

Atlantic Richfield Company (a BP affiliated company)

P.O. Box 1257 San Ramon, California 94583

Phone: (925) 275-3801 Fax: (925) 275-3815

29 August 2007

Re: Offsite Soil and Ground-Water Investigation Report

Atlantic Richfield Company Service Station #2107

3310 Park Boulevard Oakland, California ACEH Case #RO0002526

"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:

Paul Supple

Environmental Business Manager



1:09 pm, Sep 05, 2007



Alameda County Environmental Health

OFFSITE SOIL & GROUND-WATER INVESTIGATION REPORT

Atlantic Richfield Company Station No. 2107 3310 Park Boulevard Oakland, California

Prepared for:

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

Prepared by:

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

29 August 2007

Project No. 06-08-614

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



29 August 2007

Project No. 06-08-614

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

Attn.: Mr. Paul Supple

Re: Offsite Soil & Ground-Water Investigation Report, Atlantic Richfield Company Station

#2107, 3310 Park Boulevard, Oakland, California; ACEH Case #RO0002526

Dear Mr. Supple:

Broadbent & Associates, Inc. (BAI) is pleased to submit this *Offsite Soil & Ground-Water Investigation Report* for Atlantic Richfield Company Station #2107 (herein referred to as Station #2107) located at 3310 Park Boulevard, Oakland, California (Site). This report presents a description of field activities conducted and results obtained from drilling soil and ground-water borings to the north of the Site across Park Boulevard. This work was conducted in accordance with the *Conduit and Well Survey Report and Work Plan Addendum for Offsite Investigation* (URS, 5 April 2005), as approved by Alameda County Environmental Health Services (ACEH) in their letter dated 16 October 2006.

Should you have questions or require additional information, please do not hesitate to contact us at (530) 566-1400.

Sincerely,

BROADBENT & ASSOCIATES, INC.

Thomas A. Venus, P.E.

Senior Engineer

Robert H. Miller, P.G., C.HG.

Principal Hydrogeologist

16 bet 71. M.

Enclosures

cc: Mr. Steven Plunkett, Alameda County Environmental Health (Submitted via ACEH ftp site)

Electronic copy uploaded to GeoTracker

ARIZONA

CALIFORNIA

NEVADA

TEXAS

ROBERT H. MILLER

No. 4893

OFFSITE SOIL & GROUND-WATER INVESTIGATION REPORT

Atlantic Richfield Company Station #2107 3310 Park Boulevard Oakland, California

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OFFSITE SOIL & GROUND-WATER INVESTIGATION REPORT

Atlantic Richfield Company Station #2107 3310 Park Boulevard Oakland, California

1.0 INTRODUCTION

On behalf of the Atlantic Richfield Company, RM – a BP affiliated company, Broadbent & Associates, Inc. (BAI) has prepared this Offsite Soil & Ground-Water Investigation Report for additional soil and ground-water characterization at the Atlantic Richfield Company Station #2107, located at 3310 Park Boulevard, Oakland, California (Site). This offsite soil and ground-water investigation was completed to further assess the extent of hydrocarbon contamination offsite to the north of the Site. Investigation activities were conducted in accordance with the URS Conduit and Well Survey Report and Work Plan Addendum for Offsite Investigation dated 5 April 2005, as approved with additional comments by the Alameda County Environmental Health (ACEH) in their letter dated 16 October 2006. This report includes discussions on the Site Background, Field Activities Performed, Results of Investigation, Site Geology, Hydrogeology and Contaminant Distribution, Conclusions and Recommendations.

2.0 SITE BACKGROUND

The background information and previous work conducted on and off Site was furnished to BAI by RM. BAI has relied on the information provided to prepare this document and is neither responsible for, nor has confirmed the accuracy of the information contained in the documents reviewed.

The Site is an active ARCO-brand gasoline retail outlet located on the corner of 33rd Street and Park Boulevard in Oakland, Alameda County, California (Drawing 1). The Site is bounded by East 34th Street to the northeast, Park Boulevard to the north, and commercial buildings to the south and west. The land use in the immediate vicinity of the Site is mixed commercial, residential, and educational. The Site consists of a service station building and three double-walled fiberglass 12,000-gallon gasoline underground storage tanks (USTs) with associated piping and a total of eight dispensers on two pump islands. The majority of the Site is surfaced with asphalt or concrete.

A detailed history of the Site prior to 2002 can be found in the previous report, *Additional Site Investigation Report and Work Plan for Offsite Investigation*, submitted by URS on 30 November 2004. In a letter dated 11 July 1997, ACEH confirmed that no further action was required at the Site. Remediation and monitoring infrastructure (nine monitoring wells and one remediation well) were removed from the Site, with the exception of remediation piping which was left under the main driveway.

In November 2002, URS oversaw a product line upgrade at the Site. Environmental soil samples collected along the product lines during construction activities indicated a potential release therefore an Unauthorized Release Report was issued for the Site on 21 January 2003. Field activities are summarized in the URS *Product Line Removal and Upgrade Soil Sampling Report* dated 31 January 2003.

Following the Unauthorized Release Report (Fuel Leak Case #RO0002526), the ACEH sent a letter to RM dated 25 April 2003 requesting a soil and ground-water investigation at the Site. URS submitted a *Work Plan for Additional Investigation* on 11 June 2003 proposing the installation of four ground-water monitoring wells on the Site. URS received a voicemail directive from ACEH to complete a soil and ground-water investigation prior to the installation of monitoring wells at the Site. In response, URS submitted an *Addendum to Work Plan for Additional Investigation* on 29 October 2003 proposing 10 soil borings. ACEH requested several modifications to the *Addendum to Work Plan for Additional Investigation* in a letter dated 9 January 2004. URS submitted a *Second Addendum to Work Plan for Additional Investigation* on 11 March 2004.

URS began fieldwork at the Site on 30 March 2004. Due to adverse drilling conditions, just three soil borings were advanced and fieldwork was rescheduled. URS returned to the Site on 7 May 2004 and advanced three additional borings. A *Site Investigation Report and Well Installation Work Plan* was submitted on behalf of RM to ACEH on 12 August 2004. On 30 August 2004 URS received a letter from ACEH requesting additional fieldwork at the Site to complete the scope of work proposed in the original work plan and addendum. ACEH additionally requested depth-discrete ground-water sampling.

These requests by ACEH were addressed in fieldwork conducted in October 2004. URS collected twelve depth-discrete ground-water samples from six locations (HP-3 through HP-8) and four grab ground-water samples (SB-1 through SB-3 and SB-5). URS also collected 46 soil samples from eight onsite borings (SB-1 through SB-3 and SB-8 through SB-11) and three offsite borings (SB-4 through SB-6). Results were reported by URS in the *Additional site Investigation Report and Work Plan for Offsite Investigation* dated 30 November 2004.

In response to the above report and work plan, URS received a directive letter from ACEH dated 10 January 2005. URS responded by submitting the *Conduit and Well Survey Report and Work Plan Addendum for Offsite Investigation*, dated 5 April 2005. ACEH approved the 5 April 2005 work plan addendum with comments in their work plan approval letter dated 16 October 2006. After considering drilling at the base of the hillside north of Park Boulevard, Stratus Environmental Inc. (Stratus) received the various permits from the City of Oakland and performed the proposed drilling and sampling activities in June 2007.

3.0 FIELD ACTIVITIES PERFORMED

The offsite soil and ground-water investigation was completed to assess the horizontal extent of petroleum hydrocarbon impacted soil and ground-water to the north of the Site. On the 25th and 26th of June 2007, Stratus advanced a total of eight soil borings on the north side of Park

Boulevard, north of the Site, to evaluate the offsite horizontal extent of petroleum hydrocarbon impacted soil and ground water. Soil borings SB-12 through SB-15 and Hydropunch borings HP-9 through HP-12 were installed along the north side of Park Boulevard. The soil boring locations from this investigation are shown in Drawing 2.

3.1 Preliminary Field Activities

Prior to initiating field activities, Stratus obtained the necessary well drilling permit 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 Site for 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 a private utility locating company to confirm the absence of underground utilities at each boring location. Boreholes were physically cleared to a minimum of five feet below ground surface (bgs) using an air and water knife rig.

3.2 Soil Boring Advancement

On the 25th and 26th of June 2007, Stratus field personnel observed RSI Drilling (RSI) of Woodland, California advance a total of eight soil borings in four distinct offsite investigation locations (SB-12/HP-9, SB-13/HP-10, SB-14/HP-11, and SB-15/HP-12). Each boring was physically cleared to a minimum depth of five feet bgs using an air and water knife. RSI utilized a direct push Geoprobe 6600 drill rig to collect continuous cores at each soil boring location to a maximum depth of 30 feet. Physical soil samples were collected at specific depths for laboratory analysis based on field observations and recommendations from the ACEH.

Soil boring SB-12 was advanced to a total depth of 28 feet bgs. Soil samples were collected from boring SB-12 at 9, 15, 23 and 27 feet bgs. Sands and clayey sands were observed from approximately 7.2 to 9.2 feet bgs and 11.2 to 23 feet bgs, with an intermediate layer of silty clay from 9.2 to 11.2 feet bgs, and silty clay from 23 feet bgs to the total depth of 28 feet bgs.

Soil boring SB-13 was advanced to a total depth of 30 feet bgs. Soil samples were collected from boring SB-13 at 11, 15, 21, and 29 feet bgs. Clayey sands were observed from approximately 7.2 to 10 feet bgs. Silty clays and sandy clays were encountered from approximately 10 to 14 feet bgs, 18 to 20 feet bgs, and 26.3 to total depth of 30 feet bgs, with intermediate layers of clayey sands and sands with clay and silt from 14 to 18 feet bgs and 20 to 26.3 feet bgs.

Soil boring SB-14 was advanced to a total depth of 30 feet bgs. Soil samples were collected from boring SB-14 at 9, 15, 19, and 29 feet bgs. Clayey sand with silt was observed from approximately 6.5 to 11.5 feet bgs, 12 to 13.3 feet bgs, and 17.2 to 20 feet bgs. Silty clays were encountered from approximately 11.5 to 12 feet bgs, 13.3 to 15 feet bgs, 16 to 17.2 feet bgs, and 26.5 to 30 feet bgs.

Soil Boring SB-15 was advanced to a total depth of 30 feet bgs. Soil samples were collected from boring SB-15 at 9, 17, 23, and 29 feet bgs. Silty clays were observed from approximately 6.5 to 9.3 feet bgs, 13.5 to 16.5 feet bgs, and 27 to 30 feet bgs. Clayey sands and sands with clay and silt were encountered between approximately 9.3 to 13.5 feet bgs and 16.5 to 27 feet bgs.

Following completion of soil boring advancement and sample collection, borings were backfilled with neat cement grout to surface grade.

3.3 Ground-Water Sampling

Ground-water samples were collected from borings HP-9 through HP-12 to delineate the extent of hydrocarbon contamination offsite to the north. RSI used a Hydropunch[®] ground-water sampler to collect the samples. Each ground-water Hydropunch[®] boring was advanced to a maximum depth of 25 feet bgs and located adjacent to soil borings SB-12 through SB-15. Water samples were collected from boring HP-9 (adjacent to boring SB-12) between 10.5-14.5 feet bgs (Sample HP9-13) and 19-23 feet bgs (Sample HP9-21), from boring HP-10 (adjacent to boring SB-13) between 14-18 feet bgs (Sample HP10-16) and 22-26 feet bgs (Sample HP10-24), from boring HP-11 (adjacent to boring SB-14) between 22-26 feet bgs (Sample HP11-24), and from boring HP-12 (adjacent to boring SB-15) between 17-21 feet bgs (Sample HP12-19) and between 23-27 feet bgs (Sample HP12-25).

3.4 Investigation-Derived Residuals Management

Residual solids and liquids generated during the Site investigation activities were stored temporarily onsite in Department of Transportation-approved 55-gallon drums pending analytical results and profiling. Following characterization and profiling, Belshire Environmental Services was scheduled to transport the investigation-derived residuals to an RM-approved facility for treatment or disposal.

4.0 RESULTS OF INVESTIGATION

4.1 Soil Analytical Results

Soil samples were shipped to TestAmerica Analytical Testing Corporation (Morgan Hill), a California State-certified laboratory, under chain-of-custody protocol. Samples were analyzed for gasoline range organics (GRO, hydrocarbon chain lengths between C4-C12) by LUFT GCMS methodology; and for benzene, toluene, ethylbenzene, and total xylenes (BTEX), methyl tert-butyl ether (MTBE), ethyl tert-butyl ether (ETBE), tert-Amyl methyl ether (TAME), Diisopropyl ether (DIPE), 1,2-Dichloroethane (1,2-DCA), 1,2-Dibromoethane (EDB), tert-Butyl alcohol (TBA), and ethanol using EPA Method 8260B. No significant irregularities were encountered during laboratory analysis of the soil samples. Copies of the laboratory analytical reports, including chain-of-custody documentation, are provided in Appendix A. The laboratory analytical results are tabulated in Table 1 and summarized below:

• MTBE was detected above laboratory reporting limit of 0.005 milligrams per kilogram (mg/kg, or parts per million) in two of the sixteen soil samples collected at concentrations of 0.0087 mg/kg in boring sample SB12-15 and 0.0065 mg/kg in boring sample SB15-23.

The remaining analytes were not detected above their respective reporting limits in the sixteen soil samples collected. Laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation pages are provided in Appendix B.

4.2 Ground-Water Analytical Results

Ground-water samples were shipped to TestAmerica Analytical Testing Corporation (Morgan Hill), a California State-certified laboratory, under chain-of-custody protocol. Samples were analyzed for gasoline range organics (GRO, hydrocarbon chain lengths between C4-C12) by LUFT GCMS methodology; 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), 1,2-Dichloroethane (1,2-DCA), 1,2-Dibromoethane (EDB), tert-Butyl alcohol (TBA), and ethanol using EPA Method 8260B. The laboratory noted that the GRO concentrations reported in Hydropunch® boring samples HP9-13 and HP12-25 were partly due to individual peak(s) in the quantitation range. No other significant irregularities were encountered during laboratory analysis of the ground-water samples. Copies of the laboratory analytical reports, including chain-of-custody documentation, are provided in Appendix A. The laboratory analytical results are tabulated in Table 2 and summarized below:

- GRO was detected above the laboratory reporting limit of 50 micrograms per liter (μ g/L, or parts per billion) in three of the seven ground-water samples collected at concentrations of 51 μ g/L in sample HP9-13, 59 μ g/L in sample HP11-24, and 84 μ g/L in sample HP12-25.
- Benzene was detected above the laboratory reporting limit of 0.50 μ g/L in two of the seven ground-water samples collected at concentrations of 0.63 μ g/L in sample HP11-24 and 0.80 μ g/L in sample HP10-24.
- MTBE was detected above the laboratory reporting limit of 0.50 μg/L in each of the seven ground-water samples collected at concentrations ranging from 0.78 μg/L in sample HP10-16 up to 110 μg/L in sample HP12-25.

The remaining analytes were not detected above their respective reporting limits in the seven ground-water samples collected. Laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation pages are provided in Appendix B.

5.0 SITE HYDROGEOLOGY

Regionally, the site lies within the hydrogeologic feature known as the East Bay Plain Groundwater Basin (CRWQCB, 1999). Deep groundwater occurs in mostly confined aquifers

consisting of unconsolidated Tertiary to Quaternary age deposits. Some unconfined shallow water bearing deposits of Quarternary age exist within this basin, including under the subject property. The consolidated basement rocks underlying the Quarternary and Tertiary age deposits are considered to be non-water bearing due to their poor yields.

The Site lies within the Oakland sub-area of the San Francisco Basin. The San Francisco Basin is one of two basins that occupy the East Bay Plain Groundwater Basin. The water bearing deposits are composed of coalescing alluvial fans sloping westward from the Diablo Range to the east (CRWQCB, 1999). The alluvial deposits range from 300 to 700 feet in thickness, and the sequence lacks any well-defined aquitards. The primary shallow, water-bearing formation is the Merritt Sand. The Merritt Sand is a discontinuous formation with an approximate thickness of 65 feet. Below the Merritt Sand are a series of thin alternating aquifers and aquitards (Muir, 1993).

The Site is underlain by gravel, gravelly clay, and silt till from 0 to 5 feet bgs. From 5 to 30 feet bgs, the Site consists primarily of silty clay and clayey silt with lenses of silty sand, sand, and gravelly sand. From approximately 15 to 25 feet bgs in the northwest part of the Site is a large lense of fine sands and silty sands. Based on historic monitoring well data, ground-water has been encountered at depths of 5.31 to 9.32 feet bgs. Historically, the ground-water flow direction beneath the Site has been to the northwest at a gradient of approximately 0.09 feet per foot.

The Site has been leveled by cutting into the hillside. There is a cement retaining wall along the south side of the property with weep holes for run-off from the hillside. It is possible that the backfilled UST cavity, which is down gradient from the retaining wall, may be collecting run-off water. In the *Conduit and Well Survey Report and Workplan Addendum*, URS reported that this water collecting in the UST cavity may be running out of the cavity and down gradient, and might be the cause of shallow first encountered water at boring locations along the north side of the property.

6.0 CONCLUSIONS

On behalf of the Atlantic Richfield Company, RM – a BP affiliated company, BAI prepared this Offsite Soil & Ground-Water Investigation Report for Station No.2107, located at 3310 Park Boulevard, Oakland, California. Investigation activities were conducted in accordance with the URS Conduit and Well Survey Report and Work Plan Addendum for Offsite Investigation dated 5 April 2005, as approved by the Alameda County Environmental Health (ACEH) in their letter dated 16 October 2006. Based on the findings of this investigation, BAI concludes the following:

- Negligible soil contamination was discovered above the ground-water table in the four offsite borings north of the Site.
- Relatively low concentrations of GRO, Benzene, and MTBE were discovered in the four offsite borings north of the Site.

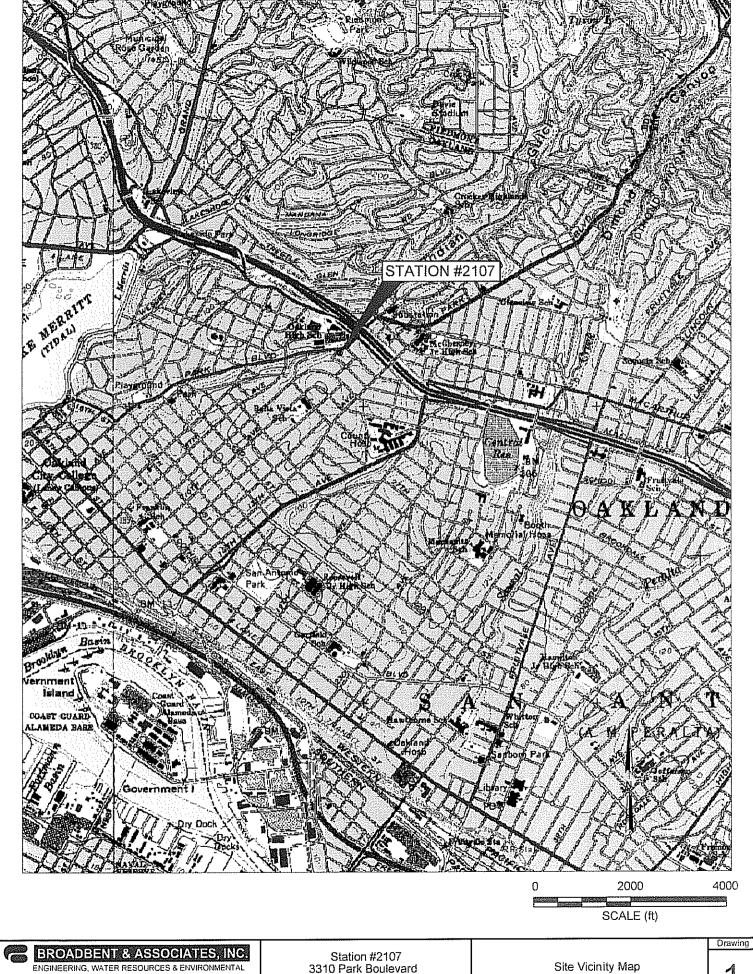
7.0 CLOSURE

This document has been prepared for the exclusive use of Atlantic Richfield Company. The findings presented in this report are based upon the observations of Stratus field personnel, points of investigation and results of laboratory tests performed by Test America Analytical Testing Corporation (Morgan Hill, 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.

8.0 REFERENCES

- ACEH, 15 April 2003. Fuel Leak Case No.RO0002526, Arco #2107, 3310 Park Blvd., Oakland, CA 94610. Letter to Atlantic Richfield Company.
- ACEH 30 August 2004. Fuel Leak Case No.RO0002526, Arco #2107, Active Automobile Service Station at 3310 Park Blvd., Oakland, California. Letter to Atlantic Richfield Company.
- ACEH, 10 January 2005. Fuel Leak Case No.RO0002526, ARCO #2107, Active Service Station at 3310 Park Blvd., Oakland, California Response to Report and Workplan. Letter to Atlantic Richfield Company.
- ACEH, 16 October 2006. Fuel Leak Case No.RO0002526, ARCO #2107, Active Service Station at 3310 Park Blvd., Oakland, California Work Plan Approval. Letter to Atlantic Richfield Company.
- California Regional Water Quality Control Board, San Francisco Bay Region, June 1999. East Bay Plain Groundwater Basin, Beneficial Use Evaluation Report, Alameda and Contra Costa Counties, CA.
- Muir, Kenneth S., 1993. Classification of Groundwater Recharge Potential in the East Bay Plain, Alameda County, California. Alameda County Flood Control and Water Conservation District.
- URS, 29 October 2003. *Addendum to Work Plan for Additional Investigation*. Letter to ACEH on behalf of Atlantic Richfield Company.
- URS, 11 March 2004. Second Addendum to Work Plan for Additional Investigation. Letter to ACEH on behalf of Atlantic Richfield Company.

- URS, 12 August 2004. Site Investigation Report and Well Installation Workplan, Atlantic Richfield Company Service Station #2107, 3310 Park Boulevard, Oakland, California, Fuel Leak Case No. RO0002526, URS Project No. 38486908.0013601. Letter to ACEH on behalf of Atlantic Richfield Company.
- URS, 30 November 2004. Additional Site Investigation Report and Workplan for Offsite Investigation, Atlantic Richfield Company Service Station #2107, 3310 Park Boulevard, Oakland, California, Alameda County Case No. RO-0002526. Letter to ACEH on behalf of Atlantic Richfield Company.
- URS, 5 April 2005. Conduit and Well Survey Report and Work Plan Addendum for Offsite Investigation, Atlantic Richfield Company Service Station #2107, 3310 Park Boulevard, Oakland, California, Alameda County Case No. RO-0002526. Letter to ACEH on behalf of Atlantic Richfield Company.



1324 Mangrove Ave. Suite 212, Chico, California Project No.: 06-08-614 Date: 8/24/07 Station #2107 3310 Park Boulevard Oakland, California

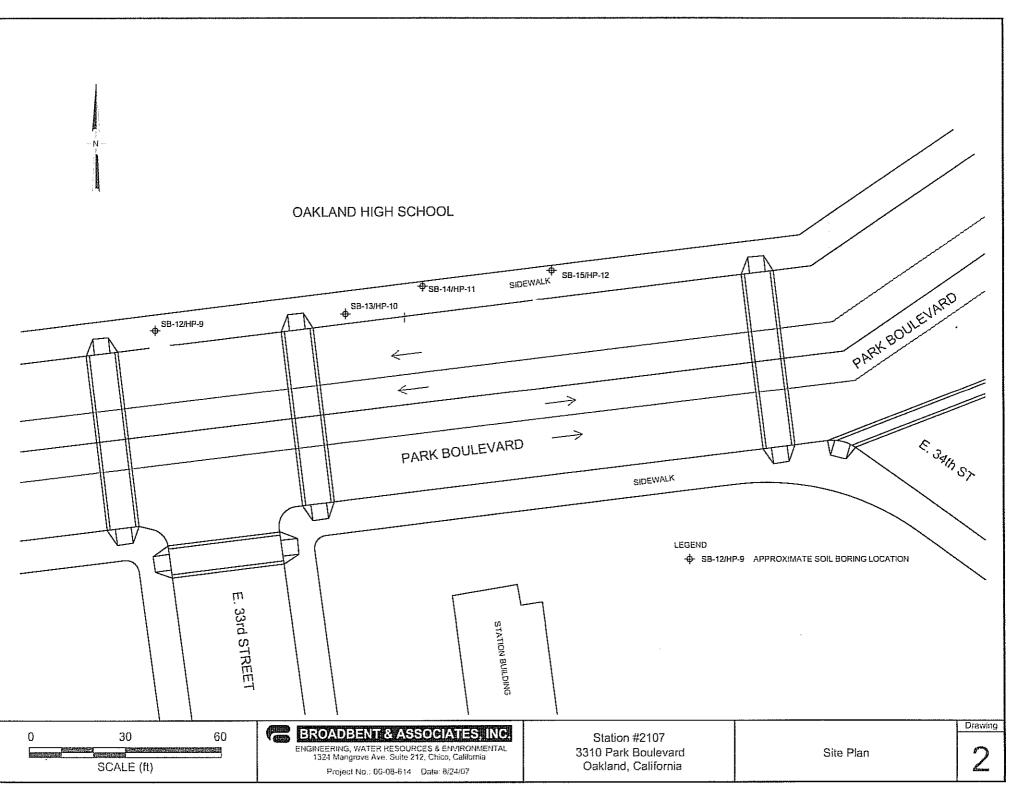


Table 1. Summary of Depth-Discrete Soil Sampling Data BP Service Station No. 2107 3310 Park Boulevard, Oakland, California (ACEH Case No. RO0002526)

						Laborat	ory Analy	tical Res	ults (mg/k	:g)				
						Total								
Boring I.D.	Date	GRO	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	ETBE	TBA	TAME	Ethanol	EDB	1,2 DCA
SB12-9	6/26/2007	<0.10	<0.0050	<0.0050	<0.0050	<0.0050	< 0.0050	<0.0050	<0.0050	<0.020	<0.0050	< 0.10	<0.0050	< 0.0050
SB12-15	6/26/2007	<0.10	<0.0050	<0.0050	<0.0050	<0.0050	0.0087	<0.0050	<0.0050	<0.020	<0.0050	<0.10	<0.0050	<0.0050
SB12-23	6/26/2007	<0.10	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	<0.10	<0.0050	<0.0050
SB12-27	6/26/2007	<0.10	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	< 0.10	<0.0050	<0.0050
SB13-11	6/25/2007	<0.10	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	<0.10	<0.0050	<0.0050
SB13-15	6/25/2007	<0.10	<0.0050	<0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	<0.10	<0.0050	<0.0050
SB13-21	6/25/2007	<0.10	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	<0.10	<0.0050	<0.0050
SB13-29	6/25/2007	<0.10	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	<0.10	<0.0050	<0.0050
SB14-9	6/26/2007	<0.10	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	< 0.10	<0.0050	<0.0050
SB14-15	6/26/2007	<0.10	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	<0.10	<0.0050	<0.0050
SB14-19	6/26/2007	<0.10	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	<0.10	<0.0050	<0.0050
SB14-29	6/26/2007	<0.10	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	< 0.10	<0.0050	<0.0050
SB15-9	6/25/2007	< 0.10	<0.0050	<0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	<0.10	<0.0050	<0.0050
SB15-17	6/25/2007	<0.10	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	< 0.10	<0.0050	<0.0050
SB15-23	6/25/2007	<0.10	<0.0050	<0.0050	<0.0050	<0.0050	0.0065	<0.0050	<0.0050	<0.020	<0.0050	<0.10	<0.0050	<0.0050
SB15-29	6/25/2007	<0.10	<0.0050	<0.0050	<0.0050	< 0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	< 0.10	<0.0050	< 0.0050
Soil Quality O	5.0	1.0	42	29	17	5.0	0.8	13	12	13		0.05	0.5	

EDB = 1,2-Dibromoethane

1,2 DCA = 1,2 Dichloroethane

TAME = Tertiary amyl methyl ether

TBA = Tertiary butyl alcohol

GRO = Gasoline Range Organics, C4-C12

DIPE = Di-isopropyl ether

ETBE = Ethyl tert-butyl ether

MTBE = Methyl tert-butyl ether

^{* =} Water Quality Objectives compiled from the CRWQCB's A Compilation of Water Quality Goals - August 2003 and from other CRWQCB sources.

Table 2. Summary of Depth-Discrete Ground-Water Sampling Data BP Service Station No. 2107 3310 Park Boulevard, Oakland, California (ACEH Case No. RO0002526)

						Labora	itory Anal	lytical Re	sults (μg/	l)				
						Total								
Boring I.D.	Date	GRO	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	ETBE	TBA	TAME	Ethanol	EDB	1,2 DCA
HP9-13	6/26/2007	51 ¹	<0.50	< 0.50	<0.50	<0.50	67	<0.50	<0.50	<20	<0.50	<300	<0.50	<0.50
HP9-21	6/26/2007	<50	<0.50	<0.50	<0.50	<0.50	7.4	<0.50	<0.50	<20	<0.50	<300	<0.50	<0.50
HP10-16	6/26/2007	<50	<0.50	<0.50	<0.50	<0.50	0.78	<0.50	<0.50	<20	<0.50	<300	<0.50	<0.50
HP10-24	6/26/2007	<50	0.80	<0.50	<0.50	<0.50	50	<0.50	<0.50	<20	<0.50	<300	<0.50	<0.50
HP11-24	6/26/2007	59	0.63	<0.50	<0.50	<0.50	66	<0.50	<0.50	<20	<0.50	<300	<0.50	<0.50
HP12-19	6/25/2007	<50	<0.50	<0.50	<0.50	<0.50	30	<0.50	<0.50	<20	<0.50	<300	<0.50	<0.50
HP12-25	6/25/2007	84 1	<1.0	<1.0	<1.0	<1.0	110	<1.0	<1.0	<40	<1.0	<600	<1.0	<1.0
Water Quality Objectives*		5.0	1.0	42	29	17	5.0	0.8	1111131111	12.	13		0.05	0,5

EDB = 1,2-Dibromoethane 1,2 DCA = 1,2 Dichloroethane

TAME = Tertiary amyl methyl ether

TBA = Tertiary butyl alcohol

GRO = Gasoline Range Organics, C4-C12

DIPE = Di-isopropyl ether

ETBE = Ethyl tert-butyl ether

MTBE = Methyl tert-butyl ether

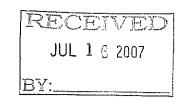
¹ = Hydrocarbon result partly due to individual peak(s) in quantitation range

^{* =} Water Quality Objectives compiled from the CRWQCB's A Compilation of Water Quality Goals - August 2003 and from other CRWQCB sources.

APPENDIX A

STRATUS SUBSURFACE ASSESSMENT DATA PACKAGE
(Includes Drilling Permit, Obstruction Permit, Excavation Permit, Traffic Control Permit, Site Plan, Field Data Sheets, Boring Logs, Borehole Sampling Logs, and Certified Laboratory Analytical Report with Chain-of-Custody Documentation)





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

July 15, 2007

Mr. Tom Venus Broadbent & Associates, Inc. 1324 Mangrove Avenue Chico, California 95926

Re:

Subsurface Assessment Data Package, ARCO Service Station No. 2107, located at 3310 Park Boulevard, Oakland, California (utility locating and assessment activities performed between May 30 and June 26, 2007)

General Information

Data Submittal Prepared / Reviewed by: Scott Bittinger / Jay Johnson

Phone Number: (530) 676-2062

Date: May 30, 2007 Arrival: 10:00 Departure: 11:15

On-Site Supplier Representative: Scott Bittinger

Scope of Work Performed: Health and safety meeting. Meet with utility locating contractor at

site to clear boring locations. Borings were subsequently marked for USA clearance.

Variations from Work Scope: None noted Weather Conditions: Cloudy, warm Unusual Field Conditions: None noted

Date: June 12, 2007 Arrival: 11:20 Departure: 11:40

On-Site Supplier Representative: Allan Dudding

Scope of Work Performed: Check work area for USA marks

Variations from Work Scope: None noted

Weather Conditions: Not noted

Unusual Field Conditions: None noted

Date: June 25, 2007 Arrival: 07:10 Departure: 19:00

On-Site Supplier Representative: Scott Bittinger and Collin Fischer

Scope of Work Performed: Health and safety meeting. Set up and remove traffic control equipment. Cored concrete at 8 drilling locations. Air knifed 4 boring locations (SB-13, SB-14,

SB-15, and HP-12). Completed 3 direct push borings (SB-13, SB-15, HP-12).

Variations from Work Scope: None noted Weather Conditions: Sunny, warm Unusual Field Conditions: None noted

Date: June 26, 2007 Arrival: 06:45 Departure: 18:50

On-Site Supplier Representative: Scott Bittinger and Collin Fischer

Scope of Work Performed: Health and safety meeting. Set up and remove traffic control equipment. Air knifed 4 boring locations (SB-12, HP-9, HP-10, and HP-11). Completed 5 direct push borings (SB-12, SB-14, HP-19, HP-10, HP-11).

Variations from Work Scope: Boring SB-12 terminated at 28 feet bgs instead of 30 feet bgs.

Weather Conditions: Sunny, warm Unusual Field Conditions: None noted

This submittal presents the tabulation of data collected in association with the installation of one vapor extraction well. The attachments include field data sheets, boring logs, hydropunch boring sampling logs, drilling permit, traffic control permit, obstruction permit, excavation permit, site plan, chain of custody documentation and certified analytical results. The information is being provided to BP-ARCO's Scoping Supplier for use in preparing a report for regulatory submittal. This submittal is limited to presentation of collected data and does not include data interpretation or conclusions or recommendations. Any questions concerning this submittal should be addressed to the Preparer/Reviewer identified above.

TONAL GEO

Scott G. Bittinger

No. 7477

Sincerely,

STRATUS ENVIRONMENTAL, INC.

Scott G. Bittinger, P.G. Project Geologist

Attachments:

- Field Data Sheets
- Boring Logs
- Borehole Sampling Logs
- Drilling Permit
- Obstruction Permit
- Excavation Permit
- Traffic Control Permit
- Site Plan
- Chain-of-Custody Documentation
- Certified Analytical Results

Cc: Paul Supple, BP/Arco

on gife 10:00 to locate off site utilities in sidewalk of west bound Park Blud.

Cloudy, 600 No parking is allowed adjacent to sidewalk... area has a red-painted curb.

A street light wondrit is located about 13" below 5 moder within a 2" words to pipe, Approx 18" with of curb.

(ruz Bros. verified locations of gas line as being that 1.5-2' south of curb only, within asphalt driving lane.

Spin drain, is generally 5't below grade

That is present near sidewall (work area.

Storm drain is about 12" in diameter.

SB-1445B-15 westerns.

apoke with justice of Hogh 5 charles School with out for summer on June 13.

Buring SB-13/HP-10 73 proposed north of shorm drain SB-12/HP-9 73 proposed south of shorm drain

Of 15th 11:15

	<u> </u>
r-,	Deput 4:40, Arrive at site at 7:10
	Meet Flash Safety at 7:20 and oblain fraffic
	Control equipment. Begin Set-up
	8:00 drill läir Knife over a Gillin from Straks anive
	HAS meeting, than set-up work area, Begin concerts
	Coming at 9:00 & gir Knifing at 9:30
	Paul from BP nsik 10:20 & Rob Miller
This has been seen as the second of the seco	from Groud Grant ourity 10:35
	Ar Knife 5B-15 to 6.5. More air Knife to SB-14 (1/200)
	Begin grophis SB-15.
***************************************	City outland moity (1:00 for inspections, leavy 11:05
	Paul & Roby 1/1,50
	Claud horing SB-13 to 7131 (12:55) fruits
	SB-15 of grant 13'00, short bush break,
	13:35: Begin air Knifing HP-12 to geoprobing SB-13
	15:30 Finish growting SB-13 & gir Knifing HP-12 to 66gs
	18:00 finish HP-12 4 growt up. also air Knifed SB-14 to 6'4".
	also air Knifed S.B-14 to 6'4".
	Pack up traffic equipment & depart.
	9/15/12 19:00
	5 W Gray

Arw 2107	6-26-07
Onsile 6:45, Collin from 5/2	his maile 7 in Par
Setting up traffic control.	RSI mines 7:30
Setting up traffit control, H&S, meeting. Setup eguip	mud, Begin air Kaiting
SB-12 of 8; 20 \$ Geo purl Finish airknihing 56-12 at 9:20	ing 5B => 7'4"
Erth Finish geo probing & growing	
- Fruith air Knifing BR 9 67 211	(10:45)
Begin geopohing 5B-12 at 11:3 HRIV at 11:30 finish 5B-12 a	
12:15 Begin HP- 9 = expose Sucen twaits	
13:20 finish clean HP-10	0 6 10",
14:30 finish vac clearing HP	
Sdroms of Soil, 2 droms	of rinside water
Finish HP-104 HP-11 (5100pm)	
grant & part holes, take doe	in fraffice control equipment
Depot site 18:50 \$	
travel to Flash Safety & return tra	fic control equipment & 19:45
Sat Cothing	

,

: 		BOR	EHO	LE S.	AMPLIN	G LOG						HP-9		
STRATUS Projec				Si	ite: ARCO Si	ation #210	7			Drillin	ıg Comp	any: RSI Drilling		
				33	310 Park Bou	devard, Oa	klan	d, CA		Driller				
Date: June 26, 200	07									Field (Geologis	t: Scott Bittinger		
Drilling Rig:		1	Georg	robe 660	<u> </u>	1	D⊷ii	lling Mo	thod:			Direct Push		
Borehole Diamete	r:		2 inch		nu .		Soil	Samul	Equipme	nt:		NA NA		
Total Depth:	•••		23 fee						ampling Equipment: Hydropunch TM					
				<i>Q−</i>	We	II Complet								
Slotted Interval:					· · · · · · · · · · · · · · · · · · ·	•		Casing	Material:					
Filter Pack Mater	ial:							Casing Diameter:						
Seal Material:						~-		Slot Si	ze:					
Backfill Material:					Neat Cement				D					
Sample ID	Depth (ft.)	Sam Inter	val	% Rec.	Time	PID (ppm)	Soi Cla	ss/	Descript	10n:				
		(ft.	.)				Wn	ter						
HP9-13	13	10.5-	14.5				Water		5 voas					
HP9-21	21	19-2	23		-		11	/ater	5 voas					
1117-21	- 41	17	<u> </u>				γī	arci	2 4042					
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		,		1										
												E. HISTORIAN HOUSE WEST CO.		
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			-											
									5 iii	TRAT	US Luic			

		BORJ	EHOL	ES.	AMPLIN	MPLING LOG						HP-10			
STRATUS Projec	t No.: E-21	107		Si	ite: ARCO St	tation #210	7			Drilling Company: RSI Drilling					
				33	310 Park Bou	levard, Oa	klan	d, CA		Drille	r: Art				
Date: June 26, 200	07									Field	Geologis	st: Scott Bittinger			
				Ш.								,			
Drilling Rig:			Geoprob		00			lling Me				Direct Push			
Borehole Diamete	r:		2 inches						Equipme			NA			
Total Depth:			26 feet b	gs					pling Equi	ipment	:	Hydropunch TM			
				Well Completion Data											
Slotted Interval:								Casing							
Filter Pack Mater	ial:								Diameter:						
Seal Material:								Slot Si	ze:						
Backfill Material:					Neat Cement		!		l			·			
Sample ID	Depth	Samı		%	Time	PID	Soi		Descript	ion:					
	(ft.)	Inter		ec.		(ppm)	Cla Wa								
		(ft.	'				VY II	ıer							
							_								
HP10-16	16	14-1	8				11	Vater -	5 voas						
111 10-10	10	14-1	-				¥1		2,003						
HP10-24	24	22-2)6				11	Vater	5 voas						
FIL 10°24	++ئـــــــــــــــــــــــــــــــــــ	22-2	.0				· · · · · ·	raici	۸092 د						
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	E	3ORI	EHO!	LE S.	AMPLIN	G LOG						HP-11		
STRATUS Project No	o.: E-21	07			ite: ARCO S					Drilling Company: RSI Drilling				
				33	310 Park Bot	ılevard, Oa	kland	l, CA		Driller	:: Art			
Date: June 26, 2007										Field (Geologis	t: Scott Bittinger		
										· · · · · ·				
Drilling Rig:				obe 660	00		Drilling Method:					Direct Push		
Borchole Diameter:			2 inch				Soil Sample Equipment:					NA		
Total Depth:			26 fee	t bgs					pling Equi	ng Equipment: Hydropunch TM				
					We	ll Complet	ion D							
Slotted Interval:									Material:					
Filter Pack Material:									Diameter	:				
Seal Material:					N. C.	01		Slot Siz	ze:					
Backfill Material:	41.	· · · · · · · · · · · · · · · · · · ·	.1	%	Neat Cement				D	·				
	epth ft.)	Samp Inter (ft.	val	Rec.	Time	PID (ppm)	Soi Clas Wat	is/	Description:					
HP11-24 2	24	22-2	6				W	ater	5 yoas			·		
														
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									S	TRAT IRONMENIA	US UNIC			

		BOR	EHOL	ES.	AMPLIN	G LOG						HP-12	
STRATUS Projec	t No.: E-2	107			ite: ARCO S					Drilling Company: RSI Drilling			
				3.	310 Park Bot	ılevard, Oa	ıklan	d, CA		Drille	r: Art	<u>-</u>	
Date: June 25, 20	07									Field	Geologis	st: Scott Bittinger	
Drilling Rig:			Geopro		00		Drilling Method:					Direct Push	
Borehole Diamete	r:		2 inches				Soil Sample Equipment:					NA	
Total Depth:			27 feet l	bgs			Wa	ter Sam	ıpling Equ	oling Equipment: Hydropunch TM			
					We	ll Complet	ion D	ata					
Slotted Interval:								Casing	g Material:				
Filter Pack Mater	ial:								g Diameter	:			
Seal Material:								Slot Si	ize:				
Backfill Material:		Sam			Neat Cement								
Sample ID	Depth	%	Time	PID	Soi		Descript	ion:					
	(ft.)	Inter		Rec.	c. (ppm) Class/								
	(ft.)					Water							
		9-1	3						Failed sa	mple at	tempt		
		17-2											
HP12-19	19				V	/ater	5 voas						
HP12-25	25	23-2	27				V	/ater	5 voas				
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Boring No. SB-12

Sheet <u>1</u> of <u>2</u>

Client	ARCO Station No. 2107	Date <u>6/26/2007</u>	
Address	3310 Park Boulevard	Drilling Company RSI	rig type: Geoprabe 6600
	Oakland, CA	Drilling Foreman Art	
Project No.	E-2107	Method Direct Push	hole dlam.: 2"
Logged By:	Scott Bittinger		

grout: 0 ft. to 28 ft.

		T 51			Well	l	ļ		T
	Sample	Blow		nple	Canstru	Depth	LITHO	Descriptions of Materials	PID
Type	No.	Count	Time	Recov.	ct.	Scale	COLUMN	and Conditions Concrete	(PPM)
						_ 1			
						,			
						*			
						_ 3		air knife to 7,2' bgs. Not logged.	
						_ 4			
						_ 5		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
						6			
					1		1		·
						_ 7			
					1			CLAYEY SAND with SILT, 7.2'-8.5', light olive brown, 60% fine grained sand, 40% silty clay, moist	
					1	_ °			·
		ļ				a	SP-SC	SAND with CLAY 8.5'-9.2', light olive brown, 90% fine grained sand, 10%	
s	SB12-9		11:36			1 0		silty clay, damp SILTY CLAY 9.2'-11.2', light olive brown, 0-10% fine grained sand, dry,	o
-		[1			stiff	\ -
	·					. 1 1			
s	SB12-11		11:38			1 2	SP-SC	SAND with CLAY and SILT, 11.2'-14', dark yellowish brown, 85-90% fine	o
								grained sand, 10-15% silty clay, damp to wet	
						1 3			
						1 4			
					ĺ	1		CLAYEY SAND 14'-15.8', grayish brown, 50-60% fine grained sand,	·
	*************					1 5	sc	40-50% silty clay, moist	
s	SB12-15		11:42			1 6			٥
						1			
						1 7			
s	SB12-17		11:45			1 8	sw-sc	SAND with CLAY and SILT 15.8'-22', fine to coarse grained, 5% fine gravel,	0
								10-15% silly clay, damp to wet	
					-	1 9			·
s	SB12-19		11:47			2 0			0
								Comments: Sail continuously recovered in continuings. Total death of being in	
								Comments: Soil continuously recovered in acrylic liners. Total depth of boring is 28 feet bgs. Boring backfilled to surface grade with neat cement.	•
								<u>-</u>	
								STRATUS	
								ENVIRONMENTAL, INC.	
L	-								

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Boring No. SB-12

Sheet 2 of 2

Client	ARCO Station No. 2107	Date 6/26/2007		
Address	3310 Park Boulevard	Drilling Company RSI	rig type: Geoprobe 6600	
	Oakland, CA	Drilling Foreman Art		
Project No.	E-2107	Method Direct Push	hole diam.: 2"	
Logged By:	Scott Bittinger			

S	ample	Blow	Sar	nple	Well Construc	Depth	LITHO	Descriptions of Materials	PID
Туре	No.	Count	Time	Recov.		Scale	COLUMN	and Conditions	(PPM)
				**********		1	sw-sc	SAND with CLAY and SILT 15.8'-22', fine to coarse grained, 5% fine gravel, 10-15% silty clay, damp to wet	
S	SB12-21		11:55			2 2 2 3	SP-SC	SAND with CLAY and SILT 22'-23', fine grained, 10-15% silty clay, damp to wet	0
S	SB12-23		11:57			2 4	CL	SILTY CLAY 23'-24', light olive brown with Iron oxide staining, dry, stiff	0
		******				5 			
<u>S</u>	SB12-25		11:59			2 6 2 7	CL	SILTY CLAY 24'-28', very dark gray, dry to moist, stiff	0
S	SB12-27		12:01			8			O
						_			
						<u> </u>			
						_ _			
						_			
						_			<u> </u>
						<u>-</u>			
									

Boring No. SB-13

Sheet <u>1</u> of <u>2</u>

Client	ARCO Station No. 2107	Date 6/25/2007	
Address	3310 Park Boulevard	Drilling Company RSI	rig type: Geoprobe 6600
	Oakland, CA	Drilling Foreman Art	
Project No.	E-2107	Method Direct Push	hole diam.: 2"
Logged By:	Scott Bittinger		

grout: 0 ft. to 30 ft.

5	Sample	Blow	San	nple	Well	Depth		Descriptions of Materials	PID
Type	No.	Count	Time	Recov.	Constru	Scale	LITHO	and Conditions	(PPM)
						1		Concrete	
	*************					_ 2 2			
						3 4		air knife to 7.2' bgs. Not logged.	
						5			
,	***********				-	′ _ 8		CLAYEY SAND 7.2'-10', very dark gray, 55% fine grained sand, 45% clayey fines, damp	
s	SB13-9		13:53			9 1 o			1
	0010-3		10.00			1 1 1 1		SILTY CLAY 10'-12', alive brown, moist, stiff	
S	SB13-11		13:59			1 2		SANDY CLAY with SILT 12'-12.8', olive gray, 65% silty clay, 35% fine grained sand, moist, stiff	3.5
S	SB13-13		14:02			1 3 1 4		SILTY CLAY 12.8'-13.6', olive gray, moist, stiff SANDY CLAY with SILT 13.6'-14', dark yellowish brown, 70% silty clay, 30% fine grained sand, moist	
						1 5	1	CLAYEY SAND 14'-16.5', dark yellowish brown, 70-90% fine grained sand, 10-30% silty clay, damp	
S	SB13-15		14:07			1 6 1 7		SAND with CLAY and SILT, 16.5'-18', dark yellowish brown, fine to coarse	0
s	SB13-17		14:09				sw-sc	grained, 5% fine gravel, 10-15% silty clay, damp to wet	0
	***					<u></u>	CL	SILTY CLAY 18'-20', light olive gray with iron oxide staining, moist, stiff	
S	SB13-19		14:12		[2 0	<u> </u>	Comments: Soil continuously recovered in acrylic liners. Total depth of boring i	<u>0</u> s
								30 feet bgs. Boring backfilled to surface grade with neat cement.	
-								STRATUS ENVIRONMENTAL, INC.	

Boring No. SB-13

Sheet 2 of 2

Client	ARCO Station No. 2107	Date 6/25/2007		
Address	3310 Park Boulevard	Drilling Company RSI	rig type: Geoprobe 6600	
	Oakland, CA	Drilling Foreman Art		
Project No.	E-2107	Method Direct Push	hole diam.: 2"	
Logged By:	Scott Bittinger			

Sample Blow Type No. Count Time Recov. Time Time Recov. Time Recov.										
Type No. Count Time Recov. t. Scale COLUMN and Conditions S SB13-21 14:14 2 1 SC CLAYEY SAND with SILT 20'-22', light olive gray, fine to medium grained, 25% silty clay, damp S SB13-23 14:16 2 3 SW-SC SAND with CLAY and SILT 22'-26.3', fine to coarse grained, trace gravel, 10-12% silty clay, damp S SB13-25 14:19 2 6 2 7 CL SILTY CLAY 26.3'-30', very dark gray, dry to moist, stiff S SB13-27 14:22 2 8 CL SILTY CLAY 26.3'-30', very dark gray, dry to moist, stiff	PID	Descriptions of Materials	LITHO	Depth	Well Construc	nple	Sar	Blow	ample	5
S SB13-21	(PPM)	and Conditions	COLUMN	Scale		Recov.	Time	Count	No.	Туре
S SB13-23 14:16 2 5 SW-SC SAND with CLAY and SILT 22'-26.3', fine to coarse grained, trace gravel, 10-12% silty clay, damp S SB13-25 14:19 2 6 2 7 CL SILTY CLAY 26.3'-30', very dark gray, dry to moist, stiff S SB13-27 14:22 2 8 2 9	l <u>.</u> 0	CLAYEY SAND with SILT 20'-22', light olive gray, fine to medium grained, 25% silty clay, damp					14:14	**************	SB13-21	s
S SB13-23 14:16 2 4 2 5 S SB13-25 14:19 2 6 2 7 2 8 2 7 2 8 2 8 2 9 CL SILTY CLAY 26.3'-30', very dark gray, dry to moist, stiff		SAND with CLAY and SILT 22'-26.3', fine to coarse grained, trace gravel,	sw-sc							
S SB13-25 14:19 2 6 S SB13-27 14:22 CL SILTY CLAY 26.3'-30', very dark gray, dry to moist, stiff Z 9	0						14:16		SB13-23	S
S SB13-27 14:22 2 8 2 SILTY CLAY 26.3-30, Very dark gray, dry to moist, still 2 9	0						14;19		SB13-25	s
<u> </u>	0	SILTY CLAY 26.3'-30', very dark gray, dry to moist, stiff	CL	7 7			14.22		6012 27	-
							14,22		3013-2/	
	<u>0</u>		1				14:26		SB13-29	S
				<u> </u>						
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Boring No. SB-14

Sheet 1 of 2

Client	ARCO Station No. 2107	Date <u>6/26/2007</u>	
Address	3310 Park Boulevard	Drilling Company RSI	rig type: Geoprobe 6600
	Oakland, CA	Drilling Foreman Art	
Project No.	E-2107	Method Direct Push	hole diam.: 2"
Logged By:	Scott Bittinger	·	

grout: 0 ft. to 30 ft.

	Samula	Blow	6.00	nnin	Well	Donth		Descriptions of Materials	Bib
	Sample	1		nple	Constru		LITHO	Descriptions of Materials	PID
Type	No.	Count	IIMB	Recov.	ct	Scale	COLUMN	and Conditions Concrete	(PPM)
						1			
						l — "			
				 	1	— ²			
						з		air knife to 6.5' bgs. Not logged,	
						4		***************************************	
						一 ₅			
				f		—			
						6		***************************************	
						<u> _ 7</u>			
•••••						l — .			
						В	SC	CLAYEY SAND with SILT, 6.5'-11.5', light olive brown 6.5'-10', dark yellowish	
						— ₉		brown 10'-11.5', 50-65% fine grained sand, 35-50% silty clay, moist	
				 	1				
S	SB14-9		8:44			1 0			
						<u> </u>			
					-	'		SILTY CLAY with SAND 11.5'-12', dark yellowish brown, 85% silty clay,	
s	SB14-11		8:46			1 2	CL	15% fine grained sand, moist	
							SC	CLAYEY SAND with SILT, 12'-13.3', grayish brown, 60% fine grained sand,	
						1 3		40% silty clay, moist SILTY CLAY 13.3'-15', grayish brown, 8% fine grained sand, dry to moist,	
s	SB14-13		8:48			1 4	CL	stiff	
						1 5	SP-SC	SAND with CLAY and SILT 15'-16', fine grained, 7-10% silty clay, damp	
s	SB14-15		8:50			1 6		DAND WITH OLA 1 and GILL 15-10, line grained, 1-10% sitty day, damp	
						—	CL	SANDY CLAY with SILT 16'-17.2', grayish brown, 80% silty clay, 20% fine	
	·					1 7		grained sand, moist	
s	SB14-17		8:52			1 B	sc	CLAYEY SAND with SILT, 17.2'-20', grayish brown to light olive brown,	
					1	—		55-65% fine grained sand, 35-45% silty clay, moist	
	**					1 9			
s	SB14-19		8:54			2 0			
	001110		0,01	I	<u> </u>		<u> </u>		
								Comments: Soil continuously recovered in acrylic liners. Total depth of boring i	is
								30 feet bgs. Boring backfilled to surface grade with neat cement.	
								The state of the s	
								STRATUS	
								ENVIRONMENTAL, INC.	

Boring No. SB-14

Sheet 2 of 2

Client	ARCO Station No. 2107	Date 6/26/2007		
Address	3310 Park Boulevard	Drilling Company RSI	rig type: Geoprobe 6600	
	Oakland, CA	Drilling Foreman Art		
Project No.	E-2107	Method Direct Push	hole diam.: 2"	
Logged By:	Scott Bittinger			

					Well		<u> </u>		T 1
	ample	Blow		nple	Construc		LITHO	Descriptions of Materials	PID
Туре	No.	Count	Time	Recov.	t.	Scale	SP-SC	and Conditions SAND with CLAY and SILT 20'-21', fine grained, 5-10% silty clay, damp to	(PPM)
						1		wet	
s	SB14-21		8:58						0
<u>~</u> -							sw-sc	SAND with CLAY and SILT 21'-26.5', fine to coars grained, 10% fine gravel,	 -
						2 3		10-12% silty clay, damp to wet	
s	SB14-23		9:00			4			0
						5			
s	SB14-25		9:02			6			0
						7			
								SILTY CLAY 26.5'-30', light olive brown/pale yellow with iron oxide stains	
S	SB14-27		9:05			B	CL	26.5'-28', very dark gray 28'-30', dry to moist, stiff	0
						9			

S	SB14-29		9:08						0
						-			
<u> </u>									
]								
 									
						—			
						_			
									-
1									

Boring No. SB-15

Sheet _1_ of _2_

Client	ARCO Station No. 2107	Date <u>6/25/2007</u>	
Address	3310 Park Boulevard	Drilling Company RSI	rig type: Geoprobe 6600
	Oakland, CA	Drilling Foreman Art	
Project No.	E-2107	Method Direct Push	hole diam.: 2"
Logged By:	Scott Bittinger		

grout: 0 ft. to 30 ft.

;	Sample	Blow	San	nple	Well Constru	Depth	LITHO	Descriptions of Materials	PID
уре	No.	Count	Time	Recov.	ct	Scale	COLUMN	and Conditions	(PPM)
								Concrete	
					1	—1		***************************************	
						2			
]				
				 -	-	3		air knife to 6.5' bgs. Not logged.	
						<u> </u>			
						<u>ا</u>			
					1	"			
					1	_ 6		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
						-,			
				i	1				
S	SB15-7		11:28	 	-	— ⁸	CL	SILTY CLAY 6.5'-9.3', dark grayish brown, moist, stiff	0
						— ₉			
					1				
S	SB15-9		11:30		-	1 0	sc	CLAYEY SAND with SILT 9.3'-12', dark yellowish grown, 80% fine to coarse grained sand, 20% silty clay, damp	0_
						1 1		granted denie, 2010 only day, denie	
s	SB15-11		11:33			<u> 1</u> 2			0
	3013-11		11,00		1	- *	sc	CLAYEY SAND 12'-13.5', grayish brown, 85% fine grained sand, 15% silty	<u>-</u>
						1 3		clay, moist	ļ
						1 4			
					1	1	l CL	SILTY CLAY 13.5'-16.5', light olive brown, moist, stiff	
	**					1 5			
						<u> </u>			
					1	_			
					-	1 7	SP-SC	SAND with CLAY and SILT 16.5'-18', dark yellowish brown, 85% fine grained	
5	SB15-17		12:20			1 8	0, -00	sand, 5% medium grained sand, 10% silty clay, wet	0
							sw		
					1	1 9	300	SAND with CLAY and SILT 18'-27', fine to coarse grained, 5% fine gravel, 10% silty clay, wet	·
S	SB15-19		12:22			2 0			0
								Comments: Soil continuously recovered in acrylic liners. Total depth of boring it	s
								30 feet bgs. Boring backfilled to surface grade with neat cement.	_



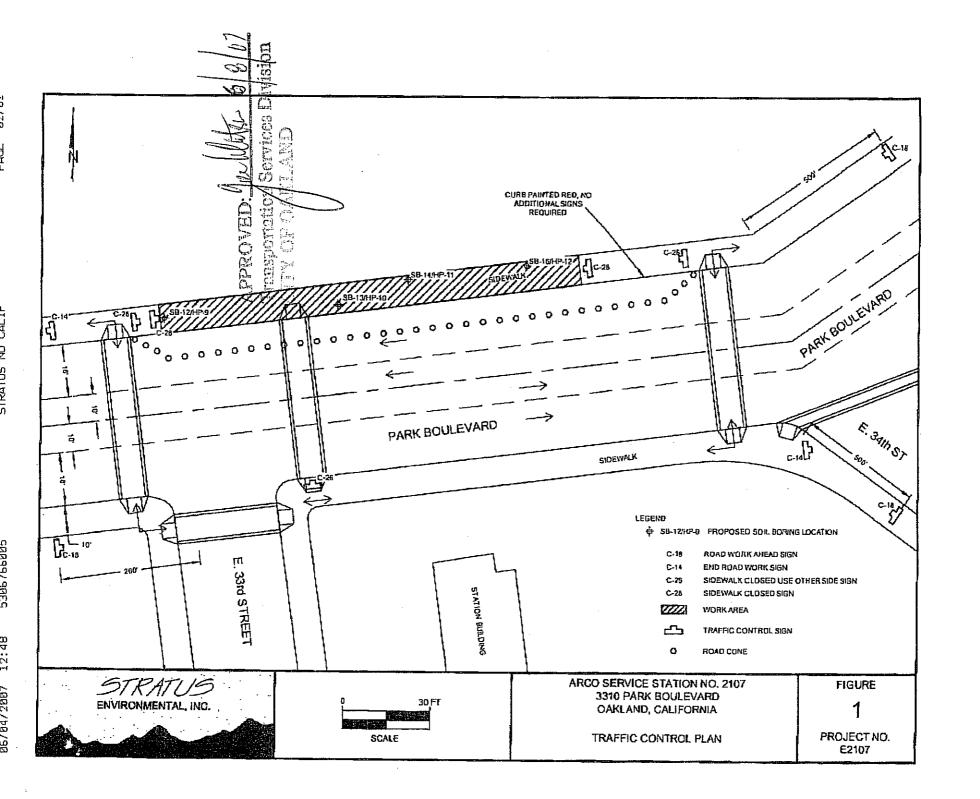
SO	11	R	n	R	١N	G	١.	a	C
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Boring No. SB-15

Sheet <u>2</u> of <u>2</u>

Client	ARCO Station No. 2107	Date 6/25/2007		
Address	3310 Park Boulevard	Drilling Company RSI	rig type: Geoprobe 6600	
	Oakland, CA	Drilling Foreman Art		
Project No.	E-2107	Method Direct Push	hole diam.: 2"	
Logged By:	Scott Bittinger			

	Sample	Blow	Sar	nple	Well	Depth	LITUO	Descriptions of Materials	PID
Туре	No.	Count	Time	Recov.		Scale	COLUMN	and Conditions	(PPM)
		1		i i	Construc	1	SW		1 1



SPECIAL PROVISION 7-10.1 TRAFFIC REQUIREMENTS

Project N	ame:		
Project N	lumber: T	SD-07-01	<i>Φβ</i> <u>/</u> /, _
Reviewe	d By: JV	Vatson <u> 🖊</u>	HILLE
Date: _6/	04/2007_		
Permit go	ood from	6/2 <i>5</i> / <i>2</i> 0	07
to 7/5/	2007	1/	

ADD NEW SUBSECTION TO READ: SP 7-10.1.4 Vehicular Traffic

Attention is directed to Section 7-10.—Public Convenience and Safety, of the City of Oakland Standard Specification for Public Works Construction, 2000 Edition (Include this paragraph for p-jobs, excavation permits or obstruction permits).

The Contractor shall conduct its work in such a manner as to provide public convenience and safety and according to the provisions in this subsection. The provisions shall not be modified or altered without written approval from the Engineer.

Standard traffic control devices shall be placed at the construction zone according to the latest edition of the Work Area Traffic Control Handbook or Caltrans Traffic Manual, Chapter 5 – "Traffic Controls for Construction and Maintenance Work Zone," or as directed by the Engineer.

All trenches and excavations in any public street or roadway shall be back filled and opened to traffic, or covered with suitable steel plates securely placed and opened to traffic at all times except during actual construction operations unless otherwise permitted by the Engineer.

Each section of work shall be completed or temporarily paved and open to traffic in not more than 5 days after commencing work unless otherwise permitted in writing by the Engineer.

Where construction encroaches into the sidewalk area, a minimum of 5 ½ feet of unobstructed sidewalk shall be maintained at all times for pedestrian use. Pedestrian barricades, shelter, and detour signs per Caltrans standards may be required.

The contractor shall conduct its operation in such a manner as to leave the following traffic lanes unobstructed and in a condition satisfactory for vehicular travel during the Obstruction Period. At all times traffic lanes will be restricted and reopened to travel. Emergency access shall be provided at all times.

Street Name Limits	Obstruction Period	North Bound	South Bound	East Bound	West Bound
Park Blvd between E.34 th Street and E.33 rd Street	Mon. – Fri. 9am – 4pm	Sidewalk Closure	N/A	N/A	N/A

The Contractor Shall Also include all check item:

- 1. Design a construction traffic control plan and submit (2) copies to the Engineer for approval prior to starting any work.
- 2. Replace all signs, pavement markings, and traffic detector loops damaged or removed due to construction within 3 days of completion of work or the final pavement lift.
- 3. Provide advance notice to Oakland Police at (510) 615-5874 (24-hrs) and Oakland Fire at (510) 238-3331 (2-rhs) when a single lane of traffic or less is provided on any street.
- 4. Provide 72-hour advance notice to AC Transit at (510) 891-4909 when affecting a bus stop.
- 5. For Caltrans roadways, ramps, or maintained facilities, the Contractor shall obtain appropriate permits and notify the Traffic Management Center 24 hours in advance of any work.
- 6. Flagger control is required. Certified Flagger is required.
- 7. Pedestrian walkway by K-rail, Canopy or Plywood is required. (See detour plan)
- 8. 🛛 Pedestrian traffic shall be maintained and guided through the project at all times.
- 9. Provide advance notice to Business and Residence within 72-hours.
- 10. Allow all traffic movement at intersection.

Nothing specified herein shall prohibit emergency work and/or repair necessary to ensure public health and safety.



EXCAVATION PERMIT

CIVIL ENGINEERING

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

PAGE 2 of 2

Permit valid for 90 days from date of issuance.

:		
PERMIT NUMBER X 0	70 0514	SITE ADDRESS/LOCATION Park Blvd. between 33 rd and 34th
APPROX. START DATE	APPROX. END DATE	24-HOUR EMERGENCY PHONE NUMBER (916) 837-1688
CONTRACTOR'S LICENSE # AN	D CLASS	CITY BUSINESS TAX #
7-57 802334	J 12	2649225
LATTENTION:		
secured an inquiry	identification number issued by USA. The	id Service Aleri (USA) two working days before excavating. This permit is not valid unless applicant has a USA telephone number is 1-806-642-2444. Underground Service Aleri (USA) # 207426
2- 48 hours pri	or to starting work, you M	UST CALL (510) 238-3651 to schedule an inspection.
3- 48 hours prid	or to re-paving, a compacti	on certificate is required (waived for approved slurry backfill).
OWNEWBUILDER		following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to
1 1, as an owner of the property, or Professions Code: The Contractor's provided that such improvements are burden of proving that he did not built 1, as owner of the property, am experiment prior to sale, (3) I have accurate more than once during any	my employees with wages as their sole License Law does not apply to an owner not intended or offered for sale. If how do or improve for the purpose of sale), compt from the sale requirements of the resided in the residence for the 12 mon three-year period. (Sec. 7044 Business colusively contracting with licensed contry who builds or improves thereon, and	who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License law).
		ificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).
Policy # 00 553 7 - 20		ed, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws
comply with such provisions or this p tranted upon the express condition the serform the obligations with respect und and employees, from and against any	ermit shall be deemed revoked. This per at the permittee shall be responsible for a street maintenance. The permittee sha and all suits, claims, or actions brought	rou should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith crinit is issued pursuant to all provisions of Title 12 Chapter 12.12 of the Oakhand Municipal Code. It is all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to all, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers by any person for or an account of any hodily injuries, disease or illness or damage to persons and/or property into or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This d by the Director of the Office of Planning and Building.
hereby affirm that I am licensed und his permit and agreeto its requirement	er provisions of Chapter 9 of Division 3 sts, and that the above information is tru	of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read at and correct under penalty of law.
Signature of Permittee	Agent for D Contractor A Owne	Control of the contro
DATE STREET LAST RESURFACED	SPECIAL PAVING DETAIL REQUIRED? - YES - NO	HOLDAY RESTRICTION? LIMITED OPERATION AREA? (NOV 1 - JAN 1) DYES DING (7AM-9AM & 4PM-6PM) DYES DING
SSUED BY	0	DATE ISSUED
		-1

CITY OF OAKLAND . Community and Economic Development Agency

250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • Fax (510) 238-2263

Applications for which no permit is issued within 180 days shall expire by limitation.

Job Site 3310 PARK BL Parcel# 023 -0394-002-01

Appl# X0700574

Descr Block s/w per approved TCP. And soil borings on Park Blvd

Permit Issued 06/12/07

Application must be routed to the Fire Department Hazardous

Materials Management Program for review and approval.

Work Type EXCAVATION-PRIVATE P

USA #

Util Fund #:

Applent

Owner ATLANTIC RICHFIELD COMPANY

Phone#

Fic# - License Classes--

Contractor RESONANTSONIC

530) 668-2424 802334 C57 A

Arch/Engr

Agent STRATUS/ A DUDDING

Applic Addr 220 N EAST ST., WOODLAND CA

916)837/1688

\$414.25 TOTAL FEES PAID AT ISSUANCE

\$61.00 Applic

\$.00 Process

\$300.00 FCE Mgmt \$.00 Invstq

\$.00 Gen Plan \$.00 Other

\$18.95 Tech Enh

JOB SITE

Date: 06/12/07 Amt Paid: \$414.25 By: SKJ Remister RØ3 Receipt# 118911

CITY OF OAKLAND . Community and Economic Development Agency

250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • Fax (510) 238-2263

Applications for which no permit is issued within 180 days shall expire by limitation.

Job Site	3310	PARK BL	Parc	cel# 023 -0394-0	02-01	Appl#	OB070408
	Applic	ation must be	couted to the 1	l borings on Pa Fire Department eview and approv	Hazardous	Permit Issued	l 06/12/07
Owner ontractor Arch/Engr Agent	ATLANT RESONAL	6/25/07 IC RICHFIELD GO	Appi	ION-METERED cnt Phone# (530) 668-24 (916) 837-16 \$483.10 \$61.00	Expir Eic# 24 8023344 C	ar feet: 200 cation: 06/	27/07 ses
		Commence of the commence of th	JOB SITE	\$.00	Process Gen Plan Other	\$40.00	Rec Mgmt Invstg Tech Enh
TCP needs from the	to be previou	approved by Tr sly approved p	ansportation S lan.	ervices every 30) days or w	henever devia	ted

Applicant:

Issued by:

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: 06/15/2007 By jamesy

Permit Numbers: W2007-0706

Permits Valid from 06/25/2007 to 06/29/2007

Application Id:

Applicant:

1181847294045

City of Project Site: Oakland

Site Location:

3310 Park Blvd, Oakland, CA (north side) 06/25/2007

Completion Date:06/29/2007

Project Start Date:

Phone: 530-676-2067

Stratus Environmental - Scott Bittinger

Property Owner:

3330 Cameron Park Dr #550, Cameron Park, CA 95682 City of Oakland

250 F Ogawa Plaza, Oakland, CA 94612

Phone: 510-258-3466

Client:

same as Property Owner '

Total Due:

\$200.00

Receipt Number: WR2007-0271

Total Amount Paid:

\$200.00

Payer Name: Stratus

Paid By: CHECK

PAID IN FULL

Works Requesting Permits:

Borehole(s) for Investigation-Contamination Study - 8 Boreholes

Driller: RSI Drilling - Lic #: 802334 - Method: other

Work Total: \$200.00

Specifications

Permit Issued Dt Hole Diam Expire Dt Max Depth

Number **Boreholes**

W2007-06/15/2007 09/23/2007 8 3.00 in, 35.00 ft

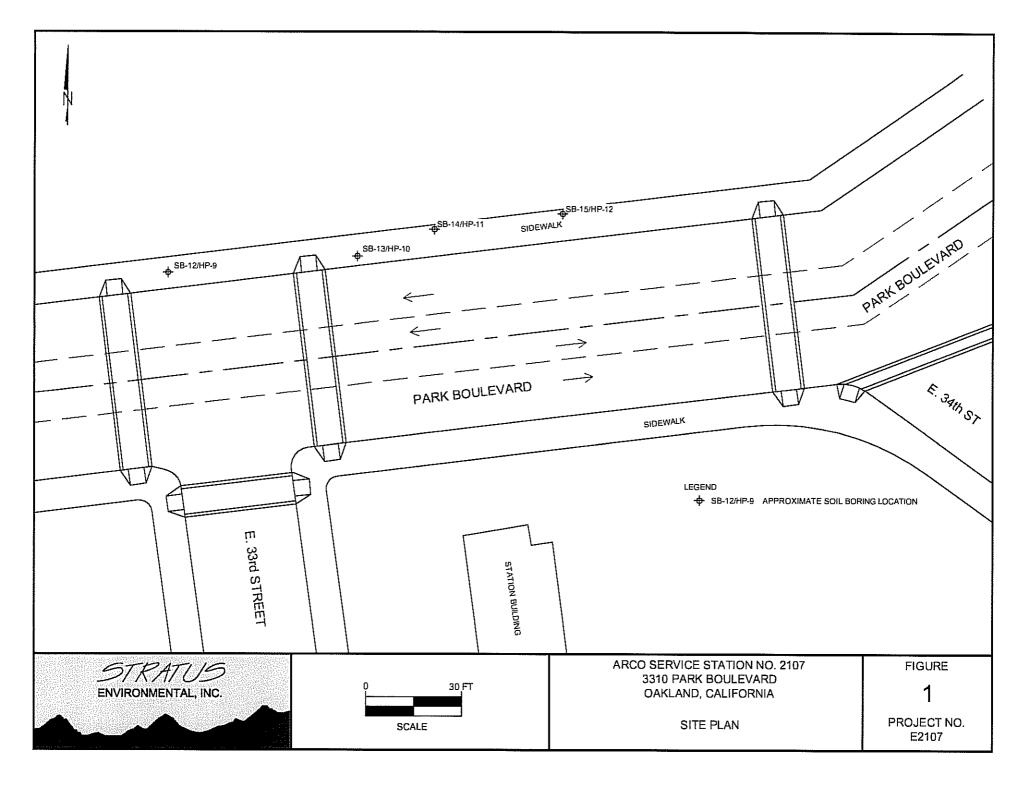
0706

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. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an 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.
- 5. Applicant shall contact James Yoo for an inspection time at 510-670-6633 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.

Alameda County Public Works Agency - Water Resources Well Permit

- 6. 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.
- 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.







10 July, 2007

Jay Johnson Stratus Environmental Inc. [Arco] 3330 Cameron Park Dr., Suite 550 Cameron Park, CA 95682

RE: ARCO #2107, Oakland, CA

Work Order: MQF0804

Enclosed are the results of analyses for samples received by the laboratory on 06/26/07 11:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lisa Race

Senior Project Manager

CA ELAP Certificate # 1210

The results in this laboratory report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the BPGCLN Technical Specifications, applicable Federal, State, local regulations and certification requirements as well as the methodologies as described in laboratory SOPs reviewed by the BPGCLN. This entire report was reviewed and approved for release.





Stratus Environmental Inc. [Arco] Project: ARCO #2107, Oakland, CA MQF0804
3330 Cameron Park Dr., Suite 550 Project Number: GOC27-0006 Reported:
Cameron Park CA, 95682 Project Manager: Jay Johnson 07/10/07 18:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB15-9	MQF0804-01	Soil	06/25/07 11:30	06/26/07 11:30
SB15-17	MQF0804-02	Soil	06/25/07 12:20	06/26/07 11:30
SB15-23	MQF0804-03	Soil	06/25/07 12:27	06/26/07 11:30
SB15-29	MQF0804-04	Soil	06/25/07 12:45	06/26/07 11:30
SB13-11	MQF0804-05	Soil	06/25/07 13:59	06/26/07 11:30
SB13-15	MQF0804-06	Soil	06/25/07 14:07	06/26/07 11:30
SB13-21	MQF0804-07	Soil	06/25/07 14:14	06/26/07 11:30
SB13-29	MQF0804-08	Soil	06/25/07 14:26	06/26/07 11:30

The carbon range for the TPH-GRO has been changed from C6-C10 to C4-C12. The carbon range for TPH-DRO has been changed from C10-C28 to C10-C36. EPA 8015B has been modified to better meet the requirements of California regulatory agencies. These samples were received with no custody seals.





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0804 Reported: 07/10/07 18:55

Total Purgeable Hydrocarbons by GC/MS (CA LUFT) TestAmerica - Morgan Hill, CA

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB15-9 (MQF0804-01) Soil Sampled: 06/	25/07 11:30	Received: 0	6/26/07 11:	30					•
Gasoline Range Organics (C4-C12)	ND	0.10	mg/kg	1	7F28013	06/26/07	06/28/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		97 %	% 65-135		"	n	II	tt	
Surrogate: 4-Bromofluorobenzene		94%	60-12	20	u	"	11	п	
Surrogate: Dibromofluoromethane		97 %	70-12	20	n	11	"	"	
Surrogate: Toluene-d8		100 %	75-12	20	n	n	n	"	
SB15-17 (MQF0804-02) Soil Sampled: 00	6/25/07 12:20	Received:	06/26/07 11	:30					
Gasoline Range Organics (C4-C12)	ND	0.10	mg/kg	1	7F28013	06/26/07	06/28/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		94 %	65-13	35	11	11	11	"	
Surrogate: 4-Bromofluorobenzene		95 %	60-12	20	"	п	и	ft.	
Surrogate: Dibromofluoromethane		100 %	70-12	20	u	n	n	"	
Surrogate: Toluene-d8		99 %	75-12	20	ir	11	"	"	
SB15-23 (MQF0804-03) Soil Sampled: 06	/25/07 12:27	Received:	06/26/07 11	:30					
Gasoline Range Organics (C4-C12)	ND	0.10	mg/kg	1	7F28013	06/26/07	06/29/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		97 %	65-13	35	"	n	11	"	
Surrogate: 4-Bromofluorobenzene		91 %	60-12	20	"	"	n	n	
Surrogate: Dibromofluoromethane		97 %	70-12	20	н	"	"	n	
Surrogate: Toluene-d8		98 %	75-12	20	"	"	"	"	
SB15-29 (MQF0804-04) Soil Sampled: 06	5/25/07 12:45	Received:	06/26/07 11	:30					
Gasoline Range Organics (C4-C12)	ND	0.10	mg/kg	ì	7F28013	06/26/07	06/29/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		102 %	65-13	35	n	11	n	"	
Surrogate: 4-Bromofluorobenzene		92 %	60-12	20	n	"	"	"	
Surrogate: Dibromofluoromethane		100 %	70-120		"	11	n	n	
Surrogate: Toluene-d8		99 %	75-12	20	"	"	11	"	





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0804 Reported: 07/10/07 18:55

Total Purgeable Hydrocarbons by GC/MS (CA LUFT) TestAmerica - Morgan Hill, CA

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB13-11 (MQF0804-05) Soil Sampled: 06/25/	07 13:59	Received:	06/26/07 1	1:30					
Gasoline Range Organics (C4-C12)	ND	0.10	mg/kg	l	7F28013	06/26/07	06/29/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		105 %	65-135		"	n	u	"	
Surrogate: 4-Bromofluorobenzene		91%	60-1.	20	μ	n	0	tt .	
Surrogate: Dibromofluoromethane		103 %	70-1.	20	"	n	"	"	
Surrogate: Toluene-d8		98 %	75-1.	20	"	"	u	**	
SB13-15 (MQF0804-06) Soil Sampled: 06/25/	07 14:07	Received:	06/26/07 1	1:30					
Gasoline Range Organics (C4-C12)	ND	0.10	mg/kg	1	7F28013	06/26/07	06/29/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		101 %	65-1	35	If	"	"	#	
Surrogate: 4-Bromofluorobenzene		92 %	60-120		u	u	"	n	
Surrogate: Dibromofluoromethane		102 %	70-1.	20	IT	0	0	n	
Surrogate: Toluene-d8		98 %	75-1	20	a	"	"	11	
SB13-21 (MQF0804-07) Soil Sampled: 06/25/	07 14:14	Received:	06/26/07 1	1:30					
Gasoline Range Organics (C4-C12)	ND	0.10	mg/kg	1	7F28013	06/26/07	06/29/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		106 %	65-1	35	n	ıt	rr	"	
Surrogate: 4-Bromofluorobenzene		92 %	60-1	20	n	11	"	"	
Surrogate: Dibromofluoromethane		104 %	70-1	20	"	17	n	"	
Surrogate: Toluene-d8		97%	75-1	20	"	17	"	Ir	
SB13-29 (MQF0804-08) Soil Sampled: 06/25/	07 14:26	Received:	06/26/07 1	1:30					
Gasoline Range Organics (C4-C12)	ND	0.10	mg/kg	1	7F28013	06/26/07	06/29/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		103 %	65-1	35	n	ıı	н	n	
Surrogate: 4-Bromofluorobenzene		92 %	60-1	20	"	rt .	"	"	
Surrogate: Dibromofluoromethane		97 %	70-1	20	"	u	"	"	
Surrogate: Toluene-d8		95 %	75-1	20	"	rŧ	n	н	





Project: ARCO #2107, Oakland, CA

MQF0804 Reported:

Project Number: GOC27-0006 Project Manager: Jay Johnson

Reported: 07/10/07 18:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB15-9 (MQF0804-01) Soil S	Sampled: 06/25/07 11:30	Received: 0	6/26/07 1	1:30					
tert-Amyl methyl ether	ND	0.0050	mg/kg	1	7F28013	06/26/07	06/28/07	EPA 8260B	
Benzene	ND	0.0050	D	(I	и	11	H	t)	
tert-Butyl alcohol	ND	0,020	II.	0	и	11	"	it .	
Di-isopropyl ether	ND	0.0050	D	ø	н	ŧI	И	D	
1,2-Dibromoethane (EDB)	ND	0.0050	D	11	И	#1	н	U	
1,2-Dichloroethane	ND	0.0050	U	11	II	11	И	U	
Ethanol	ND	0.10	1)	41	и	**	н	II.	IB
Ethyl tert-butyl ether	ND	0.0050	D	41	и	#1	И	U	
Ethylbenzene	ND	0.0050	D	*1	и	Я	н	u	
Methyl tert-butyl ether	ND	0.0050	O	#1	н	Д	II	U	
Toluene	ND	0.0050	Ü	*1	н	II	н	u.	
Xylenes (total)	ND	0.0050		11	,,	"	н		
Surrogate: Dibromofluorometho	ине	97 %	70-	120	"	п	n	u	
Surrogate: 1,2-Dichloroethane-	d4	97 %	65-	135	"	tr	n	"	
Surrogate: Toluene-d8		100 %	75-	120	н	"	"	"	
Surrogate: 4-Bromofluorobenze	ne	94 %	60-	120	"	If	rt	"	
SB15-17 (MQF0804-02) Soil		Received:	06/26/07	11:30					
tert-Amyl methyl ether	ND	0.0050	mg/kg	1	7F28013	06/26/07	06/28/07	EPA 8260B	*************
Benzene	ND	0.0050	u .	łı	и	и	н	0	
tert-Butyl alcohol	ND	0.020	1)	†1	н	н	н	U	
Di-isopropyl ether	ND	0.0050	ır	ŧı	и	11	H .	0	
1,2-Dibromoethane (EDB)	ND	0.0050	11	ŧı	н	и	н	и	
1,2-Dichloroethane	ND	0.0050	D	11	и	H	It	ĮI.	
Ethanol	ND	0.10	D	+1	11	н	1+	**	18
Ethyl tert-butyl ether	ND	0.0050	D	11	и	И	14	**	
Ethylbenzene	ND	0.0050	U	n	и	И	11	**	
Methyl tert-butyl ether	ND	0.0050	U	и	It	н	H	h	
Toluene	ND	0.0050	U	и	17	It	U	и	
Xylenes (total)	ND	0.0050	U	н	II .	It	IJ	"	
Surrogate: Dibromofluorometho	пе	100 %	70-	120	"	n	n	11	
Surrogate: 1,2-Dichloroethane-	d4	94 %	65-	135	11	#	n	rr	
Surrogate: Toluene-d8		99 %	75-	120	"	"	n	#	
Surrogate: 4-Bromofluorobenze	ne	95 %	60-	120	n	0	n	#	
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Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0804 Reported: 07/10/07 18:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB15-23 (MQF0804-03) Soil	Sampled: 06/25/07 12:27	Received:	06/26/07	11:30					
tert-Amyl methyl ether	ND	0.0050	mg/kg	1	7F28013	06/26/07	06/29/07	EPA 8260B	
Benzene	ND	0.0050	и	и	U	"	н	t?	
tert-Butyl alcohol	ND	0.020	H	И	0)1	н	17	
Di-isopropyl ether	ND	0.0050	И	н	U	и	11	R	
1,2-Dibromoethane (EDB)	ND	0.0050	If	н	U	и	н	H .	
1,2-Dichloroethane	ND	0.0050	и	И	U	и	н	If	
Ethanol	ND	0.10	и	н	II .	и	п	ŧŧ	ΙB
Ethyl tert-butyl ether	ND	0.0050	н	н	0	н	н	D	
Ethylbenzene	ND	0.0050	н	н	U	и	н	17	
Methyl tert-butyl ether	0.0065	0.0050	и	н	D	н	Ħ	D .	
Toluene	ND	0.0050	н	н	D	И	11	IT .	
Xylenes (total)	ND	0.0050	н	н		н	н	ti .	
Surrogate: Dibromofluorometha	пе	97 %	70-	120	"	"	tt.	"	
Surrogate: 1,2-Dichloroethane-a	14	97 %	65-1	135	n	11	It	u	
Surrogate: Toluene-d8		98 %	75-	120	"	"	tr.	"	
Surrogate: 4-Bromofluorobenzer	<i>1</i> е	91%	60-	120	p	IF	"	H	
SB15-29 (MQF0804-04) Soil	Sampled: 06/25/07 12:45	Received:	06/26/07	11:30					
tert-Amyl methyl ether	ND	0,0050	mg/kg	1	7F28013	06/26/07	06/29/07	EPA 8260B	
Benzene	ND	0.0050	**	н	0	н	н	U	
tert-Butyl alcohol	ND	0.020	н	н	D	н	н	U	
Di-isopropyl ether	ND	0.0050	н	н	O	н	н	U	
1,2-Dibromoethane (EDB)	ND	0.0050	н	н	0	н	μ	U	
1,2-Dichloroethane	ND	0.0050	И	и	0	И	Ħ	U	
Ethanol	ND	0.10	н	и	0	И	If	O .	IB
Ethyl tert-butyl ether	ND	0.0050	и	н	u	и	H	U	
Ethylbenzene	ND	0.0050	lt .	IŤ	u	и	14	11	
Methyl tert-butyl ether	ND	0.0050	ıt	Ħ	ŧ1	н	H	41	
Toluene	ND	0.0050	It	It	Ð	tr	tt	н	
Xylenes (total)	ND	0.0050	I†	n	n	U	I†	+I	
Surrogate: Dibromofluorometha	ne	100 %	70-	120	n	n	n	11	"
Surrogate: 1,2-Dichloroethane-c	14	102 %	65-	135	U	n	n	ri .	
Surrogate: Toluene-d8		99 %	75-	120	"	n	"	11	
Surrogate: 4-Bromofluorobenzer	16	92 %	60-		11	n	n	п	





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0804 Reported: 07/10/07 18:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
SB13-11 (MQF0804-05) Soil S	Sampled: 06/25/07 13:59	Received:	06/26/07	11:30				•	
tert-Amyl methyl ether	ND	0.0050	mg/kg	1	7F28013	06/26/07	06/29/07	EPA 8260B	
Benzene	ND	0.0050	n n	и	1)	**	lt*	tr.	
tert-Butyl alcohol	ND	0.020	"	н	17	n	H	U	
Di-isopropyl ether	ND	0.0050	И	н	t)	I†	И	tt.	
1,2-Dibromoethane (EDB)	ND	0.0050	и	н	H	It	Д	U.	
1,2-Dichloroethane	ND	0.0050	"	**	н	"	н	IT.	
Ethanol	ND	0.10	*1	**	н	11	и	ŧŧ	IB
Ethyl tert-butyl ether	ND	0.0050	ti	**	н	H	И	tt .	
Ethylbenzene	ND	0.0050	U	*1	и	и	н	tt.	
Methyl tert-butyl ether	ND	0.0050	ri .	Ħ	н	И	И	U.	
Toluene	ND	0.0050	a	Ħ	И	М	И	ti.	
Xylenes (total)	ND	0.0050	ti	11	н		н	1)	
Surrogate: Dibromofluoromethan	10	103 %	70-7	120	**	"	tt	n	
Surrogate: 1,2-Dichloroethane-d	4	105 %	65-1	135	n	"	н	n	
Surrogate: Toluene-d8		98 %	75-	120	"	,,	11	"	
Surrogate: 4-Bromofluorobenzen	e	91%	60-	120	#	tt	н	n	
SB13-15 (MQF0804-06) Soil S									
tert-Amyl methyl ether	ND	0.0050	mg/kg	1	7F28013	06/26/07	06/29/07	EPA 8260B	
Benzene	ND	0.0050	н	If	D	D	U	н	
tert-Butyl alcohol	ND	0.020	И	11	U	II	U	н	
Di-isopropyl ether	ND	0.0050	lı	e	0	a	a	н	
1,2-Dibromoethane (EDB)	ND	0.0050	и	H	u	U	0	н	
1,2-Dichloroethane	ND	0.0050	и	0	U	U	U	н	
Ethanol	ND	0.10	н	0	U	11	(1	н	1B
Ethyl tert-butyl ether	ND	0.0050	11	D	U	ø	11	н	
Ethylbenzene	ND	0.0050	н	U	U	ø	ti	н	
Methyl tert-butyl ether	ND	0.0050	и	11	U	ø	ti	н	
Toluene	ND	0.0050	н	n	U	ø	н	н	
Xylenes (total)	ND	0.0050	И	0	ø	11	†I	И	
Surrogate: Dibromofluoromethai	16	102 %	70-	120	11	11	n	11	
Surrogate: 1,2-Dichloroethane-d	4	101%	65-	135	11	"	n	ii .	
Surrogate: Toluene-d8		98 %	75-	120		"	"	"	
Surrogate: 4-Bromofluorobenzen	re	92 %	60-	120	11		"	"	
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Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0804 Reported: 07/10/07 18:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB13-21 (MQF0804-07) Soil S	Sampled: 06/25/07 14:14	Received:	06/26/07	11:30					
tert-Amyl methyl ether	ND	0.0050	mg/kg	1	7F28013	06/26/07	06/29/07	EPA 8260B	
Benzene	ND	0.0050	n	D	41	*1	Ħ	*	
tert-Butyl alcohol	ND	0.020	II .	D	O .	Ħ	н	н	
Di-isopropyl ether	ND	0.0050	D	H	4	Ħ	μ	И	
1,2-Dibromoethane (EDB)	ND	0.0050	It	n	ø	а	И	ц	
1,2-Dichloroethane	ND	0.0050	И	If	O	a	H	ц	
Ethanol	ND	0.10	И	К	0	O.	н	R	IE
Ethyl tert-butyl ether	ND	0.0050	н	К	0	o o	þi	н	
Ethylbenzene	ND	0.0050	И	н	U	a a	н	н	
Methyl tert-butyl ether	ND	0.0050	н	H	0	u	ņ	И	
Toluene	ND	0.0050	И	И	0	a a	н	д	
Xylenes (total)	ND	0.0050	н	н	0	(1	н	н	
Surrogate: Dibromofluoromethan	1е	104 %	70-	120	**		11	n	
Surrogate: 1,2-Dichloroethane-d	4	106 %	65-1	135	n	#	μ	u	
Surrogate: Toluene-d8		97 %	75-7	120	н	"	"	"	
Surrogate: 4-Bromofluorobenzen	e	92 %	60-	120	#	11	"	17	
SB13-29 (MQF0804-08) Soil S	Sampled: 06/25/07 14:26	Received:	06/26/07 1	11:30					
tert-Amyl methyl ether	ND	0.0050	mg/kg	1	7F28013	06/26/07	06/29/07	EPA 8260B	
Benzene	ND	0.0050	11	tt	н	n.	ø	ji .	
tert-Butyl alcohol	ND	0.020	11	U	и	17	U	М	
Di-isopropyl ether	ND	0.0050	0	U	"	11	0	H	
1,2-Dibromoethane (EDB)	ND	0.0050	0	U	и	P	0	н	
1,2-Dichloroethane	ND	0.0050	U	U	n	H	U	11	
Ethanol	ND	0.10	U	U	n	n	U	ti ti	ΙĐ
Ethyl tert-butyl ether	ND	0.0050	U	U	11	н	D	o o	
Ethylbenzene	ND	0.0050	U	11	n	н	D	11	
Methyl tert-butyl ether	ND	0.0050	U	0	H	н	U	**	
Toluene	ND	0.0050	D	It	ti	н	D	н	
Xylenes (total)	ND	0.0050	It	II .	Ħ	н	U	11	
Surrogate: Dibromofluoromethar	1е	97 %	70-1	20	IJ	11	rr	"	
Surrogate: 1,2-Dichloroethane-d	4	103 %	65-1	35	n	tr	H	"	
Surrogate: Toluene-d8		95 %	75-1	120	n	"	"	"	
Surrogate: 4-Bromofluorobenzen	e	92 %	60-1	20	"	#	H	"	
2									





Project: ARCO #2107, Oakland, CA

Spike

0.00500

Source

103

75-120

Project Number: GOC27-0006 Project Manager: Jay Johnson

MQF0804 Reported: 07/10/07 18:55

RPD

%REC

Total Purgeable Hydrocarbons by GC/MS (CA LUFT) - Quality Control TestAmerica - Morgan Hill, CA

Reporting

0.00516

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 7F28013 - EPA 5030 (pres	48h)/5035 / LUF	T GCMS								
Blank (7F28013-BLK1)				Prepared &	& Analyze	ed: 06/28/	07			
Gasoline Range Organics (C4-C12)	ND	0.10	mg/kg		***************************************				· · · · · · · · · · · · · · · · · · ·	
Surrogate: 1,2-Dichloroethane-d4	0.00470		11	0.00500		94	65-135			
Surrogate: 4-Bromofluorobenzene	0.00484		"	0.00500		97	60-120			
Surrogate: Dibromofluoromethane	0.00488		"	0.00500		98	70-120			
Surrogate: Toluene-d8	0.00504		"	0.00500		101	75-120			
Laboratory Control Sample (7F28013-BS2)				Prepared &	& Analyze	ed: 06/28/	07			
Gasoline Range Organics (C4-C12)	0.853	0.10	mg/kg	1.00		85	45-135	***************************************		
Surrogate: 1,2-Dichloroethane-d4	0.00520		"	0.00500		104	65-135			
Surrogate: 4-Bromofluorobenzene	0.00518		11	0.00500		104	60-120			
Surrogate: Dibromofluoromethane	0.00494			0.00500		99	70-120			
Surrogate: Toluene-d8	0.00528		"	0.00500		106	75-120			
Laboratory Control Sample Dup (7F.	28013-BSD2)			Prepared &	& Analyze	ed: 06/28/	07			
Gasoline Range Organics (C4-C12)	0.742	0.10	mg/kg	1.00		74	45-135	14	40	
Surrogate: 1,2-Dichloroethane-d4	0.00498		"	0.00500		100	65-135			
Surrogate: 4-Bromofluorobenzene	0.00514		"	0.00500		103	60-120			
Surrogate: Dibromofluoromethane	0.00490		"	0.00500		98	70-120			

Surrogate: Toluene-d8





Project: ARCO #2107, Oakland, CA

MQF0804

Project Number: GOC27-0006 Project Manager: Jay Johnson Reported: 07/10/07 18:55

Volatile Organic Compounds by EPA Method 8260B - Quality Control TestAmerica - Morgan Hill, CA

		Reporting		Spike	Source		%REC		RPD		l
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	l

Blank (7F28013-BLK1)				Prepared & Ana	alyzed: 06/28/	07	
tert-Amyl methyl ether	ND	0,0050	mg/kg				
Benzene	ND	0.0050	И				
tert-Butyl alcohol	ND	0.020	И				
Di-isopropyl ether	ND	0.0050	н				
1,2-Dibromoethane (EDB)	ND	0.0050	H				
1,2-Dichloroethane	ND	0.0050	Ħ				
Ethanol	ND	0.10	łı				IB
Ethyl tert-butyl ether	ND	0.0050	0				
Ethylbenzene	ND	0,0050	ŧ				
Methyl tert-butyl ether	ND	0.0050	0				
Toluene	ND	0.0050	ø				
Xylenes (total)	ND	0.0050	U				
Surrogate: Dibromofluoromethane	0.00488		"	0.00500	98	70-120	***************************************
Surrogate: 1,2-Dichloroethane-d4	0.00470		n	0.00500	94	65-135	
Surrogate: Toluene-d8	0.00504		"	0.00500	101	75-120	
Surrogate: 4-Bromofluorobenzene	0.00484		"	0.00500	97	60-120	
Laboratory Control Sample (7F2801	3-BS1)			Prepared & Ana	lyzed: 06/28/	07	
tert-Amyl methyl ether	0.0189	0.0050	mg/kg	0,0200	95	65-140	
Benzene	0.0219	0.0050	0	0.0200	109	70-140	
tert-Butyl alcohol	0.421	0.020	()	0.400	105	75-130	
Di-isopropyl ether	0.0190	0.0050	U	0.0200	95	60-135	
1,2-Dibromoethane (EDB)	0.0208	0.0050	0	0.0200	104	70-145	
1,2-Dichloroethane	0.0218	0.0050	{1	0.0200	109	75-130	
Ethanol	0.610	0.10	H	0.400	152	50-150	LR, IB
Ethyl tert-butyl ether	0.0204	0.0050	н	0.0200	102	70-125	
Ethylbenzene	0.0235	0.0050	"	0.0200	118	75-140	
Methyl tert-butyl ether	0.0205	0.0050	п	0.0200	102	75-130	
Toluene	0.0232	0.0050	"	0.0200	116	75-135	
Xylenes (total)	0.0696	0.0050	#1	0,0600	116	75-145	
Surrogate: Dibromofluoromethane	0.00502		11	0.00500	100	70-120	
Surrogate: 1,2-Dichloroethane-d4	0.00480		"	0.00500	96	65-135	
C . T. I. In	0.00512			0.00500	102	75-120	
Surrogate: Toluene-d8	17,17(7) 12			0.000		, p , =	





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0804 Reported: 07/10/07 18:55

Volatile Organic Compounds by EPA Method 8260B - Quality Control TestAmerica - Morgan Hill, CA

		Reporting		Spike	Source		%REC		RPD	İ
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Matrix Spike (7F28013-MS1)	Source: M	QF0804-01		Prepared of	& Analyze	d: 06/28/	07			
tert-Amyl methyl ether	0.0208	0.0050	mg/kg	0.0200	ND	104	65-140			
Benzene	0.0241	0.0050	н	0.0200	ND	121	70-140			
tert-Butyl alcohol	0.455	0.020	н	0.400	ND	114	75-130			
Di-isopropyl ether	0.0213	0.0050	н	0.0200	ND	106	60-135			
1,2-Dibromoethane (EDB)	0.0237	0.0050	11	0.0200	ND	118	70-145			
1,2-Dichloroethane	0.0246	0.0050	11	0.0200	ND	123	75-130			
Ethanol	0,526	0.10	п	0.400	ND	132	50-150			ΙB
Ethyl tert-butyl ether	0.0228	0.0050	a	0.0200	ND	114	70-125			
Ethylbenzene	0.0257	0.0050	a	0.0200	ND	128	75-140			
Methyl tert-butyl ether	0.0278	0.0050	U	0.0200	0.00290	125	75-130			
Toluene	0.0255	0.0050	9	0.0200	ND	127	75-135			
Xylenes (total)	0.0759	0.0050	а	0.0600	ND	126	75-145			
Surrogate: Dibramofluoromethane	0.00504		"	0.00500		101	70-120			
Surrogate: 1,2-Dichloroethane-d4	0.00502		n	0.00500		100	65-135			
Surrogate: Toluene-d8	0.00502		"	0.00500		100	75-120			
Surrogate: 4-Bromofluorobenzene	0.00520		"	0.00500		104	60-120			
Matrix Spike Dup (7F28013-MSD1)	Source: M	QF0804-01		Prepared a	& Analyze	i: 06/28/	′ 07			
tert-Amyl methyl ether	0.0187	0.0050	mg/kg	0.0200	ND	94	65-140	11	25	
Benzene	0.0223	0.0050	41	0.0200	ND	112	70-140	8	25	
tert-Butyl alcohol	0.423	0.020	11	0.400	ND	106	75-130	7	25	
Di-isopropyI ether	0.0198	0.0050	U	0,0200	ND	99	60-135	7	40	
1,2-Dibromoethane (EDB)										
1,2-Diolomoculatic (EDD)	0.0209	0.0050	а	0.0200	ND	104	70-145	13	30	
1,2-Dichloroethane	0.0209 0.0221	0.0050 0.0050	u U	0.0200 0.0200	ND ND	104 111	70-145 75-130	13 11	30 25	
										113
1,2-Dichloroethane	0.0221	0.0050	U	0.0200	ND	111	75-130	11	25	113
1,2-Dichloroethane Ethanol	0.0221 0.584	0.005 0 0,10	U	0.0200 0.400	ND ND	111 146	75-130 50-150	11 10	25 30	1B
1,2-Dichloroethane Ethanol Ethyl tert-butyl ether	0.0221 0.584 0.0203	0.0050 0.10 0.0050	u u	0.0200 0.400 0.0200	ND ND ND	111 146 101	75-130 50-150 70-125	11 10 12	25 30 30	1B
1,2-Dichloroethane Ethanol Ethyl tert-butyl ether Ethylbenzene	0.0221 0.584 0.0203 0.0237	0.0050 0.10 0.0050 0.0050	u u u	0.0200 0.400 0.0200 0.0200	ND ND ND ND	111 146 101 118	75-130 50-150 70-125 75-140	11 10 12 8	25 30 30 30	lB
1,2-Dichloroethane Ethanol Ethyl tert-butyl ether Ethylbenzene Methyl tert-butyl ether	0.0221 0.584 0.0203 0.0237 0.0245	0.0050 0.10 0.0050 0.0050 0.0050	U U U U	0.0200 0.400 0.0200 0.0200 0.0200	ND ND ND ND 0,00290	111 146 101 118 108	75-130 50-150 70-125 75-140 75-130	11 10 12 8 13	25 30 30 30 25	IE
1,2-Dichloroethane Ethanol Ethyl tert-butyl ether Ethylbenzene Methyl tert-butyl ether Toluene	0.0221 0.584 0.0203 0.0237 0.0245 0.0233	0.0050 0.10 0.0050 0.0050 0.0050 0.0050	U U U U	0.0200 0.400 0.0200 0.0200 0.0200 0.0200	ND ND ND ND 0.00290 ND	111 146 101 118 108	75-130 50-150 70-125 75-140 75-130 75-135	11 10 12 8 13	25 30 30 30 25 25	18
1,2-Dichloroethane Ethanol Ethyl tert-butyl ether Ethylbenzene Methyl tert-butyl ether Toluene Xylenes (total)	0.0221 0.584 0.0203 0.0237 0.0245 0.0233 0.0698	0.0050 0.10 0.0050 0.0050 0.0050 0.0050	U U U U U U U U U U U U U U U U U U U	0.0200 0.400 0.0200 0.0200 0.0200 0.0200 0.0600	ND ND ND ND 0.00290 ND	111 146 101 118 108 117	75-130 50-150 70-125 75-140 75-130 75-135 75-145	11 10 12 8 13	25 30 30 30 25 25	IB
1,2-Dichloroethane Ethanol Ethyl tert-butyl ether Ethylbenzene Methyl tert-butyl ether Toluene Xylenes (total) Surrogate: Dibromofluoromethane	0.0221 0.584 0.0203 0.0237 0.0245 0.0233 0.0698	0.0050 0.10 0.0050 0.0050 0.0050 0.0050	U U U U U U U U U U U U U U U U U U U	0.0200 0.400 0.0200 0.0200 0.0200 0.0200 0.0200 0.0600	ND ND ND ND 0.00290 ND	111 146 101 118 108 117 116	75-130 50-150 70-125 75-140 75-130 75-135 75-145	11 10 12 8 13	25 30 30 30 25 25	18
1,2-Dichloroethane Ethanol Ethyl tert-butyl ether Ethylbenzene Methyl tert-butyl ether Toluene Xylenes (total) Surrogate: Dibromoftworomethane Surrogate: 1,2-Dichloroethane-d-l	0.0221 0.584 0.0203 0.0237 0.0245 0.0233 0.0698 0.00516 0.00478	0.0050 0.10 0.0050 0.0050 0.0050 0.0050	U U U U U U U U U U U U U U U U U U U	0.0200 0.400 0.0200 0.0200 0.0200 0.0200 0.0600 0.00500 0.00500	ND ND ND ND 0.00290 ND	111 146 101 118 108 117 116	75-130 50-150 70-125 75-140 75-130 75-135 75-145 70-120 65-135	11 10 12 8 13	25 30 30 30 25 25	13





Stratus Environmental Inc. [Arco] Project: ARCO #2107, Oakland, CA MQF0804
3330 Cameron Park Dr., Suite 550 Project Number: GOC27-0006 Reported:
Cameron Park CA, 95682 Project Manager: Jay Johnson 07/10/07 18:55

Notes and Definitions

LR LCS recovery below method control limits.

IB CCV recovery above limit; analyte not detected

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Richfield Company

A BP affiliated company

Chain of Custody Record

Project Name: Are Station # 2107

BP BU/AR Region/Enfos Segment: Bf Americo 7 W. C. > Retail > Alameda > 2107
State or Lend Regulatory Agency: Alameda County Health Care Services

Requested Due Date (mm/dd/yy):

Tuly 10 Ag

On-site Time: Temp:

Off-site Time: Temp:

Sky Conditions:

Meteorological Events:

Wind Speed: Direction:

Lab Name: Test Amerika	BP/AR Facility No.: 3310 Park Blud, Oak	land Consultant/Contractor: Stratus Environ mental, Inc.
Address: 885 Jarvis Dr.	BP/AR Facility Address: V Ano 5 lation # 2107	Address: 3330 Camera Park Dr. # 550
Morgan Hill CA 95037	Site Lat/Long:	Camera Park, CA 95687
Lab PM: Lisa Race	California Global ID No.: TO 6619734306	Consultant/Contractor Project No.: E-2107
Tele/Fax: 408-781-8156	Enfos Project No.: GOC 27-0006	Consultant/Contractor PM: Tay Tolmson
BP/AR EBM: Paul Supple	Provision of OOC (circle one)	Tele/Fax: 530-676-6000
Address: 2010 (sow Canyon Place #150	Phase/WBS: Ol - a 55essment	Report Type & QC Level: PW W EDF
San Ramon, CA	Sub Phase/Task: 03 - qualy fical	E-mail EDD To: @least Cjewithestratising, net
Tele/Fax: 925-275-3506	Cost Element: 01 - Contractor Labor	Invoice to: Consultant or BP of Atlantic Richfield Co. (circle one)
Lab Bottle Order No: Matrix	Preservative	Requested Analysis .
No. Time Date Soil/Solid Water/Liquid	Tapocatory No. of Containers Unpreserved H.SO4 HNO3 HCI Methanol	Sample Point Lat/Long and Comments
1 5315-9 11:30 6-25 1	-01 11	
2 585-17 12:2 6.25	-02 1 /	
0.6 00	ا ا ا ا ا ا ا	
4 5615-29 12:45 695 4	-οφ // //	
5 SB13-11 13:59 6-25 V	-05	
6 SB13-15 14:07 6-75 V	-06 11 1	
7 5/313-21 14:14 6-25 1	-07. V	
8 5613-29 14:26 1-26	_08 (/	
9		
10		te Time Accepted By / Affiliation Date Time
Sampler's Name: Pittinger / Fischer	Rejinquished By / Affiliation Da	
Sampler's Company: Strates Environ Muntal, Tuc.	JUNU (MAL)	100 (3C) Jules 190 (3C)
Shipment Date: 625-0		
Shipment Method: FullEX		
Shipment Tracking No:		
Special Instructions:		The second secon
Custody Seals In Place: Yes / No) Temp Blank: Yes	No Cooler Temp on Receipt: 4.8°F(C)	Trip Blank: Yes / No MS/MSD Sample Submitted: Yes / No
The state of the s		BP COC Rev. 5 10/11/2006

TEST AMERICA SAMPLE RECEIPT LOG

CLIENT NAME: REC. BY (PRINT) WORKORDER:	ARCO 2107 Julie No. MOFOBOY		DATE REC'D AT LAB: TIME REC'D AT LAB: DATE LOGGED IN:	6/26/07 1130 6/28/)	41-3647 <u>-366</u> -975-556			lory Purposes (NO YES / NO YES / NO
	OPRIATE RESPONSE	LAD SAMPLE#	CLIEHT ID	CONTAINER DESCRIPTION		 рИ	SAMPLE	DATE SAMPLED	REMARKS: CONDITION (ETC.)
1. Custody Seal(s)	Present / Alfsent							C14 (1411. 1717.17)	SOMETION (E)
	Inlact / Broken*						<u></u>		
2. Chain-of-Custody	Présènt / Absent			-					
3 Traffic Reports or									
Packing List.	Present / Abren)					··		- $ A$	—————
4. Airbill;	Airbill / Sticker								
	Present / Absent						\-	-n-6/-4	
5. Airbill # 8EE Z	MACHEO				·				
6. Sample Labels:	Freeent / Absent							\	
7. Sample IDs:	Listet / Not Listed								* PLASTIC CORE
	on Chain-of-Cualody		-			£-71			
8. Sample Condition:	In(a)I / Droken* /				(}	~-67		****
	_l.eaking*		to the first of the second		BY		/// -		·····
9. Does information on	chain-of-custody,		***************************************			<u>~</u> \$	<u> </u>		
traffic reports and sa	unple labela		······································					··	
agree?	(88 / No"					-			
Sample received within	1							·	·
hold time?	(e) / No"			/ +		-			
 Adequate sample volu 	ne			/ ` ` 	-				
received?	(e) / No					-			
2. Proper preservatives u	sed7 (eg/ Mor								
3. Trip Blank / Temp Blan	k Received7				——— -				
(circle which; if yee)	Yes/Mo.								
1. Read Temp	_ 5.6'C				——— <u>—</u>				
Corrected Temp:									<u>-</u>
Is corrected temp 4 +/-	2"C? (Yes / No"		7						
cceptence range for samples req		/							
Exception (if any): META	ILS / DEF ON ICE	/		·					
or Problem COC									
マート・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・	A MARKET AND THE PROPERTY OF THE PARTY OF TH		ED CONTACT PROJECT	THE PARTY OF THE P	ELECTROLEGICO	LA FITA PARTIES	SENALUE IN INC.	A PERSONAL PROPERTY OF THE PERSON NAMED IN POST OF THE PER	E-1100 Marie Control Control

(R)_ Revision B laces Flav 7 (97/10/05)

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10 July, 2007

Jay Johnson Stratus Environmental Inc. [Arco] 3330 Cameron Park Dr., Suite 550 Cameron Park, CA 95682

RE: ARCO #2107, Oakland, CA

Work Order: MQF0863

Enclosed are the results of analyses for samples received by the laboratory on 06/27/07 11:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lisa Race

Senior Project Manager

CA ELAP Certificate # 1210

The results in this laboratory report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the BPGCLN Technical Specifications, applicable Federal, State, local regulations and certification requirements as well as the methodologies as described in laboratory SOPs reviewed by the BPGCLN. This entire report was reviewed and approved for release.





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0863 Reported: 07/10/07 19:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB14-9	MQF0863-01	Soil	06/26/07 08:44	06/27/07 11:30
SB14-15	MQF0863-02	Soil	06/26/07 08:50	06/27/07 11:30
SB14-19	MQF0863-03	Soil	06/26/07 08:54	06/27/07 11:30
SB14-29	MQF0863-04	Soil	06/26/07 09:08	06/27/07 11:30
SB12-9	MQF0863-05	Soil	06/26/07 11:36	06/27/07 11:30
SB12-15	MQF0863-06	Soil	06/26/07 11:42	06/27/07 11:30
SB12-23	MQF0863-07	Soil	06/26/07 11:57	06/27/07 11:30
SB12-27	MQF0863-08	Soil	06/26/07 12:01	06/27/07 11:30

The carbon range for the TPH-GRO has been changed from C6-C10 to C4-C12. The carbon range for TPH-DRO has been changed from C10-C28 to C10-C36. EPA 8015B has been modified to better meet the requirements of California regulatory agencies. These samples were received with no custody seals.





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0863 Reported: 07/10/07 19:11

Total Purgeable Hydrocarbons by GC/MS (CA LUFT) TestAmerica - Morgan Hill, CA

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB14-9 (MQF0863-01) Soil Sampled	: 06/26/07 08:44	Received: 0	6/27/07 11:	30					
Gasoline Range Organics (C4-C12)	ND	0.10	mg/kg	1	7F30006	06/27/07	07/01/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		99 %	65-135		п	11	n	rt	
Surrogate: 4-Bromofluorobenzene		93 %	60-120		"	11	n	"	
Surrogate: Dibromofluoromethane		102 %	70-12	20	"	"	"	n	
Surrogate: Toluene-d8		98 %	75-12	20	"	11	n	n	
SB14-15 (MQF0863-02) Soil Sample	d: 06/26/07 08:50	Received:	06/27/07 11	1:30					
Gasoline Range Organics (C4-C12)	ND	0.10	mg/kg	1	7F30006	06/27/07	07/01/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		103 %	65-13	35	ır	11	71	n	
Surrogate: 4-Bromofluorobenzene		93 %	60-12	20	"	n	n	n	
Surrogate: Dibromofluoromethane		100 %	70-12	20	n	11	11	"	
Surrogate: Toluene-d8		98 %	75-12	20	"	"	#	"	
SB14-19 (MQF0863-03) Soil Sample	d: 06/26/07 08:54	Received:	06/27/07 11	:30					
Gasoline Range Organics (C4-C12)	ND	0.10	mg/kg	1	7F30006	06/27/07	07/01/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		100 %	65-1 3	35	"	11	n	п	
Surrogate: 4-Bromofluorobenzene		90 %	60-12	20	n	11	n	u	
Surrogate: Dibromofluoromethane		102 %	70-12	20	n n	n	u	u .	
Surrogate: Toluene-d8		96 %	75-12	20	"	"	**	"	
SB14-29 (MQF0863-04) Soil Sample	d: 06/26/07 09:08	Received:	06/27/07 11	:30					
Gasoline Range Organics (C4-C12)	ND	0.10	mg/kg	1	7F30006	06/27/07	07/01/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		105 %	<i>65-13</i>	35	"	n	**	n	
Surrogate: 4-Bromofluorobenzene		88 %	60-13	20	"	n	"	"	
Surrogate: Dibromofluoromethane		97 %	70-12	20	n	и	#	It	
Surrogate: Toluene-d8		99 %	75-12	20	"	"	**	**	





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0863 Reported: 07/10/07 19:11

Total Purgeable Hydrocarbons by GC/MS (CA LUFT) TestAmerica - Morgan Hill, CA

Analyte F	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB12-9 (MQF0863-05) Soil Sampled: 06/26/07	11:36	Received: 0	6/27/07 11	:30					
Gasoline Range Organics (C4-C12)	ND	0.10	mg/kg	ì	7F30006	06/27/07	07/01/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		101 %	65-1	35	11	"	11	n	
Surrogate: 4-Bromofluorobenzene		92 %	60-1	20	tt.	"	"	n	
Surrogate: Dibromofluoromethane		101 %	70-1	20	11	"	"	n	
Surrogate: Toluene-d8		97 %	75-1	20	rt	"	"	"	
SB12-15 (MQF0863-06) Soil Sampled: 06/26/0	7 11:42	Received:	06/27/07 1	1:30					
Gasoline Range Organics (C4-C12)	ND	0.10	mg/kg	I	7F30006	06/27/07	07/01/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		107 %	65-1	35	"	11	n	ır	
Surrogate: 4-Bromofluorobenzene		94 %	60-1	20	"	ır	n	n	
Surrogate: Dibromofluoromethane		103 %	70-1	20	"	"	n	**	
Surrogate: Toluene-d8		96 %	75-1	20	"	n	n	tr .	
SB12-23 (MQF0863-07) Soil Sampled: 06/26/0	7 11:57	Received:	06/27/07 1	1:30					
Gasoline Range Organics (C4-C12)	ND	0.10	mg/kg	11	7F30006	06/27/07	07/01/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		105 %	65-1	35	n	n	"	"	
Surrogate: 4-Bromofluorobenzene		93 %	60-1	20	n	n	**	tt.	
Surrogate: Dibromofluoromethane		106 %	70-1	20	n	n	**	"	
Surrogate: Toluene-d8		96 %	75-1	20	n	n	"	tt.	
SB12-27 (MQF0863-08) Soil Sampled: 06/26/0	7 12:01	Received:	06/27/07 1	1:30					
Gasoline Range Organics (C4-C12)	ND	0.10	mg/kg	1	7F30006	06/27/07	07/01/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		104 %	65-1	35	11	u	н	ıı	
Surrogate: 4-Bromofluorobenzene		90 %	60-1	20	"	"	**	"	
Surrogate: Dibromofluoromethane		90 %	70-1	20	n	n	"	"	
Surrogate: Toluene-d8		94 %	75 - 1	20	v	н	"	rt	





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0863 Reported: 07/10/07 19:11

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
SB14-9 (MQF0863-01) Soil S	Sampled: 06/26/07 08:44	Received: 0	6/27/07 11	:30					
tert-Amyl methyl ether	ND	0.0050	mg/kg	1	7F30006	06/27/07	07/01/07	EPA 8260B	
Benzene	ND	0.0050	н	н	u	0	Ħ	1)	
tert-Butyl alcohol	ND	0.020	н	н	0	0	ti .	**	
Di-isopropyl ether	ND	0.0050	ŧi	н	U	U	ø	D)	
1,2-Dibromoethane (EDB)	ND	0.0050	ŧı	н	0	n)	U	н	
1,2-Dichloroethane	ND	0.0050	0	†I	O.	r)	0	H	
Ethanol	ND	0.10	U	11	O	H.	U	н	
Ethyl tert-butyl ether	ND	0.0050	U	Ð	17	17	U	n	
Ethylbenzene	ND	0.0050	0	0	Ħ	#	U	H	
Methyl tert-butyl ether	ND	0.0050	U	ø	H	H	U	t†	
Toluene	ND	0.0050	U	o o	Ħ	H.	U	I†	
Xylenes (total)	ND	0.0050	U	1)	H	11	1)	f†	
Surrogate: Dibromofluoromethe	me	102 %	70-1	20	"	"	n	"	
Surrogate: 1,2-Dichloroethane-	d4	99 %	65-1	35	tt	n	n	п	
Surrogate: Toluene-d8		98 %	75-1	20	"	"	"	"	
Surrogate: 4-Bromofluorobenze	ne	93 %	60-1	20	"	"	n	"	
SB14-15 (MQF0863-02) Soil	Sampled: 06/26/07 08:50	Received:	06/27/07 1	1:30					
tert-Amyl methyl ether	ND	0.0050	mg/kg	§	7F30006	06/27/07	07/01/07	EPA 8260B	
Benzene	ND	0.0050	U	ŧı	U.	n	U	0	
tert-Butyl alcohol	ND	0.020	*1	tı	0	**	0	0	
Di-isopropyl ether	ND	0.0050	a	11	D	D	u	U	
1,2-Dibromoethane (EDB)	ND	0.0050	ø	11	D	n	U	U	
1,2-Dichloroethane	ND	0.0050	0	Ð	Il	H	ø	U	
Ethanol	ND	0.10	ø	11	D	n	ø	U	
Ethyl tert-butyl ether	ND	0.0050	11	Ð	I)	11	0	u	
Ethylbenzene	ND	0.0050	u	n	D	I†	σ	U	
Methyl tert-butyl ether	ND	0.0050	n	ŋ	It	l†	ø	U	
Toluene	ND	0.0050	0	0	H	If .	U	U	
Xylenes (total)	ND	0.0050	0	0	l)	R	u	U	
Surrogate: Dibromofluoromethe	me	100 %	70-1	20	"	**	и	"	
Surrogate: 1,2-Dichloroethane-	d4	103 %	65-1	35	n	'n	и	n	
Surrogate: Toluene-d8		98 %	75-1	20	n	#	u	11	
Surrogate: 4-Bromofluorobenze	пе	93 %	60-1	20	**	"	"	n	
-									





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0863 Reported: 07/10/07 19:11

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
SB14-19 (MQF0863-03) Soil	Sampled: 06/26/07 08:54	Received:	06/27/07 1	1:30					
tert-Amyl methyl ether	ND	0.0050	mg/kg	1	7F30006	06/27/07	07/01/07	EPA 8260B	
Benzene	ND	0.0050	It	16	0	0	11	D	
tert-Butyl alcohol	ND	0.020	1¢	н	0	11	11	D	
Di-isopropyl ether	ND	0.0050	и	н	0	0	14	0	
1,2-Dibromoethane (EDB)	ND	0.0050	If	16	0	D	I#	D	
1,2-Dichloroethane	ND	0.0050	н	16	O	U	It.	U	
Ethanol	ND	0.10	P	11	0	1)	14	u	
Ethyl tert-butyl ether	ND	0.0050	#	н	0	0	11	D	
Ethylbenzene	ND	0.0050	li†	н	0	D	It.	U	
Methyl tert-butyl ether	ND	0.0050	It	H	0	0	H	O	
Toluene	ND	0.0050	H	B†	Đ	ŋ	D	n	
Xylenes (total)	ND	0.0050	0	17	0	IJ	D	ti	
Surrogate: Dibromofluorometha	ne	102 %	70-1	20	"	n	t,	"	
Surrogate: 1,2-Dichloroethane-a	14	100 %	65-1.	35	"	41	n	"	
Surrogate: Toluene-d8		96 %	75-1	20	"	n	,,	"	
Surrogate: 4-Bromofluorobenzer	пе	90 %	60-1	20	"	,,	n	11	
SB14-29 (MQF0863-04) Soil	Sampled: 06/26/07 09:08	Received:	06/27/07 1	1:30					
tert-Amyl methyl ether	ND	0.0050	mg/kg	1	7F30006	06/27/07	07/01/07	EPA 8260B	
Benzene	ND	0.0050	D	**	n	U	U	h	
tert-Butyl alcohol	ND	0.020	II .	0	Ð	U	U	М	
Di-isopropyl ether	ND	0.0050	n	D	0	U	U	11	
1,2-Dibromoethane (EDB)	ND	0.0050	D	11	n	U	U	и	
1,2-Dichloroethane	ND	0.0050	0	B	Ð	U	D	и	
Ethanol	ND	0.10	17		n	U	U	н	
Ethyl tert-butyl ether	ND	0.0050	**	*	0	O	II .	н	
Ethylbenzene	ND	0.0050	H	I+	a a	II .	II .	И	
Methyl tert-butyl ether	ND	0.0050	H	H	ti	u	u	JP.	
Toluene	ND	0.0050	n	n	Ð	u	II	Pt	
Xylenes (total)	ND	0.0050	l†	H	1)	11	II	It	
Surrogate: Dibromofluorometha	ne	97 %	70-1	20	II	IT	n	"	
Surrogate: 1,2-Dichloroethane-c	14	105 %	65-1.	35	17	IF	#	H	
Surrogate: Toluene-d8		99 %	75-1	20	ır	11	"	"	
Surrogate: 4-Bromofluorobenzer	пе	88 %	60-1	20	"	rr	"	n	





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0863 Reported: 07/10/07 19:11

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
SB12-9 (MQF0863-05) Soil S	Sampled: 06/26/07 11:36	Received: 0	6/27/07 1	1:30					
tert-Amyl methyl ether	ND	0.0050	mg/kg	1	7F30006	06/27/07	07/01/07	EPA 8260B	
Benzene	ND	0.0050	и	II.	а	a	D		
tert-Butyl alcohol	ND	0.020	и	11	a	a	D	ı	
Di-isopropyl ether	ND	0.0050	н	11	a	U	0		
1,2-Dibromoethane (EDB)	ND	0.0050	н	If	a	ii .	0	n .	
1,2-Dichloroethane	ND	0.0050	н	I+	α	u	Ð	и	
Ethanol	ND	0.10	н	н	0	n n	1)	"	
Ethyl tert-butyl ether	ND	0.0050	н	н	u	D	17	n .	
Ethylbenzene	ND	0.0050	н	И	D	1)	11	н	
Methyl tert-butyl ether	ND	0.0050	n	и	0	0	H	И	
Toluene	ND	0.0050	h	31	0	Ħ	H	н	
Xylenes (total)	ND	0.0050	ł1	*1	U	H	H	II .	
Surrogate: Dibromofluorometho	ane	101 %	70-	120	"	n	n	tr .	
Surrogate: 1,2-Dichloroethane-	d4	101 %	65-1	135	n	n	u	ii .	
Surrogate: Toluene-d8		97 %	75-4	120	"	n	"	"	
Surrogate: 4-Bromofluorobenze	me	92 %	60-	120	п	n	"	"	
SB12-15 (MQF0863-06) Soil	Sampled: 06/26/07 11:42	Received:	06/27/07 1	11:30					
tert-Amyl methyl ether	ND	0.0050	mg/kg	1	7F30006	06/27/07	07/01/07	EPA 8260B	
Benzene	ND	0.0050	и	11	n	11	U	11	
tert-Butyl alcohol	ND	0.020	"	1)	11	"	U	**	
Di-isopropyl ether	ND	0.0050	н	н	+1	"	U	**	
1,2-Dibromoethane (EDB)	ND	0.0050	и	1)	ħ	ŧı	U	11	
1,2-Dichloroethane	ND	0.0050	н	n	ti	a	U	н	
Ethanol	ND	0.10	н	II.	11	11	U	ti	
Ethyl tert-butyl ether	ND	0.0050	н	II .	*1	11	n .	n	
Ethylbenzene	ND	0.0050	н	U	11	11	U	H	
Methyl tert-butyl ether	0.0087	0.0050	н	n	*1	*1	U	n	
Toluene	ND	0.0050	И	D	н	11	a a	H	
Xylenes (total)	ND	0.0050	П	11	n	11	U	н	
Surrogate: Dibromofluorometha	ane	103 %	70-	120	"	"	11	"	
Surrogate: 1,2-Dichloroethane-	d4	107 %	65-1	135	"	n.	н	μ	
Surrogate: Toluene-d8		96 %	75-1	120	11	"	J†	"	
Surrogate: 4-Bromofluorobenze	ne	94 %	60-	120	"	rr .	**	"	
<u> </u>		• •	,	•					





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0863 Reported: 07/10/07 19:11

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
SB12-23 (MQF0863-07) Soil S	Sampled: 06/26/07 11:57	Received:	06/27/07 1	1:30					
tert-Amyl methyl ether	ND	0.0050	mg/kg]	7F30006	06/27/07	07/01/07	EPA 8260B	
Benzene	ND	0.0050	И	н	It	И	0	ø	
tert-Butyl alcohol	ND	0.020	И	п	н	11	n	u .	
Di-isopropyl ether	ND	0.0050	н	н	н	н	1†	U	
1,2-Dibromoethane (EDB)	ND	0.0050	И	Ħ	И	И	If	D.	
1,2-Dichloroethane	ND	0.0050	ł1	+1	н	11	н	D.	
Ethanol	ND	0.10	n	0)1	Ħ	И	U	
Ethyl tert-butyl ether	ND	0.0050	0	n	**	ŧı	и	U	
Ethylbenzene	ND	0.0050	0	0	H	ţı	И	n	
Methyl tert-butyl ether	ND	0.0050	O O	0	ø	U	н	ti .	
Toluene	ND	0.0050	0	0	U	O.	μ	Ħ	
Xylenes (total)	ND	0.0050	1)	n	0	U	H	I†	
Surrogate: Dibromofluorometha	10	106 %	70-1	20	,,	"	11	ıı	
Surrogate: 1,2-Dichloroethane-d	'4	105 %	65-1	35	n	n	n .	n	
Surrogate: Toluene-d8		96 %	75-1	20	u	"	11	"	
Surrogate: 4-Bromofluorobenzen	ie	93 %	60-1.	20	n	n	11	"	
SB12-27 (MQF0863-08) Soil S	Sampled: 06/26/07 12:01	Received:	06/27/07 1	1:30					
tert-Amyl methyl ether	ND	0.0050	mg/kg	1	7F30006	06/27/07	07/01/07	EPA 8260B	
Benzene	ND	0.0050	н	н	"	H	a a	n .	
tert-Butyl alcohol	ND	0.020	и	и	"	U	11	н	
Di-isopropyl ether	ND	0.0050	н	H	U	D	11	и	
1,2-Dibromoethane (EDB)	ND	0.0050	и	н	U	II.	ti	и	
1,2-Dichloroethane	ND	0.0050	н	н	11	D	a a	и	
Ethanol	ND	0.10	ıı	P	U	D	a a	m .	
Ethyl tert-butyl ether	ND	0.0050	н	11	U	n	0	н	
Ethylbenzene	ND	0.0050	н	H	U	D	a	ı	
Methyl tert-butyl ether	ND	0.0050	н	H	U	l†	a	и	
Toluene	ND	0.0050	И	Nf.	t t	H	U	и	
Xylenes (total)	ND	0.0050	И	И	ŋ	I)		И	
Surrogate: Dibromofluoromethai	16	90 %	70-1	20	n	"	"	"	
Surrogate: 1,2-Dichloroethane-d	4	104 %	65-1	35	#	n	0	it	
Surrogate: Toluene-d8		94 %	75-1.	20	#	"	"	"	
Surrogate: 4-Bromofluorobenzen	ie	90 %	60-1.	20	rt	Ħ	Ü	tr.	





Project: ARCO #2107, Oakland, CA

Spike

Source

%REC

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0863 Reported: 07/10/07 19:11

RPD

Total Purgeable Hydrocarbons by GC/MS (CA LUFT) - Quality Control TestAmerica - Morgan Hill, CA

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 7F30006 - EPA 5030 (pres	48h)/5035 / LUFT	GCMS								
Blank (7F30006-BLK1)				Prepared:	06/27/07	Analyzed	: 06/30/07			
Gasoline Range Organies (C4-C12)	ND	0.10	mg/kg							
Surrogate: 1,2-Dichloroethane-d4	0.00504		11	0.00500	***************************************	101	65-135		······································	
Surrogate: 4-Bromofluorobenzene	0.00474		u	0.00500		95	60-120			
Surrogate: Dibromofluoromethane	0.00508		"	0.00500		102	70-120			
Surrogate: Toluene-d8	0.00502		n	0.00500		100	75-120			
Laboratory Control Sample (7F30006-BS2)				Prepared & Analyzed: 06/30/07						
Gasoline Range Organics (C4-C12)	0.780	0.10	mg/kg	1.00		78	45-135			
Surrogate: 1,2-Dichloroethane-d4	0.00500		"	0.00500		100	65-135			
Surrogate: 4-Bromofluorobenzene	0.00540		"	0.00500		108	60-120			
Surrogate: Dibromofluoromethane	0.00496		n	0.00500		99	70-120			
Surrogate: Toluene-d8	0.00514		11	0.00500		103	75-120			
Laboratory Control Sample Dup (7F.	30006-BSD2)			Prepared &	& Analyzo	ed: 06/30/	07			
Gasoline Range Organics (C4-C12)	0.760	0.10	mg/kg	1.00		76	45-135	3	40	
Surrogate: 1,2-Dichloroethane-d4	0.00530	,ş=- <u>2</u>	ti	0.00500		106	65-135			
Surrogate: 4-Bromofluorobenzene	0.00530		n	0.00500		106	60-120			
Surrogate: Dibromofluoromethane	0.00498		"	0.00500		100	70-120			
Surrogate: Toluene-d8	0.00514		"	0.00500		103	75-120			





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0863 Reported: 07/10/07 19:11

Volatile Organic Compounds by EPA Method 8260B - Quality Control TestAmerica - Morgan Hill, CA

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Límit	Notes

Batch 7F30006 - EPA 5030 (pres	48h)/5035 / EPA	8260B							
Blank (7F30006-BLK1)				Prepared: 06/27	07 Analyzed	l: 06/30/07			
tert-Amyl methyl ether	ND	0.0050	mg/kg						
Benzene	ND	0.0050	U						
tert-Butyl alcohol	ND	0.020	0						
Di-isopropyl ether	ND	0.0050	U						
1,2-Dibromoethane (EDB)	ND	0.0050	U						
1,2-Dichloroethane	ND	0.0050	U						
Ethanol	ND	01.0	U						
Ethyl tert-butyl ether	ND	0.0050	U						
Ethylbenzene	ND	0.0050	U						
Methyl tert-butyl ether	ND	0.0050	U						
Toluene	ND	0.0050	ø						
Xylenes (total)	ND	0.0050	σ						
Surrogate: Dibromofluoromethane	0.00508		11	0.00500	102	70-120			
Surrogate: 1,2-Dichloroethane-d4	0.00504		"	0.00500	101	65-135			
Surrogate: Toluene-d8	0.00502		"	0.00500	100	75-120			
Surrogate: 4-Bromofluorobenzene	0.00474		n	0.00500	95	60-120			
Laboratory Control Sample (7F30006	6-BS1)			Prepared & Analyzed: 06/30/07					
tert-Amyl methyl ether	0.0179	0.0050	mg/kg	0.0200	90	65-140			
Benzene	0.0204	0.0050	U	0.0200	102	70-140			
tert-Butyl alcohol	0.390	0.020	U	0.400	97	75-130			
Di-isopropyl ether	0.0178	0.0050	U	0.0200	89	60-135			
1,2-Dibromoethane (EDB)	0.0209	0.0050	U	0.0200	105	70-145			
1,2-Dichloroethane	0.0221	0.0050	U	0.0200	110	75-130			
Ethanol	0.421	0.10	v	0.400	105	50-150			
Ethyl tert-butyl ether	0.0199	0.0050	U	0.0200	100	70-125			
Ethylbenzene	0.0219	0.0050	D	0.0200	110	75-140			
Methyl tert-butyl ether	0.0208	0.0050	U	0.0200	104	75-130			
Toluene	0.0216	0.0050	U	0.0200	108	75-135			
Xylenes (total)	0.0648	0.0050	u	0.0600	108	75-145			
Surrogate: Dibromofluoromethane	0.00536		"	0.00500	107	70-120			
Surrogate: 1,2-Dichloroethane-d4	0,00520		"	0.00500	104	65-135			
Surrogate: Toluene-d8	0.00512		"	0.00500	102	75-120			
	0.00526			0.00500					





Project: ARCO #2107, Oakland, CA

Spike

Source

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0863 Reported: 07/10/07 19:11

RPD

%REC

Volatile Organic Compounds by EPA Method 8260B - Quality Control TestAmerica - Morgan Hill, CA

Reporting

		reporting		ajnke	addice		Farcec		KPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Note
Batch 7F30006 - EPA 5030 (pres 48	h)/5035 / EPA	8260B								
Matrix Spike (7F30006-MS1)	Source: M	QF0863-02		Prepared:	06/27/07	Analyzed	l: 07/01/07			
tert-Amyl methyl ether	0.0190	0.0050	mg/kg	0,0200	ND	95	65-140			
Benzene	0.0205	0.0050	н	0.0200	ND	103	70-140			
tert-Butyl alcohol	0.385	0.020	н	0.400	ND	96	75-130			
Di-isopropyl ether	0.0183	0.0050	н	0.0200	ND	92	60-135			
1,2-Dibromoethane (EDB)	0.0216	0.0050	н	0.0200	ND	108	70-145			
1,2-Dichloroethane	0.0227	0.0050	н	0.0200	ND	113	75-130			
Ethanol	0.424	0.10	н	0.400	ND	106	50-150			
Ethyl tert-butyl ether	0.0202	0.0050	11	0.0200	ND	101	70-125			
Ethylbenzene	0.0221	0.0050	11	0.0200	ND	110	75-140			
Methyl tert-butyl ether	0.0214	0.0050	41	0.0200	ND	107	75-130			
Toluene	0.0217	0.0050	Ð	0.0200	ND	108	75-135			
Xylenes (total)	0.0654	0.0050	ti ti	0.0600	ND	109	75-145			
Surrogate: Dibromofluoromethane	0.00522		л	0.00500		104	70-120			
Swrogate: 1,2-Dichloroethane-d4	0.00532		n	0.00500		106	65-135			
Swrogate: Toluene-d8	0.00514		n	0.00500		103	75-120			
Surrogate: 4-Bromofluorobenzene	0.00510		н	0.00500		102	60-120			
Matrix Spike Dup (7F30006-MSD1)	Source: M	QF0863-02		Prepared:	06/27/07	Analyzed	1; 07/01/07			
ert-Amyl methyl ether	0.0189	0.0050	mg/kg	0.0200	ND	94	65-140	0.8	25	
Benzene	0.0203	0.0050	U	0.0200	ND	102	70-140	Ī	25	
ert-Butyl alcohol	0.387	0.020	17	0.400	ND	97	75-130	0.5	25	
Di-isopropyl ether	0.0179	0.0050	19	0.0200	ND	90	60-135	2	40	
1,2-Dibromoethane (EDB)	0.0210	0.0050	17	0.0200	ND	105	70-145	3	30	
1,2-Dichloroethane	0.0211	0.0050	17	0.0200	ND	105	75-130	7	25	
Ethanol	0.445	01.0	U	0.400	ND	111	50-150	5	30	
Ethyl tert-butyl ether	0.0200	0.0050	0	0.0200	ND	100	70-125	0.9	30	
Ethylbenzene	0.0217	0.0050	U	0,0200	ND	109	75-140	I	30	
Methyl tert-butyl ether	0.0209	0.0050	0	0.0200	ND	105	75-130	2	25	
Foluene	0.0215	0.0050	U	0.0200	ND	108	75-135	0.6	25	
Xylenes (total)	0.0646	0.0050	U	0.0600	ND	108	75-145	1	30	
Surrogate: Dibromofluoromethane	0.00522		11	0.00500		104	70-120			
Surrogate: 1,2-Dichloroethane-d4	0.00520		н	0.00500		104	65-135			
Surrogate: Toluene-d8	0.00508		n	0.00500		102	75-120			
Surrogate: 4-Bromofluorobenzene	0.00500		#	0.00500		100	60-120			





Stratus Environmental Inc. [Arco] Project: ARCO #2107, Oakland, CA MQF0863
3330 Cameron Park Dr., Suite 550 Project Number: GOC27-0006 Reported:
Cameron Park CA, 95682 Project Manager: Jay Johnson 07/10/07 19:11

Notes and Definitions

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Atlantic Richfield Company

A BP affiliated company

Chain of Custody Record
Project Name: Arus Station # 2107

BP BU/AR Region/Enfos Segment: 8/ Amtivo 7 W.C. \ Refail \ Alamoda \ 2107
State or Lead Regulatory Agency: Alamoda County Health Care Service

Requested Due Date (mm/dd/yy): July 1 Ag

On-site Time:	Temp:
Off-site Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

On-site Time:

Lab Name: Test America BBP/AR Facility No.: 3310 Park Blud., Oak land Consultant/Contractor: 5trates Environ mental, Address: 885 Jarvis Dr. BBP/AR Facility Address: V Aro 5 lation # 2107 Address: 3330 Camera Park Dr., # 550 Camera Park , CA 95087 Lab PM: Liga Race Consultant/Contractor Project No.: E-2107	
Morgan Hilly CA 95037 Site Lat/Long: Camera Park, CA 95687	
	<u> </u>
Tele/Fax: 408-787- 9156 Enfos Project No.: 60C-27-0006 Consultant/Contractor PM: Jay Johnson	
BP/AR EBM: Paul Supple Provision of OOC (circle one) Tele/Fax: 530-676-6008	
Address: 2010 Come Convert Place # 150 Phase/WBS: OI - 95898 ment Report Type & QC Level: 1866 I W/ EDF	
Sub Phase/Task: 03 - anolyfical E-mail EDD To: Great Ciruitestalising, 45	
San Ramon, CA Sub Phase/Task: ()3 - analytical E-mail EDD To: Great Creater States inc. not Tele/Fax: 975-775-3506 Cost Element: 01 - Contractor Labor Invoice to: Consultant or BP of Atlantic Richfield Co. (cir	le one)
Lab Bottle Order No: Matrix Preservative Requested Analysis	
Sample Description No. Sample Description No. Discription Air Time No. Laboratory No. Of Containers No.	and
1 5814-9 8:44 6-26 0 01 1 0 01 1	
2 5814-15 8:50 6-26 1 02 1 1	
3 5614-19 8:54 6-76 1 03 [1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
4 5BM-29 9'08 696 / 04 1 / 1 / 1 / 1	
5 5612-9 11:36 6-26 0 05 1 1 11.37	
6 SB12-15 11:42 6-26 / Ob 1 / VYYY	
7 5612-23 11:57 626 / 07 1 0, 07 1	
8 231227 12:01 6-26 0 08 (0	
9	
10	
Sempled Name: B. Unico (College 1905 Relinguished By Affiliation Date Time Accepted By Affiliation Date	Time
Sampler's Company: Strates Environ mental, Inc. JUST SILEZ 6-26-07 130 Mile 6/2	1130
Shipment Date: 6-76-107	
Shipment Method: Ful : Ex	<u> </u>
Shipment Tracking No:	<u> </u>
pecial Instructions:	
Custody Seals In Place: Yes / Mo) Temp Blank: Yes / Wo) Cooler Temp on Receipt: 3, 6°F/C) Trip Blank: Yes / No) MS/MSD Sample Submitted: Yes/	Jo
Custody Seals In Place; Yes / No Temp Blank: Yes / No Cooler Temp on Receipt: 3. 6°F/C Trip Blank: Yes / No MS/MSD Sample Submitted: Yes/	

TEST AMERICA SAMPLE RECÈIPT LOG

CLIENT NAME:	ARCO 210	7)	Charles of the second of the s	The second second second	urbranckina –		A THE PERSON NAMED IN	KIRANIMATTA NATA TANATAN	Sicology and the same and the s
REC. BY (PRINT)	ARCO (210)/)	DATE REC'D AT LAB: TIME REC'D AT LAB:	-6/2/	0/	-		For Regul	atory Purposes? 🦯
WORKORDER:	MQF0863		DATE LOGGED IN:		30	-			WATER YES NO
-			DATE COGGED IV:	0/36	107	_		WASTE W	ATER YES NO
CIRCLE THE ADDR	OPRIATE RESPONSE	, 					•	•	•
-11/2-11/10/11/11/11	PENINTE RESPUNSE	LAB	CLIENT ID	CONTAINER	PRESER		SAMPLE	DATE	REMARKS:
1. Cuslody Seal(s)	Present / Absent	SAMPLE#		DESCRIPTION	VATIVE	рH	MATRIX	SAMPLED	CONDITION (ETC.)
·· Cooled Coal(a)	Intact / Broken*			F-+				TO THE PLANTS OF	The second secon
2. Chain-of-Custody									
Traffic Reports or	Présent / Absent*						·	KU/	
Packing List:	D====1 (1)	<u> </u>							
4. Airbill;	Present / Absen) Airbill / Sticker		***		·		(200)	/	
7. 7 di 9 117,									
5. Airbill #: SEE.	Present / Absent					7		<u> </u>	
6. Sample Labels:					. 1	V V			* Plastic Core
7. Sample IDs:	Present / Absent				1				No I MOSITE COLO
a. Compre 105.	Lised / Not Listed				127			1	
8. Sample Condition:	on Chain-of-Custody				571				
or compre condition.	In(ac) / Broken* / Leaking*				7				
3. Does information on	chair of aut.			(De /	·				
traffic reports and sa	unali-vi-custody,		······································	W/					
agree?								·	
D. Sample received within	Yes / No*								
hold time?	i_		/						
Adequate sample volur	Yeâ / No*						-		
received?	į į								
2. Proper preservatives us	Yes / No*								
B. Trip Blank / Temp Blank							-		·
(circle which, if yes)									
Read Temp:	Yes / No*								
Corrected Temp:	2,00	——— <u>—</u>	/						
Is corrected temp 4 +/-;	2°C7 (Tes)/No**	/							
ceplance range for samples requ		/							
Exception (if any): META	I S / DEC ON ICE	_/							
or Problem COC	LO / UFF UNICE								
	DESCRIPTION OF THE PROPERTY OF	STREET, IN							
SRI Ravision 8		"IF CIRCLE	D. CONTACT PROJECT	DE A N. S. C. T. S.		-1-7	COLUMN ASSESSATION	Transport August	W. S. W.

laces Rev 7 (07/19/05) e 09/13/06

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12 July, 2007

Jay Johnson Stratus Environmental Inc. [Arco] 3330 Cameron Park Dr., Suite 550 Cameron Park, CA 95682

RE: ARCO #2107, Oakland, CA

Work Order: MQF0811

Enclosed are the results of analyses for samples received by the laboratory on 06/27/07 19:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lisa Race

Senior Project Manager

CA ELAP Certificate # 1210

The results in this laboratory report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the BPGCLN Technical Specifications, applicable Federal, State, local regulations and certification requirements as well as the methodologies as described in laboratory SOPs reviewed by the BPGCLN. This entire report was reviewed and approved for release.





Stratus Environmental Inc. [Arco] Project: ARCO #2107, Oakland, CA MQF0811
3330 Cameron Park Dr., Suite 550 Project Number: GOC27-0006 Reported:
Cameron Park CA, 95682 Project Manager: Jay Johnson 07/12/07 16:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HP12-19	MQF0811-01	Water	06/25/07 17:15	06/27/07 19:00
HP12-25	MQF0811-02	Water	06/25/07 17:55	06/27/07 19:00
HP9-13	MQF0811-03	Water	06/26/07 13:10	06/27/07 19:00
HP9-21	MQF0811-04	Water	06/26/07 13:40	06/27/07 19:00
HP10-16	MQF0811-05	Water	06/26/07 15:40	06/27/07 19:00
HP10-24	MQF0811-06	Water	06/26/07 16:20	06/27/07 19:00
HP11-24	MQF0811-07	Water	06/26/07 17:00	06/27/07 19:00

The carbon range for the TPH-GRO has been changed from C6-C10 to C4-C12. The carbon range for TPH-DRO has been changed from C10-C28 to C10-C36. EPA 8015B has been modified to better meet the requirements of California regulatory agencies. These samples were received with no custody seals.





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0811 Reported: 07/12/07 16:20

Total Purgeable Hydrocarbons by GC/MS (CA LUFT) TestAmerica - Morgan Hill, CA

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
HP12-19 (MQF0811-01) Water San	ipled: 06/25/07 17:15	Receive	d: 06/27/0	7 19:00					
Gasoline Range Organics (C4-C12)	ND	50	ug/l	1	7G03016	07/03/07	07/04/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		92 %	60-1:	25	"	IT	"	11	
Surrogate: Dibromofluoromethane		102 %	75-13	20	"	11	n	n	
Surrogate: Toluene-d8		94%	80-13	20	17	11	"	n	
Surrogate: 4-Bromofluorobenzene		90 %	60-13	35	"	"	n	n	
HP12-25 (MQF0811-02) Water Sam	ipled: 06/25/07 17:55	Receive	d: 06/27/0	7 19:00					
Gasoline Range Organics (C4-C12)	84	50	ug/i	ı	7G06002	07/06/07	07/06/07	LUFT GCMS	PV
Surrogate: 1,2-Dichloroethane-d4		90 %	60-12	?5	11	"	u	"	
Surrogate: Dibromofluoromethane		100 %	75-13	20	n.	н	n	tf .	
Surrogate: Toluene-d8		99 %	80-12	20	"	н	n	н	
Surrogate: 4-Bromofluorobenzene		97 %	60-13	35	"	"	n	"	
HP9-13 (MQF0811-03) Water Samp	oled: 06/26/07 13:10	Received	: 06/27/07	19:00					
Gasoline Range Organics (C4-C12)	51	50	ug/l	1	7G03016	07/03/07	07/04/07	LUFT GCMS	PV
Surrogate: 1,2-Dichloroethane-d4		98 %	60-12	25	n	"	"	11	
Surrogate: Dibromofluoromethane		97 %	75-13	20	n	**	n	п	
Surrogate: Toluene-d8		97 %	80-13	20	n	11	n	ít	
Surrogate: 4-Bromofluorobenzene		86 %	60-13	35	"	"	"	"	
HP9-21 (MQF0811-04) Water Samp	oled: 06/26/07 13:40	Received	: 06/27/07	19:00					
Gasoline Range Organics (C4-C12)	ND	50	ug/l	1	7G03016	07/03/07	07/04/07	LUFT GCMS	
Surrogate: 1,2-Dichloroethane-d4		104 %	60-12	?5	u	11	"	IJ	
Surrogate: Dibromofluoromethane		105 %	75-12	20	"	"	"	"	
Surrogate: Toluene-d8		94 %	80-12	20	п	н	Ħ	n	
Surrogate: 4-Bromofluorobenzene		99 %	60-13	35	rr .	n	11	11	





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0811 Reported: 07/12/07 16:20

Total Purgeable Hydrocarbons by GC/MS (CA LUFT) TestAmerica - Morgan Hill, CA

Reporting Analyte Result Limit Units Dilution Batch Prepared Analyzed Method Note: HP10-16 (MQF0811-05) Water Sampled: 06/26/07 15:40 Received: 06/27/07 19:00 Gasoline Range Organics (C4-C12) ND 50 7G03016 07/03/07 ug/l 07/04/07 LUFT GCMS Surrogate: 1,2-Dichloroethane-d4 93 % 60-125 Surrogate: Dibromofluoromethane 97% 75-120 Surrogate: Toluene-d8 89 % 80-120 Surrogate: 4-Bromofluorobenzene 98 % 60-135 HP10-24 (MQF0811-06) Water Sampled: 06/26/07 16:20 Received: 06/27/07 19:00 Gasoline Range Organics (C4-C12) ND 50 7G05001 07/05/07 07/05/07 LUFT GCMS ug/l Surrogate: 1,2-Dichloroethane-d4 92 % 60-125 Surrogate: Dibromofluoromethane 107% 75-120 ,, Surrogate: Toluene-d8 100% 80-120 Surrogate: 4-Bromofluorobenzene 100% 60-135 HP11-24 (MQF0811-07) Water Sampled: 06/26/07 17:00 Received: 06/27/07 19:00 Gasoline Range Organics (C4-C12) 59 50 07/05/07 ug/l 7G05001 07/05/07 LUFT GCMS 102 % Surrogate: 1,2-Dichloroethane-d4 60-125 Surrogate: Dibromofluoromethane 102 % 75-120 Surrogate: Toluene-d8 95 % 80-120

60-135

98%

Surrogate: 4-Bromofluorobenzene





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0811 Reported: 07/12/07 16:20

Volatile Organic Compounds by EPA Method 8260B TestAmerica - Morgan Hill, CA

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Nate
HP12-19 (MQF0811-01) Water	Sampled: 06/25/07 17:15	Receive	d: 06/27/0	7 19:00			···		
tert-Amyl methyl ether	ND	0.50	ug/l	1	7G03016	07/03/07	07/04/07	EPA 8260B	
Benzene	ND	0.50	If .	u	•	U	D	Ħ	
tert-Butyl alcohol	ND	20	н	"	0	0	II*	tt	
Di-isopropyl ether	ND	0.50	и	0	lt .	11	В	11	
1,2-Dibromoethane (EDB)	ND	0.50	И	0	н	If	Ц	U	
1,2-Dichloroethane	ND	0.50	н	1)	и	R	и	U	
Ethanol	ND	300	11	1+	II.	н	H	II .	
Ethyl tert-butyl ether	ND	0.50	tı	H	"	н	h	U	
Ethylbenzene	ND	0.50	0	н	"	н	Ħ	11	
Methyl tert-butyl ether	30	0.50	U	11	Ħ	Ħ	.01	H	
Toluene	ND	0.50	t†	Ħ	tl	41	U	H	
Xýlenes (total)	ND	0.50	I†	0	e e	U	0	Ħ	
Surrogate: Dibromofluoromethane		102 %	75-12	20	н	Ð	"	tt	
Surrogate: 1,2-Dichloroethane-d4		92 %	60-12	?5	н	n	n	u	
Surrogate: Toluene-d8		94 %	80-12	20	"	n	"	n	
Surrogate: 4-Bromofluorobenzene		90 %	60-13	35	"	n	u	rr r	
HP12-25 (MQF0811-02) Water	Sampled: 06/25/07 17:55	Receive	d: 06/27/07	7 19:00					
tert-Amyl methyl ether	ND	1.0	ug/l	2	7G03016	07/03/07	07/04/07	EPA 8260B	<u> </u>
Benzene	ND	1.0	ti	It	н	и	и	*1	
tert-Butyl alcohol	ND	40	**	н	и	и	н	**	
Di-isopropyl ether	ND	1.0	11	н	и	ч	II	Ħ	
1,2-Dibromoethane (EDB)	ND	1.0	ø	н	и	И	и	**	
1,2-Dichloroethane	ND	1.0	σ	н	И	И	И	11	
Ethanol	ND	600	ti	н	н	II	И	н	
Ethyl tert-butyl ether	ND	1.0	ri .	н	H	И	И	и	
Ethylbenzene	ND	1.0	U	н	и	И	Д	a	
Methyl tert-butyl ether	110	1.0	U	н	И	μ	н	a	
Toluene	ND	1.0	σ	н	H	И	н	q	
Xylenes (total)	ND	1.0	()	И	H	n	11	(I	
Surrogate: Dibromofluoromethane		99 %	75-12	20	11	п	11	0	
Surrogate: 1,2-Dichloroethane-d4		94%	60-12	?5	ø	"	n	n	
Surrogate: Toluene-d8		98 %	80-12	20	11	11	"	и	
Surrogate: 4-Bromofluorobenzene		90 %	60-13	35	11	11	n .	n	





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0811 Reported: 07/12/07 16:20

Volatile Organic Compounds by EPA Method 8260B

TestAmerica - Morgan Hill, CA

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
HP9-13 (MQF0811-03) Water	Sampled: 06/26/07 13:10	Received	: 06/27/07	19:00					
tert-Amyl methyl ether	ND	0.50	ug/l	1	7G03016	07/03/07	07/04/07	EPA 8260B	
Benzene	ND	0.50	И	11	n	U	D	11	
tert-Butyl alcohol	ND	20	*1	и	Ħ	U	n	н	
Di-isopropyl ether	ND	0.50	0	H	ti .	17	H	11	
1,2-Dibromoethane (EDB)	ND	0.50	(I	н	0	J†	И	41	
1,2-Dichloroethane	ND	0.50	D	†1	0	R	И	0	
Ethanol	ND	300	D.	†1	0	Д	Ħ	0	
Ethyl tert-butyl ether	ND	0.50	**	0	tt	п	tt	0	
Ethylbenzene	ND	0.50	I†	0	14	Ħ	tt	D	
Methyl tert-butyl ether	67	0.50	н	U	н	+1	(I	0	
Toluene	ND	0.50	И	0	н	**	U	0	
Xylenes (total)	ND	0.50)]	1))1	†I	U	0	
Surrogate: Dibromofluoromethane		97 %	75-12	20	"	"	n	"	
Surrogate: 1,2-Dichloroethane-d4		98 %	60-12	?5	ir .	11	n	n	
Surrogate: Toluene-d8		97 %	80-12	20	11	n	"	"	
Surrogate: 4-Bromofluorobenzene		86 %	60-13	35	11	n	"	a	
HP9-21 (MQF0811-04) Water S	Sampled: 06/26/07 13:40	Received	: 06/27/07	19:00					
tert-Amyl methyl ether	ND	0.50	ug/l	1	7G03016	07/03/07	07/04/07	EPA 8260B	
Benzene	ND	0.50	ti	B.	11	U	D	н	
tert-Butyl alcohol	ND	20	**	и	11	U	II.	К	
Di-isopropyl ether	ND	0.50	et e	H	11	D	17	μ	
1,2-Dibromoethane (EDB)	ND	0.50	er e	и	*I	n	H	н	
1,2-Dichloroethane	ND	0.50	0	н	Ħ	0	P	H	
Ethanol	ND	300	u	н	ŧ1	tt	14	н	
Ethyl tert-butyl ether	ND	0.50	0	**	0	17	H	н	
Ethylbenzene	ND	0.50	0	**	U	t+	н	и	
Methyl tert-butyl ether	7.4	0.50	D	**	0	Ħ	11	и	
Toluene	ND	0.50	n	Ħ	U	Д	И	н	
Xylenes (total)	ND	0.50	D.	tı	0	И	n	H	
Surrogate: Dibromofluoromethane		105 %	75-12	20	11	u	11	ıı .	
Surrogate: 1,2-Dichloroethane-d4		104 %	60-12	?5	n	u	u .	n	
Surrogate: Toluene-d8		94 %	80-12	20	"		If	n	
Surrogate: 4-Bromofluorobenzene		99 %	60-13		"	17	n	"	





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0811 Reported: 07/12/07 16:20

Volatile Organic Compounds by EPA Method 8260B TestAmerica - Morgan Hill, CA

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
HP10-16 (MQF0811-05) Water	Sampled: 06/26/07 15:40	Receive	d: 06/27/0°	7 19:00					
tert-Amyl methyl ether	ND	0.50	ug/l	1	7G03016	07/03/07	07/04/07	EPA 8260B	
Benzene	ND	0.50	16	н	H	н	11	11	
tert-Butyl alcohol	ND	20	п	н	H	н	n	(I	
Di-isopropyl ether	ND	0.50	*1	н	R	11	fi fi	u	
1,2-Dibromoethane (EDB)	ND	0.50	Ħ	н	н	+1	a	O	
1,2-Dichloroethane	ND	0.50	a	Ħ	h	Ħ	u	0	
Ethanol	ND	300	U	11	н	н	0	U	
Ethyl tert-butyl ether	ND	0.50	0	ŧs	н	a	n	u	
Ethylbenzene	ND	0.50	0	O.	11	U	II	O	
Methyl tert-butyl ether	0.78	0.50	U	ti	11	U	n	U	
Toluene	ND	0.50	0	ø	11	U	D	0	
Xylenes (total)	ND	0.50	0	0	†I	U	U	ď	
Surrogate: Dibromofluoromethane		97 %	75-12	20	"	n	n	"	
Surrogate: 1,2-Dichloroethane-d4		93 %	60-12	2 <i>5</i>	n	n	#	μ	
Surrogate: Toluene-d8		89 %	80-12	20	"	n	"	n	
Surrogate: 4-Bromofluorobenzene		98 %	60-13	35	"	,,	n	n	
HP10-24 (MQF0811-06) Water	Sampled: 06/26/07 16:20	Receive	ed: 06/27/0	7 19:00					
tert-Amyl methyl ether	ND	0.50	ug/l	1	7G05001	07/05/07	07/05/07	EPA 8260B	
Benzene	0.80	0.50	14	0	U	I†	II.	H	
tert-Butyl alcohol	ND	20	It	D	n	и	, n	H	
Di-isopropyl ether	ND	0.50	н	н	0	н	н	H	
1,2-Dibromoethane (EDB)	ND	0.50	н	и	D	и	н	н	
1,2-Dichloroethane	ND	0.50	И	и	0	и	Ц	н	
Ethanol	ND	300	*1	и	Đ	μ	H	н	
Ethyl tert-butyl ether	ND	0.50	ŧı	Д	17	н	H	п	
Ethylbenzene	ND	0.50	(1	н	#	и	ti .	н	
Methyl tert-butyl ether	50	0.50	(1	н	ÌΤ	11	ti	н	
Toluene	ND	0.50	0		If	н	11	н	
Xylenes (total)	ND	0.50	0	n	И	н	Ħ	н	
Surrogate: Dibromofluoromethane		107 %	75-12	20	n	0	11	n	
Surrogate: 1,2-Dichloroethane-d4		92 %	60-12	25	u	"	11	u	
Surrogate: Toluene-d8		100 %	80-12	20	u		11	и	
Surrogate: 4-Bromofluorobenzene		100 %	60-13		"	11	n	"	
- •									





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0811 Reported: 07/12/07 16:20

Volatile Organic Compounds by EPA Method 8260B TestAmerica - Morgan Hill, CA

Analyte	I Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
HP11-24 (MQF0811-07) Water	Sampled: 06/26/07 17:00	Receive	d: 06/27/	07 19:00					
tert-Amyl methyl ether	ND	0.50	ug/l	1	7G05001	07/05/07	07/05/07	EPA 8260B	
Benzene	0.63	0.50	н	†I	и	н	Д	It	
tert-Butyl alcohol	ND	20	и	11	н	н	и	B	
Di-isopropyl ether	ND	0.50	н	**	н	п	и	f†	
1,2-Dibromoethane (EDB)	ND	0.50	н	ti	н	Ħ	и	В	
1,2-Dichloroethane	ND	0.50	п	Ħ	н	Ħ	и	If	
Ethanol	ND	300	#1	41	и	**	п	It.	
Ethyl tert-butyl ether	ND	0.50	*1	a	н	44	11	н	
Ethylbenzene	ND	0.50	*1	a	†1	0	n	и	
Methyl tert-butyl ether	66	0.50	Ħ	0	ti	U	*1	н	
Toluene	ND	0.50	a	0	0	U	11	И	
Xylenes (total)	ND	0.50	0	0	ti	U	11	н	
Surrogate: Dibromofluoromethane		102 %	75-	120	If	11	"	π	
Surrogate: 1,2-Dichloroethane-d4		102 %	60-	125	п	п	11	и	
Surrogate: Toluene-d8		95 %	80-	120	"	n	"	"	
Surrogate: 4-Bromofluorobenzene		98 %	60-	135	n	n	n	n	





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0811 Reported: 07/12/07 16:20

Total Purgeable Hydrocarbons by GC/MS (CA LUFT) - Quality Control TestAmerica - Morgan Hill, CA

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7G03016 - EPA 5030B P/T /	LUFT GCMS									
Blank (7G03016-BLK1)				Prepared &	& Analyze	ed: 07/03/	07			
Gasoline Range Organics (C4-C12)	ND	50	ug/l		***************************************					
Surrogate: 1,2-Dichloroethane-d4	2.42		"	2.50	······································	97	60-125			
Surrogate: Dibromofluoromethane	2.46		n	2.50		98	75-120			
Surrogate: Toluene-d8	2.35		n	2.50		94	80-120			
Surrogate: 4-Bromofluorobenzene	2.36		"	2.50		94	60-135			
Laboratory Control Sample (7G03016	-BS2)			Prepared &	& Analyze	ed: 07/03/	07			
Gasoline Range Organics (C4-C12)	422	50	ug/l	500		84	65-120	······································	***************************************	
Surrogate: 1,2-Dichloroethane-d4	2.35		"	2,50		94	60-125			
Surrogate: Dibromofluoromethane	2.44		11	2.50		98	75-120			
Surrogate: Toluene-d8	2.55		"	2.50		102	80-120			
Surrogate: 4-Bromofluorobenzene	2.61		"	2,50		104	60-135			
Laboratory Control Sample Dup (7G0	3016-BSD2)			Prepared &	& Analyze	ed: 07/03/	07			
Gasoline Range Organics (C4-C12)	421	50	ug/l	500		84	65-120	0.3	20	
Surrogate: 1,2-Dichloroethane-d4	2.22		,,	2,50	***************************************	89	60-125			
Surrogate: Dibromofluoromethane	2.37		n	2,50		95	75-120			
Surrogate: Toluene-d8	2.44		,,	2.50		98	80-120			
Surrogate: 4-Bromofluorobenzene	2.68		**	2.50		107	60-135			
Batch 7G05001 - EPA 5030B P/T /	LUFT GCMS									
Blank (7G05001-BLK1)				Prepared &	& Analyzo	:d: 07/05/0	07			
Gasoline Range Organies (C4-C12)	ND	50	ug/l							
Surrogate: 1,2-Dichloroethane-d4	2.15		,,	2.50		86	60-125			
Surrogate: Dibromofluoromethane	2.52		"	2,50		101	75-120			
Surrogate: Toluene-d8	2.44		n	2.50		<i>9</i> 8	80-120			
Surrogate: 4-Bromofluorobenzene	2.54		n	2,50		102	60-135			





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0811 Reported: 07/12/07 16:20

Total Purgeable Hydrocarbons by GC/MS (CA LUFT) - Quality Control TestAmerica - Morgan Hill, CA

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7G05001 - EPA 5030B P/T /	LUFT GCMS									
Laboratory Control Sample (7G05001	-BS2)		,	Prepared	& Analyze	d: 07/05/	07			
Gasoline Range Organics (C4-C12)	411	50	ug/l	500		82	65-120			
Surrogate: 1,2-Dichloroethane-d4	2,24		11	2.50	.,,,,	90	60-125			***************************************
Surrogate: Dibromofluoromethane	2.44		n	2.50		<i>9</i> 8	75-120			
Surrogate: Toluene-d8	2.39		"	2.50		96	80-120			
Surrogate: 4-Bromofluorobenzene	2.75		"	2.50		110	60-135			
Laboratory Control Sample Dup (7G0	5001-BSD2)			Prepared a	& Analyze	ed: 07/05/	07			
Gasoline Range Organics (C4-C12)	436	50	ug/l	500		87	65-120	6	20	
Surrogate: 1,2-Dichloroethane-d4	2,28	······································	"	2.50		91	60-125	***************************************		
Surrogate: Dibromofluoromethane	2.55		n	2.50		102	75-120			
Surrogate: Toluene-d8	2.37		п	2.50		95	80-120			
Surrogate: 4-Bromofluorobenzene	2.75		н	2.50		110	60-135			
Batch 7G06002 - EPA 5030B P/T /	LUFT GCMS									
Blank (7G06002-BLK1)				Prepared a	& Analyze	:d: 07/06/	07			
Gasoline Range Organics (C4-C12)	ND	50	ug/l		***************************************					
Surrogate: 1,2-Dichloroethane-d4	2.15		11	2.50		86	60-125	~	····	
Surrogate: Dibromofluoromethane	2.43		"	2.50		97	75-120			
Surrogate: Toluene-d8	2.39		II	2.50		96	80-120			
Surrogate: 4-Bromofluorobenzene	2.37		"	2.50		95	60-135			
Laboratory Control Sample (7G06002	-BS2)			Prepared a	& Analyze	:d: 07/06/	07			
Gasoline Range Organics (C4-C12)	434	50	ug/l	500		87	65-120			
Surrogate: 1,2-Dichloroethane-d4	2.39		н	2,50		96	60-125			
Surrogate: Dibromofluoromethane	2.50		n .	2.50		100	75-120			
Surrogate: Toluene-d8	2.43		"	2.50		97	80-120			





Project: ARCO #2107, Oakland, CA

MQF0811 Reported: 07/12/07 16:20

Project Number: GOC27-0006
Project Manager: Jay Johnson

Total Purgeable Hydrocarbons by GC/MS (CA LUFT) - Quality Control TestAmerica - Morgan Hill, CA

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 7G06002 - EPA 5030B P/T / LUFT GCMS

Laboratory Control Sample Dup (7G0	6002-BSD2)	Prepared & Analyzed: 07/06/07							
Gasoline Range Organics (C4-C12)	427	50	ug/l	500	85	65-120	2	20	
Surrogate: 1,2-Dichloroethane-d4	2.50		If	2.50	100	60-125	······································		
Surrogate: Dibromofluoromethane	2.52		n	2.50	101	75-120			
Surrogate: Toluene-d8	2.35		n	2.50	94	80-120			
Surrogate: 4-Bromofluorobenzene	2.79		n	2.50	112	60-135			





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0811 Reported: 07/12/07 16:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control TestAmerica - Morgan Hill, CA

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7G03016 - EPA 5030B P/T	/ EPA 8260B		· · · · · · · · · · · · · · · · · · ·							
Blank (7G03016-BLK1)				Prepared	& Analyze	ed: 07/03/0	 07			
tert-Amyl methyl ether	ND	0.50	ug/l					***************************************		
Benzene	ND	0.50	**							
tert-Butyl alcohol	ND	20	0							
Di-isopropyl ether	ND	0.50	0							
1,2-Dibromoethane (EDB)	ND	0.50	0							
1,2-Dichloroethane	ND	0.50	0							
Ethanol	ND	300	U							
Ethyl tert-butyl ether	ND	0.50	U							
Ethylbenzene	ND	0.50	u							
Methyl tert-butyl ether	ND	0.50	U							
Toluene	ND	0.50	U							
Xylenes (total)	ND	0.50	0							
Surrogate: Dibromofluoromethane	2.46		"	2.50		98	75-120			
Surrogate: 1,2-Dichloroethane-d4	2.42		rt	2.50		97	60-125			
Surrogate: Toluene-d8	2.35		**	2.50		94	80-120			
Surrogate: 4-Bromofluorobenzene	2.36		H	2.50		94	60-135			
Laboratory Control Sample (7G03010	6-BS1)			Prepared	& Analyze	ed: 07/03/0	07			
tert-Amyl methyl ether	10.2	0.50	ug/l	10.0		102	65-135			
Benzene	10.0	0.50	н	10.0		100	75-120			
ert-Butyi alcohol	207	20	н	200		104	60-135			
Di-isopropyl ether	10.0	0.50	н	10.0		100	70-130			
1,2-Dibromoethane (EDB)	10.8	0.50	н	10.0		108	80-135			
1,2-Dichloroethane	9.68	0.50	и	10.0		97	70-125			
Ethanol	219	300	H	200		110	15-150			
Ethyl tert-butyl ether	10.5	0.50	11	10.0		105	65-130			
Ethylbenzene	10.2	0.50	H	10.0		102	75-120			
Methyl tert-butyl ether	10.3	0.50	11	10.0		103	50-140			
Toluene	9.72	0.50	H	10,0		97	75-120			
Xylenes (total)	31,2	0.50	"	30.0		104	75-130			
Surrogate: Dibromofluoromethane	2,35		n	2.50		94	75-120	***************************************	***************************************	***************************************
Surrogate: 1,2-Dichloroethane-d4	2.31		"	2.50		92	60-125			
Surrogate: Toluene-d8	2.26		"	2.50		90	80-120			
Surrogate: 4-Bromofluorobenzene	2.47		rt	2.50		99	60-135			





Project: ARCO #2107, Oakland, CA

Spike

Source

%REC

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0811 Reported: 07/12/07 16:20

RPD

Volatile Organic Compounds by EPA Method 8260B - Quality Control TestAmerica - Morgan Hill, CA

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 7G03016 - EPA 5030B P/T / E	EPA 8260B									
Matrix Spike (7G03016-MS1)	Source: MO	QF0873-01		Prepared	& Analyze	ed: 07/03/	07			
tert-Amyl methyl ether	9.51	0.50	ug/l	10,0	ND	95	65-135			
Benzene	10.2	0.50	U	10.0	ND	102	75-120			
ert-Butyl alcohol	212	20	D	200	ND	106	60-135			
Di-isopropyl ether	10.3	0.50	If	0.01	ND	103	70-130			
,2-Dibromoethane (EDB)	10.9	0.50	н	0.01	ND	109	80-135			
,2-Dichloroethane	9.74	0.50	н	10.0	ND	97	70-125			
Ethanol	199	300	н	200	ND	100	15-150			
Ethyl tert-butyl ether	11.0	0.50	н	10.0	ND	110	65-130			
Ethylbenzene	11.5	0.50	Ħ	10.0	ND	115	75-120			
Methyl tert-butyl ether	10,1	0.50	ŧ	10.0	ND	101	50-140			
foluene	10.8	0.50	a	10.0	ND	108	75-120			
(ylenes (total)	33.2	0.50	0	30.0	ND	111	75-130			
urrogate: Dibromofluoromethane	2.59		"	2.50		104	75-120			
urrogate: 1,2-Dichloroethane-d4	2.40		"	2.50		96	60-125			
urrogate: Toluene-d8	2.42		rr rr	2.50		97	80-120			
urrogate: 4-Bromofluorobenzene	3.02		"	2,50		121	60-135			
Matrix Spike Dup (7G03016-MSD1)	Source: MQ	QF0873-01		Prepared	& Analyze	ed: 07/03/	07			
ert-Amyl methyl ether	9.23	0.50	ug/l	10,0	ND	92	65-135	3	25	
Benzene	9.29	0.50	и	0.01	ND	93	75-120	10	20	
ert-Butyl alcohol	199	20	н	200	ND	99	60-135	6	25	
Di-isopropyl ether	9.53	0.50	н	10.0	ND	95	70-130	8	25	
,2-Dibromoethane (EDB)	9.65	0.50	и	10.0	ND	96	80-135	12	30	
,2-Dichloroethane	8.89	0.50	и	10.0	ND	89	70-125	9	25	
thanol	168	300	н	200	ND	84	15-150	17	25	
Ithyl tert-butyl ether	10.1	0.50	н	10.0	ND	101	65-130	8	25	
Ethylbenzene	10.6	0.50	II	10.0	ND	106	75-120	8	20	
lethyl tert-butyl ether	9.14	0.50	н	10,0	ND	91	50-140	10	25	
Toluene	9,44	0.50	**	10.0	ND	94	75-120	13	25	
(ylenes (total)	28.9	0.50	**	30.0	ND	96	75-130	14	20	
urrogate: Dibromofluoromethane	2.55	***************************************	11	2.50		102	75-120			
Surrogate: 1,2-Dichloroethane-d4	2.23		"	2.50		89	60-125			
'urrogate: Toluene-d8	2.55		n	2.50		102	80-120			
						100				

2,50

2.65

Surrogate: 4-Bromofluorobenzene

60-135

106





Project: ARCO #2107, Oakland, CA

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0811 Reported: 07/12/07 16:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control TestAmerica - Morgan Hill, CA

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7G05001 - EPA 5030B P/T	/ EPA 8260B									
Blank (7G05001-BLK1)				Prepared	& Analyze	d: 07/05/0	07			
tert-Amyl methyl ether	ND	0.50	ug/l							
Benzene	ND	0.50	11							
tert-Butyl alcohol	ND	20	ti.							
Di-isopropyl ether	ND	0.50	r)							
1,2-Dibromoethane (EDB)	ND	0.50	"							
1,2-Dichloroethane	ND	0,50	II .							
Ethanol	ND	300	ø							
Ethyl tert-butyl ether	ND	0.50	n							
Ethylbenzene	ND	0.50	1)							
Methyl tert-butyl ether	ND	0.50	0							
Toluene	ND	0.50	D							
Xylenes (total)	ND	0.50	D							
Surrogate: Dibromofluoromethane	2,52		*1	2.50		101	75-120		***************************************	***************************************
Surrogate: 1,2-Dichloroethane-d4	2.15		"	2.50		86	60-125			
Surrogate: Toluene-d8	2.44		"	2.50		98	80-120			
Surrogate: 4-Bromofluorobenzene	2,54		n	2.50		102	60-135			
Laboratory Control Sample (7G0500	I-BS1)			Prepared	& Analyze	d: 07/05/0	07			
tert-Amyl methyl ether	9,85	0.50	ug/l	0.01		98	65-135			
Вепzепе	9.41	0.50	н	0.01		94	75-120			
tert-Butyl alcohol	196	20	H	200		98	60-135			
Di-isopropyl ether	9.33	0.50	#	10,0		93	70-130			
1,2-Dibromoethane (EDB)	10.4	0.50	н	10,0		104	80-135			
1,2-Dichloroethane	8.38	0.50	н	10.0		84	70-125			
Ethanol	177	300	n	200		89	15-150			
Ethyl tert-butyl ether	9.89	0.50	11	10,0		99	65-130			
Ethylbenzene	10.2	0.50	11	10.0		102	75-120			
Methyl tert-butyl ether	9.74	0.50	11	10.0		97	50-140			
Foluene	9.49	0.50	U	10.0		95	75-120			
Xylenes (total)	31.0	0.50	11	30.0		103	75-130			
Surrogate: Dibromofluoromethane	2.35		11	2.50		94	75-120			
Surrogate: 1,2-Dichloroethane-d4	2.17		"	2.50		87	60-125			
Surrogate: Toluene-d8	2.32		"	2.50		93	80-120			
Surrogate: 4-Bromofluorobenzene	2.70		11	2.50		108	60-135			





Project: ARCO #2107, Oakland, CA

Spike

Source

Project Number: GOC27-0006 Project Manager: Jay Johnson MQF0811 Reported: 07/12/07 16:20

RPD

%REC

Volatile Organic Compounds by EPA Method 8260B - Quality Control TestAmerica - Morgan Hill, CA

Reporting

Analyte	Result	Keponing Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	Limit	Notes
Batch 7G05001 - EPA 5030B P/T / E	CPA 8260B									
Matrix Spike (7G05001-MS1)	Source: M	QF0811-06		Prepared	& Analyz	ed: 07/05/	07			
tert-Amyl methyl ether	8.47	0,50	ug/l	10.0	ND	85	65-135			
Benzene	9.55	0.50	H	10.0	0.800	88	75-120			
tert-Butyl alcohol	195	20	H	200	ND	98	60-135			
Di-isopropyl ether	9.14	0.50	H	10.0	ND	91	70-130			
1,2-Dibromoethane (EDB)	9.30	0.50	н	10.0	ND	93	80-135			
1,2-Dichloroethane	8.07	0.50	**	10.0	ND	81	70-125			
Ethanol	234	300	Ħ	200	ND	117	15-150			
Ethyl tert-butyl ether	8,86	0.50	н	10.0	ND	89	65-130			
Ethylbenzene	10.5	0.50	Ħ	10.0	ND	105	75-120			
Methyl tert-butyl ether	47.6	0.50	"	10.0	50.5	0	50-140			BE
Toluene	9.53	0.50	**	10.0	0.200	93	75-120			
Xylenes (total)	29.5	0.50	u	30.0	ND	98	75-130			
Surrogate: Dibromofluoromethane	2,29	***	11	2.50		92	75-120			
Surrogate: 1,2-Dichloroethane-d4	1.99		n	2.50		80	60-125			
Surrogate: Toluene-d8	2.21		"	2.50		88	80-120			
Surrogate: 4-Bromofluorobenzene	2.57		**	2.50		103	60-135			
Matrix Spike Dup (7G05001-MSD1)	Source: M	QF0811-06		Prepared	& Analyz	ed: 07/05/	07			
tert-Amyl methyl ether	12.4	0.50	ug/l	10.0	ND	124	65-135	38	25	BA
Benzene	12.1	0.50	Ħ	10.0	0.800	113	75-120	24	20	BA
tert-Butyl alcohol	207	20	Ħ	200	ND	103	60-135	6	25	
Di-isopropyl ether	11.2	0.50	41	10.0	ND	112	70-130	21	25	
1,2-Dibromoethane (EDB)	13.5	0.50	0	10.0	ND	135	80-135	37	30	BA
1,2-Dichloroethane	11.0	0.50	U	0.01	ND	110	70-125	30	25	B/
Ethanol	199	300	U	200	ND	100	15-150	16	25	
Ethyl tert-butyl ether	12.1	0.50	U	10.0	ND	121	65-130	31	25	BA
Ethylbenzene	10.6	0.50	u	10.0	ND	106	75-120	1	20	
Methyl tert-butyl ether	72.0	0.50	U	10.0	50.5	215	50-140	41	25	BB, BA
Toluene	10.9	0.50	U	10,0	0.200	107	75-120	14	25	
Xylenes (total)	31.7	0.50	U	30.0	ND	106	75-130	7	20	
Surrogate: Dibromofluoromethane	2.65		n	2.50		106	75-120			
Surrogate: 1,2-Dichloroethane-d4	2.63		"	2.50		105	60-125			
Surrogate: Toluene-d8	2.51		"	2.50		100	80-120			

2.62

Surrogate: 4-Bromofluorobenzene

60-135

105

2.50





Project: ARCO #2107, Onkland, CA
Project Number: GOC27-0006

MQF0811 Reported: 07/12/07 16:20

Notes and Definitions

Project Manager: Jay Johnson

PV Hydrocarbon result partly due to individ, peak(s) in quant, range

BB Sample > 4x spike concentration

BA Relative percent difference out of control

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Atlantic Richfield Company

A BP affiliated company

Chain of Custody Record

roject Name:	Ã	No 5	Station	n#	210
		, -, -	- 1-01-A	<i>- 1</i>	

BP BU/AR Region/Enfos Segment: Bf America Tw. C. Relaid Alameda 2107 State or Lead Regulatory Agency: Alameda County Health Care Services

Requested Due Date (mm/dd/yy):

	rageor
On-site Time:	Temp:
Off-site Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction

Lab Name: Test America	BP/A	BP/AR Facility No.: 3310 Park Blud, Oakland Consultant/Contractor: Stratus Environ mental, In											Inc.								
Address: 885 Janus Dr.	BP/A	BP/AR Facility Address: 🗸					m #	210	7			Address: 3330 Camerin Park Dr., #550									
Morgan Hilly CA 95037	Site I	Site Lat/Long:								Cameron Park, CA 95687											
Lab PM: Lisa Race	Calif	California Global ID No.: TO 6619 734306 Consultant/Contractor Project No.: E - 210						2107													
Tele/Fax: 408-781-8156	Enfos	Enfos Project No.: 60627-0006 Consultant/Contractor PM: Jay Johnson						jan.		-											
BP/AR EBM: Paul Supple	Provi	sion or OOC	(circl	e one	3)			5.0	· -			Tele/Fax: 530-676-6000									
Address: 2010 Crow Canyon Place #150	Phase	WBS: OI-	N- Q55855 ment Report Type & QC Level: ew W EDF						EDF												
San Ramon, CA	Sub P	Sub Phase/Task: 03 - quely fical E-mail EDD To: 6						: W	ica:	Cit	wille	strato	sinc ne	f							
Tele/Fax: 925-275-3506	Cost 1	Element: 01-	CON	drai	do	laba	^					Invo	ice to	: Cor	sultar	it or B	P of At	lantic R	ichfield	TCo. (ci	rcle one)
Lab Bottle Order No: . Ma	trix					cserva					Regi			ilysis							
Trime Trime Date Soil/Solid Water/Liquid	4 11	oratory No. 50B/1	No. of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	Methanol	100	OKU	Survis	1,204	ÉDB	配み					Sample	Point Comn	Lat/Long nents	3 and
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4 HP9-21 13:40 6-26 V		-04	5			V			/ /	1/	5	1	/								
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Custody Seals In Place: Yes / No Temp Blank:	Yes (No)	Cooler T	етр	оп Г	Receip	ot: 2	L °F(C)	··T	rip.B	lank:	Yes	/No		M	S/MSI	D Sam	ple Sut	mittec	l: Yes	No

TEST AMERICA SAMPLE RECEIPT LOG

WORKORDER:	Arco 2107 A.M. Mafo 811		DATE REC'D AT LAB: TIME REC'D AT LAB: DATE LOGGED IN:				For Regulatory Purposes? DRINKING WATER YES (WASTE WATER YES ()				
CIRCLE THE APPRO	PRIATE RESPONSE	LAB SAMPLE#	CLIENT ID	CONTAINER DESCRIPTION		рH	SAMPLE MATRIX	DATE . SAMPLED	REMARKS: CONDITION (ETC.)		
Custody Seal(s)	Present / Absent										
	Intact / Broken*			Finge							
2. Chain-of-Custody	Present / Absent*				_						
3. Traffic Reports or											
Packing List:	Present / Absent										
4. Airbill:	Airbill / Sticker										
	Present / Absent										
5. Airbill #:			-								
6. Sample Labels:	Present / Absent						· · · · · · · · · · · · · · · · · · ·				
7. Sample IDs:	L©ed / Not Listed					b.					
	on Chain-of-Custody										
8. Sample Condition:	lfila)ct / Broken* /				(00)	۱ - ۱					
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agree?	Yes / No*			、ハクフ							
Sample received within	ו			· U							
hold time?	(€} / No*			7							
1. Adequate sample volu						·					
received?	(e) No*										
Proper preservatives u											
13. Trip Blank / Temp Blan				-							
(circle which, if yes)	Yes / Ng*										
4. ,Read Temp:	2.22								, , , , , , , , , , , , , , , , , , , ,		
Corrected Temp:					-						
Is corrected temp 4 +/-	2°C? (es)/ No**				1						
Acceptance range for samples req	uiring thermal pres.)										
*Exception (if any): META	ALS / DFF ON ICE										
or Problem COC	Ţ	7									
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Revision 6 es Rev 7 (07/19/05)

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APPENDIX B GEOTRACKER UPLOAD CONFIRMATION PAGES

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Facility Global ID: T06019734306 Facility Name: ARCO #2107

Submittal Title: SWI Soil Sampling 0607

Submittal Type: Soil & Water Investigation Report

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ARCO #2107 Regional Board 3310 PARK OAKLAND, CA 94610 Local Agency (lead agency) - Case #: RO0002526 ALAMEDA COUNTY LOP - (SP) CONF# TITLE QUARTER SWI Soil Sampling 0607 6450962722 Q2 2007 SUBMITTED BY SUBMIT DATE **STATUS** Broadbent & Associates, Inc. PENDING REVIEW 8/29/2007 SAMPLE DETECTIONS REPORT # FIELD POINTS SAMPLED 8 # FIELD POINTS WITH DETECTIONS 1 # FIELD POINTS WITH WATER SAMPLE DETECTIONS ABOVE MCL SAMPLE MATRIX TYPES SOIL METHOD QA/QC REPORT METHODS USED 8260TPH,SW8260B TESTED FOR REQUIRED ANALYTES? LAB NOTE DATA QUALIFIERS M QA/QC FOR 8021/8260 SERIES SAMPLES TECHNICAL HOLDING TIME VIOLATIONS n METHOD HOLDING TIME VIOLATIONS n LAB BLANK DETECTIONS ABOVE REPORTING DETECTION LIMIT ٥ LAB BLANK DETECTIONS O DO ALL BATCHES WITH THE 8021/8260 SERIES INCLUDE THE FOLLOWING? - LAB METHOD BLANK - MATRIX SPIKE N - MATRIX SPIKE DUPLICATE N - BLANK SPIKE Υ - SURROGATE SPIKE WATER SAMPLES FOR 8021/8260 SERIES MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135% n/a MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30% n/a SURROGATE SPIKES % RECOVERY BETWEEN 85-115% n/a BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130% n/a

SOIL SAMPLES FOR 8021/8260 SERIES MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135% MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30% Υ SURROGATE SPIKES % RECOVERY BETWEEN 70-125% Υ BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130% n/a FIELD QC SAMPLES SAMPLE COLLECTED DETECTIONS > REPDL QCTB SAMPLES Ν 0 QCEB SAMPLES N 0 QCAB SAMPLES N 0

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Submittal Title: SWI Soil Sampling 0607

Submittal Type: Soil & Water Investigation Report

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ARCO #2107 Regional Board 3310 PARK OAKLAND, CA 94610 Local Agency (lead agency) - Case #: RO0002526 ALAMEDA COUNTY LOP - (SP) CONF# **QUARTER** 8775404751 SWI Soil Sampling 0607 Q2 2007 SUBMITTED BY SUBMIT DATE STATUS PENDING REVIEW Broadbent & Associates, Inc. 8/29/2007 SAMPLE DETECTIONS REPORT # FIELD POINTS SAMPLED В # FIELD POINTS WITH DETECTIONS 1 # FIELD POINTS WITH WATER SAMPLE DETECTIONS ABOVE MCL SAMPLE MATRIX TYPES SOIL METHOD QA/QC REPORT 8260TPH,SW8260B **METHODS USED** TESTED FOR REQUIRED ANALYTES? LAB NOTE DATA QUALIFIERS Υ QA/QC FOR 8021/8260 SERIES SAMPLES TECHNICAL HOLDING TIME VIOLATIONS 0 METHOD HOLDING TIME VIOLATIONS 0 LAB BLANK DETECTIONS ABOVE REPORTING DETECTION LIMIT 0 LAB BLANK DETECTIONS 0 DO ALL BATCHES WITH THE 8021/8260 SERIES INCLUDE THE FOLLOWING? Υ - LAB METHOD BLANK - MATRIX SPIKE N - MATRIX SPIKE DUPLICATE N Υ - BLANK SPIKE Υ - SURROGATE SPIKE WATER SAMPLES FOR 8021/8260 SERIES MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135% MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30% n/a SURROGATE SPIKES % RECOVERY BETWEEN 85-115% n/a BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130% n/a

SOIL SAMPLES FOR 8021/8260 SERIES MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135% MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30% Υ SURROGATE SPIKES % RECOVERY BETWEEN 70-125% Υ BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130% n/a **FIELD QC SAMPLES** COLLECTED DETECTIONS > REPDL SAMPLE QCTB SAMPLES Ν 0 QCEB SAMPLES Ν 0 QCAB SAMPLES N 0

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Facility Global ID: T06019734306 Facility Name: ARCO #2107

Submittal Title: SWI GW Sampling 0607

Submittal Type: Soil & Water Investigation Report

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ARCO #2107 Regional Board 3310 PARK OAKLAND, CA 94610 Local Agency (lead agency) - Case #: RO0002526 ALAMEDA COUNTY LOP - (SP) CONF# QUARTER SWI GW Sampling 0607 Q2 2007 6531985819 SUBMITTED BY SUBMIT DATE STATUS PENDING REVIEW Broadbent & Associates, Inc. 8/29/2007 SAMPLE DETECTIONS REPORT # FIELD POINTS SAMPLED 7 # FIELD POINTS WITH DETECTIONS 7 # FIELD POINTS WITH WATER SAMPLE DETECTIONS ABOVE MCL SAMPLE MATRIX TYPES WATER METHOD QA/QC REPORT 8260FA,8260TPH METHODS USED TESTED FOR REQUIRED ANALYTES? LAB NOTE DATA QUALIFIERS QA/QC FOR 8021/8260 SERIES SAMPLES TECHNICAL HOLDING TIME VIOLATIONS n METHOD HOLDING TIME VIOLATIONS n LAB BLANK DETECTIONS ABOVE REPORTING DETECTION LIMIT n LAB BLANK DETECTIONS n DO ALL BATCHES WITH THE 8021/8260 SERIES INCLUDE THE FOLLOWING? - LAB METHOD BLANK N - MATRIX SPIKE - MATRIX SPIKE DUPLICATE M ٧ - BLANK SPIKE γ - SURROGATE SPIKE WATER SAMPLES FOR 8021/8260 SERIES MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135% И MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30% Υ SURROGATE SPIKES % RECOVERY BETWEEN 85-115% M Υ BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130%

SOIL SAMPLES FOR 8021/8260 SERIES MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135% MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30% л/а SURROGATE SPIKES % RECOVERY BETWEEN 70-125% n/a BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130% n/a FIELD QC SAMPLES COLLECTED DETECTIONS > REPDL SAMPLE QCTB SAMPLES 0 Ν QCEB SAMPLES N 0 QCAB SAMPLES N ٥

Logged in as BROADBENT-C (CONTRACTOR)

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