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July 16, 2002

stip 744

Mr. Paul Supple
Atlantic Richfield Company
P.O. Box 6549
Moraga, California 94570

JUL 19 2002

Subject: *Results of a Dual Phase Extraction Pilot Test*
ARCO Service Station No. 2111
1156 Davis Street
San Leandro, California
Delta Project No. D000-306

Dear Mr. Supple:

This letter, prepared by Delta Environmental Consultants, Inc. (Delta) on behalf of Atlantic Richfield Company, presents the results of the events conducted during the dual phase extraction (DPE) pilot test at the above referenced site (Figure 1). The purpose of the testing was performed to evaluate DPE as a potentially applicable technology for source area removal of petroleum hydrocarbon impacted soils and groundwater at the subject site. The pilot test set-up and results are described below.

System Set-up

On January 7, 2002, a three-day DPE pilot test was performed on vapor well V-2. Following the three-day test, limited pilot tests were conducted on monitoring wells MW-2 and MW-7. The DPE system utilized a 20 horsepower, 350 cubic feet per minute (cfm) liquid ring pump to remove both groundwater and soil vapor simultaneously utilizing a down-hole pipe ("stinger") connected to the monitoring well. As the groundwater and soil vapor was removed from the subsurface, it was partitioned through an above ground air/water separator (knockout tank). The groundwater and soil vapor were then processed for separate treatment. The groundwater was transferred through a transfer pump to a temporary storage tank for later disposal. Hydrocarbons in the vapor stream were abated by a thermal oxidizer unit, which was also mounted to the mobile unit.

Air Discharge & Water Disposal Permitting

Before the pilot test, all required permits were obtained for operation of the mobile DPE unit. Use of the thermal oxidizer unit was permitted through the Bay Area Air Quality Management District. All water collected at the site was stored in a temporary storage tank and later transferred to an Atlantic Richfield Company's contracted vacuum truck for off-site disposal.

DPE Pilot Test Description

Field data was collected from the extraction unit and from selected wells to assess influence from the system. Well caps fitted with a magnehelic gauge were placed on selected monitoring wells to collect vacuum data during the pilot test. Prior to the start of each pilot test, depth to groundwater measurements were collected in all of the monitoring wells (MW-1 through MW-7) and vacuum

readings were taken from monitoring wells MW-1, MW-2, MW-7, and vapor wells V-1 through V-3. Figure 2 presents the existing remediation piping layout and the location of all the wells.

The following data were recorded periodically on field activity sheets during each pilot test:

- Total system influent airflow and groundwater recovery rates in cfm and gallons per minute (gpm), respectively.
- Total influent system and well head vacuums in inches of mercury (Hg) and inches of water column (IWC), respectively.
- Influent hydrocarbon vapor concentrations in parts per million by volume (ppmv).
- Vacuum readings from selected monitoring and test wells in IWC.
- Depth to water (DTW) and product thickness (PT) of liquid phase hydrocarbons (LPH) in selected wells in feet (ft).

Additionally, at selected intervals during each pilot test, the water meter was checked and both vapor and groundwater grab samples were collected for submittal to the laboratory. Submitted samples were analyzed for benzene, toluene, ethyl-benzene, xylenes (BTEX), methyl tertiary butyl ether (MTBE) and total petroleum hydrocarbons as gasoline (TPHg) by DHS LUFT approved methods. A summary of the air analytical results from samples collected during each pilot test is tabulated in Table 1. A summary of the groundwater analytical results from samples collected during each pilot test is tabulated in Table 2.

DPE Pilot Test on Vapor Well V-2

The DPE pilot test was performed by extracting soil vapors and total fluids with a stinger placed inside of vapor well V-2 at an approximate depth of 19 feet below surface grade (bsg). This well is a 2-inch diameter well installed east of the southern dispenser island (Figure 2). The well is screened from approximately 5 to 20 feet bsg. During the pilot test on V-2, monitoring wells MW-1, MW-2 and MW-7 and vapor wells V-1 and V-3 were monitored. The test was started on January 7, 2002 and completed on January 10, 2002. Based on field conditions, the following tasks were completed as close as practical:

- Depth to groundwater, PT, vacuum, and Flame Ionization Detector (FID) readings on MW-1, MW-2, MW-7, V-1 and V-3 were to be measured and recorded every 15 minutes for first half-hour and then every 30 minutes for first hour of test; hourly for next seven hours; then daily (at 8:00 AM) thereafter for the remainder of the test.
- Daily DTWs were to be measured and recorded in all wells (with the exception of V-2 since it was the test well, and MW-5 which could not be located).
- Groundwater (GW) and soil vapor influent samples were to be collected at the beginning of the test; 8 hours after startup; and then daily (at 8:00 AM) every day thereafter. The samples were to be analyzed for BTEX and MTBE by EPA Method 8020 and TPHg by EPA Method 8015M. The presence of MTBE was to be confirmed by EPA Method 8260.
- Influent GW and SVE flow rates, influent non-methane hydrocarbon FID readings and vacuums at test equipment and vacuums on the test wellhead were to be measured and recorded.
- Prior to shut down of the test on V-2, DTWs were to be measured and recorded in all wells.
- At the end of the test, DTW in V-2 was to be measured every minute for 10 minutes, after 15 minutes, after 30 minutes, and once after 60 minutes.

Results and Discussion for DPE Pilot Test on Vapor Well V-2

During the test, total vapor flow rates ranged from 224 to 274 cfm with an average total vapor flow rate of 248 cfm (Tables 3 and 4). At an average wellhead vacuum of 248 IWC, vacuum influence was observed in only three monitoring wells, MW-1, MW-2 and MW-7 (Table 4). These wells are located approximately 101, 24 and 40 feet, respectively, from V-2 (Figure 1). Based on the laboratory results, the influent TPHg vapor concentrations ranged from 25 to 210 ppmv (Tables 1 and 3). The TPHg extraction rates ranged from 4.32 lbs/day (0.18 lbs/hour) to 17.76 lbs/day (0.74 lbs/hour) with a time weighted average of 11.6 lbs/day. Based on the FID measurements, the non-methane hydrocarbon influent concentrations ranged from 60 to 1,087 ppmv. The non-methane hydrocarbon extraction rates ranged from 8.88 lbs/day (0.37 lbs/hour) to 104.64 lbs/day (4.36 lbs/hour) with a time weighted average of 39.3 lbs/day. The discrepancy between the FID and laboratory hydrocarbon data is more than likely due to the laboratory reporting only C6 hydrocarbon compounds and above while the FID was reporting C2 hydrocarbon compounds and above. The TPHg and non-methane hydrocarbon extraction rates are presented in Table 3. During the pilot test, a total groundwater volume of 7,120 gallons was recovered with an average recovery rate of 1.5 gpm. A hydraulic influence was observed across the groundwater table on site, with a noticeable drawdown occurring in the wells immediately adjacent to the extraction point. Based on the groundwater analytical results, dissolved petroleum hydrocarbons showed a decreasing trend throughout the test (Table 2). In addition, no LPH was observed during the test. Table 4 presents the summary of field data collected during the pilot test. Copies of the DPE system field data sheets are presented in Appendix A. Copies of all analytical reports are provided in Appendix B. The results from the pilot test are summarized below:

V-2 PILOT TEST RESULTS SUMMARY

Total hours Operated Continuous (hours)	Total Water Flow (gallons)	Average Water Flowrate (gpm)	Total DTW Increase (feet)	Average Total Vapor Flowrate (cfm)	Total TPHg Vapor Extracted (lbs)	FID Non-Methane Hydrocarbon Vapor Extracted (lbs)	Total TPHg Vapor Extraction (gallons)	FID Non-Methane Hydrocarbon Vapor Extracted (gallons)	Average TPHg Vapor Extraction Rates (lbs/day)	Average FID Non-Methane Hydrocarbon Vapor Extraction Rates (lbs/day)
78.75	7,120	1.51	5.52	255	38.0	129.0	6.2	21.1	11.6	39.3

Observed Vacuum Radius of Influence for Vapor Well V-2

Based on EPA guidance documentation, as a rule of thumb, a vacuum of 0.1" H_2O is used as the minimum vacuum level required for effective radial influence. Monitoring well MW-2 was the only well to show a vacuum influence above 0.1" H2O. However, vacuum readings were noted in wells MW-1 and MW-7, located approximately 101 feet and 40 feet, respectively, from V-2.

Mathematical Radius of Influence for Vapor Well V-2

Using a mathematical equation developed by Johnson et al (1990), the "zero vacuum" ROI was calculated to determine the distance at which the vacuum achieved in the subsurface would be equal to zero under ideally homogeneous conditions. Using the measured vacuum for well MW-7 at a distance of 40.2 feet, the calculations yields a maximum "zero vacuum" ROI of 40.21 feet. A printout of the excel calculation sheet is provided in Appendix C.

Effective Radius of Influence for Vapor Well V-2

The effective radial influence is determined to be the point at which observed vacuums are 1 percent of the applied vacuum. The 1 percent value is an arbitrary yet conservative estimate of the projected vacuum needed to provide adequate site coverage. The effective ROI is estimated by preparing a graph of normalized vacuum versus the radial distance from the extraction well. The slope of the best-fit line is used to estimate the effective ROI at the point where the line crosses the log value of 1 percent of the applied vacuum. This method of data evaluation yielded an effective ROI of 17 feet, which is illustrated on Figure 3. A printout of the excel calculation sheet is provided in Appendix C.

Permeability to Air Flow for Vapor Well V-2

Using the test data, an average permeability to airflow of 3.98×10^{-8} cm^2 (3.98 Darcy) was calculated for V-2. This permeability value is representative of silty sand. A printout of the excel calculation sheet is provided in Appendix C.

Groundwater Level Influence for Vapor Well V-2

Groundwater level influence was measured as far out to monitoring well MW-1 with a maximum draw down of 0.21 feet. However, since similar drawdown values were measured in most of the onsite wells regardless of their distance from V-2, the decrease may have been influenced by natural fluctuations in the aquifer (see Table 4).

Groundwater Level Recovery Rate for Vapor Well V-2

Groundwater levels in Vapor well V-2 were measured at the end of the test as described earlier the text. It was noted that the groundwater levels recovered to greater than 95% with in one hour.

Limited DPE Pilot Test Performed on Monitoring Well MW-7

On January 10, 2002, the DPE unit was connected to MW-7. Monitoring well MW-7 is a two-inch diameter well located at the southwest corner of the existing tank field. The well is screened from 12 to 26.9 feet bsg. Soil vapors and total fluids were extracted from the well with a down-hole stinger. Monitoring wells MW-1 and MW-2 and vapor wells V-1 through V-3 were monitored during the 20-hour pilot test.

Results and Discussion for Limited DPE Pilot Test on Monitoring Well MW-7

During the test, the total vapor flow rate was measured to be 250 cfm at a vacuum of 240 IWC (Tables 3 and 4). Due to an apparent problem with the field FID, hydrocarbon extraction rates were based solely on laboratory results from a soil vapor sample collected on January 11, 2002. Table 1 presents the air analytical results. The laboratory results indicated a low hydrocarbon removal rate of 7.32 lb/day. In addition, during the test, no significant groundwater influence was noticed in surrounding wells. This more than likely was due to the fine-grained soils in the subsurface and the short test period (20 hours). A total of 1,900 gallons of impacted groundwater was recovered during the test. No LPH was encountered during the test. A groundwater sample was collected near the completion of the test and the results are presented in Table 2. Table 3 presents the vapor extraction data. Table 4 presents the summary of field data collected during the event. Copies of the DPE system field data sheets are presented in Appendix A. Copies of all analytical reports are provided in Appendix B. Results from the limited DPE test are summarized below:

MW-7 PILOT TEST RESULTS SUMMARY

Total hours Operated Continuous (hours)	Total Water Flow (gallons)	Average Water Flowrate (gpm)	Total DTW Increase (feet)	Average Total Vapor Flowrate (cfm)	Total TPHg Vapor Extracted (lbs)	Total TPHg Vapor Extraction (gallons)	Average TPHg Vapor Extraction Rates (lbs/day)
20	1,900	1.58	0.26	250	6.1	1.0	7.32

Limited DPE Pilot Test Performed on Monitoring Well MW-2

In an effort to remove residual hydrocarbon vapors, LPH, and dissolved petroleum hydrocarbons in and/or near monitoring well MW-2, on January 11, 2002, the DPE unit was connected to MW-2. Monitoring well MW-2 is a two-inch diameter well installed east of the southern dispenser island, screened from 12 to 26 feet below surface grade (bsg). Soil vapors and total fluids were extracted from MW-2 for approximately 5 hours with a down-hole stinger. Monitoring wells MW-1 and MW-7 and vapor wells V-1 through V-3 were monitored during the limited pilot test.

Results and Discussion for Limited DPE Pilot Test on Monitoring Well MW-2

During the limited pilot test, total vapor flow rates ranged from 292 to 342 cfm with an average total vapor flow rate of 317 cfm (Tables 3 and 4). The wellhead vacuum was measured to be 150 IWC (Table 4). Initially, high concentrations of non-methane hydrocarbons were detected by the FID in the influent vapor stream, but quickly decreased as the test proceeded. The influent vapor concentrations started at 10,176 ppmv and ended at 351 ppmv. The average FID non-methane hydrocarbon vapor extraction rate was calculated to be 84.5 lbs/day. No groundwater or vapor samples were collected from MW-2 for laboratory analyses since the monitoring well had already been previously tested. Vapor extraction data are shown in Table 3. During the limited test on MW-2, a slight hydraulic influence was observed in local wells. As expected, though, MW-2 produced a high groundwater flow rate (approximately 20 gpm). A total of 5,960 gallons of groundwater was recovered during the test. Table 4 presents the summary of field data collected during the event. Copies of the DPE system field data sheets are presented in Appendix A. Results from the Limited DPE pilot test are summarized below:

MW-2 PILOT TEST RESULTS SUMMARY

Total hours Operated Continuous (hours)	Total Water Flow (gallons)	Average Water Flowrate (gpm)	Total DTW Increase (feet)	Average Total Vapor Flowrate (cfm)	FID Non-Methane Hydrocarbon Vapor Extracted (lbs)	FID Non-Methane Hydrocarbon Vapor Extracted (gallons)	Average FID Non-Methane Hydrocarbon Vapor Extraction Rates (lbs/day)
5	5,960	19.87	0.19	292	17.6	2.9	84.5

Conclusions

In conclusion, the test results indicate that limited DPE is possible at the site. Even though, in the short term, it appears that DPE is limited in its inability to quickly lower groundwater levels to expose impacted soils for SVE, given enough time of system operation, it is reasonable to expect that groundwater levels could be adequately lowered. This is supported by the fact that the decreasing groundwater levels measured in the surrounding wells never reached steady state prior to the end of the three day test on vapor well V-2. Furthermore, based on experience, the relatively high well vacuums encountered along with the low groundwater production rates from V-2 indicate that dewatering of the soils could be possible over an extended period of time. Though significant hydrocarbon vapor recovery rates may not be reasonably expected from DPE due to the fine grained soils on site, the overall effect of reducing the groundwater levels in itself would allow the soils to be exposed to atmospheric oxygen from SVE, which in turn would enhance the natural attenuation of the impacted soils and groundwater. In addition, the direct removal of impacted groundwater would be an added benefit of petroleum hydrocarbon removal, though it would be limited due to the inherent low hydrocarbon mass recovery rates of groundwater extraction in general. The test also indicates that only those wells completed in finer grain materials on site would be effective in a DPE system, whereas, monitoring well MW-2, as expected, would not serve as a practical DPE well due to its excessive groundwater production rates. Using a vacuum ROI of approximately 32 feet, which is based on the average of the three previously calculated values 40, 40.21, and 17 feet, the existing vapor and monitoring wells that have remediation piping stubbed to them would provide adequate SVE coverage for the impacted area near the dispenser islands and tank field.

Remarks and Signatures

The interpretations contained in this report represent our professional opinions and are based, in part, on information supplied by the client. These opinions are based on currently available information and are arrived at in the accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

If you have any questions regarding this project, please contact Steven Meeks at (916) 536-2613.

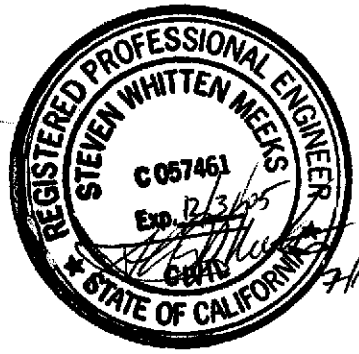
Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

for

Trevor L. Atkinson, P.E.
Project Engineer

Steven W. Meeks, P.E.
Project Manager
California Registered Civil Engineer No. C057461



7/16/02

cc: Amir Gholami, ACHCSA
Robert Cave, BAAQMD
Scott Robinson, URS

Enclosures

TABLE 1

PILOT TEST AIR ANALYTICAL DATA

ARCO Service Station No. 2111
1156 Davis Street
San Leandro, California

Sample I.D.	Date Sampled	Time	Benzene (ppmv)	Toluene (ppmv)	Ethyl-benzene (ppmv)	Total Xylenes (ppmv)	TPHg (ppmv)	MTBE (8020) (ppmv)	MTBE (8260) (ppmv)
VW-2 (V-2)	01/07/02	10:45	4.1	0.82	1.8	4.5	55[a]	84	84
1-7-02 (V-2)	01/07/02	16:00	2.1	0.34	0.68	1.5	25	NA	64
1-8-02 (V-2)	01/08/02	8:00	2.9	1.0	1.3	2.2	97	NA	209
1-9-02 (V-2)	01/09/02	8:00	5.5	2.3	2.1	3.8	210	NA	179
1-10-02 (V-2)	01/10/02	8:00	3.9	1.3	1.9	4.2	190	53	95
1-11-02 (MW-7)	01/11/02	9:00	2.0	2.3	0.85	2.3	80	72	128

[a] = Hydrocarbon pattern is present in the requested fuel quantitation but does not resemble the pattern of the requested fuel.

TPH = Total Petroleum Hydrocarbons

MTBE = Methyl tertiary butyl ether analyzed by EPA Method 8021B unless otherwise noted

µg/L = Micrograms per liter

NA = Not analyzed

TABLE 2

PILOT TEST WATER ANALYTICAL DATA

ARCO Service Station No. 2111
1156 Davis Street
San Leandro, California

Sample I.D.	Date Sampled	Time	Benzene (µg/L)	Toluene (µg/L	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	TPH (µg/L)	MTBE (8020) (µg/L)	MTBE (8260) (µg/L)
VW-2 (V-2)	01/07/02	10:50	860	<500	<500	1,400	<50,000	160,000	180,000
1-7-02 (V-2)	01/07/02	16:00	240	51	93	280	18,000[a]	NA	98,000
1-8-02 (V-2)	01/08/02	8:00	42	11	<0.5	53	1,800	NA	16,000
1-9-02 (V-2)	01/09/02	8:00	46	45	81	360	6,600	NA	8,100
1-10-02 (V-2)	01/10/02	8:00	28	<20	25	71	<2,000	6,300	5,600
1-11-02 (MW-7)	01/11/02	9:00	<20	23	<20	52	<2,000	6,800	5,800

[a] = Hydrocarbon pattern is present in the requested fuel quantitation but does not resemble the pattern of the requested fuel.

TPH = Total Petroleum Hydrocarbons

MTBE = Methyl tertiary butyl ether analyzed by EPA Method 8021B unless otherwise noted

µg/L = Micrograms per liter

NA = Not analyzed

TABLE 3

DUAL PHASE EXTRACTION PILOT TEST VAPOR RESULTS TABLE

ARCO Service Station No. 2111
1156 Davis Street
San Leandro, California

V-2 PILOT TEST VAPOR EXTRACTION RESULTS - 2002

Date & Time Sampled	Influent Flowrate (ft^3/min)	Laboratory TPHg Influent (ppmv)	Influent Non-methane Hydrocarbons by FID (ppmv)	Laboratory Benzene Influent (ppmv)	TPH Extraction Rate (lbs/hour)	Non- Methane Hydrocarbons by FID (lbs/hour)	Benzene Extraction Rate (lbs/hour)	Cumulative Volume of Processed Air (cubic feet)	**Cumulative Laboratory TPHg Extraction (lbs)**	**Cumulative FID Non-Methane Hydrocarbon Extraction (lbs)**	Total Hours Operated	Change in Hours of Operation
1/7/02 9:00	236	NA	260	NA	NC	0.82	NC	0	**NC**	**0.0**	0.00	0.00
1/7/02 9:30	236	NA	260	NA	NC	0.94	NC	7,080	**NC**	**0.4**	0.50	0.50
1/7/02 9:45	226	NA	262	NA	NC	0.91	NC	10,470	**NC**	**0.7**	0.75	0.25
1/7/02 10:00	226	NA	216	NA	NC	0.75	NC	13,860	**NC**	**0.9**	1.00	0.25
1/7/02 10:30	247	NA	112	NA	NC	0.42	NC	21,270	**NC**	**1.2**	1.50	0.50
1/7/02 10:45	247	55	112	4.1	0.18	0.37	0.34	24,975	**0.3**	**1.3**	1.75	0.25
1/7/02 12:00	238	NA	197	NA	NC	0.72	NC	42,825	**NC**	**2.0**	3.00	1.25
1/7/02 16:00	260	25	884	2.1	0.09	3.06	0.18	105,225	**1.0**	**9.5**	7.00	4.00
1/7/02 17:00	263	NA	808	NA	NC	3.26	NC	121,005	**NC**	**12.7**	8.00	1.00
1/7/02 18:00	261	NA	1,087	NA	NC	4.36	NC	136,665	**NC**	**16.5**	9.00	1.00
1/8/02 8:00	274	97	381	2.9	0.35	1.39	0.27	366,825	**4.5**	**56.7**	23.00	14.00
1/9/02 8:00	263	210	417	5.5	0.74	1.46	0.48	745,545	**17.6**	**91.0**	47.00	24.00
1/10/02 8:00	224	190	381	3.9	0.57	1.14	0.29	1,068,105	**33.3**	**122.1**	71.00	24.00
1/10/02 15:45	261	190*	185	3.9*	0.66	0.64	0.34	1,189,470	**38.0**	**129.0**	78.75	7.75

TPHg = Total petroleum hydrocarbons as gasoline.
ppmv = Parts per million by volume.
* = assumed to be same as previous sample results
NC = Not Calculated
NA = Not Analyzed

Gallons of Vapor Equivalent Gasoline Removed: **6.2**
Average Vapor Gallons Removed per Minute: **0.001**

TABLE 3

DUAL PHASE EXTRACTION PILOT TEST VAPOR RESULTS TABLE

ARCO Service Station No. 2111
1156 Davis Street
San Leandro, California

MW-7 PILOT TEST VAPOR EXTRACTION RESULTS - 2002

Date & Time Sampled	Influent Flowrate (ft^3/min)	Laboratory TPHg Influent (ppmv)	Influent Non-methane Hydrocarbons by FID (ppmv)	Laboratory Benzene Influent (ppmv)	Laboratory TPHg Extraction Rate (lbs/hour)	Non- Methane Hydrocarbons by FID (lbs/hour)	Benzene Extraction Rate (lbs/hour)	Cumulative Volume of Processed Air (cubic feet)	**Cumulative Laboratory TPHg Extraction (lbs)**	**Cumulative FID Non-Methane Hydrocarbon Extraction (lbs)**	Total Hours Operated	Change in Hours of Operation
1/10/02 16:00	NM	NA	NM	NA	NC	NC	NC	0	**0.0**	**NC**	0.00	0.00
1/10/02 17:00	NM	NA	NM	NA	NC	NC	NC	15,000	**0.3**	**NC**	1.00	1.00
1/11/02 9:00	250	80	NM	2	0.31	NC	0.17	255,000	**5.2**	**NC**	17.00	16.00
1/11/02 10:00	NM	NA	NM	NA	NC	NC	NC	270,000	**5.5**	**NC**	18.00	1.00
1/11/02 11:00	NM	NA	NM	NA	NC	NC	NC	285,000	**5.8**	**NC**	19.00	1.00
1/11/02 12:00	NM	NA	NM	NA	NC	NC	NC	300,000	**6.1**	**NC**	20.00	1.00

TPHg = Total petroleum hydrocarbons as gasoline.
ppmv = Parts per million by volume.
Note : Laboratory results and flow rates are assumed to be consistant for entire event on MW-7. FID did not function properly during test on MW-7 therefore, no recordings were made.
NC = Not Calculated
NA = Not Analyzed

Gallons of Vapor Equivalent Gasoline Removed: **1.0**
Average Vapor Gallons Removed per Minute: **0.001**

TABLE 3

DUAL PHASE EXTRACTION PILOT TEST VAPOR RESULTS TABLE

ARCO Service Station No. 2111
1156 Davis Street
San Leandro, California

MW-2 PILOT TEST VAPOR EXTRACTION RESULTS - 2002

Date & Time Sampled	Influent Flowrate (ft^3/min)	Laboratory TPHg Influent (ppmv)	Influent Non-methane Hydrocarbons by FID (ppmv)	Laboratory Benzene Influent (ppmv)	Laboratory TPHg Extraction Rate (lbs/hour)	Non- Methane Hydrocarbons by FID (lbs/hour)	Benzene Extraction Rate (lbs/hour)	Cumulative Volume of Processed Air (cubic feet)	**Cumulative Laboratory TPHg Extraction (lbs)**	**Cumulative FID Non-Methane Hydrocarbon Extraction (lbs)**	Total Hours Operated	Change in Hours of Operation
1/11/02 12:00	292	NA	10,176	NA	NC	45.65	NC	0	**NC**	**0.0**	0.00	0.00
1/11/02 12:15	NM	NA	2,406	NA	NC	10.79	NC	4,380	**NC**	**7.1**	0.25	0.25
1/11/02 12:30	NM	NA	971	NA	NC	4.36	NC	8,760	**NC**	**8.9**	0.50	0.25
1/11/02 13:00	NM	NA	690	NA	NC	3.09	NC	17,520	**NC**	**10.8**	1.00	0.50
1/11/02 14:00	NM	NA	300	NA	NC	1.35	NC	35,040	**NC**	**13.0**	2.00	1.00
1/11/02 15:00	NM	NA	351	NA	NC	1.58	NC	52,560	**NC**	**14.5**	3.00	1.00
1/11/02 17:00	NM	NA	351	NA	NC	1.58	NC	87,600	**NC**	**17.6**	5.00	2.00

TPHg = Total petroleum hydrocarbons as gasoline.
ppmv = Parts per million by volume.
NC = Not Calculated
NA = Not Analyzed

Gallons of Vapor Equivalent Gasoline Removed: 2.9
Average Vapor Gallons Removed per Minute: 0.016

TABLE 4

DUAL PHASE EXTRACTION SYSTEM FIELD DATA

ARCO Service Station No. 2111
1156 Davis Street
San Leandro, California

Pilot Test on V-2		System Readings					V-2		MW-2		MW-7		V-1		V-3		MW-1	
Date	Time	System Vacuum ("Hg)	System Conc (ppmv)	System Flowrate (ft^3/min)	Water Meter (gallons)	Total Discharge (gpm)	Vacuum Reading ("H_2O)	Depth to Water (Feet)	Vacuum Reading ("H_2O)	Depth to Water (Feet)	Vacuum Reading ("H_2O)	Depth to Water (Feet)	Vacuum Reading ("H_2O)	Depth to Water (Feet)	Vacuum Reading ("H_2O)	Depth to Water (Feet)	Vacuum Reading ("H_2O)	Depth to Water (Feet)
1/7/02 9:00	9:00	24	260.3	236	NM	NC	NM	13.48	NM	13.20	NM	13.60	NM	14.14	NM	12.99	NM	15.09
1/7/02 9:30	9:30	24	260.3	236	2,552,890	NC	265	NM	0.10	13.22	0.00	13.62	0.00	14.12	0.00	13.00	0.00	15.12
1/7/02 9:45	9:45	24	261.7	226	NM	NC	265	NM	0.10	13.21	0.00	13.61	0.00	14.14	0.00	13.00	0.00	15.11
1/7/02 10:00	10:00	24	216.4	NM	2,552,980	3.00	NM	NM	0.05	13.24	0.01	13.60	0.00	14.16	0.00	13.01	0.02	15.13
1/7/02 10:30	10:30	24	112.4	247	NM	NC	265	NM	0.05	13.25	0.01	13.60	0.00	14.16	0.00	13.01	0.02	15.14
1/7/02 11:00	11:00	24	60.3	224	NM	NC	NM	NM	0.05	13.24	0.01	13.60	0.00	14.25	0.00	13.00	0.02	15.14
1/7/02 12:00	12:00	20	196.7	238	NM	NC	220	NM	0.05	13.25	0.01	13.60	0.00	14.15	0.00	13.00	0.02	15.14
1/7/02 13:00	13:00	22	320.4	247	2,553,140	0.89	230	NM	0.05	13.25	0.01	13.60	0.00	14.16	0.00	13.01	0.02	15.14
1/7/02 14:00	14:00	22	387.4	263	NM	NC	230	NM	0.05	13.25	0.01	13.60	0.00	14.16	0.00	13.01	0.02	15.14
1/7/02 15:00	15:00	NM	System Down		NM	NC	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
1/7/02 16:00	16:00	NM	883.7	260	NM	NC	NM	NM	0.05	13.24	0.01	13.60	0.00	14.15	0.00	13.00	0.02	15.14
1/7/02 17:00	17:00	22	807.6	263	2,553,250	0.46	230	NM	0.05	13.25	0.01	13.60	0.00	14.15	0.00	13.01	0.02	15.14
1/7/02 18:00	18:00	24	1087	261	NM	NC	265	NM	0.05	13.25	0.01	13.61	0.00	14.15	0.00	13.01	0.02	15.14
1/8/02 8:00	8:00	24	380.7	274	2,554,700	1.61	265	15+	NM	13.31	NM	13.64	NM	14.24	NM	13.04	NM	15.17
1/9/02 8:00	8:00	24	416.6	263	2,557,220	1.75	265	19+	0.08	13.35	0.00	13.68	0.00	14.25	0.00	13.11	0.02	15.25
1/10/02 8:00	8:00	24	380.7	224	2,559,570	1.63	240	NM	0.22	13.39	0.00	13.69	0.00	14.29	0.00	13.16	0.03	15.27
1/10/02 15:45	15:45	24	184.7	261	2,560,010	0.95	240	19+	0.22	13.46	0.00	13.70	0.00	14.36	0.00	13.20	0.02	15.30
Totals/Avg:	4725	23.3	388.6	248.2	7,120	1.51	248.3	5.52		0.26		0.10		0.22		0.21		0.21

ppmv = parts per million by volume.
"Hg = inches of Mercury
"H_2O = inches of water collumn
NM = Not Measured

TABLE 4

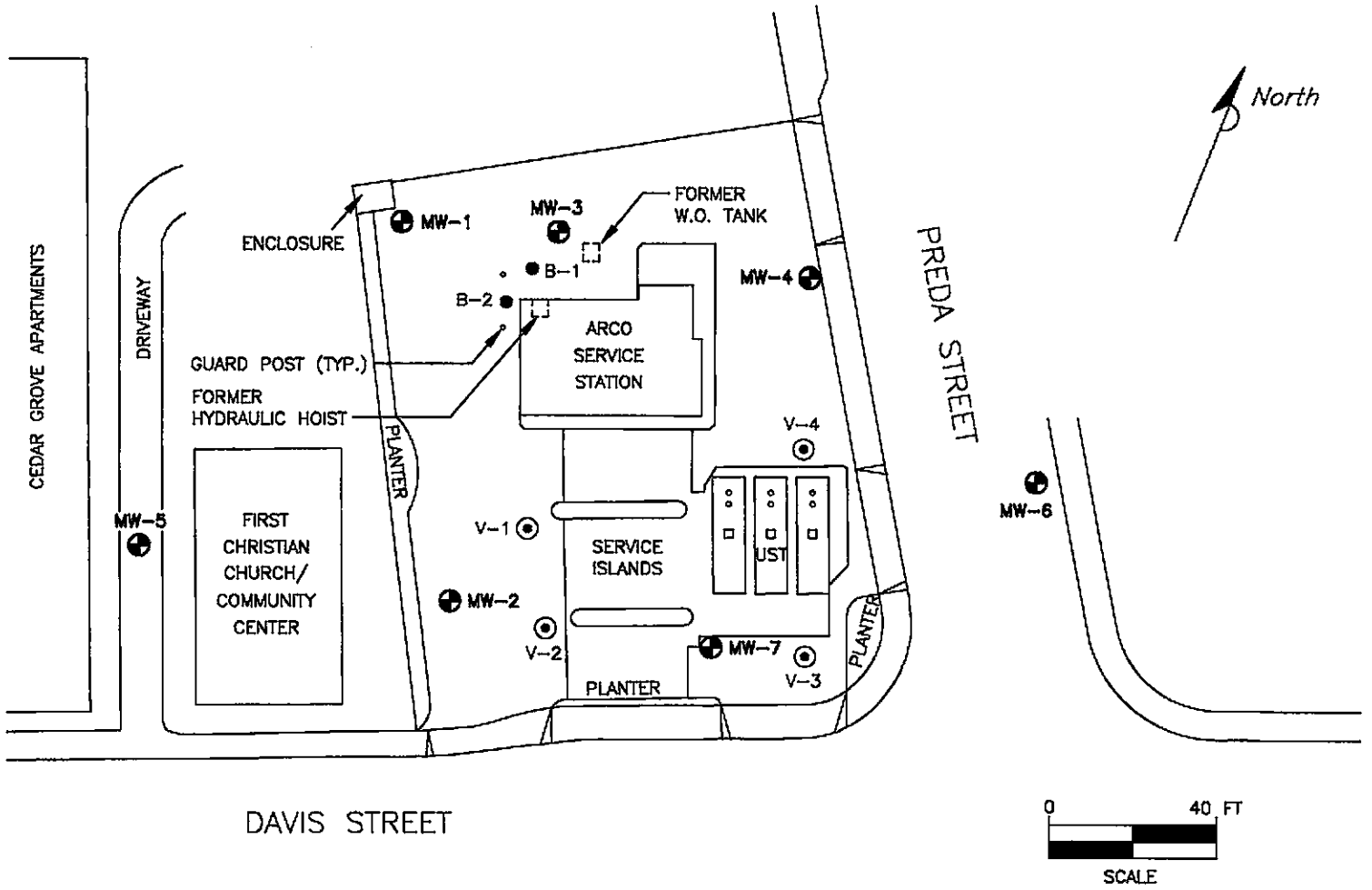
DUAL PHASE EXTRACTION SYSTEM FIELD DATA

ARCO Service Station No. 2111
1156 Davis Street
San Leandro, California

Pilot Test on MW-7		System Readings					V-2		MW-2		MW-7		V-1		V-3		MW-1	
Date	Time	System Vacuum ("Hg)	System Conc (ppmv)	System Flowrate (ft^3/min)	Water Meter (gallons)	Total Discharge (gpm)	Vacuum Reading ("H_2O)	Depth to Water (Feet)	Vacuum Reading ("H_2O)	Depth to Water (Feet)	Vacuum Reading ("H_2O)	Depth to Water (Feet)	Vacuum Reading ("H_2O)	Depth to Water (Feet)	Vacuum Reading ("H_2O)	Depth to Water (Feet)	Vacuum Reading ("H_2O)	Depth to Water (Feet)
1/10/02 16:00	16:00	24	NM	250	2,560,010	NC	NM	13.69	NM	13.45	240.00	13.77	NM	14.35	NM	13.20	NM	15.32
1/11/02 12:00	12:00	24	NM	250	2,561,910	1.58	NM	13.67	NM	13.50	240.00	13.89	NM	14.37	NM	13.20	NM	15.35
Totals/Avg:	1200			250	1,900	1.58		-0.02		0.05	240.0	0.12		0.02		0.00		0.03

Pilot Test on MW-2		System Readings					V-2		MW-2		MW-7		V-1		V-3		MW-1	
Date	Time	System Vacuum ("Hg)	System Conc (ppmv)	System Flowrate (ft^3/min)	Water Meter (gallons)	Total Discharge (gpm)	Vacuum Reading ("H_2O)	Depth to Water (Feet)	Vacuum Reading ("H_2O)	Depth to Water (Feet)	Vacuum Reading ("H_2O)	Depth to Water (Feet)	Vacuum Reading ("H_2O)	Depth to Water (Feet)	Vacuum Reading ("H_2O)	Depth to Water (Feet)	Vacuum Reading ("H_2O)	Depth to Water (Feet)
1/11/02 12:00	12:00	18	10,176	342	2,561,910	NC	NM	13.67	NM	13.50	NM	13.80	NM	14.37	NM	13.21	NM	15.35
1/11/02 17:00	17:00	18	351.4	292	2,567,870	19.87	NM	13.71	150.00	13.69	NM	13.87	NM	14.38	NM	13.20	NM	15.35
Totals/Avg:	300			317	5,960	19.87		0.04	150.0	0.19		0.07		0.01		-0.01		0.00

ppmv = parts per million by volume.
"Hg = inches of Mercury
"H_2O = inches of water collumn
NM = Not Measured



LEGEND:

- MW-1 MONITORING WELL LOCATION
- V-1 VAPOR EXTRACTION WELL LOCATION
- B-1 SOIL BORING LOCATION

FIGURE 1

SITE MAP

ARCO SERVICE STATION NO. 2111

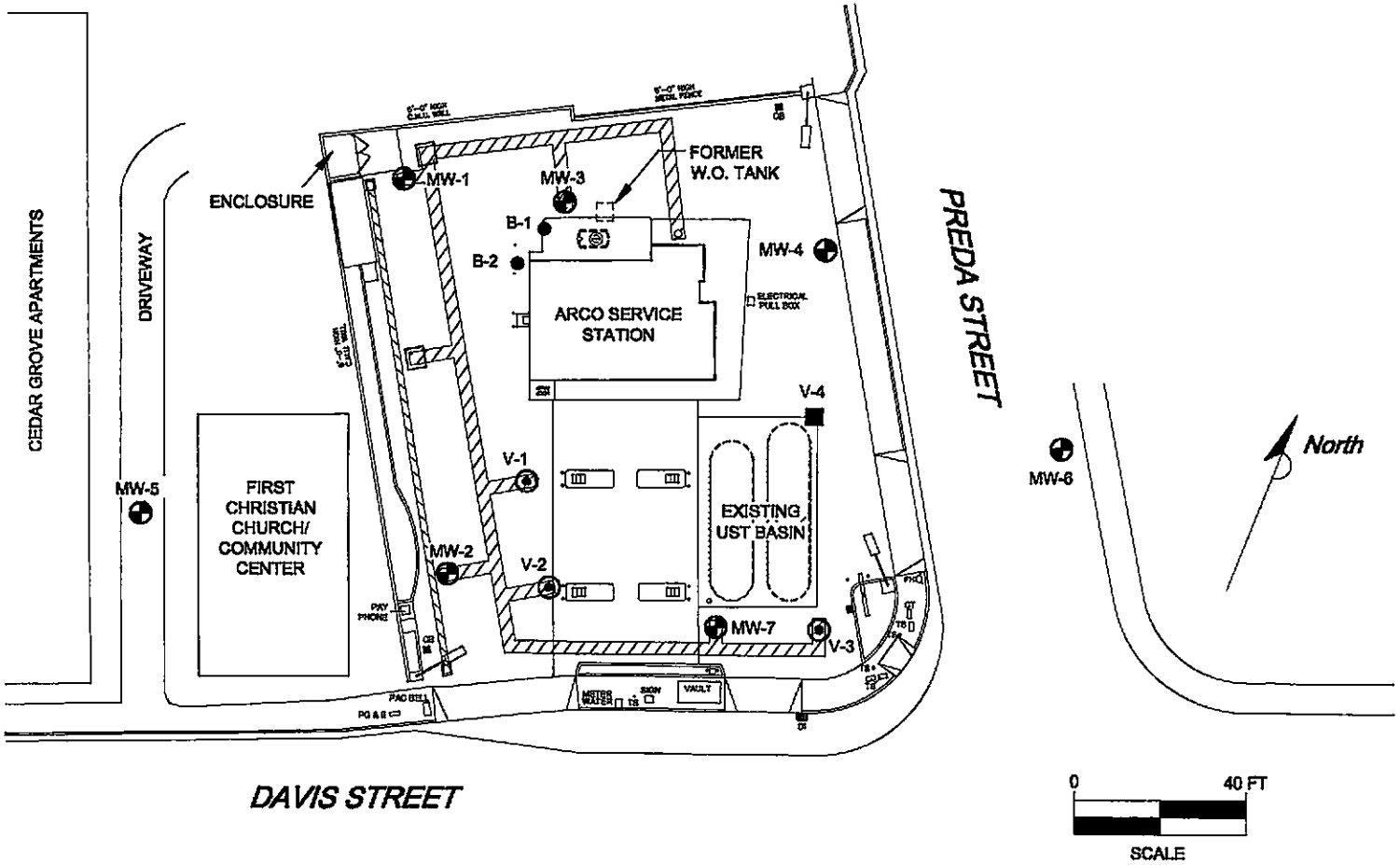
1156 DAVIS STREET

SAN LEANDRO, CALIFORNIA

PROJECT NO. D000-308	DRAWN BY TLA 8/31/00
FILE NO. 2111-1	PREPARED BY TLA
REVISION NO. 1	REVIEWED BY

Delta Environmental Consultants, Inc.

\\Sacramento\CAD Files\Sacramento\ARCO\2111\2111-1



LEGEND:

⊕	MW-1	MONITORING WELL LOCATION
◉	V-1	VAPOR EXTRACTION WELL LOCATION
●	B-1	SOIL BORING LOCATION
■	V-4	DESTROYED WELL LOCATION

FIGURE 2
SITE LAYOUT MAP

ARCO SERVICE STATION NO. 2111
1156 DAVIS STREET
SAN LEANDRO, CALIFORNIA

PROJECT NO. D000-308	DRAWN BY TLA 6/6/02
FILE NO. 2111-1	PREPARED BY TLA
REVISION NO. 1	REVIEWED BY

Delta Environmental Consultants, Inc.

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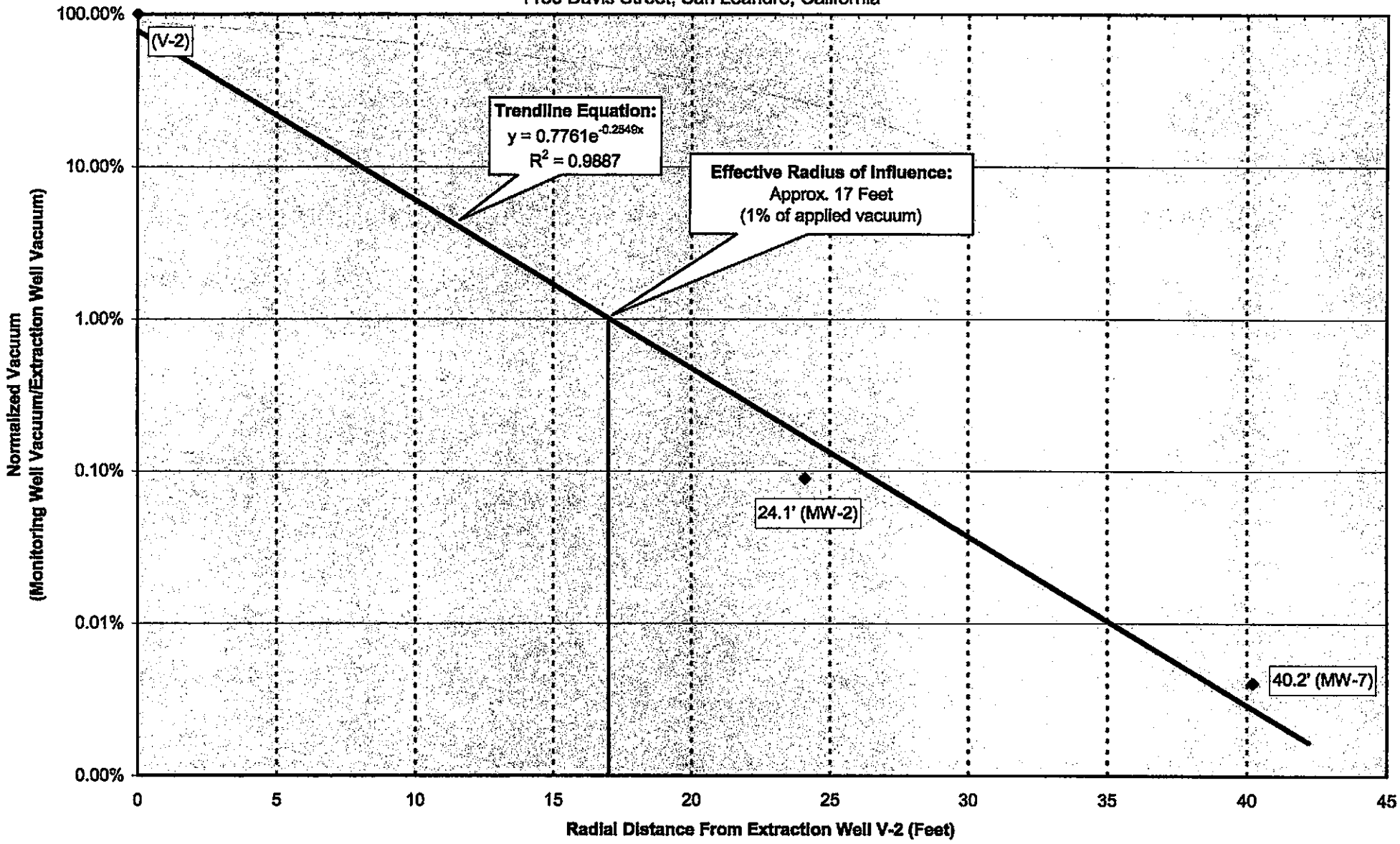
FIGURE 3

DUAL PHASE PILOT TEST
GRAPHICAL RADIUS OF INFLUENCE PLOT

ARCO Service Station No. 2111
1156 Davis Street, San Leandro, California



ENCLOSURE A

Field Notes Collected
During Pilot Test

1-7-02	MW1	MW2	MW3	MW4	MW5	MW6	MW7	VW1	VW2	VW3
9:00 AM	DTW 1509	1320	1452	1314	1310	1202	1359	1414	1344	1299

System VAC 24" Hg Well head 265 in H2O

9:30 AM	MW2	MW7	VW1	VW3	MW1	WATER METER	FID
DTW	1322	13.02	14.12	13.00	15.12	2552890	260.3 ppm
FID	50,000+	0	0	0	0		
IN OF H2O	.10	0	0	0	.02	CFM 236	

System VAC 24" Hg well head 265" H2O

9:45 AM	MW2	MW7	VW1	VW3	MW1		
DTW	1321	13.01	14.14	13.00	15.11	FID 201.7	
IN OF H2O	.10	0	0	0	.02	CFM 226	
FID	50,000+	0	0	0	0		

13.80

10:00 AM	MW2	MW7	VW1	VW3	MW1	WATER METER	FID
DTW	13.24	13.00	14.16	13.01	15.13	2552980	216.4
IN OF H2O	.05	.01	0	.0	.02		
	50,000+	0	0	0	0		

10:30 AM System VAC 21" Hg well head 265" H2O

DTW	1325	1360	14.16	13.01	15.14	FID 112.4	CFM
IN OF H2O	.05	.01	0	0	.02		247
FID	50,000+	0	0	0	0		

11:00 AM

DTW	13.24	13.60	14.25	13.00	15.14	FID 60.3	CFM
IN OF H2O	.05	.01	0	0	.02		224
FID	50,000+	0	0	0	0		

System VAC 20" Hg well head 220" H2O

12:00

DTW	1325	1360	14.15	13.00	15.14	WATER METER	CFM
IN OF H2O	.05	.01	0	0	.02	[redacted]	238
FID	50,000+	0	0	0	0	FID 196.7	

System Vac 22" Hg well head 230" H2O

1:00

DTW	13.25	1360	14.16	13.01	15.14	FID 320.4	CFM
IN OF H2O	.05	.01	0	0	.02	WATER METER	247
FID	50,000+	0	0	0	0	2553140	

System VAC 22" Hg well head 230" H2O

2:00

DTW	13.25	1360	14.16	13.01	15.14	FID 387.4	CFM
IN OF H2O	.05	.01	0	0	.02		263
FID	50,000+	0	0	0	0		

	MW2	MW7	VW1	VW3	MW1		
3:00							
DTW		System down Generator not holding power					
IN OF H2O		United Rentals has been notified and is					
FID		on the way.					
4:00		System back up and running					
		fuel filter on Generator was changed and					
		seem to be fine.					

	MW2	MW7	VW1	VW3	MW1		
4:00							
DTW	1324	1326	1415	1300	1514	FID	CFM
IN OF H2O	.05	.01	0	0	.02	893.7	220
FID	50,000+	0	0	0	0		
	System Vac 22" Hg well head 230" H2O						
5:00	1325						
DTW	1325	1360	1415	1301	1514	WATER METER	CFM
IN OF H2O	.05	.01	0	0	.02	2553250	243
FID	50,000+	0	0	0	0	FID 807.6	
6:00	System Vac 24" Hg well head 265" H2O						
DTW	1325	1361	1415	1301	1514		CFM
NOT H2O	.05	.01	0	0	.02	FID 1097	241
FID	60,000+	0	0	0	0		

1-8-02	MW1	MW2	MW3	MW4	MW5	MW6	MW7	VW1	VW2	VW3
8:00 AM	15.17	1331	1454	1315	?	1203	1264	1424	15"	13.04

Total FID 380.7
WATER METER 2554720
CFM 274
System Vac 24" Hg
well head Vac 265" H2O

1-9-02	MW1	MW2	MW3	MW4	MW5	MW6	MW7	VW1	VW2	VW3
DTW	15.25	1335	14.70	13.28	?	12.12	13.68	14.25	19'	13.11
NOT H2O	.02	.08	.0	.0	0	0	0	0	240" H2O	0
FID	0	50,000+	0	0	0	0	0	0	416.6	0

Total FID 416.6
WATER METER 2557220
CFM 263
15.90
System Vac 24" Hg
well head 265" H2O

Thompson Industrial Supply Inc.
3941 EAST LA PALMA AVENUE
ANAHEIM, CA 92807
714/632-8895 FAX **714/632-9218**
PNEUMATICS - POWER TRANSMISSION EQUIPMENT - BEARINGS

1-9-01 MW2 STARTING to show influence

9:00 AM	.10 H2O 47,137 PPM
10:00 AM	.16" H2O 32,463 PPM
11:00 AM	.17" H2O 29,742 PPM
12:00	.20" H2O 27,146 PPM
1:00	.20" H2O 13,178
2:00	.20" H2O 11,642
3:00	.20" H2O 11,559
4:00	.22" H2O 10,136
1-10-02	
8:00 AM	.22" H2O 3687

CFM = 285

System Vac 24" Hg
well head 240" H2O

Thompson Industrial Supply Inc.
3941 EAST LA PALMA AVENUE
ANAHEIM, CA 92807
714/632-8895 FAX 714/632-9218
PNEUMATICS - POWER TRANSMISSION EQUIPMENT - BEARINGS

MW1 MW2 MW3 MW4 MW5 MW6 MW7 VW1 VW2 VW3

8:00AM

1-10-02

DTW	15.27	13.39	14.74	1335	?	12.18	13.69	14.29		13.16
IN of H2O	.025	.22	0	0		0	0	0		0
FID	0	3697	0	0		0	0	0		0

System Vac 24" Hg
Well head Vac 240" H2O ?

CFM 274

WATER METER 2559570

INLET FID 380.7

Thompson Industrial Supply Inc.
3941 EAST LA PALMA AVENUE
ANAHEIM, CA 92807
714 / 632-8895 FAX **714 / 632-9218**
PNEUMATICS - POWER TRANSMISSION EQUIPMENT - BEARINGS

MW1 MW2 MW3 MW4 MW5 MW6 MW7 VW1 VW2 VW3

3:45
1-10-02

OTW	15.30	13.46	16.75	13.58	?	12.20	13.70	14.36	13.20
IN of H2O	.02	.22	0	0		0	0	0	0

FID INLET 184.7

CFM 261

System Vac 24" Hg
Will hold Vac 240" H2O

MW2 2612 PPM FID

MW2 - Recharge

1-10-02

4:00 PM	16.55
	16.25
	16.01
	15.77
	15.42
	15.07
	14.93
	14.62
	14.51
	14.36
	14.17
5:00 PM	13.86
	13.69

WATER METER

2560010

Thompson Industrial Supply Inc.
3941 EAST LA PALMA AVENUE
ANAHEIM, CA 92807
714 / 632-8895 FAX 714 / 632-9218

MW7 PNEUMATICS - POWER TRANSMISSION EQUIPMENT - BEARINGS

	MW1	MW2	MW3	MW4	MW5	MW6	MW7	VW1	VW2	VW3
1-10-02										
4:00	15.32	1345	1480	1340	?	12.25	13.77	1435	1368	132
5:00	15.32	1345	1490	1340		12.25	13.79	1435	1369	132
1-11-02 DTW 9:00AM	15.33	1346	1481	1340	?	12.24	13.86	1435	1369	132
IN OF H2O	0	0	0	0		0	12 1/2" H2O	0	0	0
9:00	1534	13.47	1481	1439	?	1223	1386	1436	1369	13[illegible]
10:00	15.34	13.48	1481	1439		12.23	1387	1436	1368	13[illegible]
11 00	15.34	1349	1481	1439	?	1223	1388	1436	1368	13[illegible]
12:00	15.35	1350	1481	13.38		12.72	13.89	1437	1367	132

12:00 WATER METER 2561910

Verbal
~250 cfm
24" Hg
20" H2O @ well Head.

707-202-3654

Thompson Industrial Supply Inc.
3941 EAST LA PALMA AVENUE
ANAHEIM, CA 92807
714/632-8895 FAX **714/632-9218**
PNEUMATICS - POWER TRANSMISSION EQUIPMENT - BEARINGS

MW 2

1-11-02 12:00	MW1	MW2	MW3	MW4	MW5	MW6	MW7	VW1	VW2	VW3
DTW	15.35	13.50	14.81	13.39	?	12.22	13.80	14.37	13.67	13.21

System VAC 18" Hg well head vac 150" H2O

CFM 342 15% Dilution Air

WATER METER 256910

12:00	INLET	FID	10,176
12:15	INLET	FID	2,406
12:30	INLET	FID	971
1:00	INLET	FID	289.5
2:00	INLET	FID	300.1
3:00	INLET	FID	321.4

Product temp 60°F
System vac 18" Hg Well head vac 150
CFM 292

5:00	MW1	MW2	MW3	MW4	MW5	MW6	MW7	VW1	VW2	VW3
DTW	15.35	13.69	14.81	13.39	?	12.20	13.87	14.38	13.71	13.20

LAST WATER METER READING
256780

ENCLOSURE B

Analytical Laboratory Reports

Sequoia
Analytical

819 Striker Avenue, Suite 8
Sacramento, CA 95834
(916) 921-9600
FAX (916) 921-0100
www.sequoialabs.com

21 January, 2002

Steven Meeks
Delta Environmental Consultants (Rancho Cordova)
3164 Gold Camp Drive Ste. 200
Rancho Cordova, CA 95670

RE: ARCO 2111, San Leandro, CA
Sequoia Report: S201100

Enclosed are the results of analyses for samples received by the laboratory on 01/07/02 14:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ron Chew
Client Services Representative

Lito Diaz
Laboratory Director

CA ELAP Certificate #1624

Sequoia Analytical

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Sacramento, CA 95834
(916) 921-9600
FAX (916) 921-0100
www.sequoialabs.com

Delta Environmental Consultants (Rancho Cordova	Project:	ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number:	2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager:	Steven Meeks	01/21/02 13:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
VW-2	S201100-01	Air	01/07/02 10:45	01/07/02 14:35

Sequoia Analytical - Sacramento

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Ron Chew, Client Services Representative

Sequoia Analytical

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Sacramento, CA 95834
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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/21/02 13:51

Total Purgeable Hydrocarbons, BTEX and MTBE in Air by DHS LUFT

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
VW-2 (S201100-01) Air Sampled: 01/07/02 10:45 Received: 01/07/02 14:35									
Purgeable Hydrocarbons	**230**	100	mg/m³ Air	10	2010193	01/11/02	01/11/02	DHS LUFT	HC-12
Benzene	**13**	0.50	"	"	"	"	"	"	
Toluene	**3.1**	0.50	"	"	"	"	"	"	
Ethylbenzene	**7.9**	0.50	"	"	"	"	"	"	
Xylenes (total)	**19**	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	**300**	5.0	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*71.0 %*		*60-140*		"	"	"	

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/21/02 13:51

Total Purgeable Hydrocarbons, BTEX and MTBE in Air (ppmv) by DHS LUFT

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
VW-2 (S201100-01) Air Sampled: 01/07/02 10:45 Received: 01/07/02 14:35									
Purgeable Hydrocarbons	**55**	28	ppmv	10	2010193	01/11/02	01/11/02	DHS LUFT	HC-12
Benzene	**4.1**	0.16	"	"	"	"	"	"	
Toluene	**0.82**	0.13	"	"	"	"	"	"	
Ethylbenzene	**1.8**	0.12	"	"	"	"	"	"	
Xylenes (total)	**4.5**	0.12	"	"	"	"	"	"	
Methyl tert-butyl ether	**84**	1.4	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*71.0 %*		*60-140*	"	"	"	"	

Sequoia Analytical

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/21/02 13:51

MTBE Confirmation by EPA Method 8260B

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
VW-2 (S201100-01) Air Sampled: 01/07/02 10:45 Received: 01/07/02 14:35									
Methyl tert-butyl ether	**300**	1.0	ug/l	5	2010242	01/18/02	01/18/02	EPA 8260B	
Surrogate: 1,2-DCA-d4		*92.4 %*	*60-140*		"	"	"	"	

Sequoia Analytical

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/21/02 13:51

Total Purgeable Hydrocarbons, BTEX and MTBE in Air by DHS LUFT - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010193 - EPA 5030B (P/T)										
Blank (2010193-BLK1)				Prepared & Analyzed: 01/11/02						
Purgeable Hydrocarbons	ND	10	mg/m³ Air							
Benzene	ND	0.050	"							
Toluene	ND	0.050	"							
Ethylbenzene	ND	0.050	"							
Xylenes (total)	ND	0.050	"							
Methyl tert-butyl ether	ND	0.50	"							
Surrogate: a,a,a-Trifluorotoluene	*1.74*		"	*2.00*		*87.0*	*60-140*			
LCS (2010193-BS1)				Prepared & Analyzed: 01/11/02						
Benzene	1.85	0.050	mg/m³ Air	2.00		92.5	70-130			
Toluene	1.94	0.050	"	2.00		97.0	70-130			
Ethylbenzene	1.98	0.050	"	2.00		99.0	70-130			
Xylenes (total)	5.52	0.050	"	6.00		92.0	70-130			
Methyl tert-butyl ether	2.05	0.50	"	2.00		102	70-130			
Surrogate: a,a,a-Trifluorotoluene	*1.97*		"	*2.00*		*98.5*	*60-140*			
LCS Dup (2010193-BSD1)				Prepared & Analyzed: 01/11/02						
Benzene	1.77	0.050	mg/m³ Air	2.00		88.5	70-130	4.42	25	
Toluene	1.89	0.050	"	2.00		94.5	70-130	2.61	25	
Ethylbenzene	1.89	0.050	"	2.00		94.5	70-130	4.65	25	
Xylenes (total)	5.37	0.050	"	6.00		89.5	70-130	2.75	25	
Methyl tert-butyl ether	1.98	0.50	"	2.00		99.0	70-130	3.47	25	
Surrogate: a,a,a-Trifluorotoluene	*1.68*		"	*2.00*		*84.0*	*60-140*			

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/21/02 13:51

Total Purgeable Hydrocarbons, BTEX and MTBE in Air (ppmv) by DHS LUFT - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010193 - EPA 5030B (P/T)										
Blank (2010193-BLK1)				Prepared & Analyzed: 01/11/02						
Purgeable Hydrocarbons	ND	2.8	ppmv							
Benzene	ND	0.016	"							
Toluene	ND	0.013	"							
Ethylbenzene	ND	0.012	"							
Xylenes (total)	ND	0.012	"							
Methyl tert-butyl ether	ND	0.14	"							
Surrogate: a,a,a-Trifluorotoluene	*0.291*		"	*0.335*		*86.9*	*60-140*			
LCS (2010193-BS1)				Prepared & Analyzed: 01/11/02						
Surrogate: a,a,a-Trifluorotoluene	*0.330*		*ppmv*	*0.335*		*98.5*	*60-140*			
LCS Dup (2010193-BSD1)				Prepared & Analyzed: 01/11/02						
Surrogate: a,a,a-Trifluorotoluene	*0.281*		*ppmv*	*0.335*		*83.9*	*60-140*			

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/21/02 13:51

MTBE Confirmation by EPA Method 8260B - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010242 - EPA 5030B [P/T]										
Blank (2010242-BLK1)				Prepared & Analyzed: 01/18/02						
Methyl tert-butyl ether	ND	0.20	ug/l							
Surrogate: 1,2-DCA-d4	*9.49*		"	*10.0*		*94.9*	*60-140*			
LCS (2010242-BS1)				Prepared & Analyzed: 01/18/02						
Methyl tert-butyl ether	9.00	0.20	ug/l	10.0		90.0	70-130			
Surrogate: 1,2-DCA-d4	*10.2*		"	*10.0*		*102*	*60-140*			
LCS Dup (2010242-BSD1)				Prepared & Analyzed: 01/18/02						
Methyl tert-butyl ether	10.1	0.20	ug/l	10.0		101	70-130	11.5	25	
Surrogate: 1,2-DCA-d4	*10.6*		"	*10.0*		*106*	*60-140*			

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/21/02 13:51

Notes and Definitions

HC-12	Hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

ARCO Products Company
Division of Atlantic-Richfield Company

Task Order No. Dual Phase Test

Chain of Custo

ARCO Facility no. 211	City (Facility) SAN Leandro	Project manager (Consultant) Steve Meeks	Laboratory name Severn
ARCO engineer Supple	Telephone no. (ARCO)	Telephone no. (Consultant) 524-2613	Fax no. (Consultant) 916-636-9385
Consultant name Kaprealian	Address (Consultant) 3164 Gold Camp Dr. Rancho Cordova		Contract number

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA M8020/8020/8015	TPH: Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ VOA ☐ Semi ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	MTBE 8260	MTBE 8020
VW-2		1			X			1-7-02	1045		X			S20:100-01							X	

Method of shipment

Special detection Limit/reporting

Special QA/QC

Remarks: TPHg 8015M BTEX 8020 MTBE Confirm MTBE w/ 8260 if detected

Lab number

Turnaround time

- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Expedited 5 Business Days ☐
- Standard 10 Business Days ☒

Condition of sample:

Temperature received:

	Date	Time		Date	Time
Relinquished by sampler	1-7-02	1045	Received by		
Relinquished by	1-7-02	1435	Received by Monica Gibson	1/7/02	1435
Relinquished by	Date	Time	Received by	Date	Time

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant
APC-3292 (2-91)

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January 23 , 2002

Steven Meeks
Delta Environmental Consultants (Rancho Cordova)
3164 Gold Camp Drive Ste. 200
Rancho Cordova, CA 95670
RE: ARCO 2111, San Leandro, CA / S201166

Enclosed are the results of analyses for samples received by the laboratory on 01/09/02. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ron Chew
Client Services Representative

Lito Diaz
Laboratory Director

CA ELAP Certificate Number 1624

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
1-7-02	S201166-01	Air	01/07/02 16:00	01/09/02 18:00
1-8-02	S201166-02	Air	01/08/02 08:00	01/09/02 18:00
1-9-02	S201166-03	Air	01/09/02 08:00	01/09/02 18:00

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:07

Total Purgeable Hydrocarbons and BTEX in Air by DHS LUFT

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-7-02 (S201166-01) Air Sampled: 01/07/02 16:00 Received: 01/09/02 18:00									
Purgeable Hydrocarbons	**100**	50	mg/m³ Air	5	2010201	01/14/02	01/14/02	DHS LUFT	
Benzene	**6.5**	0.25	"	"	"	"	"	"	
Toluene	**1.3**	0.25	"	"	"	"	"	"	
Ethylbenzene	**2.9**	0.25	"	"	"	"	"	"	
Xylenes (total)	**6.4**	0.25	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*91.5 %*	*60-140*		"	"	"	"	
1-8-02 (S201166-02) Air Sampled: 01/08/02 08:00 Received: 01/09/02 18:00									
Purgeable Hydrocarbons	**400**	100	mg/m³ Air	10	2010215	01/15/02	01/15/02	DHS LUFT	
Benzene	**9.1**	0.50	"	"	"	"	"	"	
Toluene	**3.8**	0.50	"	"	"	"	"	"	
Ethylbenzene	**5.5**	0.50	"	"	"	"	"	"	
Xylenes (total)	**9.7**	0.50	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*92.5 %*	*60-140*		"	"	"	"	
1-9-02 (S201166-03) Air Sampled: 01/09/02 08:00 Received: 01/09/02 18:00									
Purgeable Hydrocarbons	**850**	100	mg/m³ Air	10	2010215	01/15/02	01/15/02	DHS LUFT	
Benzene	**18**	0.50	"	"	"	"	"	"	
Toluene	**8.6**	0.50	"	"	"	"	"	"	
Ethylbenzene	**9.1**	0.50	"	"	"	"	"	"	
Xylenes (total)	**17**	0.50	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*101 %*	*60-140*		"	"	"	"	

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:07

Total Purgeable Hydrocarbons and BTEX in Air (ppmv) by DHS LUFT

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-7-02 (S201166-01) Air Sampled: 01/07/02 16:00 Received: 01/09/02 18:00									
Purgeable Hydrocarbons	**25**	14	ppmv	5	2010201	01/14/02	01/14/02	DHS LUFT	
Benzene	**2.1**	0.080	"	"	"	"	"	"	
Toluene	**0.34**	0.065	"	"	"	"	"	"	
Ethylbenzene	**0.68**	0.060	"	"	"	"	"	"	
Xylenes (total)	**1.5**	0.060	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*91.3 %*	*60-140*		"	"	"	"	
1-8-02 (S201166-02) Air Sampled: 01/08/02 08:00 Received: 01/09/02 18:00									
Purgeable Hydrocarbons	**97**	28	ppmv	10	2010215	01/15/02	01/15/02	DHS LUFT	
Benzene	**2.9**	0.16	"	"	"	"	"	"	
Toluene	**1.0**	0.13	"	"	"	"	"	"	
Ethylbenzene	**1.3**	0.12	"	"	"	"	"	"	
Xylenes (total)	**2.2**	0.12	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*92.5 %*	*60-140*		"	"	"	"	
1-9-02 (S201166-03) Air Sampled: 01/09/02 08:00 Received: 01/09/02 18:00									
Purgeable Hydrocarbons	**210**	28	ppmv	10	2010215	01/15/02	01/15/02	DHS LUFT	
Benzene	**5.5**	0.16	"	"	"	"	"	"	
Toluene	**2.3**	0.13	"	"	"	"	"	"	
Ethylbenzene	**2.1**	0.12	"	"	"	"	"	"	
Xylenes (total)	**3.8**	0.12	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*101 %*	*60-140*		"	"	"	"	

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:07

MTBE by EPA Method 8260B

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-7-02 (S201166-01) Air	**Sampled: 01/07/02 16:00**	**Received: 01/09/02 18:00**							
Methyl tert-butyl ether	**230**	0.0062	mg/m³ Air	12.5	2010247	01/21/02	01/21/02	EPA 8260B	
Surrogate: 1,2-DCA-d4		*99.1 %*	*60-140*		"	"	"	"	
1-8-02 (S201166-02) Air	**Sampled: 01/08/02 08:00**	**Received: 01/09/02 18:00**							
Methyl tert-butyl ether	**750**	0.012	mg/m³ Air	25	2010247	01/21/02	01/21/02	EPA 8260B	
Surrogate: 1,2-DCA-d4		*102 %*	*60-140*		"	"	"	"	
1-9-02 (S201166-03) Air	**Sampled: 01/09/02 08:00**	**Received: 01/09/02 18:00**							
Methyl tert-butyl ether	**640**	0.012	mg/m³ Air	25	2010247	01/21/02	01/21/02	EPA 8260B	
Surrogate: 1,2-DCA-d4		*96.7 %*	*60-140*		"	"	"	"	

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:07

Total Purgeable Hydrocarbons and BTEX in Air by DHS LUFT - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010201 - EPA 5030B (P/T)										
Blank (2010201-BLK1)				Prepared & Analyzed: 01/14/02						
Purgeable Hydrocarbons	ND	10	mg/m³ Air							
Benzene	ND	0.050	"							
Toluene	ND	0.050	"							
Ethylbenzene	ND	0.050	"							
Xylenes (total)	ND	0.050	"							
Surrogate: a,a,a-Trifluorotoluene	*1.64*		"	*2.00*		*82.0*	*60-140*			
LCS (2010201-BS1)				Prepared: 01/14/02 Analyzed: 01/15/02						
Benzene	1.89	0.050	mg/m³ Air	2.00		94.5	70-130			
Toluene	1.95	0.050	"	2.00		97.5	70-130			
Ethylbenzene	1.98	0.050	"	2.00		99.0	70-130			
Xylenes (total)	5.47	0.050	"	6.00		91.2	70-130			
Surrogate: a,a,a-Trifluorotoluene	*1.75*		"	*2.00*		*87.5*	*60-140*			
LCS Dup (2010201-BSD1)				Prepared: 01/14/02 Analyzed: 01/15/02						
Benzene	1.92	0.050	mg/m³ Air	2.00		96.0	70-130	1.57	25	
Toluene	1.97	0.050	"	2.00		98.5	70-130	1.02	25	
Ethylbenzene	1.98	0.050	"	2.00		99.0	70-130	0.00	25	
Xylenes (total)	5.45	0.050	"	6.00		90.8	70-130	0.366	25	
Surrogate: a,a,a-Trifluorotoluene	*1.74*		"	*2.00*		*87.0*	*60-140*			
Batch 2010215 - EPA 5030B (P/T)										
Blank (2010215-BLK1)				Prepared & Analyzed: 01/15/02						
Purgeable Hydrocarbons	ND	10	mg/m³ Air							
Benzene	ND	0.050	"							
Toluene	ND	0.050	"							
Ethylbenzene	ND	0.050	"							
Xylenes (total)	ND	0.050	"							
Surrogate: a,a,a-Trifluorotoluene	*1.72*		"	*2.00*		*86.0*	*60-140*			

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:07

Total Purgeable Hydrocarbons and BTEX in Air by DHS LUFT - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010215 - EPA 5030B (P/T)										
LCS (2010215-BS1)				Prepared & Analyzed: 01/15/02						
Benzene	1.88	0.050	mg/m³ Air	2.00		94.0	70-130			
Toluene	1.96	0.050	"	2.00		98.0	70-130			
Ethylbenzene	1.98	0.050	"	2.00		99.0	70-130			
Xylenes (total)	5.48	0.050	"	6.00		91.3	70-130			
Surrogate: a,a,a-Trifluorotoluene	*1.84*		"	*2.00*		*92.0*	*60-140*			
LCS Dup (2010215-BSD1)				Prepared & Analyzed: 01/15/02						
Benzene	2.02	0.050	mg/m³ Air	2.00		101	70-130	7.18	25	
Toluene	2.13	0.050	"	2.00		106	70-130	8.31	25	
Ethylbenzene	2.13	0.050	"	2.00		106	70-130	7.30	25	
Xylenes (total)	5.97	0.050	"	6.00		99.5	70-130	8.56	25	
Surrogate: a,a,a-Trifluorotoluene	*1.75*		"	*2.00*		*87.5*	*60-140*			

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:07

Total Purgeable Hydrocarbons and BTEX in Air (ppmv) by DHS LUFT - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010201 - EPA 5030B (P/T)										
Blank (2010201-BLK1)				Prepared & Analyzed: 01/14/02						
Purgeable Hydrocarbons	ND	2.8	ppmv							
Benzene	ND	0.016	"							
Toluene	ND	0.013	"							
Ethylbenzene	ND	0.012	"							
Xylenes (total)	ND	0.012	"							
Surrogate: a,a,a-Trifluorotoluene	*0.275*		"	*0.335*		*82.1*	*60-140*			
LCS (2010201-BS1)				Prepared: 01/14/02 Analyzed: 01/15/02						
Surrogate: a,a,a-Trifluorotoluene	*0.292*		*ppmv*	*0.335*		*87.2*	*60-140*			
LCS Dup (2010201-BSD1)				Prepared: 01/14/02 Analyzed: 01/15/02						
Surrogate: a,a,a-Trifluorotoluene	*0.291*		*ppmv*	*0.335*		*86.9*	*60-140*			
Batch 2010215 - EPA 5030B (P/T)										
Blank (2010215-BLK1)				Prepared & Analyzed: 01/15/02						
Purgeable Hydrocarbons	ND	2.8	ppmv							
Benzene	ND	0.016	"							
Toluene	ND	0.013	"							
Ethylbenzene	ND	0.012	"							
Xylenes (total)	ND	0.012	"							
Surrogate: a,a,a-Trifluorotoluene	*0.288*		"	*0.335*		*86.0*	*60-140*			
LCS (2010215-BS1)				Prepared & Analyzed: 01/15/02						
Surrogate: a,a,a-Trifluorotoluene	*0.308*		*ppmv*	*0.335*		*91.9*	*60-140*			
LCS Dup (2010215-BSD1)				Prepared & Analyzed: 01/15/02						
Surrogate: a,a,a-Trifluorotoluene	*0.293*		*ppmv*	*0.335*		*87.5*	*60-140*			

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:07

MTBE by EPA Method 8260B - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010247 - EPA 5030B [P/T]										
Blank (2010247-BLK1)				Prepared & Analyzed: 01/21/02						
Methyl tert-butyl ether	ND	0.00050	mg/m³ Air							
Surrogate: 1,2-DCA-d4	*9.47*		"	*10.0*		*94.7*	*60-140*			
LCS (2010247-BS1)				Prepared & Analyzed: 01/21/02						
Methyl tert-butyl ether	9.75	0.00050	mg/m³ Air	10.0		97.5	70-130			
Surrogate: 1,2-DCA-d4	*9.79*		"	*10.0*		*97.9*	*60-140*			
LCS Dup (2010247-BSD1)				Prepared & Analyzed: 01/21/02						
Methyl tert-butyl ether	8.57	0.00050	mg/m³ Air	10.0		85.7	70-130	12.9	25	
Surrogate: 1,2-DCA-d4	*9.59*		"	*10.0*		*95.9*	*60-140*			

Sequoia Analytical

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:07

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

ARCO Products Company
Division of Atlantic-Richfield Company

Task Order No.

Chain of Custody

ARCO Facility no. 2111	City (Facility) SAN LEANDRO ARCO 2111	Project manager (Consultant) STEVEN MEEKER	Laboratory name Sequoia Analytical
ARCO engineer	Telephone no. (ARCO)	Telephone no. (Consultant) 916-854-7342	Fax no. (Consultant) 916-638-8385
Consultant name Delta Environmental	Address (Consultant)		Contract number

Method of shipment: Courier

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other AIR	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Semi Metals ☐ VOA ☐ VOA ☐	CAM METALS EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	MTBE 8260	TPHg
1-7-02 4:00 PM		1			X			1-7-02	4:00 PM		X				S201166-01						X	X
1-9-02 9:00 AM		1			X			1-9-02	9:00AM		X						-02				X	X
1-9-02 9:00 AM		1			X			1-9-02	9:00 AM		X						-03				X	X

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number

Turnaround time

- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Expedited 5 Business Days ☐
- Standard 10 Business Days ☐

Condition of sample:

Temperature received:

	Date	Time		Date	Time
Relinquished by sampler	1/9/02	1115AM	Received by		
Relinquished by	1-9	1430	Received by		
Relinquished by	1-9		Received by Monica Gregson	1/9/02	1800

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant

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January 23 , 2002

Steven Meeks
Delta Environmental Consultants (Rancho Cordova)
3164 Gold Camp Drive Ste. 200
Rancho Cordova, CA 95670
RE: ARCO 2111, San Leandro, CA / S201206

Enclosed are the results of analyses for samples received by the laboratory on 01/11/02. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ron Chew
Client Services Representative

Lito Diaz
Laboratory Director

CA ELAP Certificate Number 1624

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
1-10-02 8:00 am	S201206-01	Air	01/10/02 08:00	01/11/02 19:00
1-11-02 9:00 am	S201206-02	Air	01/11/02 09:00	01/11/02 19:00

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:14

Total Purgeable Hydrocarbons, BTEX and MTBE in Air by DHS LUFT

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-10-02 8:00 am (S201206-01) Air	**Sampled: 01/10/02 08:00**		**Received: 01/11/02 19:00**						
Purgeable Hydrocarbons	**770**	50	mg/m³ Air	5	2010215	01/15/02	01/15/02	DHS LUFT	
Benzene	**13**	0.25	"	"	"	"	"	"	
Toluene	**4.9**	0.25	"	"	"	"	"	"	
Ethylbenzene	**8.4**	0.25	"	"	"	"	"	"	
Xylenes (total)	**18**	0.25	"	"	"	"	"	"	
Methyl tert-butyl ether	**190**	2.5	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*103 %*	*60-140*		"	"	"	"	
1-11-02 9:00 am (S201206-02) Air	**Sampled: 01/11/02 09:00**		**Received: 01/11/02 19:00**						
Purgeable Hydrocarbons	**330**	100	mg/m³ Air	10	2010215	01/15/02	01/15/02	DHS LUFT	
Benzene	**6.3**	0.50	"	"	"	"	"	"	
Toluene	**8.7**	0.50	"	"	"	"	"	"	
Ethylbenzene	**3.7**	0.50	"	"	"	"	"	"	
Xylenes (total)	**9.8**	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	**260**	5.0	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*90.0 %*	*60-140*		"	"	"	"	

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3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:14

Total Purgeable Hydrocarbons, BTEX and MTBE in Air (ppmv) by DHS LUFT

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-10-02 8:00 am (S201206-01) Air	**Sampled: 01/10/02 08:00**		**Received: 01/11/02 19:00**						
Purgeable Hydrocarbons	**190**	14	ppmv	5	2010215	01/15/02	01/15/02	DHS LUFT	
Benzene	**3.9**	0.080	"	"	"	"	"	"	
Toluene	**1.3**	0.065	"	"	"	"	"	"	
Ethylbenzene	**1.9**	0.060	"	"	"	"	"	"	
Xylenes (total)	**4.2**	0.060	"	"	"	"	"	"	
Methyl tert-butyl ether	**53**	0.70	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*103 %*	*60-140*		"	"	"	"	
1-11-02 9:00 am (S201206-02) Air	**Sampled: 01/11/02 09:00**		**Received: 01/11/02 19:00**						
Purgeable Hydrocarbons	**80**	28	ppmv	10	2010215	01/15/02	01/15/02	DHS LUFT	
Benzene	**2.0**	0.16	"	"	"	"	"	"	
Toluene	**2.3**	0.13	"	"	"	"	"	"	
Ethylbenzene	**0.85**	0.12	"	"	"	"	"	"	
Xylenes (total)	**2.3**	0.12	"	"	"	"	"	"	
Methyl tert-butyl ether	**72**	1.4	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*90.1 %*	*60-140*		"	"	"	"	

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3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:14

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-10-02 8:00 am (S201206-01) Air Sampled: 01/10/02 08:00 Received: 01/11/02 19:00									
Benzene	**11**	10	mg/m³ Air	5	2010247	01/21/02	01/21/02	EPA 8260B	
Bromobenzene	ND	10	"	"	"	"	"	"	
Bromochloromethane	ND	10	"	"	"	"	"	"	
Bromodichloromethane	ND	10	"	"	"	"	"	"	
Bromoform	ND	10	"	"	"	"	"	"	
Bromomethane	ND	25	"	"	"	"	"	"	
n-Butylbenzene	ND	10	"	"	"	"	"	"	
sec-Butylbenzene	ND	10	"	"	"	"	"	"	
tert-Butylbenzene	ND	10	"	"	"	"	"	"	
Carbon tetrachloride	ND	10	"	"	"	"	"	"	
Chlorobenzene	ND	10	"	"	"	"	"	"	
Chloroethane	ND	25	"	"	"	"	"	"	
Chloroform	ND	10	"	"	"	"	"	"	
Chloromethane	ND	25	"	"	"	"	"	"	
2-Chlorotoluene	ND	10	"	"	"	"	"	"	
4-Chlorotoluene	ND	10	"	"	"	"	"	"	
Dibromochloromethane	ND	10	"	"	"	"	"	"	
1,2-Dibromoethane	ND	10	"	"	"	"	"	"	
Dibromomethane	ND	10	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	25	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	25	"	"	"	"	"	"	
1,1-Dichloroethane	ND	10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	10	"	"	"	"	"	"	
1,1-Dichloroethene	ND	10	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	10	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	10	"	"	"	"	"	"	
1,2-Dichloropropane	ND	10	"	"	"	"	"	"	
1,3-Dichloropropane	ND	10	"	"	"	"	"	"	
2,2-Dichloropropane	ND	10	"	"	"	"	"	"	
1,1-Dichloropropene	ND	10	"	"	"	"	"	"	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10	"	"	"	"	"	"	
Isopropylbenzene	ND	10	"	"	"	"	"	"	
p-Isopropyltoluene	ND	10	"	"	"	"	"	"	
Methylene chloride	**57**	25	"	"	"	"	"	"	A-01
Methyl tert-butyl ether	**340**	10	"	"	"	"	"	"	
Naphthalene	ND	25	"	"	"	"	"	"	

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3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:14

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-10-02 8:00 am (S201206-01) Air	**Sampled: 01/10/02 08:00**	**Received: 01/11/02 19:00**							
n-Propylbenzene	ND	10	mg/m³ Air	5	2010247	01/21/02	01/21/02	EPA 8260B	
Styrene	ND	10	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	10	"	"	"	"	"	"	
Tetrachloroethene	ND	10	"	"	"	"	"	"	
Toluene	ND	10	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	10	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	10	"	"	"	"	"	"	
Trichloroethene	ND	10	"	"	"	"	"	"	
Trichlorofluoromethane	ND	25	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	10	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	10	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	10	"	"	"	"	"	"	
Vinyl chloride	ND	10	"	"	"	"	"	"	
Total Xylenes	**13**	10	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*91.7 %*	*70-130*		"	"	"	"	
Surrogate: 1,2-DCA-d4		*99.2 %*	*70-130*		"	"	"	"	
Surrogate: Toluene-d8		*98.6 %*	*70-130*		"	"	"	"	
Surrogate: 4-BFB		*95.8 %*	*70-130*		"	"	"	"	
1-11-02 9:00 am (S201206-02) Air	**Sampled: 01/11/02 09:00**	**Received: 01/11/02 19:00**							
Benzene	ND	20	mg/m³ Air	10	2010247	01/21/02	01/21/02	EPA 8260B	
Bromobenzene	ND	20	"	"	"	"	"	"	
Bromochloromethane	ND	20	"	"	"	"	"	"	
Bromodichloromethane	ND	20	"	"	"	"	"	"	
Bromoform	ND	20	"	"	"	"	"	"	
Bromomethane	ND	50	"	"	"	"	"	"	
n-Butylbenzene	ND	20	"	"	"	"	"	"	
sec-Butylbenzene	ND	20	"	"	"	"	"	"	
tert-Butylbenzene	ND	20	"	"	"	"	"	"	
Carbon tetrachloride	ND	20	"	"	"	"	"	"	
Chlorobenzene	ND	20	"	"	"	"	"	"	
Chloroethane	ND	50	"	"	"	"	"	"	
Chloroform	ND	20	"	"	"	"	"	"	
Chloromethane	ND	50	"	"	"	"	"	"	
2-Chlorotoluene	ND	20	"	"	"	"	"	"	
4-Chlorotoluene	ND	20	"	"	"	"	"	"	
Dibromochloromethane	ND	20	"	"	"	"	"	"	

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:14

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-11-02 9:00 am (S201206-02) Air	**Sampled: 01/11/02 09:00**		**Received: 01/11/02 19:00**						
1,2-Dibromoethane	ND	20	mg/m³ Air	10	2010247	01/21/02	01/21/02	EPA 8260B	
Dibromomethane	ND	20	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	50	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	20	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	20	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	20	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	20	"	"	"	"	"	"	
1,2-Dichloroethane	ND	20	"	"	"	"	"	"	
1,1-Dichloroethene	ND	20	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	20	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	20	"	"	"	"	"	"	
1,2-Dichloropropane	ND	20	"	"	"	"	"	"	
1,3-Dichloropropane	ND	20	"	"	"	"	"	"	
2,2-Dichloropropane	ND	20	"	"	"	"	"	"	
1,1-Dichloropropene	ND	20	"	"	"	"	"	"	
Ethylbenzene	ND	20	"	"	"	"	"	"	
Hexachlorobutadiene	ND	20	"	"	"	"	"	"	
Isopropylbenzene	ND	20	"	"	"	"	"	"	
p-Isopropyltoluene	ND	20	"	"	"	"	"	"	
Methylene chloride	**120**	50	"	"	"	"	"	"	A-01
Methyl tert-butyl ether	**460**	20	"	"	"	"	"	"	
Naphthalene	ND	50	"	"	"	"	"	"	
n-Propylbenzene	ND	20	"	"	"	"	"	"	
Styrene	ND	20	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	20	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	20	"	"	"	"	"	"	
Tetrachloroethene	ND	20	"	"	"	"	"	"	
Toluene	ND	20	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	20	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	20	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	20	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	20	"	"	"	"	"	"	
Trichloroethene	ND	20	"	"	"	"	"	"	
Trichlorofluoromethane	ND	50	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	20	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	20	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	20	"	"	"	"	"	"	
Vinyl chloride	ND	20	"	"	"	"	"	"	
Total Xylenes	ND	20	"	"	"	"	"	"	

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3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:14

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-11-02 9:00 am (S201206-02) Air	**Sampled: 01/11/02 09:00**	**Received: 01/11/02 19:00**							
Surrogate: Dibromofluoromethane		*104 %*	*70-130*		*2010247*	*01/21/02*	*01/21/02*	*EPA 8260B*	
Surrogate: 1,2-DCA-d4		*108 %*	*70-130*		*"*	*"*	*"*	*"*	
Surrogate: Toluene-d8		*107 %*	*70-130*		*"*	*"*	*"*	*"*	
Surrogate: 4-BFB		*95.8 %*	*70-130*		*"*	*"*	*"*	*"*	

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:14

Total Purgeable Hydrocarbons, BTEX and MTBE in Air by DHS LUFT - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010215 - EPA 5030B (P/T)										
Blank (2010215-BLK1)				Prepared & Analyzed: 01/15/02						
Purgeable Hydrocarbons	ND	10	mg/m³ Air							
Benzene	ND	0.050	"							
Toluene	ND	0.050	"							
Ethylbenzene	ND	0.050	"							
Xylenes (total)	ND	0.050	"							
Methyl tert-butyl ether	ND	0.50	"							
Surrogate: a,a,a-Trifluorotoluene	*1.72*		"	*2.00*		*86.0*	*60-140*			
LCS (2010215-BS1)				Prepared & Analyzed: 01/15/02						
Benzene	1.88	0.050	mg/m³ Air	2.00		94.0	70-130			
Toluene	1.96	0.050	"	2.00		98.0	70-130			
Ethylbenzene	1.98	0.050	"	2.00		99.0	70-130			
Xylenes (total)	5.48	0.050	"	6.00		91.3	70-130			
Methyl tert-butyl ether	2.15	0.50	"	2.00		108	70-130			
Surrogate: a,a,a-Trifluorotoluene	*1.84*		"	*2.00*		*92.0*	*60-140*			
LCS Dup (2010215-BSD1)				Prepared & Analyzed: 01/15/02						
Benzene	2.02	0.050	mg/m³ Air	2.00		101	70-130	7.18	25	
Toluene	2.13	0.050	"	2.00		106	70-130	8.31	25	
Ethylbenzene	2.13	0.050	"	2.00		106	70-130	7.30	25	
Xylenes (total)	5.97	0.050	"	6.00		99.5	70-130	8.56	25	
Methyl tert-butyl ether	2.09	0.50	"	2.00		104	70-130	2.83	25	
Surrogate: a,a,a-Trifluorotoluene	*1.75*		"	*2.00*		*87.5*	*60-140*			

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:14

Total Purgeable Hydrocarbons, BTEX and MTBE in Air (ppmv) by DHS LUFT - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010215 - EPA 5030B (P/T)										
Blank (2010215-BLK1)				Prepared & Analyzed: 01/15/02						
Purgeable Hydrocarbons	ND	2.8	ppmv							
Benzene	ND	0.016	"							
Toluene	ND	0.013	"							
Ethylbenzene	ND	0.012	"							
Xylenes (total)	ND	0.012	"							
Methyl tert-butyl ether	ND	0.14	"							
Surrogate: a,a,a-Trifluorotoluene	*0.288*		"	*0.335*		*86.0*	*60-140*			
LCS (2010215-BS1)				Prepared & Analyzed: 01/15/02						
Surrogate: a,a,a-Trifluorotoluene	*0.308*		*ppmv*	*0.335*		*91.9*	*60-140*			
LCS Dup (2010215-BSD1)				Prepared & Analyzed: 01/15/02						
Surrogate: a,a,a-Trifluorotoluene	*0.293*		*ppmv*	*0.335*		*87.5*	*60-140*			

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:14

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010247 - EPA 5030B [P/T]										
Blank (2010247-BLK1)			Prepared & Analyzed: 01/21/02							
Benzene	ND	2.0	mg/m³ Air							
Bromobenzene	ND	2.0	"							
Bromochloromethane	ND	2.0	"							
Bromodichloromethane	ND	2.0	"							
Bromoform	ND	2.0	"							
Bromomethane	ND	5.0	"							
n-Butylbenzene	ND	2.0	"							
sec-Butylbenzene	ND	2.0	"							
tert-Butylbenzene	ND	2.0	"							
Carbon tetrachloride	ND	2.0	"							
Chlorobenzene	ND	2.0	"							
Chloroethane	ND	5.0	"							
Chloroform	ND	2.0	"							
Chloromethane	ND	5.0	"							
2-Chlorotoluene	ND	2.0	"							
4-Chlorotoluene	ND	2.0	"							
Dibromochloromethane	ND	2.0	"							
1,2-Dibromoethane	ND	2.0	"							
Dibromomethane	ND	2.0	"							
1,2-Dibromo-3-chloropropane	ND	5.0	"							
1,2-Dichlorobenzene	ND	2.0	"							
1,3-Dichlorobenzene	ND	2.0	"							
1,4-Dichlorobenzene	ND	2.0	"							
Dichlorodifluoromethane	ND	5.0	"							
1,1-Dichloroethane	ND	2.0	"							
1,2-Dichloroethane	ND	2.0	"							
1,1-Dichloroethene	ND	2.0	"							
cis-1,2-Dichloroethene	ND	2.0	"							
trans-1,2-Dichloroethene	ND	2.0	"							
1,2-Dichloropropane	ND	2.0	"							
1,3-Dichloropropane	ND	2.0	"							
2,2-Dichloropropane	ND	2.0	"							
1,1-Dichloropropene	ND	2.0	"							
Ethylbenzene	ND	2.0	"							
Hexachlorobutadiene	ND	2.0	"							
Isopropylbenzene	ND	2.0	"							

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:14

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010247 - EPA 5030B [P/T]										
Blank (2010247-BLK1)				Prepared & Analyzed: 01/21/02						
p-Isopropyltoluene	ND	2.0	mg/m³ Air							
Methylene chloride	ND	5.0	"							
Methyl tert-butyl ether	ND	2.0	"							
Naphthalene	ND	5.0	"							
n-Propylbenzene	ND	2.0	"							
Styrene	ND	2.0	"							
1,1,1,2-Tetrachloroethane	ND	2.0	"							
1,1,2,2-Tetrachloroethane	ND	2.0	"							
Tetrachloroethene	ND	2.0	"							
Toluene	ND	2.0	"							
1,2,3-Trichlorobenzene	ND	2.0	"							
1,2,4-Trichlorobenzene	ND	2.0	"							
1,1,1-Trichloroethane	ND	2.0	"							
1,1,2-Trichloroethane	ND	2.0	"							
Trichloroethene	ND	2.0	"							
Trichlorofluoromethane	ND	5.0	"							
1,2,3-Trichloropropane	ND	2.0	"							
1,2,4-Trimethylbenzene	ND	2.0	"							
1,3,5-Trimethylbenzene	ND	2.0	"							
Vinyl chloride	ND	2.0	"							
Total Xylenes	ND	2.0	"							
Surrogate: Dibromofluoromethane	*9.21*		"	*10.0*		*92.1*	*70-130*			
Surrogate: 1,2-DCA-d4	*9.47*		"	*10.0*		*94.7*	*70-130*			
Surrogate: Toluene-d8	*10.7*		"	*10.0*		*107*	*70-130*			
Surrogate: 4-BFB	*9.69*		"	*10.0*		*96.9*	*70-130*			
LCS (2010247-BS1)				Prepared & Analyzed: 01/21/02						
Benzene	11.1	2.0	mg/m³ Air	10.0		111	70-130			
Chlorobenzene	10.9	2.0	"	10.0		109	70-130			
1,1-Dichloroethene	10.2	2.0	"	10.0		102	70-130			
Toluene	11.3	2.0	"	10.0		113	70-130			
Trichloroethene	9.43	2.0	"	10.0		94.3	70-130			
Surrogate: Dibromofluoromethane	*9.41*		"	*10.0*		*94.1*	*70-130*			
Surrogate: 1,2-DCA-d4	*9.79*		"	*10.0*		*97.9*	*70-130*			
Surrogate: Toluene-d8	*10.1*		"	*10.0*		*101*	*70-130*			
Surrogate: 4-BFB	*9.61*		"	*10.0*		*96.1*	*70-130*			

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:14

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010247 - EPA 5030B [P/T]										
LCS Dup (2010247-BSD1)				Prepared & Analyzed: 01/21/02						
Benzene	10.8	2.0	mg/m³ Air	10.0		108	70-130	2.74	25	
Chlorobenzene	10.9	2.0	"	10.0		109	70-130	0.00	25	
1,1-Dichloroethene	9.86	2.0	"	10.0		98.6	70-130	3.39	25	
Toluene	11.4	2.0	"	10.0		114	70-130	0.881	25	
Trichloroethene	9.24	2.0	"	10.0		92.4	70-130	2.04	25	
Surrogate: Dibromofluoromethane	*9.49*		"	*10.0*		*94.9*	*70-130*			
Surrogate: 1,2-DCA-d4	*9.59*		"	*10.0*		*95.9*	*70-130*			
Surrogate: Toluene-d8	*10.4*		"	*10.0*		*104*	*70-130*			
Surrogate: 4-BFB	*9.48*		"	*10.0*		*94.8*	*70-130*			

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 17:14

Notes and Definitions

A-01	This is a suspected laboratory contaminant.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

SEQUOIA ANALYTICAL
CHAIN OF CUSTODY

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- ❑ 1455 McDowell Blvd, Suite D. • **Petaluma, CA 94954** • (707) 792-1865 • FAX (707) 792-0342
- ❑ 819 Striker Ave., Suite 8 • **Sacramento, CA 95834** • (916) 921-9600 • FAX (916) 921-0100
- ❑ 1551 Industrial Road • **San Carlos, CA 94070** • (650) 232-9600 • FAX (650) 232-9612
- ❑ 404 N. Wiget Lane • **Walnut Creek, CA 94598** • (925) 988-9600 • FAX (925) 988-9673

Company Name: Delta Environmental		Project: Arco #2111 (San Leandro CA)	
Mailing Address: 3164 Gold Camp Dr Suite 200		Billing Address (if different):	
City: Rancho Cordova	State: CA Zip Code: 95670		
Telephone: 916 851 7342	Fax #: 916 638 8385	P.O. #:	
Report To: STEVE MEEKS	E-mail Address:	QC Data: ❑ Level II (standard) ❑ Level III ❑ Level IV	
Sampler: B. DenHartog	Date / Time Results Required:	Sequoia's Work Order #	

Turnaround Time:
- ❑ 10-15 Working Days (Standard TAT)
- ☑ 7 Working Days
- ❑ 5 Working Days
- ❑ 72 Hours
- ❑ 48 Hours
- ❑ 24 Hours
- ❑ 2-8 Hours

MANDATORY:
- ❑ SDWA (Drinking Water)
- ☑ CWA (Waste Water)
- ❑ RCRA (Hazardous Waste)
- ❑ Other

ANALYSES REQUESTED (Please provide method)

Client Sample I.D.	Date / Time Sampled	Matrix Desc.	# of Cont.	Container Type	Sequoia's Sample #	BTEX 8020 8015 5260	Comments/ Temp.(If required)
1. 1-10-02 9:00AM	1-10-02 9:00			Tedlar		X	S201206-01
2. 1-11-02 9:00AM	1-11-02 9:00			Tedlar		X	-02
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

Relinquished By:	Received By:	Date / Time: 1/11 1254
Relinquished By:	Received By:	Date / Time: 1/11 1555
Relinquished By:	Received By: Monica Gregen	Date / Time: 1-11
Relinquished By:	Received By:	Date / Time:

Were Samples Received in Good Condition? ❑ Yes ❑ No Samples on Ice? ❑ Yes ❑ No Method of Shipment: _____ Page ___ of ___

White: Sequoia Yellow: Sequoia Pink: Client

Sequoia
Analytical

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21 January, 2002

Steven Meeks
Delta Environmental Consultants (Rancho Cordova)
3164 Gold Camp Drive Ste. 200
Rancho Cordova, CA 95670

RE: ARCO 2111, San Leandro, CA
Sequoia Report: S201110

Enclosed are the results of analyses for samples received by the laboratory on 01/07/02 14:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ron Chew
Client Services Representative

Lito Diaz
Laboratory Director

CA ELAP Certificate #1624

Sequoia Analytical

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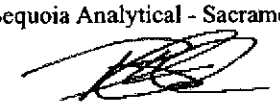
Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/21/02 14:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
VW-2	S201110-01	Water	01/07/02 10:50	01/07/02 14:35

Sequoia Analytical - Sacramento



Ron Chew, Client Services Representative

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/21/02 14:02

Total Purgeable Hydrocarbon, BTEX and MTBE by DHS LUFT

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
VW-2 (S201110-01) Water Sampled: 01/07/02 10:50 Received: 01/07/02 14:35									
Purgeable Hydrocarbons	ND	50000	ug/l	1000	2010192	01/15/02	01/15/02	DHS LUFT	
Benzene	**860**	500	"	"	"	"	"	"	
Toluene	ND	500	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
Xylenes (total)	**1400**	500	"	"	"	"	"	"	
Methyl tert-butyl ether	**160000**	2500	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*94.0 %*		*60-140*		"	"	"	

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/21/02 14:02

MTBE Confirmation by EPA Method 8260B

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
VW-2 (S201110-01) Water Sampled: 01/07/02 10:50 Received: 01/07/02 14:35									
Methyl tert-butyl ether	**180000**	1000	ug/l	2000	2010224	01/18/02	01/18/02	EPA 8260B	
Surrogate: 1,2-DCA-d4		*103 %*		*60-140*		"	"	"	"

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	Reported:
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/21/02 14:02

Total Purgeable Hydrocarbon, BTEX and MTBE by DHS LUFT - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010192 - EPA 5030B (P/T)										
Blank (2010192-BLK1)				Prepared & Analyzed: 01/15/02						
Purgeable Hydrocarbons	ND	50	ug/l							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Methyl tert-butyl ether	ND	2.5	"							
Surrogate: a,a,a-Trifluorotoluene	*9.08*		"	*10.0*		*90.8*	*60-140*			
LCS (2010192-BS1)				Prepared & Analyzed: 01/15/02						
Benzene	9.68	0.50	ug/l	10.0		96.8	70-130			
Toluene	9.60	0.50	"	10.0		96.0	70-130			
Ethylbenzene	9.18	0.50	"	10.0		91.8	70-130			
Xylenes (total)	28.2	0.50	"	30.0		94.0	70-130			
Methyl tert-butyl ether	8.02	2.5	"	10.0		80.2	70-130			
Surrogate: a,a,a-Trifluorotoluene	*9.92*		"	*10.0*		*99.2*	*60-140*			
Matrix Spike (2010192-MS1)	**Source: S201099-05**			Prepared & Analyzed: 01/15/02						
Benzene	9.32	0.50	ug/l	10.0	ND	93.2	60-140			
Toluene	9.22	0.50	"	10.0	ND	92.2	60-140			
Ethylbenzene	8.89	0.50	"	10.0	ND	88.9	60-140			
Xylenes (total)	27.4	0.50	"	30.0	ND	91.3	60-140			
Methyl tert-butyl ether	8.45	2.5	"	10.0	ND	84.5	60-140			
Surrogate: a,a,a-Trifluorotoluene	*9.06*		"	*10.0*		*90.6*	*60-140*			
Matrix Spike Dup (2010192-MSD1)	**Source: S201099-05**			Prepared & Analyzed: 01/15/02						
Benzene	10.5	0.50	ug/l	10.0	ND	105	60-140	11.9	25	
Toluene	10.3	0.50	"	10.0	ND	103	60-140	11.1	25	
Ethylbenzene	10.0	0.50	"	10.0	ND	100	60-140	11.8	25	
Xylenes (total)	31.0	0.50	"	30.0	ND	103	60-140	12.3	25	
Methyl tert-butyl ether	9.10	2.5	"	10.0	ND	91.0	60-140	7.41	25	
Surrogate: a,a,a-Trifluorotoluene	*9.83*		"	*10.0*		*98.3*	*60-140*			

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/21/02 14:02

MTBE Confirmation by EPA Method 8260B - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010224 - EPA 5030B [P/T]										
Blank (2010224-BLK1)				Prepared & Analyzed: 01/18/02						
Methyl tert-butyl ether	ND	0.50	ug/l							
Surrogate: 1,2-DCA-d4	*23.7*		"	*25.0*		*94.8*	*60-140*			
LCS (2010224-BS1)				Prepared & Analyzed: 01/18/02						
Methyl tert-butyl ether	22.5	0.50	ug/l	25.0		90.0	70-130			
Surrogate: 1,2-DCA-d4	*25.5*		"	*25.0*		*102*	*60-140*			
Matrix Spike (2010224-MS1)		**Source: S201155-01**		Prepared & Analyzed: 01/18/02						
Methyl tert-butyl ether	21.6	0.50	ug/l	25.0	ND	86.4	60-140			
Surrogate: 1,2-DCA-d4	*24.6*		"	*25.0*		*98.4*	*60-140*			
Matrix Spike Dup (2010224-MSD1)		**Source: S201155-01**		Prepared & Analyzed: 01/18/02						
Methyl tert-butyl ether	19.3	0.50	ug/l	25.0	ND	77.2	60-140	11.2	25	
Surrogate: 1,2-DCA-d4	*25.2*		"	*25.0*		*101*	*60-140*			

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3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/21/02 14:02

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

ARCO Products Company
Division of Atlantic Richfield Company

Task Order No. Dual Phase Test

Chain of Cus

ARCO Facility no. 211	City (Facility) San Leandro	Project manager (Consultant) Steve Mosley	Laboratory name Sequoia
ARCO engineer Supply	Telephone no. (ARCO)	Telephone no. (Consultant) 916-536-2613	Fax no. (Consultant) 916-338-2085
Consultant name Delta	Address (Consultant) 3164 Gold Camp Dr. Rancho Cord		Contract number

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA 8020/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 5030/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ VOAs ☐ SVOCs ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	MTBE @ 8260
VW-2		6		X		X	X	1-7-02	1050		X				S2011001						X

Special detection Limit/reporting

Special QA/QC

Remarks
TPHG 8015 M
BTEX 8020
MTBE
Confirm MTBE
By 8260
If Detected

Lab number

Turnaround time
Priority Rush 1 Business Day ☐
Rush 2 Business Days ☐
Expedited 5 Business Days ☐
Standard 10 Business Days X

Method of shipment

Condition of sample

Temperature received: 6.3°C

Relinquished by sampler	Date	Time	Received by
	1-7-02	10:45	
Relinquished by	Date	Time	Received by
	1-7-02	1435	Monica Green
Relinquished by	Date	Time	Received by

1/7/02 1435

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant
APC-3292 (2-91)

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January 23 , 2002

Steven Meeks
Delta Environmental Consultants (Rancho Cordova)
3164 Gold Camp Drive Ste. 200
Rancho Cordova, CA 95670
RE: ARCO 2111, San Leandro, CA / S201165

Enclosed are the results of analyses for samples received by the laboratory on 01/09/02. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ron Chew
Client Services Representative

Lito Diaz
Laboratory Director

CA ELAP Certificate Number 1624

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 16:52

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
1-7-02	S201165-01	Water	01/07/02 16:00	01/09/02 18:00
1-8-02	S201165-02	Water	01/08/02 08:00	01/09/02 18:00
1-9-02	S201165-03	Water	01/09/02 08:00	01/09/02 18:00

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 16:52

Total Purgeable Hydrocarbons and BTEX by DHS LUFT

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-7-02 (S201165-01) Water Sampled: 01/07/02 16:00 Received: 01/09/02 18:00									
Purgeable Hydrocarbons	**18000**	1000	ug/l	20	2010223	01/16/02	01/16/02	DHS LUFT	HC-12
Benzene	**240**	10	"	"	"	"	"	"	
Toluene	**51**	10	"	"	"	"	"	"	
Ethylbenzene	**93**	10	"	"	"	"	"	"	
Xylenes (total)	**280**	10	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*64.2 %*		*60-140*		"	"	"	
1-8-02 (S201165-02) Water Sampled: 01/08/02 08:00 Received: 01/09/02 18:00									
Purgeable Hydrocarbons	**1800**	50	ug/l	1	2010223	01/16/02	01/16/02	DHS LUFT	HC-12
Benzene	**42**	0.50	"	"	"	"	"	"	
Toluene	**11**	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	**53**	0.50	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*101 %*		*60-140*		"	"	"	
1-9-02 (S201165-03) Water Sampled: 01/09/02 08:00 Received: 01/09/02 18:00									
Purgeable Hydrocarbons	**6600**	2000	ug/l	40	2010223	01/16/02	01/16/02	DHS LUFT	HC-12
Benzene	**46**	20	"	"	"	"	"	"	
Toluene	**45**	20	"	"	"	"	"	"	
Ethylbenzene	**81**	20	"	"	"	"	"	"	
Xylenes (total)	**360**	20	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*80.8 %*		*60-140*		"	"	"	

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 16:52

MTBE by EPA Method 8260B

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-7-02 (S201165-01) Water	**Sampled: 01/07/02 16:00**	**Received: 01/09/02 18:00**							
Methyl tert-butyl ether	**98000**	500	ug/l	1000	2010244	01/21/02	01/21/02	EPA 8260B	
Surrogate: 1,2-DCA-d4		*102 %*	*60-140*		"	"	"	"	
1-8-02 (S201165-02) Water	**Sampled: 01/08/02 08:00**	**Received: 01/09/02 18:00**							
Methyl tert-butyl ether	**16000**	100	ug/l	200	2010244	01/21/02	01/21/02	EPA 8260B	
Surrogate: 1,2-DCA-d4		*106 %*	*60-140*		"	"	"	"	
1-9-02 (S201165-03) Water	**Sampled: 01/09/02 08:00**	**Received: 01/09/02 18:00**							
Methyl tert-butyl ether	**8100**	50	ug/l	100	2010277	01/22/02	01/23/02	EPA 8260B	
Surrogate: 1,2-DCA-d4		*104 %*	*60-140*		"	"	"	"	

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 16:52

Total Purgeable Hydrocarbons and BTEX by DHS LUFT - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010223 - EPA 5030B (P/T)										
Blank (2010223-BLK1)				Prepared & Analyzed: 01/16/02						
Purgeable Hydrocarbons	ND	50	ug/l							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Surrogate: a,a,a-Trifluorotoluene	*8.82*		"	*10.0*		*88.2*	*60-140*			
LCS (2010223-BS1)				Prepared & Analyzed: 01/16/02						
Benzene	9.68	0.50	ug/l	10.0		96.8	70-130			
Toluene	9.21	0.50	"	10.0		92.1	70-130			
Ethylbenzene	8.23	0.50	"	10.0		82.3	70-130			
Xylenes (total)	25.5	0.50	"	30.0		85.0	70-130			
Surrogate: a,a,a-Trifluorotoluene	*8.32*		"	*10.0*		*83.2*	*60-140*			
Matrix Spike (2010223-MS1)	**Source: S201151-16**			Prepared & Analyzed: 01/16/02						
Benzene	9.61	0.50	ug/l	10.0	ND	96.1	60-140			
Toluene	9.24	0.50	"	10.0	ND	92.4	60-140			
Ethylbenzene	8.39	0.50	"	10.0	ND	83.9	60-140			
Xylenes (total)	25.6	0.50	"	30.0	ND	85.3	60-140			
Surrogate: a,a,a-Trifluorotoluene	*8.10*		"	*10.0*		*81.0*	*60-140*			
Matrix Spike Dup (2010223-MSD1)	**Source: S201151-16**			Prepared & Analyzed: 01/16/02						
Benzene	10.4	0.50	ug/l	10.0	ND	104	60-140	7.90	25	
Toluene	10.1	0.50	"	10.0	ND	101	60-140	8.89	25	
Ethylbenzene	9.54	0.50	"	10.0	ND	95.4	60-140	12.8	25	
Xylenes (total)	29.3	0.50	"	30.0	ND	97.7	60-140	13.5	25	
Surrogate: a,a,a-Trifluorotoluene	*8.61*		"	*10.0*		*86.1*	*60-140*			

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 16:52

MTBE by EPA Method 8260B - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010244 - EPA 5030B [P/T]										
Blank (2010244-BLK1)				Prepared & Analyzed: 01/21/02						
Methyl tert-butyl ether	ND	0.50	ug/l							
Surrogate: 1,2-DCA-d4	*23.7*		"	*25.0*		*94.8*	*60-140*			
LCS (2010244-BS1)				Prepared & Analyzed: 01/21/02						
Methyl tert-butyl ether	24.4	0.50	ug/l	25.0		97.6	70-130			
Surrogate: 1,2-DCA-d4	*24.5*		"	*25.0*		*98.0*	*60-140*			
Matrix Spike (2010244-MS1)		**Source: S201151-08**		Prepared & Analyzed: 01/21/02						
Methyl tert-butyl ether	22.5	0.50	ug/l	25.0	ND	90.0	60-140			
Surrogate: 1,2-DCA-d4	*24.4*		"	*25.0*		*97.6*	*60-140*			
Matrix Spike Dup (2010244-MSD1)		**Source: S201151-08**		Prepared & Analyzed: 01/21/02						
Methyl tert-butyl ether	20.7	0.50	ug/l	25.0	ND	82.8	60-140	8.33	25	
Surrogate: 1,2-DCA-d4	*24.6*		"	*25.0*		*98.4*	*60-140*			
Batch 2010277 - EPA 5030B [P/T]										
Blank (2010277-BLK1)				Prepared & Analyzed: 01/22/02						
Methyl tert-butyl ether	ND	0.50	ug/l							
Surrogate: 1,2-DCA-d4	*20.7*		"	*25.0*		*82.8*	*60-140*			
LCS (2010277-BS1)				Prepared & Analyzed: 01/22/02						
Methyl tert-butyl ether	27.6	0.50	ug/l	25.0		110	70-130			
Surrogate: 1,2-DCA-d4	*24.6*		"	*25.0*		*98.4*	*60-140*			
Matrix Spike (2010277-MS1)		**Source: S201151-09**		Prepared & Analyzed: 01/22/02						
Methyl tert-butyl ether	21.6	0.50	ug/l	25.0	ND	86.4	60-140			
Surrogate: 1,2-DCA-d4	*21.7*		"	*25.0*		*86.8*	*60-140*			

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 16:52

MTBE by EPA Method 8260B - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010277 - EPA 5030B [P/T]										
Matrix Spike Dup (2010277-MSD1)	**Source: S201151-09**			Prepared & Analyzed: 01/22/02						
Methyl tert-butyl ether	23.6	0.50	ug/l	25.0	ND	94.4	60-140	8.85	25	
Surrogate: 1,2-DCA-d4	*23.0*		"	*25.0*		*92.0*	*60-140*			

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/23/02 16:52

Notes and Definitions

HC-12	Hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

ARCO Products Company
Division of Atlantic-Richfield Company

Task Order No.

Chain of Custody

ARCO Facility no. 2111	City (Facility) San Leandro Aroc 2111
Project manager (Consultant) STEVEN MEEKS	Laboratory name Sequoia Analytica
ARCO engineer	Telephone no. (ARCO)
Telephone no. (Consultant) 916-854-7342	Fax no. (Consultant) 916-638-8385
Consultant name Delta Environmental STEVEN MEEKS	Address (Consultant) 3164 Gold Camp Dr. Suite #200
Contract number	
Method of shipment	Courier

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	MTBE 8260	TAME
		6		X		X	X	1-7-02	4:00 PM		X				S201165-01						X	X
		6		X		X	X	1-8-02	9:00AM		X						-02				X	X
		6		X		X	X	1-9-02	9:00AM		X						-03				X	X

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number

Turnaround time

- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Expedited 5 Business Days ☐
- Standard 10 Business Days ☐

Condition of sample:

Temperature received: 2 and 3°C

Relinquished by	Date	Time	Received by	Date	Time
Relinquished by sampler: [signature]	1/9	1115AM	Received by: [signature]		
Relinquished by: [signature]	1-9	1430	Received by: [signature]		
Relinquished by: [signature]	1-9		Received by: Monica Gregen	1/9/02	1800

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Analytical

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January 28 , 2002

Steven Meeks
Delta Environmental Consultants (Rancho Cordova)
3164 Gold Camp Drive Ste. 200
Rancho Cordova, CA 95670
RE: ARCO 2111, San Leandro, CA / S201207

Enclosed are the results of analyses for samples received by the laboratory on 01/11/02. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ron Chew
Client Services Representative

Lito Diaz
Laboratory Director

CA ELAP Certificate Number 1624

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/28/02 13:52

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
1-10-02 8:00	S201207-01	Water	01/10/02 08:00	01/11/02 19:00
1-11-02 9:00	S201207-02	Water	01/11/02 09:00	01/11/02 19:00

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/28/02 13:52

Total Purgeable Hydrocarbon, BTEX and MTBE by DHS LUFT

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-10-02 8:00 (S201207-01) Water	**Sampled: 01/10/02 08:00**	**Received: 01/11/02 19:00**							
Purgeable Hydrocarbons	ND	2000	ug/l	40	2010282	01/18/02	01/18/02	DHS LUFT	
Benzene	**28**	20	"	"	"	"	"	"	
Toluene	ND	20	"	"	"	"	"	"	
Ethylbenzene	**25**	20	"	"	"	"	"	"	
Xylenes (total)	**71**	20	"	"	"	"	"	"	
Methyl tert-butyl ether	**6300**	100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*100 %*	*60-140*		"	"	"	"	
1-11-02 9:00 (S201207-02) Water	**Sampled: 01/11/02 09:00**	**Received: 01/11/02 19:00**							
Purgeable Hydrocarbons	ND	2000	ug/l	40	2010282	01/18/02	01/18/02	DHS LUFT	
Benzene	ND	20	"	"	"	"	"	"	
Toluene	**23**	20	"	"	"	"	"	"	
Ethylbenzene	ND	20	"	"	"	"	"	"	
Xylenes (total)	**52**	20	"	"	"	"	"	"	
Methyl tert-butyl ether	**6800**	100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*97.5 %*	*60-140*		"	"	"	"	

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/28/02 13:52

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-10-02 8:00 (S201207-01) Water	**Sampled: 01/10/02 08:00**	**Received: 01/11/02 19:00**							
Benzene	ND	50	ug/l	50	2010293	01/24/02	01/24/02	EPA 8260B	
Bromobenzene	ND	50	"	"	"	"	"	"	
Bromochloromethane	ND	50	"	"	"	"	"	"	
Bromodichloromethane	ND	50	"	"	"	"	"	"	
Bromoform	ND	50	"	"	"	"	"	"	
Bromomethane	ND	120	"	"	"	"	"	"	
n-Butylbenzene	ND	50	"	"	"	"	"	"	
sec-Butylbenzene	ND	50	"	"	"	"	"	"	
tert-Butylbenzene	ND	50	"	"	"	"	"	"	
Carbon tetrachloride	ND	50	"	"	"	"	"	"	
Chlorobenzene	ND	50	"	"	"	"	"	"	
Chloroethane	ND	120	"	"	"	"	"	"	
Chloroform	ND	50	"	"	"	"	"	"	
Chloromethane	ND	120	"	"	"	"	"	"	
2-Chlorotoluene	ND	50	"	"	"	"	"	"	
4-Chlorotoluene	ND	50	"	"	"	"	"	"	
Dibromochloromethane	ND	50	"	"	"	"	"	"	
1,2-Dibromoethane	ND	50	"	"	"	"	"	"	
Dibromomethane	ND	50	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	120	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	50	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	50	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	50	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	120	"	"	"	"	"	"	
1,1-Dichloroethane	ND	50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	50	"	"	"	"	"	"	
1,2-Dichloropropane	ND	50	"	"	"	"	"	"	
1,3-Dichloropropane	ND	50	"	"	"	"	"	"	
2,2-Dichloropropane	ND	50	"	"	"	"	"	"	
1,1-Dichloropropene	ND	50	"	"	"	"	"	"	
Ethylbenzene	ND	50	"	"	"	"	"	"	
Hexachlorobutadiene	ND	50	"	"	"	"	"	"	
Isopropylbenzene	ND	50	"	"	"	"	"	"	
p-Isopropyltoluene	ND	50	"	"	"	"	"	"	
Methylene chloride	ND	120	"	"	"	"	"	"	
Methyl tert-butyl ether	**5600**	50	"	"	"	"	"	"	
Naphthalene	ND	120	"	"	"	"	"	"	

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/28/02 13:52

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-10-02 8:00 (S201207-01) Water Sampled: 01/10/02 08:00 Received: 01/11/02 19:00									
n-Propylbenzene	ND	50	ug/l	50	2010293	01/24/02	01/24/02	EPA 8260B	
Styrene	ND	50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	50	"	"	"	"	"	"	
Tetrachloroethene	ND	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	50	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	50	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	50	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	50	"	"	"	"	"	"	
Trichloroethene	ND	50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	120	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	50	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	50	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Total Xylenes	ND	50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*97.6 %*		*70-130*		"	"	"	
Surrogate: 1,2-DCA-d4		*106 %*		*70-130*		"	"	"	
Surrogate: Toluene-d8		*103 %*		*70-130*		"	"	"	
Surrogate: 4-BFB		*95.2 %*		*70-130*		"	"	"	
1-11-02 9:00 (S201207-02) Water Sampled: 01/11/02 09:00 Received: 01/11/02 19:00									
Benzene	ND	50	ug/l	50	2010311	01/25/02	01/25/02	EPA 8260B	
Bromobenzene	ND	50	"	"	"	"	"	"	
Bromochloromethane	ND	50	"	"	"	"	"	"	
Bromodichloromethane	ND	50	"	"	"	"	"	"	
Bromoform	ND	50	"	"	"	"	"	"	
Bromomethane	ND	120	"	"	"	"	"	"	
n-Butylbenzene	ND	50	"	"	"	"	"	"	
sec-Butylbenzene	ND	50	"	"	"	"	"	"	
tert-Butylbenzene	ND	50	"	"	"	"	"	"	
Carbon tetrachloride	ND	50	"	"	"	"	"	"	
Chlorobenzene	ND	50	"	"	"	"	"	"	
Chloroethane	ND	120	"	"	"	"	"	"	
Chloroform	ND	50	"	"	"	"	"	"	
Chloromethane	ND	120	"	"	"	"	"	"	
2-Chlorotoluene	ND	50	"	"	"	"	"	"	
4-Chlorotoluene	ND	50	"	"	"	"	"	"	
Dibromochloromethane	ND	50	"	"	"	"	"	"	

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/28/02 13:52

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-11-02 9:00 (S201207-02) Water	**Sampled: 01/11/02 09:00**	**Received: 01/11/02 19:00**							
1,2-Dibromoethane	ND	50	ug/l	50	2010311	01/25/02	01/25/02	EPA 8260B	
Dibromomethane	ND	50	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	120	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	50	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	50	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	50	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	120	"	"	"	"	"	"	
1,1-Dichloroethane	ND	50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	50	"	"	"	"	"	"	
1,2-Dichloropropane	ND	50	"	"	"	"	"	"	
1,3-Dichloropropane	ND	50	"	"	"	"	"	"	
2,2-Dichloropropane	ND	50	"	"	"	"	"	"	
1,1-Dichloropropene	ND	50	"	"	"	"	"	"	
Ethylbenzene	ND	50	"	"	"	"	"	"	
Hexachlorobutadiene	ND	50	"	"	"	"	"	"	
Isopropylbenzene	ND	50	"	"	"	"	"	"	
p-Isopropyltoluene	ND	50	"	"	"	"	"	"	
Methylene chloride	ND	120	"	"	"	"	"	"	
Methyl tert-butyl ether	**5800**	50	"	"	"	"	"	"	
Naphthalene	ND	120	"	"	"	"	"	"	
n-Propylbenzene	ND	50	"	"	"	"	"	"	
Styrene	ND	50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	50	"	"	"	"	"	"	
Tetrachloroethene	ND	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	50	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	50	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	50	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	50	"	"	"	"	"	"	
Trichloroethene	ND	50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	120	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	50	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	50	"	"	"	"	"	"	
Vinyl chloride	ND	50	"	"	"	"	"	"	
Total Xylenes	ND	50	"	"	"	"	"	"	

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/28/02 13:52

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-11-02 9:00 (S201207-02) Water	**Sampled: 01/11/02 09:00**		**Received: 01/11/02 19:00**						
Surrogate: Dibromofluoromethane		*95.6 %*	*70-130*		*2010311*	*01/25/02*	*01/25/02*	*EPA 8260B*	
Surrogate: 1,2-DCA-d4		*97.2 %*	*70-130*		*"*	*"*	*"*	*"*	
Surrogate: Toluene-d8		*102 %*	*70-130*		*"*	*"*	*"*	*"*	
Surrogate: 4-BFB		*96.0 %*	*70-130*		*"*	*"*	*"*	*"*	

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3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	Reported:
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/28/02 13:52

Total Purgeable Hydrocarbon, BTEX and MTBE by DHS LUFT - Quality Control
Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010282 - EPA 5030B (P/T)										
Blank (2010282-BLK1)				Prepared & Analyzed: 01/18/02						
Purgeable Hydrocarbons	ND	50	ug/l							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Methyl tert-butyl ether	ND	2.5	"							
Surrogate: a,a,a-Trifluorotoluene	*9.21*		"	*10.0*		*92.1*	*60-140*			
LCS (2010282-BS1)				Prepared & Analyzed: 01/18/02						
Benzene	10.3	0.50	ug/l	10.0		103	70-130			
Toluene	10.3	0.50	"	10.0		103	70-130			
Ethylbenzene	10.0	0.50	"	10.0		100	70-130			
Xylenes (total)	31.4	0.50	"	30.0		105	70-130			
Methyl tert-butyl ether	10.5	2.5	"	10.0		105	70-130			
Surrogate: a,a,a-Trifluorotoluene	*10.2*		"	*10.0*		*102*	*60-140*			
Matrix Spike (2010282-MS1)	**Source: S201228-10**			Prepared & Analyzed: 01/18/02						
Benzene	9.77	0.50	ug/l	10.0	ND	97.7	60-140			
Toluene	9.74	0.50	"	10.0	ND	97.4	60-140			
Ethylbenzene	9.46	0.50	"	10.0	ND	94.6	60-140			
Xylenes (total)	29.5	0.50	"	30.0	ND	98.3	60-140			
Methyl tert-butyl ether	9.48	2.5	"	10.0	ND	94.8	60-140			
Surrogate: a,a,a-Trifluorotoluene	*9.67*		"	*10.0*		*96.7*	*60-140*			
Matrix Spike Dup (2010282-MSD1)	**Source: S201228-10**			Prepared & Analyzed: 01/18/02						
Benzene	10.8	0.50	ug/l	10.0	ND	108	60-140	10.0	25	
Toluene	10.8	0.50	"	10.0	ND	108	60-140	10.3	25	
Ethylbenzene	10.5	0.50	"	10.0	ND	105	60-140	10.4	25	
Xylenes (total)	32.4	0.50	"	30.0	ND	108	60-140	9.37	25	
Methyl tert-butyl ether	10.0	2.5	"	10.0	ND	100	60-140	5.34	25	
Surrogate: a,a,a-Trifluorotoluene	*10.2*		"	*10.0*		*102*	*60-140*			

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3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/28/02 13:52

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010293 - EPA 5030B [P/T]										
Blank (2010293-BLK1)				Prepared & Analyzed: 01/24/02						
Benzene	ND	1.0	ug/l							
Bromobenzene	ND	1.0	"							
Bromochloromethane	ND	1.0	"							
Bromodichloromethane	ND	1.0	"							
Bromoform	ND	1.0	"							
Bromomethane	ND	2.5	"							
n-Butylbenzene	ND	1.0	"							
sec-Butylbenzene	ND	1.0	"							
tert-Butylbenzene	ND	1.0	"							
Carbon tetrachloride	ND	1.0	"							
Chlorobenzene	ND	1.0	"							
Chloroethane	ND	2.5	"							
Chloroform	ND	1.0	"							
Chloromethane	ND	2.5	"							
2-Chlorotoluene	ND	1.0	"							
4-Chlorotoluene	ND	1.0	"							
Dibromochloromethane	ND	1.0	"							
1,2-Dibromoethane	ND	1.0	"							
Dibromomethane	ND	1.0	"							
1,2-Dibromo-3-chloropropane	ND	2.5	"							
1,2-Dichlorobenzene	ND	1.0	"							
1,3-Dichlorobenzene	ND	1.0	"							
1,4-Dichlorobenzene	ND	1.0	"							
Dichlorodifluoromethane	ND	2.5	"							
1,1-Dichloroethane	ND	1.0	"							
1,2-Dichloroethane	ND	1.0	"							
1,1-Dichloroethene	ND	1.0	"							
cis-1,2-Dichloroethene	ND	1.0	"							
trans-1,2-Dichloroethene	ND	1.0	"							
1,2-Dichloropropane	ND	1.0	"							
1,3-Dichloropropane	ND	1.0	"							
2,2-Dichloropropane	ND	1.0	"							
1,1-Dichloropropene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Hexachlorobutadiene	ND	1.0	"							
Isopropylbenzene	ND	1.0	"							

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3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	Reported:
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/28/02 13:52

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010293 - EPA 5030B [P/T]										
Blank (2010293-BLK1)				Prepared & Analyzed: 01/24/02						
p-Isopropyltoluene	ND	1.0	ug/l							
Methylene chloride	ND	2.5	"							
Methyl tert-butyl ether	ND	1.0	"							
Naphthalene	ND	2.5	"							
n-Propylbenzene	ND	1.0	"							
Styrene	ND	1.0	"							
1,1,1,2-Tetrachloroethane	ND	1.0	"							
1,1,2,2-Tetrachloroethane	ND	1.0	"							
Tetrachloroethene	ND	1.0	"							
Toluene	ND	1.0	"							
1,2,3-Trichlorobenzene	ND	1.0	"							
1,2,4-Trichlorobenzene	ND	1.0	"							
1,1,1-Trichloroethane	ND	1.0	"							
1,1,2-Trichloroethane	ND	1.0	"							
Trichloroethene	ND	1.0	"							
Trichlorofluoromethane	ND	2.5	"							
1,2,3-Trichloropropane	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Vinyl chloride	ND	1.0	"							
Total Xylenes	ND	1.0	"							
Surrogate: Dibromofluoromethane	*25.3*		"	*25.0*		*101*	*70-130*			
Surrogate: 1,2-DCA-d4	*25.8*		"	*25.0*		*103*	*70-130*			
Surrogate: Toluene-d8	*26.6*		"	*25.0*		*106*	*70-130*			
Surrogate: 4-BFB	*24.5*		"	*25.0*		*98.0*	*70-130*			
LCS (2010293-BS1)				Prepared & Analyzed: 01/24/02						
Benzene	27.5	1.0	ug/l	25.0		110	70-130			
Chlorobenzene	27.4	1.0	"	25.0		110	70-130			
1,1-Dichloroethene	26.3	1.0	"	25.0		105	70-130			
Toluene	28.1	1.0	"	25.0		112	70-130			
Trichloroethene	23.8	1.0	"	25.0		95.2	70-130			
Surrogate: Dibromofluoromethane	*24.7*		"	*25.0*		*98.8*	*70-130*			
Surrogate: 1,2-DCA-d4	*25.9*		"	*25.0*		*104*	*70-130*			
Surrogate: Toluene-d8	*25.2*		"	*25.0*		*101*	*70-130*			
Surrogate: 4-BFB	*23.5*		"	*25.0*		*94.0*	*70-130*			

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3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/28/02 13:52

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010293 - EPA 5030B [P/T]										
Matrix Spike (2010293-MS1)	**Source: S201178-11**			Prepared & Analyzed: 01/24/02						
Benzene	27.2	1.0	ug/l	25.0	ND	109	60-140			
Chlorobenzene	26.9	1.0	"	25.0	ND	108	60-140			
1,1-Dichloroethene	26.5	1.0	"	25.0	ND	106	60-140			
Toluene	27.7	1.0	"	25.0	ND	111	60-140			
Trichloroethene	24.3	1.0	"	25.0	ND	97.2	60-140			
Surrogate: Dibromofluoromethane	*23.3*		"	*25.0*		*93.2*	*70-130*			
Surrogate: 1,2-DCA-d4	*24.4*		"	*25.0*		*97.6*	*70-130*			
Surrogate: Toluene-d8	*23.4*		"	*25.0*		*93.6*	*70-130*			
Surrogate: 4-BFB	*21.9*		"	*25.0*		*87.6*	*70-130*			
Matrix Spike Dup (2010293-MSD1)	**Source: S201178-11**			Prepared & Analyzed: 01/24/02						
Benzene	27.1	1.0	ug/l	25.0	ND	108	60-140	0.368	25	
Chlorobenzene	27.7	1.0	"	25.0	ND	111	60-140	2.93	25	
1,1-Dichloroethene	24.7	1.0	"	25.0	ND	98.8	60-140	7.03	25	
Toluene	28.4	1.0	"	25.0	ND	114	60-140	2.50	25	
Trichloroethene	23.1	1.0	"	25.0	ND	92.4	60-140	5.06	25	
Surrogate: Dibromofluoromethane	*23.5*		"	*25.0*		*94.0*	*70-130*			
Surrogate: 1,2-DCA-d4	*23.7*		"	*25.0*		*94.8*	*70-130*			
Surrogate: Toluene-d8	*26.0*		"	*25.0*		*104*	*70-130*			
Surrogate: 4-BFB	*23.9*		"	*25.0*		*95.6*	*70-130*			
Batch 2010311 - EPA 5030B [P/T]										
Blank (2010311-BLK1)				Prepared & Analyzed: 01/25/02						
Benzene	ND	1.0	ug/l							
Bromobenzene	ND	1.0	"							
Bromochloromethane	ND	1.0	"							
Bromodichloromethane	ND	1.0	"							
Bromoform	ND	1.0	"							
Bromomethane	ND	2.5	"							
n-Butylbenzene	ND	1.0	"							
sec-Butylbenzene	ND	1.0	"							
tert-Butylbenzene	ND	1.0	"							
Carbon tetrachloride	ND	1.0	"							
Chlorobenzene	ND	1.0	"							
Chloroethane	ND	2.5	"							

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3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/28/02 13:52

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010311 - EPA 5030B [P/T]										
Blank (2010311-BLK1)				Prepared & Analyzed: 01/25/02						
Chloroform	ND	1.0	ug/l							
Chloromethane	ND	2.5	"							
2-Chlorotoluene	ND	1.0	"							
4-Chlorotoluene	ND	1.0	"							
Dibromochloromethane	ND	1.0	"							
1,2-Dibromoethane	ND	1.0	"							
Dibromomethane	ND	1.0	"							
1,2-Dibromo-3-chloropropane	ND	2.5	"							
1,2-Dichlorobenzene	ND	1.0	"							
1,3-Dichlorobenzene	ND	1.0	"							
1,4-Dichlorobenzene	ND	1.0	"							
Dichlorodifluoromethane	ND	2.5	"							
1,1-Dichloroethane	ND	1.0	"							
1,2-Dichloroethane	ND	1.0	"							
1,1-Dichloroethene	ND	1.0	"							
cis-1,2-Dichloroethene	ND	1.0	"							
trans-1,2-Dichloroethene	ND	1.0	"							
1,2-Dichloropropane	ND	1.0	"							
1,3-Dichloropropane	ND	1.0	"							
2,2-Dichloropropane	ND	1.0	"							
1,1-Dichloropropene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Hexachlorobutadiene	ND	1.0	"							
Isopropylbenzene	ND	1.0	"							
p-Isopropyltoluene	ND	1.0	"							
Methylene chloride	ND	2.5	"							
Methyl tert-butyl ether	ND	1.0	"							
Naphthalene	ND	2.5	"							
n-Propylbenzene	ND	1.0	"							
Styrene	ND	1.0	"							
1,1,1,2-Tetrachloroethane	ND	1.0	"							
1,1,2,2-Tetrachloroethane	ND	1.0	"							
Tetrachloroethene	ND	1.0	"							
Toluene	ND	1.0	"							
1,2,3-Trichlorobenzene	ND	1.0	"							
1,2,4-Trichlorobenzene	ND	1.0	"							

Sequoia Analytical

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(916) 921-9600
FAX (916) 921-0100
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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/28/02 13:52

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010311 - EPA 5030B [P/T]										
Blank (2010311-BLK1)				Prepared & Analyzed: 01/25/02						
1,1,1-Trichloroethane	ND	1.0	ug/l							
1,1,2-Trichloroethane	ND	1.0	"							
Trichloroethene	ND	1.0	"							
Trichlorofluoromethane	ND	2.5	"							
1,2,3-Trichloropropane	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Vinyl chloride	ND	1.0	"							
Total Xylenes	ND	1.0	"							
Surrogate: Dibromofluoromethane	*22.3*		"	*25.0*		*89.2*	*70-130*			
Surrogate: 1,2-DCA-d4	*23.0*		"	*25.0*		*92.0*	*70-130*			
Surrogate: Toluene-d8	*26.7*		"	*25.0*		*107*	*70-130*			
Surrogate: 4-BFB	*23.8*		"	*25.0*		*95.2*	*70-130*			
LCS (2010311-BS1)				Prepared & Analyzed: 01/25/02						
Benzene	27.7	1.0	ug/l	25.0		111	70-130			
Chlorobenzene	27.4	1.0	"	25.0		110	70-130			
1,1-Dichloroethene	25.9	1.0	"	25.0		104	70-130			
Toluene	27.9	1.0	"	25.0		112	70-130			
Trichloroethene	23.3	1.0	"	25.0		93.2	70-130			
Surrogate: Dibromofluoromethane	*24.0*		"	*25.0*		*96.0*	*70-130*			
Surrogate: 1,2-DCA-d4	*25.0*		"	*25.0*		*100*	*70-130*			
Surrogate: Toluene-d8	*25.3*		"	*25.0*		*101*	*70-130*			
Surrogate: 4-BFB	*24.0*		"	*25.0*		*96.0*	*70-130*			
Matrix Spike (2010311-MS1)	**Source: S201193-01**			Prepared & Analyzed: 01/25/02						
Benzene	28.6	1.0	ug/l	25.0	ND	114	60-140			
Chlorobenzene	27.6	1.0	"	25.0	ND	110	60-140			
1,1-Dichloroethene	23.5	1.0	"	25.0	ND	94.0	60-140			
Toluene	28.0	1.0	"	25.0	ND	112	60-140			
Trichloroethene	23.6	1.0	"	25.0	ND	94.4	60-140			
Surrogate: Dibromofluoromethane	*23.6*		"	*25.0*		*94.4*	*70-130*			
Surrogate: 1,2-DCA-d4	*23.3*		"	*25.0*		*93.2*	*70-130*			
Surrogate: Toluene-d8	*25.1*		"	*25.0*		*100*	*70-130*			
Surrogate: 4-BFB	*24.0*		"	*25.0*		*96.0*	*70-130*			

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/28/02 13:52

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2010311 - EPA 5030B [P/T]										
Matrix Spike Dup (2010311-MSD1)	**Source: S201193-01**			Prepared & Analyzed: 01/25/02						
Benzene	28.4	1.0	ug/l	25.0	ND	114	60-140	0.702	25	
Chlorobenzene	28.0	1.0	"	25.0	ND	112	60-140	1.44	25	
1,1-Dichloroethene	27.0	1.0	"	25.0	ND	108	60-140	13.9	25	
Toluene	28.8	1.0	"	25.0	ND	115	60-140	2.82	25	
Trichloroethene	24.3	1.0	"	25.0	ND	97.2	60-140	2.92	25	
Surrogate: Dibromofluoromethane	*24.3*		"	*25.0*		*97.2*	*70-130*			
Surrogate: 1,2-DCA-d4	*25.7*		"	*25.0*		*103*	*70-130*			
Surrogate: Toluene-d8	*25.6*		"	*25.0*		*102*	*70-130*			
Surrogate: 4-BFB	*23.8*		"	*25.0*		*95.2*	*70-130*			

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Delta Environmental Consultants (Rancho Cordova	Project: ARCO 2111, San Leandro, CA	
3164 Gold Camp Drive Ste. 200	Project Number: 2111, San Leandro, CA	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	01/28/02 13:52

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

SEQUOIA ANALYTICAL
CHAIN OF CUSTODY

- ☐ 885 Jarvis Drive • **Morgan Hill, CA 95037** • (408) 776-9600 • FAX (408) 782-6308
- ☐ 1455 McDowell Blvd, Suite D. • **Petaluma, CA 94954** • (707) 792-1865 • FAX (707) 792-0342
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- ☐ 1551 Industrial Road • **San Carlos, CA 94070** • (650) 232-9600 • FAX (650) 232-9612
- ☐ 404 N. Wiget Lane • **Walnut Creek, CA 94598** • (925) 988-9600 • FAX (925) 988-9673

Company Name: Delta Enviromental		Project: Arco 2111 (San Leandro CA)	
Mailing Address: 3164 Gold Camp Dr.		Billing Address (if different):	
City: Rancho Cordova	State: CA Zip Code: 95670		
Telephone: 916 638-7342	Fax #: 916 638 8385	P.O. #:	
Report To: STEVE MEEKS	E-mail Address:	QC Data: ☐ Level II (standard) ☐ Level III ☐ Level IV	
Sampler: B. Den Hartog	Date / Time Results Required:	Sequoia's Work Order #	

Turnaround Time:
- ☐ 10-15 Working Days (Standard TAT)
- ☑ 7 Working Days
- ☐ 5 Working Days
- ☐ 72 Hours
- ☐ 48 Hours
- ☐ 24 Hours
- ☐ 2-8 Hours

MANDATORY:
- ☐ SDWA (Drinking Water)
- ☑ CWA (Waste Water)
- ☐ RCRA (Hazardous Waste)
- ☐ Other

ANALYSES REQUESTED (Please provide method)

Client Sample I.D.	Date / Time Sampled	Matrix Desc.	# of Cont.	Container Type	Sequoia's Sample #	BTEX 8020 TPH 8240	Comments/ Temp.(If required)
1. 1-10-02 9:00	1-10-02 9:00		6	Bottles		X X X	5261207-01
2. 1-11-02 9:00	1-11-02 9:00		6	Bottles			-02
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

Relinquished By:	Received By:	Date / Time: 1/11 1245 PM
Relinquished By:	Received By:	Date / Time: 1/11 1500
Relinquished By:	Received By: Monica Gibson	Date / Time: 1-11
Relinquished By:	Received By:	Date / Time:

Were Samples Received in Good Condition? ☐ Yes ☐ No Samples on Ice? ☐ Yes ☐ No Method of Shipment: _____ Page ___ of ___

White: Sequoia Yellow: Sequoia Pink: Client

ENCLOSURE C

Printout of Excel Calculation Sheet

Radial Influence Calculations:

	VW-2	MW-2	MW-1	MW-7
Vacuum Reading("H2O):	248.33	0.22	0.02	0.01
Pw(atm):	0.3896	0.3896	0.3896	0.3896
Pr(atm):		0.9995	1.0000	1.0000
Patm(atm):		1	1	1
Radius of Extraction well(ft):	1 inches	0.083	0.083	0.083
distance(ft):	0	24.1	101	40.2
Radius of Influence(ft):	Ri:	24.27	101.08	40.21

Permeability Calculations:

	VW-2	MW-2
Q(cfm)=	248.2	248.2
$Q(cm^3/s)$=	117,137	117,137
H(screen(feet))=	14	1.71
H(screen(cm))=	426.72	52.1208
$u(g/cm*s^2)$=	0.000177	0.000177
$Pw(g/cm*s^2)$=	394,767	394,767
Patm(g/cm*s2)=	1,013,000	1,012,702
Rw(cm)=	2.54	2.54
Ri(cm)=	739.7	739.9
Q/H=	274.51	2247.42
1-(Patm/Pw)2=	-5.58	-5.58
ln(Rw/Ri)=	-5.67	-5.67
*Pw*pi=	1,240,197	1,240,197
=	1,220,650	1,219,760
k (cm2)=	3.9805E-08	3.261E-07
k (darcy) =	3.98	32.61