Atlantic Richfield Company

Chuck Carmel
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30 July 2010

Re: Vapor Intrusion Assessment Report
Atlantic Richfield Company Station #2035
1001 San Pablo Avenue, Albany, California
ACEH Case #RO0000100

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

Submitted by,

Chuck Carmel
Environmental Business Manager

Attachment

VAPOR INTRUSION ASSESSMENT REPORT
Atlantic Richfield Company Station #2035
1001 San Pablo Avenue, Albany, California
ACEH Fuel Leak Case #RO0000100

Prepared for:

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

Prepared by:

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

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30 July 2010

Project #06-88-610

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BROADBENT & ASSOCIATES, INC
ENVIRONMENTAL, WATER RESOURCES & ENGINEERING

30 July 2010

Project No. 06-88-610

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

Attn.: Mr. Chuck Carmel

Re: Vapor Intrusion Assessment Report, Atlantic Richfield Company Station #2035,
1001 San Pablo Avenue, Albany, Alameda County, California; ACEH Case #RO0000100

Dear Mr. Carmel:

Broadbent & Associates, Inc. (BAI) respectfully submits this *Vapor Intrusion Assessment Report* for Atlantic Richfield Company (a BP affiliated company) Station #2035 located at 1001 San Pablo Avenue, Albany, Alameda County, California (Site). This report contains the results of an on-site vapor intrusion assessment. These activities were conducted in accordance with the *Revised Vapor Intrusion Assessment Work Plan* (BAI, 9/24/2009), which was prepared in response to the ACEH approval letter containing technical comments, dated 3 September 2009.

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
Senior Engineer, P.E.

Enclosures

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

VAPOR INTRUSION ASSESSMENT REPORT
Atlantic Richfield Company Station #2035
1001 San Pablo Avenue, Albany, California

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VAPOR INTRUSION ASSESSMENT REPORT
Atlantic Richfield Company Station #2035
1001 San Pablo Avenue, Albany, California

1.0 INTRODUCTION

On behalf of the Atlantic Richfield Company, RM - a BP affiliated company, Broadbent & Associates, Inc. (BAI) has prepared this *Vapor Intrusion Assessment Report* concerning the Atlantic Richfield Company Station #2035, located at 1001 San Pablo Avenue, Albany, Alameda County, California (Site). The vapor intrusion assessment activities were conducted following the *Revised Vapor Intrusion Assessment Work Plan* (BAI, 9/25/2009) , which was prepared in response to the ACEH approval letter containing technical comments, dated 3 September 2009. This document includes discussions on the site background, vapor intrusion assessment activities including soil gas monitoring point installation, two rounds of sampling, analytical results, conclusions and recommendations. Drawings and appendices referenced within this document are provided following the conclusion of the document's text.

2.0 SITE BACKGROUND

The Site is currently an active ARCO-brand gasoline retail outlet located on the southeast corner of San Pablo and Marin Avenues in Albany, California. A Site Location Map is provided as Drawing 1 following the text conclusion. The land use in the immediate vicinity of the Site is mixed commercial and residential. Development at the Site consists of a service station building with four gasoline underground storage tanks (USTs) with associated piping, and four pump dispensers on two dispenser islands. The Site is primarily covered with asphalt or concrete surfacing. The ACEH-assigned Fuel Leak Case No. is RO0000100 / GeoTracker Global ID No. T0600100081. A Shell-brand service station is located at 999 San Pablo Avenue across the street approximately 65 feet to the north-northwest of the Site. The Shell Station #13-5037 is an active leaking UST case, ACEH Fuel Leak Case No. RO0000121 / GeoTracker Global ID No. T0600101277.

Numerous subsurface investigations and remedial activities have been conducted on-site since 1989. A comprehensive Site history can be found within the *Work Plan for Soil & Water Investigation* (BAI, 1/5/2009). The Site history can be supplemented with the results from advancing three soil borings and the construction of three new ground-water monitoring wells at the Site in March and April 2009, as reported in the subsequent *Soil & Ground-Water Investigation Report* (BAI, 5/20/2009).

3.0 VAPOR INTRUSION ASSESSMENT

Vapor intrusion assessment activities were originally proposed in the *Vapor Intrusion Assessment Work Plan* (BAI, 8/10/2009). That work plan had been prepared in response to the 11 June 2009 letter request from Mr. Paresh Khatri of ACEH. The *Revised Vapor Intrusion Assessment Work Plan* (BAI, 9/25/2009) was prepared in response to the 3 September 2009 letter from ACEH, which approved the original work plan but with significant comments changing the scope of work. Specifically, the technical comments in the ACEH letter of 3 September 2009 requested additional soil vapor sampling locations in the more northern and western portions of

the property where elevated hydrocarbon contaminant concentrations had been observed, but away from the current occupied structures on the Site. Submittal of a revised figure depicting the additional soil vapor sampling locations was requested within the ACEH letter of 3 September 2009. However, due to the significant change in the scope of work a revised work plan was prepared for ACEH as well as for the benefit of Stratus Environmental, Inc., who was anticipated to implement the field work under direct contract to Atlantic Richfield Company.

3.1 Preliminary Field Activities

During the last quarter of 2009, BAI replaced Stratus as the consultant responsible for executing field work at Atlantic Richfield Company and Former BP stations in Alameda County. Prior to initiating field activities, BAI obtained the necessary Well Drilling Permit No.W2009-1115 from the Alameda County Public Works Agency (See Appendix A). BAI also 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 Cruz Brothers Locators, a private utility locating company to confirm the absence of underground utilities at the boring locations. Due to the presence of a buried metal object identified during the utility clearance, the proposed location of boring SG-4 had to be moved five feet to the east-northeast.

3.2 Soil Borings

Soil borings for soil vapor sampling locations SG-1 through SG-5 (See Drawing 2) were advanced on 9-10 March 2010 by Cascade Drilling using an air-knife/vacuum extraction rig. Each boring was advanced to a total depth of approximately 3.5 ft bgs. Due to the shallow nature of the borings, soils were not classified during boring installation activities. Field notes and well construction logs are provided in Appendix A. A GEO_MAP depicting the boring locations was uploaded to the GeoTracker AB2886 database.

3.3 Construction of Soil Vapor Probes

The soil vapor sampling wells were constructed by placing a 6-inch long soil vapor probe at the bottom of each boring attached to 3/8-inch diameter NylaFlow tubing extending to the surface. The soil vapor probes were constructed of double-woven stainless steel wire screen with a pore diameter of 0.057 inch, equipped with stainless steel end fittings. The annulus of the soil vapor sampling wells were constructed with No.2/12 sand filter packs from 3.5 ft bgs to 2.5 ft bgs, overlain with a bentonite annular seal from 2.5 ft bgs to 1.0 ft bgs. The remainder of the annulus was filled with neat cement grout to the surface. The wells were completed with flush, traffic-rated well boxes, with a concrete surface seal to match the existing grade. The cement grout was allowed to cure for 37 days prior to their initial sampling. Construction details are provided within Appendix A.

Residual solids and liquids generated during well construction activities were stored temporarily onsite in a Department of Transportation-approved 55-gallon drums pending analytical results and profiling. Following characterization and profiling, Belshire Environmental Services

transported the investigation-derived residuals to an Atlantic Richfield Company-approved facility for treatment or disposal. Waste manifests are provided in Appendix A.

3.4 Initial Soil Gas Sampling Procedures

Soil vapor sampling activities were completed by BAI on 16 April 2010. No precipitation had been recorded in the area within the previous 24-hour period. Six-liter Summa® canisters were used to collect the samples for analysis. The Summa® canisters were shipped by the laboratory under high vacuum, leak checked, and batch certified to be free of contaminants. Each initial canister vacuum was measured before use and verified to be -30 inches of Mercury (in.Hg). Swagelok fittings and tee(s) were used to connect the purge canister and sample canister to the tubing. Once the canisters were connected to the tubing, the sampling train was checked for leaks by applying a vacuum from the purge canister for approximately five minutes with the Swagelok valve to the well closed. During these initial static leak tests, the vacuums in the purge canisters were observed not to change over their five minute observation periods, indicating that the sampling trains were adequately sealed and not leaking.

Once the initial static leak test was completed, the dedicated purge canister was then used to purge each sampling train (i.e. soil vapor monitoring well, fittings, and aboveground tubing). The pre-sample purge consisted of watching a change in the purge canister of 5 in.Hg over a period of 4-8 minutes. Since the purging (and sampling) flow rate was pre-set by the laboratory-supplied flow regulators/critical orifice assemblies at approximately 200 standard cubic centimeters per minute, this equated to purging each sampling train of approximately 800 to1,600 cubic centimeters (cc), or approximately four to nine times each sampling train volume of approximately 172 cc. Immediately following closing of the valve to the purging canister, the valve to the connected sample canister was opened. Samples were collected over 26 to 40 minutes, essentially until the vacuum in the canister(s) reached -5 in.Hg (or -4 in.Hg during the collection of sample SG-5 on 16 April 2010).

A chemical tracer leak test was performed as a further check for ambient air leaking into the sampling trains. During sample collection, the leak test compound 1,1-Difluoroethane (1,1-DFA, CAS#75-37-6) was applied around the probe at the ground surface and at connections in the sampling system. The leak test compound was administered by spraying a pressurized can of Dust-Off® around the test locations for extended bursts several times during the collection of each sample. A complete 12-ounce can (340g, 374 ml) was used over the course of leak testing during the collection of samples from the five soil vapor monitoring wells. The leak test compound 1,1-DFA was included in the laboratory analysis. Finally, an ambient air sample was also collected outside the Station Building (adjacent to the main entrance door) as proposed within the work plan, however no 1,1-DFA was administered during its collection.
As a further quality assurance test, a field duplicate was collected 16 April 2010 at soil vapor sampling well SG-4. Immediately following collection of sample SG-4, its valve was closed and another Summa canister beyond another tee in the tubing was opened. This duplicate sample was given the fictitious name of SG-6. Therefore, sample SG-6 is not technically a split sample of SG-4, but a duplicate sample collected immediately subsequent to the primary sample. It was thought that two canisters drawing on one well simultaneously, for a combined flow rate of

approximately 400 cubic centimeters per second, would encourage short-circuiting during an attempt to collect split air samples.

As proposed in the sampling plan, one Summa canister collected an ambient air sample (identified as 'Ambient') from ground level just outside the door into the Station Building. No leak check compound was required or utilized. A summary table of pertinent data collected in the field during Summa canister soil vapor sampling on 16 April 2010 is provided in Table 1.

3.5 Laboratory Analysis of Initial Soil Gas Samples

Collected samples were submitted promptly under chain-of-custody protocol to Calscience Environmental Laboratories, Inc. in Garden Grove, California (CA-ELAP #1230, NELAP #03220CA). Soil gas samples were analyzed for Gasoline Range Organics (GRO, hydrocarbon chain lengths C6-C12), Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX), Methyl Tertiary Butyl Ether (MTBE), Ethanol, Tertiary Butyl Alcohol (TBA), Di-Isopropyl Ether (DIPE), Ethyl Tertiary Butyl Ether (ETBE), Tertiary Amyl Methyl Ether (TAME), and 1,1-DFA (the leak check compound) by EPA Method TO-15. Soil gas samples were also analyzed for Oxygen (O_2) and Argon, Carbon Dioxide (CO_2), and Methane (CH_4) by Modified Method ASTM D-1946. Laboratory analyses for soil gas samples were performed in accordance with the EPA standard holding times for Summa® canisters. No significant irregularities were reported during laboratory analysis of the soil gas samples. The laboratory analytical report for the soil gas samples, including chain-of-custody documentation, is provided in Appendix B. Soil gas sample laboratory analytical results along with Environmental Screening Levels (ESLs) for shallow soil gas (residential land use and commercial/industrial land use) established by the California Regional Water Quality Control Board, San Francisco Bay Region (SFRWQCB) are summarized in Table 2.

As summarized in Table 2, Benzene was detected at 0.0032 milligrams per cubic meter (mg/m^3) in Sample SG-3. Toluene was detected in five samples up to 0.011 mg/m^3 in sample SG-3. Ethanol was detected in sample SG-3 at 0.020 mg/m3 and in Ambient sample at 0.039 mg/m^3. The remaining petroleum hydrocarbons GRO, Ethylbenzene, Total Xylenes, MTBE, ETBE, DIPE, TAME, and TBA were not detected above the sample-specific laboratory reporting limits given. The leak check compound 1,1-DFA was found in samples SG-1, SG-2, SG-3, SG-4, and SG-5 in significant concentrations up to 170 mg/m^3. However, 1,1-DFA was not detected in sample SG-6 (the sequential field duplicate to sample SG-4).

3.6 Follow-Up Soil Gas Sampling Procedures

Following the detection of the leak-check compound in each of the primary soil-gas samples collected on 14 April 2010, it was apparent that the contaminant concentration data were of suspect value. On 29 April 2010, BAI contacted ACEH to report the preliminary findings. Mr. Paresh Khatri of ACEH was receptive to BAI conducting a second round of field sampling, as long as both the initial and second round of sampling results were reported.

Follow-up soil gas sampling activities were completed by BAI on 14 May 2010. No precipitation had been recorded in the area within the previous 24-hour period. Six-liter Summa® canisters were used to collect the samples for analysis. The Summa® canisters were shipped by the laboratory under high vacuum, leak checked, and batch certified to be free of contaminants. Each initial canister vacuum was measured before use and verified to be -30 inches of Mercury (in.Hg). Swagelok fittings and tee(s) were used to connect the purge canister and sample canister to the tubing. Once the canisters were connected to the tubing, the sampling train was checked for leaks by applying a vacuum from the purge canister for approximately five minutes with the Swagelok valve to the well closed. During these static leak tests, the vacuums in the purge canisters were observed not to change over their five minute observation periods, indicating that the sampling trains were adequately sealed and not leaking.

Once again, after each static leak test was completed, the dedicated purge canister was then used to purge each sampling train (i.e. soil vapor monitoring well, fittings, and aboveground tubing). The pre-sample purge consisted of watching a change in the purge canister of 5 in.Hg over a period of 5-7 minutes. Immediately following closing of the valve to the purging canister, the valve to the connected sample canister was opened. Samples were collected over 29 to 45 minutes, essentially until the vacuum in the canister(s) reached -5 in.Hg.

This time during sample collection, the leak test compound Isopropyl Alcohol (Isopropanol or IPA, aka Rubbing Alcohol, CAS# 67-63-0) was applied to paper towels laid over and around the probe at the ground surface and at connections in the sampling system. The leak test compound IPA was subsequently included in the laboratory analysis. As a further quality assurance test, another field (sequential) duplicate was collected 14 May 2010 at soil vapor sampling well SG-4. Immediately following collection of sample SG-4, its valve was closed and another Summa canister beyond another tee in the tubing was opened. This duplicate sample was again given the fictitious name of SG-6.

A summary table of pertinent data collected in the field during follow-up Summa canister soil vapor sampling on 14 May 2010 is provided in Table 3.

3.7 Laboratory Analysis of Follow-Up Soil Gas Samples

Collected samples were submitted promptly under chain-of-custody protocol to Calscience Environmental Laboratories, Inc. in Garden Grove, California (CA-ELAP #1230, NELAP #03220CA). Soil gas samples were analyzed for GRO by TO-3, and BTEX, MTBE, DIPE, ETBE, TAME, TBA, Ethanol, and IPA (the leak check compound) by EPA Method TO-15. Soil gas samples were also analyzed for Oxygen (O_2) and Argon, Carbon Dioxide (CO_2), and Methane (CH_4) by Modified Method ASTM D-1946. Laboratory analyses for soil gas samples were performed in accordance with the EPA standard holding times for Summa® canisters. No significant irregularities were reported during laboratory analysis of the soil gas samples. The laboratory analytical report for the follow-up soil gas samples, including chain-of-custody documentation, is provided in Appendix C. Soil gas sample laboratory analytical results along with Environmental Screening Levels (ESLs) for shallow soil gas (residential land use and

commercial/industrial land use) established by the California Regional Water Quality Control Board, San Francisco Bay Region (SFRWQCB) are summarized in Table 4.

As summarized in Table 4, GRO was detected in the duplicate of sample SG-4 (SG-6) at 60 mg/m^3 (right above the laboratory reporting limit of 59 mg/m^3), but not in primary sample SG-4. Toluene was detected in three samples up to 0.016 mg/m^3 in sample SG-4. The remaining petroleum hydrocarbons Benzene, Ethylbenzene, Total Xylenes, MTBE, ETBE, DIPE, TAME, TBA, and Ethanol were not detected above the sample-specific laboratory reporting limits given. The leak check compound IPA was found in samples SG-2 (0.14 mg/m^3), SG-4 (91 mg/m^3), SG-4's duplicate SG-6 (130 mg/m^3), and SG-5 (18 mg/m^3).

3.8 Discussion of Vapor Intrusion Assessment Results

Where either the petroleum hydrocarbon compounds Benzene or Toluene were detected in either round, the results were significantly below the Residential and Commercial ESLs for shallow soil gas. However, GRO was reported in the duplicate of SG-4 during the follow-up round at 60 mg/m^3, above both the Residential and Commercial ESLs of 10 mg/m^3 and 29 mg/m^3, respectively. As noted previously, 60 mg/m^3 is right above the laboratory reporting limit provided. Oxygen (plus Argon) concentrations were noticeably below the normal atmospheric level of 21.9 percent in samples SG-1, SG-2, and SG-3 during both rounds of sampling (ranging from 8.4 to 17.6 percent). Similarly, Carbon Dioxide concentrations in samples SG-1, SG-2, and SG-3 were above the low laboratory reporting limits (measured at up to 5.23 percent). Both of these are believed indirect evidence of aerobic microbial biodegradation of some fuel source (possibly petroleum hydrocarbons). For reasons unexplained, the second round of sampling from SG-5 found a very low Oxygen (plus Argon) concentration of 2.78 percent, and elevated Carbon Dioxide concentration.

The discovery of the leak check compound in many of the samples collected both during the initial sampling on 16 April 2010 and follow-up sampling on 14 May 2010 is significant and troubling. Where the leak-check compound was observed and short-circuiting is considered a possibility, the analytical results should be considered suspect (i.e. too low) due to possible dilution with air from the surface. The fact that pressure losses were not observed during the static leak checks indicates that the integrity of at least the sampling train above ground was not compromised. The detection of the leak check compound(s) results might initially seem to indicate that short-circuiting was occurring between the surface and the inlets to the shallow soil-vapor probes set between 3.0-3.5 ft bgs. However, industry experts in the field of soil gas sampling that reviewed this draft report have not seen these types of issues before with shallow soil gas samples. Their review stated that the probes appeared to have been constructed properly, so they didn't think breakthrough of air/leak check compound from the surface should be occurring. The reduced oxygen levels support this point. Their hypothesis was that the sampling protocols needed to be re-evaluated and re-sampling occur using a different approach (perhaps using smaller canisters, purging with syringes, switch to helium for leak detection, etc.).

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

BAI prepared this *Vapor Intrusion Assessment Report* for Station #2035 following implementation of the scope of work proposed in the *Revised Vapor Intrusion Assessment Work Plan* (BAI, 9/25/2009). Based on the resultant observations, BAI makes the following conclusions:

- The low concentrations of Benzene and Toluene detected do not appear to indicate a vapor intrusion issue at Station #2035. However, the detection of the leak-check compounds in both rounds of sampling precludes the ability to draw this conclusion with certainty. The problem lies with documenting that the samples are valid. It is still believed that the probes were constructed correctly but that somehow the leak-check compound was getting through the sampling train during sample collection.

4.2 Recommendations

Based on the information obtained and presented in this report, BAI makes the following recommendations:

- At this time, BAI recommends that re-sampling be done using a different sampling protocol(s). A revised sampling protocol will be communicated to ACEH prior to sampling and reporting.

5.0 CLOSURE

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

6.0 REFERENCES

ACEH, 3 September 2009. *Fuel Leak Case No. RO0000100 and Geotracker Global ID T0600100081, ARCO #2035, 1001 San Pablo Avenue, Albany, CA 94706.* Letter from Mr. Paresh Khatri (ACEH) to Mr. Paul Supple (Atlantic Richfield Company) approving work plan with technical comments and request for revised site figure.

ACEH, 11 June 2009. *Fuel Leak Case No. RO0000100 and Geotracker Global ID T0600100081, ARCO #2035, 1001 San Pablo Avenue, Albany, CA 94706.* Letter from Mr. Paresh Khatri (ACEH) to Mr. Paul Supple (Atlantic Richfield Company) request for work plan.

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BAI, 10 August 2009. *Vapor Intrussion Assessment Work Plan, Atlantic Richfield Company Service Station #2035, 1001 San Pablo Avenue, Albany, California, ACEH Case #RO0000100*. Submitted to Mr. Chuck Carmel for Atlantic Richfield Company and Mr. Paresh Khatri for ACEH.

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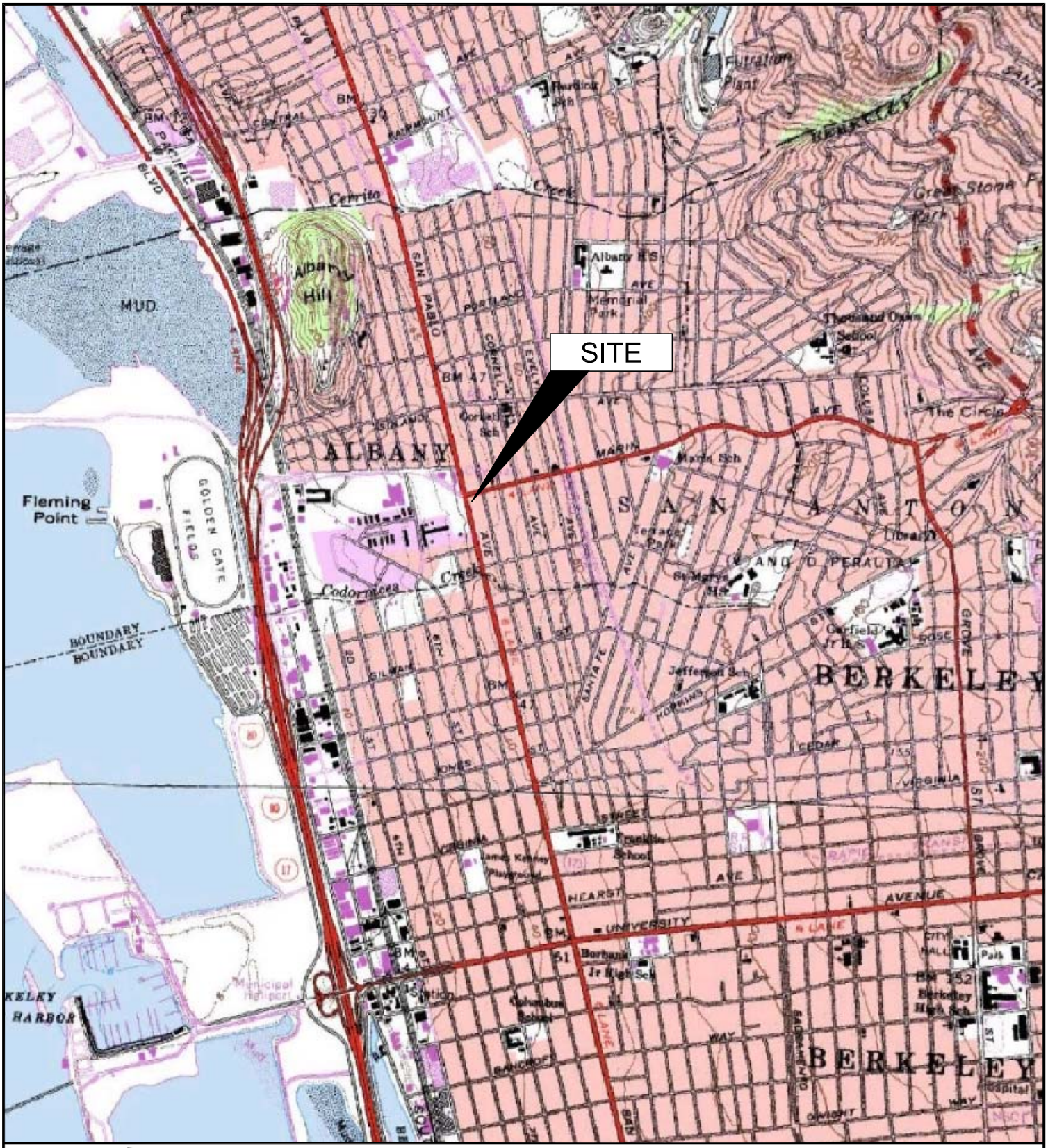


N

0 2000 4000

APPROXIMATE SCALE (ft)

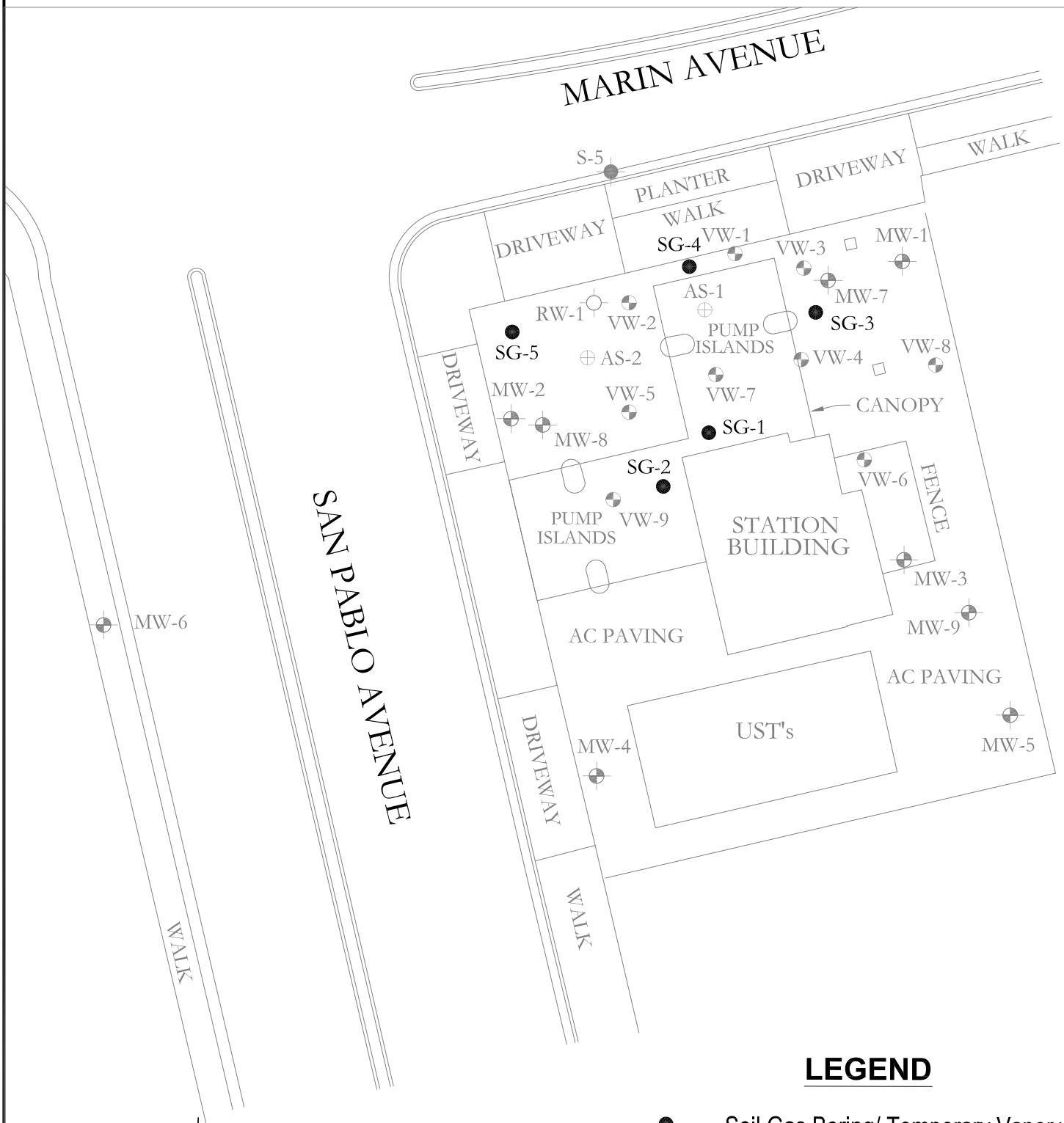
IMAGE SOURCE: USGS

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, CA 95926
Project No.: 06-88-610 Date: 08/7/09

ARCO Service Station #2035
1001 San Pablo Avenue
Albany, California

Site Location Map

Drawing
1



LEGEND

- Soil Gas Boring/ Temporary Vapor well
- (ARCO) Monitoring well
- (ARCO) Vapor extraction well
- (ARCO) Air sparge well
- S-5 (Shell) Monitoring well

NOTES: SITE MAP ADAPTED FROM WOOD RODGERS FIGURE. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California
Project No.: 06-88-610 Date:6/15/2010

ARCO Service Station #2035
1001 San Pablo Avenue
Albany, California

Site Plan with Soil Vapor Monitoring Wells

Drawing 2

Table 1 - Summa Canister Soil Vapor Sampling Field Data, 16 April 2010
Station #2035, 1001 San Pablo Avenue, Albany, California

			Static Leak Test				Purging (COA# 268, Can.# D151)					Sampling				
Sample ID	**COA#[1]**	**Can#[2]**	**Start Time**	**End Time**	**Start Vac.**	**End Vac.**	**Start Time**	**End Time**	**Elapsed**	**Start Vac.**	**End Vac.**	**Start Time**	**End Time**	**Elapsed**	**Start Vac.**	**End Vac.**
SG-1	A140	D484	15:05	15:10	-30	-30	15:10	15:17	0:07	-10	-5	15:17	15:50	0:33	-30	-5
SG-2	A325	D777	14:10	14:15	-30	-30	14:15	14:23	0:08	-15	-10	14:23	14:54	0:31	-30	-5
SG-3	A324	D625	13:15	13:20	-30	-30	13:20	13:24	0:04	-20	-15	13:26	13:52	0:26	-30	-5
SG-4	A47	D508	11:17	11:22	-30	-30	11:22	11:27	0:05	-30	-25	11:28	12:08	0:40	-30	-5
SG-4 dup[4]	unknown[5]	D535	11:17	11:22	-30	-30	11:22	11:27	0:05	-30	-25	11:28	12:08	0:40	-30	-5
SG-5	A166	D488	12:21	12:26	-30	-30	12:26	12:32	0:06	-25	-20	12:32	13:05	0:33	-30	-4
Ambient	A187	D600	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	12:30	12:57	0:27	-30	-5

Notes:

(1) COA# = Critical Orifice Assembly Number (Laboratory-supplied flow regulator; 0.0060 inch orifice, approximately 200 standard cubic centimeters per second).

(2) Can# = Laboratory-supplied 6-liter Summa canister tracking number.

(3) Vacuums measured in inches Mercury.

(4) SG-4 dup = Duplicate of sample SG-4 was identified as SG-6 on chain-of-custody document to laboratory.

(5) unknown = Forgot to record COA# data in field.

(6) n/a = Not applicable/not available; data not collected in the field.

Table 2 - Soil Vapor Sampling Laboratory Analytical Results, 16 April 2010
Station #2035, 1001 San Pablo Avenue, Albany, California

Sample ID	**GRO (C6-C12) (ppmV)**	**Benzene (mg/m^3)**	**Toluene (mg/m^3)**	**Ethyl-benzene (mg/m^3)**	**Total Xylenes (mg/m^3)**	**MTBE (mg/m^3)**	**ETBE (mg/m^3)**	**DIPE (mg/m^3)**	**TAME (mg/m^3)**	**TBA (mg/m^3)**	**Ethanol (mg/m^3)**	**1,1-DFA (mg/m^3)**	**Oxygen + Argon (%)**	**Carbon Dioxide (%)**	**Methane (%)**
SG-1	<15	<0.0024	**0.0058**	<0.0033	<0.013	<0.011	<0.013	<0.013	<0.013	<0.0092	<0.014	**13**	14.1	2.55	<0.755
SG-2	<16	<0.0025	**0.0043**	<0.0034	<0.014	<0.011	<0.013	<0.013	<0.013	<0.0096	<0.015	**12**	17.6	3.87	<0.790
SG-3	<17	**0.0032**	**0.011**	<0.0037	<0.015	<0.012	<0.014	<0.014	<0.014	<0.010	**0.020**	**11**	14.5	2.69	<0.845
SG-4	<14	<0.0089	<0.011	<0.012	<0.049	<0.040	<0.047	<0.047	<0.047	<0.034	<0.053	**170**	21.8	<0.700	<0.700
SG-4 dup.	<16	<0.0026	**0.0041**	<0.0036	<0.014	<0.012	<0.014	<0.014	<0.014	<0.010	<0.016	<0.0089	21.7	<0.825	<0.825
SG-5	<15	<0.0049	<0.0058	<0.0067	<0.027	<0.022	<0.026	<0.026	<0.026	<0.019	<0.029	**72**	21.5	<0.700	<0.700
Ambient	<19	<0.0030	**0.015**	<0.0040	<0.016	<0.013	<0.016	<0.016	<0.016	<0.011	**0.039**	<0.010	21.6	<0.930	<0.930
ESL-Res.	10 mg/m^3	0.084	63.0	0.980	21.0	9.40	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
ESL-Comm.	29 mg/m^3	0.280	180	3.30	58.0	31.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Notes:

(1) GRO analysis by EPA TO-3; Benzene through 1,1-DFA analysis by EPA TO-15; O_2+AR/CO_2/CH_4 analysis by ASTM D-1946.

(2) <X = Not detected above the given laboratory reporting limit (X) in parts per million volume/volume (ppmV) or milligrams per cubic meter (mg/m^3)

(3) ESL-Res = Environmental Screening Level for shallow soil gas (residential land use); from California Regional Water Quality Control Board, San Francisco Bay Region (SFBRWQCB), May 2008.

(4) ESL-Comm = Environmental Screening Level for shallow soil gas (commercial or industrial land use); from SFBRWQCB, May 2008.

(5) n/a = ESL not available or not applicable.

Table 3 - Summa Canister Soil Vapor Sampling Field Data, 14 May 2010
Station #2035, 1001 San Pablo Avenue, Albany, California

			Static Leak Test				Purging (COA# 217, Can.# D718)					Sampling				
Sample ID	**COA#[1]**	**Can#[2]**	**Start Time**	**End Time**	**Start Vac.**	**End Vac.**	**Start Time**	**End Time**	**Elapsed**	**Start Vac.**	**End Vac.**	**Start Time**	**End Time**	**Elapsed**	**Start Vac.**	**End Vac.**
SG-1	A461	D172	14:48	14:53	-30	-30	14:53	15:00	0:07	-8	-3	15:00	15:35	0:35	-30	-5
SG-2	A317	D339	13:44	13:50	-30	-30	13:50	13:56	0:06	-11	-8	13:56	14:25	0:29	-30	-5
SG-3	A127	D584	11:23	11:31	-30	-30	11:31	11:36	0:05	-21	-15	11:36	12:06	0:30	-30	-5
SG-4	A247	D702	9:27	9:33	-30	-30	9:33	9:39	0:06	-30	-26	9:39	10:11	0:32	-30	-5
SG-4 dup[4]	A132	D737	10:16	10:21	-30	-30	10:21	10:27	0:06	-26	-21	10:27	10:57	0:30	-30	-5
SG-5	A307	D701	12:29	12:35	-30	-30	12:35	12:40	0:05	-15	-11	12:40	13:25	0:45	-30	-5

Notes:

(1) COA# = Critical Orifice Assembly Number (Laboratory-supplied flow regulator; 0.0060 inch orifice, approximately 200 standard cubic centimeters per second).

(2) Can# = Laboratory-supplied 6-liter Summa canister tracking number.

(3) Vacuums measured in inches Mercury.

(4) SG-4 dup = Duplicate of sample SG-4 was identified as SG-6 on chain-of-custody document to laboratory.

(5) unknown = Forgot to record COA# data in field.

(6) n/a = Not applicable/not available; data not collected in the field.

Table 4 - Soil Vapor Sampling Laboratory Analytical Results, 14 May 2010
Station #2035, 1001 San Pablo Avenue, Albany, California

Sample ID	**GRO (C6-C12) (mg/m^3)**	**Benzene (mg/m^3)**	**Toluene (mg/m^3)**	**Ethyl-benzene (mg/m^3)**	**Total Xylenes (mg/m^3)**	**MTBE (mg/m^3)**	**ETBE (mg/m^3)**	**DIPE (mg/m^3)**	**TAME (mg/m^3)**	**TBA (mg/m^3)**	**Ethanol (mg/m^3)**	**IPA (mg/m^3)**	**Oxygen + Argon (%)**	**Carbon Dioxide (%)**	**Methane (%)**
SG-1	<65	<0.0027	**0.0044**	<0.0037	<0.015	<0.012	<0.014	<0.014	<0.014	<0.010	<0.016	<0.021	8.40	5.23	<0.855
SG-2	<64	<0.0027	<0.0032	<0.0036	<0.015	<0.012	<0.014	<0.014	<0.014	<0.010	<0.016	**0.14**	17.2	3.79	<0.840
SG-3	<62	<0.0026	**0.0064**	<0.0035	<0.014	<0.012	<0.014	<0.014	<0.014	<0.0098	<0.015	<0.020	11.5	5.05	<0.810
SG-4	<59	<0.0098	**0.016**	<0.013	<0.053	<0.044	<0.051	<0.051	<0.051	<0.037	<0.058	**91**	21.5	<0.765	<0.765
SG-4 dup.	**60**	<0.020	<0.023	<0.027	<0.11	<0.089	<0.10	<0.10	<0.10	<0.075	<0.12	**130**	21.5	<0.775	<0.775
SG-5	<64	<0.0027	<0.0032	<0.0036	<0.015	<0.012	<0.014	<0.014	<0.014	<0.010	<0.016	**18**	2.78	5.45	<0.840
ESL-Res.	10 mg/m^3	0.084	63.0	0.980	21.0	9.40	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
ESL-Comm.	29 mg/m^3	0.280	180	3.30	58.0	31.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Notes:

(1) GRO analysis by EPA TO-3; Benzene through Isopropanol (IPA) analysis by EPA TO-15; O_2+Ar/CO_2/CH_4 analysis by ASTM D-1946.

(2) <X = Not detected above the given laboratory reporting limit (X) in milligrams per cubic meter (mg/m^3)

(3) ESL-Res = Environmental Screening Level for shallow soil gas (residential land use); from California Regional Water Quality Control Board, San Francisco Bay Region (SFBRWQCB), May 2008.

(4) ESL-Comm = Environmental Screening Level for shallow soil gas (commercial or industrial land use); from SFBRWQCB, May 2008.

(5) n/a = ESL not available or not applicable.

APPENDIX A

SOIL VAPOR MONITORING WELL INSTALLATION DATA PACKAGE
(Includes Field Notes, Construction Logs, Well Permits and Well Completion Reports)

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

DAILY REPORT
Page 1 of 1

Project: DP 2035 Project No.: 06-88-610

Field Representative(s): T. Golden E. Farrar Day: Monday Date: 3/1/10

Time Onsite: From: 1245 To: 1440 ; From: _____ To: _____ ; From: _____ To: _____

✓ Signed HASP ✓ Safety Glasses ✓ Hard Hat ✓ Steel Toe Boots ✓ Safety Vest
✓ UST Emergency System Shut-off Switches Located ✓ Proper Gloves
✓ Proper Level of Barricading ___ Other PPE (describe) _____

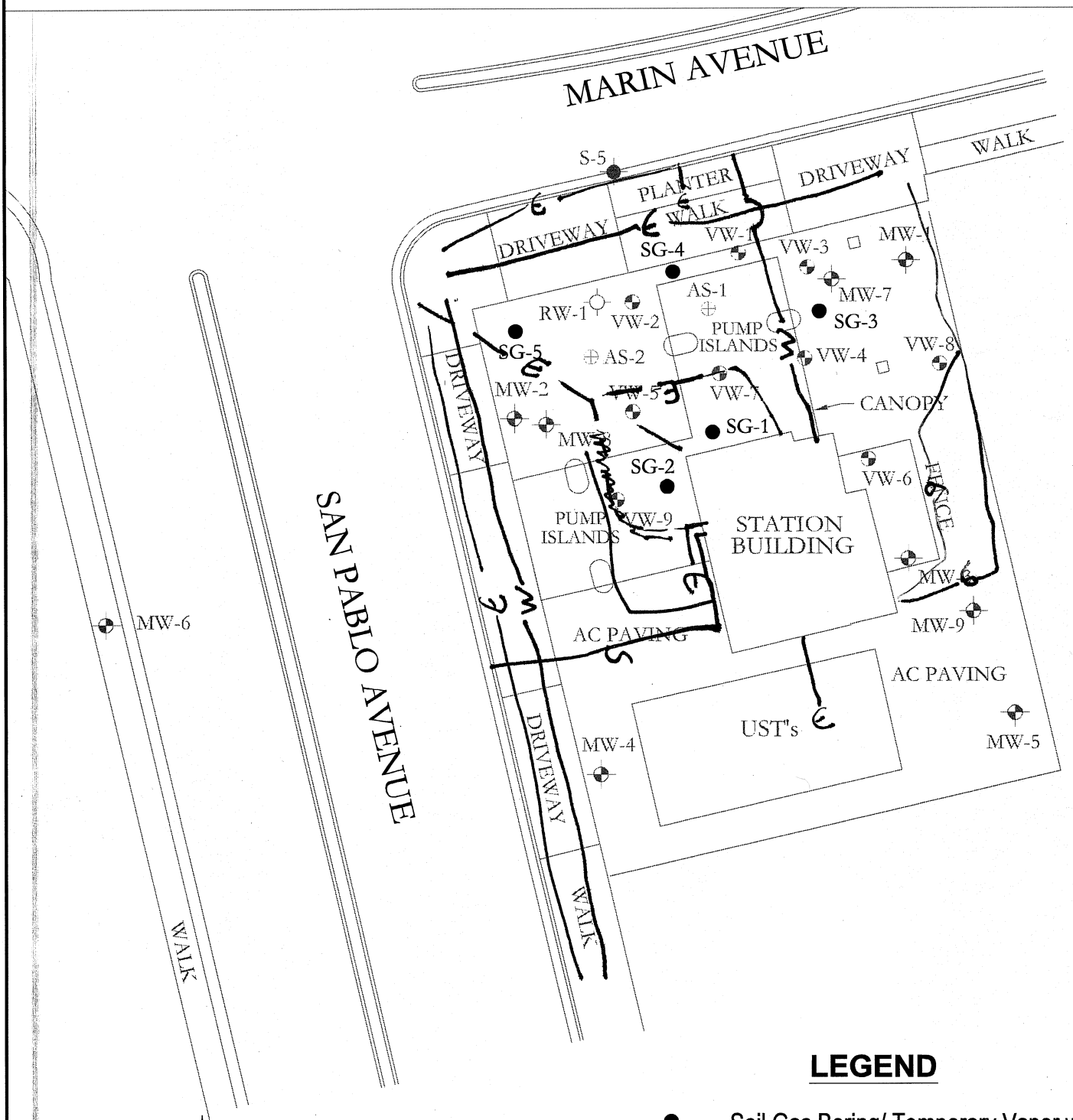
Weather: 50's overcast

Equipment In Use: _____

Visitors: _____

TIME:	WORK DESCRIPTION:
1040	Depart Vacaville
1125	Arrive 6228
1153	Depart 6228
1208	Arrive 2030
1235	Depart 2030
1245	Arrive 2035
1440	Depart 2035
1450	Arrive 428
1505	Depart 428
1510	Arrive 2128
1530	Depart 2128
1615	

Signature: _____



LEGEND

- Soil Gas Boring/ Temporary Vapor well
- (ARCO) Monitoring well
- (ARCO) Vapor extraction well
- (ARCO) Air sparge well
- S-5 (Shell) Monitoring well

NOTES: SITE MAP ADAPTED FROM WOOD RODGERS FIGURE. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California
Project No.: 06-88-610 Date:9/22/09

ARCO Service Station #2035
1001 San Pablo Avenue
Albany, California

Site Plan with Proposed
Soil Gas Boring Locations

Drawing
2

CRUZ BROTHERS LOCATORS

JOB#: 21042

P.O.Box 66768
Scotts Valley, CA 95067

(831) 461-1468 Dispatch
(831) 461-1470 Fax

INVOICE AGREEMENT

This agreement is made between Cruz Brothers Locators hereinafter referred to as "C.B.L." and the undersigned client.

Requestor: Tom Venus Company: Broadbent Assoc.

Billing Address: Phone: 530 566 1400

C.B.L. agrees to perform the following scope of work for the above mentioned client. In consideration of said scope of work the client agrees to pay C.B.L. the sum of $145.00 per hr. Note that there is a minimum charge of two hours and is incurred upon office departure to office return. Additional material expenses will be added to that amount. The client also agrees to compensate C.B.L. in the event it is proven that the problem noted in the scope of work does not exist such as a proven pressure test indicating no water or gas leak where one was believed to be. C.B.L. will not be held liable for any actions taken by any other person performing work after C.B.L.'s findings or recommendations. In any event that it is determined C.B.L. is liable for its actions the liability shall be limited to the amount of its fee. The surveying of existing utility lines are only guaranteed for utilities located and marked. Customers should never assume that 100% of said utilities have been deteced and marked. Some utilities are undetectable. The final proof of location of leak or utility line requires a small excavation from the surface called a "pothole". The property owner or construction contractor performs this work according to California State Law. For all excavation call USA 48 hr.s ahead 1-800-227-2600 to be safe. Please approve and forward this invoice to your A/P department. Payment is due upon receipt unless other arrangements have been made. Initials: _____

Job Name: Arco Station PO/Proj: 06 88 610

Job Address: 1001 San Pablo Ave City: Albany

Contact Person: Eric Farman Phone #: 775 247 790

Service & Scope of work: Clear Borings

Date: 3-1-10 Start: 100 End: 300 Total Hrs: _____ Charges: _____

Expense/Credit: 1 hr Travel Total: 3hrs

Authorizing Signature: Total Due: $ 435.00

Results: Technician: Mike Gil

Elect Red — Marked electric to station in red

Gas Yellow — Also other electric lines to lights pumps and water and AM service Bldgs.

Comm/TV Orange — Marked out water from meter to station in blue. Marked two gas lines from meter to street in yellow

Water Blue

Sewer/Drain Green — Also vanity pve trench to remediation system in white

Other Pink/Purple

Job Complete: ✓ Return Trip Advised: _____ On Going: _____

Utility Location ★ Leak Detection ★ Video Inspection ★ Vacuum Extractio

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

DAILY REPORT
Page 1 of 2

Project: BP 2035 Project No.: 06.88-610
Field Representative(s): T. Geddes E. Fox Day: Tuesday Date: 3/9/10
Time Onsite: From: 0655 To: 1515 ; From: ____ To: ____ ; From: ____ To: ____

✓ Signed HASP ✓ Safety Glasses ✓ Hard Hat ✓ Steel Toe Boots ✓ Safety Vest
✓ UST Emergency System Shut-off Switches Located ✓ Proper Gloves
✓ Proper Level of Barricading ___ Other PPE (describe) ____

Weather: Clear 40's

Equipment In Use: ____

Visitors: ____

TIME:	WORK DESCRIPTION:
0655	Depart Vancouver
0755	Arrive BP 2035
0850	Cascade arrives
1000	Begin cutting SG-2
	Clay/soil/backfill w/ gravel to 1', some old concrete 5-
	old Brick @ 1' BGS
	Sandy clay 1' to 3.5
1054	@ 3'
1100	@ 3.5 Sandy clay, firm, moist
	PID reading in Hole 0.6ppm, Cuttings 0.4ppm
1103	Grant inspector arrives
1128	Bentonite seal to 1' bgs
	Drillers dont have Swagelock to fit. need 3/8 od
1130-1215	Lunch
1230	Surface completion of SG-2 done, begin setup
	on SG-1
1305	@ 3.5 ft, sandy clay all the way down for SG-1, Hole 0.2ppm
1400	SG-1 complete, set up on SG 3

Signature: [signature]

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

DAILY REPORT
Page 2 of 2

Project: BP 2035 Project No.: 06-55-610

Field Representative(s): T. Gilders E. Fowler Day: Tuesday Date: 3/9/10

Time Onsite: From: 0855 To: 1515; From: _____ To: _____; From: _____ To: _____

✓ Signed HASP ✓ Safety Glasses ✓ Hard Hat ✓ Steel Toe Boots ✓ Safety Vest
✓ UST Emergency System Shut-off Switches Located ✓ Proper Gloves
✓ Proper Level of Barricading ___ Other PPE (describe) _____

Weather: clear

Equipment In Use: _____

Visitors: _____

TIME:	WORK DESCRIPTION:
1429	Gravel To 1" w/ some sand @ 56.3' to
	- Gravel does not appear to be pea gravel. Decided
	to continue w/ caution
1434	@ 3.5' PID @ 0.2 ppm
1505	Cutting asphalt @ SG-5
1605	@ 3.5' 0.6 ppm PID
1642	SG-5 complete
1515	offsite

Signature: _____

SAFETY FIRST
CASCADE DRILLING, INC.

L.A. 555 S. Harbor Blvd. La Habra, CA 90631 (562) 929-8176 PH (562) 869-9594 FAX
Seattle PO Box 1184 Woodinville, WA 98072 (425) 485-8908 PH (425) 485-4368 FAX
Portland 13600 SE Ambler Rd. Clackamas, OR 97015 (503) 775-4118 PH (503) 775-4099 FAX
Sacramento 3632 Omec Cir. Rancho Cordova, CA 95742 (916) 638-1169 PH (916) 638-5611 FAX

CLIENT: BROADBENT & ASSOCIATES, INC.
CLIENT P.O. #: 0698610
JOB LOCATION: 1001 San Pablo Ave
CDI PROJECT MANAGER:
DIG ALERT#: 055102
DATE: 3/9/10
CASCADE PROJECT#: S10028.01
DAY: tuesday

WELL# BORING#	DEPTH DRILLED	DESCRIPTION OF WORK	START	STOP	HOURS TOTAL
		A.M. SHOP TIME	5:30	6:00	.5
		TRAVEL TO SITE	6:00	8:30	2.5
		H&S	8:30	10:00	1.5
		unloaded tools & set up	10:00	10:30	.5
SG 2		saw cutter 12"x12" air knife 3'6" set vapor	10:30		
		well & set the well box		12:00	1.5
		lunch	12:00	12:30	.5
SG 1		saw cutter 12"x12" air knife 3'6" set vapor	12:30		
		well & set the well box		2:00	1.5
SG 3		saw cutter 12"x12" air knife 3'6" set vapor	2:00		
		well & set the well box		3:30	1.5
SG 5		saw cutter 12"x12" air knife 3'6" set vapor	3:30		
		well & set the well box		5:00	1.5
		cleanup & loaded tools	5:00	5:30	.5
TOTAL FOOTAGE		TOTAL CHARGEABLE RIG HOURS			
		TRAVEL TO SHOP Hotel	5:30	6:00	.5
		P.M. SHOP TIME	6:00	6:30	.5

RIG ENGINE HOURS START: 3602.0 STOP: 3608.5 TOTAL:

EQUIPMENT				CASING	2"	4"	MATERIALS ITEM	QTY.	ITEM	QTY.
RIG #	S-157	COMPRESSOR/JACK HAMMER		DIAMETER						
FLATBED TRUCK #	S-302	FORKLIFT / HOPPER		20 FT. SCREEN			SAND	2	WELL COVER TYPE	5" 4
FLATBED TRUCK #		CONT. SAMPLER FOOTAGE		10 FT. SCREEN			READY MIX	2	CDP WELL COVER	
TRAILER #	S-242	# OF HYDRO PUNCHES		5 FT. SCREEN			QUICK SET	3	BARRELS	1
# OF SAW CUTS		TIPS/SCREENS		20 FT. BLANK			PORTLAND		AUGER PLUGS	
# OF CORE CUTS		SNOW FENCE RENTAL	Yes	10 FT. BLANK			BENTONITE GROUT		D.O. BITS	
# OF BULL DOG				5 FT. BLANK			BENTONITE CHIPS	2	SAMPLE LINERS	
				SLIP CAP			BENTONITE POWDER	1	HOLE COVER PLATES	
CREW WITH PERDIEM	2	DEPTH TO WATER		THREADED CAP			BENTONITE PELLETS		TRAFFIC CONTROL	
				LOCKING CAPS			COATED PELLETS		PLASTIC SHEETING	Yes
NAME		INITIALS	HOURS	SPARGE TIP			BENTONITE GRANULAR		WOODEN FRAMES	
C. Beas			12.5				ASPHALT PATCH		CORE BOXES	
J. Harkens			12.–				BIT REPAIR		MONUMENT CASING	
									BOLLARD POST	

REMARKS

[signature] CLIENT SIGNATURE
[signature] OPERATOR SIGNATURE

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

DAILY REPORT
Page 1 of 1

Project: BP 2035 Project No.: 06.58.610

Field Representative(s): E. Farrar T. Craddock Day: Wed Date: 3/10/10

Time Onsite: From: 0700 To: 1200 ; From: _____ To: _____ ; From: _____ To: _____

✓ Signed HASP ✓ Safety Glasses ✓ Hard Hat ✓ Steel Toe Boots ✓ Safety Vest
✓ UST Emergency System Shut-off Switches Located ✓ Proper Gloves
✓ Proper Level of Barricading ___ Other PPE (describe) _____

Weather: Clear, windy, 40s

Equipment In Use: _____

Visitors: _____

TIME:	WORK DESCRIPTION:
0700	@ office
0710	Depart for 2035
0730	@ 2035
0745	Begin SG4
0827	large piece of concrete @ 1.5', displacing ground.
0830	Moved MW5-4 5' East to re-attempt
0840	Notified of immediate fuel delivery by station manager - Stopped work & moved vehicles to accomodate
0915	Fuel Truck departs, work resumed
1015	Setting SG4
1100	Cleanup
1200	offsite

Signature: _____

SAFETY FIRST
CASCADE DRILLING, INC.
L.A.: 555 S. Harbor Blvd., La Habra, CA 90631, (562) 929-8176 PH, (562) 863-9584 FAX
Seattle: PO Box 1184, Woodinville, WA 98072, (425) 485-8908 PH, (425) 485-4868 FAX
Portland: 13600 SE Ambler Rd., Clackamas, OR 97015, (503) 775-4118 PH, (503) 775-4099 FAX
Sacramento: 3632 Omec Cir., Rancho Cordova, CA 95742, (916) 638-1169 PH, (916) 638-5611 FAX

CLIENT: BROADBENT & ASSOCIATES, INC. | CLIENT P.O. #: 068.8.610

JOB LOCATION: 1001 San Pablo Ave | CDI PROJECT MANAGER:

DIG ALERT#: 055167 | DATE: 3/10/10

CASCADE PROJECT#: S10028.01 | DAY: Wednesday

WELL# / BORING#	DEPTH DRILLED	DESCRIPTION OF WORK	HOURS START	HOURS STOP	HOURS TOTAL
		A.M. SHOP TIME			
		TRAVEL TO SITE	6:30	7:00	.5
		H&S	7:00	7:30	.5
		unloaded tools & set up	7:30	8:00	.5
SG-4		saw cutter 12"x12" air knife 3'6" set	8:00	8:30	.5
		closed bay fuel truck on site	8:30	9:30	1.-
SG-4		saw cutter 12"x12" air knife 3'6" set	9:30		
		tie vapor well & set the well box		11:00	1.5
		cleanup empty the tank & loaded tools	11:00	12:00	1.-
		lunch	12:00	12:30	.5

TOTAL FOOTAGE: | TOTAL CHARGEABLE RIG HOURS: | TRAVEL TO SHOP: 17:30 | P.M. SHOP TIME:

RIG ENGINE HOURS: START: 3606.5 STOP: 3608.8 TOTAL:

EQUIPMENT

RIG #	S-157	COMPRESSOR/JACK HAMMER	
FLATBED TRUCK #	S-302	FORK LIFT/HOPPER	
FLATBED TRUCK #		CONT. SAMPLER FOOTAGE	
TRAILER #	S-246	# OF HYDRO PUNCHES	
# OF SAW CUTS	2	TIPS/SCREENS	
# OF CORE CUTS		SNOW FENCE RENTAL	Yes
# OF BULL DOG			

CREW WITH PERDIEM | DEPTH TO WATER

NAME	INITIALS	HOURS
C. Bias		
J. Hankema		

CASING

DIAMETER	2"	4"	
20 FT. SCREEN			
10 FT. SCREEN			
5 FT. SCREEN			
20 FT. BLANK			
10 FT. BLANK			
5 FT. BLANK			
SLIP CAP			
THREADED CAP			
LOCKING CAPS			
SPARGE TIP			

MATERIALS

ITEM	QTY.	ITEM	QTY.
SAND	2	WELL COVER TYPE	54" 1
READY MIX	1	COP. WELL COVER	
QUICK SET	1	BARRELS	1
PORTLAND		AUGER PLUGS	
BENTONITE GROUT		D.O. BITS	
BENTONITE CHIPS		SAMPLE LINERS	
BENTONITE POWDER		HOLE COVER PLATES	
BENTONITE PELLETS		TRAFFIC CONTROL	
COATED PELLETS		PLASTIC SHEETING	Yes
BENTONITE GRANULAR		WOODEN FRAMES	
ASPHALT PATCH		CORE BOXES	
BIT REPAIR		MONUMENT CASING	
		BOLLARD POST	

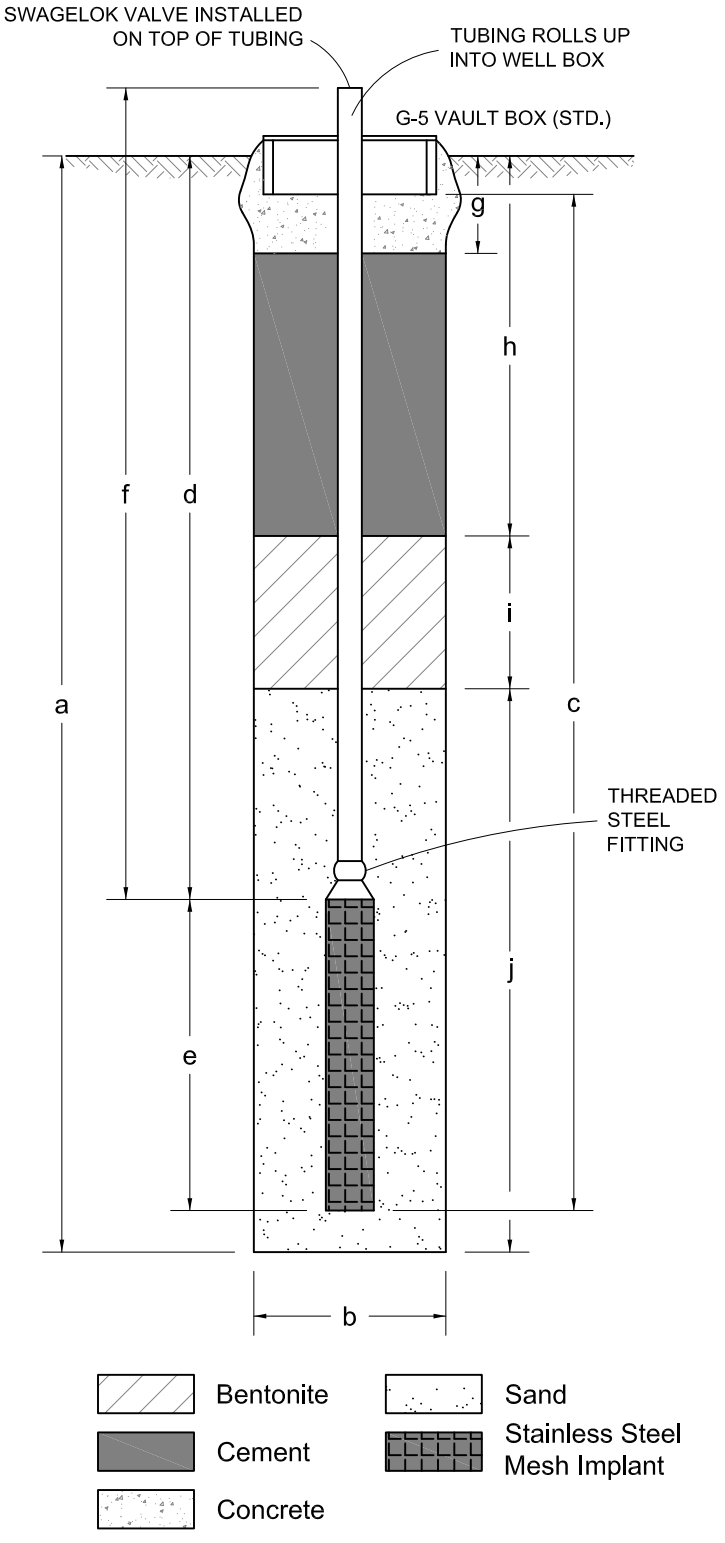
REMARKS

CLIENT SIGNATURE | OPERATOR SIGNATURE

SOIL VAPOR MONITORING WELL DETAILS

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

Project Number: 06-88-610
Project Name: ARCO Service Station #2035
Boring / Well No.: SG-1 Thru SG-5
Location: 1001 San Pablo Ave., Albany, CA
Installation Date: 9-10 March 2010
Well Permit No.: W2009-1115



Not to Scale

EXPLORATORY BORING

a. Total Depth: 3.5 ft.
b. Diameter: 6 in.
Drilling Method: Air Knife / Vacuum Extraction

WELL CONSTRUCTION

c. Total Well Depth: 3.5 ft.
Well Screen Material: 3/8" dia. Stainless Steel Mesh Implant
d. Depth to Top Perforations: 3.0 ft.
e. Perforated Interval From: 3.0 to 3.5 ft.
f. Length of Tubing: 7 ft.
Tubing Connected to Well Screen at: 3.0 ft.
Tubing Diameter: 3/8 in.
Tubing Material: Nylaflow
g. Surface Seal: 0 to 0.5 ft.
Seal Material: Concrete
h. Backfill: 0.5 to 1.0 ft.
Backfill Material: Neat Cement
i. Seal: 1.0 to 2.5 ft.
Seal Material: Bentonite
j. Filter Pack: 2.5 to 3.5 ft.
Filter Pack Material: #2/12 Sand

NOTES

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

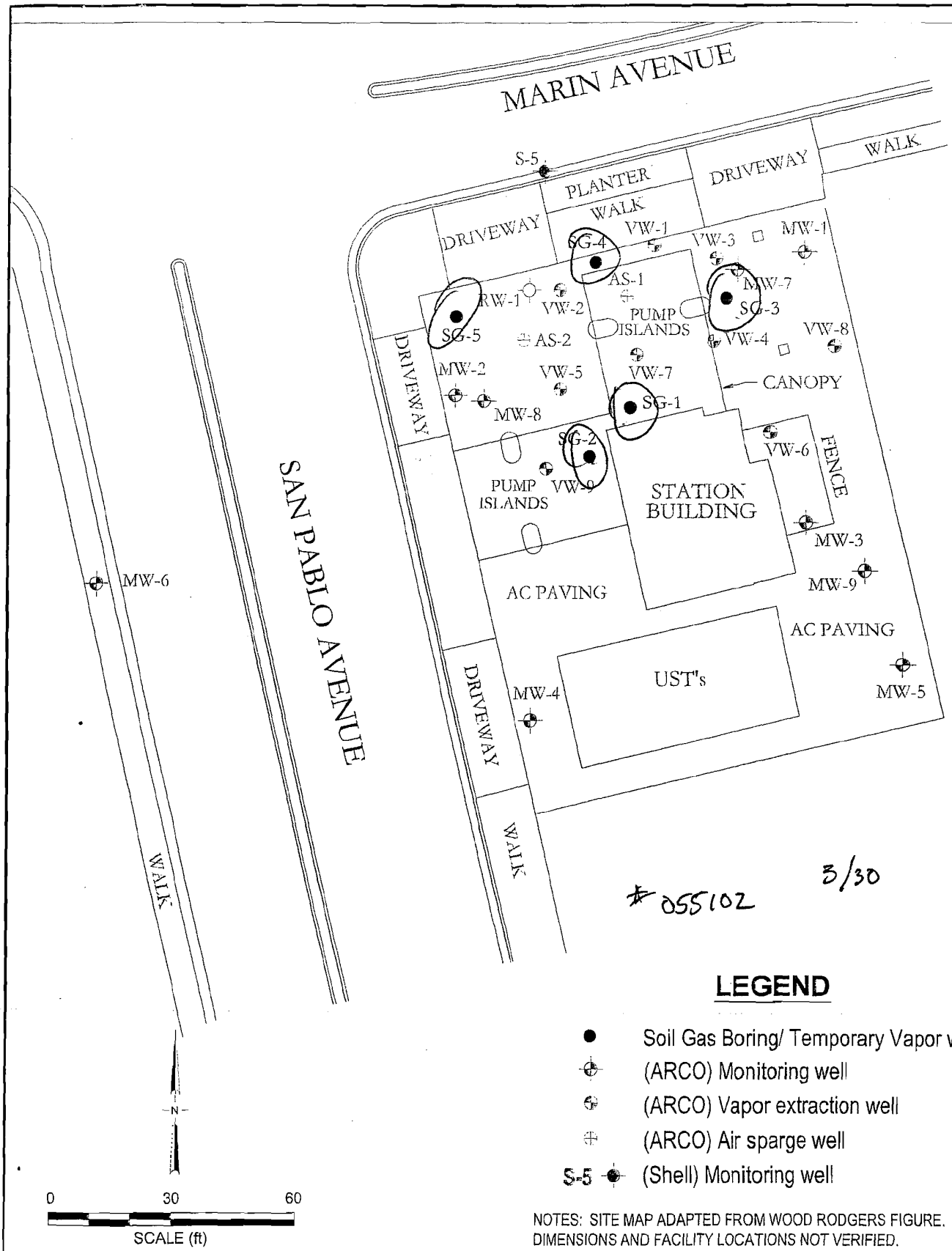
STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED



#055102 3/30

LEGEND

- ● Soil Gas Boring/ Temporary Vapor well
- ⊕ (ARCO) Monitoring well
- ⊕ (ARCO) Vapor extraction well
- ⊕ (ARCO) Air sparge well
- S-5 ⊕ (Shell) Monitoring well

NOTES: SITE MAP ADAPTED FROM WOOD RODGERS FIGURE. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

BROADBENT & ASSOCIATES, INC. ENGINEERING, WATER RESOURCES & ENVIRONMENTAL 1324 Mangrove Ave. Suite 212, Chico, California Project No.: 06-88-610 Date:9/22/09	ARCO Service Station #2035 1001 San Pablo Avenue Albany, California	Site Plan with Proposed Soil Gas Boring Locations	Drawing 2

Manifest

TPST Soil Recyclers of CA
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPST:	Load #
/ /		111 733	A07	355881001	

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
BP WEST COAST PRODUCTS, LLC P.O. BOX 80249 RANCHO SANTA MARGARITA, CA 92688	949-460-5200	CAL000244213
	Person to Contact:	
	FAX#:	Customer Account Number with TPST:

Consultant's Name and Billing Address:	Consultant's Phone #:	
	Person to Contact:	
	FAX#:	Customer Account Number with TPST:

Generation Site (Transport from): *(name & address)*	Site Phone #:	BTEX Levels
02035 1001 SAN PABLO AVENUE ALBANY, CA 94706	Person to Contact:	TPH Levels
	FAX#:	AVG. Levels

Designated Facility (Transport to): *(name & address)*	Facility Phone #:	Facility Permit Numbers
TPST SOIL RECYCLERS OF CALIFORNIA 12328 HIBISCUS AVENUE ADELANTO, CA 92301	(800) 862-8001	
	Person to Contact: DELLENA JEFFREY	
	FAX#: (760) 246-8004	

Transporter Name and Mailing Address:	Transporter's Phone #:	Transporter's US EPA ID No.:
BELSHIRE 26971 TOWNE CENTRE DRIVE FOOTHILL RANCH, CA 92610 BESI: 182168	949-460-5200	CAR000183913
	Person to Contact: LARRY MOOTHART	Transporter's DOT No.: 460647
	FAX#: 949-460-5210	Customer Account Number with TPST:

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐	1 CM		37660	37140	520
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					.26

List any exception to items listed above: Bin # 14CT

Scale Ticket# 82360

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

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year
Larry Moothart of BESI on behalf of generator		6	30	10

Transporter

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

Print or Type Name:	Signature and date:	Month	Day	Year
Lukasz Pitek	Pitek Lukasz	6	30	10

Recycling Facility

Discrepancies:

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

Print or Type Name:	Signature and date:
D. JEFFREY/J. PROVANSAL	7-12-10

Please print or type.

TRANSPORTER COPY

APPENDIX B

SOIL VAPOR MONITORING WELL SAMPLING DATA PACKAGE NO.1
(Includes Field Notes, Laboratory Analytical Reports with Chain-of-Custody Documentation)

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

DAILY REPORT
Page 1 of 2

Project: BP 2035 Project No.: 06-88-610

Field Representative(s): T. Geddes E. Farrer Day: Friday Date: 4/16/10

Time Onsite: From: 1100 To: 1600; From: _____ To: _____; From: _____ To: _____

✓ Signed HASP ✓ Safety Glasses ✓ Hard Hat ✓ Steel Toe Boots ✓ Safety Vest
✓ UST Emergency System Shut-off Switches Located ✓ Proper Gloves
✓ Proper Level of Barricading ___ Other PPE (describe) _____

Weather: Clear 60's

Equipment In Use: Summa Cans

Visitors: _____

TIME:	WORK DESCRIPTION:
1100	Arrive 2035
1118	SG-4 Purge using canister D151, CEL A268, [redacted]
	Sample canister SG-4 D508, CEL A47
1122	Begin. Initial vaccum on purge canister 30 in Hg
1127	Purge at 25" Hg
1128	SG-4 sample 30" Hg
1208	Finish Sampling SG-4 @ 5" Hg
	SG-5 can D488 for sample
	SG-5 CEL A166
1226	Purge canister @ 25"
1232	Initial [redacted] @ 30"
1305	Finish SG-5 sample @ 4" Hg
1230	Ambient container D600 CEL A187 @ 30"
1257	Ambient @ 5 in Hg, stopped sampling

Signature: _____

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

DAILY REPORT
Page 2 of 2

Project: BP 2035 Project No.: 06.88.610

Field Representative(s): J. Geddes, E. Farrar Day: Friday Date: 4/16/10

Time Onsite: From: 1100 To: 1600; From: _____ To: _____; From: _____ To: _____

✓ Signed HASP ✓ Safety Glasses ✓ Hard Hat ✓ Steel Toe Boots ✓ Safety Vest
✓ UST Emergency System Shut-off Switches Located ✓ Proper Gloves
✓ Proper Level of Barricading ___ Other PPE (describe) _____

Weather: Clear 60's

Equipment In Use: Summa cans

Visitors: _____

TIME:	WORK DESCRIPTION:
	SG-3 sample can D625, CEL A324
1320	SG-3 Purge can @ 20"
1324	Purge @ 15"
1326	SG-3 begin sample @ 30" Hg
1352	SG-3 sample @ 5" Hg
1415	SG-2 Purge @ 15"
1423	SG-2 Purg @ 30
1423	SG-2 samp @ 30" samp D777, A325 CEL
1454	SG-2 sample @ 5" Hg
1510	SG-1 Purge @ 10" Hg
1517	SG-1 samp @ 30" D484 A140
1550	SG-1 Sample complete @ 5"
1601	offsite

Signature: A. Ty Geddes

Calscience Environmental Laboratories, Inc.

April 28, 2010

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

Subject: **Calscience Work Order No.: 10-04-1395**
Client Reference: BP 2035 Vapor Intrusion Assessment

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 4/20/2010 and analyzed in accordance with the attached chain-of-custody.

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

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

Sincerely,

Calscience Environmental
Laboratories, Inc.
Richard Villafania
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.	Date Received:	04/20/10
1324 Mangrove Ave, Ste 212	Work Order No:	10-04-1395
Chico, CA 95926-2642	Preparation:	N/A
	Method:	ASTM D-1946
	Units:	%v

Project: BP 2035 Vapor Intrusion Assessment

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-1	**10-04-1395-2-A**	**04/16/10 15:17**	**Air**	**GC 36**	**N/A**	**04/20/10 00:00**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.755	1.51		Oxygen + Argon	14.1	0.755	1.51	
Carbon Dioxide	2.55	0.755	1.51						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-2	**10-04-1395-3-A**	**04/16/10 14:23**	**Air**	**GC 36**	**N/A**	**04/20/10 00:00**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.790	1.58		Oxygen + Argon	17.6	0.790	1.58	
Carbon Dioxide	3.87	0.790	1.58						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-3	**10-04-1395-4-A**	**04/16/10 13:26**	**Air**	**GC 36**	**N/A**	**04/22/10 00:00**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.845	1.69		Oxygen + Argon	14.5	0.845	1.69	
Carbon Dioxide	2.69	0.845	1.69						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-4	**10-04-1395-5-A**	**04/16/10 11:17**	**Air**	**GC 36**	**N/A**	**04/20/10 00:00**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.700	1.4		Oxygen + Argon	21.8	0.700	1.4	
Carbon Dioxide	ND	0.700	1.4						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-5	**10-04-1395-6-A**	**04/16/10 12:32**	**Air**	**GC 36**	**N/A**	**04/20/10 00:00**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.770	1.54		Oxygen + Argon	21.5	0.770	1.54	
Carbon Dioxide	ND	0.770	1.54						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-6 (Duplicate)	**10-04-1395-7-A**	**04/16/10 00:00**	**Air**	**GC 36**	**N/A**	**04/20/10 00:00**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.825	1.65		Oxygen + Argon	21.7	0.825	1.65	
Carbon Dioxide	ND	0.825	1.65						

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.	Date Received:	04/20/10
1324 Mangrove Ave, Ste 212	Work Order No:	10-04-1395
Chico, CA 95926-2642	Preparation:	N/A
	Method:	ASTM D-1946
	Units:	%v

Project: BP 2035 Vapor Intrusion Assessment

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Station Door Ambient Air	**10-04-1395-8-A**	**04/16/10 12:30**	**Air**	**GC 36**	**N/A**	**04/20/10 00:00**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.930	1.86		Oxygen + Argon	21.6	0.930	1.86	
Carbon Dioxide	ND	0.930	1.86						

Method Blank	**099-03-002-1,032**	**N/A**	**Air**	**GC 36**	**N/A**	**04/20/10 00:00**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	ND	0.500	1	
Carbon Dioxide	ND	0.500	1						

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	04/20/10
1324 Mangrove Ave, Ste 212		Work Order No:	10-04-1395
Chico, CA 95926-2642		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ppm (v/v)

Project: BP 2035 Vapor Intrusion Assessment

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-1	**10-04-1395-2-A**	**04/16/10 15:17**	**Air**	**GC/MS AA**	**N/A**	**04/20/10 15:11**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.00076	1.51		Xylenes (total)	ND	0.0030	1.51	
Diisopropyl Ether (DIPE)	ND	0.0030	1.51		Tert-Amyl-Methyl Ether (TAME)	ND	0.0030	1.51	
Ethanol	ND	0.0076	1.51		Tert-Butyl Alcohol (TBA)	ND	0.0030	1.51	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0030	1.51		Toluene	0.0015	0.00076	1.51	
Ethylbenzene	ND	0.00076	1.51		1,1-Difluoroethane	4.9	1.2	604	
Methyl-t-Butyl Ether (MTBE)	ND	0.0030	1.51						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	100	57-129		1,2-Dichloroethane-d4	110	47-137	
Toluene-d8	104	78-156					

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-2	**10-04-1395-3-A**	**04/16/10 14:23**	**Air**	**GC/MS AA**	**N/A**	**04/20/10 16:54**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.00079	1.58		Xylenes (total)	ND	0.0032	1.58	
Diisopropyl Ether (DIPE)	ND	0.0032	1.58		Tert-Amyl-Methyl Ether (TAME)	ND	0.0032	1.58	
Ethanol	ND	0.0079	1.58		Tert-Butyl Alcohol (TBA)	ND	0.0032	1.58	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0032	1.58		Toluene	0.0011	0.00079	1.58	
Ethylbenzene	ND	0.00079	1.58		1,1-Difluoroethane	4.3	0.13	63.2	
Methyl-t-Butyl Ether (MTBE)	ND	0.0032	1.58						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	99	57-129		1,2-Dichloroethane-d4	109	47-137	
Toluene-d8	99	78-156					

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-3	**10-04-1395-4-A**	**04/16/10 13:26**	**Air**	**GC/MS AA**	**N/A**	**04/21/10 00:17**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	0.00099	0.00084	1.69		Xylenes (total)	ND	0.0034	1.69	
Diisopropyl Ether (DIPE)	ND	0.0034	1.69		Tert-Amyl-Methyl Ether (TAME)	ND	0.0034	1.69	
Ethanol	0.010	0.0084	1.69		Tert-Butyl Alcohol (TBA)	ND	0.0034	1.69	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0034	1.69		Toluene	0.0029	0.00084	1.69	
Ethylbenzene	ND	0.00084	1.69		1,1-Difluoroethane	4.2	0.14	67.6	
Methyl-t-Butyl Ether (MTBE)	ND	0.0034	1.69						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	99	57-129		1,2-Dichloroethane-d4	109	47-137	
Toluene-d8	99	78-156					

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	04/20/10
1324 Mangrove Ave, Ste 212		Work Order No:	10-04-1395
Chico, CA 95926-2642		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ppm (v/v)
Project: BP 2035 Vapor Intrusion Assessment			Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-4	**10-04-1395-5-A**	**04/16/10 11:17**	**Air**	**GC/MS AA**	**N/A**	**04/21/10 15:36**	**100421L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0028	5.6		Xylenes (total)	ND	0.011	5.6	
Diisopropyl Ether (DIPE)	ND	0.011	5.6		Tert-Amyl-Methyl Ether (TAME)	ND	0.011	5.6	
Ethanol	ND	0.028	5.6		Tert-Butyl Alcohol (TBA)	ND	0.011	5.6	
Ethyl-t-Butyl Ether (ETBE)	ND	0.011	5.6		Toluene	ND	0.0028	5.6	
Ethylbenzene	ND	0.0028	5.6		1,1-Difluoroethane	62	2.2	1120	
Methyl-t-Butyl Ether (MTBE)	ND	0.011	5.6						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	97	57-129		1,2-Dichloroethane-d4	92	47-137	
Toluene-d8	97	78-156					

SG-5	**10-04-1395-6-A**	**04/16/10 12:32**	**Air**	**GC/MS AA**	**N/A**	**04/21/10 16:23**	**100421L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0015	3.08		Xylenes (total)	ND	0.0062	3.08	
Diisopropyl Ether (DIPE)	ND	0.0062	3.08		Tert-Amyl-Methyl Ether (TAME)	ND	0.0062	3.08	
Ethanol	ND	0.015	3.08		Tert-Butyl Alcohol (TBA)	ND	0.0062	3.08	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0062	3.08		Toluene	ND	0.0015	3.08	
Ethylbenzene	ND	0.0015	3.08		1,1-Difluoroethane	27	1.2	616	
Methyl-t-Butyl Ether (MTBE)	ND	0.0062	3.08						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	98	57-129		1,2-Dichloroethane-d4	93	47-137	
Toluene-d8	98	78-156					

SG-6 (Duplicate)	**10-04-1395-7-A**	**04/16/10 00:00**	**Air**	**GC/MS AA**	**N/A**	**04/21/10 17:09**	**100421L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.00082	1.65		Xylenes (total)	ND	0.0033	1.65	
Diisopropyl Ether (DIPE)	ND	0.0033	1.65		Tert-Amyl-Methyl Ether (TAME)	ND	0.0033	1.65	
Ethanol	ND	0.0082	1.65		Tert-Butyl Alcohol (TBA)	ND	0.0033	1.65	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0033	1.65		Toluene	0.0011	0.00082	1.65	
Ethylbenzene	ND	0.00082	1.65		1,1-Difluoroethane	ND	0.0033	1.65	
Methyl-t-Butyl Ether (MTBE)	ND	0.0033	1.65						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	96	57-129		1,2-Dichloroethane-d4	102	47-137	
Toluene-d8	96	78-156					

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	04/20/10
1324 Mangrove Ave, Ste 212		Work Order No:	10-04-1395
Chico, CA 95926-2642		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ppm (v/v)
Project: BP 2035 Vapor Intrusion Assessment			Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Station Door Ambient Air	**10-04-1395-8-A**	**04/16/10 12:30**	**Air**	**GC/MS AA**	**N/A**	**04/21/10 17:57**	**100421L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.00093	1.86		Xylenes (total)	ND	0.0037	1.86	
Diisopropyl Ether (DIPE)	ND	0.0037	1.86		Tert-Amyl-Methyl Ether (TAME)	ND	0.0037	1.86	
Ethanol	0.020	0.0093	1.86		Tert-Butyl Alcohol (TBA)	ND	0.0037	1.86	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0037	1.86		Toluene	0.0041	0.00093	1.86	
Ethylbenzene	ND	0.00093	1.86		1,1-Difluoroethane	ND	0.0037	1.86	
Methyl-t-Butyl Ether (MTBE)	ND	0.0037	1.86						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	97	57-129		1,2-Dichloroethane-d4	102	47-137	
Toluene-d8	98	78-156					

Method Blank	**095-01-021-8,520**	**N/A**	**Air**	**GC/MS AA**	**N/A**	**04/20/10 13:05**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.00050	1		Xylenes (total)	ND	0.0020	1	
Diisopropyl Ether (DIPE)	ND	0.0020	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0020	1	
Ethanol	ND	0.0050	1		Tert-Butyl Alcohol (TBA)	ND	0.0020	1	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0020	1		Toluene	ND	0.00050	1	
Ethylbenzene	ND	0.00050	1		1,1-Difluoroethane	ND	0.0020	1	
Methyl-t-Butyl Ether (MTBE)	ND	0.0020	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	99	57-129		1,2-Dichloroethane-d4	112	47-137	
Toluene-d8	99	78-156					

Method Blank	**095-01-021-8,523**	**N/A**	**Air**	**GC/MS AA**	**N/A**	**04/21/10 13:59**	**100421L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.00050	1		Xylenes (total)	ND	0.0020	1	
Diisopropyl Ether (DIPE)	ND	0.0020	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0020	1	
Ethanol	ND	0.0050	1		Tert-Butyl Alcohol (TBA)	ND	0.0020	1	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0020	1		Toluene	ND	0.00050	1	
Ethylbenzene	ND	0.00050	1		1,1-Difluoroethane	ND	0.0020	1	
Methyl-t-Butyl Ether (MTBE)	ND	0.0020	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	96	57-129		1,2-Dichloroethane-d4	107	47-137	
Toluene-d8	97	78-156					

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

Calscience Environmental Laboratories, Inc.

Analytical Report

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

Date Received: 04/20/10
Work Order No: 10-04-1395
Preparation: N/A
Method: EPA TO-3M

Project: BP 2035 Vapor Intrusion Assessment

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-1	**10-04-1395-2-A**	**04/16/10 15:17**	**Air**	**GC 19**	**N/A**	**04/20/10 12:34**	**100420L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	15	1.51		ppm (v/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-2	**10-04-1395-3-A**	**04/16/10 14:23**	**Air**	**GC 19**	**N/A**	**04/20/10 13:10**	**100420L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	16	1.58		ppm (v/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-3	**10-04-1395-4-A**	**04/16/10 13:26**	**Air**	**GC 19**	**N/A**	**04/20/10 13:43**	**100420L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	17	1.69		ppm (v/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-4	**10-04-1395-5-A**	**04/16/10 11:17**	**Air**	**GC 19**	**N/A**	**04/20/10 16:02**	**100420L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	14	1.4		ppm (v/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-5	**10-04-1395-6-A**	**04/16/10 12:32**	**Air**	**GC 19**	**N/A**	**04/20/10 14:17**	**100420L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	15	1.54		ppm (v/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-6 (Duplicate)	**10-04-1395-7-A**	**04/16/10 00:00**	**Air**	**GC 19**	**N/A**	**04/20/10 14:51**	**100420L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	16	1.65		ppm (v/v)

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

Calscience Environmental Laboratories, Inc.

Analytical Report

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

Date Received: 04/20/10
Work Order No: 10-04-1395
Preparation: N/A
Method: EPA TO-3M

Project: BP 2035 Vapor Intrusion Assessment

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Station Door Ambient Air	**10-04-1395-8-A**	**04/16/10 12:30**	**Air**	**GC 19**	**N/A**	**04/20/10 15:27**	**100420L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	19	1.86		ppm (v/v)

Method Blank	**099-12-685-277**	**N/A**	**Air**	**GC 19**	**N/A**	**04/20/10 07:41**	**100420L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	10	1		ppm (v/v)

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

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

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

Date Received: 04/20/10
Work Order No: 10-04-1395
Preparation: N/A
Method: EPA TO-3M

Project: BP 2035 Vapor Intrusion Assessment

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
SG-4	**Air**	**GC 19**	**N/A**	**04/20/10**	**100420D01**

Parameter	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	ND	ND	NA	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 10-04-1395
Preparation: N/A
Method: ASTM D-1946

Project: BP 2035 Vapor Intrusion Assessment

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-03-002-1,032	**Air**	**GC 36**	**N/A**	**04/20/10**	**100420L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Carbon Dioxide	107	106	80-120	1	0-30	
Oxygen + Argon	97	97	80-120	0	0-30	
Nitrogen	97	98	80-120	0	0-30	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 10-04-1395
Preparation: N/A
Method: EPA TO-15

Project: BP 2035 Vapor Intrusion Assessment

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-021-8,520	**Air**	**GC/MS AA**	**N/A**	**04/20/10**	**100420L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	104	107	60-156	44-172	3	0-40	
Carbon Tetrachloride	93	101	64-154	49-169	9	0-32	
1,2-Dibromoethane	106	112	54-144	39-159	5	0-36	
1,2-Dichlorobenzene	105	112	34-160	13-181	7	0-47	
1,2-Dichloroethane	89	95	69-153	55-167	7	0-30	
1,2-Dichloropropane	101	106	67-157	52-172	4	0-35	
1,4-Dichlorobenzene	104	112	36-156	16-176	7	0-47	
c-1,3-Dichloropropene	121	124	61-157	45-173	3	0-35	
Ethylbenzene	114	120	52-154	35-171	5	0-38	
o-Xylene	110	116	52-148	36-164	6	0-38	
p/m-Xylene	103	110	42-156	23-175	6	0-41	
Tetrachloroethene	103	109	56-152	40-168	6	0-40	
Toluene	107	110	56-146	41-161	3	0-43	
Trichloroethene	103	110	63-159	47-175	7	0-34	
1,1,2-Trichloroethane	102	107	65-149	51-163	5	0-37	
Vinyl Chloride	92	98	45-177	23-199	6	0-36	

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

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 10-04-1395
Preparation: N/A
Method: EPA TO-15

Project: BP 2035 Vapor Intrusion Assessment

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-021-8,523	**Air**	**GC/MS AA**	**N/A**	**04/21/10**	**100421L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	104	104	60-156	44-172	0	0-40	
Carbon Tetrachloride	99	104	64-154	49-169	5	0-32	
1,2-Dibromoethane	104	105	54-144	39-159	0	0-36	
1,2-Dichlorobenzene	106	106	34-160	13-181	0	0-47	
1,2-Dichloroethane	97	97	69-153	55-167	1	0-30	
1,2-Dichloropropane	102	102	67-157	52-172	0	0-35	
1,4-Dichlorobenzene	105	107	36-156	16-176	1	0-47	
c-1,3-Dichloropropene	120	121	61-157	45-173	1	0-35	
Ethylbenzene	111	110	52-154	35-171	1	0-38	
o-Xylene	109	109	52-148	36-164	0	0-38	
p/m-Xylene	102	102	42-156	23-175	0	0-41	
Tetrachloroethene	103	105	56-152	40-168	2	0-40	
Toluene	104	103	56-146	41-161	1	0-43	
Trichloroethene	107	110	63-159	47-175	3	0-34	
1,1,2-Trichloroethane	102	104	65-149	51-163	1	0-37	
Vinyl Chloride	110	109	45-177	23-199	1	0-36	

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

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 10-04-1395

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

Work Order Number: 10-04-1395

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

Atlantic Richfield Company
A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record

1395 Page 1 of 1

BP/ARC Project Name: BP 2035 Vapor Intrusion Assessment
Req Due Date (mm/dd/yy): _____ **Rush TAT:** Yes ___ No X
BP/ARC Facility No: 2035
Lab Work Order Number: _____

Lab Name:	Calscience	BP/ARC Facility Address:	1001 San Pablo Avenue	Consultant/Contractor:	Broadbent & Associates, Inc.
Lab Address:	7440 Lincoln Way	City, State, ZIP Code:	Albany, CA	Consultant/Contractor Project No:	06-88-610-5-822
Lab PM:	Richard Villafania	Lead Regulatory Agency:	ACEH	Address:	1324 Mangrove Ave. Ste. 212, Chico, CA 95926
Lab Phone:	714-895-5494	California Global ID No.:	T0600100081	Consultant/Contractor PM:	Tom Venus
Lab Shipping Accnt:	9225	Enfos Proposal No:	000P9-0006	Phone:	530-566-1400
Lab Bottle Order No:		Accounting Mode:	Provision X OOC-BU ___ OOC-RM ___	Email EDD To:	tvenus@broadbentinc.com
Other Info:		Stage: Operate (5)	Activity: Field Characterization (1)	Invoice To:	BP/ARC X Contractor ___

BP/ARC EBM: Chuck Carmel
EBM Phone:
EBM Email:

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

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	Matrix:	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol		Requested Analyses: TPH-GRO (c6-c12) by TO-3	BTEX, OXYS, EtOH by TO-15	1,1-DFA by TO-15	O2, CO2, CH4 by ASTM D1946							Comments
1	Purge Canister	4/16/10				X		1	X																Vac-30"
2	SG-1		1517			X			X						X	X	X	X							Vac-30"
3	SG-2		1423			X			X						X	X	X	X							Vac-30"
4	SG-3		1326			X			X						X	X	X	X							Vac-30"
5	SG-4		1117			X			X						X	X	X	X							Vac-30"
6	SG-5		1232			X			X						X	X	X	X							Vac-30"
7	SG-6 (Duplicate)					X			X						X	X	X	X							Vac-30"
8	Station Door Ambient Air		1230			X			X						X	X	X	X							Vac-30"

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

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Eric Farrow						
Sampler's Company: BAI		4/19/10	1430		4/19/10	10:30
Shipment Method: CSO Ship Date: 4/19/10						
Shipment Tracking No: 106193659 / 106193660						

Special Instructions: Eight 6-Liter Summa canisters to be batch certified contaminant free; Leak check gas 1,1-DFA = 1,1-Difluoroethane (CAS#75-37-6)

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

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

1395

DATE 4/19/10 SHIPPERS GSO ACCOUNT NO. 9255
COMPANY BAI
ADDRESS 875 Cotting Ln
ADDRESS STE/ROOM F
CITY Vacaville ZIP CODE 95688
SENDERS NAME Eric Foster PHONE NUMBER 707-455-7290
COMPANY CAL SCIENCE
NAME PHONE NUMBER 714-895-5494
ADDRESS 7440 LINCOLN WAY
ADDRESS STE/ROOM
CITY GARDEN GROVE ZIP CODE 92841
YOUR INTERNAL BILLING REFERENCE WILL APPEAR ON YOUR INVOICE
SPECIAL INSTRUCTIONS 2 of 2

GSO GOLDEN STATE OVERNIGHT
1-800-322-5555
WWW.GSO.COM

SHIPPING AIR BILL

4 PACKAGE INFORMATION
☐ LETTER (MAX 8 OZ)
☑ PACKAGE (WT) 30
☐ DECLARED VALUE $
☐ COD AMOUNT $ (CASH NOT ACCEPTED)

5 DELIVERY SERVICE ☑ PRIORITY OVERNIGHT BY 10:30 AM ☐ EARLY PRIORITY BY 8:00 AM ☐ SATURDAY DELIVERY
*DELIVERY TIMES MAY BE LATER IN SOME AREAS • CONSULT YOUR SERVICE GUIDE OR CALL GOLDEN STATE OVERNIGHT.

6 RELEASE SIGNATURE
SIGN TO AUTHORIZE DELIVERY WITHOUT OBTAINING SIGNATURE

7 CREDIT CARD ☐ M/C ☐ VISA ☐ AM EX CREDIT CARD NUMBER EXP. DATE

8 PICK UP INFORMATION TIME DRIVER # ROUTE #

106193659

9 GSO TRACKING NUMBER 106193659

DATE 4/19/10 SHIPPERS GSO ACCOUNT NO. 9255
COMPANY BAI
ADDRESS 875 Cotting Ln
ADDRESS STE/ROOM F
CITY Vacaville ZIP CODE 95688
SENDERS NAME Eric Foster PHONE NUMBER 707-455-7290
COMPANY CAL SCIENCE
NAME PHONE NUMBER 714-895-5494
ADDRESS 7440 LINCOLN WAY
ADDRESS STE/ROOM
CITY GARDEN GROVE ZIP CODE 92841
YOUR INTERNAL BILLING REFERENCE WILL APPEAR ON YOUR INVOICE
SPECIAL INSTRUCTIONS 1 of 2

GSO GOLDEN STATE OVERNIGHT
1-800-322-5555
WWW.GSO.COM

SHIPPING AIR BILL

4 PACKAGE INFORMATION
☐ LETTER (MAX 8 OZ)
☐ PACKAGE (WT) 3016
☐ DECLARED VALUE $
☐ COD AMOUNT $ (CASH NOT ACCEPTED)

5 DELIVERY SERVICE ☑ PRIORITY OVERNIGHT BY 10:30 AM ☐ EARLY PRIORITY BY 8:00 AM ☐ SATURDAY DELIVERY
*DELIVERY TIMES MAY BE LATER IN SOME AREAS • CONSULT YOUR SERVICE GUIDE OR CALL GOLDEN STATE OVERNIGHT.

6 RELEASE SIGNATURE
SIGN TO AUTHORIZE DELIVERY WITHOUT OBTAINING SIGNATURE

7 CREDIT CARD ☐ M/C ☐ VISA ☐ AM EX CREDIT CARD NUMBER EXP. DATE

8 PICK UP INFORMATION TIME DRIVER # ROUTE #

106193660

9 GSO TRACKING NUMBER 106193660

GSO COPY

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 10-04-1395

SAMPLE RECEIPT FORM

Box 1 of 2

CLIENT: BROADBENT & ASSOCIATES DATE: 04/20/10

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

Temperature ____.____ °C + 0.5 °C (CF) = ____.____ °C ☐ Blank ☐ Sample

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

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

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

Ambient Temperature: ☑ Air ☐ Filter ☐ Metals Only ☐ PCBs Only Initial: PS

CUSTODY SEALS INTACT:

☑ Box ☐_____ ☐ No (Not Intact) ☐ Not Present ☐ N/A Initial: PS

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

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑ PS 4/20/10	☑	☐
☑ Collection date/time, matrix, and/or # of containers logged in based on sample labels. #1, 7			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Correct containers and volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on COC or sample container	☐	☐	☑
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

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

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐500PB ☐500PB**na** ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

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

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

Preservative: **h:** HCL **n:** HNO3 **na$_2$:** $Na_2S_2O_3$ **Na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **znna:** $ZnAc_2$+NaOH **f:** Field-filtered **Scanned by:** PS

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 10-04- 1 3 9 J

SAMPLE RECEIPT FORM

Box 2 **of** 2

CLIENT: BROADBENT & ASSOCIATES **DATE:** 04/20/10

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

Temperature _____.____ °C + **0.5 °C** (CF) = _____.____ °C ☐ **Blank** ☐ **Sample**

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

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

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

Ambient Temperature: ☑ Air ☐ Filter ☐ Metals Only ☐ PCBs Only **Initial:** PS

CUSTODY SEALS INTACT:

☑ Box	☐_____	☐ No (Not Intact)	☐ Not Present	☐ N/A	**Initial:** PS
☐ Sample	☐_____	☐ No (Not Intact)	☑ Not Present		**Initial:** PS

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

CONTAINER TYPE:

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

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐500PB ☐500PB**na** ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

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

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

Preservative: **h:** HCL **n:** HNO3 **na$_2$:** $Na_2S_2O_3$ **Na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **znna:** $ZnAc_2$+NaOH **f:** Field-filtered **Scanned by:** PS

Calscience Environmental Laboratories, Inc.

Supplemental Report 1

April 29, 2010

The original report has been revised/corrected.

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

Subject: **Calscience Work Order No.: 10-04-1395**
Client Reference: BP 2035 Vapor Intrusion Assessment

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 4/20/2010 and analyzed in accordance with the attached chain-of-custody.

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

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

Sincerely,

Calscience Environmental
Laboratories, Inc.
Richard Villafania
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	04/20/10
1324 Mangrove Ave, Ste 212		Work Order No:	10-04-1395
Chico, CA 95926-2642		Preparation:	N/A
		Method:	ASTM D-1946
		Units:	%v

Project: BP 2035 Vapor Intrusion Assessment

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-1	**10-04-1395-2-A**	**04/16/10 15:17**	**Air**	**GC 36**	**N/A**	**04/20/10 00:00**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.755	1.51		Oxygen + Argon	14.1	0.755	1.51	
Carbon Dioxide	2.55	0.755	1.51						

SG-2	**10-04-1395-3-A**	**04/16/10 14:23**	**Air**	**GC 36**	**N/A**	**04/20/10 00:00**	**100420L01**		

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.790	1.58		Oxygen + Argon	17.6	0.790	1.58	
Carbon Dioxide	3.87	0.790	1.58						

SG-3	**10-04-1395-4-A**	**04/16/10 13:26**	**Air**	**GC 36**	**N/A**	**04/22/10 00:00**	**100420L01**		

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.845	1.69		Oxygen + Argon	14.5	0.845	1.69	
Carbon Dioxide	2.69	0.845	1.69						

SG-4	**10-04-1395-5-A**	**04/16/10 11:17**	**Air**	**GC 36**	**N/A**	**04/20/10 00:00**	**100420L01**		

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.700	1.4		Oxygen + Argon	21.8	0.700	1.4	
Carbon Dioxide	ND	0.700	1.4						

SG-5	**10-04-1395-6-A**	**04/16/10 12:32**	**Air**	**GC 36**	**N/A**	**04/20/10 00:00**	**100420L01**		

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.770	1.54		Oxygen + Argon	21.5	0.770	1.54	
Carbon Dioxide	ND	0.770	1.54						

SG-6 (Duplicate)	**10-04-1395-7-A**	**04/16/10 00:00**	**Air**	**GC 36**	**N/A**	**04/20/10 00:00**	**100420L01**		

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.825	1.65		Oxygen + Argon	21.7	0.825	1.65	
Carbon Dioxide	ND	0.825	1.65						

Station Door Ambient Air	**10-04-1395-8-A**	**04/16/10 12:30**	**Air**	**GC 36**	**N/A**	**04/20/10 00:00**	**100420L01**		

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.930	1.86		Oxygen + Argon	21.6	0.930	1.86	
Carbon Dioxide	ND	0.930	1.86						

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.	Date Received:	04/20/10
1324 Mangrove Ave, Ste 212	Work Order No:	10-04-1395
Chico, CA 95926-2642	Preparation:	N/A
	Method:	ASTM D-1946
	Units:	%v

Project: BP 2035 Vapor Intrusion Assessment

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-03-002-1,032**	**N/A**	**Air**	**GC 36**	**N/A**	**04/20/10 00:00**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	ND	0.500	1	
Carbon Dioxide	ND	0.500	1						

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	04/20/10
1324 Mangrove Ave, Ste 212		Work Order No:	10-04-1395
Chico, CA 95926-2642		Preparation:	N/A
		Method:	EPA TO-15
		Units:	mg/m3
Project: BP 2035 Vapor Intrusion Assessment			Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-1	**10-04-1395-2-A**	**04/16/10 15:17**	**Air**	**GC/MS AA**	**N/A**	**04/20/10 15:11**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0024	1.51		Xylenes (total)	ND	0.013	1.51	
Diisopropyl Ether (DIPE)	ND	0.013	1.51		Tert-Amyl-Methyl Ether (TAME)	ND	0.013	1.51	
Ethanol	ND	0.014	1.51		Tert-Butyl Alcohol (TBA)	ND	0.0092	1.51	
Ethyl-t-Butyl Ether (ETBE)	ND	0.013	1.51		Toluene	0.0058	0.0028	1.51	
Ethylbenzene	ND	0.0033	1.51		1,1-Difluoroethane	13	3.3	604	
Methyl-t-Butyl Ether (MTBE)	ND	0.011	1.51						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	100	57-129		1,2-Dichloroethane-d4	110	47-137	
Toluene-d8	104	78-156					

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-2	**10-04-1395-3-A**	**04/16/10 14:23**	**Air**	**GC/MS AA**	**N/A**	**04/20/10 16:54**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0025	1.58		Xylenes (total)	ND	0.014	1.58	
Diisopropyl Ether (DIPE)	ND	0.013	1.58		Tert-Amyl-Methyl Ether (TAME)	ND	0.013	1.58	
Ethanol	ND	0.015	1.58		Tert-Butyl Alcohol (TBA)	ND	0.0096	1.58	
Ethyl-t-Butyl Ether (ETBE)	ND	0.013	1.58		Toluene	0.0043	0.0030	1.58	
Ethylbenzene	ND	0.0034	1.58		1,1-Difluoroethane	12	0.34	63.2	
Methyl-t-Butyl Ether (MTBE)	ND	0.011	1.58						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	99	57-129		1,2-Dichloroethane-d4	109	47-137	
Toluene-d8	99	78-156					

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-3	**10-04-1395-4-A**	**04/16/10 13:26**	**Air**	**GC/MS AA**	**N/A**	**04/21/10 00:17**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	0.0032	0.0027	1.69		Xylenes (total)	ND	0.015	1.69	
Diisopropyl Ether (DIPE)	ND	0.014	1.69		Tert-Amyl-Methyl Ether (TAME)	ND	0.014	1.69	
Ethanol	0.020	0.016	1.69		Tert-Butyl Alcohol (TBA)	ND	0.010	1.69	
Ethyl-t-Butyl Ether (ETBE)	ND	0.014	1.69		Toluene	0.011	0.0032	1.69	
Ethylbenzene	ND	0.0037	1.69		1,1-Difluoroethane	11	0.37	67.6	
Methyl-t-Butyl Ether (MTBE)	ND	0.012	1.69						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	99	57-129		1,2-Dichloroethane-d4	109	47-137	
Toluene-d8	99	78-156					

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.	Date Received:	04/20/10
1324 Mangrove Ave, Ste 212	Work Order No:	10-04-1395
Chico, CA 95926-2642	Preparation:	N/A
	Method:	EPA TO-15
	Units:	mg/m3

Project: BP 2035 Vapor Intrusion Assessment

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-4	**10-04-1395-5-A**	**04/16/10 11:17**	**Air**	**GC/MS AA**	**N/A**	**04/21/10 15:36**	**100421L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0089	5.6		Xylenes (total)	ND	0.049	5.6	
Diisopropyl Ether (DIPE)	ND	0.047	5.6		Tert-Amyl-Methyl Ether (TAME)	ND	0.047	5.6	
Ethanol	ND	0.053	5.6		Tert-Butyl Alcohol (TBA)	ND	0.034	5.6	
Ethyl-t-Butyl Ether (ETBE)	ND	0.047	5.6		Toluene	ND	0.011	5.6	
Ethylbenzene	ND	0.012	5.6		1,1-Difluoroethane	170	6.1	1120	
Methyl-t-Butyl Ether (MTBE)	ND	0.040	5.6						
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
1,4-Bromofluorobenzene	97	57-129			1,2-Dichloroethane-d4	92	47-137		
Toluene-d8	97	78-156							

SG-5	**10-04-1395-6-A**	**04/16/10 12:32**	**Air**	**GC/MS AA**	**N/A**	**04/21/10 16:23**	**100421L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0049	3.08		Xylenes (total)	ND	0.027	3.08	
Diisopropyl Ether (DIPE)	ND	0.026	3.08		Tert-Amyl-Methyl Ether (TAME)	ND	0.026	3.08	
Ethanol	ND	0.029	3.08		Tert-Butyl Alcohol (TBA)	ND	0.019	3.08	
Ethyl-t-Butyl Ether (ETBE)	ND	0.026	3.08		Toluene	ND	0.0058	3.08	
Ethylbenzene	ND	0.0067	3.08		1,1-Difluoroethane	72	3.3	616	
Methyl-t-Butyl Ether (MTBE)	ND	0.022	3.08						
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
1,4-Bromofluorobenzene	98	57-129			1,2-Dichloroethane-d4	93	47-137		
Toluene-d8	98	78-156							

SG-6 (Duplicate)	**10-04-1395-7-A**	**04/16/10 00:00**	**Air**	**GC/MS AA**	**N/A**	**04/21/10 17:09**	**100421L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0026	1.65		Xylenes (total)	ND	0.014	1.65	
Diisopropyl Ether (DIPE)	ND	0.014	1.65		Tert-Amyl-Methyl Ether (TAME)	ND	0.014	1.65	
Ethanol	ND	0.016	1.65		Tert-Butyl Alcohol (TBA)	ND	0.010	1.65	
Ethyl-t-Butyl Ether (ETBE)	ND	0.014	1.65		Toluene	0.0041	0.0031	1.65	
Ethylbenzene	ND	0.0036	1.65		1,1-Difluoroethane	ND	0.0089	1.65	
Methyl-t-Butyl Ether (MTBE)	ND	0.012	1.65						
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
1,4-Bromofluorobenzene	96	57-129			1,2-Dichloroethane-d4	102	47-137		
Toluene-d8	96	78-156							

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	04/20/10
1324 Mangrove Ave, Ste 212		Work Order No:	10-04-1395
Chico, CA 95926-2642		Preparation:	N/A
		Method:	EPA TO-15
		Units:	mg/m3
Project: BP 2035 Vapor Intrusion Assessment			Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Station Door Ambient Air	**10-04-1395-8-A**	**04/16/10 12:30**	**Air**	**GC/MS AA**	**N/A**	**04/21/10 17:57**	**100421L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0030	1.86		Xylenes (total)	ND	0.016	1.86	
Diisopropyl Ether (DIPE)	ND	0.016	1.86		Tert-Amyl-Methyl Ether (TAME)	ND	0.016	1.86	
Ethanol	0.039	0.018	1.86		Tert-Butyl Alcohol (TBA)	ND	0.011	1.86	
Ethyl-t-Butyl Ether (ETBE)	ND	0.016	1.86		Toluene	0.015	0.0035	1.86	
Ethylbenzene	ND	0.0040	1.86		1,1-Difluoroethane	ND	0.010	1.86	
Methyl-t-Butyl Ether (MTBE)	ND	0.013	1.86						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	97	57-129		1,2-Dichloroethane-d4	102	47-137	
Toluene-d8	98	78-156					

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-021-8,520**	**N/A**	**Air**	**GC/MS AA**	**N/A**	**04/20/10 13:05**	**100420L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0016	1		Xylenes (total)	ND	0.0087	1	
Diisopropyl Ether (DIPE)	ND	0.0084	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0084	1	
Ethanol	ND	0.0094	1		Tert-Butyl Alcohol (TBA)	ND	0.0061	1	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0084	1		Toluene	ND	0.0019	1	
Ethylbenzene	ND	0.0022	1		1,1-Difluoroethane	ND	0.0054	1	
Methyl-t-Butyl Ether (MTBE)	ND	0.0072	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	99	57-129		1,2-Dichloroethane-d4	112	47-137	
Toluene-d8	99	78-156					

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-021-8,523**	**N/A**	**Air**	**GC/MS AA**	**N/A**	**04/21/10 13:59**	**100421L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0016	1		Xylenes (total)	ND	0.0087	1	
Diisopropyl Ether (DIPE)	ND	0.0084	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0084	1	
Ethanol	ND	0.0094	1		Tert-Butyl Alcohol (TBA)	ND	0.0061	1	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0084	1		Toluene	ND	0.0019	1	
Ethylbenzene	ND	0.0022	1		1,1-Difluoroethane	ND	0.0054	1	
Methyl-t-Butyl Ether (MTBE)	ND	0.0072	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	96	57-129		1,2-Dichloroethane-d4	107	47-137	
Toluene-d8	97	78-156					

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

Calscience Environmental Laboratories, Inc.

Analytical Report

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

Date Received: 04/20/10
Work Order No: 10-04-1395
Preparation: N/A
Method: EPA TO-3M

Project: BP 2035 Vapor Intrusion Assessment

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-1	**10-04-1395-2-A**	**04/16/10 15:17**	**Air**	**GC 19**	**N/A**	**04/20/10 12:34**	**100420L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	15	1.51		ppm (v/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-2	**10-04-1395-3-A**	**04/16/10 14:23**	**Air**	**GC 19**	**N/A**	**04/20/10 13:10**	**100420L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	16	1.58		ppm (v/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-3	**10-04-1395-4-A**	**04/16/10 13:26**	**Air**	**GC 19**	**N/A**	**04/20/10 13:43**	**100420L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	17	1.69		ppm (v/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-4	**10-04-1395-5-A**	**04/16/10 11:17**	**Air**	**GC 19**	**N/A**	**04/20/10 16:02**	**100420L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	14	1.4		ppm (v/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-5	**10-04-1395-6-A**	**04/16/10 12:32**	**Air**	**GC 19**	**N/A**	**04/20/10 14:17**	**100420L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	15	1.54		ppm (v/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-6 (Duplicate)	**10-04-1395-7-A**	**04/16/10 00:00**	**Air**	**GC 19**	**N/A**	**04/20/10 14:51**	**100420L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	16	1.65		ppm (v/v)

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.	Date Received: 04/20/10
1324 Mangrove Ave, Ste 212	Work Order No: 10-04-1395
Chico, CA 95926-2642	Preparation: N/A
	Method: EPA TO-3M

Project: BP 2035 Vapor Intrusion Assessment

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Station Door Ambient Air	**10-04-1395-8-A**	**04/16/10 12:30**	**Air**	**GC 19**	**N/A**	**04/20/10 15:27**	**100420L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	19	1.86		ppm (v/v)

Method Blank	**099-12-685-277**	**N/A**	**Air**	**GC 19**	**N/A**	**04/20/10 07:41**	**100420L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	10	1		ppm (v/v)

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

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

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

Date Received: 04/20/10
Work Order No: 10-04-1395
Preparation: N/A
Method: EPA TO-3M

Project: BP 2035 Vapor Intrusion Assessment

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
SG-4	**Air**	**GC 19**	**N/A**	**04/20/10**	**100420D01**

Parameter	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	ND	ND	NA	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 10-04-1395
Preparation: N/A
Method: ASTM D-1946

Project: BP 2035 Vapor Intrusion Assessment

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-03-002-1,032	**Air**	**GC 36**	**N/A**	**04/20/10**	**100420L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Carbon Dioxide	107	106	80-120	1	0-30	
Oxygen + Argon	97	97	80-120	0	0-30	
Nitrogen	97	98	80-120	0	0-30	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 10-04-1395
Preparation: N/A
Method: EPA TO-15

Project: BP 2035 Vapor Intrusion Assessment

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-021-8,520	**Air**	**GC/MS AA**	**N/A**	**04/20/10**	**100420L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	104	107	60-156	44-172	3	0-40	
Carbon Tetrachloride	93	101	64-154	49-169	9	0-32	
1,2-Dibromoethane	106	112	54-144	39-159	5	0-36	
1,2-Dichlorobenzene	105	112	34-160	13-181	7	0-47	
1,2-Dichloroethane	89	95	69-153	55-167	7	0-30	
1,2-Dichloropropane	101	106	67-157	52-172	4	0-35	
1,4-Dichlorobenzene	104	112	36-156	16-176	7	0-47	
c-1,3-Dichloropropene	121	124	61-157	45-173	3	0-35	
Ethylbenzene	114	120	52-154	35-171	5	0-38	
o-Xylene	110	116	52-148	36-164	6	0-38	
p/m-Xylene	103	110	42-156	23-175	6	0-41	
Tetrachloroethene	103	109	56-152	40-168	6	0-40	
Toluene	107	110	56-146	41-161	3	0-43	
Trichloroethene	103	110	63-159	47-175	7	0-34	
1,1,2-Trichloroethane	102	107	65-149	51-163	5	0-37	
Vinyl Chloride	92	98	45-177	23-199	6	0-36	

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

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 10-04-1395
Preparation: N/A
Method: EPA TO-15

Project: BP 2035 Vapor Intrusion Assessment

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-021-8,523	**Air**	**GC/MS AA**	**N/A**	**04/21/10**	**100421L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	104	104	60-156	44-172	0	0-40	
Carbon Tetrachloride	99	104	64-154	49-169	5	0-32	
1,2-Dibromoethane	104	105	54-144	39-159	0	0-36	
1,2-Dichlorobenzene	106	106	34-160	13-181	0	0-47	
1,2-Dichloroethane	97	97	69-153	55-167	1	0-30	
1,2-Dichloropropane	102	102	67-157	52-172	0	0-35	
1,4-Dichlorobenzene	105	107	36-156	16-176	1	0-47	
c-1,3-Dichloropropene	120	121	61-157	45-173	1	0-35	
Ethylbenzene	111	110	52-154	35-171	1	0-38	
o-Xylene	109	109	52-148	36-164	0	0-38	
p/m-Xylene	102	102	42-156	23-175	0	0-41	
Tetrachloroethene	103	105	56-152	40-168	2	0-40	
Toluene	104	103	56-146	41-161	1	0-43	
Trichloroethene	107	110	63-159	47-175	3	0-34	
1,1,2-Trichloroethane	102	104	65-149	51-163	1	0-37	
Vinyl Chloride	110	109	45-177	23-199	1	0-36	

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

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 10-04-1395

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

Work Order Number: 10-04-1395

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

Atlantic Richfield Company
A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record

1395 Page 1 of 1

BP/ARC Project Name: BP 2035 Vapor Intrusion Assessment
Req Due Date (mm/dd/yy): _____ Rush TAT: Yes ___ No X
BP/ARC Facility No: 2035
Lab Work Order Number: _____

Lab Name:	Calscience	BP/ARC Facility Address:	1001 San Pablo Avenue	Consultant/Contractor:	Broadbent & Associates, Inc.
Lab Address:	7440 Lincoln Way	City, State, ZIP Code:	Albany, CA	Consultant/Contractor Project No:	06-88-610-5-822
Lab PM:	Richard Villafania	Lead Regulatory Agency:	ACEH	Address:	1324 Mangrove Ave. Ste. 212, Chico, CA 95926
Lab Phone:	714-895-5494	California Global ID No.:	T0600100081	Consultant/Contractor PM:	Tom Venus
Lab Shipping Accnt:	9225	Enfos Proposal No:	000P9-0006	Phone:	530-566-1400
Lab Bottle Order No:		Accounting Mode:	Provision X OOC-BU ___ OOC-RM ___	Email EDD To:	tvenus@broadbentinc.com
Other Info:		Stage: Operate (5)	Activity: Field Characterization (1)	Invoice To:	BP/ARC X Contractor ___

BP/ARC EBM: Chuck Carmel
EBM Phone:
EBM Email:

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

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	Matrix:	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol		Requested Analyses: TPH-GRO (c6-c12) by TO-3	BTEX, OXYS, EtOH by TO-15	1,1-DFA by TO-15	O2, CO2, CH4 by ASTM D1946							Comments
1	Purge Canister	4/16/10				X		1	X																Vac-30"
2	SG-1		1517			X			X						X	X	X	X							Vac-30"
3	SG-2		1423			X			X						X	X	X	X							Vac-30"
4	SG-3		1326			X			X						X	X	X	X							Vac-30"
5	SG-4		1117			X			X						X	X	X	X							Vac-30"
6	SG-5		1232			X			X						X	X	X	X							Vac-30"
7	SG-6 (Duplicate)					X			X						X	X	X	X							Vac-30"
8	Station Door Ambient Air		1230			X			X						X	X	X	X							Vac-30"

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

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Eric Farrow						
Sampler's Company: BAI		4/19/10	1430		4/19/10	10:30
Shipment Method: CSD Ship Date: 4/19/10						
Shipment Tracking No: 106193659 / 106193660						

Special Instructions: Eight 6-Liter Summa canisters to be batch certified contaminant free; Leak check gas 1,1-DFA = 1,1-Difluoroethane (CAS#75-37-6)

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

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

1395

DATE 4/19/10 SHIPPERS GSO ACCOUNT NO. 9255
COMPANY BAI
ADDRESS 875 Cotting Ln
ADDRESS STE/ROOM F
CITY Vacaville ZIP CODE 95688
SENDERS NAME Eric Foster PHONE NUMBER 707-455-7290
COMPANY CAL SCIENCE
NAME PHONE NUMBER 714-895-5494
ADDRESS 7440 LINCOLN WAY
ADDRESS STE/ROOM
CITY GARDEN GROVE ZIP CODE 92841
YOUR INTERNAL BILLING REFERENCE WILL APPEAR ON YOUR INVOICE
SPECIAL INSTRUCTIONS 2 of 2

GSO GOLDEN STATE OVERNIGHT
1-800-322-5555
WWW.GSO.COM

SHIPPING AIR BILL

4 PACKAGE INFORMATION
☐ LETTER (MAX 8 OZ)
☑ PACKAGE (WT) 30
☐ DECLARED VALUE $
☐ COD AMOUNT $ (CASH NOT ACCEPTED)

5 DELIVERY SERVICE: ☑ PRIORITY OVERNIGHT BY 10:30 AM ☐ EARLY PRIORITY BY 8:00 AM ☐ SATURDAY DELIVERY
*DELIVERY TIMES MAY BE LATER IN SOME AREAS • CONSULT YOUR SERVICE GUIDE OR CALL GOLDEN STATE OVERNIGHT.

6 RELEASE SIGNATURE
SIGN TO AUTHORIZE DELIVERY WITHOUT OBTAINING SIGNATURE

7 CREDIT CARD ☐ M/C ☐ VISA ☐ AM EX CREDIT CARD NUMBER EXP. DATE

8 PICK UP INFORMATION TIME DRIVER # ROUTE #

106193659

9 GSO TRACKING NUMBER

106193659

GSO COPY

DATE 4/19/10 SHIPPERS GSO ACCOUNT NO. 9255
COMPANY BAI
ADDRESS 875 Cotting Ln
ADDRESS STE/ROOM F
CITY Vacaville ZIP CODE 95688
SENDERS NAME Eric Foster PHONE NUMBER 707-455-7290
COMPANY CAL SCIENCE
NAME PHONE NUMBER 714-895-5494
ADDRESS 7440 LINCOLN WAY
ADDRESS STE/ROOM
CITY GARDEN GROVE ZIP CODE 92841
YOUR INTERNAL BILLING REFERENCE WILL APPEAR ON YOUR INVOICE
SPECIAL INSTRUCTIONS 1 of 2

GSO GOLDEN STATE OVERNIGHT
1-800-322-5555
WWW.GSO.COM

SHIPPING AIR BILL

4 PACKAGE INFORMATION
☐ LETTER (MAX 8 OZ)
☐ PACKAGE (WT) 3016
☐ DECLARED VALUE $
☐ COD AMOUNT $ (CASH NOT ACCEPTED)

5 DELIVERY SERVICE: ☑ PRIORITY OVERNIGHT BY 10:30 AM ☐ EARLY PRIORITY BY 8:00 AM ☐ SATURDAY DELIVERY
*DELIVERY TIMES MAY BE LATER IN SOME AREAS • CONSULT YOUR SERVICE GUIDE OR CALL GOLDEN STATE OVERNIGHT.

6 RELEASE SIGNATURE
SIGN TO AUTHORIZE DELIVERY WITHOUT OBTAINING SIGNATURE

7 CREDIT CARD ☐ M/C ☐ VISA ☐ AM EX CREDIT CARD NUMBER EXP. DATE

8 PICK UP INFORMATION TIME DRIVER # ROUTE #

106193660

9 GSO TRACKING NUMBER

106193660

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 10-04-1395

SAMPLE RECEIPT FORM

Box 1 of 2

CLIENT: BROADBENT & ASSOCIATES DATE: 04/20/10

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

Temperature ____.____ °C + 0.5 °C (CF) = ____.____ °C ☐ Blank ☐ Sample

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

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

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

Ambient Temperature: ☑ Air ☐ Filter ☐ Metals Only ☐ PCBs Only Initial: PS

CUSTODY SEALS INTACT:

☑ Box ☐_____ ☐ No (Not Intact) ☐ Not Present ☐ N/A Initial: PS

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

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑ PS 4/20/10	☑	☐
☑ Collection date/time, matrix, and/or # of containers logged in based on sample labels. #1, 7			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Correct containers and volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on COC or sample container	☐	☐	☑
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

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

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐500PB ☐500PB**na** ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

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

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

Preservative: **h:** HCL **n:** HNO3 **na$_2$:** $Na_2S_2O_3$ **Na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **znna:** $ZnAc_2$+NaOH **f:** Field-filtered **Scanned by:** PS

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 10-04- 1 3 9 J

SAMPLE RECEIPT FORM

Box 2 **of** 2

CLIENT: BROADBENT & ASSOCIATES **DATE:** 04/20/10

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

Temperature _____.____ °C + **0.5 °C** (CF) = _____.____ °C ☐ **Blank** ☐ **Sample**

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

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

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

Ambient Temperature: ☑ Air ☐ Filter ☐ Metals Only ☐ PCBs Only **Initial:** PS

CUSTODY SEALS INTACT:

☑ Box	☐_____	☐ No (Not Intact)	☐ Not Present	☐ N/A	**Initial:** PS
☐ Sample	☐_____	☐ No (Not Intact)	☑ Not Present		**Initial:** PS

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

CONTAINER TYPE:

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

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐500PB ☐500PB**na** ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

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

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

Preservative: **h:** HCL **n:** HNO3 **na$_2$:** $Na_2S_2O_3$ **Na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **znna:** $ZnAc_2$+NaOH **f:** Field-filtered **Scanned by:** PS

APPENDIX C

SOIL VAPOR MONITORING WELL SAMPLING DATA PACKAGE NO.2
(Includes Field Notes, Laboratory Analytical Reports with Chain-of-Custody Documentation)

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

DAILY REPORT
Page 1 of 2

Project: BP 2035 Project No.: 06.88.610
Field Representative(s): E. Foran Day: Friday Date: 3/11/10
Time Onsite: From: 0900 To: 1545; From: ____ To: ____; From: ____ To: ____

- Y Signed HASP
- Y Safety Glasses
- Y Hard Hat
- Y Steel Toe Boots
- Y Safety Vest
- Y UST Emergency System Shut-off Switches Located
- Y Proper Gloves
- Y Proper Level of Barricading
- ___ Other PPE (describe) ____

Weather: Clear / 70°
Equipment In Use: Service truck
Visitors: None

TIME:	WORK DESCRIPTION:
0530	Report office for Sunnyvale
0650	on Sunnyvale
0730	Report Sunnyvale for 2035
0900	on 2035
0927	Set up on SG-4. Begin leak check.
	Purge D-718, A-217 -30" Hg
	Sample D-702, A-217 -30" Hg
0933	Leak check passed, begin Purge
0939	Purge complete, begin sampling
	Purge can @ 26" Hg
1011	D-702 @ 5" Hg, sampler stopped
	Begin setting up Duplicate Sample canister
	Dup D-737, A-132 -30"
1016	Begin leak check
1021	Leak check passed, begin Purge
1027	Purge complete, begin sampling
	Purge can @ 21" Hg
1123	Set up on SG-3, begin leak check p

Signature: [signature]

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

DAILY REPORT
Page 2 of 2

Project: BP 2035 Project No.: 06-88-C10
Field Representative(s): Efrain Day: Friday Date: 3/14/11 C
Time Onsite: From: ____ To: ____; From: ____ To: ____; From: ____ To: ____

___ Signed HASP ___ Safety Glasses ___ Hard Hat ___ Steel Toe Boots ___ Safety Vest
___ UST Emergency System Shut-off Switches Located ___ Proper Gloves
___ Proper Level of Barricading ___ Other PPE (describe) ____

Weather: ____

Equipment In Use: ____

Visitors: ____

TIME:	WORK DESCRIPTION:
1131	Leak check passed, begin purge
1136	Purge complete, begin sampling SG-3
	D584, A 127, -30" Hg
1206	D584 @ 5" Hg, sampling stopped
1229	Set up on SG-5, begin leak check
	Purge Can @ 15"
1235	Leak check passed, begin purge
1240	Purge complete, begin sampling SG-5
	D701, A 307 @ -30" Hg
1325	D701 @ 5" Hg, Sampling stopped
1344	set up on SG-2, begin leak check
1350	Leak check passed, begin purge, Purge Can @ 11" Hg
1356	Purge complete, begin sampling SG-2
	D339, A317, -30" Hg
1425	D339 @ 5" Hg, Sampling stopped
1418	Set up on SG-1 Leak check
1453	Leak check passed, begin purge @ 8" Hg
1500	purge complete, begin sampling SG-1
	D172, A 46, 30" Hg
1535	D172 @ 5" Hg, stop sampling
1545	offsite to Gap

Signature: ____

Calscience Environmental Laboratories, Inc.

May 28, 2010

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

Subject: **Calscience Work Order No.: 10-05-1335**
Client Reference: BP 2035 Vapor Intrusion Assessment

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 5/18/2010 and analyzed in accordance with the attached chain-of-custody.

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

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

Sincerely,

Calscience Environmental
Laboratories, Inc.
Richard Villafania
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.	Date Received:	05/18/10
1324 Mangrove Ave, Ste 212	Work Order No:	10-05-1335
Chico, CA 95926-2642	Preparation:	N/A
	Method:	ASTM D-1946
	Units:	%v

Project: BP 2035 Vapor Intrusion Assessment

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-1	**10-05-1335-1-A**	**05/14/10 15:00**	**Air**	**GC 34**	**N/A**	**05/18/10 00:00**	**100518L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.855	1.71		Oxygen + Argon	8.40	0.855	1.71	
Carbon Dioxide	5.23	0.855	1.71						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-2	**10-05-1335-2-A**	**05/14/10 13:56**	**Air**	**GC 34**	**N/A**	**05/18/10 00:00**	**100518L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.840	1.68		Oxygen + Argon	17.2	0.840	1.68	
Carbon Dioxide	3.79	0.840	1.68						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-3	**10-05-1335-3-A**	**05/14/10 11:36**	**Air**	**GC 34**	**N/A**	**05/18/10 00:00**	**100518L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.810	1.62		Oxygen + Argon	11.5	0.810	1.62	
Carbon Dioxide	5.05	0.810	1.62						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-4	**10-05-1335-4-A**	**05/14/10 09:39**	**Air**	**GC 34**	**N/A**	**05/18/10 00:00**	**100518L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.765	1.53		Oxygen + Argon	21.5	0.765	1.53	
Carbon Dioxide	ND	0.765	1.53						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-5	**10-05-1335-5-A**	**05/14/10 12:40**	**Air**	**GC 34**	**N/A**	**05/18/10 00:00**	**100518L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.840	1.68		Oxygen + Argon	2.78	0.840	1.68	
Carbon Dioxide	5.45	0.840	1.68						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-6 (Duplicate)	**10-05-1335-6-A**	**05/14/10 00:00**	**Air**	**GC 34**	**N/A**	**05/18/10 00:00**	**100518L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.775	1.55		Oxygen + Argon	21.5	0.775	1.55	
Carbon Dioxide	ND	0.775	1.55						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-03-002-1,051**	**N/A**	**Air**	**GC 34**	**N/A**	**05/18/10 00:00**	**100518L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	ND	0.500	1	
Carbon Dioxide	ND	0.500	1						

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.	Date Received:	05/18/10
1324 Mangrove Ave, Ste 212	Work Order No:	10-05-1335
Chico, CA 95926-2642	Preparation:	N/A
	Method:	EPA TO-15
	Units:	mg/m3

Project: BP 2035 Vapor Intrusion Assessment

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-1	**10-05-1335-1-A**	**05/14/10 15:00**	**Air**	**GC/MS YY**	**N/A**	**05/21/10 07:09**	**100520L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0027	1.71		Xylenes (total)	ND	0.015	1.71	
Diisopropyl Ether (DIPE)	ND	0.014	1.71		Tert-Amyl-Methyl Ether (TAME)	ND	0.014	1.71	
Ethanol	ND	0.016	1.71		Tert-Butyl Alcohol (TBA)	ND	0.010	1.71	
Ethyl-t-Butyl Ether (ETBE)	ND	0.014	1.71		Toluene	0.0044	0.0032	1.71	
Ethylbenzene	ND	0.0037	1.71		Isopropanol	ND	0.021	1.71	
Methyl-t-Butyl Ether (MTBE)	ND	0.012	1.71						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	92	57-129		1,2-Dichloroethane-d4	95	47-137	
Toluene-d8	84	78-156					

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-2	**10-05-1335-2-A**	**05/14/10 13:56**	**Air**	**GC/MS YY**	**N/A**	**05/21/10 07:57**	**100520L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0027	1.68		Xylenes (total)	ND	0.015	1.68	
Diisopropyl Ether (DIPE)	ND	0.014	1.68		Tert-Amyl-Methyl Ether (TAME)	ND	0.014	1.68	
Ethanol	ND	0.016	1.68		Tert-Butyl Alcohol (TBA)	ND	0.010	1.68	
Ethyl-t-Butyl Ether (ETBE)	ND	0.014	1.68		Toluene	ND	0.0032	1.68	
Ethylbenzene	ND	0.0036	1.68		Isopropanol	0.14	0.021	1.68	
Methyl-t-Butyl Ether (MTBE)	ND	0.012	1.68						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	97	57-129		1,2-Dichloroethane-d4	93	47-137	
Toluene-d8	90	78-156					

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-3	**10-05-1335-3-A**	**05/14/10 11:36**	**Air**	**GC/MS YY**	**N/A**	**05/21/10 08:46**	**100520L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0026	1.62		Xylenes (total)	ND	0.014	1.62	
Diisopropyl Ether (DIPE)	ND	0.014	1.62		Tert-Amyl-Methyl Ether (TAME)	ND	0.014	1.62	
Ethanol	ND	0.015	1.62		Tert-Butyl Alcohol (TBA)	ND	0.0098	1.62	
Ethyl-t-Butyl Ether (ETBE)	ND	0.014	1.62		Toluene	0.0064	0.0031	1.62	
Ethylbenzene	ND	0.0035	1.62		Isopropanol	ND	0.020	1.62	
Methyl-t-Butyl Ether (MTBE)	ND	0.012	1.62						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	91	57-129		1,2-Dichloroethane-d4	90	47-137	
Toluene-d8	83	78-156					

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	05/18/10
1324 Mangrove Ave, Ste 212		Work Order No:	10-05-1335
Chico, CA 95926-2642		Preparation:	N/A
		Method:	EPA TO-15
		Units:	mg/m3
Project: BP 2035 Vapor Intrusion Assessment			Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-4	**10-05-1335-4-A**	**05/14/10 09:39**	**Air**	**GC/MS YY**	**N/A**	**05/21/10 09:31**	**100520L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0098	6.12		Xylenes (total)	ND	0.053	6.12	
Diisopropyl Ether (DIPE)	ND	0.051	6.12		Tert-Amyl-Methyl Ether (TAME)	ND	0.051	6.12	
Ethanol	ND	0.058	6.12		Tert-Butyl Alcohol (TBA)	ND	0.037	6.12	
Ethyl-t-Butyl Ether (ETBE)	ND	0.051	6.12		Toluene	0.016	0.012	6.12	
Ethylbenzene	ND	0.013	6.12		Isopropanol	91	7.5	612	
Methyl-t-Butyl Ether (MTBE)	ND	0.044	6.12						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	94	57-129		1,2-Dichloroethane-d4	97	47-137	
Toluene-d8	95	78-156					

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-5	**10-05-1335-5-A**	**05/14/10 12:40**	**Air**	**GC/MS YY**	**N/A**	**05/21/10 10:20**	**100520L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0027	1.68		Xylenes (total)	ND	0.015	1.68	
Diisopropyl Ether (DIPE)	ND	0.014	1.68		Tert-Amyl-Methyl Ether (TAME)	ND	0.014	1.68	
Ethanol	ND	0.016	1.68		Tert-Butyl Alcohol (TBA)	ND	0.010	1.68	
Ethyl-t-Butyl Ether (ETBE)	ND	0.014	1.68		Toluene	ND	0.0032	1.68	
Ethylbenzene	ND	0.0036	1.68		Isopropanol	18	8.3	672	
Methyl-t-Butyl Ether (MTBE)	ND	0.012	1.68						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	95	57-129		1,2-Dichloroethane-d4	96	47-137	
Toluene-d8	83	78-156					

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-6 (Duplicate)	**10-05-1335-6-A**	**05/14/10 00:00**	**Air**	**GC/MS YY**	**N/A**	**05/21/10 11:06**	**100520L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.020	12.4		Xylenes (total)	ND	0.11	12.4	
Diisopropyl Ether (DIPE)	ND	0.10	12.4		Tert-Amyl-Methyl Ether (TAME)	ND	0.10	12.4	
Ethanol	ND	0.12	12.4		Tert-Butyl Alcohol (TBA)	ND	0.075	12.4	
Ethyl-t-Butyl Ether (ETBE)	ND	0.10	12.4		Toluene	ND	0.023	12.4	
Ethylbenzene	ND	0.027	12.4		Isopropanol	130	7.6	620	
Methyl-t-Butyl Ether (MTBE)	ND	0.089	12.4						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	97	57-129		1,2-Dichloroethane-d4	96	47-137	
Toluene-d8	93	78-156					

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.	Date Received:	05/18/10
1324 Mangrove Ave, Ste 212	Work Order No:	10-05-1335
Chico, CA 95926-2642	Preparation:	N/A
	Method:	EPA TO-15
	Units:	mg/m3

Project: BP 2035 Vapor Intrusion Assessment

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-021-8,560**	**N/A**	**Air**	**GC/MS YY**	**N/A**	**05/20/10 20:48**	**100520L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0016	1		Xylenes (total)	ND	0.0087	1	
Diisopropyl Ether (DIPE)	ND	0.0084	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0084	1	
Ethanol	ND	0.0094	1		Tert-Butyl Alcohol (TBA)	ND	0.0061	1	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0084	1		Toluene	ND	0.0019	1	
Ethylbenzene	ND	0.0022	1		Isopropanol	ND	0.012	1	
Methyl-t-Butyl Ether (MTBE)	ND	0.0072	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	98	57-129		1,2-Dichloroethane-d4	95	47-137	
Toluene-d8	99	78-156					

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-021-8,562**	**N/A**	**Air**	**GC/MS ZZ**	**N/A**	**05/21/10 12:55**	**100521L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0016	1		Xylenes (total)	ND	0.0087	1	
Diisopropyl Ether (DIPE)	ND	0.0084	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0084	1	
Ethanol	ND	0.0094	1		Tert-Butyl Alcohol (TBA)	ND	0.0061	1	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0084	1		Toluene	ND	0.0019	1	
Ethylbenzene	ND	0.0022	1		Isopropanol	ND	0.012	1	
Methyl-t-Butyl Ether (MTBE)	ND	0.0072	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	104	57-129		1,2-Dichloroethane-d4	107	47-137	
Toluene-d8	98	78-156					

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

Calscience Environmental Laboratories, Inc.

Analytical Report

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

Date Received: 05/18/10
Work Order No: 10-05-1335
Preparation: N/A
Method: EPA TO-3M

Project: BP 2035 Vapor Intrusion Assessment

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-1	**10-05-1335-1-A**	**05/14/10 15:00**	**Air**	**GC 38**	**N/A**	**05/18/10 15:16**	**100518L02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	65	1.71		mg/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-2	**10-05-1335-2-A**	**05/14/10 13:56**	**Air**	**GC 38**	**N/A**	**05/18/10 15:56**	**100518L02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	64	1.68		mg/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-3	**10-05-1335-3-A**	**05/14/10 11:36**	**Air**	**GC 38**	**N/A**	**05/18/10 16:32**	**100518L02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	62	1.62		mg/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-4	**10-05-1335-4-A**	**05/14/10 09:39**	**Air**	**GC 38**	**N/A**	**05/18/10 17:07**	**100518L02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	59	1.53		mg/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-5	**10-05-1335-5-A**	**05/14/10 12:40**	**Air**	**GC 38**	**N/A**	**05/18/10 17:45**	**100518L02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	64	1.68		mg/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SG-6 (Duplicate)	**10-05-1335-6-A**	**05/14/10 00:00**	**Air**	**GC 38**	**N/A**	**05/18/10 18:20**	**100518L02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	60	59	1.55		mg/m3

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

Calscience Environmental Laboratories, Inc.

Analytical Report

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

Date Received:	05/18/10
Work Order No:	10-05-1335
Preparation:	N/A
Method:	EPA TO-3M

Project: BP 2035 Vapor Intrusion Assessment

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-685-284**	**N/A**	**Air**	**GC 38**	**N/A**	**05/18/10 08:43**	**100518L02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	38	1		mg/m3

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

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

Broadbent & Associates, Inc.	Date Received:	05/18/10
1324 Mangrove Ave, Ste 212	Work Order No:	10-05-1335
Chico, CA 95926-2642	Preparation:	N/A
	Method:	EPA TO-3M

Project: BP 2035 Vapor Intrusion Assessment

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
SG-6 (Duplicate)	**Air**	**GC 38**	**N/A**	**05/18/10**	**100518D02**

Parameter	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	60	60	1	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.		Date Received:	N/A
1324 Mangrove Ave, Ste 212		Work Order No:	10-05-1335
Chico, CA 95926-2642		Preparation:	N/A
		Method:	ASTM D-1946

Project: BP 2035 Vapor Intrusion Assessment

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-03-002-1,051	**Air**	**GC 34**	**N/A**	**05/18/10**	**100518L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Carbon Dioxide	100	99	80-120	1	0-30	
Oxygen + Argon	103	103	80-120	0	0-30	
Nitrogen	105	105	80-120	0	0-30	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 10-05-1335
Preparation: N/A
Method: EPA TO-15

Project: BP 2035 Vapor Intrusion Assessment

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-021-8,560	**Air**	**GC/MS YY**	**N/A**	**05/20/10**	**100520L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	84	88	60-156	44-172	4	0-40	
Carbon Tetrachloride	82	84	64-154	49-169	3	0-32	
1,2-Dibromoethane	85	86	54-144	39-159	1	0-36	
1,2-Dichlorobenzene	98	99	34-160	13-181	1	0-47	
1,2-Dichloroethane	81	84	69-153	55-167	4	0-30	
1,2-Dichloropropane	85	87	67-157	52-172	3	0-35	
1,4-Dichlorobenzene	97	98	36-156	16-176	0	0-47	
c-1,3-Dichloropropene	93	96	61-157	45-173	3	0-35	
Ethylbenzene	93	94	52-154	35-171	1	0-38	
o-Xylene	93	95	52-148	36-164	1	0-38	
p/m-Xylene	92	93	42-156	23-175	2	0-41	
Tetrachloroethene	84	86	56-152	40-168	2	0-40	
Toluene	87	88	56-146	41-161	1	0-43	
Trichloroethene	86	88	63-159	47-175	3	0-34	
1,1,2-Trichloroethane	86	88	65-149	51-163	3	0-37	
Vinyl Chloride	87	87	45-177	23-199	0	0-36	

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

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 10-05-1335
Preparation: N/A
Method: EPA TO-15

Project: BP 2035 Vapor Intrusion Assessment

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-021-8,562	**Air**	**GC/MS ZZ**	**N/A**	**05/21/10**	**100521L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	93	89	60-156	44-172	4	0-40	
Carbon Tetrachloride	91	89	64-154	49-169	2	0-32	
1,2-Dibromoethane	98	90	54-144	39-159	9	0-36	
1,2-Dichlorobenzene	102	93	34-160	13-181	9	0-47	
1,2-Dichloroethane	97	95	69-153	55-167	1	0-30	
1,2-Dichloropropane	96	92	67-157	52-172	4	0-35	
1,4-Dichlorobenzene	103	94	36-156	16-176	9	0-47	
c-1,3-Dichloropropene	99	93	61-157	45-173	6	0-35	
Ethylbenzene	100	90	52-154	35-171	11	0-38	
o-Xylene	103	92	52-148	36-164	11	0-38	
p/m-Xylene	104	94	42-156	23-175	10	0-41	
Tetrachloroethene	98	90	56-152	40-168	9	0-40	
Toluene	99	90	56-146	41-161	10	0-43	
Trichloroethene	99	94	63-159	47-175	5	0-34	
1,1,2-Trichloroethane	98	94	65-149	51-163	4	0-37	
Vinyl Chloride	107	113	45-177	23-199	6	0-36	

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

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 10-05-1335

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

Work Order Number: 10-05-1335

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

Atlantic Richfield Company
A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record

1335

BP/ARC Project Name: BP 2035 Vapor Intrusion Assessment
Req Due Date (mm/dd/yy):
Rush TAT: Yes ___ No X

BP/ARC Facility No: 2035
Lab Work Order Number:

Lab Name: Calscience	BP/ARC Facility Address: 1001 San Pablo Avenue	Consultant/Contractor: Broadbent & Associates, Inc.
Lab Address: 7440 Lincoln Way	City, State, ZIP Code: Albany, CA	Consultant/Contractor Project No: 06-88-610-5-822
Lab PM: Richard Villafania	Lead Regulatory Agency: ACEH	Address: 1324 Mangrove Ave. Ste. 212, Chico, CA 95926
Lab Phone: 714-895-5494	California Global ID No.: T0600100081	Consultant/Contractor PM: Tom Venus
Lab Shipping Accnt: 9225	Enfos Proposal No: 000P9-0006	Phone: 530-566-1400
Lab Bottle Order No:	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: tvenus@broadbentinc.com
Other Info:	Stage: Operate (5) Activity: Field Characterization (1)	Invoice To: BP/ARC X Contractor ___
BP/ARC EBM: Chuck Carmel		
EBM Phone:		
EBM Email:		

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	Matrix:	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol		Requested Analyses: TPH-GRO (c6-c12) by TO-3	BTEX, OXYS, EtOH by TO-15	Isopropanol by TO-15	O2, CO2, CH4 by ASTM D1946							Report Type & QC Level / Comments
1	Purge Canister	5/14/10	—			X		1	X																HOLD
2	SG-1		1500			X		1	X						X	X	X	X							report TO-3/TO-15 conc. in mg/m3
3	SG-2		1356			X		1	X						X	X	X	X							report TO-3/TO-15 conc. in mg/m3
4	SG-3		1136			X		1	X						X	X	X	X							report TO-3/TO-15 conc. in mg/m3
5	SG-4		0939			X		1	X						X	X	X	X							report TO-3/TO-15 conc. in mg/m3
6	SG-5		1240			X		1	X						X	X	X	X							report TO-3/TO-15 conc. in mg/m3
7	SG-6 (Duplicate)		—			X		1	X						X	X	X	X							report TO-3/TO-15 conc. in mg/m3

Lost 5/18/10

Standard X
Full Data Package ___

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

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Eric Finn						
Sampler's Company: BAI		5/17/10	1300		5/18/10	10:30
Shipment Method: GSO Ship Date: 5/17/10						
Shipment Tracking No: 106193656, 106470691 GSO						

Special Instructions: ~~Eight~~ 6-Liter Summa canisters to be batch certified contaminant free; Leak check compound Isopropanol (rubbing alcohol).

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

1335

GSO
GOLDEN STATE OVERNIGHT

SHIPPING AIR BILL

1-800-322-5555
WWW.GSO.COM

PACKAGE

FROM
DATE 5/17/10
COMPANY B AI
ADDRESS 875 Cotting Lane
ADDRESS
STE/ ROOM G
CITY Vacaville
ZIP CODE 95688
SENDERS NAME Eric Farrar
PHONE NUMBER 775-247-7901

2 TO
COMPANY NAME CAL SCIENCE
PHONE NUMBER
ADDRESS 7440 LINCOLN WAY
ADDRESS
STE/ ROOM
CITY GARDEN GROVE
ZIP CODE 92841

3 YOUR INTERNAL BILLING REFERENCE WILL APPEAR ON YOUR INVOICE

SPECIAL INSTRUCTIONS 1 of 2

4 PACKAGE INFORMATION
☐ LETTER (MAX 8 OZ)
☒ PACKAGE (WT) 20
☐ DECLARED VALUE $
☐ COD AMOUNT $ (CASH NOT ACCEPTED)

5 DELIVERY SERVICE
☒ PRIORITY OVERNIGHT BY 10:30 AM
☐ EARLY PRIORITY BY 8:00 AM
☐ SATURDAY DELIVERY
*DELIVERY TIMES MAY BE LATER IN SOME AREAS • CONSULT YOUR SERVICE GUIDE OR CALL GOLDEN STATE OVERNIG

6 RELEASE SIGNATURE
SIGN TO AUTHORIZE DELIVERY WITHOUT OBTAINING SIGNATURE

7

8 PICK UP INFORMATION
TIME DRIVER # ROUTE #

106470691

PEEL OFF HERE

106470691

9 GSO TRACKING NUMBER

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 10-05-1 3 3 5

SAMPLE RECEIPT FORM

Cooler 0 of 0

CLIENT: BROADBENT AND ASSOCIATES DATE: 05/18/10

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

Temperature ____•___ °C + 0.5 °C (CF) = ____•___ °C ☐ Blank ☐ Sample

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

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

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

Ambient Temperature: ☑ Air ☐ Filter ☐ Metals Only ☐ PCBs Only **Initial:** PS

CUSTODY SEALS INTACT:

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

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

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
pH / Residual Chlorine / Dissolved Sulfide received within 24 hours	☐	☐	☑
Proper preservation noted on COC or sample container	☐	☐	☑
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

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

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐500PB ☐500PB**na** ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

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

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

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

APPENDIX D

GEOTRACKER UPLOAD CONFIRMATION RECEIPTS

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A EDF FILE

SUCCESS

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

Submittal Type:	**EDF - Soil and Water Investigation Report**
Submittal Title:	**Soil Vapor/Soil Gas 4-16-2010**
Facility Global ID:	**T0600100081**
Facility Name:	**ARCO #02035**
File Name:	**10041395_s1.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**6/18/2010 12:56:25 PM**
Confirmation Number:	**1963036954**

VIEW QC REPORT

VIEW DETECTIONS REPORT

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A EDF FILE

SUCCESS

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

Submittal Type:	**EDF - Soil and Water Investigation Report**
Submittal Title:	**Soil Vapor/Soil Gas 5-14-2010**
Facility Global ID:	**T0600100081**
Facility Name:	**ARCO #02035**
File Name:	**10051335.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**6/18/2010 12:56:58 PM**
Confirmation Number:	**7607987761**

VIEW QC REPORT

VIEW DETECTIONS REPORT

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A GEO_MAP FILE

SUCCESS

Your GEO_MAP file has been successfully submitted!

Submittal Type:	**GEO_MAP**
Facility Global ID:	**T0600100081**
Facility Name:	**ARCO #02035**
File Name:	**Site Plan Layout1 (1).pdf**
Username:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**6/18/2010 12:33:24 PM**
Confirmation Number:	**4166245818**