.0	8.0
#60	250	28.7	4.3
#80	180	26.2	2.5
#100	150	24.7	1.5
#200	75	21.6	3.1
Hyd1	33.6	11.2	10.4
Hyd2	21.5	10.0	1.2
Hyd3	12.5	8.9	1.1
Hyd4	8.8	7.7	1.2
Hyd5	6.4	6.6	1.1
Hyd6	3.2	5.9	0.7
Hyd7	1.3	4.8	1.2

Soil Classification	Percent of sample
Gravel	21.3
Sand	57.1
Coarse Sand	25.0
Medium Sand	20.7
Fine Sand	11.4
Silt	15.0
Clay	6.6

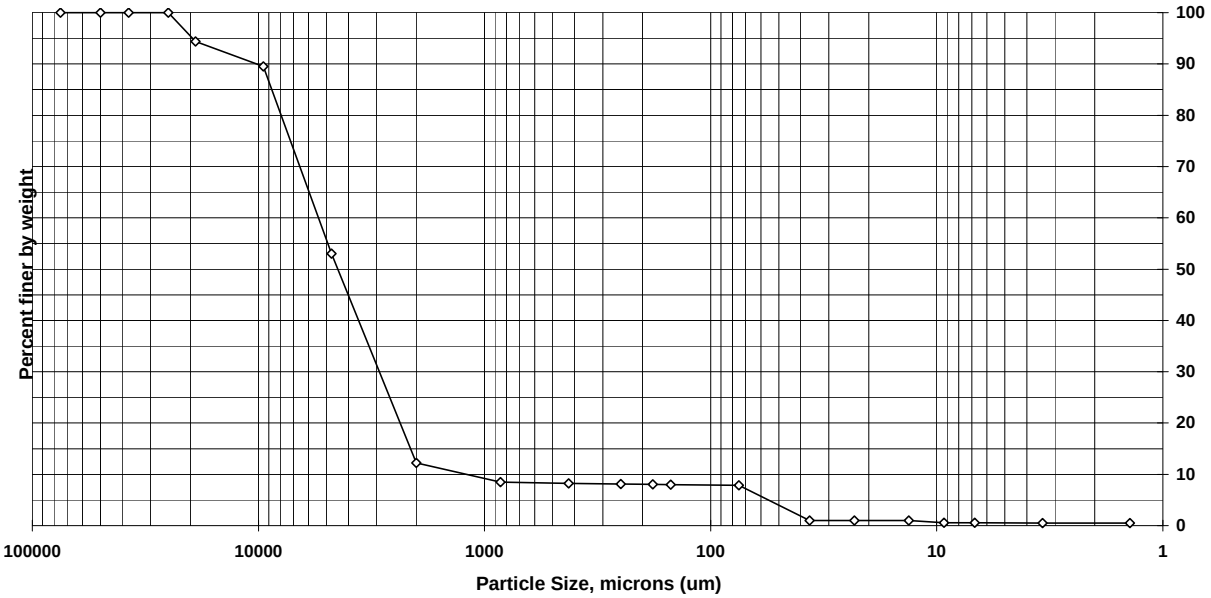
Particle Size of Soils by ASTM D422

				Date Received:	1/30/2014
Sample ID:	2014-SED-006	**Percent Solids:**	90.0%	**Start Date:**	2/4/2014
Lab ID:	600-86336-C-6	**Specific Gravity:**	2.650	**End Date:**	2/6/2014

Shape (> #10): subangular

Non-soil material: wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	94.4	5.6
3/8 inch	9500	89.5	4.9
#4	4750	53.0	36.5
#10	2000	12.2	40.8
#20	850	8.5	3.7
#40	425	8.2	0.3
#60	250	8.1	0.1
#80	180	8.1	0.0
#100	150	8.0	0.0
#200	75	7.9	0.2
Hyd1	36.5	1.0	6.9
Hyd2	23.1	1.0	0.0
Hyd3	13.3	1.0	0.0
Hyd4	9.3	0.6	0.4
Hyd5	6.8	0.6	0.0
Hyd6	3.4	0.5	0.1
Hyd7	1.4	0.5	0.0

Soil Classification	Percent of sample
Gravel	47.0
Sand	45.2
Coarse Sand	40.8
Medium Sand	4.0
Fine Sand	0.4
Silt	7.3
Clay	0.6

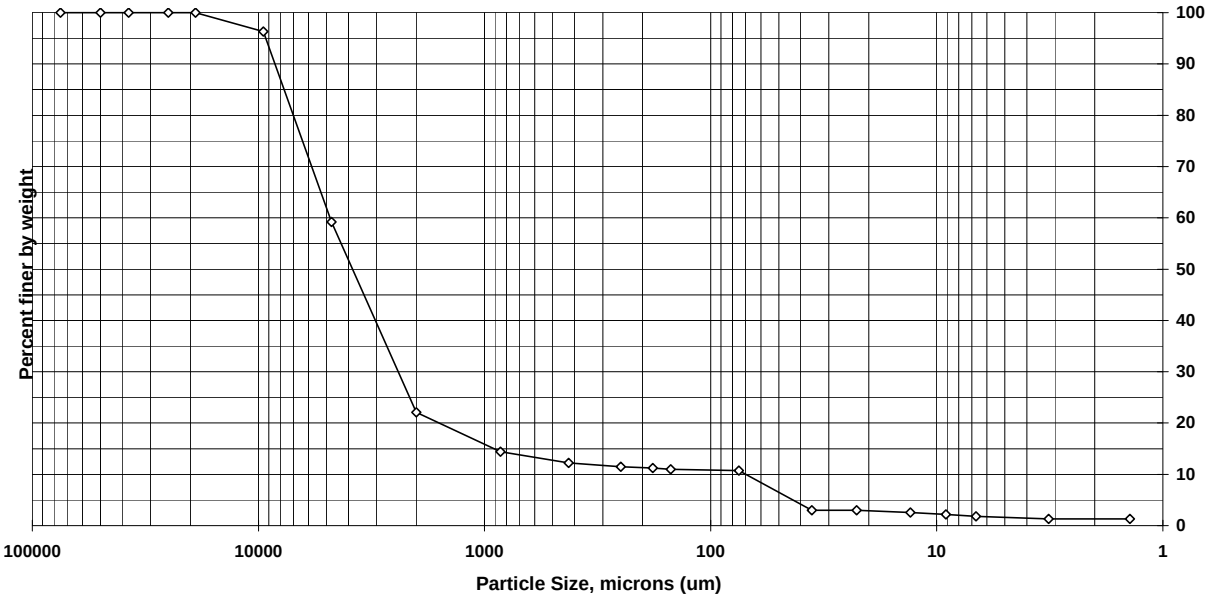
Particle Size of Soils by ASTM D422

				Date Received:	1/30/2014
Sample ID:	2014-SED-007	**Percent Solids:**	88.4%	**Start Date:**	2/4/2014
Lab ID:	600-86336-C-7	**Specific Gravity:**	2.650	**End Date:**	2/6/2014

Shape (> #10): subangular

Non-soil material: wood, shell

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	96.3	3.7
#4	4750	59.2	37.1
#10	2000	22.1	37.1
#20	850	14.4	7.7
#40	425	12.2	2.2
#60	250	11.5	0.7
#80	180	11.2	0.3
#100	150	11.0	0.2
#200	75	10.7	0.3
Hyd1	35.7	3.0	7.7
Hyd2	22.6	3.0	0.0
Hyd3	13.1	2.6	0.4
Hyd4	9.1	2.2	0.4
Hyd5	6.7	1.8	0.4
Hyd6	3.2	1.3	0.5
Hyd7	1.4	1.3	0.0

Soil Classification	Percent of sample
Gravel	40.8
Sand	48.5
Coarse Sand	37.1
Medium Sand	9.9
Fine Sand	1.5
Silt	8.9
Clay	1.8

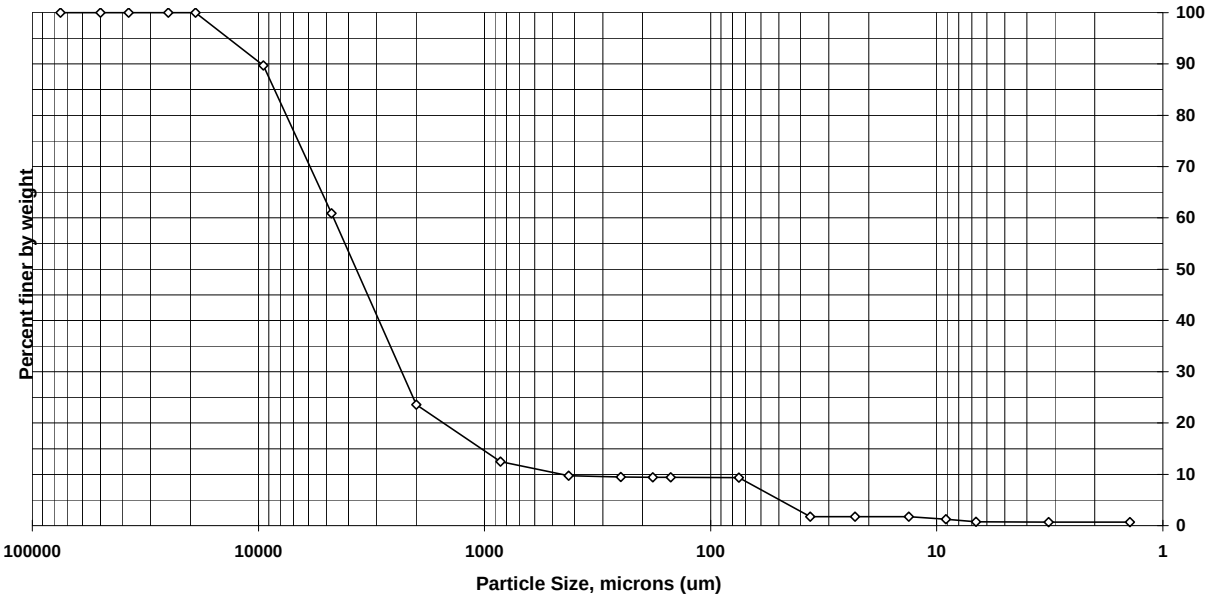
Particle Size of Soils by ASTM D422

				Date Received:	1/30/2014
Sample ID:	2014-SED-008	**Percent Solids:**	90.2%	**Start Date:**	2/4/2014
Lab ID:	600-86336-C-8	**Specific Gravity:**	2.650	**End Date:**	2/6/2014

Shape (> #10): subangular

Non-soil material: shell, glass

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	89.7	10.3
#4	4750	60.9	28.8
#10	2000	23.6	37.3
#20	850	12.5	11.1
#40	425	9.8	2.7
#60	250	9.5	0.3
#80	180	9.4	0.1
#100	150	9.4	0.0
#200	75	9.3	0.1
Hyd1	36.3	1.7	7.6
Hyd2	23	1.7	0.0
Hyd3	13.3	1.7	0.0
Hyd4	9.1	1.2	0.5
Hyd5	6.7	0.7	0.5
Hyd6	3.2	0.7	0.1
Hyd7	1.4	0.7	0.0

Soil Classification	Percent of sample
Gravel	39.1
Sand	51.6
Coarse Sand	37.3
Medium Sand	13.8
Fine Sand	0.4
Silt	8.6
Clay	0.7

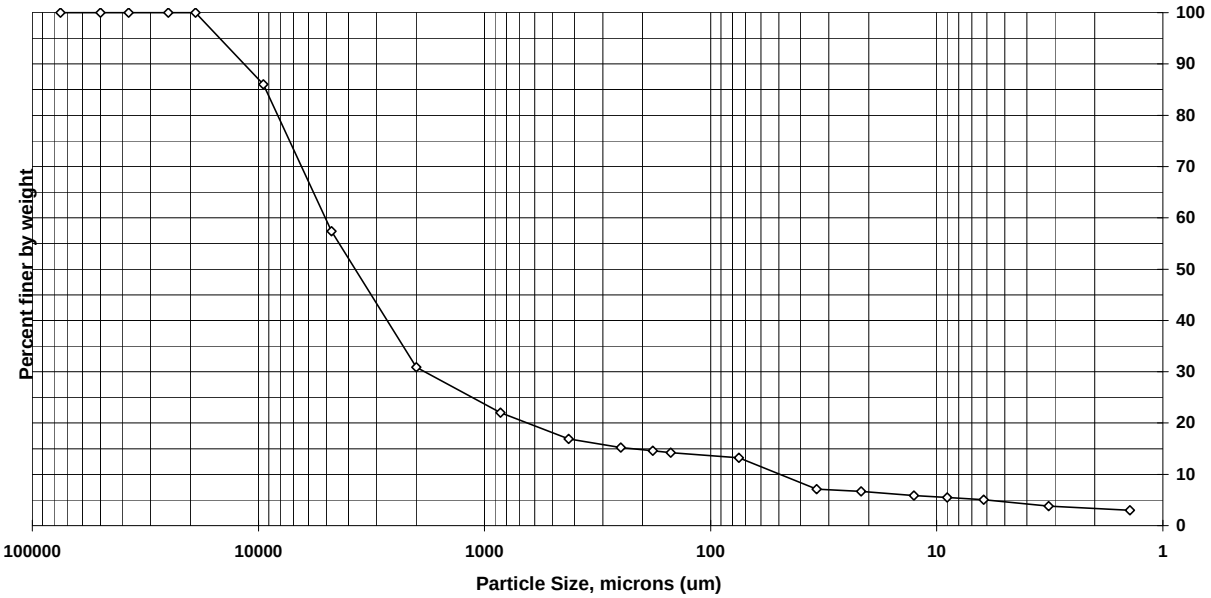
Particle Size of Soils by ASTM D422

				Date Received:	1/30/2014
Sample ID:	2014-SED-009	**Percent Solids:**	81.9%	**Start Date:**	2/4/2014
Lab ID:	600-86336-C-9	**Specific Gravity:**	2.650	**End Date:**	2/6/2014

Shape (> #10): subangular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	86.0	14.0
#4	4750	57.4	28.6
#10	2000	30.9	26.5
#20	850	22.0	8.9
#40	425	16.9	5.1
#60	250	15.2	1.7
#80	180	14.6	0.6
#100	150	14.2	0.4
#200	75	13.2	1.0
Hyd1	34	7.1	6.1
Hyd2	21.6	6.7	0.4
Hyd3	12.6	5.9	0.8
Hyd4	9	5.5	0.4
Hyd5	6.2	5.1	0.4
Hyd6	3.2	3.8	1.3
Hyd7	1.4	3.0	0.8

Soil Classification	Percent of sample
Gravel	42.6
Sand	44.2
Coarse Sand	26.5
Medium Sand	14.0
Fine Sand	3.7
Silt	8.1
Clay	5.1

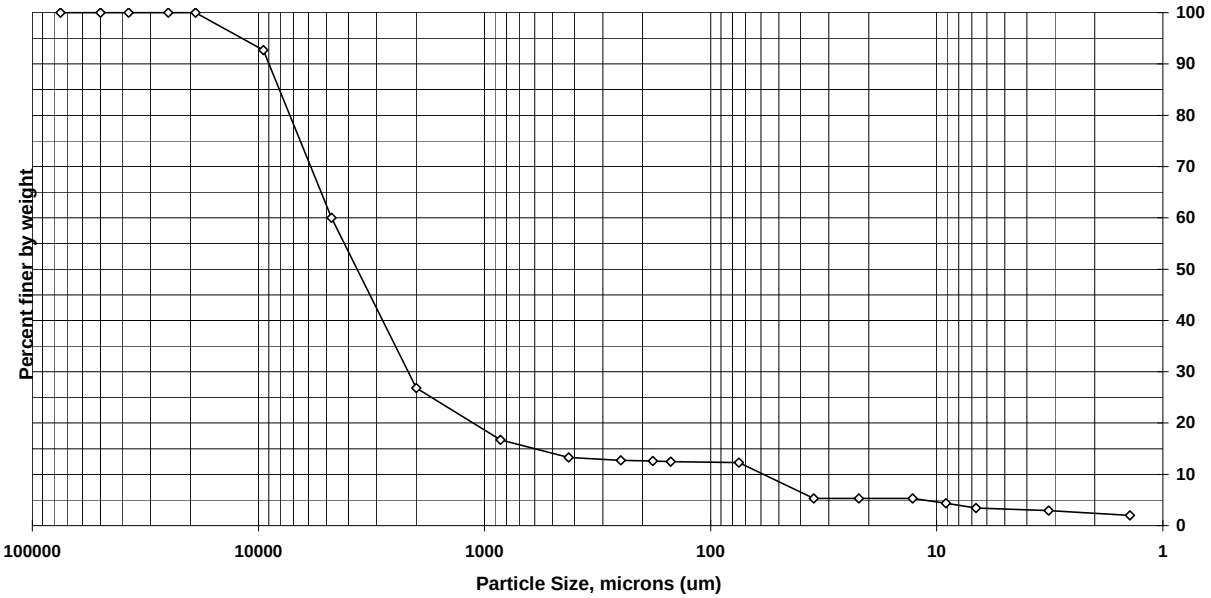
Particle Size of Soils by ASTM D422

				Date Received:	1/30/2014
Sample ID:	2014-SED-0010	**Percent Solids:**	87.2%	**Start Date:**	2/4/2014
Lab ID:	600-86336-C-10	**Specific Gravity:**	2.650	**End Date:**	2/6/2014

Shape (> #10): subangular

Non-soil material: shell, glass

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	92.7	7.3
#4	4750	60.0	32.7
#10	2000	26.8	33.2
#20	850	16.7	10.1
#40	425	13.3	3.4
#60	250	12.7	0.6
#80	180	12.6	0.1
#100	150	12.5	0.1
#200	75	12.3	0.2
Hyd1	35	5.3	7.0
Hyd2	22.1	5.3	0.0
Hyd3	12.8	5.3	0.0
Hyd4	9.1	4.4	0.9
Hyd5	6.7	3.5	0.9
Hyd6	3.2	2.9	0.5
Hyd7	1.4	2.0	0.9

Soil Classification	Percent of sample
Gravel	40.0
Sand	47.7
Coarse Sand	33.2
Medium Sand	13.5
Fine Sand	1.0
Silt	8.8
Clay	3.5

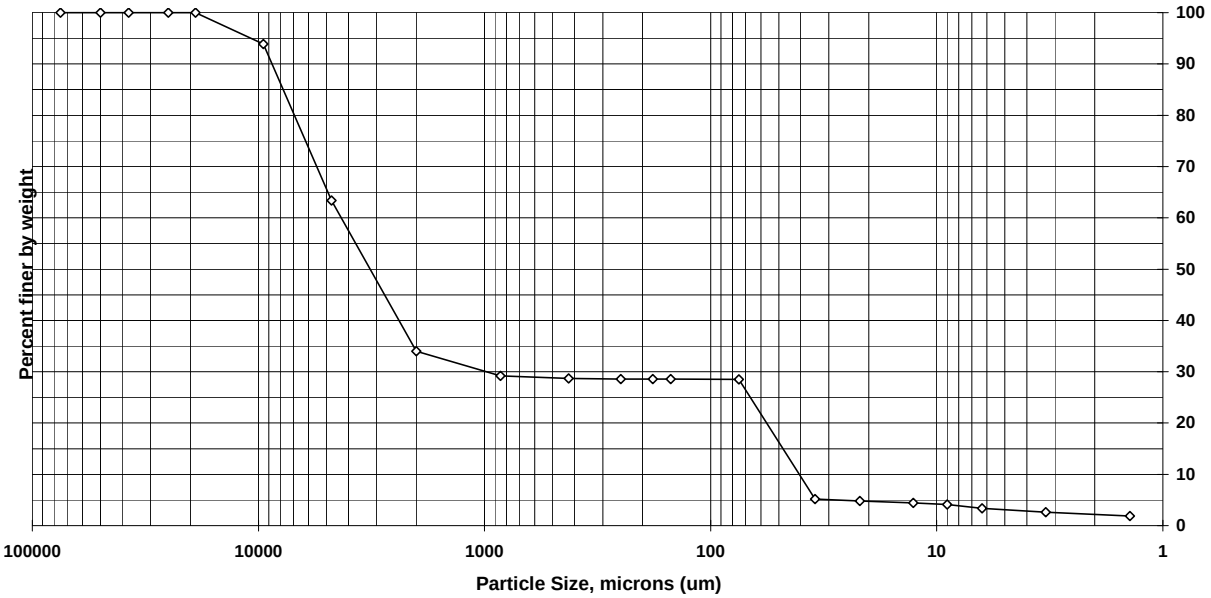
Particle Size of Soils by ASTM D422

				Date Received:	1/30/2014
Sample ID:	2014-SED-0011	**Percent Solids:**	89.8%	**Start Date:**	2/4/2014
Lab ID:	600-86336-C-11	**Specific Gravity:**	2.650	**End Date:**	2/6/2014

Shape (> #10): subangular

Non-soil material: wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	93.9	6.1
#4	4750	63.4	30.5
#10	2000	34.0	29.4
#20	850	29.2	4.8
#40	425	28.7	0.5
#60	250	28.6	0.1
#80	180	28.6	0.0
#100	150	28.6	0.0
#200	75	28.5	0.1
Hyd1	34.5	5.2	23.3
Hyd2	21.9	4.8	0.4
Hyd3	12.7	4.5	0.4
Hyd4	9	4.1	0.4
Hyd5	6.3	3.4	0.7
Hyd6	3.3	2.6	0.8
Hyd7	1.4	1.9	0.7

Soil Classification	Percent of sample
Gravel	36.6
Sand	34.9
Coarse Sand	29.4
Medium Sand	5.3
Fine Sand	0.2
Silt	25.1
Clay	3.4

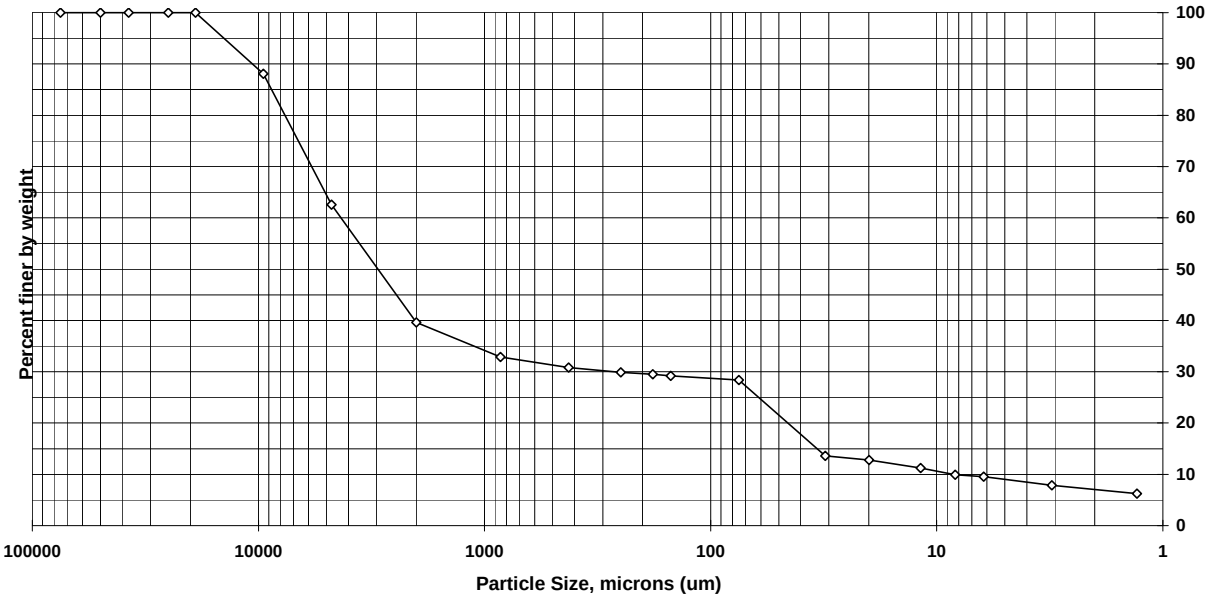
Particle Size of Soils by ASTM D422

				Date Received:	1/30/2014
Sample ID:	2014-SED-0012	**Percent Solids:**	85.7%	**Start Date:**	2/4/2014
Lab ID:	600-86336-C-12	**Specific Gravity:**	2.650	**End Date:**	2/6/2014

Shape (> #10): angular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	88.1	11.9
#4	4750	62.6	25.5
#10	2000	39.6	23.0
#20	850	32.9	6.7
#40	425	30.8	2.1
#60	250	29.9	0.9
#80	180	29.5	0.4
#100	150	29.2	0.3
#200	75	28.4	0.8
Hyd1	31.1	13.6	14.8
Hyd2	19.9	12.8	0.8
Hyd3	11.8	11.2	1.6
Hyd4	8.3	9.9	1.3
Hyd5	6.2	9.5	0.4
Hyd6	3.1	7.8	1.7
Hyd7	1.3	6.2	1.6

Soil Classification	Percent of sample
Gravel	37.4
Sand	34.2
Coarse Sand	23.0
Medium Sand	8.8
Fine Sand	2.4
Silt	18.9
Clay	9.5

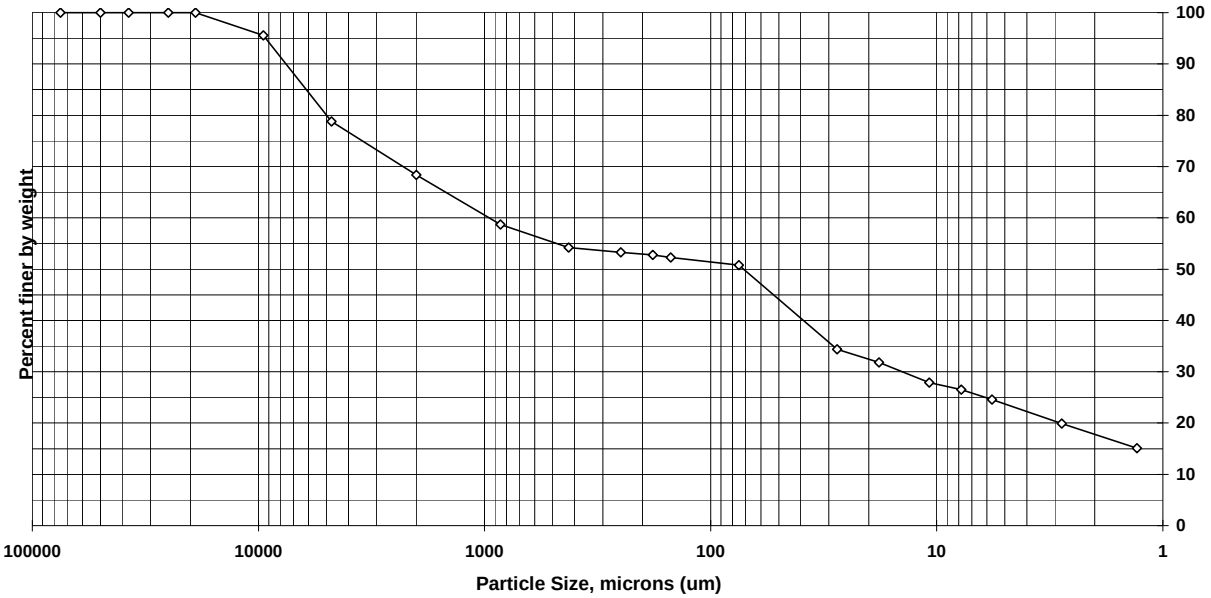
Particle Size of Soils by ASTM D422

				Date Received:	1/30/2014
Sample ID:	2014-SED-0013	**Percent Solids:**	75.5%	**Start Date:**	2/4/2014
Lab ID:	600-86336-C-13	**Specific Gravity:**	2.650	**End Date:**	2/7/2014

Shape (> #10): angular

Non-soil material: shell

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	95.6	4.4
#4	4750	78.8	16.8
#10	2000	68.4	10.4
#20	850	58.7	9.7
#40	425	54.2	4.5
#60	250	53.3	0.9
#80	180	52.8	0.5
#100	150	52.3	0.5
#200	75	50.8	1.5
Hyd1	27.6	34.4	16.4
Hyd2	18	31.8	2.6
Hyd3	10.8	27.9	3.9
Hyd4	7.8	26.5	1.4
Hyd5	5.7	24.6	1.9
Hyd6	2.8	19.9	4.7
Hyd7	1.3	15.1	4.8

Soil Classification	Percent of sample
Gravel	21.2
Sand	28.0
Coarse Sand	10.4
Medium Sand	14.2
Fine Sand	3.4
Silt	26.2
Clay	24.6

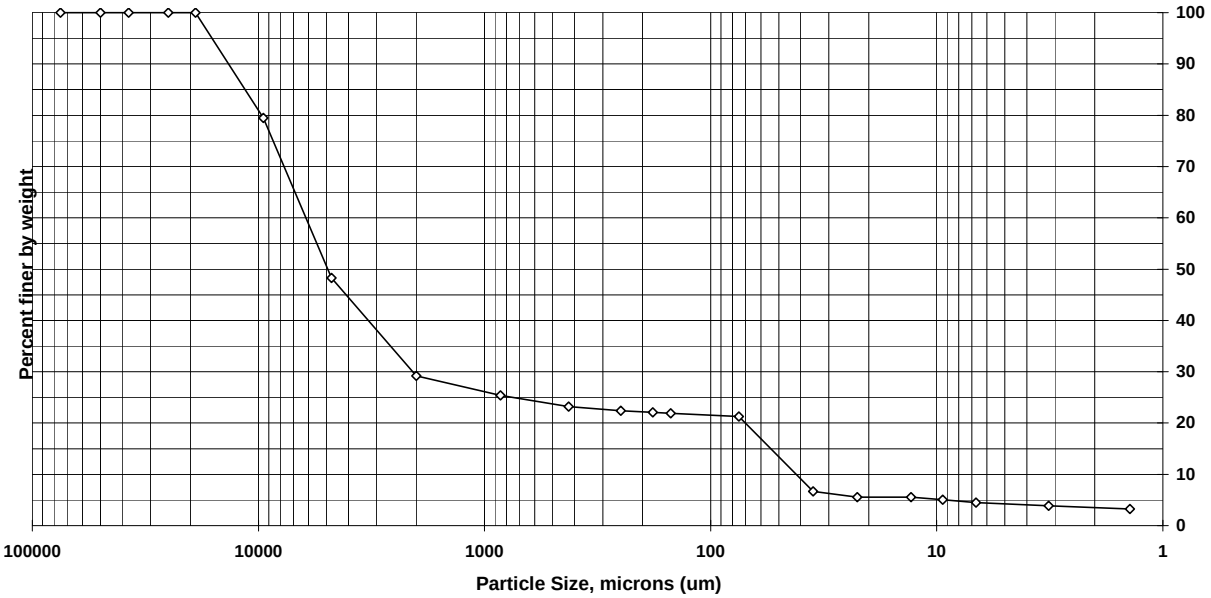
Particle Size of Soils by ASTM D422

				Date Received:	1/30/2014
Sample ID:	DUP-1	**Percent Solids:**	84.6%	**Start Date:**	2/4/2014
Lab ID:	600-86336-B-15	**Specific Gravity:**	2.650	**End Date:**	2/7/2014

Shape (> #10): angular

Non-soil material: shell, wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	79.5	20.5
#4	4750	48.3	31.2
#10	2000	29.2	19.1
#20	850	25.4	3.8
#40	425	23.2	2.2
#60	250	22.4	0.8
#80	180	22.1	0.3
#100	150	21.9	0.2
#200	75	21.3	0.6
Hyd1	35.2	6.7	14.7
Hyd2	22.5	5.6	1.1
Hyd3	13	5.6	0.0
Hyd4	9.4	5.0	0.5
Hyd5	6.7	4.5	0.5
Hyd6	3.2	3.9	0.6
Hyd7	1.4	3.2	0.6

Soil Classification	Percent of sample
Gravel	51.7
Sand	27.0
Coarse Sand	19.1
Medium Sand	6.0
Fine Sand	1.9
Silt	16.8
Clay	4.5

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-001
Lab Sample ID	600-86336-C-1

Date Received	1/30/2014
Start Date	02/04/2014 15:12
End Date	02/07/2014 12:57

Dry Weight Determination

Tin Weight	0.99	g
Wet Sample + Tin	31.81	g
Dry Sample + Tin	20.00	g
% Moisture	38.32	%

Non-soil material:	n/a
Shape (> #10):	angular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 15:15
Date/Time out of oven	02/05/2014 13:50

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		89.96	89.96
Sample Weight (Oven Dried)			55.5

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			0.32
Sample <#10			55.2
% Passing #10			61.4

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000	462.86	463.18	0.32	g	99.4	Sand	Coarse
#20	850	380.94	382.32	1.38	g	96.9	Sand	Medium
#40	425	353.88	354.83	0.95	g	95.2	Sand	Medium
#60	250	350.51	351.67	1.16	g	93.1	Sand	Fine
#80	180	338.67	339.75	1.08	g	91.2	Sand	Fine
#100	150	330.27	331.08	0.81	g	89.7	Sand	Fine
#200	75	306.05	308.39	2.34	g	85.5	Sand	Fine
				0.00	g	85.5		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	55.5

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0330	21.0	26.2	84.4	Silt	
5	5	1.0300	21.0	17.4	75.7	Silt	
15	15	1.0280	21.0	10.4	69.9	Silt	
30	30	1.0265	21.0	7.5	65.6	Silt	
60	59	1.0250	21.0	5.5	61.3	Silt	
250	256	1.0230	20.5	2.7	55.2	Clay	
1440	1440	1.0200	20.0	1.2	46.3	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-002
Lab Sample ID	600-86336-C-2

Date Received	1/30/2014
Start Date	02/04/2014 15:15
End Date	02/06/2014 13:56

Dry Weight Determination

Tin Weight	0.99	g
Wet Sample + Tin	26.51	g
Dry Sample + Tin	17.52	g
% Moisture	35.23	%

Non-soil material:	plant, wood
Shape (> #10):	angular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 15:17
Date/Time out of oven	02/05/2014 13:51

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		218.75	218.75
Sample Weight (Oven Dried)			142

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			9.04
Sample <#10			133
% Passing #10			60.8

Hydrometer Data	
Serial Number	540534
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0040
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007833333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	447.77	0.43	g	99.7	Gravel	
#4	4750	488.16	491.49	3.33	g	97.4	Gravel	
#10	2000	462.80	468.08	5.28	g	93.7	Sand	Coarse
#20	850	380.95	384.36	3.41	g	91.3	Sand	Medium
#40	425	353.89	357.21	3.32	g	89.0	Sand	Medium
#60	250	350.52	354.35	3.83	g	86.3	Sand	Fine
#80	180	338.68	341.33	2.65	g	84.4	Sand	Fine
#100	150	330.28	332.42	2.14	g	82.9	Sand	Fine
#200	75	306.09	315.69	9.60	g	76.1	Sand	Fine
				0.00	g	76.1		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	142

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0340	21.5	25.6	33.6	Silt	
5	5	1.0315	21.5	16.9	30.8	Silt	
15	15	1.0275	21.5	10.4	26.3	Silt	
30	30	1.0250	21.5	7.6	23.5	Silt	
60	58	1.0230	21.5	5.6	21.2	Silt	
250	256	1.0205	21.0	2.8	18.3	Clay	
1440	1440	1.0170	21.0	1.2	14.3	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-003
Lab Sample ID	600-86336-C-3

Date Received	1/30/2014
Start Date	02/04/2014 15:17
End Date	02/06/2014 14:19

Dry Weight Determination

Tin Weight	0.99	g
Wet Sample + Tin	40.79	g
Dry Sample + Tin	33.52	g
% Moisture	18.27	%

Non-soil material:	n/a
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 15:19
Date/Time out of oven	02/05/2014 13:53

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		200.88	200.88
Sample Weight (Oven Dried)			164

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			86
Sample <#10			78
% Passing #10			38.8

Hydrometer Data

Serial Number	540534
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0040
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007833333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	461.26	13.92	g	91.5	Gravel	
#4	4750	488.16	515.74	27.58	g	74.7	Gravel	
#10	2000	462.80	507.29	44.49	g	47.6	Sand	Coarse
#20	850	380.95	411.48	30.53	g	29.0	Sand	Medium
#40	425	353.89	368.50	14.61	g	20.1	Sand	Medium
#60	250	350.52	352.70	2.18	g	18.8	Sand	Fine
#80	180	338.68	339.31	0.63	g	18.4	Sand	Fine
#100	150	330.28	330.65	0.37	g	18.2	Sand	Fine
#200	75	306.09	307.15	1.06	g	17.6	Sand	Fine
				0.00	g	17.6		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	164

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0130	21.5	34	8.57	Silt	
5	5	1.0125	21.5	21.6	8.08	Silt	
15	15	1.0115	21.5	12.6	7.1	Silt	
30	29	1.0105	21.5	9.1	6.12	Silt	
60	58	1.0100	21.5	6.5	5.63	Silt	
250	250	1.0090	21.0	3.2	4.57	Clay	
1440	1434	1.0080	21.0	1.3	3.59	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-004
Lab Sample ID	600-86336-C-4

Date Received	1/30/2014
Start Date	02/04/2014 15:20
End Date	02/06/2014 14:35

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	31.63	g
Dry Sample + Tin	29.11	g
% Moisture	8.23	%

Non-soil material:	n/a
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 15:21
Date/Time out of oven	02/05/2014 13:53

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		221.50	221.5
Sample Weight (Oven Dried)			203

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			152
Sample <#10			51
% Passing #10			23

Hydrometer Data

Serial Number	540534
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0040
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007833333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	462.11	14.77	g	92.7	Gravel	
#4	4750	488.16	545.26	57.10	g	64.6	Gravel	
#10	2000	462.80	543.09	80.29	g	25.0	Sand	Coarse
#20	850	380.95	403.38	22.43	g	14.0	Sand	Medium
#40	425	353.89	359.33	5.44	g	11.3	Sand	Medium
#60	250	350.52	351.17	0.65	g	11.0	Sand	Fine
#80	180	338.68	338.88	0.20	g	10.9	Sand	Fine
#100	150	330.28	330.41	0.13	g	10.8	Sand	Fine
#200	75	306.09	306.52	0.43	g	10.6	Sand	Fine
				0.00	g	10.6		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	203

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0065	21.5	36.2	1.78	Silt	
5	5	1.0060	21.5	23	1.38	Silt	
15	15	1.0060	21.5	13.3	1.38	Silt	
30	29	1.0055	21.5	9.6	0.989	Silt	
60	63	1.0050	21.5	6.5	0.593	Silt	
250	250	1.0050	21.0	3.3	0.527	Clay	
1440	1434	1.0050	21.0	1.4	0.527	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-005
Lab Sample ID	600-86336-C-5

Date Received	1/30/2014
Start Date	02/04/2014 15:22
End Date	02/06/2014 14:35

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	35.27	g
Dry Sample + Tin	29.85	g
% Moisture	15.82	%

Non-soil material:	wood
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 15:24
Date/Time out of oven	02/05/2014 13:52

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		165.73	165.73
Sample Weight (Oven Dried)			140

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			64.9
Sample <#10			75.1
% Passing #10			45.3

Hydrometer Data

Serial Number	540534
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0040
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007833333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	452.44	5.10	g	96.4	Gravel	
#4	4750	488.16	512.94	24.78	g	78.7	Gravel	
#10	2000	462.80	497.80	35.00	g	53.7	Sand	Coarse
#20	850	380.95	398.77	17.82	g	41.0	Sand	Medium
#40	425	353.89	365.08	11.19	g	33.0	Sand	Medium
#60	250	350.52	356.56	6.04	g	28.7	Sand	Fine
#80	180	338.68	342.19	3.51	g	26.2	Sand	Fine
#100	150	330.28	332.38	2.10	g	24.7	Sand	Fine
#200	75	306.09	310.40	4.31	g	21.6	Sand	Fine
				0.00	g	21.6		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	140

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0140	21.5	33.6	11.2	Silt	
5	5	1.0130	21.5	21.5	10	Silt	
15	15	1.0120	21.5	12.5	8.89	Silt	
30	31	1.0110	21.5	8.8	7.74	Silt	
60	60	1.0100	21.5	6.4	6.6	Silt	
250	240	1.0095	21.0	3.2	5.93	Clay	
1440	1424	1.0085	21.0	1.3	4.78	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-006
Lab Sample ID	600-86336-C-6

Date Received	1/30/2014
Start Date	02/04/2014 15:24
End Date	02/06/2014 15:03

Dry Weight Determination

Tin Weight	1.00	g
Wet Sample + Tin	33.86	g
Dry Sample + Tin	30.57	g
% Moisture	10.01	%

Non-soil material:	wood
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 15:26
Date/Time out of oven	02/05/2014 13:52

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		227.33	227.33
Sample Weight (Oven Dried)			205

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			180
Sample <#10			25
% Passing #10			11

Hydrometer Data

Serial Number	540534
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0040
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007833333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000	457.82	469.25	11.43	g	94.4	Gravel	
3/8 inch	9500	447.34	457.45	10.11	g	89.5	Gravel	
#4	4750	488.16	563.01	74.85	g	53.0	Gravel	
#10	2000	462.80	546.37	83.57	g	12.2	Sand	Coarse
#20	850	380.95	388.58	7.63	g	8.5	Sand	Medium
#40	425	353.89	354.42	0.53	g	8.2	Sand	Medium
#60	250	350.52	350.75	0.23	g	8.1	Sand	Fine
#80	180	338.68	338.79	0.11	g	8.1	Sand	Fine
#100	150	330.28	330.38	0.10	g	8.0	Sand	Fine
#200	75	306.09	306.41	0.32	g	7.9	Sand	Fine
				0.00	g	7.9		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	205

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0055	21.5	36.5	0.979	Silt	
5	5	1.0055	21.5	23.1	0.979	Silt	
15	15	1.0055	21.5	13.3	0.979	Silt	
30	31	1.0050	21.5	9.3	0.588	Silt	
60	59	1.0050	21.5	6.8	0.588	Silt	
250	234	1.0050	21.0	3.4	0.522	Clay	
1440	1418	1.0050	21.0	1.4	0.522	Clay	

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Sediment Grain Size - D422

Client		Date Received	1/30/2014
Client Sample ID	2014-SED-007	Start Date	02/04/2014 15:30
Lab Sample ID	600-86336-C-7	End Date	02/06/2014 15:18

Dry Weight Determination

Tin Weight	1.00	g
Wet Sample + Tin	39.63	g
Dry Sample + Tin	35.13	g
% Moisture	11.65	%

Non-soil material:	wood, shell
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 15:33
Date/Time out of oven	02/05/2014 13:52

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		230.02	230.02
Sample Weight (Oven Dried)			203

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			158
Sample <#10			45
% Passing #10			19.6

Hydrometer Data

Serial Number	540534
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0040
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007833333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	454.75	7.41	g	96.3	Gravel	
#4	4750	488.16	563.39	75.23	g	59.2	Gravel	
#10	2000	462.80	538.14	75.34	g	22.1	Sand	Coarse
#20	850	380.95	396.59	15.64	g	14.4	Sand	Medium
#40	425	353.89	358.38	4.49	g	12.2	Sand	Medium
#60	250	350.52	352.01	1.49	g	11.5	Sand	Fine
#80	180	338.68	339.21	0.53	g	11.2	Sand	Fine
#100	150	330.28	330.59	0.31	g	11.0	Sand	Fine
#200	75	306.09	306.73	0.64	g	10.7	Sand	Fine
				0.00	g	10.7		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	203

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0080	21.5	35.7	2.97	Silt	
5	5	1.0080	21.5	22.6	2.97	Silt	
15	15	1.0075	21.5	13.1	2.57	Silt	
30	31	1.0070	21.5	9.1	2.18	Silt	
60	59	1.0065	21.5	6.7	1.78	Silt	
250	265	1.0060	21.0	3.2	1.32	Clay	
1440	1412	1.0060	21.0	1.4	1.32	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-008
Lab Sample ID	600-86336-C-8

Date Received	1/30/2014
Start Date	02/04/2014 15:35
End Date	02/06/2014 15:18

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	36.08	g
Dry Sample + Tin	32.64	g
% Moisture	9.81	%

Non-soil material:	shell, glass
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 15:36
Date/Time out of oven	02/05/2014 13:52

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		180.84	180.84
Sample Weight (Oven Dried)			163

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			125
Sample <#10			38
% Passing #10			21

Hydrometer Data

Serial Number	540534
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0040
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007833333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	464.15	16.81	g	89.7	Gravel	
#4	4750	488.16	535.03	46.87	g	60.9	Gravel	
#10	2000	462.80	523.67	60.87	g	23.6	Sand	Coarse
#20	850	380.95	399.03	18.08	g	12.5	Sand	Medium
#40	425	353.89	358.35	4.46	g	9.8	Sand	Medium
#60	250	350.52	350.95	0.43	g	9.5	Sand	Fine
#80	180	338.68	338.77	0.09	g	9.4	Sand	Fine
#100	150	330.28	330.31	0.03	g	9.4	Sand	Fine
#200	75	306.09	306.22	0.13	g	9.3	Sand	Fine
				0.00	g	9.3		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	163

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0060	21.5	36.3	1.72	Silt	
5	5	1.0060	21.5	23	1.72	Silt	
15	15	1.0060	21.5	13.3	1.72	Silt	
30	32	1.0055	21.5	9.1	1.23	Silt	
60	60	1.0050	21.5	6.7	0.739	Silt	
250	259	1.0050	21.0	3.2	0.657	Clay	
1440	1406	1.0050	21.0	1.4	0.657	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-009
Lab Sample ID	600-86336-C-9

Date Received	1/30/2014
Start Date	02/04/2014 15:37
End Date	02/06/2014 15:34

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	33.83	g
Dry Sample + Tin	27.89	g
% Moisture	18.10	%

Non-soil material:	n/a
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 15:38
Date/Time out of oven	02/05/2014 13:52

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		242.02	242.02
Sample Weight (Oven Dried)			198

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			137
Sample <#10			61
% Passing #10			25.2

Hydrometer Data

Serial Number	540534
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0040
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007833333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	475.08	27.74	g	86.0	Gravel	
#4	4750	488.16	544.69	56.53	g	57.4	Gravel	
#10	2000	462.80	515.20	52.40	g	30.9	Sand	Coarse
#20	850	380.95	398.51	17.56	g	22.0	Sand	Medium
#40	425	353.89	364.01	10.12	g	16.9	Sand	Medium
#60	250	350.52	353.88	3.36	g	15.2	Sand	Fine
#80	180	338.68	339.92	1.24	g	14.6	Sand	Fine
#100	150	330.28	331.01	0.73	g	14.2	Sand	Fine
#200	75	306.09	308.02	1.93	g	13.2	Sand	Fine
				0.00	g	13.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	198

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0130	21.5	34	7.1	Silt	
5	5	1.0125	21.5	21.6	6.69	Silt	
15	15	1.0115	21.5	12.6	5.88	Silt	
30	30	1.0110	21.5	9	5.48	Silt	
60	63	1.0105	21.5	6.2	5.07	Silt	
250	253	1.0090	21.0	3.2	3.79	Clay	
1440	1400	1.0080	21.0	1.4	2.97	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-0010
Lab Sample ID	600-86336-C-10

Date Received	1/30/2014
Start Date	02/04/2014 15:39
End Date	02/06/2014 15:47

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	36.14	g
Dry Sample + Tin	31.65	g
% Moisture	12.78	%

Non-soil material:	shell, glass
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 15:41
Date/Time out of oven	02/05/2014 13:52

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		199.31	199.31
Sample Weight (Oven Dried)			174

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			127
Sample <#10			47
% Passing #10			23.6

Hydrometer Data	
Serial Number	540534
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0040
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007833333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	460.05	12.71	g	92.7	Gravel	
#4	4750	488.16	545.05	56.89	g	60.0	Gravel	
#10	2000	462.80	520.60	57.80	g	26.8	Sand	Coarse
#20	850	380.95	398.44	17.49	g	16.7	Sand	Medium
#40	425	353.89	359.81	5.92	g	13.3	Sand	Medium
#60	250	350.52	351.55	1.03	g	12.7	Sand	Fine
#80	180	338.68	338.92	0.24	g	12.6	Sand	Fine
#100	150	330.28	330.53	0.25	g	12.5	Sand	Fine
#200	75	306.09	306.50	0.41	g	12.3	Sand	Fine
				0.00	g	12.3		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	174

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0100	21.5	35	5.31	Silt	
5	5	1.0100	21.5	22.1	5.31	Silt	
15	15	1.0100	21.5	12.8	5.31	Silt	
30	30	1.0090	21.5	9.1	4.38	Silt	
60	57	1.0080	21.5	6.7	3.46	Silt	
250	247	1.0075	21.0	3.2	2.92	Clay	
1440	1394	1.0065	21.0	1.4	2	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-0011
Lab Sample ID	600-86336-C-11

Date Received	1/30/2014
Start Date	02/04/2014 15:41
End Date	02/06/2014 16:00

Dry Weight Determination

Tin Weight	0.99	g
Wet Sample + Tin	36.62	g
Dry Sample + Tin	32.99	g
% Moisture	10.19	%

Non-soil material:	wood
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 15:43
Date/Time out of oven	02/05/2014 13:52

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		250.05	250.05
Sample Weight (Oven Dried)			225

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			148
Sample <#10			77
% Passing #10			30.8

Hydrometer Data	
Serial Number	540534
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0040
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007833333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	461.01	13.67	g	93.9	Gravel	
#4	4750	488.16	556.79	68.63	g	63.4	Gravel	
#10	2000	462.80	528.94	66.14	g	34.0	Sand	Coarse
#20	850	380.95	391.82	10.87	g	29.2	Sand	Medium
#40	425	353.89	355.11	1.22	g	28.7	Sand	Medium
#60	250	350.52	350.66	0.14	g	28.6	Sand	Fine
#80	180	338.68	338.73	0.05	g	28.6	Sand	Fine
#100	150	330.28	330.31	0.03	g	28.6	Sand	Fine
#200	75	306.09	306.28	0.19	g	28.5	Sand	Fine
				0.00	g	28.5		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	225

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0115	21.5	34.5	5.18	Silt	
5	5	1.0110	21.5	21.9	4.82	Silt	
15	15	1.0105	21.5	12.7	4.46	Silt	
30	30	1.0100	21.5	9	4.1	Silt	
60	63	1.0090	21.5	6.3	3.39	Silt	
250	241	1.0080	21.0	3.3	2.62	Clay	
1440	1388	1.0070	21.0	1.4	1.9	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-0012
Lab Sample ID	600-86336-C-12

Date Received	1/30/2014
Start Date	02/04/2014 15:44
End Date	02/06/2014 16:13

Dry Weight Determination

Tin Weight	1.03	g
Wet Sample + Tin	27.86	g
Dry Sample + Tin	24.01	g
% Moisture	14.35	%

Non-soil material:	n/a
Shape (> #10):	angular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 15:46
Date/Time out of oven	02/05/2014 13:51

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		231.59	231.59
Sample Weight (Oven Dried)			198

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			120
Sample <#10			78
% Passing #10			33.7

Hydrometer Data

Serial Number	540534
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0040
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007833333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	470.90	23.56	g	88.1	Gravel	
#4	4750	488.16	538.72	50.56	g	62.6	Gravel	
#10	2000	462.80	508.32	45.52	g	39.6	Sand	Coarse
#20	850	380.95	394.26	13.31	g	32.9	Sand	Medium
#40	425	353.89	357.97	4.08	g	30.8	Sand	Medium
#60	250	350.52	352.28	1.76	g	29.9	Sand	Fine
#80	180	338.68	339.41	0.73	g	29.5	Sand	Fine
#100	150	330.28	330.82	0.54	g	29.2	Sand	Fine
#200	75	306.09	307.68	1.59	g	28.4	Sand	Fine
				0.00	g	28.4		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	198

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0210	21.5	31.1	13.6	Silt	
5	5	1.0200	21.5	19.9	12.8	Silt	
15	15	1.0180	21.5	11.8	11.2	Silt	
30	31	1.0165	21.5	8.3	9.94	Silt	
60	57	1.0160	21.5	6.2	9.53	Silt	
250	235	1.0140	21.0	3.1	7.84	Clay	
1440	1382	1.0120	21.0	1.3	6.22	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client		Date Received	1/30/2014
Client Sample ID	2014-SED-0013	Start Date	02/04/2014 16:15
Lab Sample ID	600-86336-C-13	End Date	02/07/2014 13:02

Dry Weight Determination

Tin Weight	1.03	g
Wet Sample + Tin	32.93	g
Dry Sample + Tin	25.12	g
% Moisture	24.48	%

Non-soil material:	shell
Shape (> #10):	angular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 16:19
Date/Time out of oven	02/05/2014 13:51

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		162.20	162.2
Sample Weight (Oven Dried)			122

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			38.6
Sample <#10			83.4
% Passing #10			51.4

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.32	452.71	5.39	g	95.6	Gravel	
#4	4750	488.16	508.64	20.48	g	78.8	Gravel	
#10	2000	462.86	475.58	12.72	g	68.4	Sand	Coarse
#20	850	380.94	392.76	11.82	g	58.7	Sand	Medium
#40	425	353.88	359.37	5.49	g	54.2	Sand	Medium
#60	250	350.51	351.59	1.08	g	53.3	Sand	Fine
#80	180	338.67	339.29	0.62	g	52.8	Sand	Fine
#100	150	330.27	330.93	0.66	g	52.3	Sand	Fine
#200	75	306.05	307.89	1.84	g	50.8	Sand	Fine
				0.00	g	50.8		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	122

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0300	21.0	27.6	34.4	Silt	
5	5	1.0280	21.0	18	31.8	Silt	
15	15	1.0250	21.0	10.8	27.9	Silt	
30	30	1.0240	21.0	7.8	26.5	Silt	
60	58	1.0225	21.0	5.7	24.6	Silt	
250	256	1.0190	20.5	2.8	19.9	Clay	
1440	1440	1.0155	20.0	1.3	15.1	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client		Date Received	1/30/2014
Client Sample ID	DUP-1	Start Date	02/04/2014 16:20
Lab Sample ID	600-86336-B-15	End Date	02/07/2014 13:17

Dry Weight Determination

Tin Weight	0.97	g
Wet Sample + Tin	13.38	g
Dry Sample + Tin	11.47	g
% Moisture	15.39	%

Non-soil material:	shell, wood
Shape (> #10):	angular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 16:22
Date/Time out of oven	02/05/2014 13:51

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		175.57	175.57
Sample Weight (Oven Dried)			149

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			106
Sample <#10			43
% Passing #10			24.5

Hydrometer Data	
Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.32	477.92	30.60	g	79.5	Gravel	
#4	4750	488.16	534.70	46.54	g	48.3	Gravel	
#10	2000	462.86	491.28	28.42	g	29.2	Sand	Coarse
#20	850	380.94	386.56	5.62	g	25.4	Sand	Medium
#40	425	353.88	357.14	3.26	g	23.2	Sand	Medium
#60	250	350.51	351.72	1.21	g	22.4	Sand	Fine
#80	180	338.67	339.15	0.48	g	22.1	Sand	Fine
#100	150	330.27	330.61	0.34	g	21.9	Sand	Fine
#200	75	306.05	306.92	0.87	g	21.3	Sand	Fine
				0.00	g	21.3		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	149

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0100	21.0	35.2	6.65	Silt	
5	5	1.0090	21.0	22.5	5.57	Silt	
15	15	1.0090	21.0	13	5.57	Silt	
30	29	1.0085	21.0	9.4	5.03	Silt	
60	58	1.0080	21.0	6.7	4.49	Silt	
250	250	1.0075	20.5	3.2	3.86	Clay	
1440	1434	1.0070	20.0	1.4	3.23	Clay	

DATA REPORTING QUALIFIERS

Lab Section	Qualifier	Description

QUALITY CONTROL RESULTS

Client: Golder Associates Inc.

Job Number: 600-86336-2

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Geotechnical					
Analysis Batch:200-68042					
600-86336-1	2014-SED-001	T	Solid	D422	
600-86336-2	2014-SED-002	T	Solid	D422	
600-86336-3	2014-SED-003	T	Solid	D422	
600-86336-4	2014-SED-004	T	Solid	D422	
600-86336-5	2014-SED-005	T	Solid	D422	
600-86336-6	2014-SED-006	T	Solid	D422	
600-86336-7	2014-SED-007	T	Solid	D422	
600-86336-8	2014-SED-008	T	Solid	D422	
600-86336-9	2014-SED-009	T	Solid	D422	
600-86336-10	2014-SED-0010	T	Solid	D422	
600-86336-11	2014-SED-0011	T	Solid	D422	
600-86336-12	2014-SED-0012	T	Solid	D422	
600-86336-13	2014-SED-0013	T	Solid	D422	
600-86336-15	DUP-1	T	Solid	D422	

Report Basis

T = Total

Chain of Custody Record

TAL-4124 (1007)

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

(1)

Client: Golder	Project Manager: Anne & Faith-Boyd	Date: 01/28/14	Chain of Custody Number: 255223
Address: 820 South Main St. Ste 100	Telephone Number (Area Code)/Fax Number:	Lab Number:	Page 1 of 2
City: St. Louis; State: MO; Zip Code: 63301	Site Contact:	Lab Contact:	
Project Name and Location (State): Eagle Ford, TX - Stewart Creek	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TOC	Pb, As, Cd	Special Instructions/ Conditions of Receipt
2014-SED-001	01/28/14	0942			X		X						X	X	
2014-SED-002	"	1021			X		X						X	X	
2014-SED-003	"	1050			X		X						X	X	
2014-SED-004	"	1130			X		X						X	X	
2014-SED-005	"	1156			X		X						X	X	
2014-SED-006	"	1225			X		X						X	X	
2014-SED-007	"	1300			X		X						X	X	
2014-SED-008	"	1346			X		X						X	X	
2014-SED-009	"	1410			X		X						X	X	
2014-SED-010	"	1443			X		X						X	X	
2014-SED-011	"	1522			X		X						X	X	
2014-SED-012	"	1543			X		X						X	X	

600-86336 Chain of Custody

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other 5 day

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Chris Trevino	1/28/14	2300	1. Received By: [signature]	1/28/14	2300
2. Relinquished By: [signature]	1/29/14	1105	2. Received By: McConner	1/29/14	1105
3. Relinquished By: McConner	1/29/14	1530	3. Received By: [signature]	1/30/14	1011

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: Golder	Project Manager: Anne Fueth-Boyd	Date: 01/28/14	Chain of Custody Number: 255224
Address: 820 South Main St. Ste. 100	Telephone Number (Area Code)/Fax Number	Lab Number	Page 2 of 2
City: St Louis; State: MO; Zip Code: 63301	Site Contact	Lab Contact	
Project Name and Location (State): Exide Frisco, TX - Stewart Creek	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TCL	Pb, As, Cu	Total Metals - Pb, As, Cu	Dissolved Metals - Pb, As, Cu	Special Instructions/ Conditions of Receipt
2014-SED-013	01/28/14	1500			X		X						X	X			
2014-SW-001	01/28/14	1320		X					X						X	X	
DUP-1	01/28/14				X								X	X			

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other 5 day

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Chris Trevino	1/28/14	2300	1. Received By: [signature]	1/28/14	2300
2. Relinquished By: [signature]	1/29/14	1105	2. Received By: [signature]	1/29/14	1105
3. Relinquished By: [signature]	1/29/14	1530	3. Received By: [signature]	1/30/14	1011

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86336-2

Login Number: 86336

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.7
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86336-2

Login Number: 86336
List Number: 1
Creator: Marion, Greg T

List Source: TestAmerica Burlington
List Creation: 02/04/14 11:03 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	927801
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.5ºc ir gun id 181/cf=-0.1
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	Refer to Job Narrative for details.
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-86414-1
Client Project/Site: Exide Recycling Center, Stewart Creek
Revision: 1

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
3/3/2014 8:35:12 PM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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

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

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

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-86414-1 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☑ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☑ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Sophia Shah		2/7/2014
Name (printed)	Signature	Date

Project Management Assistant
Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/7/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86414-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X			R01A
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/7/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86414-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/7/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86414-1
Reviewer Name:	Dean A Joiner		

ER #[1]	Description
R01A	The following sample(s) was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): 600-86414-15, 600-86414-16, 600-86414-17, 600-86414-18, and 600-86414-19. These samples were logged in for the same analyses as the other water samples.

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Detection Check Standard

Matrix:	Soil
Method:	90.3 Walkley-Black
Preparation:	NA
Date Analyzed:	12/7/2013
Date Prepared:	12/7/2013
TALs Batches:	122871
Units:	% Carbon

Analyte	MDL	DCS Spike	Measured Result	MQL
TOC Walkley Black	0.0415	0.05	0.036	0.1

Detection Check Standard

Matrix:	Soil
Method:	6010B
Preparation:	3050
Date Analyzed:	12/30/2013
Date Prepared:	12/27/2013
Instrument:	Thermo 6500
TALS Batches:	123949, 123775p
Prep/Reagent Factor =	50
Units:	mg/kg

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.299654	0.5	0.36	25
Antimony	0.231553	0.45	0.5	2.5
Arsenic	0.217923	0.5	0.53	1
Barium	0.011322	0.03	0.04	1
Beryllium	0.014513	0.02	0.015	0.25
Boron	0.385535	0.6	0.56	20
Cadmium	0.025642	0.05	0.05	0.25
Calcium	0.86399	1.5	2.185	100
Chromium	0.050606	0.1	0.135	0.5
Cobalt	0.067622	0.1	0.09	0.5
Copper	0.173703	0.5	0.64	0.5
Iron	2.534007	4	3.76	20
Lead	0.104832	0.2	0.215	0.5
Selenium	0.258884	0.5	0.465	2
Manganese	0.038111	0.05	0.085	1.5
Molybdenum	0.136448	0.35	0.38	0.5
Nickel	0.116599	0.15	0.2	1
Silver	0.118848	0.2	0.15	0.5
Sodium	0.885548	2.4	3.135	100
Thallium	0.276988	0.7	0.73	1.5
Tin	0.08729	0.15	0.19	1
Titanium	0.014529	0.03	0.01	0.5
Vanadium	0.079068	0.15	0.125	0.5
Zinc	0.108432	0.2	0.305	1.5

Detection Check Standard

Matrix:	Water
Method:	200.7/6010
Preparation:	200.7P/3010
Date Analyzed:	12/31/2013
Date Prepared:	12/27/2013
Instrument:	Spectro01
TALs Batches:	124030, 123788p
Units:	mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.006	0.02	0.028176	0.5
Antimony	0.0063	0.01	0.010016	0.05
Arsenic	0.0033	0.01	0.008253	0.01
Barium	0.0022	0.005	0.004098	0.02
Beryllium	0.00134	0.002	0.004019	0.005
Boron	0.0077	0.02	0.019829	0.2
Cadmium	0.00073	0.001	0.001	0.005
Calcium	0.022	0.05	0.060829	1
Chromium	0.0016	0.002	0.003835	0.01
Cobalt	0.00063	0.001	0.000965	0.01
Copper	0.0014	0.002	0.002451	0.01
Iron	0.087	0.1	0.002258	0.4
Lithium	0.0024	0.005	0.006107	0.2
Lead	0.0029	0.005	0.005478	0.01
Selenium	0.0042	0.01	0.009953	0.04
Manganese	0.00084	0.002	0.001988	0.01
Molybdenum	0.0027	0.005	0.005867	0.01
Nickel	0.00179	0.005	0.005669	0.01
Silver	0.0012	0.0025	0.001901	0.01
Sodium	0.02	0.05	0.088115	1
Strontium	0.0005	0.001	0.000897	0.005
Thallium	0.0078	0.02	0.021503	0.03
Tin	0.0028	0.005	0.005708	0.01
Titanium	0.0011	0.002	0.001905	0.01
Vanadium	0.0017	0.002	0.003578	0.01
Zinc	0.0022	0.005	0.004189	0.01

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-1

Job ID: 600-86414-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-86414-1

Comments
The report was revised on 03/03/14 to update the metals analyte list and to change the sample ID to Duplicate-1 instead of 2014-SED14 (aqueous)--see attached email. This revision replaces the final report generated on 02/07/14.

Receipt
The samples were received on 1/31/2014 10:33 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.3º C and 2.4º C.

Method Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL HOU
Moisture	Percent Moisture	EPA	TAL HOU
WALKLEY BLACK	Organic Carbon, Total (TOC)	MSA	TAL HOU

Protocol References:

EPA = US Environmental Protection Agency

MSA = "Methods Of Soil Analysis, Chemical And Microbiological Properties", Part 2, 2nd Ed., 1982 And Subsequent Revisions.

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

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-86414-1	2014-SW-002	Water	01/29/14 09:48	01/31/14 10:33
600-86414-2	DUPLICATE-1	Water	01/29/14 09:48	01/31/14 10:33
600-86414-5	FIeld Blank	Water	01/29/14 10:10	01/31/14 10:33
600-86414-6	2014-SED-015	Solid	01/29/14 14:39	01/31/14 10:33
600-86414-7	2014-SED-014	Solid	01/29/14 13:49	01/31/14 10:33
600-86414-8	2014-SED-016	Solid	01/29/14 15:08	01/31/14 10:33
600-86414-9	2014-SW-003	Water	01/29/14 15:23	01/31/14 10:33
600-86414-11	2014-SW-004	Water	01/29/14 15:49	01/31/14 10:33
600-86414-13	DUPLICATE-2	Solid	01/29/14 00:00	01/31/14 10:33
600-86414-14	2014-SW-005	Water	01/29/14 16:42	01/31/14 10:33
600-86414-15	Equipment Blank 1	Water	01/29/14 08:52	01/31/14 10:33
600-86414-16	Equipment Blank 2	Water	01/29/14 08:53	01/31/14 10:33
600-86414-17	Equipment Bowl	Water	01/29/14 17:32	01/31/14 10:33
600-86414-18	Equipment Dredge	Water	01/29/14 17:35	01/31/14 10:33
600-86414-19	Duplicate-1	Water	01/29/14 09:48	01/31/14 10:33

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-1

Client Sample ID: 2014-SW-002

Lab Sample ID: 600-86414-1
Date Collected: 01/29/14 09:48
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 16:44	02/06/14 14:00	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 16:44	02/06/14 14:00	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 16:44	02/06/14 14:00	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 16:44	02/06/14 14:36	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 16:44	02/06/14 14:36	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 16:44	02/06/14 14:36	1

Client Sample ID: DUPLICATE-1

Lab Sample ID: 600-86414-2
Date Collected: 01/29/14 09:48
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 16:44	02/06/14 14:45	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 16:44	02/06/14 14:45	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 16:44	02/06/14 14:45	1

Client Sample ID: Field Blank

Lab Sample ID: 600-86414-5
Date Collected: 01/29/14 10:10
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 16:44	02/06/14 14:09	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 16:44	02/06/14 14:09	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 16:44	02/06/14 14:09	1

Client Sample ID: 2014-SED-015

Lab Sample ID: 600-86414-6
Date Collected: 01/29/14 14:39
Matrix: Solid
Date Received: 01/31/14 10:33
Percent Solids: 76.4

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**22.0**		1.20	0.262	mg/Kg	☼	02/04/14 14:31	02/05/14 11:46	1
Cadmium	**0.522**		0.300	0.0308	mg/Kg	☼	02/04/14 14:31	02/05/14 11:46	1
Lead	**32.9**		0.600	0.126	mg/Kg	☼	02/04/14 14:31	02/05/14 11:46	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**24**		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	**76**		1.0	1.0	%			02/03/14 15:19	1
TOC	**0.684**		0.131	0.0543	%	☼		02/06/14 10:00	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-1

Client Sample ID: 2014-SED-014

Lab Sample ID: 600-86414-7
Date Collected: 01/29/14 13:49
Matrix: Solid
Date Received: 01/31/14 10:33
Percent Solids: 71.8

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	12.0		1.29	0.281	mg/Kg	☼	02/04/14 14:31	02/05/14 11:49	1
Cadmium	0.439		0.323	0.0331	mg/Kg	☼	02/04/14 14:31	02/05/14 11:49	1
Lead	25.0		0.645	0.135	mg/Kg	☼	02/04/14 14:31	02/05/14 11:49	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	28		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	72		1.0	1.0	%			02/03/14 15:19	1
TOC	0.825		0.139	0.0578	%	☼		02/06/14 10:00	1

Client Sample ID: 2014-SED-016

Lab Sample ID: 600-86414-8
Date Collected: 01/29/14 15:08
Matrix: Solid
Date Received: 01/31/14 10:33
Percent Solids: 74.2

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	29.6		1.31	0.285	mg/Kg	☼	02/04/14 14:31	02/05/14 13:01	1
Cadmium	0.458		0.327	0.0336	mg/Kg	☼	02/04/14 14:31	02/05/14 13:01	1
Lead	26.2		0.655	0.137	mg/Kg	☼	02/04/14 14:31	02/05/14 13:01	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	26		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	74		1.0	1.0	%			02/03/14 15:19	1
TOC	0.406		0.135	0.0560	%	☼		02/06/14 10:00	1

Client Sample ID: 2014-SW-003

Lab Sample ID: 600-86414-9
Date Collected: 01/29/14 15:23
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 16:44	02/06/14 14:11	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 16:44	02/06/14 14:11	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 16:44	02/06/14 14:11	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 16:44	02/06/14 14:54	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 16:44	02/06/14 14:54	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 16:44	02/06/14 14:54	1

Client Sample ID: 2014-SW-004

Lab Sample ID: 600-86414-11
Date Collected: 01/29/14 15:49
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 16:44	02/06/14 14:14	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 16:44	02/06/14 14:14	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 16:44	02/06/14 14:14	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-1

Client Sample ID: 2014-SW-004

Lab Sample ID: 600-86414-11
Date Collected: 01/29/14 15:49
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 16:44	02/06/14 14:56	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 16:44	02/06/14 14:56	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 16:44	02/06/14 14:56	1

Client Sample ID: DUPLICATE-2

Lab Sample ID: 600-86414-13
Date Collected: 01/29/14 00:00
Matrix: Solid
Date Received: 01/31/14 10:33
Percent Solids: 76.0

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**57.9**		1.28	0.278	mg/Kg	☼	02/04/14 14:31	02/05/14 13:04	1
Cadmium	**1.00**		0.319	0.0328	mg/Kg	☼	02/04/14 14:31	02/05/14 13:04	1
Lead	**25.2**		0.639	0.134	mg/Kg	☼	02/04/14 14:31	02/05/14 13:04	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**24**		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	**76**		1.0	1.0	%			02/03/14 15:19	1
TOC	**0.807**		0.132	0.0546	%	☼		02/06/14 10:00	1

Client Sample ID: 2014-SW-005

Lab Sample ID: 600-86414-14
Date Collected: 01/29/14 16:42
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 16:44	02/06/14 14:16	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 16:44	02/06/14 14:16	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 16:44	02/06/14 14:16	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 16:44	02/06/14 14:59	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 16:44	02/06/14 14:59	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 16:44	02/06/14 14:59	1

Client Sample ID: Equipment Blank 1

Lab Sample ID: 600-86414-15
Date Collected: 01/29/14 08:52
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 16:44	02/06/14 14:25	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 16:44	02/06/14 14:25	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 16:44	02/06/14 14:25	1

Client Sample ID: Equipment Blank 2

Lab Sample ID: 600-86414-16

Date Collected: 01/29/14 08:53
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 16:44	02/06/14 14:27	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 16:44	02/06/14 14:27	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 16:44	02/06/14 14:27	1

Client Sample ID: Equipment Bowl

Lab Sample ID: 600-86414-17

Date Collected: 01/29/14 17:32
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 16:44	02/06/14 14:29	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 16:44	02/06/14 14:29	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 16:44	02/06/14 14:29	1

Client Sample ID: Equipment Dredge

Lab Sample ID: 600-86414-18

Date Collected: 01/29/14 17:35
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 16:44	02/06/14 14:32	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 16:44	02/06/14 14:32	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 16:44	02/06/14 14:32	1

Client Sample ID: Duplicate-1

Lab Sample ID: 600-86414-19

Date Collected: 01/29/14 09:48
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 16:44	02/06/14 14:34	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 16:44	02/06/14 14:34	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 16:44	02/06/14 14:34	1

Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

General Chemistry

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

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
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)

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-126557/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126636 — **Prep Batch: 126557**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.218	U	1.00	0.218	mg/Kg		02/04/14 14:31	02/05/14 11:37	1
Cadmium	0.0256	U	0.250	0.0256	mg/Kg		02/04/14 14:31	02/05/14 11:37	1
Lead	0.105	U	0.500	0.105	mg/Kg		02/04/14 14:31	02/05/14 11:37	1

Lab Sample ID: LCSSRM 600-126557/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126636 — **Prep Batch: 126557**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	99.6	99.28		mg/Kg		99.7	80.8 - 119.5
Cadmium	182	186.0		mg/Kg		102.2	81.9 - 118.1
Lead	115	113.6		mg/Kg		98.8	81.8 - 119.1

Lab Sample ID: 600-86414-7 MS — **Client Sample ID: 2014-SED-014**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126636 — **Prep Batch: 126557**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	12.0		61.8	76.75		mg/Kg	☼	105	75 - 125
Cadmium	0.439		30.9	31.69		mg/Kg	☼	101	75 - 125
Lead	25.0		61.8	84.98		mg/Kg	☼	97	75 - 125

Lab Sample ID: 600-86414-7 MSD — **Client Sample ID: 2014-SED-014**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126636 — **Prep Batch: 126557**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	12.0		56.7	64.29		mg/Kg	☼	92	75 - 125	18	20
Cadmium	0.439		28.3	27.69		mg/Kg	☼	96	75 - 125	13	20
Lead	25.0		56.7	77.78		mg/Kg	☼	93	75 - 125	9	20

Lab Sample ID: 600-86414-7 DU — **Client Sample ID: 2014-SED-014**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126636 — **Prep Batch: 126557**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	12.0		13.34		mg/Kg	☼	11	20
Cadmium	0.439		0.5044		mg/Kg	☼	14	20
Lead	25.0		27.88		mg/Kg	☼	11	20

Lab Sample ID: MB 600-126709/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126774 — **Prep Batch: 126709**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 16:44	02/06/14 13:56	1
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 16:44	02/06/14 13:56	1

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

Lab Sample ID: MB 600-126709/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126774 — **Prep Batch: 126709**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 16:44	02/06/14 13:56	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 16:44	02/06/14 13:56	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 16:44	02/06/14 13:56	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 16:44	02/06/14 13:56	1

Lab Sample ID: LCS 600-126709/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126774 — **Prep Batch: 126709**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.500	0.5021		mg/L		100	80 - 120
Arsenic, Dissolved	0.500	0.5021		mg/L		100	80 - 120
Cadmium	0.500	0.4971		mg/L		99	80 - 120
Cadmium, Dissolved	0.500	0.4971		mg/L		99	80 - 120
Lead	0.500	0.4883		mg/L		98	80 - 120
Lead, Dissolved	0.500	0.4883		mg/L		98	80 - 120

Lab Sample ID: 600-86414-1 MS — **Client Sample ID: 2014-SW-002**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126774 — **Prep Batch: 126709**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.00328	U	0.500	0.5120		mg/L		102	75 - 125
Cadmium	0.000350	U	0.500	0.4992		mg/L		100	75 - 125
Lead	0.00290	U	0.500	0.4898		mg/L		98	75 - 125

Lab Sample ID: 600-86414-1 MSD — **Client Sample ID: 2014-SW-002**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126774 — **Prep Batch: 126709**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.00328	U	0.500	0.5345		mg/L		107	75 - 125	4	20
Cadmium	0.000350	U	0.500	0.5186		mg/L		104	75 - 125	4	20
Lead	0.00290	U	0.500	0.5073		mg/L		101	75 - 125	4	20

Lab Sample ID: 600-86414-1 DU — **Client Sample ID: 2014-SW-002**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126774 — **Prep Batch: 126709**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	0.00328	U	0.00328	U	mg/L		NC	20
Cadmium	0.000350	U	0.000350	U	mg/L		NC	20
Lead	0.00290	U	0.00290	U	mg/L		NC	20

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

Lab Sample ID: 600-86414-1 MS — **Client Sample ID: 2014-SW-002**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 126774 — **Prep Batch: 126709**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic, Dissolved	0.00328	U	0.500	0.5353		mg/L		107	75 - 125
Cadmium, Dissolved	0.000350	U	0.500	0.5201		mg/L		104	75 - 125
Lead, Dissolved	0.00290	U	0.500	0.5056		mg/L		101	75 - 125

Lab Sample ID: 600-86414-1 MSD — **Client Sample ID: 2014-SW-002**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 126774 — **Prep Batch: 126709**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic, Dissolved	0.00328	U	0.500	0.5338		mg/L		107	75 - 125	0	20
Cadmium, Dissolved	0.000350	U	0.500	0.5147		mg/L		103	75 - 125	1	20
Lead, Dissolved	0.00290	U	0.500	0.5031		mg/L		101	75 - 125	0	20

Lab Sample ID: 600-86414-1 DU — **Client Sample ID: 2014-SW-002**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 126774 — **Prep Batch: 126709**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic, Dissolved	0.00328	U	0.00328	U	mg/L		NC	20
Cadmium, Dissolved	0.000350	U	0.000350	U	mg/L		NC	20
Lead, Dissolved	0.00290	U	0.00290	U	mg/L		NC	20

Method: Moisture - Percent Moisture

Lab Sample ID: 600-86414-6 DU — **Client Sample ID: 2014-SED-015**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126487

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	24		27		%		13	20
Percent Solids	76		73		%		5	20

Method: WALKLEY BLACK - Organic Carbon, Total (TOC)

Lab Sample ID: MB 600-126785/1 — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126785

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
TOC	0.0415	U	0.100	0.0415	%			02/06/14 10:00	1

Lab Sample ID: LCS 600-126785/2 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126785

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
TOC	2.34	2.223		%		95	80 - 120

Method: WALKLEY BLACK - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 600-86414-6 DU
Matrix: Solid
Analysis Batch: 126785

Client Sample ID: 2014-SED-015
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
TOC	0.684			0.6698		%	☼			2	20

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-1

Method: 6010B - Metals (ICP)

Analyte	MQL	MDL	Units	Method
Arsenic	0.0100	0.00328	mg/L	6010B
Arsenic	1.00	0.218	mg/Kg	6010B
Cadmium	0.00500	0.000350	mg/L	6010B
Cadmium	0.250	0.0256	mg/Kg	6010B
Lead	0.0100	0.00290	mg/L	6010B
Lead	0.500	0.105	mg/Kg	6010B

Method: 6010B - Metals (ICP) - Dissolved

Analyte	MQL	MDL	Units	Method
Arsenic, Dissolved	0.0100	0.00328	mg/L	6010B
Cadmium, Dissolved	0.00500	0.000350	mg/L	6010B
Lead, Dissolved	0.0100	0.00290	mg/L	6010B

General Chemistry

Analyte	MQL	MDL	Units	Method
Percent Moisture	1.0	1.0	%	Moisture
Percent Solids	1.0	1.0	%	Moisture
TOC	0.100	0.0415	%	WALKLEY BLACK

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-1

Metals

Prep Batch: 126557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-6	2014-SED-015	Total/NA	Solid	3050B	
600-86414-7	2014-SED-014	Total/NA	Solid	3050B	
600-86414-7 DU	2014-SED-014	Total/NA	Solid	3050B	
600-86414-7 MS	2014-SED-014	Total/NA	Solid	3050B	
600-86414-7 MSD	2014-SED-014	Total/NA	Solid	3050B	
600-86414-8	2014-SED-016	Total/NA	Solid	3050B	
600-86414-13	DUPLICATE-2	Total/NA	Solid	3050B	
LCSSRM 600-126557/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 600-126557/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 126636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-6	2014-SED-015	Total/NA	Solid	6010B	126557
600-86414-7	2014-SED-014	Total/NA	Solid	6010B	126557
600-86414-7 DU	2014-SED-014	Total/NA	Solid	6010B	126557
600-86414-7 MS	2014-SED-014	Total/NA	Solid	6010B	126557
600-86414-7 MSD	2014-SED-014	Total/NA	Solid	6010B	126557
600-86414-8	2014-SED-016	Total/NA	Solid	6010B	126557
600-86414-13	DUPLICATE-2	Total/NA	Solid	6010B	126557
LCSSRM 600-126557/2-A	Lab Control Sample	Total/NA	Solid	6010B	126557
MB 600-126557/1-A	Method Blank	Total/NA	Solid	6010B	126557

Prep Batch: 126709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-1	2014-SW-002	Dissolved	Water	3010A	
600-86414-1	2014-SW-002	Total/NA	Water	3010A	
600-86414-1 DU	2014-SW-002	Dissolved	Water	3010A	
600-86414-1 DU	2014-SW-002	Total/NA	Water	3010A	
600-86414-1 MS	2014-SW-002	Dissolved	Water	3010A	
600-86414-1 MS	2014-SW-002	Total/NA	Water	3010A	
600-86414-1 MSD	2014-SW-002	Dissolved	Water	3010A	
600-86414-1 MSD	2014-SW-002	Total/NA	Water	3010A	
600-86414-2	DUPLICATE-1	Dissolved	Water	3010A	
600-86414-5	FIeld Blank	Total/NA	Water	3010A	
600-86414-9	2014-SW-003	Dissolved	Water	3010A	
600-86414-9	2014-SW-003	Total/NA	Water	3010A	
600-86414-11	2014-SW-004	Dissolved	Water	3010A	
600-86414-11	2014-SW-004	Total/NA	Water	3010A	
600-86414-14	2014-SW-005	Dissolved	Water	3010A	
600-86414-14	2014-SW-005	Total/NA	Water	3010A	
600-86414-15	Equipment Blank 1	Total/NA	Water	3010A	
600-86414-16	Equipment Blank 2	Total/NA	Water	3010A	
600-86414-17	Equipment Bowl	Total/NA	Water	3010A	
600-86414-18	Equipment Dredge	Total/NA	Water	3010A	
600-86414-19	Duplicate-1	Total/NA	Water	3010A	
LCS 600-126709/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-126709/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 126774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-1	2014-SW-002	Dissolved	Water	6010B	126709

Metals (Continued)

Analysis Batch: 126774 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-1	2014-SW-002	Total/NA	Water	6010B	126709
600-86414-1 DU	2014-SW-002	Dissolved	Water	6010B	126709
600-86414-1 DU	2014-SW-002	Total/NA	Water	6010B	126709
600-86414-1 MS	2014-SW-002	Dissolved	Water	6010B	126709
600-86414-1 MS	2014-SW-002	Total/NA	Water	6010B	126709
600-86414-1 MSD	2014-SW-002	Dissolved	Water	6010B	126709
600-86414-1 MSD	2014-SW-002	Total/NA	Water	6010B	126709
600-86414-2	DUPLICATE-1	Dissolved	Water	6010B	126709
600-86414-5	FIeld Blank	Total/NA	Water	6010B	126709
600-86414-9	2014-SW-003	Dissolved	Water	6010B	126709
600-86414-9	2014-SW-003	Total/NA	Water	6010B	126709
600-86414-11	2014-SW-004	Dissolved	Water	6010B	126709
600-86414-11	2014-SW-004	Total/NA	Water	6010B	126709
600-86414-14	2014-SW-005	Dissolved	Water	6010B	126709
600-86414-14	2014-SW-005	Total/NA	Water	6010B	126709
600-86414-15	Equipment Blank 1	Total/NA	Water	6010B	126709
600-86414-16	Equipment Blank 2	Total/NA	Water	6010B	126709
600-86414-17	Equipment Bowl	Total/NA	Water	6010B	126709
600-86414-18	Equipment Dredge	Total/NA	Water	6010B	126709
600-86414-19	Duplicate-1	Total/NA	Water	6010B	126709
LCS 600-126709/2-A	Lab Control Sample	Total/NA	Water	6010B	126709
MB 600-126709/1-A	Method Blank	Total/NA	Water	6010B	126709

General Chemistry

Analysis Batch: 126487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-6	2014-SED-015	Total/NA	Solid	Moisture	
600-86414-6 DU	2014-SED-015	Total/NA	Solid	Moisture	
600-86414-7	2014-SED-014	Total/NA	Solid	Moisture	
600-86414-7 MS	2014-SED-014	Total/NA	Solid	Moisture	
600-86414-7 MSD	2014-SED-014	Total/NA	Solid	Moisture	
600-86414-8	2014-SED-016	Total/NA	Solid	Moisture	
600-86414-13	DUPLICATE-2	Total/NA	Solid	Moisture	

Analysis Batch: 126785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-6	2014-SED-015	Total/NA	Solid	WALKLEY BLACK	
600-86414-6 DU	2014-SED-015	Total/NA	Solid	WALKLEY BLACK	
600-86414-7	2014-SED-014	Total/NA	Solid	WALKLEY BLACK	
600-86414-8	2014-SED-016	Total/NA	Solid	WALKLEY BLACK	
600-86414-13	DUPLICATE-2	Total/NA	Solid	WALKLEY BLACK	
LCS 600-126785/2	Lab Control Sample	Total/NA	Solid	WALKLEY BLACK	
MB 600-126785/1	Method Blank	Total/NA	Solid	WALKLEY BLACK	

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-1

Client Sample ID: 2014-SW-002

Lab Sample ID: 600-86414-1
Date Collected: 01/29/14 09:48
Matrix: Water
Date Received: 01/31/14 10:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126709	02/05/14 16:44	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 14:00	DCL	TAL HOU
Dissolved	Prep	3010A			50 mL	50 mL	126709	02/05/14 16:44	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 14:36	DCL	TAL HOU

Client Sample ID: DUPLICATE-1

Lab Sample ID: 600-86414-2
Date Collected: 01/29/14 09:48
Matrix: Water
Date Received: 01/31/14 10:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	126709	02/05/14 16:44	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 14:45	DCL	TAL HOU

Client Sample ID: Fleld Blank

Lab Sample ID: 600-86414-5
Date Collected: 01/29/14 10:10
Matrix: Water
Date Received: 01/31/14 10:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126709	02/05/14 16:44	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 14:09	DCL	TAL HOU

Client Sample ID: 2014-SED-015

Lab Sample ID: 600-86414-6
Date Collected: 01/29/14 14:39
Matrix: Solid
Date Received: 01/31/14 10:33
Percent Solids: 76.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.09 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.09 g	50 mL	126636	02/05/14 11:46	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	5.0200 g	5.0200 g	126785	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-014

Lab Sample ID: 600-86414-7
Date Collected: 01/29/14 13:49
Matrix: Solid
Date Received: 01/31/14 10:33
Percent Solids: 71.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.08 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.08 g	50 mL	126636	02/05/14 11:49	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0000 g	2.0000 g	126785	02/06/14 10:00	EC1	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-1

Client Sample ID: 2014-SED-016

Lab Sample ID: 600-86414-8
Date Collected: 01/29/14 15:08
Matrix: Solid
Date Received: 01/31/14 10:33
Percent Solids: 74.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.03 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.03 g	50 mL	126636	02/05/14 13:01	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	5.0200 g	5.0200 g	126785	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SW-003

Lab Sample ID: 600-86414-9
Date Collected: 01/29/14 15:23
Matrix: Water
Date Received: 01/31/14 10:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126709	02/05/14 16:44	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 14:11	DCL	TAL HOU
Dissolved	Prep	3010A			50 mL	50 mL	126709	02/05/14 16:44	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 14:54	DCL	TAL HOU

Client Sample ID: 2014-SW-004

Lab Sample ID: 600-86414-11
Date Collected: 01/29/14 15:49
Matrix: Water
Date Received: 01/31/14 10:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126709	02/05/14 16:44	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 14:14	DCL	TAL HOU
Dissolved	Prep	3010A			50 mL	50 mL	126709	02/05/14 16:44	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 14:56	DCL	TAL HOU

Client Sample ID: DUPLICATE-2

Lab Sample ID: 600-86414-13
Date Collected: 01/29/14 00:00
Matrix: Solid
Date Received: 01/31/14 10:33
Percent Solids: 76.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.03 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.03 g	50 mL	126636	02/05/14 13:04	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0200 g	2.0200 g	126785	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SW-005

Lab Sample ID: 600-86414-14
Date Collected: 01/29/14 16:42
Matrix: Water
Date Received: 01/31/14 10:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126709	02/05/14 16:44	NER	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-1

Client Sample ID: 2014-SW-005

Lab Sample ID: 600-86414-14
Date Collected: 01/29/14 16:42
Matrix: Water
Date Received: 01/31/14 10:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 14:16	DCL	TAL HOU
Dissolved	Prep	3010A			50 mL	50 mL	126709	02/05/14 16:44	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 14:59	DCL	TAL HOU

Client Sample ID: Equipment Blank 1

Lab Sample ID: 600-86414-15
Date Collected: 01/29/14 08:52
Matrix: Water
Date Received: 01/31/14 10:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126709	02/05/14 16:44	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 14:25	DCL	TAL HOU

Client Sample ID: Equipment Blank 2

Lab Sample ID: 600-86414-16
Date Collected: 01/29/14 08:53
Matrix: Water
Date Received: 01/31/14 10:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126709	02/05/14 16:44	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 14:27	DCL	TAL HOU

Client Sample ID: Equipment Bowl

Lab Sample ID: 600-86414-17
Date Collected: 01/29/14 17:32
Matrix: Water
Date Received: 01/31/14 10:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126709	02/05/14 16:44	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 14:29	DCL	TAL HOU

Client Sample ID: Equipment Dredge

Lab Sample ID: 600-86414-18
Date Collected: 01/29/14 17:35
Matrix: Water
Date Received: 01/31/14 10:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126709	02/05/14 16:44	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 14:32	DCL	TAL HOU

Client Sample ID: Duplicate-1

Lab Sample ID: 600-86414-19
Date Collected: 01/29/14 09:48
Matrix: Water
Date Received: 01/31/14 10:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126709	02/05/14 16:44	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 14:34	DCL	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-1

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-1

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	TX00083	10-31-14

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Golder Associates	Anne Fueth-Boyd	1-29-13	255226
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 2**
820 S. Main St Suite 100	636-724-9191		
City / State / Zip Code	**Site Contact / Lab Contact**		
St. louis / MO / 63301			
Project Name and Location (State)	**Carrier/Waybill Number**		
Exide Frisco - Stewart Creek			
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed)

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TOC	METALS (As, Cd, Pb)	Total Metals (As, Cd, Pb)	Dissolved Metals (As, Cd, Pb)
2014-SW-002	1-29-14	0948		X					X						X	X
Duplicate-1		0948		X					X						X	X
2014-SW-002-MS		0948		X					X						X	X
2014-SW-002 MSD		0948		X					X						X	X
Field Blank		1010		X					X						X	X
2014-SED-015		1439			X	X	X						X	X		
2014-SED-014		1349			X	X	X						X	X		
2014-SED-016		1508			X	X	X						X	X		
2014-SW-003		1523		X					X						X	X
2014-SED-017		1535			X		X									
2014-SW-004		1549		X					X							
2014-SED-018		1639			X		X									

In Accordance w/ MSA

600-86414 Chain of Custody

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other 5-day

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Chris Trevino	01/29/14	2130	1. Received By:	1/29/14	2130
2. Relinquished By:	1/30/14	1234	2. Received By: Mike Cowen	1/30/14	1234
3. Relinquished By: Mike Cowen	1/30/14	1530	3. Received By:		

Comments

1/31/14 1032

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TAL-4124 (1007)

Client: Golder Associates	Project Manager: Anne Faeth-Boyd
Date: 1-29-13	
Address: 920 S. Main St	Telephone Number (Area Code)/Fax Number: 636-724-9191
Lab Number:	
City: St Louis; State: Mo; Zip Code: 63301	Site Contact:
Lab Contact:	
Project Name and Location (State): Exide SI156 - Sewer Creek	Carrier/Waybill Number:
Contract/Purchase Order/Quote No.:	

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TOC	Metals (As, Cd, Pb)	total metals (As, Cd, Pb)	Dissolved metals (As, Cd, Pb)
Duplicate-2	1-29-13				X		X						X	X		
2014-SED-014-MS	1-29-13	1349			X		X							X		
2014-SED-014-MSD	1-29-13	1349			X		X							X		
2014-SED-016-MSD	1-29-13	1508			X		X						X			
2014-SED-016-MS	1-29-13	1508			X		X						X			
~~[illegible]~~																
2014-SW-05	1-29-13	1642		X				X							X	X

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be longer than 1

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other 5-day

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: Chris Trevino	01/29/14	2130	1. Received By:		
2. Relinquished By:	1/30/14	1234	2. Received By:		
3. Relinquished By:	1/30/14	1530	3. Received By:		

Comments

1/31

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Std TC-1, Page 1 of 1

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Upton, Cathy

From: Joiner, Dean
Sent: Thursday, February 27, 2014 12:12 PM
To: Upton, Cathy
Subject: FW: Files from 600-86414-3 Exide Recycling Center, Stewart Creek
Follow Up Flag: Follow up
Flag Status: Red

Cathy, Can you update.

From: Higginbotham, Christina [mailto:Christina_Higginbotham@golder.com]
Sent: Thursday, February 27, 2014 10:56 AM
To: Joiner, Dean; Forthaus, Brett; Thomas, Jim
Subject: RE: Files from 600-86414-3 Exide Recycling Center, Stewart Creek

For 2014-SED-14 (aqueous) total metals only, weren't we going to revise this sample ID to be Duplicate-1 because it was mis-labeled, per our previous emails?

Christina Higginbotham, P.G. | Remediation Project Manager | **Golder Associates Inc.**
500 Century Plaza Drive, Suite 190, Houston, Texas, USA 77073
T: +1 (281) 821-6868 | **F:** +1 (281) 821-6870 | **C:** +1 (281) 620-7835 | **E:** CHigginbotham@golder.com |
www.golder.com

Work Safe, Home Safe

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Please consider the environment before printing this email.

From: Joiner, Dean [mailto:dean.joiner@testamericainc.com]
Sent: Thursday, February 27, 2014 10:52 AM
To: Forthaus, Brett; Higginbotham, Christina; Thomas, Jim
Subject: Files from 600-86414-3 Exide Recycling Center, Stewart Creek

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: Project Feedback

DEAN A JOINER

TestAmerica Houston
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 713.690.4444
www.testamericainc.com

Reference: [183683]
Attachments: 5

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86414-1

Login Number: 86414
List Number: 1
Creator: Lopez, Sandro R

List Source: TestAmerica Houston

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4/1.3
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

ANALYTICAL REPORT

Job Number: 600-86414-2

Job Description: Exide Recycling Center, Stewart Creek

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, TX 77073

Attention: Christina Higginbotham

Approved for release.
Cathy L Upton
Project Management Assistant II
2/11/2014 4:32 PM

Designee for
Dean A Joiner, Project Manager II
6310 Rothway Street, Houston, TX, 77040
(713)690-4444
dean.joiner@testamericainc.com
02/11/2014

cc: Brett Forthaus
Mr. Jim Thomas

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Project Manager.

TestAmerica Houston Certifications and Approvals: TX NELAP T104704223-09A-TX, ARDEQ 88-0759, LADEQ 01967, OKDEQ 9503, UT DOH GULF

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Comments
No additional comments.

Receipt
The samples were received on 1/31/2014 10:33 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.3º C and 2.4º C.

Geotechnical
No analytical or quality issues were noted.

METHOD SUMMARY

Client: Golder Associates Inc. Job Number: 600-86414-2

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Grain Size	TAL BUR	ASTM D422	

Lab References:

TAL BUR = TestAmerica Burlington

Method References:

ASTM = ASTM International

METHOD / ANALYST SUMMARY

Client: Golder Associates Inc.

Job Number: 600-86414-2

Method	Analyst	Analyst ID
ASTM D422	Degree, Steven L	SLD

SAMPLE SUMMARY

Client: Golder Associates Inc. Job Number: 600-86414-2

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
600-86414-6	2014-SED-015	Solid	01/29/2014 1439	01/31/2014 1033
600-86414-7	2014-SED-014	Solid	01/29/2014 1349	01/31/2014 1033
600-86414-8	2014-SED-016	Solid	01/29/2014 1508	01/31/2014 1033
600-86414-10	2014-SED-017	Solid	01/29/2014 1535	01/31/2014 1033
600-86414-12	2014-SED-018	Solid	01/29/2014 1639	01/31/2014 1033

SAMPLE RESULTS

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86414-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-015

Lab Sample ID: 600-86414-6
Client Matrix: Solid

Date Sampled: 01/29/2014 14:39
Date Received: 01/31/2014 10:33

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	56.2						%	68094	02/04/2014 16:22	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	33.5						um	68094	02/04/2014 16:22	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68094	02/04/2014 16:22	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	21.4						um	68094	02/04/2014 16:22	1	SLD
Sand	STL00582	22.0						%	68094	02/04/2014 16:22	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68094	02/04/2014 16:22	1	SLD
Coarse Sand	STL00583	10.5						%	68094	02/04/2014 16:22	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.5						um	68094	02/04/2014 16:22	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68094	02/04/2014 16:22	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.0						um	68094	02/04/2014 16:22	1	SLD
Medium Sand	STL00584	7.5						%	68094	02/04/2014 16:22	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68094	02/04/2014 16:22	1	SLD
Fine Sand	STL00585	4.0						%	68094	02/04/2014 16:22	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.2						um	68094	02/04/2014 16:22	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	75.9						% Passing	68094	02/04/2014 16:22	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.2						um	68094	02/04/2014 16:22	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	59.7						% Passing	68094	02/04/2014 16:22	1	SLD
Silt	STL00586	16.5						%	68094	02/04/2014 16:22	1	SLD
Clay	STL00587	5.3						%	68094	02/04/2014 16:22	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	68094	02/04/2014 16:22	1	SLD
Sieve Size #4 - Percent Finer	STL01274	43.8						% Passing	68094	02/04/2014 16:22	1	SLD
Sieve Size #10 - Percent Finer	STL01268	33.3						% Passing	68094	02/04/2014 16:22	1	SLD
Sieve Size #20 - Percent Finer	STL01271	29.2						% Passing	68094	02/04/2014 16:22	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86414-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-015

Lab Sample ID: 600-86414-6
Client Matrix: Solid

Date Sampled: 01/29/2014 14:39
Date Received: 01/31/2014 10:33

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	25.8						% Passing	68094	02/04/2014 16:22	1	SLD
Sieve Size #60 - Percent Finer	STL01276	23.6						% Passing	68094	02/04/2014 16:22	1	SLD
Sieve Size #80 - Percent Finer	STL01277	22.9						% Passing	68094	02/04/2014 16:22	1	SLD
Sieve Size #100 - Percent Finer	STL01269	22.6						% Passing	68094	02/04/2014 16:22	1	SLD
Sieve Size #200 - Percent Finer	STL01272	21.8						% Passing	68094	02/04/2014 16:22	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	7.8						% Passing	68094	02/04/2014 16:22	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	7.1						% Passing	68094	02/04/2014 16:22	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	6.4						% Passing	68094	02/04/2014 16:22	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	6.1						% Passing	68094	02/04/2014 16:22	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	5.4						% Passing	68094	02/04/2014 16:22	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	4.3						% Passing	68094	02/04/2014 16:22	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	3.1						% Passing	68094	02/04/2014 16:22	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86414-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-014

Lab Sample ID: 600-86414-7
Client Matrix: Solid

Date Sampled: 01/29/2014 13:49
Date Received: 01/31/2014 10:33

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	46.9						%	68094	02/04/2014 16:35	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	29.3						um	68094	02/04/2014 16:35	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68094	02/04/2014 16:35	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	19.0						um	68094	02/04/2014 16:35	1	SLD
Sand	STL00582	26.0						%	68094	02/04/2014 16:35	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68094	02/04/2014 16:35	1	SLD
Coarse Sand	STL00583	15.9						%	68094	02/04/2014 16:35	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	11.3						um	68094	02/04/2014 16:35	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68094	02/04/2014 16:35	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	7.9						um	68094	02/04/2014 16:35	1	SLD
Medium Sand	STL00584	6.3						%	68094	02/04/2014 16:35	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68094	02/04/2014 16:35	1	SLD
Fine Sand	STL00585	3.8						%	68094	02/04/2014 16:35	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.8						um	68094	02/04/2014 16:35	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	94.3						% Passing	68094	02/04/2014 16:35	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.0						um	68094	02/04/2014 16:35	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	74.5						% Passing	68094	02/04/2014 16:35	1	SLD
Silt	STL00586	11.8						%	68094	02/04/2014 16:35	1	SLD
Clay	STL00587	15.3						%	68094	02/04/2014 16:35	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	68094	02/04/2014 16:35	1	SLD
Sieve Size #4 - Percent Finer	STL01274	53.1						% Passing	68094	02/04/2014 16:35	1	SLD
Sieve Size #10 - Percent Finer	STL01268	37.2						% Passing	68094	02/04/2014 16:35	1	SLD
Sieve Size #20 - Percent Finer	STL01271	32.8						% Passing	68094	02/04/2014 16:35	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86414-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-014

Lab Sample ID: 600-86414-7
Client Matrix: Solid

Date Sampled: 01/29/2014 13:49
Date Received: 01/31/2014 10:33

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	30.9						% Passing	68094	02/04/2014 16:35	1	SLD
Sieve Size #60 - Percent Finer	STL01276	29.7						% Passing	68094	02/04/2014 16:35	1	SLD
Sieve Size #80 - Percent Finer	STL01277	29.1						% Passing	68094	02/04/2014 16:35	1	SLD
Sieve Size #100 - Percent Finer	STL01269	28.6						% Passing	68094	02/04/2014 16:35	1	SLD
Sieve Size #200 - Percent Finer	STL01272	27.1						% Passing	68094	02/04/2014 16:35	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	20.9						% Passing	68094	02/04/2014 16:35	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	19.1						% Passing	68094	02/04/2014 16:35	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	17.2						% Passing	68094	02/04/2014 16:35	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	16.2						% Passing	68094	02/04/2014 16:35	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	15.3						% Passing	68094	02/04/2014 16:35	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	12.8						% Passing	68094	02/04/2014 16:35	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	9.9						% Passing	68094	02/04/2014 16:35	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86414-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-016

Lab Sample ID: 600-86414-8
Client Matrix: Solid

Date Sampled: 01/29/2014 15:08
Date Received: 01/31/2014 10:33

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	25.3						%	68094	02/04/2014 16:38	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	30.9						um	68094	02/04/2014 16:38	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68094	02/04/2014 16:38	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	19.6						um	68094	02/04/2014 16:38	1	SLD
Sand	STL00582	42.9						%	68094	02/04/2014 16:38	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68094	02/04/2014 16:38	1	SLD
Coarse Sand	STL00583	21.9						%	68094	02/04/2014 16:38	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	11.5						um	68094	02/04/2014 16:38	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68094	02/04/2014 16:38	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.2						um	68094	02/04/2014 16:38	1	SLD
Medium Sand	STL00584	16.8						%	68094	02/04/2014 16:38	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68094	02/04/2014 16:38	1	SLD
Fine Sand	STL00585	4.2						%	68094	02/04/2014 16:38	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.0						um	68094	02/04/2014 16:38	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68094	02/04/2014 16:38	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.1						um	68094	02/04/2014 16:38	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	93.6						% Passing	68094	02/04/2014 16:38	1	SLD
Silt	STL00586	19.6						%	68094	02/04/2014 16:38	1	SLD
Clay	STL00587	12.2						%	68094	02/04/2014 16:38	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	68094	02/04/2014 16:38	1	SLD
Sieve Size #4 - Percent Finer	STL01274	74.7						% Passing	68094	02/04/2014 16:38	1	SLD
Sieve Size #10 - Percent Finer	STL01268	52.8						% Passing	68094	02/04/2014 16:38	1	SLD
Sieve Size #20 - Percent Finer	STL01271	43.3						% Passing	68094	02/04/2014 16:38	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86414-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-016

Lab Sample ID: 600-86414-8
Client Matrix: Solid

Date Sampled: 01/29/2014 15:08
Date Received: 01/31/2014 10:33

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	36.0						% Passing	68094	02/04/2014 16:38	1	SLD
Sieve Size #60 - Percent Finer	STL01276	33.6						% Passing	68094	02/04/2014 16:38	1	SLD
Sieve Size #80 - Percent Finer	STL01277	33.0						% Passing	68094	02/04/2014 16:38	1	SLD
Sieve Size #100 - Percent Finer	STL01269	32.7						% Passing	68094	02/04/2014 16:38	1	SLD
Sieve Size #200 - Percent Finer	STL01272	31.8						% Passing	68094	02/04/2014 16:38	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	16.9						% Passing	68094	02/04/2014 16:38	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	16.4						% Passing	68094	02/04/2014 16:38	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	15.0						% Passing	68094	02/04/2014 16:38	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	13.2						% Passing	68094	02/04/2014 16:38	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	12.2						% Passing	68094	02/04/2014 16:38	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	9.4						% Passing	68094	02/04/2014 16:38	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	6.5						% Passing	68094	02/04/2014 16:38	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86414-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-017

Lab Sample ID: 600-86414-10
Client Matrix: Solid

Date Sampled: 01/29/2014 15:35
Date Received: 01/31/2014 10:33

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	22.4						%	68094	02/04/2014 16:40	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	31.4						um	68094	02/04/2014 16:40	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68094	02/04/2014 16:40	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	20.0						um	68094	02/04/2014 16:40	1	SLD
Sand	STL00582	44.4						%	68094	02/04/2014 16:40	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68094	02/04/2014 16:40	1	SLD
Coarse Sand	STL00583	21.0						%	68094	02/04/2014 16:40	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	11.8						um	68094	02/04/2014 16:40	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68094	02/04/2014 16:40	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.3						um	68094	02/04/2014 16:40	1	SLD
Medium Sand	STL00584	19.2						%	68094	02/04/2014 16:40	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68094	02/04/2014 16:40	1	SLD
Fine Sand	STL00585	4.2						%	68094	02/04/2014 16:40	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.1						um	68094	02/04/2014 16:40	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	91.5						% Passing	68094	02/04/2014 16:40	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.0						um	68094	02/04/2014 16:40	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	84.9						% Passing	68094	02/04/2014 16:40	1	SLD
Silt	STL00586	18.2						%	68094	02/04/2014 16:40	1	SLD
Clay	STL00587	15.0						%	68094	02/04/2014 16:40	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	68094	02/04/2014 16:40	1	SLD
Sieve Size #4 - Percent Finer	STL01274	77.6						% Passing	68094	02/04/2014 16:40	1	SLD
Sieve Size #10 - Percent Finer	STL01268	56.6						% Passing	68094	02/04/2014 16:40	1	SLD
Sieve Size #20 - Percent Finer	STL01271	44.0						% Passing	68094	02/04/2014 16:40	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86414-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-017

Lab Sample ID: 600-86414-10
Client Matrix: Solid

Date Sampled: 01/29/2014 15:35
Date Received: 01/31/2014 10:33

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	37.4						% Passing	68094	02/04/2014 16:40	1	SLD
Sieve Size #60 - Percent Finer	STL01276	35.4						% Passing	68094	02/04/2014 16:40	1	SLD
Sieve Size #80 - Percent Finer	STL01277	34.7						% Passing	68094	02/04/2014 16:40	1	SLD
Sieve Size #100 - Percent Finer	STL01269	34.2						% Passing	68094	02/04/2014 16:40	1	SLD
Sieve Size #200 - Percent Finer	STL01272	33.2						% Passing	68094	02/04/2014 16:40	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	20.6						% Passing	68094	02/04/2014 16:40	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	20.0						% Passing	68094	02/04/2014 16:40	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	17.5						% Passing	68094	02/04/2014 16:40	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	16.3						% Passing	68094	02/04/2014 16:40	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	15.0						% Passing	68094	02/04/2014 16:40	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	12.5						% Passing	68094	02/04/2014 16:40	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	9.9						% Passing	68094	02/04/2014 16:40	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86414-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-018

Lab Sample ID: 600-86414-12
Client Matrix: Solid

Date Sampled: 01/29/2014 16:39
Date Received: 01/31/2014 10:33

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	1.5						%	68094	02/04/2014 16:51	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	26.9						um	68094	02/04/2014 16:51	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68094	02/04/2014 16:51	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	17.4						um	68094	02/04/2014 16:51	1	SLD
Sand	STL00582	44.0						%	68094	02/04/2014 16:51	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68094	02/04/2014 16:51	1	SLD
Coarse Sand	STL00583	3.1						%	68094	02/04/2014 16:51	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	10.5						um	68094	02/04/2014 16:51	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68094	02/04/2014 16:51	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	7.4						um	68094	02/04/2014 16:51	1	SLD
Medium Sand	STL00584	18.8						%	68094	02/04/2014 16:51	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68094	02/04/2014 16:51	1	SLD
Fine Sand	STL00585	22.1						%	68094	02/04/2014 16:51	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.5						um	68094	02/04/2014 16:51	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68094	02/04/2014 16:51	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	2.8						um	68094	02/04/2014 16:51	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	100.0						% Passing	68094	02/04/2014 16:51	1	SLD
Silt	STL00586	25.3						%	68094	02/04/2014 16:51	1	SLD
Clay	STL00587	29.2						%	68094	02/04/2014 16:51	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.2						um	68094	02/04/2014 16:51	1	SLD
Sieve Size #4 - Percent Finer	STL01274	98.5						% Passing	68094	02/04/2014 16:51	1	SLD
Sieve Size #10 - Percent Finer	STL01268	95.4						% Passing	68094	02/04/2014 16:51	1	SLD
Sieve Size #20 - Percent Finer	STL01271	88.9						% Passing	68094	02/04/2014 16:51	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86414-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center, Stewart Creek

Client Sample ID: 2014-SED-018

Lab Sample ID: 600-86414-12
Client Matrix: Solid

Date Sampled: 01/29/2014 16:39
Date Received: 01/31/2014 10:33

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	76.6						% Passing	68094	02/04/2014 16:51	1	SLD
Sieve Size #60 - Percent Finer	STL01276	64.0						% Passing	68094	02/04/2014 16:51	1	SLD
Sieve Size #80 - Percent Finer	STL01277	59.6						% Passing	68094	02/04/2014 16:51	1	SLD
Sieve Size #100 - Percent Finer	STL01269	57.9						% Passing	68094	02/04/2014 16:51	1	SLD
Sieve Size #200 - Percent Finer	STL01272	54.5						% Passing	68094	02/04/2014 16:51	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	40.0						% Passing	68094	02/04/2014 16:51	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	37.9						% Passing	68094	02/04/2014 16:51	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	34.2						% Passing	68094	02/04/2014 16:51	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	30.6						% Passing	68094	02/04/2014 16:51	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	29.2						% Passing	68094	02/04/2014 16:51	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	24.0						% Passing	68094	02/04/2014 16:51	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	19.5						% Passing	68094	02/04/2014 16:51	1	SLD

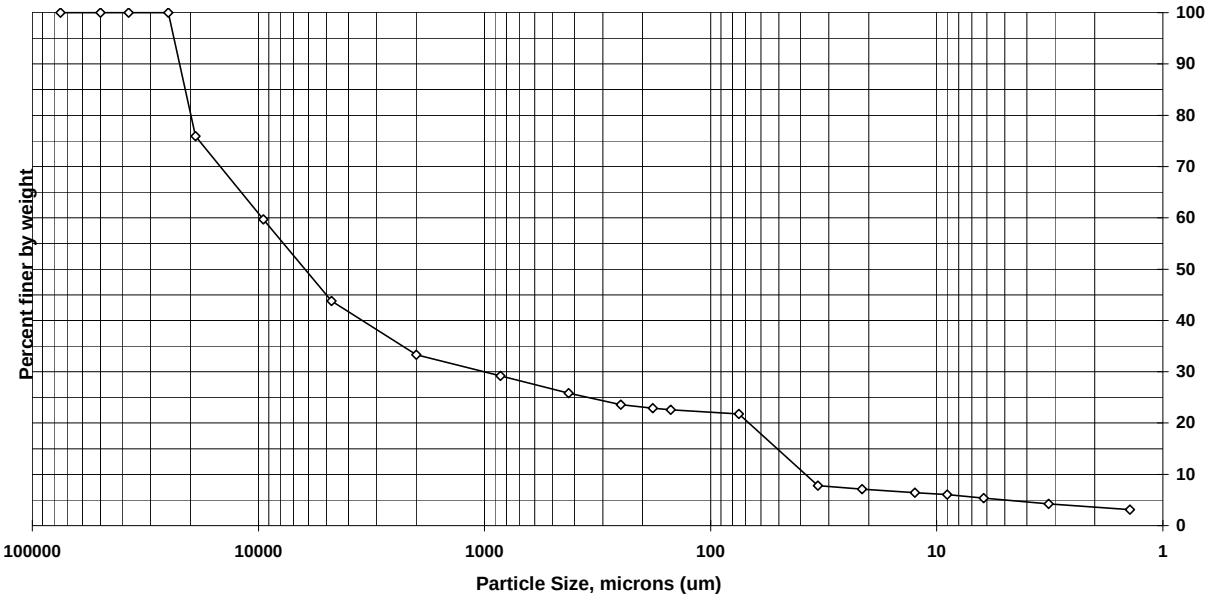
Particle Size of Soils by ASTM D422

				Date Received:	1/31/2014
Sample ID:	2014-SED-015	**Percent Solids:**	83.7%	**Start Date:**	2/4/2014
Lab ID:	600-86414-C-6	**Specific Gravity:**	2.650	**End Date:**	2/7/2014

Shape (> #10): subrounded

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	75.9	24.1
3/8 inch	9500	59.7	16.2
#4	4750	43.8	15.9
#10	2000	33.3	10.5
#20	850	29.2	4.1
#40	425	25.8	3.4
#60	250	23.6	2.2
#80	180	22.9	0.7
#100	150	22.6	0.3
#200	75	21.8	0.8
Hyd1	33.5	7.8	14.0
Hyd2	21.4	7.1	0.7
Hyd3	12.5	6.4	0.7
Hyd4	9	6.1	0.4
Hyd5	6.2	5.4	0.7
Hyd6	3.2	4.3	1.1
Hyd7	1.4	3.1	1.1

Soil Classification	Percent of sample
Gravel	56.2
Sand	22.0
Coarse Sand	10.5
Medium Sand	7.5
Fine Sand	4.0
Silt	16.5
Clay	5.3

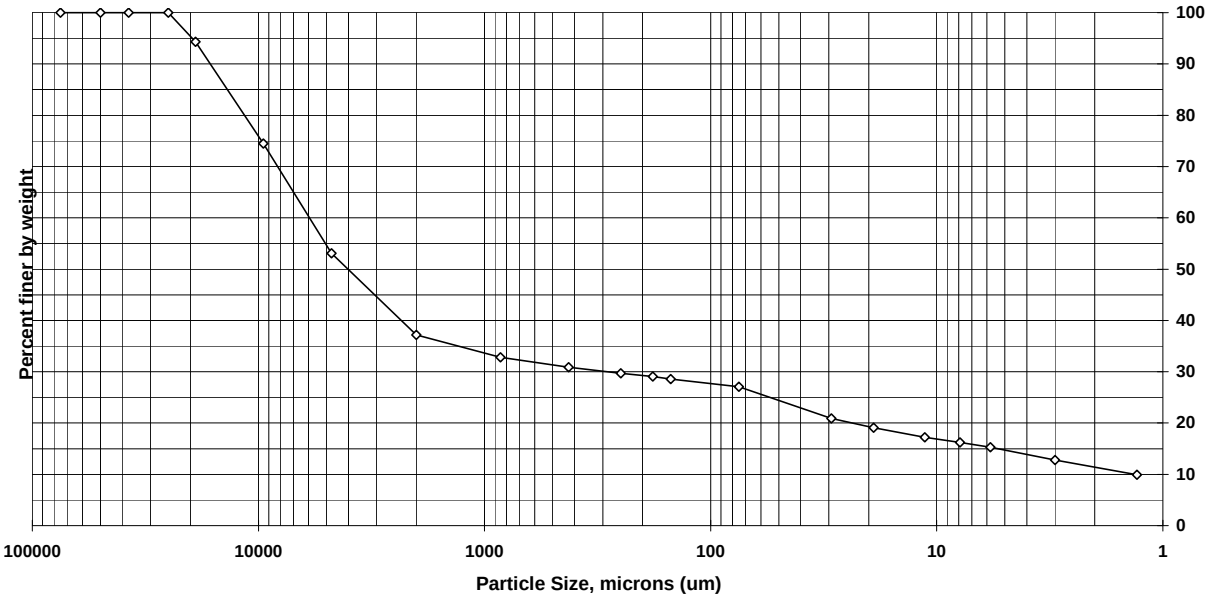
Particle Size of Soils by ASTM D422

				Date Received:	1/31/2014
Sample ID:	2014-SED-014	**Percent Solids:**	80.2%	**Start Date:**	2/4/2014
Lab ID:	600-86414-C-7	**Specific Gravity:**	2.650	**End Date:**	2/7/2014

Shape (> #10): subangular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	94.3	5.7
3/8 inch	9500	74.5	19.8
#4	4750	53.1	21.4
#10	2000	37.2	15.9
#20	850	32.8	4.4
#40	425	30.9	1.9
#60	250	29.7	1.2
#80	180	29.1	0.6
#100	150	28.6	0.5
#200	75	27.1	1.5
Hyd1	29.3	20.9	6.2
Hyd2	19	19.1	1.8
Hyd3	11.3	17.2	1.9
Hyd4	7.9	16.2	1.0
Hyd5	5.8	15.3	0.9
Hyd6	3	12.8	2.5
Hyd7	1.3	9.9	2.9

Soil Classification	Percent of sample
Gravel	46.9
Sand	26.0
Coarse Sand	15.9
Medium Sand	6.3
Fine Sand	3.8
Silt	11.8
Clay	15.3

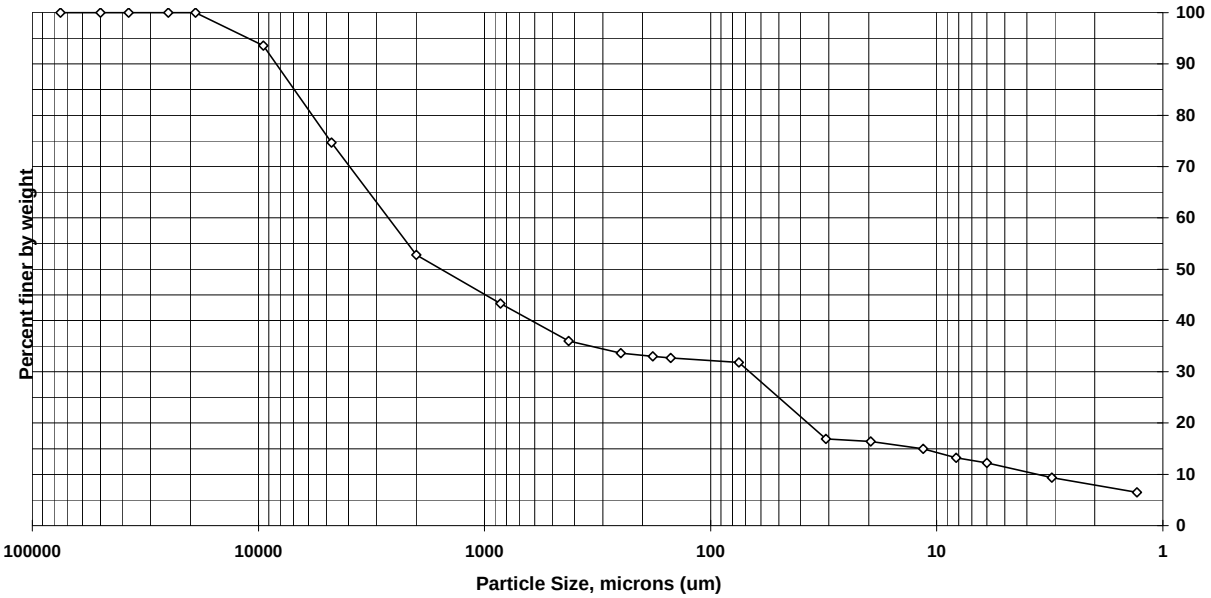
Particle Size of Soils by ASTM D422

				Date Received:	1/31/2014
Sample ID:	2014-SED-016	**Percent Solids:**	78.1%	**Start Date:**	2/4/2014
Lab ID:	600-86414-C-8	**Specific Gravity:**	2.650	**End Date:**	2/7/2014

Shape (> #10): angular

Non-soil material: wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	93.6	6.4
#4	4750	74.7	18.9
#10	2000	52.8	21.9
#20	850	43.3	9.5
#40	425	36.0	7.3
#60	250	33.6	2.4
#80	180	33.0	0.6
#100	150	32.7	0.3
#200	75	31.8	0.9
Hyd1	30.9	16.9	14.9
Hyd2	19.6	16.4	0.5
Hyd3	11.5	15.0	1.4
Hyd4	8.2	13.2	1.8
Hyd5	6	12.2	1.0
Hyd6	3.1	9.4	2.8
Hyd7	1.3	6.5	2.9

Soil Classification	Percent of sample
Gravel	25.3
Sand	42.9
Coarse Sand	21.9
Medium Sand	16.8
Fine Sand	4.2
Silt	19.6
Clay	12.2

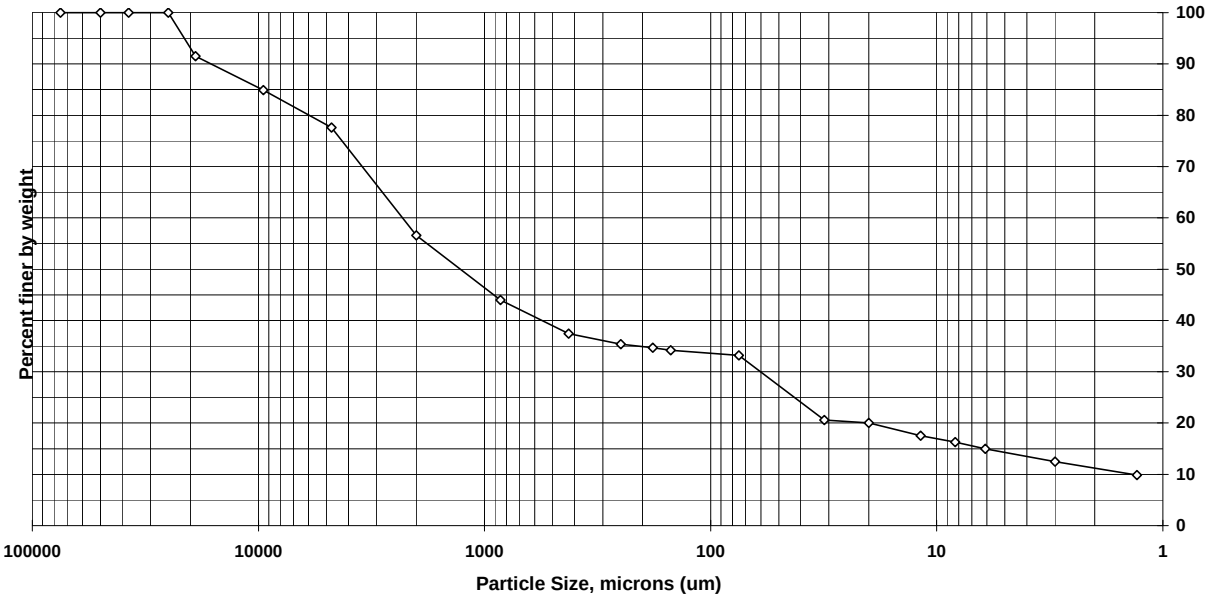
Particle Size of Soils by ASTM D422

				Date Received:	1/31/2014
Sample ID:	2014-SED-017	**Percent Solids:**	71.8%	**Start Date:**	2/4/2014
Lab ID:	600-86414-C-10	**Specific Gravity:**	2.650	**End Date:**	2/7/2014

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	91.5	8.5
3/8 inch	9500	84.9	6.6
#4	4750	77.6	7.3
#10	2000	56.6	21.0
#20	850	44.0	12.6
#40	425	37.4	6.6
#60	250	35.4	2.0
#80	180	34.7	0.7
#100	150	34.2	0.5
#200	75	33.2	1.0
Hyd1	31.4	20.6	12.6
Hyd2	20	20.0	0.6
Hyd3	11.8	17.5	2.5
Hyd4	8.3	16.3	1.2
Hyd5	6.1	15.0	1.3
Hyd6	3	12.5	2.5
Hyd7	1.3	9.9	2.6

Soil Classification	Percent of sample
Gravel	22.4
Sand	44.4
Coarse Sand	21.0
Medium Sand	19.2
Fine Sand	4.2
Silt	18.2
Clay	15.0

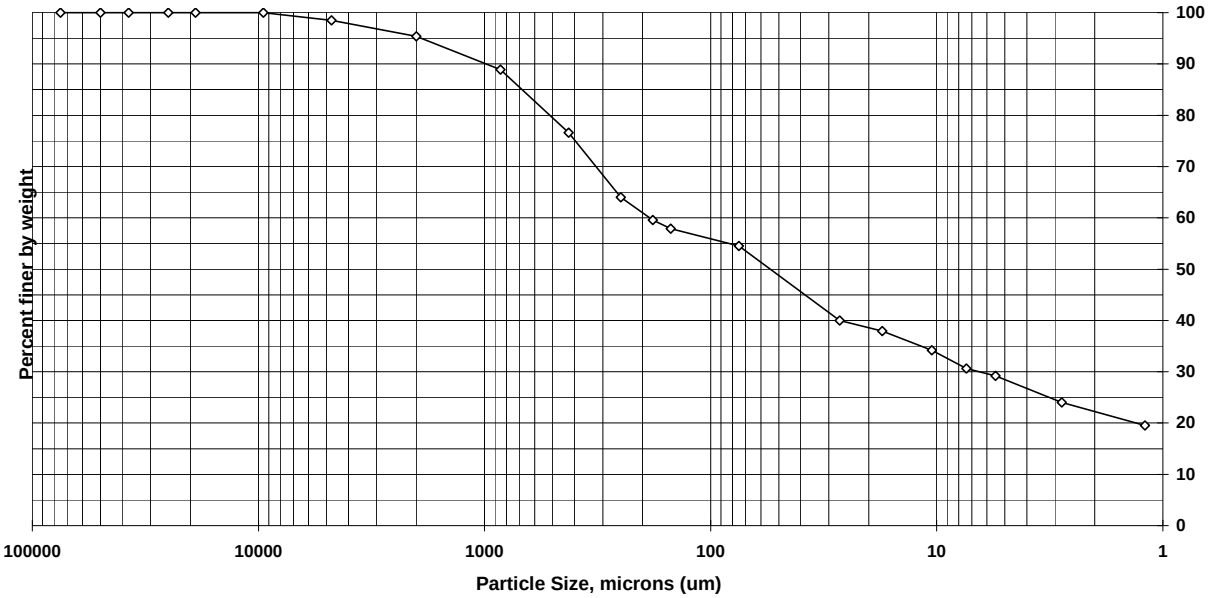
Particle Size of Soils by ASTM D422

				Date Received:	1/31/2014
Sample ID:	2014-SED-018	**Percent Solids:**	61.5%	**Start Date:**	2/4/2014
Lab ID:	600-86414-B-12	**Specific Gravity:**	2.650	**End Date:**	2/7/2014

Shape (> #10): angular

Non-soil material: plant, wood, shell

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	98.5	1.5
#10	2000	95.4	3.1
#20	850	88.9	6.5
#40	425	76.6	12.3
#60	250	64.0	12.6
#80	180	59.6	4.4
#100	150	57.9	1.7
#200	75	54.5	3.4
Hyd1	26.9	40.0	14.5
Hyd2	17.4	37.9	2.1
Hyd3	10.5	34.2	3.7
Hyd4	7.4	30.6	3.6
Hyd5	5.5	29.2	1.4
Hyd6	2.8	24.0	5.2
Hyd7	1.2	19.5	4.5

Soil Classification	Percent of sample
Gravel	1.5
Sand	44.0
Coarse Sand	3.1
Medium Sand	18.8
Fine Sand	22.1
Silt	25.3
Clay	29.2

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-015
Lab Sample ID	600-86414-C-6

Date Received	1/31/2014
Start Date	02/04/2014 16:22
End Date	02/07/2014 13:42

Dry Weight Determination

Tin Weight	0.99	g
Wet Sample + Tin	42.99	g
Dry Sample + Tin	36.15	g
% Moisture	16.29	%

Non-soil material:	n/a
Shape (> #10):	subrounded
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 16:34
Date/Time out of oven	02/05/2014 13:51

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		274.65	274.65
Sample Weight (Oven Dried)			230

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			153
Sample <#10			77
% Passing #10			28

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000	457.85	513.18	55.33	g	75.9	Gravel	
3/8 inch	9500	447.32	484.61	37.29	g	59.7	Gravel	
#4	4750	488.16	524.76	36.60	g	43.8	Gravel	
#10	2000	462.86	487.10	24.24	g	33.3	Sand	Coarse
#20	850	380.94	390.42	9.48	g	29.2	Sand	Medium
#40	425	353.88	361.76	7.88	g	25.8	Sand	Medium
#60	250	350.51	355.50	4.99	g	23.6	Sand	Fine
#80	180	338.67	340.37	1.70	g	22.9	Sand	Fine
#100	150	330.27	331.03	0.76	g	22.6	Sand	Fine
#200	75	306.05	307.86	1.81	g	21.8	Sand	Fine
				0.00	g	21.8		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	230

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0150	21.0	33.5	7.8	Silt	
5	5	1.0140	21.0	21.4	7.1	Silt	
15	15	1.0130	21.0	12.5	6.4	Silt	
30	29	1.0125	21.0	9	6.05	Silt	
60	63	1.0115	21.0	6.2	5.35	Silt	
250	250	1.0100	20.5	3.2	4.25	Clay	
1440	1434	1.0085	20.0	1.4	3.14	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-014
Lab Sample ID	600-86414-C-7

Date Received	1/31/2014
Start Date	02/04/2014 16:35
End Date	02/07/2014 13:42

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	29.01	g
Dry Sample + Tin	23.46	g
% Moisture	19.82	%

Non-soil material:	n/a
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 16:38
Date/Time out of oven	02/05/2014 13:51

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		211.92	211.92
Sample Weight (Oven Dried)			170

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			107
Sample <#10			63
% Passing #10			29.7

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000	457.81	467.58	9.77	g	94.3	Gravel	
3/8 inch	9500	447.32	480.99	33.67	g	74.5	Gravel	
#4	4750	488.16	524.55	36.39	g	53.1	Gravel	
#10	2000	462.86	489.92	27.06	g	37.2	Sand	Coarse
#20	850	389.75	397.18	7.43	g	32.8	Sand	Medium
#40	425	367.14	370.40	3.26	g	30.9	Sand	Medium
#60	250	345.89	347.85	1.96	g	29.7	Sand	Fine
#80	180	331.81	332.88	1.07	g	29.1	Sand	Fine
#100	150	335.61	336.39	0.78	g	28.6	Sand	Fine
#200	75	320.65	323.14	2.49	g	27.1	Sand	Fine
				0.00	g	27.1		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	170

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0260	21.0	29.3	20.9	Silt	
5	5	1.0240	21.0	19	19.1	Silt	
15	15	1.0220	21.0	11.3	17.2	Silt	
30	31	1.0210	21.0	7.9	16.2	Silt	
60	60	1.0200	21.0	5.8	15.3	Silt	
250	240	1.0175	20.5	3	12.8	Clay	
1440	1424	1.0145	20.0	1.3	9.92	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-016
Lab Sample ID	600-86414-C-8

Date Received	1/31/2014
Start Date	02/04/2014 16:38
End Date	02/07/2014 13:56

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	46.16	g
Dry Sample + Tin	36.29	g
% Moisture	21.86	%

Non-soil material:	wood
Shape (> #10):	angular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 16:40
Date/Time out of oven	02/05/2014 13:51

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		221.69	221.69
Sample Weight (Oven Dried)			173

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			81.8
Sample <#10			91.2
% Passing #10			41.1

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.32	458.47	11.15	g	93.6	Gravel	
#4	4750	488.16	520.92	32.76	g	74.7	Gravel	
#10	2000	462.86	500.79	37.93	g	52.8	Sand	Coarse
#20	850	380.94	397.46	16.52	g	43.3	Sand	Medium
#40	425	353.88	366.43	12.55	g	36.0	Sand	Medium
#60	250	350.51	354.70	4.19	g	33.6	Sand	Fine
#80	180	338.67	339.79	1.12	g	33.0	Sand	Fine
#100	150	330.27	330.76	0.49	g	32.7	Sand	Fine
#200	75	306.05	307.58	1.53	g	31.8	Sand	Fine
				0.00	g	31.8		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	173

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0220	21.0	30.9	16.9	Silt	
5	5	1.0215	21.0	19.6	16.4	Silt	
15	15	1.0200	21.0	11.5	15	Silt	
30	31	1.0180	21.0	8.2	13.2	Silt	
60	59	1.0170	21.0	6	12.2	Silt	
250	234	1.0140	20.5	3.1	9.36	Clay	
1440	1418	1.0110	20.0	1.3	6.5	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-017
Lab Sample ID	600-86414-C-10

Date Received	1/31/2014
Start Date	02/04/2014 16:40
End Date	02/07/2014 14:00

Dry Weight Determination

Tin Weight	1.00	g
Wet Sample + Tin	27.34	g
Dry Sample + Tin	19.90	g
% Moisture	28.25	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 16:42
Date/Time out of oven	02/05/2014 13:51

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		181.71	181.71
Sample Weight (Oven Dried)			130

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			56.6
Sample <#10			73.4
% Passing #10			40.4

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000	457.79	468.86	11.07	g	91.5	Gravel	
3/8 inch	9500	447.32	455.96	8.64	g	84.9	Gravel	
#4	4750	488.16	497.70	9.54	g	77.6	Gravel	
#10	2000	462.86	490.20	27.34	g	56.6	Sand	Coarse
#20	850	389.75	406.10	16.35	g	44.0	Sand	Medium
#40	425	367.14	375.78	8.64	g	37.4	Sand	Medium
#60	250	345.89	348.51	2.62	g	35.4	Sand	Fine
#80	180	331.81	332.74	0.93	g	34.7	Sand	Fine
#100	150	335.61	336.22	0.61	g	34.2	Sand	Fine
#200	75	320.65	322.01	1.36	g	33.2	Sand	Fine
				0.00	g	33.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	130

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0205	21.0	31.4	20.6	Silt	
5	5	1.0200	21.0	20	20	Silt	
15	15	1.0180	21.0	11.8	17.5	Silt	
30	31	1.0170	21.0	8.3	16.3	Silt	
60	59	1.0160	21.0	6.1	15	Silt	
250	265	1.0140	20.5	3	12.5	Clay	
1440	1412	1.0120	20.0	1.3	9.88	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-018
Lab Sample ID	600-86414-B-12

Date Received	1/31/2014
Start Date	02/04/2014 16:51
End Date	02/07/2014 14:21

Dry Weight Determination

Tin Weight	1.03	g
Wet Sample + Tin	45.23	g
Dry Sample + Tin	28.22	g
% Moisture	38.48	%

Non-soil material:	plant, wood, shell
Shape (> #10):	angular
Hardness (> #10):	hard

Date/Time in oven	02/04/2014 16:53
Date/Time out of oven	02/05/2014 13:51

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		181.24	181.24
Sample Weight (Oven Dried)			111

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			5.11
Sample <#10			106
% Passing #10			58.5

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	489.86	1.70	g	98.5	Gravel	
#10	2000	462.86	466.27	3.41	g	95.4	Sand	Coarse
#20	850	380.94	388.17	7.23	g	88.9	Sand	Medium
#40	425	353.88	367.55	13.67	g	76.6	Sand	Medium
#60	250	350.51	364.50	13.99	g	64.0	Sand	Fine
#80	180	338.67	343.54	4.87	g	59.6	Sand	Fine
#100	150	330.27	332.19	1.92	g	57.9	Sand	Fine
#200	75	306.05	309.84	3.79	g	54.5	Sand	Fine
				0.00	g	54.5		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	111

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0315	21.0	26.9	40	Silt	
5	5	1.0300	21.0	17.4	37.9	Silt	
15	15	1.0275	21.0	10.5	34.2	Silt	
30	32	1.0250	21.0	7.4	30.6	Silt	
60	60	1.0240	21.0	5.5	29.2	Silt	
250	259	1.0205	20.5	2.8	24	Clay	
1440	1406	1.0175	20.0	1.2	19.5	Clay	

DATA REPORTING QUALIFIERS

Lab Section	Qualifier	Description

QUALITY CONTROL RESULTS

Client: Golder Associates Inc.

Job Number: 600-86414-2

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Geotechnical					
Analysis Batch:200-68094					
600-86414-6	2014-SED-015	T	Solid	D422	
600-86414-7	2014-SED-014	T	Solid	D422	
600-86414-8	2014-SED-016	T	Solid	D422	
600-86414-10	2014-SED-017	T	Solid	D422	
600-86414-12	2014-SED-018	T	Solid	D422	

Report Basis

T = Total

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

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TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Golder Associates	Anne Fueth-Boyd	1-29-13	255226
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 2**
820 S. Main St Suite 100	636-724-9191		
City / State / Zip Code	**Site Contact / Lab Contact**		
St. louis / MO / 63301			
Project Name and Location (State)	**Carrier/Waybill Number**		
Exide Frisco-Stewart Creek			
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed)

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH		TOC	METALS (As, Cd, Pb)	Total Metals (As, Cd, Pb)	Dissolved Metals (As, Cd, Pb)	Conditions of Sample
2014-SW-002	1-29-14	0948		X						X							X	X	
Duplicate-1		0948		X						X							X	X	
2014-SW-002-MS		0943		X						X							X	X	
2014-SW-002 MSD		0943		X						X							X	X	
Field Blank		1010		X						X							X	X	
2014-SED-015		1439			X	X		X							X	X			
2014-SED-014		1349			X	X		X							X	X			
2014-SED-016		1508			X	X		X							X	X			
2014-SW-003		1523		X						X							X	X	
2014-SED-017		1535			X			X											
2014-SW-004		1549		X						X									
2014-SED-018		1639			X			X											

In Accordance w/ MSA

600-86414 Chain of Custody

Possible Hazard Identification

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

Sample Disposal

☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other 5-day

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Chris Trevino	01/29/14	2130	1. Received By	1/29/14	2130
2. Relinquished By	1/30/14	1234	2. Received By: McCowen	1/30/14	1234
3. Relinquished By: McCowen	1/30/14	1530	3. Received By		

Comments

1/31/14 1032

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

[redacted]

Chain of Custody Record

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Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TAL-4124 (1007)

Client: Golder Associates	Project Manager: Anne Faeth-Boyd	Date: 1-29-13
Address: 920 S. Main St	Telephone Number (Area Code)/Fax Number: 636-724-9191	Lab Number:
City: St Louis; State: Mo; Zip Code: 63301	Site Contact:	Lab Contact:
Project Name and Location (State): Exide SI56 - Sewer Creek	Carrier/Waybill Number:	
Contract/Purchase Order/Quote No.		

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		TOC	Metals (As, Cd, Pb)	total metals (As, Cd, pb)	Dissolved metals (As, Cd, pb)						
Duplicate-2	1-29-13				X			X							X	X								
2014-SED-014-MS	1-29-13	1349			X			X								X								
2014-SED-014-MSD	1-29-13	1349			X			X								X								
2014-SED-016-MSD	1-29-13	1508			X			X							X									
2014-SED-016-MS	1-29-13	1508			X			X							X									
[redacted]																								
2014-SW-05	1-29-13	1642		X					X								X	X						

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be longer than 1

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other 5-day

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Chris Trevino	01/29/14	2130	1. Received By:		
2. Relinquished By:	1/30/14	1234	2. Received By: McCowen		
3. Relinquished By: McCowen	1/30/14	1530	3. Received By:	1/31	

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

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4.4 The warranty obligations set forth in Sections 4.1, 4.2 and 4.3 are the sole and exclusive warranties given by TestAmerica in connection with any services performed by TestAmerica or any Results generated from such services, and TestAmerica gives and makes NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND.

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Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86414-2

Login Number: 86414

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4/1.3
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86414-2

Login Number: 86414
List Number: 1
Creator: Marion, Greg T

List Source: TestAmerica Burlington
List Creation: 02/04/14 10:51 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	927804
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.9ºc ir gun id 181/cf=-0.1
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86414-2

Login Number: 86414
List Number: 2
Creator: Marion, Greg T

List Source: TestAmerica Burlington
List Creation: 02/04/14 10:53 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	927804
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	2.9ºc ir gun id 181/cf=-0.1
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-86414-3
Client Project/Site: Exide Recycling Center, Stewart Creek
Revision: 1

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
2/28/2014 1:18:47 PM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

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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.

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-86414-3 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☑ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton			2/25/2014
Name (printed)		Signature	Date

Project Management Asst II
Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/24/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86414-3
Reviewer Name:	Cathy Upton		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/24/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86414-3
Reviewer Name:	Cathy Upton		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

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3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/24/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86414-3
Reviewer Name:	Cathy Upton		

ER #[1]	Description

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Dept	Matrix	Client Sample ID	Analyte	Result	Unit	Spike Amount	MDL	RL	Percent Recovery	Prep Method	Analysis Method	Instrument ID	CAS	Prep Batch	Analysis Batch
ME	Water	Q4 2013 AQ MDLV ICPMSC	Aluminum	56.4	ug/L	50	23	50	113	3005A	6020A	ICPMSC	7429-90-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Antimony	2.875	ug/L	2.5	2.3	5	115	3005A	6020A	ICPMSC	7440-36-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Arsenic	2.375	ug/L	2	1.3	2.5	119	3005A	6020A	ICPMSC	7440-38-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Barium	1.965	ug/L	2	1.3	5	98	3005A	6020A	ICPMSC	7440-39-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Beryllium	0.52	ug/L	0.5	0.25	0.5	104	3005A	6020A	ICPMSC	7440-41-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Boron	51.24	ug/L	50	40	100	102	3005A	6020A	ICPMSC	7440-42-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cadmium	0.195	ug/L	0.2	0.095	0.5	98	3005A	6020A	ICPMSC	7440-43-9	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Calcium	294.73	ug/L	250	130	250	118	3005A	6020A	ICPMSC	7440-70-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Chromium	5.49	ug/L	5	2.5	5	110	3005A	6020A	ICPMSC	7440-47-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cobalt	0.21	ug/L	0.2	0.15	0.5	105	3005A	6020A	ICPMSC	7440-48-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Copper	2.02	ug/L	2	1.1	5	101	3005A	6020A	ICPMSC	7440-50-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Iron	54.13	ug/L	50	33	100	108	3005A	6020A	ICPMSC	7439-89-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Lead	0.355	ug/L	0.3	0.2	1.5	118	3005A	6020A	ICPMSC	7439-92-1	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Magnesium	78.42	ug/L	80	43	250	98	3005A	6020A	ICPMSC	7439-95-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Manganese	1.955	ug/L	2	1	5	98	3005A	6020A	ICPMSC	7439-96-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Mercury	0.625	ug/L	0.5	0.4	0.8	125	3005A	6020A	ICPMSC	7439-97-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Molybdenum	2.205	ug/L	2	1.5	5	110	3005A	6020A	ICPMSC	7439-98-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Nickel	4.86	ug/L	4	2	5	122	3005A	6020A	ICPMSC	7440-02-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Potassium	219.45	ug/L	200	170	500	110	3005A	6020A	ICPMSC	9/7/7440	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Selenium	1.855	ug/L	2	1	2.5	93	3005A	6020A	ICPMSC	7782-49-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Silver	0.435	ug/L	0.4	0.25	1	109	3005A	6020A	ICPMSC	7440-22-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Sodium	457.985	ug/L	400	250	500	114	3005A	6020A	ICPMSC	7440-23-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Strontium	0.945	ug/L	1	0.5	1	95	3005A	6020A	ICPMSC	7440-24-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Thallium	0.98	ug/L	1	0.5	1	98	3005A	6020A	ICPMSC	7440-28-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Tin	2.47	ug/L	2	1.3	5	124	3005A	6020A	ICPMSC	7440-31-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Titanium	3.17	ug/L	2.5	1.3	5	127	3005A	6020A	ICPMSC	7440-32-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Vanadium	5.55	ug/L	5	3.8	10	111	3005A	6020A	ICPMSC	7440-62-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Zinc	10.095	ug/L	10	8.3	20	101	3005A	6020A	ICPMSC	7440-66-6	680-297813	680-298498

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-3

Job ID: 600-86414-3

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-86414-3

Comments
The report was revised on 02/28/14 to update the SED-14 water sample ID. This final report replaces the one generated on 02/26/14 at 4:58pm.

Receipt
The samples were received on 1/31/2014 10:33 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.3º C and 2.4º C.

Method Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-3

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SAV

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-86414-1	2014-SW-002	Water	01/29/14 09:48	01/31/14 10:33
600-86414-2	DUPLICATE-1	Water	01/29/14 09:48	01/31/14 10:33
600-86414-9	2014-SW-003	Water	01/29/14 15:23	01/31/14 10:33
600-86414-11	2014-SW-004	Water	01/29/14 15:49	01/31/14 10:33
600-86414-14	2014-SW-005	Water	01/29/14 16:42	01/31/14 10:33
600-86414-19	Duplicate-1	Water	01/29/14 09:48	01/31/14 10:33

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-3

Client Sample ID: 2014-SW-002

Lab Sample ID: 600-86414-1
Date Collected: 01/29/14 09:48
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/18/14 11:55	02/18/14 19:10	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/18/14 11:55	02/18/14 19:10	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/18/14 11:55	02/18/14 19:10	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 13:23	02/17/14 21:43	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 13:23	02/17/14 21:43	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/14/14 13:23	02/17/14 21:43	1

Client Sample ID: DUPLICATE-1

Lab Sample ID: 600-86414-2
Date Collected: 01/29/14 09:48
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 13:23	02/17/14 22:10	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 13:23	02/17/14 22:10	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/14/14 13:23	02/17/14 22:10	1

Client Sample ID: 2014-SW-003

Lab Sample ID: 600-86414-9
Date Collected: 01/29/14 15:23
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/20/14 14:31	02/22/14 01:01	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/20/14 14:31	02/22/14 01:01	1
Lead	**0.00142**	**J**	0.00150	0.000200	mg/L		02/20/14 14:31	02/22/14 01:01	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 13:23	02/17/14 22:15	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 13:23	02/17/14 22:15	1
Lead	**0.000250**	**J**	0.00150	0.000200	mg/L		02/14/14 13:23	02/17/14 22:15	1

Client Sample ID: 2014-SW-004

Lab Sample ID: 600-86414-11
Date Collected: 01/29/14 15:49
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 13:23	02/17/14 22:20	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 13:23	02/17/14 22:20	1
Lead	**0.000655**	**J**	0.00150	0.000200	mg/L		02/14/14 13:23	02/17/14 22:20	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/17/14 13:45	02/18/14 13:53	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/17/14 13:45	02/18/14 13:53	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/17/14 13:45	02/18/14 13:53	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-3

Client Sample ID: 2014-SW-005

Lab Sample ID: 600-86414-14

Date Collected: 01/29/14 16:42
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 13:23	02/17/14 22:36	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 13:23	02/17/14 22:36	1
Lead	**0.00103**	**J**	0.00150	0.000200	mg/L		02/14/14 13:23	02/17/14 22:36	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/17/14 13:45	02/18/14 13:58	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/17/14 13:45	02/18/14 13:58	1
Lead	**0.000205**	**J**	0.00150	0.000200	mg/L		02/17/14 13:45	02/18/14 13:58	1

Client Sample ID: Duplicate-1

Lab Sample ID: 600-86414-19

Date Collected: 01/29/14 09:48
Matrix: Water
Date Received: 01/31/14 10:33

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 13:23	02/17/14 22:41	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 13:23	02/17/14 22:41	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/14/14 13:23	02/17/14 22:41	1

Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-3

Qualifiers

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated 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
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)

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-315722/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316063 — **Prep Batch: 315722**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 13:23	02/17/14 21:33	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 13:23	02/17/14 21:33	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/14/14 13:23	02/17/14 21:33	1

Lab Sample ID: LCS 680-315722/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316063 — **Prep Batch: 315722**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.1052		mg/L		105	75 - 125
Cadmium	0.0500	0.05322		mg/L		106	75 - 125
Lead	0.0500	0.05177		mg/L		104	75 - 125

Lab Sample ID: MB 680-315919/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316126 — **Prep Batch: 315919**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/17/14 13:45	02/18/14 11:40	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/17/14 13:45	02/18/14 11:40	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/17/14 13:45	02/18/14 11:40	1

Lab Sample ID: LCS 680-315919/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316126 — **Prep Batch: 315919**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.1111		mg/L		111	75 - 125
Cadmium	0.0500	0.05600		mg/L		112	75 - 125
Lead	0.0500	0.05722		mg/L		114	75 - 125

Lab Sample ID: MB 680-316087/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316226 — **Prep Batch: 316087**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/18/14 11:55	02/18/14 19:00	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/18/14 11:55	02/18/14 19:00	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/18/14 11:55	02/18/14 19:00	1

Lab Sample ID: LCS 680-316087/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316226 — **Prep Batch: 316087**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.1074		mg/L		107	75 - 125
Cadmium	0.0500	0.05544		mg/L		111	75 - 125
Lead	0.0500	0.05538		mg/L		111	75 - 125

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

Lab Sample ID: 600-86414-1 MS — **Client Sample ID: 2014-SW-002**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316226 — **Prep Batch: 316087**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.00130	U	0.100	0.1077		mg/L		108	75 - 125
Cadmium	0.0000950	U	0.0500	0.05345		mg/L		107	75 - 125
Lead	0.000200	U	0.0500	0.05530		mg/L		111	75 - 125

Lab Sample ID: 600-86414-1 MSD — **Client Sample ID: 2014-SW-002**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316226 — **Prep Batch: 316087**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.00130	U	0.100	0.1095		mg/L		109	75 - 125	2	20
Cadmium	0.0000950	U	0.0500	0.05511		mg/L		110	75 - 125	3	20
Lead	0.000200	U	0.0500	0.05574		mg/L		111	75 - 125	1	20

Lab Sample ID: MB 680-316529/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316899 — **Prep Batch: 316529**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/20/14 14:31	02/21/14 22:35	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/20/14 14:31	02/21/14 22:35	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/20/14 14:31	02/21/14 22:35	1

Lab Sample ID: LCS 680-316529/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316899 — **Prep Batch: 316529**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.1078		mg/L		108	75 - 125
Cadmium	0.0500	0.05165		mg/L		103	75 - 125
Lead	0.0500	0.05170		mg/L		103	75 - 125

Lab Sample ID: 600-86414-1 MS — **Client Sample ID: 2014-SW-002**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 316063 — **Prep Batch: 315722**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.00130	U	0.100	0.1086		mg/L		109	75 - 125
Cadmium	0.0000950	U	0.0500	0.05473		mg/L		109	75 - 125
Lead	0.000200	U	0.0500	0.05403		mg/L		108	75 - 125

Lab Sample ID: 600-86414-1 MSD — **Client Sample ID: 2014-SW-002**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 316063 — **Prep Batch: 315722**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.00130	U	0.100	0.1088		mg/L		109	75 - 125	0	20
Cadmium	0.0000950	U	0.0500	0.05360		mg/L		107	75 - 125	2	20
Lead	0.000200	U	0.0500	0.05346		mg/L		107	75 - 125	1	20

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-3

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	MQL	MDL	Units	Method
Arsenic	0.00250	0.00130	mg/L	6020A
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	MQL	MDL	Units	Method
Arsenic	0.00250	0.00130	mg/L	6020A
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-3

Metals

Prep Batch: 315722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-1	2014-SW-002	Dissolved	Water	3005A	
600-86414-1 MS	2014-SW-002	Dissolved	Water	3005A	
600-86414-1 MSD	2014-SW-002	Dissolved	Water	3005A	
600-86414-2	DUPLICATE-1	Dissolved	Water	3005A	
600-86414-9	2014-SW-003	Dissolved	Water	3005A	
600-86414-11	2014-SW-004	Total Recoverable	Water	3005A	
600-86414-14	2014-SW-005	Total Recoverable	Water	3005A	
600-86414-19	Duplicate-1	Total Recoverable	Water	3005A	
LCS 680-315722/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-315722/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 315919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-11	2014-SW-004	Dissolved	Water	3005A	
600-86414-14	2014-SW-005	Dissolved	Water	3005A	
LCS 680-315919/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-315919/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 316063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-1	2014-SW-002	Dissolved	Water	6020A	315722
600-86414-1 MS	2014-SW-002	Dissolved	Water	6020A	315722
600-86414-1 MSD	2014-SW-002	Dissolved	Water	6020A	315722
600-86414-2	DUPLICATE-1	Dissolved	Water	6020A	315722
600-86414-9	2014-SW-003	Dissolved	Water	6020A	315722
600-86414-11	2014-SW-004	Total Recoverable	Water	6020A	315722
600-86414-14	2014-SW-005	Total Recoverable	Water	6020A	315722
600-86414-19	Duplicate-1	Total Recoverable	Water	6020A	315722
LCS 680-315722/2-A	Lab Control Sample	Total Recoverable	Water	6020A	315722
MB 680-315722/1-A	Method Blank	Total Recoverable	Water	6020A	315722

Prep Batch: 316087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-1	2014-SW-002	Total Recoverable	Water	3005A	
600-86414-1 MS	2014-SW-002	Total Recoverable	Water	3005A	
600-86414-1 MSD	2014-SW-002	Total Recoverable	Water	3005A	
LCS 680-316087/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-316087/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 316126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-11	2014-SW-004	Dissolved	Water	6020A	315919
600-86414-14	2014-SW-005	Dissolved	Water	6020A	315919
LCS 680-315919/2-A	Lab Control Sample	Total Recoverable	Water	6020A	315919
MB 680-315919/1-A	Method Blank	Total Recoverable	Water	6020A	315919

Analysis Batch: 316226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-1	2014-SW-002	Total Recoverable	Water	6020A	316087
600-86414-1 MS	2014-SW-002	Total Recoverable	Water	6020A	316087
600-86414-1 MSD	2014-SW-002	Total Recoverable	Water	6020A	316087

Metals (Continued)

Analysis Batch: 316226 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-316087/2-A	Lab Control Sample	Total Recoverable	Water	6020A	316087
MB 680-316087/1-A	Method Blank	Total Recoverable	Water	6020A	316087

Prep Batch: 316529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-9	2014-SW-003	Total Recoverable	Water	3005A	
LCS 680-316529/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-316529/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 316899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-9	2014-SW-003	Total Recoverable	Water	6020A	316529
LCS 680-316529/2-A	Lab Control Sample	Total Recoverable	Water	6020A	316529
MB 680-316529/1-A	Method Blank	Total Recoverable	Water	6020A	316529

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-3

Client Sample ID: 2014-SW-002

Lab Sample ID: 600-86414-1
Date Collected: 01/29/14 09:48
Matrix: Water
Date Received: 01/31/14 10:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	315722	02/14/14 13:23	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 21:43	BWR	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	316087	02/18/14 11:55	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	316226	02/18/14 19:10	BWR	TAL SAV

Client Sample ID: DUPLICATE-1

Lab Sample ID: 600-86414-2
Date Collected: 01/29/14 09:48
Matrix: Water
Date Received: 01/31/14 10:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	315722	02/14/14 13:23	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 22:10	BWR	TAL SAV

Client Sample ID: 2014-SW-003

Lab Sample ID: 600-86414-9
Date Collected: 01/29/14 15:23
Matrix: Water
Date Received: 01/31/14 10:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	315722	02/14/14 13:23	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 22:15	BWR	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	316529	02/20/14 14:31	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	316899	02/22/14 01:01	BWR	TAL SAV

Client Sample ID: 2014-SW-004

Lab Sample ID: 600-86414-11
Date Collected: 01/29/14 15:49
Matrix: Water
Date Received: 01/31/14 10:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	315722	02/14/14 13:23	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 22:20	BWR	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	315919	02/17/14 13:45	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	316126	02/18/14 13:53	BWR	TAL SAV

Client Sample ID: 2014-SW-005

Lab Sample ID: 600-86414-14
Date Collected: 01/29/14 16:42
Matrix: Water
Date Received: 01/31/14 10:33

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	315722	02/14/14 13:23	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 22:36	BWR	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	315919	02/17/14 13:45	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	316126	02/18/14 13:58	BWR	TAL SAV

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-3

Client Sample ID: Duplicate-1

Date Collected: 01/29/14 09:48
Date Received: 01/31/14 10:33

Lab Sample ID: 600-86414-19

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	315722	02/14/14 13:23	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 22:41	BWR	TAL SAV

Laboratory References:

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

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-3

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	TX00083	10-31-14

Laboratory: TestAmerica Savannah

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

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-3

Laboratory: TestAmerica Savannah (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Golder Associates	Anne Fueth-Boyd	1-29-13	255226
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 2**
820 S. Main St Suite 100	636-724-9191		
City / State / Zip Code	**Site Contact / Lab Contact**		
St. louis / MO / 63301			
Project Name and Location (State)	**Carrier/Waybill Number**		
Exide Frisco - Stewart Creek			
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TOC	METALS (As, Cd, Pb)	Total Metals (As, Cd, Pb)	Dissolved Metals (As, Cd, Pb)
2014-SW-002	1-29-14	0948		X					X						X	X
Duplicate-1		0948		X					X						X	X
2014-SW-002-MS		0948		X					X						X	X
2014-SW-002 MSD		0948		X					X						X	X
Field Blank		1010		X					X						X	X
2014-SED-015		1439			X	X	X						X	X		
2014-SED-014		1349			X	X	X						X	X		
2014-SED-016		1508			X	X	X						X	X		
2014-SW-003		1523		X					X						X	X
2014-SED-017		1535			X		X									
2014-SW-004		1549		X					X							
2014-SED-018		1639			X		X									

Special Instructions/ Conditions of Receipt

In Accordance w/ MSA

600-86414 Chain of Custody

Possible Hazard Identification

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

Sample Disposal

☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other 5-day

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Chris Trevino	01/29/14	2130	1. Received By:	1/29/14	2130
2. Relinquished By:	1/30/14	1234	2. Received By: Mike Cowen	1/30/14	1234
3. Relinquished By: Mike Cowen	1/30/14	1530	3. Received By:		

Comments

1/31/14 1032

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TAL-4124 (1007)

Client: Golder Associates	Project Manager: Anne Faeth-Boyd
Date: 1-29-13	
Address: 820 S. Main St	Telephone Number (Area Code)/Fax Number: 636-724-9191
Lab Number:	
City: St Louis; State: Mo; Zip Code: 63301	Site Contact:
Lab Contact:	
Project Name and Location (State): Exide SI156 - Sewer Creek	Carrier/Waybill Number:
Contract/Purchase Order/Quote No.:	

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TOC	Metals (As, Cd, Pb)	Total Metals (As, Cd, Pb)	Dissolved Metals (As, Cd, Pb)
Duplicate-2	1-29-13				X		X						X	X		
2014-SED-014-MS	1-29-13	1349			X		X							X		
2014-SED-014-MSD	1-29-13	1349			X		X							X		
2014-SED-016-MSD	1-29-13	1508			X		X						X			
2014-SED-016-MS	1-29-13	1508			X		X						X			
~~[illegible]~~	~~[illegible]~~															
2014-SW-05	1-29-13	1642		X				X							X	X

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be longer than 1

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other 5-day

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: Chris Irwin	01/29/14	2130	1. Received By:		
2. Relinquished By:	1/30/14	1234	2. Received By:		
3. Relinquished By:	1/30/14	1530	3. Received By:		

Comments: 1/31

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Std TC-1, Page 1 of 1

or revocation of any license, or notice of either which affects work in progress.

4.4 The warranty obligations set forth in Sections 4.1, 4.2 and 4.3 are the sole and exclusive warranties given by TestAmerica in connection with any services performed by TestAmerica or any Results generated from such services, and TestAmerica gives and makes NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND.

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Upton, Cathy

From: Joiner, Dean
Sent: Thursday, February 27, 2014 12:12 PM
To: Upton, Cathy
Subject: FW: Files from 600-86414-3 Exide Recycling Center, Stewart Creek
Follow Up Flag: Follow up
Flag Status: Red

Cathy, Can you update.

From: Higginbotham, Christina [mailto:Christina_Higginbotham@golder.com]
Sent: Thursday, February 27, 2014 10:56 AM
To: Joiner, Dean; Forthaus, Brett; Thomas, Jim
Subject: RE: Files from 600-86414-3 Exide Recycling Center, Stewart Creek

For 2014-SED-14 (aqueous) total metals only, weren't we going to revise this sample ID to be Duplicate-1 because it was mis-labeled, per our previous emails?

Christina Higginbotham, P.G. | Remediation Project Manager | **Golder Associates Inc.**
500 Century Plaza Drive, Suite 190, Houston, Texas, USA 77073
T: +1 (281) 821-6868 | **F:** +1 (281) 821-6870 | **C:** +1 (281) 620-7835 | **E:** CHigginbotham@golder.com |
www.golder.com

Work Safe, Home Safe

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Please consider the environment before printing this email.

From: Joiner, Dean [mailto:dean.joiner@testamericainc.com]
Sent: Thursday, February 27, 2014 10:52 AM
To: Forthaus, Brett; Higginbotham, Christina; Thomas, Jim
Subject: Files from 600-86414-3 Exide Recycling Center, Stewart Creek

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: Project Feedback

DEAN A JOINER

TestAmerica Houston
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 713.690.4444
www.testamericainc.com

Reference: [183683]
Attachments: 5

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86414-3

Login Number: 86414

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4/1.3
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86414-3

Login Number: 86414
List Number: 1
Creator: Conner, Keaton

List Source: TestAmerica Savannah
List Creation: 02/14/14 10:57 AM

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-86414-4
Client Project/Site: Exide Recycling Center, Stewart Creek
Revision: 2

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
3/3/2014 8:03:46 PM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

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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.

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-86414-4 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☐ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton		2/19/2014
Name (printed)	Signature	Date

Project Management Asst II
Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/19/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86414-4
Reviewer Name:	Cathy Upton		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				R05D
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?			X		
		Were MS/MSD analyzed at the appropriate frequency?			X		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
		Were MS/MSD RPDs within laboratory QC limits?			X		
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/19/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86414-4
Reviewer Name:	Cathy Upton		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/19/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86414-4
Reviewer Name:	Cathy Upton		

ER #[1]	Description
R05D	Method 6010B: The method blank for batch 127619 contained Lead above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Detection Check Standard

Matrix: Soil
Method: 300.0, 9056
Preparation: Di Leach
Date Analyzed: 11/21/2013, 11/29/2013, 12/02/2013
Date Prepared: 11/21/2013, 11/29/2013, 12/02/2013
Units: ppm

Analyte	MDL	DCS Spike	Measured Result	MQL
Fluoride	0.078	0.2	0.1553	3
Chloride	0.067	0.2	0.1526	4
Nitrite	0.024	0.05	0.0685	2
Bromide	0.117	0.2	0.2473	6
Nitrate	0.022	0.05	0.0616	2
Sulfate	0.315	0.6	0.4975	5

Detection Check Standard

Matrix:	Soil
Method:	6010B
Preparation:	3050
Date Analyzed:	12/30/2013
Date Prepared:	12/27/2013
Instrument:	Thermo 6500
TALS Batches:	123949, 123775p
Prep/Reagent Factor =	50
Units:	mg/kg

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.299654	0.5	0.36	25
Antimony	0.231553	0.45	0.5	2.5
Arsenic	0.217923	0.5	0.53	1
Barium	0.011322	0.03	0.04	1
Beryllium	0.014513	0.02	0.015	0.25
Boron	0.385535	0.6	0.56	20
Cadmium	0.025642	0.05	0.05	0.25
Calcium	0.86399	1.5	2.185	100
Chromium	0.050606	0.1	0.135	0.5
Cobalt	0.067622	0.1	0.09	0.5
Copper	0.173703	0.5	0.64	0.5
Iron	2.534007	4	3.76	20
Lead	0.104832	0.2	0.215	0.5
Selenium	0.258884	0.5	0.465	2
Manganese	0.038111	0.05	0.085	1.5
Molybdenum	0.136448	0.35	0.38	0.5
Nickel	0.116599	0.15	0.2	1
Silver	0.118848	0.2	0.15	0.5
Sodium	0.885548	2.4	3.135	100
Thallium	0.276988	0.7	0.73	1.5
Tin	0.08729	0.15	0.19	1
Titanium	0.014529	0.03	0.01	0.5
Vanadium	0.079068	0.15	0.125	0.5
Zinc	0.108432	0.2	0.305	1.5

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-4

Job ID: 600-86414-4

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-86414-4

Comments
See attached letter in reference to additional analyses requested for metals and sulfate. The report was revised on 02/26/14 to report As, Cd and Pb, replacing the final report generated on 02/19/14. The report was revised on 03/03/14 to remove the sulfate analyses, replacing the revision generated on 02/26/14.

Receipt
The samples were received on 1/31/2014 10:33 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.3º C and 2.4º C.

Method Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-4

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL HOU
Moisture	Percent Moisture	EPA	TAL HOU

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-86414-10	2014-SED-017	Solid	01/29/14 15:35	01/31/14 10:33
600-86414-12	2014-SED-018	Solid	01/29/14 16:39	01/31/14 10:33

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-4

Client Sample ID: 2014-SED-017

Lab Sample ID: 600-86414-10

Date Collected: 01/29/14 15:35
Matrix: Solid
Date Received: 01/31/14 10:33
Percent Solids: 79.6

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20.6		1.26	0.274	mg/Kg	☼	02/18/14 15:01	02/19/14 09:12	1
Cadmium	0.660		0.314	0.0322	mg/Kg	☼	02/18/14 15:01	02/19/14 09:12	1
Lead	30.1	b	0.628	0.132	mg/Kg	☼	02/18/14 15:01	02/19/14 09:12	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20		1.0	1.0	%			02/18/14 14:33	1
Percent Solids	80		1.0	1.0	%			02/18/14 14:33	1

Client Sample ID: 2014-SED-018

Lab Sample ID: 600-86414-12

Date Collected: 01/29/14 16:39
Matrix: Solid
Date Received: 01/31/14 10:33
Percent Solids: 61.7

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20.2		1.54	0.336	mg/Kg	☼	02/18/14 15:01	02/19/14 09:15	1
Cadmium	0.556		0.386	0.0396	mg/Kg	☼	02/18/14 15:01	02/19/14 09:15	1
Lead	59.8	b	0.772	0.162	mg/Kg	☼	02/18/14 15:01	02/19/14 09:15	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	38		1.0	1.0	%			02/18/14 14:33	1
Percent Solids	62		1.0	1.0	%			02/18/14 14:33	1

Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-4

Qualifiers

Metals

Qualifier	Qualifier Description
b	The compound was found in the blank and sample
U	Analyte was not detected at or above the SDL.
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated 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
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)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-4

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-127619/1-A
Matrix: Solid
Analysis Batch: 127679

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 127619

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.218	U	1.00	0.218	mg/Kg		02/18/14 15:01	02/19/14 09:08	1
Cadmium	0.0256	U	0.250	0.0256	mg/Kg		02/18/14 15:01	02/19/14 09:08	1
Lead	0.1050	J	0.500	0.105	mg/Kg		02/18/14 15:01	02/19/14 09:08	1

Lab Sample ID: LCSSRM 600-127619/2-A
Matrix: Solid
Analysis Batch: 127679

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 127619

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	99.6	98.09		mg/Kg		98.5	80.8 - 119.5
Cadmium	182	180.1		mg/Kg		99.0	81.9 - 118.1
Lead	115	112.9		mg/Kg		98.2	81.8 - 119.1

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-4

Method: 6010B - Metals (ICP)

Analyte	MQL	MDL	Units	Method
Arsenic	1.00	0.218	mg/Kg	6010B
Cadmium	0.250	0.0256	mg/Kg	6010B
Lead	0.500	0.105	mg/Kg	6010B

General Chemistry

Analyte	MQL	MDL	Units	Method
Percent Moisture	1.0	1.0	%	Moisture
Percent Solids	1.0	1.0	%	Moisture

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-4

Metals

Prep Batch: 127619

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-10	2014-SED-017	Total/NA	Solid	3050B	
600-86414-12	2014-SED-018	Total/NA	Solid	3050B	
LCSSRM 600-127619/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 600-127619/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 127679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-10	2014-SED-017	Total/NA	Solid	6010B	127619
600-86414-12	2014-SED-018	Total/NA	Solid	6010B	127619
LCSSRM 600-127619/2-A	Lab Control Sample	Total/NA	Solid	6010B	127619
MB 600-127619/1-A	Method Blank	Total/NA	Solid	6010B	127619

General Chemistry

Analysis Batch: 127613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-10	2014-SED-017	Total/NA	Solid	Moisture	
600-86414-12	2014-SED-018	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-4

Client Sample ID: 2014-SED-017

Lab Sample ID: 600-86414-10
Date Collected: 01/29/14 15:35
Matrix: Solid
Date Received: 01/31/14 10:33
Percent Solids: 79.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.00 g	50 mL	127619	02/18/14 15:01	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.00 g	50 mL	127679	02/19/14 09:12	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			127613	02/18/14 14:33	AYS	TAL HOU

Client Sample ID: 2014-SED-018

Lab Sample ID: 600-86414-12
Date Collected: 01/29/14 16:39
Matrix: Solid
Date Received: 01/31/14 10:33
Percent Solids: 61.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.05 g	50 mL	127619	02/18/14 15:01	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.05 g	50 mL	127679	02/19/14 09:15	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			127613	02/18/14 14:33	AYS	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86414-4

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	TX00083	10-31-14

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Golder Associates	Anne Fueth-Boyd	1-29-13	255226
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 2**
820 S. Main St Suite 100	636-724-9191		
City / State / Zip Code	**Site Contact / Lab Contact**		
St. louis / MO / 63301			
Project Name and Location (State)	**Carrier/Waybill Number**		
Exide Frisco - Stewart Creek			
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Other	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TOC	METALS (As, Cd, Pb)	Total Metals (As, Cd, Pb)	Dissolved Metals (As, Cd, Pb)	Additional Space
2014-SW-002	1-29-14	0948		X						X						X	X	
Duplicate-1		0948		X						X						X	X	
2014-SW-002-MS		0948		X						X						X	X	
2014-SW-002 MSD		0948		X						X						X	X	
Field Blank		1010		X						X						X	X	
2014-SED-015		1439			X	X		X						X	X			
2014-SED-014		1349			X	X		X						X	X			
2014-SED-016		1508			X	X		X						X	X			
2014-SW-003		1523		X						X						X	X	
2014-SED-017		1535			X			X										
2014-SW-004		1549		X						X								
2014-SED-018		1639			X			X										

Special Instructions/ Conditions of Receipt

In Accordance w/ MSA

600-86414 Chain of Custody

Possible Hazard Identification

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

Sample Disposal

☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other 5-day

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Chris Trevino	01/29/14	2130	1. Received By:	1/29/14	2130
2. Relinquished By:	1/30/14	1234	2. Received By: Mike Cowen	1/30/14	1234
3. Relinquished By: Mike Cowen	1/30/14	1530	3. Received By:		

Comments

1/31/14 1032

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: Golder Associates	Project Manager: Anne Faeth-Boyd	Date: 1-29-13
Address: 920 S. Main St	Telephone Number (Area Code)/Fax Number: 636-724-9191	Lab Number:
City: St Louis; State: Mo; Zip Code: 63301	Site Contact:	Lab Contact:
Project Name and Location (State): Exide SI156 - Sewer Creek	Carrier/Waybill Number:	
Contract/Purchase Order/Quote No.:		

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TOC	Metals (As, Cd, Pb)	Total Metals (As, Cd, Pb)	Dissolved Metals (As, Cd, Pb)
Duplicate-2	1-29-13				X		X						X	X		
2014-SED-014-MS	1-29-13	1349			X		X							X		
2014-SED-014-MSD	1-29-13	1349			X		X							X		
2014-SED-016-MSD	1-29-13	1508			X		X						X			
2014-SED-016-MS	1-29-13	1508			X		X						X			
~~[illegible]~~																
2014-SW-05	1-29-13	1642		X				X							X	X

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be longer than 1

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other 5-day

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: Chris Irwin	01/29/14	2130	1. Received By:		
2. Relinquished By:	1/30/14	1234	2. Received By:		
3. Relinquished By:	1/30/14	1530	3. Received By:		

Comments: 1/31

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Std TC-1, Page 1 of 1

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4.4 The warranty obligations set forth in Sections 4.1, 4.2 and 4.3 are the sole and exclusive warranties given by TestAmerica in connection with any services performed by TestAmerica or any Results generated from such services, and TestAmerica gives and makes NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND.

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Upton, Cathy

From: Joiner, Dean
Sent: Wednesday, February 19, 2014 8:40 PM
To: Upton, Cathy
Subject: FW: SED-017 and SED-018 in 600-86414

From: Higginbotham, Christina [mailto:Christina_Higginbotham@golder.com]
Sent: Tuesday, February 18, 2014 2:01 PM
To: Joiner, Dean
Subject: RE: SED-017 and SED-018 in 600-86414

Also sulfate data? Do we have any?

Christina Higginbotham, P.G. | Remediation Project Manager | **Golder Associates Inc.**
500 Century Plaza Drive, Suite 190, Houston, Texas, USA 77073
T: +1 (281) 821-6868 | **F:** +1 (281) 821-6870 | **C:** +1 (281) 620-7835 | **E:** CHigginbotham@golder.com | **www.golder.com**

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Please consider the environment before printing this email.

From: Joiner, Dean [mailto:Dean.Joiner@testamericainc.com]
Sent: Tuesday, February 18, 2014 1:55 PM
To: Higginbotham, Christina
Subject: RE: SED-017 and SED-018 in 600-86414

Should see SED-017 and SED-018 in 600-86414 tomorrow afternoon. Checking on the surface water.

From: Higginbotham, Christina [mailto:Christina_Higginbotham@golder.com]
Sent: Tuesday, February 18, 2014 12:54 PM
To: Joiner, Dean
Subject: RE: SED-017 and SED-018 in 600-86414

Please let me know when we should expect the data on these two sediment samples, as well as the surface water samples that were resubmitted to Savannah for analyses.
Thanks!

Christina Higginbotham, P.G. | Remediation Project Manager | **Golder Associates Inc.**

500 Century Plaza Drive, Suite 190, Houston, Texas, USA 77073
T: +1 (281) 821-6868 | **F:** +1 (281) 821-6870 | **C:** +1 (281) 620-7835 | **E:** CHigginbotham@golder.com |
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Please consider the environment before printing this email.

From: Joiner, Dean [mailto:Dean.Joiner@testamericainc.com]
Sent: Monday, February 17, 2014 9:14 PM
To: Higginbotham, Christina
Subject: RE: SED-017 and SED-018 in 600-86414

Received. Being setup for analysis.

From: Higginbotham, Christina [mailto:Christina_Higginbotham@golder.com]
Sent: Monday, February 17, 2014 10:26 AM
To: Joiner, Dean
Subject: RE: SED-017 and SED-018 in 600-86414

Just making sure these got shipped back to Houston (SED-017 and SED-018 for total metals)?

Begin forwarded message:

> **From:** "Joiner, Dean" <Dean.Joiner@testamericainc.com>
> **Date:** February 13, 2014 at 3:23:24 PM CST
> **To:** "Higginbotham, Christina" <Christina_Higginbotham@golder.com>
> **Subject: RE: SED-017 and SED-018 in 600-86414**
>
> Christina, Look like they are in TA Burlington. I will get these shipped back for analysis. Thanks!
>
> ---
>
> **From:** Higginbotham, Christina [mailto:Christina_Higginbotham@golder.com]
> **Sent:** Thursday, February 13, 2014 12:34 PM
> **To:** Joiner, Dean
> **Cc:** Marlow, Abby
> **Subject:** SED-017 and SED-018 in 600-86414
> **Importance:** High
>
> Hi Dean,
>
> Did you ever find out what happened with samples SED-017 and SED-018 per our discussion the other day? They were logged in originally but not in our data package. Do you think all sample containers got shipped to Burlington or something?

The original login was attached but I think Abby worked with you on revising it after that.

Please let us know the status. The acknowledgements do not specify bottles received, just that they were logged in for grain size. We need to run total metals (report As, Cd, and Pb) on these two samples.

Christina Higginbotham, P.G. | Remediation Project Manager | **Golder Associates Inc.**
500 Century Plaza Drive, Suite 190, Houston, Texas, USA 77073
T: +1 (281) 821-6868 | **F:** +1 (281) 821-6870 | **C:** +1 (281) 620-7835 | **E:** CHigginbotham@golder.com | **www.golder.com**

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Please consider the environment before printing this email.

From: Joiner, Dean [mailto:Dean.Joiner@testamericainc.com]
Sent: Wednesday, February 12, 2014 10:56 AM
To: Higginbotham, Christina
Subject: RE: 600-86414-19 Pictures Client ID : 2014-SED-14 Sampled 1-29-14 9:48 am

Christina, We received a filtered metals bottle for dissolved metals but not a total metals bottle for duplicate 1. Please Advise. Thanks!

From: Higginbotham, Christina [mailto:Christina_Higginbotham@golder.com]
Sent: Tuesday, February 11, 2014 3:47 PM
To: Joiner, Dean
Cc: Faeth-Boyd, Anne
Subject: RE: 600-86414-19 Pictures Client ID : 2014-SED-14 Sampled 1-29-14 9:48 am

Ok, I think we may have figured this out.

For "DUPLICATE-1" collected on 2014-01-29, there is not Total Metals data reported. Please confirm you did NOT receive a bottle with total metals specified for DUPLICATE-1. If this is the case, I would advise that this samples was not labeled correctly and should in fact be "DUPLICATE-1" (collected at 9:48) for Total Metals.

Christina Higginbotham, P.G. | Remediation Project Manager | **Golder Associates Inc.**
500 Century Plaza Drive, Suite 190, Houston, Texas, USA 77073
T: +1 (281) 821-6868 | **F:** +1 (281) 821-6870 | **C:** +1 (281) 620-7835 | **E:** CHigginbotham@golder.com | **www.golder.com**

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Please consider the environment before printing this email.

From: Joiner, Dean [mailto:Dean.Joiner@testamericainc.com]
Sent: Tuesday, February 11, 2014 3:34 PM
To: Higginbotham, Christina
Cc: Faeth-Boyd, Anne
Subject: 600-86414-19 Pictures Client ID : 2014-SED-14 Sampled 1-29-14 9:48 am

Christina,

The attached pictures show the sample received as water preserved w/ HNO3. Thanks!

DEAN A JOINER

TestAmerica Houston
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 713.690.4444
www.testamericainc.com

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86414-4

Login Number: 86414

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4/1.3
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-86414-5
Client Project/Site: Stewart Creek TOC
Revision: 1

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
5/15/2014 7:19:50 PM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

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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.

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-86414-5 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☐ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☑ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton		2/26/2014
Name (printed)	Signature	Date

Project Management Asst II
Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/26/2014
Project Name:	Stewart Creek TOC	Laboratory Job Number:	600-86414-5
Reviewer Name:	Cathy Upton		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?			X		
		Were MS/MSD analyzed at the appropriate frequency?			X		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
		Were MS/MSD RPDs within laboratory QC limits?			X		
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/26/2014
Project Name:	Stewart Creek TOC	Laboratory Job Number:	600-86414-5
Reviewer Name:	Cathy Upton		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?			X		
		Were percent differences for each analyte within the method-required QC limits?			X		
		Was the ICAL curve verified for each analyte?			X		
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?			X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/26/2014
Project Name:	Stewart Creek TOC	Laboratory Job Number:	600-86414-5
Reviewer Name:	Cathy Upton		

ER #[1]	Description

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Detection Check Standard

Matrix:	Soil
Method:	90.3 Walkley-Black
Preparation:	NA
Date Analyzed:	12/7/2013
Date Prepared:	12/7/2013
TALs Batches:	122871
Units:	% Carbon

Analyte	MDL	DCS Spike	Measured Result	MQL
TOC Walkley Black	0.0415	0.05	0.036	0.1

Job ID: 600-86414-5

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-86414-5

Comments
The report was revised on 05/15/14 to correct the results for the Walkley Black method, replacing the final report generated on 02/26/14.

Receipt
The samples were received on 1/31/2014 10:33 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.3º C and 2.4º C.

Method Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek TOC

TestAmerica Job ID: 600-86414-5

Method	Method Description	Protocol	Laboratory
WALKLEY BLACK	Organic Carbon, Total (TOC)	MSA	TAL HOU

Protocol References:

MSA = "Methods Of Soil Analysis, Chemical And Microbiological Properties", Part 2, 2nd Ed., 1982 And Subsequent Revisions.

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek TOC

TestAmerica Job ID: 600-86414-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-86414-10	2014-SED-017	Solid	01/29/14 15:35	01/31/14 10:33
600-86414-12	2014-SED-018	Solid	01/29/14 16:39	01/31/14 10:33

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek TOC

TestAmerica Job ID: 600-86414-5

Client Sample ID: 2014-SED-017

Lab Sample ID: 600-86414-10
Date Collected: 01/29/14 15:35
Matrix: Solid
Date Received: 01/31/14 10:33
Percent Solids: 79.6

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
TOC	0.423		0.100	0.0415	%			02/26/14 10:00	1

Client Sample ID: 2014-SED-018

Lab Sample ID: 600-86414-12
Date Collected: 01/29/14 16:39
Matrix: Solid
Date Received: 01/31/14 10:33
Percent Solids: 61.7

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
TOC	0.791		0.100	0.0415	%			02/26/14 10:00	1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

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
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)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek TOC

TestAmerica Job ID: 600-86414-5

Method: WALKLEY BLACK - Organic Carbon, Total (TOC)

Lab Sample ID: MB 600-128219/1
Matrix: Solid
Analysis Batch: 128219

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

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
TOC	0.0415	U	0.100	0.0415	%			02/26/14 10:00	1

Lab Sample ID: LCS 600-128219/2
Matrix: Solid
Analysis Batch: 128219

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
TOC			2.34	2.264		%		97	80 - 120		

Lab Sample ID: 600-86414-10 DU
Matrix: Solid
Analysis Batch: 128219

Client Sample ID: 2014-SED-017
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
TOC	0.423			0.4590		%				8	20

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Stewart Creek TOC

TestAmerica Job ID: 600-86414-5

General Chemistry

Analyte	MQL	MDL	Units	Method
TOC	0.100	0.0415	%	WALKLEY BLACK

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek TOC

TestAmerica Job ID: 600-86414-5

General Chemistry

Analysis Batch: 128219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86414-10	2014-SED-017	Total/NA	Solid	WALKLEY BLACK	
600-86414-10 DU	2014-SED-017	Total/NA	Solid	WALKLEY BLACK	
600-86414-12	2014-SED-018	Total/NA	Solid	WALKLEY BLACK	
LCS 600-128219/2	Lab Control Sample	Total/NA	Solid	WALKLEY BLACK	
MB 600-128219/1	Method Blank	Total/NA	Solid	WALKLEY BLACK	

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Stewart Creek TOC

TestAmerica Job ID: 600-86414-5

Client Sample ID: 2014-SED-017

Lab Sample ID: 600-86414-10
Date Collected: 01/29/14 15:35
Matrix: Solid
Date Received: 01/31/14 10:33
Percent Solids: 79.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	WALKLEY BLACK		1	2.0200 g	2.0200 g	128219	02/26/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-018

Lab Sample ID: 600-86414-12
Date Collected: 01/29/14 16:39
Matrix: Solid
Date Received: 01/31/14 10:33
Percent Solids: 61.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	WALKLEY BLACK		1	2.0400 g	2.0400 g	128219	02/26/14 10:00	EC1	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek TOC

TestAmerica Job ID: 600-86414-5

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14 *
Utah	NELAP	8	TX00083	10-31-14

* Expired certification is currently pending renewal and is considered valid.

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Golder Associates	Anne Fueth-Boyd	1-29-13	255226
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 2**
820 S. Main St Suite 100	636-724-9191		
City / State / Zip Code	**Site Contact / Lab Contact**		
St. louis / MO / 63301			
Project Name and Location (State)	**Carrier/Waybill Number**		
Exide Frisco - Stewart Creek			
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed): TOC; METALS (As, Cd, Pb); Total metals (As, Cd, Pb); Dissolved metals (As, Cd, Pb)

Special Instructions/ Conditions of Receipt: In Accordance w/ MSA

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TOC	METALS (As, Cd, Pb)	Total metals (As, Cd, Pb)	Dissolved metals (As, Cd, Pb)
2014-SW-002	1-29-14	0948		X					X						X	X
Duplicate-1		0948		X					X						X	X
2014-SW-002-MS		0948		X					X						X	X
2014-SW-002 MSD		0948		X					X						X	X
Field Blank		1010		X					X						X	X
2014-SED-015		1439			X	X	X						X	X		
2014-SED-014		1349			X	X	X						X	X		
2014-SED-016		1508			X	X	X						X	X		
2014-SW-003		1523		X					X						X	X
2014-SED-017		1535			X		X									
2014-SW-004		1549		X					X							
2014-SED-018		1639			X		X									

600-86414 Chain of Custody

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other 5-day

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Chris Trevino	01/29/14	2130	1. Received By:	1/29/14	2130
2. Relinquished By:	1/30/14	1234	2. Received By: Mike Cowen	1/30/14	1234
3. Relinquished By: Mike Cowen	1/30/14	1530	3. Received By:		

Comments: 1/31/14 1032

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TAL-4124 (1007)

Client: Golder Associates	Project Manager: Anne Faeth-Boyd
Date: 1-29-13	
Address: 920 S. Main St	Telephone Number (Area Code)/Fax Number: 636-724-9191
Lab Number:	
City: St Louis; State: Mo; Zip Code: 63301	Site Contact:
Lab Contact:	
Project Name and Location (State): Exide SI156 - Sewer Creek	Carrier/Waybill Number:
Contract/Purchase Order/Quote No.:	

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TOC	Metals (As, Cd, Pb)	total metals (As, Cd, Pb)	Dissolved metals (As, Cd, Pb)
Duplicate-2	1-29-13				X		X						X	X		
2014-SED-014-MS	1-29-13	1349			X		X							X		
2014-SED-014-MSD	1-29-13	1349			X		X							X		
2014-SED-016-MSD	1-29-13	1508			X		X						X			
2014-SED-016-MS	1-29-13	1508			X		X						X			
~~[illegible]~~	~~[illegible]~~															
2014-SW-05	1-29-13	1642		X				X							X	X

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be longer than 1

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other 5-day

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: Chris Irwin	01/29/14	2130	1. Received By:		
2. Relinquished By:	1/30/14	1234	2. Received By:		
3. Relinquished By:	1/30/14	1530	3. Received By:		

Comments: 1/31

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Std TC-1, Page 1 of 1

or revocation of any license, or notice of either which affects work in progress.

4.4 The warranty obligations set forth in Sections 4.1, 4.2 and 4.3 are the sole and exclusive warranties given by TestAmerica in connection with any services performed by TestAmerica or any Results generated from such services, and TestAmerica gives and makes NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND.

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Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86414-5

Login Number: 86414

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4/1.3
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-86449-1
Client Project/Site: Exide Recycling Center, Stewart Creek
Revision: 2

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
5/15/2014 7:23:43 PM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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

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

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

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-86449-1 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☑ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☑ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton		2/26/2014
Name (printed)	Signature	Date

Project Management Asst II
Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/26/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86449-1
Reviewer Name:	Cathy Upton		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X			R01A
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/26/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86449-1
Reviewer Name:	Cathy Upton		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
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3. NA = Not applicable;
4. NR = Not reviewed;
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Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/26/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86449-1
Reviewer Name:	Cathy Upton		

ER #[1]	Description
R01A	The following sample(s) was received at the laboratory without a sample collection date documented on the chain of custody: 2014-SED-029 (600-86449-1), 2014-SED-030 (600-86449-3), 2014-SED-031 (600-86449-5), 2014-SED-032 (600-86449-7), 2014-SED-033 (600-86449-9), 2014-SED-034 (600-86449-11), 2014-SW-010 (600-86449-2), 2014-SW-011 (600-86449-4), 2014-SW-012 (600-86449-6), 2014-SW-013 (600-86449-8), 2014-SW-014 (600-86449-10). The laboratory used the sample collection date as marked on the rest of the COC pages. The following sample(s) was listed on the Chain of Custody (COC); however, no sample(s) was received: Equipment Blank-Filter (600-86449-13), Field Blank (600-86449-12). Total metals bottle not received for 600-86449-13 and dissolved metals bottle not received for 86449-12.

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

Detection Check Standard

Matrix:	Water
Method:	SM5310 D, 9060, 415.1
Preparation:	NA
Date Analyzed:	12/6/2013
Date Prepared:	12/6/2013
TALs Batches:	122324
Units:	mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Carbon, Total Organic	0.437	0.5	0.669	1

Detection Check Standard

Matrix:	Soil
Method:	90.3 Walkley-Black
Preparation:	NA
Date Analyzed:	12/7/2013
Date Prepared:	12/7/2013
TALs Batches:	122871
Units:	% Carbon

Analyte	MDL	DCS Spike	Measured Result	MQL
TOC Walkley Black	0.0415	0.05	0.036	0.1

Detection Check Standard

Matrix:	Soil
Method:	6010B
Preparation:	3050
Date Analyzed:	12/30/2013
Date Prepared:	12/27/2013
Instrument:	Thermo 6500
TALS Batches:	123949, 123775p
Prep/Reagent Factor =	50
Units:	mg/kg

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.299654	0.5	0.36	25
Antimony	0.231553	0.45	0.5	2.5
Arsenic	0.217923	0.5	0.53	1
Barium	0.011322	0.03	0.04	1
Beryllium	0.014513	0.02	0.015	0.25
Boron	0.385535	0.6	0.56	20
Cadmium	0.025642	0.05	0.05	0.25
Calcium	0.86399	1.5	2.185	100
Chromium	0.050606	0.1	0.135	0.5
Cobalt	0.067622	0.1	0.09	0.5
Copper	0.173703	0.5	0.64	0.5
Iron	2.534007	4	3.76	20
Lead	0.104832	0.2	0.215	0.5
Selenium	0.258884	0.5	0.465	2
Manganese	0.038111	0.05	0.085	1.5
Molybdenum	0.136448	0.35	0.38	0.5
Nickel	0.116599	0.15	0.2	1
Silver	0.118848	0.2	0.15	0.5
Sodium	0.885548	2.4	3.135	100
Thallium	0.276988	0.7	0.73	1.5
Tin	0.08729	0.15	0.19	1
Titanium	0.014529	0.03	0.01	0.5
Vanadium	0.079068	0.15	0.125	0.5
Zinc	0.108432	0.2	0.305	1.5

Detection Check Standard

Matrix:	Water
Method:	200.7/6010
Preparation:	200.7P/3010
Date Analyzed:	12/31/2013
Date Prepared:	12/27/2013
Instrument:	Spectro01
TALs Batches:	124030, 123788p
Units:	mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.006	0.02	0.028176	0.5
Antimony	0.0063	0.01	0.010016	0.05
Arsenic	0.0033	0.01	0.008253	0.01
Barium	0.0022	0.005	0.004098	0.02
Beryllium	0.00134	0.002	0.004019	0.005
Boron	0.0077	0.02	0.019829	0.2
Cadmium	0.00073	0.001	0.001	0.005
Calcium	0.022	0.05	0.060829	1
Chromium	0.0016	0.002	0.003835	0.01
Cobalt	0.00063	0.001	0.000965	0.01
Copper	0.0014	0.002	0.002451	0.01
Iron	0.087	0.1	0.002258	0.4
Lithium	0.0024	0.005	0.006107	0.2
Lead	0.0029	0.005	0.005478	0.01
Selenium	0.0042	0.01	0.009953	0.04
Manganese	0.00084	0.002	0.001988	0.01
Molybdenum	0.0027	0.005	0.005867	0.01
Nickel	0.00179	0.005	0.005669	0.01
Silver	0.0012	0.0025	0.001901	0.01
Sodium	0.02	0.05	0.088115	1
Strontium	0.0005	0.001	0.000897	0.005
Thallium	0.0078	0.02	0.021503	0.03
Tin	0.0028	0.005	0.005708	0.01
Titanium	0.0011	0.002	0.001905	0.01
Vanadium	0.0017	0.002	0.003578	0.01
Zinc	0.0022	0.005	0.004189	0.01

Job ID: 600-86449-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-86449-1

Comments
The report was revised on 02/26/14 to report As, Cd and Pb. This report replaces the final sent on 02/10/14. The report was revised again on 05/15/14 to correct the results for the Walkley Black method, replacing the final report generated on 02/26/14.

Receipt
The samples were received on 2/1/2014 10:19 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.8º C.

Except:

The following sample(s) was received at the laboratory without a sample collection date documented on the chain of custody: 2014-SED-029 (600-86449-1), 2014-SED-030 (600-86449-3), 2014-SED-031 (600-86449-5), 2014-SED-032 (600-86449-7), 2014-SED-033 (600-86449-9), 2014-SED-034 (600-86449-11), 2014-SW-010 (600-86449-2), 2014-SW-011 (600-86449-4), 2014-SW-012 (600-86449-6), 2014-SW-013 (600-86449-8), 2014-SW-014 (600-86449-10). The laboratory used the sample collection date as marked on the rest of the COC pages.

The following sample(s) was listed on the Chain of Custody (COC); however, no sample(s) was received: Equipment Blank-Filter (600-86449-13), Field Blank (600-86449-12). Total metals bottle not received for 600-86449-13 and dissolved metals bottle not received for 86449-12.

Method Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86449-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL HOU
Moisture	Percent Moisture	EPA	TAL HOU
SM 5310D	Organic Carbon, Total (TOC)	SM	TAL HOU
WALKLEY BLACK	Organic Carbon, Total (TOC)	MSA	TAL HOU

Protocol References:

EPA = US Environmental Protection Agency

MSA = "Methods Of Soil Analysis, Chemical And Microbiological Properties", Part 2, 2nd Ed., 1982 And Subsequent Revisions.

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 HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86449-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-86449-1	2014-SED-029	Solid	01/31/14 09:46	02/01/14 07:35
600-86449-2	2014-SW-010	Water	01/31/14 10:13	02/01/14 07:35
600-86449-3	2014-SED-030	Solid	01/31/14 10:20	02/01/14 07:35
600-86449-4	2014-SW-011	Water	01/31/14 10:39	02/01/14 07:35
600-86449-5	2014-SED-031	Solid	01/31/14 10:48	02/01/14 07:35
600-86449-6	2014-SW-012	Water	01/31/14 11:04	02/01/14 07:35
600-86449-7	2014-SED-032	Solid	01/31/14 11:13	02/01/14 07:35
600-86449-8	2014-SW-013	Water	01/31/14 11:28	02/01/14 07:35
600-86449-9	2014-SED-033	Solid	01/31/14 11:40	02/01/14 07:35
600-86449-10	2014-SW-014	Water	01/31/14 12:03	02/01/14 07:35
600-86449-11	2014-SED-034	Solid	01/31/14 12:12	02/01/14 07:35
600-86449-12	Field Blank	Water	01/31/14 08:00	02/01/14 07:35
600-86449-13	Equipment Blank-Filter	Water	01/31/14 13:34	02/01/14 07:35
600-86449-14	Equipment Blank-Dredge	Water	01/31/14 13:37	02/01/14 07:35
600-86449-15	Equipment Blank-Bowl	Water	01/31/14 13:41	02/01/14 07:35
600-86449-16	Duplicate-05	Solid	01/31/14 00:00	02/01/14 07:35
600-86449-17	2014-SED-026	Solid	01/31/14 08:21	02/01/14 07:35
600-86449-18	2014-SW-007	Water	01/31/14 08:50	02/01/14 07:35
600-86449-19	2014-SED-027	Solid	01/31/14 08:58	02/01/14 07:35
600-86449-20	2014-SED-028	Solid	01/31/14 09:19	02/01/14 07:35
600-86449-21	2014-SW-008	Water	01/31/14 09:10	02/01/14 07:35
600-86449-22	2014-SW-009	Water	01/31/14 09:38	02/01/14 07:35
600-86449-23	2014-SW-015	Water	01/31/14 12:28	02/01/14 07:35
600-86449-24	2014-SED-035	Solid	01/31/14 12:38	02/01/14 07:35

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86449-1

Client Sample ID: 2014-SED-029 — Lab Sample ID: 600-86449-1

Date Collected: 01/31/14 09:46 — **Matrix: Solid**
Date Received: 02/01/14 07:35 — **Percent Solids: 59.1**

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.260	J	0.419	0.0429	mg/Kg	☼	02/04/14 14:31	02/05/14 13:07	1
Lead	12.0		0.837	0.176	mg/Kg	☼	02/04/14 14:31	02/05/14 13:07	1
Arsenic	13.4		1.67	0.365	mg/Kg	☼	02/04/14 14:31	02/05/14 13:07	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	41		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	59		1.0	1.0	%			02/03/14 15:19	1
TOC	0.613		0.100	0.0415	%			02/06/14 10:00	1

Client Sample ID: 2014-SW-010 — Lab Sample ID: 600-86449-2

Date Collected: 01/31/14 10:13 — **Matrix: Water**
Date Received: 02/01/14 07:35

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/06/14 11:21	02/07/14 13:43	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/06/14 11:21	02/07/14 13:43	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/06/14 11:21	02/07/14 13:43	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 12:33	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 12:33	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 12:33	1

Client Sample ID: 2014-SED-030 — Lab Sample ID: 600-86449-3

Date Collected: 01/31/14 10:20 — **Matrix: Solid**
Date Received: 02/01/14 07:35 — **Percent Solids: 65.4**

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.691		0.364	0.0373	mg/Kg	☼	02/04/14 14:31	02/05/14 13:09	1
Lead	14.0		0.728	0.153	mg/Kg	☼	02/04/14 14:31	02/05/14 13:09	1
Arsenic	20.3		1.46	0.317	mg/Kg	☼	02/04/14 14:31	02/05/14 13:09	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	35		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	65		1.0	1.0	%			02/03/14 15:19	1
TOC	0.546		0.100	0.0415	%			02/06/14 10:00	1

Client Sample ID: 2014-SW-011 — Lab Sample ID: 600-86449-4

Date Collected: 01/31/14 10:39 — **Matrix: Water**
Date Received: 02/01/14 07:35

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/06/14 11:21	02/07/14 13:46	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/06/14 11:21	02/07/14 13:46	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/06/14 11:21	02/07/14 13:46	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86449-1

Client Sample ID: 2014-SW-011

Lab Sample ID: 600-86449-4
Date Collected: 01/31/14 10:39
Matrix: Water
Date Received: 02/01/14 07:35

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 12:35	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 12:35	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 12:35	1

Client Sample ID: 2014-SED-031

Lab Sample ID: 600-86449-5
Date Collected: 01/31/14 10:48
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 74.9

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.588**		0.306	0.0314	mg/Kg	☼	02/04/14 14:31	02/05/14 13:12	1
Lead	**11.3**		0.612	0.128	mg/Kg	☼	02/04/14 14:31	02/05/14 13:12	1
Arsenic	**12.5**		1.22	0.267	mg/Kg	☼	02/04/14 14:31	02/05/14 13:12	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**25**		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	**75**		1.0	1.0	%			02/03/14 15:19	1
TOC	**0.604**		0.100	0.0415	%			02/06/14 10:00	1

Client Sample ID: 2014-SW-012

Lab Sample ID: 600-86449-6
Date Collected: 01/31/14 11:04
Matrix: Water
Date Received: 02/01/14 07:35

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/06/14 11:21	02/07/14 13:48	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/06/14 11:21	02/07/14 13:48	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/06/14 11:21	02/07/14 13:48	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 12:37	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 12:37	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 12:37	1

Client Sample ID: 2014-SED-032

Lab Sample ID: 600-86449-7
Date Collected: 01/31/14 11:13
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 75.7

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.386**		0.327	0.0335	mg/Kg	☼	02/04/14 14:31	02/05/14 13:14	1
Lead	**8.99**		0.654	0.137	mg/Kg	☼	02/04/14 14:31	02/05/14 13:14	1
Arsenic	**15.2**		1.31	0.285	mg/Kg	☼	02/04/14 14:31	02/05/14 13:14	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**24**		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	**76**		1.0	1.0	%			02/03/14 15:19	1
TOC	**0.557**		0.100	0.0415	%			02/06/14 10:00	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86449-1

Client Sample ID: 2014-SW-013

Lab Sample ID: 600-86449-8
Date Collected: 01/31/14 11:28
Matrix: Water
Date Received: 02/01/14 07:35

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/06/14 11:21	02/07/14 13:50	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/06/14 11:21	02/07/14 13:50	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/06/14 11:21	02/07/14 13:50	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 12:39	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 12:39	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 12:39	1

Client Sample ID: 2014-SED-033

Lab Sample ID: 600-86449-9
Date Collected: 01/31/14 11:40
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 76.9

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.331**		0.301	0.0309	mg/Kg	☼	02/04/14 14:31	02/05/14 13:17	1
Lead	**6.56**		0.602	0.126	mg/Kg	☼	02/04/14 14:31	02/05/14 13:17	1
Arsenic	**10.5**		1.20	0.262	mg/Kg	☼	02/04/14 14:31	02/05/14 13:17	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**23**		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	**77**		1.0	1.0	%			02/03/14 15:19	1
TOC	**0.737**		0.100	0.0415	%			02/06/14 10:00	1

Client Sample ID: 2014-SW-014

Lab Sample ID: 600-86449-10
Date Collected: 01/31/14 12:03
Matrix: Water
Date Received: 02/01/14 07:35

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/06/14 11:21	02/07/14 13:59	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/06/14 11:21	02/07/14 13:59	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/06/14 11:21	02/07/14 13:59	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 12:42	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 12:42	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 12:42	1

Client Sample ID: 2014-SED-034

Lab Sample ID: 600-86449-11
Date Collected: 01/31/14 12:12
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 75.2

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.488**		0.305	0.0313	mg/Kg	☼	02/04/14 14:31	02/05/14 13:20	1
Lead	**9.35**		0.610	0.128	mg/Kg	☼	02/04/14 14:31	02/05/14 13:20	1
Arsenic	**11.7**		1.22	0.266	mg/Kg	☼	02/04/14 14:31	02/05/14 13:20	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86449-1

Client Sample ID: 2014-SED-034

Lab Sample ID: 600-86449-11
Date Collected: 01/31/14 12:12
Matrix: Solid
Date Received: 02/01/14 07:35

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	25		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	75		1.0	1.0	%			02/03/14 15:19	1
TOC	0.742		0.100	0.0415	%			02/06/14 10:00	1

Client Sample ID: Field Blank

Lab Sample ID: 600-86449-12
Date Collected: 01/31/14 08:00
Matrix: Water
Date Received: 02/01/14 07:35

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/06/14 11:21	02/07/14 14:02	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/06/14 11:21	02/07/14 14:02	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/06/14 11:21	02/07/14 14:02	1

Client Sample ID: Equipment Blank-Filter

Lab Sample ID: 600-86449-13
Date Collected: 01/31/14 13:34
Matrix: Water
Date Received: 02/01/14 07:35

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 12:44	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 12:44	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 12:44	1

Client Sample ID: Equipment Blank-Dredge

Lab Sample ID: 600-86449-14
Date Collected: 01/31/14 13:37
Matrix: Water
Date Received: 02/01/14 07:35

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/06/14 11:21	02/07/14 14:04	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/06/14 11:21	02/07/14 14:04	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/06/14 11:21	02/07/14 14:04	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.437	U	1.00	0.437	mg/L			02/05/14 22:37	1

Client Sample ID: Equipment Blank-Bowl

Lab Sample ID: 600-86449-15
Date Collected: 01/31/14 13:41
Matrix: Water
Date Received: 02/01/14 07:35

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/06/14 11:21	02/07/14 14:07	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/06/14 11:21	02/07/14 14:07	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/06/14 11:21	02/07/14 14:07	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.658	J	1.00	0.437	mg/L			02/05/14 22:50	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86449-1

Client Sample ID: Duplicate-05

Lab Sample ID: 600-86449-16
Date Collected: 01/31/14 00:00
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 75.9

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.425		0.308	0.0316	mg/Kg	☼	02/04/14 14:31	02/05/14 13:22	1
Lead	12.2		0.616	0.129	mg/Kg	☼	02/04/14 14:31	02/05/14 13:22	1
Arsenic	17.3		1.23	0.268	mg/Kg	☼	02/04/14 14:31	02/05/14 13:22	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	24		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	76		1.0	1.0	%			02/03/14 15:19	1
TOC	0.564		0.100	0.0415	%			02/06/14 10:00	1

Client Sample ID: 2014-SED-026

Lab Sample ID: 600-86449-17
Date Collected: 01/31/14 08:21
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 80.7

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.358		0.304	0.0311	mg/Kg	☼	02/04/14 14:31	02/05/14 13:25	1
Lead	11.5		0.607	0.127	mg/Kg	☼	02/04/14 14:31	02/05/14 13:25	1
Arsenic	8.55		1.21	0.265	mg/Kg	☼	02/04/14 14:31	02/05/14 13:25	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	81		1.0	1.0	%			02/03/14 15:19	1
TOC	0.863		0.100	0.0415	%			02/06/14 10:00	1

Client Sample ID: 2014-SW-007

Lab Sample ID: 600-86449-18
Date Collected: 01/31/14 08:50
Matrix: Water
Date Received: 02/01/14 07:35

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/06/14 11:21	02/07/14 14:09	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/06/14 11:21	02/07/14 14:09	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/06/14 11:21	02/07/14 14:09	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 12:46	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 12:46	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 12:46	1

Client Sample ID: 2014-SED-027

Lab Sample ID: 600-86449-19
Date Collected: 01/31/14 08:58
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 68.1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.281	J	0.343	0.0352	mg/Kg	☼	02/04/14 14:31	02/05/14 13:34	1
Lead	16.4		0.686	0.144	mg/Kg	☼	02/04/14 14:31	02/05/14 13:34	1
Arsenic	14.3		1.37	0.299	mg/Kg	☼	02/04/14 14:31	02/05/14 13:34	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86449-1

Client Sample ID: 2014-SED-027

Lab Sample ID: 600-86449-19
Date Collected: 01/31/14 08:58
Matrix: Solid
Date Received: 02/01/14 07:35

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	32		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	68		1.0	1.0	%			02/03/14 15:19	1
TOC	1.07		0.100	0.0415	%			02/06/14 10:00	1

Client Sample ID: 2014-SED-028

Lab Sample ID: 600-86449-20
Date Collected: 01/31/14 09:19
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 60.7

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.392	J	0.400	0.0410	mg/Kg	☼	02/04/14 14:31	02/05/14 13:37	1
Lead	13.5		0.800	0.168	mg/Kg	☼	02/04/14 14:31	02/05/14 13:37	1
Arsenic	10.3		1.60	0.349	mg/Kg	☼	02/04/14 14:31	02/05/14 13:37	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	39		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	61		1.0	1.0	%			02/03/14 15:19	1
TOC	2.70		0.100	0.0415	%			02/06/14 10:00	1

Client Sample ID: 2014-SW-008

Lab Sample ID: 600-86449-21
Date Collected: 01/31/14 09:10
Matrix: Water
Date Received: 02/01/14 07:35

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/06/14 11:21	02/07/14 14:11	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/06/14 11:21	02/07/14 14:11	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/06/14 11:21	02/07/14 14:11	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 12:49	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 12:49	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 12:49	1

Client Sample ID: 2014-SW-009

Lab Sample ID: 600-86449-22
Date Collected: 01/31/14 09:38
Matrix: Water
Date Received: 02/01/14 07:35

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/06/14 11:21	02/07/14 14:14	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/06/14 11:21	02/07/14 14:14	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/06/14 11:21	02/07/14 14:14	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 12:57	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 12:57	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 12:57	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86449-1

Client Sample ID: 2014-SW-015

Lab Sample ID: 600-86449-23

Date Collected: 01/31/14 12:28
Matrix: Water
Date Received: 02/01/14 07:35

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/06/14 11:21	02/07/14 14:16	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/06/14 11:21	02/07/14 14:16	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/06/14 11:21	02/07/14 14:16	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 13:00	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 13:00	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 13:00	1

Client Sample ID: 2014-SED-035

Lab Sample ID: 600-86449-24

Date Collected: 01/31/14 12:38
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 70.0

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.612**		0.340	0.0349	mg/Kg	☼	02/04/14 14:31	02/05/14 13:39	1
Lead	**19.8**		0.680	0.143	mg/Kg	☼	02/04/14 14:31	02/05/14 13:39	1
Arsenic	**42.7**		1.36	0.296	mg/Kg	☼	02/04/14 14:31	02/05/14 13:39	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**30**		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	**70**		1.0	1.0	%			02/03/14 15:19	1
TOC	**1.07**		0.100	0.0415	%			02/06/14 10:00	1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
U	Analyte was not detected at or above the SDL.

General Chemistry

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated 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
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)

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-126557/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126636 — **Prep Batch: 126557**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0256	U	0.250	0.0256	mg/Kg		02/04/14 14:31	02/05/14 11:37	1
Lead	0.105	U	0.500	0.105	mg/Kg		02/04/14 14:31	02/05/14 11:37	1
Arsenic	0.218	U	1.00	0.218	mg/Kg		02/04/14 14:31	02/05/14 11:37	1

Lab Sample ID: LCSSRM 600-126557/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126636 — **Prep Batch: 126557**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	182	186.0		mg/Kg		102.2	81.9 - 118.1
Lead	115	113.6		mg/Kg		98.8	81.8 - 119.1
Arsenic	99.6	99.28		mg/Kg		99.7	80.8 - 119.5

Lab Sample ID: MB 600-126633/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126774 — **Prep Batch: 126633**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 12:28	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 12:28	1
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 12:28	1

Lab Sample ID: LCS 600-126633/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126774 — **Prep Batch: 126633**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium, Dissolved	0.500	0.5139		mg/L		103	80 - 120
Lead, Dissolved	0.500	0.5018		mg/L		100	80 - 120
Arsenic, Dissolved	0.500	0.5089		mg/L		102	80 - 120

Lab Sample ID: MB 600-126755/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126888 — **Prep Batch: 126755**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/06/14 11:21	02/07/14 13:30	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/06/14 11:21	02/07/14 13:30	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/06/14 11:21	02/07/14 13:30	1

Lab Sample ID: LCS 600-126755/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126888 — **Prep Batch: 126755**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.500	0.5147		mg/L		103	80 - 120
Lead	0.500	0.5019		mg/L		100	80 - 120

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

Lab Sample ID: LCS 600-126755/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126888 — **Prep Batch: 126755**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic			0.500	0.5115		mg/L		102	80 - 120		

Method: Moisture - Percent Moisture

Lab Sample ID: 600-86449-3 DU — **Client Sample ID: 2014-SED-030**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126487

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	35			34		%				2	20
Percent Solids	65			66		%				1	20

Method: SM 5310D - Organic Carbon, Total (TOC)

Lab Sample ID: MB 600-126729/9 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126729

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.437	U	1.00	0.437	mg/L			02/05/14 17:36	1

Lab Sample ID: LCS 600-126729/10 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126729

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			10.0	9.706		mg/L		97	85 - 115		

Method: WALKLEY BLACK - Organic Carbon, Total (TOC)

Lab Sample ID: MB 600-126787/1 — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126787

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
TOC	0.0415	U	0.100	0.0415	%			02/06/14 10:00	1

Lab Sample ID: LCS 600-126787/2 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126787

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
TOC			2.34	2.217		%		95	80 - 120		

Method: WALKLEY BLACK - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 600-86449-1 DU
Matrix: Solid
Analysis Batch: 126787

Client Sample ID: 2014-SED-029
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
TOC	0.613			0.5850		%				5	20

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86449-1

Method: 6010B - Metals (ICP)

Analyte	MQL	MDL	Units	Method
Arsenic	1.00	0.218	mg/Kg	6010B
Arsenic	0.0100	0.00328	mg/L	6010B
Cadmium	0.250	0.0256	mg/Kg	6010B
Cadmium	0.00500	0.000350	mg/L	6010B
Lead	0.500	0.105	mg/Kg	6010B
Lead	0.0100	0.00290	mg/L	6010B

Method: 6010B - Metals (ICP) - Dissolved

Analyte	MQL	MDL	Units	Method
Arsenic, Dissolved	0.0100	0.00328	mg/L	6010B
Cadmium, Dissolved	0.00500	0.000350	mg/L	6010B
Lead, Dissolved	0.0100	0.00290	mg/L	6010B

General Chemistry

Analyte	MQL	MDL	Units	Method
Percent Moisture	1.0	1.0	%	Moisture
Percent Solids	1.0	1.0	%	Moisture
Total Organic Carbon	1.00	0.437	mg/L	SM 5310D
TOC	0.100	0.0415	%	WALKLEY BLACK

Metals

Prep Batch: 126557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86449-1	2014-SED-029	Total/NA	Solid	3050B	
600-86449-3	2014-SED-030	Total/NA	Solid	3050B	
600-86449-5	2014-SED-031	Total/NA	Solid	3050B	
600-86449-7	2014-SED-032	Total/NA	Solid	3050B	
600-86449-9	2014-SED-033	Total/NA	Solid	3050B	
600-86449-11	2014-SED-034	Total/NA	Solid	3050B	
600-86449-16	Duplicate-05	Total/NA	Solid	3050B	
600-86449-17	2014-SED-026	Total/NA	Solid	3050B	
600-86449-19	2014-SED-027	Total/NA	Solid	3050B	
600-86449-20	2014-SED-028	Total/NA	Solid	3050B	
600-86449-24	2014-SED-035	Total/NA	Solid	3050B	
LCSSRM 600-126557/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 600-126557/1-A	Method Blank	Total/NA	Solid	3050B	

Prep Batch: 126633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86449-2	2014-SW-010	Dissolved	Water	3010A	
600-86449-4	2014-SW-011	Dissolved	Water	3010A	
600-86449-6	2014-SW-012	Dissolved	Water	3010A	
600-86449-8	2014-SW-013	Dissolved	Water	3010A	
600-86449-10	2014-SW-014	Dissolved	Water	3010A	
600-86449-13	Equipment Blank-Filter	Dissolved	Water	3010A	
600-86449-18	2014-SW-007	Dissolved	Water	3010A	
600-86449-21	2014-SW-008	Dissolved	Water	3010A	
600-86449-22	2014-SW-009	Dissolved	Water	3010A	
600-86449-23	2014-SW-015	Dissolved	Water	3010A	
LCS 600-126633/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-126633/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 126636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86449-1	2014-SED-029	Total/NA	Solid	6010B	126557
600-86449-3	2014-SED-030	Total/NA	Solid	6010B	126557
600-86449-5	2014-SED-031	Total/NA	Solid	6010B	126557
600-86449-7	2014-SED-032	Total/NA	Solid	6010B	126557
600-86449-9	2014-SED-033	Total/NA	Solid	6010B	126557
600-86449-11	2014-SED-034	Total/NA	Solid	6010B	126557
600-86449-16	Duplicate-05	Total/NA	Solid	6010B	126557
600-86449-17	2014-SED-026	Total/NA	Solid	6010B	126557
600-86449-19	2014-SED-027	Total/NA	Solid	6010B	126557
600-86449-20	2014-SED-028	Total/NA	Solid	6010B	126557
600-86449-24	2014-SED-035	Total/NA	Solid	6010B	126557
LCSSRM 600-126557/2-A	Lab Control Sample	Total/NA	Solid	6010B	126557
MB 600-126557/1-A	Method Blank	Total/NA	Solid	6010B	126557

Prep Batch: 126755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86449-2	2014-SW-010	Total/NA	Water	3010A	
600-86449-4	2014-SW-011	Total/NA	Water	3010A	
600-86449-6	2014-SW-012	Total/NA	Water	3010A	
600-86449-8	2014-SW-013	Total/NA	Water	3010A	

Metals (Continued)

Prep Batch: 126755 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86449-10	2014-SW-014	Total/NA	Water	3010A	
600-86449-12	Field Blank	Total/NA	Water	3010A	
600-86449-14	Equipment Blank-Dredge	Total/NA	Water	3010A	
600-86449-15	Equipment Blank-Bowl	Total/NA	Water	3010A	
600-86449-18	2014-SW-007	Total/NA	Water	3010A	
600-86449-21	2014-SW-008	Total/NA	Water	3010A	
600-86449-22	2014-SW-009	Total/NA	Water	3010A	
600-86449-23	2014-SW-015	Total/NA	Water	3010A	
LCS 600-126755/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-126755/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 126774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86449-2	2014-SW-010	Dissolved	Water	6010B	126633
600-86449-4	2014-SW-011	Dissolved	Water	6010B	126633
600-86449-6	2014-SW-012	Dissolved	Water	6010B	126633
600-86449-8	2014-SW-013	Dissolved	Water	6010B	126633
600-86449-10	2014-SW-014	Dissolved	Water	6010B	126633
600-86449-13	Equipment Blank-Filter	Dissolved	Water	6010B	126633
600-86449-18	2014-SW-007	Dissolved	Water	6010B	126633
600-86449-21	2014-SW-008	Dissolved	Water	6010B	126633
600-86449-22	2014-SW-009	Dissolved	Water	6010B	126633
600-86449-23	2014-SW-015	Dissolved	Water	6010B	126633
LCS 600-126633/2-A	Lab Control Sample	Total/NA	Water	6010B	126633
MB 600-126633/1-A	Method Blank	Total/NA	Water	6010B	126633

Analysis Batch: 126888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86449-2	2014-SW-010	Total/NA	Water	6010B	126755
600-86449-4	2014-SW-011	Total/NA	Water	6010B	126755
600-86449-6	2014-SW-012	Total/NA	Water	6010B	126755
600-86449-8	2014-SW-013	Total/NA	Water	6010B	126755
600-86449-10	2014-SW-014	Total/NA	Water	6010B	126755
600-86449-12	Field Blank	Total/NA	Water	6010B	126755
600-86449-14	Equipment Blank-Dredge	Total/NA	Water	6010B	126755
600-86449-15	Equipment Blank-Bowl	Total/NA	Water	6010B	126755
600-86449-18	2014-SW-007	Total/NA	Water	6010B	126755
600-86449-21	2014-SW-008	Total/NA	Water	6010B	126755
600-86449-22	2014-SW-009	Total/NA	Water	6010B	126755
600-86449-23	2014-SW-015	Total/NA	Water	6010B	126755
LCS 600-126755/2-A	Lab Control Sample	Total/NA	Water	6010B	126755
MB 600-126755/1-A	Method Blank	Total/NA	Water	6010B	126755

General Chemistry

Analysis Batch: 126487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86449-1	2014-SED-029	Total/NA	Solid	Moisture	
600-86449-3	2014-SED-030	Total/NA	Solid	Moisture	
600-86449-3 DU	2014-SED-030	Total/NA	Solid	Moisture	

General Chemistry (Continued)

Analysis Batch: 126487 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86449-5	2014-SED-031	Total/NA	Solid	Moisture	
600-86449-7	2014-SED-032	Total/NA	Solid	Moisture	
600-86449-9	2014-SED-033	Total/NA	Solid	Moisture	
600-86449-11	2014-SED-034	Total/NA	Solid	Moisture	
600-86449-16	Duplicate-05	Total/NA	Solid	Moisture	
600-86449-17	2014-SED-026	Total/NA	Solid	Moisture	
600-86449-19	2014-SED-027	Total/NA	Solid	Moisture	
600-86449-20	2014-SED-028	Total/NA	Solid	Moisture	
600-86449-24	2014-SED-035	Total/NA	Solid	Moisture	

Analysis Batch: 126729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86449-14	Equipment Blank-Dredge	Total/NA	Water	SM 5310D	
600-86449-15	Equipment Blank-Bowl	Total/NA	Water	SM 5310D	
LCS 600-126729/10	Lab Control Sample	Total/NA	Water	SM 5310D	
MB 600-126729/9	Method Blank	Total/NA	Water	SM 5310D	

Analysis Batch: 126787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86449-1	2014-SED-029	Total/NA	Solid	WALKLEY BLACK	
600-86449-1 DU	2014-SED-029	Total/NA	Solid	WALKLEY BLACK	
600-86449-3	2014-SED-030	Total/NA	Solid	WALKLEY BLACK	
600-86449-5	2014-SED-031	Total/NA	Solid	WALKLEY BLACK	
600-86449-7	2014-SED-032	Total/NA	Solid	WALKLEY BLACK	
600-86449-9	2014-SED-033	Total/NA	Solid	WALKLEY BLACK	
600-86449-11	2014-SED-034	Total/NA	Solid	WALKLEY BLACK	
600-86449-16	Duplicate-05	Total/NA	Solid	WALKLEY BLACK	
600-86449-17	2014-SED-026	Total/NA	Solid	WALKLEY BLACK	
600-86449-19	2014-SED-027	Total/NA	Solid	WALKLEY BLACK	
600-86449-20	2014-SED-028	Total/NA	Solid	WALKLEY BLACK	
600-86449-24	2014-SED-035	Total/NA	Solid	WALKLEY BLACK	
LCS 600-126787/2	Lab Control Sample	Total/NA	Solid	WALKLEY BLACK	
MB 600-126787/1	Method Blank	Total/NA	Solid	WALKLEY BLACK	

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86449-1

Client Sample ID: 2014-SED-029 — Lab Sample ID: 600-86449-1

Date Collected: 01/31/14 09:46 — **Matrix: Solid**
Date Received: 02/01/14 07:35 — **Percent Solids: 59.1**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.01 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.01 g	50 mL	126636	02/05/14 13:07	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0200 g	2.0200 g	126787	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SW-010 — Lab Sample ID: 600-86449-2

Date Collected: 01/31/14 10:13 — **Matrix: Water**
Date Received: 02/01/14 07:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 12:33	DCL	TAL HOU
Total/NA	Prep	3010A			50 mL	50 mL	126755	02/06/14 11:21	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126888	02/07/14 13:43	TWR	TAL HOU

Client Sample ID: 2014-SED-030 — Lab Sample ID: 600-86449-3

Date Collected: 01/31/14 10:20 — **Matrix: Solid**
Date Received: 02/01/14 07:35 — **Percent Solids: 65.4**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.05 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.05 g	50 mL	126636	02/05/14 13:09	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0300 g	2.0300 g	126787	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SW-011 — Lab Sample ID: 600-86449-4

Date Collected: 01/31/14 10:39 — **Matrix: Water**
Date Received: 02/01/14 07:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 12:35	DCL	TAL HOU
Total/NA	Prep	3010A			50 mL	50 mL	126755	02/06/14 11:21	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126888	02/07/14 13:46	TWR	TAL HOU

Client Sample ID: 2014-SED-031 — Lab Sample ID: 600-86449-5

Date Collected: 01/31/14 10:48 — **Matrix: Solid**
Date Received: 02/01/14 07:35 — **Percent Solids: 74.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.09 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86449-1

Client Sample ID: 2014-SED-031

Lab Sample ID: 600-86449-5
Date Collected: 01/31/14 10:48
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 74.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6010B		1	1.09 g	50 mL	126636	02/05/14 13:12	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0200 g	2.0200 g	126787	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SW-012

Lab Sample ID: 600-86449-6
Date Collected: 01/31/14 11:04
Matrix: Water
Date Received: 02/01/14 07:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 12:37	DCL	TAL HOU
Total/NA	Prep	3010A			50 mL	50 mL	126755	02/06/14 11:21	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126888	02/07/14 13:48	TWR	TAL HOU

Client Sample ID: 2014-SED-032

Lab Sample ID: 600-86449-7
Date Collected: 01/31/14 11:13
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 75.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.01 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.01 g	50 mL	126636	02/05/14 13:14	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.2200 g	2.2200 g	126787	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SW-013

Lab Sample ID: 600-86449-8
Date Collected: 01/31/14 11:28
Matrix: Water
Date Received: 02/01/14 07:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 12:39	DCL	TAL HOU
Total/NA	Prep	3010A			50 mL	50 mL	126755	02/06/14 11:21	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126888	02/07/14 13:50	TWR	TAL HOU

Client Sample ID: 2014-SED-033

Lab Sample ID: 600-86449-9
Date Collected: 01/31/14 11:40
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 76.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.08 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.08 g	50 mL	126636	02/05/14 13:17	DCL	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86449-1

Client Sample ID: 2014-SED-033

Lab Sample ID: 600-86449-9
Date Collected: 01/31/14 11:40
Matrix: Solid
Date Received: 02/01/14 07:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.4800 g	2.4800 g	126787	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SW-014

Lab Sample ID: 600-86449-10
Date Collected: 01/31/14 12:03
Matrix: Water
Date Received: 02/01/14 07:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 12:42	DCL	TAL HOU
Total/NA	Prep	3010A			50 mL	50 mL	126755	02/06/14 11:21	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126888	02/07/14 13:59	TWR	TAL HOU

Client Sample ID: 2014-SED-034

Lab Sample ID: 600-86449-11
Date Collected: 01/31/14 12:12
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 75.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.09 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.09 g	50 mL	126636	02/05/14 13:20	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.1900 g	2.1900 g	126787	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: Field Blank

Lab Sample ID: 600-86449-12
Date Collected: 01/31/14 08:00
Matrix: Water
Date Received: 02/01/14 07:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126755	02/06/14 11:21	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126888	02/07/14 14:02	TWR	TAL HOU

Client Sample ID: Equipment Blank-Filter

Lab Sample ID: 600-86449-13
Date Collected: 01/31/14 13:34
Matrix: Water
Date Received: 02/01/14 07:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 12:44	DCL	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86449-1

Client Sample ID: Equipment Blank-Dredge

Lab Sample ID: 600-86449-14
Date Collected: 01/31/14 13:37
Matrix: Water
Date Received: 02/01/14 07:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126755	02/06/14 11:21	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126888	02/07/14 14:04	TWR	TAL HOU
Total/NA	Analysis	SM 5310D		1	12 mL	12 mL	126729	02/05/14 22:37	AYS	TAL HOU

Client Sample ID: Equipment Blank-Bowl

Lab Sample ID: 600-86449-15
Date Collected: 01/31/14 13:41
Matrix: Water
Date Received: 02/01/14 07:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126755	02/06/14 11:21	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126888	02/07/14 14:07	TWR	TAL HOU
Total/NA	Analysis	SM 5310D		1	12 mL	12 mL	126729	02/05/14 22:50	AYS	TAL HOU

Client Sample ID: Duplicate-05

Lab Sample ID: 600-86449-16
Date Collected: 01/31/14 00:00
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 75.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.07 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.07 g	50 mL	126636	02/05/14 13:22	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.4900 g	2.4900 g	126787	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-026

Lab Sample ID: 600-86449-17
Date Collected: 01/31/14 08:21
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 80.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.02 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.02 g	50 mL	126636	02/05/14 13:25	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.1400 g	2.1400 g	126787	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SW-007

Lab Sample ID: 600-86449-18
Date Collected: 01/31/14 08:50
Matrix: Water
Date Received: 02/01/14 07:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 12:46	DCL	TAL HOU
Total/NA	Prep	3010A			50 mL	50 mL	126755	02/06/14 11:21	NER	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86449-1

Client Sample ID: 2014-SW-007

Lab Sample ID: 600-86449-18
Date Collected: 01/31/14 08:50
Matrix: Water
Date Received: 02/01/14 07:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6010B		1	50 mL	50 mL	126888	02/07/14 14:09	TWR	TAL HOU

Client Sample ID: 2014-SED-027

Lab Sample ID: 600-86449-19
Date Collected: 01/31/14 08:58
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 68.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.07 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.07 g	50 mL	126636	02/05/14 13:34	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0400 g	2.0400 g	126787	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-028

Lab Sample ID: 600-86449-20
Date Collected: 01/31/14 09:19
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 60.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.03 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.03 g	50 mL	126636	02/05/14 13:37	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	0.5000 g	0.5000 g	126787	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SW-008

Lab Sample ID: 600-86449-21
Date Collected: 01/31/14 09:10
Matrix: Water
Date Received: 02/01/14 07:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 12:49	DCL	TAL HOU
Total/NA	Prep	3010A			50 mL	50 mL	126755	02/06/14 11:21	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126888	02/07/14 14:11	TWR	TAL HOU

Client Sample ID: 2014-SW-009

Lab Sample ID: 600-86449-22
Date Collected: 01/31/14 09:38
Matrix: Water
Date Received: 02/01/14 07:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 12:57	DCL	TAL HOU
Total/NA	Prep	3010A			50 mL	50 mL	126755	02/06/14 11:21	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126888	02/07/14 14:14	TWR	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86449-1

Client Sample ID: 2014-SW-015

Lab Sample ID: 600-86449-23

Date Collected: 01/31/14 12:28
Matrix: Water
Date Received: 02/01/14 07:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 13:00	DCL	TAL HOU
Total/NA	Prep	3010A			50 mL	50 mL	126755	02/06/14 11:21	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126888	02/07/14 14:16	TWR	TAL HOU

Client Sample ID: 2014-SED-035

Lab Sample ID: 600-86449-24

Date Collected: 01/31/14 12:38
Matrix: Solid
Date Received: 02/01/14 07:35
Percent Solids: 70.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.05 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.05 g	50 mL	126636	02/05/14 13:39	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0100 g	2.0100 g	126787	02/06/14 10:00	EC1	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86449-1

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14 *
Utah	NELAP	8	TX00083	10-31-14

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

5/15/2014

Client Information	Sampler:	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-25573-9017.4
Client Contact: Christina Higginbotham	Phone:	E-Mail: dean.joiner@testamericainc.com		Page: Page
Company: Golder Associates Inc.				Job #:
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 WD TRRP			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide Recycling Center - Stewart Creek	Project #:			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C_LL - (MOD) Target Compound List	8270C_LL - PAH	8260B - Target Compound List	TX_1005 - TPH	** TX_1006 - TPH (Hold For TPH 1005 results)	300.0_28D - Sulfate	6010B - Total Metals (As, Cu, Pb)	6010B - Dissolved Metals (As, Cu, Pb)	Metals (As, Cu, Pb)	TOC						Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N	N	A	A	A	N	D	D	N	N						X	
2014-SED-029		0946	C	Sediment											X	X							
2014-SW-010		1013	G	Water	X								X	X									
2014-SED-030		1020	C	Sediment											X	X							
2014-SW-011		1039	G	Water	X								X	X									
2014-SED-031		1048	C	Sediment											X	X							
2014-SW-012		1104	G	Water	X								X	X									
2014-SED-032		1113	C	Sediment											X	X							
2014-SW-013		1128	G	Water	X								X	X									
2014-SED-033		1140	C	Sediment											X	X							
2014-SW-014		1203	G	Water	X								X	X									
2014-SED-034		1212	C	Sediment											X	X							

600-86449 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☒ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Chris Trevino	01/31/14 - 1510	Golder	McCowen	1/31/14 1510	TAL
McCowen	1/31/14 1710	TAL			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
				2/1/14 1019	

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

5/15/2014

Client Information	Sampler:	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-25573-9017.4
Client Contact: Christina Higginbotham	Phone:	E-Mail: dean.joiner@testamericainc.com		Page: Page
Company: Golder Associates Inc.				Job #:
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 WD TRRP			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide Recycling Center - Stewart Creek	Project #:			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C_LL - (MOD) Target Compound List	8270C_LL - PAH	8260B - Target Compound List	TX_1005 - TPH	*** TX_1006 - TPH (Hold For TPH 1005 results)	300.0_28D - Sulfate	6010B - Total Metals (Pb, Cd, As)	6010B - Dissolved Metals (Pb, Cd, As)	Metals (Pb, Cd, As)	TOC							Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N	N	A	A	A	N	D	D	N	U							X	
Field Blank	1-31-14	0800	G	Water	X								X											
Equipment blank - Filter		1334	G	Water	X									X										
Equipment blank - Dredge		1337	G	Water	X								X		[redacted]	X								
Equipment blank Bowl		1341	G	Water	X								X		[redacted]	X								
Duplicate - 05		—	C	Sediment											X	X								
2014-SED-026		0821	C	Sediment											X	X								
2014-SW-007		0850	G	Water	X								X	X										
2014-SED-027		0858	C	Sediment											X	X								
2014-SED-028		0919	C	Sediment											X	X								
2014-SW-008		0910	G	Water	X								X	X										
2014-SW-009		0938	G	Water	X								X	X										

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☒ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☒ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Chris Trevino	01/31/14 - 1510	Golder	A McCowen	1/31/14 1510	TAH
A McCowen	1/31/14 1710	TAH			
				2/1/14 7:09	

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica

5/15/2014

Client Information	Sampler:	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-25573-9017.4
Client Contact: Christina Higginbotham	Phone:	E-Mail: dean.joiner@testamericainc.com		Page: Page
Company: Golder Associates Inc.				Job #:
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 WD TRRP			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide Recycling Center - ~~[illegible]~~ Stewart Creek	Project #:			
Site:	SSOW#:			

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C_LL - (MOD) Target Compound List	8270C_LL - PAH	8260B - Target Compound List	TX_1005 - TPH	*** TX_1006 - TPH (Hold For TPH 1005 results)	300.0_28D - Sulfate	6010B - Total Metals (Pb, Ar, Cd)	6010B - Dissolved Metals (Pb, Ar, Cd)	Metals (Pb, Ar, Cd)	TOC						Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	A	A	A	N	D	D	N	N							
2014-SW-015		1228	G	Water	X								X	X									
2014-SED-035		1238	~~G~~ C	~~Water~~ Sediment											X	X							
~~[illegible]~~			G	Water																			
			G	Water																			
			G	Water																			
			G	Water																			
			G	Water																			
			G	Water																			
			G	Water																			
			G	Water																			
			G	Water																			

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☒ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Chris Trumo	Date/Time: 01/31/14 - 1510	Company: Golder	Received by: McCowen	Date/Time: 1/31/14 1510	Company: TA
Relinquished by: McCowen	Date/Time: 1/31/14 1710	Company: TA	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: [illegible]	Date/Time: 2/1/14 1019	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86449-1

Login Number: 86449

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.8
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-86459-1
Client Project/Site: Exide Recycling Center, Stewart Creek

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
2/6/2014 6:47:17 PM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

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Have a Question? Ask The Expert

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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.

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-86459-1 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☑ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☑ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton		2/6/2014
Name (printed)	Signature	Date

Project Management Asst II
Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/6/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86459-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			R07C
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/6/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86459-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
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4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/6/2014
Project Name:	Exide Recycling Center, Stewart Creek	Laboratory Job Number:	600-86459-1
Reviewer Name:	Dean A Joiner		

ER #[1]	Description
R07C	Method 300.0: 600-86459-1 MSD failed the recovery criteria for the following analyte(s): Sulfate. Matrix interference is suspected.

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

Detection Check Standard

Matrix:	Water
Method:	300.0,9056
Date Analyzed:	12/03/2013, 12/09/2013, 12/20/2013, 12/23/2013
Date Prepared:	12/03/2013, 12/09/2013, 12/20/2013, 12/23/2013
Units:	mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Fluoride	0.027	0.08	0.1314	0.3
Chloride	0.027	0.08	0.079	0.4
Nitrite	0.047	0.1	0.0818	0.2
Bromide	0.047	0.1	0.1991	0.6
Nitrate	0.014	0.04	0.0321	0.2
Sulfate	0.083	0.2	0.25	0.5

Detection Check Standard

Matrix:	Water
Method:	200.7/6010
Preparation:	200.7P/3010
Date Analyzed:	12/31/2013
Date Prepared:	12/27/2013
Instrument:	Spectro01
TALs Batches:	124030, 123788p
Units:	mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.006	0.02	0.028176	0.5
Antimony	0.0063	0.01	0.010016	0.05
Arsenic	0.0033	0.01	0.008253	0.01
Barium	0.0022	0.005	0.004098	0.02
Beryllium	0.00134	0.002	0.004019	0.005
Boron	0.0077	0.02	0.019829	0.2
Cadmium	0.00073	0.001	0.001	0.005
Calcium	0.022	0.05	0.060829	1
Chromium	0.0016	0.002	0.003835	0.01
Cobalt	0.00063	0.001	0.000965	0.01
Copper	0.0014	0.002	0.002451	0.01
Iron	0.087	0.1	0.002258	0.4
Lithium	0.0024	0.005	0.006107	0.2
Lead	0.0029	0.005	0.005478	0.01
Selenium	0.0042	0.01	0.009953	0.04
Manganese	0.00084	0.002	0.001988	0.01
Molybdenum	0.0027	0.005	0.005867	0.01
Nickel	0.00179	0.005	0.005669	0.01
Silver	0.0012	0.0025	0.001901	0.01
Sodium	0.02	0.05	0.088115	1
Strontium	0.0005	0.001	0.000897	0.005
Thallium	0.0078	0.02	0.021503	0.03
Tin	0.0028	0.005	0.005708	0.01
Titanium	0.0011	0.002	0.001905	0.01
Vanadium	0.0017	0.002	0.003578	0.01
Zinc	0.0022	0.005	0.004189	0.01

Job ID: 600-86459-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-86459-1

Comments
No additional comments.

Receipt
The samples were received on 2/1/2014 10:19 AM; the samples arrived in good condition, properly preserved and, where required, on ice.
The temperature of the cooler at receipt was 3.3º C.

Method Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86459-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL HOU
300.0	Anions, Ion Chromatography	MCAWW	TAL HOU

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86459-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-86459-1	2014-SW-016	Water	01/31/14 16:52	02/01/14 10:19
600-86459-2	2014-SW-017	Water	01/31/14 17:07	02/01/14 10:19
600-86459-3	2014-SW-018	Water	01/31/14 17:19	02/01/14 10:19
600-86459-4	2014-SW-019	Water	01/31/14 17:25	02/01/14 10:19
600-86459-5	2014-SW-020	Water	01/31/14 17:47	02/01/14 10:19
600-86459-6	2014-SW-021	Water	01/31/14 17:56	02/01/14 10:19
600-86459-7	DUP-2	Water	01/31/14 00:00	02/01/14 10:19
600-86459-8	DUP-3	Water	01/31/14 00:00	02/01/14 10:19

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86459-1

Client Sample ID: 2014-SW-016

Lab Sample ID: 600-86459-1
Date Collected: 01/31/14 16:52
Matrix: Water
Date Received: 02/01/14 10:19

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 13:02	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 13:02	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 13:02	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 13:38	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 13:38	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 13:38	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	125		5.00	0.830	mg/L			02/03/14 16:42	10

Client Sample ID: 2014-SW-017

Lab Sample ID: 600-86459-2
Date Collected: 01/31/14 17:07
Matrix: Water
Date Received: 02/01/14 10:19

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 13:04	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 13:04	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 13:04	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 13:40	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 13:40	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 13:40	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	123		5.00	0.830	mg/L			02/03/14 17:29	10

Client Sample ID: 2014-SW-018

Lab Sample ID: 600-86459-3
Date Collected: 01/31/14 17:19
Matrix: Water
Date Received: 02/01/14 10:19

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 13:07	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 13:07	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 13:07	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 13:42	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 13:42	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 13:42	1

Client Sample ID: 2014-SW-019

Lab Sample ID: 600-86459-4

Date Collected: 01/31/14 17:25

Matrix: Water

Date Received: 02/01/14 10:19

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 13:16	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 13:16	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 13:16	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 13:01	02/06/14 13:26	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 13:01	02/06/14 13:26	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 13:01	02/06/14 13:26	1

Client Sample ID: 2014-SW-020

Lab Sample ID: 600-86459-5

Date Collected: 01/31/14 17:47

Matrix: Water

Date Received: 02/01/14 10:19

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 13:18	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 13:18	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 13:18	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 13:01	02/06/14 13:28	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 13:01	02/06/14 13:28	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 13:01	02/06/14 13:28	1

Client Sample ID: 2014-SW-021

Lab Sample ID: 600-86459-6

Date Collected: 01/31/14 17:56

Matrix: Water

Date Received: 02/01/14 10:19

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 13:27	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 13:27	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 13:27	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 13:01	02/06/14 13:30	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 13:01	02/06/14 13:30	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 13:01	02/06/14 13:30	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	127		5.00	0.830	mg/L			02/03/14 17:45	10

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86459-1

Client Sample ID: DUP-2

Lab Sample ID: 600-86459-7
Date Collected: 01/31/14 00:00
Matrix: Water
Date Received: 02/01/14 10:19

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 13:36	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 13:36	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 13:36	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 13:01	02/06/14 13:39	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 13:01	02/06/14 13:39	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 13:01	02/06/14 13:39	1

Client Sample ID: DUP-3

Lab Sample ID: 600-86459-8
Date Collected: 01/31/14 00:00
Matrix: Water
Date Received: 02/01/14 10:19

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	126		5.00	0.830	mg/L			02/03/14 18:01	10

Qualifiers

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

General Chemistry

Qualifier	Qualifier Description
N	MS, MSD: Spike recovery exceeds upper or lower control limits.
U	Analyte was not detected at or above the SDL.

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
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)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86459-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-126633/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126774 — **Prep Batch: 126633**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 12:28	1
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 11:42	02/06/14 12:28	1
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 12:28	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 11:42	02/06/14 12:28	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 12:28	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 11:42	02/06/14 12:28	1

Lab Sample ID: LCS 600-126633/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126774 — **Prep Batch: 126633**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.500	0.5089		mg/L		102	80 - 120
Arsenic, Dissolved	0.500	0.5089		mg/L		102	80 - 120
Cadmium	0.500	0.5139		mg/L		103	80 - 120
Cadmium, Dissolved	0.500	0.5139		mg/L		103	80 - 120
Lead	0.500	0.5018		mg/L		100	80 - 120
Lead, Dissolved	0.500	0.5018		mg/L		100	80 - 120

Lab Sample ID: 600-86459-6 MS — **Client Sample ID: 2014-SW-021**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126774 — **Prep Batch: 126633**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.00328	U	0.500	0.5452		mg/L		109	75 - 125
Cadmium	0.000350	U	0.500	0.5357		mg/L		107	75 - 125
Lead	0.00290	U	0.500	0.5208		mg/L		104	75 - 125

Lab Sample ID: 600-86459-6 MSD — **Client Sample ID: 2014-SW-021**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126774 — **Prep Batch: 126633**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.00328	U	0.500	0.5178		mg/L		104	75 - 125	5	20
Cadmium	0.000350	U	0.500	0.5081		mg/L		102	75 - 125	5	20
Lead	0.00290	U	0.500	0.5016		mg/L		100	75 - 125	4	20

Lab Sample ID: 600-86459-3 DU — **Client Sample ID: 2014-SW-018**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126774 — **Prep Batch: 126633**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	0.00328	U	0.00328	U	mg/L		NC	20
Arsenic, Dissolved	0.00328		0.00328	U	mg/L		NC	20
Cadmium	0.000350	U	0.000350	U	mg/L		NC	20
Cadmium, Dissolved	0.000350		0.000350	U	mg/L		NC	20
Lead	0.00290	U	0.00290	U	mg/L		NC	20
Lead, Dissolved	0.00290		0.00290	U	mg/L		NC	20

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

Lab Sample ID: 600-86459-6 DU — **Client Sample ID: 2014-SW-021**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126774 — **Prep Batch: 126633**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Arsenic	0.00328	U		0.00328	U	mg/L				NC	20
Arsenic, Dissolved	0.00328			0.00328	U	mg/L				NC	20
Cadmium	0.000350	U		0.000350	U	mg/L				NC	20
Cadmium, Dissolved	0.000350			0.000350	U	mg/L				NC	20
Lead	0.00290	U		0.00290	U	mg/L				NC	20
Lead, Dissolved	0.00290			0.00290	U	mg/L				NC	20

Lab Sample ID: MB 600-126643/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126789 — **Prep Batch: 126643**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 13:01	02/06/14 13:17	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 13:01	02/06/14 13:17	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 13:01	02/06/14 13:17	1

Lab Sample ID: LCS 600-126643/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126789 — **Prep Batch: 126643**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic, Dissolved	0.500	0.5160		mg/L		103	80 - 120
Cadmium, Dissolved	0.500	0.5110		mg/L		102	80 - 120
Lead, Dissolved	0.500	0.5161		mg/L		103	80 - 120

Lab Sample ID: 600-86459-6 MS — **Client Sample ID: 2014-SW-021**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 126789 — **Prep Batch: 126643**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic, Dissolved	0.00328	U	0.500	0.5451		mg/L		109	75 - 125
Cadmium, Dissolved	0.000350	U	0.500	0.5174		mg/L		103	75 - 125
Lead, Dissolved	0.00290	U	0.500	0.5260		mg/L		105	75 - 125

Lab Sample ID: 600-86459-6 MSD — **Client Sample ID: 2014-SW-021**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 126789 — **Prep Batch: 126643**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic, Dissolved	0.00328	U	0.500	0.5374		mg/L		107	75 - 125	1	20
Cadmium, Dissolved	0.000350	U	0.500	0.5177		mg/L		104	75 - 125	0	20
Lead, Dissolved	0.00290	U	0.500	0.5261		mg/L		105	75 - 125	0	20

Lab Sample ID: 600-86459-6 DU — **Client Sample ID: 2014-SW-021**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 126789 — **Prep Batch: 126643**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Arsenic, Dissolved	0.00328	U		0.00328	U	mg/L				NC	20

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

Lab Sample ID: 600-86459-6 DU — **Client Sample ID: 2014-SW-021**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 126789 — **Prep Batch: 126643**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Cadmium, Dissolved	0.000350	U		0.000350	U	mg/L				NC	20
Lead, Dissolved	0.00290	U		0.00290	U	mg/L				NC	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 600-126517/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126517

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	0.0830	U	0.500	0.0830	mg/L			02/03/14 16:11	1

Lab Sample ID: LCS 600-126517/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126517

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			20.0	20.56		mg/L		103	90 - 110		

Lab Sample ID: 600-86459-1 MS — **Client Sample ID: 2014-SW-016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126517

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	125		100	204.6		mg/L		80	80 - 120		

Lab Sample ID: 600-86459-1 MSD — **Client Sample ID: 2014-SW-016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126517

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	125		100	203.7	N	mg/L		79	80 - 120	0	20

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86459-1

Method: 6010B - Metals (ICP)

Analyte	MQL	MDL	Units	Method
Arsenic	0.0100	0.00328	mg/L	6010B
Cadmium	0.00500	0.000350	mg/L	6010B
Lead	0.0100	0.00290	mg/L	6010B

Method: 6010B - Metals (ICP) - Dissolved

Analyte	MQL	MDL	Units	Method
Arsenic, Dissolved	0.0100	0.00328	mg/L	6010B
Cadmium, Dissolved	0.00500	0.000350	mg/L	6010B
Lead, Dissolved	0.0100	0.00290	mg/L	6010B

General Chemistry

Analyte	MQL	MDL	Units	Method
Sulfate	0.500	0.0830	mg/L	300.0

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86459-1

Metals

Prep Batch: 126633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86459-1	2014-SW-016	Dissolved	Water	3010A	
600-86459-1	2014-SW-016	Total/NA	Water	3010A	
600-86459-2	2014-SW-017	Dissolved	Water	3010A	
600-86459-2	2014-SW-017	Total/NA	Water	3010A	
600-86459-3	2014-SW-018	Dissolved	Water	3010A	
600-86459-3	2014-SW-018	Total/NA	Water	3010A	
600-86459-3 DU	2014-SW-018	Total/NA	Water	3010A	
600-86459-4	2014-SW-019	Total/NA	Water	3010A	
600-86459-5	2014-SW-020	Total/NA	Water	3010A	
600-86459-6	2014-SW-021	Total/NA	Water	3010A	
600-86459-6 DU	2014-SW-021	Total/NA	Water	3010A	
600-86459-6 MS	2014-SW-021	Total/NA	Water	3010A	
600-86459-6 MSD	2014-SW-021	Total/NA	Water	3010A	
600-86459-7	DUP-2	Total/NA	Water	3010A	
LCS 600-126633/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-126633/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 126643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86459-4	2014-SW-019	Dissolved	Water	3010A	
600-86459-5	2014-SW-020	Dissolved	Water	3010A	
600-86459-6	2014-SW-021	Dissolved	Water	3010A	
600-86459-6 DU	2014-SW-021	Dissolved	Water	3010A	
600-86459-6 MS	2014-SW-021	Dissolved	Water	3010A	
600-86459-6 MSD	2014-SW-021	Dissolved	Water	3010A	
600-86459-7	DUP-2	Dissolved	Water	3010A	
LCS 600-126643/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-126643/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 126774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86459-1	2014-SW-016	Dissolved	Water	6010B	126633
600-86459-1	2014-SW-016	Total/NA	Water	6010B	126633
600-86459-2	2014-SW-017	Dissolved	Water	6010B	126633
600-86459-2	2014-SW-017	Total/NA	Water	6010B	126633
600-86459-3	2014-SW-018	Dissolved	Water	6010B	126633
600-86459-3	2014-SW-018	Total/NA	Water	6010B	126633
600-86459-3 DU	2014-SW-018	Total/NA	Water	6010B	126633
600-86459-4	2014-SW-019	Total/NA	Water	6010B	126633
600-86459-5	2014-SW-020	Total/NA	Water	6010B	126633
600-86459-6	2014-SW-021	Total/NA	Water	6010B	126633
600-86459-6 DU	2014-SW-021	Total/NA	Water	6010B	126633
600-86459-6 MS	2014-SW-021	Total/NA	Water	6010B	126633
600-86459-6 MSD	2014-SW-021	Total/NA	Water	6010B	126633
600-86459-7	DUP-2	Total/NA	Water	6010B	126633
LCS 600-126633/2-A	Lab Control Sample	Total/NA	Water	6010B	126633
MB 600-126633/1-A	Method Blank	Total/NA	Water	6010B	126633

Analysis Batch: 126789

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86459-4	2014-SW-019	Dissolved	Water	6010B	126643

Metals (Continued)

Analysis Batch: 126789 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86459-5	2014-SW-020	Dissolved	Water	6010B	126643
600-86459-6	2014-SW-021	Dissolved	Water	6010B	126643
600-86459-6 DU	2014-SW-021	Dissolved	Water	6010B	126643
600-86459-6 MS	2014-SW-021	Dissolved	Water	6010B	126643
600-86459-6 MSD	2014-SW-021	Dissolved	Water	6010B	126643
600-86459-7	DUP-2	Dissolved	Water	6010B	126643
LCS 600-126643/2-A	Lab Control Sample	Total/NA	Water	6010B	126643
MB 600-126643/1-A	Method Blank	Total/NA	Water	6010B	126643

General Chemistry

Analysis Batch: 126517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86459-1	2014-SW-016	Total/NA	Water	300.0	
600-86459-1 MS	2014-SW-016	Total/NA	Water	300.0	
600-86459-1 MSD	2014-SW-016	Total/NA	Water	300.0	
600-86459-2	2014-SW-017	Total/NA	Water	300.0	
600-86459-6	2014-SW-021	Total/NA	Water	300.0	
600-86459-8	DUP-3	Total/NA	Water	300.0	
LCS 600-126517/4	Lab Control Sample	Total/NA	Water	300.0	
MB 600-126517/3	Method Blank	Total/NA	Water	300.0	

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86459-1

Client Sample ID: 2014-SW-016

Lab Sample ID: 600-86459-1
Date Collected: 01/31/14 16:52
Matrix: Water
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 13:02	DCL	TAL HOU
Dissolved	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 13:38	DCL	TAL HOU
Total/NA	Analysis	300.0		10	5 mL	5 mL	126517	02/03/14 16:42	DAW	TAL HOU

Client Sample ID: 2014-SW-017

Lab Sample ID: 600-86459-2
Date Collected: 01/31/14 17:07
Matrix: Water
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 13:04	DCL	TAL HOU
Dissolved	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 13:40	DCL	TAL HOU
Total/NA	Analysis	300.0		10	5 mL	5 mL	126517	02/03/14 17:29	DAW	TAL HOU

Client Sample ID: 2014-SW-018

Lab Sample ID: 600-86459-3
Date Collected: 01/31/14 17:19
Matrix: Water
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 13:07	DCL	TAL HOU
Dissolved	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 13:42	DCL	TAL HOU

Client Sample ID: 2014-SW-019

Lab Sample ID: 600-86459-4
Date Collected: 01/31/14 17:25
Matrix: Water
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 13:16	DCL	TAL HOU
Dissolved	Prep	3010A			50 mL	50 mL	126643	02/05/14 13:01	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126789	02/06/14 13:26	DCL	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86459-1

Client Sample ID: 2014-SW-020

Lab Sample ID: 600-86459-5
Date Collected: 01/31/14 17:47
Matrix: Water
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 13:18	DCL	TAL HOU
Dissolved	Prep	3010A			50 mL	50 mL	126643	02/05/14 13:01	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126789	02/06/14 13:28	DCL	TAL HOU

Client Sample ID: 2014-SW-021

Lab Sample ID: 600-86459-6
Date Collected: 01/31/14 17:56
Matrix: Water
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 13:27	DCL	TAL HOU
Dissolved	Prep	3010A			50 mL	50 mL	126643	02/05/14 13:01	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126789	02/06/14 13:30	DCL	TAL HOU
Total/NA	Analysis	300.0		10	5 mL	5 mL	126517	02/03/14 17:45	DAW	TAL HOU

Client Sample ID: DUP-2

Lab Sample ID: 600-86459-7
Date Collected: 01/31/14 00:00
Matrix: Water
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126633	02/05/14 11:42	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126774	02/06/14 13:36	DCL	TAL HOU
Dissolved	Prep	3010A			50 mL	50 mL	126643	02/05/14 13:01	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126789	02/06/14 13:39	DCL	TAL HOU

Client Sample ID: DUP-3

Lab Sample ID: 600-86459-8
Date Collected: 01/31/14 00:00
Matrix: Water
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	5 mL	5 mL	126517	02/03/14 18:01	DAW	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center, Stewart Creek

TestAmerica Job ID: 600-86459-1

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	TX00083	10-31-14

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica

2/6/2014

Client Information	Sampler: Chris Trevino	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-25573-9017.4
Client Contact: Christina Higginbotham	Phone: 817-281-0820	E-Mail: dean.joiner@testamericainc.com		1 of 2
Company: Golder Associates Inc.				103-2086
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 WD TRRP			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide Recycling Center - Water	Project #: 130-2084-1005			
Site: Exide FRC O - Stewart Creek	SSOW#:			

600-86459 Login
PM: Joiner, Dean A
Company Golder Associates Inc

Preservation Codes:

L	M - Hexane
OH	N - None
Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C_LL - (MOD) Target Compound List	8270C_LL - PAH	8260B - Target Compound List	TX_1005 - TPH	*** TX_1006 - TPH (Hold For TPH 1005 results)	300.0_28D - Sulfate	6010B - Total Metals	6010B - Dissolved Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N	N	A	A	A	N	D	D	X	
2014-SW-016	01/31/14	1652	G	Water	X							X	X	X	3	
2014-SW-016 MS	"	1652	G	Water								X			1	
2014-SW-016 MSD	"	1652	G	Water								X			1	
2014-SW-017	"	1707	G	Water	X							X	X	X	3	
2014-SW-018	"	1719	G	Water	X								X	X	3	
2014-SW-019	"	1725	G	Water	X								X	X	3	
2014-SW-020	"	1747	G	Water	X								X	X	2	
2014-SW-021	"	1756	G	Water	X							X	X	X	3	
2014-SW-021 MS	"	1756	G	Water	X								X	X	2	
2014-SW-021 MSD	"	1756	G	Water	X								X	X	2	
DUP-2	"	—	G	Water	X								X	X	2	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☒ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:	
Relinquished by: Chris Trevino	Date/Time: 01/31/14 - 0755	Company: Golder	Received by:	Date/Time: / Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: / Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 2/1/14 1019 / Company

Custody Seals Intact: △ Yes △ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica

2/6/2014

Client Information	Sampler: Chris Trevino	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-25573-9017.4
Client Contact: Christina Higginbotham	Phone: 817-281-0810	E-Mail: dean.joiner@testamericainc.com		Page: Page 2 of 2
Company: Golder Associates Inc.				Job #: 103-2086
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 WD TRRP			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide Recycling Center - Water	Project #: 130-2086-1005			
Site: Exide Frisco - Stewart Creek	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C_LL - (MOD) Target Compound List	8270C_LL - PAH	8260B - Target Compound List	TX_1005 - TPH	*** TX_1006 - TPH (Hold For TPH 1005 results)	300.0_28D - Sulfate	6010B - Total Metals	6010B - Dissolved Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	A	A	A	N	D	D		
DOP-3	01/31/14	—	G	Water								X			1	
			G	Water												
			G	Water												
			G	Water												
			G	Water												
			G	Water												
			G	Water												
			G	Water												
			G	Water												
			G	Water												
			G	Water												

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☒ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Chris Trevino	Date/Time: 01/31/14 - 0755	Company: Golder	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 2/1/14 1019	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: △ Yes △ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86459-1

Login Number: 86459

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-86459-2
Client Project/Site: Stewart Creek 6020
Revision: 1

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
2/26/2014 5:26:06 PM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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

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

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

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-86459-2 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☑ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton		2/21/2014
Name (printed)	Signature	Date

Project Management Asst II
Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/21/2014
Project Name:	Stewart Creek 6020	Laboratory Job Number:	600-86459-2
Reviewer Name:	Cathy Upton		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		X			R01A
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/21/2014
Project Name:	Stewart Creek 6020	Laboratory Job Number:	600-86459-2
Reviewer Name:	Cathy Upton		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
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4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/21/2014
Project Name:	Stewart Creek 6020	Laboratory Job Number:	600-86459-2
Reviewer Name:	Cathy Upton		

ER #[1]	Description
R01A	Insufficient sample volume was provided for the following sample(s) for the 6020 analysis: 600-86459-1 MS and 600-86459-1 MSD.

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
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Dept	Matrix	Client Sample ID	Analyte	Result	Unit	Spike Amount	MDL	RL	Percent Recovery	Prep Method	Analysis Method	Instrument ID	CAS	Prep Batch	Analysis Batch
ME	Water	Q4 2013 AQ MDLV ICPMSC	Aluminum	56.4	ug/L	50	23	50	113	3005A	6020A	ICPMSC	7429-90-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Antimony	2.875	ug/L	2.5	2.3	5	115	3005A	6020A	ICPMSC	7440-36-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Arsenic	2.375	ug/L	2	1.3	2.5	119	3005A	6020A	ICPMSC	7440-38-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Barium	1.965	ug/L	2	1.3	5	98	3005A	6020A	ICPMSC	7440-39-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Beryllium	0.52	ug/L	0.5	0.25	0.5	104	3005A	6020A	ICPMSC	7440-41-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Boron	51.24	ug/L	50	40	100	102	3005A	6020A	ICPMSC	7440-42-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cadmium	0.195	ug/L	0.2	0.095	0.5	98	3005A	6020A	ICPMSC	7440-43-9	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Calcium	294.73	ug/L	250	130	250	118	3005A	6020A	ICPMSC	7440-70-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Chromium	5.49	ug/L	5	2.5	5	110	3005A	6020A	ICPMSC	7440-47-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cobalt	0.21	ug/L	0.2	0.15	0.5	105	3005A	6020A	ICPMSC	7440-48-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Copper	2.02	ug/L	2	1.1	5	101	3005A	6020A	ICPMSC	7440-50-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Iron	54.13	ug/L	50	33	100	108	3005A	6020A	ICPMSC	7439-89-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Lead	0.355	ug/L	0.3	0.2	1.5	118	3005A	6020A	ICPMSC	7439-92-1	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Magnesium	78.42	ug/L	80	43	250	98	3005A	6020A	ICPMSC	7439-95-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Manganese	1.955	ug/L	2	1	5	98	3005A	6020A	ICPMSC	7439-96-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Mercury	0.625	ug/L	0.5	0.4	0.8	125	3005A	6020A	ICPMSC	7439-97-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Molybdenum	2.205	ug/L	2	1.5	5	110	3005A	6020A	ICPMSC	7439-98-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Nickel	4.86	ug/L	4	2	5	122	3005A	6020A	ICPMSC	7440-02-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Potassium	219.45	ug/L	200	170	500	110	3005A	6020A	ICPMSC	9/7/7440	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Selenium	1.855	ug/L	2	1	2.5	93	3005A	6020A	ICPMSC	7782-49-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Silver	0.435	ug/L	0.4	0.25	1	109	3005A	6020A	ICPMSC	7440-22-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Sodium	457.985	ug/L	400	250	500	114	3005A	6020A	ICPMSC	7440-23-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Strontium	0.945	ug/L	1	0.5	1	95	3005A	6020A	ICPMSC	7440-24-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Thallium	0.98	ug/L	1	0.5	1	98	3005A	6020A	ICPMSC	7440-28-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Tin	2.47	ug/L	2	1.3	5	124	3005A	6020A	ICPMSC	7440-31-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Titanium	3.17	ug/L	2.5	1.3	5	127	3005A	6020A	ICPMSC	7440-32-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Vanadium	5.55	ug/L	5	3.8	10	111	3005A	6020A	ICPMSC	7440-62-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Zinc	10.095	ug/L	10	8.3	20	101	3005A	6020A	ICPMSC	7440-66-6	680-297813	680-298498

Job ID: 600-86459-2

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-86459-2

Comments
Report was revised on 02/26/14 updating metals analyte list. This final report replaces the one generated on 02/21/14.

Receipt
The samples were received on 2/1/2014 10:19 AM; the samples arrived in good condition, properly preserved and, where required, on ice.
The temperature of the cooler at receipt was 3.3º C.

Except:

Insufficient sample volume was provided for the following sample(s) for the 6020 analysis: 2014-SW-016 (600-86459-1 MS), 2014-SW-016 (600-86459-1 MSD).

Method Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek 6020

TestAmerica Job ID: 600-86459-2

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SAV

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek 6020

TestAmerica Job ID: 600-86459-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-86459-1	2014-SW-016	Water	01/31/14 16:52	02/01/14 10:19
600-86459-2	2014-SW-017	Water	01/31/14 17:07	02/01/14 10:19
600-86459-3	2014-SW-018	Water	01/31/14 17:19	02/01/14 10:19
600-86459-4	2014-SW-019	Water	01/31/14 17:25	02/01/14 10:19
600-86459-5	2014-SW-020	Water	01/31/14 17:47	02/01/14 10:19
600-86459-6	2014-SW-021	Water	01/31/14 17:56	02/01/14 10:19
600-86459-7	DUP-2	Water	01/31/14 00:00	02/01/14 10:19

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek 6020

TestAmerica Job ID: 600-86459-2

Client Sample ID: 2014-SW-016

Lab Sample ID: 600-86459-1
Date Collected: 01/31/14 16:52
Matrix: Water
Date Received: 02/01/14 10:19

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 15:29	02/17/14 16:32	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 15:29	02/17/14 16:32	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/14/14 15:29	02/17/14 16:32	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 15:29	02/17/14 16:37	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 15:29	02/17/14 16:37	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/14/14 15:29	02/17/14 16:37	1

Client Sample ID: 2014-SW-017

Lab Sample ID: 600-86459-2
Date Collected: 01/31/14 17:07
Matrix: Water
Date Received: 02/01/14 10:19

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/17/14 13:45	02/18/14 14:03	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/17/14 13:45	02/18/14 14:03	1
Lead	**0.000990**	**J**	0.00150	0.000200	mg/L		02/17/14 13:45	02/18/14 14:03	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 15:02	02/17/14 19:42	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 15:02	02/17/14 19:42	1
Lead	**0.000350**	**J**	0.00150	0.000200	mg/L		02/14/14 15:02	02/17/14 19:42	1

Client Sample ID: 2014-SW-018

Lab Sample ID: 600-86459-3
Date Collected: 01/31/14 17:19
Matrix: Water
Date Received: 02/01/14 10:19

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/17/14 13:45	02/18/14 14:09	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/17/14 13:45	02/18/14 14:09	1
Lead	**0.000585**	**J**	0.00150	0.000200	mg/L		02/17/14 13:45	02/18/14 14:09	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 15:02	02/17/14 19:47	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 15:02	02/17/14 19:47	1
Lead	**0.000255**	**J**	0.00150	0.000200	mg/L		02/14/14 15:02	02/17/14 19:47	1

Client Sample ID: 2014-SW-019

Lab Sample ID: 600-86459-4
Date Collected: 01/31/14 17:25
Matrix: Water
Date Received: 02/01/14 10:19

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 15:02	02/17/14 19:52	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 15:02	02/17/14 19:52	1
Lead	**0.00133**	**J**	0.00150	0.000200	mg/L		02/14/14 15:02	02/17/14 19:52	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek 6020

TestAmerica Job ID: 600-86459-2

Client Sample ID: 2014-SW-019

Lab Sample ID: 600-86459-4
Date Collected: 01/31/14 17:25
Matrix: Water
Date Received: 02/01/14 10:19

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 15:02	02/17/14 19:58	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 15:02	02/17/14 19:58	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/14/14 15:02	02/17/14 19:58	1

Client Sample ID: 2014-SW-020

Lab Sample ID: 600-86459-5
Date Collected: 01/31/14 17:47
Matrix: Water
Date Received: 02/01/14 10:19

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 15:02	02/17/14 20:03	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 15:02	02/17/14 20:03	1
Lead	**0.00174**		0.00150	0.000200	mg/L		02/14/14 15:02	02/17/14 20:03	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 15:02	02/17/14 20:08	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 15:02	02/17/14 20:08	1
Lead	**0.000310**	**J**	0.00150	0.000200	mg/L		02/14/14 15:02	02/17/14 20:08	1

Client Sample ID: 2014-SW-021

Lab Sample ID: 600-86459-6
Date Collected: 01/31/14 17:56
Matrix: Water
Date Received: 02/01/14 10:19

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/18/14 11:55	02/18/14 19:37	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/18/14 11:55	02/18/14 19:37	1
Lead	**0.000635**	**J**	0.00150	0.000200	mg/L		02/18/14 11:55	02/18/14 19:37	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 15:02	02/17/14 20:13	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 15:02	02/17/14 20:13	1
Lead	**0.000850**	**J**	0.00150	0.000200	mg/L		02/14/14 15:02	02/17/14 20:13	1

Client Sample ID: DUP-2

Lab Sample ID: 600-86459-7
Date Collected: 01/31/14 00:00
Matrix: Water
Date Received: 02/01/14 10:19

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 15:02	02/17/14 20:50	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 15:02	02/17/14 20:50	1
Lead	**0.000595**	**J**	0.00150	0.000200	mg/L		02/14/14 15:02	02/17/14 20:50	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 15:02	02/17/14 20:56	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 15:02	02/17/14 20:56	1
Lead	**0.000395**	**J**	0.00150	0.000200	mg/L		02/14/14 15:02	02/17/14 20:56	1

Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Stewart Creek 6020

TestAmerica Job ID: 600-86459-2

Qualifiers

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated 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
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)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Stewart Creek 6020

TestAmerica Job ID: 600-86459-2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-315743/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316063 — **Prep Batch: 315743**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 15:02	02/17/14 18:39	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 15:02	02/17/14 18:39	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/14/14 15:02	02/17/14 18:39	1

Lab Sample ID: LCS 680-315743/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316063 — **Prep Batch: 315743**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.1133		mg/L		113	75 - 125
Cadmium	0.0500	0.05637		mg/L		113	75 - 125
Lead	0.0500	0.05639		mg/L		113	75 - 125

Lab Sample ID: MB 680-315753/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316063 — **Prep Batch: 315753**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 15:29	02/17/14 16:11	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 15:29	02/17/14 16:11	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/14/14 15:29	02/17/14 16:11	1

Lab Sample ID: LCS 680-315753/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316063 — **Prep Batch: 315753**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.1148		mg/L		115	75 - 125
Cadmium	0.0500	0.05580		mg/L		112	75 - 125
Lead	0.0500	0.05642		mg/L		113	75 - 125

Lab Sample ID: MB 680-315919/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316126 — **Prep Batch: 315919**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/17/14 13:45	02/18/14 11:40	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/17/14 13:45	02/18/14 11:40	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/17/14 13:45	02/18/14 11:40	1

Lab Sample ID: LCS 680-315919/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316126 — **Prep Batch: 315919**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.1111		mg/L		111	75 - 125
Cadmium	0.0500	0.05600		mg/L		112	75 - 125
Lead	0.0500	0.05722		mg/L		114	75 - 125

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

Lab Sample ID: MB 680-316087/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316226 — **Prep Batch: 316087**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/18/14 11:55	02/18/14 19:00	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/18/14 11:55	02/18/14 19:00	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/18/14 11:55	02/18/14 19:00	1

Lab Sample ID: LCS 680-316087/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316226 — **Prep Batch: 316087**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.1074		mg/L		107	75 - 125
Cadmium	0.0500	0.05544		mg/L		111	75 - 125
Lead	0.0500	0.05538		mg/L		111	75 - 125

Lab Sample ID: 600-86459-6 MS — **Client Sample ID: 2014-SW-021**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316226 — **Prep Batch: 316087**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.00130	U	0.100	0.1085		mg/L		108	75 - 125
Cadmium	0.0000950	U	0.0500	0.05450		mg/L		109	75 - 125
Lead	0.000635	J	0.0500	0.05510		mg/L		109	75 - 125

Lab Sample ID: 600-86459-6 MSD — **Client Sample ID: 2014-SW-021**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 316226 — **Prep Batch: 316087**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.00130	U	0.100	0.1025		mg/L		102	75 - 125	6	20
Cadmium	0.0000950	U	0.0500	0.05245		mg/L		105	75 - 125	4	20
Lead	0.000635	J	0.0500	0.05245		mg/L		104	75 - 125	5	20

Lab Sample ID: 600-86459-6 MS — **Client Sample ID: 2014-SW-021**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 316063 — **Prep Batch: 315743**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.00130	U	0.100	0.1127		mg/L		113	75 - 125
Cadmium	0.0000950	U	0.0500	0.05485		mg/L		110	75 - 125
Lead	0.000850	J	0.0500	0.05421		mg/L		107	75 - 125

Lab Sample ID: 600-86459-6 MSD — **Client Sample ID: 2014-SW-021**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 316063 — **Prep Batch: 315743**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.00130	U	0.100	0.1080		mg/L		108	75 - 125	4	20
Cadmium	0.0000950	U	0.0500	0.05408		mg/L		108	75 - 125	1	20
Lead	0.000850	J	0.0500	0.05331		mg/L		105	75 - 125	2	20

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Stewart Creek 6020

TestAmerica Job ID: 600-86459-2

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	MQL	MDL	Units	Method
Arsenic	0.00250	0.00130	mg/L	6020A
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	MQL	MDL	Units	Method
Arsenic	0.00250	0.00130	mg/L	6020A
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek 6020

TestAmerica Job ID: 600-86459-2

Metals

Prep Batch: 315743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86459-2	2014-SW-017	Dissolved	Water	3005A	
600-86459-3	2014-SW-018	Dissolved	Water	3005A	
600-86459-4	2014-SW-019	Dissolved	Water	3005A	
600-86459-4	2014-SW-019	Total Recoverable	Water	3005A	
600-86459-5	2014-SW-020	Dissolved	Water	3005A	
600-86459-5	2014-SW-020	Total Recoverable	Water	3005A	
600-86459-6	2014-SW-021	Dissolved	Water	3005A	
600-86459-6 MS	2014-SW-021	Dissolved	Water	3005A	
600-86459-6 MSD	2014-SW-021	Dissolved	Water	3005A	
600-86459-7	DUP-2	Dissolved	Water	3005A	
600-86459-7	DUP-2	Total Recoverable	Water	3005A	
LCS 680-315743/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-315743/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 315753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86459-1	2014-SW-016	Dissolved	Water	3005A	
600-86459-1	2014-SW-016	Total Recoverable	Water	3005A	
LCS 680-315753/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-315753/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 315919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86459-2	2014-SW-017	Total Recoverable	Water	3005A	
600-86459-3	2014-SW-018	Total Recoverable	Water	3005A	
LCS 680-315919/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-315919/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 316063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86459-1	2014-SW-016	Dissolved	Water	6020A	315753
600-86459-1	2014-SW-016	Total Recoverable	Water	6020A	315753
600-86459-2	2014-SW-017	Dissolved	Water	6020A	315743
600-86459-3	2014-SW-018	Dissolved	Water	6020A	315743
600-86459-4	2014-SW-019	Dissolved	Water	6020A	315743
600-86459-4	2014-SW-019	Total Recoverable	Water	6020A	315743
600-86459-5	2014-SW-020	Dissolved	Water	6020A	315743
600-86459-5	2014-SW-020	Total Recoverable	Water	6020A	315743
600-86459-6	2014-SW-021	Dissolved	Water	6020A	315743
600-86459-6 MS	2014-SW-021	Dissolved	Water	6020A	315743
600-86459-6 MSD	2014-SW-021	Dissolved	Water	6020A	315743
600-86459-7	DUP-2	Dissolved	Water	6020A	315743
600-86459-7	DUP-2	Total Recoverable	Water	6020A	315743
LCS 680-315743/2-A	Lab Control Sample	Total Recoverable	Water	6020A	315743
LCS 680-315753/2-A	Lab Control Sample	Total Recoverable	Water	6020A	315753
MB 680-315743/1-A	Method Blank	Total Recoverable	Water	6020A	315743
MB 680-315753/1-A	Method Blank	Total Recoverable	Water	6020A	315753

Prep Batch: 316087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86459-6	2014-SW-021	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 316087 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86459-6 MS	2014-SW-021	Total Recoverable	Water	3005A	
600-86459-6 MSD	2014-SW-021	Total Recoverable	Water	3005A	
LCS 680-316087/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-316087/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 316126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86459-2	2014-SW-017	Total Recoverable	Water	6020A	315919
600-86459-3	2014-SW-018	Total Recoverable	Water	6020A	315919
LCS 680-315919/2-A	Lab Control Sample	Total Recoverable	Water	6020A	315919
MB 680-315919/1-A	Method Blank	Total Recoverable	Water	6020A	315919

Analysis Batch: 316226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86459-6	2014-SW-021	Total Recoverable	Water	6020A	316087
600-86459-6 MS	2014-SW-021	Total Recoverable	Water	6020A	316087
600-86459-6 MSD	2014-SW-021	Total Recoverable	Water	6020A	316087
LCS 680-316087/2-A	Lab Control Sample	Total Recoverable	Water	6020A	316087
MB 680-316087/1-A	Method Blank	Total Recoverable	Water	6020A	316087

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Stewart Creek 6020

TestAmerica Job ID: 600-86459-2

Client Sample ID: 2014-SW-016 — Lab Sample ID: 600-86459-1

Date Collected: 01/31/14 16:52 — **Matrix: Water**
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	315753	02/14/14 15:29	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 16:32	BWR	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	315753	02/14/14 15:29	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 16:37	BWR	TAL SAV

Client Sample ID: 2014-SW-017 — Lab Sample ID: 600-86459-2

Date Collected: 01/31/14 17:07 — **Matrix: Water**
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	315743	02/14/14 15:02	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 19:42	BWR	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	315919	02/17/14 13:45	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	316126	02/18/14 14:03	BWR	TAL SAV

Client Sample ID: 2014-SW-018 — Lab Sample ID: 600-86459-3

Date Collected: 01/31/14 17:19 — **Matrix: Water**
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	315743	02/14/14 15:02	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 19:47	BWR	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	315919	02/17/14 13:45	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	316126	02/18/14 14:09	BWR	TAL SAV

Client Sample ID: 2014-SW-019 — Lab Sample ID: 600-86459-4

Date Collected: 01/31/14 17:25 — **Matrix: Water**
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	315743	02/14/14 15:02	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 19:52	BWR	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	315743	02/14/14 15:02	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 19:58	BWR	TAL SAV

Client Sample ID: 2014-SW-020 — Lab Sample ID: 600-86459-5

Date Collected: 01/31/14 17:47 — **Matrix: Water**
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	315743	02/14/14 15:02	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 20:03	BWR	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	315743	02/14/14 15:02	BJB	TAL SAV

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Stewart Creek 6020

TestAmerica Job ID: 600-86459-2

Client Sample ID: 2014-SW-020

Lab Sample ID: 600-86459-5

Date Collected: 01/31/14 17:47
Matrix: Water
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 20:08	BWR	TAL SAV

Client Sample ID: 2014-SW-021

Lab Sample ID: 600-86459-6

Date Collected: 01/31/14 17:56
Matrix: Water
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	315743	02/14/14 15:02	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 20:13	BWR	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	316087	02/18/14 11:55	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	316226	02/18/14 19:37	BWR	TAL SAV

Client Sample ID: DUP-2

Lab Sample ID: 600-86459-7

Date Collected: 01/31/14 00:00
Matrix: Water
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	315743	02/14/14 15:02	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 20:50	BWR	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	315743	02/14/14 15:02	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 20:56	BWR	TAL SAV

Laboratory References:

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

Certification Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek 6020

TestAmerica Job ID: 600-86459-2

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	TX00083	10-31-14

Laboratory: TestAmerica Savannah

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

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14

Certification Summary

Client: Golder Associates Inc.
Project/Site: Stewart Creek 6020

TestAmerica Job ID: 600-86459-2

Laboratory: TestAmerica Savannah (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-13 *
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica

2/26/2014

Client Information	Sampler: Chris Trevino	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-25573-9017.4
Client Contact: Christina Higginbotham	Phone: 817-281-0820	E-Mail: dean.joiner@testamericainc.com		1 of 2
Company: Golder Associates Inc.				103-2086
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 WD TRRP			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide Recycling Center - Water	Project #: 130-2084-1005			
Site: Exide FRC O - Stewart Creek	SSOW#:			

600-86459 Login
PM: Joiner, Dean A
Company Golder Associates Inc

Preservation Codes:
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2SO3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - ph 4-5
Z - other (specify)
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C_LL - (MOD) Target Compound List	8270C_LL - PAH	8260B - Target Compound List	TX_1005 - TPH	*** TX_1006 - TPH (Hold For TPH 1005 results)	300.0_28D - Sulfate	6010B - Total Metals	6010B - Dissolved Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N	N	A	A	A	N	D	D	X	
2014-SW-016	01/31/14	1652	G	Water	X							X	X	X	3	
2014-SW-016 MS	"	1652	G	Water								X			1	
2014-SW-016 MSD	"	1652	G	Water								X			1	
2014-SW-017	"	1707	G	Water	X							X	X	X	3	
2014-SW-018	"	1719	G	Water	X								X	X	3	
2014-SW-019	"	1725	G	Water	X								X	X	3	
2014-SW-020	"	1747	G	Water	X								X	X	2	
2014-SW-021	"	1756	G	Water	X							X	X	X	3	
2014-SW-021 MS	"	1756	G	Water	X								X	X	2	
2014-SW-021 MSD	"	1756	G	Water	X								X	X	2	
DUP-2	"	—	G	Water	X								X	X	2	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☒ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Chris Trevino	01/31/14 - 0755	Golder			
				2/1/14 1019	

Custody Seals Intact: △ Yes △ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica

2/26/2014

Client Information	Sampler: Chris Trevino	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-25573-9017.4
Client Contact: Christina Higginbotham	Phone: 817-281-0810	E-Mail: dean.joiner@testamericainc.com		Page: Page 2 of 2
Company: Golder Associates Inc.				Job #: 103-2086
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 WD TRRP			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide Recycling Center - Water	Project #: 130-2086-1005			
Site: Exide Frisco - Stewart Creek	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C_LL - (MOD) Target Compound List	8270C_LL - PAH	8260B - Target Compound List	TX_1005 - TPH	*** TX_1006 - TPH (Hold For TPH 1005 results)	300.0_28D - Sulfate	6010B - Total Metals	6010B - Dissolved Metals	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	A	A	A	N	D	D		
DOP-3	01/31/14	—	G	Water								X			1	
			G	Water												
			G	Water												
			G	Water												
			G	Water												
			G	Water												
			G	Water												
			G	Water												
			G	Water												
			G	Water												
			G	Water												

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Chris Trevino	01/31/14 - 0755	Golder			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 2/1/14 1019	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86459-2

Login Number: 86459

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86459-2

Login Number: 86459
List Number: 1
Creator: Conner, Keaton

List Source: TestAmerica Savannah
List Creation: 02/14/14 10:57 AM

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-86460-1
Client Project/Site: Exide Recycling Center - Water
Revision: 1

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
5/15/2014 7:27:09 PM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

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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.

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-86460-1 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☑ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☑ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton		2/6/2014
Name (printed)	Signature	Date

Project Management Asst II
Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/6/2014
Project Name:	Exide Recycling Center - Water	Laboratory Job Number:	600-86460-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/6/2014
Project Name:	Exide Recycling Center - Water	Laboratory Job Number:	600-86460-1
Reviewer Name:	Dean A Joiner		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

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Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/6/2014
Project Name:	Exide Recycling Center - Water	Laboratory Job Number:	600-86460-1
Reviewer Name:	Dean A Joiner		

ER #[1]	Description

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Detection Check Standard

Matrix:	Water
Method:	SM5310 D, 9060, 415.1
Preparation:	NA
Date Analyzed:	12/6/2013
Date Prepared:	12/6/2013
TALs Batches:	122324
Units:	mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Carbon, Total Organic	0.437	0.5	0.669	1

Detection Check Standard

Matrix:	Soil
Method:	90.3 Walkley-Black
Preparation:	NA
Date Analyzed:	12/7/2013
Date Prepared:	12/7/2013
TALs Batches:	122871
Units:	% Carbon

Analyte	MDL	DCS Spike	Measured Result	MQL
TOC Walkley Black	0.0415	0.05	0.036	0.1

Detection Check Standard

Matrix:	Water
Method:	200.7/6010
Preparation:	200.7P/3010
Date Analyzed:	12/31/2013
Date Prepared:	12/27/2013
Instrument:	Spectro01
TALs Batches:	124030, 123788p
Units:	mg/L

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.006	0.02	0.028176	0.5
Antimony	0.0063	0.01	0.010016	0.05
Arsenic	0.0033	0.01	0.008253	0.01
Barium	0.0022	0.005	0.004098	0.02
Beryllium	0.00134	0.002	0.004019	0.005
Boron	0.0077	0.02	0.019829	0.2
Cadmium	0.00073	0.001	0.001	0.005
Calcium	0.022	0.05	0.060829	1
Chromium	0.0016	0.002	0.003835	0.01
Cobalt	0.00063	0.001	0.000965	0.01
Copper	0.0014	0.002	0.002451	0.01
Iron	0.087	0.1	0.002258	0.4
Lithium	0.0024	0.005	0.006107	0.2
Lead	0.0029	0.005	0.005478	0.01
Selenium	0.0042	0.01	0.009953	0.04
Manganese	0.00084	0.002	0.001988	0.01
Molybdenum	0.0027	0.005	0.005867	0.01
Nickel	0.00179	0.005	0.005669	0.01
Silver	0.0012	0.0025	0.001901	0.01
Sodium	0.02	0.05	0.088115	1
Strontium	0.0005	0.001	0.000897	0.005
Thallium	0.0078	0.02	0.021503	0.03
Tin	0.0028	0.005	0.005708	0.01
Titanium	0.0011	0.002	0.001905	0.01
Vanadium	0.0017	0.002	0.003578	0.01
Zinc	0.0022	0.005	0.004189	0.01

Detection Check Standard

Matrix:	Soil
Method:	6010B
Preparation:	3050
Date Analyzed:	12/30/2013
Date Prepared:	12/27/2013
Instrument:	Thermo 6500
TALS Batches:	123949, 123775p
Prep/Reagent Factor =	50
Units:	mg/kg

Analyte	MDL	DCS Spike	Measured Result	MQL
Aluminum	0.299654	0.5	0.36	25
Antimony	0.231553	0.45	0.5	2.5
Arsenic	0.217923	0.5	0.53	1
Barium	0.011322	0.03	0.04	1
Beryllium	0.014513	0.02	0.015	0.25
Boron	0.385535	0.6	0.56	20
Cadmium	0.025642	0.05	0.05	0.25
Calcium	0.86399	1.5	2.185	100
Chromium	0.050606	0.1	0.135	0.5
Cobalt	0.067622	0.1	0.09	0.5
Copper	0.173703	0.5	0.64	0.5
Iron	2.534007	4	3.76	20
Lead	0.104832	0.2	0.215	0.5
Selenium	0.258884	0.5	0.465	2
Manganese	0.038111	0.05	0.085	1.5
Molybdenum	0.136448	0.35	0.38	0.5
Nickel	0.116599	0.15	0.2	1
Silver	0.118848	0.2	0.15	0.5
Sodium	0.885548	2.4	3.135	100
Thallium	0.276988	0.7	0.73	1.5
Tin	0.08729	0.15	0.19	1
Titanium	0.014529	0.03	0.01	0.5
Vanadium	0.079068	0.15	0.125	0.5
Zinc	0.108432	0.2	0.305	1.5

Case Narrative

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water

TestAmerica Job ID: 600-86460-1

Job ID: 600-86460-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-86460-1

Comments
The report was revised on 05/15/14 to correct the results for the Walkley Black method, replacing the final report generated on 02/06/14.

Receipt
The samples were received on 2/1/2014 10:19 AM; the samples arrived in good condition, properly preserved and, where required, on ice.
The temperature of the cooler at receipt was 2.2º C.

Method Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water

TestAmerica Job ID: 600-86460-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL HOU
Moisture	Percent Moisture	EPA	TAL HOU
SM 5310D	Organic Carbon, Total (TOC)	SM	TAL HOU
WALKLEY BLACK	Organic Carbon, Total (TOC)	MSA	TAL HOU

Protocol References:

EPA = US Environmental Protection Agency

MSA = "Methods Of Soil Analysis, Chemical And Microbiological Properties", Part 2, 2nd Ed., 1982 And Subsequent Revisions.

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 HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water

TestAmerica Job ID: 600-86460-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-86460-1	2014-SW-006	Water	01/30/14 10:21	02/01/14 10:19
600-86460-2	FIELD BLANK	Water	01/30/14 15:15	02/01/14 10:19
600-86460-3	Equipment Blank-Dredge	Water	01/30/14 15:01	02/01/14 10:19
600-86460-4	Equipment Blank-Bowl	Water	01/30/14 15:06	02/01/14 10:19
600-86460-5	2014-SED-019	Solid	01/30/14 10:04	02/01/14 10:19
600-86460-6	2014-SED-020	Solid	01/30/14 11:05	02/01/14 10:19
600-86460-7	2014-SED-021	Solid	01/30/14 11:57	02/01/14 10:19
600-86460-8	2014-SED-022	Solid	01/30/14 12:31	02/01/14 10:19
600-86460-9	2014-SED-023	Solid	01/30/14 13:10	02/01/14 10:19
600-86460-10	DUPLICATE-04	Solid	01/30/14 00:00	02/01/14 10:19
600-86460-11	2014-SED-024	Solid	01/30/14 13:42	02/01/14 10:19
600-86460-12	2014-SED-025	Solid	01/30/14 14:09	02/01/14 10:19

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water

TestAmerica Job ID: 600-86460-1

Client Sample ID: 2014-SW-006

Lab Sample ID: 600-86460-1
Date Collected: 01/30/14 10:21
Matrix: Water
Date Received: 02/01/14 10:19

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 13:01	02/06/14 13:41	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 13:01	02/06/14 13:41	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 13:01	02/06/14 13:41	1

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 13:01	02/06/14 13:43	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 13:01	02/06/14 13:43	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 13:01	02/06/14 13:43	1

Client Sample ID: FIELD BLANK

Lab Sample ID: 600-86460-2
Date Collected: 01/30/14 15:15
Matrix: Water
Date Received: 02/01/14 10:19

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/04/14 12:07	02/05/14 12:20	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/04/14 12:07	02/05/14 12:20	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/04/14 12:07	02/05/14 12:20	1

Client Sample ID: Equipment Blank-Dredge

Lab Sample ID: 600-86460-3
Date Collected: 01/30/14 15:01
Matrix: Water
Date Received: 02/01/14 10:19

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/04/14 12:07	02/05/14 12:22	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/04/14 12:07	02/05/14 12:22	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/04/14 12:07	02/05/14 12:22	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.653	J	1.00	0.437	mg/L			02/05/14 23:28	1

Client Sample ID: Equipment Blank-Bowl

Lab Sample ID: 600-86460-4
Date Collected: 01/30/14 15:06
Matrix: Water
Date Received: 02/01/14 10:19

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/04/14 12:07	02/05/14 12:38	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/04/14 12:07	02/05/14 12:38	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/04/14 12:07	02/05/14 12:38	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.479	J	1.00	0.437	mg/L			02/05/14 23:40	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water

TestAmerica Job ID: 600-86460-1

Client Sample ID: 2014-SED-019

Lab Sample ID: 600-86460-5
Date Collected: 01/30/14 10:04
Matrix: Solid
Date Received: 02/01/14 10:19
Percent Solids: 69.5

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	1.25		0.336	0.0345	mg/Kg	☼	02/04/14 14:31	02/05/14 13:42	1
Lead	47.3		0.673	0.141	mg/Kg	☼	02/04/14 14:31	02/05/14 13:42	1
Arsenic	10.0		1.35	0.293	mg/Kg	☼	02/04/14 14:31	02/05/14 13:42	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	31		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	69		1.0	1.0	%			02/03/14 15:19	1
TOC	0.928		0.100	0.0415	%			02/06/14 10:00	1

Client Sample ID: 2014-SED-020

Lab Sample ID: 600-86460-6
Date Collected: 01/30/14 11:05
Matrix: Solid
Date Received: 02/01/14 10:19
Percent Solids: 74.0

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	1.77		0.322	0.0330	mg/Kg	☼	02/04/14 14:31	02/05/14 13:52	1
Lead	26.0		0.643	0.135	mg/Kg	☼	02/04/14 14:31	02/05/14 13:52	1
Arsenic	15.0		1.29	0.280	mg/Kg	☼	02/04/14 14:31	02/05/14 13:52	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	26		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	74		1.0	1.0	%			02/03/14 15:19	1
TOC	0.263		0.100	0.0415	%			02/06/14 10:00	1

Client Sample ID: 2014-SED-021

Lab Sample ID: 600-86460-7
Date Collected: 01/30/14 11:57
Matrix: Solid
Date Received: 02/01/14 10:19
Percent Solids: 76.4

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	4.09		0.306	0.0314	mg/Kg	☼	02/04/14 14:31	02/05/14 13:54	1
Lead	40.6		0.612	0.128	mg/Kg	☼	02/04/14 14:31	02/05/14 13:54	1
Arsenic	25.6		1.22	0.267	mg/Kg	☼	02/04/14 14:31	02/05/14 13:54	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	24		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	76		1.0	1.0	%			02/03/14 15:19	1
TOC	0.315		0.100	0.0415	%			02/06/14 10:00	1

Client Sample ID: 2014-SED-022

Lab Sample ID: 600-86460-8
Date Collected: 01/30/14 12:31
Matrix: Solid
Date Received: 02/01/14 10:19
Percent Solids: 70.6

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.301	J	0.350	0.0359	mg/Kg	☼	02/05/14 14:18	02/06/14 10:14	1
Lead	11.7		0.701	0.147	mg/Kg	☼	02/05/14 14:18	02/06/14 10:14	1
Arsenic	11.6		1.40	0.306	mg/Kg	☼	02/05/14 14:18	02/06/14 10:14	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water

TestAmerica Job ID: 600-86460-1

Client Sample ID: 2014-SED-022

Lab Sample ID: 600-86460-8
Date Collected: 01/30/14 12:31
Matrix: Solid
Date Received: 02/01/14 10:19

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	29		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	71		1.0	1.0	%			02/03/14 15:19	1
TOC	0.643		0.100	0.0415	%			02/06/14 10:00	1

Client Sample ID: 2014-SED-023

Lab Sample ID: 600-86460-9
Date Collected: 01/30/14 13:10
Matrix: Solid
Date Received: 02/01/14 10:19
Percent Solids: 83.0

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	1.64		0.293	0.0300	mg/Kg	☼	02/05/14 14:18	02/06/14 10:16	1
Lead	24.6		0.585	0.123	mg/Kg	☼	02/05/14 14:18	02/06/14 10:16	1
Arsenic	31.2		1.17	0.255	mg/Kg	☼	02/05/14 14:18	02/06/14 10:16	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	83		1.0	1.0	%			02/03/14 15:19	1
TOC	0.223		0.100	0.0415	%			02/06/14 10:00	1

Client Sample ID: DUPLICATE-04

Lab Sample ID: 600-86460-10
Date Collected: 01/30/14 00:00
Matrix: Solid
Date Received: 02/01/14 10:19
Percent Solids: 67.6

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	1.31		0.343	0.0351	mg/Kg	☼	02/05/14 14:18	02/06/14 10:19	1
Lead	46.2		0.685	0.144	mg/Kg	☼	02/05/14 14:18	02/06/14 10:19	1
Arsenic	14.2		1.37	0.299	mg/Kg	☼	02/05/14 14:18	02/06/14 10:19	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	32		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	68		1.0	1.0	%			02/03/14 15:19	1
TOC	0.882		0.100	0.0415	%			02/06/14 10:00	1

Client Sample ID: 2014-SED-024

Lab Sample ID: 600-86460-11
Date Collected: 01/30/14 13:42
Matrix: Solid
Date Received: 02/01/14 10:19
Percent Solids: 84.4

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	1.28		0.274	0.0281	mg/Kg	☼	02/05/14 14:18	02/06/14 10:21	1
Lead	15.7		0.548	0.115	mg/Kg	☼	02/05/14 14:18	02/06/14 10:21	1
Arsenic	25.4		1.10	0.239	mg/Kg	☼	02/05/14 14:18	02/06/14 10:21	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	84		1.0	1.0	%			02/03/14 15:19	1
TOC	0.208		0.100	0.0415	%			02/06/14 10:00	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water

TestAmerica Job ID: 600-86460-1

Client Sample ID: 2014-SED-025

Date Collected: 01/30/14 14:09
Date Received: 02/01/14 10:19

Lab Sample ID: 600-86460-12

Matrix: Solid
Percent Solids: 79.9

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	3.03		0.298	0.0306	mg/Kg	☼	02/05/14 14:18	02/06/14 10:24	1
Lead	15.1		0.596	0.125	mg/Kg	☼	02/05/14 14:18	02/06/14 10:24	1
Arsenic	14.8		1.19	0.260	mg/Kg	☼	02/05/14 14:18	02/06/14 10:24	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20		1.0	1.0	%			02/03/14 15:19	1
Percent Solids	80		1.0	1.0	%			02/03/14 15:19	1
TOC	0.699		0.100	0.0415	%			02/06/14 10:00	1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
U	Analyte was not detected at or above the SDL.

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
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)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water

TestAmerica Job ID: 600-86460-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-126535/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126636 — **Prep Batch: 126535**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/04/14 12:07	02/05/14 12:06	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/04/14 12:07	02/05/14 12:06	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/04/14 12:07	02/05/14 12:06	1

Lab Sample ID: LCS 600-126535/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126636 — **Prep Batch: 126535**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.500	0.5018		mg/L		100	80 - 120
Lead	1.00	0.9764		mg/L		98	80 - 120
Arsenic	1.00	0.9939		mg/L		99	80 - 120

Lab Sample ID: 600-86460-3 MS — **Client Sample ID: Equipment Blank-Dredge**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126636 — **Prep Batch: 126535**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.000350	U	0.500	0.5014		mg/L		100	75 - 125
Lead	0.00290	U	1.00	0.9705		mg/L		97	75 - 125
Arsenic	0.00328	U	1.00	0.9863		mg/L		99	75 - 125

Lab Sample ID: 600-86460-3 MSD — **Client Sample ID: Equipment Blank-Dredge**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126636 — **Prep Batch: 126535**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	0.000350	U	0.500	0.5005		mg/L		100	75 - 125	0	20
Lead	0.00290	U	1.00	0.9627		mg/L		96	75 - 125	1	20
Arsenic	0.00328	U	1.00	0.9882		mg/L		99	75 - 125	0	20

Lab Sample ID: 600-86460-3 DU — **Client Sample ID: Equipment Blank-Dredge**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126636 — **Prep Batch: 126535**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cadmium	0.000350	U	0.000350	U	mg/L		NC	20
Lead	0.00290	U	0.00290	U	mg/L		NC	20
Arsenic	0.00328	U	0.00328	U	mg/L		NC	20

Lab Sample ID: MB 600-126557/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126636 — **Prep Batch: 126557**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0256	U	0.250	0.0256	mg/Kg		02/04/14 14:31	02/05/14 11:37	1
Lead	0.105	U	0.500	0.105	mg/Kg		02/04/14 14:31	02/05/14 11:37	1
Arsenic	0.218	U	1.00	0.218	mg/Kg		02/04/14 14:31	02/05/14 11:37	1

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

Lab Sample ID: LCSSRM 600-126557/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126636 — **Prep Batch: 126557**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	182	186.0		mg/Kg		102.2	81.9 - 118.1
Lead	115	113.6		mg/Kg		98.8	81.8 - 119.1
Arsenic	99.6	99.28		mg/Kg		99.7	80.8 - 119.5

Lab Sample ID: 600-86460-5 MS — **Client Sample ID: 2014-SED-019**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126636 — **Prep Batch: 126557**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	1.25		33.5	33.09		mg/Kg	☼	95	75 - 125
Lead	47.3		67.0	108.3		mg/Kg	☼	91	75 - 125
Arsenic	10.0		67.0	75.09		mg/Kg	☼	97	75 - 125

Lab Sample ID: 600-86460-5 MSD — **Client Sample ID: 2014-SED-019**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126636 — **Prep Batch: 126557**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	1.25		33.8	32.36		mg/Kg	☼	92	75 - 125	7	20
Lead	47.3		67.7	107.5		mg/Kg	☼	89	75 - 125	6	20
Arsenic	10.0		67.7	71.67		mg/Kg	☼	91	75 - 125	10	20

Lab Sample ID: 600-86460-5 DU — **Client Sample ID: 2014-SED-019**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126636 — **Prep Batch: 126557**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cadmium	1.25		1.315		mg/Kg	☼	5	20
Lead	47.3		49.93		mg/Kg	☼	5	20
Arsenic	10.0		9.649		mg/Kg	☼	4	20

Lab Sample ID: MB 600-126643/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126789 — **Prep Batch: 126643**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.000350	U	0.00500	0.000350	mg/L		02/05/14 13:01	02/06/14 13:17	1
Cadmium, Dissolved	0.000350	U	0.00500	0.000350	mg/L		02/05/14 13:01	02/06/14 13:17	1
Lead	0.00290	U	0.0100	0.00290	mg/L		02/05/14 13:01	02/06/14 13:17	1
Lead, Dissolved	0.00290	U	0.0100	0.00290	mg/L		02/05/14 13:01	02/06/14 13:17	1
Arsenic	0.00328	U	0.0100	0.00328	mg/L		02/05/14 13:01	02/06/14 13:17	1
Arsenic, Dissolved	0.00328	U	0.0100	0.00328	mg/L		02/05/14 13:01	02/06/14 13:17	1

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

Lab Sample ID: LCS 600-126643/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126789 — **Prep Batch: 126643**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.500	0.5110		mg/L		102	80 - 120
Cadmium, Dissolved	0.500	0.5110		mg/L		102	80 - 120
Lead	0.500	0.5161		mg/L		103	80 - 120
Lead, Dissolved	0.500	0.5161		mg/L		103	80 - 120
Arsenic	0.500	0.5160		mg/L		103	80 - 120
Arsenic, Dissolved	0.500	0.5160		mg/L		103	80 - 120

Lab Sample ID: MB 600-126661/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126737 — **Prep Batch: 126661**

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0256	U	0.250	0.0256	mg/Kg		02/05/14 14:18	02/06/14 10:09	1
Lead	0.105	U	0.500	0.105	mg/Kg		02/05/14 14:18	02/06/14 10:09	1
Arsenic	0.218	U	1.00	0.218	mg/Kg		02/05/14 14:18	02/06/14 10:09	1

Lab Sample ID: LCSSRM 600-126661/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 126737 — **Prep Batch: 126661**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	182	194.4		mg/Kg		106.8	81.9 - 118.1
Lead	115	113.9		mg/Kg		99.0	81.8 - 119.1
Arsenic	99.6	101.6		mg/Kg		102.0	80.8 - 119.5

Method: SM 5310D - Organic Carbon, Total (TOC)

Lab Sample ID: MB 600-126729/9 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126729

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.437	U	1.00	0.437	mg/L			02/05/14 17:36	1

Lab Sample ID: LCS 600-126729/10 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 126729

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.706		mg/L		97	85 - 115

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water

TestAmerica Job ID: 600-86460-1

Method: WALKLEY BLACK - Organic Carbon, Total (TOC)

Lab Sample ID: MB 600-126787/1
Matrix: Solid
Analysis Batch: 126787

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

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
TOC	0.0415	U	0.100	0.0415	%			02/06/14 10:00	1

Lab Sample ID: LCS 600-126787/2
Matrix: Solid
Analysis Batch: 126787

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
TOC			2.34	2.217		%		95	80 - 120		

Lab Sample ID: 600-86460-5 DU
Matrix: Solid
Analysis Batch: 126787

Client Sample ID: 2014-SED-019
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
TOC	0.928			0.9100		%				2	20

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water

TestAmerica Job ID: 600-86460-1

Method: 6010B - Metals (ICP)

Analyte	MQL	MDL	Units	Method
Arsenic	0.0100	0.00328	mg/L	6010B
Arsenic	1.00	0.218	mg/Kg	6010B
Cadmium	0.00500	0.000350	mg/L	6010B
Cadmium	0.250	0.0256	mg/Kg	6010B
Lead	0.0100	0.00290	mg/L	6010B
Lead	0.500	0.105	mg/Kg	6010B

Method: 6010B - Metals (ICP) - Dissolved

Analyte	MQL	MDL	Units	Method
Arsenic, Dissolved	0.0100	0.00328	mg/L	6010B
Cadmium, Dissolved	0.00500	0.000350	mg/L	6010B
Lead, Dissolved	0.0100	0.00290	mg/L	6010B

General Chemistry

Analyte	MQL	MDL	Units	Method
Percent Moisture	1.0	1.0	%	Moisture
Percent Solids	1.0	1.0	%	Moisture
Total Organic Carbon	1.00	0.437	mg/L	SM 5310D
TOC	0.100	0.0415	%	WALKLEY BLACK

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water

TestAmerica Job ID: 600-86460-1

Metals

Prep Batch: 126535

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86460-2	FIELD BLANK	Total/NA	Water	3010A	
600-86460-3	Equipment Blank-Dredge	Total/NA	Water	3010A	
600-86460-3 DU	Equipment Blank-Dredge	Total/NA	Water	3010A	
600-86460-3 MS	Equipment Blank-Dredge	Total/NA	Water	3010A	
600-86460-3 MSD	Equipment Blank-Dredge	Total/NA	Water	3010A	
600-86460-4	Equipment Blank-Bowl	Total/NA	Water	3010A	
LCS 600-126535/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-126535/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 126557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86460-5	2014-SED-019	Total/NA	Solid	3050B	
600-86460-5 DU	2014-SED-019	Total/NA	Solid	3050B	
600-86460-5 MS	2014-SED-019	Total/NA	Solid	3050B	
600-86460-5 MSD	2014-SED-019	Total/NA	Solid	3050B	
600-86460-6	2014-SED-020	Total/NA	Solid	3050B	
600-86460-7	2014-SED-021	Total/NA	Solid	3050B	
LCSSRM 600-126557/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 600-126557/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 126636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86460-2	FIELD BLANK	Total/NA	Water	6010B	126535
600-86460-3	Equipment Blank-Dredge	Total/NA	Water	6010B	126535
600-86460-3 DU	Equipment Blank-Dredge	Total/NA	Water	6010B	126535
600-86460-3 MS	Equipment Blank-Dredge	Total/NA	Water	6010B	126535
600-86460-3 MSD	Equipment Blank-Dredge	Total/NA	Water	6010B	126535
600-86460-4	Equipment Blank-Bowl	Total/NA	Water	6010B	126535
600-86460-5	2014-SED-019	Total/NA	Solid	6010B	126557
600-86460-5 DU	2014-SED-019	Total/NA	Solid	6010B	126557
600-86460-5 MS	2014-SED-019	Total/NA	Solid	6010B	126557
600-86460-5 MSD	2014-SED-019	Total/NA	Solid	6010B	126557
600-86460-6	2014-SED-020	Total/NA	Solid	6010B	126557
600-86460-7	2014-SED-021	Total/NA	Solid	6010B	126557
LCS 600-126535/2-A	Lab Control Sample	Total/NA	Water	6010B	126535
LCSSRM 600-126557/2-A	Lab Control Sample	Total/NA	Solid	6010B	126557
MB 600-126535/1-A	Method Blank	Total/NA	Water	6010B	126535
MB 600-126557/1-A	Method Blank	Total/NA	Solid	6010B	126557

Prep Batch: 126643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86460-1	2014-SW-006	Dissolved	Water	3010A	
600-86460-1	2014-SW-006	Total/NA	Water	3010A	
LCS 600-126643/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-126643/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 126661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86460-8	2014-SED-022	Total/NA	Solid	3050B	
600-86460-9	2014-SED-023	Total/NA	Solid	3050B	
600-86460-10	DUPLICATE-04	Total/NA	Solid	3050B	

Metals (Continued)

Prep Batch: 126661 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86460-11	2014-SED-024	Total/NA	Solid	3050B	
600-86460-12	2014-SED-025	Total/NA	Solid	3050B	
LCSSRM 600-126661/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 600-126661/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 126737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86460-8	2014-SED-022	Total/NA	Solid	6010B	126661
600-86460-9	2014-SED-023	Total/NA	Solid	6010B	126661
600-86460-10	DUPLICATE-04	Total/NA	Solid	6010B	126661
600-86460-11	2014-SED-024	Total/NA	Solid	6010B	126661
600-86460-12	2014-SED-025	Total/NA	Solid	6010B	126661
LCSSRM 600-126661/2-A	Lab Control Sample	Total/NA	Solid	6010B	126661
MB 600-126661/1-A	Method Blank	Total/NA	Solid	6010B	126661

Analysis Batch: 126789

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86460-1	2014-SW-006	Dissolved	Water	6010B	126643
600-86460-1	2014-SW-006	Total/NA	Water	6010B	126643
LCS 600-126643/2-A	Lab Control Sample	Total/NA	Water	6010B	126643
MB 600-126643/1-A	Method Blank	Total/NA	Water	6010B	126643

General Chemistry

Analysis Batch: 126487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86460-5	2014-SED-019	Total/NA	Solid	Moisture	
600-86460-5 MS	2014-SED-019	Total/NA	Solid	Moisture	
600-86460-5 MSD	2014-SED-019	Total/NA	Solid	Moisture	
600-86460-6	2014-SED-020	Total/NA	Solid	Moisture	
600-86460-7	2014-SED-021	Total/NA	Solid	Moisture	
600-86460-8	2014-SED-022	Total/NA	Solid	Moisture	
600-86460-9	2014-SED-023	Total/NA	Solid	Moisture	
600-86460-10	DUPLICATE-04	Total/NA	Solid	Moisture	
600-86460-11	2014-SED-024	Total/NA	Solid	Moisture	
600-86460-12	2014-SED-025	Total/NA	Solid	Moisture	

Analysis Batch: 126729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86460-3	Equipment Blank-Dredge	Total/NA	Water	SM 5310D	
600-86460-4	Equipment Blank-Bowl	Total/NA	Water	SM 5310D	
LCS 600-126729/10	Lab Control Sample	Total/NA	Water	SM 5310D	
MB 600-126729/9	Method Blank	Total/NA	Water	SM 5310D	

Analysis Batch: 126787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86460-5	2014-SED-019	Total/NA	Solid	WALKLEY BLACK	
600-86460-5 DU	2014-SED-019	Total/NA	Solid	WALKLEY BLACK	

General Chemistry (Continued)

Analysis Batch: 126787 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86460-6	2014-SED-020	Total/NA	Solid	WALKLEY BLACK	
600-86460-7	2014-SED-021	Total/NA	Solid	WALKLEY BLACK	
600-86460-8	2014-SED-022	Total/NA	Solid	WALKLEY BLACK	
600-86460-9	2014-SED-023	Total/NA	Solid	WALKLEY BLACK	
600-86460-10	DUPLICATE-04	Total/NA	Solid	WALKLEY BLACK	
600-86460-11	2014-SED-024	Total/NA	Solid	WALKLEY BLACK	
600-86460-12	2014-SED-025	Total/NA	Solid	WALKLEY BLACK	
LCS 600-126787/2	Lab Control Sample	Total/NA	Solid	WALKLEY BLACK	
MB 600-126787/1	Method Blank	Total/NA	Solid	WALKLEY BLACK	

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water

TestAmerica Job ID: 600-86460-1

Client Sample ID: 2014-SW-006

Lab Sample ID: 600-86460-1
Date Collected: 01/30/14 10:21
Matrix: Water
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			50 mL	50 mL	126643	02/05/14 13:01	NER	TAL HOU
Dissolved	Analysis	6010B		1	50 mL	50 mL	126789	02/06/14 13:43	DCL	TAL HOU
Total/NA	Prep	3010A			50 mL	50 mL	126643	02/05/14 13:01	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126789	02/06/14 13:41	DCL	TAL HOU

Client Sample ID: FIELD BLANK

Lab Sample ID: 600-86460-2
Date Collected: 01/30/14 15:15
Matrix: Water
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126535	02/04/14 12:07	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126636	02/05/14 12:20	DCL	TAL HOU

Client Sample ID: Equipment Blank-Dredge

Lab Sample ID: 600-86460-3
Date Collected: 01/30/14 15:01
Matrix: Water
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126535	02/04/14 12:07	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126636	02/05/14 12:22	DCL	TAL HOU
Total/NA	Analysis	SM 5310D		1	12 mL	12 mL	126729	02/05/14 23:28	AYS	TAL HOU

Client Sample ID: Equipment Blank-Bowl

Lab Sample ID: 600-86460-4
Date Collected: 01/30/14 15:06
Matrix: Water
Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	126535	02/04/14 12:07	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	126636	02/05/14 12:38	DCL	TAL HOU
Total/NA	Analysis	SM 5310D		1	12 mL	12 mL	126729	02/05/14 23:40	AYS	TAL HOU

Client Sample ID: 2014-SED-019

Lab Sample ID: 600-86460-5
Date Collected: 01/30/14 10:04
Matrix: Solid
Date Received: 02/01/14 10:19
Percent Solids: 69.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.07 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.07 g	50 mL	126636	02/05/14 13:42	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0500 g	2.0500 g	126787	02/06/14 10:00	EC1	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water

TestAmerica Job ID: 600-86460-1

Client Sample ID: 2014-SED-020

Lab Sample ID: 600-86460-6
Date Collected: 01/30/14 11:05
Matrix: Solid
Date Received: 02/01/14 10:19
Percent Solids: 74.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.05 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.05 g	50 mL	126636	02/05/14 13:52	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	5.0600 g	5.0600 g	126787	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-021

Lab Sample ID: 600-86460-7
Date Collected: 01/30/14 11:57
Matrix: Solid
Date Received: 02/01/14 10:19
Percent Solids: 76.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.07 g	50 mL	126557	02/04/14 14:31	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.07 g	50 mL	126636	02/05/14 13:54	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	5.0500 g	5.0500 g	126787	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-022

Lab Sample ID: 600-86460-8
Date Collected: 01/30/14 12:31
Matrix: Solid
Date Received: 02/01/14 10:19
Percent Solids: 70.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.01 g	50 mL	126661	02/05/14 14:18	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.01 g	50 mL	126737	02/06/14 10:14	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0100 g	2.0100 g	126787	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-023

Lab Sample ID: 600-86460-9
Date Collected: 01/30/14 13:10
Matrix: Solid
Date Received: 02/01/14 10:19
Percent Solids: 83.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.03 g	50 mL	126661	02/05/14 14:18	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.03 g	50 mL	126737	02/06/14 10:16	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	5.0500 g	5.0500 g	126787	02/06/14 10:00	EC1	TAL HOU

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water

TestAmerica Job ID: 600-86460-1

Client Sample ID: DUPLICATE-04

Lab Sample ID: 600-86460-10

Date Collected: 01/30/14 00:00
Matrix: Solid
Date Received: 02/01/14 10:19
Percent Solids: 67.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.08 g	50 mL	126661	02/05/14 14:18	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.08 g	50 mL	126737	02/06/14 10:19	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0100 g	2.0100 g	126787	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-024

Lab Sample ID: 600-86460-11

Date Collected: 01/30/14 13:42
Matrix: Solid
Date Received: 02/01/14 10:19
Percent Solids: 84.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.08 g	50 mL	126661	02/05/14 14:18	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.08 g	50 mL	126737	02/06/14 10:21	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	5.0600 g	5.0600 g	126787	02/06/14 10:00	EC1	TAL HOU

Client Sample ID: 2014-SED-025

Lab Sample ID: 600-86460-12

Date Collected: 01/30/14 14:09
Matrix: Solid
Date Received: 02/01/14 10:19
Percent Solids: 79.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.05 g	50 mL	126661	02/05/14 14:18	NER	TAL HOU
Total/NA	Analysis	6010B		1	1.05 g	50 mL	126737	02/06/14 10:24	DCL	TAL HOU
Total/NA	Analysis	Moisture		1			126487	02/03/14 15:19	AYS	TAL HOU
Total/NA	Analysis	WALKLEY BLACK		1	2.0600 g	2.0600 g	126787	02/06/14 10:00	EC1	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water

TestAmerica Job ID: 600-86460-1

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14 *
Utah	NELAP	8	TX00083	10-31-14

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custc

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

600-86460 Chain of Custody

5/15/2014

Client Information	Sampler:	Lab PM: Joiner, Dean A
Client Contact: Christina Higginbotham	Phone:	E-Mail: dean.joiner@testamer
Company: Golder Associates Inc.		
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:	
City: Houston	TAT Requested (days): 5 WD TRRP	
State, Zip: TX, 77073		
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested	
Email: Christina_Higginbotham@golder.com	WO #:	
Project Name: Exide Recycling Center - Water	Project #:	
Site:	SSOW#:	

COC No: 600-25573-9017.4
Page: Page 1 of 2
Job #:

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C_LL - (MOD) Target Compound List	8270C_LL - PAH	8260B - Target Compound List	TX_1005 - TPH	*** TX_1006 - TPH (Hold For TPH 1005 results)	300.0_28D - Sulfate	6010B - Total Metals - Pb, Cd, As	6010B - Dissolved Metals - Pb, Cd, As	Metals - Pb, Cd, As	TOC						Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N	N	A	A	A	N	D	D	N	N						X	
2014-SW-006	1-30-14	1021	G	Water	X								X	X								2	
FIELD BLANK	"	1515	G	Water									X									1	
Equipment Blank - DREDGE	"	1501	G	Water					[redacted]				X			X						2	
Equipment Blank - Bowl	"	1506	G	Water					[redacted]				X			X						2	
2014-SED-019	"	1004	G	~~Water~~ solid											X	X						2	
2014-SED-019 MS	"	1004	G	~~Water~~ solid	X										X	X						2	
2014-SED-019 MSD	"	1004	G	~~Water~~ solid	X										X	X						2	
2014-SED-020	"	1105	G	~~Water~~ solid											X	X						2	
2014-SED-021	"	1157	G	~~Water~~ solid											X	X						2	
2014-SED-022	"	1231	G	~~Water~~ solid											X	X						2	
2014-SED-023	"	1310	G	~~Water~~ solid											X	X						2	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by: Chris Irvin	Date/Time: 01/30/14 - 2010	Company: Golder	Received by:	Date/Time: 1/30/14 2010	Company: Golder
Relinquished by:	Date/Time: 1/31/14 - 1112	Company	Received by:	Date/Time: 1/31/14 1112	Company: TA
Relinquished by:	Date/Time: 1/31/14 1317	Company: TA	Received by:	Date/Time: 1/31/14 1019	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler:	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-25573-9017.4
Client Contact: Christina Higginbotham	Phone:	E-Mail: dean.joiner@testamericainc.com		Page: Page 2 of 2
Company: Golder Associates Inc.				Job #:
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 WD TRRP			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide Recycling Center - Water	Project #:			
Site:	SSOW#:			

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C_LL - (MOD) Target Compound List	8270C_LL - PAH	8260B - Target Compound List	TX_1005 - TPH	*** TX_1006 - TPH (Hold For TPH 1005 results)	300.0_28D - Sulfate	6010B - Total Metals - Pb, Cd, As	6010B - Dissolved Metals - Pb, Cd, As	2 Metals - Pb, Cd, As	TOC					Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	A	A	A	N	D	D								
Duplicate-04	1-30-14		C	~~Water~~ solid											X	X					2	
2014-SED-024	1-30-13	1342	C	~~Water~~ solid											X	X					2	
2014-SED-025	1-30-13	1409	C	~~Water~~ solid											X	X					2	
			G	Water																		
			G	Water																		
			G	Water																		
			G	Water																		
			G	Water																		
			G	Water																		
			G	Water																		
			G	Water																		

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☒ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Chris Trevino	01/30/14 - 2010			1/30/14 2010	Golder
	1/31/14 - 1112			1/31/14 1112	TA
	1/31/14 1317	TA		2/8/14 1019	

Custody Seals Intact: Δ Yes Δ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

5/15/2014

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86460-1

Login Number: 86460

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.2
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

ANALYTICAL REPORT

Job Number: 600-86460-2

Job Description: Exide Recycling Center - Water

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, TX 77073

Attention: Christina Higginbotham

Approved for release.
Cathy L Upton
Project Management Assistant II
2/17/2014 12:27 PM

Designee for
Dean A Joiner, Project Manager II
6310 Rothway Street, Houston, TX, 77040
(713)690-4444
dean.joiner@testamericainc.com
02/17/2014

cc: Brett Forthaus
Mr. Jim Thomas

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Project Manager.

TestAmerica Houston Certifications and Approvals: TX NELAP T104704223-09A-TX, ARDEQ 88-0759, LADEQ 01967, OKDEQ 9503, UT DOH GULF

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Comments
No additional comments.

Receipt
The samples were received on 2/1/2014 10:19 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.2º C.

Geotechnical
No analytical or quality issues were noted.

METHOD SUMMARY

Client: Golder Associates Inc. Job Number: 600-86460-2

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Grain Size	TAL BUR	ASTM D422	

Lab References:

TAL BUR = TestAmerica Burlington

Method References:

ASTM = ASTM International

METHOD / ANALYST SUMMARY

Client: Golder Associates Inc.

Job Number: 600-86460-2

Method	Analyst	Analyst ID
ASTM D422	Degree, Steven L	SLD

SAMPLE SUMMARY

Client: Golder Associates Inc. Job Number: 600-86460-2

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
600-86460-5	2014-SED-019	Solid	01/30/2014 1004	02/01/2014 1019
600-86460-6	2014-SED-020	Solid	01/30/2014 1105	02/01/2014 1019
600-86460-7	2014-SED-021	Solid	01/30/2014 1157	02/01/2014 1019
600-86460-8	2014-SED-022	Solid	01/30/2014 1231	02/01/2014 1019
600-86460-9	2014-SED-023	Solid	01/30/2014 1310	02/01/2014 1019
600-86460-11	2014-SED-024	Solid	01/30/2014 1342	02/01/2014 1019
600-86460-12	2014-SED-025	Solid	01/30/2014 1409	02/01/2014 1019

SAMPLE RESULTS

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86460-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center - Water

Client Sample ID: 2014-SED-019

Lab Sample ID: 600-86460-5
Client Matrix: Solid

Date Sampled: 01/30/2014 10:04
Date Received: 02/01/2014 10:19

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	0.0						%	68281	02/07/2014 17:20	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	28.2						um	68281	02/07/2014 17:20	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68281	02/07/2014 17:20	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	18.2						um	68281	02/07/2014 17:20	1	SLD
Sand	STL00582	35.8						%	68281	02/07/2014 17:20	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68281	02/07/2014 17:20	1	SLD
Coarse Sand	STL00583	1.4						%	68281	02/07/2014 17:20	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	11.0						um	68281	02/07/2014 17:20	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68281	02/07/2014 17:20	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	7.9						um	68281	02/07/2014 17:20	1	SLD
Medium Sand	STL00584	10.7						%	68281	02/07/2014 17:20	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68281	02/07/2014 17:20	1	SLD
Fine Sand	STL00585	23.7						%	68281	02/07/2014 17:20	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.6						um	68281	02/07/2014 17:20	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68281	02/07/2014 17:20	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.0						um	68281	02/07/2014 17:20	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	100.0						% Passing	68281	02/07/2014 17:20	1	SLD
Silt	STL00586	31.7						%	68281	02/07/2014 17:20	1	SLD
Clay	STL00587	32.5						%	68281	02/07/2014 17:20	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	68281	02/07/2014 17:20	1	SLD
Sieve Size #4 - Percent Finer	STL01274	100.0						% Passing	68281	02/07/2014 17:20	1	SLD
Sieve Size #10 - Percent Finer	STL01268	98.6						% Passing	68281	02/07/2014 17:20	1	SLD
Sieve Size #20 - Percent Finer	STL01271	94.7						% Passing	68281	02/07/2014 17:20	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86460-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center - Water

Client Sample ID: 2014-SED-019

Lab Sample ID: 600-86460-5
Client Matrix: Solid

Date Sampled: 01/30/2014 10:04
Date Received: 02/01/2014 10:19

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	87.9						% Passing	68281	02/07/2014 17:20	1	SLD
Sieve Size #60 - Percent Finer	STL01276	80.2						% Passing	68281	02/07/2014 17:20	1	SLD
Sieve Size #80 - Percent Finer	STL01277	76.6						% Passing	68281	02/07/2014 17:20	1	SLD
Sieve Size #100 - Percent Finer	STL01269	74.0						% Passing	68281	02/07/2014 17:20	1	SLD
Sieve Size #200 - Percent Finer	STL01272	64.2						% Passing	68281	02/07/2014 17:20	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	49.2						% Passing	68281	02/07/2014 17:20	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	46.2						% Passing	68281	02/07/2014 17:20	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	40.4						% Passing	68281	02/07/2014 17:20	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	37.4						% Passing	68281	02/07/2014 17:20	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	32.5						% Passing	68281	02/07/2014 17:20	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	27.6						% Passing	68281	02/07/2014 17:20	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	22.6						% Passing	68281	02/07/2014 17:20	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86460-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center - Water

Client Sample ID: 2014-SED-020

Lab Sample ID: 600-86460-6
Client Matrix: Solid

Date Sampled: 01/30/2014 11:05
Date Received: 02/01/2014 10:19

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	38.0						%	68281	02/07/2014 17:28	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	31.8						um	68281	02/07/2014 17:28	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68281	02/07/2014 17:28	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	20.5						um	68281	02/07/2014 17:28	1	SLD
Sand	STL00582	46.1						%	68281	02/07/2014 17:28	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68281	02/07/2014 17:28	1	SLD
Coarse Sand	STL00583	25.7						%	68281	02/07/2014 17:28	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.1						um	68281	02/07/2014 17:28	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68281	02/07/2014 17:28	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.5						um	68281	02/07/2014 17:28	1	SLD
Medium Sand	STL00584	17.3						%	68281	02/07/2014 17:28	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68281	02/07/2014 17:28	1	SLD
Fine Sand	STL00585	3.1						%	68281	02/07/2014 17:28	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.3						um	68281	02/07/2014 17:28	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	94.7						% Passing	68281	02/07/2014 17:28	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.1						um	68281	02/07/2014 17:28	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	80.1						% Passing	68281	02/07/2014 17:28	1	SLD
Silt	STL00586	5.9						%	68281	02/07/2014 17:28	1	SLD
Clay	STL00587	10.0						%	68281	02/07/2014 17:28	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	68281	02/07/2014 17:28	1	SLD
Sieve Size #4 - Percent Finer	STL01274	62.0						% Passing	68281	02/07/2014 17:28	1	SLD
Sieve Size #10 - Percent Finer	STL01268	36.3						% Passing	68281	02/07/2014 17:28	1	SLD
Sieve Size #20 - Percent Finer	STL01271	22.6						% Passing	68281	02/07/2014 17:28	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86460-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center - Water

Client Sample ID: 2014-SED-020

Lab Sample ID: 600-86460-6
Client Matrix: Solid

Date Sampled: 01/30/2014 11:05
Date Received: 02/01/2014 10:19

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	19.0						% Passing	68281	02/07/2014 17:28	1	SLD
Sieve Size #60 - Percent Finer	STL01276	17.9						% Passing	68281	02/07/2014 17:28	1	SLD
Sieve Size #80 - Percent Finer	STL01277	17.4						% Passing	68281	02/07/2014 17:28	1	SLD
Sieve Size #100 - Percent Finer	STL01269	17.0						% Passing	68281	02/07/2014 17:28	1	SLD
Sieve Size #200 - Percent Finer	STL01272	15.9						% Passing	68281	02/07/2014 17:28	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	14.5						% Passing	68281	02/07/2014 17:28	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	13.2						% Passing	68281	02/07/2014 17:28	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	11.4						% Passing	68281	02/07/2014 17:28	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	10.9						% Passing	68281	02/07/2014 17:28	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	10.0						% Passing	68281	02/07/2014 17:28	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	9.1						% Passing	68281	02/07/2014 17:28	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	7.7						% Passing	68281	02/07/2014 17:28	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86460-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center - Water

Client Sample ID: 2014-SED-021

Lab Sample ID: 600-86460-7
Client Matrix: Solid

Date Sampled: 01/30/2014 11:57
Date Received: 02/01/2014 10:19

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	18.0						%	68281	02/07/2014 18:32	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	34.0						um	68281	02/07/2014 18:32	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68281	02/07/2014 18:32	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	21.6						um	68281	02/07/2014 18:32	1	SLD
Sand	STL00582	63.1						%	68281	02/07/2014 18:32	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68281	02/07/2014 18:32	1	SLD
Coarse Sand	STL00583	21.9						%	68281	02/07/2014 18:32	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.6						um	68281	02/07/2014 18:32	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68281	02/07/2014 18:32	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.0						um	68281	02/07/2014 18:32	1	SLD
Medium Sand	STL00584	37.7						%	68281	02/07/2014 18:32	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68281	02/07/2014 18:32	1	SLD
Fine Sand	STL00585	3.5						%	68281	02/07/2014 18:32	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.5						um	68281	02/07/2014 18:32	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68281	02/07/2014 18:32	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.1						um	68281	02/07/2014 18:32	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	92.8						% Passing	68281	02/07/2014 18:32	1	SLD
Silt	STL00586	12.1						%	68281	02/07/2014 18:32	1	SLD
Clay	STL00587	6.8						%	68281	02/07/2014 18:32	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	68281	02/07/2014 18:32	1	SLD
Sieve Size #4 - Percent Finer	STL01274	82.0						% Passing	68281	02/07/2014 18:32	1	SLD
Sieve Size #10 - Percent Finer	STL01268	60.1						% Passing	68281	02/07/2014 18:32	1	SLD
Sieve Size #20 - Percent Finer	STL01271	37.1						% Passing	68281	02/07/2014 18:32	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86460-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center - Water

Client Sample ID: 2014-SED-021

Lab Sample ID: 600-86460-7
Client Matrix: Solid

Date Sampled: 01/30/2014 11:57
Date Received: 02/01/2014 10:19

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	22.4						% Passing	68281	02/07/2014 18:32	1	SLD
Sieve Size #60 - Percent Finer	STL01276	19.8						% Passing	68281	02/07/2014 18:32	1	SLD
Sieve Size #80 - Percent Finer	STL01277	19.5						% Passing	68281	02/07/2014 18:32	1	SLD
Sieve Size #100 - Percent Finer	STL01269	19.4						% Passing	68281	02/07/2014 18:32	1	SLD
Sieve Size #200 - Percent Finer	STL01272	18.9						% Passing	68281	02/07/2014 18:32	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	9.9						% Passing	68281	02/07/2014 18:32	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	9.4						% Passing	68281	02/07/2014 18:32	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	8.4						% Passing	68281	02/07/2014 18:32	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	7.9						% Passing	68281	02/07/2014 18:32	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	6.8						% Passing	68281	02/07/2014 18:32	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	5.8						% Passing	68281	02/07/2014 18:32	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	4.2						% Passing	68281	02/07/2014 18:32	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86460-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center - Water

Client Sample ID: 2014-SED-022

Lab Sample ID: 600-86460-8
Client Matrix: Solid

Date Sampled: 01/30/2014 12:31
Date Received: 02/01/2014 10:19

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	0.0						%	68281	02/07/2014 18:35	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	28.4						um	68281	02/07/2014 18:35	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68281	02/07/2014 18:35	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	18.5						um	68281	02/07/2014 18:35	1	SLD
Sand	STL00582	21.7						%	68281	02/07/2014 18:35	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68281	02/07/2014 18:35	1	SLD
Coarse Sand	STL00583	0.0						%	68281	02/07/2014 18:35	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	10.9						um	68281	02/07/2014 18:35	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68281	02/07/2014 18:35	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	7.9						um	68281	02/07/2014 18:35	1	SLD
Medium Sand	STL00584	3.4						%	68281	02/07/2014 18:35	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68281	02/07/2014 18:35	1	SLD
Fine Sand	STL00585	18.3						%	68281	02/07/2014 18:35	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	5.7						um	68281	02/07/2014 18:35	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68281	02/07/2014 18:35	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	2.8						um	68281	02/07/2014 18:35	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	100.0						% Passing	68281	02/07/2014 18:35	1	SLD
Silt	STL00586	30.0						%	68281	02/07/2014 18:35	1	SLD
Clay	STL00587	48.3						%	68281	02/07/2014 18:35	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.2						um	68281	02/07/2014 18:35	1	SLD
Sieve Size #4 - Percent Finer	STL01274	100.0						% Passing	68281	02/07/2014 18:35	1	SLD
Sieve Size #10 - Percent Finer	STL01268	100.0						% Passing	68281	02/07/2014 18:35	1	SLD
Sieve Size #20 - Percent Finer	STL01271	99.0						% Passing	68281	02/07/2014 18:35	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86460-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center - Water

Client Sample ID: 2014-SED-022

Lab Sample ID: 600-86460-8
Client Matrix: Solid

Date Sampled: 01/30/2014 12:31
Date Received: 02/01/2014 10:19

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	96.6						% Passing	68281	02/07/2014 18:35	1	SLD
Sieve Size #60 - Percent Finer	STL01276	92.2						% Passing	68281	02/07/2014 18:35	1	SLD
Sieve Size #80 - Percent Finer	STL01277	89.1						% Passing	68281	02/07/2014 18:35	1	SLD
Sieve Size #100 - Percent Finer	STL01269	86.7						% Passing	68281	02/07/2014 18:35	1	SLD
Sieve Size #200 - Percent Finer	STL01272	78.3						% Passing	68281	02/07/2014 18:35	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	64.4						% Passing	68281	02/07/2014 18:35	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	59.0						% Passing	68281	02/07/2014 18:35	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	55.0						% Passing	68281	02/07/2014 18:35	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	51.0						% Passing	68281	02/07/2014 18:35	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	48.3						% Passing	68281	02/07/2014 18:35	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	41.6						% Passing	68281	02/07/2014 18:35	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	35.0						% Passing	68281	02/07/2014 18:35	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86460-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center - Water

Client Sample ID: 2014-SED-023

Lab Sample ID: 600-86460-9
Client Matrix: Solid

Date Sampled: 01/30/2014 13:10
Date Received: 02/01/2014 10:19

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	60.8						%	68281	02/07/2014 18:38	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	35.2						um	68281	02/07/2014 18:38	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68281	02/07/2014 18:38	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	22.4						um	68281	02/07/2014 18:38	1	SLD
Sand	STL00582	25.7						%	68281	02/07/2014 18:38	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68281	02/07/2014 18:38	1	SLD
Coarse Sand	STL00583	14.1						%	68281	02/07/2014 18:38	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.9						um	68281	02/07/2014 18:38	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68281	02/07/2014 18:38	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.3						um	68281	02/07/2014 18:38	1	SLD
Medium Sand	STL00584	9.4						%	68281	02/07/2014 18:38	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68281	02/07/2014 18:38	1	SLD
Fine Sand	STL00585	2.2						%	68281	02/07/2014 18:38	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.6						um	68281	02/07/2014 18:38	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68281	02/07/2014 18:38	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.3						um	68281	02/07/2014 18:38	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	68.0						% Passing	68281	02/07/2014 18:38	1	SLD
Silt	STL00586	12.1						%	68281	02/07/2014 18:38	1	SLD
Clay	STL00587	1.4						%	68281	02/07/2014 18:38	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.4						um	68281	02/07/2014 18:38	1	SLD
Sieve Size #4 - Percent Finer	STL01274	39.2						% Passing	68281	02/07/2014 18:38	1	SLD
Sieve Size #10 - Percent Finer	STL01268	25.1						% Passing	68281	02/07/2014 18:38	1	SLD
Sieve Size #20 - Percent Finer	STL01271	19.0						% Passing	68281	02/07/2014 18:38	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86460-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center - Water

Client Sample ID: 2014-SED-023

Lab Sample ID: 600-86460-9
Client Matrix: Solid

Date Sampled: 01/30/2014 13:10
Date Received: 02/01/2014 10:19

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	15.7						% Passing	68281	02/07/2014 18:38	1	SLD
Sieve Size #60 - Percent Finer	STL01276	14.3						% Passing	68281	02/07/2014 18:38	1	SLD
Sieve Size #80 - Percent Finer	STL01277	13.9						% Passing	68281	02/07/2014 18:38	1	SLD
Sieve Size #100 - Percent Finer	STL01269	13.8						% Passing	68281	02/07/2014 18:38	1	SLD
Sieve Size #200 - Percent Finer	STL01272	13.5						% Passing	68281	02/07/2014 18:38	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	2.5						% Passing	68281	02/07/2014 18:38	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	2.1						% Passing	68281	02/07/2014 18:38	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	2.1						% Passing	68281	02/07/2014 18:38	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	2.1						% Passing	68281	02/07/2014 18:38	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	1.4						% Passing	68281	02/07/2014 18:38	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	1.2						% Passing	68281	02/07/2014 18:38	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	1.1						% Passing	68281	02/07/2014 18:38	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86460-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center - Water

Client Sample ID: 2014-SED-024

Lab Sample ID: 600-86460-11
Client Matrix: Solid

Date Sampled: 01/30/2014 13:42
Date Received: 02/01/2014 10:19

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	48.9						%	68281	02/07/2014 18:41	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	33.4						um	68281	02/07/2014 18:41	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68281	02/07/2014 18:41	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	21.3						um	68281	02/07/2014 18:41	1	SLD
Sand	STL00582	38.6						%	68281	02/07/2014 18:41	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68281	02/07/2014 18:41	1	SLD
Coarse Sand	STL00583	24.7						%	68281	02/07/2014 18:41	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.4						um	68281	02/07/2014 18:41	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68281	02/07/2014 18:41	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	9.0						um	68281	02/07/2014 18:41	1	SLD
Medium Sand	STL00584	8.0						%	68281	02/07/2014 18:41	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68281	02/07/2014 18:41	1	SLD
Fine Sand	STL00585	5.9						%	68281	02/07/2014 18:41	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.1						um	68281	02/07/2014 18:41	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68281	02/07/2014 18:41	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.2						um	68281	02/07/2014 18:41	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	79.7						% Passing	68281	02/07/2014 18:41	1	SLD
Silt	STL00586	7.6						%	68281	02/07/2014 18:41	1	SLD
Clay	STL00587	4.9						%	68281	02/07/2014 18:41	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	68281	02/07/2014 18:41	1	SLD
Sieve Size #4 - Percent Finer	STL01274	51.1						% Passing	68281	02/07/2014 18:41	1	SLD
Sieve Size #10 - Percent Finer	STL01268	26.4						% Passing	68281	02/07/2014 18:41	1	SLD
Sieve Size #20 - Percent Finer	STL01271	20.6						% Passing	68281	02/07/2014 18:41	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86460-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center - Water

Client Sample ID: 2014-SED-024

Lab Sample ID: 600-86460-11
Client Matrix: Solid

Date Sampled: 01/30/2014 13:42
Date Received: 02/01/2014 10:19

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	18.4						% Passing	68281	02/07/2014 18:41	1	SLD
Sieve Size #60 - Percent Finer	STL01276	16.4						% Passing	68281	02/07/2014 18:41	1	SLD
Sieve Size #80 - Percent Finer	STL01277	15.1						% Passing	68281	02/07/2014 18:41	1	SLD
Sieve Size #100 - Percent Finer	STL01269	14.3						% Passing	68281	02/07/2014 18:41	1	SLD
Sieve Size #200 - Percent Finer	STL01272	12.5						% Passing	68281	02/07/2014 18:41	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	7.3						% Passing	68281	02/07/2014 18:41	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	6.5						% Passing	68281	02/07/2014 18:41	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	5.7						% Passing	68281	02/07/2014 18:41	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	5.3						% Passing	68281	02/07/2014 18:41	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	4.9						% Passing	68281	02/07/2014 18:41	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	3.8						% Passing	68281	02/07/2014 18:41	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	2.9						% Passing	68281	02/07/2014 18:41	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86460-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center - Water

Client Sample ID: 2014-SED-025

Lab Sample ID: 600-86460-12
Client Matrix: Solid

Date Sampled: 01/30/2014 14:09
Date Received: 02/01/2014 10:19

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Method: ASTM D422,Solid										Dry Weight Corrected?:		N
Gravel	STL00581	40.3						%	68281	02/07/2014 18:43	1	SLD
Hydrometer Reading 1 - Particle Size	STL01494	33.0						um	68281	02/07/2014 18:43	1	SLD
Sieve Size 3 inch - Percent Finer	STL01283	100.0						% Passing	68281	02/07/2014 18:43	1	SLD
Hydrometer Reading 2 - Particle Size	STL01495	21.0						um	68281	02/07/2014 18:43	1	SLD
Sand	STL00582	43.5						%	68281	02/07/2014 18:43	1	SLD
Sieve Size 2 inch - Percent Finer	STL01282	100.0						% Passing	68281	02/07/2014 18:43	1	SLD
Coarse Sand	STL00583	32.8						%	68281	02/07/2014 18:43	1	SLD
Hydrometer Reading 3 - Particle Size	STL01496	12.2						um	68281	02/07/2014 18:43	1	SLD
Sieve Size 1.5 inch - Percent Finer	STL01281	100.0						% Passing	68281	02/07/2014 18:43	1	SLD
Hydrometer Reading 4 - Particle Size	STL01497	8.6						um	68281	02/07/2014 18:43	1	SLD
Medium Sand	STL00584	5.9						%	68281	02/07/2014 18:43	1	SLD
Sieve Size 1 inch - Percent Finer	STL01280	100.0						% Passing	68281	02/07/2014 18:43	1	SLD
Fine Sand	STL00585	4.8						%	68281	02/07/2014 18:43	1	SLD
Hydrometer Reading 5 - Particle Size	STL01498	6.2						um	68281	02/07/2014 18:43	1	SLD
Sieve Size 0.75 inch - Percent Finer	STL01279	100.0						% Passing	68281	02/07/2014 18:43	1	SLD
Hydrometer Reading 6 - Particle Size	STL01499	3.2						um	68281	02/07/2014 18:43	1	SLD
Sieve Size 0.375 inch - Percent Finer	STL01278	88.0						% Passing	68281	02/07/2014 18:43	1	SLD
Silt	STL00586	10.7						%	68281	02/07/2014 18:43	1	SLD
Clay	STL00587	5.5						%	68281	02/07/2014 18:43	1	SLD
Hydrometer Reading 7 - Particle Size	STL01500	1.3						um	68281	02/07/2014 18:43	1	SLD
Sieve Size #4 - Percent Finer	STL01274	59.7						% Passing	68281	02/07/2014 18:43	1	SLD
Sieve Size #10 - Percent Finer	STL01268	26.9						% Passing	68281	02/07/2014 18:43	1	SLD
Sieve Size #20 - Percent Finer	STL01271	23.0						% Passing	68281	02/07/2014 18:43	1	SLD

Golder Associates Inc.
ATTN: Christina Higginbotham

Job Number: 600-86460-2
Project: Exide Recycling Center, Frisco TX Projec
SDG Number: Exide Recycling Center - Water

Client Sample ID: 2014-SED-025

Lab Sample ID: 600-86460-12
Client Matrix: Solid

Date Sampled: 01/30/2014 14:09
Date Received: 02/01/2014 10:19

Test Method	CAS Number	Result	Q	Flag	MDL	MQL	SDL	Unit	Batch	Analysis Date/Time	D.F.	Analyst
Sieve Size #40 - Percent Finer	STL01275	21.0						% Passing	68281	02/07/2014 18:43	1	SLD
Sieve Size #60 - Percent Finer	STL01276	18.7						% Passing	68281	02/07/2014 18:43	1	SLD
Sieve Size #80 - Percent Finer	STL01277	17.7						% Passing	68281	02/07/2014 18:43	1	SLD
Sieve Size #100 - Percent Finer	STL01269	17.2						% Passing	68281	02/07/2014 18:43	1	SLD
Sieve Size #200 - Percent Finer	STL01272	16.2						% Passing	68281	02/07/2014 18:43	1	SLD
Hydrometer Reading 1 - Percent Finer	STL01284	8.4						% Passing	68281	02/07/2014 18:43	1	SLD
Hydrometer Reading 2 - Percent Finer	STL01285	8.0						% Passing	68281	02/07/2014 18:43	1	SLD
Hydrometer Reading 3 - Percent Finer	STL01286	7.2						% Passing	68281	02/07/2014 18:43	1	SLD
Hydrometer Reading 4 - Percent Finer	STL01287	6.3						% Passing	68281	02/07/2014 18:43	1	SLD
Hydrometer Reading 5 - Percent Finer	STL01288	5.5						% Passing	68281	02/07/2014 18:43	1	SLD
Hydrometer Reading 6 - Percent Finer	STL01290	4.8						% Passing	68281	02/07/2014 18:43	1	SLD
Hydrometer Reading 7 - Percent Finer	STL01291	3.9						% Passing	68281	02/07/2014 18:43	1	SLD

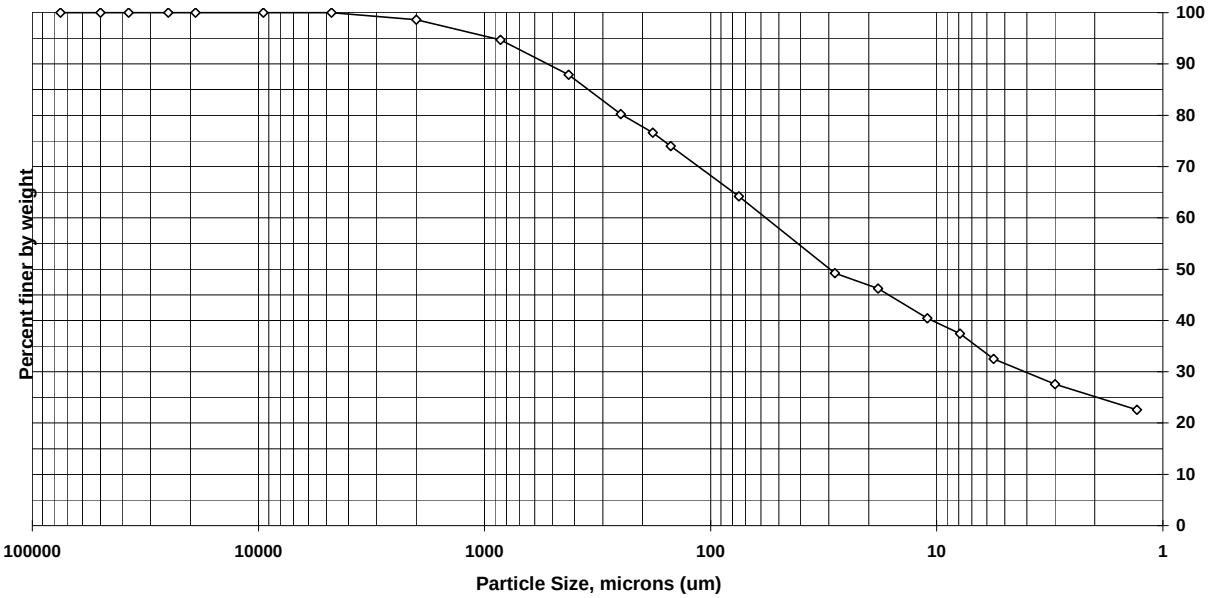
Particle Size of Soils by ASTM D422

				Date Received:	2/1/2014
Sample ID:	2014-SED-019	**Percent Solids:**	72.1%	**Start Date:**	2/7/2014
Lab ID:	600-86460-C-5	**Specific Gravity:**	2.650	**End Date:**	2/12/2014

Shape (> #10): angular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	98.6	1.4
#20	850	94.7	3.9
#40	425	87.9	6.8
#60	250	80.2	7.7
#80	180	76.6	3.6
#100	150	74.0	2.6
#200	75	64.2	9.8
Hyd1	28.2	49.2	15.0
Hyd2	18.2	46.2	3.0
Hyd3	11	40.4	5.8
Hyd4	7.9	37.4	3.0
Hyd5	5.6	32.5	4.9
Hyd6	3	27.6	4.9
Hyd7	1.3	22.6	5.0

Soil Classification	Percent of sample
Gravel	0.0
Sand	35.8
Coarse Sand	1.4
Medium Sand	10.7
Fine Sand	23.7
Silt	31.7
Clay	32.5

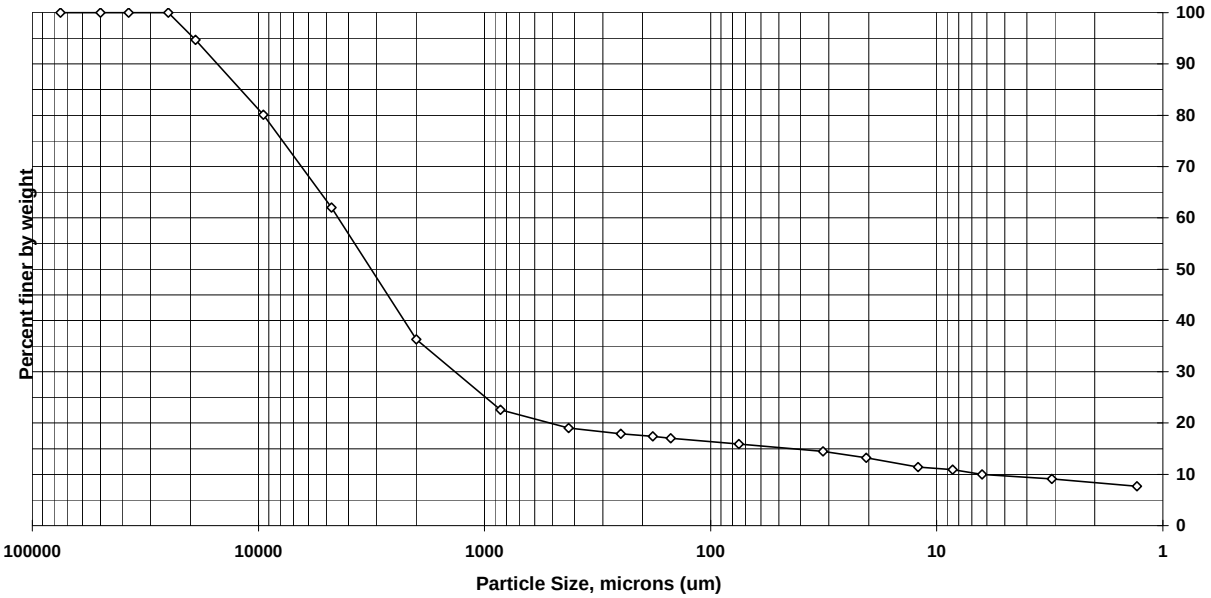
Particle Size of Soils by ASTM D422

				Date Received:	2/1/2014
Sample ID:	2014-SED-020	**Percent Solids:**	79.0%	**Start Date:**	2/7/2014
Lab ID:	600-86460-C-6	**Specific Gravity:**	2.650	**End Date:**	2/12/2014

Shape (> #10): angular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	94.7	5.3
3/8 inch	9500	80.1	14.6
#4	4750	62.0	18.1
#10	2000	36.3	25.7
#20	850	22.6	13.7
#40	425	19.0	3.6
#60	250	17.9	1.1
#80	180	17.4	0.5
#100	150	17.0	0.4
#200	75	15.9	1.1
Hyd1	31.8	14.5	1.4
Hyd2	20.5	13.2	1.3
Hyd3	12.1	11.4	1.8
Hyd4	8.5	10.9	0.5
Hyd5	6.3	10.0	0.9
Hyd6	3.1	9.1	0.9
Hyd7	1.3	7.7	1.4

Soil Classification	Percent of sample
Gravel	38.0
Sand	46.1
Coarse Sand	25.7
Medium Sand	17.3
Fine Sand	3.1
Silt	5.9
Clay	10.0

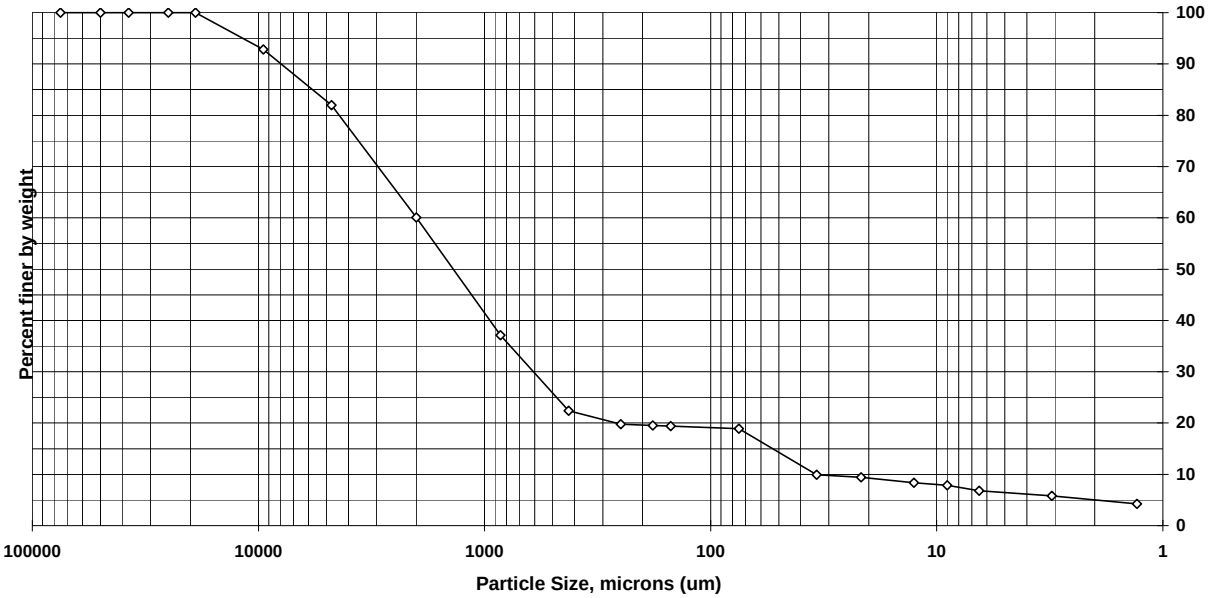
Particle Size of Soils by ASTM D422

				Date Received:	2/1/2014
Sample ID:	2014-SED-021	**Percent Solids:**	79.0%	**Start Date:**	2/7/2014
Lab ID:	600-86460-C-7	**Specific Gravity:**	2.650	**End Date:**	2/12/2014

Shape (> #10): angular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	92.8	7.2
#4	4750	82.0	10.8
#10	2000	60.1	21.9
#20	850	37.1	23.0
#40	425	22.4	14.7
#60	250	19.8	2.6
#80	180	19.5	0.3
#100	150	19.4	0.1
#200	75	18.9	0.5
Hyd1	34	9.9	9.0
Hyd2	21.6	9.4	0.5
Hyd3	12.6	8.4	1.0
Hyd4	9	7.9	0.5
Hyd5	6.5	6.8	1.0
Hyd6	3.1	5.8	1.0
Hyd7	1.3	4.2	1.6

Soil Classification	Percent of sample
Gravel	18.0
Sand	63.1
Coarse Sand	21.9
Medium Sand	37.7
Fine Sand	3.5
Silt	12.1
Clay	6.8

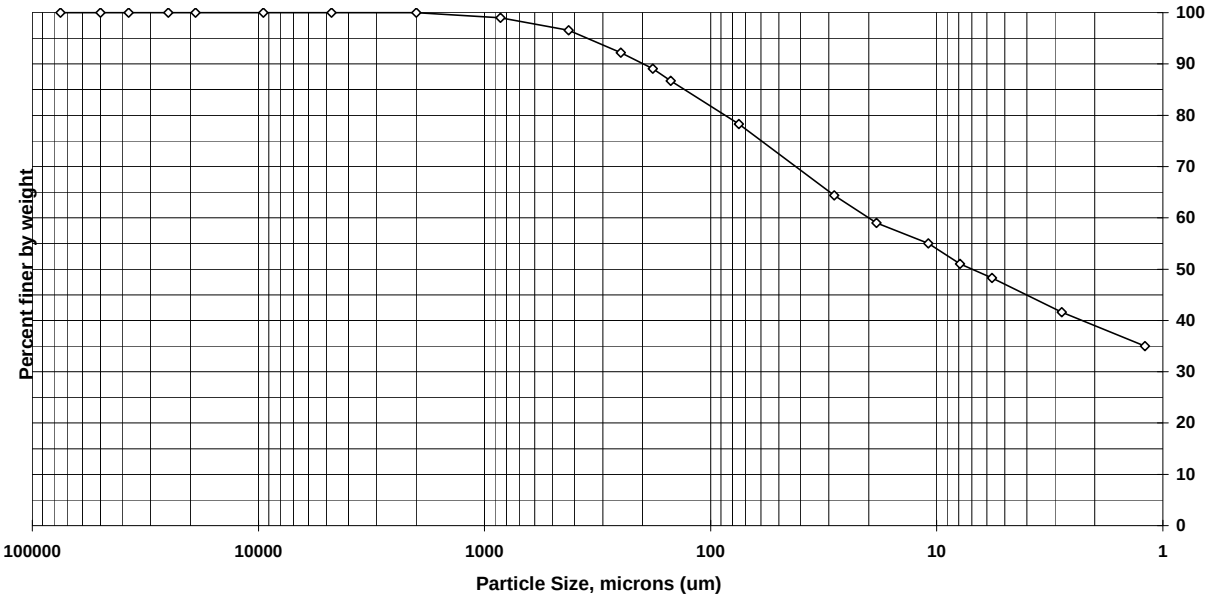
Particle Size of Soils by ASTM D422

				Date Received:	2/1/2014
Sample ID:	2014-SED-022	**Percent Solids:**	70.2%	**Start Date:**	2/7/2014
Lab ID:	600-86460-C-8	**Specific Gravity:**	2.650	**End Date:**	2/12/2014

Shape (> #10): n/a

Non-soil material: n/a

Hardness (> #10): n/a



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	100.0	0.0
#20	850	99.0	1.0
#40	425	96.6	2.4
#60	250	92.2	4.4
#80	180	89.1	3.1
#100	150	86.7	2.4
#200	75	78.3	8.4
Hyd1	28.4	64.4	13.9
Hyd2	18.5	59.0	5.4
Hyd3	10.9	55.0	4.0
Hyd4	7.9	51.0	4.0
Hyd5	5.7	48.3	2.7
Hyd6	2.8	41.6	6.7
Hyd7	1.2	35.0	6.6

Soil Classification	Percent of sample
Gravel	0.0
Sand	21.7
Coarse Sand	0.0
Medium Sand	3.4
Fine Sand	18.3
Silt	30.0
Clay	48.3

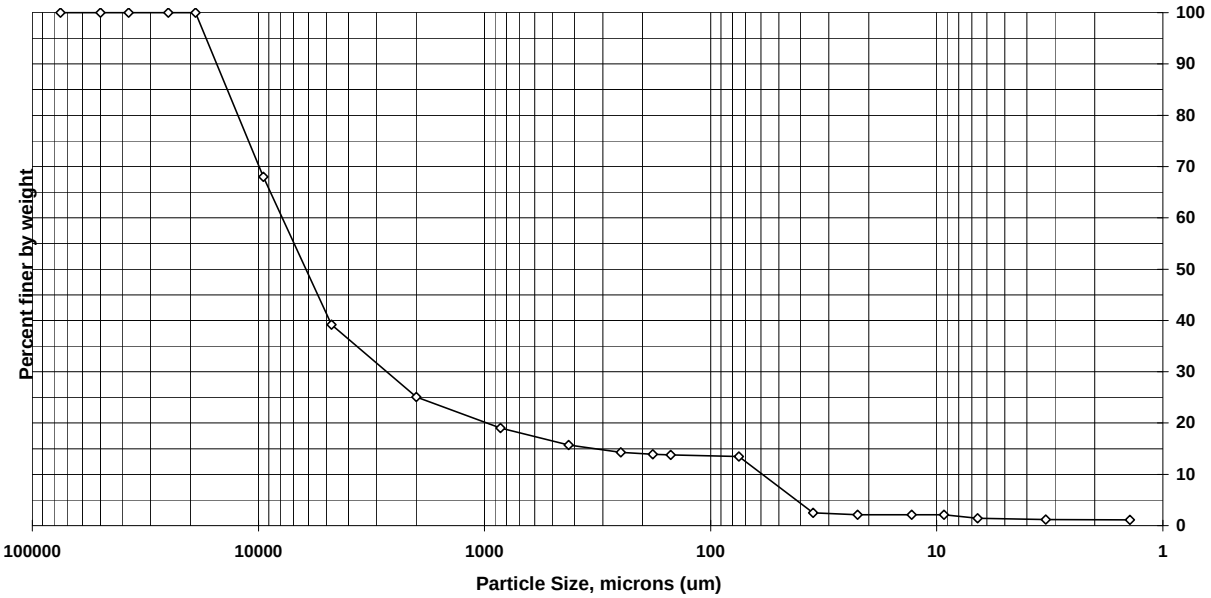
Particle Size of Soils by ASTM D422

				Date Received:	2/1/2014
Sample ID:	2014-SED-023	**Percent Solids:**	87.8%	**Start Date:**	2/7/2014
Lab ID:	600-86460-C-9	**Specific Gravity:**	2.650	**End Date:**	2/12/2014

Shape (> #10): subrounded

Non-soil material: shell

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	68.0	32.0
#4	4750	39.2	28.8
#10	2000	25.1	14.1
#20	850	19.0	6.1
#40	425	15.7	3.3
#60	250	14.3	1.4
#80	180	13.9	0.4
#100	150	13.8	0.1
#200	75	13.5	0.3
Hyd1	35.2	2.5	11.0
Hyd2	22.4	2.1	0.4
Hyd3	12.9	2.1	0.0
Hyd4	9.3	2.1	0.0
Hyd5	6.6	1.4	0.7
Hyd6	3.3	1.2	0.2
Hyd7	1.4	1.1	0.1

Soil Classification	Percent of sample
Gravel	60.8
Sand	25.7
Coarse Sand	14.1
Medium Sand	9.4
Fine Sand	2.2
Silt	12.1
Clay	1.4

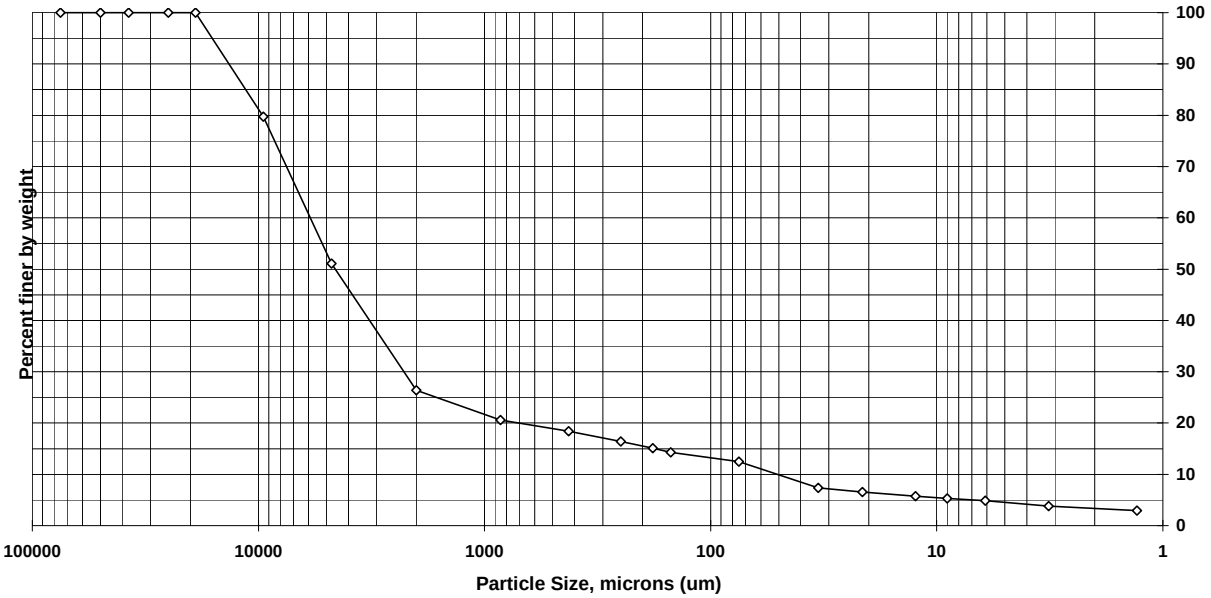
Particle Size of Soils by ASTM D422

				Date Received:	2/1/2014
Sample ID:	2014-SED-024	**Percent Solids:**	81.4%	**Start Date:**	2/7/2014
Lab ID:	600-86460-C-11	**Specific Gravity:**	2.650	**End Date:**	2/12/2014

Shape (> #10): subrounded

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	79.7	20.3
#4	4750	51.1	28.6
#10	2000	26.4	24.7
#20	850	20.6	5.8
#40	425	18.4	2.2
#60	250	16.4	2.0
#80	180	15.1	1.3
#100	150	14.3	0.8
#200	75	12.5	1.8
Hyd1	33.4	7.3	5.2
Hyd2	21.3	6.5	0.8
Hyd3	12.4	5.7	0.8
Hyd4	9	5.3	0.4
Hyd5	6.1	4.9	0.4
Hyd6	3.2	3.8	1.1
Hyd7	1.3	2.9	0.9

Soil Classification	Percent of sample
Gravel	48.9
Sand	38.6
Coarse Sand	24.7
Medium Sand	8.0
Fine Sand	5.9
Silt	7.6
Clay	4.9

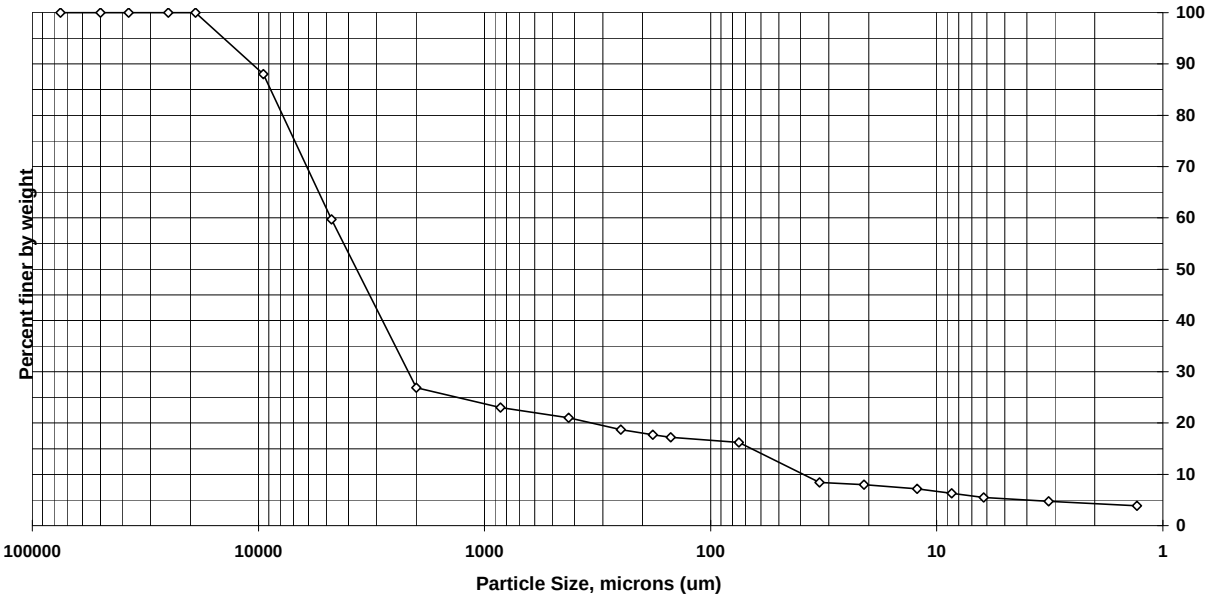
Particle Size of Soils by ASTM D422

				Date Received:	2/1/2014
Sample ID:	2014-SED-025	**Percent Solids:**	84.5%	**Start Date:**	2/7/2014
Lab ID:	600-86460-C-12	**Specific Gravity:**	2.650	**End Date:**	2/12/2014

Shape (> #10): subangular

Non-soil material: n/a

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	88.0	12.0
#4	4750	59.7	28.3
#10	2000	26.9	32.8
#20	850	23.0	3.9
#40	425	21.0	2.0
#60	250	18.7	2.3
#80	180	17.7	1.0
#100	150	17.2	0.5
#200	75	16.2	1.0
Hyd1	33	8.4	7.8
Hyd2	21	8.0	0.4
Hyd3	12.2	7.2	0.8
Hyd4	8.6	6.3	0.8
Hyd5	6.2	5.5	0.8
Hyd6	3.2	4.8	0.7
Hyd7	1.3	3.9	0.9

Soil Classification	Percent of sample
Gravel	40.3
Sand	43.5
Coarse Sand	32.8
Medium Sand	5.9
Fine Sand	4.8
Silt	10.7
Clay	5.5

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-019
Lab Sample ID	600-86460-C-5

Date Received	2/1/2014
Start Date	02/07/2014 17:20
End Date	02/12/2014 15:00

Dry Weight Determination

Tin Weight	1.00	g
Wet Sample + Tin	31.30	g
Dry Sample + Tin	22.85	g
% Moisture	27.89	%

Non-soil material:	n/a
Shape (> #10):	angular
Hardness (> #10):	hard

Date/Time in oven	02/07/2014 17:27
Date/Time out of oven	02/10/2014 17:11

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		113.55	113.55
Sample Weight (Oven Dried)			81.9

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			1.15
Sample <#10			80.8
% Passing #10			71.2

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000	462.84	463.99	1.15	g	98.6	Sand	Coarse
#20	850	380.93	384.11	3.18	g	94.7	Sand	Medium
#40	425	353.87	359.41	5.54	g	87.9	Sand	Medium
#60	250	350.53	356.87	6.34	g	80.2	Sand	Fine
#80	180	338.86	341.79	2.93	g	76.6	Sand	Fine
#100	150	330.37	332.52	2.15	g	74.0	Sand	Fine
#200	75	306.13	314.15	8.02	g	64.2	Sand	Fine
				0.00	g	64.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	81.9

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0290	20.5	28.2	49.2	Silt	
5	5	1.0275	20.5	18.2	46.2	Silt	
15	15	1.0245	20.5	11	40.4	Silt	
30	30	1.0230	20.5	7.9	37.4	Silt	
60	63	1.0205	20.5	5.6	32.5	Silt	
250	241	1.0180	20.5	3	27.6	Clay	
1440	1388	1.0155	20.0	1.3	22.6	Clay	

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Sediment Grain Size - D422

Client		Date Received	2/1/2014
Client Sample ID	2014-SED-020	Start Date	02/07/2014 17:28
Lab Sample ID	600-86460-C-6	End Date	02/12/2014 15:07

Dry Weight Determination

Tin Weight	1.00	g
Wet Sample + Tin	62.34	g
Dry Sample + Tin	49.48	g
% Moisture	20.97	%

Non-soil material:	n/a
Shape (> #10):	angular
Hardness (> #10):	hard

Date/Time in oven	02/07/2014 17:37
Date/Time out of oven	02/10/2014 17:11

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		225.70	225.7
Sample Weight (Oven Dried)			178

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			113
Sample <#10			65
% Passing #10			28.8

Hydrometer Data

Serial Number	531857
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000	457.82	467.25	9.43	g	94.7	Gravel	
3/8 inch	9500	447.33	473.23	25.90	g	80.1	Gravel	
#4	4750	488.18	520.38	32.20	g	62.0	Gravel	
#10	2000	462.84	508.59	45.75	g	36.3	Sand	Coarse
#20	850	389.71	414.01	24.30	g	22.6	Sand	Medium
#40	425	367.05	373.39	6.34	g	19.0	Sand	Medium
#60	250	345.79	347.76	1.97	g	17.9	Sand	Fine
#80	180	331.70	332.61	0.91	g	17.4	Sand	Fine
#100	150	335.53	336.24	0.71	g	17.0	Sand	Fine
#200	75	320.56	322.57	2.01	g	15.9	Sand	Fine
				0.00	g	15.9		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	178

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0200	20.5	31.8	14.5	Silt	
5	5	1.0185	20.5	20.5	13.2	Silt	
15	15	1.0165	20.5	12.1	11.4	Silt	
30	31	1.0160	20.5	8.5	10.9	Silt	
60	57	1.0150	20.5	6.3	10	Silt	
250	235	1.0140	20.5	3.1	9.1	Clay	
1440	1382	1.0125	20.0	1.3	7.67	Clay	

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Sediment Grain Size - D422

Client		Date Received	2/1/2014
Client Sample ID	2014-SED-021	Start Date	02/07/2014 18:32
Lab Sample ID	600-86460-C-7	End Date	02/12/2014 17:09

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	39.49	g
Dry Sample + Tin	31.42	g
% Moisture	20.97	%

Non-soil material:	n/a
Shape (> #10):	angular
Hardness (> #10):	hard

Date/Time in oven	02/07/2014 18:34
Date/Time out of oven	02/10/2014 17:11

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		196.33	196.33
Sample Weight (Oven Dried)			155

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			61.8
Sample <#10			93.2
% Passing #10			47.5

Hydrometer Data

Serial Number	540534
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0040
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007833333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.33	458.46	11.13	g	92.8	Gravel	
#4	4750	488.15	504.87	16.72	g	82.0	Gravel	
#10	2000	462.85	496.82	33.97	g	60.1	Sand	Coarse
#20	850	380.93	416.56	35.63	g	37.1	Sand	Medium
#40	425	353.87	376.60	22.73	g	22.4	Sand	Medium
#60	250	350.53	354.63	4.10	g	19.8	Sand	Fine
#80	180	338.86	339.29	0.43	g	19.5	Sand	Fine
#100	150	330.37	330.53	0.16	g	19.4	Sand	Fine
#200	75	306.13	306.96	0.83	g	18.9	Sand	Fine
				0.00	g	18.9		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	155

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0140	20.5	34	9.93	Silt	
5	5	1.0135	20.5	21.6	9.41	Silt	
15	15	1.0125	20.5	12.6	8.38	Silt	
30	30	1.0120	20.5	9	7.86	Silt	
60	59	1.0110	20.5	6.5	6.82	Silt	
250	256	1.0100	20.5	3.1	5.79	Clay	
1440	1440	1.0085	20.5	1.3	4.23	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-022
Lab Sample ID	600-86460-C-8

Date Received	2/1/2014
Start Date	02/07/2014 18:35
End Date	02/12/2014 17:24

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	31.98	g
Dry Sample + Tin	22.74	g
% Moisture	29.84	%

Non-soil material:	n/a
Shape (> #10):	n/a
Hardness (> #10):	n/a

Date/Time in oven	02/07/2014 18:37
Date/Time out of oven	02/10/2014 17:12

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		85.61	85.61
Sample Weight (Oven Dried)			60.1

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			0
Sample <#10			60.1
% Passing #10			70.2

Hydrometer Data

Serial Number	540534
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0040
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007833333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000			0.00	g	100.0	Sand	Coarse
#20	850	380.93	381.56	0.63	g	99.0	Sand	Medium
#40	425	353.87	355.31	1.44	g	96.6	Sand	Medium
#60	250	350.53	353.19	2.66	g	92.2	Sand	Fine
#80	180	338.86	340.72	1.86	g	89.1	Sand	Fine
#100	150	330.37	331.81	1.44	g	86.7	Sand	Fine
#200	75	306.13	311.18	5.05	g	78.3	Sand	Fine
				0.00	g	78.3		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	60.1

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0285	20.5	28.4	64.4	Silt	
5	5	1.0265	20.5	18.5	59	Silt	
15	15	1.0250	20.5	10.9	55	Silt	
30	30	1.0235	20.5	7.9	51	Silt	
60	58	1.0225	20.5	5.7	48.3	Silt	
250	256	1.0200	20.5	2.8	41.6	Clay	
1440	1440	1.0175	20.5	1.2	35	Clay	

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Sediment Grain Size - D422

Client		Date Received	2/1/2014
Client Sample ID	2014-SED-023	Start Date	02/07/2014 18:38
Lab Sample ID	600-86460-C-9	End Date	02/12/2014 17:27

Dry Weight Determination

Tin Weight	1.06	g
Wet Sample + Tin	37.70	g
Dry Sample + Tin	33.22	g
% Moisture	12.23	%

Non-soil material:	shell
Shape (> #10):	subrounded
Hardness (> #10):	hard

Date/Time in oven	02/07/2014 18:40
Date/Time out of oven	02/10/2014 17:12

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		258.43	258.43
Sample Weight (Oven Dried)			227

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			170
Sample <#10			57
% Passing #10			22.1

Hydrometer Data

Serial Number	540534
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0040
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007833333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.33	519.97	72.64	g	68.0	Gravel	
#4	4750	488.15	553.48	65.33	g	39.2	Gravel	
#10	2000	462.85	494.97	32.12	g	25.1	Sand	Coarse
#20	850	380.93	394.71	13.78	g	19.0	Sand	Medium
#40	425	353.87	361.25	7.38	g	15.7	Sand	Medium
#60	250	350.53	353.81	3.28	g	14.3	Sand	Fine
#80	180	338.86	339.72	0.86	g	13.9	Sand	Fine
#100	150	330.37	330.69	0.32	g	13.8	Sand	Fine
#200	75	306.13	306.83	0.70	g	13.5	Sand	Fine
				0.00	g	13.5		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	227

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0075	23.0	35.2	2.48	Silt	
5	5	1.0070	23.0	22.4	2.12	Silt	
15	15	1.0070	23.0	12.9	2.12	Silt	
30	29	1.0070	23.0	9.3	2.12	Silt	
60	58	1.0060	23.0	6.6	1.42	Silt	
250	250	1.0060	21.0	3.3	1.18	Clay	
1440	1434	1.0060	20.5	1.4	1.12	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-024
Lab Sample ID	600-86460-C-11

Date Received	2/1/2014
Start Date	02/07/2014 18:41
End Date	02/12/2014 18:08

Dry Weight Determination

Tin Weight	1.03	g
Wet Sample + Tin	57.02	g
Dry Sample + Tin	46.63	g
% Moisture	18.56	%

Non-soil material:	plant
Shape (> #10):	subrounded
Hardness (> #10):	hard

Date/Time in oven	02/07/2014 18:42
Date/Time out of oven	02/10/2014 17:12

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		241.74	241.74
Sample Weight (Oven Dried)			197

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			145
Sample <#10			52
% Passing #10			21.5

Hydrometer Data

Serial Number	540534
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0040
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007833333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.33	487.29	39.96	g	79.7	Gravel	
#4	4750	488.15	544.55	56.40	g	51.1	Gravel	
#10	2000	462.85	511.47	48.62	g	26.4	Sand	Coarse
#20	850	380.93	392.37	11.44	g	20.6	Sand	Medium
#40	425	353.87	358.29	4.42	g	18.4	Sand	Medium
#60	250	350.53	354.56	4.03	g	16.4	Sand	Fine
#80	180	338.86	341.39	2.53	g	15.1	Sand	Fine
#100	150	330.37	331.92	1.55	g	14.3	Sand	Fine
#200	75	306.13	309.66	3.53	g	12.5	Sand	Fine
				0.00	g	12.5		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	197

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0130	23.0	33.4	7.34	Silt	
5	5	1.0120	23.0	21.3	6.52	Silt	
15	15	1.0110	23.0	12.4	5.71	Silt	
30	29	1.0105	23.0	9	5.3	Silt	
60	63	1.0100	23.0	6.1	4.89	Silt	
250	250	1.0090	21.0	3.2	3.8	Clay	
1440	1434	1.0080	20.5	1.3	2.92	Clay	

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Sediment Grain Size - D422

Client	
Client Sample ID	2014-SED-025
Lab Sample ID	600-86460-C-12

Date Received	2/1/2014
Start Date	02/07/2014 18:43
End Date	02/12/2014 18:11

Dry Weight Determination

Tin Weight	1.00	g
Wet Sample + Tin	53.00	g
Dry Sample + Tin	44.93	g
% Moisture	15.52	%

Non-soil material:	n/a
Shape (> #10):	subangular
Hardness (> #10):	hard

Date/Time in oven	02/07/2014 18:45
Date/Time out of oven	02/10/2014 17:13

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)		225.77	225.77
Sample Weight (Oven Dried)			191

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			140
Sample <#10			51
% Passing #10			22.6

Hydrometer Data

Serial Number	540534
Calib. Date (mm/dd/yyyy)	03/12/2013
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0040
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007833333
Default Soil Gravity	2.6500

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
3 inch	75000			0.00	g	100.0	Gravel	
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.33	470.20	22.87	g	88.0	Gravel	
#4	4750	488.15	542.24	54.09	g	59.7	Gravel	
#10	2000	462.85	525.50	62.65	g	26.9	Sand	Coarse
#20	850	380.93	388.34	7.41	g	23.0	Sand	Medium
#40	425	353.87	357.66	3.79	g	21.0	Sand	Medium
#60	250	350.53	354.85	4.32	g	18.7	Sand	Fine
#80	180	338.86	340.75	1.89	g	17.7	Sand	Fine
#100	150	330.37	331.30	0.93	g	17.2	Sand	Fine
#200	75	306.13	308.08	1.95	g	16.2	Sand	Fine
				0.00	g	16.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	191

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0140	23.0	33	8.41	Silt	
5	5	1.0135	23.0	21	7.99	Silt	
15	15	1.0125	23.0	12.2	7.15	Silt	
30	31	1.0115	23.0	8.6	6.31	Silt	
60	60	1.0105	23.0	6.2	5.47	Silt	
250	240	1.0100	21.0	3.2	4.76	Clay	
1440	1424	1.0090	20.5	1.3	3.85	Clay	

DATA REPORTING QUALIFIERS

Lab Section	Qualifier	Description

QUALITY CONTROL RESULTS

Client: Golder Associates Inc.

Job Number: 600-86460-2

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Geotechnical					
Analysis Batch:200-68281					
600-86460-5	2014-SED-019	T	Solid	D422	
600-86460-6	2014-SED-020	T	Solid	D422	
600-86460-7	2014-SED-021	T	Solid	D422	
600-86460-8	2014-SED-022	T	Solid	D422	
600-86460-9	2014-SED-023	T	Solid	D422	
600-86460-11	2014-SED-024	T	Solid	D422	
600-86460-12	2014-SED-025	T	Solid	D422	

Report Basis

T = Total

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custo

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600-86460 Chain of Custody

Client Information	Sampler:	Lab PM: Joiner, Dean A
Client Contact: Christina Higginbotham	Phone:	E-Mail: dean.joiner@testamer
Company: Golder Associates Inc.		
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:	
City: Houston	TAT Requested (days): 5 WD TRRP	
State, Zip: TX, 77073		
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested	
Email: Christina_Higginbotham@golder.com	WO #:	
Project Name: Exide Recycling Center - Water	Project #:	
Site:	SSOW#:	

COC No: 600-25573-9017.4
Page: Page 1 of 2
Job #:

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C_LL - (MOD) Target Compound List	8270C_LL - PAH	8260B - Target Compound List	TX_1005 - TPH	*** TX_1006 - TPH (Hold For TPH 1005 results)	300.0_28D - Sulfate	6010B - Total Metals - Pb, Cd, As	6010B - Dissolved Metals - Pb, Cd, As	Metals - Pb, Cd, As	TOC						Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N	N	A	A	A	N	D	D	N	N						X	
2014-SW-006	1-30-14	1021	G	Water	X								X	X								2	
FIELD BLANK	"	1515	G	Water									X									1	
Equipment Blank - DREDGE	"	1501	G	Water					[redacted]				X			X						2	
Equipment Blank - Bowl	"	1506	G	Water					[redacted]				X			X						2	
2014-SED-019	"	1004	G	~~Water~~ solid											X	X						2	
2014-SED-019 MS	"	1004	G	~~Water~~ solid	X										X	X						2	
2014-SED-019 MSD	"	1004	G	~~Water~~ solid	X										X	X						2	
2014-SED-020	"	1105	G	~~Water~~ solid											X	X						2	
2014-SED-021	"	1157	G	~~Water~~ solid											X	X						2	
2014-SED-022	"	1231	G	~~Water~~ solid											X	X						2	
2014-SED-023	"	1310	G	~~Water~~ solid											X	X						2	

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Chris Irwin	01/30/14 - 2010	Golder	[signature]	1/30/14 2010	Golder
[signature]	1/31/14 - 1112	Company	[signature]	1/31/14 1112	TA
[signature]	1/31/14 1317	AL	[signature]	1/31/14 1019	Company

Custody Seals Intact: △ Yes △ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica
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Client Information	Sampler:	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-25573-9017.4
Client Contact: Christina Higginbotham	Phone:	E-Mail: dean.joiner@testamericainc.com		Page: Page 2 of 2
Company: Golder Associates Inc.				Job #:
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 WD TRRP			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide Recycling Center - Water	Project #:			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C_LL - (MOD) Target Compound List	8270C_LL - PAH	8260B - Target Compound List	TX_1005 - TPH	*** TX_1006 - TPH (Hold For TPH 1005 results)	300.0_28D - Sulfate	6010B - Total Metals - Pb, Cd, As	6010B - Dissolved Metals - Pb, Cd, As	Metals - Pb, Cd, As	TOC						Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	A	A	A	N	D	D	N	Z							
Duplicate-04	1-30-14		C	~~Water~~ solid											X	X						2	
2014-SED-024	1-30-13	1342	C	~~Water~~ solid											X	X						2	
2014-SED-025	1-30-13	1409	C	~~Water~~ solid											X	X						2	
			G	Water																			
			G	Water																			
			G	Water																			
			G	Water																			
			G	Water																			
			G	Water																			
			G	Water																			
			G	Water																			

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☒ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

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

	Date/Time	Company		Date/Time	Company
Relinquished by: Kris Trevino	01/30/14 - 2010		Received by:	1/30/14 2010	Golder
Relinquished by:	1/31/14 - 1112		Received by:	1/31/14 1112	TA
Relinquished by:	1/31/14 1317	TA	Received by:	2/8/14 1019	

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86460-2

Login Number: 86460

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.2
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86460-2

Login Number: 86460
List Number: 1
Creator: Marion, Greg T

List Source: TestAmerica Burlington
List Creation: 02/07/14 08:21 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	927814
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	1.3ºc ir gun id 181/cf=-0.1
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-86460-3
Client Project/Site: Exide Recycling Center - Water 6020

For:
Golder Associates Inc.
500 Century Plaza Drive
Suite 190
Houston, Texas 77073

Attn: Christina Higginbotham

Authorized for release by:
2/19/2014 10:15:18 AM
Cathy Upton, Project Management Assistant II
(713)690-4444
cathy.upton@testamericainc.com

Designee for

Dean Joiner, Project Manager II
(713)690-4444
dean.joiner@testamericainc.com

LINKS

Review your project results through TotalAccess

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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.

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Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for TestAmerica Houston job number 600-86460-3 and consists of:

- ☑ R1 - Field chain-of-custody documentation;
- ☑ R2 - Sample identification cross-reference;
- ☑ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
  - a. Items consistent with NELAC Chapter 5,
  - b. dilution factors,
  - c. preparation methods,
  - d. cleanup methods, and
  - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
  - a. Calculated recovery (%R), and
  - b. The laboratory's surrogate QC limits.
- ☑ R5 - Test reports/summary forms for blank samples;
- ☑ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
  - a. LCS spiking amounts,
  - b. Calculated %R for each analyte, and
  - c. The laboratory's LCS QC limits.
- ☐ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a. Samples associated with the MS/MSD clearly identified,
  - b. MS/MSD spiking amounts,
  - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d. Calculated %Rs and relative percent differences (RPDs), and
  - e. The laboratory's MS/MSD QC limits
- ☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
  - a. The amount of analyte measured in the duplicate,
  - b. The calculated RPD, and
  - c. The laboratory's QC limits for analytical duplicates.
- ☑ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☑ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton		2/18/2014
Name (printed)	Signature	Date

Project Management Asst II
Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/18/2014
Project Name:	Exide Recycling Center - Water 6020	Laboratory Job Number:	600-86460-3
Reviewer Name:	Cathy Upton		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?			X		
		Were MS/MSD analyzed at the appropriate frequency?			X		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
		Were MS/MSD RPDs within laboratory QC limits?			X		
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/18/2014
Project Name:	Exide Recycling Center - Water 6020	Laboratory Job Number:	600-86460-3
Reviewer Name:	Cathy Upton		

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal standards (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw data (NELAC Section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	TestAmerica Houston	LRC Date:	2/18/2014
Project Name:	Exide Recycling Center - Water 6020	Laboratory Job Number:	600-86460-3
Reviewer Name:	Cathy Upton		

ER #[1]	Description

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Dept	Matrix	Client Sample ID	Analyte	Result	Unit	Spike Amount	MDL	RL	Percent Recovery	Prep Method	Analysis Method	Instrument ID	CAS	Prep Batch	Analysis Batch
ME	Water	Q4 2013 AQ MDLV ICPMSC	Aluminum	56.4	ug/L	50	23	50	113	3005A	6020A	ICPMSC	7429-90-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Antimony	2.875	ug/L	2.5	2.3	5	115	3005A	6020A	ICPMSC	7440-36-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Arsenic	2.375	ug/L	2	1.3	2.5	119	3005A	6020A	ICPMSC	7440-38-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Barium	1.965	ug/L	2	1.3	5	98	3005A	6020A	ICPMSC	7440-39-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Beryllium	0.52	ug/L	0.5	0.25	0.5	104	3005A	6020A	ICPMSC	7440-41-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Boron	51.24	ug/L	50	40	100	102	3005A	6020A	ICPMSC	7440-42-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cadmium	0.195	ug/L	0.2	0.095	0.5	98	3005A	6020A	ICPMSC	7440-43-9	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Calcium	294.73	ug/L	250	130	250	118	3005A	6020A	ICPMSC	7440-70-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Chromium	5.49	ug/L	5	2.5	5	110	3005A	6020A	ICPMSC	7440-47-3	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Cobalt	0.21	ug/L	0.2	0.15	0.5	105	3005A	6020A	ICPMSC	7440-48-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Copper	2.02	ug/L	2	1.1	5	101	3005A	6020A	ICPMSC	7440-50-8	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Iron	54.13	ug/L	50	33	100	108	3005A	6020A	ICPMSC	7439-89-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Lead	0.355	ug/L	0.3	0.2	1.5	118	3005A	6020A	ICPMSC	7439-92-1	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Magnesium	78.42	ug/L	80	43	250	98	3005A	6020A	ICPMSC	7439-95-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Manganese	1.955	ug/L	2	1	5	98	3005A	6020A	ICPMSC	7439-96-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Mercury	0.625	ug/L	0.5	0.4	0.8	125	3005A	6020A	ICPMSC	7439-97-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Molybdenum	2.205	ug/L	2	1.5	5	110	3005A	6020A	ICPMSC	7439-98-7	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Nickel	4.86	ug/L	4	2	5	122	3005A	6020A	ICPMSC	7440-02-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Potassium	219.45	ug/L	200	170	500	110	3005A	6020A	ICPMSC	9/7/7440	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Selenium	1.855	ug/L	2	1	2.5	93	3005A	6020A	ICPMSC	7782-49-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Silver	0.435	ug/L	0.4	0.25	1	109	3005A	6020A	ICPMSC	7440-22-4	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Sodium	457.985	ug/L	400	250	500	114	3005A	6020A	ICPMSC	7440-23-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Strontium	0.945	ug/L	1	0.5	1	95	3005A	6020A	ICPMSC	7440-24-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Thallium	0.98	ug/L	1	0.5	1	98	3005A	6020A	ICPMSC	7440-28-0	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Tin	2.47	ug/L	2	1.3	5	124	3005A	6020A	ICPMSC	7440-31-5	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Titanium	3.17	ug/L	2.5	1.3	5	127	3005A	6020A	ICPMSC	7440-32-6	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Vanadium	5.55	ug/L	5	3.8	10	111	3005A	6020A	ICPMSC	7440-62-2	680-297813	680-298498
ME	Water	Q4 2013 AQ MDLV ICPMSC	Zinc	10.095	ug/L	10	8.3	20	101	3005A	6020A	ICPMSC	7440-66-6	680-297813	680-298498

Job ID: 600-86460-3

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-86460-3

Comments
No additional comments.

Receipt
The samples were received on 2/1/2014 10:19 AM; the samples arrived in good condition, properly preserved and, where required, on ice.
The temperature of the cooler at receipt was 2.2º C.

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

Method Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water 6020

TestAmerica Job ID: 600-86460-3

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SAV

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water 6020

TestAmerica Job ID: 600-86460-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-86460-1	2014-SW-006	Water	01/30/14 10:21	02/01/14 10:19
600-86460-2	FIELD BLANK	Water	01/30/14 15:15	02/01/14 10:19

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water 6020

TestAmerica Job ID: 600-86460-3

Client Sample ID: 2014-SW-006

Lab Sample ID: 600-86460-1

Date Collected: 01/30/14 10:21
Date Received: 02/01/14 10:19

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 15:29	02/17/14 16:27	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 15:29	02/17/14 16:27	1
Lead	**0.000440**	**J**	0.00150	0.000200	mg/L		02/14/14 15:29	02/17/14 16:27	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 13:23	02/17/14 22:47	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 13:23	02/17/14 22:47	1
Lead	**0.000240**	**J**	0.00150	0.000200	mg/L		02/14/14 13:23	02/17/14 22:47	1

Client Sample ID: FIELD BLANK

Lab Sample ID: 600-86460-2

Date Collected: 01/30/14 15:15
Date Received: 02/01/14 10:19

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 13:23	02/17/14 22:52	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 13:23	02/17/14 22:52	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/14/14 13:23	02/17/14 22:52	1

Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water 6020

TestAmerica Job ID: 600-86460-3

Qualifiers

Metals

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated 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
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)

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water 6020

TestAmerica Job ID: 600-86460-3

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-315722/1-A
Matrix: Water
Analysis Batch: 316063

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 315722

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 13:23	02/17/14 21:33	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 13:23	02/17/14 21:33	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/14/14 13:23	02/17/14 21:33	1

Lab Sample ID: LCS 680-315722/2-A
Matrix: Water
Analysis Batch: 316063

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 315722

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.1052		mg/L		105	75 - 125
Cadmium	0.0500	0.05322		mg/L		106	75 - 125
Lead	0.0500	0.05177		mg/L		104	75 - 125

Lab Sample ID: MB 680-315753/1-A
Matrix: Water
Analysis Batch: 316063

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 315753

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130	U	0.00250	0.00130	mg/L		02/14/14 15:29	02/17/14 16:11	1
Cadmium	0.0000950	U	0.000500	0.0000950	mg/L		02/14/14 15:29	02/17/14 16:11	1
Lead	0.000200	U	0.00150	0.000200	mg/L		02/14/14 15:29	02/17/14 16:11	1

Lab Sample ID: LCS 680-315753/2-A
Matrix: Water
Analysis Batch: 316063

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 315753

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.1148		mg/L		115	75 - 125
Cadmium	0.0500	0.05580		mg/L		112	75 - 125
Lead	0.0500	0.05642		mg/L		113	75 - 125

Unadjusted Detection Limits

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water 6020

TestAmerica Job ID: 600-86460-3

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	MQL	MDL	Units	Method
Arsenic	0.00250	0.00130	mg/L	6020A
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	MQL	MDL	Units	Method
Arsenic	0.00250	0.00130	mg/L	6020A
Cadmium	0.000500	0.0000950	mg/L	6020A
Lead	0.00150	0.000200	mg/L	6020A

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water 6020

TestAmerica Job ID: 600-86460-3

Metals

Prep Batch: 315722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86460-1	2014-SW-006	Dissolved	Water	3005A	
600-86460-2	FIELD BLANK	Total Recoverable	Water	3005A	
LCS 680-315722/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-315722/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 315753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86460-1	2014-SW-006	Total Recoverable	Water	3005A	
LCS 680-315753/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-315753/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 316063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-86460-1	2014-SW-006	Dissolved	Water	6020A	315722
600-86460-1	2014-SW-006	Total Recoverable	Water	6020A	315753
600-86460-2	FIELD BLANK	Total Recoverable	Water	6020A	315722
LCS 680-315722/2-A	Lab Control Sample	Total Recoverable	Water	6020A	315722
LCS 680-315753/2-A	Lab Control Sample	Total Recoverable	Water	6020A	315753
MB 680-315722/1-A	Method Blank	Total Recoverable	Water	6020A	315722
MB 680-315753/1-A	Method Blank	Total Recoverable	Water	6020A	315753

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water 6020

TestAmerica Job ID: 600-86460-3

Client Sample ID: 2014-SW-006

Lab Sample ID: 600-86460-1

Date Collected: 01/30/14 10:21

Matrix: Water

Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	315722	02/14/14 13:23	BJB	TAL SAV
Dissolved	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 22:47	BWR	TAL SAV
Total Recoverable	Prep	3005A			50 mL	250 mL	315753	02/14/14 15:29	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 16:27	BWR	TAL SAV

Client Sample ID: FIELD BLANK

Lab Sample ID: 600-86460-2

Date Collected: 01/30/14 15:15

Matrix: Water

Date Received: 02/01/14 10:19

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	250 mL	315722	02/14/14 13:23	BJB	TAL SAV
Total Recoverable	Analysis	6020A		1	50 mL	250 mL	316063	02/17/14 22:52	BWR	TAL SAV

Laboratory References:

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

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water 6020

TestAmerica Job ID: 600-86460-3

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	1309	08-31-14
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	TX00083	10-31-14

Laboratory: TestAmerica Savannah

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

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14 *
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14

* Expired certification is currently pending renewal and is considered valid.

Certification Summary

Client: Golder Associates Inc.
Project/Site: Exide Recycling Center - Water 6020

TestAmerica Job ID: 600-86460-3

Laboratory: TestAmerica Savannah (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-13 *
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custc

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

600-86460 Chain of Custody

2/19/2014

Client Information	Sampler:	Lab PM: Joiner, Dean A	COC No: 600-25573-9017.4
Client Contact: Christina Higginbotham	Phone:	E-Mail: dean.joiner@testamer	Page: Page 1 of 2
Company: Golder Associates Inc.			Job #:
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:		
City: Houston	TAT Requested (days): 5 WD TRRP		
State, Zip: TX, 77073			
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested		
Email: Christina_Higginbotham@golder.com	WO #:		
Project Name: Exide Recycling Center - Water	Project #:		
Site:	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C_LL - (MOD) Target Compound List	8270C_LL - PAH	8260B - Target Compound List	TX_1005 - TPH	*** TX_1006 - TPH (Hold For TPH 1005 results)	300.0_28D - Sulfate	6010B - Total Metals - Pb, Cd, As	6010B - Dissolved Metals - Pb, Cd, As	Metals - Pb, Cd, As	TOC						Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N	N	A	A	A	N	D	D	N	N						X	
2014-SW-006	1-30-14	1021	G	Water	X								X	X								2	
FIELD BLANK	"	1515	G	Water									X									1	
Equipment Blank - DREDGE	"	1501	G	Water					[redacted]				X			X						2	
Equipment Blank - Bowl	"	1506	G	Water					[redacted]				X			X						2	
2014-SED-019	"	1004	G	~~Water~~ solid											X	X						2	
2014-SED-019 MS	"	1004	G	~~Water~~ solid	X										X	X						2	
2014-SED-019 MSD	"	1004	G	~~Water~~ solid	X										X	X						2	
2014-SED-020	"	1105	G	~~Water~~ solid											X	X						2	
2014-SED-021	"	1157	G	~~Water~~ solid											X	X						2	
2014-SED-022	"	1231	G	~~Water~~ solid											X	X						2	
2014-SED-023	"	1310	G	~~Water~~ solid											X	X						2	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Chris Irvin	01/30/14 - 2010	Golder		1/30/14 2010	Golder
	1/31/14 - 1112			1/31/14 1112	
	1/31/14 1317			1/31/14 1019	

Custody Seals Intact:	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
Δ Yes Δ No		

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

2/19/2014

Client Information	Sampler:	Lab PM: Joiner, Dean A	Carrier Tracking No(s):	COC No: 600-25573-9017.4
Client Contact: Christina Higginbotham	Phone:	E-Mail: dean.joiner@testamericainc.com		Page: Page 2 of 2
Company: Golder Associates Inc.				Job #:
Address: 500 Century Plaza Drive Suite 190	Due Date Requested:			
City: Houston	TAT Requested (days): 5 WD TRRP			
State, Zip: TX, 77073				
Phone: 281-821-6868(Tel) 281-821-6870(Fax)	PO #: Purchase Order Requested			
Email: Christina_Higginbotham@golder.com	WO #:			
Project Name: Exide Recycling Center - Water	Project #:			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C_LL - (MOD) Target Compound List	8270C_LL - PAH	8260B - Target Compound List	TX_1005 - TPH	*** TX_1006 - TPH (Hold For TPH 1005 results)	300.0_28D - Sulfate	6010B - Total Metals - Pb, Cd, As	6010B - Dissolved Metals - Pb, Cd, As	2 Metals - Pb, Cd, As	TOC						Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N	N	A	A	A	N	D	D	2	2						X	
Duplicate-04	1-30-14		C	~~Water~~ solid											X	X						2	
2014-SED-024	1-30-13	1342	C	~~Water~~ solid											X	X						2	
2014-SED-025	1-30-13	1409	C	~~Water~~ solid											X	X						2	
			G	Water																			
			G	Water																			
			G	Water																			
			G	Water																			
			G	Water																			
			G	Water																			
			G	Water																			
			G	Water																			

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☒ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Chris Trevino	01/30/14 - 2010			1/30/14 2010	Golder
	1/31/14 - 1112			1/31/14 1112	TA
	1/31/14 1317	TA		2/8/14 1019	

Custody Seals Intact: Δ Yes Δ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86460-3

Login Number: 86460

List Source: TestAmerica Houston

List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.2
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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 600-86460-3

Login Number: 86460
List Number: 1
Creator: Conner, Keaton

List Source: TestAmerica Savannah
List Creation: 02/14/14 10:57 AM

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