

Ust 1975 unocal station #5472

Ust 8459

Seattle

DATE: September 17, 2001

**TOSCO MARKETING COMPANY
GROUNDWATER MONITORING REPORT**

Site No.: 5472 Address: 3460 1st Avenue South, Seattle, WA
Tosco Project Manager: Timothy D. Johnson
Consultant /Contact Person: Environmental Resolutions, Inc./John Meyer
Primary Agency/Regulatory ID No.: Washington State Department of Ecology

WORK PERFORMED THIS QUARTER(S) [Second - 2001]:

- Monitored, purged, and sampled 7 groundwater monitoring wells

WORK PROPOSED FOR NEXT QUARTER [Third - 2001]:

- Monitor, purge, and sample 10 groundwater monitoring wells

SUMMARY:

Frequency of Sampling Events:	<u>Quarterly</u>	(Quarterly, etc.)
Approximate Depth to Groundwater:	<u>2 to 8 ft</u>	(Measured Feet)
Groundwater Gradient:	<u>Northerly and Westerly</u>	(Direction)
	<u>0.05 ft/ft</u>	(Magnitude)
Maximum TPH-G/Benzene Concentrations:	<u>350/0.702</u>	(ppb)
Measurable Free Product Detected:	<u>No</u>	(Yes - ID wells(s)/No)
Free Product Recovered This Quarter:	<u>Unknown</u>	(gallons)
Cumulative Free Product Recovered to Date:	<u>Unknown</u>	(gallons)
Bulk Soil Removed This Quarter:	<u>None</u>	(cubic yards)
Water Wells or Surface Waters w/in a 2000'	<u>Unknown</u>	(Distance and)
Radius and Respective Direction:	<u>Unknown</u>	Direction)
Current Remedial Action:	<u>SVE/AS</u>	(SVE/AS/P&T etc.)
Permits for Discharge:	<u>PSCAA #8121</u>	(NPDES, POTW, etc.)

DISCUSSION:

- 3 of 7 wells sampled contained hydrocarbon concentrations exceeding MTCA Method A Cleanup Levels.

ATTACHMENTS:

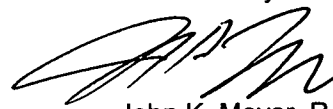
Plate P1 - Groundwater Sample Analysis Map, 6/22/01
Table 1 - Groundwater Analytical Results
Laboratory Reports and Chain of Custody Records
Field Data Records

Prepared By:



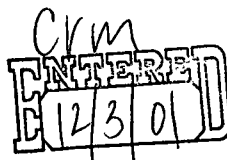
Yukiko Noguchi
Environmental Technician

Reviewed By:



John K. Meyer, R.G.
Branch Manager

cc: Washington State Department of Ecology, NW Region
GeoEngineers, Lisa Bona
Vasco Properties
D. Buck
S. Shanks



RECEIVED
OCT 30 2001
DEPT OF ECOLOGY
31023GWS



**GROUNDWATER SAMPLE
ANALYSIS MAP - 06/22/01**
TOSCO FACILITY 5472
3460 1st Avenue South
Seattle, Washington

EXPLANATION
◆ MW1 Groundwater Monitoring Well
93.27 Not Measured
NS Not Sampled

PROJECT NO.
31023

PLATE
1
YN: 09/18/01

FN 31023CWS

SOURCE: Modified from maps provided by Tosco Marketing Company

Laboratory Results in ug/L (ppb)
Sample Date
Total Petroleum Hydrocarbons as Gasoline 1,950
Total Petroleum Hydrocarbons as Diesel 1,340
Total Petroleum Hydrocarbons as Oil ND
Benzene 22.8
Toluene 1.83
Ethylbenzene 1.05
Total Xylenes 3.33
Numbers in Red Exceed MTC Method A Cleanup Levels
-- = Not Analyzed
<1.00 = Less than the State Laboratory Reporting Limit

06/23/00	09/13/00	03/27/01	06/23/01
93.9	151	88.8	261
<250	240	<750	<750
813	1,680	<750	<750
528	<750	<750	<750
<2.50	<0.500	<0.500	<0.500
<2.50	<0.500	<0.500	<0.500
6.18	<1.43	<1.00	<1.00

06/23/00	09/13/00	03/27/01	06/23/01
360	1,410	484	780
<60.0	<750	<750	<750
2.09	<0.570	<0.500	<0.500
<0.500	<0.500	<0.500	<0.500
<0.500	<0.500	<0.500	<0.500
1.58	<3.50	<1.00	<1.00

06/23/00	09/13/00	03/27/01	06/23/01
95.54	248	748	748
<60.0	<60.0	<60.0	<60.0
<2.50	<0.500	<0.500	<0.500
<2.50	<0.500	<0.500	<0.500
10.6	2.93	1.42	0.702
<0.500	<0.500	<0.500	<0.500
<0.500	<0.500	<0.500	<0.500
4.81	0.782	<1.00	<1.00

06/23/00	09/13/00	03/27/01	06/23/01
451	428	1,380	1,180
<250	<60.0	8,630	1,210
<2.50	<0.500	<0.500	<0.500
<2.50	<0.500	<0.500	<0.500
148	1.42	<0.500	<0.500
<60.0	<0.500	<0.500	<0.500
<2.50	<0.500	<0.500	<0.500
2.84	<1.35	<0.500	<0.500

06/23/00	09/13/00	03/27/01	06/23/01
102	1,270	<750	<750
<60	<750	<750	<750
29.4	<1.40	<0.500	<0.500
<0.500	<0.500	<0.500	<0.500
<0.500	<0.500	<0.500	<0.500
1.82	<0.500	<0.500	<0.500

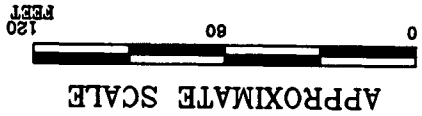
06/23/00	09/13/00	03/27/01	06/23/01
<60.0	<60.0	<60.0	<60.0
283	3,780	<1,040	<250
<750	<750	<750	<750
1.19	13.2	<0.500	<0.500
<0.500	<0.500	<0.500	<0.500
<0.500	<0.500	<0.500	<0.500
1.82	<0.500	<0.500	<0.500

06/23/00	09/13/00	03/27/01	06/23/01
973	<60.0	<60.0	<60.0
<250	<60.0	<60.0	<60.0
<750	<750	<750	<750
688	343	<750	1,640
<2.50	<0.500	<0.500	<0.500
1,670	<0.500	<0.500	<0.500
<5.00	<0.500	<0.500	<0.500
256	0.588	<0.500	<0.500
37.0	<1.00	2.08	<1.00

06/23/00	09/13/00	03/27/01	06/23/01
<60.0	<60.0	<60.0	<60.0
284	<750	<750	<750
<0.500	<0.500	<0.500	<0.500
<0.500	<0.500	<0.500	<0.500
<1.00	<1.00	<1.00	<1.00

06/23/00	09/13/00	03/27/01	06/23/01
148	2,820	651	<750
<60.0	<750	<750	<750
<0.500	<0.500	<0.500	<0.500
<0.500	<0.500	<0.500	<0.500
<1.00	<1.00	<1.00	<1.00

06/23/00	09/13/00	03/27/01	06/23/01
<60.0	<60.0	<60.0	<60.0
366	260	364	297
<750	<750	<750	<750
<0.500	<0.500	<0.500	<0.500
<0.500	<0.500	<0.500	<0.500
<1.00	<1.00	<1.00	<1.00



◆ MW15 92.83



1ST AVENUE SOUTH

SOUTH SPOKANE STREET

◆ MW11 94.15

◆ MW12 95.54

◆ MW9 98.77

◆ MW7 98.77

◆ MW14 92.53

◆ MW13 92.76

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
Tosco Facility 5472
3460 1st Avenue South
Seattle, Washington
Page 1 of 4

Well Name	Sample Date	DTW	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X	Diss. Pb
MW1 99.52	02/25/91	5.43	92.59	LPH Present							
	10/19/92	7.20	92.60	LPH Present							
	08/26/93	7.36	92.27	LPH Present							
	10/13/94	8.23	91.55	LPH Present							
	04/25/95	5.82	93.90	30,000	15,000	9,600	880	<4.0	340	290	--
	07/12/95	NM	--	13,000	4,900	<8,000	1,000	<8.0	360	210	<2.0
	10/12/95	6.15	93.41	LPH Present							
	01/22/96	5.10	94.35	LPH Present							
	04/10/96	5.86	93.76	LPH Present							
	07/29/96	5.83	93.69	6,700	6,210	2,950	753	5.50	159	22.5	--
	10/25/96	6.32	93.37	LPH Present							
	03/05/97	4.96	94.58	3,240	3,660	2,100	114	<2.50	18.7	<5.00	--
	03/05/97*	4.96	94.56	8,150	534	<750	40.7	<2.50	58.9	15.3	--
	06/19/97	5.66	93.87	LPH Present							
	09/18/97	6.56	92.86	LPH Present							
	12/18/97	5.54	93.98	3,960	3,450	1,440	142	1.31	2.85	3.54	--
	03/11/98	5.14	94.36	2,720	4,630	3,690	120	2.77	4.23	5.20	--
	06/24/98	8.25	93.27	1,950	1,340	<750	22.8	1.83	1.05	3.33	--
	09/18/98	8.86	92.66	1,890	<250	<750	12.7	<2.50	<2.50	<5.00	--
	12/14/98	3.70	95.82	2,840	8,450	3,880	32.7	<5.00	11.7	<10.0	--
	03/26/99	4.50	95.02	2,490	4,130	2,280	180	1.87	20.8	6.13	--
	06/23/99	5.99	93.53	982	1,410	844	67.6	<2.50	<2.50	<5.00	--
	09/23/99	6.85	92.67	1,540	1,380	<750	17.29	0.731	2.13	2.07	--
	12/06/99	9.15	90.37	<50.0	525	<750	1.33	0.828	0.937	2.32	--
	03/13/00	5.24	94.28	<700	4,340	2,260	185	<5.00	<5.00	<10.0	--
	06/28/00	5.45	94.07	<50.0	2,820	<1,290	<0.500	<0.500	<0.500	<1.00	--
	09/13/00	6.96	92.56	148	651	<750	1.04	<0.500	<0.500	<1.00	--
	03/27/01	Obstructed by vehicle	--	--	--	--	--	--	--	--	--
	06/22/01	NM	--	--	--	--	--	--	--	--	--
MW6 99.67	02/25/91	5.69	92.50	--	--	--	<1.0	<1.0	<1.0	<1.0	--
	10/19/92	7.64	92.03	<1,000	<250	--	<19	<1.0	<1.0	<1.0	--
	08/26/93	6.33	93.34	<100	<250	<750	<0.50	<0.50	<0.50	<0.50	--
	10/13/94	7.90	91.77	<50	450	<750	<0.50	<0.50	<0.50	<1.0	--
	04/25/95	5.63	94.04	<50	330	1,300	<0.50	<0.50	<0.50	<1.0	<2.0
	07/12/95	NM	--	<50	550	1,200	<0.50	<0.50	<0.50	<1.0	<2.0
	10/12/95	6.50	93.17	<50	330	870	<0.50	<0.50	<0.50	<1.0	--
	01/22/96	5.08	94.59	<50	610	<750	<0.50	<0.50	<0.50	<1.0	--
	04/10/96	5.73	93.94	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	--
	07/29/96	5.55	94.12	<5	<250	<750	<0.50	<0.50	<0.50	<1.0	--
	10/25/96	8.25	93.42	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	--
	03/05/97	5.09	94.58	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	--
	03/05/97*	5.52	94.15	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	--
	06/19/97*	5.52	94.15	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	--
	09/18/97*	6.35	93.32	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	--
	12/18/97	5.72	93.95	<50.0	269	<750	<0.500	<0.500	<0.500	<1.00	--
	03/11/98	5.25	94.42	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--
	06/24/98	6.23	93.44	<50.0	257	<750	<0.500	<0.500	0.580	1.88	--
	09/18/98	6.44	93.23	<50.0	2,320	1,300	<0.500	<0.500	<0.500	<1.00	--
	12/14/98	4.82	95.05	<50.0	<250	<750	<0.500	<0.500	<0.500	1.06	--
	03/26/99	4.59	95.08	<50.0	<250	775	<0.500	<0.500	<0.500	<1.00	--
	06/23/99	5.88	93.79	<50.0	363	<750	<0.500	<0.500	<0.500	<1.00	--
	09/23/99	8.59	93.08	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--
	12/06/99	5.39	94.28	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--
	03/13/00	5.37	94.30	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--
	06/28/00	6.04	93.63	<50.0	355	<874	<0.500	<0.500	<0.500	<1.00	--
	09/13/00	8.61	93.06	<50.0	<250	<550	<0.500	<0.500	<0.500	<1.00	--
	03/27/01	5.42	94.25	<50.0	364	<750	<0.500	<0.500	<0.500	<1.00	--
	06/22/01	5.52	94.15	<50.0	297	<750	<0.500	<0.500	<0.500	<1.00	--
MW7 99.50	02/25/91	4.33	92.68	--	--	--	11	<1.0	<1.0	<1.0	--
	10/19/92	5.98	92.52	<1,000	620	--	12	<1.0	<1.0	<1.0	<5
	08/26/93	6.16	92.34	<100	<250	<750	<0.50	<0.50	<0.50	<0.50	--
	10/13/94	8.58	91.94	<50	540	<750	3.3	<0.50	<0.50	<1.0	<110
	04/25/95	4.45	93.05	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	<2.0
	07/12/95	NM	--	<50	2,000	2,100	<0.50	<0.50	<0.50	<1.0	<2.0
	10/12/95	4.90	93.60	<50	<250	850	<0.50	<0.50	<0.50	<1.0	--
	01/22/96	3.89	94.61	<50	520	<750	1.5	<0.50	<0.50	<1.0	--
	04/10/96	4.63	93.87	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	--
	07/29/96	4.55	93.85	<50	<250	<750	<0.60	<0.05	<0.05	<0.10	--
	10/25/96	4.98	93.52	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	--
	03/05/97	3.94	94.56	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	--
	03/05/97*	3.94	94.56	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	--
	06/19/97*	4.57	93.93	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	--
	09/18/97*	5.29	93.21	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	--
	12/18/97	4.43	94.07	<50.0	357	<750	<0.500	<0.500	<0.500	<1.00	--
	03/11/98	4.05	94.45	<50.0	<250	<750	0.875	<0.500	<0.500	<1.00	--
	06/24/98	4.91	93.59	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--
	09/18/98	5.67	92.83	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--
	12/14/98	3.57	94.93	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--
	03/26/99	3.44	95.06	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--
	06/23/99	4.91	93.59	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--
	09/23/99	5.76	92.74	<50.0	<250	<750	5.02	<0.500	<0.500	<1.00	--
	12/06/99	NM	--	--	--	--	--	--	--	--	--
	03/13/00	4.27	94.23	<50.0	<455	<1,370	<0.500	<0.500	<0.500	<1.00	--
	06/28/00	NM	--	--	--	--	--	--	--	--	--
	09/13/00	5.86	92.64	<50.0	264	<750	<0.500	<0.500	<0.500	<1.00	--
	03/27/01	NM	--	--	--	--	--	--	--	--	--
	06/22/01	NM	--	--	--	--	--	--	--	--	--

MTCA Method A Cleanup Level
Continued on Page 2.

1,000* 5 40 30 20 5

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
Tosco Facility 5472
3460 1st Avenue South
Seattle, Washington
Page 2 of 4

Well Name	Sample Date	DTW	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X	Diss. Pb
MW8 98.96	02/25/91	5.44	92.06	--	--	--	7	16	29	32	--
	10/19/92	7.17	91.79	4,800	330	--	7,200	32	510	1,500	<5
	08/26/93	6.91	92.05	7,500	880	--	16,000	310	800	870	<3
	10/13/94	7.40	91.56	2,200	740	1,200	19,000	<40	<40	63	4.8
	04/25/95	5.41	93.55	8,700	1,500	1,200	10,000	200	340	1,000	<2.0
	07/12/95	NM	--	4,800	1,500	1,000	8,700	<8.0	130	690	<2.0
	10/12/95	6.48	92.48	3,500	1,500	1,100	11,000	16	18	59	--
	01/22/96	5.10	94.35	2,500	2,500	1,000	6,500	<20	<20	23	--
	04/10/96	5.63	93.33	2,300	2,000	750	3,400	<20	<20	21	--
	07/29/96	4.22	94.74	3,000	1,000	<750	8,550	<25.0	<25.0	<50.0	--
	10/25/96	6.03	92.93	3,500	<250	<750	3,500	<25.0	<25.0	50.3	--
	03/05/97	4.91	94.05	3,490	390	<750	3,970	<10.0	<10.0	<20.0	--
	03/05/97 ^{sp}	4.91	94.05	7,730	375	<750	830	<5.0	11.5	<10.0	--
	06/19/97 ^{sp}	5.46	93.50	6,220	621	<750	1,870	<12.5	13.1	<25.0	--
	06/19/97 ^{sp}	6.28	92.21	3,310	292	<750	4,380	<10	11.5	<20	--
	12/18/97	5.53	93.43	2,890	1,850	<750	4,890	<25.0	<25.0	<50.0	--
	03/11/98	5.14	93.82	<2,500	1,370	<750	2,840	<25.0	<25.0	<50.0	--
	06/24/98	6.15	92.81	2,650	1,790	<750	2,230	<25.0	<25.0	<50.0	--
	09/18/98	6.56	92.40	1,840	<250	<750	779	<12.5	<12.5	<25.0	--
	12/14/98	Obstructed by surface water									
	03/28/99	NM	--	1,340	1,300	<750	27.7	<2.50	<4.50	<8.50	--
	06/23/99	5.73	93.23	<2,500	1,110	<750	<25.0	<25.0	<25.0	<50.0	--
	08/23/99	6.52	92.44	1,420	1,020	<750	9.87	<2.00	<2.00	<7.00	--
	12/08/99	Obstructed by surface water									
	03/13/00	5.89	93.07	688	558	<750	30.4	<2.50	<2.50	5.52	--
	06/28/00	5.18	93.78	<250	--	--	148	<2.50	<2.50	<5.00	--
	09/13/00	7.29	91.67	428	1,390	1,380	<1.42	<0.770	<1.35	<2.84	--
	03/27/01	2.53	96.43	451	8,830	788	<0.500	<0.500	<0.500	<1.00	--
	06/22/01	2.19	96.77	<50.0	1,180	1,210	<0.500	<0.500	<0.500	<1.00	--
MW9 98.86	02/25/91	4.55	92.82	--	--	--	14,100	19,400	1,300	10,320	--
	10/19/92	6.47	92.19	5,800	35,000	--	6,000	150	350	1,500	<5
	08/26/93	6.48	92.05	8,800	4,400	<750	7,100	100	830	1,300	<3
	10/13/94	7.00	91.66	2,700	4,100	<750	3,000	11	190	140	7.9
	04/25/95	4.70	93.96	9,300	2,500	1,000	350	3.7	210	310	<2.0
	07/12/95	NM	--	1,600	2,600	1,300	68	<2.0	82	72	<2.0
	10/12/95	5.15	93.51	4,800	8,800	8,000	930	17	240	310	--
	01/22/96	4.06	94.80	4,000	9,200	1,800	110	<2.0	100	100	--
	04/10/96	4.88	93.80	3,800	3,000	1,000	170	<2.0	170	49	--
	07/29/96	4.71	93.95	1,600	990	890	1,080	<12.5	17.0	<25.0	--
	10/25/96	5.22	93.44	2,100	1,910	<750	887	9.31	9.91	<10.0	--
	03/05/97	4.11	94.55	1,030	22,400	2,240	49.4	<0.50	15.6	<1.0	--
	03/05/97 ^{sp}	4.11	94.55	2,120	8,150	1,080	48.4	<1.0	17.9	2.11	--
	06/19/97 ^{sp}	4.78	93.88	710	1,450	<750	104	<2.5	13.6	5.14	--
	06/19/97 ^{sp}	5.59	93.07	778	458	<750	684	8.27	2.27	4.61	--
	12/18/97	4.81	94.05	1,850	26,000	4,010	59.7	2.82	<2.50	<5.00	--
	03/11/98	4.19	94.47	216	2,180	<750	12.5	<0.500	0.781	<1.00	--
	06/24/98	5.04	93.62	383	603	<750	155	3.88	<2.50	<5.00	--
	09/18/98	6.02	92.64	443	1,090	<750	188	<2.50	<2.50	8.45	--
	12/14/98	3.94	94.72	377	2,670	<750	3.27	0.650	0.812	1.05	--
	03/26/99	3.61	95.05	257	4,150	820	1.68	1.04	<0.600	2.31	--
	06/23/99	5.11	93.55	123	4,040	<750	75.5	0.683	<0.500	<1.00	--
	09/23/99	6.08	92.58	279	785	<750	31.4	1.35	0.549	3.77	--
	12/08/99	3.97	94.69	231	2,230	<750	6.73	1.46	<0.500	<1.00	--
	03/13/00	4.67	93.99	<250	5,030	<750	5.62	<2.50	<2.50	<5.00	--
	06/28/00	5.26	93.40	<50	1,660	<750	29.4	0.770	<0.500	<1.00	--
	09/13/00	6.30	92.36	102	1,270	<750	<1.40	<0.500	<0.500	<1.00	--
	03/27/01	Obstructed by vehicle									
	06/22/01	NM	--	--	--	--	--	--	--	--	--
MW10 99.82	02/25/91	NM	--	4,200	<250	--	2,000	9.0	200	1,300	72
	10/19/92	7.52	92.10	--	--	--	--	--	--	--	--
	08/26/93	7.44	92.18	1,700	<250	<750	68	3.7	50	97	<3
	10/13/94	7.96	91.66	720	280	<750	730	8.1	1.1	150	25
	04/25/95	5.79	93.83	3,000	45	980	2,100	21	47	270	<2.0
	07/12/95	NM	--	1,800	55	<750	2,500	27	<20	290	--
	10/12/95	6.85	92.77	2,200	420	<750	2,100	19	7.8	99	--
	01/22/96	5.82	93.80	1,900	440	<750	1,200	12	23	39	--
	04/10/96	6.08	93.54	1,500	300	<750	920	19	15	50	--
	07/29/96	5.24	94.38	<2,500	260	<750	3,880	27.6	<25.0	<50.0	--
	10/25/96	NM	--	--	--	--	--	--	--	--	--
	03/05/97	NM	--	--	--	--	--	--	--	--	--
	06/19/97 ^{sp}	5.95	93.67	53	<250	<750	691	7.48	<5.0	20.3	--
	06/19/97 ^{sp}	6.80	92.82	736	<250	<750	1,170	9.747	3.11	18.2	--
	12/18/97	NM	--	--	--	--	--	--	--	--	--
	03/11/98	NM	--	--	--	--	--	--	--	--	--
	06/24/98	6.84	92.98	301	376	<750	453	3.33	<2.50	6.74	--
	09/18/98	7.19	92.43	<1,000	292	<750	1,000	<10.0	<10.0	<20.0	--
	12/14/98	5.41	94.21	<1,000	363	<750	477	12.0	<10.0	29.2	--
	03/26/99	5.06	94.56	331	300	<750	281	3.32	<2.50	8.30	--
	06/23/99	6.23	93.39	89.0	289	<750	212	1.28	<0.500	2.26	--
	09/23/99	7.12	92.50	289	388	<750	459	2.68	0.877	7.58	--
	12/08/99	5.62	94.00	268	378	<750	180	2.63	<0.500	4.25	--
	03/13/00	5.73	93.89	139	280	<750	153	1.35	<0.500	4.22	--
	06/28/00	8.20	91.42	<50.0	283	<750	1.19	<0.500	<0.500	<1.00	--
	09/13/00	7.33	92.29	<50.0	3,780	<1,040	13.2	0.591	<0.500	1.62	--
	03/27/01	Flooded									
	06/22/01	7.57	92.05	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--

MTCA Method A Cleanup Level
Continued on Page 3.

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TABLE 1
GROUNDWATER ANALYTICAL RESULTS
Tosco Facility 5472
3460 1st Avenue South
Seattle, Washington
Page 3 of 4

Well Name	Sample Date	DTW	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X	Diss. Pb
MW11 99.70	02/25/91	NM	--	--	--	--	--	--	--	--	--
	10/19/92	7.97	91.73	<1,000	<250	--	<0.1	<1.0	<1.0	<1.0	<5
	08/26/93	7.59	92.11	<100	<250	<750	<0.50	<0.50	<0.50	<0.50	<3
	10/13/94	8.20	91.50	<50	300	1,100	<0.50	<0.50	<0.50	<1.0	<2.0
	04/25/95	6.00	93.70	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	<2.0
	07/12/95	NM	--	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	<2.0
	10/12/95	7.0	92.70	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	--
	01/22/96	NM	--	--	--	--	--	--	--	--	--
	04/10/96	5.97	93.73	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	--
	07/29/96	5.84	93.86	<50	<250	<750	<0.50	<0.50	<0.50	<0.10	--
	10/25/96	6.55	93.15	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	--
	03/05/97	5.41	94.29	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	--
	03/05/97 ^{RP}	5.41	94.29	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	--
	06/19/97 ^{RP}	5.81	93.89	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	--
	09/19/97 ^{RP}	6.31	93.39	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	--
	12/18/97	6.21	93.49	<50.0	285	<750	<0.500	<0.500	<0.500	<1.00	--
	03/11/98	5.55	94.15	<50.0	297	<750	<0.500	<0.500	<0.500	<1.00	--
	06/24/98	6.32	93.38	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--
	09/18/98	6.35	93.35	<50.0	7,380	<750	<0.500	<0.500	<0.500	<1.00	--
	12/14/98	4.80	94.80	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--
	03/26/99	Obstructed by construction			--	--	--	--	--	--	--
	06/23/99	Obstructed by construction			--	--	--	--	--	--	--
	12/06/99	NM	--	--	--	--	--	--	--	--	--
	03/13/00	NM	--	--	--	--	--	--	--	--	--
	06/28/00	NM	--	--	--	--	--	--	--	--	--
	09/13/00	NM	--	--	--	--	--	--	--	--	--
	03/27/01	NM	--	--	--	--	--	--	--	--	--
	06/22/01	NM	--	--	--	--	--	--	--	--	--
MW12 100.32	02/25/91	NM	--	--	--	--	--	--	--	--	--
	10/19/92	8.37	91.95	9,500	630	--	7,500	1,800	180	1,810	<5
	08/26/93	8.11	92.21	--	--	--	--	--	--	--	--
	10/13/94	8.68	91.66	18,000	3,000	<750	3,300	91	1,100	380	<2.0
	04/25/95	6.40	93.92	32,000	2,600	2,000	1,700	41	470	1,100	<2.0
	07/12/95	NM	--	14,000	8,500	<8,000	3,500	100	1,000	2,100	<2.0
	10/12/95	7.45	92.87	17,400	2,800	1,300	940	7.5	310	740	--
	01/22/96	7.70	92.62	33,000	1,700	1,100	1,400	250	1,200	3,300	--
	04/10/96	6.53	93.79	20,000	1,500	<750	380	7.7	690	940	--
	07/29/96	6.24	94.08	15,100	1,400	<750	3,300	<25.0	535	1,320	--
	10/25/96	7.08	93.24	9,900	290	<750	2,660	<25.0	482	1,040	--
	03/05/97	5.78	94.54	17,900	372	<750	652	722	15	1,810	--
	03/05/97 ^{RP}	5.78	94.54	14,300	431	<750	637	<10.0	646	960	--
	06/19/97 ^{RP}	6.45	93.87	14,900	558	<750	535	<10.0	525	557	--
	09/19/97 ^{RP}	7.30	93.02	8,450	556	<750	585	<10.0	344	248	--
	12/18/97	6.48	93.84	8,380	1,490	918	490	10.8	382	585	--
	03/11/98	5.98	94.34	7,540	1,380	809	625	10.7	322	362	--
	06/24/98	7.15	93.17	2,490	1,280	<750	203	3.49	353	11.4	--
	09/18/98	7.49	92.83	848	<250	<750	88.8	0.583	22.0	16.5	--
	12/14/98	5.21	95.11	4,730	744	<750	229	5.81	245	198	--
	03/26/99	5.31	95.01	1,880	700	<750	73.7	2.66	<87.0	35.2	--
	06/23/99	6.71	93.61	<2,500	956	<750	77.8	<25.0	78.2	<50.0	--
	09/23/99	7.53	92.79	1,180	882	<750	13.2	0.940	1.07	2.54	--
	12/06/99	10.96	89.36	60.9	518	<750	1.00	<0.500	<0.500	<1.00	--
	03/13/00	5.80	94.52	37.9	690	<750	102	5.18	83.7	38.9	--
	06/28/00	6.40	93.92	<50.0	748	<750	10.6	<0.500	<0.500	<1.00	--
	09/13/00	7.40	92.92	246	749	<921	2.93	<0.500	4.91	1.88	--
	03/27/01	5.80	94.52	<50.0	1,720	<750	1.42	<0.500	0.782	<1.00	--
	06/22/01	4.78	95.54	<50.0	1,680	<835	0.702	<0.500	0.808	<1.00	--
MW13 100.24	8/24/98	7.80	92.44	815	802	<750	<2.50	<2.50	<2.50	<5.00	--
	09/18/98	8.16	92.08	899	1,130	<750	<2.25	<1.25	<1.25	3.51	--
	12/14/98	6.75	93.49	853	508	<750	1.68	0.640	<0.500	3.43	--
	03/26/99	6.30	93.94	885	839	<750	<2.50	1.25	<1.75	4.38	--
	06/23/99	7.36	92.88	365	927	<750	0.810	<0.500	0.717	1.98	--
	09/23/99	NM	--	859	1,360	<750	<2.00	<1.00	<0.500	<4.00	--
	12/06/99	7.15	93.09	873	1,010	<750	<0.500	<2.20	<0.900	<2.80	--
	03/13/00	6.95	93.29	832	980	<750	<5.00	<5.00	<5.00	<10.00	--
	06/28/00	7.66	92.58	<250	813	<750	528	<2.50	<2.50	6.16	--
	09/13/00	8.25	91.99	240	688	<750	<0.730	<0.500	<0.500	<1.43	--
	03/27/01	7.36	92.89	151	1,890	<750	<0.500	<0.500	<0.500	<1.00	--
	06/22/01	7.48	92.78	93.9	261	<750	<0.500	<0.500	<0.500	<1.00	--

MTCA Method A Cleanup Level
Continued on Page 4

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TABLE 1
GROUNDWATER ANALYTICAL RESULTS
Tosco Facility 5472
3480 1st Avenue South
Seattle, Washington
Page 4 of 4

Well Name	Sample Date	DTW	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X	Diss. Pb
MW14 99.94	06/24/98	7.60	92.34	2,230	505	<750	422	<10.0	<10.0	<20.0	-
	09/18/98	8.03	91.91	1,500	748	<750	754	<2.50	<2.50	13.3	-
	12/14/98	6.68	93.26	1,990	597	<750	182	<2.50	<2.50	9.39	-
	03/26/99	6.20	93.74	1,180	752	<750	6.53	<0.500	<0.900	4.84	-
	06/23/99	7.15	92.79	1,180	484	<750	21.1	<2.50	<2.50	<5.00	-
	09/23/99	7.91	92.03	2,950	512	<750	20.2	<1.00	<2.00	<8.00	-
	12/06/99	6.90	93.04	2,740	823	<750	27.0	0.503	<1.00	5.62	-
	03/13/00	6.74	93.20	1,780	649	<750	105	0.503	1.09	5.04	-
	06/28/00	7.47	92.47	<50.0	780	<750	2.09	<0.500	<0.500	<1.00	-
	09/13/00	8.10	91.84	1,410	1,080	<872	<0.570	<0.500	<0.600	<3.50	-
	03/27/01	7.23	92.71	484	1,410	<750	<0.500	<0.500	<0.500	<1.00	-
	06/22/01	7.41	92.53	350	-	-	<0.500	0.534	<0.500	1.58	-
MW15 99.29	06/24/98	6.52	92.77	74.0	477	<750	14.1	1.03	0.568	1.72	-
	09/18/98	7.06	92.23	<50.0	648	<750	10.5	0.678	<0.500	2.32	-
	12/14/98	5.78	93.51	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	-
	03/26/99	5.42	93.87	59.8	344	<750	2.86	1.90	1.93	3.28	-
	08/23/99	6.15	93.14	<50.0	<250	<750	0.872	<0.500	<0.500	<1.00	-
	09/23/99	6.90	92.39	<50.0	1,240	<750	1.44	<0.500	<0.500	1.57	-
	12/06/99	5.95	93.34	<50.0	<250	<750	0.951	<0.500	<0.500	1.01	-
	03/13/00	5.74	93.55	<50.0	<455	<1,330	1.61	<0.500	1.05	3.77	-
	06/28/00	6.41	92.88	973	<250	<750	1,670	<5.00	<250	17.0	-
	09/13/00	7.05	92.24	<50.0	633	<750	<0.500	<0.500	<0.500	<1.00	-
	03/27/01	6.30	92.99	<50.0	343	<750	0.522	0.524	0.598	2.08	-
	06/22/01	6.46	92.83	<50.0	598	1,840	<0.500	<0.500	<0.500	<1.00	-

MTCA Method A Cleanup Level

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EXPLANATION:

All concentrations in ug/L (ppb).

Wellhead elevations taken from prior consultant's reports.

DTW = Depth to water in feet below top of casing.

GW Elev. = Groundwater elevation relative to top of casing elevations; Corrected for free product where applicable using a specific gravity of 0.75.

TPH-G = Total Petroleum Hydrocarbons as Gasoline by Ecology Method WTPH-G.

TPH-D and TPH-O = Total Petroleum Hydrocarbons as Diesel and Oil, respectively, by Ecology Method WTPH-D (extended).

B = Benzene; T = Toluene; E = Ethylbenzene; X = Total Xylenes.

BTEX = Aromatic compounds by EPA Method 8021B.

Diss. Pb = Dissolved Lead by EPA Method 7421.

NMF = Not Measured; '-' = Not sampled.

< = Less than the stated laboratory reporting limit.

* = Sample collected without purging.

* Total Petroleum Hydrocarbons.

Samples collected from MW-13, MW-14, and MW-15 on 6/24/98 identified as MW-B, MW-A, and MW-C, respectively, on laboratory report.

October 1994 results are for total lead.

Shaded values equal or exceed MTCA Method A Cleanup Levels.

Data collected before 12/18/97 are taken from prior consultants.

CASE NARRATIVE for B1F0571

Client: ERI
Project Manager: John Meyer
Project Name: TOSCO #5472
Project Number: 31023

1.0 DESCRIPTION OF CASE

Seven water sample were received for the analysis of:

- WTPH-Dext
- WTPH-G/BTEX

2.0 COMMENTS ON SAMPLE RECEIPT

The samples were received and logged in on 22nd June 2001 at a temperature of 2.6C. Sample B1F0571-06 (MW-14) was received with one broken amber so we could not analyze this sample for Diesels.

Preparation and Analysis

WTPH-G/BTEX

There were no anomalies associated with this analysis.

WTPH-Dext

The surrogate recoveries for sample B1F0571-02 (MW-8) were below the method established control limits, this indicates there could be a low bias to your sample results for this sample. Re-extraction and re-analysis is recommended in order to establish whether this was due to an extraction anomaly or sample matrix effects. Due to the lack of suitably preserved sample re-extraction was not possible.

"I certify that this data package is in compliance with the Contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature."



Amar Gill
Project Manager
North Creek Analytical



Seattle 17720 North Creek Parkway, Suite 100, Bellevue, WA 98004-4111
425.420.9200 fax 425.420.9210
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
509.924.9200 fax 509.924.9290
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503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

12 July, 2001

John Meyer
ERI
905 Industry Dr
Tukwila, WA 98188

RE: TOSCO #5472

Enclosed are the results of analyses for samples received by the laboratory on 06/22/01 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Amar Gill
Project Manager

ERI
 905 Industry Dr
 Tukwila WA, 98188

Project: TOSCO #5472
 Project Number: 31023
 Project Manager: John Meyer

Reported:
 07/12/01 13:01

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-6	B1F0571-01	Water	06/22/01 12:00	06/22/01 18:00
MW-8	B1F0571-02	Water	06/22/01 12:00	06/22/01 18:00
MW-10	B1F0571-03	Water	06/22/01 12:00	06/22/01 18:00
MW-12	B1F0571-04	Water	06/22/01 12:00	06/22/01 18:00
MW-13	B1F0571-05	Water	06/22/01 12:00	06/22/01 18:00
MW-14	B1F0571-06	Water	06/22/01 12:00	06/22/01 18:00
MW-15	B1F0571-07	Water	06/22/01 12:00	06/22/01 18:00

North Creek Analytical - Bothell

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.



Amar Gill, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network

Page 1 of 10

ERI
 905 Industry Dr
 Tukwila WA, 98188

Project: TOSCO #5472
 Project Number: 31023
 Project Manager: John Meyer

Reported:
 07/12/01 13:01

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8021B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-6 (B1F0571-01) Water Sampled: 06/22/01 12:00 Received: 06/22/01 18:00									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	1G01006	07/01/01	07/01/01	WTPH-G/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	98.8 %	50-150			"	"	"	"	
Surrogate: 4-BFB (PID)	101 %	62-125			"	"	"	"	
MW-8 (B1F0571-02) Water Sampled: 06/22/01 12:00 Received: 06/22/01 18:00									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	1G01006	07/01/01	07/01/01	WTPH-G/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	101 %	50-150			"	"	"	"	
Surrogate: 4-BFB (PID)	101 %	62-125			"	"	"	"	
MW-10 (B1F0571-03) Water Sampled: 06/22/01 12:00 Received: 06/22/01 18:00									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	1G01006	07/01/01	07/01/01	WTPH-G/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	95.0 %	50-150			"	"	"	"	
Surrogate: 4-BFB (PID)	97.7 %	62-125			"	"	"	"	

North Creek Analytical - Bothell

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 Amy Gill, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

Page 2 of 10

ERI
 905 Industry Dr
 Tukwila WA, 98188

Project: TOSCO #5472
 Project Number: 31023
 Project Manager: John Meyer

Reported:
 07/12/01 13:01

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8021B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-12 (B1F0571-04) Water Sampled: 06/22/01 12:00 Received: 06/22/01 18:00									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	1G01006	07/01/01	07/01/01	WTPH-G/8021B	
Benzene	0.702	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	0.808	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	97.5 %	50-150			"	"	"	"	
Surrogate: 4-BFB (PID)	97.3 %	62-125			"	"	"	"	
MW-13 (B1F0571-05) Water Sampled: 06/22/01 12:00 Received: 06/22/01 18:00									
Gasoline Range Hydrocarbons	93.9	50.0	ug/l	1	1G01006	07/01/01	07/01/01	WTPH-G/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	98.1 %	50-150			"	"	"	"	
Surrogate: 4-BFB (PID)	96.5 %	62-125			"	"	"	"	
MW-14 (B1F0571-06) Water Sampled: 06/22/01 12:00 Received: 06/22/01 18:00									
Gasoline Range Hydrocarbons	350	50.0	ug/l	1	1G01006	07/01/01	07/01/01	WTPH-G/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	0.534	0.500	"	"	"	"	"	"	I-06
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	1.58	1.00	"	"	"	"	"	"	I-06
Surrogate: 4-BFB (FID)	92.7 %	50-150			"	"	"	"	
Surrogate: 4-BFB (PID)	104 %	62-125			"	"	"	"	

North Creek Analytical - Bothell

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 Amar Gill, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

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ERI
 905 Industry Dr
 Tukwila WA, 98188

Project: TOSCO #5472
 Project Number: 31023
 Project Manager: John Meyer

Reported:
 07/12/01 13:01

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8021B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-15 (B1F0571-07) Water Sampled: 06/22/01 12:00 Received: 06/22/01 18:00									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	1G01006	07/01/01	07/01/01	WTPH-G/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	99.8 %	50-150			"	"	"	"	
Surrogate: 4-BFB (PID)	99.6 %	62-125			"	"	"	"	

North Creek Analytical - Bothell

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Amar Gill, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network

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ERI
 905 Industry Dr
 Tukwila WA, 98188

 Project: TOSCO #5472
 Project Number: 31023
 Project Manager: John Meyer

 Reported:
 07/12/01 13:01

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C36 by WTPH-D (extended) North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-6 (B1F0571-01) Water Sampled: 06/22/01 12:00 Received: 06/22/01 18:00									
Diesel Range Hydrocarbons	0.297	0.250	mg/l	1	1F28031	06/28/01	07/09/01	WTPH-D	
Heavy Oil Range Hydrocarbons	ND	0.750	"	"	"	"	"	"	
Surrogate: 2-FBP	81.5 %	50-121			"	"	"	"	
Surrogate: Octacosane	86.4 %	56-123			"	"	"	"	
MW-8 (B1F0571-02) Water Sampled: 06/22/01 12:00 Received: 06/22/01 18:00									
Diesel Range Hydrocarbons	1.18	0.288	mg/l	1	1F28031	06/28/01	07/10/01	WTPH-D	
Heavy Oil Range Hydrocarbons	1.21	0.865	"	"	"	"	"	"	
Surrogate: 2-FBP	45.5 %	50-121			"	"	"	"	X
Surrogate: Octacosane	50.7 %	56-123			"	"	"	"	X
MW-10 (B1F0571-03) Water Sampled: 06/22/01 12:00 Received: 06/22/01 18:00									
Diesel Range Hydrocarbons	ND	0.250	mg/l	1	1F28031	06/28/01	07/09/01	WTPH-D	
Heavy Oil Range Hydrocarbons	ND	0.750	"	"	"	"	"	"	
Surrogate: 2-FBP	78.9 %	50-121			"	"	"	"	
Surrogate: Octacosane	85.7 %	56-123			"	"	"	"	
MW-12 (B1F0571-04) Water Sampled: 06/22/01 12:00 Received: 06/22/01 18:00									
Diesel Range Hydrocarbons	1.68	0.278	mg/l	1	1F28031	06/28/01	07/09/01	WTPH-D	
Heavy Oil Range Hydrocarbons	ND	0.835	"	"	"	"	"	"	
Surrogate: 2-FBP	86.5 %	50-121			"	"	"	"	
Surrogate: Octacosane	90.4 %	56-123			"	"	"	"	
MW-13 (B1F0571-05) Water Sampled: 06/22/01 12:00 Received: 06/22/01 18:00									
Diesel Range Hydrocarbons	0.261	0.250	mg/l	1	1F28031	06/28/01	07/09/01	WTPH-D	
Heavy Oil Range Hydrocarbons	ND	0.750	"	"	"	"	"	"	
Surrogate: 2-FBP	81.9 %	50-121			"	"	"	"	
Surrogate: Octacosane	75.1 %	56-123			"	"	"	"	

North Creek Analytical - Bothell

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 Amanda G. Project Manager

 North Creek Analytical, Inc.
 Environmental Laboratory Network

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ERI
 905 Industry Dr
 Tukwila WA, 98188

Project: TOSCO #5472
 Project Number: 31023
 Project Manager: John Meyer

Reported:
 07/12/01 13:01

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C36 by WTPH-D (extended)
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-15 (B1F0571-07) Water Sampled: 06/22/01 12:00 Received: 06/22/01 18:00									
Diesel Range Hydrocarbons	0.588	0.300	mg/l	1	1F28031	06/28/01	07/09/01	WTPH-D	
Heavy Oil Range Hydrocarbons	1.64	0.901	"	"	"	"	"	"	
Surrogate: 2-FBP	59.5 %	50-121			"	"	"	"	
Surrogate: Octacosane	65.7 %	56-123			"	"	"	"	

North Creek Analytical - Bothell

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Amanda Giff, Project Manager

North Creek Analytical, Inc.
 Environmental Laboratory Network

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ERI
 905 Industry Dr
 Tukwila WA, 98188

Project: TOSCO #5472
 Project Number: 31023
 Project Manager: John Meyer

Reported:
 07/12/01 13:01

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8021B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1G01006: Prepared 07/01/01 Using EPA 5030B (P/T)										
Blank (1G01006-BLK1)										
Gasoline Range Hydrocarbons	ND	50.0	ug/l							
Benzene	ND	0.500	"							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Surrogate: 4-BFB (FID)	41.4		"	48.0		86.2	50-150			
Surrogate: 4-BFB (PID)	44.8		"	48.0		93.3	62-125			
LCS (1G01006-BS1)										
Gasoline Range Hydrocarbons	546	50.0	ug/l	500		109	70-130			
Surrogate: 4-BFB (FID)	57.2		"	48.0		119	50-150			
LCS (1G01006-BS2)										
Benzene	9.67	0.500	ug/l	10.0		96.7	80-120			
Toluene	10.3	0.500	"	10.0		103	80-120			
Ethylbenzene	10.5	0.500	"	10.0		105	80-120			
Xylenes (total)	32.5	1.00	"	30.0		108	80-120			
Surrogate: 4-BFB (PID)	48.5		"	48.0		101	62-125			
LCS Dup (1G01006-BSD1)										
Gasoline Range Hydrocarbons	527	50.0	ug/l	500		105	70-130	3.54	25	
Surrogate: 4-BFB (FID)	57.4		"	48.0		120	50-150			
LCS Dup (1G01006-BSD2)										
Benzene	9.77	0.500	ug/l	10.0		97.7	80-120	1.03	40	
Toluene	10.2	0.500	"	10.0		102	80-120	0.976	40	
Ethylbenzene	10.4	0.500	"	10.0		104	80-120	0.957	40	
Xylenes (total)	32.1	1.00	"	30.0		107	80-120	1.24	40	
Surrogate: 4-BFB (PID)	48.3		"	48.0		101	62-125			

North Creek Analytical - Bothell

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 Amar Gill, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

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ERI
 905 Industry Dr
 Tukwila WA, 98188

 Project: TOSCO #5472
 Project Number: 31023
 Project Manager: John Meyer

 Reported:
 07/12/01 13:01

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8021B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1G01006: Prepared 07/01/01 Using EPA 5030B (P/T)										
Duplicate (1G01006-DUP1)					Source: B1F0571-01					
Gasoline Range Hydrocarbons	ND	50.0	ug/l		ND				25	
Surrogate: 4-BFB (FID)	44.1		"	48.0		91.9	50-150			
Matrix Spike (1G01006-MS1)					Source: B1F0571-02					
Gasoline Range Hydrocarbons	481	50.0	ug/l	500	ND	93.5	70-130			
Surrogate: 4-BFB (FID)	51.9		"	48.0		108	50-150			
Matrix Spike (1G01006-MS2)					Source: B1F0571-03					
Benzene	9.94	0.500	ug/l	10.0	ND	97.8	80-120			
Toluene	10.3	0.500	"	10.0	ND	101	75-117			
Ethylbenzene	10.2	0.500	"	10.0	ND	100	80-120			
Xylenes (total)	29.9	1.00	"	30.0	ND	97.6	80-120			
Surrogate: 4-BFB (PID)	48.3		"	48.0		101	62-125			
Matrix Spike Dup (1G01006-MSD1)					Source: B1F0571-02					
Gasoline Range Hydrocarbons	461	50.0	ug/l	500	ND	89.5	70-130	4.25	15	
Surrogate: 4-BFB (FID)	53.7		"	48.0		112	50-150			
Matrix Spike Dup (1G01006-MSD2)					Source: B1F0571-03					
Benzene	9.88	0.500	ug/l	10.0	ND	97.2	80-120	0.605	40	
Toluene	10.3	0.500	"	10.0	ND	101	75-117	0.00	40	
Ethylbenzene	9.99	0.500	"	10.0	ND	98.0	80-120	2.08	40	
Xylenes (total)	28.8	1.00	"	30.0	ND	94.0	80-120	3.75	40	
Surrogate: 4-BFB (PID)	47.8		"	48.0		99.6	62-125			

North Creek Analytical - Bothell

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 Amar Gill, Project Manager

 North Creek Analytical, Inc.
 Environmental Laboratory Network

Page 8 of 10

ERI
 905 Industry Dr
 Tukwila WA, 98188

 Project: TOSCO #5472
 Project Number: 31023
 Project Manager: John Meyer

 Reported:
 07/12/01 13:01

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C36 by WTPH-D (extended) - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1F28031: Prepared 06/28/01 Using EPA 3510C/600 Series										
Blank (1F28031-BLK1)										
Diesel Range Hydrocarbons	ND	0.250	mg/l							
Heavy Oil Range Hydrocarbons	ND	0.750	"							
Surrogate: 2-FBP	0.238		"	0.320		74.4	50-121			
Surrogate: Octacosane	0.252		"	0.320		78.8	56-123			
LCS (1F28031-BS1)										
Diesel Range Hydrocarbons	1.64	0.250	mg/l	2.00		82.0	62-122			
Surrogate: 2-FBP	0.279		"	0.320		87.2	50-121			
LCS Dup (1F28031-BSD1)										
Diesel Range Hydrocarbons	1.46	0.250	mg/l	2.00		73.0	62-122	11.6	40	
Surrogate: 2-FBP	0.233		"	0.320		72.8	50-121			

North Creek Analytical - Bothell

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 Amar Gill, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

Page 9 of 10

ERI
905 Industry Dr
Tukwila WA, 98188

Project: TOSCO #5472
Project Number: 31023
Project Manager: John Meyer

Reported:
07/12/01 13:01

Notes and Definitions

I-06 The analyte concentration may be artificially elevated due to coeluting compounds or components.

X See case narrative.

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

North Creek Analytical - Bothell

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Amas Gill, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

Page 10 of 10

TOSCO CHAIN OF CUSTODY REPORT

WD# BIF0571

TOSCO INFORMATION	
Facility Number:	5472
Site Address:	3460 1 st AVE S
City, State, ZIP:	SEATTLE, WA
Project/AWO Code	
Tosco Manager:	
FACILITY TYPE: (check one) ☐ BP/☒ ☐ Terminal/Bulk Plant	
☐ Brown Bear ☒ Former 76 Site ☐ Other	

CONSULTANT INFORMATION	
Firm:	ERT
Project#	1023
Address: 905 INDUSTRY DR TUKWILA, WA 98155	
Phone: (206) 575-6220	Fax: X6423
Project Manager:	JOHN MEYER
E-mail:	
Sample Collection by: ROY MOESE	

Quality Assurance Data Level:

☒ A: Standard Summary
☐ B: Standard + Chromatograms

Laboratory Turnaround Days:

☒ 5 ☐ 3 ☐ 2 ☐ 1
10 Day - Standard

SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CON-TAINERS
1. MW-6	6/22/01	W	3
2. MW-8		W	3
3. MW-10		W	3
4. MW-12		W	3
5. MW-13		W	3
6. MW-14		W	3
7. MW-15		W	3
8.			
9.			
10.			

OR	WA	AK	NW Series	ID
TPH-HCID				
TPH-Gas				
BTEX	X			
EPA 8021 Mod.	X			
TPH-Gas + BTEX	X			
TPH-Diesel				
TPH-Diesel Extended	X			
TPH-Diesel-Ext. w/SG Cleanup	X			
Halogen. Volatiles	X			
EPA 8021	X			
Pesticides/PCBs or PCBs Only	X			
GC/MS Volatiles	X			
EPA 8260	X			
GC/MS Semi Vols.	X			
EPA 8270	X			
PAH's:	X			
8270 SIM or 8310	X			
Lead:	X			
Total or Dissolved TCLP or RCRA	X			
Metals (8)	X			

NCA SAMPLE NUMBER

BIF0571 - 01
02
03
04
05
06
07

Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1. Roy Moese	ERT	6/22/01	R. Moese	NCA	6/22/01 18:00
2. [Signature]	NCA	6/22/01 18:00	[Signature]	NCA	6/22/01 18:00
3.					

Comments:

Comments:

W/10 2.6

GROUNDWATER SAMPLING - FIELD LOG

Client Name: Tosco 5472
Location: 1st AVE : Spokane
Field Crew: Roy Morse

ERI Job No. 1023

Date: 6/22/01

Page 1 of 1

Field Cleaning Performed:

Analysis: _____

* -- Case Volume = $(d_{\text{out}} - d_{\text{well}})_{\text{in}} \times F$ where $F =$
 0.163 for a 2" inside diameter well casing
 0.652 for a 4" inside diameter well casing
 1.467 for a 6" inside diameter well casing

[illegible]

Revised 6/20/96

ENVIRONMENTAL RESOLUTIONS, INC.

1290-521