

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.  
TestAmerica Irvine  
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Suite 100  
Irvine, CA 92614-5817  
Tel: (949)261-1022

**RECEIVED**

By Alameda County Environmental Health at 10:42 am, Dec 29, 2014

TestAmerica Job ID: 440-97145-1  
Client Project/Site: ARCO 2162, San Leandro

For:  
Broadbent & Associates, Inc.  
4820 Business Center Drive  
#110  
Fairfield, California 94534

Attn: Kristene Tidwell



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*Authorized for release by:  
12/18/2014 2:27:08 PM*

Kathleen Robb, Project Manager II  
(949)261-1022  
kathleen.robbs@testamericainc.com

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

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

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

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# Sample Summary

Client: Broadbent & Associates, Inc.  
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-97145-1

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-97145-1	Irrigation Well	Water	12/16/14 18:45	12/18/14 10:43

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# Case Narrative

Client: Broadbent & Associates, Inc.  
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-97145-1

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**Job ID: 440-97145-1**

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**Laboratory: TestAmerica Irvine**

**Narrative**

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**Job Narrative**  
**440-97145-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 12/18/2014 10:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.9° C.

**GC/MS VOA**

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.



# Client Sample Results

Client: Broadbent & Associates, Inc.  
 Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-97145-1

**Client Sample ID: Irrigation Well**

**Lab Sample ID: 440-97145-1**

**Date Collected: 12/16/14 18:45**

**Matrix: Water**

**Date Received: 12/18/14 10:43**

**Method: 8260B/CA\_LUFTMS - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	ug/L			12/18/14 13:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	104		76 - 132				12/18/14 13:09	1
4-Bromofluorobenzene (Surr)	97		80 - 120				12/18/14 13:09	1
Toluene-d8 (Surr)	107		80 - 128				12/18/14 13:09	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50	ug/L			12/18/14 13:09	1
Ethylbenzene	ND		0.50	ug/L			12/18/14 13:09	1
m,p-Xylene	ND		1.0	ug/L			12/18/14 13:09	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	ug/L			12/18/14 13:09	1
o-Xylene	ND		0.50	ug/L			12/18/14 13:09	1
Toluene	ND		0.50	ug/L			12/18/14 13:09	1
Xylenes, Total	ND		1.0	ug/L			12/18/14 13:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		80 - 120				12/18/14 13:09	1
Dibromofluoromethane (Surr)	104		76 - 132				12/18/14 13:09	1
Toluene-d8 (Surr)	107		80 - 128				12/18/14 13:09	1

# Method Summary

Client: Broadbent & Associates, Inc.  
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-97145-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8260B/CA_LUFTM S	Volatile Organic Compounds by GC/MS	SW846	TAL IRV

**Protocol References:**

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

**Laboratory References:**

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



# Lab Chronicle

Client: Broadbent & Associates, Inc.  
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-97145-1

**Client Sample ID: Irrigation Well**

**Lab Sample ID: 440-97145-1**

**Date Collected: 12/16/14 18:45**

**Matrix: Water**

**Date Received: 12/18/14 10:43**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	225459	12/18/14 13:09	LB	TAL IRV
Total/NA	Analysis	8260B/CA_LUFTMS		1	10 mL	10 mL	225460	12/18/14 13:09	LB	TAL IRV

**Laboratory References:**

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



# QC Sample Results

Client: Broadbent & Associates, Inc.  
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-97145-1

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

Lab Sample ID: MB 440-225459/4

Matrix: Water

Analysis Batch: 225459

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50	ug/L			12/18/14 08:30	1
Ethylbenzene	ND		0.50	ug/L			12/18/14 08:30	1
m,p-Xylene	ND		1.0	ug/L			12/18/14 08:30	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	ug/L			12/18/14 08:30	1
o-Xylene	ND		0.50	ug/L			12/18/14 08:30	1
Toluene	ND		0.50	ug/L			12/18/14 08:30	1
Xylenes, Total	ND		1.0	ug/L			12/18/14 08:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		80 - 120		12/18/14 08:30	1
Dibromofluoromethane (Surr)	106		76 - 132		12/18/14 08:30	1
Toluene-d8 (Surr)	109		80 - 128		12/18/14 08:30	1

Lab Sample ID: LCS 440-225459/5

Matrix: Water

Analysis Batch: 225459

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	25.0	25.9		ug/L		104	68 - 130
Ethylbenzene	25.0	27.8		ug/L		111	70 - 130
m,p-Xylene	25.0	28.1		ug/L		113	70 - 130
Methyl-t-Butyl Ether (MTBE)	25.0	28.1		ug/L		112	63 - 131
o-Xylene	25.0	27.5		ug/L		110	70 - 130
Toluene	25.0	26.5		ug/L		106	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	106		76 - 132
Toluene-d8 (Surr)	104		80 - 128

Lab Sample ID: 440-96888-B-7 MS

Matrix: Water

Analysis Batch: 225459

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		25.0	26.3		ug/L		104	66 - 130
Ethylbenzene	0.51		25.0	28.3		ug/L		111	70 - 130
m,p-Xylene	2.2		25.0	30.5		ug/L		113	70 - 133
Methyl-t-Butyl Ether (MTBE)	ND		25.0	29.5		ug/L		118	70 - 130
o-Xylene	1.2		25.0	28.5		ug/L		109	70 - 133
Toluene	1.5		25.0	28.3		ug/L		107	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	102		76 - 132
Toluene-d8 (Surr)	103		80 - 128

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# QC Sample Results

Client: Broadbent & Associates, Inc.  
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-97145-1

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

Lab Sample ID: 440-96888-B-7 MSD

Matrix: Water

Analysis Batch: 225459

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		25.0	25.6		ug/L		101	66 - 130	3	20
Ethylbenzene	0.51		25.0	27.9		ug/L		109	70 - 130	1	20
m,p-Xylene	2.2		25.0	30.3		ug/L		112	70 - 133	1	25
Methyl-t-Butyl Ether (MTBE)	ND		25.0	27.8		ug/L		111	70 - 130	6	25
o-Xylene	1.2		25.0	28.5		ug/L		110	70 - 133	0	20
Toluene	1.5		25.0	27.7		ug/L		105	70 - 130	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	101		76 - 132
Toluene-d8 (Surr)	104		80 - 128

## Method: 8260B/CA\_LUFTMS - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 440-225460/4

Matrix: Water

Analysis Batch: 225460

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	ug/L			12/18/14 08:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	106		76 - 132		12/18/14 08:30	1
4-Bromofluorobenzene (Surr)	99		80 - 120		12/18/14 08:30	1
Toluene-d8 (Surr)	109		80 - 128		12/18/14 08:30	1

Lab Sample ID: LCS 440-225460/6

Matrix: Water

Analysis Batch: 225460

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
GRO (C4-C12)	500	486		ug/L		97	55 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	104		76 - 132
4-Bromofluorobenzene (Surr)	99		80 - 120
Toluene-d8 (Surr)	108		80 - 128

Lab Sample ID: 440-96888-B-7 MS

Matrix: Water

Analysis Batch: 225460

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
GRO (C4-C12)	170		1730	2410		ug/L		130	50 - 145

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# QC Sample Results

Client: Broadbent & Associates, Inc.  
 Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-97145-1

## Method: 8260B/CA\_LUFTMS - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 440-96888-B-7 MS

Matrix: Water

Analysis Batch: 225460

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	102		76 - 132
4-Bromofluorobenzene (Surr)	97		80 - 120
Toluene-d8 (Surr)	103		80 - 128

Lab Sample ID: 440-96888-B-7 MSD

Matrix: Water

Analysis Batch: 225460

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
GRO (C4-C12)	170		1730	2240		ug/L		120	50 - 145	8	20

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	101		76 - 132
4-Bromofluorobenzene (Surr)	99		80 - 120
Toluene-d8 (Surr)	104		80 - 128

# QC Association Summary

Client: Broadbent & Associates, Inc.  
 Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-97145-1

## GC/MS VOA

### Analysis Batch: 225459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96888-B-7 MS	Matrix Spike	Total/NA	Water	8260B	
440-96888-B-7 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
440-97145-1	Irrigation Well	Total/NA	Water	8260B	
LCS 440-225459/5	Lab Control Sample	Total/NA	Water	8260B	
MB 440-225459/4	Method Blank	Total/NA	Water	8260B	

### Analysis Batch: 225460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96888-B-7 MS	Matrix Spike	Total/NA	Water	8260B/CA_LUFT MS	
440-96888-B-7 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/CA_LUFT MS	
440-97145-1	Irrigation Well	Total/NA	Water	8260B/CA_LUFT MS	
LCS 440-225460/6	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
MB 440-225460/4	Method Blank	Total/NA	Water	8260B/CA_LUFT MS	



## Definitions/Glossary

Client: Broadbent & Associates, Inc.  
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-97145-1

### 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)

# Certification Summary

Client: Broadbent & Associates, Inc.  
Project/Site: ARCO 2162, San Leandro

TestAmerica Job ID: 440-97145-1

## Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-15
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-15
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15
Northern Mariana Islands	State Program	9	MP0002	01-29-15
Oregon	NELAP	10	4005	01-29-15
USDA	Federal		P330-09-00080	06-06-15
USEPA UCMR	Federal	1	CA01531	01-31-15

\* Certification renewal pending - certification considered valid.

TestAmerica Irvine



## Login Sample Receipt Checklist

Client: Broadbent & Associates, Inc.

Job Number: 440-97145-1

**Login Number: 97145**

**List Number: 1**

**Creator: Robb, Kathleen**

**List Source: TestAmerica Irvine**

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.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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	

