TRC
Customer-Focused Solutions

May 24, 2005 TRC Project No. 42-0144-04

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

SITE: 76 SERVICE STATION NO. 5043
449 HEGENBERGER ROAD
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. 5043, located at 449 Hegenberger Road in Oakland, California. This action was performed in accordance with the work plan submitted by TRC on October 11, 2004. The work was conducted on April 8-9, 2005, and consisted of 24 continuous hours of DPE.

1.0 FIELD ACTIVITIES

1.1 Scope of Work

A 24-hour DPE event was performed on April 8-9, 2005. The DPE event was implemented to attempt to remove residual vapor-phase, adsorbed-phase and dissolved-phase hydrocarbons remaining in site soils.

1.2 Pre-Field Activities

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

1.3 Procedures

TRC used a mobile treatment system (MTS) to extract soil vapors from monitoring well MW-6. Liquid- and vapor-phase hydrocarbons were removed from the extraction well and separated at the MTS. The liquids were automatically transferred into an aboveground storage

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 well was 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 Horiba™ 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

Refer to Table 1 for tabulated MTS data, and Appendix A for field data sheets. The average flow rate was 6.6 cfm and average applied vacuum was 23 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 2,640 ppmv and 210 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 3,000 ppmv to 240 ppmv. Benzene concentrations ranged from 11 to 2.3 ppmv. MTBE concentrations were non-detect. Laboratory analytical TPH-g and benzene concentrations are plotted versus time in Figure 4. Vapor-phase TPH-g 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 1.77 pounds of TPH-g were removed from the extraction wells in 24 hours of operation. A total of 2,000 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

The 24-hour DPE event was moderately successful at removing vapor-phase petroleum hydrocarbons from the subsurface. Influent vapor concentrations dropped substantially in the first five hours of the event and slowly decreased during the subsequent 20 hours. However, overall influent concentrations were not high enough to allow for efficient hydrocarbon removal given the low flow rates obtainable given the soil conditions.

The influent concentrations and mass removal rates suggest that DPE is not a viable long-term remedial alternative for removing source hydrocarbons from this site.

Dissolved-phase hydrocarbon concentrations in the extraction well (MW-6) were lower after the MTS event. The decrease could be a result of the groundwater extraction activity. Analytical data collected during the next round of monitoring and sampling should indicate whether or not this event had a long-term decreasing effect on contaminant concentrations in groundwater at MW-6.

3.0 RECOMMENDATIONS

Given the lack of productivity of DPE activities during this test, TRC recommends that DPE not be considered a viable potential remediation technique at the site.

TRC recommends investigation of alternative remedial methods to obtain site closure.

4.0 LIST OF ATTACHMENTS

Figures:
1) Vicinity Map
2) Site Plan
3) System Concentration and Hydrocarbon Recovery Versus Time
4) Vapor-Phase TPH and Benzene Concentrations Versus Time

Tables:
1) Mobile Treatment System Vacuum Extraction Data
2) Vacuum Extraction Event Report - Summary Sheet

Appendices:
A) MTS Field Sheets
B) Laboratory Analytical Reports
C) Waste Manifest

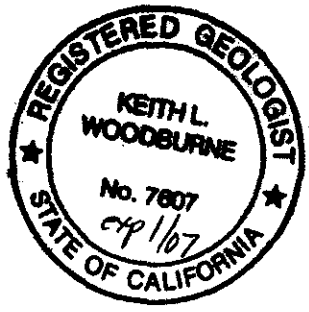
Should you have any questions regarding this report, please contact us at (925) 688-1200.

Sincerely,
TRC

Mark Trevor
Project Geologist

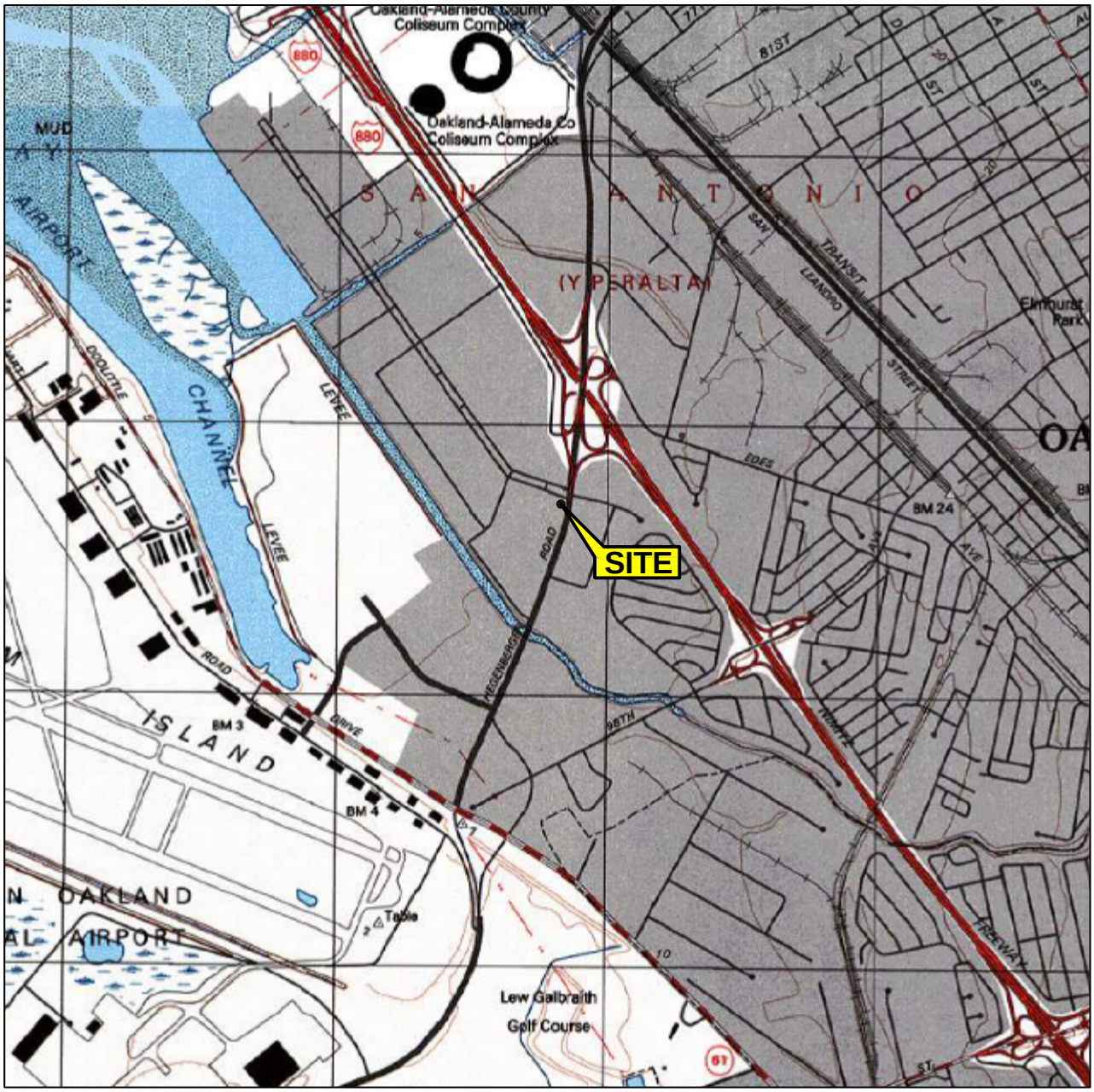
Keith Woodburne, R.G.
Senior Project Geologist

Roger Batra
Senior Project Manager



cc: Ms. Shelby Lathrop, ConocoPhillips (electronic upload)

FIGURES



1 MILE 3/4 1/2 1/4 0 1 MILE

SCALE 1 : 24,000

N

SOURCE:

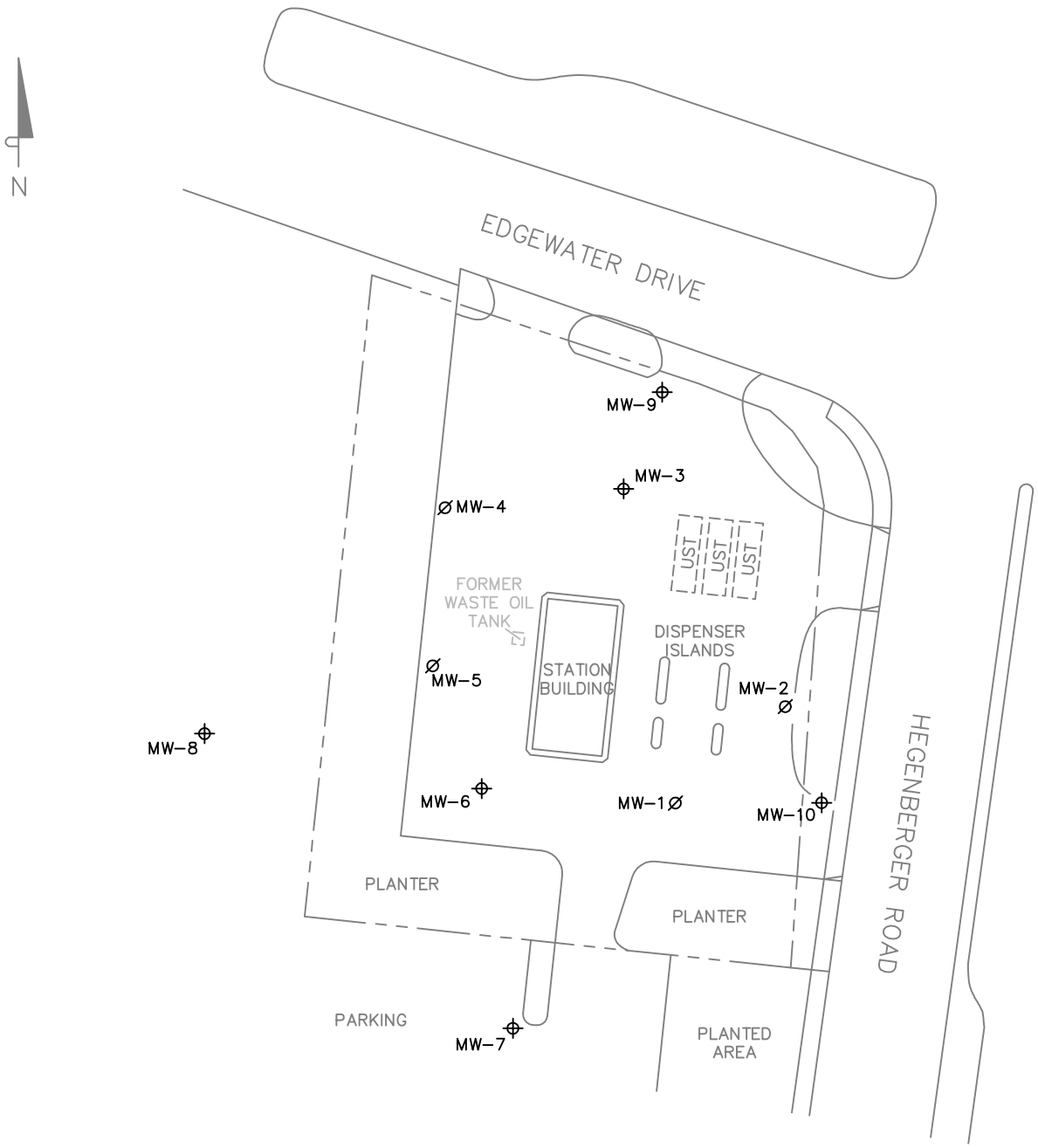
United States Geological Survey
7.5 Minute Topographic Maps:
San Leandro Quadrangle
California

VICINITY MAP

76 Service Station #5043
449 Hegenberger Road
Oakland, California

TRC

FIGURE 1



APPROXIMATE SCALE (FEET)

0 60 120

LEGEND

———	Approximate property line
MW-10 ⊕	Groundwater monitoring well
MW-5 ∅	Abandoned well

SOURCE: Site plan by Gettler-Ryan, May 2001.

SITE PLAN

76 Service Station #5043
449 Hegenberger Road
Oakland, California

TRC

FIGURE 2

SYSTEM CONCENTRATION AND HYDROCARBON RECOVERY VERSUS TIME

ConocoPhillips 5043

449 Hegenberger Road, Oakland CA

April 8-9, 2005

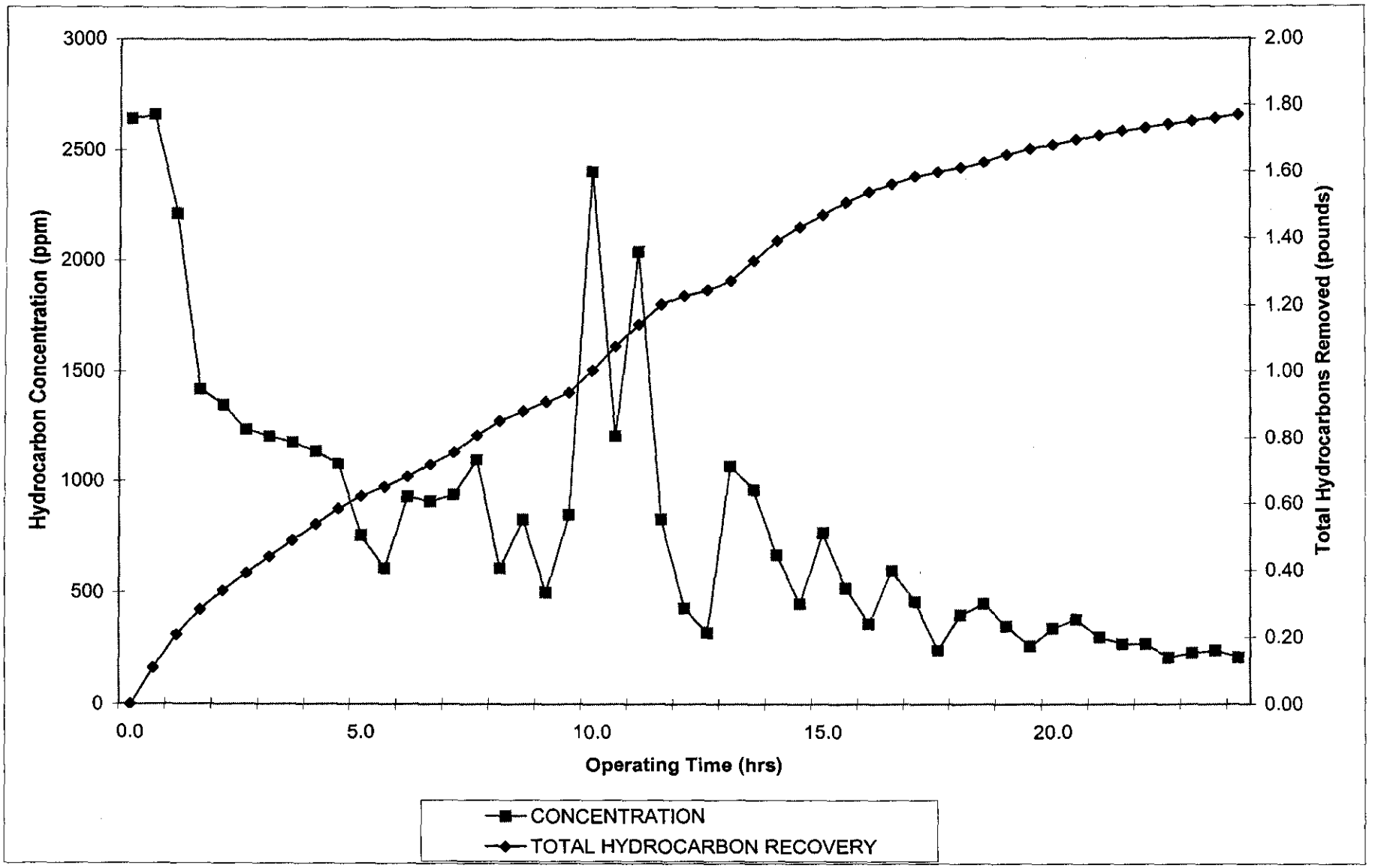


FIGURE 3

Vapor - Phase TPH and Benzene Concentrations Versus Time
ConocoPhillips 5043
449 Hegenberger Road, Oakland, CA
Oakland, 2004

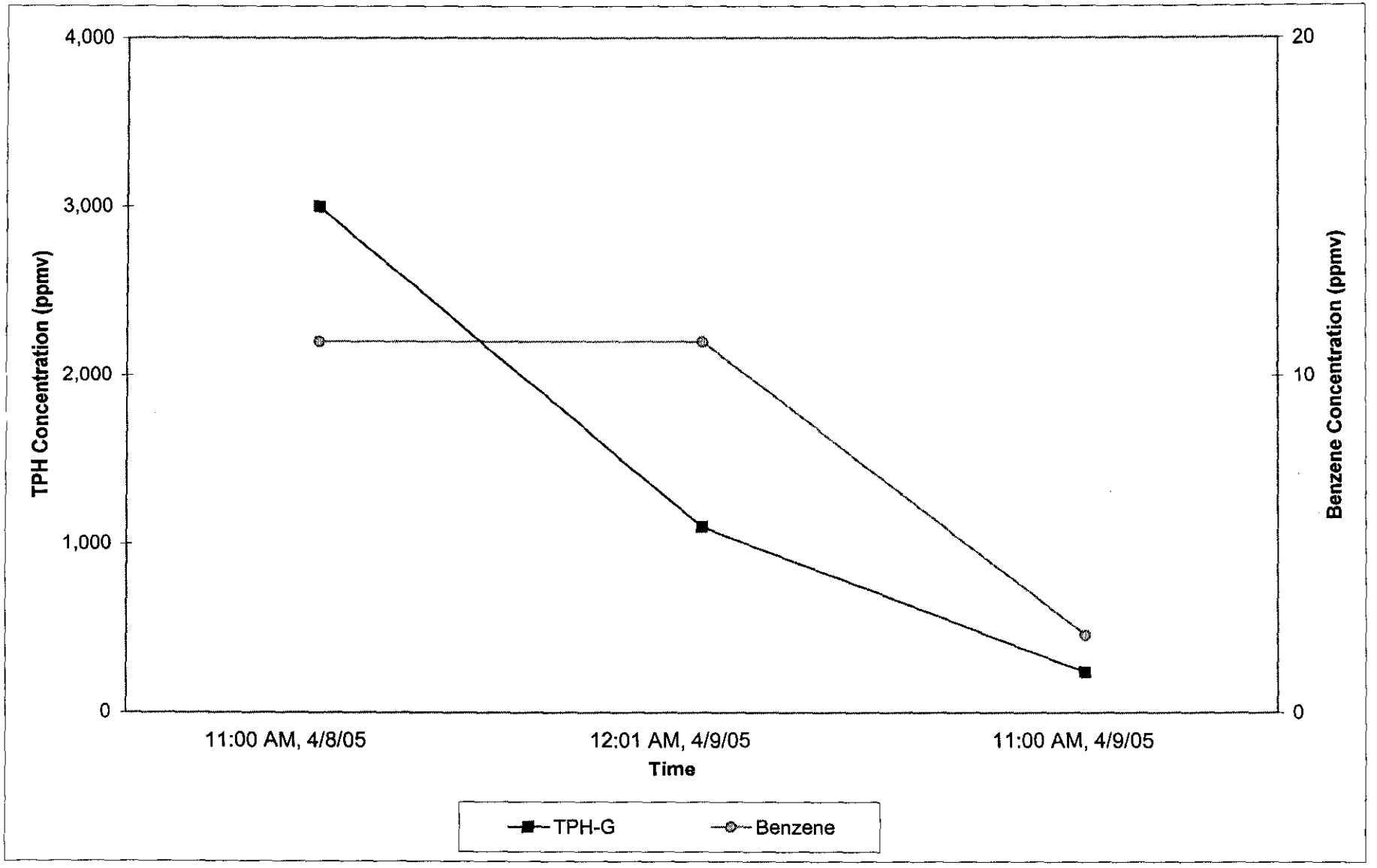


FIGURE 4

TABLES

Table 1

MOBILE TREATMENT SYSTEM VACUUM EXTRACTION DATA

ConocoPhillips 5043

449 Hegenberger Road, Oakland CA

April 8-9, 2005

				TOTAL SYSTEM MEASUREMENTS					
							CUMULATIVE HYDROCARBON RECOVERY		
DATE	TIME	ELAPSED TIME (MINUTES)	TOTAL TIME (HOURS)	INLET BLOWER VACUUM (IN OF Hg)	SYSTEM INLET FLOW* (CFM)	CONCENTRATION** (PPMV)	POUNDS	GALLONS*	EXTRACTION WELL OPEN
08-Apr-05	11:00	0.0	0.0	24.0	6	2640	0.00	0.00	MW-6
08-Apr-05	11:30	30.00	0.50	24.0	6	2660	0.11	0.02	MW-6
08-Apr-05	12:00	30.00	1.00	23.0	6	2210	0.21	0.03	MW-6
08-Apr-05	12:30	30.00	1.50	20.5	6	1420	0.28	0.05	MW-6
08-Apr-05	13:00	30.00	2.00	20.5	6	1350	0.34	0.05	MW-6
08-Apr-05	13:30	30.00	2.50	20.5	6	1240	0.39	0.06	MW-6
08-Apr-05	14:00	30.00	3.00	21.0	6	1210	0.44	0.07	MW-6
08-Apr-05	14:30	30.00	3.50	22.0	6	1180	0.49	0.08	MW-6
08-Apr-05	15:00	30.00	4.00	22.0	6	1140	0.54	0.09	MW-6
08-Apr-05	15:30	30.00	4.50	21.5	6	1080	0.58	0.09	MW-6
08-Apr-05	16:00	30.00	5.00	21.0	6	760	0.62	0.10	MW-6
08-Apr-05	16:30	30.00	5.50	21.0	6	610	0.65	0.10	MW-6
08-Apr-05	17:00	30.00	6.00	23.0	6	930	0.68	0.11	MW-6
08-Apr-05	17:30	30.00	6.50	21.5	6	910	0.72	0.11	MW-6
08-Apr-05	18:00	30.00	7.00	23.0	6	940	0.76	0.12	MW-6
08-Apr-05	18:30	30.00	7.50	22.5	9	1100	0.81	0.13	MW-6
08-Apr-05	19:00	30.00	8.00	21.5	6	610	0.85	0.14	MW-6
08-Apr-05	19:30	30.00	8.50	23.5	6	830	0.88	0.14	MW-6
08-Apr-05	20:00	30.00	9.00	22.5	6	500	0.91	0.15	MW-6
08-Apr-05	20:30	30.00	9.50	24.5	6	850	0.94	0.15	MW-6
08-Apr-05	21:00	30.00	10.00	24.8	6	2400	1.00	0.16	MW-6
08-Apr-05	21:30	30.00	10.50	25.3	6	1210	1.08	0.17	MW-6
08-Apr-05	22:00	30.00	11.00	25.2	6	2040	1.14	0.18	MW-6
08-Apr-05	22:30	30.00	11.50	24.4	6	830	1.20	0.19	MW-6
08-Apr-05	23:00	30.00	12.00	23.3	6	430	1.23	0.20	MW-6
08-Apr-05	23:30	30.00	12.50	22.0	6	320	1.24	0.20	MW-6
09-Apr-05	0:00	30.00	13.00	24.1	6	1070	1.27	0.20	MW-6
09-Apr-05	0:30	30.00	13.50	24.9	11	960	1.33	0.21	MW-6
09-Apr-05	1:00	30.00	14.00	23.3	11	670	1.39	0.22	MW-6
09-Apr-05	1:30	30.00	14.50	22.0	11	450	1.43	0.23	MW-6
09-Apr-05	2:00	30.00	15.00	25.4	6	770	1.47	0.23	MW-6
09-Apr-05	2:30	30.00	15.50	23.8	11	520	1.51	0.24	MW-6
09-Apr-05	3:00	30.00	16.00	22.2	9	360	1.54	0.25	MW-6
09-Apr-05	3:30	30.00	16.50	25.0	6	600	1.56	0.25	MW-6
09-Apr-05	4:00	30.00	17.00	24.0	6	460	1.58	0.25	MW-6
09-Apr-05	4:30	30.00	17.50	21.5	6	240	1.60	0.26	MW-6
09-Apr-05	5:00	30.00	18.00	24.5	6	400	1.61	0.26	MW-6
09-Apr-05	5:30	30.00	18.50	24.3	6	450	1.63	0.26	MW-6
09-Apr-05	6:00	30.00	19.00	22.7	11	350	1.65	0.26	MW-6
09-Apr-05	6:30	30.00	19.50	21.2	6	260	1.67	0.27	MW-6
09-Apr-05	7:00	30.00	20.00	24.7	6	340	1.68	0.27	MW-6
09-Apr-05	7:30	30.00	20.50	24.5	6	380	1.70	0.27	MW-6
09-Apr-05	8:00	30.00	21.00	23.0	6	300	1.71	0.27	MW-6
09-Apr-05	8:30	30.00	21.50	22.0	6	270	1.72	0.28	MW-6
09-Apr-05	9:00	30.00	22.00	22.5	6	270	1.73	0.28	MW-6
09-Apr-05	9:30	30.00	22.50	21.5	6	210	1.74	0.28	MW-6

Table 1

MOBILE TREATMENT SYSTEM VACUUM EXTRACTION DATA

ConocoPhillips 5043
449 Hegenberger Road, Oakland CA
April 8-9, 2005

DATE	TIME	ELAPSED TIME (MINUTES)	TOTAL TIME (HOURS)	TOTAL SYSTEM MEASUREMENTS					EXTRACTION WELL OPEN
				INLET BLOWER VACUUM (IN OF Hg)	SYSTEM INLET FLOW* (CFM)	CONCENTRATION** (PPMV)	CUMULATIVE HYDROCARBON RECOVERY		
							POUNDS	GALLONS*	
09-Apr-05	10:00	30.00	23.00	24.0	6	230	1.75	0.28	MW-6
09-Apr-05	10:30	30.00	23.50	23.0	6	240	1.76	0.28	MW-6
09-Apr-05	11:00	30.00	24.00	22.5	6	210	1.77	0.28	MW-6
				TOTAL HYDROCARBONS RECOVERED			**1.77**	**0.28**	
				TOTAL WATER RECOVERED (GALLONS)			**2,000**		

Notes

TPH = total petroleum hydrocarbons
CFM = cubic feet per minute
IN of Hg = inches of mercury
ppmv = parts per million by volume
-- = Unit down for extraction well transfer

* = Based on hydrocarbon density of 6.26 pounds per gallon.
** = Based on field Horiba OVA readings.

Table 2

TRC

Vacuum Extraction Event Report ***Summary Sheet***

76 Station 5043
449 Hegenberger Road
Oakland, California

BAAQMD # 262
NPDES# NA

VACUUM EXTRACTION PERFORMANCE

Date(s) of Event(s):	**4/8-9/05**
Total *Operating* Hours:	**24.00**
Technology Used:	**High-vacuum liquid-ring pump with Thermal Oxidizer**
Total Sytem Max/Min Influent Vapor Concentration (ppmv):	**2,660 / 210**
Total System Max/Min Flow Rate (cfm):	**11 / 6**
Total Max/Min Vacuum (in Hg):	**25.4 / 20.5**
Total Recovery Volume by Vapor (pounds/gallons):	**1.77 / 0.28**

LABORATORY ANALYSIS OF VAPOR SAMPLES

			Sample Result (ppmv)						
Well ID	Date	Time Sampled	TPH-G *	Benzene*	Toluene*	Ethyl Benzene*	Total Xylenes*	MTBE*	Comments
MW-6	08-Apr-05	11:00 AM	3,000	11	16	13	40	ND<0.7	Influent
MW-6	09-Apr-05	12:01 AM	1100	11	25	7.1	27	ND<0.7	Influent
MW-6	09-Apr-05	11:00 AM	240	2.3	6.8	3.1	13	ND<0.14	Influent

LABORATORY ANALYSIS OF GROUNDWATER SAMPLES

			Sample Result (ug/L)						
Well ID	Date	Time Sampled	TPH-G *	Benzene*	Toluene*	Ethyl Benzene*	Total Xylenes*	MTBE*	Comments
MW-6	10-Jan-05	NA	71,000	1,600	3,700	2,100	9,900	ND<50	
MW-6	09-May-05	3:09 PM	34,000	480	1,100	1,400	4,800	ND<50	

ADDITIONAL INFORMATION:

* = Analyzed by EPA method 8260B
PPMV = parts per million by volume
ug/L = micrograms per liter
cfm = cubic feet per minute
in Hg = inches of mercury
TPH-g = total petroleum hydrocarbons as gasoline
MtBE = Methyl tert-Butyl Ether
N.D. = not detectable
NA = not tested

Note: Total system concentration and flow measurements are taken on the pressure side of the blower after dilution.

Prepared by: _____ Mark Trevor, Project Geologist TRC Project No: 42-0144-04

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

APPENDIX A

TRC MTS FIELD DATA

Customer-Focused Solutions

Sheet: 1 / 1

Client: CONOCO PHILLIPS
Site: 76-STA-5043
Date: 4/8/05
MTS Unit #: 0934
Laptop Unit #: 3
Project No.: 42-0144-02
Task No.: 4140
Technician: LEE

CUMULATIVE WELLS		EXTRACTION WELL # 1		EXTRACTION WELL # 2
TOTALIZER START (gallons):	Time:	WELL ID:	MW-6	
TOTALIZER END (gallons):	Time:	DTW (ft):	2.40	
STACK HC CONCENTRATION (ppmv):	Time: 1600 HORIBA "OFF"	DEPTH to FP (ft):	2.39	
Manifold Temp		TOTAL DEPTH(ft.):	12.75'	
		CASING DIAM. (in):	2"	

	VACUUM SIDE DATA						PRESSURE SIDE DATA					EXTRACTION WELL # 1					EXTRACTION WELL # 2				
Time (24 hr.)	Total Well Flow DP (in. H2O)	Total Well Flow Rate (scfm)	Total Well Inf. Conc. (ppmv)	Manifold Vacuum (in. of Hg)	H2O Temp	Temp	System Flow DP (in. H2O)	System Flow Rate (scfm)	System Inf. Conc. (ppm)	System Temp (deg. F)	Extraction wells open	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)
1120	62			24.0	107	100	.01	6	2640	1443	#1	.01				10'					
1130	62			24.0	130	129	.01	6	2660	1445		.01				11.0					
1200	67			23.0	130	136	.01	6	2210	1446		.01									
1230	67			20.5	140	135	.02	6	1420	1448		.02									
1300	68			20.5	140	140	.01	6	1350	1446											
1330	68			20.5	145	146	.01	6	1240	1448											
1400	69			21.0	145	148	.01	6	1210	1449											
1430	67			22.0	120	125	.01	6	1180	1444											
1500	66			22.0	130	125	.01	6	1140	1441											
1530	64			21.5	135	125	.01	6	1080	1449											
1600	63			21.0	142	134	.01	6	760	1445											
1630	62			21.0	148	138	.01	6	610	1446											
1700	62			23.0	120	138	.01	6	930	1453											
1730	61			21.5	130	125	.01	6	910	1442											
1800	61			23.0	130	125	.01	6	940	1444											
1830	60			22.5	125	112	.02	9	1100	1443											
1900	58			21.5	135	112	.01	6	610	1447											
1930	59			23.5	110	100	.01	6	830	1448											
2000	56			22.5	125	96	.01	6	500	1451											
2030	56			24.5	92	98	.01	6	850	1450											

NOTES: 1415 FILLED SEAL H2O TANK
1645 FILLED SEAL WATER TANK, SEAL WATER TANK BLOW DOWN 1745, VENTING SMALL AMOUNT AT WELL HEAD FOR FLOW. (1815) (1845 STOPPED VENTING AT WELL HORIB DROPPED ↑ TO 700 ppm (1915 BLEW DOWN SEAL H2O TANK

Rev10/03

TRC MTS FIELD DATA

Customer-Focused Solutions

Client: CONOCO PHILLIPS
Site: 76 STA 5043
Date: 4/8/08
MTS Unit #: 0934
Laptop Unit #: 3
Sheet: 2 / 1
Project No.: 42-0144-02
Task No.: VA03
Technician: CEE

CUMULATIVE WELLS

TOTALIZER START (gallons): Time:
TOTALIZER END (gallons): Time:
STACK HC CONCENTRATION (ppmv): "0" Time: 2:30 Am

EXTRACTION WELL # 1

WELL ID: MW-6
DTW (ft):
DEPTH to FP (ft):
TOTAL DEPTH(ft.):
CASING DIAM. (in): 2"

EXTRACTION WELL # 2

	VACUUM SIDE DATA						PRESSURE SIDE DATA					EXTRACTION WELL # 1					EXTRACTION WELL # 2				
Time (24 hr.)	Total Well Flow DP (in. H2O)	Total Well Flow Rate (scfm)	Total Well Inf. Conc. (ppmv)	Manifold Vacuum (in. of Hg)	H2O Temp	Temp	System Flow DP (in. H2O)	System Flow Rate (scfm)	System Inf. Conc. (ppm)	System Temp (deg. F)	Extraction wells open	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)
21:00	56			24.8	80	125	.01	6	2460	1453	1					11'					
21:30	57			25.3	85	78°	.01	6	1210	1477											
22:00	57			25.2	88	80°	.01	6	2040	1443											
22:30	56			24.4	101	80°	.01	6	830	1445											
23:00	55°			23.3	114°	80°	.01	6	430	1441											
23:30	55°			22.0	128°	95°	.01	6	320	1447						17'					
~~23:50~~	~~55°~~			~~22.0~~	~~134°~~	~~124°~~	~~.02~~				1										
24:01	55°			24.1	95°	110°	.01	6	1070	1444											
00:30	56			24.9	94°	88°	.03	11	960	1446											
1:00	56			23.3	115°	95°	.03	11	670	1443		"									
1:30	56			22.0	134°	114°	.03	11	450	1450		"									
~~1:45~~	~~56~~			~~25.0~~	~~80°~~	~~108°~~	~~.01~~	~~6~~	~~770~~	~~1452~~		"									
1:50	56			25.1	80°	100°	.01	6	980	1441		"									
2:00	56			25.4	80°	95°	.01	6	770	1443		"									
2:30	56			23.8	110°	88°	.03	11	520	1443											
3:00	56			22.2	130°	110°	.02	9	360	1443		"									
3:30	56			25.0	85°	108	.01	6	600	1447		"									
4:00	56			24.0	109°	92°	.01	6	460	1445		"									
4:30	56			21.5	135°	106	.01	6	240	1448											
5:00	56			24.5	85°	115°	.01	6	400	1442											

Manifold Temp

Remarks written across the Extraction Well columns:
- 23:50: ↓ Venting thru well head Valve
- 24:01: Tedlar taken (no venting) MW-6 (Venting was closed 5 min for Tedlar)
- 00:30: Vented
- 1:45: Cool seal tank Closed Venting at 1:35 am
- 1:50: Reopen at 1:50 Am (Venting)
- 2:30: (Still Vented at well Head)
- 3:00: (3:05 cooled Down seal H2O again)
- 4:30: Closed Venting 4:01

NOTES: Readings immediately rise with Venting every time
Closed Vent at well head to take Tedlar MW-6 at 12:01 Am. (00:01)
Thru the night about every 1½ hrs I had to unload seal water (Hot) and Add Cool Fresh H2O
ACTUAL Well H2O gals while venting = 6" or 18 gal hr.

eng/mts/template/fieldsheet.xls

Rev10/03

Client: Conoco Phillips
Site: 76 Station # 5043
Date: 4/9/05

TRC MTS FIELD DATA

Customer-Focused Solutions

MTS Unit #: 0934
Laptop Unit #: 3

Sheet: 3 / 1
Project No.: 42 0144 02
Task No.: VA03
Technician: RG, Lee

CUMULATIVE WELLS												EXTRACTION WELL # 1					EXTRACTION WELL # 2				
TOTALIZER START (gallons):			Time:									WELL ID: MW-6									
TOTALIZER END (gallons):			Time:									DTW (ft):									
STACK HC CONCENTRATION (ppmv):			Time: 1030 HORIBA ~ "0"									DEPTH to FP (ft):									
												TOTAL DEPTH(ft.):									
												CASING DIAM. (in): 2"									
												Stinger to be 10 - 15'									
	Manifold Temp	VACUUM SIDE DATA						PRESSURE SIDE DATA													
Time (24 hr.)	Total Well Flow DP (in. H2O)	Total Well Flow Rate (scfm)	Total Well Inf. Conc. (ppmv)	Manifold Vacuum (in. of Hg)	Seal H2O Temp	Temp	System Flow DP (in. H2O)	System Flow Rate (scfm)	System Inf. Conc. (ppm)	System Temp (deg. F)	Extraction wells open:	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)
0530				24.3	100°	85°	.01	6	450	1443	#1	"Vented at well head"									
0620				22.7	123	98°	.03	11	350	1450											
0630				21.2	142°	1447	.01	6	260	1452											
0700				24.7	88°	118	.01	6	340	1446											
0730	59			24.5	105	96	.01	6	380	1443											
0800	59			23.0	125	117	.01	6	300	1442											
0830	60			22.0	135	129	.01	6	270	1443											
0900	60			22.5	120	114	.01	6	270	1442											
0930	58			21.5	145	143	.01	6	210	1446											
1000	62			24.0	105	120	.01	6	230	1450											
1030	60			23.0	122	116	.01	6	240	1448											
1100	60			22.5	135	122	.01	6	210	1450											

NOTES: SHUT DOWN UNIT AT 1105 DTW 11.40. 1130 TOOK WATER SAMPLES 1100 TOOK INFLUENT & EFFLUENT SAMPLES TO LAB

APPENDIX B

SEVERN TRENT STL

Submission#: 2005-04-0239

TRC/Alton Geoscience-Concord

April 22, 2005

1590 Solano Way, Suite A
Concord, CA 94520

Attn.: Roger Batra

Project#: 41050001FA20
Project: Conoco Phillips #5043

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,

Dimple Sharma
Project Manager

SEVERN TRENT STL

Submission: 2005-04-0239

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: 41050001FA20
Conoco Phillips #5043

Received: 04/08/2005 17:10

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
INFLUENT VAPOR MW-6	04/08/2005 11:00	Air	1

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: 41050001FA20
Conoco Phillips #5043

Received: 04/08/2005 17:10

Prep(s): 5030B
Test(s): 8260B

Sample ID: **INFLUENT VAPOR MW-6**
Lab ID: 2005-04-0239 - 1

Sampled: 04/08/2005 11:00
Extracted: 4/9/2005 12:49

Matrix: Air
QC Batch#: 2005/04/09-1B.64

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
GRO (C6-C12)	3000	1.6	ppmv	5.00	04/09/2005 12:49	
Benzene	11	1.6	ppmv	5.00	04/09/2005 12:49	
Toluene	16	1.3	ppmv	5.00	04/09/2005 12:49	
Ethylbenzene	13	1.2	ppmv	5.00	04/09/2005 12:49	
Total xylenes	40	1.2	ppmv	5.00	04/09/2005 12:49	
Methyl tert-butyl ether (MTBE)	ND	0.70	ppmv	5.00	04/09/2005 12:49	
Ethanol	ND	130	ppmv	5.00	04/09/2005 12:49	
Surrogate(s)						
1,2-Dichloroethane-d4	112.3	72-128	%	5.00	04/09/2005 12:49	
Toluene-d8	97.4	80-113	%	5.00	04/09/2005 12:49	

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: 41050001FA20
Conoco Phillips #5043

Received: 04/08/2005 17:10

Batch QC Report

Prep(s): 5030B
Method Blank
MB: 2005/04/09-1B.64-018

Water

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	
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	
Surrogates(s)					
1,2-Dichloroethane-d4	112.6	73-130	%	04/09/2005 08:18	
Toluene-d8	99.4	81-114	%	04/09/2005 08:18	

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: 41050001FA20
Conoco Phillips #5043

Received: 04/08/2005 17:10

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike **Water** **QC Batch # 2005/04/09-1B.64**

LCS 2005/04/09-1B.64-056 Extracted: 04/09/2005 Analyzed: 04/09/2005 07:56
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Methyl tert-butyl ether (MTBE)	26.0		25	104.0			65-165	20		
Benzene	26.0		25	104.0			69-129	20		
Toluene	24.2		25	96.8			70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	528		500	105.6			73-130			
Toluene-d8	503		500	100.6			81-114			

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: 41050001FA20
Conoco Phillips #5043

Received: 04/08/2005 17:10

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2005/04/09-1B.64**

MS/MSD

Lab ID: 2005-04-0097 - 003

MS: 2005/04/09-1B.64-013 Extracted: 04/09/2005 Analyzed: 04/09/2005 09:13

Dilution: 1.00

MSD: 2005/04/09-1B.64-034 Extracted: 04/09/2005 Analyzed: 04/09/2005 09:34

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		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		500	112.4	115.6		73-130			
Toluene-d8	507	505		500	101.4	101.0		81-114			

SEVERN TRENT STL

Submission: 2005-04-0239

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: 41050001FA20
Conoco Phillips #5043

Received: 04/08/2005 17:10

Legend and Notes

Analysis Flag

L2

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

Chain of Custody Record

STL-4124 (0901)

SEVERN TRENT STL
Severn Trent Laboratories, Inc.

2005-04-0239

114016

Client	CONOCO PHILLIPS
Address	5052 COMMERCIAL CIRCLE
City / State / Zip Code	
Project Name and Location (State)	76 STATION - 5043
Contract/Purchase Order/Quote No.	
Project Manager	ROGER BARTA
Telephone Number (Area Code)/Fax Number	925-688-2466
Site Contact	MARK TREVOR
Lab Contact	BETH RILEY
Carrier/Waybill Number	
Date	4/8/05
Lab Number	
Chain of Custody Number	164400
Page	1 of 1

Matrix: Air, Aqueous, Sed., Soil

Containers & Preservatives: Unpres., H2SO4, HNO3, HCl, NaOH, ZnAc/NaOH

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix	Containers & Preservatives	TEDLAR	TPPH	BETEX	MTBE	ETHANOL (8260B)	Special Instructions/ Conditions of Receipt
INFLUENT VAPOR [illegible] 6	4/8/05	11:00			X	X	X	X	X	19°C

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other NORMAL

QC Requirements (Specify)

	Signature	Date	Time
1. Relinquished By	Lee Dillinger	4/8/05	1605
1. Received By	[signature]	4/8/05	1610
2. Relinquished By	[signature]	4-8-05	1710
2. Received By	Tracy [signature]	4/8/05	1710
3. Relinquished By			
3. Received By			

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

SEVERN TRENT STL

Submission#: 2005-04-0261

TRC/Alton Geoscience-Concord

April 21, 2005

1590 Solano Way, Suite A
Concord, CA 94520

Attn.: Roger Batra
Project: Conoco Phillips #5043
Site: 449 Hegenberger Rd., Oakland

Attached is our report for your samples received on 04/11/2005 10:25
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 05/26/2005 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,

Dimple Sharma
Project Manager

SEVERN TRENT STL

Submission: 2005-04-0261

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: Conoco Phillips #5043

Received: 04/11/2005 10:25

Site: 449 Hegenberger Rd., Oakland

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
INFLUENT VAPOR MW-6	04/09/2005 00:01	Air	1
INFLUENT VAPOR MW-6	04/09/2005 11:00	Air	2
EFFLUENT VAPOR MW-6	04/09/2005 11:00	Air	3

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: Conoco Phillips #5043

Received: 04/11/2005 10:25

Site: 449 Hegenberger Rd., Oakland

Prep(s): 5030B

Test(s): 8260B

Sample ID: **INFLUENT VAPOR MW-6**

Lab ID: 2005-04-0261 - 1

Sampled: 04/09/2005 00:01

Extracted: 4/11/2005 20:57
4/13/2005 10:11

Matrix: Air

QC Batch#: 2005/04/11-2B.66
2005/04/13-1B.64

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
GRO (C6-C12)	1100	70	ppmv	5.00	04/11/2005 20:57	
Benzene	11	1.6	ppmv	5.00	04/11/2005 20:57	
Toluene	25	1.3	ppmv	5.00	04/11/2005 20:57	
Ethylbenzene	7.1	1.2	ppmv	5.00	04/11/2005 20:57	
Total xylenes	27	1.2	ppmv	5.00	04/11/2005 20:57	
Methyl tert-butyl ether (MTBE)	ND	0.70	ppmv	5.00	04/11/2005 20:57	
Ethanol	ND	130	ppmv	5.00	04/13/2005 10:11	H2
Surrogate(s)						
1,2-Dichloroethane-d4	103.8	72-128	%	5.00	04/13/2005 10:11	H2
1,2-Dichloroethane-d4	94.9	72-128	%	5.00	04/11/2005 20:57	
Toluene-d8	91.9	80-113	%	5.00	04/13/2005 10:11	H2
Toluene-d8	94.0	80-113	%	5.00	04/11/2005 20:57	

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: Conoco Phillips #5043

Received: 04/11/2005 10:25

Site: 449 Hegenberger Rd., Oakland

Prep(s):	5030B	Test(s):	8260B
Sample ID:	**INFLUENT VAPOR MW-6**	Lab ID:	2005-04-0261 - 2
Sampled:	04/09/2005 11:00	Extracted:	4/11/2005 21:23 4/13/2005 10:32
Matrix:	Air	QC Batch#:	2005/04/11-2B.66 2005/04/13-1B.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
GRO (C6-C12)	240	14	ppmv	1.00	04/11/2005 21:23	
Benzene	2.3	0.31	ppmv	1.00	04/11/2005 21:23	
Toluene	6.8	0.26	ppmv	1.00	04/11/2005 21:23	
Ethylbenzene	3.1	0.23	ppmv	1.00	04/11/2005 21:23	
Total xylenes	13	0.23	ppmv	1.00	04/11/2005 21:23	
Methyl tert-butyl ether (MTBE)	ND	0.14	ppmv	1.00	04/11/2005 21:23	
Ethanol	ND	25	ppmv	1.00	04/13/2005 10:32	H2
Surrogate(s)						
1,2-Dichloroethane-d4	106.3	72-128	%	1.00	04/13/2005 10:32	H2
1,2-Dichloroethane-d4	93.9	72-128	%	1.00	04/11/2005 21:23	
Toluene-d8	97.3	80-113	%	1.00	04/13/2005 10:32	H2
Toluene-d8	99.0	80-113	%	1.00	04/11/2005 21:23	

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: Conoco Phillips #5043

Received: 04/11/2005 10:25

Site: 449 Hegenberger Rd., Oakland

Prep(s):	5030B	Test(s):	8260B
Sample ID:	**EFFLUENT VAPOR MW-6**	Lab ID:	2005-04-0261 - 3
Sampled:	04/09/2005 11:00	Extracted:	4/11/2005 21:48 4/13/2005 10:54
Matrix:	Air	QC Batch#:	2005/04/11-2B.66 2005/04/13-1B.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
GRO (C6-C12)	ND	14	ppmv	1.00	04/11/2005 21:48	
Benzene	ND	0.31	ppmv	1.00	04/11/2005 21:48	
Toluene	ND	0.26	ppmv	1.00	04/11/2005 21:48	
Ethylbenzene	ND	0.23	ppmv	1.00	04/11/2005 21:48	
Total xylenes	ND	0.23	ppmv	1.00	04/11/2005 21:48	
Methyl tert-butyl ether (MTBE)	ND	0.14	ppmv	1.00	04/11/2005 21:48	
Ethanol	ND	25	ppmv	1.00	04/13/2005 10:54	H2
Surrogate(s)						
1,2-Dichloroethane-d4	107.5	72-128	%	1.00	04/13/2005 10:54	H2
1,2-Dichloroethane-d4	94.0	72-128	%	1.00	04/11/2005 21:48	
Toluene-d8	96.9	80-113	%	1.00	04/13/2005 10:54	H2
Toluene-d8	100.6	80-113	%	1.00	04/11/2005 21:48	

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: Conoco Phillips #5043

Received: 04/11/2005 10:25

Site: 449 Hegenberger Rd., Oakland

Batch QC Report

Prep(s): 5030B — Test(s): 8260B

Method Blank — **Water** — **QC Batch # 2005/04/11-2B.66**

MB: 2005/04/11-2B.66-046 — Date Extracted: 04/11/2005 18:46

Compound	Conc.	RL	Unit	Analyzed	Flag
GRO (C6-C12)	ND	50	ug/L	04/11/2005 18:46	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	04/11/2005 18:46	
Benzene	ND	0.5	ug/L	04/11/2005 18:46	
Toluene	ND	0.5	ug/L	04/11/2005 18:46	
Ethylbenzene	ND	0.5	ug/L	04/11/2005 18:46	
Total xylenes	ND	1.0	ug/L	04/11/2005 18:46	
Ethanol	ND	50	ug/L	04/11/2005 18:46	
Surrogates(s)					
1,2-Dichloroethane-d4	96.6	73-130	%	04/11/2005 18:46	
Toluene-d8	98.0	81-114	%	04/11/2005 18:46	

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: Conoco Phillips #5043

Received: 04/11/2005 10:25

Site: 449 Hegenberger Rd., Oakland

Batch QC Report

Prep(s): 5030B — Test(s): 8260B

Method Blank — **Water** — **QC Batch # 2005/04/13-1B.64**

MB: 2005/04/13-1B.64-039 — Date Extracted: 04/13/2005 08:39

Compound	Conc.	RL	Unit	Analyzed	Flag
GRO (C6-C12)	ND	50	ug/L	04/13/2005 08:39	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	04/13/2005 08:39	
Benzene	ND	0.5	ug/L	04/13/2005 08:39	
Toluene	ND	0.5	ug/L	04/13/2005 08:39	
Ethylbenzene	ND	0.5	ug/L	04/13/2005 08:39	
Total xylenes	ND	1.0	ug/L	04/13/2005 08:39	
Ethanol	ND	50	ug/L	04/13/2005 08:39	
Surrogates(s)					
1,2-Dichloroethane-d4	107.8	73-130	%	04/13/2005 08:39	
Toluene-d8	93.2	81-114	%	04/13/2005 08:39	

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: Conoco Phillips #5043

Received: 04/11/2005 10:25

Site: 449 Hegenberger Rd., Oakland

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike **Water** **QC Batch # 2005/04/11-2B.66**

LCS 2005/04/11-2B.66-021 Extracted: 04/11/2005 Analyzed: 04/11/2005 18:21

LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Methyl tert-butyl ether (MTBE)	24.8		25	99.2			65-165	20		
Benzene	21.2		25	84.8			69-129	20		
Toluene	24.3		25	97.2			70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	462		500	92.4			73-130			
Toluene-d8	490		500	98.0			81-114			

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: Conoco Phillips #5043

Received: 04/11/2005 10:25

Site: 449 Hegenberger Rd., Oakland

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike **Water** **QC Batch # 2005/04/13-1B.64**

LCS 2005/04/13-1B.64-017 Extracted: 04/13/2005 Analyzed: 04/13/2005 08:17

LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Methyl tert-butyl ether (MTBE)	25.3		25	101.2			65-165	20		
Benzene	28.6		25	114.4			69-129	20		
Toluene	29.2		25	116.8			70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	499		500	99.8			73-130			
Toluene-d8	475		500	95.0			81-114			

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: Conoco Phillips #5043

Received: 04/11/2005 10:25

Site: 449 Hegenberger Rd., Oakland

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2005/04/11-2B.66**

MS/MSD

Lab ID: 2005-04-0156 - 001

MS: 2005/04/11-2B.66-047 Extracted: 04/11/2005 Analyzed: 04/11/2005 19:42

Dilution: 1.00

MSD: 2005/04/11-2B.66-048 Extracted: 04/11/2005 Analyzed: 04/11/2005 20:07

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	24.5	23.6	ND	25	98.0	94.4	3.7	69-129	20		
Toluene	28.0	26.8	ND	25	112.0	107.2	4.4	70-130	20		
Methyl tert-butyl ether	63.4	61.9	31.2	25	128.8	122.8	4.8	65-165	20		
Surrogate(s)											
1,2-Dichloroethane-d4	496	492		500	99.2	98.4		73-130			
Toluene-d8	541	528		500	108.2	105.6		81-114			

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: Conoco Phillips #5043

Received: 04/11/2005 10:25
Site: 449 Hegenberger Rd., Oakland

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2005/04/13-1B.64**

MS/MSD

Lab ID: 2005-04-0097 - 001

MS: 2005/04/13-1B.64-037 Extracted: 04/13/2005 Analyzed: 04/13/2005 11:37
Dilution: 1.00

MSD: 2005/04/13-1B.64-059 Extracted: 04/13/2005 Analyzed: 04/13/2005 11:59
Dilution: 1.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Methyl tert-butyl ether	67.9	69.4	39.1	25	115.2	121.2	5.1	65-165	20		
Benzene	23.5	23.1	ND	25	94.0	92.4	1.7	69-129	20		
Toluene	23.5	23.4	ND	25	94.0	93.6	0.4	70-130	20		
Surrogate(s)											
1,2-Dichloroethane-d4	518	537		500	103.5	107.4		73-130			
Toluene-d8	458	465		500	91.5	93.0		81-114			

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: Conoco Phillips #5043

Received: 04/11/2005 10:25

Site: 449 Hegenberger Rd., Oakland

Legend and Notes

Analysis Flag

L2

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

Result Flag

H2

Analyzed out of holding time.

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL 4124 (0801)

2005-04-0261

114051

Client	Project Manager	Date	Chain of Custody Number
CONOCO PHILLIPS	ROGER BARTA	4/9/05	163982
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
5052 COMMERCIAL CIRCLE	925-688-2466		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
	MARK TREVER	BETH RILEY	
Project Name and Location (State)	**Carrier/Waybill Number**		
76 STATION - 5043			
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Other	Containers & Preservatives: Unpres.	H_2SO_4	HNO3	HCl	NaOH	ZnAc/NaOH	Other	Analysis (Attach list if more space is needed): TPPH	BETEX	MTBE	ETHANOL (8260B)	Special Instructions/ Conditions of Receipt
INFLUENT VAPOR MW-6	4/9	0001	X											X TEDLAR	X	X	X	X	
INFLUENT VAPOR MW-6	4/9	1100												X	X	X	X	X	
EFFLUENT VAPOR MW-6	4/9	1100												X	X	X	X	X	

Possible Hazard Identification

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other NORMAL

QC Requirements (Specify)

1. Relinquished By	Date	Time	1. Received By	Date	Time
Lee Dillingham	4/11/05	1025	Joann Mullen	4/11/05	1025
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

DISTRIBUTION: WHITE - Returned to Client with Report. CANARY - Stays with the Sample. PINK - Field Copy

SEVERN TRENT STL

Submission#: 2005-05-0293

TRC/Alton Geoscience-Concord

May 13, 2005

1590 Solano Way, Suite A
Concord, CA 94520

Attn.: Roger Batra

Project#: 42014408
Project: Conoco Phillips # 5043
Site: 449 Hegenberger Rd, 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,

Dimple Sharma
Project Manager

SEVERN TRENT STL

Submission: 2005-05-0293

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: 42014408
Conoco Phillips # 5043

Received: 05/10/2005 17:10

Site: 449 Hegenberger Rd, Oakland

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-6	05/09/2005 15:09	Water	1

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: 42014408
Conoco Phillips # 5043

Received: 05/10/2005 17:10

Site: 449 Hegenberger Rd, Oakland

Prep(s): 5030B
Test(s): 8260B
Sample ID: **MW-6**
Lab ID: 2005-05-0293 - 1
Sampled: 05/09/2005 15:09
Extracted: 5/13/2005 13:44
Matrix: Water
QC Batch#: 2005/05/13-1A.62
Analysis Flag: L2, pH: <2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
GRO (C6-C12)	34000	5000	ug/L	100.00	05/13/2005 13:44	
Benzene	480	50	ug/L	100.00	05/13/2005 13:44	
Toluene	1100	50	ug/L	100.00	05/13/2005 13:44	
Ethylbenzene	1400	50	ug/L	100.00	05/13/2005 13:44	
Total xylenes	4800	100	ug/L	100.00	05/13/2005 13:44	
Methyl tert-butyl ether (MTBE)	ND	50	ug/L	100.00	05/13/2005 13:44	
Ethanol	ND	5000	ug/L	100.00	05/13/2005 13:44	
Surrogate(s)						
1,2-Dichloroethane-d4	87.3	73-130	%	100.00	05/13/2005 13:44	
Toluene-d8	93.2	81-114	%	100.00	05/13/2005 13:44	

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: 42014408
Conoco Phillips # 5043

Received: 05/10/2005 17:10

Site: 449 Hegenberger Rd, Oakland

Batch QC Report

Prep(s): 5030B — Test(s): 8260B

Method Blank — **Water** — **QC Batch # 2005/05/13-1A.62**

MB: 2005/05/13-1A.62-003 — Date Extracted: 05/13/2005 10:03

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	

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: 42014408
Conoco Phillips # 5043

Received: 05/10/2005 17:10

Site: 449 Hegenberger Rd, Oakland

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike **Water** **QC Batch # 2005/05/13-1A.62**

LCS 2005/05/13-1A.62-037 Extracted: 05/13/2005 Analyzed: 05/13/2005 09:37
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Methyl tert-butyl ether (MTBE)	24.2		25	96.8			65-165	20		
Benzene	24.0		25	96.0			69-129	20		
Toluene	23.2		25	92.8			70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	435		500	87.0			73-130			
Toluene-d8	470		500	94.0			81-114			

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: 42014408
Conoco Phillips # 5043

Received: 05/10/2005 17:10

Site: 449 Hegenberger Rd, Oakland

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Matrix Spike (MS / MSD) **Water** **QC Batch # 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
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. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	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)											
1,2-Dichloroethane-d4	404	404		500	80.8	80.8		73-130			
Toluene-d8	486	474		500	97.2	94.8		81-114			

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: 42014408
Conoco Phillips # 5043

Received: 05/10/2005 17:10

Site: 449 Hegenberger Rd, Oakland

Legend and Notes

Analysis Flag

L2

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

ConocoPhillips Chain Of Custody Record

1149G3

STL-San Francisco
1220 Quarry Lane
Pleasanton, CA 94566
(925) 484-1919 (925) 484-1096 fax

ConocoPhillips Site Manager: Shelby Lathrop
INVOICE REMITTANCE ADDRESS: CONOCOPHILLIPS Attn: Dea Hutchinson 3611 South Harbor, Suite 200 Santa Ana, CA 92704
2005-05-0293

ConocoPhillips Work Order Number:
ConocoPhillips Cost Object:
DATE: 5/9/05
PAGE: 1 of 1

SAMPLING COMPANY:	Valid Value ID:	CONOCOPHILLIPS SITE NUMBER	GLOBAL ID NO.:
TRC	TRCC	5043	TO600101476

ADDRESS: 1590 Solano Way , Suite A Concord, CA 94520
PROJECT CONTACT (Hardcopy or PDF Report to): Roger Batra
TELEPHONE: (925)688-2466 FAX: (925)688-0388 E-MAIL: rbatra@trcsolutions.com
SITE ADDRESS (Street and City): 449 Hegenberger Rd, Oakland
CONOCOPHILLIPS SITE MANAGER: Shelby Lathrop
EDF DELIVERABLE TO (ftp or Designate): PHONE NO.: E-MAIL: LAB USE ONLY
SAMPLER NAME(S) (Print): Tim Johnson
CONSULTANT PROJECT NUMBER: 42014408

TURNAROUND TIME (CALENDAR DAYS): ☐ 10 DAYS ☐ 7 DAYS ☐ 72 HOURS ☑ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NEEDED ☐

* Field Point name only required if different from Sample ID

REQUESTED ANALYSES

LAB USE ONLY	Sample Identification/Field Point Name*	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	8015m - TPHd Extractable	8260B - TPHg/BTEX/MBE	8260B - TPHg/BTEX/8 Oxygenates	8260B - MTBE/BTEX/8 oxygenates + methanol (8015M)	8260B - Full Scan VOCs (does not include oxygenates)	8270C - Semi-Volatiles	8015M / 8021B - TPHg/BTEX/MBE	Lead ☐Total ☐STLC ☐TCLP	Ethanol by 8260B
	MW-6	5/9/05	1509	GW	6		X							X

RUSH

FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes
3 vc

TEMPERATURE ON RECEIPT C°

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
	Refrigerator	5/9/05	1630
		5/10/05	1550
		5/10/05	1710

6/16/05 Revision

Table 1

CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS

January 10, 2005

76 Station 5043

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (µg/l)	TPPH 8260B (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE 8021B (µg/l)	MTBE 8260B (µg/l)	Comments
MW-3		**(Screen Interval in feet: 2.5-14.0)**												
01/10/05	8.04	1.52	0.00	6.52	0.48	--	280	ND<0.50	0.62	ND<0.50	2.4	--	64	
MW-6		**(Screen Interval in feet: 2.5-13.5)**												
01/10/05	8.87	2.35	0.00	6.52	0.68	--	71000	1600	3700	2100	9900	--	ND<50	
MW-7		**(Screen Interval in feet: 3.0-13.0)**												
01/10/05	8.83	2.77	0.00	6.06	0.94	--	74	0.51	2.2	1.7	7.0	--	ND<0.50	
MW-8		**(Screen Interval in feet: 3.0-15.0)**												
01/10/05	8.52	1.92	0.00	6.60	1.14	--	58	ND<0.50	0.61	1.2	4.0	--	ND<0.50	
MW-9		**(Screen Interval in feet: 3.0-13.0)**												
01/10/05	8.29	0.07	0.00	8.22	1.21	--	93	0.60	2.3	2.4	9.0	--	ND<0.50	
MW-10		**(Screen Interval in feet: 3.0-13.0)**												
01/10/05	8.62	2.68	0.00	5.94	0.73	--	84	7.8	2.7	2.2	8.9	--	ND<0.50	

APPENDIX C

WATER QUALITY & COMPLIANCE	Remediation Wastewater from Petroleum 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:	Name: Ed Ralston	Signature: Ed Ralston
Company:	ConocoPhillips	Date of Request: 5/12/2005
Address:	76 Broadway, Sacramento, CA. 95818	
Telephone/Fax:	Phone: 916-558-7633	FAX: 916-558-7639
Station No. and Location:	COP #255043, 449 Hegenberger Road, Oakland, CA	
Description of Water Source:	Purge Water – DPE test	
Total Volume of Water/Solids Expected:	Water: 2,000 gallons	Solids: minimal
Expected per-Delivery Volume/Frequency:	Volume: 2,000 gallons	Frequency: one time discharge
Pesticides/Fish Toxicity Expected:	Pesticides: Yes (No)	Fish Tox: Yes (No)
Maximum Rate of Disposal (ESD)	2000	Gallons per Week

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

This water is *(circle one)*: (Recommended) **not recommended for processing at the WWTP.**

This form is valid until: 8/14/05

ESD Signature: [signature] **Date Recommended:** 5/16/05

Operations Signature: [signature] **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 / PM
Volume delivered:	_____ **gallons or** _____ **bbl.**	**pH** _____

NO FREE PRODUCT ACCEPTED **GRAVITY OFF-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@trcsolutions.com