Atlantic Richfield Company

Shannon Couch
Project Manager

PO Box 1257
San Ramon, CA 94583
Phone: (925) 275-3804
Fax: (925) 275-3815
E-Mail: shannon.couch@bp.com

RECEIVED

11:09 am, Jan 23, 2012

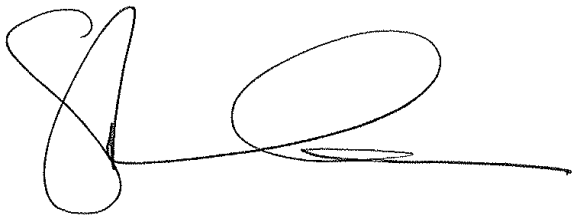
Alameda County
Environmental Health

January 16, 2012

Re: On-Site Soil and Groundwater Investigation Report
Atlantic Richfield Company Station #4977
2770 Castro Valley Blvd.
Castro Valley, California
ACEH Case RO0002436

"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,



Shannon Couch
Project Manager

Attachment

ON-SITE SOIL & GROUNDWATER INVESTIGATION REPORT

Atlantic Richfield Company Station #4977
2770 Castro Valley Blvd., Castro Valley, California
ACEH Case No. RO0002436

Prepared for:

Ms. Shannon Couch
Project Manager
Atlantic Richfield Company
P.O. Box 1257
San Ramon, California 94583

Prepared by:

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

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

January 16, 2012

Project No. 06-82-625

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

Creating Valuable Solutions, Building Trust

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

January 16, 2012

Project No. 06-82-625

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

Attn.: Ms. Shannon Couch

Re: On-Site Soil & Groundwater Investigation Report, Atlantic Richfield Company Station #4977, 2770 Castro Valley Blvd., Castro Valley, California; ACEH Case #RO0002436

Dear Ms. Couch:

Attached is the *On-Site Soil & Groundwater Investigation Report* for Atlantic Richfield Company Station #4977 located at 2770 Castro Valley Blvd., Castro Valley, California (Site). Should you have questions regarding the work performed or results obtained, please do not hesitate to contact us at (530) 566-1400.

Sincerely,

BROADBENT & ASSOCIATES, INC.

Jason Duda
Project Scientist

Matthew G. Herrick, P.G., C.HG
Senior Hydrogeologist

Enclosure

cc: Mr. Paresh Khatri, Alameda County Environmental Health (Submitted via ACEH ftp site)
Mr. Paul M. Smith, Livermore-Pleasanton Fire Department, 3560 Nevada St., Pleasanton, California 94566
Mr. Chuck Headlee, California Regional Water Quality Control Board – San Francisco Region (Submitted via GeoTracker)
Electronic copy uploaded to GeoTracker

ON-SITE SOIL & GROUNDWATER INVESTIGATION REPORT
Atlantic Richfield Company Station #4977
2770 Castro Valley Blvd., Castro Valley, California
ACEH Case #RO0002436

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APPENDICES

ON-SITE SOIL & GROUNDWATER INVESTIGATION REPORT
Atlantic Richfield Company Station #4977
2770 Castro Valley Blvd., Castro Valley, California
ACEH Case #RO0002436

1.0 INTRODUCTION

On behalf of the Atlantic Richfield Company (ARC) , Remediation Management – a BP affiliated company, Broadbent & Associates, Inc. (BAI) has prepared this *On-Site Soil & Groundwater Investigation Report* for Station #4977 located at 2770 Castro Valley Blvd., Castro Valley, California (Site). This on-site soil and groundwater investigation was completed to further evaluate the lateral and vertical extent of petroleum hydrocarbon impacted soil and groundwater. Investigation activities were conducted in accordance with the BAI *Soil and Ground-Water Investigation Work Plan* dated November 8, 2010 and the BAI email response dated December 3, 2010 to Alameda County Environmental Health's (ACEH) request for an additional boring. ACEH approved the work activities proposed within the *Soil and Ground-Water Investigation Work Plan* in their response letter dated November 18, 2010 contingent upon the addition of one boring (B-6) approximately 20 feet south of boring B-5. However, due to numerous underground utilities located within the proposed area of B-6, this boring was not advanced during the investigation. This report includes discussions on the Site Description, Field Activities Performed, Results of the Investigation, and Conclusions.

2.0 SITE DESCRIPTION

The Site is an active ARCO-brand retail gasoline station and mini-market located on the southwest corner of the intersection of Wisteria Street and Castro Valley Blvd., Castro Valley, California (Drawing 1 and Drawing 2). The land use in the immediate vicinity of the Site is mixed commercial and residential. Development at the Site consists of a station building and two gasoline dispensing islands with associated underground storage tanks (USTs) and product piping.

3.0 SITE GEOLOGY AND HYDROGEOLOGY

The Site is located within the Coast Range Geomorphic Province, on the eastern side of San Francisco Bay, approximately one mile west of the Hayward Fault. The Site was mapped by the United States Geologic Survey (USGS) as containing weakly consolidated, poorly sorted, slightly weathered, irregular interbedded clay, silt, sand, and gravel. In addition, artificial fill derived from nearby cuts or quarries is often emplaced over native materials during construction activities to provide level building pads and base rock for roadways in developed urban areas such as the Bay Area.

The Site is located within the Castro Valley Basin, which is an isolated structural basin surrounded on the north, west, and east by folded and faulted uplands comprised of Cretaceous sandstone, shale, and conglomerates of marine origin. Active traces of the Hayward fault are present to the west of the valley. Sediments in the valley are mostly of fluvial origin and relatively thin (<100 feet in thickness). The unconfined water-bearing zone lies within unconsolidated alluvial sediments and groundwater generally flows to the southwest toward the

San Francisco Bay. These water-bearing sediments overlie the sedimentary Chico Formation, considered a non-water producing formation based on its historically poor groundwater yields.

The nearest surface water drainage is an unknown drainage canal, located approximately 575 feet southwest of the Site. The canal's overall general flow direction is from east to west; however, specific flow directions of the canal vary to the southeast near the Site, eventually turning to the west-northwest prior to entering the San Francisco Bay via San Lorenzo Creek.

The Site elevation is approximately 165 feet above mean sea level. The water table fluctuates seasonally with recorded static depths to water in monitor wells at the Site ranging between a historic minimum depth of 4.44 ft (MW-3 on 5/17/2011) and maximum of 14.91 feet (MW-1 on 6/2/2009). Historically, depth-to-water measurements have averaged 7.60 ft below top-of-casing measuring point elevations in the monitoring wells. The potentiometric groundwater gradient during the second quarter 2011 monitoring event on May 17, 2011 (most recent available) was to the south-southeast at a magnitude of 0.042 ft/ft.

Geologic data derived from on-site borings indicate that the lithology on-site consists mainly of clay and silty clay with interbedded layers of silty gravel and gravelly, silty clay from ground surface to a depth of approximately 20 feet bgs. Soil boring logs from this investigation are provided in Appendix B.

4.0 FIELD ACTIVITIES PERFORMED

This on-site soil and groundwater investigation was completed to further evaluate the lateral and vertical extent of petroleum hydrocarbon impacted soil and groundwater at the Site. On September 23, 2011, BAI oversaw Cascade Drilling, L.P. (Cascade) of Rancho Cordova, California advance three soil borings (identified as B-3, B-4, and B-5) at the Site. The soil boring locations from this investigation are depicted in Drawing 2.

4.1 Preliminary Field Activities

Prior to initiating field activities, BAI obtained the necessary drilling permits from the Alameda County Public Works Agency (See Appendix A), prepared a site health and safety plan specific to the work scope; and cleared the boring locations from conflicts with subsurface utilities. The utility clearance included notifying Underground Service Alert of the work a minimum of 48 hours prior to initiating the field investigation, and additionally securing the services of Cruz Brothers, a private utility locating company to confirm the absence of underground utilities at the boring locations. Boreholes were physically cleared to 6.5 feet below ground surface (bgs) using an air knife rig on September 22, 2011, consistent with the safety protocols contained within the BAI Ground Disturbance Defined Practice.

4.2 Soil Boring Advancement and Sampling Activities

On September 23, 2011, BAI field personnel observed Cascade advance three soil borings (B-3, B-4, and B-5). Cascade utilized a Geoprobe 7720 DT direct push drill rig to

advance the soil borings to a maximum depth of 15 feet bgs for borings B-4 and B-5, and 20 ft bgs for boring B-3. Soil samples were collected at approximate five foot intervals. Select soil samples were submitted to the laboratory for analysis. Groundwater was not encountered in the three borings advanced; therefore, groundwater samples could not be collected. Details regarding each of the soil borings are summarized below. Field sheets and soil boring logs are provided within Appendix B.

Soil Boring B-3

- Advanced to a total depth of 20 feet bgs.
- Soil samples were collected at 6.5, 10, 15, and 20 feet bgs.
- No visual impacts were observed during boring advancement. Olfactory impacts described as a strong hydrocarbon odor were observed at 6.5 feet bgs.
- Following completion of soil boring advancement, a grab groundwater sample could not be collected due to the absence of groundwater. The boring was allowed to remain open for approximately four hours prior to grouting activities. However, after this time, groundwater was still not present within the boring.

Soil Boring B-4

- Advanced to a total depth of 15 feet bgs.
- Soil samples were collected four, 6.5, 10, and 15 feet bgs.
- Soil discoloration presumably associated with hydrocarbon contamination was observed at approximately two feet bgs. No other visual impacts were observed during boring advancement.
- Olfactory impacts described as a hydrocarbon odor were observed at 2.5, four, 6.5, 10 and 11.5 feet bgs.
- Following completion of soil boring advancement, a grab groundwater sample could not be collected due to the absence of groundwater. The boring was allowed to remain open for approximately 1.5 hours prior to grouting activities. However, after this time, groundwater was still not present within the boring.

Soil Boring B-5

- Advanced to a total depth of 15 feet bgs.
- Soil samples were collected at four, seven, 10, and 15 feet bgs.
- No visual impacts were observed during boring advancement.
- Olfactory impacts described as a hydrocarbon odor were observed at depths of four to 13 feet bgs.
- Following completion of soil boring advancement, a grab groundwater sample was not collected due to the absence of groundwater. Upon completion of sampling activities, each boring was filled with neat cement grout and competed at the surface to match existing surroundings.

4.3 Investigation-Derived Residuals Management

Residual solids generated during the on-site investigation activities were stored temporarily on-site in Department of Transportation-approved 55-gallon drums pending analytical results and profiling. Following characterization and profiling, Belshire Environmental Services transported the investigation-derived residuals to Soil Safe in Adelanto, California for treatment or disposal on October 10, 2011. The non-hazardous waste manifest is provided in Appendix B.

5.0 RESULTS OF INVESTIGATION

Soil samples were shipped to Calscience Environmental Laboratories, Inc. (Garden Grove), a California State-certified laboratory, under chain-of-custody protocol. Samples were analyzed for Gasoline Range Organics (GRO, hydrocarbon chain lengths between C6-C12) by EPA Method 8015B; and for Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX), 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-Dichloroethane (1,2-DCA), 1,2-Dibromoethane (EDB), and Ethanol using EPA Method 8260B. According to the laboratory, the GRO concentrations detected in the soil samples B-4-4', B-5-4', and B-5-7' were quantitated against gasoline. The laboratory also noted that the reporting limits for soil samples B-4-6.5' and B-5-10' were raised due to elevated levels of non-target analytes. No other significant irregularities were reported during laboratory analysis of the samples. Laboratory analytical results are summarized below.

- Hydrocarbons in the GRO range were detected above the laboratory reporting limit in seven of the twelve soil samples analyzed with concentrations ranging from 0.97 milligrams per kilogram (mg/kg) in sample B-5-4' to 630 mg/kg in sample B-4-10'
- Benzene was detected above the laboratory reporting limit in one soil sample, B-4-10', at a concentration of 0.37 mg/kg.
- Ethylbenzene was detected above the laboratory reporting limit in five of the twelve soil samples analyzed at concentrations ranging from 0.0022 mg/kg in sample B-5-7' to 9.9 mg/kg in sample B-4-10'.
- Total Xylenes were detected above the laboratory reporting limit in soil samples B-3-6.5' and B-4-10' at concentrations of 6.8 mg/kg and 0.38 mg/kg, respectively.
- The remaining analytes were not detected above laboratory reporting limits in the twelve soil samples collected during this investigation.

Soil sampling analytical data are summarized in Table 1. A copy of the laboratory analytical report with chain-of-custody documentation is provided in Appendix C. Laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. The upload confirmation page is provided in Appendix D.

6.0 CONCLUSIONS

On behalf of the Atlantic Richfield Company, BAI prepared this *On-Site Soil & Groundwater Investigation Report* for Station #4977, located at 2770 Castro Valley Blvd., Castro Valley, California. Based on the findings of this investigation, BAI concludes the following:

- Soil sample laboratory analytical results compared against the residential Environmental Screening Levels (ESLs) established by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB, 2008) under a potential drinking water resource scenario are as follows: the ESL for GRO (83 mg/kg) was exceeded in samples B-3-6.5', B-4-6.5', B-4-10', and B-5-10'; the ESL for Benzene (0.044 mg/kg) was exceeded in sample B-4-10'; the ESL for Ethylbenzene (2.3 mg/kg (shallow soils) and 3.3 mg/kg (deep soils)) was exceeded in samples B-3-6.5' and B-4-10'; and the ESL for Total Xylenes (2.3 mg/kg) was exceeded in sample B-3-6.5'. These results are summarized in the table below.

Soil Sample Analytical Results Exceeding ESLs

	GRO (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)
B-3-6.5'	610	--	4.1	6.8
B-4-6.5'	490	--	--	--
B-4-10'	630	0.37	9.9	--
B-5-10'	610	--	--	--
ESLs	83 (d& s)	0.044 (d & s)	2.3 (s)/3.3 (d)	2.3 (d & s)

-- = Not detected above ESL
d = Deep soils
s = Shallow soils

- Based on laboratory analysis of soil samples collected during the investigation, residual petroleum hydrocarbon impacted soil appears to be present at depths of approximately four to ten feet bgs in boring locations B-4 and B-5 and approximately 6.5 feet bgs in boring B-3. However, measured depth to water at the Site has been observed as shallow as 4.44 feet bgs (Second Quarter 2011), which suggests that the soil samples collected from 6.5 to 20 feet bgs could have potentially been in the saturated zone. Thus, impacted groundwater could have affected the concentrations observed during laboratory analysis of the soil samples at these depths.
- Impacted soil in boring B-5 was minimal within the shallow zone based on the samples collected at four and seven feet bgs. The shallow soil samples adequately characterize the horizontal extent of impacted soil associated with historic sample DP-2 collected near the dispenser islands.

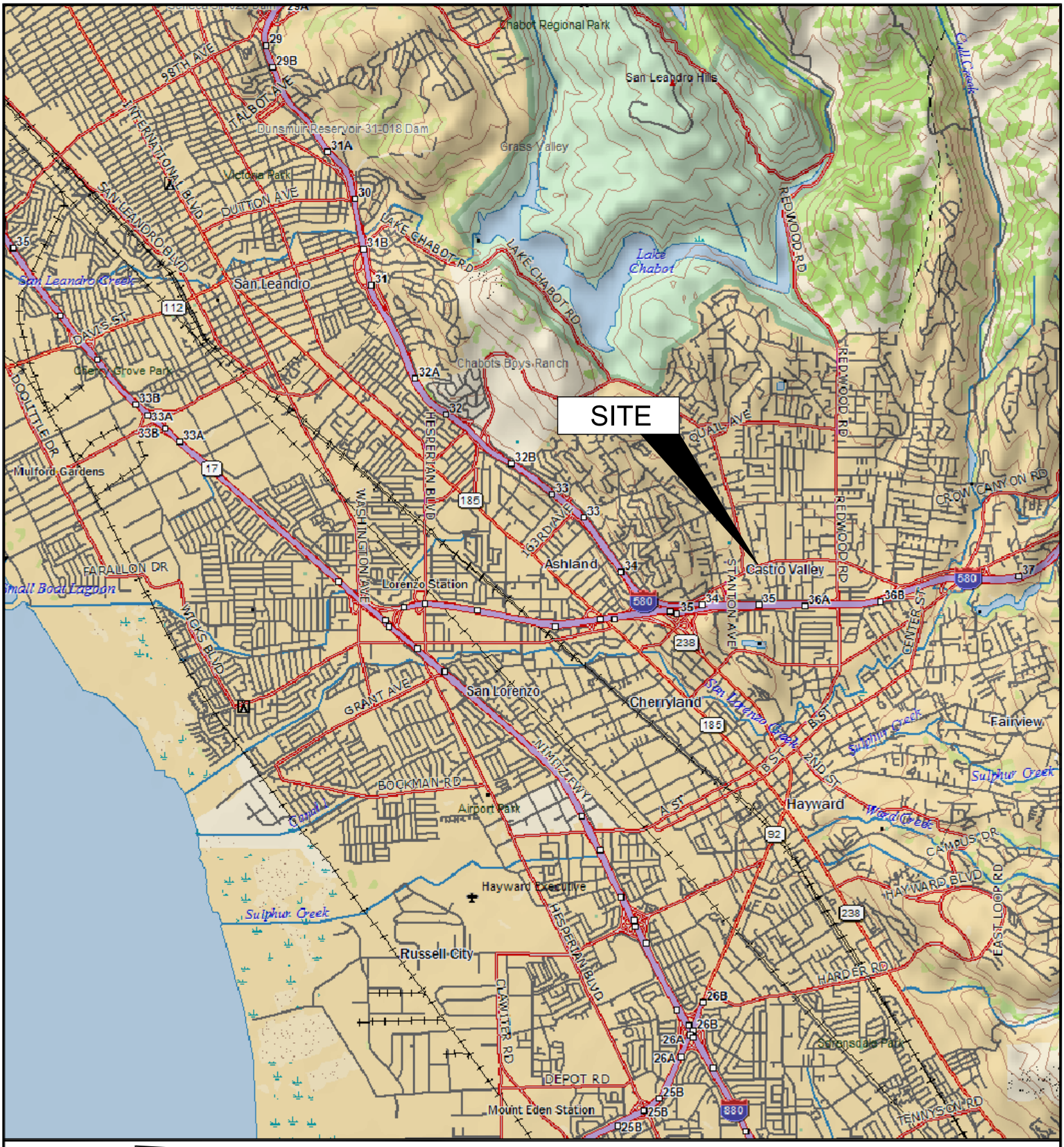
- MTBE was not detected above laboratory reporting limits in the four soil samples collected from boring B-4, which was in the general vicinity of historic product line soil sample PL-7. The absence of MTBE within the collected soil samples indicates that the extent of MTBE impacted soil associated with historic sample PL-7 has been characterized and appears to no longer be present within this area.
- The vertical extent of impacted soil associated with the Site appears to be adequately characterized based on the laboratory analytical data, which does not indicate impacted soil within the samples collected at depths equal to or greater than 15 feet bgs.
- Groundwater was not encountered during the on-site investigation presumably due to the stiff clays present within the subsurface.

7.0 SUMMARY AND RECOMMENDATIONS

The lateral and vertical extent of petroleum hydrocarbon impacted soil has been adequately characterized. Low permeability of encountered subsurface materials did not allow for the collection of groundwater sample from borings; however, this same nature of the subsurface material has likely limited the migration of petroleum hydrocarbon impacted groundwater at the Site. It is recommended that a Conceptual Site Model be prepared to determine if a closure recommendation is appropriate at the Site.

8.0 LIMITATIONS

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



SITE

N

0 1 2

APPROXIMATE SCALE (mi)

IMAGE SOURCE: DELORME

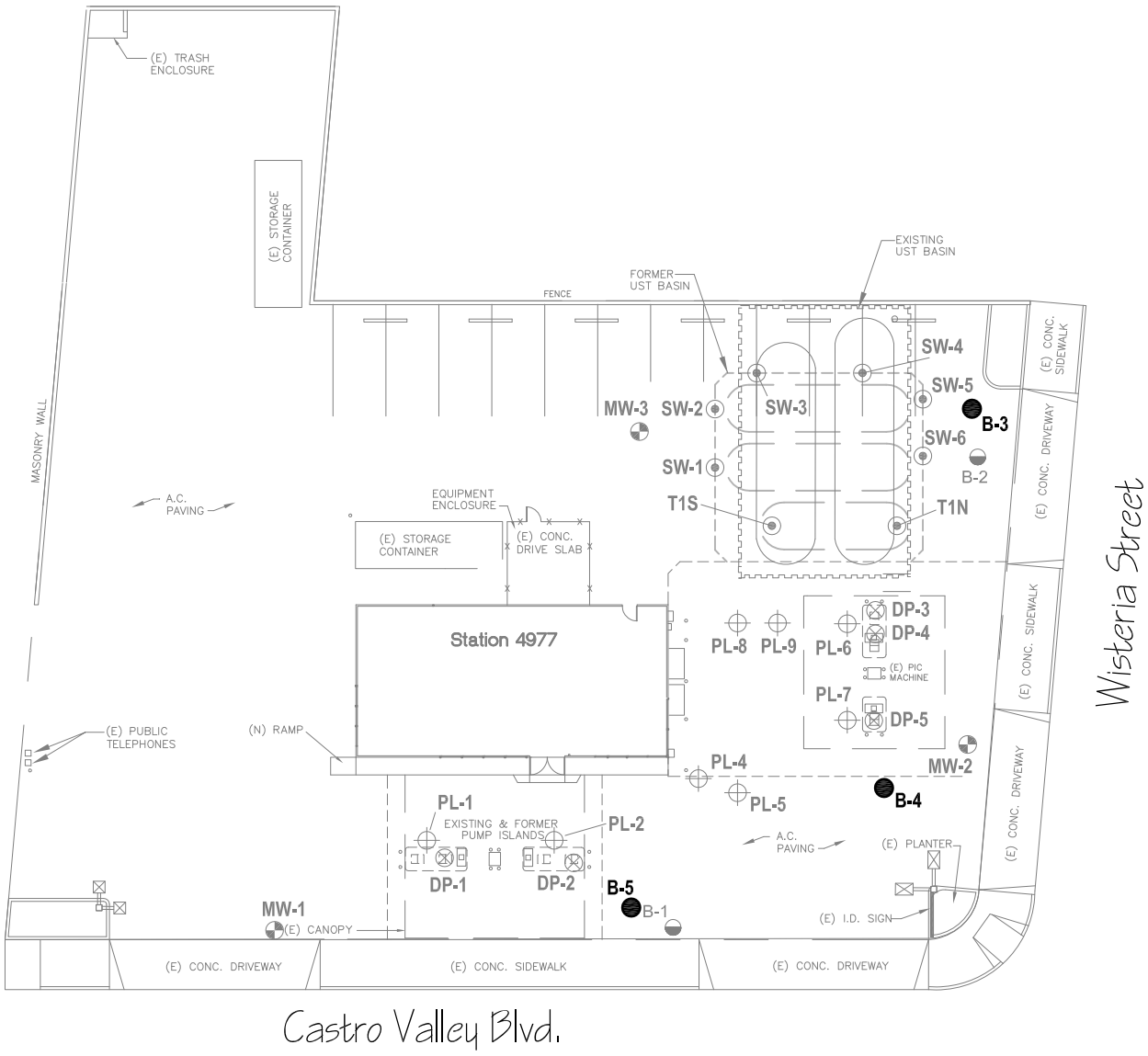
BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California 95926

Project No.: 06-82-625 Date: 12/16/2009

Station #4977
2770 Castro Valley Blvd.
Castro Valley, California

Site Location Map

Drawing 1



LEGEND

- SOIL BORING
- MONITORING WELL
- HISTORIC SOIL BORING
- DISPENSER COMPLIANCE SAMPLE
- PRODUCT LINE SAMPLES
- FORMER TANK BASIN SAMPLES

N

0 30 60

SCALE (ft)

NOTE: SITE MAP ADAPTED FROM DELTA ENVIRONMENTAL FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California 95926
Project No.: 06-82-625 Date: 10/27/10

Station #4977
2770 Castro Valley Blvd.
Castro Valley, California

Site Map with
Boring Locations

Drawing
2

Table 1. Summary of Soil Sample Analytical Data
Station #4977, 2770 Castro Valley Boulevard, Castro Valley, California

Soil Boring Identification*	Sample ID	Date Collected	GRO mg/kg	Benzene mg/kg	Toluene mg/kg	Ethylbenzene mg/kg	Xylenes mg/kg	MTBE mg/kg	Comments
B-3									
	B-3-6.5'	9/23/2011	**610**	<0.40	<0.40	**4.1**	**6.8**	<0.40	
	B-3-10'	9/23/2011	<0.50	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	B-3-15'	9/23/2011	<0.50	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	B-3-20'	9/23/2011	<0.50	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
B-4									
	B-4-4'	9/22/2011	**1.2 (1)**	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	B-4-6.5'	9/23/2011	**490**	<0.10 (2)	<0.10 (2)	**0.12**	<0.10 (2)	<0.10 (2)	
	B-4-10'	9/23/2011	**630**	**0.37**	<0.10	**9.9**	**0.38**	<0.10	
	B-4-15'	9/23/2011	<0.50	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
B-5									
	B-5-4'	9/22/2011	**0.97 (1)**	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	B-5-7'	9/23/2011	**17 (1)**	<0.0010	<0.0010	**0.0022**	<0.0010	<0.0010	
	B-5-10'	9/23/2011	**610**	<0.10 (2)	<0.10 (2)	**0.41**	<0.10 (2)	<0.10 (2)	
	B-5-15'	9/23/2011	<0.50	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
ESLs	--	--	83 (d & s)	0.044 (d & s)	2.9 (d & s)	2.3 (s)/3.3 (d)	2.3 (d & s)	0.023 (d & s)	

Abbreviations & Symbols:

* = See Drawing 2 for soil boring locations.

(1) = Quantitated against gasoline.

(2) = Reporting limits raised due to high levels of non-target analytes.

GRO: Gasoline range organics.

Calscience Environmental Laboratories, Inc.: GRO (C6-C12)

GRO analyzed using EPA method 8015B

Benzene, Toluene, Ethylbenzene, Total Xylenes, and MTBE analyzed using EPA method 8260B.

mg/kg = Milligrams per kilogram.

ESLs = Environmental Screening Levels for deep soil (>3 meters bgs) and shallow soil (<3 meters bgs) where groundwater is a current or potential source of drinking water in a residential setting (San Francisco Bay Regional Water Quality Control Board, 2008).

bgs = Below ground surface

d = Deep soil

s = Shallow soil

Notes:

1,2-dibromoethane (EDB), 1,2-dichloroethane (1,2 DCA), tert-butyl alcohol (TBA), Di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), ter-amyl methyl ether (TAME), and ethanol were not detected at or above their respective laboratory reporting limit.

The last number in each Sample ID denotes the depth at which the sample was collected in feet bgs (i.e., B-3-10' was collected at a depth of 10 feet bgs)

APPENDIX A

ALAMEDA COUNTY PUBLIC WORKS AGENCY PERMIT

Alameda County Public Works Agency - Water Resources Well Permit

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 08/31/2011 By jamesy

Permit Numbers: W2011-0567
Permits Valid from 09/22/2011 to 09/23/2011

Application Id:	1314649879381	**City of Project Site:**	Castro Valley
Site Location:	2770 Castro Valley Blvd. Castro Valley, CA 94546		
Project Start Date:	09/14/2011	**Completion Date:**	09/15/2011
Assigned Inspector:	Contact Vicky Hamlin at (510) 670-5443 or vickyh@acpwa.org		
Extension Start Date:	09/22/2011	**Extension End Date:**	09/23/2011
Extension Count:	1	**Extended By:**	vickyh1
Applicant:	Broadbent & Associates, Inc. - Jason Duda 1324 Mangrove Ave., Suite 212, Chico, CA 95926	**Phone:**	530-566-1400
Property Owner:	BP West Coast Products, LLC BP West Coast Products, LLC P.O. Box 5015, Buena Park, CA 90622	**Phone:**	925-275-3804
Client:	** same as Property Owner **		
Contact:	Jason Duda	**Phone:** **Cell:**	-- --

	Total Due:	$265.00
Receipt Number: WR2011-0266	**Total Amount Paid:**	$265.00
Payer Name : Jason Duda	Paid By: MC	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Environmental/Monitorinig Study - 4 Boreholes
Driller: Cascade Drilling - Lic #: 938110 - Method: DP **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2011-0567	08/31/2011	12/13/2011	4	1.75 in.	15.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Applicant shall contact Vicky Hamlin for an inspection time at 510-670-5443 or email to vickyh@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

5. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

6. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

7. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

APPENDIX B

BAI INVESTIGATIVE ACTIVITIES DATA
(Includes Field Sheets, Boring Logs, and Non-Hazardous Waste Manifest)

ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

DAILY REPORT

Project: BP 4977 Project No.: 06-82-625

Field Representative(s): Taylor Lancelot, James Ramos Day: Thur. Date: 9-22-11

Time Onsite: From: 0900 To: ____; From: ____ To: ____; From: ____ To: ____

+ Signed HASP + Safety Glasses + Hard Hat + Steel Toe Boots + Safety Vest

+ UST Emergency System Shut-off Switches Located + Proper Gloves

+ Proper Level of Barricading ___ Other PPE (describe) ____

Weather: sunny, warm

Equipment In Use: Van truck, hand auger

Visitors: ____

TIME:	WORK DESCRIPTION:
0900	Onsite, Safety Meeting w/Cascade
1050	Set up on B-3
	~~All~~ ~2" past asphalt, soil very clayey, will hand auger
1147	Clear to 6.5', backfill w/native material, no ~~odor~~ odor, no visual contamination, finish surface w/cold patch.
1150	Break for lunch
1220	Return from lunch
1233	Set up on B-4, begin jackhammer asphalt
	@ about 2', very strong hydrocarbon odor and discoloration of soil
	@ 4.5', soil color changed to a grayish/greenish color; hydrocarbon odor still present
1313	clearing to 6.5' completed; backfilling w/bentonite sampled approx 3-4'
1345	Spoke w/ Jason Duda about placement of B-5 <10' from product lines. Calling higher ups to determine what to do

Signature: ____

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

DAILY REPORT

Project: BP 4977 Project No.: 06-82-625

Field Representative(s): TL, JR Day: Thur. Date: 9/22/11

TIME:	WORK DESCRIPTION:
1403	On- Spoke w/ JD, moved B-5 to ≈ 2' from sidewalk
	Set up on B-5
1412	Begin jackhammer on B-5
1430	Strong odor @ 4', take sample
1442	Completed cleaning B-5, backfill w/ bentonite and
	surface finish w/ cold patch
1515	Cascade offsite
	generated ½ drum soil cuttings, located in
	trash enclosure on the western most area of
	site

Signature:

ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

DAILY REPORT

Project: BP 4977 Project No.: 06-82-625

Field Representative(s): Taylor Lanctot James Romo Day: Fri. Date: 09/23/11

Time Onsite: From: 0800 To: ____; From: ____ To: ____; From: ____ To: ____

† Signed HASP † Safety Glasses † Hard Hat † Steel Toe Boots † Safety Vest

† UST Emergency System Shut-off Switches Located † Proper Gloves

† Proper Level of Barricading ___ Other PPE (describe) ____

Weather: Sunny, warm

Equipment In Use: Direct Push Rig

Visitors: ____

TIME:	WORK DESCRIPTION:
0800	Onsite, met w/ Cascade. Safety Meeting
0930	Begin Setting up on B-3
1013	Begin Direct push on B-3
1040	Finished direct push to 15'
	No water in hole, spoke w/ Jason Duda, says to go to 20'
1100	Vickie w/ Alameda Co. onsite to inspect grout, finished boring to 20', still no water. Agreed to let hole sit covered and move on, Vickie will return @ 3PM.
1140	Break for lunch
1210	Return from lunch
	Still no water in B-3, begin set up on B-4
1239	Begin direct push B-4
	No water in B-4, called JD, gave the ok to grout, moving to B-5 to direct push, wait for Vicki and grout all three borings at same time
1330	Begin direct push B-5, no water in B-5
1412	Vicki w/ Alameda Co. onsite to inspect grout

Signature: [signature]

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

DAILY REPORT

Project: BP 4977 Project No.: 06-82-625

Field Representative(s): Taylor Lancebat James Ramos Day: Fri. Date: 9/23/11

TIME:	WORK DESCRIPTION:
1420	Begin grouting B-5
1430	Vicki offsite
1445	Begin grouting B-4
1500	Begin grouting B-3
1530	Concrete surface completion finished for all wells, begin clean-up

Signature:

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

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

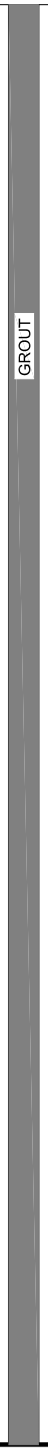
PROJECT NAME: BP 4977 | SITE ADDRESS: 2770 Castro Valley Rd., Castro Valley, CA

PROJECT NUMBER: 06-82-625 | LEGAL DESC: | APN:

LOGGED BY: Taylor Lancelot | FACILITY ID OR WAIVER: | NOI NUMBER:

DATE: 9/23/11 | START: 1013 | DRILLING COMPANY: Cascade | DRILLER: Ricky Barragan

WELLID: B-3 | STOP: 1040 | DRILLING METHOD: Direct Push | SAMPLE METHOD: Direct Push



DEPTH (FEET)	SAMPLE ID	PID	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE / CLASSIFICATION		REMARKS & ODORS
						ASPHALT		
1			DRY	LIGHT BROWN	LOOSE	SILTY GRAVEL	GM	NONE
2			SLIGHTLY MOIST	DARK BROWN	FIRM	SILTY CLAY	CL	NONE
3								
4								
5								
6	B-3-6.5	350	SLIGHTLY MOIST	BROWN GRAY GREEN	VERY STIFF	SILTY CLAY	CL	STRONG
7								
8								
9								
10	B-3-10	31	MOIST	BROWN GRAY	STIFF	SILTY CLAY	CL	NONE
11			VERY MOIST	GREEN BROWN	SOFT	GRAVELLY, SILTY, CLAY	CL	NONE
12								
13			MOIST	GRAY BROWN	FIRM	GRAVELLY, SILTY, CLAY, WITH LARGER COBBLES THAN PREVIOUS	CL	NONE
14								
15	B-3-15	128						
16			SLIGHTLY MOIST	GRAY	STIFF	GRAVELLY, SILTY, CLAY	CL	NONE
17								
18			DRY	GRAY	LOOSE SOFT	GRAVELLY, SILTY, CLAY	CL	NONE
19								
20	B-3-20	0						

TOTAL BORING DEPTH: 20' | PAGE NO: 1 OF 1 | ESTIMATED GROUND WATER DEPTH: NA

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

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 4977 | SITE ADDRESS: 2770 Castro Valley Rd., Castro Valley, CA

PROJECT NUMBER: 06-82-625 | LEGAL DESC: | APN:

LOGGED BY: Taylor Lancelot | FACILITY ID OR WAIVER: | NOI NUMBER:

DATE: 9/23/11 | START: 1239 | DRILLING COMPANY: Cascade | DRILLER: Ricky Barragan

WELLID: B-4 | STOP: 1305 | DRILLING METHOD: Direct Push | SAMPLE METHOD: Direct Push

DEPTH (FEET)	BORING DIAMETER: 2"	SAMPLE ID	PID	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS & ODORS
							ASPHALT		
1				DRY	LIGHT BROWN	LOOSE	SILTY GRAVEL	GM	NONE
2				SLIGHTLY MOIST	BLACK	STIFF	SILTY CLAY	CL	STRONG
3									
4		B-4-4		SLIGHTLY MOIST	GRAY GREEN	FIRM	SILTY CLAY	CL	STRONG
5	GROUT								
6									
7		B-4-6.5	294	SLIGHTLY MOIST	GREEN BROWN	STIFF	SILTY CLAY	CL	STRONG
8									
9									
10		B-4-10	205						TRACE
11									
12			210	MOIST	BROWN GREEN	LOOSE SOFT	GRAVELLY, SILTY, CLAY	CL	SLIGHT
13				SLIGHTLY MOIST	BROWN GREEN	STIFF	SILTY CLAY	CL	NONE
14				DRY	BROWN	LOOSE	SILTY, CLAYEY, GRAVEL	GM	NONE
15		B-4-15							
16									
17									
18									
19									
20									

TOTAL BORING DEPTH: 15' | PAGE NO: 1 OF 1 | ESTIMATED GROUND WATER DEPTH: NA

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

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 4977 | SITE ADDRESS: 2770 Castro Valley Rd., Castro Valley, CA

PROJECT NUMBER: 06-82-625 | LEGAL DESC: | APN:

LOGGED BY: Taylor Lancelot | FACILITY ID OR WAIVER: | NOI NUMBER:

DATE: 9/23/11 | START: 1330 | DRILLING COMPANY: Cascade | DRILLER: Ricky Barragan

WELLID: B-5 | STOP: 1350 | DRILLING METHOD: Direct Push | SAMPLE METHOD: Direct Push

DEPTH (FEET)	BORING DIAMETER: 2"	SAMPLE ID	PID	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS & ODORS
							ASPHALT		
1				DRY	LIGHT BROWN	LOOSE	SILTY, CLAYEY, GRAVEL	GM	NONE
2				SLIGHTLY MOIST	DARK BROWN	FIRM	SILTY CLAY	CL	NONE
3									
4	GROUT	B-5-4	673	SLIGHTLY MOIST	BLACK GREEN	STIFF	SILTY CLAY	CL	STRONG
5									
6			98	SLIGHTLY MOIST	BLACK	FIRM	SILTY CLAY	CL	STRONG
7		B-5-7	172	VERY MOIST	BLACK	SOFT	SILTY CLAY	CL	STRONG
8									
9				SLIGHTLY MOIST	BROWN GREEN	STIFF	SILTY CLAY	CL	STRONG
10		B-5-10		MOIST	GRAY BROWN GREEN	SOFT	SILTY CLAY	CL	STRONG
11			0.0	MOIST	GRAY BROWN GREEN	SOFT	GRAVELLY, SILTY CLAY	CL	SLIGHT
12									
13				SLIGHTLY MOIST	GRAY BROWN	FIRM	GRAVELLY, SILTY, CLAY	CL	SLIGHT
14				DRY	GRAY BROWN	STIFF	SILTY CLAY	CL	NONE
15		B-5-15							
16									
17									
18									
19									
20									

TOTAL BORING DEPTH: 15' | PAGE NO: 1 OF 1 | ESTIMATED GROUND WATER DEPTH: NA

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

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Manifest

SOIL SAFE OF CA – TPST
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transport Truck #:	Facility #:	Approval Number:	Load #
/ /		111 733	A07	38226	6011

Generator and/or Consultant

Generator's Name and Billing Address: BP WEST COAST PRODUCTS, LLC P.O. BOX 80249 RANCHO SANTA MARGARITA, CA 92688	Generator's Phone #: 949-460-5200	CAL000244273
	Person to Contact:	
	FAX#:	Customer Account Number
Consultant's Name and Billing Address:	Consultant's Phone #:	
	Person to Contact:	
	FAX#:	Customer Account Number
Generation Site (Transport from): *(name & address)* BP 04977 2770 CASTRO VALLEY ROAD CASTRO VALLEY, CA 94546	Site Phone #:	
	Person to Contact:	
	FAX#:	
Designated Facility (Transport to): *(name & address)* SOIL SAFE 12328 HIBISCUS AVENUE ADELANTO, CA 92301	Facility Phone #: (800) 862-8001	
	Person to Contact: DELLENA JEFFREY	
	FAX#: (760) 246-8004	
Transporter Name and Mailing Address: BELSHIRE 25971 TOWNE CENTRE DRIVE FOOTHILL RANCH, CA 92610 BESI: 197886	Transporter's Phone #: 949-460-5200	CAR000183913
	Person to Contact: LARRY MOOTHART	450847
	FAX#: 949-460-5210	Customer Account Number

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐	1 dm		34010	31400	2610
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					.28

List any exception to items listed above: SIM # 0521 Scale Ticket # 97601

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils descried in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year
Larry Moothart of BESI on behalf of generator		10	20	11

Transporter

Transporter's certification: I/We acknowledge receipt of the soil referenced above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that the soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Lukasz Patel	Lukasz Patel	10	20	11

Recycling Facility

Discrepancies:
4977
697389

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
D. JEFFREY/J. PROVANSAL	10/20/11

Please print or type.

TRANSPORTER COPY

APPENDIX C

CERTIFIED LABORATORY ANALYTICAL REPORT WITH CHAIN-OF-CUSTODY DOCUMENTATION

Calscience
Environmental & Marine Chemistry Laboratories

CALSCIENCE

WORK ORDER NUMBER: 11-09-1801

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Broadbent & Associates, Inc.

Client Project Name: BP 4977

Attention: Jason Duda
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Approved for release on 10/10/2011 by:
Richard Villafania
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, 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. Note that the Chain-of-Custody Record and Sample Receipt Form are integral parts of this report.

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.	Date Received: 09/28/11
1324 Mangrove Ave, Ste 212	Work Order No: 11-09-1801
Chico, CA 95926-2642	Preparation: EPA 5030C
	Method: EPA 8015B (M)

Project: BP 4977 Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-3-6.5	**11-09-1801-1-A**	**09/23/11 10:22**	**Solid**	**GC 4**	**09/28/11**	**10/03/11 15:55**	**111003B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	610	10	20		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	127	42-126	LH,AY

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-3-10	**11-09-1801-2-A**	**09/23/11 10:30**	**Solid**	**GC 4**	**09/28/11**	**09/30/11 17:39**	**110930B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	80	42-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-3-15	**11-09-1801-3-A**	**09/23/11 10:34**	**Solid**	**GC 4**	**09/28/11**	**09/30/11 19:42**	**110930B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	77	42-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-3-20	**11-09-1801-4-A**	**09/23/11 11:05**	**Solid**	**GC 4**	**09/28/11**	**09/30/11 20:13**	**110930B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	67	42-126	

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.	Date Received: 09/28/11
1324 Mangrove Ave, Ste 212	Work Order No: 11-09-1801
Chico, CA 95926-2642	Preparation: EPA 5030C
	Method: EPA 8015B (M)

Project: BP 4977

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-4-4	**11-09-1801-5-A**	**09/22/11 13:13**	**Solid**	**GC 4**	**09/28/11**	**09/30/11 20:44**	**110930B01**

Comment(s): -LW Quantitated against gasoline.

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	1.2	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	77	42-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-4-6.5	**11-09-1801-6-A**	**09/23/11 12:45**	**Solid**	**GC 4**	**09/28/11**	**10/03/11 16:56**	**111003B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	490	10	20		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	123	42-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-4-10	**11-09-1801-7-A**	**09/23/11 12:56**	**Solid**	**GC 4**	**09/28/11**	**10/03/11 17:58**	**111003B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	630	10	20		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	107	42-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-4-15	**11-09-1801-8-A**	**09/23/11 12:57**	**Solid**	**GC 4**	**09/28/11**	**10/03/11 14:22**	**111003B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	82	42-126	

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: 09/28/11
Work Order No: 11-09-1801
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: BP 4977

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-5-4	**11-09-1801-9-A**	**09/22/11 14:32**	**Solid**	**GC 4**	**09/28/11**	**09/30/11 21:46**	**110930B01**

Comment(s): -LW Quantitated against gasoline.

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	0.97	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	82	42-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-5-7	**11-09-1801-10-A**	**09/23/11 13:37**	**Solid**	**GC 4**	**09/28/11**	**09/30/11 22:16**	**110930B01**

Comment(s): -LW Quantitated against gasoline.

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	17	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	92	42-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-5-10	**11-09-1801-11-A**	**09/23/11 13:45**	**Solid**	**GC 4**	**09/28/11**	**10/03/11 19:00**	**111003B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	610	10	20		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	109	42-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-5-15	**11-09-1801-12-A**	**09/23/11 13:46**	**Solid**	**GC 4**	**09/28/11**	**09/30/11 22:47**	**110930B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	77	42-126	

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: 09/28/11
Work Order No: 11-09-1801
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: BP 4977

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-697-361**	**N/A**	**Solid**	**GC 4**	**09/28/11**	**09/30/11 15:36**	**110930B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	77	42-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-697-362**	**N/A**	**Solid**	**GC 4**	**09/30/11**	**10/03/11 10:46**	**111003B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	89	42-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-697-363**	**N/A**	**Solid**	**GC 4**	**09/30/11**	**10/03/11 12:19**	**111003B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	4.0	8		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	84	42-126	

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	09/28/11
1324 Mangrove Ave, Ste 212		Work Order No:	11-09-1801
Chico, CA 95926-2642		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	mg/kg
Project: BP 4977			Page 1 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-3-6.5	**11-09-1801-1-A**	**09/23/11 10:22**	**Solid**	**GC/MS XX**	**09/28/11**	**09/30/11 13:04**	**110930L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.40	400		Xylenes (total)	6.8	0.40	400	
1,2-Dibromoethane	ND	0.40	400		Methyl-t-Butyl Ether (MTBE)	ND	0.40	400	
1,2-Dichloroethane	ND	0.40	400		Tert-Butyl Alcohol (TBA)	ND	4.0	400	
Ethylbenzene	4.1	0.40	400		Diisopropyl Ether (DIPE)	ND	0.80	400	
Ethanol	ND	40	400		Ethyl-t-Butyl Ether (ETBE)	ND	0.80	400	
Toluene	ND	0.40	400		Tert-Amyl-Methyl Ether (TAME)	ND	0.80	400	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	105	60-132			Dibromofluoromethane	97	63-141		
1,2-Dichloroethane-d4	115	62-146			Toluene-d8	103	80-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-3-10	**11-09-1801-2-A**	**09/23/11 10:30**	**Solid**	**GC/MS XX**	**09/28/11**	**09/29/11 12:32**	**110929L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0010	1		Xylenes (total)	ND	0.0010	1	
1,2-Dibromoethane	ND	0.0010	1		Methyl-t-Butyl Ether (MTBE)	ND	0.0010	1	
1,2-Dichloroethane	ND	0.0010	1		Tert-Butyl Alcohol (TBA)	ND	0.010	1	
Ethylbenzene	ND	0.0010	1		Diisopropyl Ether (DIPE)	ND	0.0020	1	
Ethanol	ND	0.10	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0020	1	
Toluene	ND	0.0010	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0020	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	102	60-132			Dibromofluoromethane	96	63-141		
1,2-Dichloroethane-d4	116	62-146			Toluene-d8	101	80-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-3-15	**11-09-1801-3-A**	**09/23/11 10:34**	**Solid**	**GC/MS XX**	**09/28/11**	**09/29/11 16:16**	**110929L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0010	1		Xylenes (total)	ND	0.0010	1	
1,2-Dibromoethane	ND	0.0010	1		Methyl-t-Butyl Ether (MTBE)	ND	0.0010	1	
1,2-Dichloroethane	ND	0.0010	1		Tert-Butyl Alcohol (TBA)	ND	0.010	1	
Ethylbenzene	ND	0.0010	1		Diisopropyl Ether (DIPE)	ND	0.0020	1	
Ethanol	ND	0.10	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0020	1	
Toluene	ND	0.0010	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0020	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	102	60-132			Dibromofluoromethane	97	63-141		
1,2-Dichloroethane-d4	116	62-146			Toluene-d8	100	80-120		

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	09/28/11
1324 Mangrove Ave, Ste 212		Work Order No:	11-09-1801
Chico, CA 95926-2642		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	mg/kg
Project: BP 4977			Page 2 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-3-20	**11-09-1801-4-A**	**09/23/11 11:05**	**Solid**	**GC/MS XX**	**09/28/11**	**09/29/11 16:44**	**110929L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0010	1		Xylenes (total)	ND	0.0010	1	
1,2-Dibromoethane	ND	0.0010	1		Methyl-t-Butyl Ether (MTBE)	ND	0.0010	1	
1,2-Dichloroethane	ND	0.0010	1		Tert-Butyl Alcohol (TBA)	ND	0.010	1	
Ethylbenzene	ND	0.0010	1		Diisopropyl Ether (DIPE)	ND	0.0020	1	
Ethanol	ND	0.10	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0020	1	
Toluene	ND	0.0010	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0020	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	92	60-132			Dibromofluoromethane	97	63-141		
1,2-Dichloroethane-d4	117	62-146			Toluene-d8	98	80-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-4-4	**11-09-1801-5-A**	**09/22/11 13:13**	**Solid**	**GC/MS XX**	**09/28/11**	**09/29/11 19:03**	**110929L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0010	1		Xylenes (total)	ND	0.0010	1	
1,2-Dibromoethane	ND	0.0010	1		Methyl-t-Butyl Ether (MTBE)	ND	0.0010	1	
1,2-Dichloroethane	ND	0.0010	1		Tert-Butyl Alcohol (TBA)	ND	0.010	1	
Ethylbenzene	ND	0.0010	1		Diisopropyl Ether (DIPE)	ND	0.0020	1	
Ethanol	ND	0.10	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0020	1	
Toluene	ND	0.0010	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0020	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	103	60-132			Dibromofluoromethane	98	63-141		
1,2-Dichloroethane-d4	117	62-146			Toluene-d8	100	80-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-4-6.5	**11-09-1801-6-A**	**09/23/11 12:45**	**Solid**	**GC/MS XX**	**09/28/11**	**09/30/11 13:32**	**110930L02**

Comment(s): -BH Reporting limits raised due to high level of non-target analytes.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.10	100		Xylenes (total)	ND	0.10	100	
1,2-Dibromoethane	ND	0.10	100		Methyl-t-Butyl Ether (MTBE)	ND	0.10	100	
1,2-Dichloroethane	ND	0.10	100		Tert-Butyl Alcohol (TBA)	ND	1.0	100	
Ethylbenzene	0.12	0.10	100		Diisopropyl Ether (DIPE)	ND	0.20	100	
Ethanol	ND	10	100		Ethyl-t-Butyl Ether (ETBE)	ND	0.20	100	
Toluene	ND	0.10	100		Tert-Amyl-Methyl Ether (TAME)	ND	0.20	100	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	107	60-132			Dibromofluoromethane	90	63-141		
1,2-Dichloroethane-d4	109	62-146			Toluene-d8	103	80-120		

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	09/28/11
1324 Mangrove Ave, Ste 212		Work Order No:	11-09-1801
Chico, CA 95926-2642		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	mg/kg

Project: BP 4977

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-4-10	**11-09-1801-7-A**	**09/23/11 12:56**	**Solid**	**GC/MS XX**	**09/28/11**	**09/30/11 14:00**	**110930L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	0.37	0.10	100		Xylenes (total)	0.38	0.10	100	
1,2-Dibromoethane	ND	0.10	100		Methyl-t-Butyl Ether (MTBE)	ND	0.10	100	
1,2-Dichloroethane	ND	0.10	100		Tert-Butyl Alcohol (TBA)	ND	1.0	100	
Ethylbenzene	9.9	0.10	100		Diisopropyl Ether (DIPE)	ND	0.20	100	
Ethanol	ND	10	100		Ethyl-t-Butyl Ether (ETBE)	ND	0.20	100	
Toluene	ND	0.10	100		Tert-Amyl-Methyl Ether (TAME)	ND	0.20	100	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	104	60-132			Dibromofluoromethane	89	63-141		
1,2-Dichloroethane-d4	106	62-146			Toluene-d8	103	80-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-4-15	**11-09-1801-8-A**	**09/23/11 12:57**	**Solid**	**GC/MS XX**	**09/28/11**	**09/29/11 19:31**	**110929L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0010	1		Xylenes (total)	ND	0.0010	1	
1,2-Dibromoethane	ND	0.0010	1		Methyl-t-Butyl Ether (MTBE)	ND	0.0010	1	
1,2-Dichloroethane	ND	0.0010	1		Tert-Butyl Alcohol (TBA)	ND	0.010	1	
Ethylbenzene	ND	0.0010	1		Diisopropyl Ether (DIPE)	ND	0.0020	1	
Ethanol	ND	0.10	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0020	1	
Toluene	ND	0.0010	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0020	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	101	60-132			Dibromofluoromethane	97	63-141		
1,2-Dichloroethane-d4	118	62-146			Toluene-d8	100	80-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-5-4	**11-09-1801-9-A**	**09/22/11 14:32**	**Solid**	**GC/MS XX**	**09/28/11**	**09/29/11 19:59**	**110929L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0010	1		Xylenes (total)	ND	0.0010	1	
1,2-Dibromoethane	ND	0.0010	1		Methyl-t-Butyl Ether (MTBE)	ND	0.0010	1	
1,2-Dichloroethane	ND	0.0010	1		Tert-Butyl Alcohol (TBA)	ND	0.010	1	
Ethylbenzene	ND	0.0010	1		Diisopropyl Ether (DIPE)	ND	0.0020	1	
Ethanol	ND	0.10	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0020	1	
Toluene	ND	0.0010	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0020	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	105	60-132			Dibromofluoromethane	98	63-141		
1,2-Dichloroethane-d4	116	62-146			Toluene-d8	102	80-120		

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	09/28/11
1324 Mangrove Ave, Ste 212		Work Order No:	11-09-1801
Chico, CA 95926-2642		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	mg/kg
Project: BP 4977			Page 4 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-5-7	**11-09-1801-10-A**	**09/23/11 13:37**	**Solid**	**GC/MS XX**	**09/28/11**	**09/29/11 20:27**	**110929L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0010	1		Xylenes (total)	ND	0.0010	1	
1,2-Dibromoethane	ND	0.0010	1		Methyl-t-Butyl Ether (MTBE)	ND	0.0010	1	
1,2-Dichloroethane	ND	0.0010	1		Tert-Butyl Alcohol (TBA)	ND	0.010	1	
Ethylbenzene	0.0022	0.0010	1		Diisopropyl Ether (DIPE)	ND	0.0020	1	
Ethanol	ND	0.10	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0020	1	
Toluene	ND	0.0010	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0020	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	108	60-132			Dibromofluoromethane	95	63-141		
1,2-Dichloroethane-d4	115	62-146			Toluene-d8	103	80-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-5-10	**11-09-1801-11-A**	**09/23/11 13:45**	**Solid**	**GC/MS XX**	**09/28/11**	**09/30/11 14:28**	**110930L02**

Comment(s): -BH Reporting limits raised due to high level of non-target analytes.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.10	100		Xylenes (total)	ND	0.10	100	
1,2-Dibromoethane	ND	0.10	100		Methyl-t-Butyl Ether (MTBE)	ND	0.10	100	
1,2-Dichloroethane	ND	0.10	100		Tert-Butyl Alcohol (TBA)	ND	1.0	100	
Ethylbenzene	0.41	0.10	100		Diisopropyl Ether (DIPE)	ND	0.20	100	
Ethanol	ND	10	100		Ethyl-t-Butyl Ether (ETBE)	ND	0.20	100	
Toluene	ND	0.10	100		Tert-Amyl-Methyl Ether (TAME)	ND	0.20	100	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	107	60-132			Dibromofluoromethane	89	63-141		
1,2-Dichloroethane-d4	103	62-146			Toluene-d8	101	80-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-5-15	**11-09-1801-12-A**	**09/23/11 13:46**	**Solid**	**GC/MS XX**	**09/28/11**	**09/30/11 12:36**	**110930L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0010	1		Xylenes (total)	ND	0.0010	1	
1,2-Dibromoethane	ND	0.0010	1		Methyl-t-Butyl Ether (MTBE)	ND	0.0010	1	
1,2-Dichloroethane	ND	0.0010	1		Tert-Butyl Alcohol (TBA)	ND	0.010	1	
Ethylbenzene	ND	0.0010	1		Diisopropyl Ether (DIPE)	ND	0.0020	1	
Ethanol	ND	0.10	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0020	1	
Toluene	ND	0.0010	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0020	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	101	60-132			Dibromofluoromethane	101	63-141		
1,2-Dichloroethane-d4	120	62-146			Toluene-d8	102	80-120		

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.	Date Received:	09/28/11
1324 Mangrove Ave, Ste 212	Work Order No:	11-09-1801
Chico, CA 95926-2642	Preparation:	EPA 5030C
	Method:	EPA 8260B
	Units:	mg/kg
Project: BP 4977		Page 5 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-709-586**	**N/A**	**Solid**	**GC/MS XX**	**09/29/11**	**09/29/11 12:04**	**110929L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0010	1		Xylenes (total)	ND	0.0010	1	
1,2-Dibromoethane	ND	0.0010	1		Methyl-t-Butyl Ether (MTBE)	ND	0.0010	1	
1,2-Dichloroethane	ND	0.0010	1		Tert-Butyl Alcohol (TBA)	ND	0.010	1	
Ethylbenzene	ND	0.0010	1		Diisopropyl Ether (DIPE)	ND	0.0020	1	
Ethanol	ND	0.10	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0020	1	
Toluene	ND	0.0010	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0020	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	100	60-132			Dibromofluoromethane	95	63-141		
1,2-Dichloroethane-d4	117	62-146			Toluene-d8	99	80-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-709-588**	**N/A**	**Solid**	**GC/MS XX**	**09/30/11**	**09/30/11 12:05**	**110930L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0010	1		Xylenes (total)	ND	0.0010	1	
1,2-Dibromoethane	ND	0.0010	1		Methyl-t-Butyl Ether (MTBE)	ND	0.0010	1	
1,2-Dichloroethane	ND	0.0010	1		Tert-Butyl Alcohol (TBA)	ND	0.010	1	
Ethylbenzene	ND	0.0010	1		Diisopropyl Ether (DIPE)	ND	0.0020	1	
Ethanol	ND	0.10	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0020	1	
Toluene	ND	0.0010	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0020	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	101	60-132			Dibromofluoromethane	99	63-141		
1,2-Dichloroethane-d4	119	62-146			Toluene-d8	100	80-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-709-589**	**N/A**	**Solid**	**GC/MS XX**	**09/30/11**	**09/30/11 11:37**	**110930L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.10	100		Xylenes (total)	ND	0.10	100	
1,2-Dibromoethane	ND	0.10	100		Methyl-t-Butyl Ether (MTBE)	ND	0.10	100	
1,2-Dichloroethane	ND	0.10	100		Tert-Butyl Alcohol (TBA)	ND	1.0	100	
Ethylbenzene	ND	0.10	100		Diisopropyl Ether (DIPE)	ND	0.20	100	
Ethanol	ND	10	100		Ethyl-t-Butyl Ether (ETBE)	ND	0.20	100	
Toluene	ND	0.10	100		Tert-Amyl-Methyl Ether (TAME)	ND	0.20	100	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	101	60-132			Dibromofluoromethane	97	63-141		
1,2-Dichloroethane-d4	114	62-146			Toluene-d8	99	80-120		

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

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: 09/28/11
Work Order No: 11-09-1801
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project BP 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
B-3-10	**Solid**	**GC 4**	**09/28/11**	**09/30/11**	**110930S01**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	10.00	89	85	42-126	5	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: 09/28/11
Work Order No: 11-09-1801
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project BP 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
11-09-1988-1	**Solid**	**GC 4**	**09/30/11**	**10/03/11**	**111003S01**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	10.00	85	85	42-126	0	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: 09/28/11
Work Order No: 11-09-1801
Preparation: EPA 5030C
Method: EPA 8260B

Project BP 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
B-3-10	**Solid**	**GC/MS XX**	**09/28/11**	**09/29/11**	**110929S01**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	0.05000	98	96	61-127	2	0-20	
Chloroform	0.05000	98	98	80-120	0	0-20	
1,1-Dichloroethane	0.05000	94	93	80-120	2	0-20	
1,2-Dichloroethane	0.05000	109	108	80-120	1	0-20	
1,1-Dichloroethene	0.05000	108	106	47-143	2	0-25	
Ethanol	0.5000	98	110	17-167	11	0-47	
Tetrachloroethene	0.05000	104	103	80-120	1	0-20	
Toluene	0.05000	98	96	63-123	2	0-20	
Trichloroethene	0.05000	99	97	44-158	2	0-20	
Methyl-t-Butyl Ether (MTBE)	0.05000	92	93	57-123	1	0-21	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: 09/28/11
Work Order No: 11-09-1801
Preparation: EPA 5030C
Method: EPA 8260B

Project BP 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
B-5-15	**Solid**	**GC/MS XX**	**09/28/11**	**09/30/11**	**110930S01**

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	0.05000	92	95	61-127	4	0-20	
Chloroform	0.05000	90	95	80-120	5	0-20	
1,1-Dichloroethane	0.05000	87	92	80-120	5	0-20	
1,2-Dichloroethane	0.05000	100	101	80-120	1	0-20	
1,1-Dichloroethene	0.05000	97	103	47-143	7	0-25	
Ethanol	0.5000	104	103	17-167	0	0-47	
Tetrachloroethene	0.05000	102	108	80-120	6	0-20	
Toluene	0.05000	90	95	63-123	5	0-20	
Trichloroethene	0.05000	90	94	44-158	5	0-20	
Methyl-t-Butyl Ether (MTBE)	0.05000	91	89	57-123	2	0-21	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: N/A
Work Order No: 11-09-1801
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: BP 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-697-363	**Solid**	**GC 4**	**09/30/11**	**10/03/11**	**111003B02**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	10.00	102	96	70-118	6	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.		Date Received:	N/A
1324 Mangrove Ave, Ste 212		Work Order No:	11-09-1801
Chico, CA 95926-2642		Preparation:	EPA 5030C
		Method:	EPA 8015B (M)

Project: BP 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-697-361	**Solid**	**GC 4**	**09/28/11**	**09/30/11**	**110930B01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	10.00	90	96	70-118	7	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.	Date Received:	N/A
1324 Mangrove Ave, Ste 212	Work Order No:	11-09-1801
Chico, CA 95926-2642	Preparation:	EPA 5030C
	Method:	EPA 8015B (M)

Project: BP 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-697-362	**Solid**	**GC 4**	**09/30/11**	**10/03/11**	**111003B01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	10.00	102	96	70-118	6	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: N/A
Work Order No: 11-09-1801
Preparation: EPA 5030C
Method: EPA 8260B

Project: BP 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-709-586	**Solid**	**GC/MS XX**	**09/29/11**	**09/29/11**	**110929L01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	0.05000	102	103	78-120	71-127	0	0-20	
Bromobenzene	0.05000	103	104	80-120	73-127	1	0-20	
Bromochloromethane	0.05000	95	96	80-120	73-127	1	0-20	
Bromodichloromethane	0.05000	104	106	80-120	73-127	2	0-20	
Bromoform	0.05000	109	117	80-120	73-127	7	0-20	
Bromomethane	0.05000	73	117	80-120	73-127	46	0-20	
n-Butylbenzene	0.05000	109	108	77-123	69-131	1	0-25	
sec-Butylbenzene	0.05000	107	108	80-120	73-127	0	0-20	
tert-Butylbenzene	0.05000	106	106	80-120	73-127	0	0-20	
Carbon Disulfide	0.05000	94	95	80-120	73-127	1	0-20	
Carbon Tetrachloride	0.05000	94	97	49-139	34-154	4	0-20	
Chlorobenzene	0.05000	103	104	79-120	72-127	1	0-20	
Chloroethane	0.05000	102	103	80-120	73-127	1	0-20	
Chloroform	0.05000	102	104	80-120	73-127	2	0-20	
Chloromethane	0.05000	97	94	80-120	73-127	3	0-20	
2-Chlorotoluene	0.05000	107	109	80-120	73-127	1	0-20	
4-Chlorotoluene	0.05000	109	108	80-120	73-127	0	0-20	
Dibromochloromethane	0.05000	106	109	80-120	73-127	2	0-20	
1,2-Dibromo-3-Chloropropane	0.05000	101	99	80-120	73-127	3	0-20	
1,2-Dibromoethane	0.05000	105	106	80-120	73-127	1	0-20	
Dibromomethane	0.05000	109	107	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	0.05000	106	105	75-120	68-128	1	0-20	
1,3-Dichlorobenzene	0.05000	105	104	80-120	73-127	1	0-20	
1,4-Dichlorobenzene	0.05000	103	102	80-120	73-127	1	0-20	
Dichlorodifluoromethane	0.05000	112	112	80-120	73-127	0	0-20	
1,1-Dichloroethane	0.05000	98	98	80-120	73-127	1	0-20	
1,2-Dichloroethane	0.05000	113	113	80-120	73-127	0	0-20	
1,1-Dichloroethene	0.05000	108	110	74-122	66-130	2	0-20	
c-1,2-Dichloroethene	0.05000	93	95	80-120	73-127	1	0-20	
t-1,2-Dichloroethene	0.05000	95	95	80-120	73-127	1	0-20	
1,2-Dichloropropane	0.05000	103	104	79-115	73-121	1	0-25	
1,3-Dichloropropane	0.05000	109	108	80-120	73-127	0	0-20	
2,2-Dichloropropane	0.05000	86	90	80-120	73-127	3	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: N/A
Work Order No: 11-09-1801
Preparation: EPA 5030C
Method: EPA 8260B

Project: BP 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-709-586	**Solid**	**GC/MS XX**	**09/29/11**	**09/29/11**	**110929L01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
1,1-Dichloropropene	0.05000	96	95	80-120	73-127	1	0-20	
c-1,3-Dichloropropene	0.05000	98	99	80-120	73-127	2	0-20	
t-1,3-Dichloropropene	0.05000	101	103	80-120	73-127	2	0-20	
Ethylbenzene	0.05000	107	108	76-120	69-127	1	0-20	
Isopropylbenzene	0.05000	108	108	80-120	73-127	0	0-20	
p-Isopropyltoluene	0.05000	107	107	80-120	73-127	0	0-20	
Methylene Chloride	0.05000	96	98	80-120	73-127	2	0-20	
Naphthalene	0.05000	96	97	80-120	73-127	1	0-20	
n-Propylbenzene	0.05000	108	108	80-120	73-127	1	0-20	
Styrene	0.05000	106	106	80-120	73-127	0	0-20	
Ethanol	0.5000	116	111	56-140	42-154	4	0-20	
1,1,1,2-Tetrachloroethane	0.05000	96	101	80-120	73-127	4	0-20	
1,1,2,2-Tetrachloroethane	0.05000	106	105	80-120	73-127	1	0-20	
Tetrachloroethene	0.05000	113	118	80-120	73-127	4	0-20	
Toluene	0.05000	102	103	77-120	70-127	1	0-20	
1,2,3-Trichlorobenzene	0.05000	106	102	80-120	73-127	4	0-20	
1,2,4-Trichlorobenzene	0.05000	104	101	80-120	73-127	3	0-20	
1,1,1-Trichloroethane	0.05000	95	99	80-120	73-127	4	0-20	
1,1,2-Trichloroethane	0.05000	107	108	80-120	73-127	1	0-20	
Trichloroethene	0.05000	103	104	80-120	73-127	1	0-20	
Trichlorofluoromethane	0.05000	120	117	80-120	73-127	2	0-20	
1,2,3-Trichloropropane	0.05000	109	108	80-120	73-127	0	0-20	
1,2,4-Trimethylbenzene	0.05000	109	110	80-120	73-127	1	0-20	
1,3,5-Trimethylbenzene	0.05000	110	110	80-120	73-127	0	0-20	
Vinyl Acetate	0.05000	87	88	80-120	73-127	1	0-20	
Vinyl Chloride	0.05000	101	102	68-122	59-131	1	0-20	
Xylenes (total)	0.1500	108	109	80-120	73-127	1	0-20	
Methyl-t-Butyl Ether (MTBE)	0.05000	96	97	77-120	70-127	0	0-20	
Tert-Butyl Alcohol (TBA)	0.2500	95	98	68-122	59-131	3	0-20	
Diisopropyl Ether (DIPE)	0.05000	95	96	78-120	71-127	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	0.05000	98	100	78-120	71-127	2	0-20	
Tert-Amyl-Methyl Ether (TAME)	0.05000	102	103	75-120	68-128	1	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Broadbent & Associates, Inc.		Date Received:	N/A
1324 Mangrove Ave, Ste 212		Work Order No:	11-09-1801
Chico, CA 95926-2642		Preparation:	EPA 5030C
		Method:	EPA 8260B

Project: BP 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-709-586	**Solid**	**GC/MS XX**	**09/29/11**	**09/29/11**	**110929L01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers

Total number of LCS compounds : 65
Total number of ME compounds : 1
Total number of ME compounds allowed : 3
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: N/A
Work Order No: 11-09-1801
Preparation: EPA 5030C
Method: EPA 8260B

Project: BP 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-709-588	**Solid**	**GC/MS XX**	**09/30/11**	**09/30/11**	**110930L01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	0.05000	102	99	78-120	71-127	3	0-20	
Bromobenzene	0.05000	105	103	80-120	73-127	2	0-20	
Bromochloromethane	0.05000	95	93	80-120	73-127	2	0-20	
Bromodichloromethane	0.05000	111	108	80-120	73-127	3	0-20	
Bromoform	0.05000	124	122	80-120	73-127	1	0-20	
Bromomethane	0.05000	74	73	80-120	73-127	1	0-20	
n-Butylbenzene	0.05000	108	104	77-123	69-131	4	0-25	
sec-Butylbenzene	0.05000	106	103	80-120	73-127	3	0-20	
tert-Butylbenzene	0.05000	104	103	80-120	73-127	1	0-20	
Carbon Disulfide	0.05000	95	90	80-120	73-127	5	0-20	
Carbon Tetrachloride	0.05000	103	102	49-139	34-154	1	0-20	
Chlorobenzene	0.05000	104	101	79-120	72-127	3	0-20	
Chloroethane	0.05000	89	88	80-120	73-127	1	0-20	
Chloroform	0.05000	104	100	80-120	73-127	4	0-20	
Chloromethane	0.05000	96	95	80-120	73-127	2	0-20	
2-Chlorotoluene	0.05000	109	106	80-120	73-127	3	0-20	
4-Chlorotoluene	0.05000	108	104	80-120	73-127	3	0-20	
Dibromochloromethane	0.05000	115	115	80-120	73-127	1	0-20	
1,2-Dibromo-3-Chloropropane	0.05000	110	109	80-120	73-127	1	0-20	
1,2-Dibromoethane	0.05000	107	105	80-120	73-127	2	0-20	
Dibromomethane	0.05000	109	104	80-120	73-127	4	0-20	
1,2-Dichlorobenzene	0.05000	106	103	75-120	68-128	3	0-20	
1,3-Dichlorobenzene	0.05000	105	102	80-120	73-127	3	0-20	
1,4-Dichlorobenzene	0.05000	103	99	80-120	73-127	4	0-20	
Dichlorodifluoromethane	0.05000	109	106	80-120	73-127	3	0-20	
1,1-Dichloroethane	0.05000	99	94	80-120	73-127	5	0-20	
1,2-Dichloroethane	0.05000	115	113	80-120	73-127	2	0-20	
1,1-Dichloroethene	0.05000	112	106	74-122	66-130	6	0-20	
c-1,2-Dichloroethene	0.05000	94	90	80-120	73-127	4	0-20	
t-1,2-Dichloroethene	0.05000	96	92	80-120	73-127	5	0-20	
1,2-Dichloropropane	0.05000	104	101	79-115	73-121	3	0-25	
1,3-Dichloropropane	0.05000	109	106	80-120	73-127	3	0-20	
2,2-Dichloropropane	0.05000	92	90	80-120	73-127	3	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: N/A
Work Order No: 11-09-1801
Preparation: EPA 5030C
Method: EPA 8260B

Project: BP 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-709-588	**Solid**	**GC/MS XX**	**09/30/11**	**09/30/11**	**110930L01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
1,1-Dichloropropene	0.05000	95	91	80-120	73-127	4	0-20	
c-1,3-Dichloropropene	0.05000	101	99	80-120	73-127	2	0-20	
t-1,3-Dichloropropene	0.05000	108	106	80-120	73-127	2	0-20	
Ethylbenzene	0.05000	109	104	76-120	69-127	4	0-20	
Isopropylbenzene	0.05000	110	105	80-120	73-127	4	0-20	
p-Isopropyltoluene	0.05000	107	103	80-120	73-127	5	0-20	
Methylene Chloride	0.05000	95	92	80-120	73-127	4	0-20	
Naphthalene	0.05000	97	95	80-120	73-127	2	0-20	
n-Propylbenzene	0.05000	110	106	80-120	73-127	4	0-20	
Styrene	0.05000	107	103	80-120	73-127	4	0-20	
Ethanol	0.5000	109	101	56-140	42-154	8	0-20	
1,1,1,2-Tetrachloroethane	0.05000	106	104	80-120	73-127	1	0-20	
1,1,2,2-Tetrachloroethane	0.05000	106	103	80-120	73-127	2	0-20	
Tetrachloroethene	0.05000	110	107	80-120	73-127	3	0-20	
Toluene	0.05000	102	99	77-120	70-127	3	0-20	
1,2,3-Trichlorobenzene	0.05000	107	103	80-120	73-127	3	0-20	
1,2,4-Trichlorobenzene	0.05000	106	102	80-120	73-127	4	0-20	
1,1,1-Trichloroethane	0.05000	101	98	80-120	73-127	3	0-20	
1,1,2-Trichloroethane	0.05000	110	107	80-120	73-127	2	0-20	
Trichloroethene	0.05000	104	100	80-120	73-127	4	0-20	
Trichlorofluoromethane	0.05000	114	109	80-120	73-127	4	0-20	
1,2,3-Trichloropropane	0.05000	110	109	80-120	73-127	0	0-20	
1,2,4-Trimethylbenzene	0.05000	109	105	80-120	73-127	4	0-20	
1,3,5-Trimethylbenzene	0.05000	113	108	80-120	73-127	5	0-20	
Vinyl Acetate	0.05000	87	83	80-120	73-127	4	0-20	
Vinyl Chloride	0.05000	99	97	68-122	59-131	1	0-20	
Xylenes (total)	0.1500	109	105	80-120	73-127	3	0-20	
Methyl-t-Butyl Ether (MTBE)	0.05000	96	95	77-120	70-127	1	0-20	
Tert-Butyl Alcohol (TBA)	0.2500	97	94	68-122	59-131	3	0-20	
Diisopropyl Ether (DIPE)	0.05000	96	94	78-120	71-127	2	0-20	
Ethyl-t-Butyl Ether (ETBE)	0.05000	99	97	78-120	71-127	2	0-20	
Tert-Amyl-Methyl Ether (TAME)	0.05000	102	101	75-120	68-128	1	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.		Date Received:	N/A
1324 Mangrove Ave, Ste 212		Work Order No:	11-09-1801
Chico, CA 95926-2642		Preparation:	EPA 5030C
		Method:	EPA 8260B

Project: BP 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-709-588	**Solid**	**GC/MS XX**	**09/30/11**	**09/30/11**	**110930L01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers

Total number of LCS compounds : 65
Total number of ME compounds : 2
Total number of ME compounds allowed : 3
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: N/A
Work Order No: 11-09-1801
Preparation: EPA 5030C
Method: EPA 8260B

Project: BP 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-709-589	**Solid**	**GC/MS XX**	**09/30/11**	**09/30/11**	**110930L02**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	0.05000	102	99	78-120	71-127	3	0-20	
Bromobenzene	0.05000	105	103	80-120	73-127	2	0-20	
Bromochloromethane	0.05000	95	93	80-120	73-127	2	0-20	
Bromodichloromethane	0.05000	111	108	80-120	73-127	3	0-20	
Bromoform	0.05000	124	122	80-120	73-127	1	0-20	
Bromomethane	0.05000	74	73	80-120	73-127	1	0-20	
n-Butylbenzene	0.05000	108	104	77-123	69-131	4	0-25	
sec-Butylbenzene	0.05000	106	103	80-120	73-127	3	0-20	
tert-Butylbenzene	0.05000	104	103	80-120	73-127	1	0-20	
Carbon Disulfide	0.05000	95	90	80-120	73-127	5	0-20	
Carbon Tetrachloride	0.05000	103	102	49-139	34-154	1	0-20	
Chlorobenzene	0.05000	104	101	79-120	72-127	3	0-20	
Chloroethane	0.05000	89	88	80-120	73-127	1	0-20	
Chloroform	0.05000	104	100	80-120	73-127	4	0-20	
Chloromethane	0.05000	96	95	80-120	73-127	2	0-20	
2-Chlorotoluene	0.05000	109	106	80-120	73-127	3	0-20	
4-Chlorotoluene	0.05000	108	104	80-120	73-127	3	0-20	
Dibromochloromethane	0.05000	115	115	80-120	73-127	1	0-20	
1,2-Dibromo-3-Chloropropane	0.05000	110	109	80-120	73-127	1	0-20	
1,2-Dibromoethane	0.05000	107	105	80-120	73-127	2	0-20	
Dibromomethane	0.05000	109	104	80-120	73-127	4	0-20	
1,2-Dichlorobenzene	0.05000	106	103	75-120	68-128	3	0-20	
1,3-Dichlorobenzene	0.05000	105	102	80-120	73-127	3	0-20	
1,4-Dichlorobenzene	0.05000	103	99	80-120	73-127	4	0-20	
Dichlorodifluoromethane	0.05000	109	106	80-120	73-127	3	0-20	
1,1-Dichloroethane	0.05000	99	94	80-120	73-127	5	0-20	
1,2-Dichloroethane	0.05000	115	113	80-120	73-127	2	0-20	
1,1-Dichloroethene	0.05000	112	106	74-122	66-130	6	0-20	
c-1,2-Dichloroethene	0.05000	94	90	80-120	73-127	4	0-20	
t-1,2-Dichloroethene	0.05000	96	92	80-120	73-127	5	0-20	
1,2-Dichloropropane	0.05000	104	101	79-115	73-121	3	0-25	
1,3-Dichloropropane	0.05000	109	106	80-120	73-127	3	0-20	
2,2-Dichloropropane	0.05000	92	90	80-120	73-127	3	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: N/A
Work Order No: 11-09-1801
Preparation: EPA 5030C
Method: EPA 8260B

Project: BP 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-709-589	**Solid**	**GC/MS XX**	**09/30/11**	**09/30/11**	**110930L02**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
1,1-Dichloropropene	0.05000	95	91	80-120	73-127	4	0-20	
c-1,3-Dichloropropene	0.05000	101	99	80-120	73-127	2	0-20	
t-1,3-Dichloropropene	0.05000	108	106	80-120	73-127	2	0-20	
Ethylbenzene	0.05000	109	104	76-120	69-127	4	0-20	
Isopropylbenzene	0.05000	110	105	80-120	73-127	4	0-20	
p-Isopropyltoluene	0.05000	107	103	80-120	73-127	5	0-20	
Methylene Chloride	0.05000	95	92	80-120	73-127	4	0-20	
Naphthalene	0.05000	97	95	80-120	73-127	2	0-20	
n-Propylbenzene	0.05000	110	106	80-120	73-127	4	0-20	
Styrene	0.05000	107	103	80-120	73-127	4	0-20	
Ethanol	0.5000	109	101	56-140	42-154	8	0-20	
1,1,1,2-Tetrachloroethane	0.05000	106	104	80-120	73-127	1	0-20	
1,1,2,2-Tetrachloroethane	0.05000	106	103	80-120	73-127	2	0-20	
Tetrachloroethene	0.05000	110	107	80-120	73-127	3	0-20	
Toluene	0.05000	102	99	77-120	70-127	3	0-20	
1,2,3-Trichlorobenzene	0.05000	107	103	80-120	73-127	3	0-20	
1,2,4-Trichlorobenzene	0.05000	106	102	80-120	73-127	4	0-20	
1,1,1-Trichloroethane	0.05000	101	98	80-120	73-127	3	0-20	
1,1,2-Trichloroethane	0.05000	110	107	80-120	73-127	2	0-20	
Trichloroethene	0.05000	104	100	80-120	73-127	4	0-20	
Trichlorofluoromethane	0.05000	114	109	80-120	73-127	4	0-20	
1,2,3-Trichloropropane	0.05000	110	109	80-120	73-127	0	0-20	
1,2,4-Trimethylbenzene	0.05000	109	105	80-120	73-127	4	0-20	
1,3,5-Trimethylbenzene	0.05000	113	108	80-120	73-127	5	0-20	
Vinyl Acetate	0.05000	87	83	80-120	73-127	4	0-20	
Vinyl Chloride	0.05000	99	97	68-122	59-131	1	0-20	
Xylenes (total)	0.1500	109	105	80-120	73-127	3	0-20	
Methyl-t-Butyl Ether (MTBE)	0.05000	96	95	77-120	70-127	1	0-20	
Tert-Butyl Alcohol (TBA)	0.2500	97	94	68-122	59-131	3	0-20	
Diisopropyl Ether (DIPE)	0.05000	96	94	78-120	71-127	2	0-20	
Ethyl-t-Butyl Ether (ETBE)	0.05000	99	97	78-120	71-127	2	0-20	
Tert-Amyl-Methyl Ether (TAME)	0.05000	102	101	75-120	68-128	1	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Broadbent & Associates, Inc.		Date Received:	N/A
1324 Mangrove Ave, Ste 212		Work Order No:	11-09-1801
Chico, CA 95926-2642		Preparation:	EPA 5030C
		Method:	EPA 8260B

Project: BP 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-709-589	**Solid**	**GC/MS XX**	**09/30/11**	**09/30/11**	**110930L02**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers

Total number of LCS compounds : 65
Total number of ME compounds : 2
Total number of ME compounds allowed : 3
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

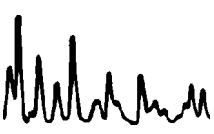
Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 11-09-1801

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.
ET	Sample was extracted past end of recommended maximum 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.
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.
ME	LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range.
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.

Qualifier	Definition
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.



Atlantic Richfield Company
A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record

BP/ARC Project Name: BP 4977 **Req Due Date (mm/dd/yy):** **Rush TAT:** Yes ___ No X

BP/ARC Facility No: 4977 **Lab Work Order Number:** 11-09-1801

Lab Name:	Calscience	BP/ARC Facility Address:	2770 Castro Valley Road	Consultant/Contractor:	Broadbent & Associates, Inc.
Lab Address:	7440 Lincoln Way	City, State, ZIP Code:	Castro Valley, CA	Consultant/Contractor Project No:	06-88-625-408-880
Lab PM:	Richard Villafania	Lead Regulatory Agency:	ACEH	Address:	1324 Mangrove Ave. Ste. 212, Chico, CA 95926
Lab Phone:	714-895-5494	California Global ID No.:	T0600100089	Consultant/Contractor PM:	Jason Duda
Lab Shipping Accnt:	9225	Enfos Proposal No:	~~005X0-0001~~ 006 ZK-0001	Phone:	530-566-1400
Lab Bottle Order No:		Accounting Mode:	Provision X OOC-BU ___ OOC-RM ___	Email EDD To:	jduda@broadbentinc.com
Other Info:		Stage:	Assess (408) Activity: Project Spend ($80)	Invoice To:	BP/ARC X Contractor ___

BP/ARC EBM: ~~Chuck Carmel~~ Shannon Couch
EBM Phone:
EBM Email:

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	Matrix	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol		Requested Analyses: GRO (C6-C12) (8015B)	BTEX (8260 B)	5 Oxys (8260 B)	EDB (8260 B)	1,2-DCA (8260 B)	Ethanol (8260 B)				
1	B-3-6.5	9/23/2011	1022	x				1							x	x	x	x	x	x				
2	B-3-10	9/23/2011	1030	x				1							x	x	x	x	x	x				
3	B-3-15	9/23/2011	1034	x				1							x	x	x	x	x	x				
4	B-3-20	9/23/2011	1105	x				1							x	x	x	x	x	x				
5	B-4-4	9/22/2011	1313	x				1							x	x	x	x	x	x				
6	B-4-6.5	9/23/2011	1245	x				1							x	x	x	x	x	x				
7	B-4-10	9/23/2011	1256	x				1							x	x	x	x	x	x				
8	B-4-15	9/23/2011	1257	x				1							x	x	x	x	x	x				
9	B-5-4	9/22/2011	1432	x				1							x	x	x	x	x	x				
10	B-5-7	9/23/2011	1337	x				1							x	x	x	x	x	x				

Report Type & QC Level: Standard X; Full Data Package ___

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

Hold

		Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name:	Taylor Lancelot						
Sampler's Company:	Broadbent & Associates	[signature] / BAI	9/27/11	8:00	[signature] / BAI	9/27/11	8:00
Shipment Method:	GSO Ship Date: 9-27-11	Jason Duda / BAI	9/27/11	16:00	GSO	9/27/11	1604
Shipment Tracking No:	107158300				[signature] CCL	9/28/11	1130

Special Instructions:

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

Atlantic Richfield Company
A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record

BP/ARC Project Name: BP 4977 **Req Due Date (mm/dd/yy):** _____ **Rush TAT:** Yes ___ No X

BP/ARC Facility No: 4977 **Lab Work Order Number:** 11-09-1801

Lab Name:	Calscience	BP/ARC Facility Address:	2770 Castro Valley Road	Consultant/Contractor:	Broadbent & Associates, Inc.
Lab Address:	7440 Lincoln Way	City, State, ZIP Code:	Castro Valley, CA	Consultant/Contractor Project No:	06-88-625-408-880
Lab PM:	Richard Villafania	Lead Regulatory Agency:	ACEH	Address:	1324 Mangrove Ave. Ste. 212, Chico, CA 95926
Lab Phone:	714-895-5494	California Global ID No.:	T0600100089	Consultant/Contractor PM:	Jason Duda
Lab Shipping Accnt:	9225	Enfos Proposal No:	~~-005X0-0001~~ 0062K-0001	Phone:	530-566-1400
Lab Bottle Order No:		Accounting Mode:	Provision X OOC-BU ___ OOC-RM ___	Email EDD To:	jduda@broadbentinc.com
Other Info:		Stage:	Assess (408) Activity: Project Spend (480)	Invoice To:	BP/ARC X Contractor ___

BP/ARC EBM: ~~Chuck Carmel~~ Chuck Shannon Couch

EBM Phone:

EBM Email:

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	Matrix:	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol		Requested Analyses: GRO (C6-C12) (8015B)	BTEX (8260 B)	5 Oxys (8260 B)	EDB (8260 B)	1,2-DCA (8260 B)	Ethanol (8260 B)				
11	B-5-10	9/23/2011	1345	x				1							x	x	x	x	x	x				
12	B-5-15	9/23/2011	1346	x				1							x	x	x	x	x	x				

Report Type & QC Level: Standard X; Full Data Package ___

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

		Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name:	Taylor Lancelot						
Sampler's Company:	Broadbent & Associates	[illegible] / BAI	9/27/11	8:00	[illegible] / BAI	9-27-11	8:00
Shipment Method:	GSO Ship Date: 9-27-11	[illegible] / BAI	9/27/11	16:00	GSO	9-27-11	16:30
Shipment Tracking No:	107158300				[illegible] COC	9/28/11	1130

Special Instructions:

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

1801


JRC
GSO
GOLDEN STATE OVERNIGHT
1-800-322-5555
www.gso.com
[redacted]
GARDEN GROVE
92841
37 lb
3/CSI
D
D9[illegible]43A
94673035
1109272041
CSL-06

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 11-09-1801

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Broadbent & Associates DATE: 09/28/11

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 1.4 °C + 0.5 °C (CF) = 1.9 °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 Initial: YC

CUSTODY SEALS INTACT:

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

☐ 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.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours	☐	☐	☑
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 #5 i 9 ☐8ozCGJ ☐16ozCGJ ☑Sleeve (2) ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐500PB ☐500PB**na**

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** PS

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

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:**$Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **znna:** $ZnAc_2$+NaOH **f:** Field-filtered **Scanned by:** WSC

APPENDIX D

GEOTRACKER UPLOAD CONFIRMATION RECEIPT

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 - Site Investigation**
Submittal Title:	**On-Site Soil and Groundwater Investigation 2011-09**
Facility Global ID:	**T0600100089**
Facility Name:	**ARCO #4977**
File Name:	**11091801.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**11/3/2011 3:16:19 PM**
Confirmation Number:	**3052320122**

VIEW QC REPORT

VIEW DETECTIONS REPORT