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Alameda County Environmental Health

May 24, 2005

TRG Customer-Focused Solutions

TRC Project No. 42-0163-03

Mr. Don Hwang Alameda County Health Services 1131 Harbor Bay Parkway, Suite 250 Oakland, California 94502

SITE: 76 SERVICE STATION NO. 0746 3943 BROADWAY OAKLAND, CALIFORNIA ALAMEDA COUNTY

SUBJECT: DUAL-PHASE EXTRACTION REPORT

Dear Mr. Hwang:

On behalf of ConocoPhillips Company (ConocoPhillips), TRC submits this report of dual-phase extraction (DPE) activities for ConocoPhillips Station No. 0746, located at 3943 Broadway in Oakland, California. This action was performed in accordance with the work plan submitted by TRC on September 23, 2004. The work was conducted on April 5-8, 2005, and consisted of 68 continuous hours of DPE.

1.0 FIELD ACTIVITIES

1.1 Scope of Work

A 68-hour DPE event was performed on April 5-8, 2005. The DPE event was implemented to attempt to remove residual vapor-phase, adsorbed-phase and dissolved-phase hydrocarbons remaining in site soils. The event was originally scheduled to last 72-hours, but was terminated 4 hours prior to scheduled shut-down time do to limited space for extracted groundwater.

1.2 Pre-Field Activities

A notification letter dated March 30, 2005 was sent to the Bay Area Quality Management District (BAAQMD). A site-specific health and safety plan was prepared for TRC personnel.

1.3 Procedures

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TRC used a mobile treatment system (MTS) to extract hydrocarbon vapors from wells RW-1, MW-3, and MW-5. Liquid- and vapor-phase hydrocarbons were removed from the extraction wells and separated at the MTS. The liquids were automatically transferred into an aboveground storage

Dual-Phase Extraction Report 76 Service Station No. 0746 May 24, 2005

tank and the hydrocarbon vapors were abated using a catalytic/thermal oxidizer. The exclusion zone was constructed with consideration of the station refueling activities. As a result, refueling activities continued without interruption during the DPE event.

The extraction wells were fitted with a custom wellhead seal and connected with flexible hose to convey soil vapors to the MTS unit. The MTS consists of a truck-mounted high vacuum (28 inches of Hg) liquid ring pump and thermal oxidizer, moisture knockout tank, air particulate filters, and all necessary piping and gauges. Abated soil vapors were discharged to the atmosphere.

A TRC operator was onsite throughout the course of the event to record system airflow rates [cubic feet per minute (cfm)], applied vacuum in the conveyance piping [inches of mercury (inches Hg)], and influent soil vapor screening data [parts per million by volume (ppmv)]. A HoribaTM organic vapor analyzer (OVA) was used to screen influent soil vapor concentrations.

Three influent soil vapor samples were collected in Tedlar[™] bags and submitted to a certified analytical laboratory under chain-of-custody documentation. Samples were analyzed for the presence of total petroleum hydrocarbons calculated as gasoline (TPH-g), benzene, toluene, ethyl benzene, and total xylenes (BTEX compounds), methyl tertiary butyl ether (MTBE), and ethanol using Environmental Protection Agency (EPA) Method 8260B.

1.4 Results

During the event, the MTS unit operated continuously for a total of 68 hours. In order to maximize vapor-phase hydrocarbon recovery during the event, vapor extraction was focused on the most productive well (MW-3) when combined influent concentrations had dropped to asymptotic levels. The resulting short-term spike in influent concentration can be seen on Figure 3.

Refer to Table 1 for tabulated MTS data, and Appendix A for field data sheets. The average flow rate was 32 cfm and average applied vacuum was 20 inches Hg. OVA screening for influent concentrations of total petroleum hydrocarbons was performed during the event. Total petroleum hydrocarbon concentrations were measured with the OVA at the beginning and conclusion of the event at 6,750 ppmv and 500 ppmv, respectively. Total estimated hydrocarbon mass removal and hydrocarbon concentration are plotted versus time in Figure 3.

Laboratory analytical results are presented in Table 2, *Summary Sheet*. All certified analytical reports and chain-of-custody documentation are presented in Appendix B. Vapor-phase TPH-g concentrations ranged from 5,600 ppmv to 1,100 ppmv. Benzene concentrations ranged from 22 ppmv to 3.9 ppmv. MTBE concentrations range from 5.3 ppmv to 2.9 ppmv. Laboratory analytical TPH-g and benzene concentrations are plotted versus time in Figure 4. Vapor-phase TPH and benzene concentrations decreased during the event. Influent soil vapor concentration data (measured every 30 minutes throughout the course of the event) was used to calculate mass



removed during the DPE event. Table 1 presents the results. Approximately 39 pounds of hydrocarbons were removed from the extraction wells in 68 hours of continuous operation. A total of 6,500 gallons of groundwater were removed from the subsurface.

1.5 Waste Disposal

Groundwater generated during the course of DPE activities was transported by Onyx Environmental to the ConocoPhillips refinery in Rodeo, California, for treatment and disposal. A copy of the waste manifest is included in Appendix C.

2.0 EVALUATION OF FINDINGS

This event was successful at removing a substantial amount of vapor-phase petroleum hydrocarbons from the subsurface in a relatively short time period. Influent vapor concentrations decreased over the course of the event and appeared to reach asymptotic levels.

The influent concentrations and mass removal rates indicate that further short-term DPE treatment may be an effective means of reducing source material in the vicinity of RW-1, MW-3, and MW-5.

Hydrocarbon concentrations in groundwater were lower after the MTS event for two of the wells (RW-1 and MW-5). MW-3 exhibited an increase in dissolved-phase hydrocarbon concentration. The increase could be due to hydraulic influence attracting nearby groundwater of greater hydrocarbon impact than that typically encountered at MW-3. These results do not contraindicate the potential success of DPE as a viable technology for reducing groundwater concentrations at the site, and a longer DPE event (three to five days) may result in declining influent concentrations.

3.0 **RECOMMENDATIONS**

Given the localized area of hydrocarbon-impacted soil (in the vicinity of MW-3, MW-5, and RW-1) and the results of the short-term DPE event, TRC recommends that DPE be considered as a viable potential remediation technique for the site. Short-term MTS treatment is proposed as more cost-effective than installation of a dedicated DPE remediation system, provided the number of short-term treatment events is relatively limited.

TRC recommends evaluation of dissolved gasoline trends over the next 3-6 months for any longer-term effects related to this event. Remediation alternatives for the site, including a possible additional long-term DPE event of three to five days, will in the interim be discussed with the lead regulatory agency, and a plan towards site closure will be developed by the fourth quarter of 2005.



Dual-Phase Extraction Report 76 Service Station No. 0746 May 24, 2005

4.0 LIST OF ATTACHMENTS

Figures:	 Vicinity Map Site Plan System Concentration and Hydrocarbon Recovery Versus Time Vapor-Phase TPH and Benzene Concentrations Versus Time
Tables:	 Mobile Treatment System Vacuum Extraction Data Mobile Treatment System - Summary Sheet
Appendices:	A) MTS Field SheetsB) Laboratory Analytical ReportsC) Waste Manifest

Should you have any questions regarding this report, please contact us at (925) 688-1200.

Sincerely, TRC

Mali m

Mark Trevor Project Geologist

Roger Boutre

Roger Batra Senior Project Manager

cc: Shelby Lathrop, ConocoPhillips (electronic upload)

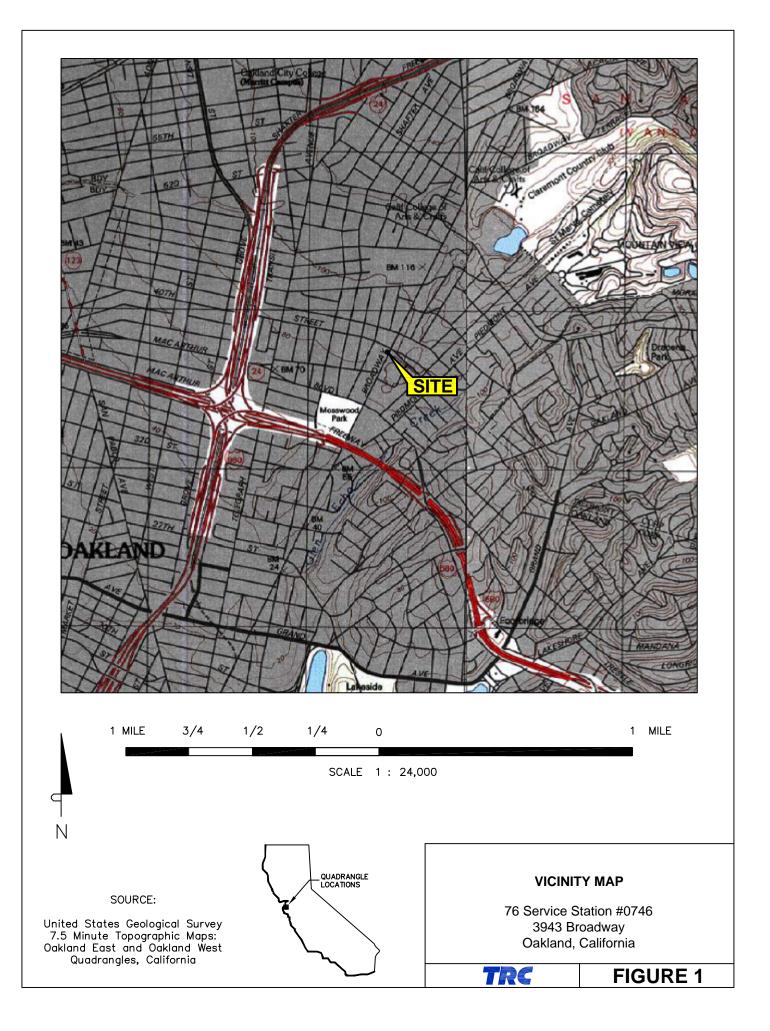
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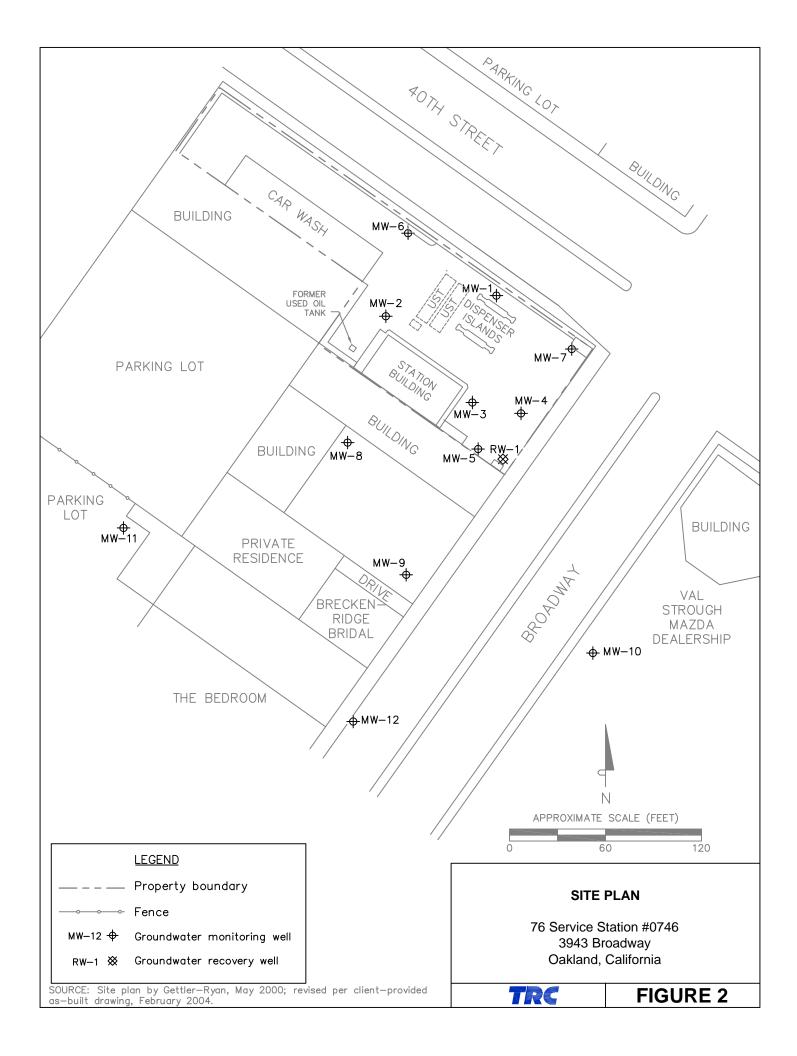
Keith Woodburne, R.G. Senior Project Geologist





FIGURES





SYSTEM CONCENTRATION AND HYDROCARBON RECOVERY VERSUS TIME

ConocoPhillips 0746 3943 Broadway, Oakland CA April 5-8, 2005

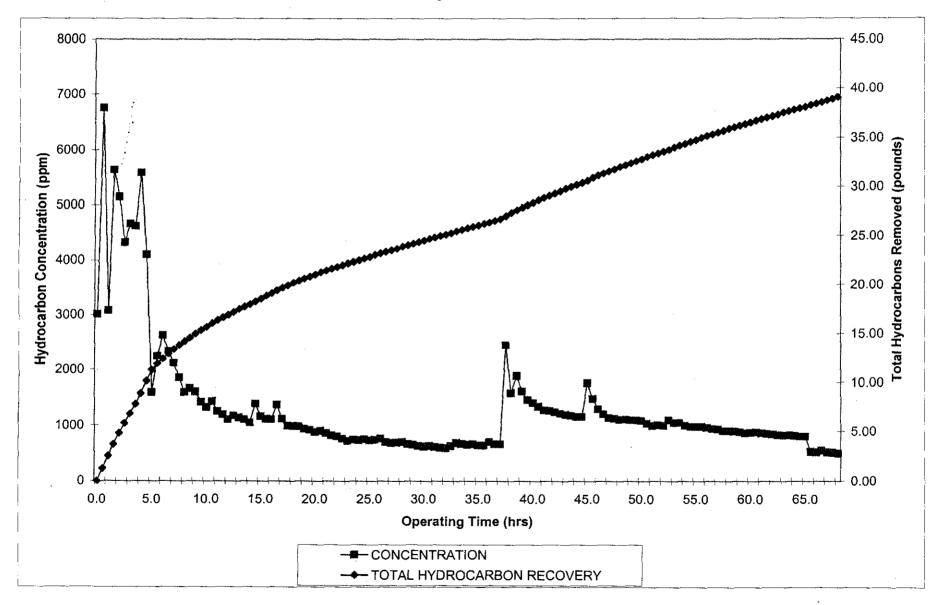


FIGURE 3

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Vapor - Phase TPH and Benzene Concentrations Versus Time ConocoPhillips 0746 3943 Broadway, Oakland, CA April 5-8, 2005

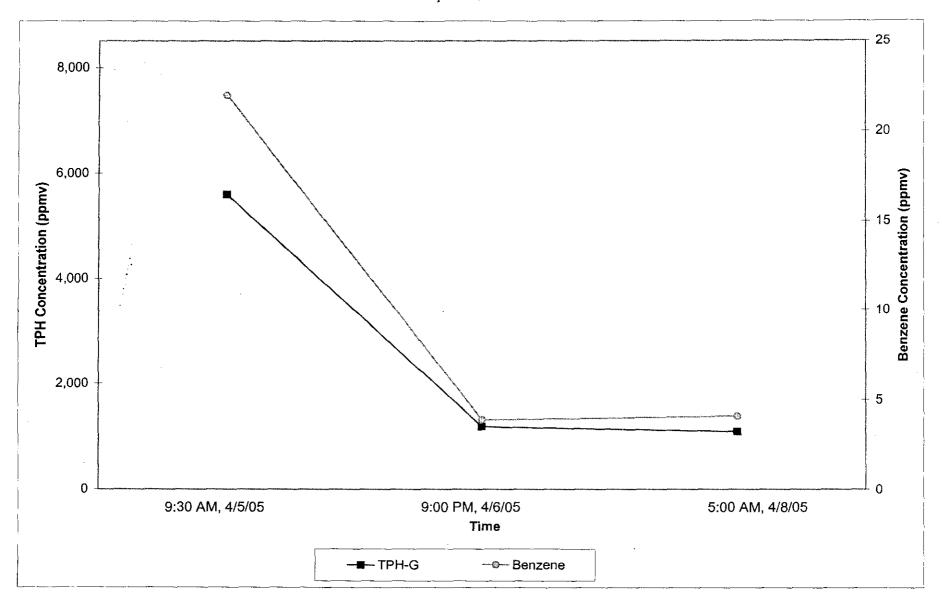


FIGURE 4

TABLES

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Table 1

MOBILE TREATMENT SYSTEM VACUUM EXTRACTION DATA

ConocoPhillips 0746 3943 Broadway, Oakland CA April 5-8, 2005

						TOTAL SYSTEM MEASURE	MENTS	a da barrina	n <mark>de</mark> mederek <u>e</u> e mare e ser
		ELAPSED TIME	TOTAL TIME	INLET BLOWER	SYSTEM	CONCENTRATION**			
DATE	TIME	(MINUTES)	(HOURS)	(IN OF Hg)	(CFM)	(PPMV)	POUNDS	GALLONS*	EXTRACTION WELL OPEN
05-Apr-05	9:00	0.0	0.0	19.0	50	3020	0.00	0.00	RW-1, MW-3, MW-5
05-Apr-05	9:30	30.00	0.50	22.0	28	6750	1.30	0,21	RW-1, MW-3, MW-5
05-Apr-05	10:00	30,00	1.00	18.5	45	3080	2.52	0.40	RW-1, MW-3, MW-5
05-Apr-05	10:30	30.00	1,50	20.7	32	5630	3.67	0.59	RW-1, MW-3, MW-5
05-Apr-05	11:00	30.00	2.00	20.2	31	5150	4,83	0.77	RW-1, MW-3, MW-5
05-Apr-05	11:30	30,00	2.50	19,8	32	4320	5.85	0.93	RW-1, MW-3, MW-5
05-Apr-05	12:00	30.00	3.00	20.0	31	4660	6.81	1.09	RW-1, MW-3, MW-5
05-Apr-05	12:30	30,00	3.50	20.0	31	4620	7.79	1.24	RW-1, MW-3, MW-5
05-Apr-05	13:00	30,00	4.00	20.0	31	5580	8.87	1.42	RW-1, MW-3, MW-5
05-Apr-05	13:30	30.00	4.50	19.0	45	4100	10,13	1.52	RW-1, MW-3, MW-5
05-Apr-05	14:00	30.00	5.00	15.0	67	1600	11.22	1.79	RW-1, MW-3, MW-5
05-Apr-05	14:30	30,00	5,50	20.5	31	2250	11.86	1,89	RW-1, MW-3, MW-5
05-Apr-05	15:00	30.00	6.00	20,0	31	2630	12.38	1.98	RW-1, MW-3, MW-5
05-Apr-05	15:30	30.00	6.50	19,5	31	2340	12.90	2.06	RW-1, MW-3, MW-5
05-Apr-05	16:00	30.00	7.00	19.5	31	2120	13.37	2.14	RW-1, MW-3, MW-5
05-Apr-05	16:30	30.00	7.50	20.0	32	1860	13.80	2.20	RW-1, MW-3, MW-5
05-Apr-05	17:00	30.00	8.00	20.0	32	1600	14.18	2.26	RW-1, MW-3, MW-5
05-Apr-05	17:30	30.00	8.50	20.0	37	1670	14.16	2.33	RW-1, MW-3, MW-5
05-Apr-05	17:30	30.00	9.00	20.0	37	1610	14.98	2.39	RW-1, MW-3, MW-5
05-Apr-05	18:30	30.00	9.50	20.0	34	1430	15.35	2.45	RW-1, MW-3, MW-5
05-Apr-05	19:00	30.00	10.00	20.0	37	1330	15.68	2.50	RW-1, MW-3, MW-5
05-Apr-05	19:30	30.00	10.50	19.5	37	1440	16.03	2.56	RW-1, MW-3, MW-5
	20:00	30.00	11.00		34		16.36	2.61	RW-1, MW-3, MW-5
05-Apr-05 05-Apr-05	20:00	30.00	11.50	20.0	34	1260	16.64	2.66	RW-1, MW-3, MW-5
05-Apr-05	20:30	30.00	12.00	20.0	34	1110	16.91	2.70	RW-1, MW-3, MW-5
05-Apr-05	21:30	30.00	12.50	19.5	36	1180	17,18	2.74	RW-1, MW-3, MW-5
		30.00			34	1140	17.46	2.79	RW-1, MW-3, MW-5
05-Apr-05	22:00 22:30	30.00	13.00 13,50	19.5 19.5	34 35	1110	17.46	2.83	RW-1, MW-3, MW-5
05-Apr-05 05-Apr-05	22:30	30.00	14.00	19.5	33	1050	17.98	2.83	RW-1, MW-3, MW-5
		30.00	14.00		33		18.26	2.92	RW-1, MW-3, MW-5
05-Apr-05	23:30			20.0		1400			
06-Apr-05	0:00	30.00	15.00	19.5	34	1170	18.55	2.96	RW-1, MW-3, MW-5
06-Apr-05	0:30	30.00	15.50	19.2	37	1120	18.83	3.01	RW-1, MW-3, MW-5
06-Apr-05	1:00	30.00	16.00	19.2	37	1110	19.11	3.05	RW-1, MW-3, MW-5
06-Apr-05	1:30	30.00	16.50	19.5	33	1380	19.41	3.10	RW-1, MW-3, MW-5
06-Apr-05	2:00	30.00	17.00	19.2	33	1120	19.69	3.15	RW-1, MW-3, MW-5
06-Apr-05	2:30	30.00	17.50	19.3	36	1000	19.94	3.19	RW-1, MW-3, MW-5
06-Apr-05	3:00	30.00	18.00	19,1		990	20.18	3.22	RW-1, MW-3, MW-5
06-Apr-05	3:30	30.00		19.2	34	980	20,41	3.26	RW-1, MW-3, MW-5
06-Apr-05	4:00	30.00	19.00	19.6	33	940	20.63	3.30	RW-1, MW-3, MW-5
06-Apr-05	4:30	30.00	19.50	19.5	35	920	20,85	3,33	RW-1, MW-3, MW-5
06-Apr-05	5:00	30.00	20.00	19.5	34	880	21.06	3.36	RW-1, MW-3, MW-5
06-Apr-05	5:30	30.00	20.50	19.6	34	900	21.27	3.40	RW-1, MW-3, MW-5
06-Apr-05	6:00	30.00	21.00	19.6	33	860	21,47	3.43	RW-1, MW-3, MW-5
06-Apr-05	6:30	30.00	21.50	19.4	34	820	21.66	3.46	RW-1, MW-3, MW-5
06-Apr-05	7:00	30.00	22.00	20.2	32	800	21.84	3.49	RW-1, MW-3, MW-5
06-Apr-05	7:30	30.00	22.50	20.0	32	760	22.01	3.52	RW-1, MW-3, MW-5
06-Apr-05	8:00	30.00	23.00	19.5	34	720	22.18	3.54	RW-1, MW-3, MW-5
06-Apr-05	8:30	30.00	23.50	19.5	34	740	22.35	3.57	RW-1, MW-3, MW-5
06-Apr-05	9:00	30.00	24.00	19.5	34	730	22.52	3.60	<u>RW-1, MW-3, MW-5</u>
06-Apr-05	9:30	30.00	24.50	19.5	34	750	22.69	3.62	RW-1, MW-3, MW-5

Table 1MOBILE TREATMENT SYSTEM VACUUM EXTRACTION DATA
ConocoPhillips 07463943 Broadway, Oakland CA
April 5-8, 2005

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						TOTAL SYSTEM MEASURE	MENTS		
		ELAPSED TIME	TOTAL TIME	INLET BLOWER VACUUM	SYSTEM	CONCENTRATION**		BON RECOVERY	
DATE	TIME	(MINUTES)	(HOURS)	(IN OF Hg)	(CFM)	(PPMV)	POUNDS	GALLONS*	EXTRACTION WELL OPEN
06-Apr-05	10:00	30.00	25.00	19.5	34	730	22.86	3.65	RW-1, MW-3, MW-5
06-Apr-05	10:30	30.00	25.50	19.5	34	740	23.03	3.68	RW-1, MW-3, MW-5
06-Apr-05	11:00	30.00	26.00	19.5	34	760	23.21	3.71	RW-1, MW-3, MW-5
06-Apr-05	11:30	30.00	26.50	19.5	34	700	23.38	3.73	RW-1, MW-3, MW-5
06-Apr-05	12:00	30.00	27.00	19.5	33	680	23.54	3.76	RW-1, MW-3, MW-5
06-Apr-05	12:30	30,00	27.50	19.5	35	690	23.69	3.79	RW-1, MW-3, MW-5
06-Apr-05	13:00	30.00	28.00	19.5	35	700	23.86	3.81	RW-1, MW-3, MW-5
06-Apr-05	13:30	30,00	28.50	19,0	37	660	24.03	3.84	RW-1, MW-3, MW-5
06-Apr-05	14:00	30.00	29.00	19,5	37	650	24.19	3.86	RW-1, MW-3, MW-5
06-Apr-05	14:30	30,00	29.50	19,0	37	630	24.35	3.89	RW-1, MW-3, MW-5
06-Apr-05	15:00	30.00	30.00	19,5	37	620	24.51	3.92	RW-1, MW-3, MW-5
06-Apr-05	15:30	30.00	30.50	19.5	37	630	24.67	3.94	RW-1, MW-3, MW-5
06-Apr-05	16:00	30,00	31.00	19,5	37	610	24.83	3.97	RW-1, MW-3, MW-5
06-Apr-05	16:30	30,00	31.51	19.5	37	600	24.98	3.99	RW-1, MW-3, MW-5
06-Apr-05	17:00	30.00	32.01	19,5	37	590	25.13	4.01	RW-1, MW-3, MW-5
06-Apr-05	17:30	30,00	32.51	19.5	37	630	25.28	4.04	RW-1, MW-3, MW-5
06-Apr-05	18:00	30.00	33.01	19.5	36	680	25.45	4.07	RW-1, MW-3, MW-5
06-Apr-05	18:30	30,00	33.51	19.5	36	660	25.61	4.09	RW-1, MW-3, MW-5
06-Apr-05	19:00	30,00	34.01	19.5	36	650	25.77	4.12	RW-1, MW-3, MW-5
06-Apr-05	19:30	30.00	34.51	19.5	36	660	25.93	4.14	RW-1, MW-3, MW-5
06-Apr-05	20:00	30.00	35.01	20,5	31	640	26.08	4.17	RW-1, MW-3, MW-5
06-Apr-05	20:30	30.00	35.51	20.0	32	640	26.22	4.19	RW-1, MW-3, MW-5
06-Apr-05	20:30	30.00	36.01	19.5	34	700	26.37	4.21	RW-1, MW-3, MW-5
06-Apr-05	21:30	30.00	36.51	18.7	39	660	26.54	4,24	RW-1, MW-3, MW-5
06-Apr-05	22:00	30.00	37.01	18.4	39	660	26.72	4.27	RW-1, MW-3, MW-5
06-Apr-05	22:30	30.00	37.51	18.5	22	2460	27.04	4.32	MW-3
06-Apr-05	23:00	30,00	38,01	21.0	23	1590	27.35	4.37	MW-3
06-Apr-05	23:30	30,00	38.51	20.6	23	1890	27.62	4,41	MW-3
07-Apr-05	0:00	30.00	39,01	20.7	23	1630	27.90	4,46	MW-3
07-Apr-05	0:30	30.00	39.51	20.5	25	1470	28.15	4.50	MW-3
07-Apr-05	1:00	30.00	40.01	20.5	25	1420	28.40	4.54	MW-3
07-Apr-05	1:30	30.00	40.51	20.5	25	1350	28.64	4.58	MW-3
07-Apr-05	2:00	30.00	41.01	20.4	26	1280	28.87	4.61	MW-3
07-Apr-05	2:30	30.00	41.51	20.3	26	1280	29.10	4.65	MW-3
07-Apr-05	3:00	30.00			26			4.68	
07-Apr-05	3:30	30.00	42.01 42.51	20.3	26	1250	29.32	4.00	
07-Apr-05	4:00	30.00	42.51	20.3	26	1220	29.54 29.76	4.72	MW-3
07-Apr-05	4:00	30.00	43.51	20.3	26	1200	29.76	4,79	MW-3
	4:30 5:00			20.3		1180			······································
07-Apr-05	5:00	30.00	44.01	20.3	26	1160	30.18	4.82	MW-3
07-Apr-05		30.00	44.51	20.0	23	1160	30.37	4.85	MW-3
07-Apr-05	6:00	30.00	45.01	21.0	23	1770	30.60	4,89	MW-3
07-Apr-05	6:30	30.00	45.51	21.0	23	1490	30,86	4.93	MW-3
07-Apr-05	7:00	30.00	46.01	20,7	26	1300	31.09	4.97	MW-3
07-Apr-05	7:30	30.00		20.5	26	1210	31,31	5.00	MW-3
07-Apr-05	8:00	30.00	47.01	20.3	28	1140	31.53	5.04	MW-3
07-Apr-05	8:30	30.00	47.51	20.3	28		31.75	5.07	
07-Apr-05	9:00	30.00	48.01	20,3	28	1110	31.96	5.11	MW-3
07-Apr-05	9:30	30.00		20.3	28	1110	32.17	5.14	MW-3
07-Apr-05	10:00	30.00	49.01	20.3	28	1100	32.38	5.17	MW-3
07-Apr-05	10:30	30.00	49.51	20.3	28	1100	32.59	<u>5.21</u>	MW-3

Table 1

MOBILE TREATMENT SYSTEM VACUUM EXTRACTION DATA

ConocoPhillips 0746

3943 Broadway, Oakland CA

April 5-8, 2005

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					tri de l'est des	TOTAL SYSTEM MEASURE	MENTS		
				INLET BLOWER	SYSTEM		CUMULATIVE HYDROCA	RBON RECOVERY	
DATE	TIME	ELAPSED TIME (MINUTES)	TOTAL TIME (HOURS)	VACUUM (IN OF Hg)	INLET FLOW* (CFM)	CONCENTRATION** (PPMV)	POUNDS	GALLONS*	EXTRACTION WELL OPEN
07-Apr-05	11:00	30.00	50.01	20.3	28	1090	32.80	5.24	<u>MW-3</u>
07-Apr-05	11:30	30.00	50.51	20.3	28	1040	33.01	5.27	<u>MW-3</u>
07-Apr-05	12:00	30.00	51,01	20.3	28	990	33.20	5,30	MW-3
07-Apr-05	12:30	30.00	51.51	20.5	28	1010	33.39	5.33	MW-3
07-Apr-05	13:00	30.00	52.01	20.5	28	1000	33.58	5.36	<u>MW-3</u>
07-Apr-05	13:30	30.00	52.51	20.5	28	1100	33.78	5.40	MW-3
07-Apr-05	14:00	30.00	53.01	20.5	28	1050	33.99	5.43	<u>MW-3</u>
07-Apr-05	14:30	30.00	53.51	20.5	28	1050	34.19	5.46	<u>MW-3</u>
07-Apr-05	15:00	30.00	54.01	20.5	29	1000	34.39	5.49	MW-3
07-Apr-05	15:30	30.00	54.51	20.5	29	980	34.58	5.52	MW-3
07-Apr-05	16:00	30.00	55.01	20.5	29	980	34.78	5.56	MW-3
07-Apr-05	16:30	30,00	55.51	20.5	29	980	34.97	5.59	MW-3
07-Apr-05	17:00	30.00	56.01	20.5	29	960	35,16	5,62	MW-3
07-Apr-05	17:30	30,00	56.51	20.5	28	940	35.35	5.65	MW-3
07-Apr-05	18:00	30,00	57.01	20.5	28	930	35.53	5.68	MW-3
07-Apr-05	18:30	30.00	57.51	20.3	28	900	35,70	5,70	MW-3
07-Apr-05	19:00	30.00	58.01	20.3	28	900	35.87	5.73	MW-3
07-Apr-05	19:30	30.00	58.51	20.3	27	890	36.04	5.76	MW-3
07-Apr-05	20:00	30.00	59.01	20.3	27	880	36,21	5.78	<u>MW-3</u>
07-Apr-05	20;30	30.00	59.51	20.2	27	860	36,37	5,81	MW-3
07-Apr-05	21:00	30.00	60.01	20.2	27	870	36.53	5.83	MW-3
07-Apr-05	21:30	30.00	60.51	20.2	28	880	36.69	5.86	MW-3
07-Apr-05	22:00	30.00	61.01	20.2	26	860	36.85	5.89	MW-3
07-Apr-05	22:30	30.00	61.51	20.2	26	850	37.00	5.91	MW-3
07-Apr-05	23:00	30.00	62.01	20.2	27	840	37.15	5.94	MW-3
07-Apr-05	23:30	30.00	62.51	20.2	27	830	37.31	5,96	MW-3
08-Apr-05	0:00	30.00	63.01	20,2	27	820	37,46	5.98	MW-3
08-Apr-05	0:30	30.00	63.51	20.2	27	820	37.61	6.01	MW-3
08-Apr-05	1:00	30.00	64.01	20.2	28	810	37,76	6.03	MW-3
08-Apr-05	1:30	30.00	64.51	21.2	26	. 800	37.91	6.06	MW-3
08-Apr-05	2:00	30.00	65.01	21.2	26	800	38.05	6.08	MW-3
08-Apr-05	2:30	30.00	65.51		44	530	38,21	6,10	RW-1, MW-3, MW-5
08-Apr-05	3:00	30.00	66.01	17.9	44	520	38.37	6.13	RW-1, MW-3, MW-5
08-Apr-05	3:30	30.00	66,51	17.8	47	550		6.16	RW-1, MW-3, MW-5
08-Apr-05	4:00	30.00	67.01	17.8	47	520	38.71	6.18	RW-1, MW-3, MW-5
08-Apr-05	4;30	30.00	67.51	17.8	47	510	38.87	6.21	RW-1, MW-3, MW-5
08-Apr-05	5:00	30.00	68.01	17.7	46	500	39.03	6.24	RW-1, MW-3, MW-5
				TOTAL	HYDROCARBONS R	ECOVERED	39.03	6.24	}
				TOTAL V	VATER RECOVERED	(GALLONS)	6,500]

Notes

TPH = total petroleum hydrocarbons

CFM = cubic feet per minute

IN of Hg = inches of mercury

ppmv = ; per million by volume

-- = Unit down for extraction well transfer

Page 3 of 3

* = Based on hydrocarbon density of 6.26 pounds per gallon.

** = Based on field Horiba OVA readings.

TRC

Vacuum Extraction Event Report

Summary Sheet

76 Statisn 0746 BAAQAD # 361 934 Bradya MAC 361 934 Bradya MAC VACUUM EXTRACTION PERFORMANCE April 54, 308 Data(a) (Cpaning Hone: 6.60 Technology Use: April 54, 308 Total Opening Hone: 6.797 500 Total System Max/Min Influent Vapor Concentration (pmv): 6.759 / 500 Total System Max/Min Plow Rate (cfin): 67 / 22 Total System Max/Min Vacuum (in Hg): 22 / 15 Total Recovery Volume by Vapor (pounds/gallons): 39 / 62 TABORATORY ANALYSIS OF VAPOR SAMPLES Sample Result (ppmv) Weil Tabe Tabe Tabe Weil Tabe Tabe Sp	76 8	tation 07/	14									
Oaktand, Catifornia NPDES# NA VACULE STRACTION PERFORMANCE April 54, 306 April 54, 306 63.00 Date(a) of Event(a): April 54, 306 63.00 63.00 Total Operating Hours: April 54, 306 63.00 64.00 Total System Max/Min Influent Vapor Concentration (tpmv): 6,759 / 590 7.22 Total Max/Min Influent Vapor Concentration (tpmv): 67/12 7.01											BAAQMD #	262
Date(s) of Event(s): Technology Used: April 5-8, 2006 64,00 Technology Used: High-vacuum liquid-ring pump with Thermal Oxidize High-vacuum liquid-ring pump with Thermal Oxidize Total System Max/Min Influent Vapor Concentration (ppmv): 6,750/500 Total System Max/Min Influent Vapor Concentration (ppmv): 67/22 Total System Max/Min Plow Rate (cfm): 67/22 Total Max/Min Vacuum (in Hg): 22/15 Total Recovery Volume by Vapor (pounds/gallons): 39/6.2 LABORATORY ANAL VSIS OF VAPOR SAMPLES Samplet Result (pmv) Weil Time Total System Total System MTBE* Comments MW*3, 06-Apr-05 9.20 PM Weil Time Total 0.22 8.3 13 31 2.9 Influent MW*3, 06-Apr-05 9.20 PM 100 4.1 4.8 4.7 23 5.3 Influent MW*3, 08-Apr-05 5.00 PM 1100 4.1 4.8 4.7 23 5.3 Influent MW*3, 08-Apr-05 5.00 PM 1100 4.1 4.8 4.7 23 5.3 Influent MW*3, 08-Apr-05 5.00 PM 1100 4.1 4.8 4.7 23 100 per MTS MW*3, 08-Apr-05 5.00 PM 1100 4.1 4.8 4.7 25 pe			•								NPDES#	NA
64.00 Technology Usd: High-vacuum Highld-ring pump with Thermal Oxidizer Total System Max/Min Influent Vapor Concentration (ppmv): 6.750 / 580 Total System Max/Min Influent Vapor Concentration (ppmv): 6.750 / 580 Total System Max/Min Flow Rate (cfm): 67/ 12 Total Max/Min Vacuum (in Hg): 22 / 15 Total Recovery Volume by Vapor (pounds/gallons): 39 / 62 LABORATORY ANALYSIS OF VAPOR SAMPLES Well Total System Mit Bernet Value (pm v) Well Total System Values (pm v) Well Tot	VAC	UUM EX	FRACTION PE	RFORMAN	<u>CE</u>						·	
64.00 Technology Usd: High-vacuum Highld-ring pump with Thermal Oxidizer Total System Max/Min Influent Vapor Concentration (ppmv): 6.750 / 580 Total System Max/Min Influent Vapor Concentration (ppmv): 6.750 / 580 Total System Max/Min Flow Rate (cfm): 67/ 12 Total Max/Min Vacuum (in Hg): 22 / 15 Total Recovery Volume by Vapor (pounds/gallons): 39 / 62 LABORATORY ANALYSIS OF VAPOR SAMPLES Well Total System Mit Bernet Value (pm v) Well Total System Values (pm v) Well Tot		Date(s) of F	vent(s):									April 5-8, 2005
6,759/500 Total System Max/Min Influent Vapor Concentration (ppmv): 67/22 Total System Max/Min Flow Rate (cfin): 67/22 Total Max/Min Vacuum (in Hg): 22/15 Total Recovery Volume by Vapor (pounds/gallons): 39/62 LABORATORY ANALYSIS OF VAPOR SAMPLES Weil Time Time Time Time Time Time Time Time												
Year Year <th< td=""><td>· ·</td><td>Technology</td><td>Used:</td><td></td><td></td><td></td><td></td><td></td><td>High-</td><td>vacuum liquid-</td><td>ring pump with</td><td>Fhermal Oxidizer</td></th<>	· ·	Technology	Used:						High-	vacuum liquid-	ring pump with	Fhermal Oxidizer
Year Year <th< td=""><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	1											
22/15 Total Max/Min Vacuum (in Hg): 39/62 Total Recovery Volume by Vapor (pounds/gallons): Otal Recovery Volume by Vapor (pounds/gallons): Max Multiple Max Multiple Multiple <tr< td=""><td></td><td>Total Syte</td><td>m Max/Min In</td><td>fluent Vapor</td><td>Concentratio</td><td>on (ppmv):</td><td></td><td></td><td></td><td></td><td></td><td>6,750 / 500</td></tr<>		Total Syte	m Max/Min In	fluent Vapor	Concentratio	on (ppmv):						6,750 / 500
39/62 Total Recovery Volume by Vapor (pounds/gallons): ZABORATORY ANALYSIS OF VAPOR SAMPLES Well Time Time Sample Result (ppmv) Well Time Time Sample Result (ppmv) MW-3 MW-3 05.Apr-05 Sample Result (ppmv) MW-3 MW-4 MW-5 OS.Apr-05 Sample Result (ppmv) MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-1 MW-2 MTBE<		Total Syst	em Max/Min F	low Rate (cf	îm):							67 / 22
39/62 Total Recovery Volume by Vapor (pounds/gallons): ZABORATORY ANALYSIS OF VAPOR SAMPLES Well Time Time Sample Result (ppmv) Well Time Time Sample Result (ppmv) MW-3 MW-3 05.Apr-05 Sample Result (ppmv) MW-3 MW-4 MW-5 OS.Apr-05 Sample Result (ppmv) MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-5 MW-6 MW-1 MW-2 MTBE<		Total Max	/Min Vacuum	(in Ho) [.]								22 / 15
Sample Result (ppmv) Weil Time TPH-G * Benzene* Toluene* Ethyl Benzene* Total Xylnes* MTBE* Comments RW-1, MW-3, 05-Apr-05 9:30 AM 5:660 22 8:3 13 31 2.9 Influent RW-1, MW-3, 06-Apr-05 9:30 AM 5:660 22 8:3 13 31 2.9 Influent RW-1, MW-3, 06-Apr-05 9:00 PM 1200 3:9 15 8:2 33 3.4 Influent RW-1, MW-5 06-Apr-05 5:00 PM 1100 4:1 4:8 4:7 23 5:3 Influent NW-3 08-Apr-05 5:00 PM 1100 4:1 4:8 4:7 23 5:3 Influent NW-4 09-Apr-05 5:00 PM 1100 4:1 4:8 4:7 23 5:3 Influent RW-1 09-Adp-05 1:00 PM 4:0 1:00 3:4 1:0 1:00 1:00 1:00 1:00 1:00 1:00 1:00	1	101111111		(
Sample Result (ppmv) Weil Time TPH-G* Benzene* Toluere* Entry Benzene* Total Xylenes* MTBE* Comments MW-1, MW-3, MW-3 05-Apr-05 9:30 AM 5:600 22 8:3 13 31 2.9 Influent MW-3, MW-5 06-Apr-05 9:00 PM 1200 3.9 15 8:2 33 3.4 Influent WW-1, MW-3, MW-5 06-Apr-05 9:00 PM 1200 3.9 15 8:2 33 3.4 Influent WW-5 06-Apr-05 5:00 PM 1100 4.1 4:8 4.7 23 5.3 Indluent WW-5 08-Apr-05 5:00 PM 1100 4.1 4:8 4.7 23 5.3 Indluent WW-5 08-Apr-05 5:00 PM 1100 4.1 4:8 4.7 23 5.3 Indluent WW-5 10:00 AM 9:00 5:0 NE Ethyl Bezzene* Total Xylenes* MTBE* Comments <		Total Reco	overy Volume	by Vарот (ре	ounds/gallons	i):						39 / 6.2
Well Date Sampled TPH-G * Benzene* Tolucne* Ethyl Benzene* Total Xylenes* MTBE* Comments RW-1, MW-3, MW-3, MW-3, MW-3, MW-3, MW-4, MW-5, 06-Apr-05 9:30 AM 5.600 22 8.3 13 31 2.9 Influent RW-1, MW-3, MW-3, MW-5 06-Apr-05 9:00 PM 1200 3.9 15 8.2 33 3.4 Influent RW-1, MW-3, MW-5 06-Apr-05 9:00 PM 1200 3.9 15 8.2 33 3.4 Influent RW-1, MW-3, MW-5 06-Apr-05 9:00 PM 100 4.1 4.8 4.7 23 5.3 Influent WW-1 Date Samplet TPH-G * Benzene* Tolucne* Ethyl Benzene* Total Xylenes* MTBE* Comments RW-1 29.Nov-04 8:35 AM 4:500 46 ND<10	LAP	BORATOR	Y ANALYSIS	OF VAPOR S	SAMPLES		<u>-</u>					
Well Date Sampled TPH-G * Benzene* Tolucne* Ethyl Benzene* Total Xylenes* MTBE* Comments RW-1, MW-3, MW-3, MW-3, MW-3, MW-3, MW-4, MW-5, 06-Apr-05 9:30 AM 5.600 22 8.3 13 31 2.9 Influent RW-1, MW-3, MW-3, MW-5 06-Apr-05 9:00 PM 1200 3.9 15 8.2 33 3.4 Influent RW-1, MW-3, MW-5 06-Apr-05 9:00 PM 1200 3.9 15 8.2 33 3.4 Influent RW-1, MW-3, MW-5 06-Apr-05 9:00 PM 100 4.1 4.8 4.7 23 5.3 Influent WW-1 Date Samplet TPH-G * Benzene* Tolucne* Ethyl Benzene* Total Xylenes* MTBE* Comments RW-1 29.Nov-04 8:35 AM 4:500 46 ND<10												
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MW-3 09-May-05 12:02 PM 12:00 PM 12						······	1				<u></u>	-
MW-5 29-Nov-04 NA LPH LPH LPH LPH LPH LPH pre MTS MW-5 09-May-05 12:18 PM 59,000 1,400 770 2,700 8,200 ND<50							+				· · · · · · · · · · · · · · · · · · ·	-{
MW-5 09-May-05 12:18 PM 59,000 1,400 770 2,700 8,200 ND<50 post MTS ADDITIONAL INFORMATION: * - ND - <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td>··</td> <td></td> <td></td> <td>-</td>						1			··			-
ADDITIONAL INFORMATION: * = Analyzed by EPA method 8260B PPMV = parts per million by volume LPH = liquid-phase hydrocarbons in well ug/L = micrograms per liter Note: cfin = cubic feet per minute are taken on the pressure side of the blower after dilution. in Hg = inches of mercury TPH-g TPH-g = total petroleum hydrocarbons as gasoline MBE = Methyl tert-Butyl Ether N.D. = not detectable												-
 * = Analyzed by EPA method 8260B PPMV = parts per million by volume LPH = liquid-phase hydrocarbons in well ug/L = micrograms per liter Note: Total system concentration and flow measurements cfm = cubic feet per minute are taken on the pressure side of the blower after dilution. in Hg = inches of mercury TPH-g = total petroleum hydrocarbons as gasoline MtBE = Methyl tert-Butyl Ether N.D. = not detectable 		MW-5	09-May-05	12:18 PM	59,000	1,400	770	2,700	8,200	<u>ND<50</u>	post MTS	لـ
 * = Analyzed by EPA method 8260B PPMV = parts per million by volume LPH = liquid-phase hydrocarbons in well ug/L = micrograms per liter Note: Total system concentration and flow measurements cfm = cubic feet per minute are taken on the pressure side of the blower after dilution. in Hg = inches of mercury TPH-g = total petroleum hydrocarbons as gasoline MtBE = Methyl tert-Butyl Ether N.D. = not detectable 												
PPMV = parts per million by volume LPH = liquid-phase hydrocarbons in well ug/L = micrograms per liter Note: Total system concentration and flow measurements cfm = cubic feet per minute are taken on the pressure side of the blower after dilution. in Hg = inches of mercury TPH-g TPH-g = total petroleum hydrocarbons as gasoline MiBE = Methyl tert-Butyl Ether N.D. = not detectable	AD	DITIONAL	INFORMATI	ON:								
PPMV = parts per million by volume LPH = liquid-phase hydrocarbons in well ug/L = micrograms per liter Note: Total system concentration and flow measurements cfm = cubic feet per minute are taken on the pressure side of the blower after dilution. in Hg = inches of mercury TPH-g TPH-g = total petroleum hydrocarbons as gasoline MiBE = Methyl tert-Butyl Ether N.D. = not detectable		* - * *	ad Lorph -	- 1 00/00								
ug/L = micrograms per liter Note: Total system concentration and flow measurements cfin = cubic feet per minute are taken on the pressure side of the blower after dilution. in Hg = inches of mercury TPH-g TPH-g = total petroleum hydrocarbons as gasoline MtBE = Methyl tert-Butyl Ether N.D. = not detectable							IPH	= liquid_phase had	ocarbone in well			
cfin = cubic feet per minute are taken on the pressure side of the blower after dilution. in Hg = inches of mercury TPH-g TPH-g = total petroleum hydrocarbons as gasoline MtBE = Methyl tert-Butyl Ether N.D. = not detectable	1			-						easurements		
in Hg = inches of mercury TPH-g = total petroleum hydrocarbons as gasoline MtBE = Methyl tert-Butyl Ether N.D. = not detectable								-			m.	
MtBE = Methyl tert-Butyl Ether N.D. = not detectable								-				
N.D. = not detectable		-	-	-	ns as gasoline							
		N.D. NA	= not detectable = not tested	•								

Prepared by:

Mark Trevor, Project Geologist

Approved	by:
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Keith Woodburne, R.G., Senior Project Geologist

APPENDIX A

12 00 (24 hr.) (24 hr.) (11. H 12 00 (1. H (1. H (1. H (1. H) (1. H)	alions): (ATION (ppmv): (ATION (ppmv): (Bill Total Well Flow Rate (sc(m)	a di	Time: Time: Time: Time:	NULATIVE M 9330 A			0934		La	iptop Unit #:		ACTION W	A 1 1 1	fectinician:	: <u>८६८</u> 	1	ACTION WE	14 26 -	<u>· [[27</u>	<u>9</u> 77
TOTALIZER END (gailo STACK HC CONCENT Plan 12:0,000 Time (24 hr.) (in. H 12:00 Q:05 15 Q:050	ATION (ppmv); ATION (ppmv); Well Well Flow Rate (acrm)	Total Well Manife	Time: Time: Time: Time:				· · · · · · · · · · · · · · · · · · ·			<u> </u>		Morio								1
TOTALIZER END (gailo STACK HC CONCENT Plan 12:0,000 Time (24 hr.) (in. H 12:00 Q:05 15 Q:050	ATION (ppmv); ATION (ppmv); Well Well Flow Rate (acrm)	Total Well Manife	Time:	9\$3 <i>0</i> A	pm	·····	· · · · · · · · · · · · · · · · · · ·		,	ł	WELL ID:	RU	2:4		IN	w-3	5			-
121 00 (24 hr.) (24 hr.) (15 (24 hr.) (17 (17)	Well Total Well Flow Rate (acfm)	Total Well Manife	DATA	93501	fm				·		(n) WTG			6.45	1 .	7,75	-			
$\begin{array}{c} \mathcal{O}_{1}^{0} \mathcal{O}_{2}^{0} \mathcal{O}_{1}^{0} \\ \text{Time} \\ (24 \text{ hr.}) \\ 12 1 \text{ 00} \\ \mathbf{Q}_{1}^{0} 0^{0} 0^{0} 0^{0} \\ \mathbf{Q}_{1}^{0} 0^{0} 0^{0} 0^{0} \\ \mathbf{Q}_{1}^{0} 0^{0} 0^{0} \\ \mathbf{Q}_{1}^{0} 0^{0} 0^{0} \\ \mathbf{Q}_{1$	Wolii Totai w Well Flow Rate RO) (#cfm)	Total Well Manife						·			TH to FP (ft):		·	Ð_	·	7,50	_		•••••	
$\begin{array}{c} \mathcal{V}^{0,20} \\ \mathcal{V}^{0,20} \\ \text{Time} \\ (24 \text{ hr.}) \\ \mathcal{V}^{1} \\ \mathcal{V}^{0} \\ \mathcal{O}^{1} \\ \mathcal{O}^{$	Wolii Totai w Well Flow Rate RO) (#cfm)	Total Well Manife									G DIAM. (in);	(6 Martin			2				
Time (24 hr.) (in A 12 00 9:00,15 9:30 (0:00	Well Flow Rate (IIICfm)	Well Manife				PRES	SSURESIDI	EDATA								T				4
12100 9:00 ,15 9:30			ilola H20 ilum (Hg) Tet?	Te-P.	System Flow DP (In. H2O)		e Inf. Conc.	. Temp	welts			e HC Conc. (ppmv)	Vacuum (in, of Hg)	Stinger Depth (ft)	Flow OP (in, H2O)		HC Cons. (ppmv)	(in, of Hg)	Stinger Depth (1)	
9:30	* .				, 1.55		720	wei	1+> f			1.8	Herry						1	
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	ATAL		· ···· · · · · · · · · · · · · · · · ·								
24 hr.) (fn. H2O) (scfm) (ppmv) (in. of Ho) (in. H2O) (scfm) (ppm) (System Extraction Temp wells (deg. F) open:	Flow DP (in, H2O)	Flow Rate (sc/m)	HC Conc.	Vacuum (in. of Hg)	Stinger Depih ((i)	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc, (ppmv)	Vacuum (in. of Hg)	Stir De
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	1*1				CUM	ULATIVE V	MTS Unit #:)934			plop Unit #:		CTION W	-	Technician.		EXTR	ACTION W	ELL # 2	
TOTALIZER STA	RT (gallon	s):		i i i i ann	Tine:			.,		······································			WELL ID;	RW	-(mu	-5		· .
TOTALIZER EN		All (22.2.2.			Tinte:	7:00	A MA					DERT	DTW ((t):		·····			• ••••			· · · ·
STACK HC CON	\ r			························	Time:							1	IO FP (II): EPTH(II.):			· · · · · · · · · · · ·			· · · · · · · · · · ·	e en Les recue	
	Manto		VACIUM	SIDE DAT	•			Sale and a	SURESID	e Baray		CASING	DIAM, (in);	Ć 4				2	н.		
· .	Toyal Well		Total	1	120		System		-1	*	erita (MISERS) (M		·····	!	!	Calut		<u> </u>		!	s
Time (24 hr.)	01 (in, H2O)	Flow Rate (scim)	Well Inf. Conc. (ppniv)	i (in, of Hg)	- And	"lel	Flow OP (in, H2O)	System Flow Rate (scfm)	System Inf. Conc. (pom)	System	Extraction wells open:	Flow DP (in, H2O)		HC Conc. (ppmv)	(in, of Hg)		Flow DP (in, H2O)		HC Cond, (ppmv)	Vacuum (in. of Hg)	.] [
4230	54°	F	F	19.5	(360	146	,23	35	920	1444	123		2 A 15 A			81]		1.		
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6:00	54°	1		14.6	135	146°	121	33 34	860										· · · ·	4	: • *
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8:00		•		19.5	135	142	.22	34	720	1495					;	·			• • • • • • • • •		-
	58			12.5	135	142	حح, ا	34	THO	1448			ļ			·		,			-
900	60			19,5	140	145	1.22	34	730	1446	a instrument of a	102	9	770	220		10	22	420	210	
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1000	···· ··· ··· ··· ···	1		19.5	142	150	1,22		730	1444		}								1	1
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1130	60		<u> </u>	19.5	140	150	1.22		700	1448			?								
1230	60	· • • • • •	[·	19.5	140	150	1.72	33	680	1492	' en 1 -		•			· · · · · · · · · ·		1		t i	1
1300	59			19.5	140	150	121 123 123	35 35 37	700	7444		102		960	21.7		10	22	420	20.7	-
1330	69	· .	· · · · · · · · · · · · · · · · · · ·	19.0	140		1.22	-37	660	1448	-teres	/	. l				X				İ,
1400	59			19:5	138	149	25	37 6	650	1440	\mathbb{Y}	908 - y	• •			\mathbb{V}		10 - 1 -	1	- 4	Ì
NOTES:	ADI	22 5	~ ~			Am / C		TANK	$C \in \mathcal{V} \in$	C CHU	KK (60.5"	14/6/0	95 - 1	0253	HUT	Dowa	UN	IT FO	r pre	PA
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Date: 7			1/1/0		CUM		MTS Unit #:		934			ptop Unit #; 		ACTION W	- ELL#1			EXTRA	CTION W	ELL # 2	
TOTALIZER ST	ART (gallon:	<u>):</u>			Time:								WELL ID:	Ru	<u>-1</u>			mi	N-5		· · · · · · ·
TOTALIZER EN STACK HC CON			·····		Time:	530 -	ч <u>ю</u> "				· · · · · · · · · · · · · · · · · · ·	OEPTI	DTW (ft): 1 to FP (ft):					<u></u>			
	TULET				1008. 1							{	DEPTH((t.);	22	40					·····	
	TOMP		VACUUM					VIANE	SURESID	CHAYAU		CASING	DIAM, (in):	6				·····	2		
	Total Well Flow	Total	Total	SIDE DAT.	HaO	VAPOR	System	1	1.000 / 1.000 () 1.000 (i.	<u></u>	(
Time	AP .	Well Flow Rate	Well Inf. Conc.	Vacuum	TEMP	VAPOR TEMP TO OX	Flow DP	System Flow Rate		Temp	Extraction wells		Flow Rale			Stinger Depth		Flow Rale		Vacuum	Stinge Depth
(24 hr.). 1430	16. H20)	(scím)	(ppmv)	19,0	135	1460	(in, H20)		(ppm)	(deg. F) 1947	open:	(in, H2O)	(scim)	(ppmv)	(in, of Hg)	8'	(in, H2O)	(scfm)	(ppmv)	(in. of Hg)	$\frac{(0)}{7^{t}}$
1500	59'				135		, 25		620	1448	2.1.	1.02	9	650	21.7	1	.08	19	370	21:0	
1530	58'		- [135		1.25			1443				<u> </u>			190	÷.*		1	· · · • • • • •
1600	58	(*************************************			· · · · · · · · · · · · · · · · · · ·		1.25		610				· · · · · · · · · · · · · · · · · · ·		<u> </u>						
1630	58	Γ		1915	1350	146	.25			1448											
1700	\$7'		1	19.5	135'	144	.25	37		1449		:02	9	580	21.7		,12	24	330	20.7	
1730	57'			19.5	135	1440	.25			1441									<u> </u>		
1800	57	 	<u> </u>	19.5	135	145°	124			1998			·	 						,	
1830	56		· · · · · · · · · · · · · · · · · · ·	19.5	135	145	24	36		1444			 							ļ	
	55	<u> </u>	<u>{</u>	19.5	155	145		36		1449		.02	9	560	21.6		<u>.((</u>	23	1 540	20.6	-+
19:70 20:00	· · · · · · · · · · · · · · · · · · ·	 		19.5	135	145	24	36	660	1444	┉┟╌╴╌╴┠╼╍╼╴┙	1		+			-	 			, }
20132		<u> </u>	+	205	116	124	1.17	31	640	1442	·										
21:00			+	19.5	131	1270	,19	32	640	1444		.02	9	110	22.0			23	350	21.0	
21:30				18.7	1350	139*	1.29	39			· • • • • • • • • • • • • • • • • • • •	100	-+ <u>-</u>	1040	40		. <u>i_f !</u>	~/_	230	12.0	·
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22:30				18.5	134"	141	. 29				123	,02	٦	660	2(.8	¥	13	26	370	20.5	-V
23100		-		21.0		1450		22	2460	1450	#3	1	مىرە بىرى بىرى بىرى بىرى بىرى بىرى بىرى بىرى			*/					*
2330) 	20.6			<u> . 1 </u>	23	1590	1446	only					X	-				Х
23:85		< 471 7	LAB D	20,6	140	149	. 11	23	1890	1447	\checkmark					$ \rangle$	L		<u> </u>		<u>/</u>
NOTES:					υp	VATEOR	- <u>Smy</u>	1:00	PII.	0.			A-7-7	a.t.	4-5m		ell	2.0-		18 Marit - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1	···· ···
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Site: 76	STAT	ion (0746			tomer-F	ocused	d Soluti	ons				ATA		F	roject No.: Task No.:		A03 G. (6	303		
Date: 4	7 05	<u> </u>	· · · · · · · · · · · · · · · · · · ·			7	MTS Unit #:		934	·	La	otop Unit#			-	fechnician;	R				
						ULATIVE V	VELLS							ACTION W		·····	·	EXTR/	ACTION W	ELL # 2	<u> </u>
OTALIZER STA		<u>.</u>			Time: Time:		· • · · • · • • • • • • • • • • • • • •						WELL ID: DTW (ft):	mo	- 2			- `			
TACK HC CON		N (ppmy)			Time: C	9700	¹¹ 0'	/				DEPT	H to FP ((t):		~						
· · · · · · · · · · · · · · · · · · ·	Man	fre			· ··· · · · · · · · · · · · · · · · ·			· * ***			***		DEPTH((I.):	22.5	<i>[</i> '			- 4*+1 a.a.,			
	110	-p	VACUUM SI					TI PRES	SURE'SIDI	DATA	中学家的同时	CASING	DIAM. (in);							*···· *- · · ···· *·	
ſ	Total Well Flow	Totai Well	Total	Maplifold	420		System Flow		<u> </u>	System		Flow	:]	Stinger	Flow			T	; Sting
Time (24 hr.)	DP (in. H2O)	Flow Rate (scfm)	Totai Weli Inf. Conc. (ppmv)	Manifold Vacuum (in. of Hg)	Tip	Terp	DP (in. H2O)	Flow Rate (scim)	System	Temp (deg. F)	; weils	DP	Flow Rale (scim)	HC Conc.	Vecuum (in, of Hg)	Depth ((t)	DP (in. H2O)	Flow Rate (scfm)		Vacuum (in, of Hg)	Dept
23245	((00)		20.6		[<u> </u>	23	11.60	1450	#1(0	el.	1 (000)10	1		15	1		1		
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2350			t	20,7	140	149'		23	1620	1445	V		1		3	20'		1	1		
00:05				20.7		·;	.12	24	2200	1446	ľ				1	151		1			
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1200				20.5			13	26	1420	1446				<u> </u>	1		 				
1230		- 	· · · · · ·	20,4	<u> </u>	ļ	13	26	1350	1444		 		·	<u> .</u>	ļļ.	<u> </u>	 -			 .;
2200	58	 	 	20,3	140'	150	.13		1280		└		<u> </u>					, <u> </u>		<u> </u>	
2:30				20.3		<u> </u>	.13	26	1270	1446					·				.		
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A 1997 COLORED AND ADDRESS OF ADD	57°			20.3	11/ 20	11160	.13	26	1220	1771					-{		- 				
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5:00		!	<u> </u> !	3017 30 2		<u>.</u>	12	21	11.60	1150	╎┦━	┼────		1	<u>}</u>	<u>+</u> +			÷	<u> </u>	÷
5.00	**************************************		}	20.2	1.00	. 19 .		03		1751		.]			<u> </u>		-	· • • • • • • • • • • • • • • • • • • •	-		
530	· ••••••••••••••••••••••••••••••••••••		<u>∤</u> _	20.0	177	1.70	10	22	-11-60	1476	•,					÷		- 	+		1
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Client: <u>CO</u> Site: <u>76 S</u> Date: <u>4/</u> 7	STATIC	9U - C	746	•	Cus	iomer-F	OCUSO MTS Unit #	d Solut 1: <u>O</u> ʻ	ions 7.74		L	aptop Unit #	" J	•	· · ·	Task No.: Technician:		1403 E			
	105				CUM	ULATIVE W								ACTION W	- ELL#1			EXTRA	CTION W	ELL # 2	
TOTALIZER STA	RT (gallons).			Time:								WELL ID:	mw-	3						
TOTALIZER END					Time;	1230	Lin	DIE NO		¢/		-	DTW (ft):				· [
STACK HC CON		a second s			<u>Time:</u>	1000			<u> </u>				H to FP (fl): DEPTH(fl.):				·				
7	NLET TO				·····			Notes the second second	the state of the state	Witten and Streets	IN 18 1984 IV 1995 24		DIAM. (in):	2	//					••••	
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Time ^(24 hr,)	Total Well Now (in: N2O)	Well Flow Rate (scfm)	Well Inf. Conc. (ppmv)	Manifold Vacuum (in. of Hg)	TEMP	VA AOR TO OX TEMP	Flow DP (in, H2O	System Flow Reli (scfm)	 System Inf. Conc. (ppm) 		Extraction wells open:	DP	Fiow Rate	HC Conc. (ppmv)	Vacuum (in, of Hg)	Stinger Depth (It)	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinge Depti (ft)
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a server and so any hear of a server	60			20.5	140	152	115			1451		••••			and the second second				-		
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					CUM	ULATIVE W	ELLS							CTION W			 		CTION WI	ELL # 2	
OTALIZER STA		<u>}</u>			Time:								WELL ID:	mu	5-3			MW	- 2		. مەھەر ، ،
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(24 hr.)	(h. heo) 59	(scfm)	(ppmv)	(in. of Hg)			(in. H2O)	(scim)	(ppm)	1447	open:	(in. H2O)	, (scfm)	(ppmv)	(in. of Hg)		(in, H2O)	(safm)	(ppmv)	(in. of Hg)	¦(
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Г	Dato:	1510	<u>></u>			CUM	ULATIVE V			3-1		. La;	otop Unit #:		ACTION W	<u> </u>	Technician			CTION W	ELL # 2	
	OTALIZER STA	RT (gallons				Time:	ULANVEV	VELLO		•				WELL ID:					nw-			
	OTALIZER EN		· · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		Time:								DTW (fQ;								
Ş	TACK HC CON	CENTRATI	W (ppmv);		2	Time:	3:30	Am	leg					(to FP ((1);						•••••••••••		
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	Time . (24 hr.)	Total Web Flore OP (n. H2O)		Well Inf. Conc. (ppmv)	Manifold Vácuum (in. of Hg)	120 51.000	Tom	System Flow OF (in H2O)	System Flow Rate (scfm)	System Inf, Conc. (ppm)	System Temp (deg. F)	Extraction wells open:	Flow is DP (in, H2O)	Flow Rate	HC Conc.	: Vacvum : (in. of Hg)	Stinger Depth (/t)	Flow OP	Flow Rate (sofin)	HC Conc.	Vacuum (in. of Hg)	S
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Form #162 . Effective Date: 2-13-22 VAPOR EXTRACTION TEST Project No. <u>42-0163-03</u> Task No. <u>UA03</u> Start Time. <u>4-5-05</u> (9,00) VAL START 1⁵⁸⁹ welt huns (NOON) Site: 76 - 0746 . Date: ant Stop Time.. 1. C. P. L. Extraction Well Observation Wells 5. W-IMW-S Mar-3 Well I.D. Distance (feet) Casing Dia. (inches) IN- Hote Screen Interval (ft) Vacuum (inch H20) Time (min) Flow Rate (cfm) HG-Gone-(ppm) OFF 18.5 12.5 Ynow 0:00/Zico 19.0 0:05 / BOO 0:10 / 4 30 OFF 15.5 9,5 ेः 1615 10.0 12:0 10.0 0:15 /530 14,0 9.0 0:20 1630 14.0 10 0:25 1730 14.0 8.0 2.0 14.0 0.30/830 910 10,0 0:35 1930 14,0 10.0 0:40 2030 9:0 19:0 tte 6 #6 0:45-2130 46 14.0 146-146-6 H 0:50 2 31 30 13.5 46 4/6/05500 130 13.0 HG 5,0 46(62.0 120) 5.0) 62.042 1:00 1:30 510 HG 7.0 HG 5.0 HG 7.0HG 1:10 2:00 7.0 HG 1:20 2:30 7.0 HG 7.0 HG-84.00 HZO well Hero Ro 94.00 420 IADJVITAD to the 1:30 2135 96.0 HZO 95.00 420 345 75.00 420 70.00 420 4 1:40 90.00 4 1:50 5200 70.00 1 1.8,000 11 95.00 2:00 7 00 75,00 -cy 2:30 800 90.0 60,0 70.00 90.0 3:00 900 65.0 70.0 3:30 1000 65.0 65.0 70.0 4:00 1100 65.0 65.0 4:30 1200 70.0 1510 88.0 5:00 1300 90,0 75:0 88.0 25.0 6:00 1400 90.0 65.0 \$5.0 7:00 1500 90.0 65.0 REMAING IN MG DUE TO PROBLEM 8:00 1600 8.0 5.0 - 810 WITH 9:00 (700 120 0H08 8.5 5.0 8.0 610 10:00 1800 5.0 10.0 5.0 9.0 12:00 19:00 5.0 Depth pola 14:00 20:00 5.2 9.5 515 9.0 TD 57 16:00 2/130 5.0 0 11.2 18:00 23-30 10 20:00 23:35 10.0 1-5 25:00 2345 <u>0.0</u> 15 30:00 2350 9.0 20 4 7 05 40:00 00:00 0.0 20 50:00 2015 . 15 60:00 00 30 15 U. 1100 3100 4:00 70:00 ħ. 80:00 90:00 11.5 100:00 <u>(10)</u> 110 i. 6100 14 11.0 0300 11.0 See Next. Page

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Project No. <u>42</u> Task No. <u>040</u> Start Time		A A A A A A A A A A A A A A A A A A A		Site: Date: Stop Tir	<u>6 574. C</u> <u>4/7/C</u> ne4	5 8/05/600	2/2	hat 1
	E	xtraction Well	······		0	bservation	Wells	
Well I.D.		MWw-5		F D.				<u> </u>
Distance (feet)		MMW-5	<u>N</u> ~ 1	RWI	mw-s		<u></u>	+
Casing Dia. (inches)	2"	······································	· .	 			<u> </u>	+
Screen Interval (#)	d					+		10
Time (min)	Ebw Bate (cim)	HC Conc. (ppm)	1	<u> </u>	I Vacuur	π (inch H20)	<u> </u>	<u></u>
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MTS FIELD DATA

Continuation Sheet

Project No.: 42-0163-03

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Customer-Focused Solutions

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0746 Date: Extraction Well ! Extraction Well # Extraction Woll # Extraction Well # MW-3 7.85 Well ID: DTW (ft); DEPTH TO FP (II): TOTAL DERTH (IL): CASING DIA. (in): Flow &P Flow Rate; HC Conc., Vacuum (In, H2D) (sc(m) ; (ppmy) (In, of Ho) Flow AP Flow Rete HC Conc., Vacuum Flow Flow AP AP Flow Rate HC Conc, Vacuum (in, H2O) (scfm) (ppmv) (in, of Hg) Stinger ΔP Time Slinger Flow Rale; HC Conc. ; Vacuum Slinger Slinger Depth (ft) (24 hr.) Depth (ft) (in, H2O); (scim) Depth (ft) (in, H2O) (sc(m) (ppmv) (in, of Hg) Depth (N) (ppmv) (in. of Hg) 12.00 9:00 9:30 · 04 13 (1490 22.6 10:00 1100 17 1130 1200 16 9120 21.5 .06 12-30 1300 106 16 6700 21.5 1330 1400 1430 .08 19 4890 21.5 1500 1530 1600 1630 1700 108 19 4440 21.0 7730 1800 Notes: ung/gits/template/tiek/sheet.xis Rev10/03 ا خون 12.145





Continuation Sheet

ZB Project No.: 42-0163-03

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Continuation Sheet

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APPENDIX B

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TRC/Alton Geoscience-Concord

April 20, 2005

1590 Solano Way, Suite A Concord, CA 94520

Attn.:	Roger Batra
Project:	Conoco Phillips # 0746
Site:	3942 Broadway, Oakland
	Oakland

Attached is our report for your samples received on 04/06/2005 16:20 This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 05/21/2005 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.

You can also contact me via email. My email address is: dsharma@stl-inc.com

Sincerely,

aema

Dimple Sharma Project Manager



TRC/Alton Geoscience-Concord

Attn.: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: Conoco Phillips # 0746

Received: 04/06/2005 16:20

Site: 3942 Broadway, Oakland Oakland

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
INFLUENT VAPOR RW-1 MW-3 MW-5	04/05/2005 09:30	Air	1

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TRC/Alton Geoscience-Concord Attn.: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: Conoco Phillips # 0746

Received: 04/06/2005 16:20

Site: 3942 Broadway, Oakland Oakland

Prep(s): 5030B Sample ID: INFLUENT VAPOR RW-1 MW-3 MW-5 Sampled: 04/05/2005 09:30 Matrix: Air

Analysis Flag: L2 (See Legend and Note Section)

Test(s):	8260B	. 1
Lab ID:	2005-04-0126 - 1	
Extracted:	4/7/2005 09:00	
QC Batch#:	2005/04/07-1A.64	

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
GRO (C6-C12)	5600	1.6	ppmv	5.00	04/07/2005 09:00	
Benzene	22	1.6	ppmv	5.00	04/07/2005 09:00	
Toluene	8.3	1.3	ppmv	5.00	04/07/2005 09:00	
Ethylbenzene	13	1.2	ppmv	5.00	04/07/2005 09:00	
Total xylenes	31	1.2	ppmv	5.00	04/07/2005 09:00	
Methyl tert-butyl ether (MTBE)	2.9	0.70	ppmv	5.00	04/07/2005 09:00	
Ethanol	ND	130	ppmv	5.00	04/07/2005 09:00	
Surrogate(s)						
1,2-Dichloroethane-d4	109.2	72-128	%	5.00	04/07/2005 09:00	
Toluene-d8	95.3	80-113	%	5.00	04/07/2005 09:00	

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04/12/2005 11:17



TRC/Alton Geoscience-Concord

Attn.: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: Conoco Phillips # 0746

Received: 04/06/2005 16:20

Site: 3942 Broadway, Oakland Oakland

	Bato	h QC Report			
Prep(s): 5030B Method Blank MB: 2005/04/07-1A.64-042		Water	D	Test(s) QC Batch # 2005/04/0 ate Extracted: 04/07/200	
Compound	Conc.	RL	Unit	Analyzed	Flag
GRO (C6-C12)	ND	50	ug/L	04/07/2005 07:42	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	04/07/2005 07:42	
Benzene	ND	0.5	ug/L	04/07/2005 07:42	
Toluene	ND	0.5	ug/L	04/07/2005 07:42	
Ethylbenzene	ND	0.5	ug/L	04/07/2005 07:42	
Total xylenes	ND	1.0	ug/L	04/07/2005 07:42	
Ethanol	ND	50	ug/L	04/07/2005 07:42	
Surrogates(s)					
1,2-Dichloroethane-d4	111.2	73-130	%	04/07/2005 07:42	
Toluene-d8	99.6	81-114	%	04/07/2005 07:42	

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TRC/Alton Geoscience-Concord

Attn.: Roger Batra

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Project: Conoco Phillips # 0746

Received: 04/06/2005 16:20

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Site: 3942 Broadway, Oakland Oakland

Batch QC Report										
Prep(s): 5030B									Test(s):	8260B
Laboratory Control Spike		Water				QC Batch # 2005/04/07-1A.64				
LCS 2005/04/07-1A.64-021 Extracted: 04/07/2005 Analyzed: 04/07/2005 07:21 LCSD										
Compound	Conc.	ug/L	Exp.Conc.	Recov	/ery %	RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Methyl tert-butyl ether (MTBE) Benzene Toluene	21.6 21.7 20.8		25 25 25	86.4 86.8 83.2			65-165 69-129 70-130	20 20 20		
Surrogates(s) 1,2-Dichloroethane-d4 Toluene-d8	544 510		500 500	108.8 102.0			73-130 81-114			

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Project: Conoco Phillips # 0746

Received: 04/06/2005 16:20

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Site: 3942 Broadway, Oakland Oakland

MS/MSD Lab ID: 20 MS: 2005/04/07-1A.64-053 Extracted: 04/07/2005 Analyzed:	Test(s): 8260B
MS: 2005/04/07-1A.64-053 Extracted: 04/07/2005 Analyzed:	2005/04/07-1A.64
	05-04-0004 - 002
Dilution	04/07/2005 11:53
	1.00
MSD: 2005/04/07-1A.64-015 Extracted: 04/07/2005 Analyzed:	04/07/2005 12:15
Dilution:	1.00

Compound	Conc.	u	۱ <u>/۲</u>	Spk.Leve	R	ecovery	%	Limits	s %	Fl	ags
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Methyl tert-butyl ether	108	104	78.1	25	119.6	103.6	14.3	65-165	20		
Benzene	22.7	24.1	ND	25	90.8	96.4	6.0	69-129	20		
Toluene	20.7	22.9	ND	25	82.8	91.6	10.1	70-130	20		
Surrogate(s)		{	ĺ			l	[}		ŝ
1,2-Dichloroethane-d4	556	554		500	111.1	110.8	ł	73-130	ļ [
Toluene-d8	495	513	1	500	99.1	102.5		81-114			

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Received: 04/06/2005 16:20

Site: 3942 Broadway, Oakland Oakland

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Analysis Flag

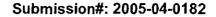
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Reporting limits were raised due to high level of analyte present in the sample.

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TRC/Alton Geoscience-Concord

April 21, 2005

1590 Solano Way, Suite A Concord, CA 94520

Attn.:	Roger Batra
Project:	Conoco Phillips #0746
Site:	3943 Broadway, Oakland

Attached is our report for your samples received on 04/07/2005 17:58 This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 05/22/2005 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.

You can also contact me via email. My email address is: dsharma@stl-inc.com

Sincerely,

haema

Dimple Sharma Project Manager

> Severn Trent Laboratories, Inc. STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566 Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496



TRC/Alton Geoscience-Concord

Attn.: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: Conoco Phillips #0746

Received: 04/07/2005 17:58 Site: 3943 Broadway, Oakland

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
COMBINED INFLUENT VAPOR	04/06/2005 21:00	Air	1



TRC/Alton Geoscience-Concord

Attn.: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: Conoco Phillips #0746

Received: 04/07/2005 17:58 Site: 3943 Broadway, Oakland

Prep(s): 5030B	Test(s):	8260B
Sample ID: COMBINED INFLUENT VAPOR	Lab ID:	2005-04-0182 - 1
Sampled: 04/06/2005 21:00	Extracted:	4/8/2005 12:00
Matrix: Air	QC Batch#:	2005/04/08-1A.64
Analysis Flag: L2 (See Legend and Note Section)	:	

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
GRO (C6-C12)	1200	3.1	ppmv	10.00	04/08/2005 12:00	
Benzene	3.9	3.1	ppmv	10.00	04/08/2005 12:00	
Toluene	15	2.6	ppmv	10.00	04/08/2005 12:00	
Ethylbenzene	8.2	2.3	ppmv	10.00	04/08/2005 12:00	
Total xylenes	33	2.3	ppmv	10.00	04/08/2005 12:00	
Methyl tert-butyl ether (MTBE)	3.4	1.4	ppmv	10.00	04/08/2005 12:00	
Ethanol	ND	250	ppmv	10.00	04/08/2005 12:00	
Surrogate(s)						
1,2-Dichloroethane-d4	117.3	72-128	%	1.00	04/08/2005 12:00	
Toluene-d8	98.0	80-113	%	1.00	04/08/2005 12:00	

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TRC/Alton Geoscience-Concord

Attn.: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: Conoco Phillips #0746

Received: 04/07/2005 17:58 Site: 3943 Broadway, Oakland

	Bate	ch QC Report							
Prep(s): 5030B Method Blank MB: 2005/04/08-1A.64-035		Test(s): 82608 Water QC Batch # 2005/04/08-1A.6 Date Extracted: 04/08/2005 08:3							
Compound	Conc.	RL	Unit	Analyzed	Flag				
GRO (C6-C12)	ND	50	ug/L	04/08/2005 08:35					
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	04/08/2005 08:35					
Benzene	ND	0.5	ug/L	04/08/2005 08:35					
Toluene	ND	0.5	ug/L	04/08/2005 08:35					
Ethylbenzene	ND	0.5	ug/L	04/08/2005 08:35					
Total xylenes	ND	1.0	ug/L	04/08/2005 08:35					
Ethanol	ND	50	ug/L	04/08/2005 08:35					
Surrogates(s)									
1,2-Dichloroethane-d4	113.8	73-130	%	04/08/2005 08:35					
Toluene-d8	98.6	81-114	%	04/08/2005 08:35					

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TRC/Alton Geoscience-Concord

Attn.: Roger Batra

Benzene

Toluene

Surrogates(s) 1.2-Dichloroethane-d4

Toluene-d8

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

25.3

23.5

536

490

Project: Conoco Phillips #0746

Received: 04/07/2005 17:58 Site: 3943 Broadway, Oakland

Batch QC Report Prep(s): 5030B Test(s): 8260B Laboratory Control Spike Water QC Batch # 2005/04/08-1A.64 LCS 2005/04/08-1A.64-014 Extracted: 04/08/2005 Analyzed: 04/08/2005 08:14 LCSD ug/L Exp.Conc. Recovery % RPD Ctrl.Limits % Conc. Flags Compound LCS LCSD % RPD LCS LCSD Rec. LCS LCSD Methyl tert-butyl ether (MTBE) 25.3 25 101.2 65-165 20

101.2

94.0

107.2

98.0

69-129

70-130

73-130

81-114

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Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496

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TRC/Alton Geoscience-Concord

Attn.: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: Conoco Phillips #0746

Received: 04/07/2005 17:58 Site: 3943 Broadway, Oakland

		Batch QC Report		
Prep(s)	: 5030B			Test(s): 8260B
Matrix	Spike (MS / MSD)	Water	QC Bate	:h # 2005/04/08-1A.64
MS/MS	SD		Lab ID:	2005-04-0017 - 001
MS:	2005/04/08-1A.64-029	Extracted: 04/08/2005	Analyzed:	04/08/2005 09:29
		· · · · · · · · · · · · · · · · · · ·	Dilution:	1.00
MSD:	2005/04/08-1A.64-051	Extracted: 04/08/2005	Analyzed:	04/08/2005 09:51
			Dilution:	1.00

Compound	Conc.	ug	/L	Spk.Level	R	ecovery	%	Limits	s %	FI	ags
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Methyl tert-butyl ether Benzene Toluene	213 25.6 22.2	213 26.8 23.7	167 1.43 ND	25 25 25	184.0 96.7 88.8	852.0 107.2 94.8	129. 10.3 6.5	65-165 69-129 70-130	20 20 20	М3	M3,R2
Surrogate(s) 1,2-Dichloroethane-d4 Toluene-d8	552 489	543 479		500 500	110.4 97.8	108.6 95.8		73-130 81-114			

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Severn Trent Laboratories, Inc.



TRC/Alton Geoscience-Concord

Attn.: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: Conoco Phillips #0746

Received: 04/07/2005 17:58 Site: 3943 Broadway, Oakland

Legend and Notes

Analysis Flag

L2

Reporting limits were raised due to high level of analyte present in the sample.

Result Flag

MЗ

Sample > 4x spike concentration.

R2

Analyte RPD was out of QC limits due to sample heterogeneity.

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TRC/Alton Geoscience-Concord

April 21, 2005

1590 Solano Way, Suite A Concord, CA 94520 Attn.: Roger Batra Project#: 41050001FA20 Project: Conoco Phillips #0746

Site: 3943 Broadway, Oakland

Attached is our report for your samples received on 04/08/2005 17:10 This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 05/23/2005 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.

You can also contact me via email. My email address is: dsharma@stl-inc.com

Sincerely,

haema

Dimple Sharma Project Manager



TRC/Alton Geoscience-Concord

Attn.: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: 41050001FA20 Conoco Phillips #0746 Received: 04/08/2005 17:10

Site: 3943 Broadway, Oakland

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
INFLUENT VAPOR MW-3 MW-5 RW-1	04/08/2005 05:00	Air	1
EFFLUENT VAPOR (STACK)	04/08/2005 05:00	Air	2



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TRC/Alton Geoscience-Concord

Attn.: Roger Batra

Toluene-d8

1590 Solano Way, Suite A Concord, CA 94520 . Phone: (925) 688-1200 Fax: (925) 688-0388

Project: 41050001FA20 Conoco Phillips #0746 Received: 04/08/2005 17:10

Site: 3943 Broadway, Oakland

Prep(s): 5030B Sample ID: INFLUENT VAPOR	MW-3 MW-4	5 RW-1	Test(s): Lab ID:	and the second second	3 -04-0238 - 1						
Sampled: 04/08/2005 05:00			Extracted: 4/9/2005 10:18								
Matrix: Air	5. 1		QC Bat	ch#: 2005/	/04/09-1B.64						
Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag					
GRO (C6-C12)	1100	0.31	ppmv	1.00	04/09/2005 10:18						
Benzene	4.1	0.31	ppmv	1.00	04/09/2005 10:18						
Toluene	4.8	0.26	ppmv	1.00	04/09/2005 10:18						
Ethylbenzene	4.7	0.23	ppmv	1.00	04/09/2005 10:18						
Total xylenes	23	0.23	ppmv	1.00	04/09/2005 10:18						
Methyl tert-butyl ether (MTBE)	5.3	0.14	ppmv	1.00	04/09/2005 10:18						
Ethanol	ND	25	ppmv	1.00	04/09/2005 10:18						
Surrogate(s)											
1,2-Dichloroethane-d4	117.9	72-128	%	1.00	04/09/2005 10:18						

80-113

%

1.00 04/09/2005 10:18

98.5

04/12/2005 12:43



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TRC/Alton Geoscience-Concord

Attn.: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: 41050001FA20 Conoco Phillips #0746 Received: 04/08/2005 17:10

Site: 3943 Broadway, Oakland

Prep(s): 5030B	· · · · ·		Test(s			
Sample ID: EFFLUENT VAPOF	R (STACK)		Lab ID	: 2005-	04-0238 - 2	e le F
Sampled: 04/08/2005 05:00		4 4	Extrac	ted: 4/9/20	005 09:56	
Matrix: Air	·		QC Ba	tch#: 2005/	04/09-1B.64	ч. Н
Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
GRO (C6-C12)	ND	0.31	ppmv	1.00	04/09/2005 09:56	
Benzene	ND	0.31	ppmv	1.00	04/09/2005 09:56	
Toluene	ND	0.26	ppmv	1.00	04/09/2005 09:56	
Ethylbenzene	ND	0.23	ppmv	1.00	04/09/2005 09:56	
Total xylenes	ND	0.23	ppmv	1.00	04/09/2005 09:56	
Methyl tert-butyl ether (MTBE)	ND	0.14	ppmv	1.00	04/09/2005 09:56	
Ethanol	ND	25	ppmv	1.00	04/09/2005 09:56	
Surrogate(s)						
1,2-Dichloroethane-d4	115.9	72-128	%	1.00	04/09/2005 09:56	
Toluene-d8	95.2	80-113	%	1.00	04/09/2005 09:56	

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TRC/Alton Geoscience-Concord

Attn.: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: 41050001FA20 Conoco Phillips #0746 Received: 04/08/2005 17:10

Site: 3943 Broadway, Oakland

····

	Bato	h QC Report							
Prep(s): 5030B Method Blank MB: 2005/04/09-1B.64-018		Water	D	Test(s): 8260B QC Batch # 2005/04/09-1B.64 Date Extracted: 04/09/2005 08:18					
Compound	Conc.	RL	Unit	Analyzed	Flag				
GRO (C6-C12)	ND	50	ug/L	04/09/2005 08:18					
Benzene	ND	0.5	ug/L	04/09/2005 08:18	1				
Toluene	ND	0.5	ug/L	04/09/2005 08:18					
Ethylbenzene	ND	0.5	ug/L	04/09/2005 08:18					
Total xylenes	ND	1.0	ug/L	04/09/2005 08:18					
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	04/09/2005 08:18					
Ethanol	ND	50	ug/L	04/09/2005 08:18	l				
Surrogates(s)		ł							
1,2-Dichloroethane-d4	112.6	73-130	%	04/09/2005 08:18					
Toluene-d8	99.4	81-114	%	04/09/2005 08:18					

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04/12/2005 12:43



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TRC/Alton Geoscience-Concord

Attn : Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: 41050001FA20 Conoco Phillips #0746 Received: 04/08/2005 17:10

Site: 3943 Broadway, Oakland

		E	atch QC Re	port	·.									
Prep(s): 5030B			· · ·					-	Test(s):	8260B				
Laboratory Control Spik	e		Water	r.		QC Batch # 2005/04/09-1B.								
LCS 2005/04/09-1B. LCSD	64-056	· ·	Extracted: (04/09/20	05	Analyzed: 04/09/2005 07:5								
Compound	Conc.	ug/L	Exp.Conc.	Recov	/ery %	RPD	Ctrl.Lin	nits %	Fla	igs				
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD				
Methyl tert-butyl ether (MTBE) Benzene Toluene	26.0 26.0 24.2		25 25 25	104.0 104.0 96.8			65-165 69-129 70-130	20 20 20						
<i>Surrogates(s)</i> 1,2-Dichloroethane-d4 Toluene-d8	528 503		500 500	105.6 100.6			73-130 81-114							

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TRC/Alton Geoscience-Concord

Attn.: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: 41050001FA20 Conoco Phillips #0746 Received: 04/08/2005 17:10

Site: 3943 Broadway, Oakland

		Batch QC Report	· · · · · · · · · · · · · · · · · · ·	
Prep(s)): 5030B			Test(s): 8260B
Matrix	Spike(MS/MSD)	Water	QC Bate	ch # 2005/04/09-1B.64
MS/M	SD		Lab ID:	2005-04-0097 - 003
MS:	2005/04/09-1B.64-013	Extracted: 04/09/2005	Analyzed: Dilution:	04/09/2005 09:13 1.00
MSD:	2005/04/09-1B.64-034	Extracted: 04/09/2005	Analyzed: Dilution:	04/09/2005 09:34 1.00

Compound	Conc.	Conc. ug/L		Spk.Level	R	ecovery	%	Limit	s %	Flags		
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD	
Methyl tert-butyl ether	27.7	28.0	ND	25	110.8	112.0	1.1	65-165	20			
Benzene	28.2	26.8	ND	25	112.8	107.2	5.1	69-129	20			
Toluene	26.0	25.1	ND	25	104.0	100.4	3.5	70-130	20			
Surrogate(s)												
1,2-Dichloroethane-d4	562	578	1	500	112.4	115.6	1	73-130				
Toluene-d8	507	505		500	101.4	101.0		81-114				

Page 6 of 6

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DISTRIBUTION: WHITE - Halamood to Cloud with Report, CAVARY - Stays with the Sample: PINK - Field Copy

Submission#: 2005-05-0292



TRC/Alton Geoscience-Concord

May 16, 2005

1590 Solano Way, Suite A
Concord, CA 94520
Attn.: Roger Batra
Project#: 42016308
Project: Conoco Phillips # 0746
Site: 3943 Broadway, Oakland

Attached is our report for your samples received on 05/10/2005 17:10 This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 06/24/2005 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.

You can also contact me via email. My email address is: dsharma@stl-inc.com

Sincerely,

harma

Dimple Sharma Project Manager

•

Submission: 2005-05-0292



Gas/BTEX Fuel Oxygenates by 8260B

TRC/Alton Geoscience-Concord

Attn.: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: 42016308 Conoco Phillips # 0746 Received: 05/10/2005 17:10

Site: 3943 Broadway, Oakland

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-3	05/09/2005 12:02	Water	1
MW-5	05/09/2005 12:18	Water	2
RW-1	05/09/2005 13:12	Water	3

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05/15/2005 13:35



TRC/Alton Geoscience-Concord Attn.: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: 42016308 Conoco Phillips # 0746 Received: 05/10/2005 17:10

Site: 3943 Broadway, Oakland

Prep(s):	5030B			Test(s):	8260B	aba 1
Sample ID:	MW-3			Lab ID:	2005-05-0292 - 1	
Sampled:	05/09/2005	12:02		Extracted:	5/14/2005 02:49	
Matrix:	Water			QC Batch#:	2005/05/13-2A.62	
Analysis Fla	ag: L2, pH: <2	2 (See Le	egend and Note	Section)		

Compound	Conc.	RL	Unit	_ Dilution	Analyzed	Flag
GRO (C6-C12)	12000	500	ug/L	10.00	05/14/2005 02:49	
Benzene	130	5.0	ug/L	10.00	05/14/2005 02:49	
Toluene	58	5.0	ug/L	10.00	05/14/2005 02:49	
Ethylbenzene	410	5.0	ug/L	10.00	05/14/2005 02:49	
Total xylenes	1200	10	ug/L	10.00	05/14/2005 02:49	
Methyl tert-butyl ether (MTBE)	680	5.0	ug/L	10.00	05/14/2005 02:49	
Ethanol	ND	500	ug/L	10.00	05/14/2005 02:49	
Surrogate(s)						
1,2-Dichloroethane-d4	104.8	73-130	%	10.00	05/14/2005 02:49	
Toluene-d8	96.6	81-114	%	10.00	05/14/2005 02:49	



TRC/Alton Geoscience-Concord

Attn.: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: 42016308 Conoco Phillips # 0746 Received: 05/10/2005 17:10

Site: 3943 Broadway, Oakland

Prep(s):	5030B				Test(s)	8260B		
Sample ID:	MW-5		al.	· · ·	Lab ID:	2005-0	5-0292 - 2	
Sampled:	05/09/2005 1	2:18			Extract	ed: 5/13/20	05 15:03	
Matrix:	Water			1	QC Ba	ch#: 2005/0	5/13-1A.62	
Analysis Fl	ag: L2, pH: <2	(See Leg	end and N	Note Secti	ion)			
Compound			Conc.	RL	Unit	Dilution	Analyzed	Flag

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
GRO (C6-C12)	59000	5000	ug/L	100.00	05/13/2005 15:03	
Benzene	1400	50	ug/L	100.00	05/13/2005 15:03	
Toluene	770	50	ug/L	100.00	05/13/2005 15:03	
Ethylbenzene	2700	50	ug/L	100.00	05/13/2005 15:03	
Total xylenes	8200	100	ug/L	100.00	05/13/2005 15:03	
Methyl tert-butyl ether (MTBE)	ND	50	ug/L	100.00	05/13/2005 15:03	
Ethanol	ND	5000	ug/L	100.00	05/13/2005 15:03	
Surrogate(s)						
1,2-Dichloroethane-d4	92.0	73-130	%	100.00	05/13/2005 15:03	
Toluene-d8	92.2	81-114	%	100.00	05/13/2005 15:03	

05/15/2005 13:35



TRC/Alton Geoscience-Concord

Attn.: Roger Batra

Ethylbenzene

Total xylenes

Surrogate(s)

Toluene-d8

1.2-Dichloroethane-d4

Ethanol

Methyl tert-butyl ether (MTBE)

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: 42016308 Conoco Phillips # 0746 Received: 05/10/2005 17:10

Site: 3943 Broadway, Oakland

1.00 05/14/2005 02:23

1.00 05/14/2005 02:23

1.00 05/14/2005 02:23

1.00 05/14/2005 02:23

1.00 05/14/2005 02:23 1.00 05/14/2005 02:23

Prep(s): 5030B			Test(s)	: 8260	В	
Sample ID: RW-1			Lab ID	2005	-05-0292 - 3	
Sampled: 05/09/2005 13:12			Extract	ed: 5/14/	2005 02:23	
Matrix: Water			QC Ba	tch#: 2005	/05/13-2A.62	
pH: <2						
Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
GRO (C6-C12)	2100	50	ug/L	1.00	05/14/2005 02:23	
Benzene	18	0.50	ug/L	1.00	05/14/2005 02:23	
Toluene	0.98	0.50	ug/L	1.00	05/14/2005 02:23	

0.50

1.0

0.50

73-130

81-114

50

lug/L

ug/L

ug/L

ug/L

%

%

37

10

25

ND

103.0

96.3

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Attn.: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: 42016308 Conoco Phillips # 0746 Received: 05/10/2005 17:10

Site: 3943 Broadway, Oakland

	Bate	ch QC Report								
Prep(s): 5030B Method Blank MB: 2005/05/13-1A.62-003		Water	D	Test(s): 826 QC Batch # 2005/05/13-1A Date Extracted: 05/13/2005 10						
Compound	Conc.	RL	Unit	Analyzed	Flag					
GRO (C6-C12)	ND	50	ug/L	05/13/2005 10:03						
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	05/13/2005 10:03						
Benzene	ND	0.5	ug/L	05/13/2005 10:03						
Toluene	ND	0.5	ug/L	05/13/2005 10:03						
Ethylbenzene	ND	0.5	ug/L	05/13/2005 10:03						
Total xylenes	ND	1.0	ug/L	05/13/2005 10:03						
Ethanol	ND	50	ug/L	05/13/2005 10:03						
Surrogates(s)		}								
1,2-Dichloroethane-d4	88.2	73-130	%	05/13/2005 10:03						
Toluene-d8	96.6	81-114	%	05/13/2005 10:03						

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Attn.: Roger Batra

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Project: 42016308 Conoco Phillips # 0746 Received: 05/10/2005 17:10

Site: 3943 Broadway, Oakland

	Ba	tch QC Report		· · · · · · · · · · · · · · · · · · ·					
Prep(s): 5030B Method Blank MB: 2005/05/13-2A.62-044		Water	D	Test(s): 826 QC Batch # 2005/05/13-2A. Date Extracted: 05/13/2005 20:					
Compound	Conc.	RL	Unit	Analyzed	Flag				
GRO (C6-C12)	ND	50	ug/L	05/13/2005 20:44					
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	05/13/2005 20:44					
Benzene	ND	0.5] ug/L	05/13/2005 20:44					
Toluene	ND	0.5] ug/L	05/13/2005 20:44					
Ethylbenzene	ND	0.5] ug/L	05/13/2005 20:44					
Total xylenes	ND	1.0] ug/L	05/13/2005 20:44					
Ethanol	ND	50	ug/L	05/13/2005 20:44					
Surrogates(s)]						
1,2-Dichloroethane-d4	104.8	73-130	%	05/13/2005 20:44					
Toluene-d8	94.0	81-114) %	05/13/2005 20:44					

•••••••

.



Gas/BTEX Fuel Oxygenates by 8260B

TRC/Alton Geoscience-Concord

Attn.: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: 42016308 Conoco Phillips # 0746 Received: 05/10/2005 17:10

Site: 3943 Broadway, Oakland

		В	atch QC Re	port										
Prep(s): 5030B									Test(s):	8260B				
Laboratory Control Spik	e		Wate	•		QC Batch # 2005/05/13-1A.								
LCS 2005/05/13-1A. LCSD	62-037		Extracted: (005	Analyzed: 05/13/2005 09:									
Compound	Conc.	ug/L	Exp.Conc.	Reco	very %	RPD	Ctrl.Lin	nits %	Fla	ags				
· · · · F · · -	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD				
Methyl tert-butyl ether (MTBE) Benzene Toluene	24.2 24.0 23.2		25 25 25	96.8 96.0 92.8			65-165 69-129 70-130	20 20 20						
Surrogates(s) 1,2-Dichloroethane-d4 Toluene-d8	435 470		500 500	87.0 94.0			73-130 81-114							

•

Submission: 2005-05-0292

Test(s): 8260B

QC Batch # 2005/05/13-2A.62

Analyzed: 05/13/2005 20:18



Gas/BTEX Fuel Oxygenates by 8260B

TRC/Alton Geoscience-Concord

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Project: 42016308 Conoco Phillips # 0746 Received: 05/10/2005 17:10

Site: 3943 Broadway, Oakland

Batch QC Report

Water

Extracted: 05/13/2005

Prep(s): 5030B

Laboratory Control Spike

LCS 2005/05/13-2A.62-018 LCSD

Compound	Conc.	ug/L	Exp.Conc.	Reco	very %	RPD	Ctrl.Lin	nits %	Flags		
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	L <u>C</u> S	LCSD	
Methyl tert-butyl ether (MTBE) Benzene Toluene	26.5 22.9 21.9		25 25 25	106.0 91.6 87.6			65-165 69-129 70-130	20 20 20			
<i>Surrogates(s)</i> 1,2-Dichloroethane-d4 Toluene-d8	511 484		500 500	102.2 96.8			73-130 81-114				

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Project: 42016308 Conoco Phillips # 0746 Received: 05/10/2005 17:10

Site: 3943 Broadway, Oakland

Prep(s): 5030B		Batch QC Report		Test(s): 8260B
Matrix Spike (MS	/MSD)	Water	QC Bate	ch # 2005/05/13-1A.62
MS/MSD			Lab ID:	2005-05-0122 - 003
MS: 2005/05/13-	1A.62-059	Extracted: 05/13/2005	Analyzed:	05/13/2005 11:59
방법이 관람들이다.			Dilution:	1.00
MSD: 2005/05/13-	1A.62-025	Extracted: 05/13/2005	Analyzed:	05/13/2005 12:25
			Dilution:	1.00

Compound	_Conc.	u	g/L	Spk.Level	R	ecovery	%	Limit	<u>s %</u>	FI	ags
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Methyl tert-butyl ether	36.1	33.6	11.5	25	98.4	88.4	10.7	65-165	20	-	
Benzene	25.3	25.2	ND	25	101.2	100.8	0.4	69-129	20		
Toluene	25.3	24.1	ND	25	101.2	96.4	4.9	70-130	20		
Surrogate(s)							ĺ				
1,2-Dichloroethane-d4	404	404		500	80.8	80.8		73-130			
Toluene-d8	486	474		500	97.2	94.8		81-114			

•

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Attn .: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: 42016308 Conoco Phillips # 0746 Received: 05/10/2005 17:10

...

Site: 3943 Broadway, Oakland

		an an an Anna An Anna Anna	Ba	itch QC I	Repo	rt					
Prep(s): 5030B										Test(s	s): 8260B
Matrix Spike (MS / I	MSD)			Wate	r			QC Ba	tch # 2(005/05/1	3-2A.62
MS/MSD						··· ·	La	ıb ID:	200	5-05-00	72 - 001
MS: 2005/05/13-24	.62-006		Extract	ed: 05/13/	2005		Ar	nalyzed:		05/13/20	05 22:06
						en de la composition de la composition de la composition de la composition de la composition de la composition En la composition de la composition de la composition de la composition de la composition de la composition de la		lution:		4.011.01.04	1.00
MSD: 2005/05/13-2A	v.62-032		Extract	ed: 05/13/	2005		an stores t	nalyzed: lution:		05/13/20	05 22:32 1.00
Compound	Conc.	U	g/L	Spk.Level		Recovery	%	Lim	its %	F	lags
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD

Compound		<u>u</u> y,		ppk.cevel	IN IN	ecovery	/0	Linne	5 70		aya
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Methyl tert-butyl ether	50.5	55.5	24.7	25	103.2	123.2	17.7	65-165	20		
Benzene	25.3	27.3	ND	25	101.2	109.2	7.6	69-129	20		
Toluene	23.6	24.5	ND	25	94.4	98.0	3.7	70-130	20		Į
Surrogate(s)								ļ			
1,2-Dichloroethane-d4	484	525]	500	96.8	105.0	[73-130	(I		
Toluene-d8	470	495		500	94.0	99.0		81-114			

Submission: 2005-05-0292



Gas/BTEX Fuel Oxygenates by 8260B

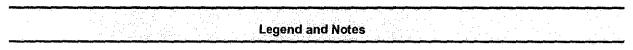
TRC/Alton Geoscience-Concord

Attn .: Roger Batra

1590 Solano Way, Suite A Concord, CA 94520 Phone: (925) 688-1200 Fax: (925) 688-0388

Project: 42016308 Conoco Phillips # 0746 Received: 05/10/2005 17:10

Site: 3943 Broadway, Oakland



Analysis Flag

L2

Reporting limits were raised due to high level of analyte present in the sample.

STL-San	Francisco						C	Coi	noc	oPl	hill	lips	s C	ha	in C)f C	us	toc	iy F	Red	or	d			11496
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Pleasanter	i, CA 94566				-		-		Atto	: Doe i	Hutci	ninao					Cor	юcaP	hillo	s Cas	Objo				
(925) 484-1919	926) 484-1096 fax	20	02.	-05	-02	-1	2			l South la Ana,				200			e national Anti-	ente l'est		el teres		Pasta a	PA	GE:	ا ofا
SAMPLENG COMPARY:		Valla Valoy	đ):		04	çói	ICC OF	મથાજ	site h	u ua ea				·······			, and the contract of the cont		61.004	LIDIK	1.5				
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Table 1

CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS

November 29, 2004 76 Station 0746

Date Sampled	TOC Elevation	Depth to Water	LPH Thickness	Ground- water Elevatior	Change in Elevation	TPH-G	TPPH 8260B	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE 8021B	MTBE 8260B	Comments
	(feet)	(feet)	(feet)	(feet)	(feet)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	
MW-1 11/29/04	80.54	7. 27	0.00	73.27	0.27		58	ND<0.50	ND<0.50	ND<0.50	ND<1.0		44	
MW-2 11/29/04	81.32													Unable to open
M W-3 11/29/04	81.41	9.15	0.00	72.26	0.14		9000	5.9	ND<5.0	45	ND<10		550	
MW-4 11/29/04	81.48	9.01	0.00	72.47	-0.52		120	ND<0.50	ND<0.50	0.52	ND<1.0		0.55	
MW-5 11/29/04	81.38	9.16	0.21	72.38	0.14			_						LPH in well
MW-6 11/29/04	79.94	7.01	0.00	72.93	0.53		ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0		4.8	
MW-7 11/29/04	81.64	8.21	0.00	73.43	0.11		62	ND<0.50	ND<0.50	ND<0.50	ND<1.0		3.6	
MW-8 11/29/04	81.41	9,88	0.00	71.53	0.16	~-	1500	ND<10	ND<10	ND<10	ND<20		1600	
MW-9 11/29/04	80.53	9.55	0.00	70.98	-0.17		690	0.72	ND<0.50	1.3	ND<1.0		160	
MW-10 11/ 2 9/04	81.61	12.58	0.00	69.03	-1.06		ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0		0.72	
MW-11 11/29/04	78.18	10.96	0.00	67.22	-0.86		63	ND<0.50	ND<0.50	1.0	2.5		ND<0.50	
MW-12 11/29/04	79.61	12.17	0.00	67.44	-2.33		64	0.68	ND<0.50	1.2	3.0		0.71	
RW-1														
0746								Page	1 of 2					

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Table 1 CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS November 29, 2004

76 Station 0746

Date Sampled	TOC Elevation	Depth to Water	LPH Thickness		Change in Elevation	трн-с	тррн 8260В	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE 8021B	MTBE 8260B	Comments
	(feet)	(feet)	(feet)	(feet)	(feet)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	 · · · · · · · · · · · · · · · · · · ·
RW-1 11/29/0	continued 4 80.63	8.23	0.00	7 2 .40	0.08		4500	46	ND<1.0	34	3.6		140	

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APPENDIX C

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CONOCOPHILLIPS

WATER QUALITY &	COMPLIANCE	Remediation Wastewater from Peur	pleum Product Facilities
Responsible Dept. ESD	Orig. Issue: 12/1/94	Latest Revision: 12/17/03	Page: 1

Form R-149: Authorization for Receipt of Remediation Wastewater @ ConocoPhillips's San Francisco Refinery at Rodeo

WASTEWATER TREATMENT PLANT (UNIT 100) OPERATORS:

This form below, if approved, serves as an acceptance document to process the wastewater at the San Francisco Refinery Wastewater Treatment Plant, Unit 100. The Requester is required to supply all of the necessary analytical and completely fill out the following table:

Requester's Name/Signature:	Namu: Ed Ralston	Sponting DRal				
Company:	ConocoPhillips	Date of Request: 5/12/2005				
Address:	76 Broadway, Sacramento, CA. 95818					
Telephone/Fax:	rhear 916-558-7633	PAX:916-558-7639				
Station No. and Location:	COP #250746, 3943 Broadway, Oakland, CA					
Description of Water Source:	Purge Water - DPE test					
Total Volume of Water/Solids Expected:	waar: 8,000 gallons	soud minimal				
Expected per-Delivery Volume/Frequency:	Volume: 8,000 gallons	Prequency: One time discharge				
Pesticides/Fish Toxicity Expected:	Perfizides: YOS NO	Feb Tox: Yes No				
Maximum Rate of Disposal (ESD)	6003	Gallons per Week				

The remediation wastewater described above has been reviewed for Federal and California Hazardons Waste characteristics.

This water is (circle one): recommended

nended) / not recommended for processing at the WWTP.

This form is valid untit:	8/14/05/1		, ,
ESD Signature: (A Jour Claitin	Date Recommended:	5/16/05
Operations Signature:	3.C. Unichano	Date Approved:	5/17/05

TRUCK DRIVERS: Please provide a copy of this R-149 form upon delivery of wastewater to Unit 100.

Driver's info:

Truck No.

. _____ pH at site_

UNIT 100 OPERATORS: Please fill out the portion below and forward this completed form to ESD in Room 111 of the Administration Building.

Date and time of delivery:	Delivered on:///	@ AM/PN	
Volume delivered:	gallons orbbL	pH	

NO FREE PRODUCT ACCEPTED

GRAVITY CFF-LOAD ONLY

Any questions? Call:	(510) 245-4403, (510);	(510) 245-4465 or	FAX (510) 245-4476.
ONYX/Mark Laliberte:	FAX: (707) 745-0510;	DIRECT: (707) 748-3722;	CELL: (510) 715-6532
TRC: Dennis Jensen; 21	Technology Drive, Irvine, CA 92618	; (949) 753-0101 (office); (949) 753-0111 (fax); djensen@tresolutions.com

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Revision Date: 9/4/03