September 24, 2001 G-R #180255

TO:

Mr. David B. De Witt

Tosco Marketing 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	September 17, 2001	Groundwater Monitoring and Sampling Report Third Quarter - Event of August 10, 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 *October 8*, 2001, 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

trans/4625-DBD



September 17, 2001 G-R Job #180255

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

RE:

Third Quarter Event of August 10, 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

Figure 2:

Concentration Map

Table 1:

Groundwater Monitoring Data and Analytical Results

Table 2:

Groundwater Analytical Results

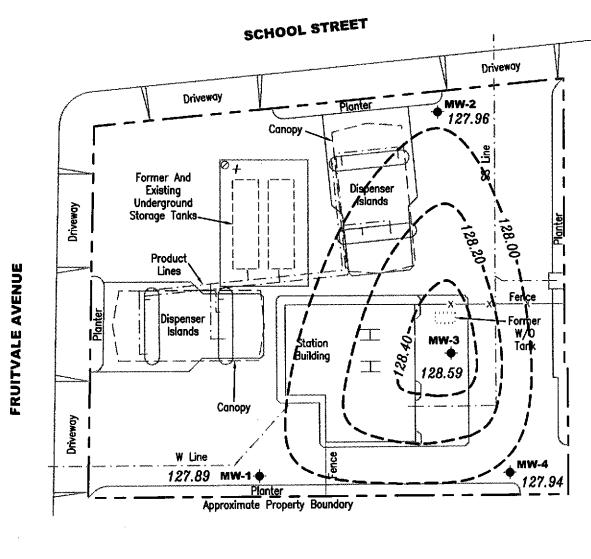
Table 3:

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

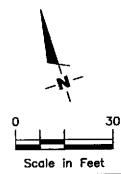
99.99 Groundwater elevation in feet referenced to Mean Sea Level

(MSL)

Groundwater elevation contour, dashed where inferred.

+ TOC not available

Groundwater flow direction varies at a gradient of 0.008 to 0.02 Ft./Ft.



Source: Figure modified from drowing provided by Unocal.



POTENTIOMETRIC MAP

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

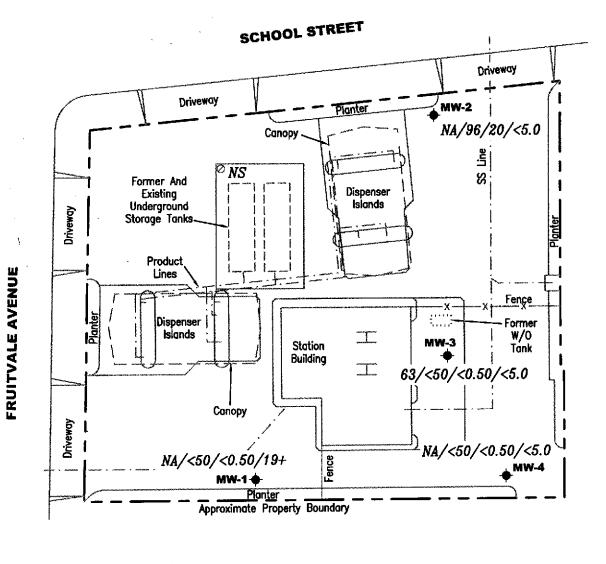
REVISED DATE

PROJECT NUMBER REVIEWED BY 180255

DATE August 10, 2001

FILE NAME: P:\Enviro\Tosco\4625\Q01-4625.DWG | Layout Tob: Pot3

FIGURE



EXPLANATION

- Groundwater monitoring well
- **UST Observation well**

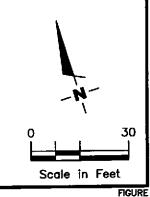
A/B/C/DTPH(D) (Total Petroleum Hydrocarbons as Diesel)/TPH(G) (Total Petroleum Hydrocarbons às Gasoline)/Benzene/MTBE

concentrations in ppb

NA Not Analyzed

MTBE by EPA Method 8260

NS Not Sampled



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

August 10, 2001

FILE NAME: P:\ENVIRO\TOSCO\4625\QO1-4625.DWG | Loyout Tob: Con3

Table 1
Groundwater Monitoring Data and Analytical Results

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

WELL ID/	DATE	DTW	S.L.	GWE	TPH-D	TPH-G	В	Т	E	X	MTBE
TOC*		(ft.)	(ft. bgs)	(msl)	(ррв)	(ppb)	(ppb)	(ррв)	(ppb)	(ppb)	(ppb)
MW-1											
136.36	05/03/00	11.81	5.0-25.0	124.55		ND	ND	ND	ND	ND	11/14 ²
100.00	07/28/00	7.79	•	128.57		ND	ND	ND	ND	ND	$21/19^2$
	10/29/00	7.90		128.46		62¹	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
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		2,200 ¹	680	4.1	57	270	24/ND ²
	10/29/00	8.38		130.26		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
MW-3											4
137.68	05/03/00	7.60	5.0-25.0	130.08	93 ⁵	ND	ND	ND	ND	ND	ND/ND ⁴
74	07/28/00	8.82		128.86	ND^3	ND	ND	ND	ND	ND	ND/ND ⁴
	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
MW-4								_		,	ND/ND²
136.60	05/03/00	6.48	5,0-25.0	130.12		ND	ND	ND	ND	ND	
	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 .5.0
	08/10/01	8.66		127.94		<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

WELL ID/	DATE	DTW	S.I.	GWE	TPH-D	TPH-G	В	T	E	X	MTBE
TOC*		(ft.)	(ft. bgs)	(msl)	(ppb)	(pph)	(ppb)	(ppb)	(pph)	(ppb)	(ppb)
UST OBSER	VATION WEL	L									
	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		••						••	
Trip Blank											
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

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

- * 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.
- ² 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.
- ⁸ 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

WELL ID	DATE	VOCs by EPA 8240 (ppb)	VOCs by EPA 8021 (ppb)	SVOCs by EPA 8270 (ppb)	Chromium (ppm)	TOG (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

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 Method 8240 for VOCs EPA Method 8270 for SVOCs

EPA 200 Series Methods for Chromium

All EPA Method 8240 and 8270 constituents were ND, unless noted.

All VOCs by EPA Method 8240 were ND, except for Tertrachloroethene was detected at 2.7 ppb.

Table 3

Groundwater Analytical Results - Oxygenate Compounds

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

WELL ID	DATE	ETHANOL (ppb)	TBA (ppb)	MTBE (pph)	DIPE (ppb)	ETBE (pph)	TAME (pph)	1,2-DCA (ppb)	EDB (ppb)
MW-1	02/09/01 05/11/01 08/10/01 ¹	ND ND <1,000	ND ND <100	9.0 16.3 19	ND ND <2.0	ND ND < 2.0	ND ND <2.0	ND ND <2.0	ND ND <2.0
MW-3	07/28/00		ND	ND	ND	ND	ND	ND	ND

EXPLANATIONS:

ANALYTICAL METHOD:

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 or 1,2-Dibromoethane

(ppb) = Parts per billion

-- = Not Analyzed

ND = Not Detected

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/ acility #_46	25		Job#:		_	
Address: 30	70 Fruitvale	Ave	Date:	8-10-0)	
City: Oakl	and , CA.		Samp	ler: <u>Joe</u>		
Well 1D	mw-1	Well	Condition:	01/		<u>.</u>
Well Diameter	2 in.		ocarbon kness:	Amount B	C.	(Oal.)
Total Depth	25.06 #	1	2" = 0.			= 0.66
Depth to Water	8.47	Fac	tor (VF)	6" = 1.50	12" = 5.80	
	16.59 x	VF 0.17	$= \frac{282}{\times 3} \times 3 \text{ (case)}$	volume) = Estimated P	urge Volume:	8·> toal.)
Purge Equipment:	Disposable Bailer Bailer Stack Suction Grundfos Other:	_	Sampling Equipment:	Disposable B Bailer Pressure Bail Grab Sample Other:	er	, ,
Purging Flow Ra	12:23 Pm(1 te:	ibor .	Water Color: Sediment Descrip If yes; Time:		Odor:	(oal.)
Time	Volume pH (gal.)	Con.	ductivity P Temp	erature D.O.	ORP (mV)	Alkalinity (ppm)
12:08 -12:16 -12:13	3 7.10 5.5 7.16 8.5 7.2		97 74 15 7 18 7	3.6		
SAMPLE ID	(#) - CONTAINER	LABO REFRIG.	RATORY INFORMA PRESERV. TYPE	ATION LABORATORY	ANA	YSES
MW-1	3404	Y	HCL	Seq.	TPHG, BT	rex, mtbe
		<u> </u>				
COMMENTS:		1				
COMMUNICATION .						

Client/ Facility # <u>46</u>	25		Job#:		_	
	70 Fruituale	Ave	Date:	8-10-0	<u> </u>	
City: Oak	and , CA:		Samp	ler: <u>Joe</u>		
Well ID	Mw- 2	Well	Condition:	01/		•
Well Diameter	2_in.	-	ocarbon kness:	Amount Ba		(gal.)
Total Depth	2 d. 28 #		ume 2° = 0.		-	= 0.66
Depth to Water	10.68 #	Fac	tor (VF)	6° = 1.50	12" = 5.80	
	13.6 x	vF <u>6.17</u>	= 2.31 × 3 (case)	volume) = Estimated Pr	urge Volume:	7 (04)
Purge Equipment:	Disposable Bailer Bailer Stack Suction Grundfos Other:	· · · · · · · · · · · · · · · · · · ·	Sampling Equipment:	Disposable Be Bailer Pressure Baile Grab Sample Other:	er	
Did well de wate	te:		Sediment Descrip	Volumerature D.O.		Alkalinity (ppm)
12:42	25 7.61 5 7.60 7 7.56	9	34 7	4.1 3 2 13.3		
			RATORY INFORMA	ATION LABORATORY	ANA	LYSES
SAMPLE ID MW - 2	3YOA	REFRIG.	PRESERV. TYPE	Seq.		TEX, MTBE
10/00 - 2						
<u> </u>				<u> </u>		·
COMMENTS: .		<u> </u>			•	
	<u> </u>					

Client/						
Facility #_46	25		Job#:	1802	.55	·
	70 Fruitvale	Are	Date:	8-10	-0	
City: Oakl				ler: <u>Toe</u>	<u> </u>	
Well ID	Mw-3	Well (Condition:	01/		*
Well Diameter	2 in	•	ocarbon	L.	nt Bailed)
Total Depth Depth to Water	9.09 #	Volu	me 2" = 0. or (VF)			" = 0.66
Purge Equipment:	Disposable Bailer Bailer Stack	vf <u>c.:7</u>	266 × 3 (case) Sampling Equipment:	<u>Disposab</u> Bailer	le Bailer	8 1021
Starting Time:	Suction Grundfos Other:		Weather Condition	Pressure Grab Sar Other:	mple	
-						
Sampling Time:	11:50 Am (11	•	Water Color:			1011
Purging Flow Rat	te:	pm.	Sediment Descrip	rtion:	· · · · · · · · · · · · · · · · · · ·	•
Purging Flow Rate		Condinate of the condin	Sediment Descrip If yes; Time: motivity C Temp os/cm X 1	erature D	· · · · · · · · · · · · · · · · · · ·	•
Purging Flow Rate Did well de-wate Time	volume pH (gal.)	Conda production of the conda	Sediment Descrip If yes; Time: macrivity C Temp os/cm X Temp . 4/ 7	erature D	/olume:	(gal)
Purging Flow Rate Did well de-wate Time 1:35	Volume pH (gal.) 7.19 7.28 7.28 (4) - CONTAINER 3 YO 4	Conda probability of the probabi	Sediment Descrip If yes; Time: unctivity 7 Temp os/cm X	ATION LABORATO	/olume:	Alkalinity (ppm)
Purging Flow Rate Did well de-wate Time //: 3/ //: 37 //: 37 //: 30 SAMPLE ID	te:	Conding pm. Conding pm. 10 10 LABOR REFRIG. Y	Sediment Descrip If yes; Time: mativity 7 Temp os/cm X	ATION LABORATO	/olume:	Alkalinity (ppm) ALYSES TEX, MTBE
Purging Flow Rate Did well de-wate Time //: 3/ //: 37 //: 37 //: 30 SAMPLE ID	Volume pH (gal.) 7.19 7.28 7.28 (4) - CONTAINER 3 YO A 2 YO A 1 A W S	Conda production of the conda	Sediment Descrip If yes; Time: motivity 7 Temp os/cm X	ATION LABORATO	/olume:	Alkalinity (ppm) ALYSES TEX, MTBE 198270
Purging Flow Rate Did well de-wate Time //: 3/ /	te:	Conda production of the conda	Sediment Descrip If yes; Time: motivity 7 Temp os/cm X	ATION LABORATO	TPHG, B VOCS TPH Oil d	Alkalinity (ppm) ALYSES TEX, MTBE 1948270

Client/ Facility # <u>46</u>			Job#:			
Address: 307	o Fruitvale	Ave			<u> </u>	
City: Oakl	end , CA:		Sampl	er: <u>50</u> E		
Well ID	mw-4	Well	Condition:	01/		·
Well Diameter	2_in	-	ocarbon kness:	Amount Ba	C.	
Total Depth	24.65	Vait	ome 2" = 0.1		_	= 0.66
Depth to Water	8.66	Fact	or (VF) 	6* = 1.50	12" = 5.80	
Purge Equipment:	Disposable Bailer Bailer Stack Suction Grundfos Other:	vf <u>c.(7.</u>	Sampling Equipment:	Oisposable Bailer Pressure Baile Grab Sample Other:	iiler	8.5 _(gal.)
Sampling Time: Purging Flow Rat Did well de-wate		Cond	Sediment Descrip	tion: Volumerature D.O. (mg/L)	· · · · · · · · · · · · · · · · · · ·	igal l
1053	3 7.51 5.5 7.58 8.5 7.61		7-16 72 .51 73 .55 73	.0		
		LABOR	RATORY INFORMA	ATION		
SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV, TYPE	Seq.		YSES EX, MTBE
MW-4	HOYE	Y	HCL	JET	17119101	2,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
<u> </u>	1	<u> </u>	<u> </u>			
COMMENTS: _			· · · · · · · · · · · · · · · · · · ·		•	
				,		

Client/ Facility #_46	25		Job#:	18025	-
Address: 30	70 Fruitvale	Ave	Date:	8-10-0)
City: Oakl	and ICA.		Sample	er: <u>50</u> €	
Well ID	UST Observ		l) Conditi on:	01/	
Well Diameter	68 in	•	ocarbon ness:	Amount B	—— ——
Total Depth Depth to Water	9.54 "	Volu: Face	2" = 0.1" or (VF)	7 3" = 0.3 6" = 1.50	8 4" = 0.66 12" = 5.80
Purge Equipment:	Disposable Bailer Bailer Stack Suction Grundfos Other:	vf <u>c.17</u>	Sampling Equipment:	Disposable B Bailer Pressure Bail Grab Sample	ler
Did well de-wate	volume pH (gal.)	om. — Cond	Water Color: Sediment Descript If yes; Time: uctivity Compensed Temper os/cm X — C	ion:Volu	ORP Alkalinity
		LABOR	ATORY INFORMA		
SAMPLE ID	GO- CONTAINER	REFRIG.	PRESERV. TYPE	Seq.	TPHG, BTEX, MTBE
MW-	7 710**			·	
COMMENTS:	M- on 14				

TOSCO

Texas Martidas Company 2000 Com Carrys PL, St. 600 See Burner, California SASSI

Foolity Number TOSCO SS #4625	Contact (Name) Mr. D
Foolity Address 3070 FRUITVALE AVE., OAKLAND, CA	(Phone) (92.5) 2
onsultant Project Number 180255	Laboratory Name Sequoia A
	Laboratory Release Number
Address 6747 Sierra Court, Suite J. Dublin, CA 94568	Samples Collected by (Nome) 20
Profed Contact (Name) Deanna L. Harding	Collection Date: 8-10-01

Ollaill, of oastoak	Novora
Control (Nume) Mr. David De Witt	
(Phone) (925) 277-2384	
eborolory Name Sequois Analytical	·
aboratory Release Number	
Samples Collected by (Name) JOE ATEMIAN]
Collection Date: 8 10-01	
Signoture Sura	

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b	Number	Container	V = A	Grab Composite Discrete	ı :	ดดาสน้อก	(6)	BTEX wind BE		1	elocarbon	Aromatic	Organics	Organica		\$ 240	485%	3			大confirm mube Hits
Sample Number	Somple		Matrix S = Soll Water	900	2	Sample Pres	load (Yos or	TPH Gas + BTE	1914 Oleand (80013)	Oil and Great (5520)	Purymoble Habo (8010)	Purgeable (8020)	Personale (8240)	Edractoble (8270)	CAC-PSZAM	63 55 C3 56	Svacsty	Total Chromis.			by running. M toe Remote
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MW-1	02	v34	,	,	1223	,	1	1	<u> </u>			<u> </u>	<u> </u>	 				٠.,			
MW.2	03	VER	,	′	1255		,						<u> </u>		-			-			1100000
MW-3	04	3453	,	,	1150			\ <u>`</u>	V	<u> </u>	'	ļ	<u> </u>				<u> </u>	<u> </u>			L108073
mw-4	05	YUA		,	1108	,	4	<u> </u>	ļ				 					 			
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4 September, 2001

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

RE: Tosco(1)

Sequoia Report: L108073

Enclosed are the results of analyses for samples received by the laboratory on 08/10/01 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Latonya Pelt Project Manager

CA ELAP Certificate #2360

Johnya K. Pelt



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 SS#4625, OAKLAND, CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-LB	L108073-01	Water	08/10/01 00:00	08/10/01 18:00
MW-1	L108073-02	Water	08/10/01 12:23	08/10/01 18:00
MW-2	L108073-03	Water	08/10/01 12:55	08/10/01 18:00
MW-3	L108073-04	Water	08/10/01 11:50	08/10/01 18:00
MW-4	L108073-05	Water	08/10/01 11:08	08/10/01 18:00

Sequoia Analytical - San Carlos

Johnya K. Pelt

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 SS#4625, OAKLAND,CA

Reported: 09/04/01 14:44

Project Manager: Deanna Harding

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

Sequoia Analytical - San Carlos Reporting Analyzed Method Notes Dilution Batch Prepared Result Limit Units Analyte Received: 08/10/01 18:00 TB-LB (L108073-01) Water Sampled: 08/10/01 00:00 08/23/01 **DHS LUFT** 1080099 08/23/01 ND 50 ug/l Purgeable Hydrocarbons as Gasoline ND 0.50 Benzene ND 0.50 Toluene 0.50 ND Ethylbenzene ND 0.50 Xylenes (total) ND 5.0 Methyl tert-butyl ether 70-130 105 % Surrogate: a,a,a-Trifluorotoluene MW-1 (L108073-02) Water Sampled: 08/10/01 12:23 Received: 08/10/01 18:00 **DHS LUFT** 08/23/01 1080099 08/23/01 Purgeable Hydrocarbons as Gasoline ND 50 ug/l ND 0.50 Benzene 0.50 ND Toluene ND 0.50 Ethylbenzene 0.50 ND Xylenes (total) 17 5.0 Methyl tert-butyl ether 70-130 104 % Surrogate: a,a,a-Trifluorotoluene MW-2 (L108073-03) Water Sampled: 08/10/01 12:55 Received: 08/10/01 18:00 P-01 08/23/01 08/23/01 **DHS LUFT** 1080099 ug/l Purgeable Hydrocarbons as Gasoline 96 50 20 0.50 Benzene ND 0.50 Toluene 2.1 0.50 Ethylbenzene 0.50 9.4 Xylenes (total) 5.0 ND Methyl tert-butyl ether

70-130

116%

Surrogate: a,a,a-Trifluorotoluene



Gettler-Ryan/Geostrategies(1)

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

Project Number: TOSCO SS#4625, OAKLAND,CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

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 (L108073-04) Water Sampled	: 08/10/01 11:50	Received: 0	8/10/01	18:00					
Purgeable Hydrocarbons as Gasoline	ND	50	u g/l	1	1080099	08/23/01	08/23/01	DHS LUFT	
Benzene	ND	0.50	**	ti .	*	**	N	H	
Toluene	ND	0.50	#	ħ	•	n	**	u	
Ethylbenzene	ND	0.50	•		11	н	n	ħ	
Xylenes (total)	ND	0.50	**	*	u	u		n	
Methyl tert-butyl ether	ND	5.0	10	#	н	н	11	11	
Surrogate: a,a,a-Trifluorotoluene		106 %	70	-130	"	"	"	n	
MW-4 (L108073-05) Water Sampled	: 08/10/01 11:08	Received: 0	8/10/01	18:00					
Purgeable Hydrocarbons as Gasoline	ND	50	ug/l	1	1080099	08/23/01	08/23/01	DHS LUFT	
Benzene	ND	0.50	H	н	п	**	**		
Toluene	ND	0.50	111	•	н	#1	ıı	19	
Ethylbenzene	ND	0.50	*	71	W	11	н	n	
Xylenes (total)	ND	0.50	n	Ħ	41	n	n.	n .	
Methyl tert-butyl ether	ND	5.0		R		h	#	11	
Surrogate: a,a,a-Trifluorotoluene		104 %	70	-130	**	rr	"	"	



Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND,CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L108073-04) Water	Sampled: 08/10/01 11:50	Received: 0	8/10/01 1	8:00					
Freon 113	ND	1.0	u g/ l	1	1080065	08/15/01	08/15/01	EPA 8021B	
Bromodichloromethane	ND	0.50	**	**	Į!	н	*	7	
Bromoform	ND	0.50	н	11	**	u	n	•	
Bromomethane	ND	1.0	ŧr .	D	77	**	**	"	
Carbon tetrachloride	ND	0.50		n	н	u	н	n	
Chlorobenzene	ND	0.50	17	N	11	19		n	
Chloroethane	ND	1.0	**	97	н	н	17	*	
Chloroform	ND	0.50	D	*	n	**	n	u	
Chloromethane	ND	1.0	н	Ŧ	Ħ	71	u	91	
Dibromochloromethane	ND	0.50	n	11	"	*	n	н	
1,2-Dibromoethane (EDB)	ND	0.50	н	11	u	'n	N	H	
1.3-Dichlorobenzene	ND	0.50	**	u	11	H	n	π	
1.4-Dichlorobenzene	ND	0.50		Ħ	н	•1	II.	14	
1,2-Dichlorobenzene	ND	0.50	*	н	H	**	11	D	
1,1-Dichloroethane	ND	0.50	**	. 44		**	Ņ	h	
1,2-Dichloroethane	ND	0.50		*	*	II	H	ħ	
1,1-Dichloroethene	ND	0.50	11		n	N		Ħ	
cis-1,2-Dichloroethene	ND	0.50		90	9	u	Ħ	11	
trans-1,2-Dichloroethene	ND	0.50	11	H	H	M	11	н	
1,2-Dichloropropane	ND	0.50	n	u u	Ħ	**	н	n	
cis-1,3-Dichloropropene	ND	0.50	n	н		D	•	u	
trans-1,3-Dichloropropene	ND	0.50	H		*		π	t t	
Methylene chloride	ND	5.0	Ħ	**	"	*		n	
1,1,2,2-Tetrachloroethane	ND	0.50	*	u	tr	u	h	H	
Tetrachloroethene	ND	0.50	₩.	**	n	**	н	u	
1,1,1-Trichloroethane	ND	0.50	n	n	н	n	17	**	
1,1,2-Trichloroethane	ND	0.50	91	IJ	H .	u	•	47	
Trichloroethene	ND	0.50	•	fi	*	11	Ħ	11	
Trichlorofluoromethane	ND	0.50	u	li	**	**	#	н	
Vinyl chloride	ND	1.0	*	п	*1		11	н	
Tinyi cinoride		02.0.0/	70	7.20	,,		н	π	

Surrogate: 1-Chloro-2-fluorobenzene

93.9 %

70-130



Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND,CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

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 (L108073-02) Water	Sampled: 08/10/01 12:23	Received: 0	8/10/01	18:00					HT-04
Ethanol	ND	1000	ug/l	1	1090007	09/04/01	09/04/01	EPA 8260B	
1,2-Dibromoethane	ND	2.0	Ħ	п	n	fr	II	н	
1,2-Dichloroethane	ND	2.0	*	n	11	II .	N	•	
Di-isopropyl ether	ND	2.0	11	н		H	v	ŧı	
Ethyl tert-butyl ether	ND	2.0	н	97	**	17	n	••	
Methyl tert-butyl ether	19	2.0	н	#1	п	11	v	н	
Tert-amyl methyl ether	ND	2.0	н	n	19	n	D	n	
Tert-butyl alcohol	ND	. 100				h	н	H	
Surrogate: 1,2-Dichloroethan	e-d4	88.8 %	7.	6-114	н	*	"	"	
Surrogate: Toluene-d8		96.8 %	8	8-110	п	"	"	ŧ	





Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND, CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

Volatile Organic Compounds by EPA Method 8240B Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L108073-04) Water S	Sampled: 08/10/01 11:50	Received: (8/10/01	18:00					
Chloromethane	ND	2.0	ug/l	1	1H14015	08/21/01	08/21/01	EPA 8240B	
Vinyl chloride	ND	2.0	p	11	0	и	ÍI	ii.	
Bromomethane	ND	5.0	**	19	l)	II	11	n	
Chloroethane	ND	2.0	н	н	Ħ	•	П	h	
Trichlorofluoromethane	ND	2.0	þ	•	n	н	10		
1,1-Dichloroethene	ND	2.0	•	n	**	19	н	11	
Acetone	ND	20	Ħ	11	ħ	"	**	17	
Carbon disulfide	ND	2.0	11	п	\$1	Ħ	**	H	
Methylene chloride	ND	10	n	#	u	11	H	**	
Methyl tert-butyl ether (MTBE)		2.0	n	*	H	11	**	•	
trans-1,2-Dichloroethene	ND	2.0	u	4 II		π	H	n	
Vinyl acetate	ND	2.0	n	п	۳	**	'n	и	
1,1-Dichloroethane	ND	2.0	**	u	11	н	n n	**	
cis-1,2-Dichloroethene	ND	2.0	u	19	н	•	ħ	"	
2-Butanone (MEK)	ND	20	**	17	**	**	11	н	
Chloroform	ND	2.0	v	н	•	и	H	Ħ	
1,1,1-Trichloroethane	ND	2.0	H	Ħ	н	11	n	u	
Carbon tetrachloride	ND	10	**	*	H	•	u	н	
Benzene	ND	2.0	н	11	ħ	II .	u	н	
1,2-Dichloroethane	ND	2.0	н	D	19	ii .	u	n	
Trichloroethene	ND	2.0	**	н	Ħ	**	Л	**	
1,2-Dichloropropane	ND	2.0	н	n	11	п	lı	н	
Bromodichloromethane	ND	2.0	17	"	11	**	•	*	
2,2,5,5-Tetramethyltetrahydrofu		5.0	н	н	n	•	и	17	
cis-1,3-Dichloropropene	ND	2.0	**	•		и	· p	н	
4-Methyl-2-pentanone (MIBK)	ND	10	**	*	**	*1	н	*	
-	ND	5.0		tr.	н	н	n	11	
Toluene	ND	2.0		n	h	11	ď	þ	
trans-1,3-Dichloropropene	ND	2.0		н	H	н	11	u	
1,1,2-Trichloroethane	ND	2.0			77	n	. н	н	
Tetrachloroethene	ND ND	10		"	11	*	Ħ	п	
2-Hexanone	ND ND	2.0		*	n	***	*	19	
Dibromochloromethane	ND ND	2.0		11	**	н	11	н	
Chlorobenzene	ND ND	2.0		п	,	et .	ti	w	
Ethylbenzene	ND ND	2.0		**	n	47	*		
Total Xylenes	ND ND	2.0		n	н	н	**	n	
Styrene		2.0		19	n	п	U	Ħ	
Bromoform	ND			ĮI.	11	n	u	**	
1,1,2,2-Tetrachloroethane	ND	2.0		n	11	44	**	π	
1,3-Dichlorobenzene	ND	2.0			fi	n	н	19	
1,4-Dichlorobenzene	ND	2.0	"						

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.





Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND, CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

Volatile Organic Compounds by EPA Method 8240B Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L108073-04) Water S	Sampled: 08/10/01 11:50	Received: 0	8/10/01 18	3:00	_				
1,2-Dichlorobenzene	ND	2.0	пб/J	1	1H14015	08/21/01	08/21/01	EPA 8240B	
Surrogate: Dibromofluorometha	ine	120 %	50-1	50	"	"	н	"	
Surrogate: 1,2-Dichloroethane-		104 %	50-1	50	H	"	**	"	
Surrogate: Toluene-d8		100 %	50-1	50	"	"	н	n	
Surrogate: 4-Bromofluorobenze	ne	104 %	50-1	50	"	"	"	,,	





Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND,CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

Diesel Hydrocarbons (C9-C24) by DHS LUFT Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L108073-04) Water	Sampled: 08/10/01 11:50	Received: 0	8/10/01	18:00					
Diesel Range Hydrocarbons (C9-C24)		50	ug/l	1	1H20017	08/23/01	08/24/01	EPA 8015M	HC-12
Surropate: n-Pentacosane		82.0 %	50-	-150	ρ	#	11	11	





Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND, CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

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

Алаlyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L108073-04) Water	Sampled: 08/10/01 11:50	Received: 0	8/10/01	18:00					
Chromium	ND	0.010	mg/l	1	1H20016	08/20/01	08/31/01	EPA 200.7	





Dublin CA, 94568

Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND,CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

Semivolatile Organic Compounds by EPA Method 8270C

Sequoja Analytical - Walnut Creek

	5040	noia Anal	,						
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-3 (L108073-04) Water	Sampled: 08/10/01 11:50	Received: 0	8/10/01 1	8:00					
Acenaphthene	ND	5.0	ug/l	1	1H14006	08/15/01	08/15/01	EPA 8270C	
Acenaphthylene	ND	5.0	"	*	**	tı		n	
Aniline	ND	5.0		Ħ	н	Ħ	11	11	
Anthracene	ND	5.0	n	**	н	lı	н	7	
Benzoic acid	ND	10	**	10	•	11	u	**	
Benzo (a) anthracene	ND	5.0	п	ii	H	rt .	Ħ	н	
Benzo (b) fluoranthene	ND	5.0	n	н	41	n	11	H	
Benzo (k) fluoranthene	ND	5.0	n	41	п	11	n	**	
Benzo (ghi) perylene	ND	5.0	91	n	ħ	H	"	#	
Benzo[a]pyrene	ND	5.0	17	#	u	Ħ	#	11	
Benzyl alcohol	ND	5.0	n	n	**	n	10	**	
Bis(2-chloroethoxy)methane	ND	5.0	н	u	**	11	н	Ħ	
Bis(2-chloroethyl)ether	ND	5.0	**	n	н	н	H	P	
Bis(2-chloroisopropyl)ether	ND	5.0	91		*	11	"	19	
Bis(2-ethylhexyl)phthalate	ND	10	77	**	R	*	**	11	
4-Bromophenyl phenyl ether	ND	5.0		**	n	ū	Ħ	16	
Butyl benzyl phthalate	ND	50	tr .	**	47	19	n	h	
4-Chloroaniline	ND	25	11-	17	19	n	A I	11	
2-Chloronaphthalene	ND	5.0	n	н	Ħ	44	π	Ħ	
4-Chloro-3-methylphenol	ND	5.0	п	tı .			**	•	
2-Chlorophenol	ND	5.0	н	\$r	n	"	H	4	
4-Chlorophenyl phenyl ether	, ND	5.0	Ħ		11	н	Ħ	11	
Chrysene	ND	5.0	**	**	II .	și.	н	n	
Dibenz (a,h) anthracene	ND	10	**	п	*		11	**	
Dibenzofuran	ND	5.0	u	н	**	11	H	•	
Di-n-butyl phthalate	ND	10	11		#	н	u _t	n	
1,2-Dichlorobenzene	ND	5.0	11	•	**	Ħ	71	n	
1,3-Dichlorobenzene	ND	5.0	#	"	11	1t	ŧŧ	п	
1.4-Dichlorobenzene	ND	10	11	**	11	*	п	**	
3,3'-Dichlorobenzidine	ND	10	**	11	u	n	n	#	
2,4-Dichlorophenol	ND	5.0	п	н	н	11	N	**	
· -	ND	5.0	n	,,	н	II	41	19	
Diethyl phthalate	ND	5.0	н	11	**	n	n	н	
2,4-Dimethylphenol	ND	5.0	н	п	ır	Ħ	11	er e	
Dimethyl phthalate	ND	10	н	n	11		H	Ħ	
4,6-Dinitro-2-methylphenol	ND ND	10		H	п	tı	п	19	
2,4-Dinitrophenol	ND ND	10	11	19	н	п	ti	U	
2,4-Dinitrotoluene	ND ND	10	н	ŧī	,,		#	п	
2,6-Dinitrotoluene	ND		77	**	11	*1	17	•	
Di-n-octyl phthalate		10	'n		Ħ	11	и	*	
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.



Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND,CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

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

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-3 (L108073-04) Water	Sampled: 08/10/01 11:50	Received: 0	8/10/01 1	8:00					. =
Fluorene	ND	5.0	ug/l	1	1H14006	08/15/01	08/15/01	EPA 8270C	
Hexachlorobenzene	ND	10	n	H	į.	#1	*1	R.	
Hexachlorobutadiene	ND	10	н	17	91	Ħ	10	ŧı	
Hexachlorocyclopentadiene	ND	10	"	p	*	"	П	w	
Hexachloroethane	ND	5.0	#	II	ķ r	19	Ħ	19	
Indeno (1,2,3-cd) pyrene	ND	10	77	Ħ	11	li .	#1	н	
Isophorone	ND	5.0	**	*1	n	H	**	"	
2-Methylnaphthalene	ND	5.0	**	#	н	u	W.	*	
2-Methylphenol	ND	5.0	11	+1	"	ır	11	u	
4-Methylphenol	ND	5.0	н	17	**	n	н	"	
Naphthalene	ND	5.0	н	II	n	D	H	Ħ	
2-Nitroaniline	ND	10	Ħ	H	0	n	n	п	
3-Nitroaniline	ND	10	н	"	11	**	и	#	
4-Nitroaniline	ND	20	W		н	. 7	**	n	
Nitrobenzene	ND	5.0	n	n	N	0	H		
2-Nitrophenol	ND	5.0	n	*	77	11	н	n	
4-Nitrophenol	ND	10	n	#*	*	n		u	
N-Nitrosodimethylamine	ND	5.0	•	v	ir	N	n	H	
N-Nitrosodiphenylamine	ND	5.0	11	н	"	11	*	•	
N-Nitrosodi-n-propylamine	ND	5.0	17	n	н	n	n	п	
Pentachlorophenol	ND	10	п	n	п	**	ĮĮ.	*	
Phenanthrene	ND	5.0	H	N	P	II	Ħ	'n	
Phenol	ND	5.0	"	*	н	n	n	н	
Pyrene	ND	5.0	#t	Ħ	n	11	b.	N.	
1,2,4-Trichlorobenzene	ND	5.0	st .		n	n	n	19	
2,4,5-Trichlorophenol	ND	10	*	"	11	**	11	Ħ	
2,4,6-Trichlorophenol	ND	10	ti	tt	11	19	n	11	
Surrogate: 2-Fluorophenol		47.7 %	21	-110	,,	,,	11	#	
Surrogate: Phenol-d6		32.9 %	10	-110	"	**	r	n	
Surrogate: Nitrobenzene-d5		93.7 %	35	-114	#	n	R	н	
Surrogate: 2-Fluorobiphenyl		108 %	43	-116	"	ır	"	11	
Surrogate: 2,4,6-Tribromopher	nol	113 %	10	-123	H	11	"	16	
Surrogate: p-Terphenyl-d14		114%		-14]	**	77	н	**	



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 1

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

Project Number: TOSCO SS#4625, OAKLAND,CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (L108073-04) Water	Sampled: 08/10/01 11:50	Received: 0	8/10/01	18:00					
TRPH	ND	5.0	mg/l]	1H24004	08/24/01	08/27/01	SM 5520B/F	





Dublin CA, 94568

Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND, CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

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 1080099 - EPA 5030B (P/T)	·		*			. "				
Blank (1080099-BLK1)				Prepared	& Analyz	ed: 08/23/	01		·	
Purgeable Hydrocarbons as Gasoline	ND	50	ug/l	•		-				
Benzene	ND	0.50	n							
Toluene	ND	0.50	u							
Ethylbenzene	ND	0.50	17							
Xylenes (total)	ND	0.50								
Methyl tert-butyl ether	ND	5.0	"							
Surrogate: a,a,a-Trifluorotoluene	9.96		"	10.0		99.6	70-130			
LCS (1080099-BS1)				Prepared	& Analyz	ed: 08/23/	01			-
Benzene	9.94	0.50	ug/l	10.0		99.4	70-130			
Toluene	9.77	0.50	17	10.0		97.7	70-130			
Ethylbenzene	9.88	0.50	n	10.0		98.8	70-130			
Xylenes (total)	30.5	0.50	P	30.0		102	70-130			
Surrogate: a,a,a-Trifluorotoluene	10.3		"	10.0		103	70-130			
LCS (1080099-BS2)				Prepared	& Analyz	ed: 08/23.				
Purgeable Hydrocarbons as Gasoline	268	50	ug/l	250		107	70-130			
Surrogate: a,a,a-Trifluorotoluene	11.3		'n	10.0		113	70-130			
Matrix Spike (1080099-MS1)	So	urce: L10800	64-05	Prepared	& Analyz	zed: 08/23				
Purgeable Hydrocarbons as Gasoline	236	50	ug/l	250	ND	94.4	60-140			
Surrogate: a,a,a-Triftuorotoluene	10.4		"	10.0		104	70-130			
Matrix Spike Dup (1080099-MSD1)	Sc	ource: L1080	64-05	Prepared	l & Analyz	zed: 08/23	/01			
Purgeable Hydrocarbons as Gasoline	280	50	ug/i	250	ND	112	60-140	17.1	25	
Surrogate: a,a,a-Trifluorotoluene	11.4		#	10.0		114	70-130			



Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND,CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

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

Analysis	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Analyte	110000									
Batch 1080065 - EPA 5030B (P/T)					<u> </u>					
Blank (1080065-BLK1)				Prepared	& Analyze	ed: 08/15/0)1			
Freon 113	ND	1.0	ug/l							
Bromodichloromethane	ND	0.50	17							
Bromoform	ND	0.50	P							
Bromomethane	ND	1.0	n							
Carbon tetrachloride	ND	0.50	\$1							
Chlorobenzene	ND	0.50	"							
Chloroethane	ND	1.0	,,							
Chloroform	ND	0.50	н							
Chloromethane	ND	1.0	н							
Dibromochloromethane	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	**							
1,3-Dichlorobenzene	ND	0.50	*							
],4-Dichlorobenzene	ND	0.50	**							
1,2-Dichlorobenzene	ND	0.50	D							
1,1-Dichloroethane	ND	0.50	н							
1,2-Dichloroethane	ND	0.50	•							
1,1-Dichloroethene	ИD	0.50	T	v						
cis-1,2-Dichloroethene	ND	0.50								
trans-1,2-Dichloroethene	ND	0.50	11							
1,2-Dichloropropane	ND	0.50	п							
cis-1,3-Dichloropropene	ND	0.50	*1							
trans-1,3-Dichloropropene	ND	0.50	**							
Methylene chloride	ND	5.0	n							
1,1,2,2-Tetrachloroethane	ND	0.50	11							
Tetrachloroethene	ND	0.50	97							
1,1,1-Trichloroethane	ND	0.50	11							
1,1,2-Trichloroethane	ND	0.50	Ð							
Trichloroethene	ND	0.50	H							
Trichlorofluoromethane	ND	0.50	71							
Vinyl chloride	ND	1.0	ut.							
Benzene	ND	0.50	19							
Ethylbenzene	ND	0.50	11							
Toluene	ND	0.50	**							
Total Xylenes	ND	0.50	11							
Surrogate: 1-Chloro-2-fluorobenzene	10.6		H	10.0		106	70-130)		



Dublin CA, 94568

Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND,CA

Project Manager: Deanna Harding 0

Reported: 09/04/01 14:44

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

Daniela	Reporting	1 1-4-	Spike	Source	WEEC	%REC	חחח	RPD	Ness
Kesult	Limii	Units	Level	Resun	70KEC	Limits	KPD	Limit	Notes
			Prepared	& Analyze	ed: 08/15/0	01			
9.74	0.50	ug/l	10.0		97.4	70-130			
9.56	0.50	17	10.0		95.6	70-130			
10.0	0.50	10	10.0		100	70-130			
12.1	0.50	н	10.0		121	70-130			
12.0	0.50	D	10.0		120	70-130			
11.0		н	10.0		110	70-130			
Sou	rce: L10807	3-04	Prepared	& Analyz					
9.50	0.50	ug/l	10.0	ND	95.0	60-140			
8.56	0.50	н	10.0	ND	85.6	60-140			
9.24	0.50	н	10.0	ND	92.4	60-140			
10.5		п	10.0		105	70-130			
Sou	rce: L10807	3-04	Prepared	& Analyz					
9.29	0.50	ug/I	10.0	ND	92.9	60-140	2.24	25	
8.41	0.50	•	10.0	ND	84.1	60-140	1.77	25	
0.20	0.50		10.0	ND	93.0	60-140	0.647	25	
9.30	0.50				,				
	9.56 10.0 12.1 12.0 11.0 Sour 9.50 8.56 9.24 10.5 Sour 9.29 8.41	9.74 0.50 9.56 0.50 10.0 0.50 12.1 0.50 12.0 0.50 11.0 Source: L10807 9.50 0.50 8.56 0.50 9.24 0.50 10.5 Source: L10807 9.29 0.50 8.41 0.50	Pesult Limit Units	Prepared Prepared 9.74 0.50 ug/l 10.0 9.56 0.50 " 10.0 10.0 12.1 0.50 " 10.0 12.0 0.50 " 10.0 12.0 0.50 " 10.0 10.0 11.0 " 10.0 10.5 " 10.0 10.	Prepared & Analyze Prepared & Analyze	Prepared & Analyzed: 08/15/8 9.74	Prepared & Analyzed: 08/15/01	Prepared & Analyzed: 08/15/01	Prepared & Analyzed: 08/15/01



Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND,CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

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 1090007 - EPA 5030B [P/T]										
Blank (1090007-BLK1)				Prepared	& Analyze	ed: 09/04/0	01			
Ethanol	ND	1000	ug/l							
1,2-Dibromoethane	ND	2.0	n							
1,2-Dichloroethane	ND	2.0	н							
Di-isopropyl ether	ND	2,0	H							
Ethyl tert-butyl ether	ND	2.0	u							
Methyl tert-butyl ether	ND	2.0	π							
Tert-amyl methyl ether	ND	2.0	*							
Tert-butyl alcohol	ND	100	**			_				
Surrogate: 1,2-Dichloroethane-d4	52.9		,,	50.0		106	76-114			
Surrogate: Toluene-d8	52.4		"	50.0		105	88-110			
LCS (1090007-BS1)				Prepared	& Analyz	ed: 09/04/	01			
Methyl tert-butyl ether	57.6	2.0	ug/l	50.0		115	70-130			
Surrogate: 1,2-Dichloroethane-d4	55.2		н	50.0		110	76-114			
Surrogate: Toluene-d8	53.6		n	50.0		107	88-110			
Matrix Spike (1090007-MS1)	So	urce: L10818	3-04	Prepared	& Analyz					
Methyl tert-butyl ether	48.1	2.0	ug/l	50.0	ND	96.2	60-140			
Surrogate: 1,2-Dichloroethane-d4	46.4		**	50.0		92.8	76-114			
Surrogate: Toluene-d8	48.0		"	50.0		96.0	88-110			
Matrix Spike Dup (1090007-MSD1)	Source: L108183-04			Prepared	l & Analyz	zed: 09/04/	/01			
Methyl tert-butyl ether	49.9	2.0	ug/l	50.0	ND	99.8	60-140	3.67	25	
Surrogate: 1,2-Dichloroethane-d4	47.6		"	50.0		95.2	76-114			
Surrogate: Toluene-d8	48.7		"	50.0		97.4	88-110			



Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J Dublin CA, 94568

Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND,CA

Spike

Source

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

RPD

%REC

Volatile Organic Compounds by EPA Method 8240B - Quality Control Sequoia Analytical - Walnut Creek

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1H14015 - EPA 5030B (P/T)										
Blank (1H14015-BLK1)				Prepared:	08/14/01	Analyzed	: 08/15/01			
Chloromethane	ND	2.0	ug/l							
Vinyl chloride	ND	2.0	п							
Bromomethane	ND	5.0	ŧı							
Chloroethane	ND	2.0	"							
Trichlorofluoromethane	ND	2.0	**							
,1-Dichloroethene	ND	2.0	**							
Acetone	ND	20	*							
Carbon disulfide	ND	2.0	н							
Methylene chloride	ND	10	47							
Methyl tert-butyl ether (MTBE)	ND	2.0	"							
rans-1,2-Dichloroethene	ND	2.0	19							
Vinyl acetate	ND	2.0	11							
,1-Dichloroethane	ND	2.0	n							
cis-1,2-Dichloroethene	ND	2.0	n							
2-Butanone (MEK)	ND	20	н							
Chloroform	ND	2.0	**							
,1,1-Trichloroethane	ND	2.0								
Carbon tetrachloride	ND	- 10	#							
Benzene	ND	2.0	17							
1,2-Dichloroethane	ND	2.0	×							
Trichloroethene	ND	2.0	ŧr							
1,2-Dichloropropane	ND	2.0								
Bromodichloromethane	ND	2.0								
2,2,5,5-Tetramethyltetrahydrofuran	ND	5.0	#							
cis-1,3-Dichloropropene	ND	2.0	n							
4-Methyl-2-pentanone (MIBK)	ND	10	71							
Гошепе	ND	5.0	#1							
rans-1,3-Dichloropropene	ND	2.0	11							
,1,2-Trichloroethane	ND	2.0	TI							
letrachloroethene	ND	2.0	#1							
2-Hexanone	ND	10								
Dibromochloromethane	ND	2.0								
Chlorobenzene	ND	2.0	Ħ							
Ethylbenzene	ND	2.0	**							
Γotal Xylenes	ND	2.0	11							

2.0

ND

Sequoia Analytical - San Carlos

Styrene

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Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND,CA Project Manager: Deanna Harding Reported: 09/04/01 14:44

6747 Sierra Court, Suite J Dublin CA, 94568

Volatile Organic Compounds by EPA Method 8240B - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1H14015 - EPA 5030B (P/T)					<u></u>					
Blank (1H14015-BLK1)			_	Prepared:	08/14/01	Analyzed	: 08/15/01			
Bromoform	ND	2.0	ug/l							
1,1,2,2-Tetrachloroethane	ND	2.0	"							
,3-Dichlorobenzene	ND	2.0	**							
1,4-Dichlorobenzene	ND	2.0	Ţī.							
1,2-Dichlorobenzene	ND	2.0	11							
<u> </u>				25.0		105	50-150			
Surrogate: Dibromofluoromethane Surrogate: 1,2-Dichloroethane-d4	26.3 24.7		,,	25.0		98.8	50-150			
Surrogate: 1,2-Dicnioroeinane-a4 Surrogate: Toluene-d8	24.7			25.0		99.2	50-150			
Surrogate: 1-otaene-uo Surrogate: 4-Bromofluorobenzene	25.9		21	25.0		104	50-150			
•				Prenared	08/16/01	Analyze	i: 08/1 <u>7/01</u>			
Blank (1H14015-BLK3) Chloromethane	ND	2.0	ug/l	,,,,p.,.			,			
	ND	2.0	"							
Vinyl chloride Bromomethane	ND	5.0	11							
Chloroethane	ND	2.0								
Trichlorofluoromethane	ND	2.0	n							
],]-Dichloroethene	ND	2.0	н							
Acetone	ND	20	Nt.							
Carbon disulfide	ND	2.0	tr							
Methylene chloride	ND	10	**							
Methyl tert-butyl ether (MTBE)	ND	2.0	11							
trans-1,2-Dichloroethene	ND	2.0	н							
Vinyl acetate	ND	2.0	n							
1.1-Dichloroethane	ND	2.0	н							
cis-1,2-Dichloroethene	ND	2.0	н							
2-Butanone (MEK)	ND	20	Ħ							
Chloroform	ND	2.0	п							
1,1,1-Trichloroethane	ND	2.0	**							
Carbon tetrachloride	ND	10								
Benzene	ND	2.0								
1,2-Dichloroethane	ND	2.0	н							
Trichloroethene	ŇD	2.0								
1,2-Dichloropropane	ND	2.0	11							
Bromodichloromethane	ND	2.0	þi							
2,2,5,5-Tetramethyltetrahydrofuran	ND	5.0	п							
cis-1,3-Dichloropropene	ND	2.0	h							
4-Methyl-2-pentanone (MIBK)	ND	10	н							

Sequoia Analytical - San Carlos

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Dublin CA, 94568

Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND, CA

Reported: 09/04/01 14:44

Project Manager: Deanna Harding

Volatile Organic Compounds by EPA Method 8240B - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1H14015 - EPA 5030B (P/T)										
Blank (1H14015-BLK3)				Prepared:	08/16/01	Analyzed	: 08/17/01			
Toluene	ND	5.0	ug/l							
trans-1,3-Dichloropropene	ND	2.0								
1,1,2-Trichloroethane	ND	2.0	H							
Tetrachloroethene	ND	2.0	11							
2-Hexanone	ND	10	11							
Dibromochloromethane	ND	2.0	n							
Chlorobenzene	ND	2.0	н							
Ethylbenzene	ND	2.0	H							
Total Xylenes	ND	2.0	*							
Styrene	ND	2.0	u							
Bromoform	ND	2.0	*							
1,1,2,2-Tetrachloroethane	ND	2.0	и							
1,3-Dichlorobenzene	ND	2.0	fr							
1,4-Dichlorobenzene	ND	2.0	**							
1,2-Dichlorobenzene	ND	2.0	in							
Surrogate: Dibromofluoromethane	31.0		,,	25.0		124	50-150			
Surrogate: 1,2-Dichloroethane-d4	21.2		"	25.0		84.8	50-150			
Surrogate: Toluene-d8	26.4		*1	25.0		106	50-150			
Surrogate: 4-Bromofluorobenzene	28.4		"	25.0		114	50-150			
Blank (1H14015-BLK5)				Prepared	& Analyz	zed: 08/21/	01			
Chloromethane	ND	2.0	ug/l							
Vinyl chloride	ND	2.0	17							
Bromomethane	ND	5.0	. #							
Chloroethane	ND	2.0	71							
Trichlorofluoromethane	ND	2.0	**							
1,1-Dichloroethene	ND	2.0	77							
Acetone	ND	20	, 11							
Carbon disulfide	ND	2.0								
Methylene chloride	ND	10	n							
Methyl tert-butyl ether (MTBE)	ND	2.0	*							
trans-1,2-Dichloroethene	ND	2.0	u							
Vinyl acetate	ND	2.0								
1,1-Dichloroethane	ND	2.0	**							
cis-1,2-Dichloroethene	ND	2.0								
2-Butanone (MEK)	ND	20								
Chloroform	ND	2.0	#							

Sequoia Analytical - San Carlos

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Dublin CA, 94568

Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND,CA

Reported: 09/04/01 14:44

Project Manager: Deanna Harding

Volatile Organic Compounds by EPA Method 8240B - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1H14015 - EPA 5030B (P/T)										
Biank (1H14015-BLK5)				Prepared	& Analyz	ed: 08/21/0	01			
1,1,1-Trichloroethane	ND	2.0	ug/l							
Carbon tetrachloride	ND	10	**							
Benzene	ND	2.0	11							
1,2-Dichloroethane	ND	2.0	D							
Trichloroethene	ND	2.0	n							
1,2-Dichloropropane	ND	2.0	н							
Bromodichloromethane	ND	2.0	Ħ							
2,2,5,5-Tetramethyltetrahydrofuran	ND	5.0	**							
cis-1,3-Dichloropropene	ND	2.0	n							
4-Methyl-2-pentanone (MlBK)	ND	10	**							
Toluene	ND	5.0	11							
trans-1,3-Dichloropropene	ND	2.0	11							
1,1,2-Trichloroethane	ND	2.0	п							
Tetrachloroethene	ND	2.0	H							
2-Hexanone	ND	10	n							
Dibromochloromethane	ND	2.0								
Chlorobenzene	ND	2.0	*							
Ethylbenzene	ND	2.0	π							
Total Xylenes	ND	2.0	**							
Styrene	ND	2.0	17							
Bromoform	ND	2.0	н							
1,1,2,2-Tetrachloroethane	ND	2.0	n							
1,3-Dichlorobenzene	ND	2.0	H							
1,4-Dichlorobenzene	ND	2.0	n							
1,2-Dichlorobenzene	ND	2.0	Ħ							
Surrogate: Dibromofluoromethane	28.0	-	Ħ	25.0		112	50-15 0			
Surrogate: 1,2-Dichloroethane-d4	25.0		"	25.0		100	50-150			
Surrogate: Toluene-d8	26.0		н	25.0		104	50-150			
Surrogate: 4-Bromofluorobenzene	27.0		n	25.0		108	50-150			



Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND, CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

Volatile Organic Compounds by EPA Method 8240B - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1H14015 - EPA 5030B (P/T)							<u>-</u>			
LCS (1H14015-BS1)				Prepared	& Analyze	ed: 08/14/0				
1,1-Dichloroethene	20.6	2.0	ug/l	25.0		82.4	65-135			
Methyl tert-butyl ether (MTBE)	22.9	2.0	н	25.0		91.6	70-130			
Benzene	24.4	2.0	н	25.0		97.6	70-130			
Trichloroethene	24.2	2.0	**	25.0		96.8	70-130			
Toluene	26.6	5.0	11	25.0		106	70-130			
Chlorobenzene	25.3	2.0	ħ	25.0		101	70-130			
Surrogate: Dibromofluoromethane	26.1		11	25.0		104	50-150			
Surrogate: 1,2-Dichloroethane-d4	25.1		"	25.0		100	50-150			
Surrogate: Toluene-d8	24.6		"	25.0		98.4	50-150			
Surrogate: 4-Bromofluorobenzene	24.9		,,	25.0		99.6	50-150			
LCS (1H14015-BS3)				Prepared:	08/16/01	Analyzed	1: 08/17/01			
1,1-Dichloroethene	19.8	2.0	ug/l	25.0		79.2	65-135			
Methyl tert-butyl ether (MTBE)	22.0	2.0		25.0		88.0	70-130			
Benzene	22.7	2.0		25.0		90.8	70-130			
Trichloroethene	20.8	2.0	**	25.0		83.2	70-130			
Toluene	22.3	5.0	77	25.0		89.2	70-130			
Chlorobenzene	21.9	2.0	Ħ	25.0		87.6	70-130			
Surrogate: Dibromofluoromethane	31.6		**	25.0	<u>-</u>	126	50-150			
Surrogate: 1,2-Dichloroethane-d4	21.0		"	25.0		84.0	50-150			
Surrogate: Toluene-d8	26.9		n	25.0		108	50-150			
Surrogate: 4-Bramofluorobenzene	27.5		"	25.0		110	50-150			
LCS (1H14015-BS5)				Prepared	& Analyz	zed: 08/21/	01	<u></u>		
1,]-Dichloroethene	21.5	2.0	ug/l	25.0		86.0	65-135			
Methyl tert-butyl ether (MTBE)	23.3	2.0	n	25.0		93.2	70-130			
Benzene	25,5	2.0	H	25.0		102	70-130			
Trichloroethene	21.1	2.0	*	25.0		84.4	70-130			
Toluene	23.0	5.0	Ħ	25.0		92.0	70-130			
Chlorobenzene	21.7	2.0	"	25.0		86.8	70-130			
Surrogate: Dibromofluoromethane	29.0		11	25.0		116	50-150			
Surrogate: 1,2-Dichloroethane-d4	24.0		н	25.0		96.0	50-150			
Surrogate: Toluene-d8	26.0		11	25.0		104	50-150			
Surrogate: 4-Bromofluorobenzene	27.0		r	25.0		108	50-150			



Dublin CA, 94568

Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND,CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

Volatile Organic Compounds by EPA Method 8240B - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1H14015 - EPA 5030B (P/T)					 					
Matrix Spike (1H14015-MS2)	So	urce: W10820	03-01	Prepared:	08/16/01	Analyzed	: 08/17/01			
1.1-Dichloroethene	19.9	2.0	ug/l	25.0	ND	79.6	60-140			
Methyl tert-butyl ether (MTBE)	23.4	2.0		25.0	ND	93.6	60-140			
Benzene	22.3	2.0	*	25.0	ND	89.2	60-140			
Trichloroethene	25.7	2.0	n	25.0	3.8	87.6	60-140			
Toluene	22.5	5.0	**	- 25.0	ND	90.0	60-140			
Chlorobenzene	21.7	2.0	n	25.0	ND	86.8	60-140			
Surrogate: Dibromofluoromethane	27.6		,,	25.0		110	50-150			
Surrogate: 1,2-Dichloroethane-d4	25.7		Ħ	25.0		103	50-150			
Surrogate: Toluene-d8	25.2		n	25.0		101	50-150			
Surrogate: 4-Bromofluorobenzene	25.2		n	25.0		101	50 -150			
Matrix Spike Dup (1H14015-MSD2)	So	urce: W1082	03-01	Prepared	: 08/16/01	Analyze	1: 08/17/01			
1,1-Dichloroethene	22.6	2.0	ug/l	25.0	ND	90.4	60-140	12.7	25	
Methyl tert-butyl ether (MTBE)	27.1	2.0	•	25.0	ND	108	60-140	14.7	25	
Benzene	25.4	2.0	**	25.0	ND	102	60-140	13.0	25	
Trichloroethene	28.2	2.0	n	25.0	3,8	97.6	60-140	9.28	25	
Toluene	25.7	5.0	н	25.0	ND	103	60-140	13.3	25	
Chlorobenzene	24.8	2.0	Ħ	25.0	ND	99.2	60-140	13.3	25	
Surrogate: Dibromofluoromethane	27.5		"	25.0		110	50-150			
Surrogate: 1,2-Dichloroethane-d4	25.5		**	25.0		102	50-150			
Surrogate: Toluene-d8	25.2		"	25.0	•	101	50-150			
Surrogate: 4-Bromofluorobenzene	25.3		,,	25.0		101	50-150			



Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND, CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

Diesel Hydrocarbons (C9-C24) by DHS LUFT - Quality Control Sequoia Analytical - Walnut Creek

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1H20017 - EPA 3510B										
Blank (1H20017-BLK1)				Prepared: (08/20/01	Analyzed:	08/21/01			
Diesel Range Hydrocarbons (C9-C24)	ND	50	ug/l							
Surrogate: n-Pentacosane	30.7		н	33.3		92.2	50-150			
Blank (1H20017-BLK2)			-	Prepared: (08/23/01	Analyzed	08/24/01			
Diesel Range Hydrocarbons (C9-C24)	ND	50	ug/l							
Surrogate: n-Pentacosane	25.7		"	33.3	-	77.2	50-150			
LCS (1H20017-BS1)				Prepared:	08/20/01	Analyzed	: 08/21/01			
Diesel Range Hydrocarbons (C9-C24)	445	50	ug/l	500		89.0	60-140			
Surrogate: n-Pentacosane	30.0		n	33.3		90.1	50-150			
LCS (1H20017-BS2)				Prepared:	08/23/01	Analyzed	: 08/24/01		. _	
Diesel Range Hydrocarbons (C9-C24)	437	50	ug/l	500		87.4	60-140			
Surrogate: n-Pentacosane	31.3		"	33.3		94.0	50-150			
LCS Dup (1H20017-BSD1)				Prepared:	08/20/01	Analyzed	: 08/21/01			
Diesel Range Hydrocarbons (C9-C24)	467	50	ug/l	500		93.4	60-140	4.82	50	
Surrogate: n-Pentacosane	30 .7		"	33.3		92.2	50-150			



Dublin CA, 94568

Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND,CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1H20016 - 200.7										
Blank (1H20016-BLK1)				Prepared:	08/20/01	Analyzed	1: 08/31/01			
Chromium	ND	0.010	mg/l							
LCS (1H20016-BS1)				Prepared	08/20/01	Analyzed	1: 08/31/01			
Chronium	1.01	0.010	mg/l	1.00		101	80-120			
LCS Dup (1H20016-BSD1)				Prepared	08/20/01	Analyzed	1: 08/31/01			
Chromium	1.04	0.010	mg/l	1.00		104	80-120	2.93	20	
Matrix Spike (1H20016-MS1)	So	urce: L1080	73-04	Prepared	: 08/20/01	Analyzed	d: 08/31/01			
Chromium	1.02	0.010	mg/l	1.00	ND	102	80-120		·	
Matrix Spike Dup (1H20016-MSD1)	So	urce: L10801	73-04	Prepared	: 08/20/01	Analyze	d: 08/31/01			
Chromium	1.02	0.010	mg/l	1.00	ND	102	80-120	0.00	20	



Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND, CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

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 1H14006 - EPA 3510B Se	p Funnel									
Blank (1H14006-BLK1)				Prepared:	08/14/01	Analyzed	: 08/15/01			
Acenaphthene	ND	5.0	ug/i							
Acenaphthylene	ND	5.0	**							
Aniline	Й	5.0	**							
Anthracene	ND	5.0	ŧ							
Benzoic acid	ND	10	•							
Benzo (a) anthracene	ND	5.0	**							
Benzo (b) fluoranthene	ND	5.0	n							
Benzo (k) fluoranthene	ND	5.0	п							
Benzo (ghi) perylene	ND	5.0	н							
Benzo[a]pyrene	ND	5.0	"							
Benzyl alcohol	ND	5.0	Ħ							
Bis(2-chloroethoxy)methane	ND	5.0	**							
Bis(2-chloroethyl)ether	ND	5.0	41							
Bis(2-chloroisopropyl)ether	ND	5.0	*							
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	5.0	11							
Butyl benzyl phthalate	ND	50	n							
4-Chloroaniline	ND	25	н							
2-Chloronaphthalene	ND	5.0	н							
4-Chloro-3-methylphenol	ND	5.0	,							
2-Chlorophenol	ND	5.0	Ħ							
4-Chlorophenyl phenyl ether	ND	5.0	**							
Chrysene	ND	5.0	**							
Dibenz (a,h) anthracene	ND	10	н							
Dibenzofuran	ND	5.0	H							
Di-n-butyl phthalate	ND	10	**							
1,2-Dichlorobenzene	ND	5.0	•							
1,3-Dichlorobenzene	ND	5.0	71							
1,4-Dichlorobenzene	ND	10	n							
3,3'-Dichlorobenzidine	ND	10	"							
2,4-Dichlorophenol	ND	5.0	H .							
Diethyl phthalate	ND	5.0	11							
2,4-Dimethylphenol	ND	5.0	11							
Dimethyl phthalate	ND	5.0	n							
4,6-Dinitro-2-methylphenol	ND	10	n							
2,4-Dinitrophenol	ND	10	11							



Dublin CA, 94568

Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND, CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

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 1H14006 - EPA 3510B Sep	Funnel									
Blank (1H14006-BLK1)				Prepared:	08/14/01	Analyzed	: 08/15/01			
2,4-Dinitrotoluene	ND	10	ug/l							
2,6-Dinitrotoluene	ND	10	п							
Di-n-octyl phthalate	ND	10	H							
Fluoranthene	ND	5.0	H							
Fluorene	ND	5.0	•							
Hexachlorobenzene	ND	10	"							
lexachlorobutadiene	ND	10	5*							
Hexachlorocyclopentadiene	ND	10	и							
Hexachloroethane	ND	5.0	Ħ							
Indeno (1,2,3-cd) pyrene	ND	10								
sophorone	ND	5.0	11							
2-Methylnaphthalene	ND	5.0	п							
2-Methylphenol	ND	5.0	•							
1-Methylphenol	ND	5.0	n							
Naphthalene	ND	5.0	н							
2-Nitroaniline	ND	10	**							
3-Nitroaniline	ND	10	W.							
4-Nitroaniline	ND	20	*							
Nitrobenzene	ND	5.0	**							
2-Nitrophenol	ND	5.0)1							
4-Nitrophenol	ND	10	h							
N-Nitrosodimethylamine	ND	5.0	н							
N-Nitrosodiphenylamine	ND	5.0	**							
N-Nitrosodi-n-propylamine	ND	5.0	*							
Pentachlorophenol	ND	10	Ħ							
Phenanthrene	ND	5.0	*							
Phenol	ND	5.0	tt.							
Pyrene	ND	5.0	**							
1,2,4-Trichlorobenzene	ND	5.0	"							
2,4,5-Trichlorophenol	ND	10	н							
2,4,6-Trichlorophenol	ND	10	Ħ							
Surrogate: 2-Fluorophenol	65.1		n	150		43.4	21-110			
Surrogate: Phenol-d6	45.5		"	150		30.3	10-110			
Surrogate: Nitrobenzene-d5	77.2		"	100		77.2	35-114			
Surrogate: 2-Fluorobiphenyl	87.1			100		87.1 84.0	43-116			
Surrogate: 2,4,6-Tribromophenol	126	•	**	150		84.0	10-123			

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.





Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND,CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

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 1H14006 - EPA 3510B Sep	Funnel									
Blank (1H14006-BLK1)				Prepared:	08/14/01	Analyzed	: 08/15/01			
Surrogate: p-Terphenyl-d14	90,2		ug/l	100		90.2	33-141			
Blank (1H14006-BLK2)				Prepared	& Analyz	ed: 08/15/	01	· 		
Acenaphthene	ND	5.0	ug/l							
Acenaphthylene	ND	5.0	"							
Aniline	ND	5.0	n							
Anthracene	ND	5.0	H							
Benzoic acid	ND	10	**							
Benzo (a) anthracene	ND	5.0	*							
Benzo (b) fluoranthene	ND	5.0	**							
Benzo (k) fluoranthene	ND	5.0	10							
Benzo (ghi) perylene	ND	5.0	n							
Benzo[a]pyrene	ND	5.0	11							
Benzyl alcohol	ND	5.0	Ħ							
Bis(2-chloroethoxy)methane	ND	5.0	H							
Bis(2-chloroethyl)ether	ND	5.0	**							
Bis(2-chloroisopropyl)ether	ND	5.0	n							
Bis(2-ethylhexyl)phthalate	ND	10	Ħ							
4-Bromophenyl phenyl ether	ND	5.0								
Butyl benzyl phthalate	ND	50	97							
4-Chloroaniline	ND	25	**							
2-Chloronaphthalene	ND	5.0	n							
4-Chloro-3-methylphenol	ND	5.0	н							
2-Chlorophenol	ND	5.0	Ħ							
4-Chlorophenyl phenyl ether	ND	5.0	**							
Chrysene	ND	5.0	h							
Dibenz (a,h) anthracene	ND	10	н							
Dibenzofuran	ND	5.0	n							
Di-n-butyl phthalate	ND	10	H							
1,2-Dichlorobenzene	ND	5.0	n							
1,3-Dichlorobenzene	ND	5.0	**							
1,4-Dichlorobenzene	ND	10	**							
3,3'-Dichlorobenzidine	ND	10	**							
2,4-Dichlorophenol	ND	5.0	n							
Diethyl phthalate	ND	5.0	п							
2,4-Dimethylphenol	ND	5.0	Ħ							



Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND,CA

Spike

Source

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

RPD

%REC

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

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1H14006 - EPA 3510B Sep	Funnel									<u> </u>
Blank (1H14006-BLK2)			_	Prepared	& Analyze	ed: 08/15/0	1			
Dimethyl phthalate	ND	5.0	սջ/۱							
1,6-Dinitro-2-methylphenol	ND	10	*							
2,4-Dinitrophenol	ND	10	41							
4-Dinitrotoluene	ND	10	•							
,6-Dinitrotoluene	ND	10	*							
Di-n-octyl phthalate	ND	10	U							
Fluoranthene	ND	5.0	*							
Tuorene	ND	5.0	"							
Hexachlorobenzene	ND	10	*							
-lexachlorobutadiene	ND	10	**							
Hexachlorocyclopentadiene	ND	10	19							
Hexachloroethane	ND	5.0	н							
ndeno (1,2,3-cd) pyrene	ND	10	п							
sophorone	ND	5.0	•							
2-Methylnaphthalene	ND	5.0	•							
2-Methylphenol	ND	5.0	ħ							
4-Methylphenol	ND	5.0	D							
Naphthalene	ND	5.0	н							
2-Nitroaniline	ND	10	**							
3-Nitroaniline	ND	10	*							
4-Nitroaniline	ND	20	**							
Nitrobenzene	ND	5.0	n							
2-Nitrophenol	ND	5.0	N							
4-Nitrophenol	ND	10	•							
N-Nitrosodimethylamine	ND	5.0	•							
N-Nitrosodiphenylamine	ND	5.0	Ħ							
N-Nitrosodi-n-propylamine	ND	5.0	**							
Pentachlorophenol	ND	10	11							
Phenanthrene	ND	5.0	11							
Phenoi	ND	5.0	n							
Pyrene Pyrene	ND	5.0	**							
1,2,4-Trichlorobenzene	ND	5.0	•							
2,4,5-Trichlorophenol	ND	10	##							
2,4,6-Trichlorophenol	ND	10	**							
	45.1		,,	150		30.1	21-110			
Surrogate: 2-Fluorophenol Surrogate: Phenol-d6	40.7		,,	150		27.1	10-110			

Sequoia Analytical - San Carlos

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Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND, CA

Spike

Source

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

RPD

%REC

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

Reporting

Aπalyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1H14006 - EPA 3510B Sep	Funnel									
Blank (1H14006-BLK2)				Prepared	& Analyze	d: 08/15/0)1	•		
Surrogaie: Nitrobenzene-d5	77.2		ug/l	100		77.2	35-114	 · · · · · · · · · · · · · · · · · ·		
Surrogate: 2-Fluorobiphenyl	<i>85.7</i>		"	100		85.7	43-116			
Surrogate: 2,4,6-Tribromophenol	124		*	150		82.7	10-123			
Surrogate: p-Terphenyl-d14	89.9		"	100		89. <i>9</i>	33-141			
LCS (1H14006-BS1)				Prepared:	08/14/01	Analyzed	: 08/15/01			
Acenaphthene	77.3	5.0	ug/l	100		77.3	46-118			
4-Chloro-3-methylphenol	115	5.0	n	150		76.7	23-97			
2-Chlorophenol	98.7	5.0	N	150		65.8	27-123			
1,4-Dichlorobenzene	66.1	10	n	100		66.1	36-97			
2,4-Dinitrotoluene	74.6	10	H	100		74.6	24-96			
4-Nitrophenol	40.7	10	"	150		27.1	10-80			
N-Nitrosodi-n-propylamine	95.6	5.0	lf .	100		95.6	41-116			
Pentachlorophenol	106	10	**	150		70.7	9-103			
Phenol	48.2	5.0	•	150		32.1	12-110			
Pyrene	68.6	5.0	**	100		68,6	26-127			
1,2,4-Trichlorobenzene	74.1	5.0	n	100		74.1	39-98			
Surrogate: 2-Fluorophenol	66.0		#	150		44.0	21-110			
Surrogate: Phenol-d6	45.2		**	150		30.I	10-110			
Surrogate; Nitrobenzene-d5	76.8		rr	100		76.8	35-114			
Surrogate: 2-Fluorobiphenyl	79.7		**	100		79 . 7	43-116			
Surrogate: 2,4,6-Tribromophenol	132		"	150		88.0	10-123			
Surrogate: p-Terphenyl-d14	7 8 .9		**	100		78.9	33-141			
LCS (1H14006-BS2)				Prepared	& Analyze	ed: 08/15/	01			
Acenaphthene	71.5	5.0	ug/l	100		71.5	46-118			
4-Chloro-3-methylphenol	106	5.0	•	150		70.7	23-97			
2-Chlorophenol	96.1	5.0	n	150		64.1	27-123			
1,4-Dichlorobenzene	62.1	10	11	100		62.1	36-97			
2,4-Dinitrotoluene	69.7	10	**	100		69.7	24-96			
4-Nitrophenol	26.2	10	#	150		17.5	10-80			
N-Nitrosodi-n-propylamine	100	5.0	n	100		100	41-116			
Pentachlorophenol	80.2	10	st	150		53.5	9-103			
Phenol	44.8	5.0	#	150		29.9	12-110			
Pyrene	73.3	5.0	п	100		73.3	26-127			
1,2,4-Trichlorobenzene	67.2	5.0	Ħ	100		67.2	39-98			
Surrogate: 2-Fluorophenol	61.5			150		41.0	21-110			



Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND, CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

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 1H14006 - EPA 3510B Sep	Funnel									
LCS (1H14006-BS2)				Prepared	& Analyz	ed: 08/15/0	01			
Surrogate: Phenol-d6	41.4	<u> </u>	ug/l	150		27.6	10-110			
Surrogaie: Nitrobenzene-d5	73.4		"	100		73.4	35-114			
Surrogaie: 2-Fluorobiphenyl	74.7		**	100		74 .7	43-116			
Surrogate: 2,4,6-Tribromophenal	120		"	150		80.0	10-123			
Surrogate: p-Terphenyl-d14	84.6		,,	100		84.6	33-141			
LCS Dup (1H14006-BSD1)				Prepared	08/14/01	Analyzed	1: 08/15/01			
Acenaphthene	81.1	5.0	и д /1	100		81.1	46-118	4.80	30	
4-Chloro-3-methylphenol	121	5.0	n	150		80.7	23-97	5.08	30	
2-Chlorophenol	102	5.0	97	150		68.0	27-123	3.29	30	
1.4-Dichlorobenzene	67.8	10	**	100		67.8	36-97	2.54	30	
2,4-Dinitrotoluene	81.0	10	Ð	100		81.0	24-96	8.23	30	
4-Nitrophenol	42.0	10	н	350		28.0	10-80	3.14	30	
N-Nitrosodi-n-propylamine	95.0	5.0		100		95.0	41-116	0.630	30	
Pentachlorophenol	124	10	**	150		82.7	9-103	15.7	30	
Phenol	45.3	5.0	**	150		30.2	12-110	6.20	30	
Pyrene	70.7	5.0	w	100		70.7	26-127	3.02	30	
1,2,4-Trichlorobenzene	76.2	5.0	н	100		76.2	39-98	2.79	30	
Surrogate: 2-Fluorophenol	65.0	 **	"	150		43.3	21-110			
Surrogate: Phenol-d6	41.8		n	150		2 7.9	10-110			
Surrogate: Nitrobenzene-d5	78.0		"	100		<i>78.0</i>	35-114			
Surrogate: 2-Fluorobiphenyl	80.9		"	100		80.9	43-116			
Surrogate: 2,4,6-Tribromophenol	139		**	150		92.7	10-123			
Surrogate: p-Terphenyl-d14	78.1		"	100		78.1	33-141			
~m. vo F F /										





Project: Tosco(1)

Project Number: TOSCO SS#4625, OAKLAND,CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

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 1H24004 - EPA 3510B SepFu	nnel									
Blank (1H24004-BLK1)				Prepared:	08/24/01	Analyzed	: 08/27/01			
TRPH	ND	5.0	mg/l							
LCS (1H24004-BS1)				Prepared:	08/24/01	Analyzed	: 08/27/01			
TRPH	93.2	5.0	mg/l	100		93.2	70-130			
LCS Dup (1H24004-BSD1)				Prepared:	08/24/01	Analyzed	l: 08/27/01			
TRPH	91.1	5.0	mg/l	100		91.1	70-130	2.28	30	



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 SS#4625, OAKLAND, CA

Project Manager: Deanna Harding

Reported: 09/04/01 14:44

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.

HT-04 This sample was analyzed beyond the EPA recommended holding time. The results may still be useful for their intended purpose.

P-01 Chromatogram Pattern: Gasoline C6-C12

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