

20-436



GETTLER-RYAN INC.

TRANSMITTAL Alameda County
DEC 05 2002
Environmental Health

November 18, 2002
G-R #180181

TO: Mr. David B. De Witt
Phillips 66 Company
2000 Crow Canyon Place, Suite 4000
San Ramon, California 94583

cc: Mr. David Vossler
Gettler-Ryan Inc.
Petaluma, California

FROM: Deanna L. Harding
Project Coordinator
Gettler-Ryan Inc.
6747 Sierra Court, Suite J
Dublin, California 94568

RE: **Tosco (Unocal) Service Station
#4186
1771 First Street
Livermore, California**

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	November 8, 2002	Groundwater Monitoring and Sampling Report Fourth Quarter - Event of October 1, 2002

COMMENTS:

This report is being sent to you for your review/comment, prior to being distributed on your behalf. If no comments are received by **December 2, 2002**, this report will be distributed to the following:

cc: Ms. Eva Chu, Alameda County Health Care Services, 1131 Harbor Bay Pkwy., Alameda, CA 94502
Ms. Carol Mahoney, Zone 7 Water Zone, 5997 Parkside Drive, Pleasanton, CA 94588

Enclosures

trans/4186-dbd



GETTLER-RYAN INC.

November 8, 2002
G-R Job #180181

Mr. David B. De Witt
Phillips 66 Company
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583

**RE: Fourth Quarter Event of October 1, 2002,
Groundwater Monitoring & Sampling Report
Tosco (Unocal) Service Station #4186
1771 First Street
Livermore, California**

Dear Mr. De Witt:

This report documents the most recent groundwater monitoring and sampling events performed by Gettler-Ryan Inc. (G-R) at the referenced site. All field work was conducted in accordance with G-R Standard Operating Procedure - Groundwater Sampling (attached).

Static groundwater levels were measured and all wells were checked for the presence of separate-phase hydrocarbons. Separate-phase hydrocarbons were not present in the wells. Static water level data and groundwater elevations are summarized in Table 1. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring wells and submitted to a state certified laboratory for analyses. The field data sheets for this event are attached. Analytical results are presented in the table(s) listed below. A Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

Sincerely,

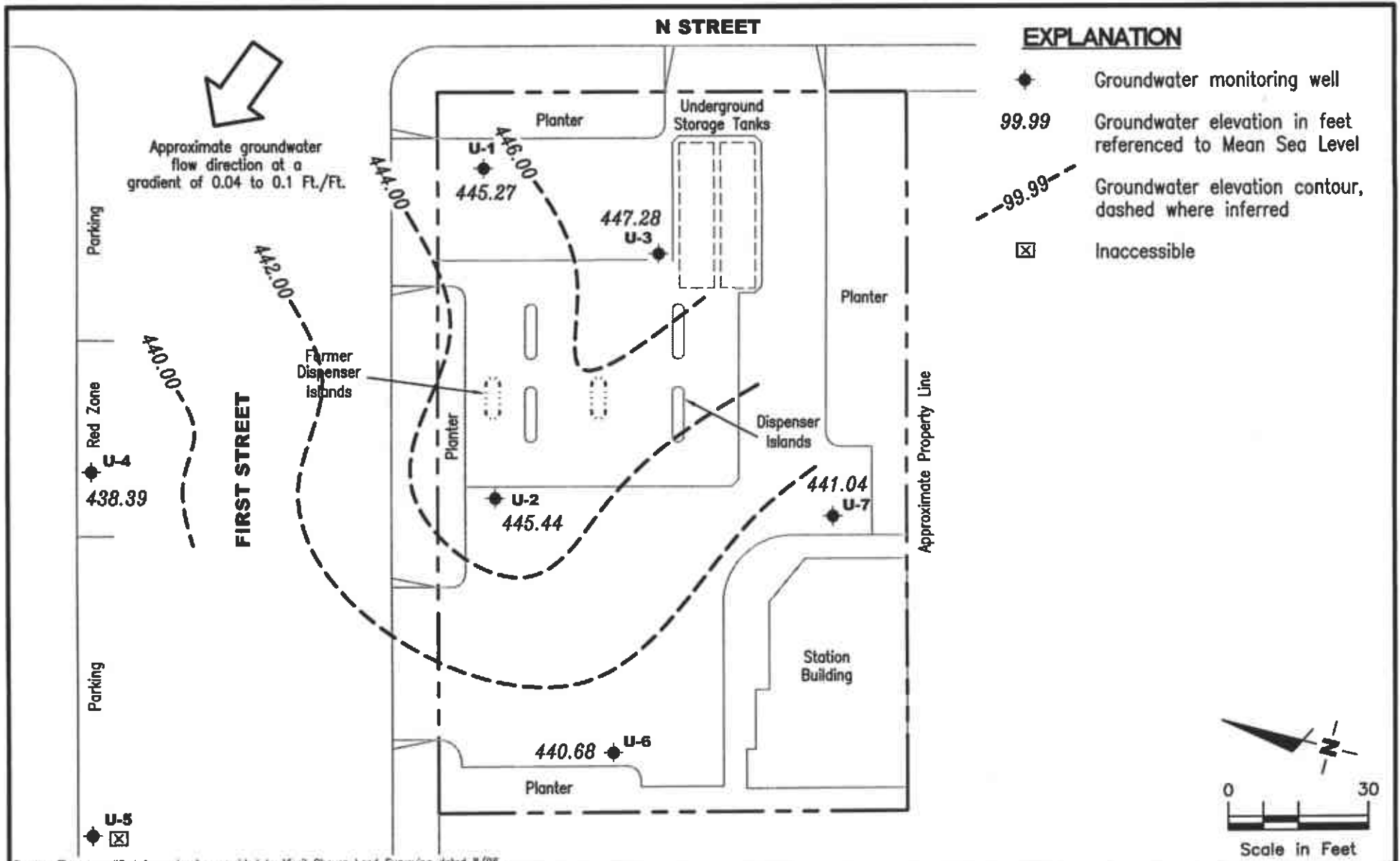
Deanna L. Harding
Project Coordinator

Robert C. Mallory
Registered Geologist, No. 7285



Figure 1: Potentiometric Map
Figure 2: Concentration Map
Table 1: Groundwater Monitoring Data and Analytical Results
Table 2: Groundwater Analytical Results - Oxygenate Compounds
Table 3: Field Measurements
Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports

4186.qml



Source: Figure modified from drawing provided by Virgil Chavez Land Surveying dated 8/96.

GETTLER - RYAN INC.
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POTENTIOMETRIC MAP
 Tosco (Unocal) Service Station #4186
 1771 First Street
 Livermore, California

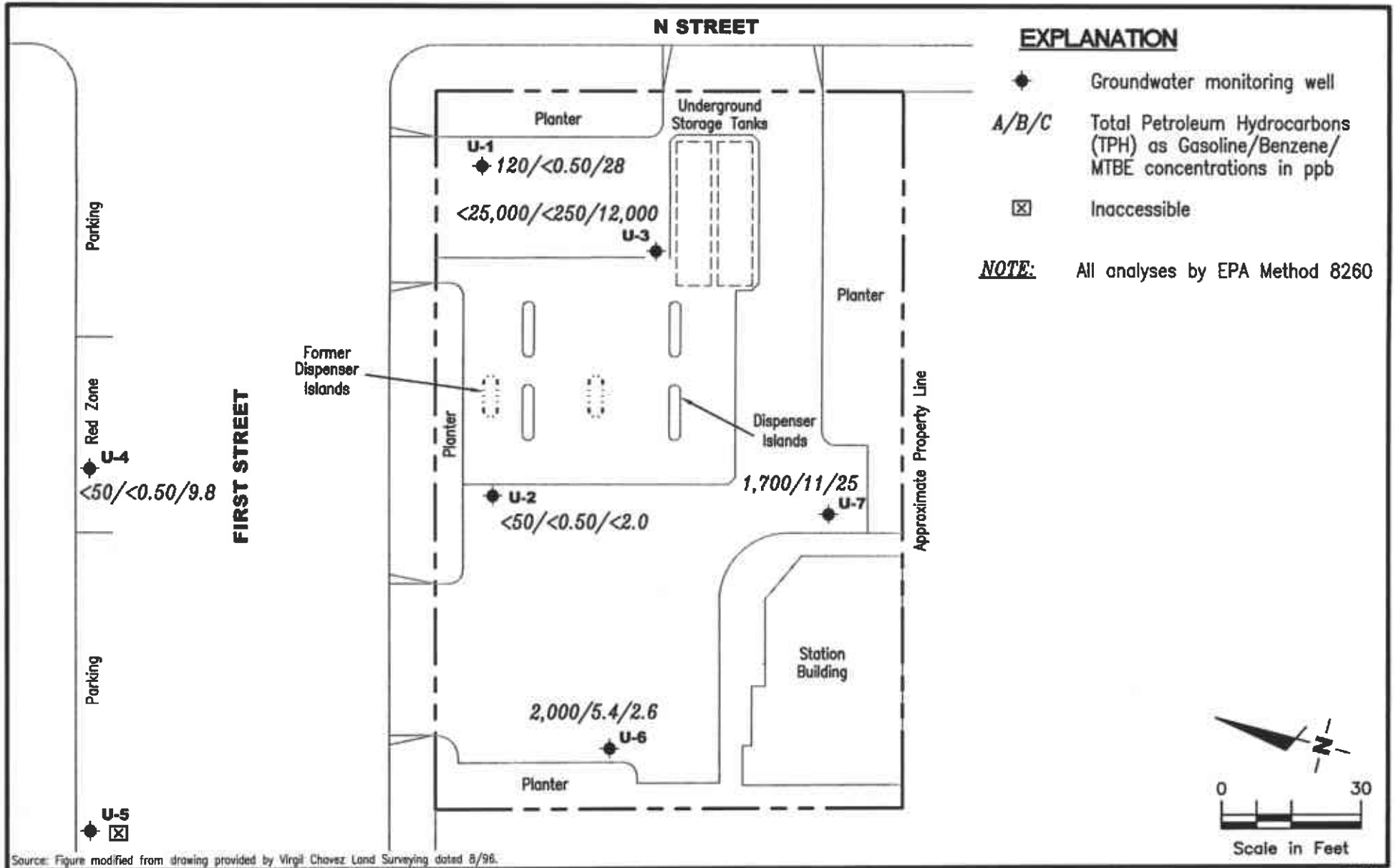
FIGURE
1

PROJECT NUMBER
 180181

REVIEWED BY

DATE
 October 1, 2002

REVISED DATE



Source: Figure modified from drawing provided by Virgil Chavez Land Surveying dated 8/96.

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CONCENTRATION MAP
 Tosco (Unocal) Service Station #4186
 1771 First Street
 Livermore, California

FIGURE
2

PROJECT NUMBER
 180181

REVIEWED BY

DATE
 October 1, 2002

REVISED DATE

Table 1
Groundwater Monitoring Data and Analytical Results
Tosco (Unocal) Service Station #4186
1771 First Street
Livermore, California

WELL ID/ TOC*(ft.)	DATE	DTW (ft.)	S.I. (ft.bgs)	GWE (msl)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
U-1										
478.27	07/13/98	23.28	14.0-34.0	454.99	ND	ND	ND	ND	ND	ND
	10/07/98	26.43		451.84	ND	ND	ND	ND	ND	ND
	01/15/99	30.42		447.85	ND	ND	ND	ND	1.1	7.3
	04/14/99	24.21		454.06	ND	ND	ND	ND	ND	160
	07/19/99	27.10		451.17	ND	ND	ND	ND	ND	92
	10/12/99	29.40		448.87	ND	ND	ND	ND	ND	37
	01/24/00	27.90		450.37	ND	ND	ND	ND	ND	28
	04/10/00	26.16		452.11	ND	ND	0.930	ND	ND	ND
	07/17/00	28.04		450.23	ND	ND	ND	ND	ND	160
	10/02/00	28.41		449.86	ND	ND	ND	ND	ND	120
	01/08/01	28.68		449.59	ND	ND	ND	ND	ND	103
	04/03/01	25.74		452.53	ND	ND	ND	ND	ND	55.1
	07/02/01	30.67		447.60	ND	ND	ND	ND	ND	ND
	NP 10/08/01	33.13		445.14	<50	<0.50	<0.50	<0.50	<0.50	<5.0
	01/03/02	27.67		450.60	160 ⁹	<0.50	0.51	<0.50	0.69	31
	04/05/02	29.40		448.87	<50	<0.50	<0.50	<0.50	<0.50	60
	07/02/02 ¹⁰	31.17		447.10	1,100	<0.50	1.7	0.73	130	35
	10/01/02 ¹⁰	33.00		445.27	120	<0.50	<0.50	<0.50	8.8	28
U-2										
477.44	07/13/98	23.52	13.0-33.0	453.92	1,200	130	12	62	180	1,100
	10/07/98	25.31		452.13	ND	ND	ND	ND	ND	160
	01/15/99	30.22		447.22	ND	ND	ND	ND	ND	280
	04/14/99	24.50		452.94	ND	ND	ND	ND	ND	460
	07/19/99	28.54		448.90	ND	ND	ND	ND	ND	220
	10/12/99	30.48		446.96	ND	ND	ND	ND	ND	160
	01/24/00	24.52		452.92	ND	ND	ND	ND	ND	150
	04/10/00	23.68		453.76	ND	ND	ND	ND	ND	177
	07/17/00	28.35		449.09	ND	ND	ND	ND	ND	62.7
	10/02/00	28.72		448.72	ND	ND	ND	ND	ND	52

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #4186
 1771 First Street
 Livermore, California

WELL ID/ TOC*(ft.)	DATE	DTW (ft.)	S.I. (ft.bgs)	GWE (msl)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
U-2	01/08/01	29.11	13.0-33.0	448.33	ND	ND	ND	ND	ND	57.3
(cont)	04/03/01	25.95		451.49	ND	ND	ND	ND	ND	30.2
	07/02/01	29.01		448.43	ND	ND	ND	ND	ND	16
	10/08/01	30.94		446.50	<50	<0.50	<0.50	<0.50	<0.50	82
	01/03/02	27.33		450.11	260 ⁴	7.7	11	1.7	15	42
	04/05/02	30.02		447.42	<50	<0.50	<0.50	<0.50	<0.50	25
	07/02/02 ¹⁰	31.23		446.21	<50	<0.50	<0.50	<0.50	<1.0	<0.50
	10/01/02 ¹⁰	32.00		445.44	<50	<0.50	0.62	<0.50	<1.0	<2.0
U-3										
478.46	07/13/98	23.82	14.0-34.0	454.64	70,000	3,100	5,500	2,700	16,000	7,500
	10/07/98	25.64		452.82	54,000	5,000	1,100	3,100	14,000	6,100
	01/15/99	30.92		447.54	41,000 ¹	3,100	ND ²	1,800	3,800	15,000
	04/14/99	24.48		453.98	33,000	86	290	2,200	7,800	39,000
	07/19/99	28.46		450.00	48,000	3,900	2,500	3,600	14,000	12,000/16,000 ³
	10/12/99	30.39		448.07	35,000 ⁴	4,200	ND ²	2,300	1,800	22,000/8,300 ⁵
	01/24/00	23.43		455.03	13,000 ⁴	260	ND ²	770	3,200	53,000/42,000 ³
	04/10/00	23.31		455.15	35,200 ⁴	1,070	241	2,820	8,850	35,600/40,900 ³
	07/17/00	27.53		450.93	29,000 ⁴	3,570	525	3,180	5,660	22,500/21,000 ³
	10/02/00	28.19		450.27	11,000 ⁴	2,100	31	2,000	780	25,000/28,000 ^{3,6}
	01/08/01	29.85		448.61	33,600 ⁴	3,060	427	3,040	4,190	24,700/30,900 ³
	04/03/01	24.98		453.48	5,390 ⁴	660	10.8	304	356	15,200/19,300 ⁵
	07/02/01	31.35		447.11	13,000 ⁴	1,200	58	1,300	930	25,000/26,000 ³
NP	10/08/01	32.69		445.77	6,100 ⁴	500	<10	570	130	23,000/22,000 ³
	01/03/02	23.73		454.73	9,900 ⁴	700	130	24	1,000	14,000/12,000 ³
	04/05/02	28.27		450.19	9,800	1,100	180	220	1,400	16,000/30,000 ³
	07/02/02 ¹⁰	29.71		448.75	<25,000	<250	<250	<250	<500	12,000
	10/01/02 ¹⁰	31.18		447.28	<25,000	<250	<250	<250	<500	12,000

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #4186
 1771 First Street
 Livermore, California

WELL ID/ TOC*(ft.)	DATE	DTW (ft.)	S.I. (ft.bgs)	GWE (msl)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
U-4										
476.93	04/03/01 ⁷	31.63	35.0-45.0	445.30	ND	ND	ND	ND	ND	37.8/38.2 ³
	07/02/01	37.96		438.97	ND	ND	ND	ND	ND	ND/5.3 ³
	10/08/01	44.24		432.69	NOT SAMPLED DUE TO INSUFFICIENT WATER					--
	01/03/02	36.15		440.78	100 ⁹	<0.50	<0.50	<0.50	<0.50	10/8.5 ³
	04/05/02	37.64		439.29	<50	0.50	<0.50	<0.50	<0.50	4.1
	07/02/02 ¹⁰	36.85		440.08	67 ¹¹	<0.50	<0.50	<0.50	<1.0	12
	10/01/02 ¹⁰	38.54		438.39	<50	<0.50	<0.50	<0.50	<1.0	9.8
U-5										
476.51	04/03/01 ⁷	31.75	37.0-47.0	444.76	ND	ND	0.728	ND	0.993	54.8/55.4 ³
	07/02/01	38.68		437.83	ND	ND	ND	ND	ND	88/94 ³
	NP 10/08/01	46.31		430.20	<50	<0.50	<0.50	<0.50	<0.50	37/54 ³
	01/03/02	36.55		439.96	<50	<0.50	0.59	<0.50	0.91	51/53 ³
	04/05/02	37.83		438.68	<50	<0.50	<0.50	<0.50	<0.50	37
	07/02/02 ¹⁰	36.92		439.59	<50	<0.50	<0.50	<0.50	<1.0	43
	10/01/02 ¹⁰	INACCESSIBLE - TRUCK PARKED OVER WELL				--	--	--	--	--
U-6										
478.38	01/03/02 ⁷	33.99	--	444.39	5,000 ⁸	36	<25	260	450	<250/<10 ³
	04/05/02	36.18		442.20	1,300	16	<5.0	54	<5.0	<25
	07/02/02 ¹⁰	36.33		442.05	1,100	1.4	<0.50	16	<1.0	0.94
	10/01/02 ¹⁰	37.70		440.68	2,000	5.4	<0.50	62	<1.0	2.6
U-7										
478.74	01/03/02 ⁷	32.43	--	446.31	3,100 ⁸	93	<10	35	73	140/130 ³
	04/05/02	34.06		444.68	630	22	0.53	2.6	<0.50	45
	07/02/02 ¹⁰	35.28		443.46	1,100	21	<0.50	6.9	<1.0	60
	10/01/02 ¹⁰	37.70		441.04	1,700	11	<0.50	3.1	<1.0	25

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #4186
 1771 First Street
 Livermore, California

WELL ID/ TOC*(ft.)	DATE	DTW (ft.)	S.I. (ft.bgs)	GWE (msl)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
TRIP BLANK										
	07/13/98	--	--	--	ND	ND	ND	ND	ND	ND
	10/07/98	--	--	--	ND	ND	ND	ND	ND	ND
	01/15/99	--	--	--	ND	ND	ND	ND	ND	ND
	04/14/99	--	--	--	ND	ND	ND	ND	ND	ND
	07/19/99	--	--	--	ND	ND	ND	ND	ND	ND
	10/12/99	--	--	--	ND	ND	ND	ND	ND	ND
	01/24/00	--	--	--	ND	ND	ND	ND	ND	ND
	04/10/00	--	--	--	ND	ND	ND	ND	ND	ND
	07/17/00	--	--	--	ND	ND	ND	ND	ND	ND
	10/02/00	--	--	--	ND	ND	ND	ND	ND	ND
	01/08/01	--	--	--	ND	ND	ND	ND	ND	ND
	04/03/01	--	--	--	ND	ND	ND	ND	ND	ND
	07/02/01	--	--	--	ND	ND	ND	ND	ND	ND
	10/08/01	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<5.0
	01/03/02	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<5.0
	04/05/02	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
QA	07/02/02 ¹⁰	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50
	10/01/02 ¹⁰	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<2.0

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #4186
 1771 First Street
 Livermore, California

EXPLANATIONS:

TOC = Top of Casing
 DTW = Depth to Water
 (ft.) = Feet
 S. I. = Screen Interval
 (ft.bgs) = Feet Below Ground Surface
 GWE = Groundwater Elevation
 (msl) = Mean sea level

TPH-G = Total Petroleum Hydrocarbons as Gasoline
 B = Benzene
 T = Toluene
 E = Ethylbenzene
 X = Xylenes
 MTBE = Methyl tertiary butyl ether
 (ppb) = Parts per billion

ND = Not Detected
 -- = Not Measured/Not Analyzed
 NP = No Purge
 QA = Quality Assurance

* TOC elevations are relative to msl in feet. The benchmark used was a City of Livermore survey monument at First & "Q" Streets, (Benchmark Elevation = 469.246 feet, msl). Wells U-6 and U-7 were surveyed on January 16, 2002, using the previous benchmark.

¹ Laboratory report indicates gasoline and unidentified hydrocarbons C6-C12.

² Detection limit raised. Refer to analytical reports.

³ MTBE by EPA Method 8260.

⁴ Laboratory report indicates gasoline C6-C12.

⁵ MTBE by EPA Method 8260 analyzed past EPA recommended holding time.

⁶ Laboratory report indicates the sample was analyzed within holding time. Re-analysis for confirmation or dilution was performed past the recommend holding time.

⁷ Well development performed.

⁸ Laboratory report indicates weathered gasoline C6-C12.

⁹ Laboratory report indicates unidentified hydrocarbons C6-C12.

¹⁰ TPH-G, BTEX and MTBE by EPA Method 8260.

¹¹ Laboratory report indicates hydrocarbon reported in the gasoline range does not match our gasoline standard.

Table 2

Groundwater Analytical Results - Oxygenate Compounds

Tosco (Unocal) Service Station #4186

1771 First Street

Livermore, California

WELL ID	DATE	ETHANOL (ppb)	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	EDB (ppb)	1,2-DCA (ppb)
U-1	10/02/00	--	ND	--	--	--	--	--	--
	07/02/02	--	--	35	--	--	--	--	--
	10/01/02	--	--	28	--	--	--	--	--
U-2	10/02/00	--	ND	--	--	--	--	--	--
	07/02/02	--	--	<0.50	--	--	--	--	--
	10/01/02	--	--	<2.0	--	--	--	--	--
U-3	07/19/99	--	--	16,000	--	--	--	--	--
	10/12/1999	--	--	8,300	--	--	--	--	--
	01/24/00	--	--	42,000	--	--	--	--	--
	04/10/00	--	--	40,900	--	--	--	--	--
	07/17/00	--	--	21,000	--	--	--	--	--
	10/02/00	--	63,000	28,000	--	--	--	--	--
	01/08/01	ND ¹	49,300	30,900	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹
	04/03/01 ²	ND ¹	22,200	19,300	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹
	07/02/01	ND ¹	27,000	26,000	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹
	10/08/01	<140,000	33,000	22,000	<290	<290	<290	<290	<290
	01/03/02	<50,000	17,000	12,000	<100	<100	<100	<100	<100
	04/05/02	<25,000	66,000	30,000	<100	<100	<100	<100	<100
	07/02/02	<13,000	47,000	12,000	<500	<250	<250	<250	<250
10/01/02	<250,000	<50,000	12,000	<1,000	<1,000	<1,000	<1,000	<1,000	
U-4	04/03/01	ND	ND	38.2	ND	ND	ND	ND	ND
	07/02/01	ND	ND	5.3	ND	ND	ND	ND	ND
	01/03/02	<500	<20	8.5	<1.0	<1.0	<1.0	<1.0	<1.0
	07/02/02	--	--	12	--	--	--	--	--
	10/01/02	--	--	9.8	--	--	--	--	--

Table 2
Groundwater Analytical Results - Oxygenate Compounds
 Tosco (Unocal) Service Station #4186
 1771 First Street
 Livermore, California

WELL ID	DATE	ETHANOL (ppb)	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	EDB (ppb)	1,2-DCA (ppb)
U-5	04/03/01	ND	ND	55.4	ND	ND	ND	ND	ND
	07/02/01	ND	ND	94	ND	ND	ND	ND	ND
	10/08/01	<1,000	<100	54	<2.0	<2.0	<2.0	<2.0	<2.0
	01/03/02	<500	<20	53	<1.0	<1.0	<1.0	<1.0	<1.0
	07/02/02	--	--	43	--	--	--	--	--
	10/01/02	INACCESSIBLE - TRUCK PARKED OVER WELL				--	--	--	--
U-6	01/03/02	<5,000	<200	<10	<10	<10	<10	<10	<10
	07/02/02	--	--	0.94	--	--	--	--	--
	10/01/02	--	--	2.6	--	--	--	--	--
U-7	01/03/02	<500	30	130	<1.0	<1.0	<1.0	<1.0	<1.0
	07/02/02	--	--	60	--	--	--	--	--
	10/01/02	--	--	25	--	--	--	--	--

Table 2
Groundwater Analytical Results - Oxygenate Compounds
Tosco (Unocal) Service Station #4186
1771 First Street
Livermore, California

EXPLANATIONS:

TBA = Tertiary butyl alcohol
MTBE = Methyl tertiary butyl ether
DIPE = Di-isopropyl ether
ETBE = Ethyl tertiary butyl ether
TAME = Tertiary amyl methyl ether
EDB = 1,2-Dibromoethane
1,2-DCA = 1,2-Dichloroethane
(ppb) = Parts per billion
ND = Not Detected
-- = Not Analyzed

ANALYTICAL METHOD:

EPA Method 8260 for Oxygenate Compounds

¹ Detection limit raised. Refer to analytical reports.

² Laboratory report indicates this sample was analyzed outside of the EPA recommended holding time.

Table 3
Field Measurements
 Tosco (Unocal) Service Station #4186
 1771 First Street
 Livermore, California

WELL ID	DATE	Time (2400 hr)	pH	Conductivity (μ hos/cm)	Temp. ($^{\circ}$ C/ $^{\circ}$ F)	DO (mg/L)	ORP (mV)
U-1	10/01/02	NOT MEASURED DUE TO INSUFFICIENT WATER				--	--
U-2	10/01/02	1558	7.26	1249	20.4/--	1.40	--
U-3	10/01/02	1710	6.98	1262	19.8/--	0.80	-40
		1712	6.82	1227	20.1/--	0.50	-47
U-4	10/01/02	1738	7.45	784	19.6/--	0.60	58
		1742	7.35	793	19.7/--	0.60	63
		1745	7.34	846	19.5/--	1.00	83
U-5	10/01/02	INACCESSIBLE - TRUCK PARKED OVER WELL				--	--
U-6	10/01/02	1533	6.92	1315	19.9/--	0.70	--
		1535	6.88	1277	19.5/--	0.70	--
		1537	6.91	1266	19.3/--	0.90	--
U-7	10/01/02	1640	7.26	1146	19.6/--	1.70	-43
		1642	7.18	1143	19.4/--	1.10	-69
		1645	7.19	1132	19.1/--	1.80	-60

EXPLANATIONS:

(μ hos/cm) = Micromhos per centimeter
 ($^{\circ}$ C/ $^{\circ}$ F) = Degrees Celsius/Degrees Fahrenheit
 DO = Dissolved Oxygen
 (mg/L) = Milligrams per liter
 ORP = Oxidation Reduction Potential
 (mV) = Millivolts
 -- = Not Measured

STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

Gettler-Ryan Inc. field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. Prior to sample collection, the type of analysis to be performed is determined. Loss prevention of volatile compounds is controlled and sample preservation for subsequent analysis is maintained.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using an interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, all depth to water level measurements are collected with a static water level indicator and are also recorded in the field notes, prior to purging and sampling any wells.

After water levels are collected and prior to sampling, temperature, pH and electrical conductivity are measured. If purging is to occur, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or disposable bailers. The measurements are taken a minimum of three times during the purging. Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used when possible. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

A laboratory supplied trip blank accompanies each sampling set and is labeled as QA. For sampling sets greater than 20 samples, 5% trip blanks are included. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

As requested by Phillips 66 Company, the purge water and decontamination water generated during sampling activities is transported to Phillips 66 - San Francisco Refinery, located in Rodeo, California.



GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility #: Tosco #4186 Job Number: 180181
 Site Address: 1771 First Street Event Date: 10/01/02 (inclusive)
 City: Livermore, CA Sampler: DM

Well ID: U-1
 Well Diameter: 2 in.
 Total Depth: 34.00 ft.
 Depth to Water: 33.00 ft.

Well Condition: O.K.

Volume Factor (VF)	3/4" = 0.02	1" = 0.04	2" = 0.17	3" = 0.38
	4" = 0.66	5" = 1.02	6" = 1.50	12" = 5.80

1.00 xVF .17 = .17 x3 (case volume) = Estimated Purge Volume: 1 gal.

Purge Equipment:
 Disposable Bailer
 Stainless Steel Bailer
 Stack Pump
 Suction Pump
 Grundfos
 Other:

Sampling Equipment:
 Disposable Bailer
 Pressure Bailer
 Discrete Bailer
 Other:

Time Started: _____ (2400 hrs)
 Time Bailed: _____ (2400 hrs)
 Depth to Product: _____ ft
 Depth to Water: _____ ft
 Hydrocarbon Thickness: _____ ft
 Visual Confirmation/Description: _____
 Skimmer / Absorbant Sock (circle one)
 Amt Removed from Skimmer: _____ gal
 Amt Removed from Well: _____ gal
 Product Transferred to: _____

Start Time (purge): 1615 Weather Conditions: Windy Sunny
 Sample Time/Date: 10/25/02/10/02 Water Color: Cloudy (Brown) Odor: No
 Purging Flow Rate: - gpm. Sediment Description: Silty
 Did well de-water? No If yes, Time: _____ Volume: _____ gal.

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm)	Temperature (C/F)	D.O. (mg/L)	ORP (mV)
1615	<u>1</u>					

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-1</u>	<u>5</u> x voa vial	<u>YES</u>	<u>HCL</u>	<u>STL Pleasanton</u>	<u>TPH-G/BTEX/MTBE(8260)</u>

COMMENTS: Took total Depth. Not enough water for readings. Barely enough for samples

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Size: _____



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility #: Tosco #4186 Job Number: 180181
 Site Address: 1771 First Street Event Date: 10/01/02 (inclusive)
 City: Livermore, CA Sampler: DM

Well ID: U-2
 Well Diameter: 2 in.
 Total Depth: 33.25 ft.
 Depth to Water: 32.00 ft.

Well Condition: OK

Volume	3/4" = 0.02	1" = 0.04	2" = 0.17	3" = 0.38
Factor (VF)	4" = 0.66	5" = 1.02	6" = 1.50	12" = 5.80

1.25 xVF .17 = 0.21 x3 (case volume) = Estimated Purge Volume: 1 gal.

Purge Equipment:
 Disposable Bailer
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Other: _____

Sampling Equipment:
 Disposable Bailer
 Pressure Bailer _____
 Discrete Bailer _____
 Other: _____

Time Started: _____ (2400 hrs)
 Time Bailed: _____ (2400 hrs)
 Depth to Product: _____ ft
 Depth to Water: _____ ft
 Hydrocarbon Thickness: _____ ft
 Visual Confirmation/Description: _____
 Skimmer / Absorbant Sock (circle one)
 Amt Removed from Skimmer: _____ gal
 Amt Removed from Well: _____ gal
 Product Transferred to: _____

Start Time (purge): 1550 Weather Conditions: Clear Windy
 Sample Time/Date: 10/07/02 Water Color: Cloudy (Brown) Odor: No
 Purging Flow Rate: _____ gpm. Sediment Description: silt
 Did well de-water? No If yes, Time: _____ Volume: _____ gal.

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm)	Temperature (C/F)	D.O. (mg/L)	ORP (mV)
<u>1558</u>	<u>1</u>	<u>7.26</u>	<u>1249</u>	<u>20.4</u>	<u>1.4</u>	
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-2</u>	<u>3 x vov vial</u>	<u>YES</u>	<u>HCL</u>	<u>STL Pleasanton</u>	<u>TPH-G/BTEX/MTBE(8260)</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: Took total depth, not much water. Taking 1 reading and sample. Only 1/4 Bailer (Grab sample). Forgot to take ORP.

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Size: _____



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility #: Tosco #4186 Job Number: 180181
 Site Address: 1771 First Street Event Date: 10/01/02 (inclusive)
 City: Livermore, CA Sampler: DM

Well ID: U-3
 Well Diameter: 2 in.
 Total Depth: 33.68 ft.
 Depth to Water: 31.18 ft.

Well Condition: DM

Volume	3/4" = 0.02	1" = 0.04	2" = 0.17	3" = 0.38
Factor (VF)	4" = 0.66	5" = 1.02	6" = 1.50	12" = 5.80

2.50 xVF .17 = 0.42 x3 (case volume) = Estimated Purge Volume: 1 1/2 gal.

Purge Equipment:
 Disposable Bailer /
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Other: _____

Sampling Equipment:
 Disposable Bailer /
 Pressure Bailer _____
 Discrete Bailer _____
 Other: _____

Time Started: _____ (2400 hrs)
 Time Bailed: _____ (2400 hrs)
 Depth to Product: _____ ft
 Depth to Water: _____ ft
 Hydrocarbon Thickness: _____ ft
 Visual Confirmation/Description: _____
 Skimmer / Absorbant Sock (circle one)
 Amt Removed from Skimmer: _____ gal
 Amt Removed from Well: _____ gal
 Product Transferred to: _____

Start Time (purge): 1700 Weather Conditions: Sunny Windy
 Sample Time/Date: 1720 10/01/02 Water Color: Clear Odor: strong
 Purging Flow Rate: - gpm. Sediment Description: _____
 Did well de-water? No If yes, Time: _____ Volume: _____ gal.

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm)	Temperature (C/F)	D.O. (mg/L)	ORP (mV)
<u>1710</u>	<u>1 1/2</u>	<u>6.98</u>	<u>1262</u>	<u>19.8</u>	<u>2.8</u>	<u>-40</u>
<u>1712</u>	<u>2</u>	<u>6.82</u>	<u>1227</u>	<u>20.1</u>	<u>0.5</u>	<u>-47</u>

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-3</u>	<u>5 x vov vial</u>	<u>YES</u>	<u>HCL</u>	<u>STL Pleasanton</u>	<u>TPH-G/BTEX/MTBE(8260) 8/01/02 4/20/00</u>

COMMENTS: Took total Depth. 1 extra reading.

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Size: _____



GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility #: Tosco #4186 Job Number: 180181
 Site Address: 1771 First Street Event Date: 10/21/02 (inclusive)
 City: Livermore, CA Sampler: DM

Well ID: U-4 Well Condition: O.K.
 Well Diameter: 2 in.
 Total Depth: 45.28 ft.
 Depth to Water: 38.54 ft.
 $6.74 \times VF .17 = 1.14 \times 3 (case\ volume) = Estimated\ Purge\ Volume: 3\frac{1}{2} gal.$

Volume	3/4" = 0.02	1" = 0.04	2" = 0.17	3" = 0.38
Factor (VF)	4" = 0.66	5" = 1.02	6" = 1.50	12" = 5.80

Purge Equipment:
 Disposable Bailer
 Stainless Steel Bailer
 Stack Pump
 Suction Pump
 Grundfos
 Other: _____

Sampling Equipment:
 Disposable Bailer
 Pressure Bailer
 Discrete Bailer
 Other: _____

Time Started: _____ (2400 hrs)
 Time Bailed: _____ (2400 hrs)
 Depth to Product: _____ ft
 Depth to Water: _____ ft
 Hydrocarbon Thickness: _____ ft
 Visual Confirmation/Description: _____
 Skimmer / Absorbant Sock (circle one)
 Amt Removed from Skimmer: _____ gal
 Amt Removed from Well: _____ gal
 Product Transferred to: _____

Start Time (purge): 1735 Weather Conditions: Sunny, Windy
 Sample Time/Date: 1754 10/21/02 Water Color: Cloudy (Brown) Odor: NO
 Purging Flow Rate: - gpm. Sediment Description: Silty
 Did well de-water? NO If yes, Time: - Volume: - gal.

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm)	Temperature (°C)	D.O. (mg/L)	ORP (mV)
<u>1738</u>	<u>1</u>	<u>7.45</u>	<u>784</u>	<u>19.6</u>	<u>0.10</u>	<u>58</u>
<u>1742</u>	<u>2</u>	<u>7.35</u>	<u>793</u>	<u>19.7</u>	<u>0.10</u>	<u>63</u>
<u>1745</u>	<u>3 1/2</u>	<u>7.34</u>	<u>840</u>	<u>19.5</u>	<u>1.0</u>	<u>83</u>
_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-4</u>	<u>3 x vov vial</u>	<u>YES</u>	<u>HCL</u>	<u>STL Pleasanton</u>	<u>TPH-G/BTEX/MTBE(8260)</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: Took total Depth Good recovery.

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Size: _____



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility #: Tosco #4186 Job Number: 180181
 Site Address: 1771 First Street Event Date: 10/01/02 (inclusive)
 City: Livermore, CA Sampler: DM

Well ID: U-5
 Well Diameter: 2 in.
 Total Depth: _____ ft.
 Depth to Water: _____ ft.

Well Condition: OK / Inaccessible

Volume	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
Factor (VF)	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

_____ xVF _____ = _____ x3 (case volume) = Estimated Purge Volume: _____ gal.

Purge Equipment:

Disposable Bailer _____
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Other: _____

Sampling Equipment:

Disposable Bailer _____
 Pressure Bailer _____
 Discrete Bailer _____
 Other: _____

Time Started: _____ (2400 hrs)
 Time Bailed: _____ (2400 hrs)
 Depth to Product: _____ ft
 Depth to Water: _____ ft
 Hydrocarbon Thickness: _____ ft
 Visual Confirmation/Description: _____
 Skimmer / Absorbant Sock (circle one)
 Amt Removed from Skimmer: _____ gal
 Amt Removed from Well: _____ gal
 Product Transferred to: _____

Start Time (purge): _____ Weather Conditions: _____
 Sample Time/Date: _____ / _____ Water Color: _____ Odor: _____
 Purging Flow Rate: _____ gpm. Sediment Description: _____
 Did well de-water? _____ If yes, Time: _____ Volume: _____ gal.

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm)	Temperature (C/F)	D.O. (mg/L)	ORP (mV)
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
U-	x voa vial	YES	HCL	STL Pleasanton	TPH-G/BTEX/MTBE(8260)

COMMENTS: Small Bobtail delivery truck parked over well
on 1st Street. Inaccessible Refer to Map behind this page.
This is a very busy Street all day long. Must be corded off
if the chance comes.
 Add/Replaced Lock: _____ Add/Replaced Plug: _____ Size: _____



GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility #: Tosco #4186 Job Number: 180181
 Site Address: 1771 First Street Event Date: 10/01/02 (inclusive)
 City: Livermore, CA Sampler: DM.

Well ID: U-6
 Well Diameter: 2 in.
 Total Depth: 44.63 ft.
 Depth to Water: 37.70 ft.

Well Condition: OK.

Volume	3/4" = 0.02	1" = 0.04	2" = 0.17	3" = 0.38
Factor (VF)	4" = 0.66	5" = 1.02	6" = 1.50	12" = 5.80

6.93 x VF 17 = 1.17 x3 (case volume) = Estimated Purge Volume: 3 1/2 gal.

Purge Equipment:

Disposable Bailer
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Other: _____

Sampling Equipment:

Disposable Bailer
 Pressure Bailer _____
 Discrete Bailer _____
 Other: _____

Time Started:	_____ (2400 hrs)
Time Bailed:	_____ (2400 hrs)
Depth to Product:	_____ ft
Depth to Water:	_____ ft
Hydrocarbon Thickness:	_____ ft
Visual Confirmation/Description:	_____
Skimmer / Absorbant Sock (circle one)	
Amt Removed from Skimmer:	_____ gal
Amt Removed from Well:	_____ gal
Product Transferred to:	_____

Start Time (purge): 1531 Weather Conditions: Clear Windy
 Sample Time/Date: 1546 10/01/02 Water Color: Clear Odor: YES
 Purging Flow Rate: - gpm. Sediment Description: _____
 Did well de-water? No If yes, Time: _____ Volume: _____ gal.

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm)	Temperature (CF)	D.O. (mg/L)	ORP (mV)
<u>1533</u>	<u>1</u>	<u>6.92</u>	<u>1315</u>	<u>19.9</u>	<u>0.7</u>	
<u>1535</u>	<u>2</u>	<u>6.88</u>	<u>1277</u>	<u>19.5</u>	<u>0.7</u>	
<u>1537</u>	<u>3 1/2</u>	<u>6.91</u>	<u>1266</u>	<u>19.3</u>	<u>0.9</u>	
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-6</u>	<u>3 x voa vial</u>	<u>YES</u>	<u>HCL</u>	<u>STL Pleasanton</u>	<u>TPH-G/BTEX/MTBE(8260)</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: Took total Depth. Forgot to take ORP.

Add/Replaced Lock: _____

Add/Replaced Plug: _____ Size: _____



GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility #: Tosco #4186 Job Number: 180181
 Site Address: 1771 First Street Event Date: 10/01/02 (inclusive)
 City: Livermore, CA Sampler: DM

Well ID: U-7 Well Condition: O.K.
 Well Diameter: 2 in.
 Total Depth: 44.45 ft.
 Depth to Water: 37.70 ft.
6.75 xVF .17 = 1.14 x3 (case volume) = Estimated Purge Volume: 3 1/2 gal.

Volume	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
Factor (VF)	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

Purge Equipment:

Disposable Bailer
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Other: _____

Sampling Equipment:

Disposable Bailer
 Pressure Bailer _____
 Discrete Bailer _____
 Other: _____

Time Started: _____ (2400 hrs)
 Time Bailed: _____ (2400 hrs)
 Depth to Product: _____ ft
 Depth to Water: _____ ft
 Hydrocarbon Thickness: _____ ft
 Visual Confirmation/Description: _____
 Skimmer / Absorbant Sock (circle one)
 Amt Removed from Skimmer: _____ gal
 Amt Removed from Well: _____ gal
 Product Transferred to: _____

Start Time (purge): 1637 Weather Conditions: Sunny Windy
 Sample Time/Date: 1657 10/01/02 Water Color: Clear Odor: YES
 Purging Flow Rate: — gpm. Sediment Description: —
 Did well de-water? No If yes, Time: _____ Volume: _____ gal.

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm)	Temperature (°F)	D.O. (mg/L)	ORP (mV)
<u>1640</u>	<u>1</u>	<u>7.26</u>	<u>1146</u>	<u>19.6</u>	<u>1.7</u>	<u>-43</u>
<u>1642</u>	<u>2</u>	<u>7.18</u>	<u>1145</u>	<u>19.4</u>	<u>1.1</u>	<u>-69</u>
<u>1645</u>	<u>3 1/2</u>	<u>7.19</u>	<u>1132</u>	<u>19.1</u>	<u>1.8</u>	<u>-60</u>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-7</u>	<u>3</u> x vov vial	<u>YES</u>	<u>HCL</u>	<u>STL Pleasanton</u>	<u>TPH-G/BTEX/MTBE(8260)</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: Took total Depth.

Add/Replaced Lock: _____

Add/Replaced Plug: _____ Size: _____

2002-10-0084

69299
Gettler-Ryan Inc., Chain-of-Custody

Tosco Corp./ Phillips 66 Co. 300 Crow Canyon Place Suite 400 San Ramon, CA 94583	Facility Number <u>#4186</u> Facility Address <u>1711 FIRST STREET, LIVERMORE, CA</u> Global ID <u>T0600101777</u> Project <u>180181.80</u> Client Contact <u>MR. DAVID B. DEWITT</u> Phone <u>(925) 277-2384</u>	Laboratory Name <u>STL - PLEASANTON, CA</u> Consultant <u>GETTLER-RYAN, INC.</u> <u>DEANNA L. HARDING</u> Address <u>6747 SIERRA CT., SUITE J, DUBLIN CA 94568</u> Phone <u>(925) 551-7555</u> Fax <u>(925) 551-7899</u> Samples Collected by <u>David Mowery</u>
--	---	---

SAMPLE ID	Number of Containers Matrix	S = Soil A = Air W = Water C = Charcoal	Sample Preservation	Date/Time (2400 Hrs)	TPH-GAS/BTEX/MTBE EPA 8015/80218	TPH-DIESEL EPA 8015	TPH-DIESEL w/Silica gel EPA 8015	TPH-GAS EPA 8015	TPH-GAS/BTEX/MTBE EPA 8260	2 OXYGENATES EPA 8260	METHANOL EPA 8015	TOTAL OIL & GREASE EPA 5620	METALS Cd, Cr, Pb, Zn, Ni	NITRATE/SULFATE/ALKALINITY EPA 300 SERIES	HMOC'S (8010) EPA 80218	VOC'S (8240) EPA 8260	SVOC'S EPA 8270	Remarks
					QA 1	1	W		10-01-02				X					
U-1	3	W	HCL	10-01-02 11075				X										
U-2	3	W	HCL	10-01-02 11607				X										
U-3	5	W	HCL	10-01-02 11720				X	X									
U-4	3	W	HCL	10-01-02 11954				X										
U-6	3	W	HCL	10-01-02 11541				X										
U-7	3	W	HCL	10-01-02 11658				X										

Inquished By (Signature) <i>David Mowery</i>	Organization <i>Gettler-Ryan</i>	Date/Time <i>10-01-02</i>	Received By (Signature)	Organization	Date/Time	Iced Y/N	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 72 Hrs. 5 Days <u>10 Days</u> As Contracted
Inquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced Y/N	
Inquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature) <i>JL</i>		Date/Time <i>10-3-02</i>	Iced <u>Y/N</u> <i>YLS</i>	

Oct 17 02 03:56p

ST10nsite

9256003002

p. 1

Submission#: 2002-10-0084

October 17, 2002

SEVERN

TRENT

LABORATORY

Gettler Ryan

6747 Sierra Court Suite J
Dublin, CA 94568

Attn.: Deanna Harding

Project#: 180181.00

Project: Tosco # 4186

Site: 1711 First Street
Livermore, CA

STL San Francisco
1220 Quarry Ln
Pleasanton CA 94566

Tel.: (925) 484-1919
Fax: (925) 484-1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#:2496

RECEIVED

OCT 17 2002

GETTLER RYAN INC.
GENERAL CONTRACTORS

Dear Ms. Harding,

Attached is our report for your samples received on 10/03/2002 13:45

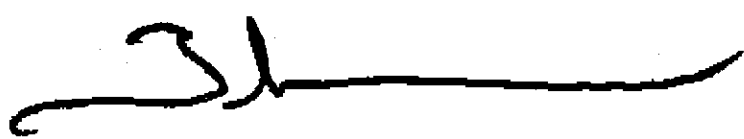
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 11/17/2002 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: tgranicher@chromalab.com

Sincerely,



Tod Granicher
Project Manager

Submission #: 2002-10-0084

Gas/BTEX Fuel Oxygenates by 8260B

Gettler Ryan

Attn.: Deanna Harding
6747 Sierra Court Suite J
Dublin, CA 94568

Phone: (925) 551-7444 Fax: (925) 551-7899

Project: 180181.00
Tosco # 4186

Received: 10/03/2002 13:45

Site: 1711 First Street
Livermore, CA

SEVERN

TRENT

LABORATORY

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel: (925) 484-1919
Fax: (925) 484-1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP# 2496

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
QA	10/01/2002	Water	1
U-1	10/01/2002 16:25	Water	2
U-2	10/01/2002 16:07	Water	3
U-3	10/01/2002 17:20	Water	4
U-4	10/01/2002 17:54	Water	5
U-6	10/01/2002 15:41	Water	6
U-7	10/01/2002 16:57	Water	7

Gas/BTEX Fuel Oxygenates by 8260B

Gettler Ryan

Attn.: Deanna Harding
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Project: 180181.00
 Tosco # 4186

Received: 10/03/2002 13:45

Site: 1711 First Street
 Livermore, CA

CA DHS ELAP# 2496

Prep(s): 5030B	Test(s): 8260FAB
Sample ID: QA	Lab ID: 2002-10-0084 - 1
Sampled: 10/01/2002	Extracted: 10/11/2002 15:04
Matrix: Water	QC Batch#: 2002/10/11-01 62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	10/11/2002 15:04	
Benzene	ND	0.50	ug/L	1.00	10/11/2002 15:04	
Toluene	ND	0.50	ug/L	1.00	10/11/2002 15:04	
Ethylbenzene	ND	0.50	ug/L	1.00	10/11/2002 15:04	
Total xylenes	ND	1.0	ug/L	1.00	10/11/2002 15:04	
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L	1.00	10/11/2002 15:04	
Surrogates(s)						
1,2-Dichloroethane-d4	91.5	76-114	%	1.00	10/11/2002 15:04	
Toluene-d8	97.9	88-110	%	1.00	10/11/2002 15:04	

Submission #: 2002-10-0084

Gas/BTEX Fuel Oxygenates by 8260B

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CA DHS ELAP# 2496

Prep(s):	5030B	Test(s):	8260FAB
Sample ID:	U-1	Lab ID:	2002-10-0084 - 2
Sampled:	10/01/2002 16:25	Extracted:	10/14/2002 17:07
Matrix:	Water	QC Batch#:	2002/10/14-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	120	50	ug/L	1.00	10/14/2002 17:07	
Benzene	ND	0.50	ug/L	1.00	10/14/2002 17:07	
Toluene	ND	0.50	ug/L	1.00	10/14/2002 17:07	
Ethylbenzene	ND	0.50	ug/L	1.00	10/14/2002 17:07	
Total xylenes	8.8	1.0	ug/L	1.00	10/14/2002 17:07	
Methyl tert-butyl ether (MTBE)	28	2.0	ug/L	1.00	10/14/2002 17:07	
Surrogates(s)						
1,2-Dichloroethane-d4	83.0	76-114	%	1.00	10/14/2002 17:07	
Toluene-d8	92.0	88-110	%	1.00	10/14/2002 17:07	

Gas/BTEX Fuel Oxygenates by 8260B

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CA DHS ELAP# 2496

Prep(s):	5030B	Test(s):	8260FAB
Sample ID:	U-2	Lab ID:	2002-10-0084 - 3
Sampled:	10/01/2002 16:07	Extracted:	10/11/2002 17:35
Matrix:	Water	QC Batch#:	2002/10/11-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	10/11/2002 17:35	
Benzene	ND	0.50	ug/L	1.00	10/11/2002 17:35	
Toluene	0.62	0.50	ug/L	1.00	10/11/2002 17:35	
Ethylbenzene	ND	0.50	ug/L	1.00	10/11/2002 17:35	
Total xylenes	ND	1.0	ug/L	1.00	10/11/2002 17:35	
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L	1.00	10/11/2002 17:35	
Surrogates(s)						
1,2-Dichloroethane-d4	96.7	76-114	%	1.00	10/11/2002 17:35	
Toluene-d8	99.7	88-110	%	1.00	10/11/2002 17:35	

Submission #: 2002-10-0084

Gas/BTEX Fuel Oxygenates by 8260B

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CA DHS ELAP# 2496

Prep(s): 5030B	Test(s): 8260FAB
Sample ID: U-3	Lab ID: 2002-10-0084 - 4
Sampled: 10/01/2002 17:20	Extracted: 10/15/2002 11:55
Matrix: Water	QC Batch#: 2002/10/15-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	25000	ug/L	500.00	10/15/2002 11:55	
Benzene	ND	250	ug/L	500.00	10/15/2002 11:55	
Toluene	ND	250	ug/L	500.00	10/15/2002 11:55	
Ethylbenzene	ND	250	ug/L	500.00	10/15/2002 11:55	
Total xylenes	ND	500	ug/L	500.00	10/15/2002 11:55	
tert-Butyl alcohol (TBA)	ND	50000	ug/L	500.00	10/15/2002 11:55	
Methyl tert-butyl ether (MTBE)	12000	1000	ug/L	500.00	10/15/2002 11:55	
Di-isopropyl Ether (DIPE)	ND	1000	ug/L	500.00	10/15/2002 11:55	
Ethyl tert-butyl ether (ETBE)	ND	1000	ug/L	500.00	10/15/2002 11:55	
tert-Amyl methyl ether (TAME)	ND	1000	ug/L	500.00	10/15/2002 11:55	
1,2-DCA	ND	1000	ug/L	500.00	10/15/2002 11:55	
EDB	ND	1000	ug/L	500.00	10/15/2002 11:55	
Ethanol	ND	250000	ug/L	500.00	10/15/2002 11:55	
Surrogates(s)						
1,2-Dichloroethane-d4	82.6	76-114	%	500.00	10/15/2002 11:55	
Toluene-d8	93.0	88-110	%	500.00	10/15/2002 11:55	

Gas/BTEX Fuel Oxygenates by 8260B

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CA DHS ELAP# 2496

Prep(s):	5030B	Test(s):	8260FAB
Sample ID:	U-4	Lab ID:	2002-10-0084 - 5
Sampled:	10/01/2002 17:54	Extracted:	10/11/2002 18:19
Matrix:	Water	QC Batch#:	2002/10/11-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	10/11/2002 18:19	
Benzene	ND	0.50	ug/L	1.00	10/11/2002 18:19	
Toluene	ND	0.50	ug/L	1.00	10/11/2002 18:19	
Ethylbenzene	ND	0.50	ug/L	1.00	10/11/2002 18:19	
Total xylenes	ND	1.0	ug/L	1.00	10/11/2002 18:19	
Methyl tert-butyl ether (MTBE)	9.8	2.0	ug/L	1.00	10/11/2002 18:19	
Surrogates(s)						
1,2-Dichloroethane-d4	94.0	76-114	%	1.00	10/11/2002 18:19	
Toluene-d8	100.6	88-110	%	1.00	10/11/2002 18:19	

Submission #: 2002-10-0084

Gas/BTEX Fuel Oxygenates by 8260B

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CA DHS ELAP# 2496

Prep(s):	5030B	Test(s):	8260FAB
Sample ID:	U-6	Lab ID:	2002-10-0084 - 6
Sampled:	10/01/2002 15:41	Extracted:	10/14/2002 17:51
Matrix:	Water	QC Batch#:	2002/10/14-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	2000	50	ug/L	1.00	10/14/2002 17:51	
Benzene	5.4	0.50	ug/L	1.00	10/14/2002 17:51	
Toluene	ND	0.50	ug/L	1.00	10/14/2002 17:51	
Ethylbenzene	62	0.50	ug/L	1.00	10/14/2002 17:51	
Total xylenes	ND	1.0	ug/L	1.00	10/14/2002 17:51	
Methyl tert-butyl ether (MTBE)	2.6	2.0	ug/L	1.00	10/14/2002 17:51	
Surrogates(s)						
1,2-Dichloroethane-d4	85.2	76-114	%	1.00	10/14/2002 17:51	
Toluene-d8	94.4	88-110	%	1.00	10/14/2002 17:51	

Gas/BTEX Fuel Oxygenates by 8260B

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CA DHS ELAP# 2496

Prep(s): 5030B	Test(s): 8260FAB
Sample ID: U-7	Lab ID: 2002-10-0084 - 7
Sampled: 10/01/2002 16:57	Extracted: 10/14/2002 18:13
Matrix: Water	QC Batch#: 2002/10/14-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	1700	50	ug/L	1.00	10/14/2002 18:13	
Benzene	11	0.50	ug/L	1.00	10/14/2002 18:13	
Toluene	ND	0.50	ug/L	1.00	10/14/2002 18:13	
Ethylbenzene	3.1	0.50	ug/L	1.00	10/14/2002 18:13	
Total xylenes	ND	1.0	ug/L	1.00	10/14/2002 18:13	
Methyl tert-butyl ether (MTBE)	25	2.0	ug/L	1.00	10/14/2002 18:13	
Surrogates(s)						
1,2-Dichloroethane-d4	90.0	76-114	%	1.00	10/14/2002 18:13	
Toluene-d8	98.8	88-110	%	1.00	10/14/2002 18:13	

Gas/BTEX Fuel Oxygenates by 8260B

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030B

Method Blank

MB: 2002/10/11-01.62-047

Water

Test(s): 8260FAB

QC Batch # 2002/10/11-01.62

Date Extracted: 10/11/2002 11:47

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	10/11/2002 11:47	
Benzene	ND	0.5	ug/L	10/11/2002 11:47	
Toluene	ND	0.5	ug/L	10/11/2002 11:47	
Ethylbenzene	ND	0.5	ug/L	10/11/2002 11:47	
Total xylenes	ND	1.0	ug/L	10/11/2002 11:47	
tert-Butyl alcohol (TBA)	ND	100	ug/L	10/11/2002 11:47	
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L	10/11/2002 11:47	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	10/11/2002 11:47	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	10/11/2002 11:47	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	10/11/2002 11:47	
1,2-DCA	ND	2.0	ug/L	10/11/2002 11:47	
EDB	ND	2.0	ug/L	10/11/2002 11:47	
Ethanol	ND	500	ug/L	10/11/2002 11:47	
Surrogates(s)					
1,2-Dichloroethane-d4	88.8	76-114	%	10/11/2002 11:47	
Toluene-d8	98.0	88-110	%	10/11/2002 11:47	

Gas/BTEX Fuel Oxygenates by 8260B

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030B

Method Blank

MB: 2002/10/14-01.62-054

Water

Test(s): 8260FAB

QC Batch # 2002/10/14-01.62

Date Extracted: 10/14/2002 14:54

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	10/14/2002 14:54	
Benzene	ND	0.5	ug/L	10/14/2002 14:54	
Toluene	ND	0.5	ug/L	10/14/2002 14:54	
Ethylbenzene	ND	0.5	ug/L	10/14/2002 14:54	
Total xylenes	ND	1.0	ug/L	10/14/2002 14:54	
tert-Butyl alcohol (TBA)	ND	100	ug/L	10/14/2002 14:54	
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L	10/14/2002 14:54	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	10/14/2002 14:54	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	10/14/2002 14:54	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	10/14/2002 14:54	
1,2-DCA	ND	2.0	ug/L	10/14/2002 14:54	
EDB	ND	2.0	ug/L	10/14/2002 14:54	
Ethanol	ND	500	ug/L	10/14/2002 14:54	
Surrogates(s)					
1,2-Dichloroethane-d4	89.2	76-114	%	10/14/2002 14:54	
Toluene-d8	92.0	88-110	%	10/14/2002 14:54	

Submission #: 2002-10-0084

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030B

Method Blank

MB: 2002/10/15-01.62-012

Water

Test(s): 8260FAB

QC Batch # 2002/10/15-01.62

Date Extracted: 10/15/2002 11:12

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	10/15/2002 11:12	
Benzene	ND	0.5	ug/L	10/15/2002 11:12	
Toluene	ND	0.5	ug/L	10/15/2002 11:12	
Ethylbenzene	ND	0.5	ug/L	10/15/2002 11:12	
Total xylenes	ND	1.0	ug/L	10/15/2002 11:12	
tert-Butyl alcohol (TBA)	ND	100	ug/L	10/15/2002 11:12	
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L	10/15/2002 11:12	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	10/15/2002 11:12	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	10/15/2002 11:12	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	10/15/2002 11:12	
1,2-DCA	ND	2.0	ug/L	10/15/2002 11:12	
EDB	ND	2.0	ug/L	10/15/2002 11:12	
Ethanol	ND	500	ug/L	10/15/2002 11:12	
Surrogates(s)					
1,2-Dichloroethane-d4	79.3	76-114	%	10/15/2002 11:12	
Toluene-d8	92.9	88-110	%	10/15/2002 11:12	

Gas/BTEX Fuel Oxygenates by 8260B

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030B

Test(s): 8260FAB

Laboratory Control Spike

Water

QC Batch # 2002/10/11-01.62

LCS 2002/10/11-01.62-004

Extracted: 10/11/2002

Analyzed: 10/11/2002 11:04

LCSD 2002/10/11-01.62-026

Extracted: 10/11/2002

Analyzed: 10/11/2002 11:26

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	22.7	23.6	25.0	90.8	94.4	3.9	69-129	20		
Toluene	25.5	25.6	25.0	102.0	102.4	0.4	70-130	20		
Methyl tert-butyl ether (MTBE)	26.7	24.3	25.0	106.8	97.2	9.4	65-165	20		
Surrogates(s)										
1,2-Dichloroethane-d4	520	484	500	104.0	96.8		76-114			
Toluene-d8	498	500	500	99.6	100.0		88-110			

Submission #: 2002-10-0084

Gas/BTEX Fuel Oxygenates by 8260B

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030B

Test(s): 8260FAB

Laboratory Control Spike

Water

QC Batch # 2002/10/14-01.62

LCS 2002/10/14-01.62-010

Extracted: 10/14/2002

Analyzed: 10/14/2002 14:10

LCSD 2002/10/14-01.62-032

Extracted: 10/14/2002

Analyzed: 10/14/2002 14:32

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD %	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		Rec.	RPD	LCS	LCSD
Benzene	22.6	22.8	25.0	90.4	91.2	0.9	69-129	20		
Toluene	24.1	24.2	25.0	96.4	96.8	0.4	70-130	20		
Methyl tert-butyl ether (MTBE)	22.4	22.3	25.0	89.6	89.2	0.4	65-165	20		
Surrogates(s)										
1,2-Dichloroethane-d4	456	456	500	91.2	91.2		76-114			
Toluene-d8	455	450	500	91.0	90.0		88-110			

Gas/BTEX Fuel Oxygenates by 8260B

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030B

Test(s): 8260FAB

Laboratory Control Spike

Water

QC Batch # 2002/10/15-01.62

LCS 2002/10/15-01.62-028

Extracted: 10/15/2002

Analyzed: 10/15/2002 10:28

LCSD 2002/10/15-01.62-050

Extracted: 10/15/2002

Analyzed: 10/15/2002 10:50

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	23.3	22.6	25.0	93.2	90.4	3.1	69-129	20		
Toluene	25.2	24.9	25.0	100.8	99.6	1.2	70-130	20		
Methyl tert-butyl ether (MTBE)	24.6	23.8	25.0	98.4	95.2	3.3	65-165	20		
Surrogates(s)										
1,2-Dichloroethane-d4	450	444	500	90.0	88.8		76-114			
Toluene-d8	472	460	500	94.4	92.0		88-110			

Gas/BTEX Fuel Oxygenates by 8260B

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030B

Test(s): 8260FAB

Matrix Spike (MS / MSD)

Water

QC Batch # 2002/10/11-01.62

U-4 >> MS

Lab ID: 2002-10-0084 - 005

MS: 2002/10/11-01.62-041

Extracted: 10/11/2002

Analyzed: 10/11/2002 18:41

MSD: 2002/10/11-01.62-003

Extracted: 10/11/2002

Dilution: 1.00

Analyzed: 10/11/2002 19:03

Dilution: 1.00

Compound	Conc. ug/L			Spk. Level ug/L	Recovery			Limits %		Flags	
	MS	MSD	Sample		MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	24.0	23.8	ND	25.0	96.0	95.2	0.8	69-129	20		
Toluene	25.1	25.4	ND	25.0	100.4	101.6	1.2	70-130	20		
Methyl tert-butyl ether	31.5	34.2	9.75	25.0	87.0	97.8	11.7	65-165	20		
Surrogate(s)											
1,2-Dichloroethane-d4	496	506		500	99.1	101.2		76-114			
Toluene-d8	500	493		500	100.0	98.7		88-110			