

Wickham, Jerry, Env. Health

From: Jason Duda [jduda@broadbentinc.com]
Sent: Wednesday, October 03, 2012 12:59 PM
To: Wickham, Jerry, Env. Health
Cc: 'Matt Herrick'; Shannon Couch
Subject: BP Station #771 (ACEH Case No. RO0000200)
Attachments: J22155-1 UDS Level 2 Report Final Report.pdf

Hello Jerry,

I wanted to provide you with the laboratory analytical results from the re-sampling of well MW-7 at BP Station #771 located at 899 Rincon Ave., Livermore. As you may recall, a small amount of LNAPL (0.01 ft) was observed within MW-7 on July 25, 2012 during Third Quarter 2012 sampling activities. Broadbent returned to the Site on August 31, 2012 to measure the LNAPL thickness and conduct bailing activities in order to collect a sample from MW-7. Adjacent wells MW-2, MW-4, and VW-1 were also gauged for the presence of LNAPL during this visit. LNAPL was not observed within the adjacent wells but was still present within MW-7 at an approximate thickness of 0.01 ft. Approximately 1.5 gallons of LNAPL/water mixture was bailed from the well prior to sample collection. However, a distinctive sheen was still visible at MW-7, even though the interface probe did not detect LNAPL.

After evaluation of the attached analytical compared to historic concentrations within MW-7, the LNAPL observed does not appear to be the result of a new release. The GRO concentration (15,000 µg/L) is an order of magnitude greater than recently observed (2,100 µg/L in First Quarter 2012), but the remaining constituent concentrations, including MTBE and TBA, are comparable to recent analytical data. Gettler-Ryan Inc. also conducted testing of the UST system following the observance of LNAPL within MW-7. The results of the testing activities did not indicate that the UST system was compromised. Please let me know if you have any additional questions or concerns. Thank you. Take care.

Jason Duda
Project Scientist

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-22155-1
Client Project/Site: ARCO 0771, Livermore

For:
Broadbent & Associates, Inc.
1324 Mangrove Ave
Suite 212
Chico, California 95926

Attn: Mr. Jason Duda



*Authorized for release by:
9/5/2012 2:48:30 PM*

Pat Abe
Project Manager I
pat.abe@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 0771, Livermore

TestAmerica Job ID: 440-22155-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-22155-1	MW-7	Water	08/31/12 12:50	09/01/12 10:00

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Case Narrative

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0771, Livermore

TestAmerica Job ID: 440-22155-1

Job ID: 440-22155-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-22155-1

Comments

No additional comments.

Receipt

The samples were received on 9/1/2012 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.8° C.

GC/MS VOA

Method(s) 8260B: Calibration verification for Ethanol is outside of limits as stated in BP-GCLN technical requirements however the calibration verification meets the requirements as stated in the analytical method.

No other analytical or quality issues were noted.

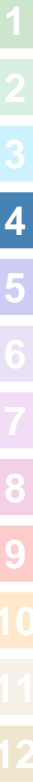
GC VOA

Method(s) 8015B: Surrogate recovery for the following sample(s) was outside control limits: (440-21760-4 MS). Evidence of matrix interference is present; therefore, re-analysis was not performed.

No other analytical or quality issues were noted.

VOA Prep

No analytical or quality issues were noted.



Client Sample Results

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0771, Livermore

TestAmerica Job ID: 440-22155-1

Client Sample ID: MW-7

Lab Sample ID: 440-22155-1

Date Collected: 08/31/12 12:50

Matrix: Water

Date Received: 09/01/12 10:00

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		10	ug/L			09/05/12 05:10	20
1,2-Dichloroethane	ND		10	ug/L			09/05/12 05:10	20
Benzene	650		10	ug/L			09/05/12 05:10	20
Ethanol	ND	RJ	3000	ug/L			09/05/12 05:10	20
Ethylbenzene	31		10	ug/L			09/05/12 05:10	20
Ethyl-t-butyl ether (ETBE)	ND		10	ug/L			09/05/12 05:10	20
Isopropyl Ether (DIPE)	ND		10	ug/L			09/05/12 05:10	20
m,p-Xylene	51		20	ug/L			09/05/12 05:10	20
Methyl-t-Butyl Ether (MTBE)	120		10	ug/L			09/05/12 05:10	20
o-Xylene	ND		10	ug/L			09/05/12 05:10	20
Tert-amyl-methyl ether (TAME)	ND		10	ug/L			09/05/12 05:10	20
tert-Butyl alcohol (TBA)	510		200	ug/L			09/05/12 05:10	20
Toluene	16		10	ug/L			09/05/12 05:10	20
Xylenes, Total	51		20	ug/L			09/05/12 05:10	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		80 - 120		09/05/12 05:10	20
Dibromofluoromethane (Surr)	100		80 - 120		09/05/12 05:10	20
Toluene-d8 (Surr)	103		80 - 120		09/05/12 05:10	20

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	15000		10000	ug/L			09/01/12 17:08	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		65 - 140		09/01/12 17:08	200

Lab Chronicle

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0771, Livermore

TestAmerica Job ID: 440-22155-1

Client Sample ID: MW-7

Lab Sample ID: 440-22155-1

Date Collected: 08/31/12 12:50

Matrix: Water

Date Received: 09/01/12 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		20	10 mL	10 mL	49675	09/05/12 05:10	RM	TAL IRV
Total/NA	Analysis	8015B/5030B		200	10 mL	10 mL	49415	09/01/12 17:08	KS	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 0771, Livermore

TestAmerica Job ID: 440-22155-1

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-49675/4

Matrix: Water

Analysis Batch: 49675

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50	ug/L			09/04/12 19:58	1
1,2-Dichloroethane	ND		0.50	ug/L			09/04/12 19:58	1
Benzene	ND		0.50	ug/L			09/04/12 19:58	1
Ethanol	ND		150	ug/L			09/04/12 19:58	1
Ethylbenzene	ND		0.50	ug/L			09/04/12 19:58	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			09/04/12 19:58	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			09/04/12 19:58	1
m,p-Xylene	ND		1.0	ug/L			09/04/12 19:58	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	ug/L			09/04/12 19:58	1
o-Xylene	ND		0.50	ug/L			09/04/12 19:58	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			09/04/12 19:58	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			09/04/12 19:58	1
Toluene	ND		0.50	ug/L			09/04/12 19:58	1
Xylenes, Total	ND		1.0	ug/L			09/04/12 19:58	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		80 - 120		09/04/12 19:58	1
Dibromofluoromethane (Surr)	96		80 - 120		09/04/12 19:58	1
Toluene-d8 (Surr)	96		80 - 120		09/04/12 19:58	1

Lab Sample ID: LCS 440-49675/5

Matrix: Water

Analysis Batch: 49675

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	25.0	26.2		ug/L		105	75 - 125
1,2-Dichloroethane	25.0	22.3		ug/L		89	60 - 140
Benzene	25.0	20.5		ug/L		82	70 - 120
Ethanol	250	264		ug/L		106	40 - 155
Ethylbenzene	25.0	25.1		ug/L		100	75 - 125
Ethyl-t-butyl ether (ETBE)	25.0	19.1		ug/L		76	65 - 135
Isopropyl Ether (DIPE)	25.0	21.5		ug/L		86	60 - 135
m,p-Xylene	50.0	52.6		ug/L		105	75 - 125
Methyl-t-Butyl Ether (MTBE)	25.0	17.8		ug/L		71	60 - 135
o-Xylene	25.0	25.6		ug/L		102	75 - 125
Tert-amyl-methyl ether (TAME)	25.0	17.2		ug/L		69	60 - 135
tert-Butyl alcohol (TBA)	125	141		ug/L		113	70 - 135
Toluene	25.0	22.4		ug/L		90	70 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	99		80 - 120
Toluene-d8 (Surr)	96		80 - 120

QC Sample Results

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0771, Livermore

TestAmerica Job ID: 440-22155-1

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-21316-B-7 MS

Matrix: Water

Analysis Batch: 49675

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				
1,2-Dibromoethane (EDB)	ND		25.0	30.5		ug/L		122	70 - 130
1,2-Dichloroethane	0.52		25.0	27.3		ug/L		107	60 - 140
Benzene	ND		25.0	23.6		ug/L		94	65 - 125
Ethanol	ND		250	293		ug/L		117	40 - 155
Ethylbenzene	ND		25.0	28.2		ug/L		113	65 - 130
Ethyl-t-butyl ether (ETBE)	ND		25.0	23.7		ug/L		95	60 - 135
Isopropyl Ether (DIPE)	ND		25.0	26.5		ug/L		106	60 - 140
m,p-Xylene	ND		50.0	58.6		ug/L		117	65 - 130
Methyl-t-Butyl Ether (MTBE)	0.54		25.0	22.7		ug/L		89	55 - 145
o-Xylene	ND		25.0	28.5		ug/L		114	65 - 125
Tert-amyl-methyl ether (TAME)	ND		25.0	21.6		ug/L		86	60 - 140
tert-Butyl alcohol (TBA)	ND		125	160		ug/L		128	65 - 140
Toluene	ND		25.0	25.8		ug/L		103	70 - 125

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	104		80 - 120
Toluene-d8 (Surr)	98		80 - 120

Lab Sample ID: 440-21316-B-7 MSD

Matrix: Water

Analysis Batch: 49675

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						
1,2-Dibromoethane (EDB)	ND		25.0	30.5		ug/L		122	70 - 130	0	25
1,2-Dichloroethane	0.52		25.0	27.6		ug/L		108	60 - 140	1	20
Benzene	ND		25.0	23.3		ug/L		93	65 - 125	1	20
Ethanol	ND		250	288		ug/L		115	40 - 155	2	30
Ethylbenzene	ND		25.0	27.4		ug/L		109	65 - 130	3	20
Ethyl-t-butyl ether (ETBE)	ND		25.0	24.4		ug/L		98	60 - 135	3	25
Isopropyl Ether (DIPE)	ND		25.0	26.5		ug/L		106	60 - 140	0	25
m,p-Xylene	ND		50.0	55.9		ug/L		112	65 - 130	5	25
Methyl-t-Butyl Ether (MTBE)	0.54		25.0	23.6		ug/L		92	55 - 145	4	25
o-Xylene	ND		25.0	27.8		ug/L		111	65 - 125	2	20
Tert-amyl-methyl ether (TAME)	ND		25.0	22.1		ug/L		88	60 - 140	2	30
tert-Butyl alcohol (TBA)	ND		125	154		ug/L		123	65 - 140	4	25
Toluene	ND		25.0	25.4		ug/L		102	70 - 125	2	20

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120
Toluene-d8 (Surr)	96		80 - 120

QC Sample Results

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0771, Livermore

TestAmerica Job ID: 440-22155-1

Method: 8015B/5030B - Gasoline Range Organics (GC)

Lab Sample ID: MB 440-49415/3

Matrix: Water

Analysis Batch: 49415

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50	ug/L			09/01/12 14:12	1
Surrogate	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac		
4-Bromofluorobenzene (Surr)	97		65 - 140		09/01/12 14:12	1		

Lab Sample ID: LCS 440-49415/2

Matrix: Water

Analysis Batch: 49415

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)	800	699		ug/L		87	80 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	127		65 - 140				

Lab Sample ID: 440-21760-B-4 MS

Matrix: Water

Analysis Batch: 49415

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)	ND		800	765		ug/L		96	65 - 140
Surrogate	%Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	147	LH	65 - 140						

Lab Sample ID: 440-21760-B-4 MSD

Matrix: Water

Analysis Batch: 49415

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
GRO (C4-C12)	ND		800	740		ug/L		92	65 - 140	3	20
Surrogate	%Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	139		65 - 140								

QC Association Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0771, Livermore

TestAmerica Job ID: 440-22155-1

GC/MS VOA

Analysis Batch: 49675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-21316-B-7 MS	Matrix Spike	Total/NA	Water	8260B/5030B	
440-21316-B-7 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/5030B	
440-22155-1	MW-7	Total/NA	Water	8260B/5030B	
LCS 440-49675/5	Lab Control Sample	Total/NA	Water	8260B/5030B	
MB 440-49675/4	Method Blank	Total/NA	Water	8260B/5030B	

GC VOA

Analysis Batch: 49415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-21760-B-4 MS	Matrix Spike	Total/NA	Water	8015B/5030B	
440-21760-B-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B/5030B	
440-22155-1	MW-7	Total/NA	Water	8015B/5030B	
LCS 440-49415/2	Lab Control Sample	Total/NA	Water	8015B/5030B	
MB 440-49415/3	Method Blank	Total/NA	Water	8015B/5030B	

Definitions/Glossary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0771, Livermore

TestAmerica Job ID: 440-22155-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
RJ	Contract limits originate from BP LaMP Technical Requirements

GC VOA

Qualifier	Qualifier Description
LH	Surrogate Recoveries were higher than QC limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
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 0771, Livermore

TestAmerica Job ID: 440-22155-1

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
Arizona	State Program	9	AZ0671	10-13-12
California	LA Cty Sanitation Districts	9	10256	01-31-13
California	NELAC	9	1108CA	01-31-13
California	State Program	9	2706	06-30-14
Guam	State Program	9	Cert. No. 12.002r	01-23-13
Hawaii	State Program	9	N/A	01-31-13
Nevada	State Program	9	CA015312007A	07-31-12
New Mexico	State Program	6	N/A	01-31-12
Northern Mariana Islands	State Program	9	MP0002	01-31-13
Oregon	NELAC	10	4005	09-12-12
USDA	Federal		P330-09-00080	06-06-14

Login Sample Receipt Checklist

Client: Broadbent & Associates, Inc.

Job Number: 440-22155-1

Login Number: 22155

List Number: 1

Creator: Perez, Angel

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
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	
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	Alex Martinez
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	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	