GETTLER-RYAN INC.

JUL 2 3 2002

TRANSMITTAL

July 3, 2002 G-R #180255

TO:

Mr. David B. De Witt

Phillips 66 Company

2000 Crow Canyon Place, Suite 400

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 (76) Service Station

#4625

3070 Fruitvale Avenue Oakland, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	June 19, 2002	Groundwater Monitoring and Sampling Report Second Quarter - Event of May 8, 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 *July 19, 2002*, this report will be distributed to the following:

cc: Mr. Don Hwang, Alameda County Health Care Services, 1131 Harbor Bay Parkway, Alameda, California 94502

Enclosure



June 19, 2002 G-R Job #180255

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

RE: Second Quarter Event of May 8, 2002

Groundwater Monitoring & Sampling Report

Tosco (76) Service Station #4625

3070 Fruitvale Avenue Oakland, California

Dear Mr. De Witt:

This report documents the most recent groundwater monitoring and sampling event 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 any of 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 report are also attached.

Please call if you have any questions or comments regarding this report. Thank you.

1 Harden

Sincerely,

Deanna L. Harding

Project Coordinator

Hagop Kevork P.E. No. C55734

Figure 1:

Potentiometric Map

Figure 2:

Concentration Map

Table 1:

Groundwater Monitoring Data and Analytical Results

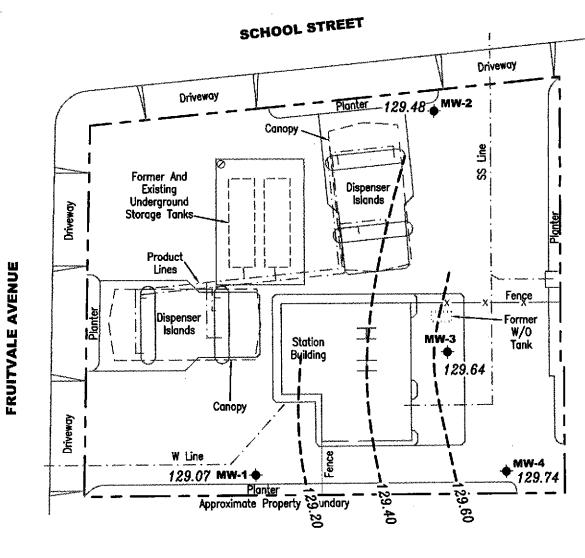
Table 2:

Groundwater Analytical Results

Table 3: Attachments: Groundwater Analytical Results - Oxygenate Compounds Standard Operating Procedure - Groundwater Sampling

Field Data Sheets

Chain of Custody Document and Laboratory Analytical Reports



EXPLANATION

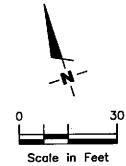
Groundwater monitoring well

UST Observation well

Groundwater elevation in feet 99.99 referenced to Mean Sea Level

Groundwater elevation contour, dashed where inferred

> Approximate groundwater flow direction at a gradient of 0.009 Ft./Ft.



Source: Figure modified from drawing provided by Unacol.



POTENTIOMETRIC MAP

Tosco (76) Service Station #4625 3070 Fruitvale Avenue Oakland, California

DATE

REVISED DATE

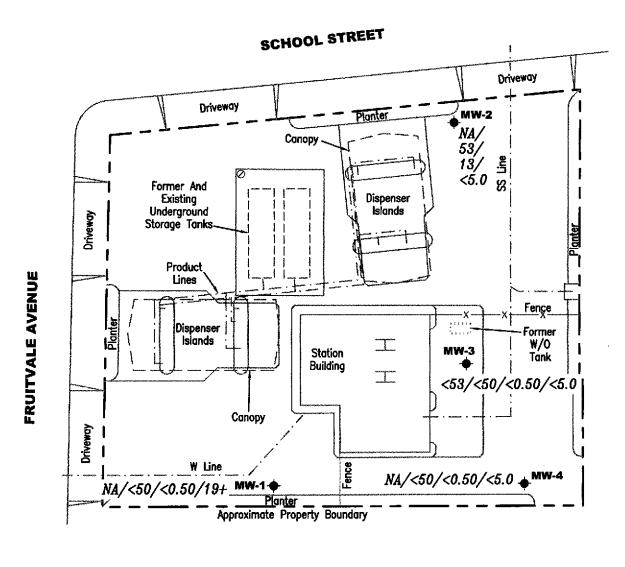
PROJECT NUMBER 180255

REVIEWED BY

May 8, 2002

FILE NAME: P:\Envira\TOSCO\4625\Q02-4625.DWG | Layout Tab: Pot2

FIGURE



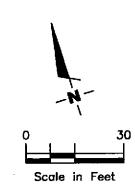
EXPLANATION

Groundwater monitoring well

A/B/C/D Total Petroleum Hydrocarbons (TPH) as Diesel/TPH as Gasoline/Benzene/MTBE concentrations in ppb

NA Not Analyzed

+ MTBE by EPA Method 8260



Source: Figure modified from drawing provided by Unocal.



CONCENTRATION MAP
Tosco (76) Service Station #4625
3070 Fruitvale Avenue

Oakland, California

REVISED DATE

PROJECT NUMBER 180255

REVIEWED BY

May 8, 2002

FILE NAME: P:\Enviro\TOSCO\4625\Q02-4625.DWG | Layout Tab: Con2

FIGURE

Table 1
Groundwater Monitoring Data and Analytical Results

Tosco (76) Service Station #4625 3070 Fruitvale Avenue Oakland, California

WELL ID/	DATE	DTW	S.I.	GWE	TPH-D	TPH-G	В	T	E	X	MTBE
TOC*(ft)		(ft.)	(fLbgs)	(msl)	(ррб)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
MW-1											
136.36	05/03/00	11.81	5.0-25.0	124.55		ND	ND	ND	ND	ND	11/142
	07/28/00	7.79		128.57	••	ND	NĎ	ND	ND	ND .	21/19 ²
	10/29/00	7.90		128.46		62 ¹	ND	ND	ND	NĎ	6.5/3.9 ²
	02/09/01	7.95		128.41		ND	ND	ND	ND	NĎ	$9.0/9.0^{2}$
	05/11/01	7.22		129.14		ND	ND	ND	ND	ND	12.7/16.3 ²
	08/10/01	8.47		127.89		<50	<0.50	< 0.50	<0.50	<0.50	17/19 ⁷
	11/07/01	8.10		128.26		<50	< 0.50	< 0.50	< 0.50	< 0.50	22/26 ²
	02/06/02	6.84		129.52		<50	< 0.50	<0.50	<0.50	< 0.50	14/18 ²
	05/08/02	7.29		129.07		<50	<0.50	<0.50	<0.50	<0.50	20/19 ²
MW-2											
138.64	05/03/00	8.59	5.0-25.0	130.05		2,400 ¹	53	ND^3	ND^3	240	3ND/ND ²
	07/28/00	9.95		128.69		2,2001	680	4.1	57	270	24/ND ²
	10/29/00	8.38		130.26		490 ¹	67	ND^3	23	22	ND^3
	02/09/01	8.41		130.23		ND	3.1	ND	0.52	1.1	ND
	05/11/01	8.93		129.71	· ·	ND	1.99	ND	ND	ND	ND
	08/10/01	10.68		127.96		96¹	20	<0.50	2.1	9.4	<5.0
	11/07/01	10.01		128.63		480 ¹	110	<1.0	26	42	· <10
	02/06/02	8.10		130.54		. 69 ¹	13	< 0.50	0.84	4.4	<5.0
	05/08/02	9.16		129.48		53¹	13	<0.50	1.2	1.5	<5.0
MW-3											
137.68	05/03/00	7.60	5.0-25.0	130.08	93 ⁵	ND	ND	ND	ND	ND	ND/ND⁴
100.101	07/28/00	7.80 8.82	3.0-23.0	128.86	ND ³	ND	ND	ND	ND	ND	ND/ND4
	10/29/00	7.33		130.35	NĎ	ND	ND	ND	NĎ	ND	ND
	02/09/01	7.33 7.40		130.33	72 ⁶	ND	ND	ND	ND	NĎ	ND
		7.40 7.90		130.28	NĎ	NĎ	ND	ND	ND	ND	ND
	05/11/01			129.78	63 ⁸	<50	<0.50	<0.50	<0.50	<0.50	<5.0
	08/10/01	9.09		140.39		~,0	70.00	20120	70100	-5.50	

Table 1
Groundwater Monitoring Data and Analytical Results

Tosco (76) Service Station #4625 3070 Fruitvale Avenue Oakland, California

					Ouidund,	CERTOTING					
WELL, ID/	DATE	DTW	S.I.	GWE	TPH-D	TPH-G	В	T	Ē	X	MTBE
TOC*(ft)		(ft.)	(fl.bgs)	(msl)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
3.600.0	44				6						
MW-3	11/07/01	9.03	5.0-25.0	128.65	888	<50	<0.50	< 0.50	< 0.50	< 0.50	<5.0
(cont)	02/06/02	7.16		130.52	<310	<50	< 0.50	<0.50	< 0.50	< 0.50	<5.0
	05/08/02	8.04		129.64	<53	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-4											
136.60	05/03/00	6.48	5.0-25.0	130.12		ND	ND	ND	ND	ND	ND/ND ²
	07/28/00	7.55		129.05		ND	ND	ND	ND	ND	ND
	10/29/00	6.12		130.48		ND	ND	ND	ND	ND	ND
	02/09/01	6.14		130.46		ND	ND	ND	ND	ND	ND
	05/11/01	7.51		129.09		ND	ND	ND	ND	ND	ND
	08/10/01	8.66		127.94		<50	< 0.50	< 0.50	<0.50	<0.50	<5.0
	11/07/01	7.92		128.68		<50	<0.50	<0.50	< 0.50	< 0.50	<5.0
	02/06/02	7.18		129.42		<50	< 0.50	<0.50	< 0.50	<0.50	<5.0
	05/08/02	6.86		129.74		<50	<0.50	<0.50	<0.50	<0.50	<5.0
HST ORSE	RVATION WELL				4						
COI ODGEI	05/03/00	8.00									
	07/28/00	9.28			·						
	10/29/00	7.75									
	02/09/01	6.14						••			
	05/11/01	7.96									
	08/10/01	9.54		***							••
	11/07/01	9.33									
	02/06/02	8.08									
	05/08/02	8.51		**							
	V3/VQ/V2	0.31									

Table 1
Groundwater Monitoring Data and Analytical Results
Tosco (76) Service Station #4625

co (76) Service Station #46 3070 Fruitvale Avenue Oakland, California

WELL ID/	DATE	DTW	S.I.	GWE	TPH-D	TPH-G	В	T	E	X	MTBE
FOC*(ft)		(ft.)	(fl.bgs)	(msl)	(ppb)	(ppb)	(ppb)	(ррв)	(ppb)	(ppb)	(ppb)
Frip Blank											
	05/03/00					ND	ND	ND	ND	ND	ND
	07/28/00					ND	ND	ND	ND	ND	ND
	10/29/00					ND	ND	ND	ND .	ND	ND
	02/09/01					ND	ND	ND	ND	ND	ND
	05/11/01					ND	ND	ND	ND	ND	ND
•	08/10/01	***				<50	< 0.50	< 0.50	< 0.50	< 0.50	<5.0
	11/07/01					<50	<0.50	< 0.50	<0.50	< 0.50	<5.0
	02/06/02				·	<50	<0.50	<0.50	<0.50	<0.50	<5.0
	05/08/02					<50	< 0.50	<0.50	<0.50	< 0.50	<5.0

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (76) Service Station #4625 3070 Fruitvale Avenue Oakland, California

EXPLANATIONS:

TOC = Top of Casing

TPH-D = Total Petroleum Hydrocarbons as Diesel

(ppb) = Parts per billion

DTW = Depth to Water

TPH-G = Total Petroleum Hydrocarbons as Gasoline

ND = Not Detected

(ft.) = Feet

B = Benzene

S.I. = Screen Interval

T = Toluene

-- = Not Measured/Not Analyzed

(ft.bgs) = Feet Below Ground Surface

E = Ethylbenzene

GWE = Groundwater Elevation

X = Xylenes

(msl) = Mean sea level

MTBE = Methyl tertiary butyl ether

- TOC elevations were surveyed based on a cut square on School Street, City of Oakland Benchmark No. 3783, (Elevation = 136.99 feet, msl).
- Laboratory report indicates gasoline C6-C12.
- MTBE by EPA Method 8260.
- Detection limit raised. Refer to analytical reports.
- MTBE by EPA Method 8240.
- Laboratory report indicates unidentified hydrocarbons C9-C24.
- Laboratory report indicates discrete peaks.
- MTBE by EPA Method 8260 was analyzed beyond the EPA recommended holding time.
- Laboratory report indicates hydrocarbon pattern is present in the requested fuel quantitaion range but does not resemble the pattern of the requested fuel.

Table 2 Groundwater Analytical Results

Tosco (76) Service Station #4625 3070 Fruitvale Avenue Oakland, California

WELLID	DATE	VOCs by EPA 8240	VOCs by EPA 8021	VOCs by EPA 8260	SVOCs by EPA 8270	Chromium	TOG
		(ррв)	(ppb)	(pph)	(ppb)	(ррт)	(ppm)
MW-3							
	05/03/00	ND			ND	ND	ND
	07/28/00	\mathbf{ND}^1			ND	1.8	ND
	10/29/00	ND			ND	ND	7.0
	02/09/01	ND			ND	0.038	ND
	05/11/01	ND	••		ND	ND	ND
	08/10/01	<2.0-<20	<0.50-<5.0		<5.0-<50	<0.010	<5.0
	11/07/01	<2.0-<20	<0.50-<5,0 ²		<5.0-<50	< 0.010	<5.0
	02/06/02	<2.0-<20	<0.50-<5.0		<5.0-<50	0.11	<5.0
	05/08/02	<2.0-<20	••	$< 0.50^3$	<5.2-<100	0.037	<5.2

EXPLANATIONS:

VOCs = Volatile Organic Compounds

SVOCs = Semi-Volatile Organic Compounds

TOG = Total Oil and Grease

(ppb) = Parts per billion

(ppm) = Parts per million

ND = Not Detected

-- = Not Analyzed

ANALYTICAL METHODS:

EPA 200 Series Methods for Chromium EPA Method SM5520 for Total Oil and Grease

NOTE: All EPA Method 8240, 8021, 8260, and 8270 constituents were ND, unless noted.

All VOCs by EPA Method 8240 were ND, except for Tetrachloroethene (PCE) was detected at 2.7 ppb.

² All VOCs by EPA Method 8021 were less than the reporting limit, except for Trichloroethane (TCE) was detected at 0.55 ppb.

All VOCs by EPA Method 8260 were less than the reporting limit, except for cis-1,2-Dichloroethene (c-1,2-DCE) was detected at 0.69 ppb, PCE at 0.56 ppb, and TCE at 0.86 ppb.

Table 3
Groundwater Analytical Results - Oxygenate Compounds

Tosco (76) Service Station #4625 3070 Fruitvale Avenue Oakland, California

WELLID	DATE	ETHANOL (ppb)	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	1,2-DCA (ppb)	EDB (ppb)
MW-1	02/09/01 05/11/01 08/10/01 ¹ 11/07/01 02/06/02 05/08/02	ND ND <1,000 <500 <500	ND ND <100 <20 <100	9.0 16.3 19 26 18 19	ND ND <2.0 <1.0 <2.0 <2.0	ND ND <2.0 <1.0 <2.0 <2.0	ND ND <2.0 <1.0 <2.0 <2.0	ND ND <2.0 <1.0 <2.0 <2.0	ND ND <2.0 <1.0 <2.0 <2.0 <2.0
MW-3	07/28/00		ND	ND	ND	ND	ND	ND	ND

EXPLANATIONS:

TBA = Tertiary butyl alcohol

MTBE = Methyl tertiary butyl ether

DIPE = Di-isopropyl ether

ETBE = Ethyl tertiary butyl ether

TAME = Tertiary amyl methyl ether

1,2-DCA = 1,2-Dichloroethane

EDB = Ethylene dibromide/1,2-Dibromoethane

(ppb) = Parts per billion

-- = Not Analyzed

ND = Not Detected

ANALYTICAL METHOD:

EPA Method 8260 for Oxygenate Compounds

Laboratory report indicates sample was analyzed beyond the EPA recommended holding time.

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, static water level measurements are collected with the interface probe and are also recorded in the field notes.

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 polyvinyl chloride 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. 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.

12 CALLY 77	25		Job#:	18025		
Address: 3	070 Fruitva	ole Ave.	Date:	5-8-0	۷.	·
	cland, (A.		Sample	er: <u>50</u> e	· · · · · · · · · · · · · · · · · · ·	
Well ID	mw-1	Well Condi	ition:	0.K		
Well Diameter		Hydrocarbo	The state of the s	Amount Ba		
Total Depth	7.29	Thickness: Volume Factor (VF)	2" = 0.1	<u>in</u> (product/was 7 3" = 0.38 6" = 1.50	 	= 0.66
Depth to Water	1.2/		, 	,		
	17.79 x	vf <u>@ 17_3.0</u>	2 X 3 (case w	olume) = Estimated Po	ırge Volume:	9 lost 1
Purge Equipment:	Disposable Bailer Bailer Stack Suction Grundfos Other:	_	Sampling Equipment:	Disposable Ba Bailer Pressure Baile Grab Sample	·.	*
Sampling Time:	<u>11',36 k m (113</u> te:lon		r Color: nent Descript		Odor 10 C	
Did well de-wate		If yes	i; Time:	Voluc	ne:	(gal)
Did well de-wate		If yes	r; Time:	Volumenture D.O.	ORP	Alkalinity (ppm)
Did well de-wate	Volume pH (gal.)	Conductivit	Time:	D.O. (mg/L)	ORP	Alkalinity
Time 1	Volume pH (gal.)	Conductivity purhos/cm.	Time:	Volumentum D.O.	ORP	Alkalinity
Did well de-wate	Volume pH (gal.)	Conductivit	Time:	D.O. (mg/L)	ORP	Alkalinity
Time 11:23	Volume pH (gal.)	Conductivity purhos/cm.	Time:	D.O. (mg/L)	ORP	Alkalinity
Time 1	Volume pH (gal.)	Conductivity purhos/cm.	Time:	Volumenture D.O. (mg/L)	ORP	Alkalinity
Time Time 11.28 11.28 12.28 SAMPLE ID	Volume pH (gal.) 3 8.12 6 7.36 7.39	Conductivity perhos/cm. O · G O · 2 · 2 · 2 · 3 · 3 · 3 · 3 · 4 · 4 · 4 · 4 · 4 · 4	Time:	TION LABORATORY	ORP (mV)	Alkalinity (ppm)
Time 1.28	Volume pH (gal.) 3 8.11 6 7.36 9 7.39	Conductivity perhos/cm. O · G O · 2 · 2 · 2 · 3 · 3 · 3 · 3 · 4 · 4 · 4 · 4 · 4 · 4	Tempe Y 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	TION	ORP (mV)	Alkalinity (ppm)
Time Time 11.23 11.25 12.28 SAMPLE ID	Volume pH (gal.) 3 8.12 6 7.36 7.39	Conductivity perhos/cm. O · G O · 2 · 2 · 2 · 3 · 3 · 3 · 3 · 4 · 4 · 4 · 4 · 4 · 4	Time:	TION LABORATORY	ORP (mV)	Alkalinity (ppm)
Time Time 11.23 11.25 12.28 SAMPLE ID	Volume pH (gal.) 3 8.12 6 7.36 7.39	Conductivity perhos/cm. O · G O · 2 · 2 · 2 · 3 · 3 · 3 · 3 · 4 · 4 · 4 · 4 · 4 · 4	Time:	TION LABORATORY	ORP (mV)	Alkalinity (ppm)
Time Time 11.28 11.28 12.28 SAMPLE ID	Volume pH (gal.) 3 8.12 6 7.36 7.39	Conductivity perhos/cm. O · G O · 2 · 2 · 2 · 3 · 3 · 3 · 3 · 4 · 4 · 4 · 4 · 4 · 4	Time:	TION LABORATORY	ORP (mV)	Alkalinity (ppm)

Client/ Facility #_40	025		Jot	o#:	18025	-5	
	070 Fruit	role A	<u>ve.</u> Da	te: <u> </u>	5-8-0	2	
City: Oal	cland, CA.		Sar	mpler:	50 e		
Well ID	mw-2	We	ill Condition:	0.	K		-
Well Diameter			drocarbon	· •	Amount Ba		7
Total Depth	24.30,		ckness:	• 0.17	(product/wai 3" = 0.38		loel)
Depth to Water	7.16 +	F	ICCOT (VF)	6 = 1		12" = 5,80	= 0.66
	15.14 x	VF <u>Ø · l</u>	7 <u>257</u> x36	ise volume) =	Estimated Pu	rrga Voluma: _	8 Igal)
Purge Equipment:	Disposable Bailer Bailer		Samplini Equipme				•
	Stack	•	- Edubine	Ba	sposable Ba iiler		
	Grundfos	•	,		ess ure Baïle ab Sample	er .	•
	Other:			Other: _		- . ·	•
Starting Time: Sampling Time: Purging Flow Rat	12:039 m(1	203)	Weather Conditions Water Color: Sediment Desc	cl	clear ear	Odor 4	on e
Did well de-wate	ů ————		If yes; Time:	` 	Volum	1e;	الموا الموا
	Volume pH (gal.)	jin.	ductivity (**) Tes shos/cm X	**************************************	D.O. (mg/L)	ORP (mV)	Alkalinicy (ppm)
11:55	5.0 7.50	7	0.20	23.6		·	*
	<u>3 7.63</u>	<u>≥</u> .—∔	0:18 -	73.2			·
					•		
*	- , <u>-</u> , , , , , , , , , , , , , , , , , , ,		······································	<u> </u>		· · · · · · · · · · · · · · · · · · ·	
SAMPLE ID	(#) - CONTAINER	LABOI REFRIG.	RATORY INFORI PRESERV. TYPE		: DRATORY	ANA	LYSES
MW-2	3404	Υ	HCL	Se	-	T	TEX, MTBE
		·					
					· · · · ·		
COMMENTS: _					:		
					•		<u> </u>
	_	-	•	•			

		£1E£1	DAIA SHEE		•
Client/ Facility # 46	125		Job#		
Address:3	070 Fruity	ole Av	e. Date:	5-8-6	02
City: Oak	cland, CA.	·	Sam	oler: <u>50 e</u>	
Well ID	mw-3	Well	Condition:	0.K	
Well Diameter	2 in		ocarbon	Amount E	Bailed
Total Depth Depth to Water	8.04	Vah	oness: 2° = 0 cor (VF)	<u>in (product/w</u> 17 3* = 0.3 6' = 1.50	
		VF .0.17	-284×3 (case	volume) = Estimated (Purge Volume: 8:5 [gal]
Purge Equipment:	Disposable Bailer Bailer Stack Suction Grundfos Other:		Sampling Equipment	: Disposable B Bailer Pressure Bail Grab Sample Other:	ler
Starting Time: Sampling Time: Purging Flow Rat	• -	23§) pm.	Weather Condition Water Color: Sediment Descrip	clea(Odor NONE
1 1 2/	70lume pH (gal.) 2.5 7.15 5.5 7.18	Cond		•	ORP Allcalinity (mV) (ppm)
SAMPLE ID	(#) - CONTAINER	LABOR REFRIG.	ATORY INFORM PRESERV. TYPE	ATION LABORATORY	ANALYSES
Mw-31	3404	Y	HCL	Seq.	TPHG. BTEX, MTBE
	1AW6	<i>tt</i>	//	1/	VOES by 8240.
-	1 Amb	7		1/	SYOC'S 548.270.
COMMENTS: _	1 Amb	19	HCC HNO3	"	Total Chromium
		 -	 		<u> </u>

Client/ Facility #_46	25	,	Job#:	18025	-5	
	070 Fruity	ale Av	<u>re∙</u> Date:	5-8-0	2	
City: Oak	land, CA.		Samp	ler: <u>50 e</u>		
Well ID	mw-4	Well	Condition:	0.K		
Well Diameter	2 in	-	rocarbon	Amount Ba		-
Total Depth	24.65 4		kness:	<u>in</u> (product/was		0,66
Depth to Water	6.86	1	tor (VF)	€ = 1.50	12 = 5.80	4.00
;	x	٧ ٠ <u>ه. ۱</u>	1_3.02 x 3 (case	volume) = Estimated Pu	arge Volume:	9 1001 1
Purge Equipment:	Disposable Bailer Bailer Stack Suction		Sampling Equipment	Bailer Pressure Baile		· *
	Other:	_		Grab Sample Other	-	
Starting Time:		13	•	~ ! ~		
Sampling Time: Purging Flow Rate	11:04 A m (110	4) pm.	Weather Condition Water Color: Sediment Descrip	clea(Odors // o	0 V Z
Sampling Time:	11:04 A m (110	4) pm.	Water Color: Sediment Descrip	clea(Odors // o	ou <
Sampling Time: Purging Flow Rate Did well de-water Time V	11.04 A m (110) 2: 10 ? folume pH (g=1.)	Cond	Water Color: Sediment Descrip If yes; Time: Incrivity (Temposos/cm X	clea(tion:	Odor: M	•
Sampling Time: Purging Flow Rate Did well de-water Time V	11:04 A m (110) ? folume pH (g=1)	Cond	Water Color: Sediment Descrip If yes; Time:	clea(tion:	Odor: // o	
Sampling Time: Purging Flow Rate Did well de-water Time V	11.04 A m (110) 2: 10 ? folume pH (g=1.)	Cond	Water Color: Sediment Descrip If yes; Time: Incrivity Temposos/cm X	clea(tion:	Odor: // o	
Sampling Time: Purging Flow Rate Did well de-water Time V	11:04 A m (110) ? folume pH (g=1)	Cond	Water Color: Sediment Descrip If yes; Time: Incrivity Temposos/cm X	clea(tion: Volume D.O. (mg/L) 2.5	Odor: // o	
Sampling Time: Purging Flow Rate Did well de-water Time V	11:04 A m (110) ? folume pH (g=1)	Cond	Water Color: Sediment Descrip If yes; Time: Incrivity Temposos/cm X	clea(tion: Volume D.O. (mg/L) 2.5	Odor: // o	
Sampling Time: Purging Flow Rate Did well de-water Time V	11:04 A m (110) ? folume pH (g=1)	Condi	Water Color: Sediment Descrip If yes; Time: Incrivity Temposos/cm X	Clea(tion:	Odor: // o	
Sampling Time: Purging Flow Rate Did well de-water Time V 10:50 10:54	11.04 A M (110) 10.04 A M (110) 10.02 10.	Correct parts of the correct p	Water Color: Sediment Descrip If yes; Time: Inctivity 1	Clea(tion: Volum D.O. (mg/L) 2-8 3-2 CTION LABORATORY	Odor: N (Alkalinity (ppm)
Sampling Time: Purging Flow Rate Did well de-water Time V	11:04 A m (110) 10:10	Cond	Water Color: Sediment Descrip If yes; Time: Inctivity Temp ass/cm X 7 7 7 7 7 7 7 7 7 7 7 7 7	clea(tion: Volum D.O. (mg/L) 2.5 3.2	Odor: M	Alkalinity (ppm)
Sampling Time: Purging Flow Rate Did well de-water Time V 10:50 10:54	11.04 A M (110) 10.04 A M (110) 10.02 10.	Correct parts of the correct p	Water Color: Sediment Descrip If yes; Time: Inctivity 1	Clea(tion: Volum D.O. (mg/L) 2-8 3-2 CTION LABORATORY	Odor: N (Alkalinity (ppm)
Sampling Time: Purging Flow Rate Did well de-water Time V 10:50 10:54	11.04 A M (110) 10.04 A M (110) 10.02 10.	Correct parts of the correct p	Water Color: Sediment Descrip If yes; Time: Inctivity 1	Clea(tion: Volum D.O. (mg/L) 2-8 3-2 CTION LABORATORY	Odor: N (Alkalinity (ppm)
Sampling Time: Purging Flow Rate Did well de-water Time V	11.04 A M (110) 10.04 A M (110) 10.02 10.	Correct parts of the correct p	Water Color: Sediment Descrip If yes; Time: Inctivity 1	Clea(tion: Volum D.O. (mg/L) 2-8 3-2 CTION LABORATORY	Odor: N (Alkalinity (ppm)

Client/ Facility #_46	,25		Job#:		
	070 Fruits	ole A	<u>ve · Date:</u>	5-8-0	2
City: Oal	cland, CA.	-	Sampl	er: <u>50 e</u>	
Well ID	O SOME UST	ob.Weil Wel	l Condition:	0.K	
Well Diameter			rocarbon	Amount Ba	<i>~</i>
Total Depth	0 1		lume 2° = 0.1	in (product/wat 7 3" = 0.38	
Depth to Water	8,51 #	Fa	cor (VF)	€ = 1.50	12" = 5,80
Purge Equipment:	Disposable Bailer Bailer Stack Suction Grundfos Other:	7	Sampling Equipment:	Disposable Ba Bailer Pressure Baile Grab Sample Other:	
	te:	3 bar -	Weather Condition Water Color: Sediment Descript If yes: Time:	clea(Odor:
	Volume pH (g=L)	Con	ductivity t ^O Tempo hos/cm X - C	• • • •	ORP Alkalinity (mV) (ppm)
	/		· · · · · · · · · · · · · · · · · · ·		
<u>*</u>		1 ABO	RATORY INFORMA	TION	
SAMPLEAD	(#) - CONTAINER	REFRIG.	PRESERV, TYPE	LABORATORY	ANALYSES
wa-	3 vat	\ <u>\</u>	HGL	Seq	TPHG. BTEX, MTBE
COMMENTS: _	M. onl	1.		-	_
· · · · · · · · · · · · · · · · · · ·		· :		· ·	



)		Fool	ily Addre	•• <u> 30 </u>	CO #4625 O Fruity	ale A	ve.,	0ak1	and,	CA			Contact		<u> </u>	l. Da	ve De	N1tt		iouy-ivecolu
TOSO		Cone	ultont Pr	ojest Nu	mber	180255		-				_ ,	Loborala	rv Henni		-	_	<u> 7-238</u> :1vt1		<u> </u>	•
Touce Mediating a	Carabasa	Cone	vitant Ho iddrese	ime <u> (آ)</u> 67	ittler '47 Si	-Rvan In ERRA COUR	C(G	<u>-R</u> Ir	رع			<u> </u>	aberala	ry R∳lea	iee Phire	bor	-	-			
2009 Dida Caryon San Ramoni, Culty	75 . Sim , 400		Foliaci Ci	onlact (I	O	eanna L.	11, <u>301</u>	15 1	<u>'D</u> nr	IN.C	1 945	1 1	Samples Collected by (Home) JOE A SENIAN 1								
				1) 1)	hone)(9	25) <u>551 -</u> 75	<u> </u>	ng	. 925	2551	7000	- 1	effection	_	- 8 ·	-X- c	٠ -			·	
	-		፱				7.7 (14)	Потра	1, <u>22,3</u>	771-	7899	<u> </u>	igrotun	<u> </u>), <u>-</u>	¥	24		-11		
5037	- }	}	₹ 5	. A.			ł	1		W.	/ 	<u>,</u>	_ Analys	** To 5	e Parfo	1	, § Sur	<u> </u>	, .		DO NOT BILL!
(10503)	Somple Numb	r of Container	Soil A 1 / Webs C 1 C	6 = Grab C = Compasite D = Discrete		Preservation	ON NO	BTEX WINTER	-	Marie Co	. Helecurbor	• Aromade	- Crossica	somoonics	Zavi	ores hs	0228485	Control	-1		TB-LB ANALYSIS Run 8 Oxy's by
Se la constant de la	3	Numb	No.	<u>\$</u>	Ė	Somple	- 10 (%)	TH Care	TPH Disent (5015)	Off and (5520)	Purpeuble (BOTG)	Purpedble (5026)	Purposte (8240)	Extractable (3270)	CAC-PS Zo.Ni (CAC-PS Zo.Ni (CAP or AA)	Vocssy	510054	10 P			8260 on all 8021 MTBE hills.
TB-L8	<u> </u>	Vo A	3	0-	-	HCC	Y	<u> </u>					-					1.	1	1	8 Oxy's – MTBH
mw-1	07	73 A	,		1/36	,		V											-:		TBA, DIPE, ETBE TAME, 1,2DCA
MW-2	04	VOA.		. /	1203		/	1	<u> </u>	<u> </u>				· -	<u></u>				1		EDB, Ethanoi -
14W-3		2 AMI 2 PELY			1238		1		<u>~</u>	V			-			~	1	V	1	 -	
-MW-4	05	19.4		,	1104	,	1					-							1	1	-
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 <u> -</u>			·]						<u> </u>				
					<u>-</u>						}						<u> </u>	<u> </u>	<u></u> _		
Relinquished by f	Signature)	<u> </u>		Hiation		010/Time 154)	. 🔨 🔻	olived By		•		10	gonizati	_	Dole J	/mg 3 8 /07	31.0	-	Turn Ac		no (Cirelo Chojos)
Nellingviehed By (S			Organ	Viallon	D	ate/Ame		ived By			PA	\neg	gonkulk			/Ilme				48	
Rollingulahed By (8	ignature)		Grgar	diation	Ď.	ule/∏me	fleo	eved Fo	Labor	ilory By	(Signat	nte)			Date	/Tima	=	•	Ç	10	Days Days



22 May, 2002

Deanna Harding Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568

RE: Tosco(1) Sequoia Report: L205032 GEFFLEK-KTAN GOL

Enclosed are the results of analyses for samples received by the laboratory on 05/08/02 15:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Richard G. Yee For Wayne Stevenson

CA ELAP Certificate #2360

Project Manager



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J

6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #4625, Oakland

Project Manager: Deanna Harding

Reported: 05/22/02 15:35

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-LB	L205032-01	Water	05/08/02 00:00	05/08/02 15:45
MW-1	L 205 032 - 02	Water	05/08/02 11:36	05/08/02 15:45
MW-2	L205032-03	Water	05/08/02 12:03	05/08/02 15:45
MW-3	L205032-04	Water	05/08/02 12:38	05/08/02 15:45
MW-4	L205032-05	Water	05/08/02 11:04	05/08/02 15:45

Sequoia Analytical - San Carlos

Richal year

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



Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Total Purgeable Hydrocarbon (C6-C12) by EPA 8015M and BTEX/MTBE by EPA 8021B

Sequoia Analytical - San Carlos Reporting Analyte Result Limit Units Dilution Batch Prepared Analyzed Method Notes TB-LB (L205032-01) Water Sampled: 05/08/02 00:00 Received: 05/08/02 15:45 Purgeable Hydrocarbons as Gasoline ND 50 ug/l 2050042 05/20/02 05/21/02 EPA 8021B Benzene ND 0.50 Toluene ND 0.50 Ethylbenzene ND 0.50 Xylenes (total) ND 0.50 Methyl tert-butyl ether ND 5.0 Surrogate: a,a,a-Trifluorotoluene 101% 70-130 MW-1 (L205032-02) Water Sampled: 05/08/02 11:36 Received: 05/08/02 15:45 Purgeable Hydrocarbons as Gasoline ND 50 ug/l 2050042 05/20/02 05/21/02 EPA 8021B Benzene ND 0.50 Toluene ND 0.50 Ethylbenzene ND 0.50 Xylenes (total) ND 0.50 Methyl tert-butyl ether 20 5.0 Surrogate: a,a,a-Trifluorotoluene 98.8% 70-130 MW-2 (L205032-03) Water Sampled: 05/08/02 12:03 Received: 05/08/02 15:45 Purgeable Hydrocarbons as Gasoline 53 50 2050042 ug/I 05/20/02 05/21/02 EPA 8021B P-01 Benzene 13 0.50 Toluene ND 0.50 Ethylbenzene 1.2 0.50 Xylenes (total) 1.5 0.50 Methyl tert-butyl ether ND 5.0 Surrogate: a,a,a-Trifluorotoluene

70-130

85.7%



Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #4625, Oakland

Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Total Purgeable Hydrocarbon (C6-C12) by EPA 8015M and BTEX/MTBE by EPA 8021B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L205032-04) Water Sampl	ed: 05/08/02 12:38	Received: 0	5/08/02	15:45					
Purgeable Hydrocarbons as Gasoline	ND	50	ug/l]	2050042	05/20/02	05/21/02	EPA 8021B	
Benzene	ND	0.50	11	It	17	b	n	•	
Toluene	ND	0.50		II	11	U)ı	П	
Ethylbenzene	ND	0.50	н	п	n	ш	н		
Xylenes (total)	ND	0.50	н	ti	11	n	н	**	
Methyl tert-butyl ether	ND	5.0	ŧı	n	и	н		н	
Surrogate: a,a,a-Trifluorotoluene		90.6 %	70	130	,,	11	n	n	
MW-4 (L205032-05) Water Sample	ed: 05/08/02 11:04	Received: 0	5/08/02	15:45					
Purgeable Hydrocarbons as Gasoline	ND	50	ug/l	J	2050047	05/21/02	05/21/02	EPA 8021B	
Benzene	ND	0.50	Ħ	п	н	H	**		
Toluene	ND	0.50	н	H	**	11	**	**	
Ethylbenzene	ND	0.50	n	п	v	11	н	•	
Xylenes (total)	ND	0.50	п	u	n	и	п	0	
Methyl tert-butyl ether	ŅD	5.0	и	Ħ	**	n	ti	11	
Surrogate: a,a,a-Trifluorotoluene	-	98.0 %	70-	130	"	"	n	n	



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-3 (L205032-04) Water	Sampled: 05/08/02 12:38	Received: 0	5/08/02 1	5:45		-		·	_
Bromodichloromethane	ND	0.50	ug/l	1	2050022	05/09/02	05/09/02	EPA 8260B	
Bromoform	ND	0.50	•	17	11	н	"	"	
Bromomethane	ND	0.50	4 T	11	10	n	n	н	
Carbon tetrachloride	ND	0.50	н	**	10	li		n	
Chlorobenzene	ND	0.50	**	n		11	п	11	
Chloroethane	ND	0.50	**	н	,	11	•	n	
Chloroform	ND	0.50	PI	n		11	**	н	
Chloromethane	ND	0.50	h	11	n	**	,	,,	
Dibromochloromethane	ND	0.50	н	is	*	**	#	н	
1,2-Dibromoethane (EDB)	ND	0.50	н	19			77	n	
1,2-Dichlorobenzene	ND	0.50	н	37	It .	••	**	**	
1,3-Dichlorobenzene	ND	0.50	**	71		•	71	,	
1,4-Dichlorobenzene	ND	0.50	**			**	*	H	
Dichlorodifluoromethane	ND	0.50	¥I	TF	н	**	•	**	
1,1-Dichloroethane	ND	0.50	11	11	**	и		"	
1,2-Dichloroethane	ND	0.50	**	W	н	Ħ	11	H	
1,1-Dichloroethene	ND	0.50	**	н	n	h		n	•
cis-1,2-Dichloroethene	0.69	0.50	н	ħ		n	4	n	
trans-1,2-Dichloroethene	ND	0.50	п	ti .	н	п	•	n	
1,2-Dichloropropane	ND	0.50	n	IJ	18	*	n	n	
cis-1,3-Dichloropropene	ND	0.50	10	19	19	**	II.	н	
trans-1,3-Dichloropropene	ND	0.50	**	"	19	17	**	h	
Freon 113	ND	0.50	• '	11	19	11	ų	н	
Methylene chloride	ND	0.50	**	11	10	π	Ħ	н	
1,1,2,2-Tetrachloroethane	ND	0.50	n	н	17	**	v	n	
Fetrachloroethene	0.56	0.50	**	#1	II .	u.	**	н	
1,1,1-Trichloroethane	ND	0.50	n	**	n	n		n	
1,1,2-Trichloroethane	ND	0.50		**	n	"		H	
Frichloroethene	0.86	0.50	11	II	н	H	,,	11	
richlorofluoromethane	ND	0.50	**	n		n	ti	**	
Vinyl chloride	ND ND	0.50	n	u	h	ij	11	**	
Surrogate: 1,2-Dichloroethane-	-d4	94.2 %	70-1	30	,,	"		·····	
Surrogate: Toluene-d8		96.2 %	70-1		"	"	#	"	
Surrogate: 4-BFB		92.0 %	70-1		"	H	,,		



Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding Reported: 05/22/02 15:35

Volatile Organic Compounds by EPA Method 8240B Sequoia Analytical - San Carlos

		Panarina							
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L205032-04) Water	Sampled: 05/08/02 12:38	Received: 0	5/08/02 15	5:45					A-01
Acetone	ND	20	ug/l	1	2050022	05/09/02	05/09/02	EPA Method 8240	
Benzene	ND	2.0	ħ	"	"	п	R	II .	
Bromodichloromethane	ND	2.0	н	**	n	Ħ	n	п	
Bromoform	ND	2.0	ħ	11	II .	17	ar .	н	
Bromomethane	ND	2.0	H	H	tı	10	10	"	
2-Butanone	ND	20	п	II	н	u	19	10	
Carbon disulfide	ND	2.0	н	n	*1	н	н	n	
Carbon tetrachloride	ND	2.0	**	н	D	11	H	W.	
Chlorobenzene	ND	2.0	4	п	π	ut.	п	•	
Chloroethane	ND	2.0	"	н	.n	"	**	19	
Chloroform	ND	2.0	10	*r	π	п	n	н	
Chloromethane	ND	2.0	u	n	u	•	11 -	н	
Dibromochloromethane	ND	2.0	9	**	11	10	tr.	н	
1,1-Dichloroethane	ND	2.0	10	11	н	11	11	Ht.	
1,2-Dichloroethane	ND	2.0	11	+	H	n	H	π	
1,1-Dichloroethene	ND	2.0	H	n	н	ŧŧ	н	М	
cis-1,2-Dichloroethene	ND	2.0	l t	Ħ	н		н	h	
trans-1,2-Dichloroethene	ND	2.0	**	n	n	**	**		
1,2-Dichloropropane	ND	2.0	11	Ħ	н	п	н		
cis-1,3-Dichloropropene	ND	2.0	17	u	H	и	0	н	
trans-1,3-Dichloropropene	ND	2.0	н	•	"	11	*	н	
Ethylbenzene	ND	2.0	H	11	π	11	**	н	
2-Hexanone	ND	20	н	и	н	н	**	н	
Methylene chloride	ND	5.0	н	,,	#	n	n	II .	
4-Methyl-2-pentanone	ND	20	n	п	11	н	п	11	
Styrene	ND	2.0	н	н	H	N	н	n	
1,1,2,2-Tetrachloroethane	ND	2.0	n	ıı .	н	11	Ħ	Ħ	
Tetrachloroethene	ND	2.0	v	11	**		н	**	
Toluene	ND	2.0	pr .	'n	19	11	п	**	
1,1,1-Trichloroethane	ND	2.0	n	19		et .	H	h	
1,1,2-Trichloroethane	ND	2.0	п	"	я	•	н	#	
Trichloroethene	ND	2.0	п			11	н	ħ	
Trichlorofluoromethane	ND	2.0	tı	11	n		ır	**	
Vinyl acetate	ND	5.0	•	**	h	п	"	n	
Vinyl chloride	ND	2.0	*	11	t)	10	n	п	
Total Xylenes	ND	2.0	**	n		п	n	H	
			7/ 1		n	,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	n	
Surrogate: 1,2-Dichloroethane	:-u4	94.2 %	76-1		"	,,	"		
Surrogate: Toluene-d8		96.2 %	88-1		,,			"	
Surrogate: 4-BFB		92.0 %	86-I	15	"	"	"	n	

Sequoia Analytical - San Carlos

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

Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland

Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Volatile Organic 8 Oxygenated Compounds by EPA Method 8260B

Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (L205032-02) Water	Sampled: 05/08/02 11:36	Received: 0	5/08/02 15	:45					
Ethanol	ND	500	ug/i	1	2050048	05/22/02	05/22/02	EPA 8260B	
1,2-Dibromoethane	ND	2.0	n	11	н	п	II	II .	
1,2-Dichloroethane	ND	2.0	11	**	Ħ	н	n	н	
Di-isopropyl ether	ND	2.0	u	н	н	*	11	н	
Ethyl tert-butyl ether	ND	2.0	**	n	41	. 41	u	w	
Methyl tert-butyl ether	19	2.0	n	н	II.	4	#		
Tert-amyl methyl ether	ND	2.0		II .	**	n	₩	u	
Tert-butyl alcohol	ND	100	п	ti	н	H	11	11	
Surrogate: 1,2-Dichloroethan	e-d4 .	105 %	70-1.	30	"	n	, "	,,	
Surrogate: Toluene-d8		101 %	70-1.	30	,	п	n	п	



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Diesel Hydrocarbons (C10-C28) by 8015B modified

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L205032-04) Water Sample	ed: 05/08/02 12:38	Received: 0	5/08/02 1	5:45					
Diesel Range Organics (C10-C28)	ND	53	ug/l]	2E14022	05/14/02	05/21/02	8015Bm	
Surrogate: n-Octacosane		80.2 %	50-	150	"	"	"	,,	



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding Reported:

05/22/02 15:35

Total Metals by EPA 200 Series Methods Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L205032-04) Water	Sampled: 05/08/02 12:38	Received: 0	5/08/02	15:45					
Chromium	0.037	0.010	mg/l	1	2E14008	05/14/02	05/20/02	EPA 200.7	

Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Semivolatile Organic Compounds by EPA Method 8270C Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L205032-04) Water	Sampled: 05/08/02 12:38	Received: 0	5/08/02	15:45	<u>-</u>	<u> </u>			
Acenaphthene	ND	5.2	ug/l	1	2E10019	05/10/02	05/14/02	EPA 8270C	
Acenaphthylene	ND	5.2	19	H	**		n	H	
Anthracene	ND	5.2	*	n	n	ŧı	10	**	
Benzoic acid	ND	10	н	w	H	п	u	п	
Benzo (a) anthracene	ND	5.2	57	N	н	п	11	*	
Benzo (b) fluoranthene	ND	5.2	н	н	10	н	•	n	
Benzo (k) fluoranthene	ND	5.2	n	n	10	п	11	н	
Benzo (ghi) perylene	ND	10	U	п	11	n	10	ħ	
Вепzo[a]pyrene	ND	5.2	n	11	41	ш		11	
Benzyl alcohol	ND	1 0	**	u	•	н	v	n	
Bis(2-chloroethoxy)methane	ND	5.2	п	н		н	**	Ħ	
Bis(2-chłoroethyl)ether	ND	10	Ħ	*1	ħ	н	**	#	
Bis(2-chloroisopropyl)ether	ND	5.2	**	**	11	n	. 11	41	
Bis(2-ethylhexyl)phthalate	ND	10	н	•	**	н	11	Ħ	
4-Bromophenyl phenyl ether	ND	5.2	н	Ħ		ji			
Butyl benzyl phthalate	ND	5.2		n	н	,	17	*1	
4-Chloroaniline	ND	52	19	n	n	19		п	
2-Chloronaphthalene	ND	5.2	ŧr.	17	11	11	Tr.	•	
4-Chloro-3-methylphenol	ND	5.2	н	**	H	11		**	
2-Chlorophenol	ND	5.2	#	n	19	tr	н	v	
1-Chlorophenyl phenyl ether	ND	10	M	11	11	ħ	**	97	
Chrysene	ND	5.2	н	**	**		•	*	
Dibenz (a,h) anthracene	ND	5.2	н	n	ıπ			•	
Dibenzofuran	ND	5.2	в	н	11-	'n	ħ	4	
Di-п-butyl phthalate	ND	5.2	91	II	**	19	н	¥	
,2-Dichlorobenzene	ND	10	n	11		**	**		
,3-Dichlorobenzene	ND	10		**	**		T		
,4-Dichlorobenzene	ND	10	я	н	n	,,	11		
,3'-Dichlorobenzidine	ND	52	н	•	н	II.	п	h	
,4-Dichlorophenol	ND	5.2	ŧı.	u	,,	и	н		
Diethyl phthalate	ND	5.2	n	H		и	п	*	
.4-Dimethylphenol	ND	10	ŧI.	•	π	,,	n		
Dimethyl phthalate	ND	5.2	н	п	er .	н		 91	
,6-Dinitro-2-methylphenol	ND	5.2	l)	**	,,	n	11		
,4-Dinitrophenol	ND	10	Ħ	,	tı	**	10		
.4-Dinitrotoluene	ND	5.2	н	n	н		u u	n n	
.6-Dinitrotoluene	ND ·	5.2	11	n	II	11	"	n	
Di-n-octyl phthalate	ND	5.2	н	11	.,		**	-	
luoranthene	ND	5.2	п	Ħ		" N	"		
luorene	ND	5.2	*1	it .	 	"	" "	я 	



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court; Suite J

Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding Reported: 05/22/02 15:35

Semivolatile Organic Compounds by EPA Method 8270C

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L205032-04) Water	Sampled: 05/08/02 12:38	Received: 0	5/08/02 15	5:45					
Hexachlorobenzene	ND	5.2	ug/i	1	2E10019	05/10/02	05/14/02	EPA 8270C	
Hexachlorobutadiene	ND	10	n	w	ù	**	11	Ħ	
Hexachlorocyclopentadiene	ND	10	n	11	•	11	н	R	
Hexachloroethane	ND	10	н	11		11	ti	**	
Indeno (1,2,3-cd) pyrene	ND	10	И	**	71	и	н	n	
Isophorone	ND	5.2	n	11	17	п	н	11	
2-Methylnaphthalene	ND	5.2	11	**	*	h	**	п	
2-Methylphenol	ND	5.2	h	n	#	Ħ		ti d	
4-Methylphenoi	ND	5.2	n	11	b			II.	
Naphthalene	ND	5.2	h	11	н	**	*	n	
2-Nitroaniline	ND	10	н	н	ft	**	**	TI .	
3-Nitroaniline	ND	100	п	В	II .	11	11	q	
4-Nitroaniline	ND	52	н	н	н	Ħ	n	n	
Nitrobenzene	ND	5.2	и	U	н	•	н	п	
2-Nitrophenol	ND	5.2	Ħ	ıı .	н		H	•	
4-Nitrophenol	ND	10	N	u	**	**	**	11	•
N-Nitrosodiphenylamine	ND	10	H	tt t	Tr.	н	u	n	
N-Nitrosodi-n-propylamine	ND	5.2	n	п	W	н	0	19	
Pentachlorophenol	ND	10	н	ш	*	n	. n	n	
Phenanthrene	ND	5.2	н	n	17	н	*	н	
Phenol	ND	5.2	н	н	'n	Ħ	•	ti	
Ругепе	ND	5.2	Ņ	н .	•	"	n	п	
1,2,4-Trichlorobenzene	ND	10	**	"	w	**	н	#	
2,4,5-Trichlorophenol	ND	5.2	н		it .	п	н	n	
2,4,6-Trichlorophenol	ND	5.2	11	**	17	ıı	n		
Surrogate: 2-Fluorophenol		34.5 %	2-8	36	"	**	H	"	
Surrogate: Phenol-d6		23.8 %	15		"	"	n	,,	
Surrogate: Nitrobenzene-d5		87.3 %	68-1		"	"	ır	"	
Surrogate: 2-Fluorobiphenyl		91.0%	70-1		"	"	11	n	
Surrogate: 2,4,6-Tribromophen	nol	80.4 %	23-7		,,	"	r	,,	
Surrogate: p-Terphenyl-d14		90.4 %	91-1		"	,,	"	,,	S-B



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland

Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Conventional Chemistry Parameters by APHA/EPA Methods Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L205032-04) Water	Sampled: 05/08/02 12:38	Received: 0	5/08/02	15:45				·	
Oil & Grease	ND	5.2	mg/l	ı	2E14029	05/14/02	05/15/02	SM 5520B	

Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J

Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland

Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Total Purgeable Hydrocarbon (C6-C12) by EPA 8015M and BTEX/MTBE by EPA 8021B - Quality Control Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2050042 - EPA 5030B (P/T)										
Blank (2050042-BLK1)	-			Prepared	& Analyzi	ed: 05/20/	02			
Purgeable Hydrocarbons as Gasotine	ND	50	ug/l							· · · · · ·
Benzene	ND .	0.50	"							
Toluene	ND	0.50	**							
Ethylbenzene	ND	0.50	**							
Xylenes (total)	ND	0.50	н							
Methyl tert-butyl ether	. ND	5.0	п							
Surrogate: a,a,a-Trifluorotoluene	9.59		"	10.0		95.9	70-130	·		
LCS (2050042-BS1)				Prepared	& Analyza	ed: 05/20/0	32			
Benzene	10.3	0.50	ug/l	10.0		103	70-130			
Toluene	9.49	0.50	,,	10.0		94.9	70-130			
Ethylbenzene	8.92	0.50	н	10.0		89.2	70-130			
Xylenes (total)	26.4	0.50	н	30.0		88.0	70-130			
Surrogate: a,a,a-Trifluorotoluene	10.5		"	10.0		105	70-130		_	
LCS (2050042-BS2)				Prepared 4	& Analyza	ed: 05/20/0	12			
Purgeable Hydrocarbons as Gasoline	269	50	ug/l	250		108	70-130			
Surrogate: a,a,a-Trifluorotoluene	10.6	-:	11	10.0		106	70-130			
Matrix Spike (2050042-MS1)	Sou	rce: L20504	1-01	Prepared a	& Analyze	:d: 05/20/0	02			
Purgeable Hydrocarbons as Gasoline	249	50	ug/l	250	ND	99.6	60-140			
turrogate: a,a,a-Trifluorotoluene	9.89	· · · · · · · · · · · · · · · · · · ·	,,	10.0		98.9	70-130			
Matrix Spike Dup (2050042-MSD1)	Sou	rce: L20504	1-01	Prepared a	& Analyze	:d: 05/20/0	12			
Purgeable Hydrocarbons as Gasoline	257	50	пв/1	250	ND	103	60-140	3.16	25	
urrogate: a,a,a-Trifluorotoluene	10.6	· · · · · · · · · · · · · · · · · · ·	"	10.0		106	70-130			-



Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding Reported: 05/22/02 15:35

Total Purgeable Hydrocarbon (C6-C12) by EPA 8015M and BTEX/MTBE by EPA 8021B - Quality Control Sequoia Analytical - San Carlos

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 2050047 - EPA 5030B (P/T)										
Blank (2050047-BLK1)				Prepared	& Analyze	ed: 05/21/	02			
Purgeable Hydrocarbons as Gasoline	ND	50	ug/l							<u>-</u>
Benzene	ND	0.50	II							
Γolu en e	ND	0.50	н							
Ethylbenzene	ND	0.50	n							
Xylenes (total)	ND	0.50	•							
Methyl tert-butyl ether	ND	5.0	11							
Surrogate: a,a,a-Trifluorotoluene	9.22		"	10.0	-	92.2	70-130			
LCS (2050047-B\$1)				Prepared	& Analyze	ed: 05/21/	02			
Benzene	9.22	0.50	ug/l	10.0		92.2	70-130			
Toluene	8.81	0.50	н	10.0		88.1	70-130			
Ethylbenzene	8.09	0.50	**	10.0		80.9	70-130			
Xylenes (total)	24.2	0.50	U	30.0		80.7	70-130			
Surrogate: a,a,a-Trifluorotoluene	10.1		11	10.0		101	70-130		 -	
LCS (2050047-BS2)				Prepared	& Analyze	ed: 05/21/	02			
Purgeable Hydrocarbons as Gasoline	243	50	ug/l	250		97.2	70-130			
Surrogate: a,a,a-Trifluorotoluene	9.82	<u> </u>	"	10.0		98.2	70-130			
Matrix Spike (2050047-MS1)	Sou	rce: L20503	2-05	Prepared	& Analyze	ed: 05/21/	02			
Benzene	9.68	0.50	ug/i	10.0	ND	96.8	60-140			
Гоluene	9.24	0.50	н	10.0	ND	92.4	60-140			
Ethylbenzene	8.70	0.50	10	10.0	ND	87.0	60-140			
Xylenes (total)	25.7	0.50	11	30.0	ND	85.7	60-140			
Surrogate: a,a,a-Trifluorotoluene	9.98		Ħ	10.0		99.8	70-130	••		
Matrix Spike Dup (2050047-MSD1)	Sou	rce: L20503	2-05	Prepared a	& Analyze	ed: 05/21/	02			
Benzene	10.2	0.50	ug/l	10.0	ND	102	60-140	5.23	25	,
foluene	9.63	0.50	II .	10.0	ND	96.3	60-140	4.13	25	
Ethylbenzene	9.14	0.50	n	10.0	ND	91.4	60-140	4.93	25	
(ylenes (total)	26.8	0.50	**	30.0	ND	89.3	60-140	4.19	25	
Surrogate: a,a,a-Trifluorotoluene	10.4		"	10.0		104	70-130			

Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J

Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland

Reported: 05/22/02 15:35

Project Manager: Deanna Harding

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2050022 - EPA 5030B [P/T]										. 10103
Blank (2050022-BLK1)				Prepared of	& Analyze	-d- 05/09/0	72	 - <u>_</u>		
Bromodichloromethane	ND	0.50	 пб/J	2.0pu.0u		d. 05/07/0	, <u> </u>			
Bromoform	ND	0.50	0	•						
Bromomethane	ND	0.50	•							
Carbon tetrachloride	ND	0.50	н							
Chlorobenzene	ND	0.50	n							
Chloroethane	ND	0.50	н							
Chloroform	ND	0.50	**							
Chloromethane	ND	0.50	tı							
Dibromochloromethane	ND	0.50	77							
1,2-Dibromoethane (EDB)	ND	0.50	N							
1,2-Dichlorobenzene	ND	0.50	н							
1,3-Dichlorobenzene	ND	0.50	н							
1,4-Dichlorobenzene	ND	0.50	19							
Dichlorodifluoromethane	ND	0.50	u							
,1-Dichloroethane	ND	0.50	11							
1,2-Dichloroethane	ND	0.50	Ħ							
1,1-Dichloroethene	ND	0.50	н							
is-1,2-Dichloroethene	ND	0.50	H						•	
rans-1,2-Dichloroethene	ND	0.50	н							
,2-Dichloropropane	ИD	0.50	**							
sis-1,3-Dichloropropene	ND	0.50	H.							
rans-1,3-Dichloropropene	ND	0.50	n							
Freon 113	ND	0.50								
Methylene chloride	ND	0.50	н							
,1,2,2-Tetrachloroethane	ND	0.50	11							
etrachloroethene	ND	0.50	er .							
,1,1-Trichloroethane	ND	0.50								
,1,2-Trichloroethane	ND	0.50	*1							
richloroethene	ND	0.50	н							
richlorofluoromethane	ND	0.50	11							
'inyl chloride	ND	0.50	**							
urrogate: 1,2-Dichloroethane-d4	9.50		11	10.0		95.0	70-130			,,,,,
urrogate: Toluene-d8	9.70		H	10.0		97.0	70-130			
urrogaie: 4-BFB	9.20		**	10.0		92.0	70-130			



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2050022 - EPA 5030B [P/T]									· · · · · · · · · · · · · · · · · · ·	
Blank (2050022-BLK2)		<u> </u>		Prepared a	& Analyze	ed: 05/14/0)2			
Bromodichloromethane	ND	0.50	ug/l				-			
Bromoform	ND	0.50	ri							
Bromomethane	ND	0.50	n							
Carbon tetrachloride	ND	0.50	II .							
Chlorobenzene	ND	0.50	н							
Chloroethane	ND	0.50	Ħ							
Chloroform	ND	0.50	n							
Chloromethane	ND	0.50	н							
Dibromochloromethane	ND	0.50	Ħ							
1,2-Dibromoethane (EDB)	ND	0.50	Ħ							
1,2-Dichtorobenzene	ND	0.50	H							
1,3-Dichlorobenzene	ND	0.50	н							
1,4-Dichlorobenzene	ND	0.50	**							
Dichlorodifluoromethane	ND	0.50	**							
1,1-Dichloroethane	ND	0.50	Ħ							
1,2-Dichloroethane	ND	0.50	н							
1,1-Dichloroethene	. ND	0.50	н							
cis-1,2-Dichloroethene	ND	0.50	fi							
trans-1,2-Dichloroethene	ND	0.50	Ħ							
1,2-Dichloropropane	ND	0.50	**							
cis-1,3-Dichloropropene	ND	0.50	ŧı							
rans-1,3-Dichloropropene	ND	0.50	ы							
Freon 113	ND	0.50	e							•
Methylene chloride	ND	0.50	н							
1,1,2,2-Tetrachloroethane	ND	0.50	tt							
Tetrachloroethene	ND	0.50	H							
1,1,1-Trichloroethane	ND	0.50	19							
1,1,2-Trichloroethane	ND	0.50	#							
Frichloroethene	ND	0.50	π							
Frichlorofluoromethane	ND	0.50	n							
Vinyl chloride	ND	0.50	н							
Surrogate: 1,2-Dichloroethane-d4	9.73		#	10.0		97.3	70-130			
Surrogate: Tohuene-d8	10.1		11	10.0		101	70-130			
Surrogate: 4-BFB	8.35		**	10.0		83.5	70-130			

Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland

Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2050022 - EPA 5030B [P/T]										
Blank (2050022-BLK3)				Prepared a	& Analyza	d: 05/17/0)2			
Bromodichloromethane	ND	0.50	ug/l							
Bromoform	ND	0.50	n							
Bromomethane	ND	0.50	11							
Carbon tetrachloride	ND	0.50	**							
Chlorobenzene	ND	0.50	••							
Chloroethane	ND	0.50	п							
Chloroform	ND	0.50	rr							
Chloromethane	ND	0.50	Ħ							
Dibromochloromethane	ND	0.50	*							
1,2-Dibromoethane (EDB)	ND	0.50	v							
1,2-Dichlorobenzene	ND	0.50	e t							
1,3-Dichlorobenzene	ND	0.50	н							
1,4-Dichlorobenzene	ND	0.50	н							
Dichlorodifluoromethane	ND	0.50	н							
1,1-Dichloroethane	ND	0,50	н							
1,2-Dichloroethane	ND	0.50	н							
1,1-Dichloroethene	ND	0.50	n							
cis-1,2-Dichloroethene	ND	0.50	**							
rans-1,2-Dichloroethene	ND	0.50	**							
1,2-Dichloropropane	ND	0.50	.,							
sis-1,3-Dichloropropene	ND	0.50	P							
rans-1,3-Dichloropropene	ND	0.50	п	•						
Freon 113	ND	0.50	#							
Methylene chloride	ND	0.50								
,1,2,2-Tetrachloroethane	ND	0,50	**							
Tetrachloroethene	ND	0.50	н							
,1,1-Trichloroethane	ND	0.50	11							
,1,2-Trichloroethane	ND	0.50	11							
Frichloroethene	ND	0.50	n							
Frichlorofluoromethane	ND	0.50	•							
/inyl chloride	ND	0.50	н							
Surrogate: 1,2-Dichloroethane-d4	10.9		"	10.0		109	70-130			
Surrogate: Toluene-d8	10.6		rr	10.0		106	70-130			
Surrogate: 4-BFB	9.04		. "	10.0		90.4	70-130			



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2050022 - EPA 5030В [Р/Г]										7.000
LCS (2050022-BS1)				Prepared	& Analyz	ed: 05/09/0				
Chlorobenzene	19.8	0.50	ug/l	20.0	••a., <u>.</u>	99.0	70-130			· ·
1,1-Dichloroethene	19.9	0.50	н	20.0		99.5	65-135			
Trichloroethene	19,1	0.50	n	20.0		95.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	9.91		"	10.0	<u> </u>	99.1	70-130		.	
Surrogate: Toluene-d8	9.43		"	10.0		94.3	70-130			
Surrogate: 4-BFB	9.22		"	10.0		92.2	70-130			
LCS (2050022-BS2)				Prepared	& Anaivz	ed: 05/14/0	02			
Chlorobenzene	19.9	0.50	ug/l	20.0		99.5	70-130			
1,1-Dichloroethene	21.2	0.50	#	20.0		106	65-135			
Trichloroethene	19.0	0.50	*1	20.0		95.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	10.1		11	10.0		101	70-130			
Surrogate: Toluene-d8	10.0		17	10.0		100	70-130			
Surrogate: 4-BFB	8.46		rr	10.0		84.6	70-130			
LCS (2050022-BS3)				Prepared	& Analyz	ed: 05/17/	02			
Chlorobenzene	10.2	0.50	ug/l	10.0		102	70-130			
1,1-Dichloroethene	10.7	0.50	н	10.0		107	65-135			
Trichloroethene	10.1	0.50	U	10.0		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	10.3		,,	10.0		103	70-130			
Surrogate: Toluene-d8	10.5		"	10.0		105	70-130			
Surrogate: 4-BFB	8.83		*	10.0		88.3	70-130			
Matrix Spike (2050022-MS1)	Soi	urce: L20503	2-04	Prepared	& Analyz	ed: 05/09/	02			
Chlorobenzene	19.3	0.50	ug/l	20.0	ND	96.5	60-140			
1,1-Dichloroethene	19.6	0.50	*	20.0	ND	98.0	60-140			
Frichloroethene	19.3	0.50	u	20.0	0.86	92.2	60-140			
Surrogate: 1,2-Dichloroethane-d4	10.0		11	10.0		100	70-130			 -
Surrogate: Toluene-d8	9.52		,,	10.0		95.2	70-130			
Surrogate: 4-BFB	9.35		"	10.0		93.5	70-130			



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland

Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2050022 - EPA 5030B [P/T]									· <u> </u>	
Matrix Spike Dup (2050022-MSD1)	Sou	rce: L20503	2-04	Prepared	& Analyze	d: 05/09/0)2			
Chlorobenzene	19.6	0.50	ug/l	20.0	ND	98.0	60-140	1.54	25	
I, I-Dichloroethene	19.7	0.50	"	20.0	ND	98.5	60-140	0.509	25	
Trichloroethene	19.6	0.50	11	20.0	0.86	93.7	60-140	1.61	25	
Surrogate: 1,2-Dichloroethane-d4	9.54		"	10.0		95.4	70-130			
Surrogate: Toluene-d8	9.78		"	10.0		97.8	70-130			•
Surrogate: 4-BFB	9.19		77	10.0		91.9	70-130			

Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland

Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Volatile Organic Compounds by EPA Method 8240B - Quality Control Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2050022 - EPA 5030B [P/T]			<u>.</u>							
Blank (2050022-BLK1)				Prepared	& Analyza	ed: 05/09/0)2			
Acetone	ND	20	ug/l						-	-
Benzene	ND	2.0	n							
Bromodichloromethane	ND	2.0	н							
Bromoform	ND	2.0	н							
Bromomethane	ND	2.0	н							
2-Butanone	ND	20	н	•						
Carbon disulfide	NĎ	2.0	н							
Carbon tetrachloride	ND	2.0	19							
Chlorobenzene	ND	2.0	11							
Chloroethane	ND	2.0	11							•
Chloroform	ND	2.0	11							
Chloromethane	ND	2.0	11							
Dibromochloromethane	ND	2.0	11							
, I-Dichloroethane	ND	2.0	**							
,2-Dichloroethane	ND	2.0								
,1-Dichloroethene	ND	2.0	н							
is-1,2-Dichloroethene	ND	2.0	TT							
rans-1,2-Dichloroethene	ND	2.0							,	
,2-Dichloropropane	ND	2.0	**							
sis-1,3-Dichtoropropene	ND	2.0	m							
rans-1,3-Dichloropropene	ND	2.0	n							
Ethylbenzene	ND	2.0	**							
-Hexanone	ND	- 20				•				
Methylene chloride	ND	5.0	**							
-Methyl-2-pentanone	ND	20	н							
Styrene	ND	2.0	n							
,1,2,2-Tetrachloroethane	ND	2.0	"							
etrachloroethene	ND	2.0	**							
`oluene	ND	2.0	**							
,1,1-Trichloroethane	ND	2.0	n							
,1,2-Trichloroethane	ND	2.0	Ħ							
richloroethene	ND	2.0	**							
richlorofluoromethane	ND	2.0	*1							
inyl acetate	ND	5.0	n							
/inyl chloride	ND	2.0	н							
- 		0								

2.0

ND

Total Xylenes

Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2050022 - EPA 5030B [P/T]								<u> </u>		
Blank (2050022-BLK1)				Prepared	& Analyze	d: 05/09/)2			
Surrogate: 1,2-Dichloroethane-d4	9.50		ug/l	10.0		95.0	76-114			
Surrogate: Toluene-d8	9.70		"	10.0		97.0	88-110			
Surrogate: 4-BFB	9.20		."	10.0		92.0	86-115			
LCS (2050022-BS1)				Prepared	& Analyze	:d: 05/09/0	12			
Велгене	20.6	2.0	ug/l	20.0		103	65-135			
Chlorobenzene	19,8	2.0	11	20.0		99.0	70-130			
,1-Dichloroethene	19.9	2.0	н	20.0		99.5	70-130			
foluene	20.2	2.0	**	20.0		101	70-130			
Frichloroethene	19.1	. 2.0	w	20.0		95.5	70-130 70-130			
Surrogate: 1,2-Dichloroethane-d4	9.91		n,	10.0		99.1	76-114			
Surrogate: Toluene-d8	9.43		tr	10.0		94.3	70-114 88-110			
Surrogate: 4-BFB	9.22		tr	10.0		92.2	86-115			
Matrix Spike (2050022-MS1)	Soi	rce: L20503	2-04	Prepared a	& Analyze	:d: 05/09/0	12			
Benzene	21.0	2.0	ug/i	20.0	ND	105	60-140			
Chlorobenzene	19.3	2.0	"	20.0	ND	96.5	60-140			
, l-Dichloroethene	19.6	2.0	•	20.0	ND	98.0	60-140			
Oluene	19.7	2.0	n	20.0	ND	98.5	60-140			
richloroethene	19.3	2.0	10	20.0	ND	96.5	60-140			
urrogate: 1,2-Dichloroethane-d4	10.0		"	10.0		100	76-114			
urrogate: Toluene-d8	9.52		н	10.0		95.2	70-114 88-110			
urrogate: 4-BFB	9.35		n	10.0		93.5	86-115			
Matrix Spike Dup (2050022-MSD1)	Sou	rce: L205032	2-04	Prepared &	& Analyze	d- 05/09/0	12			
enzenc	20.7	2.0	ug/l	20.0	ND	104	60-140	1.44	25	
hlorobenzene	19.6	2.0	#	20.0	ND	98.0	60-140	1.54	25 25	
,1-Dichloroethene	19.7	2.0	71	20.0	ND	98.5	60-140	0.509	25 25	
oluene	20.0	2.0	n	20.0	ND	100	60-140	1.51		
richloroethene	19.6	2.0	11	20.0	ND	98.0	60-140	1.54	25 25	
urrogate: 1,2-Dichloroethane-d4	9.54	<u>. </u>	"	10.0		95.4	76-114			
urrogate: Toluene-d8	9.78		11	10.0		97.8	70-714 88-110			
urrogate: 4-BFB	9.19		n	10.0		91.9	86-115			



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2050048 - EPA 5030B [P/T]										
Blank (2050048-BLK1)				Prepared	& Analyza	d: 05/21/0	02			
Ethanol	ND	500	ug/l	············	•					
1,2-Dibromoethane	ND	2.0	*							
1,2-Dichloroethane	ND	2.0	77							
Di-isopropyl ether	ND	2.0	н							
Ethyl tert-butyl ether	ND	2.0	я			•				
Methyl tert-butyl ether	ND	2.0	•							
Tert-amyl methyl ether	ND	2.0	e							
Tert-butyl alcohol	ND	100	\$F							
Surrogate: 1,2-Dichloroethane-d4	51.8		"	50.0		104	70-130			
Surrogate: Toluene-d8	51.0		Ħ	50.0		102	70-130			
Blank (2050048-BLK2)				Prepared	& Analyze	ed: 05/22/	02			
Ethanol	ND	500	ug/l	· ·						
1,2-Dibromoethane	ND	2.0	n							
1,2-Dichloroethane	ND	2.0	n							
Di-isopropyl ether	ND	2.0	"							
Ethyl tert-butyl ether	ND	2.0	11							
Methyl tert-butyl ether	ND	2.0	n							
Tert-amyl methyl ether	ND	2.0	и							
Tert-butyl alcohol	ND	100	н							
Surrogate: 1,2-Dichloroethane-d4	51.0		"	50.0		102	70-130			
Surrogate: Toluene-d8	51.4		#	50.0		103	70-130			
LCS (2050048-BS1)				Prepared	& Analyz	ed: 05/21/	02			
Methyl tert-butyl ether	44.9	2.0	ug/l	50.0		89.8	70-130			w
Surrogate: 1,2-Dichloroethane-d4	51.6		"	50.0		103	70-130			
Surrogate: Toluene-d8	52.8		"	50.0		106	70-130			

Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2050048 - EPA 5030B [P/T]						<u>. </u>	' '			
LCS (2050048-BS2)				Prepared	& Analyze	d: 05/22/0)2		·	
Methyl tert-butyl ether	44.9	2.0	ug/l	50.0		89.8	70-130		···········	
Surrogate: 1,2-Dichloroethane-d4	50.7		h	50.0	.	101	70-130			
Surrogaie: Toluene-d8	52.9		n	50.0		106	70-130			
Matrix Spike (2050048-MS1)	Sor	urce: L20507	1-05	Prepared a	& Analyze	ed: 05/21/0	12			
Methyl tert-butyl ether	44.8	2.0	ug/l	50.0	ND	89.6	60-140			
Surrogate: 1,2-Dichloroethane-d4	50.9		"	50.0		102	70-130			
Surrogate: Toluene-d8	54.0		"	50.0		108	70-130			
Matrix Spike Dup (2050048-MSD1)	Soi	rce: L20507	1-05	Prepared a	& Analyze	ed: 05/21/0	12			
Methyl tert-butyl ether	47.3	2.0	ug/l	50.0	ND	94.6	60-140	5.43	25	
Surrogate: 1,2-Dichloroethane-d4	51.3	71.	11	50.0	 -	103	70-130			
Surrogate: Toluene-d8	53.6		"	50.0		107	70-130			



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding Reported: 05/22/02 15:35

Diesel Hydrocarbons (C10-C28) by 8015B modified - Quality Control Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E14022 - EPA 3510B			1 411		_					•
Blank (2E14022-BLK1)				Prepared:	05/14/02	Analyzed	: 05/15/02			
Diesel Range Organics (C10-C28)	ND	50	ug/l							
Surrogate: n-Octacosane	39.4		"	50.0		78.8	50-150	······		
LCS (2E14022-BS1)				Prepared:	05/14/02	Analyzed	: 05/15/02			
Diesel Range Organics (C10-C28)	435	50	ug/l	500		87.0	60-140			
Surrogate: n-Octacosane	41.1	<u>"</u>	77	50.0		82.2	50-150			
LCS Dup (2E14022-BSD1)				Prepared:	05/14/02	Analyzed	: 05/15/02			
Diesel Range Organics (C10-C28)	427	50	ug/l	500		85.4	60-140	1.86	50	
Surrogate: n-Octacosane	38.8		#	50.0		77.6	50-150			



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding Reported: 05/22/02 15:35

Total Metals by EPA 200 Series Methods - Quality Control Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E14008 - EPA 3005A										
Blank (2E14008-BLK1)				Prepared:	05/14/02	Aпalyzed	: 05/15/02	•••		
Chromium	ND	0.010	mg/l	···	- <u></u> -					
LCS (2E14008-BS1)				Prepared:	05/14/02	Analyzed	: 05/15/02			
Chromium	1.07	0.010	mg/l	1.00		107	80-120			
Matrix Spike (2E14008-MS1)	Sou	rce: MLE02	200-01	Prepared:	05/14/02	Analyzed	1: 05/20/02			
Chromium	1.03	0.010	mg/l	1.00	ND	103	80-120			<u></u>
Matrix Spike Dup (2E14008-MSD1)	Sou	rce: MLE02	00-01	Prepared:	05/14/02	Analyzed	1: 05/20/02			
Chromium	1.04	0.010	mg/l	1.00	ND	104	80-120	0.966	20	

Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #4625, Oakland

Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E10019 - EPA 3510B SepF	unnel									
Blank (2E10019-BLK1)	<u>-</u>		•	Prepared:	05/10/02	Analyzed	: 05/13/02			
Acenaphthene	ND	5.0	ug/l							7
Acenaphthylene	ND	5.0	н							
Anthracene	ND	5.0	h							
Benzoic acid	ND	10	н							
Benzo (a) anthracene	ND	5.0	n							
Benzo (b) fluoranthene	ND	5.0	II							
Benzo (k) fluoranthene	ND	5.0	u							
Benzo (ghi) perylene	ND	10	19							
Benzo[a]pyrene	ND	5.0	и							
Benzyl alcohol	ND	10	l+							
is(2-chloroethoxy)methane	ND	5.0	11							
sis(2-chloroethyl)ether	ND	10	10							
lis(2-chloroisopropyl)ether	ND	5.0								
is(2-ethylhexyl)phthalate	ND	10	**							
·Bromophenyl phenyl ether	ND	5.0	ŧı							
utyl benzyl phthalate	ND	5.0	m							
-Chloroaniline	ND	50	**				•			
-Chloronaphthalene	ND	5.0	R							
-Chloro-3-methylphenol	ND	5.0	**							
-Chlorophenol	ND	5.0	11							
-Chlorophenyl phenyl ether	ND	10	**							
hrysene	ND	5.0	ч							
ribenz (a,h) anthracene	ND	5.0								
ibenzofuran	ND	5.0	н							
i-n-butyl phthaiate	ND	5.0	n							
2-Dichlorobenzene	ND	10	19				*			
3-Dichlorobenzene	ND	10	e							
4-Dichlorobenzene	ND	10	Ħ							
3´-Dichlorobenzidine	ND	50	*							
4-Dichlorophenol	ND	5.0	19				-			
iethyl phthalate	ND	5.0	**							
4-Dimethylphenol	ND	10					•			
imethyl phthalate	ND	5.0								
6-Dinitro-2-methylphenol	ND	5.0	n							
4-Dinitrophenot	ND	10	ti							
4-Dinitrotoluene	ND	5.0	11							

Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J

Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Sequoia Analytical - Morgan Hill

Analyte	D . 1	Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 2E10019 - EPA 3510B Sep	Funnel									
Blank (2E10019-BLK1)				Prepared:	05/10/02	Analyzed	: 05/13/02			
2,6-Dinitrotoluene	ND	5.0	ug/l							
Di-n-octyl phthalate	ND	5.0	п							
Fluoranthene	ND	5.0								
Fluorene	ND	5.0	"							
Hexachlorobenzene	ND	5.0	н							
Hexachlorobutadiene	ND	10	n							
Hexachlorocyclopentadiene	ND	10	Ħ				ı			
Hexachloroethane	ND	10	n							
Indeno (1,2,3-cd) pyrene	ND	10	"							
Isophorone	ND	5.0	11							
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	5.0	77							
4-Methylphenol	ND	5.0	H							
Naphthalene	ND	5.0								
2-Nitroaniline	ND	10	**							
3-Nitroaniline	ND	100	**							
4-Nitroaniline	ND	50	Ħ							
Nitrobenzene	ND	5.0	н							
2-Nitrophenol	ND	5.0	н	·						
4-Nitrophenol	ND	10	н							
N-Nitrosodiphenylamine	ND	10	H							
N-Nitrosodi-n-propylamine	ND	5.0	п							
Pentachlorophenol	ND	10	11							
Phenanthrene	ND .	5.0								
Phenol	ND	5.0	н							
Pyrene	ND	5.0	H,							
1,2,4-Trichlorobenzene	ND	10	Ħ							
2,4,5-Trichlorophenol	ND	5.0	н							
2,4,6-Trichlorophenol	ND	5.0	п							
Surrogate: 2-Fluorophenol	26.3		••	50.0	<u>-</u>	52.6	2-86			
Surrogate: Phenol-d6	17.0		"	50.0		34.0	15-50			
Surrogate: Nitrobenzene-d5	39.5		u	50.0		79.0	68-115			
Surrogate: 2-Fluorobiphenyl	43.9		"	50.0		87.8	70-120			
Surrogate: 2,4,6-Tribromophenol	37.9		**	50.0		75.8	23-176			
Surrogate: p-Terphenyl-d14	51.4		ar .	50.0		103	91-143			



Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding Reported: 05/22/02 15:35

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E10019 - EPA 3510B Sepi	Funnel					·				
LCS (2E10019-BS1)				Prepared:	05/10/02	Analyzed	: 05/13/02			
Acenaphthene	43.9	5.0	ug/l	50.0		87.8	67-118			
4-Chloro-3-methylphenol	43.5	5.0	u	50.0		87.0	56-125			
2-Chiorophenol	42.6	5.0	D	50.0		85.2	57-118			
,4-Dichlorobenzene	38.1	10	"	50.0		76.2	58-103			
2,4-Dinitrotoluene	44.0	5.0	w	50.0		88.0	62-113			
-Nitrophenol	18.5	10	n	50.0		37.0	16-48			
N-Nitrosodi-n-propylamine	45.9	5.0	4	50.0		91.8	58-112			
Pentachlorophenol	41.7	10	11	50.0		83,4	50-111			
henol	20.9	5.0	**	50.0		41.8	22-53			
утеле	51.0	5.0	•	50.0		102	71-147			
,2,4-Trichlorobenzene	39.1	10	н	50.0		78.2	62-109			
urrogate: 2-Fluorophenol	26.8		7/	50.0		53.6	2-86	•		
Surrogate: Phenol-d6	17.5		r	50.0		35.0	15-50			
urrogate: Nitrobenzene-d5	40.3		"	50.0		80.6	68-115			
Surrogate: 2-Fluorobiphenyl	45.5		**	50.0		91.0	70-120			
urrogate: 2,4,6-Tribromophenol	43.6		"	50.0		<i>87.2</i>	23-176			
urrogate: p-Terphenyl-d14	50.0		"	50.0		100	91-143			
CS Dup (2E10019-BSD1)				Prepared:	05/10/02	Analyzed	: 05/13/02			
Acenaphthene	46.7	5.0	ug/l	50.0		93.4	67-118	6.18	30	
-Chloro-3-methylphenol	44.0	5.0	•	50.0	•	88.0	56-125	1.14	30	
-Chlorophenol	44.7	5.0	*	50.0		89.4	57-118	4.81	30	
,4-Dichlorobenzene	40.1	10	#	50.0		80.2	58-103	5.12	30	
,4-Dinitrotoluene	44.6	5.0	*	50.0		89.2	62-113	1.35	30	
-Nitrophenol	18.1	10	**	50.0		36.2	16-48	2.19	30	
N-Nitrosodi-n-propylamine	47.0	5.0	*	50.0		94.0	58-112	2.37	30	
entachlorophenol	42.5	10		50.0		85.0	50-111	1.90	30	
henol	21.4	5.0	v	50.0		42.8	22-53	2.36	30	
Pyrene	49.9	5.0		50.0		99.8	71-147	2.18	30	
,2,4-Trichlorobenzene	39.5	10	Ħ	50.0		79.0	62-109	1.02	30	
urrogate: 2-Fluorophenol	26.9		#	50.0		53.8	2-86			.
urrogate: Phenol-d6	17.6		n	50.0		35.2	15-50			
Surrogate: Nitrobenzene-d5	39.9		71	50.0		79.8	68-115			
urrogate: 2-Fluorobiphenyl	46.0		"	50.0		92.0	70-120			
Surrogate: 2,4,6-Tribromophenol	41.1		n	50.0		82.2	23-176			
Surrogate: p-Terphenyl-d14	48.7		#	50.0		97.4	91-143			



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland Project Manager: Deanna Harding

Reported: 05/22/02 15:35

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control Sequoia Analytical - Morgan Hill

Analyte .	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E14029 - General Prep				·			• .			
Blank (2E14029-BLK1)				Prepared:	05/14/02	Analyzed	: 05/15/02			
Oil & Grease	ND	5.0	mg/l	-						
LCS (2E14029-BS1)				Prepared:	05/14/02	Analyzed	: 05/15/02			
Oil & Grease	15.2	5.0	mg/l	20.0	,,,,	76.0	70-130			_
LCS Dup (2E14029-BSD1)				Prepared:	05/14/02	Analyzed	: 05/15/02			
Oil & Grease	16.5	5.0	mg/l	20.0		82.5	70-130	8.20	30	



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Reported:

05/22/02 15:35

Notes and Definitions

A-01 Sample was analyzed by EPA Method 8260.

P-01 Chromatogram Pattern: Gasoline C6-C12

S-BN Base/Neutral surrogate recovery outside control limits. The data was accepted based on valid recovery of remaining two

base/neutral surrogates.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference