

US EPA ARCHIVE DOCUMENT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica St. Louis
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Earth City, MO 63045
Tel: (314)298-8566

TestAmerica Job ID: 160-3068-1
Client Project/Site: West Lake Landfill

For:
Engineering Management Support, Inc.
7220 W. Jefferson AVE
Suite 406
Lakewood, Colorado 80235

Attn: Mr. Paul Rosasco

Rhonda Ridenhower

Authorized for release by:
8/2/2013 1:32:54 PM

Rhonda Ridenhower, Customer Service Manager
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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.



Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Chain of Custody	6
Receipt Checklists	7
Definitions/Glossary	8
Method Summary	9
Sample Summary	10
Detection Summary	11
Client Sample Results	13
QC Sample Results	20
QC Association Summary	28
Surrogate Summary	30

Case Narrative

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Job ID: 160-3068-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

Client: Engineering Management Support, Inc.

Project: West Lake Landfill

Report Number: 160-3068-1

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

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

Per client request to report all analytical runs, analyses included in the package that were not used in the final report were re-analyzed due to QC failures in the analytical sequence

RECEIPT

The samples were received on 07/22/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.0 C.

VOLATILE ORGANIC COMPOUNDS (GC MS)

Samples PZ-305-AI (160-3068-1), LR-104 (160-3068-2) and TRIP BLANK (160-3068-3) were analyzed for volatile organic compounds (GC MS) in accordance with EPA SW-846 Method 8260C. The samples were analyzed on 07/23/2013 and 07/24/2013.

Analytical batch 62292

The continuing calibration verification (CCV) for Chloroethane associated with batch 62292 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

US EPA ARCHIVE DOCUMENT

13

Case Narrative

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Job ID: 160-3068-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 62292 were outside control limits for Chloroethane. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other difficulties were encountered during the VOCs analysis.

All other quality control parameters were within the acceptance limits.

METALS (ICP)-Dissolved and Total

Samples PZ-305-AI (160-3068-1) and LR-104 (160-3068-2) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 07/25/2013 and analyzed on 07/29/2013.

Analytical batch 63280

The following samples were diluted to bring the concentration of target analytes (calcium, magnesium, sodium, and iron) within the calibration range. Magnesium also interferes with iron and iron interferes with arsenic, chromium, selenium, and zinc: (160-3052-2 SD), I-73 (160-3052-2), I-73 (160-3052-2 MS), I-73 (160-3052-2 MSD), LR-104 (160-3068-2), PZ-305-AI (160-3068-1). Elevated reporting limits (RLs) are provided.

Due to the high concentration of iron, magnesium, and sodium, the matrix spike / matrix spike duplicate (MS/MSD) for batch 62880 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for prep batch 62880 were outside control limits for silver, manganese, zinc, and barium. The RPD was within method limits indicating a possible matrix interference. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Analytical batch 63435

Due to the high concentration of calcium, the matrix spike / matrix spike duplicate (MS/MSD) for prep batch 62880 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

The following samples were diluted to bring the concentration of target analytes (calcium) within the calibration range: (160-3052-2 SD), I-73 (160-3052-2), I-73 (160-3052-2 MS), I-73 (160-3052-2 MSD). Elevated reporting limits (RLs) are provided.

Analytical batch 63744

Due to the high concentration of magnesium, and sodium, the matrix spike / matrix spike duplicate (MS/MSD) for prep batch 62879 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Due to the high concentration of Calcium, the matrix spike / matrix spike duplicate (MS/MSD) for prep batch 62879 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

The following samples were diluted to bring the concentration of target analytes within the calibration range: (160-3052-2 SD), I-73 (160-3052-2), I-73 (160-3052-2 MS), I-73 (160-3052-2 MSD), LR-104 (160-3068-2), PZ-305-AI (160-3068-1). Elevated reporting limits (RLs) are provided.

The initial calibration verification (ICV) for prep batch 62879 was above the upper control limit for thallium indicating a potential high bias. The affected samples are ND for Thallium and the data have been qualified and reported.

Analytical batch 63435, 63280, 63744: The sample results for iron and magnesium. and were observed outside the dissolved verses total criteria. All other elements were within QC limits, indicating that this is an anomaly due to matrix interference.

No other difficulties were encountered during the metals analysis.

All other quality control parameters were within the acceptance limits.

DISSOLVED MERCURY (CVAA)

Samples PZ-305-AI (160-3068-1) and LR-104 (160-3068-2) were analyzed for dissolved mercury (CVAA) in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 07/24/2013.

Case Narrative

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Job ID: 160-3068-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

Due to matrix interference, the matrix spike / matrix spike duplicate (MS/MSD) recoveries were below control limits. The RPD and associated laboratory control sample (LCS) recovery met acceptance criteria.

No other difficulties were encountered during the mercury analysis.

All other quality control parameters were within the acceptance limits.

TOTAL MERCURY

Samples PZ-305-AI (160-3068-1) and LR-104 (160-3068-2) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 07/24/2013.

Due to matrix interference, the matrix spike / matrix spike duplicate (MS/MSD) recoveries were below control limits. The RPD and associated laboratory control sample (LCS) recovery met acceptance criteria.

No other difficulties were encountered during the mercury analysis.

All other quality control parameters were within the acceptance limits.

ANIONS

Samples PZ-305-AI (160-3068-1) and LR-104 (160-3068-2) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 07/22/2013 and 07/24/2013.

The following samples were diluted to bring the concentrations of Chloride and Sulfate within the calibration range in IC batch 62869: LR-104 (160-3068-2), PZ-305-AI (160-3068-1). Elevated reporting limits (RLs) are provided.

The matrix spike (MS) recovery for Chloride in batch 62869 was outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria, as did the other reported anion MS recoveries in this batch. (160-3068-1 MS).

No other difficulties were encountered during the anions analysis.

All other quality control parameters were within the acceptance limits.

ALKALINITY

Samples PZ-305-AI (160-3068-1) and LR-104 (160-3068-2) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 07/31/2013.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

Login Sample Receipt Checklist

Client: Engineering Management Support, Inc.

Job Number: 160-3068-1

Login Number: 3068
List Number: 1
Creator: Daniels, Brian J

List Source: TestAmerica St. Louis

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

US EPA ARCHIVE DOCUMENT

13

Definitions/Glossary

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Qualifiers

GC/MS VOA

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

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
E	Result exceeded calibration range.
B	Compound was found in the blank and sample.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.

General Chemistry

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
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)

US EPA ARCHIVE DOCUMENT

13

Method Summary

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL SL
6010C	Metals (ICP)	SW846	TAL SL
7470A	Mercury (CVAA)	SW846	TAL SL
300.0	Anions, Ion Chromatography	MCAWW	TAL SL
310.1	Alkalinity	MCAWW	TAL SL

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

US EPA ARCHIVE DOCUMENT

Sample Summary

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-3068-1	PZ-305-AI	Water	07/22/13 10:41	07/22/13 13:11
160-3068-2	LR-104	Water	07/22/13 11:45	07/22/13 13:11
160-3068-3	TRIP BLANK	Water	07/22/13 00:00	07/22/13 13:11

US EPA ARCHIVE DOCUMENT

Detection Summary

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Client Sample ID: PZ-305-AI

Lab Sample ID: 160-3068-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.5	J	5.0	0.25	ug/L	1		8260C	Total/NA
Chlorobenzene	7.5		5.0	0.38	ug/L	1		8260C	Total/NA
Aluminum	490		200	80	ug/L	1		6010C	Total/NA
Antimony	5.8	J	10	4.0	ug/L	1		6010C	Total/NA
Arsenic	24		10	2.0	ug/L	1		6010C	Total/NA
Barium	630		50	4.0	ug/L	1		6010C	Total/NA
Calcium	230000	E	1000	110	ug/L	1		6010C	Total/NA
Calcium	300000		10000	1100	ug/L	10		6010C	Total/NA
Iron	45000		100	28	ug/L	1		6010C	Total/NA
Iron	46000		1000	280	ug/L	10		6010C	Total/NA
Lead	3.4	J	10	1.5	ug/L	1		6010C	Total/NA
Magnesium	77000	E	1000	130	ug/L	1		6010C	Total/NA
Magnesium	80000		10000	1300	ug/L	10		6010C	Total/NA
Manganese	3400		15	3.3	ug/L	1		6010C	Total/NA
Potassium	6700		5000	1700	ug/L	1		6010C	Total/NA
Selenium	3.8	J	15	2.7	ug/L	1		6010C	Total/NA
Sodium	20000		1000	320	ug/L	1		6010C	Total/NA
Vanadium	5.4	J	50	4.1	ug/L	1		6010C	Total/NA
Zinc	10	J	20	5.2	ug/L	1		6010C	Total/NA
Antimony	6.5	J	10	4.0	ug/L	1		6010C	Dissolved
Arsenic	25		10	2.0	ug/L	1		6010C	Dissolved
Barium	630		50	4.0	ug/L	1		6010C	Dissolved
Calcium	230000	E	1000	110	ug/L	1		6010C	Dissolved
Calcium	280000		10000	1100	ug/L	10		6010C	Dissolved
Iron	45000		100	28	ug/L	1		6010C	Dissolved
Iron	46000		1000	280	ug/L	10		6010C	Dissolved
Lead	4.0	J	10	1.5	ug/L	1		6010C	Dissolved
Magnesium	76000	E	1000	130	ug/L	1		6010C	Dissolved
Magnesium	78000		10000	1300	ug/L	10		6010C	Dissolved
Manganese	3500	B	15	3.3	ug/L	1		6010C	Dissolved
Potassium	6600		5000	1700	ug/L	1		6010C	Dissolved
Sodium	20000		1000	320	ug/L	1		6010C	Dissolved
Zinc	11	J B	20	5.2	ug/L	1		6010C	Dissolved
Nitrate as N	0.0059	J	0.020	0.0040	mg/L	1		300.0	Total/NA
Bromide	0.54		0.25	0.025	mg/L	1		300.0	Total/NA
Sulfate	0.26	J	0.50	0.050	mg/L	1		300.0	Total/NA
Iodide	0.36	J	1.0	0.10	mg/L	1		300.0	Total/NA
Alkalinity	1000	B	5.0	0.54	mg/L	1		310.1	Total/NA
Chloride - DL	70		4.0	0.40	mg/L	20		300.0	Total/NA

Client Sample ID: LR-104

Lab Sample ID: 160-3068-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	140	J	200	80	ug/L	1		6010C	Total/NA
Antimony	5.1	J	10	4.0	ug/L	1		6010C	Total/NA
Arsenic	5.0	J	10	2.0	ug/L	1		6010C	Total/NA
Barium	410		50	4.0	ug/L	1		6010C	Total/NA
Calcium	210000	E	1000	110	ug/L	1		6010C	Total/NA
Calcium	260000		10000	1100	ug/L	10		6010C	Total/NA
Iron	12000		100	28	ug/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica St. Louis

US EPA ARCHIVE DOCUMENT

Detection Summary

Client: Engineering Management Support, Inc.
 Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Client Sample ID: LR-104 (Continued)

Lab Sample ID: 160-3068-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	13000		1000	280	ug/L	10		6010C	Total/NA
Lead	3.1	J	10	1.5	ug/L	1		6010C	Total/NA
Magnesium	53000	E	1000	130	ug/L	1		6010C	Total/NA
Magnesium	54000		10000	1300	ug/L	10		6010C	Total/NA
Manganese	1100		15	3.3	ug/L	1		6010C	Total/NA
Potassium	5000		5000	1700	ug/L	1		6010C	Total/NA
Sodium	21000		1000	320	ug/L	1		6010C	Total/NA
Antimony	4.6	J	10	4.0	ug/L	1		6010C	Dissolved
Arsenic	6.2	J	10	2.0	ug/L	1		6010C	Dissolved
Barium	420		50	4.0	ug/L	1		6010C	Dissolved
Calcium	200000	E	1000	110	ug/L	1		6010C	Dissolved
Calcium	250000		10000	1100	ug/L	10		6010C	Dissolved
Cobalt	4.7	J	50	4.0	ug/L	1		6010C	Dissolved
Iron	12000		100	28	ug/L	1		6010C	Dissolved
Iron	13000		1000	280	ug/L	10		6010C	Dissolved
Lead	2.6	J	10	1.5	ug/L	1		6010C	Dissolved
Magnesium	54000	E	1000	130	ug/L	1		6010C	Dissolved
Magnesium	56000		10000	1300	ug/L	10		6010C	Dissolved
Manganese	1200	B	15	3.3	ug/L	1		6010C	Dissolved
Potassium	5000		5000	1700	ug/L	1		6010C	Dissolved
Sodium	21000		1000	320	ug/L	1		6010C	Dissolved
Nitrate as N	0.024		0.020	0.0040	mg/L	1		300.0	Total/NA
Bromide	0.61		0.25	0.025	mg/L	1		300.0	Total/NA
Iodide	0.48	J	1.0	0.10	mg/L	1		300.0	Total/NA
Alkalinity	610	B	5.0	0.54	mg/L	1		310.1	Total/NA
Chloride - DL	38		4.0	0.40	mg/L	20		300.0	Total/NA
Sulfate - DL	36		10	1.0	mg/L	20		300.0	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 160-3068-3

No Detections.

US EPA ARCHIVE DOCUMENT

13

This Detection Summary does not include radiochemical test results.

TestAmerica St. Louis

Client Sample Results

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Client Sample ID: PZ-305-AI

Lab Sample ID: 160-3068-1

Date Collected: 07/22/13 10:41

Matrix: Water

Date Received: 07/22/13 13:11

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.29	ug/L			07/24/13 02:41	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.43	ug/L			07/24/13 02:41	1
1,1,2-Trichloroethane	ND		5.0	0.57	ug/L			07/24/13 02:41	1
1,1-Dichloroethane	ND		5.0	0.39	ug/L			07/24/13 02:41	1
1,1-Dichloroethene	ND		5.0	0.37	ug/L			07/24/13 02:41	1
1,2,4-Trichlorobenzene	ND		5.0	0.55	ug/L			07/24/13 02:41	1
1,2-Dibromo-3-Chloropropane	ND		10	1.2	ug/L			07/24/13 02:41	1
1,2-Dibromoethane (EDB)	ND		5.0	0.44	ug/L			07/24/13 02:41	1
1,2-Dichlorobenzene	ND		5.0	0.28	ug/L			07/24/13 02:41	1
1,2-Dichloroethane	ND		5.0	0.37	ug/L			07/24/13 02:41	1
1,2-Dichloropropane	ND		5.0	0.32	ug/L			07/24/13 02:41	1
1,3-Dichlorobenzene	ND		5.0	0.23	ug/L			07/24/13 02:41	1
1,4-Dichlorobenzene	ND		5.0	0.35	ug/L			07/24/13 02:41	1
2-Butanone (MEK)	ND		20	0.39	ug/L			07/24/13 02:41	1
2-Hexanone	ND		20	0.59	ug/L			07/24/13 02:41	1
4-Methyl-2-pentanone (MIBK)	ND		20	0.33	ug/L			07/24/13 02:41	1
Acetone	ND		20	6.7	ug/L			07/24/13 02:41	1
Benzene	1.5	J	5.0	0.25	ug/L			07/24/13 02:41	1
Bromodichloromethane	ND		5.0	0.25	ug/L			07/24/13 02:41	1
Bromoform	ND		5.0	0.37	ug/L			07/24/13 02:41	1
Bromomethane	ND		10	0.40	ug/L			07/24/13 02:41	1
Carbon disulfide	ND		5.0	0.37	ug/L			07/24/13 02:41	1
Carbon tetrachloride	ND		5.0	0.36	ug/L			07/24/13 02:41	1
Chlorobenzene	7.5		5.0	0.38	ug/L			07/24/13 02:41	1
Chloroethane	ND		10	0.38	ug/L			07/24/13 02:41	1
Chloroform	ND		5.0	0.15	ug/L			07/24/13 02:41	1
Chloromethane	ND		10	0.55	ug/L			07/24/13 02:41	1
cis-1,2-Dichloroethene	ND		5.0	0.16	ug/L			07/24/13 02:41	1
cis-1,3-Dichloropropene	ND		5.0	0.34	ug/L			07/24/13 02:41	1
Cyclohexane	ND		10	0.36	ug/L			07/24/13 02:41	1
Dibromochloromethane	ND		5.0	0.33	ug/L			07/24/13 02:41	1
Dichlorodifluoromethane	ND		10	0.45	ug/L			07/24/13 02:41	1
Ethylbenzene	ND		5.0	0.30	ug/L			07/24/13 02:41	1
Isopropylbenzene	ND		5.0	0.26	ug/L			07/24/13 02:41	1
Methyl acetate	ND		25	2.3	ug/L			07/24/13 02:41	1
Methyl tert-butyl ether	ND		5.0	0.40	ug/L			07/24/13 02:41	1
Methylcyclohexane	ND		10	0.26	ug/L			07/24/13 02:41	1
Methylene Chloride	ND		5.0	1.7	ug/L			07/24/13 02:41	1
m-Xylene & p-Xylene	ND		5.0	0.57	ug/L			07/24/13 02:41	1
o-Xylene	ND		5.0	0.32	ug/L			07/24/13 02:41	1
Styrene	ND		5.0	0.35	ug/L			07/24/13 02:41	1
Tetrachloroethene	ND		5.0	0.28	ug/L			07/24/13 02:41	1
Toluene	ND		5.0	1.0	ug/L			07/24/13 02:41	1
trans-1,2-Dichloroethene	ND		5.0	0.18	ug/L			07/24/13 02:41	1
trans-1,3-Dichloropropene	ND		5.0	0.35	ug/L			07/24/13 02:41	1
Trichloroethene	ND		5.0	0.29	ug/L			07/24/13 02:41	1
Trichlorofluoromethane	ND		5.0	0.22	ug/L			07/24/13 02:41	1
Vinyl chloride	ND		5.0	0.43	ug/L			07/24/13 02:41	1
Xylenes, Total	ND		10	0.85	ug/L			07/24/13 02:41	1

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13

TestAmerica St. Louis

Client Sample Results

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Client Sample ID: PZ-305-AI

Lab Sample ID: 160-3068-1

Date Collected: 07/22/13 10:41

Matrix: Water

Date Received: 07/22/13 13:11

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		82 - 132		07/24/13 02:41	1
4-Bromofluorobenzene (Surr)	94		82 - 121		07/24/13 02:41	1
Dibromofluoromethane (Surr)	107		85 - 119		07/24/13 02:41	1
Toluene-d8 (Surr)	106		85 - 115		07/24/13 02:41	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	490		200	80	ug/L		07/25/13 11:42	07/26/13 18:41	1
Antimony	5.8	J	10	4.0	ug/L		07/25/13 11:42	07/26/13 18:41	1
Arsenic	24		10	2.0	ug/L		07/25/13 11:42	07/26/13 18:41	1
Barium	630		50	4.0	ug/L		07/25/13 11:42	07/26/13 18:41	1
Beryllium	ND		5.0	0.61	ug/L		07/25/13 11:42	07/26/13 18:41	1
Cadmium	ND		5.0	0.91	ug/L		07/25/13 11:42	07/26/13 18:41	1
Calcium	230000	E	1000	110	ug/L		07/25/13 11:42	07/26/13 18:41	1
Calcium	300000		10000	1100	ug/L		07/25/13 11:42	07/26/13 20:28	10
Chromium	ND		10	3.1	ug/L		07/25/13 11:42	07/26/13 18:41	1
Cobalt	ND		50	4.0	ug/L		07/25/13 11:42	07/26/13 18:41	1
Copper	ND		25	4.6	ug/L		07/25/13 11:42	07/26/13 18:41	1
Iron	45000		100	28	ug/L		07/25/13 11:42	07/26/13 18:41	1
Iron	46000		1000	280	ug/L		07/25/13 11:42	07/26/13 20:28	10
Lead	3.4	J	10	1.5	ug/L		07/25/13 11:42	07/26/13 18:41	1
Magnesium	77000	E	1000	130	ug/L		07/25/13 11:42	07/26/13 18:41	1
Magnesium	80000		10000	1300	ug/L		07/25/13 11:42	07/26/13 20:28	10
Manganese	3400		15	3.3	ug/L		07/25/13 11:42	07/26/13 18:41	1
Nickel	ND		40	13	ug/L		07/25/13 11:42	07/26/13 18:41	1
Potassium	6700		5000	1700	ug/L		07/25/13 11:42	07/26/13 18:41	1
Selenium	3.8	J	15	2.7	ug/L		07/25/13 11:42	07/26/13 18:41	1
Silver	ND		10	6.0	ug/L		07/25/13 11:42	07/26/13 18:41	1
Sodium	20000		1000	320	ug/L		07/25/13 11:42	07/26/13 18:41	1
Thallium	ND		20	4.0	ug/L		07/25/13 11:42	07/26/13 18:41	1
Vanadium	5.4	J	50	4.1	ug/L		07/25/13 11:42	07/26/13 18:41	1
Zinc	10	J	20	5.2	ug/L		07/25/13 11:42	07/26/13 18:41	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		200	80	ug/L		07/25/13 11:37	07/29/13 22:12	1
Antimony	6.5	J	10	4.0	ug/L		07/25/13 11:37	07/29/13 22:12	1
Arsenic	25		10	2.0	ug/L		07/25/13 11:37	07/29/13 22:12	1
Barium	630		50	4.0	ug/L		07/25/13 11:37	07/29/13 22:12	1
Beryllium	ND		5.0	0.61	ug/L		07/25/13 11:37	07/29/13 22:12	1
Cadmium	ND		5.0	0.91	ug/L		07/25/13 11:37	07/29/13 22:12	1
Calcium	230000	E	1000	110	ug/L		07/25/13 11:37	07/29/13 22:12	1
Calcium	280000		10000	1100	ug/L		07/25/13 11:37	07/29/13 23:51	10
Chromium	ND		10	3.1	ug/L		07/25/13 11:37	07/29/13 22:12	1
Cobalt	ND		50	4.0	ug/L		07/25/13 11:37	07/29/13 22:12	1
Copper	ND		25	4.6	ug/L		07/25/13 11:37	07/29/13 22:12	1
Iron	45000		100	28	ug/L		07/25/13 11:37	07/29/13 22:12	1
Iron	46000		1000	280	ug/L		07/25/13 11:37	07/29/13 23:51	10
Lead	4.0	J	10	1.5	ug/L		07/25/13 11:37	07/29/13 22:12	1
Magnesium	76000	E	1000	130	ug/L		07/25/13 11:37	07/29/13 22:12	1

TestAmerica St. Louis

Client Sample Results

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Client Sample ID: PZ-305-AI

Lab Sample ID: 160-3068-1

Date Collected: 07/22/13 10:41

Matrix: Water

Date Received: 07/22/13 13:11

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	78000		10000	1300	ug/L		07/25/13 11:37	07/29/13 23:51	10
Manganese	3500	B	15	3.3	ug/L		07/25/13 11:37	07/29/13 22:12	1
Nickel	ND		40	13	ug/L		07/25/13 11:37	07/29/13 22:12	1
Potassium	6600		5000	1700	ug/L		07/25/13 11:37	07/29/13 22:12	1
Selenium	ND		15	2.7	ug/L		07/25/13 11:37	07/29/13 22:12	1
Silver	ND		10	6.0	ug/L		07/25/13 11:37	07/29/13 22:12	1
Sodium	20000		1000	320	ug/L		07/25/13 11:37	07/29/13 22:12	1
Thallium	ND	^	20	4.0	ug/L		07/25/13 11:37	07/29/13 22:12	1
Vanadium	ND		50	4.1	ug/L		07/25/13 11:37	07/29/13 22:12	1
Zinc	11	J B	20	5.2	ug/L		07/25/13 11:37	07/29/13 22:12	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		07/24/13 10:11	07/24/13 16:38	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		07/24/13 10:13	07/24/13 17:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.0059	J	0.020	0.0040	mg/L			07/22/13 17:30	1
Bromide	0.54		0.25	0.025	mg/L			07/22/13 17:30	1
Sulfate	0.26	J	0.50	0.050	mg/L			07/22/13 17:30	1
Iodide	0.36	J	1.0	0.10	mg/L			07/24/13 20:17	1
Alkalinity	1000	B	5.0	0.54	mg/L			07/31/13 09:58	1

General Chemistry - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	70		4.0	0.40	mg/L			07/22/13 17:46	20

Client Sample ID: LR-104

Lab Sample ID: 160-3068-2

Date Collected: 07/22/13 11:45

Matrix: Water

Date Received: 07/22/13 13:11

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.29	ug/L			07/24/13 03:06	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.43	ug/L			07/24/13 03:06	1
1,1,2-Trichloroethane	ND		5.0	0.57	ug/L			07/24/13 03:06	1
1,1-Dichloroethane	ND		5.0	0.39	ug/L			07/24/13 03:06	1
1,1-Dichloroethene	ND		5.0	0.37	ug/L			07/24/13 03:06	1
1,2,4-Trichlorobenzene	ND		5.0	0.55	ug/L			07/24/13 03:06	1
1,2-Dibromo-3-Chloropropane	ND		10	1.2	ug/L			07/24/13 03:06	1
1,2-Dibromoethane (EDB)	ND		5.0	0.44	ug/L			07/24/13 03:06	1
1,2-Dichlorobenzene	ND		5.0	0.28	ug/L			07/24/13 03:06	1
1,2-Dichloroethane	ND		5.0	0.37	ug/L			07/24/13 03:06	1
1,2-Dichloropropane	ND		5.0	0.32	ug/L			07/24/13 03:06	1
1,3-Dichlorobenzene	ND		5.0	0.23	ug/L			07/24/13 03:06	1
1,4-Dichlorobenzene	ND		5.0	0.35	ug/L			07/24/13 03:06	1
2-Butanone (MEK)	ND		20	0.39	ug/L			07/24/13 03:06	1

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13

Client Sample Results

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Client Sample ID: LR-104

Lab Sample ID: 160-3068-2

Date Collected: 07/22/13 11:45

Matrix: Water

Date Received: 07/22/13 13:11

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	ND		20	0.59	ug/L			07/24/13 03:06	1
4-Methyl-2-pentanone (MIBK)	ND		20	0.33	ug/L			07/24/13 03:06	1
Acetone	ND		20	6.7	ug/L			07/24/13 03:06	1
Benzene	ND		5.0	0.25	ug/L			07/24/13 03:06	1
Bromodichloromethane	ND		5.0	0.25	ug/L			07/24/13 03:06	1
Bromoform	ND		5.0	0.37	ug/L			07/24/13 03:06	1
Bromomethane	ND		10	0.40	ug/L			07/24/13 03:06	1
Carbon disulfide	ND		5.0	0.37	ug/L			07/24/13 03:06	1
Carbon tetrachloride	ND		5.0	0.36	ug/L			07/24/13 03:06	1
Chlorobenzene	ND		5.0	0.38	ug/L			07/24/13 03:06	1
Chloroethane	ND		10	0.38	ug/L			07/24/13 03:06	1
Chloroform	ND		5.0	0.15	ug/L			07/24/13 03:06	1
Chloromethane	ND		10	0.55	ug/L			07/24/13 03:06	1
cis-1,2-Dichloroethene	ND		5.0	0.16	ug/L			07/24/13 03:06	1
cis-1,3-Dichloropropene	ND		5.0	0.34	ug/L			07/24/13 03:06	1
Cyclohexane	ND		10	0.36	ug/L			07/24/13 03:06	1
Dibromochloromethane	ND		5.0	0.33	ug/L			07/24/13 03:06	1
Dichlorodifluoromethane	ND		10	0.45	ug/L			07/24/13 03:06	1
Ethylbenzene	ND		5.0	0.30	ug/L			07/24/13 03:06	1
Isopropylbenzene	ND		5.0	0.26	ug/L			07/24/13 03:06	1
Methyl acetate	ND		25	2.3	ug/L			07/24/13 03:06	1
Methyl tert-butyl ether	ND		5.0	0.40	ug/L			07/24/13 03:06	1
Methylcyclohexane	ND		10	0.26	ug/L			07/24/13 03:06	1
Methylene Chloride	ND		5.0	1.7	ug/L			07/24/13 03:06	1
m-Xylene & p-Xylene	ND		5.0	0.57	ug/L			07/24/13 03:06	1
o-Xylene	ND		5.0	0.32	ug/L			07/24/13 03:06	1
Styrene	ND		5.0	0.35	ug/L			07/24/13 03:06	1
Tetrachloroethene	ND		5.0	0.28	ug/L			07/24/13 03:06	1
Toluene	ND		5.0	1.0	ug/L			07/24/13 03:06	1
trans-1,2-Dichloroethene	ND		5.0	0.18	ug/L			07/24/13 03:06	1
trans-1,3-Dichloropropene	ND		5.0	0.35	ug/L			07/24/13 03:06	1
Trichloroethene	ND		5.0	0.29	ug/L			07/24/13 03:06	1
Trichlorofluoromethane	ND		5.0	0.22	ug/L			07/24/13 03:06	1
Vinyl chloride	ND		5.0	0.43	ug/L			07/24/13 03:06	1
Xylenes, Total	ND		10	0.85	ug/L			07/24/13 03:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		82 - 132					07/24/13 03:06	1
4-Bromofluorobenzene (Surr)	90		82 - 121					07/24/13 03:06	1
Dibromofluoromethane (Surr)	101		85 - 119					07/24/13 03:06	1
Toluene-d8 (Surr)	103		85 - 115					07/24/13 03:06	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	140	J	200	80	ug/L		07/25/13 11:42	07/26/13 18:45	1
Antimony	5.1	J	10	4.0	ug/L		07/25/13 11:42	07/26/13 18:45	1
Arsenic	5.0	J	10	2.0	ug/L		07/25/13 11:42	07/26/13 18:45	1
Barium	410		50	4.0	ug/L		07/25/13 11:42	07/26/13 18:45	1
Beryllium	ND		5.0	0.61	ug/L		07/25/13 11:42	07/26/13 18:45	1
Cadmium	ND		5.0	0.91	ug/L		07/25/13 11:42	07/26/13 18:45	1

TestAmerica St. Louis

US EPA ARCHIVE DOCUMENT

13

Client Sample Results

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Client Sample ID: LR-104

Lab Sample ID: 160-3068-2

Date Collected: 07/22/13 11:45

Matrix: Water

Date Received: 07/22/13 13:11

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	210000	E	1000	110	ug/L		07/25/13 11:42	07/26/13 18:45	1
Calcium	260000		10000	1100	ug/L		07/25/13 11:42	07/26/13 20:32	10
Chromium	ND		10	3.1	ug/L		07/25/13 11:42	07/26/13 18:45	1
Cobalt	ND		50	4.0	ug/L		07/25/13 11:42	07/26/13 18:45	1
Copper	ND		25	4.6	ug/L		07/25/13 11:42	07/26/13 18:45	1
Iron	12000		100	28	ug/L		07/25/13 11:42	07/26/13 18:45	1
Iron	13000		1000	280	ug/L		07/25/13 11:42	07/26/13 20:32	10
Lead	3.1	J	10	1.5	ug/L		07/25/13 11:42	07/26/13 18:45	1
Magnesium	53000	E	1000	130	ug/L		07/25/13 11:42	07/26/13 18:45	1
Magnesium	54000		10000	1300	ug/L		07/25/13 11:42	07/26/13 20:32	10
Manganese	1100		15	3.3	ug/L		07/25/13 11:42	07/26/13 18:45	1
Nickel	ND		40	13	ug/L		07/25/13 11:42	07/26/13 18:45	1
Potassium	5000		5000	1700	ug/L		07/25/13 11:42	07/26/13 18:45	1
Selenium	ND		15	2.7	ug/L		07/25/13 11:42	07/26/13 18:45	1
Silver	ND		10	6.0	ug/L		07/25/13 11:42	07/26/13 18:45	1
Sodium	21000		1000	320	ug/L		07/25/13 11:42	07/26/13 18:45	1
Thallium	ND		20	4.0	ug/L		07/25/13 11:42	07/26/13 18:45	1
Vanadium	ND		50	4.1	ug/L		07/25/13 11:42	07/26/13 18:45	1
Zinc	ND		20	5.2	ug/L		07/25/13 11:42	07/26/13 18:45	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		200	80	ug/L		07/25/13 11:37	07/29/13 22:15	1
Antimony	4.6	J	10	4.0	ug/L		07/25/13 11:37	07/29/13 22:15	1
Arsenic	6.2	J	10	2.0	ug/L		07/25/13 11:37	07/29/13 22:15	1
Barium	420		50	4.0	ug/L		07/25/13 11:37	07/29/13 22:15	1
Beryllium	ND		5.0	0.61	ug/L		07/25/13 11:37	07/29/13 22:15	1
Cadmium	ND		5.0	0.91	ug/L		07/25/13 11:37	07/29/13 22:15	1
Calcium	200000	E	1000	110	ug/L		07/25/13 11:37	07/29/13 22:15	1
Calcium	250000		10000	1100	ug/L		07/25/13 11:37	07/29/13 23:55	10
Chromium	ND		10	3.1	ug/L		07/25/13 11:37	07/29/13 22:15	1
Cobalt	4.7	J	50	4.0	ug/L		07/25/13 11:37	07/29/13 22:15	1
Copper	ND		25	4.6	ug/L		07/25/13 11:37	07/29/13 22:15	1
Iron	12000		100	28	ug/L		07/25/13 11:37	07/29/13 22:15	1
Iron	13000		1000	280	ug/L		07/25/13 11:37	07/29/13 23:55	10
Lead	2.6	J	10	1.5	ug/L		07/25/13 11:37	07/29/13 22:15	1
Magnesium	54000	E	1000	130	ug/L		07/25/13 11:37	07/29/13 22:15	1
Magnesium	56000		10000	1300	ug/L		07/25/13 11:37	07/29/13 23:55	10
Manganese	1200	B	15	3.3	ug/L		07/25/13 11:37	07/29/13 22:15	1
Nickel	ND		40	13	ug/L		07/25/13 11:37	07/29/13 22:15	1
Potassium	5000		5000	1700	ug/L		07/25/13 11:37	07/29/13 22:15	1
Selenium	ND		15	2.7	ug/L		07/25/13 11:37	07/29/13 22:15	1
Silver	ND		10	6.0	ug/L		07/25/13 11:37	07/29/13 22:15	1
Sodium	21000		1000	320	ug/L		07/25/13 11:37	07/29/13 22:15	1
Thallium	ND	^	20	4.0	ug/L		07/25/13 11:37	07/29/13 22:15	1
Vanadium	ND		50	4.1	ug/L		07/25/13 11:37	07/29/13 22:15	1
Zinc	ND		20	5.2	ug/L		07/25/13 11:37	07/29/13 22:15	1

US EPA ARCHIVE DOCUMENT

13

TestAmerica St. Louis

Client Sample Results

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Client Sample ID: LR-104

Lab Sample ID: 160-3068-2

Date Collected: 07/22/13 11:45

Matrix: Water

Date Received: 07/22/13 13:11

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		07/24/13 10:11	07/24/13 16:39	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		07/24/13 10:13	07/24/13 17:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.024		0.020	0.0040	mg/L			07/22/13 20:30	1
Bromide	0.61		0.25	0.025	mg/L			07/22/13 20:30	1
Iodide	0.48	J	1.0	0.10	mg/L			07/24/13 20:32	1
Alkalinity	610	B	5.0	0.54	mg/L			07/31/13 09:58	1

General Chemistry - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	38		4.0	0.40	mg/L			07/22/13 20:47	20
Sulfate	36		10	1.0	mg/L			07/22/13 20:47	20

Client Sample ID: TRIP BLANK

Lab Sample ID: 160-3068-3

Date Collected: 07/22/13 00:00

Matrix: Water

Date Received: 07/22/13 13:11

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.29	ug/L			07/23/13 18:52	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.43	ug/L			07/23/13 18:52	1
1,1,2-Trichloroethane	ND		5.0	0.57	ug/L			07/23/13 18:52	1
1,1-Dichloroethane	ND		5.0	0.39	ug/L			07/23/13 18:52	1
1,1-Dichloroethene	ND		5.0	0.37	ug/L			07/23/13 18:52	1
1,2,4-Trichlorobenzene	ND		5.0	0.55	ug/L			07/23/13 18:52	1
1,2-Dibromo-3-Chloropropane	ND		10	1.2	ug/L			07/23/13 18:52	1
1,2-Dibromoethane (EDB)	ND		5.0	0.44	ug/L			07/23/13 18:52	1
1,2-Dichlorobenzene	ND		5.0	0.28	ug/L			07/23/13 18:52	1
1,2-Dichloroethane	ND		5.0	0.37	ug/L			07/23/13 18:52	1
1,2-Dichloropropane	ND		5.0	0.32	ug/L			07/23/13 18:52	1
1,3-Dichlorobenzene	ND		5.0	0.23	ug/L			07/23/13 18:52	1
1,4-Dichlorobenzene	ND		5.0	0.35	ug/L			07/23/13 18:52	1
2-Butanone (MEK)	ND		20	0.39	ug/L			07/23/13 18:52	1
2-Hexanone	ND		20	0.59	ug/L			07/23/13 18:52	1
4-Methyl-2-pentanone (MIBK)	ND		20	0.33	ug/L			07/23/13 18:52	1
Acetone	ND		20	6.7	ug/L			07/23/13 18:52	1
Benzene	ND		5.0	0.25	ug/L			07/23/13 18:52	1
Bromodichloromethane	ND		5.0	0.25	ug/L			07/23/13 18:52	1
Bromoform	ND		5.0	0.37	ug/L			07/23/13 18:52	1
Bromomethane	ND		10	0.40	ug/L			07/23/13 18:52	1
Carbon disulfide	ND		5.0	0.37	ug/L			07/23/13 18:52	1
Carbon tetrachloride	ND		5.0	0.36	ug/L			07/23/13 18:52	1
Chlorobenzene	ND		5.0	0.38	ug/L			07/23/13 18:52	1
Chloroethane	ND		10	0.38	ug/L			07/23/13 18:52	1
Chloroform	ND		5.0	0.15	ug/L			07/23/13 18:52	1

TestAmerica St. Louis

US EPA ARCHIVE DOCUMENT

13

Client Sample Results

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 160-3068-3

Date Collected: 07/22/13 00:00

Matrix: Water

Date Received: 07/22/13 13:11

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		10	0.55	ug/L			07/23/13 18:52	1
cis-1,2-Dichloroethene	ND		5.0	0.16	ug/L			07/23/13 18:52	1
cis-1,3-Dichloropropene	ND		5.0	0.34	ug/L			07/23/13 18:52	1
Cyclohexane	ND		10	0.36	ug/L			07/23/13 18:52	1
Dibromochloromethane	ND		5.0	0.33	ug/L			07/23/13 18:52	1
Dichlorodifluoromethane	ND		10	0.45	ug/L			07/23/13 18:52	1
Ethylbenzene	ND		5.0	0.30	ug/L			07/23/13 18:52	1
Isopropylbenzene	ND		5.0	0.26	ug/L			07/23/13 18:52	1
Methyl acetate	ND		25	2.3	ug/L			07/23/13 18:52	1
Methyl tert-butyl ether	ND		5.0	0.40	ug/L			07/23/13 18:52	1
Methylcyclohexane	ND		10	0.26	ug/L			07/23/13 18:52	1
Methylene Chloride	ND		5.0	1.7	ug/L			07/23/13 18:52	1
m-Xylene & p-Xylene	ND		5.0	0.57	ug/L			07/23/13 18:52	1
o-Xylene	ND		5.0	0.32	ug/L			07/23/13 18:52	1
Styrene	ND		5.0	0.35	ug/L			07/23/13 18:52	1
Tetrachloroethene	ND		5.0	0.28	ug/L			07/23/13 18:52	1
Toluene	ND		5.0	1.0	ug/L			07/23/13 18:52	1
trans-1,2-Dichloroethene	ND		5.0	0.18	ug/L			07/23/13 18:52	1
trans-1,3-Dichloropropene	ND		5.0	0.35	ug/L			07/23/13 18:52	1
Trichloroethene	ND		5.0	0.29	ug/L			07/23/13 18:52	1
Trichlorofluoromethane	ND		5.0	0.22	ug/L			07/23/13 18:52	1
Vinyl chloride	ND		5.0	0.43	ug/L			07/23/13 18:52	1
Xylenes, Total	ND		10	0.85	ug/L			07/23/13 18:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		82 - 132		07/23/13 18:52	1
4-Bromofluorobenzene (Surr)	95		82 - 121		07/23/13 18:52	1
Dibromofluoromethane (Surr)	104		85 - 119		07/23/13 18:52	1
Toluene-d8 (Surr)	105		85 - 115		07/23/13 18:52	1

US EPA ARCHIVE DOCUMENT

13

QC Sample Results

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

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

Lab Sample ID: MB 160-62292/3-A

Matrix: Water

Analysis Batch: 62292

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.29	ug/L			07/23/13 18:28	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.43	ug/L			07/23/13 18:28	1
1,1,2-Trichloroethane	ND		5.0	0.57	ug/L			07/23/13 18:28	1
1,1-Dichloroethane	ND		5.0	0.39	ug/L			07/23/13 18:28	1
1,1-Dichloroethene	ND		5.0	0.37	ug/L			07/23/13 18:28	1
1,2,4-Trichlorobenzene	ND		5.0	0.55	ug/L			07/23/13 18:28	1
1,2-Dibromo-3-Chloropropane	ND		10	1.2	ug/L			07/23/13 18:28	1
1,2-Dibromoethane (EDB)	ND		5.0	0.44	ug/L			07/23/13 18:28	1
1,2-Dichlorobenzene	ND		5.0	0.28	ug/L			07/23/13 18:28	1
1,2-Dichloroethane	ND		5.0	0.37	ug/L			07/23/13 18:28	1
1,2-Dichloropropane	ND		5.0	0.32	ug/L			07/23/13 18:28	1
1,3-Dichlorobenzene	ND		5.0	0.23	ug/L			07/23/13 18:28	1
1,4-Dichlorobenzene	ND		5.0	0.35	ug/L			07/23/13 18:28	1
2-Butanone (MEK)	ND		20	0.39	ug/L			07/23/13 18:28	1
2-Hexanone	ND		20	0.59	ug/L			07/23/13 18:28	1
4-Methyl-2-pentanone (MIBK)	ND		20	0.33	ug/L			07/23/13 18:28	1
Acetone	ND		20	6.7	ug/L			07/23/13 18:28	1
Benzene	ND		5.0	0.25	ug/L			07/23/13 18:28	1
Bromodichloromethane	ND		5.0	0.25	ug/L			07/23/13 18:28	1
Bromoform	ND		5.0	0.37	ug/L			07/23/13 18:28	1
Bromomethane	ND		10	0.40	ug/L			07/23/13 18:28	1
Carbon disulfide	ND		5.0	0.37	ug/L			07/23/13 18:28	1
Carbon tetrachloride	ND		5.0	0.36	ug/L			07/23/13 18:28	1
Chlorobenzene	ND		5.0	0.38	ug/L			07/23/13 18:28	1
Chloroethane	ND		10	0.38	ug/L			07/23/13 18:28	1
Chloroform	ND		5.0	0.15	ug/L			07/23/13 18:28	1
Chloromethane	ND		10	0.55	ug/L			07/23/13 18:28	1
cis-1,2-Dichloroethene	ND		5.0	0.16	ug/L			07/23/13 18:28	1
cis-1,3-Dichloropropene	ND		5.0	0.34	ug/L			07/23/13 18:28	1
Cyclohexane	ND		10	0.36	ug/L			07/23/13 18:28	1
Dibromochloromethane	ND		5.0	0.33	ug/L			07/23/13 18:28	1
Dichlorodifluoromethane	ND		10	0.45	ug/L			07/23/13 18:28	1
Ethylbenzene	ND		5.0	0.30	ug/L			07/23/13 18:28	1
Isopropylbenzene	ND		5.0	0.26	ug/L			07/23/13 18:28	1
Methyl acetate	ND		25	2.3	ug/L			07/23/13 18:28	1
Methyl tert-butyl ether	ND		5.0	0.40	ug/L			07/23/13 18:28	1
Methylcyclohexane	ND		10	0.26	ug/L			07/23/13 18:28	1
Methylene Chloride	ND		5.0	1.7	ug/L			07/23/13 18:28	1
m-Xylene & p-Xylene	ND		5.0	0.57	ug/L			07/23/13 18:28	1
o-Xylene	ND		5.0	0.32	ug/L			07/23/13 18:28	1
Styrene	ND		5.0	0.35	ug/L			07/23/13 18:28	1
Tetrachloroethene	ND		5.0	0.28	ug/L			07/23/13 18:28	1
Toluene	ND		5.0	1.0	ug/L			07/23/13 18:28	1
trans-1,2-Dichloroethene	ND		5.0	0.18	ug/L			07/23/13 18:28	1
trans-1,3-Dichloropropene	ND		5.0	0.35	ug/L			07/23/13 18:28	1
Trichloroethene	ND		5.0	0.29	ug/L			07/23/13 18:28	1
Trichlorofluoromethane	ND		5.0	0.22	ug/L			07/23/13 18:28	1
Vinyl chloride	ND		5.0	0.43	ug/L			07/23/13 18:28	1

US EPA ARCHIVE DOCUMENT

13

TestAmerica St. Louis

QC Sample Results

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

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

Lab Sample ID: MB 160-62292/3-A

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 62292

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		10	0.85	ug/L			07/23/13 18:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		82 - 132		07/23/13 18:28	1
4-Bromofluorobenzene (Surr)	94		82 - 121		07/23/13 18:28	1
Dibromofluoromethane (Surr)	101		85 - 119		07/23/13 18:28	1
Toluene-d8 (Surr)	104		85 - 115		07/23/13 18:28	1

Lab Sample ID: LCS 160-62292/4-A

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 62292

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	47.1		ug/L		94	85 - 115
1,1,2,2-Tetrachloroethane	50.0	52.2		ug/L		104	84 - 115
1,1,2-Trichloroethane	50.0	55.6		ug/L		111	85 - 115
1,1-Dichloroethane	50.0	50.4		ug/L		101	85 - 115
1,1-Dichloroethene	50.0	47.8		ug/L		96	85 - 118
1,2,4-Trichlorobenzene	50.0	46.5		ug/L		93	75 - 124
1,2-Dibromo-3-Chloropropane	50.0	57.5		ug/L		115	71 - 123
1,2-Dibromoethane (EDB)	50.0	52.2		ug/L		104	85 - 115
1,2-Dichlorobenzene	50.0	49.4		ug/L		99	85 - 115
1,2-Dichloroethane	50.0	50.6		ug/L		101	79 - 122
1,2-Dichloropropane	50.0	53.2		ug/L		106	85 - 115
1,3-Dichlorobenzene	50.0	50.0		ug/L		100	85 - 115
1,4-Dichlorobenzene	50.0	49.8		ug/L		100	85 - 115
2-Butanone (MEK)	50.0	60.6		ug/L		121	71 - 123
2-Hexanone	50.0	59.4		ug/L		119	66 - 121
4-Methyl-2-pentanone (MIBK)	50.0	58.0		ug/L		116	74 - 123
Acetone	50.0	48.5		ug/L		97	51 - 140
Benzene	50.0	50.2		ug/L		100	85 - 115
Bromodichloromethane	50.0	52.5		ug/L		105	85 - 117
Bromoform	50.0	44.3		ug/L		89	85 - 115
Bromomethane	50.0	50.2		ug/L		100	70 - 135
Carbon disulfide	50.0	48.9		ug/L		98	85 - 123
Carbon tetrachloride	50.0	48.2		ug/L		96	85 - 118
Chlorobenzene	50.0	52.5		ug/L		105	85 - 115
Chloroethane	50.0	59.0		ug/L		118	75 - 125
Chloroform	50.0	47.7		ug/L		95	85 - 115
Chloromethane	50.0	49.1		ug/L		98	73 - 132
cis-1,2-Dichloroethene	50.0	48.8		ug/L		98	85 - 115
cis-1,3-Dichloropropene	50.0	54.3		ug/L		109	85 - 127
Cyclohexane	50.0	49.5		ug/L		99	73 - 115
Dibromochloromethane	50.0	51.3		ug/L		103	85 - 115
Dichlorodifluoromethane	50.0	45.2		ug/L		90	62 - 115
Ethylbenzene	50.0	46.9		ug/L		94	85 - 115
Isopropylbenzene	50.0	49.3		ug/L		99	85 - 124
Methyl acetate	250	292		ug/L		117	73 - 135

TestAmerica St. Louis

US EPA ARCHIVE DOCUMENT

13

QC Sample Results

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

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

Lab Sample ID: LCS 160-62292/4-A

Matrix: Water

Analysis Batch: 62292

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	50.0	52.7		ug/L		105	73 - 115
Methylcyclohexane	50.0	51.9		ug/L		104	85 - 134
Methylene Chloride	50.0	49.2		ug/L		98	84 - 115
m-Xylene & p-Xylene	50.0	50.3		ug/L		101	85 - 115
o-Xylene	50.0	49.3		ug/L		99	85 - 115
Styrene	50.0	51.8		ug/L		104	85 - 115
Tetrachloroethene	50.0	49.9		ug/L		100	85 - 115
Toluene	50.0	50.4		ug/L		101	85 - 115
trans-1,2-Dichloroethene	50.0	47.3		ug/L		95	85 - 115
trans-1,3-Dichloropropene	50.0	54.0		ug/L		108	85 - 123
Trichloroethene	50.0	49.4		ug/L		99	85 - 115
Trichlorofluoromethane	50.0	48.1		ug/L		96	85 - 116
Vinyl chloride	50.0	49.7		ug/L		99	68 - 133
Xylenes, Total	100	99.6		ug/L		100	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		82 - 132
4-Bromofluorobenzene (Surr)	96		82 - 121
Dibromofluoromethane (Surr)	103		85 - 119
Toluene-d8 (Surr)	102		85 - 115

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 160-62879/1-A

Matrix: Water

Analysis Batch: 63744

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 62879

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		200	80	ug/L		07/25/13 11:37	07/29/13 20:32	1
Antimony	ND		10	4.0	ug/L		07/25/13 11:37	07/29/13 20:32	1
Arsenic	ND		10	2.0	ug/L		07/25/13 11:37	07/29/13 20:32	1
Barium	ND		50	4.0	ug/L		07/25/13 11:37	07/29/13 20:32	1
Beryllium	ND		5.0	0.61	ug/L		07/25/13 11:37	07/29/13 20:32	1
Cadmium	ND		5.0	0.91	ug/L		07/25/13 11:37	07/29/13 20:32	1
Calcium	ND		1000	110	ug/L		07/25/13 11:37	07/29/13 20:32	1
Chromium	ND		10	3.1	ug/L		07/25/13 11:37	07/29/13 20:32	1
Cobalt	ND		50	4.0	ug/L		07/25/13 11:37	07/29/13 20:32	1
Copper	ND		25	4.6	ug/L		07/25/13 11:37	07/29/13 20:32	1
Iron	ND		100	28	ug/L		07/25/13 11:37	07/29/13 20:32	1
Lead	ND		10	1.5	ug/L		07/25/13 11:37	07/29/13 20:32	1
Magnesium	ND		1000	130	ug/L		07/25/13 11:37	07/29/13 20:32	1
Manganese	15.7		15	3.3	ug/L		07/25/13 11:37	07/29/13 20:32	1
Nickel	ND		40	13	ug/L		07/25/13 11:37	07/29/13 20:32	1
Potassium	ND		5000	1700	ug/L		07/25/13 11:37	07/29/13 20:32	1
Selenium	ND		15	2.7	ug/L		07/25/13 11:37	07/29/13 20:32	1
Silver	ND		10	6.0	ug/L		07/25/13 11:37	07/29/13 20:32	1
Sodium	ND		1000	320	ug/L		07/25/13 11:37	07/29/13 20:32	1
Thallium	ND	^	20	4.0	ug/L		07/25/13 11:37	07/29/13 20:32	1

TestAmerica St. Louis

US EPA ARCHIVE DOCUMENT

13

QC Sample Results

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

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

Lab Sample ID: MB 160-62879/1-A

Matrix: Water

Analysis Batch: 63744

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 62879

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	ND		50	4.1	ug/L		07/25/13 11:37	07/29/13 20:32	1
Zinc	5.20	J	20	5.2	ug/L		07/25/13 11:37	07/29/13 20:32	1

Lab Sample ID: MB 160-62879/1-A

Matrix: Water

Analysis Batch: 63920

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 62879

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		200	80	ug/L		07/25/13 11:37	07/30/13 15:40	1
Antimony	ND		10	4.0	ug/L		07/25/13 11:37	07/30/13 15:40	1
Arsenic	ND		10	2.0	ug/L		07/25/13 11:37	07/30/13 15:40	1
Barium	ND		50	4.0	ug/L		07/25/13 11:37	07/30/13 15:40	1
Beryllium	ND		5.0	0.61	ug/L		07/25/13 11:37	07/30/13 15:40	1
Cadmium	ND		5.0	0.91	ug/L		07/25/13 11:37	07/30/13 15:40	1
Calcium	ND		1000	110	ug/L		07/25/13 11:37	07/30/13 15:40	1
Chromium	ND		10	3.1	ug/L		07/25/13 11:37	07/30/13 15:40	1
Cobalt	ND		50	4.0	ug/L		07/25/13 11:37	07/30/13 15:40	1
Copper	ND		25	4.6	ug/L		07/25/13 11:37	07/30/13 15:40	1
Iron	ND		100	28	ug/L		07/25/13 11:37	07/30/13 15:40	1
Lead	ND		10	1.5	ug/L		07/25/13 11:37	07/30/13 15:40	1
Magnesium	ND		1000	130	ug/L		07/25/13 11:37	07/30/13 15:40	1
Manganese	11.4	J	15	3.3	ug/L		07/25/13 11:37	07/30/13 15:40	1
Nickel	ND		40	13	ug/L		07/25/13 11:37	07/30/13 15:40	1
Potassium	ND		5000	1700	ug/L		07/25/13 11:37	07/30/13 15:40	1
Selenium	ND		15	2.7	ug/L		07/25/13 11:37	07/30/13 15:40	1
Silver	ND		10	6.0	ug/L		07/25/13 11:37	07/30/13 15:40	1
Sodium	ND		1000	320	ug/L		07/25/13 11:37	07/30/13 15:40	1
Thallium	ND		20	4.0	ug/L		07/25/13 11:37	07/30/13 15:40	1
Vanadium	ND		50	4.1	ug/L		07/25/13 11:37	07/30/13 15:40	1
Zinc	7.40	J	20	5.2	ug/L		07/25/13 11:37	07/30/13 15:40	1

Lab Sample ID: LCS 160-62879/2-A

Matrix: Water

Analysis Batch: 63744

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 62879

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	10000	9890		ug/L		99	80 - 120
Antimony	500	501		ug/L		100	80 - 120
Arsenic	1000	969		ug/L		97	80 - 120
Barium	1000	1040		ug/L		104	80 - 120
Beryllium	1000	1020		ug/L		102	80 - 120
Cadmium	1000	990		ug/L		99	80 - 120
Calcium	10000	9900		ug/L		99	80 - 120
Chromium	1000	987		ug/L		99	80 - 120
Cobalt	1000	1010		ug/L		101	80 - 120
Copper	1000	1020		ug/L		102	80 - 120
Iron	10000	10200		ug/L		102	80 - 120
Lead	1000	1010		ug/L		101	80 - 120
Magnesium	10000	10000		ug/L		100	80 - 120

TestAmerica St. Louis

US EPA ARCHIVE DOCUMENT

13

QC Sample Results

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

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

Lab Sample ID: LCS 160-62879/2-A
Matrix: Water
Analysis Batch: 63744

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 62879

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	1000	1030		ug/L		103	80 - 120
Nickel	1000	1000		ug/L		100	80 - 120
Potassium	10000	9950		ug/L		99	80 - 120
Selenium	1000	1010		ug/L		101	80 - 120
Silver	100	83.5		ug/L		84	80 - 120
Sodium	10000	9940		ug/L		99	80 - 120
Thallium	200	220	^	ug/L		110	80 - 120
Vanadium	1000	1000		ug/L		100	80 - 120
Zinc	1000	989		ug/L		99	80 - 120

Lab Sample ID: MB 160-62880/1-A
Matrix: Water
Analysis Batch: 63280

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 62880

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		200	80	ug/L		07/25/13 11:42	07/26/13 17:02	1
Antimony	ND		10	4.0	ug/L		07/25/13 11:42	07/26/13 17:02	1
Arsenic	ND		10	2.0	ug/L		07/25/13 11:42	07/26/13 17:02	1
Barium	ND		50	4.0	ug/L		07/25/13 11:42	07/26/13 17:02	1
Beryllium	ND		5.0	0.61	ug/L		07/25/13 11:42	07/26/13 17:02	1
Cadmium	ND		5.0	0.91	ug/L		07/25/13 11:42	07/26/13 17:02	1
Calcium	ND		1000	110	ug/L		07/25/13 11:42	07/26/13 17:02	1
Chromium	ND		10	3.1	ug/L		07/25/13 11:42	07/26/13 17:02	1
Cobalt	ND		50	4.0	ug/L		07/25/13 11:42	07/26/13 17:02	1
Copper	ND		25	4.6	ug/L		07/25/13 11:42	07/26/13 17:02	1
Iron	ND		100	28	ug/L		07/25/13 11:42	07/26/13 17:02	1
Lead	ND		10	1.5	ug/L		07/25/13 11:42	07/26/13 17:02	1
Magnesium	ND		1000	130	ug/L		07/25/13 11:42	07/26/13 17:02	1
Manganese	ND		15	3.3	ug/L		07/25/13 11:42	07/26/13 17:02	1
Nickel	ND		40	13	ug/L		07/25/13 11:42	07/26/13 17:02	1
Potassium	ND		5000	1700	ug/L		07/25/13 11:42	07/26/13 17:02	1
Selenium	ND		15	2.7	ug/L		07/25/13 11:42	07/26/13 17:02	1
Silver	ND		10	6.0	ug/L		07/25/13 11:42	07/26/13 17:02	1
Sodium	ND		1000	320	ug/L		07/25/13 11:42	07/26/13 17:02	1
Thallium	ND		20	4.0	ug/L		07/25/13 11:42	07/26/13 17:02	1
Vanadium	ND		50	4.1	ug/L		07/25/13 11:42	07/26/13 17:02	1
Zinc	ND		20	5.2	ug/L		07/25/13 11:42	07/26/13 17:02	1

Lab Sample ID: LCS 160-62880/2-A
Matrix: Water
Analysis Batch: 63280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 62880

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	10000	10100		ug/L		101	80 - 120
Antimony	500	528		ug/L		106	80 - 120
Arsenic	1000	1040		ug/L		104	80 - 120
Barium	1000	1050		ug/L		105	80 - 120
Beryllium	1000	1040		ug/L		104	80 - 120
Cadmium	1000	1050		ug/L		105	80 - 120

TestAmerica St. Louis

US EPA ARCHIVE DOCUMENT

13

QC Sample Results

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

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

Lab Sample ID: LCS 160-62880/2-A

Matrix: Water

Analysis Batch: 63280

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 62880

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	10000	10900		ug/L		109	80 - 120
Chromium	1000	1080		ug/L		108	80 - 120
Cobalt	1000	1090		ug/L		109	80 - 120
Copper	1000	1060		ug/L		106	80 - 120
Iron	10000	10400		ug/L		104	80 - 120
Lead	1000	1100		ug/L		110	80 - 120
Magnesium	10000	10400		ug/L		104	80 - 120
Manganese	1000	1050		ug/L		105	80 - 120
Nickel	1000	1090		ug/L		109	80 - 120
Potassium	10000	10000		ug/L		100	80 - 120
Selenium	1000	1060		ug/L		106	80 - 120
Silver	100	88.7		ug/L		89	80 - 120
Sodium	10000	10200		ug/L		102	80 - 120
Thallium	200	233		ug/L		117	80 - 120
Vanadium	1000	1020		ug/L		102	80 - 120
Zinc	1000	1060		ug/L		106	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 160-62431/1-A

Matrix: Water

Analysis Batch: 62861

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 62431

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		07/24/13 10:11	07/24/13 15:53	1

Lab Sample ID: LCS 160-62431/2-A

Matrix: Water

Analysis Batch: 62861

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 62431

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.64		ug/L		113	80 - 120

Lab Sample ID: MB 160-62433/1-A

Matrix: Water

Analysis Batch: 62861

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 62433

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.060	ug/L		07/24/13 10:13	07/24/13 16:41	1

Lab Sample ID: LCS 160-62433/2-A

Matrix: Water

Analysis Batch: 62861

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 62433

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.54		ug/L		111	80 - 120

TestAmerica St. Louis

QC Sample Results

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 160-62869/9

Matrix: Water

Analysis Batch: 62869

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.020	0.0040	mg/L			07/22/13 16:57	1
Chloride	ND		0.20	0.020	mg/L			07/22/13 16:57	1
Bromide	ND		0.25	0.025	mg/L			07/22/13 16:57	1
Sulfate	ND		0.50	0.050	mg/L			07/22/13 16:57	1

Lab Sample ID: LCS 160-62869/10

Matrix: Water

Analysis Batch: 62869

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.400	0.379		mg/L		95	90 - 110
Chloride	2.00	1.88		mg/L		94	90 - 110
Bromide	2.00	1.93		mg/L		97	90 - 110
Sulfate	8.00	7.57		mg/L		95	90 - 110

Lab Sample ID: 160-3068-1 MS

Matrix: Water

Analysis Batch: 62869

Client Sample ID: PZ-305-AI

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.0059	J	0.400	0.398		mg/L		98	90 - 110
Bromide	0.54		2.00	2.56		mg/L		101	90 - 110
Sulfate	0.26	J	4.00	4.11		mg/L		96	90 - 110

Lab Sample ID: 160-3068-1 DU

Matrix: Water

Analysis Batch: 62869

Client Sample ID: PZ-305-AI

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	0.0059	J	0.00433	J	mg/L		31	20
Bromide	0.54		0.537		mg/L		0.1	20
Sulfate	0.26	J	0.257	J	mg/L		1	20

Lab Sample ID: MB 160-62933/9

Matrix: Water

Analysis Batch: 62933

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iodide	ND		1.0	0.10	mg/L			07/24/13 16:18	1

Lab Sample ID: LCS 160-62933/10

Matrix: Water

Analysis Batch: 62933

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iodide	4.00	4.04		mg/L		101	90 - 110

US EPA ARCHIVE DOCUMENT

13

TestAmerica St. Louis

QC Sample Results

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Method: 300.0 - Anions, Ion Chromatography - DL

Lab Sample ID: 160-3068-1 MS

Matrix: Water

Analysis Batch: 62869

Client Sample ID: PZ-305-AI

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride - DL	70		40.0	115	F	mg/L		113	90 - 110

Lab Sample ID: 160-3068-1 DU

Matrix: Water

Analysis Batch: 62869

Client Sample ID: PZ-305-AI

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride - DL	70		69.6		mg/L		0.2	20

Method: 310.1 - Alkalinity

Lab Sample ID: MB 160-63939/1

Matrix: Water

Analysis Batch: 63939

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	0.250	J	1.3	0.14	mg/L			07/31/13 09:58	1

Lab Sample ID: LCS 160-63939/3

Matrix: Water

Analysis Batch: 63939

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	400	376		mg/L		94	90 - 110

Lab Sample ID: LLCS 160-63939/2

Matrix: Water

Analysis Batch: 63939

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	190		mg/L		95	90 - 110

US EPA ARCHIVE DOCUMENT

13

QC Association Summary

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

GC/MS VOA

Analysis Batch: 62292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3068-1	PZ-305-AI	Total/NA	Water	8260C	
160-3068-2	LR-104	Total/NA	Water	8260C	
160-3068-3	TRIP BLANK	Total/NA	Water	8260C	
LCS 160-62292/4-A	Lab Control Sample	Total/NA	Water	8260C	
MB 160-62292/3-A	Method Blank	Total/NA	Water	8260C	

Metals

Prep Batch: 62431

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3068-1	PZ-305-AI	Total/NA	Water	7470A	
160-3068-2	LR-104	Total/NA	Water	7470A	
LCS 160-62431/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 160-62431/1-A	Method Blank	Total/NA	Water	7470A	

Prep Batch: 62433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3068-1	PZ-305-AI	Dissolved	Water	7470A	
160-3068-2	LR-104	Dissolved	Water	7470A	
LCS 160-62433/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 160-62433/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 62861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3068-1	PZ-305-AI	Dissolved	Water	7470A	62433
160-3068-1	PZ-305-AI	Total/NA	Water	7470A	62431
160-3068-2	LR-104	Dissolved	Water	7470A	62433
160-3068-2	LR-104	Total/NA	Water	7470A	62431
LCS 160-62431/2-A	Lab Control Sample	Total/NA	Water	7470A	62431
LCS 160-62433/2-A	Lab Control Sample	Total/NA	Water	7470A	62433
MB 160-62431/1-A	Method Blank	Total/NA	Water	7470A	62431
MB 160-62433/1-A	Method Blank	Total/NA	Water	7470A	62433

Prep Batch: 62879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3068-1	PZ-305-AI	Dissolved	Water	3010A	
160-3068-2	LR-104	Dissolved	Water	3010A	
LCS 160-62879/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-62879/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 62880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3068-1	PZ-305-AI	Total/NA	Water	3010A	
160-3068-2	LR-104	Total/NA	Water	3010A	
LCS 160-62880/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-62880/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 63280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3068-1	PZ-305-AI	Total/NA	Water	6010C	62880

TestAmerica St. Louis

QC Association Summary

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

Metals (Continued)

Analysis Batch: 63280 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3068-1	PZ-305-AI	Total/NA	Water	6010C	62880
160-3068-2	LR-104	Total/NA	Water	6010C	62880
160-3068-2	LR-104	Total/NA	Water	6010C	62880
LCS 160-62880/2-A	Lab Control Sample	Total/NA	Water	6010C	62880
MB 160-62880/1-A	Method Blank	Total/NA	Water	6010C	62880

Analysis Batch: 63744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3068-1	PZ-305-AI	Dissolved	Water	6010C	62879
160-3068-1	PZ-305-AI	Dissolved	Water	6010C	62879
160-3068-2	LR-104	Dissolved	Water	6010C	62879
160-3068-2	LR-104	Dissolved	Water	6010C	62879
LCS 160-62879/2-A	Lab Control Sample	Total/NA	Water	6010C	62879
MB 160-62879/1-A	Method Blank	Total/NA	Water	6010C	62879

Analysis Batch: 63920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-62879/1-A	Method Blank	Total/NA	Water	6010C	62879

General Chemistry

Analysis Batch: 62869

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3068-1	PZ-305-AI	Total/NA	Water	300.0	
160-3068-1 - DL	PZ-305-AI	Total/NA	Water	300.0	
160-3068-1 DU	PZ-305-AI	Total/NA	Water	300.0	
160-3068-1 DU - DL	PZ-305-AI	Total/NA	Water	300.0	
160-3068-1 MS	PZ-305-AI	Total/NA	Water	300.0	
160-3068-1 MS - DL	PZ-305-AI	Total/NA	Water	300.0	
160-3068-2	LR-104	Total/NA	Water	300.0	
160-3068-2 - DL	LR-104	Total/NA	Water	300.0	
LCS 160-62869/10	Lab Control Sample	Total/NA	Water	300.0	
MB 160-62869/9	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 62933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3068-1	PZ-305-AI	Total/NA	Water	300.0	
160-3068-2	LR-104	Total/NA	Water	300.0	
LCS 160-62933/10	Lab Control Sample	Total/NA	Water	300.0	
MB 160-62933/9	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 63939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3068-1	PZ-305-AI	Total/NA	Water	310.1	
160-3068-2	LR-104	Total/NA	Water	310.1	
LCS 160-63939/3	Lab Control Sample	Total/NA	Water	310.1	
LLCS 160-63939/2	Lab Control Sample	Total/NA	Water	310.1	
MB 160-63939/1	Method Blank	Total/NA	Water	310.1	

TestAmerica St. Louis

Surrogate Summary

Client: Engineering Management Support, Inc.
Project/Site: West Lake Landfill

TestAmerica Job ID: 160-3068-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	12DCE	BFB	DBFM	TOL
		(82-132)	(82-121)	(85-119)	(85-115)
160-3068-1	PZ-305-AI	107	94	107	106
160-3068-2	LR-104	102	90	101	103
160-3068-3	TRIP BLANK	104	95	104	105
LCS 160-62292/4-A	Lab Control Sample	105	96	103	102
MB 160-62292/3-A	Method Blank	104	94	101	104

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

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13