



## Federated Environmental Associates, Inc.

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December 16, 2014

Gail A. Johnstone, Sr. V.P., Loan Operations  
Newtek Small Business Finance, Inc.  
212 W. 35th Street, 2nd Floor  
New York, New York 10001

RE: *Limited Subsurface Testing Project*/Test for VOCs/Tetrachloroethylene  
***Cruz Brothers Realty, LLC/Loan #69356***  
3,960 SF Grocery Store and Laundromat on 0.22-Acres  
1322-1326 Central Avenue and 1325-1327 Augustina Avenue  
Far Rockaway, New York 11691 (Queens County/Borough)  
Federated Environmental Project #145850

Dear Ms. Johnstone:

Federated Environmental Associates, Inc. has completed the *Limited Subsurface Testing Project* as described in our proposals dated November 10, 2014.

### **Site and Project Background**

The subject property consists of an 83-year old, 3,960 SF grocery store and laundromat on 0.22-acres. Three Brothers Meat Market (1324-1326 Central Avenue) and Rockaway Super Laundromat (1322 Central Avenue) operate on-site. Consolidated Edison provides electric service, National Grid provides natural gas, and the NYDEC provides municipal water and sewer services.

The *Phase I Environmental Site Assessment* conducted on property (Federated Environmental Project #145812, September 2014) revealed that 1322 Central Avenue was occupied by Arroyo Cleaners (a dry cleaners) from 1991 to 2003. Multiple standard historical sources confirmed the historical presence of the dry cleaners on-site. In addition, standard historical sources identified the presence of a furniture stripping/refinishing company operating on-site in the 1960s. Dry cleaners often contaminate properties with tetrachloroethylene, a common dry cleaning solvent. Spent dry cleaning solvent is commonly (and improperly) disposed into municipal sewer lines resulting in subsurface soil and groundwater contamination. As such, Federated Environmental identified the historical Arroyo Cleaners and furniture stripper/refinisher operating on-site as a *recognized environmental condition (REC)* and proposed this limited, screening-type testing project.

Because of confounding physical factors, the *Limited Subsurface Testing Project* was designed to test soil and/or groundwater samples collected from areas close to the building footprint for volatile organic compounds (VOCs) including tetrachloroethylene.

1314 Bedford Avenue, Suite 102   ♦   Baltimore, Maryland 21208

(888) 806-6667   [www.federatedenvironmental.com](http://www.federatedenvironmental.com)   [contact@federatedenvironmental.com](mailto:contact@federatedenvironmental.com)

This *Limited Subsurface Testing Project* was designed to test soil and/or groundwater samples collected from areas in close proximity to the building footprint, the likely former dry cleaning machine location (from outside the building), and the inferred downgradient groundwater area to the northwest. A broad range of environmental contaminants are readily associated with the former dry cleaning and furniture stripping/refinishing operations on-site. Federated Environmental tested specifically for volatiles organic compounds (VOCs) as general indicators of contamination on-site. As such, the parameter list is not all-inclusive.

Federated Environmental installed and developed temporary wells in each of the three test borings and collected discrete soil and groundwater samples. Abundant sample-able groundwater developed in all three of the Geoprobe test borings. The subsurface conditions consisted of unconsolidated, finely to poorly sorted, fine to coarse sand and gravel. Almost immediately, static, unconfined groundwater developed at a depth of approximately 21.0-feet below ground surface (bgs).

The groundwater samples were analyzed by a New York-certified environmental laboratory, and the sample analysis was implemented in accordance with New York Department of Environmental Conservation (NYDEC) sampling and analytical guidelines, specifically under statute Environmental Conservation Law, §§ 3-0301[2][M], 17-0301, 17-0809: Part 703: *Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations* and Technical Operational Guidance Series (TOGs) Part 1.1.1: *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*. The designated water class for the samples collected and analyzed from on-site is GA (fresh groundwater), and as such, the applicable groundwater quality standards was applied to the generated analytical results for this project.

**Temporary Monitoring Well Data and Sample Collection Observations**

Table 2: Temporary Monitoring Well Data and Sample Collection Observations				
Test Location	Well Depth	GW Depth <sup>a</sup>	Field Observations	Soils Observed <sup>b</sup>
TB-1/MW-1	25.0-feet	~21.0-feet	no odors, sheens, discoloration	finely to poorly sorted sands
TB-2/MW-2	25.0-feet	~21.0-feet	no odors, sheens, discoloration	finely to poorly sorted sands
TB-3/MW-3	25.0-feet	~21.0-feet	no odors, sheens, discoloration	finely to poorly sorted sands

<sup>a</sup> Field personnel noted that the temporary wells recharged almost immediately after development. This suggests a relatively high hydraulic conductivity or K-value (groundwater moves at greater rates through this type of soil than others depending on the gradient).

<sup>b</sup> No actual loam or clay soils were encountered but rather unconsolidated, finely to poorly sorted, fine to coarse sand and gravel.

**Groundwater Volatile Organic Compounds (VOCs) Analytical Results**

Evaluation of the laboratory analytical results for the groundwater samples collected on-site revealed several detectable concentrations of volatile organic compounds (VOCs) within the EPA Method 8260B parameter list. The analytical method tests for chlorinated and otherwise halogenated VOCs, aromatic hydrocarbons, various ketones associated with gasoline and related petroleum products, solvents, degreasers, and a wide range of process chemical compounds.

Table 2: Laboratory Analytical Results for Select EPA Method 8260B Volatile Organic Compounds, Positive "Hits" Only (ug/L) <sup>a</sup>				
Location/Parameter <sup>a</sup>	tetrachloroethene	trichloroethene <sup>c</sup>	1,2-dichloroethene <sup>c</sup>	chloroform <sup>c</sup>
TB-1/MW-1	1710.0	1.0	2.0	5.0
TB-2/MW-2	15.0	ND	ND	1.0
TB-3/MW-3	ND	ND	ND	ND
NYDEC Groundwater Quality Standard for Water Class GA in MCL (ug/L) <sup>b</sup>	5.0	5.0	5.0	15.0

<sup>a</sup> Only positive, detected results are provided.

<sup>b</sup> Source: New York Environmental Conservation Law, §§ 3-0301[2][M], 17-0301, 17-0809: Part 703: *Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations* and Technical Operational Guidance Series (TOGs) Part 1.1.1: *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*. Shaded results exceed the acceptable published standard.

<sup>c</sup> These chemical products form from the natural degradation of tetrachloroethylene, i.e. they are degradation products.

**Limited Subsurface Testing Project Findings and Discussion**

- Evaluation of the laboratory analytical results for the specific groundwater samples collected on-site reveals concentrations of volatile organic compounds (VOCs), most notably tetrachloroethylene (dry cleaning solvent) well above published NYDEC Technical Operational Guidance Series (TOGs) Part 1.1.1: *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*.
- Field observations made during the site testing did not reveal obvious evidence of contamination such as odors, discoloration, or sheens. Moreover, the *Limited Subsurface Testing Project* did not reveal evidence of buried wastes of any kind. However, the laboratory analysis identified groundwater contamination with tetrachloroethylene (dry cleaning solvent) well above published NYDEC guidelines.

**Recommendations**

- The *Limited Subsurface Investigation* has identified a reportable release of tetrachloroethylene (dry cleaning solvent) on the subject property. Federated Environmental recommends coordinating the investigation and remediation of the release with the NYDEC Region 2 Office (1 Hunters Point Plaza/47-40 21st Street, Long Island City, N.Y. 11101-5407). The NYDEC Region 2 Office contact is Paul John, Remediation Engineer, at (718) 482-4995.
- Until such time this chemical contaminant release has been managed to conclusion, the subject property represents an elevated environmental risk.

The client is advised that no testing project, including this testing project, can reasonably be expected to be a complete chemical characterization of a given property and should not be relied upon or interpreted as such.

Thank you for the opportunity to be of service on this project. If you have any additional questions, comments, or concerns regarding any aspect of this matter, please contact us at (888) 806-6667.

Respectfully,

FEDERATED ENVIRONMENTAL ASSOCIATES, INC.



James C. Gossweiler, P.G. (IT)  
Project Geologist/Sr. Environmental Assessor

Attachments:

*Test Boring/Temporary Well Location Map*

*Project Photographs*

*TestAmerica Laboratory Analytical Results (including QA/QC Lab Blanks)*

*Qualifications of the Environmental Professional (EP)*

# Test Boring/Temporary Well Location Map



1322-1326 Central Avenue/1325-1327 Augustina Avenue  
Far Rockaway (Queens), New York

1-inch = 40-feet

Source: Google Earth Aerial Photo, 2012



1322 Central Avenue operated as Arroyo Cleaners from 1991-2003.

Figure 1: Completion of TB-1 northwest and behind 1322 Central Avenue, the former dry cleaners location. This test boring revealed groundwater contaminated with elevated concentrations of tetrachloroethylene (dry cleaning solvent).



Figure 2: Representative soil core samples on-site showing finely to poorly sorted, unconsolidated fine to coarse sands and gravel. No organic material or clays are present to depths of 25.0-feet below ground surface (bgs).



Figure 3: Completed TB-1 temporary monitoring well with installed 2-inch diameter, schedule 40 PVC well casing with 5.0-feet of 0.01" slotted screen.



Figure 4: Development of the temporary well at TB-1 using a Geopump 2 peristaltic pump and new polybutylene and Teflon tubing. Abundant groundwater are produced at all test locations by an unconfined aquifer at ~21.0-feet below ground surface (bgs).



Figure 5: Completion of TB-2 farther southwest from the rear of 1322 Central Avenue. This view is looking northeast. The adjacent Church of God is visible in the background.



Figure 6: Another view of TB-2 relative to the rear of 1322 Central Avenue and TB-1. This view is looking southeast. Boring TB-2 collapsed after the soil cores were removed and before a temporary well could be installed. The boring was redrilled using an SP-15 hydropunch to collect the groundwater sample. Elevated tetrachloroethylene was detected in both TB-1 and TB-2.

1322-1326 Central Ave./1325-1327 Augustina Ave.  
Far Rockaway (Queens), New York

December 3, 2014

Project Number: 145850



Figure 7: TB-3 was advanced farther west-northwest on the rear lot (Augustina Avenue) near the above brick-lined hole believed to be part of an earlier sewer line.



Figure 8: Completion of TB-3. No detectable concentrations of tetrachloroethylene were discovered in the soil or groundwater at this test location. Of note, the detectable contaminant concentrations increase closer to 1322 Central Avenue, the former cleaners location.

1322-1326 Central Ave./1325-1327 Augustina Ave.  
Far Rockaway (Queens), New York

December 3, 2014

Project Number: 145850

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Nashville

2960 Foster Creighton Drive

Nashville, TN 37204

Tel: (615)726-0177

TestAmerica Job ID: 490-67884-1

TestAmerica Sample Delivery Group: 145850

Client Project/Site: Cruz Brothers

For:

Federated Environmental Associates

1314 Bedford Avenue

STE102

Baltimore, Maryland 21208

Attn: J. Sedlack

*Roxanne L Connor*

Authorized for release by:

12/10/2014 4:23:32 PM

Roxanne Connor, Senior Project Manager

(615)301-5761

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### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

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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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# Sample Summary

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-67884-1	TB-1	Soil	12/03/14 08:45	12/04/14 08:30
490-67884-2	TB-2	Soil	12/03/14 08:45	12/04/14 08:30
490-67884-3	TB-3	Soil	12/03/14 12:00	12/04/14 08:30
490-67884-4	TB-1	Ground Water	12/03/14 08:45	12/04/14 08:30
490-67884-5	TB-2	Ground Water	12/03/14 08:45	12/04/14 08:30
490-67884-6	TB-3	Ground Water	12/03/14 12:00	12/04/14 08:30

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- 2
- 3
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- 5
- 6
- 7
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- 9
- 10
- 11
- 12
- 13

# Case Narrative

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

**Job ID: 490-67884-1**

**Laboratory: TestAmerica Nashville**

## Narrative

**Job Narrative**  
**490-67884-1**

### Comments

No additional comments.

### Receipt

The samples were received on 12/4/2014 8:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

### GC/MS VOA

Method(s) 8260C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 212468

Method(s) 8260C: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 212739 recovered outside control limits for the following analyte: tetrachloroethene.

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

### Organic Prep

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

### VOA Prep

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



## Definitions/Glossary

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

### Qualifiers

#### GC/MS VOA

Qualifier	Qualifier Description
*	RPD of the LCS and LCSD exceeds the 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
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Client Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

**Client Sample ID: TB-1**

**Lab Sample ID: 490-67884-1**

**Date Collected: 12/03/14 08:45**

**Matrix: Soil**

**Date Received: 12/04/14 08:30**

**Percent Solids: 91.9**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.0547		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Benzene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Bromobenzene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Bromoform	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Bromomethane	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
2-Butanone (MEK)	ND		0.0547		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Carbon disulfide	ND		0.00547		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Carbon tetrachloride	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Chlorobenzene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Chlorobromomethane	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Chlorodibromomethane	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Chloroethane	ND		0.00547		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Chloroform	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Chloromethane	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
2-Chlorotoluene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
4-Chlorotoluene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
cis-1,2-Dichloroethene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
cis-1,3-Dichloropropene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,2-Dibromo-3-Chloropropane	ND		0.00547		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Dibromomethane	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,2-Dichlorobenzene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,3-Dichlorobenzene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,4-Dichlorobenzene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Dichlorobromomethane	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Dichlorodifluoromethane	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,1-Dichloroethane	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,2-Dichloroethane	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,1-Dichloroethene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,2-Dichloropropane	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,3-Dichloropropane	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
2,2-Dichloropropane	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,1-Dichloropropene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Ethylbenzene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Ethylene Dibromide	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Hexachlorobutadiene	ND		0.00547		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
2-Hexanone	ND		0.0547		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Isopropylbenzene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
4-Isopropyltoluene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Methylene Chloride	ND		0.0109		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
4-Methyl-2-pentanone (MIBK)	ND		0.0547		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Methyl tert-butyl ether	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Naphthalene	ND		0.00547		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
n-Butylbenzene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
N-Propylbenzene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
sec-Butylbenzene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Styrene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
tert-Butylbenzene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,1,1,2-Tetrachloroethane	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,1,2,2-Tetrachloroethane	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1

TestAmerica Nashville

# Client Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

**Client Sample ID: TB-1**

**Lab Sample ID: 490-67884-1**

**Date Collected: 12/03/14 08:45**

**Matrix: Soil**

**Date Received: 12/04/14 08:30**

**Percent Solids: 91.9**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Tetrachloroethene</b>	<b>0.00326</b>		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Toluene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
trans-1,2-Dichloroethene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
trans-1,3-Dichloropropene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,2,3-Trichlorobenzene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,2,4-Trichlorobenzene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,1,1-Trichloroethane	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,1,2-Trichloroethane	ND		0.00547		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Trichloroethene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Trichlorofluoromethane	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,2,3-Trichloropropane	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,2,4-Trimethylbenzene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
1,3,5-Trimethylbenzene	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Vinyl chloride	ND		0.00219		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
Xylenes, Total	ND		0.00328		mg/Kg	☼	12/06/14 08:08	12/09/14 16:58	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	109		70 - 130				12/06/14 08:08	12/09/14 16:58	1
Dibromofluoromethane (Surr)	97		70 - 130				12/06/14 08:08	12/09/14 16:58	1
1,2-Dichloroethane-d4 (Surr)	97		70 - 130				12/06/14 08:08	12/09/14 16:58	1
Toluene-d8 (Surr)	101		70 - 130				12/06/14 08:08	12/09/14 16:58	1

**General Chemistry**

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>8.1</b>		0.10		%			12/08/14 11:37	1
<b>Percent Solids</b>	<b>92</b>		0.10		%			12/08/14 11:37	1

# Client Sample Results

Client: Federated Environmental Associates  
 Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
 SDG: 145850

**Client Sample ID: TB-2**

**Lab Sample ID: 490-67884-2**

**Date Collected: 12/03/14 08:45**

**Matrix: Soil**

**Date Received: 12/04/14 08:30**

**Percent Solids: 94.6**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.0514		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Benzene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Bromobenzene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Bromoform	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Bromomethane	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
2-Butanone (MEK)	ND		0.0514		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Carbon disulfide	ND		0.00514		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Carbon tetrachloride	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Chlorobenzene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Chlorobromomethane	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Chlorodibromomethane	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Chloroethane	ND		0.00514		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Chloroform	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Chloromethane	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
2-Chlorotoluene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
4-Chlorotoluene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
cis-1,2-Dichloroethene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
cis-1,3-Dichloropropene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,2-Dibromo-3-Chloropropane	ND		0.00514		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Dibromomethane	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,2-Dichlorobenzene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,3-Dichlorobenzene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,4-Dichlorobenzene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Dichlorobromomethane	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Dichlorodifluoromethane	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,1-Dichloroethane	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,2-Dichloroethane	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,1-Dichloroethene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,2-Dichloropropane	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,3-Dichloropropane	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
2,2-Dichloropropane	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,1-Dichloropropene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Ethylbenzene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Ethylene Dibromide	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Hexachlorobutadiene	ND		0.00514		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
2-Hexanone	ND		0.0514		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Isopropylbenzene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
4-Isopropyltoluene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Methylene Chloride	ND		0.0103		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
4-Methyl-2-pentanone (MIBK)	ND		0.0514		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Methyl tert-butyl ether	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Naphthalene	ND		0.00514		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
n-Butylbenzene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
N-Propylbenzene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
sec-Butylbenzene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Styrene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
tert-Butylbenzene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,1,1,2-Tetrachloroethane	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,1,2,2-Tetrachloroethane	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1

TestAmerica Nashville

# Client Sample Results

Client: Federated Environmental Associates  
 Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
 SDG: 145850

**Client Sample ID: TB-2**

**Lab Sample ID: 490-67884-2**

**Date Collected: 12/03/14 08:45**

**Matrix: Soil**

**Date Received: 12/04/14 08:30**

**Percent Solids: 94.6**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Tetrachloroethene</b>	<b>0.00238</b>		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Toluene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
trans-1,2-Dichloroethene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
trans-1,3-Dichloropropene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,2,3-Trichlorobenzene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,2,4-Trichlorobenzene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,1,1-Trichloroethane	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,1,2-Trichloroethane	ND		0.00514		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Trichloroethene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Trichlorofluoromethane	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,2,3-Trichloropropane	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,2,4-Trimethylbenzene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
1,3,5-Trimethylbenzene	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Vinyl chloride	ND		0.00206		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
Xylenes, Total	ND		0.00309		mg/Kg	☼	12/06/14 08:08	12/09/14 17:30	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	107		70 - 130				12/06/14 08:08	12/09/14 17:30	1
Dibromofluoromethane (Surr)	98		70 - 130				12/06/14 08:08	12/09/14 17:30	1
1,2-Dichloroethane-d4 (Surr)	101		70 - 130				12/06/14 08:08	12/09/14 17:30	1
Toluene-d8 (Surr)	102		70 - 130				12/06/14 08:08	12/09/14 17:30	1

**General Chemistry**

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture</b>	<b>5.4</b>		0.10		%			12/08/14 11:37	1
<b>Percent Solids</b>	<b>95</b>		0.10		%			12/08/14 11:37	1

# Client Sample Results

Client: Federated Environmental Associates  
 Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
 SDG: 145850

**Client Sample ID: TB-3**

**Lab Sample ID: 490-67884-3**

**Date Collected: 12/03/14 12:00**

**Matrix: Soil**

**Date Received: 12/04/14 08:30**

**Percent Solids: 96.8**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		0.0529		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Benzene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Bromobenzene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Bromoform	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Bromomethane	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
2-Butanone (MEK)	ND		0.0529		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Carbon disulfide	ND		0.00529		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Carbon tetrachloride	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Chlorobenzene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Chlorobromomethane	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Chlorodibromomethane	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Chloroethane	ND		0.00529		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Chloroform	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Chloromethane	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
2-Chlorotoluene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
4-Chlorotoluene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
cis-1,2-Dichloroethene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
cis-1,3-Dichloropropene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,2-Dibromo-3-Chloropropane	ND		0.00529		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Dibromomethane	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,2-Dichlorobenzene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,3-Dichlorobenzene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,4-Dichlorobenzene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Dichlorobromomethane	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Dichlorodifluoromethane	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,1-Dichloroethane	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,2-Dichloroethane	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,1-Dichloroethene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,2-Dichloropropane	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,3-Dichloropropane	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
2,2-Dichloropropane	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,1-Dichloropropene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Ethylbenzene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Ethylene Dibromide	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Hexachlorobutadiene	ND		0.00529		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
2-Hexanone	ND		0.0529		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Isopropylbenzene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
4-Isopropyltoluene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Methylene Chloride	ND		0.0106		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
4-Methyl-2-pentanone (MIBK)	ND		0.0529		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Methyl tert-butyl ether	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Naphthalene	ND		0.00529		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
n-Butylbenzene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
N-Propylbenzene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
sec-Butylbenzene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Styrene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
tert-Butylbenzene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,1,1,2-Tetrachloroethane	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,1,2,2-Tetrachloroethane	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1

TestAmerica Nashville

# Client Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

**Client Sample ID: TB-3**

**Lab Sample ID: 490-67884-3**

**Date Collected: 12/03/14 12:00**

**Matrix: Soil**

**Date Received: 12/04/14 08:30**

**Percent Solids: 96.8**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Toluene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
trans-1,2-Dichloroethene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
trans-1,3-Dichloropropene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,2,3-Trichlorobenzene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,2,4-Trichlorobenzene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,1,1-Trichloroethane	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,1,2-Trichloroethane	ND		0.00529		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Trichloroethene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Trichlorofluoromethane	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,2,3-Trichloropropane	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,2,4-Trimethylbenzene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
1,3,5-Trimethylbenzene	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Vinyl chloride	ND		0.00212		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Xylenes, Total	ND		0.00318		mg/Kg	☼	12/06/14 08:08	12/09/14 18:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		70 - 130				12/06/14 08:08	12/09/14 18:02	1
Dibromofluoromethane (Surr)	97		70 - 130				12/06/14 08:08	12/09/14 18:02	1
1,2-Dichloroethane-d4 (Surr)	100		70 - 130				12/06/14 08:08	12/09/14 18:02	1
Toluene-d8 (Surr)	100		70 - 130				12/06/14 08:08	12/09/14 18:02	1

**General Chemistry**

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	3.2		0.10		%			12/08/14 11:37	1
Percent Solids	97		0.10		%			12/08/14 11:37	1

# Client Sample Results

Client: Federated Environmental Associates  
 Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
 SDG: 145850

**Client Sample ID: TB-1**

**Lab Sample ID: 490-67884-4**

**Date Collected: 12/03/14 08:45**

**Matrix: Ground Water**

**Date Received: 12/04/14 08:30**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		25.0		ug/L			12/09/14 19:32	1
Benzene	ND		1.00		ug/L			12/09/14 19:32	1
Bromobenzene	ND		1.00		ug/L			12/09/14 19:32	1
Bromoform	ND		1.00		ug/L			12/09/14 19:32	1
Bromomethane	ND		1.00		ug/L			12/09/14 19:32	1
2-Butanone (MEK)	ND		50.0		ug/L			12/09/14 19:32	1
Carbon disulfide	ND		1.00		ug/L			12/09/14 19:32	1
Carbon tetrachloride	ND		1.00		ug/L			12/09/14 19:32	1
Chlorobenzene	ND		1.00		ug/L			12/09/14 19:32	1
Chlorobromomethane	ND		1.00		ug/L			12/09/14 19:32	1
Chlorodibromomethane	ND		1.00		ug/L			12/09/14 19:32	1
Chloroethane	ND		1.00		ug/L			12/09/14 19:32	1
<b>Chloroform</b>	<b>5.02</b>		1.00		ug/L			12/09/14 19:32	1
Chloromethane	ND		1.00		ug/L			12/09/14 19:32	1
2-Chlorotoluene	ND		1.00		ug/L			12/09/14 19:32	1
4-Chlorotoluene	ND		1.00		ug/L			12/09/14 19:32	1
<b>cis-1,2-Dichloroethene</b>	<b>2.62</b>		1.00		ug/L			12/09/14 19:32	1
cis-1,3-Dichloropropene	ND		1.00		ug/L			12/09/14 19:32	1
1,2-Dibromo-3-Chloropropane	ND		10.0		ug/L			12/09/14 19:32	1
Dibromomethane	ND		1.00		ug/L			12/09/14 19:32	1
1,2-Dichlorobenzene	ND		1.00		ug/L			12/09/14 19:32	1
1,3-Dichlorobenzene	ND		1.00		ug/L			12/09/14 19:32	1
1,4-Dichlorobenzene	ND		1.00		ug/L			12/09/14 19:32	1
Dichlorobromomethane	ND		1.00		ug/L			12/09/14 19:32	1
Dichlorodifluoromethane	ND		1.00		ug/L			12/09/14 19:32	1
1,1-Dichloroethane	ND		1.00		ug/L			12/09/14 19:32	1
1,2-Dichloroethane	ND		1.00		ug/L			12/09/14 19:32	1
1,1-Dichloroethene	ND		1.00		ug/L			12/09/14 19:32	1
1,2-Dichloropropane	ND		1.00		ug/L			12/09/14 19:32	1
1,3-Dichloropropane	ND		1.00		ug/L			12/09/14 19:32	1
2,2-Dichloropropane	ND		1.00		ug/L			12/09/14 19:32	1
1,1-Dichloropropene	ND		1.00		ug/L			12/09/14 19:32	1
Ethylbenzene	ND		1.00		ug/L			12/09/14 19:32	1
Ethylene Dibromide	ND		1.00		ug/L			12/09/14 19:32	1
Hexachlorobutadiene	ND		2.00		ug/L			12/09/14 19:32	1
2-Hexanone	ND		10.0		ug/L			12/09/14 19:32	1
Isopropylbenzene	ND		1.00		ug/L			12/09/14 19:32	1
4-Isopropyltoluene	ND		1.00		ug/L			12/09/14 19:32	1
Methylene Chloride	ND		5.00		ug/L			12/09/14 19:32	1
4-Methyl-2-pentanone (MIBK)	ND		10.0		ug/L			12/09/14 19:32	1
Methyl tert-butyl ether	ND		1.00		ug/L			12/09/14 19:32	1
Naphthalene	ND		5.00		ug/L			12/09/14 19:32	1
n-Butylbenzene	ND		1.00		ug/L			12/09/14 19:32	1
N-Propylbenzene	ND		1.00		ug/L			12/09/14 19:32	1
sec-Butylbenzene	ND		1.00		ug/L			12/09/14 19:32	1
Styrene	ND		1.00		ug/L			12/09/14 19:32	1
tert-Butylbenzene	ND		1.00		ug/L			12/09/14 19:32	1
1,1,1,2-Tetrachloroethane	ND		1.00		ug/L			12/09/14 19:32	1
1,1,2,2-Tetrachloroethane	ND		1.00		ug/L			12/09/14 19:32	1

TestAmerica Nashville

# Client Sample Results

Client: Federated Environmental Associates  
 Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
 SDG: 145850

**Client Sample ID: TB-1**

**Lab Sample ID: 490-67884-4**

**Date Collected: 12/03/14 08:45**

**Matrix: Ground Water**

**Date Received: 12/04/14 08:30**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Tetrachloroethene</b>	<b>1710</b>	*	25.0		ug/L			12/10/14 14:19	25
Toluene	ND		1.00		ug/L			12/09/14 19:32	1
trans-1,2-Dichloroethene	ND		1.00		ug/L			12/09/14 19:32	1
trans-1,3-Dichloropropene	ND		1.00		ug/L			12/09/14 19:32	1
1,2,3-Trichlorobenzene	ND		1.00		ug/L			12/09/14 19:32	1
1,2,4-Trichlorobenzene	ND		1.00		ug/L			12/09/14 19:32	1
1,1,1-Trichloroethane	ND		1.00		ug/L			12/09/14 19:32	1
1,1,2-Trichloroethane	ND		1.00		ug/L			12/09/14 19:32	1
<b>Trichloroethene</b>	<b>1.23</b>		1.00		ug/L			12/09/14 19:32	1
Trichlorofluoromethane	ND		1.00		ug/L			12/09/14 19:32	1
1,2,3-Trichloropropane	ND		1.00		ug/L			12/09/14 19:32	1
1,2,4-Trimethylbenzene	ND		1.00		ug/L			12/09/14 19:32	1
1,3,5-Trimethylbenzene	ND		1.00		ug/L			12/09/14 19:32	1
Vinyl chloride	ND		1.00		ug/L			12/09/14 19:32	1
Xylenes, Total	ND		2.00		ug/L			12/09/14 19:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130		12/09/14 19:32	1
4-Bromofluorobenzene (Surr)	107		70 - 130		12/10/14 14:19	25
Dibromofluoromethane (Surr)	89		70 - 130		12/09/14 19:32	1
Dibromofluoromethane (Surr)	89		70 - 130		12/10/14 14:19	25
1,2-Dichloroethane-d4 (Surr)	84		70 - 130		12/09/14 19:32	1
1,2-Dichloroethane-d4 (Surr)	84		70 - 130		12/10/14 14:19	25
Toluene-d8 (Surr)	100		70 - 130		12/09/14 19:32	1
Toluene-d8 (Surr)	101		70 - 130		12/10/14 14:19	25

# Client Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

**Client Sample ID: TB-2**

**Lab Sample ID: 490-67884-5**

**Date Collected: 12/03/14 08:45**

**Matrix: Ground Water**

**Date Received: 12/04/14 08:30**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		25.0		ug/L			12/09/14 19:59	1
Benzene	ND		1.00		ug/L			12/09/14 19:59	1
Bromobenzene	ND		1.00		ug/L			12/09/14 19:59	1
Bromoform	ND		1.00		ug/L			12/09/14 19:59	1
Bromomethane	ND		1.00		ug/L			12/09/14 19:59	1
2-Butanone (MEK)	ND		50.0		ug/L			12/09/14 19:59	1
Carbon disulfide	ND		1.00		ug/L			12/09/14 19:59	1
Carbon tetrachloride	ND		1.00		ug/L			12/09/14 19:59	1
Chlorobenzene	ND		1.00		ug/L			12/09/14 19:59	1
Chlorobromomethane	ND		1.00		ug/L			12/09/14 19:59	1
Chlorodibromomethane	ND		1.00		ug/L			12/09/14 19:59	1
Chloroethane	ND		1.00		ug/L			12/09/14 19:59	1
<b>Chloroform</b>	<b>1.37</b>		1.00		ug/L			12/09/14 19:59	1
Chloromethane	ND		1.00		ug/L			12/09/14 19:59	1
2-Chlorotoluene	ND		1.00		ug/L			12/09/14 19:59	1
4-Chlorotoluene	ND		1.00		ug/L			12/09/14 19:59	1
cis-1,2-Dichloroethene	ND		1.00		ug/L			12/09/14 19:59	1
cis-1,3-Dichloropropene	ND		1.00		ug/L			12/09/14 19:59	1
1,2-Dibromo-3-Chloropropane	ND		10.0		ug/L			12/09/14 19:59	1
Dibromomethane	ND		1.00		ug/L			12/09/14 19:59	1
1,2-Dichlorobenzene	ND		1.00		ug/L			12/09/14 19:59	1
1,3-Dichlorobenzene	ND		1.00		ug/L			12/09/14 19:59	1
1,4-Dichlorobenzene	ND		1.00		ug/L			12/09/14 19:59	1
Dichlorobromomethane	ND		1.00		ug/L			12/09/14 19:59	1
Dichlorodifluoromethane	ND		1.00		ug/L			12/09/14 19:59	1
1,1-Dichloroethane	ND		1.00		ug/L			12/09/14 19:59	1
1,2-Dichloroethane	ND		1.00		ug/L			12/09/14 19:59	1
1,1-Dichloroethene	ND		1.00		ug/L			12/09/14 19:59	1
1,2-Dichloropropane	ND		1.00		ug/L			12/09/14 19:59	1
1,3-Dichloropropane	ND		1.00		ug/L			12/09/14 19:59	1
2,2-Dichloropropane	ND		1.00		ug/L			12/09/14 19:59	1
1,1-Dichloropropene	ND		1.00		ug/L			12/09/14 19:59	1
Ethylbenzene	ND		1.00		ug/L			12/09/14 19:59	1
Ethylene Dibromide	ND		1.00		ug/L			12/09/14 19:59	1
Hexachlorobutadiene	ND		2.00		ug/L			12/09/14 19:59	1
2-Hexanone	ND		10.0		ug/L			12/09/14 19:59	1
Isopropylbenzene	ND		1.00		ug/L			12/09/14 19:59	1
4-Isopropyltoluene	ND		1.00		ug/L			12/09/14 19:59	1
Methylene Chloride	ND		5.00		ug/L			12/09/14 19:59	1
4-Methyl-2-pentanone (MIBK)	ND		10.0		ug/L			12/09/14 19:59	1
Methyl tert-butyl ether	ND		1.00		ug/L			12/09/14 19:59	1
Naphthalene	ND		5.00		ug/L			12/09/14 19:59	1
n-Butylbenzene	ND		1.00		ug/L			12/09/14 19:59	1
N-Propylbenzene	ND		1.00		ug/L			12/09/14 19:59	1
sec-Butylbenzene	ND		1.00		ug/L			12/09/14 19:59	1
Styrene	ND		1.00		ug/L			12/09/14 19:59	1
tert-Butylbenzene	ND		1.00		ug/L			12/09/14 19:59	1
1,1,1,2-Tetrachloroethane	ND		1.00		ug/L			12/09/14 19:59	1
1,1,2,2-Tetrachloroethane	ND		1.00		ug/L			12/09/14 19:59	1

TestAmerica Nashville

# Client Sample Results

Client: Federated Environmental Associates  
 Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
 SDG: 145850

**Client Sample ID: TB-2**

**Lab Sample ID: 490-67884-5**

**Date Collected: 12/03/14 08:45**

**Matrix: Ground Water**

**Date Received: 12/04/14 08:30**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Tetrachloroethene</b>	<b>15.4</b>		1.00		ug/L			12/09/14 19:59	1
Toluene	ND		1.00		ug/L			12/09/14 19:59	1
trans-1,2-Dichloroethene	ND		1.00		ug/L			12/09/14 19:59	1
trans-1,3-Dichloropropene	ND		1.00		ug/L			12/09/14 19:59	1
1,2,3-Trichlorobenzene	ND		1.00		ug/L			12/09/14 19:59	1
1,2,4-Trichlorobenzene	ND		1.00		ug/L			12/09/14 19:59	1
1,1,1-Trichloroethane	ND		1.00		ug/L			12/09/14 19:59	1
1,1,2-Trichloroethane	ND		1.00		ug/L			12/09/14 19:59	1
Trichloroethene	ND		1.00		ug/L			12/09/14 19:59	1
Trichlorofluoromethane	ND		1.00		ug/L			12/09/14 19:59	1
1,2,3-Trichloropropane	ND		1.00		ug/L			12/09/14 19:59	1
1,2,4-Trimethylbenzene	ND		1.00		ug/L			12/09/14 19:59	1
1,3,5-Trimethylbenzene	ND		1.00		ug/L			12/09/14 19:59	1
Vinyl chloride	ND		1.00		ug/L			12/09/14 19:59	1
Xylenes, Total	ND		2.00		ug/L			12/09/14 19:59	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	106		70 - 130					12/09/14 19:59	1
Dibromofluoromethane (Surr)	91		70 - 130					12/09/14 19:59	1
1,2-Dichloroethane-d4 (Surr)	85		70 - 130					12/09/14 19:59	1
Toluene-d8 (Surr)	102		70 - 130					12/09/14 19:59	1

# Client Sample Results

Client: Federated Environmental Associates  
 Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
 SDG: 145850

**Client Sample ID: TB-3**

**Lab Sample ID: 490-67884-6**

**Date Collected: 12/03/14 12:00**

**Matrix: Ground Water**

**Date Received: 12/04/14 08:30**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		25.0		ug/L			12/09/14 20:26	1
Benzene	ND		1.00		ug/L			12/09/14 20:26	1
Bromobenzene	ND		1.00		ug/L			12/09/14 20:26	1
Bromoform	ND		1.00		ug/L			12/09/14 20:26	1
Bromomethane	ND		1.00		ug/L			12/09/14 20:26	1
2-Butanone (MEK)	ND		50.0		ug/L			12/09/14 20:26	1
Carbon disulfide	ND		1.00		ug/L			12/09/14 20:26	1
Carbon tetrachloride	ND		1.00		ug/L			12/09/14 20:26	1
Chlorobenzene	ND		1.00		ug/L			12/09/14 20:26	1
Chlorobromomethane	ND		1.00		ug/L			12/09/14 20:26	1
Chlorodibromomethane	ND		1.00		ug/L			12/09/14 20:26	1
Chloroethane	ND		1.00		ug/L			12/09/14 20:26	1
Chloroform	ND		1.00		ug/L			12/09/14 20:26	1
Chloromethane	ND		1.00		ug/L			12/09/14 20:26	1
2-Chlorotoluene	ND		1.00		ug/L			12/09/14 20:26	1
4-Chlorotoluene	ND		1.00		ug/L			12/09/14 20:26	1
cis-1,2-Dichloroethene	ND		1.00		ug/L			12/09/14 20:26	1
cis-1,3-Dichloropropene	ND		1.00		ug/L			12/09/14 20:26	1
1,2-Dibromo-3-Chloropropane	ND		10.0		ug/L			12/09/14 20:26	1
Dibromomethane	ND		1.00		ug/L			12/09/14 20:26	1
1,2-Dichlorobenzene	ND		1.00		ug/L			12/09/14 20:26	1
1,3-Dichlorobenzene	ND		1.00		ug/L			12/09/14 20:26	1
1,4-Dichlorobenzene	ND		1.00		ug/L			12/09/14 20:26	1
Dichlorobromomethane	ND		1.00		ug/L			12/09/14 20:26	1
Dichlorodifluoromethane	ND		1.00		ug/L			12/09/14 20:26	1
1,1-Dichloroethane	ND		1.00		ug/L			12/09/14 20:26	1
1,2-Dichloroethane	ND		1.00		ug/L			12/09/14 20:26	1
1,1-Dichloroethene	ND		1.00		ug/L			12/09/14 20:26	1
1,2-Dichloropropane	ND		1.00		ug/L			12/09/14 20:26	1
1,3-Dichloropropane	ND		1.00		ug/L			12/09/14 20:26	1
2,2-Dichloropropane	ND		1.00		ug/L			12/09/14 20:26	1
1,1-Dichloropropene	ND		1.00		ug/L			12/09/14 20:26	1
Ethylbenzene	ND		1.00		ug/L			12/09/14 20:26	1
Ethylene Dibromide	ND		1.00		ug/L			12/09/14 20:26	1
Hexachlorobutadiene	ND		2.00		ug/L			12/09/14 20:26	1
2-Hexanone	ND		10.0		ug/L			12/09/14 20:26	1
Isopropylbenzene	ND		1.00		ug/L			12/09/14 20:26	1
4-Isopropyltoluene	ND		1.00		ug/L			12/09/14 20:26	1
Methylene Chloride	ND		5.00		ug/L			12/09/14 20:26	1
4-Methyl-2-pentanone (MIBK)	ND		10.0		ug/L			12/09/14 20:26	1
Methyl tert-butyl ether	ND		1.00		ug/L			12/09/14 20:26	1
Naphthalene	ND		5.00		ug/L			12/09/14 20:26	1
n-Butylbenzene	ND		1.00		ug/L			12/09/14 20:26	1
N-Propylbenzene	ND		1.00		ug/L			12/09/14 20:26	1
sec-Butylbenzene	ND		1.00		ug/L			12/09/14 20:26	1
Styrene	ND		1.00		ug/L			12/09/14 20:26	1
tert-Butylbenzene	ND		1.00		ug/L			12/09/14 20:26	1
1,1,1,2-Tetrachloroethane	ND		1.00		ug/L			12/09/14 20:26	1
1,1,2,2-Tetrachloroethane	ND		1.00		ug/L			12/09/14 20:26	1

TestAmerica Nashville

# Client Sample Results

Client: Federated Environmental Associates  
 Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
 SDG: 145850

**Client Sample ID: TB-3**

**Lab Sample ID: 490-67884-6**

**Date Collected: 12/03/14 12:00**

**Matrix: Ground Water**

**Date Received: 12/04/14 08:30**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		1.00		ug/L			12/09/14 20:26	1
Toluene	ND		1.00		ug/L			12/09/14 20:26	1
trans-1,2-Dichloroethene	ND		1.00		ug/L			12/09/14 20:26	1
trans-1,3-Dichloropropene	ND		1.00		ug/L			12/09/14 20:26	1
1,2,3-Trichlorobenzene	ND		1.00		ug/L			12/09/14 20:26	1
1,2,4-Trichlorobenzene	ND		1.00		ug/L			12/09/14 20:26	1
1,1,1-Trichloroethane	ND		1.00		ug/L			12/09/14 20:26	1
1,1,2-Trichloroethane	ND		1.00		ug/L			12/09/14 20:26	1
Trichloroethene	ND		1.00		ug/L			12/09/14 20:26	1
Trichlorofluoromethane	ND		1.00		ug/L			12/09/14 20:26	1
1,2,3-Trichloropropane	ND		1.00		ug/L			12/09/14 20:26	1
1,2,4-Trimethylbenzene	ND		1.00		ug/L			12/09/14 20:26	1
1,3,5-Trimethylbenzene	ND		1.00		ug/L			12/09/14 20:26	1
Vinyl chloride	ND		1.00		ug/L			12/09/14 20:26	1
Xylenes, Total	ND		2.00		ug/L			12/09/14 20:26	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	106		70 - 130					12/09/14 20:26	1
Dibromofluoromethane (Surr)	92		70 - 130					12/09/14 20:26	1
1,2-Dichloroethane-d4 (Surr)	85		70 - 130					12/09/14 20:26	1
Toluene-d8 (Surr)	103		70 - 130					12/09/14 20:26	1

# QC Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

## Method: 8260C - Volatile Organic Compounds by GC/MS

**Lab Sample ID: MB 490-212413/7**

**Matrix: Water**

**Analysis Batch: 212413**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		25.0		ug/L			12/09/14 11:54	1
Benzene	ND		1.00		ug/L			12/09/14 11:54	1
Bromobenzene	ND		1.00		ug/L			12/09/14 11:54	1
Bromoform	ND		1.00		ug/L			12/09/14 11:54	1
Bromomethane	ND		1.00		ug/L			12/09/14 11:54	1
2-Butanone (MEK)	ND		50.0		ug/L			12/09/14 11:54	1
Carbon disulfide	ND		1.00		ug/L			12/09/14 11:54	1
Carbon tetrachloride	ND		1.00		ug/L			12/09/14 11:54	1
Chlorobenzene	ND		1.00		ug/L			12/09/14 11:54	1
Chlorobromomethane	ND		1.00		ug/L			12/09/14 11:54	1
Chlorodibromomethane	ND		1.00		ug/L			12/09/14 11:54	1
Chloroethane	ND		1.00		ug/L			12/09/14 11:54	1
Chloroform	ND		1.00		ug/L			12/09/14 11:54	1
Chloromethane	ND		1.00		ug/L			12/09/14 11:54	1
2-Chlorotoluene	ND		1.00		ug/L			12/09/14 11:54	1
4-Chlorotoluene	ND		1.00		ug/L			12/09/14 11:54	1
cis-1,2-Dichloroethene	ND		1.00		ug/L			12/09/14 11:54	1
cis-1,3-Dichloropropene	ND		1.00		ug/L			12/09/14 11:54	1
1,2-Dibromo-3-Chloropropane	ND		10.0		ug/L			12/09/14 11:54	1
Dibromomethane	ND		1.00		ug/L			12/09/14 11:54	1
1,2-Dichlorobenzene	ND		1.00		ug/L			12/09/14 11:54	1
1,3-Dichlorobenzene	ND		1.00		ug/L			12/09/14 11:54	1
1,4-Dichlorobenzene	ND		1.00		ug/L			12/09/14 11:54	1
Dichlorobromomethane	ND		1.00		ug/L			12/09/14 11:54	1
Dichlorodifluoromethane	ND		1.00		ug/L			12/09/14 11:54	1
1,1-Dichloroethane	ND		1.00		ug/L			12/09/14 11:54	1
1,2-Dichloroethane	ND		1.00		ug/L			12/09/14 11:54	1
1,1-Dichloroethene	ND		1.00		ug/L			12/09/14 11:54	1
1,2-Dichloropropane	ND		1.00		ug/L			12/09/14 11:54	1
1,3-Dichloropropane	ND		1.00		ug/L			12/09/14 11:54	1
2,2-Dichloropropane	ND		1.00		ug/L			12/09/14 11:54	1
1,1-Dichloropropene	ND		1.00		ug/L			12/09/14 11:54	1
Ethylbenzene	ND		1.00		ug/L			12/09/14 11:54	1
Ethylene Dibromide	ND		1.00		ug/L			12/09/14 11:54	1
Hexachlorobutadiene	ND		2.00		ug/L			12/09/14 11:54	1
2-Hexanone	ND		10.0		ug/L			12/09/14 11:54	1
Isopropylbenzene	ND		1.00		ug/L			12/09/14 11:54	1
4-Isopropyltoluene	ND		1.00		ug/L			12/09/14 11:54	1
Methylene Chloride	ND		5.00		ug/L			12/09/14 11:54	1
4-Methyl-2-pentanone (MIBK)	ND		10.0		ug/L			12/09/14 11:54	1
Methyl tert-butyl ether	ND		1.00		ug/L			12/09/14 11:54	1
Naphthalene	ND		5.00		ug/L			12/09/14 11:54	1
n-Butylbenzene	ND		1.00		ug/L			12/09/14 11:54	1
N-Propylbenzene	ND		1.00		ug/L			12/09/14 11:54	1
sec-Butylbenzene	ND		1.00		ug/L			12/09/14 11:54	1
Styrene	ND		1.00		ug/L			12/09/14 11:54	1
tert-Butylbenzene	ND		1.00		ug/L			12/09/14 11:54	1
1,1,1,2-Tetrachloroethane	ND		1.00		ug/L			12/09/14 11:54	1

TestAmerica Nashville

# QC Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

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

**Lab Sample ID: MB 490-212413/7**

**Matrix: Water**

**Analysis Batch: 212413**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		1.00		ug/L			12/09/14 11:54	1
Tetrachloroethene	ND		1.00		ug/L			12/09/14 11:54	1
Toluene	ND		1.00		ug/L			12/09/14 11:54	1
trans-1,2-Dichloroethene	ND		1.00		ug/L			12/09/14 11:54	1
trans-1,3-Dichloropropene	ND		1.00		ug/L			12/09/14 11:54	1
1,2,3-Trichlorobenzene	ND		1.00		ug/L			12/09/14 11:54	1
1,2,4-Trichlorobenzene	ND		1.00		ug/L			12/09/14 11:54	1
1,1,1-Trichloroethane	ND		1.00		ug/L			12/09/14 11:54	1
1,1,2-Trichloroethane	ND		1.00		ug/L			12/09/14 11:54	1
Trichloroethene	ND		1.00		ug/L			12/09/14 11:54	1
Trichlorofluoromethane	ND		1.00		ug/L			12/09/14 11:54	1
1,2,3-Trichloropropane	ND		1.00		ug/L			12/09/14 11:54	1
1,2,4-Trimethylbenzene	ND		1.00		ug/L			12/09/14 11:54	1
1,3,5-Trimethylbenzene	ND		1.00		ug/L			12/09/14 11:54	1
Vinyl chloride	ND		1.00		ug/L			12/09/14 11:54	1
Xylenes, Total	ND		2.00		ug/L			12/09/14 11:54	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130		12/09/14 11:54	1
Dibromofluoromethane (Surr)	91		70 - 130		12/09/14 11:54	1
1,2-Dichloroethane-d4 (Surr)	87		70 - 130		12/09/14 11:54	1
Toluene-d8 (Surr)	104		70 - 130		12/09/14 11:54	1

**Lab Sample ID: LCS 490-212413/3**

**Matrix: Water**

**Analysis Batch: 212413**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	100	78.51		ug/L		79	54 - 145
Benzene	20.0	20.19		ug/L		101	80 - 121
Bromobenzene	20.0	22.04		ug/L		110	68 - 130
Bromoform	20.0	16.09		ug/L		80	46 - 145
Bromomethane	20.0	13.51		ug/L		68	41 - 150
2-Butanone (MEK)	100	78.74		ug/L		79	62 - 133
Carbon disulfide	20.0	19.71		ug/L		99	77 - 126
Carbon tetrachloride	20.0	16.77		ug/L		84	64 - 147
Chlorobenzene	20.0	19.85		ug/L		99	80 - 120
Chlorobromomethane	20.0	18.11		ug/L		91	78 - 129
Chlorodibromomethane	20.0	18.13		ug/L		91	69 - 133
Chloroethane	20.0	17.10		ug/L		86	72 - 120
Chloroform	20.0	17.49		ug/L		87	73 - 129
Chloromethane	20.0	15.91		ug/L		80	12 - 150
2-Chlorotoluene	20.0	21.01		ug/L		105	75 - 126
4-Chlorotoluene	20.0	21.99		ug/L		110	75 - 130
cis-1,2-Dichloroethene	20.0	19.09		ug/L		95	76 - 125
cis-1,3-Dichloropropene	20.0	20.65		ug/L		103	74 - 140
1,2-Dibromo-3-Chloropropane	20.0	17.30		ug/L		86	54 - 125
Dibromomethane	20.0	19.29		ug/L		96	71 - 125

TestAmerica Nashville

# QC Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

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

**Lab Sample ID: LCS 490-212413/3**

**Matrix: Water**

**Analysis Batch: 212413**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec. Limits
	Added	Result	Qualifier				
1,2-Dichlorobenzene	20.0	21.10		ug/L		105	80 - 121
1,3-Dichlorobenzene	20.0	20.59		ug/L		103	80 - 122
1,4-Dichlorobenzene	20.0	20.70		ug/L		103	80 - 120
Dichlorobromomethane	20.0	20.24		ug/L		101	75 - 129
Dichlorodifluoromethane	20.0	20.53		ug/L		103	37 - 127
1,1-Dichloroethane	20.0	20.15		ug/L		101	78 - 125
1,2-Dichloroethane	20.0	17.26		ug/L		86	77 - 121
1,1-Dichloroethene	20.0	19.87		ug/L		99	79 - 124
1,2-Dichloropropane	20.0	22.04		ug/L		110	75 - 120
1,3-Dichloropropane	20.0	20.71		ug/L		104	80 - 125
2,2-Dichloropropane	20.0	17.31		ug/L		87	43 - 161
1,1-Dichloropropene	20.0	20.45		ug/L		102	80 - 122
Ethylbenzene	20.0	19.64		ug/L		98	80 - 130
Ethylene Dibromide	20.0	19.63		ug/L		98	80 - 129
Hexachlorobutadiene	20.0	23.72		ug/L		119	49 - 146
2-Hexanone	100	87.53		ug/L		88	60 - 142
Isopropylbenzene	20.0	18.42		ug/L		92	80 - 141
4-Isopropyltoluene	20.0	20.13		ug/L		101	75 - 128
Methylene Chloride	20.0	19.05		ug/L		95	79 - 123
4-Methyl-2-pentanone (MIBK)	100	92.24		ug/L		92	60 - 137
Methyl tert-butyl ether	20.0	16.95		ug/L		85	72 - 133
Naphthalene	20.0	18.46		ug/L		92	62 - 138
n-Butylbenzene	20.0	20.67		ug/L		103	68 - 132
N-Propylbenzene	20.0	21.51		ug/L		108	75 - 129
sec-Butylbenzene	20.0	20.53		ug/L		103	76 - 128
Styrene	20.0	19.20		ug/L		96	80 - 127
tert-Butylbenzene	20.0	19.85		ug/L		99	76 - 126
1,1,1,2-Tetrachloroethane	20.0	18.36		ug/L		92	74 - 135
1,1,1,2,2-Tetrachloroethane	20.0	20.86		ug/L		104	69 - 131
Tetrachloroethene	20.0	18.19		ug/L		91	80 - 126
Toluene	20.0	20.14		ug/L		101	80 - 126
trans-1,2-Dichloroethene	20.0	20.68		ug/L		103	79 - 126
trans-1,3-Dichloropropene	20.0	17.69		ug/L		88	63 - 134
1,2,3-Trichlorobenzene	20.0	21.37		ug/L		107	62 - 133
1,2,4-Trichlorobenzene	20.0	19.45		ug/L		97	63 - 133
1,1,1-Trichloroethane	20.0	16.85		ug/L		84	78 - 135
1,1,2-Trichloroethane	20.0	19.51		ug/L		98	80 - 124
Trichloroethene	20.0	19.09		ug/L		95	80 - 123
Trichlorofluoromethane	20.0	16.68		ug/L		83	65 - 124
1,2,3-Trichloropropane	20.0	19.61		ug/L		98	70 - 131
1,2,4-Trimethylbenzene	20.0	20.23		ug/L		101	77 - 126
1,3,5-Trimethylbenzene	20.0	20.46		ug/L		102	77 - 127
Vinyl chloride	20.0	21.29		ug/L		106	68 - 120

Surrogate	LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	106		70 - 130
Dibromofluoromethane (Surr)	90		70 - 130
1,2-Dichloroethane-d4 (Surr)	90		70 - 130

TestAmerica Nashville

# QC Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

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

**Lab Sample ID: LCS 490-212413/3**

**Matrix: Water**

**Analysis Batch: 212413**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	100		70 - 130

**Lab Sample ID: LCSD 490-212413/4**

**Matrix: Water**

**Analysis Batch: 212413**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	RPD Limit
							Limits	RPD		
Acetone	100	77.48		ug/L		77	54 - 145	1	21	
Benzene	20.0	19.23		ug/L		96	80 - 121	5	17	
Bromobenzene	20.0	20.84		ug/L		104	68 - 130	6	20	
Bromoform	20.0	15.19		ug/L		76	46 - 145	6	16	
Bromomethane	20.0	14.43		ug/L		72	41 - 150	7	50	
2-Butanone (MEK)	100	76.56		ug/L		77	62 - 133	3	19	
Carbon disulfide	20.0	18.69		ug/L		93	77 - 126	5	21	
Carbon tetrachloride	20.0	16.01		ug/L		80	64 - 147	5	19	
Chlorobenzene	20.0	18.81		ug/L		94	80 - 120	5	14	
Chlorobromomethane	20.0	17.04		ug/L		85	78 - 129	6	17	
Chlorodibromomethane	20.0	17.16		ug/L		86	69 - 133	5	15	
Chloroethane	20.0	17.56		ug/L		88	72 - 120	3	20	
Chloroform	20.0	16.63		ug/L		83	73 - 129	5	18	
Chloromethane	20.0	17.22		ug/L		86	12 - 150	8	31	
2-Chlorotoluene	20.0	20.01		ug/L		100	75 - 126	5	17	
4-Chlorotoluene	20.0	21.24		ug/L		106	75 - 130	4	18	
cis-1,2-Dichloroethene	20.0	18.11		ug/L		91	76 - 125	5	17	
cis-1,3-Dichloropropene	20.0	19.07		ug/L		95	74 - 140	8	15	
1,2-Dibromo-3-Chloropropane	20.0	15.85		ug/L		79	54 - 125	9	24	
Dibromomethane	20.0	18.38		ug/L		92	71 - 125	5	16	
1,2-Dichlorobenzene	20.0	20.17		ug/L		101	80 - 121	5	15	
1,3-Dichlorobenzene	20.0	19.50		ug/L		97	80 - 122	5	15	
1,4-Dichlorobenzene	20.0	18.53		ug/L		93	80 - 120	11	15	
Dichlorobromomethane	20.0	19.34		ug/L		97	75 - 129	5	18	
Dichlorodifluoromethane	20.0	20.27		ug/L		101	37 - 127	1	18	
1,1-Dichloroethane	20.0	19.04		ug/L		95	78 - 125	6	17	
1,2-Dichloroethane	20.0	16.44		ug/L		82	77 - 121	5	17	
1,1-Dichloroethene	20.0	19.29		ug/L		96	79 - 124	3	17	
1,2-Dichloropropane	20.0	20.95		ug/L		105	75 - 120	5	17	
1,3-Dichloropropane	20.0	19.99		ug/L		100	80 - 125	4	14	
2,2-Dichloropropane	20.0	16.25		ug/L		81	43 - 161	6	18	
1,1-Dichloropropene	20.0	19.23		ug/L		96	80 - 122	6	17	
Ethylbenzene	20.0	18.62		ug/L		93	80 - 130	5	15	
Ethylene Dibromide	20.0	18.77		ug/L		94	80 - 129	4	15	
Hexachlorobutadiene	20.0	23.30		ug/L		116	49 - 146	2	23	
2-Hexanone	100	79.82		ug/L		80	60 - 142	9	15	
Isopropylbenzene	20.0	17.33		ug/L		87	80 - 141	6	16	
4-Isopropyltoluene	20.0	19.35		ug/L		97	75 - 128	4	16	
Methylene Chloride	20.0	18.52		ug/L		93	79 - 123	3	17	
4-Methyl-2-pentanone (MIBK)	100	86.68		ug/L		87	60 - 137	6	17	
Methyl tert-butyl ether	20.0	16.00		ug/L		80	72 - 133	6	16	

TestAmerica Nashville

# QC Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

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

**Lab Sample ID: LCSD 490-212413/4**

**Matrix: Water**

**Analysis Batch: 212413**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene	20.0	18.36		ug/L		92	62 - 138	1	26
n-Butylbenzene	20.0	20.01		ug/L		100	68 - 132	3	18
N-Propylbenzene	20.0	20.39		ug/L		102	75 - 129	5	17
sec-Butylbenzene	20.0	19.20		ug/L		96	76 - 128	7	16
Styrene	20.0	17.99		ug/L		90	80 - 127	7	24
tert-Butylbenzene	20.0	18.55		ug/L		93	76 - 126	7	16
1,1,1,2-Tetrachloroethane	20.0	17.45		ug/L		87	74 - 135	5	16
1,1,2,2-Tetrachloroethane	20.0	20.07		ug/L		100	69 - 131	4	20
Tetrachloroethene	20.0	17.48		ug/L		87	80 - 126	4	16
Toluene	20.0	18.87		ug/L		94	80 - 126	6	15
trans-1,2-Dichloroethene	20.0	19.63		ug/L		98	79 - 126	5	16
trans-1,3-Dichloropropene	20.0	17.23		ug/L		86	63 - 134	3	14
1,2,3-Trichlorobenzene	20.0	21.92		ug/L		110	62 - 133	3	25
1,2,4-Trichlorobenzene	20.0	20.06		ug/L		100	63 - 133	3	19
1,1,1-Trichloroethane	20.0	15.67		ug/L		78	78 - 135	7	17
1,1,2-Trichloroethane	20.0	18.15		ug/L		91	80 - 124	7	15
Trichloroethene	20.0	17.80		ug/L		89	80 - 123	7	17
Trichlorofluoromethane	20.0	16.87		ug/L		84	65 - 124	1	18
1,2,3-Trichloropropane	20.0	18.39		ug/L		92	70 - 131	6	19
1,2,4-Trimethylbenzene	20.0	19.13		ug/L		96	77 - 126	6	16
1,3,5-Trimethylbenzene	20.0	19.48		ug/L		97	77 - 127	5	17
Vinyl chloride	20.0	21.72		ug/L		109	68 - 120	2	17

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	105		70 - 130
Dibromofluoromethane (Surr)	90		70 - 130
1,2-Dichloroethane-d4 (Surr)	86		70 - 130
Toluene-d8 (Surr)	98		70 - 130

**Lab Sample ID: 490-67507-B-2 MS**

**Matrix: Water**

**Analysis Batch: 212413**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Acetone	ND		250	174.0		ug/L		70	45 - 141
Benzene	ND		50.0	48.67		ug/L		97	75 - 133
Bromobenzene	ND		50.0	52.98		ug/L		106	60 - 138
Bromoform	ND		50.0	40.64		ug/L		81	42 - 147
Bromomethane	ND		50.0	33.04		ug/L		66	16 - 163
2-Butanone (MEK)	ND		250	190.4		ug/L		76	50 - 138
Carbon disulfide	ND		50.0	43.87		ug/L		88	48 - 152
Carbon tetrachloride	ND		50.0	43.24		ug/L		86	62 - 164
Chlorobenzene	ND		50.0	47.86		ug/L		96	80 - 129
Chlorobromomethane	ND		50.0	41.67		ug/L		83	67 - 139
Chlorodibromomethane	ND		50.0	45.92		ug/L		92	66 - 140
Chloroethane	ND		50.0	42.03		ug/L		84	58 - 137
Chloroform	ND		50.0	41.58		ug/L		83	66 - 138
Chloromethane	ND		50.0	39.99		ug/L		80	10 - 169

TestAmerica Nashville

# QC Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

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

**Lab Sample ID: 490-67507-B-2 MS**

**Client Sample ID: Matrix Spike**

**Matrix: Water**

**Prep Type: Total/NA**

**Analysis Batch: 212413**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
2-Chlorotoluene	ND		50.0	50.83		ug/L		102	67 - 138
4-Chlorotoluene	ND		50.0	53.38		ug/L		107	69 - 138
cis-1,2-Dichloroethene	ND		50.0	45.21		ug/L		90	68 - 138
cis-1,3-Dichloropropene	ND		50.0	49.08		ug/L		98	71 - 141
1,2-Dibromo-3-Chloropropane	ND		50.0	41.38		ug/L		83	52 - 126
Dibromomethane	ND		50.0	46.10		ug/L		92	58 - 140
1,2-Dichlorobenzene	ND		50.0	49.35		ug/L		99	79 - 128
1,3-Dichlorobenzene	ND		50.0	47.85		ug/L		96	77 - 131
1,4-Dichlorobenzene	ND		50.0	47.31		ug/L		95	78 - 126
Dichlorobromomethane	ND		50.0	49.75		ug/L		99	70 - 140
Dichlorodifluoromethane	ND		50.0	46.55		ug/L		93	40 - 127
1,1-Dichloroethane	ND		50.0	47.86		ug/L		96	71 - 139
1,2-Dichloroethane	ND		50.0	40.73		ug/L		81	64 - 136
1,1-Dichloroethene	ND		50.0	48.85		ug/L		98	70 - 142
1,2-Dichloropropane	ND		50.0	52.87		ug/L		106	67 - 131
1,3-Dichloropropane	ND		50.0	50.17		ug/L		100	72 - 134
2,2-Dichloropropane	ND		50.0	39.01		ug/L		78	37 - 175
1,1-Dichloropropene	ND		50.0	49.52		ug/L		99	76 - 139
Ethylbenzene	ND		50.0	48.05		ug/L		96	79 - 139
Ethylene Dibromide	ND		50.0	47.27		ug/L		95	75 - 137
Hexachlorobutadiene	ND		50.0	44.95		ug/L		90	45 - 155
2-Hexanone	ND		250	220.0		ug/L		88	50 - 150
Isopropylbenzene	ND		50.0	46.12		ug/L		92	80 - 153
4-Isopropyltoluene	ND		50.0	47.21		ug/L		94	71 - 137
Methylene Chloride	ND		50.0	45.25		ug/L		91	64 - 139
4-Methyl-2-pentanone (MIBK)	ND		250	235.4		ug/L		94	50 - 147
Methyl tert-butyl ether	ND		50.0	39.22		ug/L		78	66 - 141
Naphthalene	ND		50.0	41.80		ug/L		84	55 - 140
n-Butylbenzene	ND		50.0	48.27		ug/L		97	66 - 141
N-Propylbenzene	ND		50.0	52.55		ug/L		105	69 - 142
sec-Butylbenzene	ND		50.0	48.24		ug/L		96	73 - 138
Styrene	ND		50.0	46.50		ug/L		93	61 - 148
tert-Butylbenzene	ND		50.0	48.58		ug/L		97	70 - 138
1,1,1,2-Tetrachloroethane	ND		50.0	44.90		ug/L		90	73 - 141
1,1,2,2-Tetrachloroethane	ND		50.0	51.19		ug/L		102	56 - 143
Tetrachloroethene	ND		50.0	46.52		ug/L		93	72 - 145
Toluene	ND		50.0	47.94		ug/L		96	75 - 136
trans-1,2-Dichloroethene	ND		50.0	48.77		ug/L		98	66 - 143
trans-1,3-Dichloropropene	ND		50.0	44.20		ug/L		88	59 - 135
1,2,3-Trichlorobenzene	ND		50.0	44.81		ug/L		90	55 - 138
1,2,4-Trichlorobenzene	ND		50.0	43.12		ug/L		86	60 - 136
1,1,1-Trichloroethane	ND		50.0	41.32		ug/L		83	76 - 149
1,1,2-Trichloroethane	ND		50.0	46.53		ug/L		93	74 - 134
Trichloroethene	ND		50.0	46.10		ug/L		92	73 - 144
Trichlorofluoromethane	ND		50.0	43.72		ug/L		87	58 - 139
1,2,3-Trichloropropane	ND		50.0	47.63		ug/L		95	53 - 144
1,2,4-Trimethylbenzene	ND		50.0	48.40		ug/L		97	69 - 136
1,3,5-Trimethylbenzene	ND		50.0	49.61		ug/L		99	69 - 139

TestAmerica Nashville

# QC Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

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

**Lab Sample ID: 490-67507-B-2 MS**

**Client Sample ID: Matrix Spike**

**Matrix: Water**

**Prep Type: Total/NA**

**Analysis Batch: 212413**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	ND		50.0	52.11		ug/L		104	56 - 129
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS Qualifier</b>	<b>Limits</b>						
4-Bromofluorobenzene (Surr)	106		70 - 130						
Dibromofluoromethane (Surr)	89		70 - 130						
1,2-Dichloroethane-d4 (Surr)	84		70 - 130						
Toluene-d8 (Surr)	97		70 - 130						

**Lab Sample ID: 490-67507-C-2 MSD**

**Client Sample ID: Matrix Spike Duplicate**

**Matrix: Water**

**Prep Type: Total/NA**

**Analysis Batch: 212413**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	ND		250	180.0		ug/L		72	45 - 141	3	21
Benzene	ND		50.0	48.70		ug/L		97	75 - 133	0	17
Bromobenzene	ND		50.0	54.26		ug/L		109	60 - 138	2	20
Bromoform	ND		50.0	40.63		ug/L		81	42 - 147	0	16
Bromomethane	ND		50.0	36.66		ug/L		73	16 - 163	10	50
2-Butanone (MEK)	ND		250	177.8		ug/L		71	50 - 138	7	19
Carbon disulfide	ND		50.0	43.63		ug/L		87	48 - 152	1	21
Carbon tetrachloride	ND		50.0	43.55		ug/L		87	62 - 164	1	19
Chlorobenzene	ND		50.0	48.02		ug/L		96	80 - 129	0	14
Chlorobromomethane	ND		50.0	42.66		ug/L		85	67 - 139	2	17
Chlorodibromomethane	ND		50.0	45.40		ug/L		91	66 - 140	1	15
Chloroethane	ND		50.0	42.04		ug/L		84	58 - 137	0	20
Chloroform	ND		50.0	41.87		ug/L		84	66 - 138	1	18
Chloromethane	ND		50.0	41.92		ug/L		84	10 - 169	5	31
2-Chlorotoluene	ND		50.0	50.37		ug/L		101	67 - 138	1	17
4-Chlorotoluene	ND		50.0	53.64		ug/L		107	69 - 138	0	18
cis-1,2-Dichloroethene	ND		50.0	45.76		ug/L		92	68 - 138	1	17
cis-1,3-Dichloropropene	ND		50.0	49.63		ug/L		99	71 - 141	1	15
1,2-Dibromo-3-Chloropropane	ND		50.0	44.25		ug/L		89	52 - 126	7	24
Dibromomethane	ND		50.0	46.53		ug/L		93	58 - 140	1	16
1,2-Dichlorobenzene	ND		50.0	50.05		ug/L		100	79 - 128	1	15
1,3-Dichlorobenzene	ND		50.0	49.08		ug/L		98	77 - 131	3	15
1,4-Dichlorobenzene	ND		50.0	48.36		ug/L		97	78 - 126	2	15
Dichlorobromomethane	ND		50.0	50.22		ug/L		100	70 - 140	1	18
Dichlorodifluoromethane	ND		50.0	45.66		ug/L		91	40 - 127	2	18
1,1-Dichloroethane	ND		50.0	48.30		ug/L		97	71 - 139	1	17
1,2-Dichloroethane	ND		50.0	41.11		ug/L		82	64 - 136	1	17
1,1-Dichloroethene	ND		50.0	48.84		ug/L		98	70 - 142	0	17
1,2-Dichloropropane	ND		50.0	53.20		ug/L		106	67 - 131	1	17
1,3-Dichloropropane	ND		50.0	49.92		ug/L		100	72 - 134	0	14
2,2-Dichloropropane	ND		50.0	39.51		ug/L		79	37 - 175	1	18
1,1-Dichloropropene	ND		50.0	49.86		ug/L		100	76 - 139	1	17
Ethylbenzene	ND		50.0	49.00		ug/L		98	79 - 139	2	15
Ethylene Dibromide	ND		50.0	47.62		ug/L		95	75 - 137	1	15
Hexachlorobutadiene	ND		50.0	52.03		ug/L		104	45 - 155	15	23

TestAmerica Nashville

# QC Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

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

**Lab Sample ID: 490-67507-C-2 MSD**

**Matrix: Water**

**Analysis Batch: 212413**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
2-Hexanone	ND		250	228.5		ug/L		91	50 - 150	4	15
Isopropylbenzene	ND		50.0	46.24		ug/L		92	80 - 153	0	16
4-Isopropyltoluene	ND		50.0	48.50		ug/L		97	71 - 137	3	16
Methylene Chloride	ND		50.0	45.99		ug/L		92	64 - 139	2	17
4-Methyl-2-pentanone (MIBK)	ND		250	233.0		ug/L		93	50 - 147	1	17
Methyl tert-butyl ether	ND		50.0	40.44		ug/L		81	66 - 141	3	16
Naphthalene	ND		50.0	48.33		ug/L		97	55 - 140	15	26
n-Butylbenzene	ND		50.0	50.11		ug/L		100	66 - 141	4	18
N-Propylbenzene	ND		50.0	53.35		ug/L		107	69 - 142	2	17
sec-Butylbenzene	ND		50.0	49.30		ug/L		99	73 - 138	2	16
Styrene	ND		50.0	46.97		ug/L		94	61 - 148	1	24
tert-Butylbenzene	ND		50.0	49.77		ug/L		100	70 - 138	2	16
1,1,1,2-Tetrachloroethane	ND		50.0	45.27		ug/L		91	73 - 141	1	16
1,1,2,2-Tetrachloroethane	ND		50.0	50.43		ug/L		101	56 - 143	1	20
Tetrachloroethene	ND		50.0	44.49		ug/L		89	72 - 145	4	16
Toluene	ND		50.0	47.96		ug/L		96	75 - 136	0	15
trans-1,2-Dichloroethene	ND		50.0	49.19		ug/L		98	66 - 143	1	16
trans-1,3-Dichloropropene	ND		50.0	44.99		ug/L		90	59 - 135	2	14
1,2,3-Trichlorobenzene	ND		50.0	50.83		ug/L		102	55 - 138	13	25
1,2,4-Trichlorobenzene	ND		50.0	47.75		ug/L		96	60 - 136	10	19
1,1,1-Trichloroethane	ND		50.0	41.76		ug/L		84	76 - 149	1	17
1,1,2-Trichloroethane	ND		50.0	46.97		ug/L		94	74 - 134	1	15
Trichloroethene	ND		50.0	46.58		ug/L		93	73 - 144	1	17
Trichlorofluoromethane	ND		50.0	43.92		ug/L		88	58 - 139	0	18
1,2,3-Trichloropropane	ND		50.0	47.04		ug/L		94	53 - 144	1	19
1,2,4-Trimethylbenzene	ND		50.0	49.16		ug/L		98	69 - 136	2	16
1,3,5-Trimethylbenzene	ND		50.0	50.26		ug/L		101	69 - 139	1	17
Vinyl chloride	ND		50.0	53.11		ug/L		106	56 - 129	2	17

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
Dibromofluoromethane (Surr)	90		70 - 130
1,2-Dichloroethane-d4 (Surr)	86		70 - 130
Toluene-d8 (Surr)	98		70 - 130

**Lab Sample ID: MB 490-212468/8**

**Matrix: Solid**

**Analysis Batch: 212468**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acetone	ND		0.0500		mg/Kg			12/09/14 14:00	1
Benzene	ND		0.00200		mg/Kg			12/09/14 14:00	1
Bromobenzene	ND		0.00200		mg/Kg			12/09/14 14:00	1
Bromoform	ND		0.00200		mg/Kg			12/09/14 14:00	1
Bromomethane	ND		0.00200		mg/Kg			12/09/14 14:00	1
2-Butanone (MEK)	ND		0.0500		mg/Kg			12/09/14 14:00	1
Carbon disulfide	ND		0.00500		mg/Kg			12/09/14 14:00	1
Carbon tetrachloride	ND		0.00200		mg/Kg			12/09/14 14:00	1

TestAmerica Nashville

# QC Sample Results

Client: Federated Environmental Associates  
 Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
 SDG: 145850

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

Lab Sample ID: MB 490-212468/8

Matrix: Solid

Analysis Batch: 212468

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND		0.00200		mg/Kg			12/09/14 14:00	1
Chlorobromomethane	ND		0.00200		mg/Kg			12/09/14 14:00	1
Chlorodibromomethane	ND		0.00200		mg/Kg			12/09/14 14:00	1
Chloroethane	ND		0.00500		mg/Kg			12/09/14 14:00	1
Chloroform	ND		0.00200		mg/Kg			12/09/14 14:00	1
Chloromethane	ND		0.00200		mg/Kg			12/09/14 14:00	1
2-Chlorotoluene	ND		0.00200		mg/Kg			12/09/14 14:00	1
4-Chlorotoluene	ND		0.00200		mg/Kg			12/09/14 14:00	1
cis-1,2-Dichloroethene	ND		0.00200		mg/Kg			12/09/14 14:00	1
cis-1,3-Dichloropropene	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,2-Dibromo-3-Chloropropane	ND		0.00500		mg/Kg			12/09/14 14:00	1
Dibromomethane	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,2-Dichlorobenzene	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,3-Dichlorobenzene	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,4-Dichlorobenzene	ND		0.00200		mg/Kg			12/09/14 14:00	1
Dichlorobromomethane	ND		0.00200		mg/Kg			12/09/14 14:00	1
Dichlorodifluoromethane	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,1-Dichloroethane	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,2-Dichloroethane	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,1-Dichloroethene	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,2-Dichloropropane	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,3-Dichloropropane	ND		0.00200		mg/Kg			12/09/14 14:00	1
2,2-Dichloropropane	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,1-Dichloropropene	ND		0.00200		mg/Kg			12/09/14 14:00	1
Ethylbenzene	ND		0.00200		mg/Kg			12/09/14 14:00	1
Ethylene Dibromide	ND		0.00200		mg/Kg			12/09/14 14:00	1
Hexachlorobutadiene	ND		0.00500		mg/Kg			12/09/14 14:00	1
2-Hexanone	ND		0.0500		mg/Kg			12/09/14 14:00	1
Isopropylbenzene	ND		0.00200		mg/Kg			12/09/14 14:00	1
4-Isopropyltoluene	ND		0.00200		mg/Kg			12/09/14 14:00	1
Methylene Chloride	ND		0.0100		mg/Kg			12/09/14 14:00	1
4-Methyl-2-pentanone (MIBK)	ND		0.0500		mg/Kg			12/09/14 14:00	1
Methyl tert-butyl ether	ND		0.00200		mg/Kg			12/09/14 14:00	1
Naphthalene	ND		0.00500		mg/Kg			12/09/14 14:00	1
n-Butylbenzene	ND		0.00200		mg/Kg			12/09/14 14:00	1
N-Propylbenzene	ND		0.00200		mg/Kg			12/09/14 14:00	1
sec-Butylbenzene	ND		0.00200		mg/Kg			12/09/14 14:00	1
Styrene	ND		0.00200		mg/Kg			12/09/14 14:00	1
tert-Butylbenzene	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,1,1,2-Tetrachloroethane	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,1,2,2-Tetrachloroethane	ND		0.00200		mg/Kg			12/09/14 14:00	1
Tetrachloroethene	ND		0.00200		mg/Kg			12/09/14 14:00	1
Toluene	ND		0.00200		mg/Kg			12/09/14 14:00	1
trans-1,2-Dichloroethene	ND		0.00200		mg/Kg			12/09/14 14:00	1
trans-1,3-Dichloropropene	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,2,3-Trichlorobenzene	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,2,4-Trichlorobenzene	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,1,1-Trichloroethane	ND		0.00200		mg/Kg			12/09/14 14:00	1

TestAmerica Nashville

# QC Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

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

**Lab Sample ID: MB 490-212468/8**

**Matrix: Solid**

**Analysis Batch: 212468**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		0.00500		mg/Kg			12/09/14 14:00	1
Trichloroethene	ND		0.00200		mg/Kg			12/09/14 14:00	1
Trichlorofluoromethane	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,2,3-Trichloropropane	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,2,4-Trimethylbenzene	ND		0.00200		mg/Kg			12/09/14 14:00	1
1,3,5-Trimethylbenzene	ND		0.00200		mg/Kg			12/09/14 14:00	1
Vinyl chloride	ND		0.00200		mg/Kg			12/09/14 14:00	1
Xylenes, Total	ND		0.00300		mg/Kg			12/09/14 14:00	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130		12/09/14 14:00	1
Dibromofluoromethane (Surr)	102		70 - 130		12/09/14 14:00	1
1,2-Dichloroethane-d4 (Surr)	106		70 - 130		12/09/14 14:00	1
Toluene-d8 (Surr)	103		70 - 130		12/09/14 14:00	1

**Lab Sample ID: LCS 490-212468/4**

**Matrix: Solid**

**Analysis Batch: 212468**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	0.250	0.2725		mg/Kg		109	51 - 149
Benzene	0.0500	0.04773		mg/Kg		95	75 - 127
Bromobenzene	0.0500	0.04742		mg/Kg		95	75 - 130
Bromoform	0.0500	0.04746		mg/Kg		95	36 - 150
Bromomethane	0.0500	0.04479		mg/Kg		90	43 - 142
2-Butanone (MEK)	0.250	0.2615		mg/Kg		105	61 - 132
Carbon disulfide	0.0500	0.04582		mg/Kg		92	74 - 135
Carbon tetrachloride	0.0500	0.04280		mg/Kg		86	70 - 141
Chlorobenzene	0.0500	0.04550		mg/Kg		91	84 - 125
Chlorobromomethane	0.0500	0.04853		mg/Kg		97	70 - 132
Chlorodibromomethane	0.0500	0.04958		mg/Kg		99	66 - 134
Chloroethane	0.0500	0.04886		mg/Kg		98	53 - 144
Chloroform	0.0500	0.04638		mg/Kg		93	76 - 130
Chloromethane	0.0500	0.04761		mg/Kg		95	23 - 150
2-Chlorotoluene	0.0500	0.04674		mg/Kg		93	78 - 132
4-Chlorotoluene	0.0500	0.05013		mg/Kg		100	77 - 138
cis-1,2-Dichloroethene	0.0500	0.04923		mg/Kg		98	75 - 125
cis-1,3-Dichloropropene	0.0500	0.04768		mg/Kg		95	73 - 148
1,2-Dibromo-3-Chloropropane	0.0500	0.04837		mg/Kg		97	49 - 142
Dibromomethane	0.0500	0.04747		mg/Kg		95	71 - 130
1,2-Dichlorobenzene	0.0500	0.04901		mg/Kg		98	80 - 134
1,3-Dichlorobenzene	0.0500	0.05028		mg/Kg		101	79 - 137
1,4-Dichlorobenzene	0.0500	0.04727		mg/Kg		95	77 - 139
Dichlorobromomethane	0.0500	0.04735		mg/Kg		95	68 - 135
Dichlorodifluoromethane	0.0500	0.04755		mg/Kg		95	12 - 144
1,1-Dichloroethane	0.0500	0.04758		mg/Kg		95	75 - 124
1,2-Dichloroethane	0.0500	0.04921		mg/Kg		98	65 - 134
1,1-Dichloroethene	0.0500	0.04405		mg/Kg		88	75 - 131

TestAmerica Nashville

# QC Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

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

**Lab Sample ID: LCS 490-212468/4**

**Matrix: Solid**

**Analysis Batch: 212468**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloropropane	0.0500	0.04721		mg/Kg		94	69 - 120
1,3-Dichloropropane	0.0500	0.04971		mg/Kg		99	78 - 126
2,2-Dichloropropane	0.0500	0.04361		mg/Kg		87	68 - 145
1,1-Dichloropropene	0.0500	0.04341		mg/Kg		87	79 - 127
Ethylbenzene	0.0500	0.04772		mg/Kg		95	80 - 134
Ethylene Dibromide	0.0500	0.04789		mg/Kg		96	80 - 135
Hexachlorobutadiene	0.0500	0.04457		mg/Kg		89	65 - 148
2-Hexanone	0.250	0.2857		mg/Kg		114	57 - 148
Isopropylbenzene	0.0500	0.04547		mg/Kg		91	80 - 150
4-Isopropyltoluene	0.0500	0.04861		mg/Kg		97	77 - 141
Methylene Chloride	0.0500	0.04605		mg/Kg		92	68 - 144
4-Methyl-2-pentanone (MIBK)	0.250	0.2886		mg/Kg		115	59 - 138
Methyl tert-butyl ether	0.0500	0.04528		mg/Kg		91	70 - 136
Naphthalene	0.0500	0.04659		mg/Kg		93	69 - 150
n-Butylbenzene	0.0500	0.05081		mg/Kg		102	72 - 152
N-Propylbenzene	0.0500	0.05018		mg/Kg		100	75 - 137
sec-Butylbenzene	0.0500	0.04772		mg/Kg		95	79 - 141
Styrene	0.0500	0.04997		mg/Kg		100	82 - 137
tert-Butylbenzene	0.0500	0.04497		mg/Kg		90	80 - 132
1,1,1,2-Tetrachloroethane	0.0500	0.04362		mg/Kg		87	80 - 136
1,1,2,2-Tetrachloroethane	0.0500	0.05386		mg/Kg		108	66 - 134
Tetrachloroethene	0.0500	0.04444		mg/Kg		89	78 - 140
Toluene	0.0500	0.04702		mg/Kg		94	80 - 132
trans-1,2-Dichloroethene	0.0500	0.04811		mg/Kg		96	76 - 128
trans-1,3-Dichloropropene	0.0500	0.04857		mg/Kg		97	62 - 139
1,2,3-Trichlorobenzene	0.0500	0.04530		mg/Kg		91	70 - 150
1,2,4-Trichlorobenzene	0.0500	0.04620		mg/Kg		92	62 - 150
1,1,1-Trichloroethane	0.0500	0.04572		mg/Kg		91	72 - 140
1,1,2-Trichloroethane	0.0500	0.05193		mg/Kg		104	78 - 128
Trichloroethene	0.0500	0.04231		mg/Kg		85	77 - 127
Trichlorofluoromethane	0.0500	0.04756		mg/Kg		95	50 - 140
1,2,3-Trichloropropane	0.0500	0.05290		mg/Kg		106	65 - 139
1,2,4-Trimethylbenzene	0.0500	0.04800		mg/Kg		96	77 - 139
1,3,5-Trimethylbenzene	0.0500	0.04793		mg/Kg		96	78 - 138
Vinyl chloride	0.0500	0.05193		mg/Kg		104	47 - 136

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	101		70 - 130
Dibromofluoromethane (Surr)	100		70 - 130
1,2-Dichloroethane-d4 (Surr)	104		70 - 130
Toluene-d8 (Surr)	103		70 - 130

**Lab Sample ID: LCSD 490-212468/5**

**Matrix: Solid**

**Analysis Batch: 212468**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
								RPD	Limit
Acetone	0.250	0.3019		mg/Kg		121	51 - 149	10	50

TestAmerica Nashville

# QC Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

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

Lab Sample ID: LCSD 490-212468/5

Matrix: Solid

Analysis Batch: 212468

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD	
							RPD	Limit	RPD	Limit
Benzene	0.0500	0.05092		mg/Kg		102	75 - 127	6	50	
Bromobenzene	0.0500	0.04969		mg/Kg		99	75 - 130	5	50	
Bromoform	0.0500	0.04929		mg/Kg		99	36 - 150	4	50	
Bromomethane	0.0500	0.04568		mg/Kg		91	43 - 142	2	50	
2-Butanone (MEK)	0.250	0.2827		mg/Kg		113	61 - 132	8	50	
Carbon disulfide	0.0500	0.04828		mg/Kg		97	74 - 135	5	50	
Carbon tetrachloride	0.0500	0.04583		mg/Kg		92	70 - 141	7	50	
Chlorobenzene	0.0500	0.04857		mg/Kg		97	84 - 125	7	50	
Chlorobromomethane	0.0500	0.05122		mg/Kg		102	70 - 132	5	50	
Chlorodibromomethane	0.0500	0.05152		mg/Kg		103	66 - 134	4	50	
Chloroethane	0.0500	0.04993		mg/Kg		100	53 - 144	2	50	
Chloroform	0.0500	0.04954		mg/Kg		99	76 - 130	7	49	
Chloromethane	0.0500	0.05128		mg/Kg		103	23 - 150	7	50	
2-Chlorotoluene	0.0500	0.04974		mg/Kg		99	78 - 132	6	50	
4-Chlorotoluene	0.0500	0.05243		mg/Kg		105	77 - 138	4	50	
cis-1,2-Dichloroethene	0.0500	0.05159		mg/Kg		103	75 - 125	5	50	
cis-1,3-Dichloropropene	0.0500	0.05118		mg/Kg		102	73 - 148	7	50	
1,2-Dibromo-3-Chloropropane	0.0500	0.04552		mg/Kg		91	49 - 142	6	50	
Dibromomethane	0.0500	0.05088		mg/Kg		102	71 - 130	7	50	
1,2-Dichlorobenzene	0.0500	0.04646		mg/Kg		93	80 - 134	5	50	
1,3-Dichlorobenzene	0.0500	0.05233		mg/Kg		105	79 - 137	4	50	
1,4-Dichlorobenzene	0.0500	0.05054		mg/Kg		101	77 - 139	7	50	
Dichlorobromomethane	0.0500	0.05038		mg/Kg		101	68 - 135	6	50	
Dichlorodifluoromethane	0.0500	0.04636		mg/Kg		93	12 - 144	3	50	
1,1-Dichloroethane	0.0500	0.05090		mg/Kg		102	75 - 124	7	50	
1,2-Dichloroethane	0.0500	0.05087		mg/Kg		102	65 - 134	3	50	
1,1-Dichloroethene	0.0500	0.04588		mg/Kg		92	75 - 131	4	50	
1,2-Dichloropropane	0.0500	0.05007		mg/Kg		100	69 - 120	6	50	
1,3-Dichloropropane	0.0500	0.05250		mg/Kg		105	78 - 126	5	42	
2,2-Dichloropropane	0.0500	0.04708		mg/Kg		94	68 - 145	8	50	
1,1-Dichloropropene	0.0500	0.04539		mg/Kg		91	79 - 127	4	50	
Ethylbenzene	0.0500	0.05086		mg/Kg		102	80 - 134	6	50	
Ethylene Dibromide	0.0500	0.05096		mg/Kg		102	80 - 135	6	50	
Hexachlorobutadiene	0.0500	0.04533		mg/Kg		91	65 - 148	2	50	
2-Hexanone	0.250	0.3090		mg/Kg		124	57 - 148	8	50	
Isopropylbenzene	0.0500	0.04896		mg/Kg		98	80 - 150	7	50	
4-Isopropyltoluene	0.0500	0.05074		mg/Kg		101	77 - 141	4	50	
Methylene Chloride	0.0500	0.04859		mg/Kg		97	68 - 144	5	50	
4-Methyl-2-pentanone (MIBK)	0.250	0.3159		mg/Kg		126	59 - 138	9	50	
Methyl tert-butyl ether	0.0500	0.04873		mg/Kg		97	70 - 136	7	50	
Naphthalene	0.0500	0.04794		mg/Kg		96	69 - 150	3	50	
n-Butylbenzene	0.0500	0.04898		mg/Kg		98	72 - 152	4	50	
N-Propylbenzene	0.0500	0.05243		mg/Kg		105	75 - 137	4	50	
sec-Butylbenzene	0.0500	0.05055		mg/Kg		101	79 - 141	6	50	
Styrene	0.0500	0.05339		mg/Kg		107	82 - 137	7	50	
tert-Butylbenzene	0.0500	0.04769		mg/Kg		95	80 - 132	6	50	
1,1,1,2-Tetrachloroethane	0.0500	0.04747		mg/Kg		95	80 - 136	8	50	
1,1,2,2-Tetrachloroethane	0.0500	0.05356		mg/Kg		107	66 - 134	1	50	

TestAmerica Nashville

# QC Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

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

**Lab Sample ID: LCSD 490-212468/5**

**Matrix: Solid**

**Analysis Batch: 212468**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD	
							RPD	Limit		
Tetrachloroethene	0.0500	0.04698		mg/Kg		94	78 - 140	6	50	
Toluene	0.0500	0.05078		mg/Kg		102	80 - 132	8	50	
trans-1,2-Dichloroethene	0.0500	0.05019		mg/Kg		100	76 - 128	4	50	
trans-1,3-Dichloropropene	0.0500	0.05182		mg/Kg		104	62 - 139	6	50	
1,2,3-Trichlorobenzene	0.0500	0.04632		mg/Kg		93	70 - 150	2	50	
1,2,4-Trichlorobenzene	0.0500	0.04748		mg/Kg		95	62 - 150	3	50	
1,1,1-Trichloroethane	0.0500	0.04911		mg/Kg		98	72 - 140	7	50	
1,1,2-Trichloroethane	0.0500	0.05402		mg/Kg		108	78 - 128	4	50	
Trichloroethene	0.0500	0.04486		mg/Kg		90	77 - 127	6	50	
Trichlorofluoromethane	0.0500	0.04554		mg/Kg		91	50 - 140	4	50	
1,2,3-Trichloropropane	0.0500	0.05637		mg/Kg		113	65 - 139	6	50	
1,2,4-Trimethylbenzene	0.0500	0.05109		mg/Kg		102	77 - 139	6	50	
1,3,5-Trimethylbenzene	0.0500	0.05122		mg/Kg		102	78 - 138	7	50	
Vinyl chloride	0.0500	0.05471		mg/Kg		109	47 - 136	5	50	

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	100		70 - 130
Dibromofluoromethane (Surr)	101		70 - 130
1,2-Dichloroethane-d4 (Surr)	107		70 - 130
Toluene-d8 (Surr)	104		70 - 130

**Lab Sample ID: MB 490-212739/7**

**Matrix: Water**

**Analysis Batch: 212739**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acetone	ND		25.0		ug/L		12/10/14 12:59	1	
Benzene	ND		1.00		ug/L		12/10/14 12:59	1	
Bromobenzene	ND		1.00		ug/L		12/10/14 12:59	1	
Bromoform	ND		1.00		ug/L		12/10/14 12:59	1	
Bromomethane	ND		1.00		ug/L		12/10/14 12:59	1	
2-Butanone (MEK)	ND		50.0		ug/L		12/10/14 12:59	1	
Carbon disulfide	ND		1.00		ug/L		12/10/14 12:59	1	
Carbon tetrachloride	ND		1.00		ug/L		12/10/14 12:59	1	
Chlorobenzene	ND		1.00		ug/L		12/10/14 12:59	1	
Chlorobromomethane	ND		1.00		ug/L		12/10/14 12:59	1	
Chlorodibromomethane	ND		1.00		ug/L		12/10/14 12:59	1	
Chloroethane	ND		1.00		ug/L		12/10/14 12:59	1	
Chloroform	ND		1.00		ug/L		12/10/14 12:59	1	
Chloromethane	ND		1.00		ug/L		12/10/14 12:59	1	
2-Chlorotoluene	ND		1.00		ug/L		12/10/14 12:59	1	
4-Chlorotoluene	ND		1.00		ug/L		12/10/14 12:59	1	
cis-1,2-Dichloroethene	ND		1.00		ug/L		12/10/14 12:59	1	
cis-1,3-Dichloropropene	ND		1.00		ug/L		12/10/14 12:59	1	
1,2-Dibromo-3-Chloropropane	ND		10.0		ug/L		12/10/14 12:59	1	
Dibromomethane	ND		1.00		ug/L		12/10/14 12:59	1	
1,2-Dichlorobenzene	ND		1.00		ug/L		12/10/14 12:59	1	
1,3-Dichlorobenzene	ND		1.00		ug/L		12/10/14 12:59	1	

TestAmerica Nashville

# QC Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

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

Lab Sample ID: MB 490-212739/7

Matrix: Water

Analysis Batch: 212739

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dichlorobenzene	ND		1.00		ug/L			12/10/14 12:59	1
Dichlorobromomethane	ND		1.00		ug/L			12/10/14 12:59	1
Dichlorodifluoromethane	ND		1.00		ug/L			12/10/14 12:59	1
1,1-Dichloroethane	ND		1.00		ug/L			12/10/14 12:59	1
1,2-Dichloroethane	ND		1.00		ug/L			12/10/14 12:59	1
1,1-Dichloroethene	ND		1.00		ug/L			12/10/14 12:59	1
1,2-Dichloropropane	ND		1.00		ug/L			12/10/14 12:59	1
1,3-Dichloropropane	ND		1.00		ug/L			12/10/14 12:59	1
2,2-Dichloropropane	ND		1.00		ug/L			12/10/14 12:59	1
1,1-Dichloropropene	ND		1.00		ug/L			12/10/14 12:59	1
Ethylbenzene	ND		1.00		ug/L			12/10/14 12:59	1
Ethylene Dibromide	ND		1.00		ug/L			12/10/14 12:59	1
Hexachlorobutadiene	ND		2.00		ug/L			12/10/14 12:59	1
2-Hexanone	ND		10.0		ug/L			12/10/14 12:59	1
Isopropylbenzene	ND		1.00		ug/L			12/10/14 12:59	1
4-Isopropyltoluene	ND		1.00		ug/L			12/10/14 12:59	1
Methylene Chloride	ND		5.00		ug/L			12/10/14 12:59	1
4-Methyl-2-pentanone (MIBK)	ND		10.0		ug/L			12/10/14 12:59	1
Methyl tert-butyl ether	ND		1.00		ug/L			12/10/14 12:59	1
Naphthalene	ND		5.00		ug/L			12/10/14 12:59	1
n-Butylbenzene	ND		1.00		ug/L			12/10/14 12:59	1
N-Propylbenzene	ND		1.00		ug/L			12/10/14 12:59	1
sec-Butylbenzene	ND		1.00		ug/L			12/10/14 12:59	1
Styrene	ND		1.00		ug/L			12/10/14 12:59	1
tert-Butylbenzene	ND		1.00		ug/L			12/10/14 12:59	1
1,1,1,2-Tetrachloroethane	ND		1.00		ug/L			12/10/14 12:59	1
1,1,1,2,2-Tetrachloroethane	ND		1.00		ug/L			12/10/14 12:59	1
Tetrachloroethene	ND		1.00		ug/L			12/10/14 12:59	1
Toluene	ND		1.00		ug/L			12/10/14 12:59	1
trans-1,2-Dichloroethene	ND		1.00		ug/L			12/10/14 12:59	1
trans-1,3-Dichloropropene	ND		1.00		ug/L			12/10/14 12:59	1
1,2,3-Trichlorobenzene	ND		1.00		ug/L			12/10/14 12:59	1
1,2,4-Trichlorobenzene	ND		1.00		ug/L			12/10/14 12:59	1
1,1,1-Trichloroethane	ND		1.00		ug/L			12/10/14 12:59	1
1,1,2-Trichloroethane	ND		1.00		ug/L			12/10/14 12:59	1
Trichloroethene	ND		1.00		ug/L			12/10/14 12:59	1
Trichlorofluoromethane	ND		1.00		ug/L			12/10/14 12:59	1
1,2,3-Trichloropropane	ND		1.00		ug/L			12/10/14 12:59	1
1,2,4-Trimethylbenzene	ND		1.00		ug/L			12/10/14 12:59	1
1,3,5-Trimethylbenzene	ND		1.00		ug/L			12/10/14 12:59	1
Vinyl chloride	ND		1.00		ug/L			12/10/14 12:59	1
Xylenes, Total	ND		2.00		ug/L			12/10/14 12:59	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	104		70 - 130		12/10/14 12:59	1
Dibromofluoromethane (Surr)	89		70 - 130		12/10/14 12:59	1
1,2-Dichloroethane-d4 (Surr)	88		70 - 130		12/10/14 12:59	1
Toluene-d8 (Surr)	105		70 - 130		12/10/14 12:59	1

TestAmerica Nashville

# QC Sample Results

Client: Federated Environmental Associates  
 Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
 SDG: 145850

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

**Lab Sample ID: LCS 490-212739/3**

**Matrix: Water**

**Analysis Batch: 212739**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	100	77.74		ug/L		78	54 - 145
Benzene	20.0	21.03		ug/L		105	80 - 121
Bromobenzene	20.0	23.09		ug/L		115	68 - 130
Bromoform	20.0	16.91		ug/L		85	46 - 145
Bromomethane	20.0	15.68		ug/L		78	41 - 150
2-Butanone (MEK)	100	82.53		ug/L		83	62 - 133
Carbon disulfide	20.0	20.27		ug/L		101	77 - 126
Carbon tetrachloride	20.0	16.87		ug/L		84	64 - 147
Chlorobenzene	20.0	20.72		ug/L		104	80 - 120
Chlorobromomethane	20.0	18.04		ug/L		90	78 - 129
Chlorodibromomethane	20.0	19.14		ug/L		96	69 - 133
Chloroethane	20.0	17.32		ug/L		87	72 - 120
Chloroform	20.0	17.79		ug/L		89	73 - 129
Chloromethane	20.0	19.02		ug/L		95	12 - 150
2-Chlorotoluene	20.0	22.19		ug/L		111	75 - 126
4-Chlorotoluene	20.0	23.83		ug/L		119	75 - 130
cis-1,2-Dichloroethene	20.0	19.80		ug/L		99	76 - 125
cis-1,3-Dichloropropene	20.0	21.27		ug/L		106	74 - 140
1,2-Dibromo-3-Chloropropane	20.0	17.61		ug/L		88	54 - 125
Dibromomethane	20.0	20.19		ug/L		101	71 - 125
1,2-Dichlorobenzene	20.0	22.02		ug/L		110	80 - 121
1,3-Dichlorobenzene	20.0	21.44		ug/L		107	80 - 122
1,4-Dichlorobenzene	20.0	20.76		ug/L		104	80 - 120
Dichlorobromomethane	20.0	20.28		ug/L		101	75 - 129
Dichlorodifluoromethane	20.0	21.84		ug/L		109	37 - 127
1,1-Dichloroethane	20.0	20.61		ug/L		103	78 - 125
1,2-Dichloroethane	20.0	17.66		ug/L		88	77 - 121
1,1-Dichloroethene	20.0	20.76		ug/L		104	79 - 124
1,2-Dichloropropane	20.0	22.56		ug/L		113	75 - 120
1,3-Dichloropropane	20.0	21.95		ug/L		110	80 - 125
2,2-Dichloropropane	20.0	17.29		ug/L		86	43 - 161
1,1-Dichloropropene	20.0	20.85		ug/L		104	80 - 122
Ethylbenzene	20.0	20.48		ug/L		102	80 - 130
Ethylene Dibromide	20.0	20.51		ug/L		103	80 - 129
Hexachlorobutadiene	20.0	26.24		ug/L		131	49 - 146
2-Hexanone	100	90.56		ug/L		91	60 - 142
Isopropylbenzene	20.0	19.21		ug/L		96	80 - 141
4-Isopropyltoluene	20.0	20.91		ug/L		105	75 - 128
Methylene Chloride	20.0	20.16		ug/L		101	79 - 123
4-Methyl-2-pentanone (MIBK)	100	99.14		ug/L		99	60 - 137
Methyl tert-butyl ether	20.0	16.88		ug/L		84	72 - 133
Naphthalene	20.0	20.31		ug/L		102	62 - 138
n-Butylbenzene	20.0	22.01		ug/L		110	68 - 132
N-Propylbenzene	20.0	22.48		ug/L		112	75 - 129
sec-Butylbenzene	20.0	21.29		ug/L		106	76 - 128
Styrene	20.0	19.92		ug/L		100	80 - 127
tert-Butylbenzene	20.0	20.74		ug/L		104	76 - 126
1,1,1,2-Tetrachloroethane	20.0	18.79		ug/L		94	74 - 135

TestAmerica Nashville

# QC Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

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

**Lab Sample ID: LCS 490-212739/3**

**Matrix: Water**

**Analysis Batch: 212739**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2,2-Tetrachloroethane	20.0	22.12		ug/L		111	69 - 131
Tetrachloroethene	20.0	21.08		ug/L		105	80 - 126
Toluene	20.0	21.08		ug/L		105	80 - 126
trans-1,2-Dichloroethene	20.0	21.08		ug/L		105	79 - 126
trans-1,3-Dichloropropene	20.0	18.50		ug/L		92	63 - 134
1,2,3-Trichlorobenzene	20.0	23.98		ug/L		120	62 - 133
1,2,4-Trichlorobenzene	20.0	21.01		ug/L		105	63 - 133
1,1,1-Trichloroethane	20.0	16.90		ug/L		85	78 - 135
1,1,2-Trichloroethane	20.0	21.70		ug/L		108	80 - 124
Trichloroethene	20.0	19.52		ug/L		98	80 - 123
Trichlorofluoromethane	20.0	17.02		ug/L		85	65 - 124
1,2,3-Trichloropropane	20.0	20.68		ug/L		103	70 - 131
1,2,4-Trimethylbenzene	20.0	21.01		ug/L		105	77 - 126
1,3,5-Trimethylbenzene	20.0	21.59		ug/L		108	77 - 127
Vinyl chloride	20.0	22.48		ug/L		112	68 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
Dibromofluoromethane (Surr)	89		70 - 130
1,2-Dichloroethane-d4 (Surr)	85		70 - 130
Toluene-d8 (Surr)	100		70 - 130

**Lab Sample ID: LCSD 490-212739/4**

**Matrix: Water**

**Analysis Batch: 212739**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	100	76.60		ug/L		77	54 - 145	1	21
Benzene	20.0	19.29		ug/L		96	80 - 121	9	17
Bromobenzene	20.0	21.20		ug/L		106	68 - 130	9	20
Bromoform	20.0	15.47		ug/L		77	46 - 145	9	16
Bromomethane	20.0	14.19		ug/L		71	41 - 150	10	50
2-Butanone (MEK)	100	77.95		ug/L		78	62 - 133	6	19
Carbon disulfide	20.0	18.01		ug/L		90	77 - 126	12	21
Carbon tetrachloride	20.0	15.54		ug/L		78	64 - 147	8	19
Chlorobenzene	20.0	19.05		ug/L		95	80 - 120	8	14
Chlorobromomethane	20.0	16.57		ug/L		83	78 - 129	8	17
Chlorodibromomethane	20.0	16.58		ug/L		83	69 - 133	14	15
Chloroethane	20.0	17.91		ug/L		90	72 - 120	3	20
Chloroform	20.0	16.47		ug/L		82	73 - 129	8	18
Chloromethane	20.0	19.05		ug/L		95	12 - 150	0	31
2-Chlorotoluene	20.0	19.33		ug/L		97	75 - 126	14	17
4-Chlorotoluene	20.0	22.09		ug/L		110	75 - 130	8	18
cis-1,2-Dichloroethene	20.0	18.21		ug/L		91	76 - 125	8	17
cis-1,3-Dichloropropene	20.0	19.13		ug/L		96	74 - 140	11	15
1,2-Dibromo-3-Chloropropane	20.0	16.78		ug/L		84	54 - 125	5	24
Dibromomethane	20.0	18.52		ug/L		93	71 - 125	9	16
1,2-Dichlorobenzene	20.0	19.90		ug/L		100	80 - 121	10	15

TestAmerica Nashville

# QC Sample Results

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

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

**Lab Sample ID: LCSD 490-212739/4**

**Matrix: Water**

**Analysis Batch: 212739**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
								RPD	Limit
1,3-Dichlorobenzene	20.0	19.76		ug/L		99	80 - 122	8	15
1,4-Dichlorobenzene	20.0	18.69		ug/L		93	80 - 120	10	15
Dichlorobromomethane	20.0	18.88		ug/L		94	75 - 129	7	18
Dichlorodifluoromethane	20.0	22.40		ug/L		112	37 - 127	3	18
1,1-Dichloroethane	20.0	18.82		ug/L		94	78 - 125	9	17
1,2-Dichloroethane	20.0	16.48		ug/L		82	77 - 121	7	17
1,1-Dichloroethene	20.0	18.76		ug/L		94	79 - 124	10	17
1,2-Dichloropropane	20.0	21.11		ug/L		106	75 - 120	7	17
1,3-Dichloropropane	20.0	19.94		ug/L		100	80 - 125	10	14
2,2-Dichloropropane	20.0	15.69		ug/L		78	43 - 161	10	18
1,1-Dichloropropene	20.0	18.92		ug/L		95	80 - 122	10	17
Ethylbenzene	20.0	18.87		ug/L		94	80 - 130	8	15
Ethylene Dibromide	20.0	19.10		ug/L		96	80 - 129	7	15
Hexachlorobutadiene	20.0	24.06		ug/L		120	49 - 146	9	23
2-Hexanone	100	90.68		ug/L		91	60 - 142	0	15
Isopropylbenzene	20.0	17.31		ug/L		87	80 - 141	10	16
4-Isopropyltoluene	20.0	18.91		ug/L		95	75 - 128	10	16
Methylene Chloride	20.0	18.32		ug/L		92	79 - 123	10	17
4-Methyl-2-pentanone (MIBK)	100	94.62		ug/L		95	60 - 137	5	17
Methyl tert-butyl ether	20.0	16.26		ug/L		81	72 - 133	4	16
Naphthalene	20.0	18.76		ug/L		94	62 - 138	8	26
n-Butylbenzene	20.0	19.81		ug/L		99	68 - 132	11	18
N-Propylbenzene	20.0	20.72		ug/L		104	75 - 129	8	17
sec-Butylbenzene	20.0	19.04		ug/L		95	76 - 128	11	16
Styrene	20.0	18.22		ug/L		91	80 - 127	9	24
tert-Butylbenzene	20.0	18.67		ug/L		93	76 - 126	10	16
1,1,1,2-Tetrachloroethane	20.0	17.17		ug/L		86	74 - 135	9	16
1,1,1,2,2-Tetrachloroethane	20.0	21.10		ug/L		106	69 - 131	5	20
Tetrachloroethene	20.0	17.43	*	ug/L		87	80 - 126	19	16
Toluene	20.0	19.16		ug/L		96	80 - 126	10	15
trans-1,2-Dichloroethene	20.0	19.70		ug/L		99	79 - 126	7	16
trans-1,3-Dichloropropene	20.0	16.88		ug/L		84	63 - 134	9	14
1,2,3-Trichlorobenzene	20.0	22.30		ug/L		111	62 - 133	7	25
1,2,4-Trichlorobenzene	20.0	19.43		ug/L		97	63 - 133	8	19
1,1,1-Trichloroethane	20.0	15.64		ug/L		78	78 - 135	8	17
1,1,2-Trichloroethane	20.0	19.10		ug/L		96	80 - 124	13	15
Trichloroethene	20.0	17.39		ug/L		87	80 - 123	11	17
Trichlorofluoromethane	20.0	17.78		ug/L		89	65 - 124	4	18
1,2,3-Trichloropropane	20.0	19.72		ug/L		99	70 - 131	5	19
1,2,4-Trimethylbenzene	20.0	19.38		ug/L		97	77 - 126	8	16
1,3,5-Trimethylbenzene	20.0	19.68		ug/L		98	77 - 127	9	17
Vinyl chloride	20.0	23.37		ug/L		117	68 - 120	4	17

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	107		70 - 130
Dibromofluoromethane (Surr)	90		70 - 130
1,2-Dichloroethane-d4 (Surr)	89		70 - 130
Toluene-d8 (Surr)	100		70 - 130

TestAmerica Nashville

# QC Sample Results

Client: Federated Environmental Associates  
 Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
 SDG: 145850

## Method: Moisture - Percent Moisture

Lab Sample ID: 490-67880-A-1 DU  
 Matrix: Solid  
 Analysis Batch: 212211

Client Sample ID: Duplicate  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	19		19		%		4	20
Percent Solids	81		81		%		0.9	20

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# QC Association Summary

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

## GC/MS VOA

### Prep Batch: 211884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-67884-1	TB-1	Total/NA	Soil	5035A	
490-67884-2	TB-2	Total/NA	Soil	5035A	
490-67884-3	TB-3	Total/NA	Soil	5035A	

### Analysis Batch: 212413

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-67507-B-2 MS	Matrix Spike	Total/NA	Water	8260C	
490-67507-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260C	
490-67884-4	TB-1	Total/NA	Ground Water	8260C	
490-67884-5	TB-2	Total/NA	Ground Water	8260C	
490-67884-6	TB-3	Total/NA	Ground Water	8260C	
LCS 490-212413/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 490-212413/4	Lab Control Sample Dup	Total/NA	Water	8260C	
MB 490-212413/7	Method Blank	Total/NA	Water	8260C	

### Analysis Batch: 212468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-67884-1	TB-1	Total/NA	Soil	8260C	211884
490-67884-2	TB-2	Total/NA	Soil	8260C	211884
490-67884-3	TB-3	Total/NA	Soil	8260C	211884
LCS 490-212468/4	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 490-212468/5	Lab Control Sample Dup	Total/NA	Solid	8260C	
MB 490-212468/8	Method Blank	Total/NA	Solid	8260C	

### Analysis Batch: 212739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-67884-4	TB-1	Total/NA	Ground Water	8260C	
LCS 490-212739/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 490-212739/4	Lab Control Sample Dup	Total/NA	Water	8260C	
MB 490-212739/7	Method Blank	Total/NA	Water	8260C	

## General Chemistry

### Analysis Batch: 212211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-67880-A-1 DU	Duplicate	Total/NA	Solid	Moisture	
490-67884-1	TB-1	Total/NA	Soil	Moisture	
490-67884-2	TB-2	Total/NA	Soil	Moisture	
490-67884-3	TB-3	Total/NA	Soil	Moisture	

# Lab Chronicle

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

## Client Sample ID: TB-1

Date Collected: 12/03/14 08:45

Date Received: 12/04/14 08:30

## Lab Sample ID: 490-67884-1

Matrix: Soil

Percent Solids: 91.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A			4.97 g	5.0 mL	211884	12/06/14 08:08	JLP	TAL NSH
Total/NA	Analysis	8260C		1	4.97 g	5.0 mL	212468	12/09/14 16:58	KKK	TAL NSH
Total/NA	Analysis	Moisture		1			212211	12/08/14 11:37	RRS	TAL NSH

## Client Sample ID: TB-2

Date Collected: 12/03/14 08:45

Date Received: 12/04/14 08:30

## Lab Sample ID: 490-67884-2

Matrix: Soil

Percent Solids: 94.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A			5.14 g	5.0 mL	211884	12/06/14 08:08	JLP	TAL NSH
Total/NA	Analysis	8260C		1	5.14 g	5.0 mL	212468	12/09/14 17:30	KKK	TAL NSH
Total/NA	Analysis	Moisture		1			212211	12/08/14 11:37	RRS	TAL NSH

## Client Sample ID: TB-3

Date Collected: 12/03/14 12:00

Date Received: 12/04/14 08:30

## Lab Sample ID: 490-67884-3

Matrix: Soil

Percent Solids: 96.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A			4.88 g	5.0 mL	211884	12/06/14 08:08	JLP	TAL NSH
Total/NA	Analysis	8260C		1	4.88 g	5.0 mL	212468	12/09/14 18:02	KKK	TAL NSH
Total/NA	Analysis	Moisture		1			212211	12/08/14 11:37	RRS	TAL NSH

## Client Sample ID: TB-1

Date Collected: 12/03/14 08:45

Date Received: 12/04/14 08:30

## Lab Sample ID: 490-67884-4

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	212413	12/09/14 19:32	JJR	TAL NSH
Total/NA	Analysis	8260C		25	5 mL	5 mL	212739	12/10/14 14:19	JJR	TAL NSH

## Client Sample ID: TB-2

Date Collected: 12/03/14 08:45

Date Received: 12/04/14 08:30

## Lab Sample ID: 490-67884-5

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	212413	12/09/14 19:59	JJR	TAL NSH

# Lab Chronicle

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

**Client Sample ID: TB-3**

**Lab Sample ID: 490-67884-6**

**Date Collected: 12/03/14 12:00**

**Matrix: Ground Water**

**Date Received: 12/04/14 08:30**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	212413	12/09/14 20:26	JJR	TAL NSH

**Laboratory References:**

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

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# Method Summary

Client: Federated Environmental Associates  
Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
SDG: 145850

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL NSH
Moisture	Percent Moisture	EPA	TAL NSH

**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 NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177



# Certification Summary

Client: Federated Environmental Associates  
 Project/Site: Cruz Brothers

TestAmerica Job ID: 490-67884-1  
 SDG: 145850

## Laboratory: TestAmerica Nashville

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

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	A2LA		NA: NELAP & A2LA	12-31-15
A2LA	ISO/IEC 17025		0453.07	12-31-15
Alaska (UST)	State Program	10	UST-087	10-31-15
Arizona	State Program	9	AZ0473	05-05-15
Arkansas DEQ	State Program	6	88-0737	04-25-15
California	NELAP	9	1168CA	10-31-14 *
Connecticut	State Program	1	PH-0220	12-31-15
Florida	NELAP	4	E87358	06-30-15
Illinois	NELAP	5	200010	12-09-15
Iowa	State Program	7	131	04-01-16
Kansas	NELAP	7	E-10229	01-31-15
Kentucky (UST)	State Program	4	19	06-30-15
Kentucky (WW)	State Program	4	90038	12-31-14 *
Louisiana	NELAP	6	30613	06-30-15
Maryland	State Program	3	316	03-31-15
Massachusetts	State Program	1	M-TN032	06-30-15
Minnesota	NELAP	5	047-999-345	12-31-14 *
Mississippi	State Program	4	N/A	06-30-15
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-15
New Hampshire	NELAP	1	2963	10-09-15
New Jersey	NELAP	2	TN965	06-30-15
New York	NELAP	2	11342	03-31-15
North Carolina (WW/SW)	State Program	4	387	12-31-14 *
North Dakota	State Program	8	R-146	06-30-15
Ohio VAP	State Program	5	CL0033	10-16-15
Oklahoma	State Program	6	9412	08-31-15
Oregon	NELAP	10	TN200001	04-29-15
Pennsylvania	NELAP	3	68-00585	06-30-15
Rhode Island	State Program	1	LAO00268	12-30-14 *
South Carolina	State Program	4	84009 (001)	02-28-15
South Carolina (DW)	State Program	4	84009 (002)	02-23-17
Tennessee	State Program	4	2008	02-23-17
Texas	NELAP	6	T104704077	08-31-15
USDA	Federal		S-48469	10-30-16
Utah	NELAP	8	TN00032	07-31-15
Virginia	NELAP	3	460152	06-14-15
Washington	State Program	10	C789	07-19-15
West Virginia DEP	State Program	3	219	02-28-15
Wisconsin	State Program	5	998020430	08-31-15
Wyoming (UST)	A2LA	8	453.07	12-31-15

\* Certification renewal pending - certification considered valid.

**COOLER RECEIPT FORM**



Cooler Received/Opened On 12/4/2014 @ 0830

1. Tracking # 2274 (last 4 digits, FedEx)

Courier: FedEx IR Gun ID 94660220

2. Temperature of rep. sample or temp blank when opened: 2.4 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES NO..NA

If yes, how many and where: \_\_\_\_\_

5. Were the seals intact, signed, and dated correctly? YES...NO NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) MDM

7. Were custody seals on containers: YES NO and Intact YES...NO NA

Were these signed and dated correctly? YES...NO NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES..NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES..NO...NA

12. Did all container labels and tags agree with custody papers? YES..NO...NA

13a. Were VOA vials received? YES..NO...NA

b. Was there any observable headspace present in any VOA vial? YES NO..NA

14. Was there a Trip Blank in this cooler? YES NO..NA If multiple coolers, sequence # \_\_\_\_\_

I certify that I unloaded the cooler and answered questions 7-14 (initial) MDM

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO NA

b. Did the bottle labels indicate that the correct preservatives were used YES..NO...NA

16. Was residual chlorine present? YES...NO NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) MDM

17. Were custody papers properly filled out (ink, signed, etc)? YES..NO...NA

18. Did you sign the custody papers in the appropriate place? YES..NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) MDM

I certify that I attached a label with the unique LIMS number to each container (initial) MDM

21. Were there Non-Conformance issues at login? YES NO Was a NCM generated? YES NO..# \_\_\_\_\_

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# TestAmerica

ANALYTICAL TESTING CORPORATION

Nashville Division  
2960 Foster Creighton  
Nashville, TN 37204

Phone: 615-726-0177  
Fax: 615-726-3404

To assist us in using the proper analytical methods,  
is this work being conducted for regulatory purposes?  
Compliance Monitoring NO

*This COC includes three soil samples and three groundwater samples.*

Client Name: FEDERATED ENVIRONMENTAL Client #:

Address: 1314 BEDFORD AVENUE

City/State/Zip Code: BALTIMORE MD 21208

Project Manager: J. WITT SEB LACK

Telephone Number: (410) 653-8434 Fax: (410) 653-3451

Sampler Name: (Print Name) Jim Gossweiler

Sampler Signature: *[Signature]*

Project Name: CRUZ Brothers  
Project #: 145850  
Site Location ID: 1322-1326 Central Ave. State: NY  
Report To: Jim Gossweiler  
Invoice To: SAHC  
Quote #: \_\_\_\_\_ PO#: \_\_\_\_\_  
Loc: 490  
**67884**

TAT Standard <input checked="" type="checkbox"/> Rush (surcharges may apply) Data Needed: <u>5-DBM TBT</u>	SAMPLE ID	Date Sampled	Time Sampled	G = Grab, C = Composite	Field Filtered	Matrix SL - Sludge DW - Drinking Water GW - Groundwater S - Soil/Solid WW - Wastewater Specify Other	Preservation & # of Containers							Analyze For	REMARKS
							HNO <sub>3</sub>	HCl	NaOH	H <sub>2</sub> SO <sub>4</sub>	Methanol	None	Other (Specify)		
	TB-1	12/3	8:45	G	N	5 (GW)	X	X	X	X	X	X	X	X	-1 / 4
	TB-2	↓	↓	G	N	5 (GW)	X	X	X	X	X	X	X	X	2 / 5
	TB-3	↓	12:00	G	N	5 (GW)	X	X	X	X	X	X	X	X	3 / 6

*EPA 8260  
DRY WEIGHT*

Special Instructions:

*Run all soils and groundwaters by EPA 8260B.*

LABORATORY COMMENTS:

Init Lab Temp: 24C  
Rec Lab Temp: \_\_\_\_\_

Relinquished By: *[Signature]* Date: 12/3 Time: 1:30 Received By: *[Signature]* Date: 12-4-N Time: 0830

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Method of Shipment: \_\_\_\_\_

Custody Seals: Y N N/A  
Bottles Supplied by Test America: Y N

## Login Sample Receipt Checklist

Client: Federated Environmental Associates

Job Number: 490-67884-1

SDG Number: 145850

**Login Number: 67884**

**List Number: 1**

**Creator: McBride, Mike**

**List Source: TestAmerica Nashville**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
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	2.4
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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



**James C. Gossweiler, P.G. (IT)**  
**Principal Geologist/Sr. Environmental Assessor**

**Summary of Experience/Qualifications**

- Over 25-years national experience in performing, overseeing, and evaluating pre-transactional environmental and structural due diligence assessments of commercial real estate
- Extensive experience in groundwater well testing, contaminant plume delineations, and regulatory agency reporting, environmental hydrogeology
- Direct responsibility for environmental assessments, compilation of site information, and design/implementation of contaminated real estate management strategies
- Design, installation, and operation of various groundwater/soil remediation systems including active pump and treat, vapor extractions, air sparging, and bacteriological treatment
- Extensive working knowledge of environmental regulations including CERCLA, SARA, TSCA, RCRA, AHERA, NESHAPS, NPDES, and FIFRA
- McCrone Research Institute (Chicago, IL) trained Polarized Light Microscopist (PLM) and AHERA Asbestos Inspector and Management Planner
- Working knowledge origin, fate, transport of environmental contaminants including petroleum hydrocarbons, chlorinated or otherwise halogenated volatile organic compounds (VOCs), heavy and/or rare or precious earth metals, polynuclear aromatic hydrocarbons (PAHs), organochlorine, organophosphate, carbamate herbicides/pesticides, dioxins, PCBs, and unexploded ordinance compounds, e.g., RDX
- Experience detecting and managing naturally-occurring environmental contaminants such as radon, elevated nitrate, mercaptan, and sulfide groundwater concentrations
- Experience in conducting non-tidal wetlands delineations, forest stand delineations, and like bioassay investigations
- Professional testimony/litigation support for Georgia, West Virginia, and U.S. Department of the Interior

**Education**

- B.S. Geology, Towson University, Towson, Maryland, 2015
- B.S. Biology/Environmental Science, Allegheny College, Meadville, Pennsylvania, 1985
- McCrone Research Institute, Chicago, Illinois, *Microscopical Identification of Asbestos*

**Certifications/Licensure**

- Registered Environmental Assessor, REA I, State of California, REA #3649
- Registered Hazardous Substances Professional, US EPA, (NEHA), HW#231
- Certified Hazardous Materials Site Worker and Supervisor (20 CFR 1910.120)
- AHERA Asbestos Inspector and Management Planner
- Mold Inspector & Assessor, #03-6826

**Memberships**

- American Institute of Professional Geologists (AIPG) YP-0041
- ASTM 1527 E50 Committee Member (since 1994)
- Licensed Site Remediation Professional Association (LSRPA), New Jersey
- Association of Groundwater Scientists and Engineers (AGSE)

**Work History**

- Principal Geologist/Sr. Environmental Assessor, Federated Environmental Associates, Inc. (1994-date)
- Technical Operations Director, HTS Environmental Group (1989-1994)