Atlantic Richfield Company

Chuck Carmel
Environmental Business Manager

PO Box 1257
San Ramon, CA 94583
Phone: (925) 275-3803
Fax: (925) 275-3815
E-Mail: charles.carmel@bp.com

30 October 2009

Re: Third Quarter 2009 Ground-Water Monitoring Report
Former Richfield Company Station #472
6415 International Boulevard, Oakland, California
ACEH Case #RO0002982

"I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct.

Submitted by,

Chuck Carmel
Environmental Business Manager

Attachment:

Third Quarter 2009 Ground-Water Monitoring Report
Former Richfield Oil Company Service Station #472
6415 International Boulevard, Oakland, California
ACEH Case #RO0002982

Prepared for

Mr. Chuck Carmel
Environmental Business Manager
Atlantic Richfield Company
P.O. Box 1257
San Ramon, California 94583

Prepared by

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

1324 Mangrove Avenue, Suite 212
Chico, California 95926
(530) 566-1400
www.broadbentinc.com

30 October 2009

Project No. 09-88-601

Broadbent & Associates, Inc.
1324 Mangrove Ave., Suite 212
Chico, CA 95926
Voice (530) 566-1400
Fax (530) 566-1401

BROADBENT & ASSOCIATES, INC
ENVIRONMENTAL, WATER RESOURCES & ENGINEERING

30 October 2009

Project No. 09-88-601

Atlantic Richfield Company
P.O. Box 1257
San Ramon, California 94583
Submitted via ENFOS

Attn.: Mr. Chuck Carmel

Re: Third Quarter 2009 Ground-Water Monitoring Report, Former Richfield Oil Company Service Station #472, 6415 International Boulevard, Oakland, California
ACEH Case #RO0002982

Dear Mr. Carmel:

Provided herein is the *Third Quarter 2009 Ground-Water Monitoring Report* for Former Richfield Oil Company Service Station #472 located at 6415 International Boulevard, Oakland, Alameda County, California (Site). This report presents results of the initial ground-water monitoring conducted at the Site during the Third Quarter of 2009.

Should you have questions regarding the work performed or results obtained, please do not hesitate to contact me at (530) 566-1400.

Sincerely,

BROADBENT & ASSOCIATES, INC.

Thomas A. Venus, P.E.
Senior Engineer

REGISTERED PROFESSIONAL ENGINEER
THOMAS A. VENUS
No. 54698
Expires 12-31-09
CIVIL
STATE OF CALIFORNIA

Enclosures

cc: Mr. Paresh Khatri, Alameda County Environmental Health (Submitted via ACEH ftp site)
Electronic copy uploaded to GeoTracker

STATION #472 GROUND-WATER MONITORING REPORT

Facility: #472 Address:	6415 International Boulevard, Oakland, California
Environmental Business Manager:	Mr. Chuck Carmel
Consulting Co./Contact Person:	Broadbent & Associates, Inc.(BAI)/Mr. Tom Venus, PE (530) 566-1400
Consultant Project No.:	09-88-601
Primary Agency/Regulatory ID No.:	Alameda County Environmental Health (ACEH) ACEH Case #RO0002982
Facility Permits/Permitting Agency:	NA

WORK PERFORMED THIS QUARTER (Third Quarter 2009):

1. Prepared and submitted *Second Quarter 2009 Status Report* (BAI, 7/7/2009).
2. Conducted ground-water monitoring/sampling for Third Quarter 2009. Work performed on 25 August 2009 by Stratus Environmental, Inc. (Stratus).

WORK PROPOSED FOR NEXT QUARTER (Fourth Quarter 2009):

1. Prepared and submitted *Third Quarter 2009 Ground-Water Monitoring Report* (contained herein).
2. Conduct ground-water monitoring/sampling for Fourth Quarter 2009.

QUARTERLY RESULTS SUMMARY:

Current phase of project:	**Ground-water monitoring/sampling**
Frequency of ground-water monitoring:	**Quarterly = MW-1, MW-2, and MW-3**
Frequency of ground-water sampling:	**Quarterly = MW-1, MW-2, and MW-3**
Is free product (FP) present on-site:	**No**
Current remediation techniques:	**NA**
Depth to ground water (below TOC):	**9.29 ft (MW-1) to 11.07 ft (MW-3)**
General ground-water flow direction:	**Southwest**
Approximate hydraulic gradient:	**0.01 ft/ft**

DISCUSSION:

Third Quarter 2009 ground-water monitoring and sampling was conducted at Station #472 on 25 August 2009 by Stratus. Water levels were gauged in each of the three wells at the Site. No irregularities were noted during water level gauging. Depth-to-water measurements ranged from 9.29 ft at MW-1 to 11.07 ft at MW-3. Resulting ground-water surface elevations ranged from 14.88 ft above datum in well MW-1 to 13.66 ft in well MW-3. Initial water level elevations are summarized in Table 1. Water level elevations yielded a potentiometric ground-water flow direction and gradient to the southwest at approximately 0.01 ft/ft. Ground-water monitoring field data sheets are provided within Appendix A. Measured depths to ground water and respective ground-water elevations are summarized in Table 1. Current and historic ground-water flow directions and gradients are provided in Table 3. A Site Location Map is presented as Drawing 1. Potentiometric ground-water elevation contours are presented in Drawing 2.

Consistent with the current ground-water sampling schedule, water samples were collected from wells MW-1, MW-2, and MW-3 on 25 August 2009. No irregularities were reported during sampling. Samples were submitted under chain-of-custody protocol to Calscience Environmental Laboratories, Inc.

(Garden Grove, California), for analysis of Gasoline Range Organics (GRO, C6-C12), Diesel Range Organics (DRO, C10-C28), and Oil Range Organics (ORO, C6-C12) by EPA Method 8015B; for Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) by EPA Method 8260B; and Methyl Tert-Butyl Ether (MTBE), Ethyl Tert-Butyl Ether (ETBE), Tert-Amyl Methyl Ether (TAME), Di-Isopropyl Ether(DIPE), Tert-Butyl Alcohol (TBA), 1,2-Dibromomethane (EDB), 1,2-Dichloroethane (1,2-DCA), and Ethanol by EPA Method 8260B. The laboratory noted that during the DRO analysis of sample MW-1 an unknown hydrocarbon(s) was encountered based on the diesel reference standard. No other significant irregularities were encountered during laboratory analysis of the samples. Ground-water sampling field data sheets and the laboratory analytical report, including chain-of-custody documentation, are provided in Appendix A.

Gasoline Range Organics (GRO) were detected above the laboratory reporting limit in two of the three wells sampled at concentrations of 530 micrograms per liter (µg/L) in well MW-1 and 63 µg/L in well MW-3. Toluene was detected above the laboratory reporting limit in well MW-3 at a concentration of 1.2 µg/L. MTBE was detected above the laboratory reporting limit in well MW-1 at a concentration of 0.54 µg/L. DRO was detected above the laboratory reporting limit in well MW-1 at 85 µg/L and at 190 µg/L in well MW-1 but with the previously mentioned note by the laboratory that the MW-1 chromatogram did not resemble that of the reference diesel standard. The remaining analytes were not detected above their laboratory reporting limits in the three wells sampled this quarter. Initial ground-water monitoring laboratory analytical results are summarized in Table 1 and Table 2. The most recent GRO, Benzene, and MTBE concentrations are also presented in Drawing 2. Ground-water monitoring data (GEO_WELL) and laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation receipts are provided in Appendix B.

CONCLUSIONS AND RECOMMENDATIONS:

It is somewhat premature to make conclusions based on one round of ground-water monitoring and sampling at Station #472. That stated, ground-water elevations, flow direction, and hydraulic gradient were generally consistent with expectations. An unexpected observation was that the highest concentrations of contaminants were reported in the sample collected from well MW-1, which the documented flow direction puts on the upgradient side of the Site. No petroleum hydrocarbon contaminants were detected in the sample from well MW-2, which is in close proximity to the assumed former underground storage tank pit. BAI recommends that one year of quarterly monitoring and sampling should be performed to seek trends in the ground-water elevations, flow directions, horizontal gradients, and contaminant concentrations. A ground-water monitoring report will be submitted for the next sampling event scheduled for the Fourth Quarter of 2009.

CLOSURE:

The findings presented in this report are based upon: observations of Stratus field personnel (see Appendix A), the points investigated, and results of laboratory tests performed by Calscience Environmental Laboratories, Inc. (Garden Grove, California). Our services were performed in accordance with the generally accepted standard of practice at the time this report was written. No other warranty, expressed or implied was made. This report has been prepared for the exclusive use of Atlantic Richfield Company. It is possible that variations in soil or ground-water conditions could exist beyond points explored in this investigation. Also, changes in site conditions could occur in the future due to variations in rainfall, temperature, regional water usage, or other factors.

ATTACHMENTS:

Drawing 1. Site Location Map, Station #472, 6415 International Boulevard, Oakland, California

Drawing 2. Ground-Water Elevation Contour and Analytical Summary Map, 25 August 2009, Station #472, 6415 International Boulevard, Oakland, California

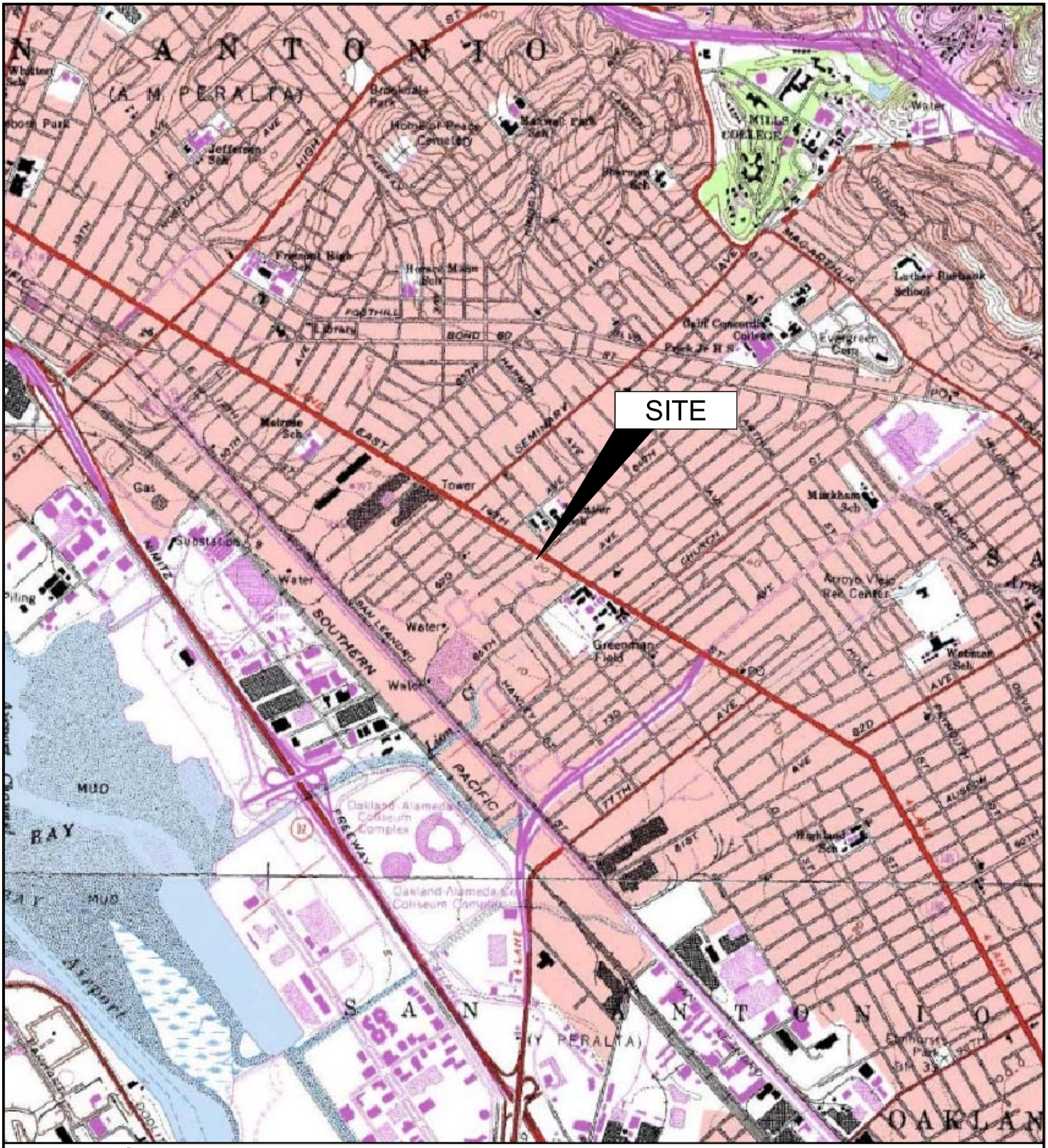
Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses, Station #472, 6415 International Blvd., Oakland, California

Table 2. Summary of Fuel Additives Analytical Data, Station #472, 6415 International Blvd., Oakland, California

Table 3. Historical Ground-Water Flow Direction and Gradient, Station #472, 6415 International Blvd., Oakland, California

Appendix A. Stratus Ground-Water Sampling Data Package (Includes Field Data Sheets, Laboratory Analytical Report with Chain-of-Custody Documentation, and Field Procedures)

Appendix B. GeoTracker Upload Confirmation Receipts



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0 2000 4000

APPROXIMATE SCALE (ft)

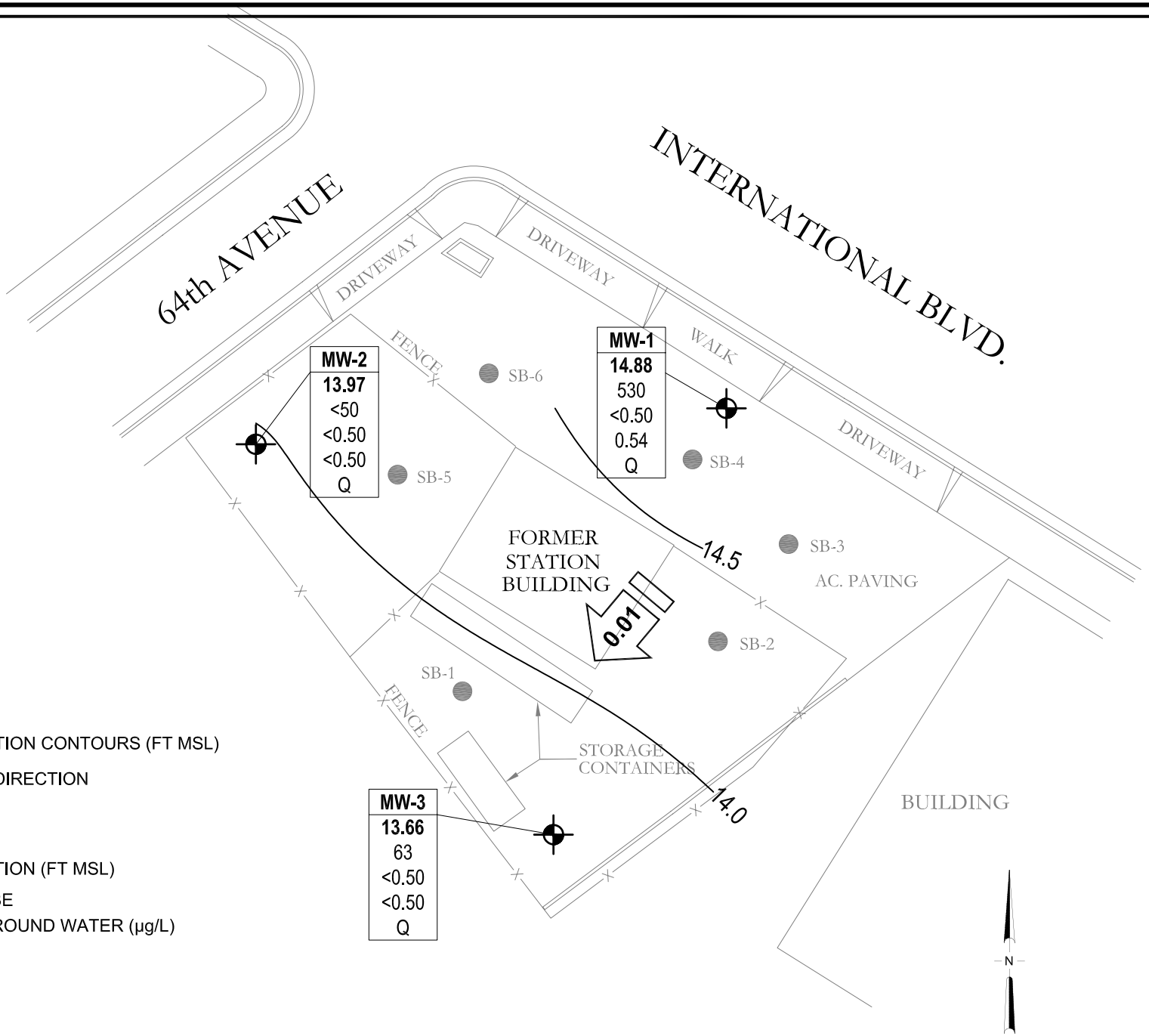
IMAGE SOURCE: USGS

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, CA 95926
Project No.: 09-88-601 Date: 07/31/09

Former Station #472
6415 International Boulevard
Oakland, California

Site Location Map

Drawing
1



LEGEND

- MONITORING WELL
- SOIL BORING
- 14.0 — GROUND-WATER ELEVATION CONTOURS (FT MSL)
- 0.01 — GROUND-WATER FLOW DIRECTION AND GRADIENT (FT/FT)

Well	WELL DESIGNATION
ELEV	GROUND-WATER ELEVATION (FT MSL)
GRO	GRO, BENZENE AND MTBE CONCENTRATIONS IN GROUND WATER (µg/L)
Benzene	
MTBE	
Q/SA/A	SAMPLING FREQUENCY
Q	SAMPLED QUARTERLY

0 30 60
SCALE (ft)

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California
Project No.: 09-88-601 Date: 10/2/09

Former Station #472
6415 International Boulevard
Oakland, California

Ground-Water Elevation Contour and Analytical Summary Map
25 August 2009

Drawing
2

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #472, 6415 International Boulevard, Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/ TPHd (µg/L)	TOG (µg/L)
							GRO/ TPHg	Benzene	Toluene	Ethyl- Benzene	Total Xylenes	MtBE					
MW-1																	
8/25/2009	P	LX (DRO)	24.17	9.29	--	14.88	530	<0.50	<0.50	<0.50	<0.50	0.54	--	CEL	7.21	190	--
MW-2																	
8/25/2009	P		23.62	9.65	--	13.97	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	CEL	7.30	<50	--
MW-3																	
8/25/2009	P		24.73	11.07	--	13.66	63	<0.50	1.2	<0.50	<0.50	<0.50	--	CEL	7.09	85	--

ABBREVIATIONS & SYMBOLS:
--/--- = Not analyzed/applicable/measured/available
< = Not detected at or above specified laboratory reporting limit
DO = Dissolved oxygen
DRO = Diesel range organics
DTW = Depth to water in ft bgs
ft bgs = feet below ground surface
GRO = Gasoline range organics, range C4-C12
GWE = Groundwater elevation measured in ft
HVOC = Halogenated volatile organic compounds
mg/L = Milligrams per liter
MTBE = Methyl tert-butyl ether
NP = Well not purged prior to sampling
P = Well purged prior to sampling
TOC = Top of casing measured in ft
TOG = Total oil and grease
TPH-d = Total petroleum hydrocarbons as diesel
TPH-g = Total petroleum hydrocarbons as gasoline
µg/L = Micrograms per liter
CEL = CalScience Environmental Laboratories, Inc.

FOOTNOTES:
LX = Quantitation of unknown hydrocarbon(s) in sample based on diesel.

Table 2. Summary of Fuel Additives Analytical Data

Station #472, 6415 International Boulevard, Oakland, CA

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-1									
8/25/2009	<300	<10	0.54	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-2									
8/25/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-3									
8/25/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

ABBREVIATIONS & SYMBOLS:
-- = Not analyzed/applicable/measured/available
< = Not detected at or above specified laboratory reporting limit
1,2-DCA = 1,2-Dichloroethane
DIPE = Di-isopropyl ether
EDB = 1,2-Dibromoethane
ETBE = Ethyl tert-butyl ether
MTBE = Methyl tert-butyl ether
TAME = tert-Amyl methyl ether
TBA = tert-Butyl alcohol
µg/L = Micrograms per Liter

NOTES:
All volatile organic compounds were analyzed using EPA Method 8260B.

Table 3. Historical Ground-Water Flow Direction and Gradient

Station #472, 6415 International Boulevard, Oakland, CA

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
8/25/2009	Southwest	0.01

APPENDIX A

STRATUS GROUND-WATER SAMPLING DATA PACKAGE
(INCLUDES FIELD DATA SHEETS, LABORATORY ANALYTICAL REPORT WITH CHAIN-OF-CUSTODY DOCUMENTATION, AND FIELD PROCEDURES)

STRATUS
ENVIRONMENTAL, INC.

3330 Cameron Park Drive, Ste 550
Cameron Park, California 95682
(530) 676-6004 ~ Fax: (530) 676-6005

September 17, 2009

Mr. Rob Miller
Broadbent & Associates, Inc.
2000 Kirman Avenue
Reno, NV 89502

Re: Groundwater Sampling Data Package, ARCO Service Station No. 472, located at 6415 International Boulevard, Oakland, California.

General Information

Data Submittal Prepared / Reviewed by: Carol Huff / Scott Bittinger / Jay Johnson
Phone Number: (530) 676-6000
On-Site Supplier Representative: Collin Fischer

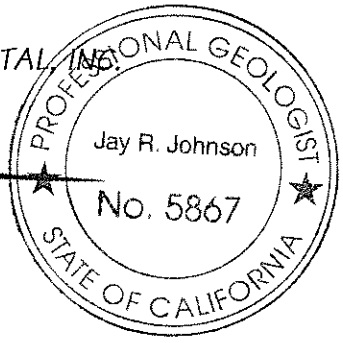
Sampling Date: August 25, 2009
Unusual Field Conditions: None noted.
Scope of Work Performed: Quarterly groundwater monitoring and sampling
Variations from Work Scope: None noted.

This submittal presents the data collected in association with routine groundwater monitoring. The attachments include field data sheets, chain of custody documentation, certified analytical results, and field procedures for groundwater sampling documentation. The information is being provided to BP-ARCO's Scoping Supplier for use in preparing a report for regulatory submittal. This submittal is limited to presentation of collected data and does not include data interpretation or conclusions or recommendations.

Any questions concerning this submittal should be addressed to the Preparer/Reviewer identified above.

Sincerely,

STRATUS ENVIRONMENTAL, INC.



Jay R. Johnson, P.G.
Project Manager

Attachments:

- Field Data Sheets
- Chain of Custody Documentation
- Certified Analytical Results
- Field Procedures for Groundwater Sampling

cc: Mr. Chuck Carmel, BP/ARCO

STRATUS ENVIRONMENTAL, INC.

Site Address: 6415 INT- BLVD
City: OAKLAND, CA
Sampled by: CE
Signature: [signature]

Site Number: 472
Project Number: E472
Project PM: Jim Johnson
DATE: 8/25/04

Water Level Data					Purge Volume Calculations					Purge Method				Sample Record			Field Data
Well ID	Time	Depth to Product (feet)	Depth to Water (feet)	Total Depth (feet)	Water column (feet)	Diameter (inches)	Multiplier	3 casing volumes (gallons)	Actual water purged (gallons)	No Purge	Bailer	Pump	other	DTW at sample time (feet)	Sample I.D.	Sample Time	DO (mg/L)
MW-1	1020		9.29	16.95	7.54	4"	2	15.08	15		X			11.12		1145/1147	
MW-2	1048		9.65	17.17	7.52	4"	2	15.04	15		X			9.66		1200/1205	
MW-3	1115		11.07	17.17	6.1	4"	2	12.2	12		X			11.11		1220/1225	

Multiplier
2" = 0.5 3" = 1.0 4" = 2.0 6" = 4.4

Please refer to groundwater sampling field procedures
pH/Conductivity/temperature Meter - Oakton Model PC-10
DO Meter - Oakton 300 Series (DO is always measured before purge)

CALIBRATION DATE
pH:
Conductivity:
DO:

time					time				
purge stop time					pugre stop time				
Well ID MW-1					Well ID				
purge start time					burge start time				
	Temp C	pH	cond	gallons		Temp C	pH	cond	gallons
time 1025	22.4	7.15	476	0	time				
time 1026	22.6	7.17	464	5	time				
time 1031	22.1	7.08	483	10	time				
time 1037	21.7	7.21	524	15	time				
purge stop time					purge stop time				
Well ID MW-2					Well ID				
purge start time					purge start time				
	Temp C	pH	cond	gallons		Temp C	pH	cond	gallons
time 1053	21.3	7.20	427	0	time				
time 1057	21.8	7.35	412	5	time				
time 1101	21.6	7.51	424	10	time				
time 1107	21.5	7.30	417	15	time				
purge stop time					purge stop time				
Well ID MW-3					Well ID				
purge start time					purge start time				
	Temp C	pH	cond	gallons		Temp C	pH	cond	gallons
time 1121	19.6	7.17	535	0	time				
time 1124	19.9	7.13	529	4	time				
time 1127	19.6	7.12	528	8	time				
time 1130	19.4	7.09	520	12	time				
purge stop time					purge stop time				

ATLANTIC RICHFIELD COMPANY

Laboratory Management Program LaMP **Chain of Custody Record** 189409

Page 1 of 1

BP/ARC Project Name:

BP/ARC Facility No: 472

Req Due Date (mm/dd/yy):

Lab Work Order Number: 2086

Rush TAT: Yes ___ No X

Lab Name: CALSCIENCE	BP/ARC Facility Address: 6415 INT. BLVD.	Consultant/Contractor: STRATUS
Lab Address: 7440 LINCOLN WAY, GARDEN GROVE	City, State, ZIP Code: OAKLAND, CA.	Consultant/Contractor Project No: E472
Lab PM: RICHARD V.	Lead Regulatory Agency: ACEH	Address: 3330 CAMERON PARK DR. #550
Lab Phone: (714) 895-5494	California Global ID No.: T0600000417	Consultant/Contractor PM: JAY JOHNSON
Lab Shipping Accnt: 9255	Enfos Proposal No: 004LO-0002	Phone: (530) 676 6000
Lab Bottle Order No:	Accounting Mode: Provision ___ OOC-BU ___ OOC-RM X	Email EDD To: CHUFF@STRATUSINC.NET
Other Info:	Stage: APPROVED Activity: FIELD ENHANCED ATTENUATION	Invoice To: BP/ARC X Contractor ___
BP/ARC EBM: PAUL SUPPLEE		
EBM Phone:		
EBM Email:		

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	Requested Analyses: GRO (8015B)	BTEX (8021B)	DO (8015B)	BTEX + 12 (8260)	EDB (8260)	12 DCA (8260)	Ethanol (8260)	TPH Blank	Report Type & QC Level
1	MW-2	08/25/09	1200		X		2	X						X	X						Standard X
2	MW-2		1205		X		6				X		X			X	X	X	X		Full Data Package ___
2	MW-1		1145		X		2	X						X	X						
4	MW-1		1147		X		6				X		X			X	X	X	X		
3	MW-3		1220		X		2	X						X	X						
6	MW-3		1225		X		6				X		X			X	X	X	X		
4	TRIP BLANK	↓	1330		X		2	X												X	

Comments

Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Sampler's Name: CF	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: STRATUS	CF	8/25/09	1830			
Shipment Method: GSO Ship Date: 8/25/09						
Shipment Tracking No: 106160267						
Special Instructions:					8/26/09	1030

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: ___ °F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

Laboratory Copy

BP/ARC LaMP COC Rev. 6 01/01/2009

Calscience Environmental Laboratories, Inc.

September 08, 2009

Jay Johnson
Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

Subject: **Calscience Work Order No.:** **09-08-2088**
Client Reference: **472**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 8/26/2009 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Richard Villafania
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Stratus Environmental, inc.		Date Received:	08/26/09
3330 Cameron Park Drive, Suite 550		Work Order No:	09-08-2088
Cameron Park, CA 95682-8861		Preparation:	EPA 3510C
		Method:	EPA 8015B (M)

Project: 472

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	**09-08-2088-1-G**	**08/25/09 12:00**	**Aqueous**	**GC 49**	**08/26/09**	**08/27/09 20:25**	**090826B12**

Parameter	Result	RL	DF	Qual	Units
Diesel Range Organics (C10-C28)	ND	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
Decachlorobiphenyl	99	68-140			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	**09-08-2088-2-G**	**08/25/09 11:45**	**Aqueous**	**GC 49**	**08/26/09**	**08/27/09 20:41**	**090826B12**

Comment(s): -LX = Quantitation of unknown hydrocarbon(s) in sample based on diesel.

Parameter	Result	RL	DF	Qual	Units
Diesel Range Organics (C10-C28)	190	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
Decachlorobiphenyl	95	68-140			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	**09-08-2088-3-G**	**08/25/09 12:20**	**Aqueous**	**GC 49**	**08/26/09**	**08/27/09 20:57**	**090826B12**

Parameter	Result	RL	DF	Qual	Units
Diesel Range Organics (C10-C28)	85	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
Decachlorobiphenyl	98	68-140			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-699-169**	**N/A**	**Aqueous**	**GC 49**	**08/26/09**	**08/27/09 19:38**	**090826B12**

Parameter	Result	RL	DF	Qual	Units
Diesel Range Organics (C10-C28)	ND	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
Decachlorobiphenyl	97	68-140			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Stratus Environmental, inc.	Date Received:	08/26/09
3330 Cameron Park Drive, Suite 550	Work Order No:	09-08-2088
Cameron Park, CA 95682-8861	Preparation:	EPA 3510C
	Method:	EPA 8015B (M)

Project: 472

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	**09-08-2088-1-G**	**08/25/09 12:00**	**Aqueous**	**GC 49**	**08/26/09**	**08/27/09 20:25**	**090826B11**

Parameter	Result	RL	DF	Qual	Units
Motor Oil Range Organics (C17-C44)	ND	250	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
Decachlorobiphenyl	99	68-140			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	**09-08-2088-2-G**	**08/25/09 11:45**	**Aqueous**	**GC 49**	**08/26/09**	**08/27/09 20:41**	**090826B11**

Parameter	Result	RL	DF	Qual	Units
Motor Oil Range Organics (C17-C44)	ND	250	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
Decachlorobiphenyl	95	68-140			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	**09-08-2088-3-G**	**08/25/09 12:20**	**Aqueous**	**GC 49**	**08/26/09**	**08/27/09 20:57**	**090826B11**

Parameter	Result	RL	DF	Qual	Units
Motor Oil Range Organics (C17-C44)	ND	250	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
Decachlorobiphenyl	98	68-140			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-711-24**	**N/A**	**Aqueous**	**GC 49**	**08/26/09**	**08/27/09 15:58**	**090826B11**

Parameter	Result	RL	DF	Qual	Units
Motor Oil Range Organics (C17-C44)	ND	250	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
Decachlorobiphenyl	101	68-140			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

Date Received: 08/26/09
Work Order No: 09-08-2088
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project: 472

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	**09-08-2088-1-D**	**08/25/09 12:00**	**Aqueous**	**GC 1**	**08/26/09**	**08/26/09 18:00**	**090826B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
Surrogates:	REC (%)	Control Limits		Qual	
1,4-Bromofluorobenzene	85	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	**09-08-2088-2-D**	**08/25/09 11:45**	**Aqueous**	**GC 1**	**08/26/09**	**08/26/09 19:35**	**090826B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	530	50	1		ug/L
Surrogates:	REC (%)	Control Limits		Qual	
1,4-Bromofluorobenzene	96	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	**09-08-2088-3-D**	**08/25/09 12:20**	**Aqueous**	**GC 1**	**08/26/09**	**08/26/09 20:06**	**090826B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	63	50	1		ug/L
Surrogates:	REC (%)	Control Limits		Qual	
1,4-Bromofluorobenzene	84	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-695-648**	**N/A**	**Aqueous**	**GC 1**	**08/26/09**	**08/26/09 13:13**	**090826B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
Surrogates:	REC (%)	Control Limits		Qual	
1,4-Bromofluorobenzene	79	38-134			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

Date Received: 08/26/09
Work Order No: 09-08-2088
Preparation: EPA 5030B
Method: EPA 8260B
Units: ug/L

Project: 472

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	**09-08-2088-1-A**	**08/25/09 12:00**	**Aqueous**	**GC/MS BB**	**08/28/09**	**08/28/09 20:10**	**090828L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	97	80-128			Dibromofluoromethane	100	80-127		
Toluene-d8	89	80-120			1,4-Bromofluorobenzene	96	68-120		

MW-1	**09-08-2088-2-A**	**08/25/09 11:45**	**Aqueous**	**GC/MS BB**	**08/28/09**	**08/28/09 20:38**	**090828L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	0.54	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	90	80-128			Dibromofluoromethane	99	80-127		
Toluene-d8	86	80-120			1,4-Bromofluorobenzene	102	68-120		

MW-3	**09-08-2088-3-A**	**08/25/09 12:20**	**Aqueous**	**GC/MS BB**	**08/28/09**	**08/28/09 21:07**	**090828L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	1.2	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	94	80-128			Dibromofluoromethane	99	80-127		
Toluene-d8	87	80-120			1,4-Bromofluorobenzene	96	68-120		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Stratus Environmental, inc.	Date Received:	08/26/09
3330 Cameron Park Drive, Suite 550	Work Order No:	09-08-2088
Cameron Park, CA 95682-8861	Preparation:	EPA 5030B
	Method:	EPA 8260B
	Units:	ug/L
Project: 472		Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-703-1,059**	**N/A**	**Aqueous**	**GC/MS BB**	**08/28/09**	**08/28/09 13:01**	**090828L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	94	80-128			Dibromofluoromethane	97	80-127		
Toluene-d8	80	80-120			1,4-Bromofluorobenzene	93	68-120		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.		Date Received:	08/26/09
3330 Cameron Park Drive, Suite 550		Work Order No:	09-08-2088
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8015B (M)

Project 472

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-2	**Aqueous**	**GC 1**	**08/26/09**	**08/26/09**	**090826S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	103	97	38-134	5	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.		Date Received:	08/26/09
3330 Cameron Park Drive, Suite 550		Work Order No:	09-08-2088
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8260B

Project 472

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-08-2297-5	**Aqueous**	**GC/MS BB**	**08/28/09**	**08/28/09**	**090828S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	106	109	76-124	3	0-20	
Carbon Tetrachloride	93	95	74-134	2	0-20	
Chlorobenzene	104	107	80-120	3	0-20	
1,2-Dibromoethane	94	100	80-120	6	0-20	
1,2-Dichlorobenzene	100	105	80-120	4	0-20	
1,1-Dichloroethene	109	109	73-127	0	0-20	
Ethylbenzene	100	100	78-126	0	0-20	
Toluene	100	96	80-120	4	0-20	
Trichloroethene	102	106	77-120	5	0-20	
Vinyl Chloride	92	98	72-126	6	0-20	
Methyl-t-Butyl Ether (MTBE)	93	100	67-121	7	0-49	
Tert-Butyl Alcohol (TBA)	111	109	36-162	3	0-30	
Diisopropyl Ether (DIPE)	100	105	60-138	5	0-45	
Ethyl-t-Butyl Ether (ETBE)	93	98	69-123	6	0-30	
Tert-Amyl-Methyl Ether (TAME)	89	95	65-120	6	0-20	
Ethanol	144	121	30-180	17	0-72	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.		Date Received:	N/A
3330 Cameron Park Drive, Suite 550		Work Order No:	09-08-2088
Cameron Park, CA 95682-8861		Preparation:	EPA 3510C
		Method:	EPA 8015B (M)

Project: 472

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-699-169	**Aqueous**	**GC 49**	**08/26/09**	**08/27/09**	**090826B12**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Diesel Range Organics (C10-C28)	95	100	75-117	4	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.		Date Received:	N/A
3330 Cameron Park Drive, Suite 550		Work Order No:	09-08-2088
Cameron Park, CA 95682-8861		Preparation:	EPA 3510C
		Method:	EPA 8015B (M)

Project: 472

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-711-24	**Aqueous**	**GC 49**	**08/26/09**	**08/27/09**	**090826B11**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Motor Oil Range Organics (C17-C44)	101	113	53-141	11	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.		Date Received:	N/A
3330 Cameron Park Drive, Suite 550		Work Order No:	09-08-2088
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8015B (M)

Project: 472

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-648	**Aqueous**	**GC 1**	**08/26/09**	**08/26/09**	**090826B01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	104	111	78-120	7	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.		Date Received:	N/A
3330 Cameron Park Drive, Suite 550		Work Order No:	09-08-2088
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8260B

Project: 472

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-703-1,059	Aqueous	GC/MS BB	08/28/09	08/28/09	090828L01

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	106	104	80-120	73-127	2	0-20	
Carbon Tetrachloride	94	89	74-134	64-144	6	0-20	
Chlorobenzene	104	101	80-120	73-127	3	0-20	
1,2-Dibromoethane	97	100	79-121	72-128	2	0-20	
1,2-Dichlorobenzene	101	103	80-120	73-127	1	0-20	
1,1-Dichloroethene	113	107	78-126	70-134	6	0-28	
Ethylbenzene	102	97	80-120	73-127	5	0-20	
Toluene	112	104	80-120	73-127	7	0-20	
Trichloroethene	107	103	79-127	71-135	4	0-20	
Vinyl Chloride	104	102	72-132	62-142	2	0-20	
Methyl-t-Butyl Ether (MTBE)	93	97	69-123	60-132	4	0-20	
Tert-Butyl Alcohol (TBA)	105	106	63-123	53-133	1	0-20	
Diisopropyl Ether (DIPE)	99	99	59-137	46-150	0	0-37	
Ethyl-t-Butyl Ether (ETBE)	93	94	69-123	60-132	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	89	93	70-120	62-128	5	0-20	
Ethanol	124	133	28-160	6-182	7	0-57	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 09-08-2088

Qualifier	Definition
AX	Sample too dilute to quantify surrogate.
BA	Relative percent difference out of control.
BA,AY	BA = Relative percent difference out of control. AY = Matrix interference suspected.
BB	Sample > 4x spike concentration.
BF	Reporting limits raised due to high hydrocarbon background.
BH	Reporting limits raised due to high level of non-target analytes.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
BY	Sample received at improper temperature.
BZ	Sample preserved improperly.
CL	Initial analysis within holding time but required dilution.
CQ	Analyte concentration greater than 10 times the blank concentration.
CU	Surrogate concentration diluted to not detectable during analysis.
DF	Reporting limits elevated due to matrix interferences.
DU	Insufficient sample quantity for matrix spike/dup matrix spike.
ET	Sample was extracted past end of recommended max. holding time.
EY	Result exceeds normal dynamic range; reported as a min est.
GR	Internal standard recovery is outside method recovery limit.
IB	CCV recovery abovelimit; analyte not detected.
IH	Calibrtn. verif. recov. below method CL for this analyte.
IJ	Calibrtn. verif. recov. above method CL for this analyte.
J,DX	J=EPA Flag -Estimated value; DX= Value < lowest standard (MQL), but > than MDL.
LA	Confirmatory analysis was past holding time.
LG,AY	LG= Surrogate recovery below the acceptance limit. AY= Matrix interference suspected.
LH,AY	LH= Surrogate recovery above the acceptance limit. AY= Matrix interference suspected.
LM,AY	LM= MS and/or MSD above acceptance limits. See Blank Spike (LCS). AY= Matrix interference suspected.
LN,AY	LN= MS and/or MSD below acceptance limits. See Blank Spike (LCS). AY= Matrix interference suspected.
LQ	LCS recovery above method control limits.

Work Order Number: 09-08-2088

Qualifier	Definition
LR	LCS recovery below method control limits.
LW	Quantitation of unknown hydrocarbon(s) in sample based on gasoline.
LX	Quantitation of unknown hydrocarbon(s) in sample based on diesel.
MB	Analyte present in the method blank.
PC	Sample taken from VOA vial with air bubble > 6mm diameter.
PI	Primary and confirm results varied by > than 40% RPD.
RB	RPD exceeded method control limit; % recoveries within limits.
SG	A silica gel cleanup procedure was performed.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.

Atlantic Richfield Company

Laboratory Management Program LaMP **Chain of Custody Record** 189409

Page 1 of 1

BP/ARC Project Name:

BP/ARC Facility No: 472

Req Due Date (mm/dd/yy): 2088

Rush TAT: Yes ___ No X

Lab Work Order Number:

Lab Name: CALSCIENCE	BP/ARC Facility Address: 6415 INT. BLVD.	Consultant/Contractor: STRATUS
Lab Address: 7440 LINCOLN WAY, GARDEN GROVE	City, State, ZIP Code: OAKLAND, CA.	Consultant/Contractor Project No: E472
Lab PM: RICHARD V.	Lead Regulatory Agency: ACEH	Address: 2330 CAMINO RAMON STE. #550
Lab Phone: (714) 895-5494	California Global ID No.: T0600000417	Consultant/Contractor PM: JAY JOHNSON
Lab Shipping Accnt: 9255	Enfos Proposal No: 004LO-0002	Phone: (510) 676 6000
Lab Bottle Order No:	Accounting Mode: Provision ___ OOC-BU ___ OOC-RM X	Email EDD To: CHUFFO@STRATUSINC.NET
Other Info:	Stage: APPRAISE Activity: FIELD CHARACTERIZATION	Invoice To: BP/ARC X Contractor ___
BP/ARC EBM: PAUL SUPPLE		
EBM Phone:		
EBM Email:		

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	Requested Analyses: GRO (8015B)	BTEX (8021B)	MTBE (8021B)	EDB (8260)	1,2 DCA (8260)	Ethanol (8260)	TPH Blank	Report Type & QC Level
1	MW-2	08/25/09	1200		X		2	X						X	X					Standard X
2	MW-2		1205		X		6				X		X		X	X	X	X		Full Data Package ___
3	MW-1		1145		X		2	X						X	X					
4	MW-1		1147		X		6				X		X		X	X	X	X		Comments
5	MW-3		1220		X		2	X						X	X					Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.
6	MW-3		1225		X		6				X		X		X	X	X	X		
7	TRIP BLANK		1330		X		2	X											X	

Sampler's Name: CF	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: STRATUS	CF	8/25/09	1830			
Shipment Method: GSO Ship Date: 8/25/09						
Shipment Tracking No: 106160267						
Special Instructions:					8/26/09	1030

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: ___ °F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

Laboratory Copy

BP/ARC LaMP COC Rev. 6 01/01/2009

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 09-08-2088

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Stratus DATE: 8/26/09

TEMPERATURE: (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 3.7 °C - 0.2 °C (CF) = 3.5 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs Only Initial: HP

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: HP

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: PS

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ COC not relinquished. ☐ No date relinquished. ☐ No time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Correct containers and volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☑	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☑VOA**h** (6) ☐VOA**na₂** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na₂** ☐1AGB**s** ☐500AGB ☑500AGJ (2) ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐500PB ☐500PB**na** ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na₂** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® ☐_____ **Other:** ☐_____ **Checked/Labeled by:** PS

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelop **Reviewed by:** YL

Preservative: h: HCL n: HNO_3 **na₂**: $Na_2S_2O_3$ Na: NaOH p: H_3PO_4 s: H_2SO_4 **znna**: $ZnAc_2$+NaOH f: Field-filtered **Scanned by:** PS

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 09-09-2088

SAMPLE ANOMALY FORM

SAMPLES - CONTAINERS & LABELS:

- ☐ **Samples NOT RECEIVED but listed on COC**
- ☐ **Samples received but NOT LISTED on COC**
- ☐ **Holding time expired** – list sample ID(s) and test
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s)/preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☐ **Sample labels do not match COC** – Note in comments
  - ☐ **Sample ID**
  - ☐ **Date and/or Time Collected**
  - ☐ **Project Information**
  - ☐ **# of Containers**
  - ☐ **Analysis**
- ☐ **Sample containers compromised** – Note in comments
  - ☐ **Leaking**
  - ☐ **Broken**
  - ☐ **Without Labels**
- ☐ **Air sample containers compromised** – Note in comments
  - ☐ **Flat**
  - ☐ **Very low in volume**
  - ☐ **Leaking (transferred into Calscience Tedlar® Bag*)**
  - ☐ **Leaking (transferred into Client's Tedlar® Bag*)**
- ☐ **Other:** _____

Comments:

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of RSK or CO_2 or DO Received
4	B	2						

Comments: LOT # 10054

*Transferred at Client's request.

Initial / Date PS 8/26/09

ATTACHMENT

FIELD PROCEDURES FOR GROUNDWATER SAMPLING

The sampling procedures for groundwater monitoring events are contained in this appendix.

Groundwater and Liquid-Phase Petroleum Hydrocarbon Depth Assessment

Prior to measuring the depth to liquid in the well, the well caps are removed and the liquid level allowed to stabilize. A water/hydrocarbon interface probe is used to assess the liquid-phase petroleum hydrocarbon (LPH) thickness, if present, and a water level indicator is used to measure the groundwater depth in monitoring wells that do not contain LPH. Depth to groundwater or LPH is measured from a datum point at the top of each monitoring well casing. The datum point is typically a notch cut in the north side of the casing edge. If a water level indicator is used, the tip is subjectively analyzed for hydrocarbon sheen.

Subjective Analysis of Groundwater

Prior to purging, a water sample is collected from the monitoring well for subjective assessment. The sample is retrieved by gently lowering a clean, disposable bailer to approximately one-half the bailer length past the air/liquid interface. The bailer is then retrieved, and the sample contained within the bailer is examined for floating LPH and the appearance of a LPH sheen.

Monitoring Well Sampling

In many cases, determining whether to purge or not to purge wells prior to sample collection is made in the field and is often based on depth to water relative to the screen interval of the well. Site-specific field data sheets present details associated with the purge method and equipment used.

Monitoring wells, when purged, use a pump or bailer until pH, temperature, and conductivity of the purge water has stabilized and a minimum of three well volumes of water has been removed. Field measuring equipment is calibrated and maintained according to the manufacturer's instructions. If three well volumes cannot be removed in one half hour's time the well is allowed to recharge to 80% of original level. After recharging, a groundwater sample is then collected from each of the wells using disposable bailers.

A Teflon bailer, electric submersible or bladder pump will be the only equipment used for well sampling. When samples for volatile organic analysis are being collected, the pump flow will be regulated at approximately 100 milliliters per minute to minimize pump effluent turbulence and aeration. Glass bottles of at least 40-milliliters volume and fitted with Teflon-lined septa will be used in sampling for volatile organics. These

bottles will be filled completely to prevent air accumulation in the bottle. A positive meniscus forms when the bottle is completely full. A convex Teflon septum will be placed over the positive meniscus to eliminate air. After the bottle is capped, it is inverted and tapped to verify that it contains no air bubbles. The sample containers for other parameters will be filled, filtered as required, and capped. Glass and plastic bottles used by Stratus to collect groundwater samples are supplied by the laboratory.

Groundwater Sample Labeling and Preservation

Samples are collected in appropriate containers supplied by the laboratory. All required chemical preservation is added to the bottles prior to delivery to Stratus. Sample label information includes a unique sample identification number, job identification number, date, and time. After labeling, all groundwater samples are placed in a Ziploc® type bag and placed in an ice chest cooled to approximately 4° Celsius. Upon arriving at Stratus' office the samples are transferred to a locked refrigerator cooled to approximately 4° Celsius. Chemical preservation is controlled by the required analysis and is noted on the chain-of-custody form. Trip and temperature blanks supplied by the laboratory accompany the groundwater sample containers and groundwater samples.

Sample Identification and Chain-of-Custody Procedures

Sample identification and chain-of-custody procedures document sample possession from the time of collection to ultimate disposal. Each sample container submitted for analysis has a label affixed to identify the job number, sampler, date and time of sample collection, and a sample number unique to that sample. This information, in addition to a description of the sample, field measurements made, sampling methodology, names of on-site personnel, and any other pertinent field observations, is recorded in the field records. The samples are analyzed by a California-certified laboratory.

A chain-of-custody form is used to record possession of the sample from time of collection to its arrival at the laboratory. When the samples are shipped, the person in custody of them relinquishes the samples by signing the chain-of-custody form and noting the time. The sample-control officer at the laboratory verifies sample integrity and confirms that the samples are collected in the proper containers, preserved correctly, and contain adequate volumes for analysis. These conditions are noted on a Laboratory Sample Receipt Checklist that becomes part of the laboratory report upon request.

If these conditions are met, each sample is assigned a unique log number for identification throughout analysis and reporting. The log number is recorded on the chain-of-custody form and in the legally-required log book maintained by the laboratory. The sample description, date received, client's name, and other relevant information is also recorded.

Equipment Cleaning

All reusable sampling equipments are cleaned using phosphate-free detergents and rinsed with de-ionized water.

APPENDIX B

GEOTRACKER UPLOAD CONFIRMATION RECEIPTS

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A GEO_WELL FILE

SUCCESS

Processing is complete. No errors were found!
Your file has been successfully submitted!

Submittal Type:	**GEO_WELL**
Submittal Title:	**3Q09 GEO_WELL 472**
Facility Global ID:	**T10000000417**
Facility Name:	**ARCO # / PLUCKY LIQUORS**
File Name:	**GEO_WELL.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**9/29/2009 1:41:39 PM**
Confirmation Number:	**2892702400**

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A EDF FILE

SUCCESS

Processing is complete. No errors were found!
Your file has been successfully submitted!

Submittal Type:	**EDF - Monitoring Report - Quarterly**
Submittal Title:	**3Q09 GW Monitoring**
Facility Global ID:	**T10000000417**
Facility Name:	**ARCO # / PLUCKY LIQUORS**
File Name:	**09082088.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**9/29/2009 1:44:39 PM**
Confirmation Number:	**9909532845**

VIEW QC REPORT

VIEW DETECTIONS REPORT