January 8, 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	December 21, 2001	Groundwater Monitoring and Sampling Report Fourth Quarter - Event of November 7, 2001

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 *January 21, 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



December 21, 2001 G-R Job #180255

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

RE: Fourth Quarter Event of November 7, 2001

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 as specified by G-R Standard Operating Procedure -Groundwater Sampling (attached). The field data sheets are also attached. The samples were analyzed by Sequoia Analytical. Analytical results are summarized in Tables 1, 2 and 3. 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

Hagop Kevork P.E. No. C55734

Figure 1:

Potentiometric Map

Concentration Map

Figure 2: Table 1:

Groundwater Monitoring Data and Analytical Results

Table 2:

Groundwater Analytical Results

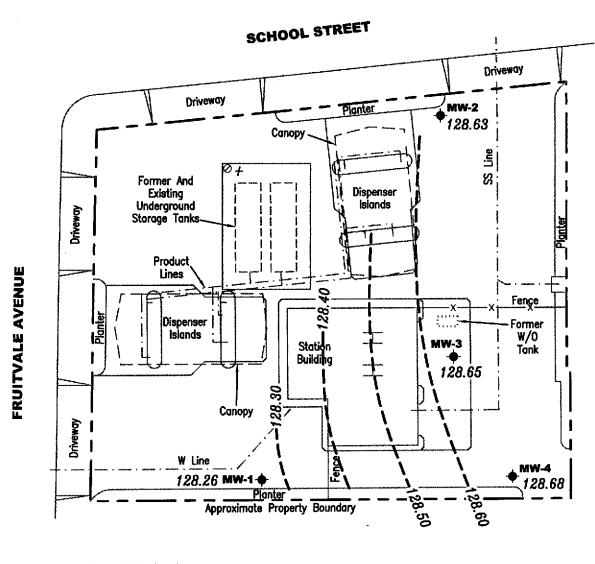
Table 3:

Groundwater Analytical Results - Oxygenate Compounds Standard Operating Procedure - Groundwater Sampling

Attachments:

Field Data Sheets Chain of Custody Document and Laboratory Analytical Reports

4625.qml



EXPLANATION

Groundwater monitoring well

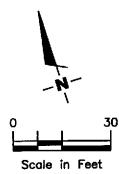
99.99 Groundwater elevation in feet referenced to Mean Sea Level (MSL)

CM)

Groundwater elevation contour, dashed where inferred.

+ TOC not available

Approximate groundwater flow direction at a gradient of 0.005 Ft./Ft.



Source: Figure modified from drawing provided by Unocal.



POTENTIOMETRIC MAP

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

REVISED DATE

PROJECT NUMBER 180255 REVIEWED BY

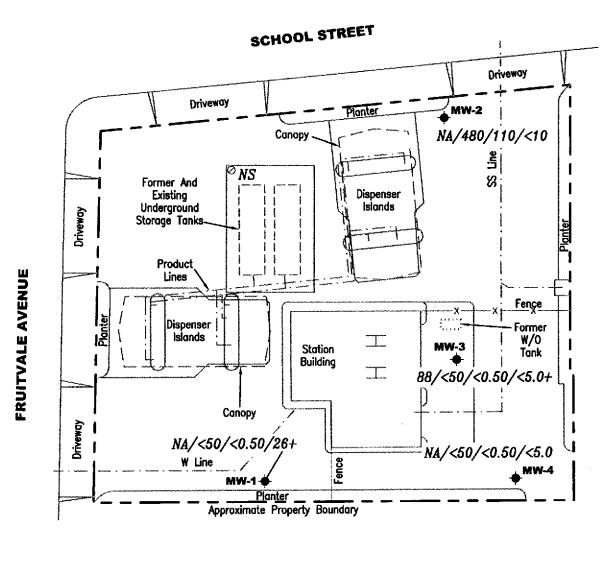
November 7, 2001

DATE

FILE NAME: P:\ENVIRO\TOSCO\4625\Q01-4625.DWG | Layout Tab: Pot4

FIGURE

1



EXPLANATION

Groundwater monitoring well

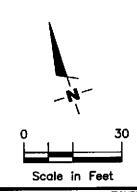
A/B/C/D TPH(D) (Total Petroleum
Hydrocarbons as Diesel)/TPH(G)
(Total Petroleum Hydrocarbons
as Gasoline)/Benzene/MTBE
concentrations in ppb

NA Not Analyzed

MTBE by EPA Method 8260

NS Not Sampled

REVISED DATE



Source: Figure modified from drawing provided by Unocal.

PROJECT NUMBER



REVIEWED BY

CONCENTRATION MAP

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

DATE

November 7, 2001

 \sim

2

180255
FILE NAME: P:\ENVIRO\TOSCO\4625\Q01-4625.DWG | Layout Tob: Con4

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
тос*		(ft.)	(fl.bgs)	(msl)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(p pb)
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	ND	ND	ND	ND	21/19 ²
	10/29/00	7.90		128.46		62 ¹	ND	ND	ND	ND	$6.5/3.9^2$
	02/09/01	7.95		128.41		ND	ND	ND	ND	ND	$9.0/9.0^{2}$
	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
MW-2											
138.64	05/03/00	8.59	5.0-25.0	130.05		$2,400^{1}$	53	ND^3	ND^3	240	³ ND/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	<u></u>	490¹	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		96 ¹	20	< 0.50	2.1	9.4	<5.0
	11/07/01	10.01		128.63		480 ¹	110	<1.0	26	42	<10
MW-3											
137.68	05/03/00	7.60	5.0-25.0	130.08	93 ⁵	ND	ND	ND	ND	ND	ND/ND⁴
	07/28/00	8.82		128.86	ND^3	ND	ND	ND	ND	ND	ND/ND⁴
	10/29/00	7.33		130.35	ND	ND	ND	ND	ND	ND	ND
	02/09/01	7.40		130.28	72 ⁶	ND	ND	ND	ND	ND	ND
	05/11/01	7.90		129.78	ND	ND	ND	ND	ND	ND	ND
	08/10/01	9.09		128.59	63 ⁸	<50	< 0.50	< 0.50	< 0.50	< 0.50	<5.0
	11/07/01	9.03		128.65	88 ⁸	< 50	< 0.50	< 0.50	< 0.50	< 0.50	<5.0

4625.xls/#180255

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
FOC*		(ft.)	(ft.bgs)	(msl)	(ppb)	(pph)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
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
нет аверь	VATION WEL	Ť									
USI ODSEK	05/03/00	8.00						# *			~~
	07/28/00	9.28				**					
	10/29/00	7.75					 	 	 		••
	02/09/01	6.14						<u></u>			
	05/11/01	7.96					 				
	08/10/01	9.54									
	11/07/01	9.33		 						••	
Trip Blank								VD	ND	MD	NIC
TB-LB	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

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

-- = Not Measured/Not Analyzed

S.I. = Screen Interval

T = Toluene

(ft.bgs) = Feet Below Ground Surface

E = Ethylbenzene

GWE = Groundwater Elevation

X = Xylenes

(msl) = Mean sea level

MTBE = Methyl tertiary butyl ether

- Laboratory report indicates gasoline C6-C12.
- MTBE by EPA Method 8260.
- Detection limit raised. Refer to analytical reports.
- MTBE by EPA Method 8240.
- 5 Laboratory report indicates unidentified hydrocarbons C9-C24.
- 6 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 quantitation range but does not resemble the pattern of the requested fuel.

^{*} TOC elevations were surveyed based on a cut square on School Street, City of Oakland Benchmark No. 3783, (Elevation = 136.99 feet, msl).

Table 2 Groundwater Analytical Results

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

WELL ID	DATE	VOCs by EPA 8240	VOCs by EPA 8021	SVOCs by EPA 8270	Chromium	TOG
		(ppb)	(ppb)	(ppb)	(ррт)	(ppm)
MW-3						
	05/03/00	ND		ND	ND	ND
	07/28/00	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

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 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.

All VOCs by EPA Method 8021 were less than the reporting limit, except for Trichloroethane (TCE) was detected at 0.55 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 (pph)	EDB (pph)
MW-1	02/09/01	ND	ND	9.0	ND	ND	ND	ND	ND
	05/11/01 08/10/01 ¹	ND <1,000	ND <100	16.3 19	ND <2.0	ND <2.0	ND <2.0	ND <2.0	ND <2.0
	11/07/01	<500	<20	26	<1.0	<1.0	<1.0	<1.0	<1.0
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 Tosco Marketing Company, the purge water and decontamination water generated during sampling activities is transported to Tosco - San Francisco Area Refinery, located in Rodeo, California.

Client/ Facility #_46°	25		Job#:		
Address: 30	10 Fruitvale	Ave.	Date:	11-7-0	
	land CA.		Sample	er: <u>50 e</u>	
Well ID	mw-1	Well (Condition:	0.k.	
Well Diameter	2 in	-	carbon	Amount Ba <u>in (product/wa</u> n	Lang .
Total Depth	25.06	Volu			
Depth to Water	8.10	Face	or (VF)	6" = 1.50	12" = 5.80
	16.96 x	VF .017	= 2.88 x 3 (case ve	olume) = Estimated Pr	urge Volume:
Purge Equipment:	Disposable Bailer Bailer Stack Suction Grundfos Other:		Sampling Equipment:	Disposable Ba Bailer Pressure Baile Grab Sample Other:	er .
Did well de-wat	rte:or	Cond	Sediment Descript If yes; Time: uctivity \(\text{Tempe} \)	Volum	ORP Alkalinity (mV) (ppm)
12:40	(gal) 3 _ 7.25	_ <u> </u>	ostonik + 96 <u>71.</u>	6	(m-) (P)
12:42	6 7.35 9 7.38	8.0	02 <u>71.</u> 12 71	3 /	
		_ ·			
		-			
SAMPLE ID	(#) - CONTAINER	LABOR REFRIG.	ATORY INFORMA PRESERV. TYPE	LABORATORY	ANALYSES
mw-j	3404	Υ	HCL	Seq.	TPHG, BTEX, MTBE
			·		
COMMENTS:		- — -			
COMMEN (3:				· -	
		-	•	· · · · · · · · · · · · · · · · · · ·	<u>.</u>

Client/	_	1 121	D DATA SKILL	. 1		•	•
Facility # 46			Job#		30255	•	
•	70 Fruitvale		•	: 4	-7-0	<u> </u>	····
City: Oak	land CA.		Sam	oler:	50e	·	
·					- 1		
Weil ID	mw-2	Wel	l Condition:	0 · k	-		
Well Diameter		-	Irocarbon	<i>-</i> .	Amount Bai	Jakar .	
Total Depth	24.28 +			<u></u>	fproduct/wate		= 0.66
Depth to Water	10.01 4	Fa	ctor (VF)	6° = 1.		12" = 5,80	
	14.27 x	VF :017	= 2.43 × 3 (case	volumei =	Estimated Pur	ros Vokima* (7.5
Purge	Disposable Bailer	₹.	Sampling				
Equipment:	Bailer Stack	•	Equipment		posable Bai iler	ler	y
	Suction	•		Pre	essure Bailer		
	Grundfos Other:			Gr. Other: _	ab Sample		
Purging Flow Rat	1 <u>30 p.m. (.13</u>		Water Color: Sediment Descrip If yes; Time:	otion:	<u> </u>		·
		· ·	·	• .			, <u></u>
Time \	Volume pH (gal.)	متمر	ductivity () Temp hos/cm X	C Secure	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
1:15	2.5 7.71		·98 72			· ———	
(19	<u>5</u> <u>7.31</u> 7.5 7.38	<u> </u>	16.7	1.8		 	*
		_ ·					
			<u> </u>		•		-
			RATORY INFORM				
SAMPLE ID	3YOL	REFRIG.	PRESERV. TYPE	U80	RATORY		YSES
71.00	3 10 4	4	HCL	1 36	ች	IPHG, B	EX,MTBE
			<u> </u>				
COMMENTS: _		•			·	·	
			<u> </u>		-		•

	•	FIELL	DATA SHEET	•	•
Client/ Facility #_465	25		Job#:	180255	1
Address: 307	10 Fruitvale	Ave.	Date:	11-7-0	<u> </u>
•	land CA.		Sample	er: <u>50 e</u>	
			•		
Well ID	mw-3	Well	Condition:	0.K-	
Well Diameter	2 in	_	ocarbon	Amount Ba	Light .
Total Depth	24.73 4	Volt	ime 2° = 0.1	7 3° = 0.38 6° = 1.50	
Depth to Water	9.03	130	or (VF)		12 = 3.80
	x	VF <u>0.17</u>	_2.67 x 3 (case v	olume) = Estimated Pu	nge Volume: 8 (cal.)
Purge Equipment:	Disposable Bailer Bailer Stack Suction Grundfos Other:		Sampling Equipment:	Risposable Ba Bailer Pressure Baile Grab Sample Other:	
	11:46 12:44 (1214 te:1 er?	<u>1)</u> pros.	Weather Condition Water Color: Sediment Descript If yes; Time:	ion:	
Time	Volume pH (gal.)		loctivity (*) Tempe		ORP Alkalinity (mV) (ppm)
11:46 11:48 11:50	3.5 7.27 5 7.32 8 7:26	<u>a</u>	66 72 58 71. 54 71	6	
		_ ·			
				704	
SAMPLE ID	(#) - CONTAINER	LABOI REFRIG.	RATORY INFORMA PRESERV. TYPE	LABORATORY	ANALYSES
mw-3	3404	Y	HCL	Seq.	TPHG, BTEY, MTBE
	2V0A	11	10 -	11	VOCS by 8240
	1 Amb	•		1/1	5 VOC's by 8270
	1 AMb	"		"	TPHD
COMMENTS: .	1 Amb 1 plastic	1.11	HCC HNO3	, ,	Total Chromium.
				•	

Client/ Facility #_4	625	·	·	J o	b#;	180255		,
Address: 3		tvale	Aye.	Da	te:	11-7-0	01	
City: _ O글	Kland,	cA·	· · · · · · · · · · · · · · · · · · ·	Sa	mpler:	50e		
Well ID	. mw-	4	Wel	l Condition:	0	·k-		
Nell Diameter	<u> </u>	2 in	-	rocarbon	à	Amount E	Bailed /2	2-
Fotal Depth	24.6	<u> </u>		kness:	in = 0.17			
Depth to Water	7.9	2 6		ctor (VF)	6		12" = 5,80	2 = 0.00
	16.7	<u>3</u> x	vf <u>.017</u>	-284 x310	ese volum	el = Estimated i	Purge Volume: .	9 (gal.)
Purge Equipment:	Disposable Bailer Stack Suction Grundfos Other:		_	Samplin Equipm	ent:	Disposable E Bailer Pressure Bai Grab Sample	ler .	7
Sampling Time: Purging Flow R Did well de-wa	ate:)	•	Water Color: Sediment Designation If yes; Time:	niption:		·	•
Time	Volume (gal.)	· pH	Cons jání	ductivity (⁷⁾ To hos/cm K	-C subersone	e D.O. (mg/L)		Alkalinity (ppm)
1110	-3 -	7.70		39	11.6	-	<u> </u>	
11:12	<u>9</u>	7.47 7.55		46 -	71. 5 71. 5		- -	_*
			• •		· .			<u> </u>
					 	<u> </u>		-
				ATORY INFOR				
SAMPLE ID	IN- CONT.		REFRIG.	PRESERV. TYP		ABORATORY		NLYSES
71107-4	310.		<u> </u>	HCL		3e4.	TPHG, B	TEX, MTBE
<u></u>	1							
COMMENTS:				, "· <u> </u>			<u> </u>	,
		•	-	· · ·			·	
<u> </u>			•	•	. —	•		

Client/ Pacility # <u>462</u>	.5		_ Job#:	180255	-
	o Fruitvale	Ave.	. Date:	11-7-0	
city: Oakl	and CA.		. Sample	r: <u>50e</u>	
Well ID	voulto	ervationWe Well Co		0.k-	
Well Diameter	in	Hydroca Thickne		Amount Ba	Z.M
Total Depth	<u> </u>	Volume		3" = 0.38	
Depth to Water	9.33 +	Factor (VF)	೯ = 1.50 	12* = 5,80
		VF <u>017</u> =		lume) = Estimated Pu	rrge Volume:(gsl.)
Purge Equipment:	Disposable Bailer Bailer Stack		Sampling Equipment:	Disposable Ba Bailer Pressure Baile	
	Grundfos Other:	<u> </u>	. 0	-Grab Sample ther:	•
Starting Time:		We	ather Conditions	olear	
Sampling Time:		Wa	iter Color:	cleac	Odor:
Purging Flow Rate	B:		A	on:	
Did well de-water	7	#y	es; Time:	Volur	ne:
	Tolume pH (gal.)	Conduct	ivity (⁷⁾ Temper	and: D.O. (mg/L)	ORP Alkalinity (mV) (ppm)
	/		_/		
·	,	- /			
/ -					-
44404519	CONTAINED		ORY INFORMA	TION LABORATORY	ANALYSES
SAMPLE ID	3YO4	Nerhjia.	HCL !	Sequ	THE BTEX MTBE
71100					
COMMENTS: _	M. O. I.V.	· ·	_		·
COMMENIO: "	1.	.			
			•		
The state of the s					

Organization

Date/Have

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(hai	in-A	. * []	ictoni	y-Reco <u>r</u> e
UHU	III U	1 01	401VU:	110001

5 Days 10 Days

An Contracted

Pale/Ilme

TOSCO	

Tence Marketing Company 2000 Com Corper FL, Su. 400 Sust Record, California 54563

Refinquished By (Signature)

Foolity Number_TOSCO #4625 Foolity Address 3070 Fruitvale Ave., Oakland, CA Consultant Project Number 180255	Conloct (Home) MR. Dave DeWitt (Phone) 925-277-2384 Laboratory Name Sequois Analytical
Consultant Manne Gettler-Ryan Inc. (G-R Inc.)	Laboratory Release Humber
Project Contact (Nagre) Deanna L. Hard no	Collection Date 11-7-01 Signature Signature

				Y	HANDLE T	2722111	22 4100	POLLIDA	,,				- duoing								
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C111068	칥		than change	Grab Composite Discrete		9 10 10 10 10 10 10 10 10 10 10 10 10 10		Ē.			ę X	큏	١	Į.		8240	5,8270	2			TB-LB ANALYSIS
E	Sample Numb	Containe	 ₹ 0	1983		2	or No.	¥ 68		8	8 8	Ę	Organic	8 0	1 40	20	200.	3.5	ŀ		
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TB-LB	01	10h	w	6-		HCL	Y	1													
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Venily defend of	20w-	<u> </u>		-R Inc	1.	7-01	+	<u> </u>	- 0	V-a	بو	S	EQ S	<u>c. </u>	(){-	loi '	07:2				Hru.
Relinquished By			On	entze V en		ole/Time	Red	perved B	y (Sign	olule)	. –	- '	Drganizal	ion	Dal	e/Time	:	-			Hre. Doys

Recleved For Loberstory Dy (Signature)





21 November, 2001

REGEIVED

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

GETTLER-RYAN INC.

RE: Tosco(1)

Sequoia Report: L111068

Enclosed are the results of analyses for samples received by the laboratory on 11/07/01 15:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sporya K. Pelt

Latonya Pelt Project Manager

CA ELAP Certificate #2360



1551 Industrial Road San Carlos CA 94070 (650) 232-9600 FAX (650) 232-9612 www.sequoialabs.com

Gettler-Ryan/Geostrategies(1)

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

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-LB	L111068-01	Water	11/07/01 00:00	11/07/01 15:50
MW-1	L111068-02	Water	11/07/01 12:51	11/07/01 15:50
MW-2	L111068-03	Water	11/07/01 13:30	11/07/01 15:50
MW-3	L111068-04	Water	11/07/01 12:14	11/07/01 15:50
MW-4	L111068-05	Water	11/07/01 11:30	11/07/01 15:50

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

Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

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

Sequoia Analytical - San Carlos

		14014 7 222	<u> </u>						1
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TB-LB (L111068-01) Water S	ampled: 11/07/01 00:00	Received:	1/07/01	15:50	<u></u>		<u> </u>		·
Purgeable Hydrocarbons as Gaso		50	ug/l	1	1110045	11/13/01	11/13/01	EPA 8021B	
Benzene	ND	0.50	u.	IJ	H		70	,. H	
Toluene	ND	0.50	PI		11	n	n	" "	
Ethylbenzene	ND	0.50	**	n	10	Н	,	"	
Xylenes (total)	ND	0.50	"	М	н		n _	#	
Methyl tert-butyl ether	ND	5.0	н						
Surrogate: a,a,a-Trifluorotoluen	e	89.3 %	70	-130	"	tr	Ħ	**	
MW-1 (L111068-02) Water S	ampled: 11/07/01 12:51	Received: 1	1/07/01	15:50					
		50	ug/i	1	1110045	11/13/01	11/13/01	EPA 8021B	
Purgeable Hydrocarbons as Gaso	ND	0.50	*	#	u			H	
Benzene	ND	0.50	#	H	U	Ħ		•	
Toluene	ND	0.50	н	*	n	π		п	
Ethylbenzene	ND	0.50	Br .	**		Ħ	*	н	
Xylenes (total)	22	5.0		n	"	n	n	tı	
Methyl tert-butyl ether			70	0-130	"	,,	"	77	
Surrogate: a,a,a-Trifluorotoluen	e	88.7 %							
MW-2 (L111068-03) Water 5	Sampled: 11/07/01 13:30	Received:	<u>11/07/01</u>	15:50				ED 4 0001D	P-01
Purgeable Hydrocarbons as G		100	ug/l	2	1110045	11/13/01	11/13/01	EPA 8021B	P-U.
Benzene	110	1.0	н	**	*	H	,,	11	
Toluene	ND	1.0		n	п	"	_		
Ethylbenzene	26	1.0	Ħ		*		• #	-	
Nylenes (total)	42	1.0	н	Ħ	n	H	-	n	
Methyl tert-butyl ether	ND	10			н				
Surrogate: a,a,a-Trifluorotoluer	ne	92.2 %	7	0-130	n	**	и	"	





Gettler-Ryan/Geostrategies(1)

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

Project Number: Tosco #4625, Oakland, CA Project Manager: Deanna Harding Reported: 11/21/01 16:22

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 (L111068-04) Water	Sampled: 11/07/01 12:14	Received: 1	1/07/01	15:50					
Purgeable Hydrocarbons as Gas	soline ND	50	ug/l	1	1110045	11/13/01	11/13/01	EPA 8021B	
Benzene	ND	0.50			19	11	0	n	
Toluene	ND	0.50	tr	tr	н	н	tu	н	
Ethylbenzene	ND	0.50	**	*	н	н	**	π	
Xylenes (total)	ND	0.50	m	н	'n	n	11	₩	
Methyl tert-butyl ether	ND	5.0	*	н	н	N	н	Ħ	
Surrogate: a,a,a-Trifluorotolue	ne	87.8 %	70-	-130	n	"	tr	"	
MW-4 (L111068-05) Water	Sampled: 11/07/01 11:30	Received: 1	1/07/01	15:50					
Purgeable Hydrocarbons as Gas	soline ND	50	ug/l	1	1110045	11/13/01	11/13/01	EPA 8021B	
Benzene	ND	0.50	**	u	*	n	*	н	
Toluene	ND	0.50	=	ч	-	11	TT	H	
Ethylbenzene	ND	0.50	Ħ	11	n	11	n	n	
Xylenes (total)	ND	0.50	₩	**	₩	n	н	u u	
Methyl tert-butyl ether	ND	5.0	#	ft		N	51	n	
Surrogate: a,a,a-Trifluorotolue	ne	81.9 %	70-	-130	"	11	п	n ·	



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

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

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

Anolyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note:
Analyte	 						_ .		
	Sampled: 11/07/01 12:14 ND	Received: 1	1/0 //01] ug/l	1	1110044	11/13/01	11/13/01	EPA Method	
Acetone	ND	20	ug/i	•				8240	
Benzene	ND	2.0	п	**	*	11	*	n	
Bromodichloromethane	ND	2.0	м	н	"	н	**	**	
Bromoform	ND	2.0	•	H.	Ħ	u	H	**	
Bromomethane	, ND	2.0	п	n	n	#	π	н	
2-Butanone	ND	20	ŧŧ	,	**	Ħ	Ħ	H	
Carbon disulfide	ND	2.0	10	**	7	11	n	#	
Carbon tetrachloride	ND	2.0	н	н	Ħ	T	н	11	
Chlorobenzene	ND	2.0		ır	н	11	п	H	
Chloroethane	ND	2.0	D	•		H	**	**	
2-Chloroethylvinyl ether	ND	20	#	11	**	н	Ħ	**	
Chloroform	ND	2.0		п	Ħ	11	n	H	
Chloromethane	ND	2.0	•	н		н	*		
Dibromochloromethane	ND	2.0	11	**			*	*	
1.1-Dichloroethane	ND	2.0	н	*	n	п	H	n	
1,2-Dichloroethane	ND	2.0	•	Ħ	n	н	*	"	
1,1-Dichloroethene	ND	2.0		n	n	H	7	*	
cis-1,2-Dichloroethene	ND	2.0	*	н	#	#	II	n	
trans-1,2-Dichloroethene	ND	2.0	•			"	п	π	
1.2-Dichloropropane	ND	2.0	н	#	н	н	•	**	
3-Dichloropropene	ND	2.0	н	Ħ	Ħ		*	₩	
	ND	2.0		н	n	H	н	Ħ	
Ethylbenzene	ND	2.0	Ħ	IP	11	h	n	H	
2-Hexanone	ND	20	•	ч	п	ıı	4	•	
Methylene chloride	ND	5.0	н	n	. 11	v	н	h	
4-Methyl-2-pentanone	ND	20	Ħ	11	п	11	H	π	
Styrene	ND	2.0	**	H	н	n	•	н	
1,1,2,2-Tetrachloroethane	ND	2.0		н	н	n	n	Ħ	
Tetrachloroethene	ND	2.0		*	H	77	11	*	
Toluene	ND	2.0	Ħ	n	-	"	н	•	
1,1,1-Trichloroethane	ND	2.0	*	n	0	н	H	Ħ	
1,1,2-Trichloroethane	ND	2.0		n	11	"	•	H	
Trichloroethene	ND	2.0	п	н	ĮI.		n	₹	
Trichlorofluoromethane	ND	2.0	н	N	Ħ	Ħ	н	"	
	ND	5.0		77	n	•		н	
Vinyl acetate	ND	2.0	**	*	n	77	*	n	
Vinyl chloride	ND	2.0			H	11	#		
Total Xylenes			7.	6-114	"	"	,,	"	
Surrogate: 1,2-Dichloroethane	2-04	105 %		5-114 8-110	"	r <i>t</i>	#	Ħ	
Surrogate: Toluene-d8		97.2 %	80	D-110					

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, CA

Project Manager: Deanna Harding

Reported:

11/21/01 16:22

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L111068-04) Water	Sampled: 11/07/01 12:14	Received: 1	1/07/01 1	5:50					
Surrogate: 4-BFB		94.0 %	86-	115	1110044	11/13/01	11/13/01	EPA Method 8240	



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

Project: Tosco(1)

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

Volatile Organic Compounds by EPA Method 8021B

Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	ampled: 11/07/01 12:14	Received: 1	1/07/01	15:50			<u> </u>		_
Freon 113	ND	1.0	ug/l	1	1110057	11/20/01	11/21/01	EPA 8021B	•
Bromodichloromethane	ND	0.50	n	11	11	N		,	
Bromoform	ND	0.50	п	н	H		4	 H	
Bromomethane	ND	1.0	**	9	•	n 	"		
Carbon tetrachloride	ND	0.50	•	17	н	"	" n	н	
Chlorobenzene	ND	0.50	Ħ	н	11	11	" "	 77	
Chloroethane	ND	1.0		11	*		,	#	
Chloroform	ND	0.50	*		п	"	т		
Chloromethane	ND	1.0	11	н	*	-			
Dibromochloromethane	ND	0.50	м	**	11				
1,2-Dibromoethane (EDB)	ND	0.50	**	n	н	#			
1,3-Dichlorobenzene	ND	0.50	n	H		ч	-	" N	
1,4-Dichlorobenzene	ND	0.50	. н	*	i1	"	и и	 H	
1,2-Dichlorobenzene	ND	0.50	*	п	**	"			
1,1-Dichloroethane	ND	0.50	*		u	ti		,	
1,2-Dichloroethane	ND	0.50	и	Ħ	Ħ		"		
1,1-Dichloroethene	ND	0.50	#	II	*	"	-		
cis-1,2-Dichloroethene	ND	0.50	Ħ	11	11	H			
trans-1,2-Dichloroethene	ND	0.50	11	*	H				
1,2-Dichloropropane	ND	0.50	и	и	tr	"	7		
cis-1,3-Dichloropropene	ND	0.50	•	it .					
trans-1.3-Dichloropropene	ND	0.50	11	Ħ	н	.11	,,		
chloride	מא	5.0	н	н	11		"		
etrachloroethane	ND	0.50	•	**	"	**			
Tetrachloroethene	ND	0.50	Ħ	"	н	Ħ	#		
1.1.1-Trichloroethane	ND	0.50	п	н	H	**	n 	"	
1,1,2-Trichloroethane	ND	0.50	*	•	গ	n		,	
Trichloroethene	0.55	0.50	p	n	11	n	-	,,	
Trichlorofluoromethane	ND	0.50	Ħ	н	n	Ħ	H		
Vinyl chloride	ND	1.0	n			11			
Chlora 2 flyarahe		95.8 %	7	0-130	н	#	"	**	

Surrogate: I-Chloro-2-fluorobenzene



Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J

Dublin CA, 94568

Project: Tosco(1)

Project Manager: Deanna Harding

Project Number: Tosco #4625, Oakland, CA

Reported: 11/21/01 16:22

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 (L111068-02) Water	Sampled: 11/07/01 12:51	Received: 1	1/07/01	15:50					
Ethanol	ND	500	ug/l	1	1110059	11/16/01	11/16/01	EPA 8260B	
1,2-Dibromoethane	ND	1.0		•		н	•	H	
1,2-Dichloroethane	ND	1,0	11	Ħ	H .	n	**	11	
Di-isopropyl ether	ND	1.0	H	•	п	bt .	și și	11	
Ethyl tert-butyl ether	ND	1.0	π	**	*	**	**	11	
Methyl tert-butyl ether	26	1.0	•		4	п	H	н	
Tert-amyl methyl ether	ND	1.0	Ħ	**	#	**	н	11	
Tert-butyl alcohol	ND	20	*	*		¥	11	н	
Surrogate: 1,2-Dichloroethan	e-d4	93.8 %	70	-130	"	n	n	"	
Surrogate: Toluene-d8		99.4 %	70	-130	"	"	"	"	





Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland, CA

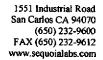
Reported: 11/21/01 16:22

Project Manager: Deanna Harding

Diesel Hydrocarbons (C10-C23) by DHS LUFT

Sequoia Analytical - Walnut Creek

		•	V			_			
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L111068-04) Water	Sampled: 11/07/01 12:14	Received: 1	1/07/01	15:50					
Diesel Range Hydrocarbons		50	սg/Լ	1	1K09010	11/14/01	11/16/01	EPA 8015M	HC-12
(C10-C23) Surrogate: n-Pentacosane		59.2 %	50-	-150	n	n	"	"	





Project: Tosco(1)

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported:

11/21/01 16:22

Total Metals by EPA 200 Series Methods Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L111068-04) Water	Sampled: 11/07/01 12:14	Received: 1	1/07/01	15:50					
Chromium	ND	0.010	mg/l	1	1K 13020	11/13/01	11/14/01	EPA 200.7	





Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

Semivolatile Organic Compounds by EPA Method 8270C

Sequoia Analytical - Walnut Creek

	_	Reporting					4		
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-3 (L111068-04) Water	Sampled: 11/07/01 12:14	Received: 1	1/07/01 1	15:50					
Acenaphthene	ND	5.0	ug/l	1	1K12025	11/14/01	11/14/01	EPA 8270C	
Acenaphthylene	ND	5.0	n	н	Ħ	ч	*	#	
Aniline	ND	5.0	Ħ	Ħ	0	π	P	u	
Anthracene	ND	5.0	Bř		11	•	11	n	
Benzoic acid	ND	10	44	#	Ħ	19	Ħ	Ħ	
Benzo (a) anthracene	ND	5.0	77	Ħ	n	Ħ	**	H	
Benzo (b) fluoranthene	ND	5.0	*	**	**	"	•		
Benzo (k) fluoranthene	ND	5.0		H	n	*		n	
Benzo (ghi) perylene	ND	5.0		"	10		41	"	
Benzo[a]pyrene	ND	5.0	"	**	n	*	н	и	
Benzyl alcohol	ND	5.0	я		H	n	"	at .	
Bis(2-chloroethoxy)methane	ND	5.0	H	п	*	H	#	•	
Bis(2-chloroethyl)ether	ND	5.0	Ħ	**	**	#	•	•	
Bis(2-chloroisopropyl)ether	ND	5.0	19	91	•	•	11	11	
Bis(2-ethylhexyl)phthalate	ND	10		н	n	и	ŧı	н	
4-Bromophenyl phenyl ether	ND	5.0	*	n	N	н	•	Ħ	
Butyl benzyl phthalate	ND	50	**	п	*		*	**	
4-Chloroaniline	ND	25			-	Ħ	Ħ	**	
2-Chloronaphthalene	ND	5.0	**	17	W	11	н	11	
4-Chloro-3-methylphenol	ND	5.0	**	u	11	11	Ħ	н	
2-Chlorophenol	ND	5.0	. #	Ħ	H	n	Ħ	n	
4-Chlorophenyl phenyl ether	ND	5.0	И	н	n	n	н	#	
Chrysene	ND	5.0	"		•		11	n	
Dibenz (a,h) anthracene	ND	10				n		11	
Dibenzofuran	ND	5.0	77	n	π	н	Ħ	п	
hand a control of the	ND	10		**	Ħ		n	n	
1,2-Dichlorobenzene	ND	5.0	**	н		**	11	•	
1,3-Dichlorobenzene	ND	5.0	11	н		u	fa	Ħ	
1,4-Dichlorobenzene	ND	10		H	77	n	n		
3,3'-Dichlorobenzidine	ND	10	"	н		n		11	
-	ND	5.0	4	n	91	H	Ħ	н	
2,4-Dichlorophenol	ND	5.0	н	п	н	n	н	n	
Diethyl phthalate	ND ND	5.0	#1	*	н	m	tt		
2,4-Dimethylphenol	ND ND	5.0	n	n	п		Ħ		
Dimethyl phthalate	ND ND	10	*	11	**	н	п	a	
4,6-Dinitro-2-methylphenol	ND ND	10		#	11	H	•	n	
2,4-Dinitrophenol			**	п	n	,,	7	н	
2,4-Dinitrotoluene	ND	10		n	H	n	n	**	
2,6-Dinitrotoluene	ND	10					11		
Di-n-octyl phthalate	ND	10	_	 n	 n	11		#	
Fluoranthene	ND	5.0	**	-	,,		••	==	

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.





Dublin CA, 94568

Project: Tosco(1)

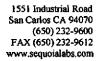
Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

Semivolatile Organic Compounds by EPA Method 8270C Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L111068-04) Water	Sampled: 11/07/01 12:14	Received: 1	1/07/01 1	5:50				· · · · · · · · · · · · · · · · · · ·	
Fluorene	ND	5.0	ug/l	1	1K12025	11/14/01	11/14/01	EPA 8270C	
Hexachlorobenzene	ND	10	m	н	17	#	**	•	
Hexachlorobutadiene	ND	10	**	н	•	**	4	•	
Hexachlorocyclopentadiene	ND	10	11	N	n	11	н	n	
Hexachloroethane	ND	5.0	11	77		н	П	11	
Indeno (1,2,3-cd) pyrene	ND	10	11	#	,,	Ħ	**	Ħ	
Isophorone	ND	5.0	п	#	н	u	•	п	
2-Methylnaphthalene	ND	5.0	н	"	į,		•	•	
2-Methylphenol	ND	5.0	W .	п	U	•	11	*	
4-Methylphenol	ND	5.0	Ħ	и	#	11	n	ti	
Numhthalene	ND	5.0	n	"	Ħ	H	R	Ħ	
2-Nitro aniline	ND	10	•	**	11	n		H	
3-Nitroaniline	ND	10	#	**	н		=		
4-Nitroaniline	ND	20	**	#	ľ	#	Ħ	Ħ	
Nitrobenzene	ND	5.0	tr	**	*	11	п	n	
2-Nitrophenol	ND	5.0	**	19	•	H	Ħ	n ·	
4-Nitrophenol	ND	10	11	11	**	rt	n	п	
N-Nitrosodimethylamine	ND	5.0	**	п	Ħ	"	*	н	
N-Nitrosodiphenylamine	ND	5.0	11	n	п	*	•	**	
N-Nitrosodi-n-propylamine	ND	5.0	H	**	н	"	*	Ħ	
Pentachlorophenol	ND	10	п	*	**	Ħ	11	н	
Phenanthrene	ND	5.0	Ħ	*	•	H	#	н	
Phenol	ND	5.0	n	11	H	•	•	н	
Pyrene	ND	5.0	n	Ħ	ħ	*	**	Ħ	
1.2.4-Trichlorobenzene	ND	5.0	•	н	н	11		Ħ	
2.4.5-Trichlorophenol	ND	10	#	н	H	н	н	11	
2,4,6-Trichlorophenol	ND	10	# .	"	н	н	Ħ	Ħ	
Surrogate: 2-Fluorophenol		28.8 %	21	-110	W	"	п	tr	
Surrogate: Phenol-d6		19.9 %	10	-110	"	rr	n	n	
Surrogate: Nitrobenzene-d5		65.4 %	35	-114	*	77	77	"	
Surrogate: 2-Fluorobiphenyl		63.5 %	43	116	"	*	n	"	
Surrogate: 2,4,6-Tribromophe	nol	<i>55.5</i> %	10	-123	"	"	. "	"	
Surrogate: p-Terphenyl-d14		46.2 %	33	-141	"	**	"	ė,	





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

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

Conventional Chemistry Parameters by APHA/EPA Methods Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L111068-04) Water	Sampled: 11/07/01 12:14	Received: 1	1/07/01	15:50					
Oil & Grease	ND	5.0	mg/l	1	1K14010	11/14/01	11/14/01	SM 5520B	





Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

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 1110045 - EPA 5030B (P/T)						·				
Blank (1110045-BLK1)				Prenared	& Analyza	ed: 11/13/	01			
Purgeable Hydrocarbons as Gasoline	ND	50	ug/l				* -			
Benzene	ND	0.50	,							
Toluene	ND	0.50	#							
Ethylbenzene	ND	0.50								
Xylenes (total)	ND	0.50	*1							
Methyl tert-butyl ether	ND	5.0								
Surrogate: a,a,a-Trifluorotoluene	10.2		"	10.0		102	70-130			
LCS (1110045-BS1)				Prepared	& Analyz	ed: 11/13/	01			
Benzene	9.89	0.50	ug/l	10.0		98.9	70-130			
Toluene	10.1	0.50	*	10.0		101	70-130			
Ethylbenzene	9.85	0.50	π	10.0		98.5	70-130			
Xylenes (total)	29.7	0.50	*	30.0		99.0	70-130			
Surrogate: a,a,a-Trifluorotoluene	9.77		"	10.0		97.7	70-130			
LCS (1110045-BS2)				Prepared	& Analyz	ed: 11/13/	01			
Purgeable Hydrocarbons as Gasoline	245	50	ug/l	250	-	98.0	70-130		-	
Surrogate: a,a,a-Trifluorotoluene	11.5	 -	"	10.0		115	70-130			
Matrix Spike (1110045-MS1)	Soi	urce: L11104	1-04	Prepared	& Analyz	ed: 11/13/	01			
Benzene	11.9	0.50	ug/l	10.0	ND	119	60-140			
Toluene Toluene	11.7	0.50	н	10.0	ND	117	60-140			
Ethylbenzene	11.8	0.50		10.0	ND	118	60-140	•		
Xylenes (total)	35.1	0.50	#	30.0	ND	117	60-140			
Surrogate: a,a,a-Trifluorotoluene	7.96		"	10.0	·	79.6	70-130			-
Matrix Spike Dup (1110045-MSD1)		ırce: L11104	1-04	Prepared	& Analyz	ed: 11/13/	01			
Benzene	11.3	0.50	ug/l	10.0	ND	113	60-140	5.17	25	
Toluene	11.2	0.50	*	10.0	ND	112	60-140	4.37	25	
Ethylbenzene	11.4	0.50	, n	10.0	ND	114	60-140	3.45	25	
Kylenes (total)	33.8	0.50	н	30.0	ND	113	60-140	3.77	25	
Surrogate: a,a,a-Trifluorotoluene	8.39		н	10.0		83.9	70-130			



Project: Tosco(1)

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

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 1110044 - EPA 5030B [P/T]									<u>_</u>	
Blank (1110044-BLK1)				Prepared	& Analyz	ed: 11/12/0	01	,		
Acetone	ND	20	ug/l							
Benzene	ND	2.0	**							
Bromodichloromethane	ND	2.0	11							
Bromoform	ND	2.0	н		-					
Bromomethane	ND	2.0	n							
2-Butanone	ND	20	*							
Carbon disulfide	ND	2.0	•							
Carbon tetrachloride	ND	2.0	**							
Chlorobenzene	ND	2.0	n							
Chloroethane	ND	2.0	Ħ							
2-Chloroethylvinyl ether	ND	20	•							
Chloroform	ND	2.0	#							
Chloromethane	ND	2.0	п							
Dibromochloromethane	ND	2.0	н							
1,1-Dichloroethane	ND	2.0	Ħ							
I_2-Dichloroethane	ND	2.0	•							
i i -i Dichloroethene	ND	2.0	**							
cis-1,2-Dichloroethene	ND	2.0	n							
trans-1,2-Dichloroethene	ND	2.0	n							
1,2-Dichloropropane	ND	2.0	*							
cis-1,3-Dichloropropene	ND	2.0								
trans-1,3-Dichloropropene	ND	2.0								
Ethylbenzene	ND	2.0	п							
2-Hexanone	ND	20	н							
Methylene chloride	ND	5.0	н							
4-Methyl-2-pentanone	ND	20	н							
Styrene	ND	2.0	Ħ							
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene	ND	2.0	*							
Toluene	ND	2.0	n							
1,1,1-Trichloroethane	ND	2.0	н							
1,1,2-Trichloroethane	ND	2.0	н							
Trichloroethene	ND	2.0								
Trichlorofluoromethane	ND	2.0								
Vinyl acetate	ND	5.0								
Vinyl chloride	ND	2.0								



Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J

Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

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

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1110044 - EPA 5030B [P/T]										
Blank (1110044-BLK1)				Prepared a	& Analyz	ed: 11/12/0)1 .			
Total Xylenes	ND	2.0	ug/l							
Surrogate: 1,2-Dichloroethane-d4	52.3		11	50.0		105	76-114			
Surrogate: Toluene-d8	50.6		**	50.0		101	88-110			
Surrogate: 4-BFB	45.0		ar .	50.0		90.0	86-115			
Blank (1110044-BLK2)				Prepared	& Analyz	ed: 11/13/0	01			
Acetone	ND	20	ug/l							
Benzene	ND	2.0	•							
Bromodichloromethane	ND	2.0	**							
Bromoform	ND	2.0								
Bromomethane	ND	2.0	**							
2-Butanone	ND	20	п							
Carbon disulfide	ND	2.0	**							
Carbon tetrachloride	ND	2.0	41							
Chlorobenzene	ND	2.0	**							
Thloroethane	ND	2.0	Ħ							
-Chloroethylvinyl ether	ND	20	*1							
hloroform	ND	2.0	Ħ							
Chloromethane	ND	2.0	n							
Dibromochloromethane	ND	2.0	**							
,1-Dichloroethane	NĎ	2.0	**							
,2-Dichloroethane	ND	2.0								
1,1-Dichloroethene	ND	2.0								
ris-1,2-Dichloroethene	ND	2.0	н							
rans-1,2-Dichloroethene	ND	2.0	**							
,2-Dichloropropane	ND	2.0	•							
sis-1,3-Dichloropropene	ND	2.0								
rans-1,3-Dichloropropene	ND	2.0								
Ethylbenzene	ND	2.0	n							
-Hexanone	ND	20	H							
Methylene chloride	ND	5.0								
-Methyl-2-pentanone	ND	20	"							
Styrene	ND	2.0	•							
,1,2,2-Tetrachloroethane	ND	2.0	н							
l'etrachloroethene	ND	2.0								
l'oluene	ND	2.0	•							
1,1,1-Trichloroethane	ND	2.0	H							

Sequoia Analytical - San Carlos

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Project: Tosco(1)

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

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 1110044 - EPA 5030B [P/T]							~~			<u>.</u>
Blank (1110044-BLK2)			. <u>.</u>	Prepared	& Analyza	ed: 11/13/0	<u> </u>			
1,1,2-Trichloroethane	ND	2.0	ug/l							
Trichloroethene	ND	2.0								
Crichlorofluoromethane	ND	2.0	n .							
Vinyl acetate	ND	5.0	π							
Vinyl chloride	ND	2.0	tı							
Total Xylenes	ND	2.0	н					<u></u>		
Surrogate: 1,2-Dichloroethane-d4	51.1		P7	50.0		102	76-114			
Surrogate: 1,2-Diction bettaine 4.7 Surrogate: Toluene-d8	50.5		"	50.0		101	88-110			
Surrogate: 4-BFB	44.1		**	50.0		<i>88.2</i>	86-115			
-				Prepared	& Analyz	ed: 11/12/	01			
LCS (1110044-BS1)	21.8	2.0	ug/l	20.0		109	65-135			
Benzene	22.6	2.0	#	20.0		113	70-130			
Chlorobenzene	19.9	2.0		20.0		99.5	70-130			
1,1-Dichloroethene	21.7	2.0	•	20.0		108	70-130			
Toluene	20.3	2.0		20.0		102	70-130			
Trichloroethene			- н	50.0		105	76-114			
Surrogate: 1,2-Dichloroethane-d4	52.6		,,	50.0		103	88-110			
Surrogate: Toluene-d8	51.4 51.1		n	50.0		102	86-115			
Surrogate: 4-BFB	31.1					. 4. 44/49	/O.1			
: C S (1110044-BS2)					1 & Analy	zed: 11/13			_	
Benzene	21.7	2.0	ug/i	20.0		108	65-135			
Chlorobenzene	21.5	2.0	#	20.0		108	70-130			
1,1-Dichloroethene	20.3	2.0	H	20.0		102	70-130			
Toluene	20.3	2.0	ħ	20.0		102	70-130			
Trichloroethene	18.7	2.0		20.0	<u></u>	93.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	54.5	· · · · · · · · · · · · · · · · · · ·	11	50.0		109	76-114			
Surrogate: Toluene-d8	49.6		"	50.0		99.2	88-110			
Surrogate: 4-BFB	46.4		"	50.0		92.8	86-115			





Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

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 1110044 - EPA 5030B [P/T]		···						··	· -	
Matrix Spike (1110044-MS1)	So	orce: L11103	2-01	Prepared	& Analyza	ed: 11/12/0	01			
Benzene	21.7	2.0	ug/l	20.0	ND	108	60-140			
Chlorobenzene	22.5	2.0	н	20.0	ND	112	60-140			
1,1-Dichloroethene	19.7	2.0	19	20.0	ND	98.5	60-140			
Toluene	21.5	2.0	*	20.0	ND	108	60-140			
Trichloroethene	.19.9	2.0	н	20.0	ND	99.5	60-140			
Surrogate: 1,2-Dichloroethane-d4	51.1		H	50.0		102	76-114			
Surrogate: Toluene-d8	50.5		**	50.0		101	88-110			
Surrogate: 4-BFB	47.0		"	50.0		94.0	86-115			
Matrix Spike Dup (1110044-MSD1)	Soi	rce: L11103	2-01	Prepared	& Analyzo	ed: 11/12/	D1			
Benzene	22.3	2.0	ug/l	20,0	ND	112	60-140	2.73	25	-
Chlorobenzene	22.3	2.0	-	20.0	ND	112	60-140	0.893	25	
1,1-Dichloroethene	20.5	2.0		20.0	ND	102	60-140	3.98	25	
Toluene	21.9	2.0		20.0	ND	110	60-140	1.84	25	
Trichloroethene	19.9	2.0		20.0	ND	99.5	60-140	0.00	25	
Surrogate: 1,2-Dichloroethane-d4	53.0		"	50.0		106	76-114			
Surrogate: Toluene-d8	51.0		**	50.0		102	88-110			
Surrogate: 4-BFB	48.4		n	50.0		<i>96.8</i>	86-115			



Project: Tosco(1)

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

Volatile Organic Compounds by EPA Method 8021B - Quality Control Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1110057 - EPA 5030B (P/T)				· · · · · · · · · · · · · · · · · · ·			<u></u>			
Blank (1110057-BLK1)				Prepared	& Analyze	ed: 11/20/	01			
Treon 113	ND	1.0	ug/l							
Bromodichloromethane	ND	0.50								
3romoform	ND	0.50	**							
3romomethane	ND	1.0	Ħ							
Carbon tetrachloride	ND	0.50	**							
Chlorobenzene	ND	0.50	n	•						
Chloroethane	ND	1.0	•							
Chloroform	NĎ	0.50	*							
Thioromethane	ND	1.0	n							
Dibromochloromethane	ND	0.50	Ħ							
1,2-Dibromoethane (EDB)	ND	0.50	11							
1.3-Dichlorobenzene	ND	0.50								
1,4-Dichlorobenzene	ND	0.50	Ħ							
1,2-Dichlorobenzene	ND	0.50								
1,1-Dichloroethane	ND	0.50	•							
1,2-Dichloroethane	ND	0.50								
1,1-Dichloroethene	ND	0.50	н							
cis-1,2-Dichloroethene	ND	0.50	n							
trans-1,2-Dichloroethene	ND	0.50	#							
1.2-Dichloropropane	ND	0.50	11							
cis-1,3-Dichloropropene	ND	0.50	н							
trans-1,3-Dichloropropene	ND	0.50	**							
Methylene chloride	ND	5.0								
1,1,2,2-Tetrachloroethane	ND	0.50	н							
Tetrachloroethene	ND	0.50	"							
1,1,1-Trichloroethane	ND	0.50								
1,1,2-Trichloroethane	ND	0.50	-				••			
Trichloroethene	ND	0.50	'n							
Trichlorofluoromethane	ND	0.50	#							
Vinyl chloride	ND	1.0	"							
Benzene	ND	0.50	77							
Ethylbenzene	ND	0.50	*							
Toluene	ND	0.50								
Total Xylenes	ND	0.50	H							

Sequoia Analytical - San Carlos

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Gettler-Ryan/Geostrategies(1)

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

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

Volatile Organic Compounds by EPA Method 8021B - Quality Control Sequoia Analytical - San Carlos

l	Donula	Reporting	11-1-	Spike	Source	WDEC	%REC	nen	RPD	N 7.4
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1110057 - EPA 5030B (P/T)	<u></u>									
LCS (1110057-BS1)				Prepared	& Analyz	ed: 11/20/	01			
Chlorobenzene	11.1	0.50	ug/l	10.0		111	70-130			
1,1-Dichloroethene	8.54	0.50	н	10.0		85.4	70-130			
Trichloroethene	9.55	0.50	н	10.0		95.5	70-130			
Benzene	9.83	0.50	п	10.0		98.3	70-130			
Toluene	9.99	0.50	н	10.0		99.9	70-130			
Surrogate: 1-Chloro-2-fluorobenzene	9.60		,,	10.0		96.0	70-130			
Matrix Spike (1110057-MS1)	So	urce: L11106	2-03	Prepared	& Analyz	ed: 11/20/	01			_
Chlorobenzene	9.45	0.50	ug/l	10.0	ND	94.5	60-140			
1,1-Dichloroethene	9.02	0.50	n	10.0	ND	90.2	60-140			
Trichloroethene	9.68	0.50	H	10.0	ND	96.8	60-140			
Surrogate: 1-Chloro-2-fluorobenzene	8.41		я	10.0		84.1	70-130			
Matrix Spike Dup (1110057-MSD1)	So	urce: L11106	2-03	Prepared	& Analyz	ed: 11/20/	01			
Chlorobenzene	8.46	0.50	ug/l	10.0	ND	84.6	60-140	11.1	25	
1,1-Dichloroethene	8.25	0.50	11	10.0	ND	82.5	60-140	8.92	25	
Trichloroethene	8.65	0.50	Ħ	10.0	ND	86.5	60-140	11.2	25	
Surrogate: 1-Chloro-2-fluorobenzene	8.52		"	10.0		85.2	70-130			



Project: Tosco(1)

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

Volatile Organic 8 Oxygenated Compounds by EPA Method 8260B - Quality Control Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1110059 - EPA 5030B [P/T]										
Blank (1110059-BLK1)				Prepared	& Analyz	ed: 11/15/0)1			
Ethanol	ND	500	ug/l							
1,2-Dibromoethane	ND	1.0	н							
1,2-Dichloroethane	ND	1.0	н							
Di-isopropyl ether	ND	1.0	н							
Ethyl tert-butyl ether	ND	1.0								
Methyl tert-butyl ether	ND	1.0	Ħ							
Tert-amyl methyl ether	ND	1.0	77	•						
Tert-butyl alcohol	ND	20	"							
Surrogate: 1,2-Dichloroethane-d4	46.5		n	50.0		93.0	70-130			
Surrogate: Toluene-d8	56.5		tt	50.0		113	70-130			
Blank (1110059-BLK2)				Prepared	& Analyz	ed: 11/16/	01			
Ethanol	ND	500	ug/l	-						
1,2-Dibromoethane	ND	1.0	"							
1,2-Dichloroethane	ND	1.0	н							
Di-isopropyl ether	ND	1,0								
Ethyl tert-butyl ether	ND	1.0	#							
Methyl tert-butyl ether	ND	1.0								
Fert-amyl methyl ether	ND	1.0	**							
Ten-butyl alcohol	ND	20	и							
Surrogate: 1,2-Dichloroethane-d4	44.2		,,	50.0		88.4	70-130			
Surrogate: Toluene-d8	50.9		*	50.0		102	70-130			
LCS (1110059-BS1)				Prepared	& Analy	zed: 11/15	/01			
Methyl tert-butyl ether	52.5	1.0	ug/l	50.0		105	70-130			
Surrogate: 1,2-Dichloroethane-d4	43.6	<u></u>	н	50.0		87.2	70-130			
Surrogate: Toluene-d8	60.8		H	50.0		122	70-130			



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

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

Volatile Organic 8 Oxygenated Compounds by EPA Method 8260B - Quality Control Sequoia Analytical - San Carlos

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1110059 - EPA 5030B [P/T]										
LCS (1110059-BS2)				Prepared	& Analyze	ed: 11/16/	01			
Methyl tert-butyl ether	49.0	1.0	ug/l	50.0		98.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	44.6		и	50.0		89.2	70-130			
Surrogate: Toluene-d8	55.6		r	50.0		III	70-130			
Matrix Spike (1110059-MS1)	Sou	rce: L11108	8-04	Prepared	& Analyza	ed: 11/15/	01			
Methyl tert-butyl ether	86.7	1.0	ug/l	50.0	39	95.4	60-140			
Surrogate: 1,2-Dichloroethane-d4	44.3		н	50.0		88.6	70-130			
Surrogate: Toluene-d8	57.4		rr .	50.0		115	70-130			
Matrix Spike Dup (1110059-MSD1)	Sou	rce: L11108	8-04	Prepared	& Analyza	ed: 11/15/	01	•	·	
Methyl tert-butyl ether	85.9	1.0	ug/l	50.0	39	93.8	60-140	1.69	25	
Surrogate: 1,2-Dichloroethane-d4	45.1		"	50.0	·	90.2	70-130			
Surrogate: Toluene-d8	<i>57.5</i>		**	50.0		115	70-130			



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

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

Diesel Hydrocarbons (C10-C23) by DHS LUFT - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1K09010 - EPA 3510B							<u></u>		-	
Blank (1K09010-BLK1)				Prepared:	11/09/01	Analyzed	11/12/01			
Diesel Range Hydrocarbons (C10-C23)	NĎ	50	ug/l							
Surrogate: n-Pentacosane	47.3		,,	33.3		142	50-150			
Blank (1K09010-BLK2)				Prepared:	11/14/01	Analyzed	: 11/15/01			
Diesel Range Hydrocarbons (C10-C23)	ND	50	ug/l					_		
Surrogate: n-Pentacosane	19.3		. "	33.3		58.0	50-150			
LCS (1K09010-BS1)				Prepared	: 11/09/01	Analyzed	: 11/12/01			
Diesel Range Hydrocarbons (C10-C23)	483	50	ug/l	500		96.6	60-140			
Surrogate: n-Pentacosane	49.3	<u></u> -	н	33.3		148	50-150			
LCS Dup (1K09010-BSD1)				Prepared	: 11/09/01	Analyzed	1: 11/12/01			
Diesel Range Hydrocarbons (C10-C23)	569	50	ug/l	500		114	60-140	16.3	50	
Surrogate: n-Pentacosane	57.7		"	33.3		173	50-150			S-L



Gettler-Ryan/Geostrategies(1)

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

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

Total Metals by EPA 200 Series Methods - Quality Control Sequoia Analytical - Walnut Creek

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1K13020 - 200.7										
Blank (1K13020-BLK1)				Prepared:	11/13/01	Analyzed	: 11/14/01			
Chromium	ND	0.010	mg/l							
LCS (1K13020-BS1)				Prepared:	11/13/01	Analyzed	: 11/14/01			
Chromium	0.974	0.010	mg/l	1.00		97.4	80-120			
LCS Dup (1K13020-BSD1)				Prepared:	11/13/01	Analyzed	: 11/14/01			
Chromium	1.01	0.010	mg/l	1.00		101	80-120	3.63	20	
Matrix Spike (1K13020-MS1)	Soi	urce: L11106	8-04	Prepared:	11/13/01	Analyzed	: 11/14/01			
Chromium	0.981	0.010	mg/i	1.00	ND	98.1	80-120			
Matrix Spike Dup (1K13020-MSD1)	So	urce: L11106	8-04	Prepared:	11/13/01	Analyzed	1: 11/14/01			
Chromium	0.968	0.010	mg/l	1.00	ND	96.8	80-120	1.33	20	



Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported:

11/21/01 16:22

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1K12025 - EPA 3510B Sep F	Tunnel									 ·
Blank (1K12025-BLK1)				Prepared:	11/12/01	Analyzed	: 11/14/01	<u>. </u>		
cenaphthene	ND	5.0	ug/l							
cenaphthylene	ND	5.0								
Aniline	ND	5.0	Ħ							
Anthracene	ND	5.0	п							
Benzoic acid	ND	10	Ħ							
Benzo (a) anthracene	ND	5.0	H							
Benzo (b) fluoranthene	ND	5.0	n							
Benzo (k) fluoranthene	ND	5.0	n							
Benzo (ghi) perylene	ND	5.0	Ħ							
Benzo[a]pyrene	ND	5.0	н							
Benzyl alcohol	ND	5.0	**							
Bis(2-chloroethoxy)methane	ND	5.0								
Bis(2-chloroethyl)ether	ND	5.0	н							
Bis(2-chloroisopropyl)ether	ND	5.0	п							
Bis(2-ethylhexyl)phthalate	ND	10	H							
4-Bromophenyl phenyl other	ND	5.0	n							
Butyl benzyl phthalate	ND	50	**							
4-Chloroaniline	ND	25	*							
2-Chioronaphthalene	ND	5.0	п							
4-Chloro-3-methylphenol	ND	5.0	*							
2-Chlorophenol	ND	5.0	7							
4-Chlorophenyl phenyl ether	ND	5.0	н							
Chrysene	ND	5.0	-							
Dibenz (a,h) anthracene	ND	10	**							
Dibenzofuran	ND	5.0	•							
Di-n-butyl phthalate	ND	10	H							
1,2-Dichlorobenzene	ND	5.0	•							
1,3-Dichlorobenzene	ND	5.0	**							
1,4-Dichlorobenzene	ND	10	. #							
3,3'-Dichlorobenzidine	ND	10	**							
2,4-Dichlorophenol	ND	5.0	п							
Diethyl phthalate	ND	5.0	н							
2,4-Dimethylphenol	ND	5.0								
Dimethyl phthalate	ND	5.0								
4,6-Dinitro-2-methylphenol	NĎ	10	н н							
2,4-Dinitrophenol	ND	10) #							

Sequoia Analytical - San Carlos

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Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Sequoia Analytical - Walnut Creek

ı	•		Reporting		Spike	Source		%REC		RPD	
Α	nalyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
_											

Blank (1K12025-BLK1)				Prepared: 11/1	12/01 Anal	yzed:	11/14/01	
2,4-Dinitrotoluene	ND	10	ug/l					
2,6-Dinitrotoluene	ND	10	**					
Di-n-octyl phthalate	ND	10	н					
Fluoranthene	ND	5.0	#					
Fluorene	ND	5.0	**					
Hexachlorobenzene	ND	10	tr .					
Hexachlorobutadiene	ND	10	*					
i lexachlorocyclopentadiene	ND	10	n					
Hexachloroethane	ND	5.0	н					
Indeno (1,2,3-cd) pyrene	ND	10						
Isophorone	ND	5.0	н					
2-Methylnaphthalene	ND	5.0		-				
2-Methylphenol	ND	5.0	**					
4-Methylphenol	ND	5.0	11					
Naphthalene	ND	5.0	**					
2-Nitroaniline	ND	10	Ħ					
3-Nitroaniline	ND	10	н					
1-Nitroaniline	ND	20	11					
Nitrobenzene	ND	5.0	11					
2-Nitrophenol	·ND	5.0	**					
1-Nitrophenol	ND	10	u					
N-Nitrosodimethylamine	ND	5.0	u					
N-Nitrosodiphenylamine	ND	5.0	*					
V-Nitrosodi-n-propylamine	ND	5.0	n					
Pentachlorophenol	ND	10	н					
Phenanthrene	ND	5.0	n					
Phenol	ND	5.0	н					
Pyrene	ND	5.0	н					
,2,4-Trichlorobenzene	ND	5.0	n					
2,4,5-Trichlorophenol	ND	10	"		٠			
2,4,6-Trichlorophenol	ND	10	"					
Surrogate: 2-Fluorophenol	55.4			150	30	6,9	21-110	
Surrogate: Phenol-d6	37.0		,	150	24	4.7	10-110	

100

100

150

74.8

74.0

89.1

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Surrogate: Nitrobenzene-d5

Surrogate: 2-Fluorobiphenyl

Surrogate: 2,4,6-Tribromophenol

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74.8

74.0

59.4

35-114

43-116

10-123



Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported:

11/21/01 16:22

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1K12025 - EPA 3510B Sep	Funnel									
Blank (1K12025-BLK1)				Prepared:	11/12/01	Analyzed	: 11/14/01		_	
Surrogate: p-Terphenyl-d14	76.9		ug/l	100		76.9	33-141			
Blank (1K12025-BLK2)				Prepared	& Analyz	ed: 11/14/0	01			
Acenaphthene	ND	5.0	ug/l							
Acenaphthylene	ND	5.0	п							
Aniline	ND	5.0								
Anthracene	ND	5.0								
Benzoic acid	ND	10	**							
Benzo (a) anthracene	ND	5.0	Ħ							
Benzo (b) fluoranthene	ND	5.0	н							
Benzo (k) fluoranthene	ND	5.0	п							
Benzo (ghi) perylene	ND	5.0	n							
Benzo[a]pyrene	ND	5.0	**							
Benzyl alcohol	ND	5.0	н							
Bis(2-chloroethoxy)methane	ND	5.0	н							
Bis(2-chloroethyl)ether	ND	5.0								
Bis(2-chloroisopropyl)ether	ND	5.0	H							
Bis(2-ethylhexyl)phthalate	ND	10	n							
4-Bromophenyl phenyl ether	ND	5.0	**							
Butyl benzyl phthalate	ND	50	n							
4-Chloroaniline	ND	25	n							
2-Chloronaphthalene	ND	5.0	Ħ							
4-Chloro-3-methylphenol	ND	5.0								
2-Chlorophenol	ND	5.0	**							
4-Chlorophenyl phenyl ether	ND	5.0	**							
Chrysene	ND	5.0	-							
Dibenz (a,h) anthracene	, ND	10	*							
Dibenzofuran	ND	5.0								
Di-n-butyl phthalate	ND	10	n							
1,2-Dichlorobenzene	ND	5.0	Ħ							
1,3-Dichlorobenzene	ND	5.0	Ħ							
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10	*							
2,4-Dichlorophenol	ND	5.0								
Diethyl phthalate	ND	5.0	•							
2,4-Dimethylphenol	ND	5.0	н							



Dublin CA, 94568

Project: Tosco(1)

Project Manager: Deanna Harding

Project Number: Tosco #4625, Oakland, CA

Spike

Source

%REC

Reported: 11/21/01 16:22

RPD

Reporting

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1K12025 - EPA 3510B S	ep Funnel								· •	
Blank (1K12025-BLK2)				Prepared .	& Analyze	ed: 11/14/0	1			
Dimethyl phthalate	ND	5.0	ug/l							
4,6-Dinitro-2-methylphenol	ND	10								
2,4-Dinitrophenol	ND	10	#							
2,4-Dinitrotoluene	ND	10	ıı.							
2,6-Dinitrotoluene	ND	10	u							
Di-π-octyl phthalate	ND	10	11							
Pluoranthene	ND	5.0	11							
Fluorene	ND	5.0	и							
Hexachlorobenzene	ND	10	н							
Hexachlorobutadiene	ND	10	Ħ							
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	5.0								
ndeno (1,2,3-cd) pyrene	ND	10	*							
sophorone	ND	5.0	n							
2-Methylnaphthalene	ND	5.0	4							
?-Methylphenol	ND	5.0	"							
l-Methylphenol	ND	5.0	**							
Naphthalene	ND	5.0	11							
2-Nitroaniline	ND	10	н							
3-Nuroaniline	ND	10	н							
1-Nitroaniline	ND	20								
Nitrobenzene	ND	5.0	*							
2-Nitrophenol	ND	5.0								
4-Nitrophenol	ND	10	#							
N-Nitrosodimethylamine	ND	5.0	•							
N-Nitrosodiphenylamine	ND	5.0	*							
N-Nitrosodi-n-propylamine	ND	5.0	•							
Pentachlorophenol	ND	10	-							
Phenanthrene	ND	5.0	Ħ					٠		
Phenol	ND	5.0	•							
Pyrene	ND	5.0	n							
1,2,4-Trichlorobenzene	ND	5.0	Ħ							
2,4,5-Trichlorophenol	ND	10	11							
2,4,6-Trichlorophenol	ND	10	#							
Surrogate: 2-Fluorophenol	40.6		"	150		27.1	21-110	- ·		
Surrogate: Phenol-d6	27.4		**	150		18.3	10-110			

Sequoia Analytical - San Carlos

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Project: Tosco(1)

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Sequoia Analytical - Walnut Creek

	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Analyte										
Batch <u>1K12025 - EPA 3510B Sep</u>	Funnel			 						
Blank (1K12025-BLK2)		· · · · · · · · · · · · · · · · · · ·			& Analyz	ed: 11/14/0				
Surrogate: Nitrobenzene-d5	66.4		ug/l	100		66.4	35-114 42-116			
Surrogate: 2-Fluorobiphenyl	66.9			100		66.9 60.6	43-116 10-123			
Surrogate: 2,4,6-Tribromophenol	90.9			150		60.6 76.3	33-141			
Surrogate: p-Terphenyl-d14	76.3		"	100						
LCS (1K12025-BS1)				Prepared	11/12/01	Analyzed				
Acenaphthene	65.1	5.0	ug/l	100		65.1	46-118			
4-Chloro-3-methylphenol	104	5.0	**	150		69.3	23-97			
4-Chlorophenol	91.3	5.0	Ħ	150		60.9	27-123			
	58.7	. 10	71	100		58.7	36-97			
1,4-Dichlorobenzene 2,4-Dinitrotoluene	65.3	10	Ħ	100		65.3	24-96			
	33.0	10	11	150		22.0	10-80			
4-Nitrophenol N-Nitrosodi-n-propylamine	64.0	5.0	11	100		64.0	41-116			
	74.2	10	n	150		49.5	9-103			
Pentachlorophenol	43.4	5.0	•	150		28.9	12-110			
Phenoi	65.6	5.0	n	100		65.6	26-127			
Pyrene	65.1	5.0	**	100		65.1	39-98			
1,2,4-Trichlorobenzene	57.7		"	150		38.5	21-110			
Surrogate: 2-Fluorophenol	37.7 36.8		μ	150		24.5	10-110			
Surrogate: Phenol-d6	76.4		"	100		76.4	35-114			
verrogate: Nitrobenzene-d5	70.4		**	100		72.4	43-116			
arrangate: 2-Fluorobiphenyl	100		μ	150		66.7	10-123			
Surrogate: 2,4,6-Tribromophenol Surrogate: p-Terphenyl-d14	70.5		#	100		70.5	33-141			
_				Prepare	d & Anah	yzed: 11/14	1/01			_
LCS (1K12025-BS2)	70.6	5.0	ug/l	100		70,6	46-118		· = 	_
Acenaphthene	97.1	5.0	-	150		64.7	23-97			
4-Chloro-3-methylphenol	73.4	5.0	11	150		48.9	27-123			
2-Chiorophenol	65.0	10		100		65.0	36-97			
1,4-Dichlorobenzene		10		100		74.5	24-96			
2,4-Dinitrotoluene	74.5	10		150		14.3	10-80			
4-Nitrophenol	21.5			100		76.8	41-116			
N-Nitrosodi-n-propylamine	76.8	5.0		150		42.9				
Pentachlorophenol	64.4	10				18.9				
Phenol	28.3	5.0		150		72.8				
Pyrene	72.8	5.0		100		70.6				
1,2,4-Trichlorobenzene	70.6	5.0		100						<u></u>
Surrogate: 2-Fluorophenol	35.7		"	150	ı	23.8	21-110	9		

Sequoia Analytical - San Carlos

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Gettler-Ryan/Geostrategies(1)

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

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1K12025 - EPA 3510B Sep	Funnel				<u> </u>					
LCS (1K12025-BS2)				Prepared	& Analyze	ed: 11/14/0	01			
Surrogate: Phenol-dó	24.2	******	ug/l	150		16.1	10-110			<u> </u>
Surrogate: Nitrobenzene-d5	82.2		"	100		82.2	35-114			
Surrogate: 2-Fluorobiphenyl	79.2		"	100		79.2	43-116			
Surrogate: 2,4,6-Tribromophenol	86.5		"	150		57.7	10-123			
Surrogate: p-Terphenyl-d14	77.0		"	100		77. 0	33-141			
LCS Dup (1K12025-BSD1)				Prepared:	11/12/01	Analyzed	: 11/14/01			
Acenaphthene	70.6	5.0	ug/l	100		70.6	46-118	8.11	30	
4-Chloro-3-methylphenol	115	5.0	п	150		76.7	23-97	10.0	30	
2-Chiorophenol	97.8	5.0	H	150		65.2	27-123	6.87	30	
1,4-Dichlorobenzene	63.3	10	•	100		63.3	36-97	7.54	30	
2,4-Dinitrotoluene	71.2	10	н	100		71.2	24-96	8.64	30	
4-Nitrophenol	51.3	10	π	150		34.2	10-80	43.4	30	QR-0
N-Nitrosodi-n-propylamine	76.9	5.0	10	100		76.9	41-116	18.3	30	\
Pentachlorophenol	104	10	u	150		69.3	9-103	33.4	30	QR-0
Phenol	48.3	5.0	*	150		32.2	12-110	10.7	30	
Pyrene	69.6	5.0	n	100		69.6	26-127	5.92	30	
1,2,4-Trichlorobenzene	71.0	5.0		100		71.0	39 -98	8.67	30	
Surrogate: 2-Fluorophenol	58.1		n	150		38.7	21-110			
Surrogate: Phenol-d6	40.7		**	150		27.1	10-110			
Surrogate: Nitrobenzene-d5	82.4		#	100		82.4	35-114			
Nurrogate: 2-Fluorobiphenyl	80.0		H	100		80.0	43-116			
Surragate: 2,4,6-Tribromophenol	110		"	150		73.3	10-123			
Surrogate: p-Terphenyl-d14	77.8		"	100		77.8	33-141			



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

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1K14010 - EPA 3510B SepFunn	el	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		_		,,				
Blank (1K14010-BLK1)		-		Prepared	& Analyza	ed: 11/14/	01			
Oil & Grease	. ND	5.0	mg/l							
LCS (1K14010-BS1)				Prepared	& Analyz	ed: 11/14/	01			
Oil & Grease	102	5.0	mg/l	100		102	70-130			
LCS Dup (1K14010-BSD1)				Prepared	& Analyz	ed: 1 <u>1/14/</u>	01			
Oil & Grease	98.9	5.0	mg/l	100		98.9	70-130	3.09	30	



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Gettler-Ryan/Geostrategies(1)

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

Project Number: Tosco #4625, Oakland, CA

Project Manager: Deanna Harding

Reported: 11/21/01 16:22

Notes and Definitions

HC-12 Hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.

P-01 Chromatogram Pattern: Gasoline C6-C12

QR-02 The RPD result exceeded the control limits; however, both percent recoveries were acceptable. Sample results for the QC batch

were accepted based on percent recoveries and completeness of QC data.

S-LIM The surrogate recovery was outside control limits. The result may still be useful for its intended purpose.

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

JAN 2 TOO