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DATE: October 10, 2001

ENVIRONMENTAL DEPARTMENT  
NORTHWEST REGION

**TOSCO MARKETING COMPANY  
GROUNDWATER MONITORING REPORT**

Site No.: 5353 Address: 600 Westlake Avenue North, 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) [Third - 2001]:**

- Monitored 12 and sampled 10 groundwater monitoring wells without purging

**WORK PROPOSED FOR NEXT QUARTER [Fourth - 2001]:**

- Monitor 11, purge, and sample 9 groundwater monitoring wells

**SUMMARY:**

Frequency of Sampling Events:	<u>Quarterly</u>	(Quarterly, etc.)
Approximate Depth to Groundwater:	<u>8 to 12 ft</u>	(Measured Feet)
Groundwater Gradient:	<u>Southerly and Easterly</u>	(Direction)
	<u>0.006 ft/ft</u>	(Magnitude)
Maximum TPH-G/Benzene Concentrations:	<u>159,000/5,870</u>	(ppb)
Measurable Free Product Detected:	<u>Yes; MW33</u>	(Yes - ID wells(s)/No)
Free Product Recovered This Quarter:	<u>None</u>	(gallons)
Cumulative Free Product Recovered to Date:	<u>46,632</u>	(gallons)
Bulk Soil Removed This Quarter:	<u>None</u>	(cubic yards)
Water Wells or Surface Waters w/in a 2000'	<u>Lake Union</u>	(Distance &
Radius and Respective Direction:	<u>400 feet north</u>	Direction)
Current Remedial Action:	<u>VES</u>	(SVE/AS/P&T etc.)
Permits for Discharge:	<u>PSAPCA No. 4397</u>	(NPDES, POTW, etc.)

**DISCUSSION:**

- 5 of 10 wells sampled contained hydrocarbon concentrations exceeding MTCA Method A Cleanup Levels.
- 0.3 feet LPH measured in MW33.

**ATTACHMENTS:**

- Plate 1 - Groundwater Sample Analysis Map, 09/07/01
- Table 1 - Groundwater Analytical Results
- Laboratory Reports and Chain of Custody Records
- Field Data Records

Prepared By:

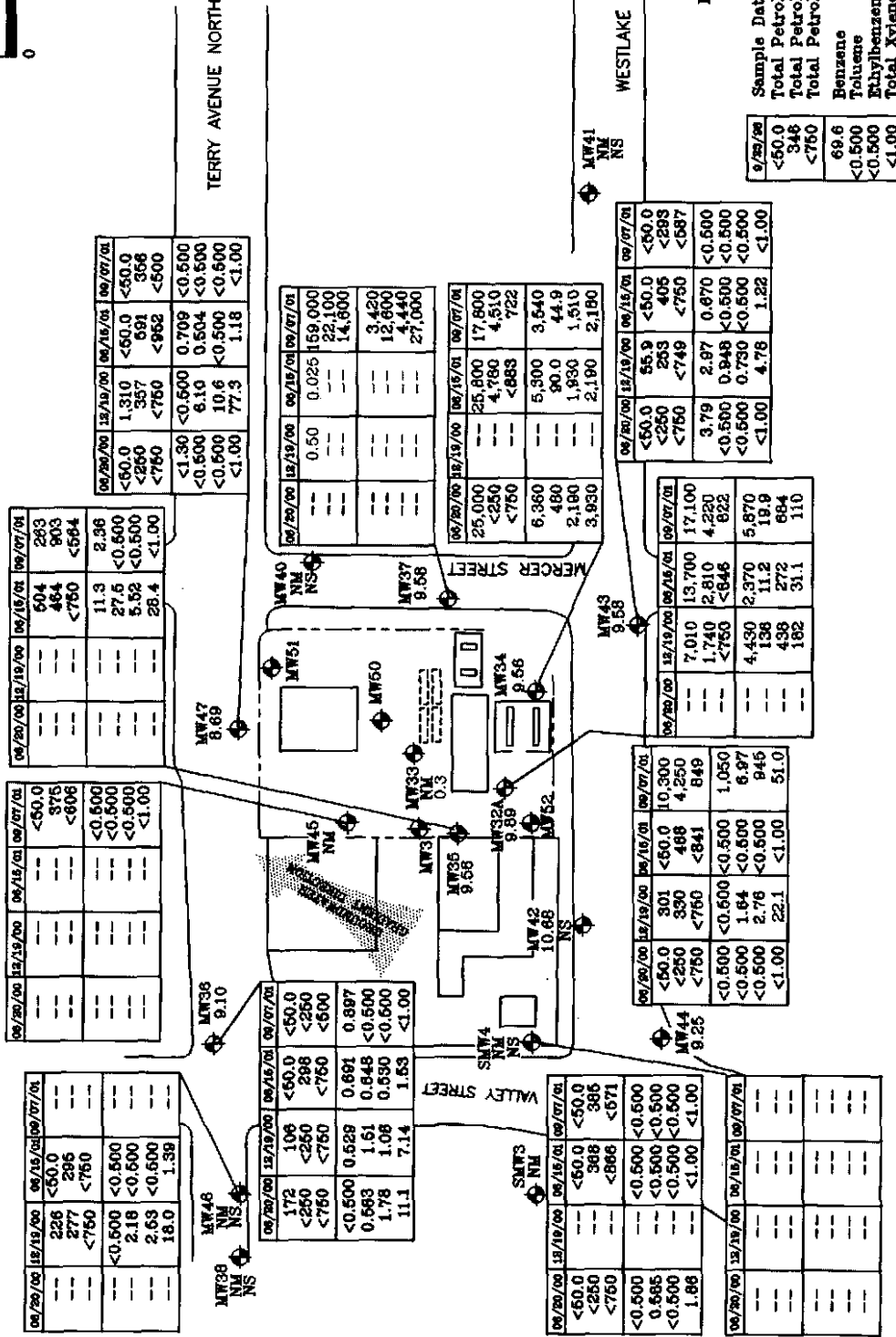
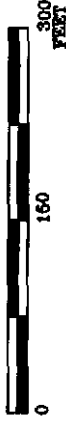
Yukiko Noguchi  
Environmental Technician

Reviewed By:

John K. Meyer, R.G.  
Branch Manager

cc: Ecology NW Region  
GeoEngineers, Dave Cook

APPROXIMATE SCALE



**GROUNDWATER SAMPLE ANALYSIS MAP - 09/07/01**  
 TOSCO FACILITY 5353  
 600 Westlake Avenue North  
 Seattle, Washington

**PROJECT NO.**  
31020

**PLATE**  
1

YN: 10/10/01

**EXPLANATION**

MW37	Groundwater Monitoring Well
9.70	Groundwater Elevation
0.01	Free Product Thickness in Feet
NM	Not Measured
NS	Not Sampled

SOURCE: Modified from sample provided by Tosco Marketing Company

FN 31120GWS

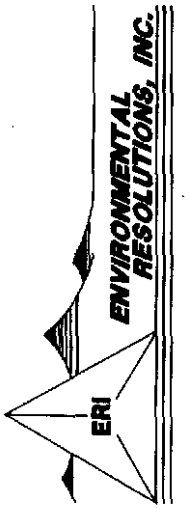


TABLE 1  
GROUNDWATER ANALYTICAL RESULTS  
Tosco Facility 5353  
600 Westlake Avenue North  
Seattle, Washington  
Page 1 of 6

Well Name	Sample Date	DTW	LPH	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X
SMW3 NE	03/08/95	10.25	0.00	--	<50	400	2,400	<0.5	<0.5	<0.5	<1.0
	06/06/95	10.23	0.00	--	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	09/07/95	10.89	0.00	--	<50	300	<750	<0.5	<0.5	<0.5	<1.0
	12/08/95	10.36	0.00	--	<50	300	<750	<0.5	<0.5	<0.5	<1.0
	04/01/96	10.07	0.00	--	34,000	4,000	2,300	8,400	42	2,100	3,000
	06/25/96	10.19	0.00	--	<50.0	320	<750	<0.500	<0.500	<0.500	<1.00
	09/27/96	11.12	0.00	--	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	03/28/97	10.19	0.00	--	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	06/30/97 <sup>NP</sup>	10.14	0.00	--	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	09/08/97 <sup>NP</sup>	10.85	0.00	--	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	12/19/97 <sup>NP</sup>	9.67	0.00	--	<50.0	521	<750	<0.500	<0.500	<0.500	<1.00
	3/16/98 <sup>NP</sup>	9.28	0.00	--	50.1	<250	<750	<0.500	<0.500	<0.500	<1.00
	6/26/98 <sup>NP</sup>	8.87	0.00	--	<50.0	500	<750	<0.500	<0.500	<0.500	<1.00
	9/23/98 <sup>NP</sup>	9.88	0.00	--	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	12/17/98 <sup>NP</sup>	9.22	0.00	--	<50.0	293	<750	<0.500	<0.500	<0.500	<1.00
	3/31/99 <sup>NP</sup>	9.01	0.00	--	<50.0	360	<750	<0.500	<0.500	0.526	4.97
	6/30/99 <sup>NP</sup>	9.55	0.00	--	<50.0	639	<750	<0.500	0.609	<0.500	1.32
	12/08/99 <sup>NP</sup>	8.75	0.00	--	<50.0	<484	<1,450	<0.500	<0.500	<0.500	<1.00
	06/20/00 <sup>NP</sup>	8.89	0.00	--	<50.0	<250	<750	<0.500	0.585	<0.500	1.86
	12/19/00	NM	--	--	--	--	--	--	--	--	--
6/15/01 <sup>NP</sup>	7.23	0.00	--	<50.0	368	<866	<0.500	<0.500	<0.500	<1.00	
06/26/01	NM	--	--	--	--	--	--	--	--	--	
9/07/01 <sup>NP**</sup>	9.19	0.00	--	<50.0	385	<571	<0.500	<0.500	<0.500	<1.00	
SMW4 NE	03/08/95	8.14	0.00	--	38,000	4,100	5,100	13,000	<250	2,400	8,200
	06/06/95	8.90	0.00	--	41,000	5,500	<750	8,400	44	2,700	4,890
	09/07/95	8.99	0.00	--	--	--	--	--	--	--	--
	12/08/95	7.56	0.00	--	40,000	1,500	920	8,100	57	2,600	3,690
	04/01/96	8.13	0.00	--	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	06/25/96	8.20	0.00	--	28,100	2,680	630	3,900	81.4	1,710	1,710
	09/27/96	8.62	0.00	--	28,600	2,460	<750	6,090	<0.500	2,060	1,730
	03/28/97	8.20	0.00	--	--	--	--	--	--	--	--
	06/30/97	8.06	0.00	--	--	--	--	--	--	--	--
	09/08/97	9.00	0.00	--	--	--	--	--	--	--	--
	12/19/97	9.41	0.04	--	--	--	--	--	--	--	--
	03/16/98	9.09	0.00	--	--	--	--	--	--	--	--
	06/26/98	8.76	Trace	--	--	--	--	--	--	--	--
	09/23/98	9.96	0.05	--	--	--	--	--	--	--	--
	12/17/98	10.22	Trace	--	--	--	--	--	--	--	--
	03/31/99	8.70	Trace	--	--	--	--	--	--	--	--
	06/30/99	8.20	Trace	--	--	--	--	--	--	--	--
	12/08/99	Not Accessible	--	--	--	--	--	--	--	--	--
	06/20/00	Not Accessible	--	--	--	--	--	--	--	--	--
	12/19/00	Not Accessible	--	--	--	--	--	--	--	--	--
06/15/01	Not Accessible	--	--	--	--	--	--	--	--	--	
06/26/01	NM	--	--	--	--	--	--	--	--	--	
09/07/01	Not Accessible	--	--	--	--	--	--	--	--	--	
MW32A 20.70	03/08/95	11.29	0.00	9.69	21,000	2,300	2,300	5,800	1,700	990	2,900
	06/06/95	--	--	--	--	--	--	--	--	--	--
	09/07/95	11.27	--	9.43	20,000	2,500	1,600	4,200	470	730	2,000
	12/08/95	10.61	--	10.06	11,000	1,200	<750	1,600	86	420	910
	04/01/96	10.90	--	9.80	7,900	1,400	1,000	2,200	58	300	490
	06/25/96	10.98	--	9.72	7,500	1,250	<750	1,200	60.4	217	435
	09/27/96	11.37	--	9.61	7,050	1,040	<750	1,570	37.4	264	416
	03/28/97	11.26	--	9.72	--	--	--	--	--	--	--
	06/30/97	10.89	--	--	--	--	--	--	--	--	--
	09/08/97	11.67	0.00	9.31	--	--	--	--	--	--	--
	12/19/97	11.42	0.00	9.28	--	--	--	--	--	--	--
	03/16/98	11.30	0.00	9.40	--	--	--	--	--	--	--
	06/26/98	11.29	0.00	9.41	--	--	--	--	--	--	--
	09/23/98	11.97	0.00	8.73	--	--	--	--	--	--	--
	12/17/98	11.09	0.00	9.61	--	--	--	--	--	--	--
	03/31/99	10.47	0.00	10.23	--	--	--	--	--	--	--
	06/30/99	9.60	0.00	11.10	--	--	--	--	--	--	--
	12/08/99	11.07	0.00	9.63	--	--	--	--	--	--	--
	06/20/00	11.40	0.00	9.30	--	--	--	--	--	--	--
	12/19/00 <sup>NP</sup>	10.90	0.00	9.80	7,010	1,740	<750	4,430	136	438	182
6/15/01 <sup>NP</sup>	11.31	0.00	9.39	13,700	2,910	<846	2,370	11.2	272	311	
6/26/01 <sup>NP</sup>	11.85	0.00	8.85	18,500	1,620	<750	8,780	1,110	1,280	1,020	
9/07/01 <sup>NP</sup>	10.81	0.00	9.89	17,100	1,220	822	5,870	19.9	684	110	
MTCA Method A Cleanup Level					1,000 <sup>a</sup>	5	40	30	20		

Continued on Page 2.

TABLE 1  
GROUNDWATER ANALYTICAL RESULTS  
Tosco Facility 5353  
600 Westlake Avenue North  
Seattle, Washington  
Page 2 of 6

Well Name	Sample Date	DTW	LPH	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X
MW33 20.75	03/08/95	11.16	0.00	9.73	4,900	1,400	2,000	650	<25	320	420
	06/06/95	--	--	--	--	--	--	--	--	--	--
	09/07/95	11.20	0.00	9.55	9,700	1,400	820	550	148	230	820
	12/08/95	--	--	--	13,000	1,900	1,800	880	249	280	760
	04/01/96	11.00	0.00	9.75	5,200	960	<750	630	33	130	270
	06/25/96	11.05	0.00	9.70	2,700	1,030	<750	230	24.6	46.5	61.1
	09/27/96	11.13	0.00	9.76	5,150	1,190	<750	1,180	237	86.3	272
	03/28/97	11.19	0.00	9.70	--	--	--	--	--	--	--
	06/30/97	10.66	0.00	10.23	--	--	--	--	--	--	--
	09/08/97	10.48	0.00	10.41	--	--	--	--	--	--	--
	12/19/97	--	--	--	--	--	--	--	--	--	--
	03/16/98	--	--	--	--	--	--	--	--	--	--
	06/26/98	11.18	0.00	9.57	--	--	--	--	--	--	--
	09/23/98	11.90	0.00	8.85	--	--	--	--	--	--	--
	12/17/98	11.03	0.00	9.72	--	--	--	--	--	--	--
	03/31/99	10.36	0.00	10.37	--	--	--	--	--	--	--
	06/30/99	9.52	0.00	11.23	--	--	--	--	--	--	--
	12/08/99	10.97	0.00	9.78	--	--	--	--	--	--	--
	06/20/00	11.33	0.00	9.42	--	--	--	--	--	--	--
	12/19/00	Not Accessible	--	--	--	--	--	--	--	--	--
06/15/01	12.72	2.50	10.16	--	--	--	--	--	--	--	
06/26/01	NM	--	--	--	--	--	--	--	--	--	
09/07/01	NM	0.3	--	LPH Present							
MW34 21.42	03/08/95	11.62	0.00	10.08	8,200	1,100	480	2,400	1,500	250	1,300
	06/06/95	11.73	0.00	9.97	8,100	2,300	<750	4,200	1,000	330	1,200
	09/07/95	11.57	0.00	9.85	18,000	1,800	930	4,800	2,300	580	2,000
	12/08/95	10.92	0.00	10.50	68,000	2,900	1,800	12,000	9,200	1,200	5,500
	04/01/96	11.21	0.00	10.21	10,000	1,900	<750	5,500	380	520	1,200
	06/25/96	11.19	0.00	10.23	13,700	1,160	<750	4,190	1,110	393	1,740
	09/27/96	11.58	0.00	10.12	16,300	1,030	<750	5,010	2,520	541	1,310
	03/28/97	11.47	0.00	10.23	--	--	--	--	--	--	--
	6/30/97 <sup>NP</sup>	11.19	0.00	10.51	2,970	311	<750	1,930	15.7	271	531
	9/08/97 <sup>NP</sup>	11.74	0.00	9.96	8,390	455	<750	3,920	645	567	1,270
	12/19/97	NM	--	--	--	--	--	--	--	--	--
	03/16/98	NM	--	--	--	--	--	--	--	--	--
	6/26/98 <sup>NP</sup>	11.42	0.00	10.00	78,900	3,090	<750	13,400	11,100	2,310	9,080
	9/23/98 <sup>NP</sup>	12.23	0.00	9.19	9,040	3,000	799	3,540	243	636	1,650
	12/17/98 <sup>NP</sup>	11.35	0.00	10.07	80,900	5,470	1,380	14,200	10,800	3,110	11,800
	3/31/99 <sup>NP</sup>	10.85	0.00	10.57	33,400	1,910	<750	5,978	1,740	1,400	3,820
	6/30/99 <sup>NP</sup>	10.18	0.00	11.24	28,500	4,840	984	4,340	1,320	1,490	3,610
	12/08/99 <sup>NP</sup>	11.33	0.00	10.09	62,400	2,500	<1,350	12,900	7,440	3,240	9,210
	6/20/00 <sup>NP</sup>	11.68	0.00	9.74	25,000	<250	<750	6,360	480	2,190	3,930
	12/19/00	NM	--	--	--	--	--	--	--	--	--
6/15/01 <sup>NP</sup>	11.85	0.00	9.57	25,900	4,780	<883	5,300	90.6	1,930	2,190	
06/26/01	NM	--	--	--	--	--	--	--	--	--	
9/07/01 <sup>NP</sup>	11.86	0.00	9.56	17,880	4,510	722	3,540	44.8	1,510	2,180	
MW35 20.10	03/08/95	10.87	0.00	9.60	2,600	1,200	1,380	400	<25	120	83
	06/06/95	10.87	0.00	9.60	810	1,000	930	62	1.4	27	38
	09/07/95	10.87	0.00	9.43	--	--	--	--	--	--	--
	12/08/95	0.00	--	--	--	--	--	--	--	--	--
	04/01/96	--	--	--	--	--	--	--	--	--	--
	06/25/96	11.11	0.00	8.99	1,620	850	<750	68.2	1.11	26.7	17.6
	09/27/96	10.64	0.00	9.63	959	524	<750	38.8	0.990	10.4	6.18
	03/28/97 <sup>NP</sup>	11.28	0.00	8.99	1,370	333	<750	161	2.36	81.9	10.7
	03/28/97	11.28	0.00	8.99	1,800	<250	<750	256	2.62	48.1	8.04
	06/30/97 <sup>NP</sup>	10.19	0.00	10.08	1,900	<250	<750	348	<2.50	85.0	7.31
	09/08/97 <sup>NP</sup>	10.86	0.00	9.41	4,200	<250	<750	1,460	16.2	233	65.2
	12/19/97	NM	--	--	--	--	--	--	--	--	--
	3/16/98 <sup>NP</sup>	10.64	0.00	9.46	905	361	<750	410	4.24	<2.50	<5.00
	6/26/98 <sup>NP</sup>	10.85	0.00	9.45	1,300	682	<750	600	<10.0	45.1	<20.0
	9/23/98 <sup>NP</sup>	11.38	0.00	8.72	865	859	<750	243	<2.50	<2.50	<5.00
	12/17/98 <sup>NP</sup>	10.49	0.00	9.61	699	572	<750	402	<2.50	10.8	9.99
	03/31/99	Obstructed by vehicle	--	--	--	--	--	--	--	--	--
	06/30/99	Obstructed by vehicle	--	--	--	--	--	--	--	--	--
	12/08/99	Obstructed by vehicle	--	--	--	--	--	--	--	--	--
	06/20/00	Obstructed by vehicle	--	--	--	--	--	--	--	--	--
12/19/00	Obstructed by vehicle	--	--	--	--	--	--	--	--	--	
06/15/01	NM	--	--	--	--	--	--	--	--	--	
6/26/01 <sup>NP</sup>	10.60	0.00	9.50	504	464	<750	11.3	27.5	5.52	128.4	
9/04/01 <sup>NP</sup>	10.54	0.00	9.56	263	903	<564	2.36	<0.500	<0.500	<1.00	
MTCA Method A Cleanup Level					1,000 <sup>a</sup>	5	40	30	20		

Continued on Page 3.

TABLE 1  
GROUNDWATER ANALYTICAL RESULTS  
Tosco Facility 5353  
600 Westlake Avenue North  
Seattle, Washington  
Page 3 of 6

Well Name	Sample Date	DTW	LPH	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X
MW36 17.80	03/08/95	9.07	0.00	8.97	<50	560	1,200	2.6	<0.5	<0.5	<1.0
	06/06/95	7.92	0.00	10.12	<50	<250	<750	1.0	<0.5	<0.5	<1.0
	09/07/95	8.11	0.00	9.89	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	12/08/95	9.00	0.00	8.80	<50	510	1,200	1.1	<0.5	<0.5	<1.0
	04/01/96	9.00	0.00	8.80	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	06/25/96	8.97	0.00	--	<50.0	<250	<750	0.580	0.500	<0.500	<1.00
	09/27/96	7.53	0.00	10.51	<50.0	<250	<750	1.18	<0.500	<0.500	<1.00
	03/28/97	9.21	0.00	8.83	<50.0	<250	<750	0.810	<0.500	<0.500	<1.00
	06/30/97 <sup>NP</sup>	6.88	0.00	11.16	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	09/08/97 <sup>NP</sup>	9.21	0.00	8.83	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	12/19/97 <sup>NP</sup>	10.09	0.00	7.71	<50.0	<250	<750	0.606	<0.500	<0.500	<1.00
	3/16/98 <sup>NP</sup>	9.29	0.00	8.51	56.6	287	<750	<0.500	<0.500	<0.500	<1.00
	6/26/98 <sup>NP</sup>	8.47	0.00	9.33	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	9/23/98 <sup>NP</sup>	9.89	0.00	7.91	<50.0	<250	<750	0.737	<0.500	<0.500	1.13
	12/17/98 <sup>NP</sup>	10.00	0.00	7.80	<50.0	286	<750	0.533	<0.500	<0.500	<1.00
	3/31/99 <sup>NP</sup>	8.96	0.00	8.84	<50.0	321	<750	0.759	<0.500	<0.500	<1.00
	6/30/99 <sup>NP</sup>	8.44	0.00	9.36	<50.0	<250	<750	1.29	<0.500	<0.500	<1.00
	12/08/99 <sup>NP</sup>	10.05	0.00	7.75	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	06/20/00 <sup>NP</sup>	8.47	0.00	9.33	172	<250	<750	<0.500	0.583	1.78	11.1
	12/19/00 <sup>NP</sup>	9.50	0.00	8.30	106	<250	<750	0.529	1.51	1.08	7.14
6/15/01 <sup>NP</sup>	8.00	0.00	9.80	<50.0	296	<750	0.691	0.648	0.530	1.53	
06/26/01	NM	--	--	--	--	--	--	--	--	--	
9/07/01 <sup>NP</sup>	8.70	0.00	9.10	<50.0	<250	<500	0.897	<0.500	<0.500	<1.00	
MW37 21.01	03/08/95	11.94	0.00	9.24	34	3,200	1,400	3,100	2,400	1,200	6,700
	06/06/95	11.76	0.01	9.43	451	4,600	2,500	3,700	2,400	1,300	7,900
	06/06/95	11.76	0.01	9.43	90	--	--	5,100	6,000	2,400	14,000
	09/07/95	11.17	0.00	9.84	--	--	--	--	--	--	--
	12/08/95	10.22	0.00	10.79	--	--	--	--	--	--	--
	04/01/96	10.79	0.02	10.22	--	--	--	--	--	--	--
	06/25/96	10.82	0.20	10.19	--	--	--	--	--	--	--
	09/27/96	11.47	0.05	9.75	--	--	--	--	--	--	--
	03/28/97 <sup>NP</sup>	11.14	0.25	10.40	60,100	7,570	789	1,530	2,180	1,850	7,440
	03/28/97	11.14	0.25	10.40	297,000	45,100	<8,250	6,570	13,200	4,330	22,900
	06/30/97	10.80	0.02	10.23	--	--	--	--	--	--	--
	09/08/97	11.41	0.23	9.77	--	--	--	--	--	--	--
	12/19/97	11.28	0.02	9.75	--	--	--	--	--	--	--
	03/16/98	11.11	0.01	9.91	--	--	--	--	--	--	--
	06/26/98	11.32	0.01	9.70	--	--	--	--	--	--	--
	09/23/98	12.01	0.03	9.03	--	--	--	--	--	--	--
	12/17/98	11.00	Trace	10.01	--	--	--	--	--	--	--
	03/31/99	--	Trace	--	--	--	--	--	--	--	--
	06/30/99	Dry	0.3	--	--	--	--	--	--	--	--
	12/08/99	11.11	--	9.90	--	--	--	--	--	--	--
06/20/00	11.50	--	9.51	--	--	--	--	--	--	--	
12/19/00	11.50	0.50	9.94	--	--	--	--	--	--	--	
6/15/01 <sup>NP</sup>	11.35	0.025	9.68	--	--	--	--	--	--	--	
06/26/01	NM	--	--	--	--	--	--	--	--	--	
9/07/01 <sup>NP</sup>	11.43	0.00	9.58	159,000	22,100	14,600	3,420	12,600	4,440	27,000	
MW38 16.52	03/08/95	--	--	--	--	--	--	--	--	--	--
	06/06/95	--	--	--	--	--	--	--	--	--	--
	09/07/95	--	--	--	--	--	--	--	--	--	--
	12/08/95	--	--	--	--	--	--	--	--	--	--
	04/01/96	--	--	--	--	--	--	--	--	--	--
	06/25/96	--	--	--	--	--	--	--	--	--	--
	09/27/96	--	--	--	--	--	--	--	--	--	--
	03/28/97	9.23	0.00	7.60	<50	<250	<750	<0.500	<0.500	<0.500	<1.00
	06/30/97	--	--	--	--	--	--	--	--	--	--
	09/08/97	--	--	--	--	--	--	--	--	--	--
	12/19/97	NM	--	--	--	--	--	--	--	--	--
	03/16/98	NM	--	--	--	--	--	--	--	--	--
	06/26/98	NM	--	--	--	--	--	--	--	--	--
	09/23/98	NM	--	--	--	--	--	--	--	--	--
	12/17/98	NM	--	--	--	--	--	--	--	--	--
	03/31/99	NM	--	--	--	--	--	--	--	--	--
	06/30/99	NM	--	--	--	--	--	--	--	--	--
	12/08/99	NM	--	--	--	--	--	--	--	--	--
06/20/00	NM	--	--	--	--	--	--	--	--	--	
12/19/00	NM	--	--	--	--	--	--	--	--	--	
06/15/01	NM	--	--	--	--	--	--	--	--	--	
06/26/01	NM	--	--	--	--	--	--	--	--	--	
09/07/01	NM	--	--	--	--	--	--	--	--	--	

MTCA Method A Cleanup Level

1,000<sup>a</sup> 5 40 30 20

Continued on page 4.

TABLE 1  
GROUNDWATER ANALYTICAL RESULTS  
Tosco Facility 5353  
600 Westlake Avenue North  
Seattle, Washington  
Page 4 of 6

Well Name	Sample Date	DTW	LPH	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X
MW40 20.89	03/08/95	10.98	0.00	10.14	960	2,600	2,600	11	<0.5	11	<1.0
	06/06/95	11.18	0.00	9.94	1,500	2,300	1,600	6.8	4.3	4.1	21
	09/07/95	11.08	0.00	9.81	650	13,000	65,000	11	0.91	0.57	<1.0
	12/08/95	10.30	0.00	10.59	500	1,400	4,800	2.7	3	<0.5	<1.0
	04/01/96	10.56	0.00	10.33	520	3,200	13,000	1.2	<0.5	0.55	<1.0
	06/25/96	10.69	0.00	10.20	500	2,700	8,460	<0.500	9.82	<0.500	<1.00
	09/27/96	10.95	0.00	10.17	602	3,550	9,860	0.604	41.1	0.525	<1.0
	03/28/97	10.92	0.00	10.20	--	--	--	--	--	--	--
	06/30/97	--	--	--	--	--	--	--	--	--	--
	09/08/97	--	--	--	--	--	--	--	--	--	--
	12/19/97 <sup>NP</sup>	11.11	0.00	9.78	325	3,260	12,600	<0.500	0.504	0.663	2.44
	03/16/98	NM	--	--	--	--	--	--	--	--	--
	06/26/98	NM	--	--	--	--	--	--	--	--	--
	09/23/98	NM	--	--	--	--	--	--	--	--	--
	12/17/98 <sup>NP</sup>	10.86	0.00	10.03	384	2,840	9,620	<0.500	<0.500	<0.500	<1.00
	03/31/99	NM	--	--	--	--	--	--	--	--	--
	06/30/99	NM	--	--	--	--	--	--	--	--	--
	12/08/99	NM	--	--	--	--	--	--	--	--	--
	06/20/00	NM	--	--	--	--	--	--	--	--	--
	12/09/00	NM	--	--	--	--	--	--	--	--	--
12/19/00	NM	--	--	--	--	--	--	--	--	--	
06/15/01	NM	--	--	--	--	--	--	--	--	--	
06/26/01	NM	--	--	--	--	--	--	--	--	--	
09/07/01	NM	--	--	--	--	--	--	--	--	--	
MW41 27.00	03/08/95	14.72	--	12.48	<50	<250	<750	1.6	<0.5	<0.5	<1.0
	06/06/95	15.02	--	12.18	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	09/07/95	15.00	--	12.00	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	12/08/95	16.30	--	10.70	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	04/01/96	15.02	--	11.98	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	06/25/96	15.07	--	11.93	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	09/27/96	15.42	0.00	11.78	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	03/28/97	15.27	0.00	11.93	--	--	--	--	--	--	--
	06/30/97	--	--	--	--	--	--	--	--	--	--
	09/08/97	--	--	--	--	--	--	--	--	--	--
	12/19/97	NM	--	--	--	--	--	--	--	--	--
	03/16/98	NM	--	--	--	--	--	--	--	--	--
	06/26/98	NM	--	--	--	--	--	--	--	--	--
	09/23/98	NM	--	--	--	--	--	--	--	--	--
	12/17/98	NM	--	--	--	--	--	--	--	--	--
	03/31/99	NM	--	--	--	--	--	--	--	--	--
	06/30/99	NM	--	--	--	--	--	--	--	--	--
	12/08/99	NM	--	--	--	--	--	--	--	--	--
	06/20/00	NM	--	--	--	--	--	--	--	--	--
	12/19/00	NM	--	--	--	--	--	--	--	--	--
06/15/01	NM	--	--	--	--	--	--	--	--	--	
06/26/01	NM	--	--	--	--	--	--	--	--	--	
09/07/01	NM	--	--	--	--	--	--	--	--	--	
MW42 20.34	03/08/95	9.45	0.00	10.91	130	670	1,200	790	<25	<25	<50
	06/06/95	9.37	0.00	10.89	120	820	1,500	500	<0.56	<0.5	<1.0
	09/07/95	9.50	0.00	10.84	3,000	780	1,200	210	4.1	42	1290
	12/08/95	8.95	0.00	11.39	200	1,300	1,900	380	<2.0	<2.0	<4.0
	04/01/96	9.03	0.00	11.31	180	650	<750	280	0.52	<0.5	<1.0
	06/25/96	9.07	0.00	11.27	150	720	<750	150	<0.500	<0.500	<1.00
	09/27/96	9.12	0.00	11.24	<250	534	<750	228	<2.50	<2.50	<5.00
	03/28/97	9.09	0.00	11.27	--	--	--	--	--	--	--
	06/30/97	8.92	0.00	11.44	--	--	--	--	--	--	--
	09/08/97	9.57	0.00	10.79	--	--	--	--	--	--	--
	12/19/97	NM	--	--	--	--	--	--	--	--	--
	03/16/98	9.53	0.00	10.81	--	--	--	--	--	--	--
	06/26/98	9.51	0.00	10.83	--	--	--	--	--	--	--
	09/23/98	9.96	0.00	10.38	--	--	--	--	--	--	--
	12/17/98	9.10	0.00	11.24	--	--	--	--	--	--	--
	03/31/99	9.00	0.00	11.34	--	--	--	--	--	--	--
	06/30/99	8.60	0.00	11.74	--	--	--	--	--	--	--
	12/08/99	8.00	0.00	12.34	--	--	--	--	--	--	--
	06/20/00	NM	--	--	--	--	--	--	--	--	--
	12/19/00	NM	--	--	--	--	--	--	--	--	--
06/15/01	9.41	0.00	10.93	--	--	--	--	--	--	--	
06/26/01	NM	--	--	--	--	--	--	--	--	--	
09/07/01	9.66	0.00	10.68	--	--	--	--	--	--	--	

MTCA Method A Cleanup Level

1,000<sup>a</sup>

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Continued on page 5.

TABLE 1  
GROUNDWATER ANALYTICAL RESULTS  
Tosco Facility 5353  
600 Westlake Avenue North  
Seattle, Washington  
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Well Name	Sample Date	DTW	LPH	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X
MW43 21.04	03/08/95	11.35	0.00	9.94	<50	650	2,400	25	<0.5	<0.5	<1.0
	06/06/95	11.45	0.00	9.84	<50	690	1,500	8.2	<0.5	<0.5	<1.0
	09/07/95	11.14	0.00	9.90	<50	<250	850	10	<0.5	<0.5	<1.0
	12/08/95	10.85	0.00	10.19	<50	990	3,100	37	<0.5	<0.5	<1.0
	04/01/96	10.98	0.00	10.06	<50	300	<750	4.5	<0.5	<0.5	<1.0
	06/25/96	11.06	0.00	9.98	<50.0	370	<750	2.57	<0.500	<0.500	<1.00
	09/27/96	11.33	0.00	9.96	<50.0	339	<750	4.40	<0.5	<0.500	<1.00
	03/28/97	11.13	0.00	9.98	<50.0	<250	<750	5.89	0.884	<0.500	2.47
	06/30/97 <sup>NP</sup>	7.08	0.00	14.21	<50.0	<250	<750	59.2	<0.500	<0.500	<1.00
	09/08/97 <sup>NP</sup>	11.46	0.00	9.83	83	<250	<750	35.5	<0.500	2.10	3.08
	12/19/97	NM	--	--	--	--	--	--	--	--	--
	3/16/98 <sup>NP</sup>	11.09	0.00	9.95	76.3	408	<750	26.5	<0.500	<0.500	<1.00
	6/26/98 <sup>NP</sup>	11.26	0.00	9.78	<50.0	346	<750	89.6	<0.500	<0.500	<1.00
	9/23/98 <sup>NP</sup>	11.75	0.00	9.29	<50.0	267	<750	9.05	<0.500	<0.500	<1.00
	12/17/98 <sup>NP</sup>	11.07	0.00	9.97	<50.0	<250	<750	35.0	<0.500	<0.500	<1.00
	3/31/99 <sup>NP</sup>	10.97	0.00	10.07	<50.0	267	<750	9.84	<0.500	0.782	2.47
	6/30/99 <sup>NP</sup>	9.97	0.00	11.07	146	253	<750	28.2	7.47	2.95	17.5
	12/08/99 <sup>NP</sup>	11.06	0.00	9.98	<50.0	<250	<750	20.9	<0.500	<0.500	<1.00
	06/20/00 <sup>NP</sup>	11.40	0.00	9.64	<50.0	<250	<750	3.79	<0.500	<0.500	<1.00
	12/19/00 <sup>NP</sup>	11.40	0.00	9.64	55.9	253	<749	2.97	0.948	0.730	4.78
6/15/01 <sup>NP</sup>	11.32	0.00	9.72	<50.0	405	<750	0.670	<0.500	<0.500	1.22	
06/26/01	NM	--	--	--	--	--	--	--	--	--	
9/07/01 <sup>NP</sup>	11.46	0.00	9.58	<50.0	<293	<587	<0.500	<0.500	<0.500	<1.00	
MW44 18.73	03/08/95	9.44	0.00	10.46	<50	290	940	<0.5	<0.5	<0.5	<1.0
	06/06/95	8.28	0.00	10.62	<50	<250	820	<0.5	<0.5	<0.5	1.6
	09/07/95	7.94	0.00	10.79	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	12/08/95	8.09	0.00	10.64	<50	520	2,500	<0.5	<0.5	<0.5	<1.0
	04/01/96	7.98	0.00	10.75	<50	<250	<750	<0.5	<0.5	<0.5	<1.0
	06/25/96	7.90	0.00	10.83	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	09/27/96	8.28	0.00	10.59	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	03/28/97	8.07	0.00	10.83	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	06/30/97 <sup>NP</sup>	7.84	0.00	11.06	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	09/08/97 <sup>NP</sup>	8.65	0.00	10.25	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	12/19/97 <sup>NP</sup>	8.51	0.00	10.22	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	3/16/98 <sup>NP</sup>	8.43	0.00	10.30	60.0	310	<750	<0.500	<0.500	<0.500	<1.00
	6/26/98 <sup>NP</sup>	8.37	0.00	10.36	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	9/23/98 <sup>NP</sup>	9.30	0.00	9.43	<50.0	343	<750	<0.500	<0.500	<0.500	<1.00
	12/17/98 <sup>NP</sup>	8.10	0.00	10.63	<50.0	271	<750	<0.500	<0.500	<0.500	<1.00
	3/31/99 <sup>NP</sup>	8.18	0.00	10.55	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	6/30/99 <sup>NP</sup>	8.03	0.00	10.70	<50.0	393	<750	<0.500	0.619	<0.500	1.21
	12/08/99 <sup>NP</sup>	8.52	0.00	10.21	<50.0	281	<750	<0.500	<0.500	<0.500	<1.00
	06/20/00 <sup>NP</sup>	9.53	0.00	9.20	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	12/19/00 <sup>NP</sup>	9.20	0.00	9.53	301	330	<750	<0.500	1.64	2.76	22.1
6/15/01 <sup>NP</sup>	8.44	0.00	10.29	<50.0	468	<841	<0.500	<0.500	<0.500	<1.00	
06/26/01	NM	--	--	--	--	--	--	--	--	--	
9/07/01 <sup>NP</sup>	9.48	0.00	9.25	10,300	4,250	849	1,050	6.97	945	51.0	
MW45 NE	9/07/01 <sup>NP</sup>	9.80	--	--	<50.0	375	<606	<0.500	<0.500	<0.500	<1.00
MW46 16.91	03/08/95	8.00	0.00	8.91	<50	720	3,600	<0.5	<0.5	<0.5	<1.0
	06/06/95	7.30	0.00	10.01	<50	<250	1,400	<0.5	<0.5	<0.5	<1.0
	09/07/95	7.80	0.00	8.93	<50	710	5,600	<0.5	<0.5	<0.5	<1.0
	12/08/95	8.32	0.00	8.59	<50	1,400	14,000	<0.5	<0.5	<0.5	<1.0
	04/01/96	7.04	0.00	9.87	<50	<400	2,800	<0.5	<0.5	<0.5	<1.0
	06/25/96	7.85	0.00	9.06	<50.0	440	2,090	<0.500	<0.500	<0.500	<1.00
	09/27/96	7.57	0.00	9.74	<50.0	267	<750	0.518	<0.500	<0.500	<1.00
	03/28/97	7.25	0.00	10.06	<50.0	<250	<750	<0.500	1.25	<0.500	2.06
	06/30/97	7.12	0.00	10.19	--	--	--	--	--	--	--
	09/08/97	8.82	0.00	8.49	--	--	--	--	--	--	--
	12/19/97 <sup>NP</sup>	9.40	0.00	7.51	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00
	03/16/98	NM	--	--	--	--	--	--	--	--	--
	06/26/98	NM	--	--	--	--	--	--	--	--	--
	09/23/98	NM	--	--	--	--	--	--	--	--	--
	12/17/98 <sup>NP</sup>	9.20	0.00	7.71	<50.0	354	<750	<0.500	<0.500	<0.500	<1.00
	03/31/99	NM	--	--	--	--	--	--	--	--	--
	06/30/99	NM	--	--	--	--	--	--	--	--	--
	12/08/99	NM	--	--	--	--	--	--	--	--	--
	06/20/00	NM	--	--	--	--	--	--	--	--	--
	12/19/00*	12.70	0.00	4.21	226	277	<750	<0.500	2.18	2.53	18.0
6/15/01 <sup>NP</sup>	7.19	0.00	9.72	<50.0	295	<750	<0.500	<0.500	<0.500	1.39	
06/26/01	NM	--	--	--	--	--	--	--	--	--	
09/07/01	NM	--	--	--	--	--	--	--	--	--	

MTCA Method A Cleanup Level  
Continued on page 6.

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TABLE 1  
GROUNDWATER ANALYTICAL RESULTS

Tosco Facility 5353  
600 Westlake Avenue North  
Seattle, Washington  
Page 6 of 6

Well Name	Sample Date	DTW	LPH	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X
MW47	03/08/95	10.88	0.00	9.16	<50	330	1,000	5.3	<0.5	<0.5	<1.0
19.83	06/06/95	10.91	0.00	9.13	70	380	780	15	0.59	<0.5	2.3
	09/07/95	10.76	0.00	9.07	<50	260	<750	1.7	<0.5	<0.5	<1.0
	12/08/95	10.40	0.00	9.43	740	580	2,000	<0.5	<0.5	<0.5	<1.0
	04/01/96	10.67	0.00	9.16	<50	<250	<750	4.4	<0.5	<0.5	<1.0
	06/25/96	10.71	0.00	9.12	110	400	<750	14.4	<0.500	<0.500	<1.00
	09/27/96	10.85	0.00	9.19	<50.0	<250	<750	4.34	<0.500	<0.500	<1.00
	03/28/97 <sup>NP</sup>	10.92	0.00	9.12	64.5	<250	<750	7.61	<0.500	<0.500	1.57
	03/29/97	10.92	0.00	9.12	177	<250	<750	52.6	<0.500	<0.500	<1.00
	06/30/97	--	--	--	--	--	--	--	--	--	--
	09/08/97	--	--	--	--	--	--	--	--	--	--
	12/19/97	--	--	--	--	--	--	--	--	--	--
	03/16/98	--	--	--	--	--	--	--	--	--	--
	6/26/98 <sup>NP</sup>	10.78	0.00	9.05	<50.0	356	<750	127.3	<0.500	<0.500	<1.00
	09/23/98	--	--	--	--	--	--	--	--	--	--
	12/17/98 <sup>NP</sup>	10.61	0.00	9.22	<50.0	<250	<750	3.34	<0.500	<0.500	1.12
	03/31/99	9.65	0.00	10.18	--	--	--	--	--	--	--
	06/30/99	--	0.00	--	--	--	--	--	--	--	--
	12/08/99	--	--	--	--	--	--	--	--	--	--
	06/20/00 <sup>NP</sup>	10.94	0.00	8.89	<50.0	<250	<750	<1.30	<0.500	<0.500	<1.00
	12/19/00 <sup>NP</sup>	11.20	0.00	8.83	1,310	347	<750	<0.500	6.10	10.6	77.3
	06/15/01	10.98	0.00	8.85	<50.0	591	<952	0.709	0.504	<0.500	1.18
	06/26/01	NM	--	--	--	--	--	--	--	--	--
	9/07/01 <sup>NP</sup>	11.14	0.00	8.69	<50.0	356	<500	<0.500	<0.500	<0.500	<1.00
MTCA Method A Cleanup Level						1,000*		5	40	30	20

MTCA Method A Cleanup Level

EXPLANATION:

Concentrations in ug/L (ppb).

Wellhead elevations taken from prior consultant's reports.

DTW = Depth to water in feet below top of casing except where noted in prior reports.

LPH = Liquid-phase petroleum hydrocarbon thickness in feet.

GW Elev. = Groundwater elevation relative to DTW data; corrected for LPH where applicable using a specific gravity of 0.85.

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

TPH-D and TPH-O = Total petroleum hydrocarbons as diesel and as oil (respectively) by Ecology Method NWTPH-D (Extended).

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

BTEX = Aromatic compounds by EPA Method 8020.

< = Less than the stated laboratory reporting limit.

NE = Not established; NM = Not measured; -- = Not analyzed or sampled.

<sup>NP</sup> = Not purged.

\* Total Petroleum Hydrocarbons

Shaded values equal or exceed MTCA Method A Cleanup Levels.

Data collected before 12/19/97 are taken from prior consultants.

\*MW46 is identified as MW9 on the chain of custody and official laboratory report

\*\*SMW3 is identified as SMW2 on the chain of custody and official laboratory report.





**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
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

21 September 2001

John Meyer  
ERI  
905 Industry Dr  
Tukwila, WA 98188  
RE: TOSCO #5353

Enclosed are the results of analyses for samples received by the laboratory on 09/07/01 13:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Amar Gill  
Project Manager



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 425.420.9200 fax 425.420.9210  
 Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
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 541.383.9310 fax 541.382.7588

ERI 905 Industry Dr Tukwila WA, 98188	Project: TOSCO #5353 Project Number: 1020 Project Manager: John Meyer	Reported: 09/21/01 17:14
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**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SMW2	B1I0126-01	Water	09/07/01 12:00	09/07/01 13:30
MW32A	B1I0126-02	Water	09/07/01 12:00	09/07/01 13:30
MW34	B1I0126-03	Water	09/07/01 07:45	09/07/01 13:30
MW35	B1I0126-04	Water	09/07/01 12:00	09/07/01 13:30
MW36	B1I0126-05	Water	09/07/01 12:00	09/07/01 13:30
MW37	B1I0126-06	Water	09/07/01 04:45	09/07/01 13:30
MW43	B1I0126-07	Water	09/07/01 12:00	09/07/01 13:30
MW44	B1I0126-08	Water	09/07/01 12:00	09/07/01 13:30
MW45	B1I0126-09	Water	09/07/01 12:00	09/07/01 13:30
MW47	B1I0126-10	Water	09/07/01 12:00	09/07/01 13:30

North Creek Analytical - Bothell

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Amar Gill, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



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 425.420.9200 fax 425.420.9210  
 Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
 509.924.9200 fax 509.924.9290  
 Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
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 541.383.9310 fax 541.382.7588

ERI 905 Industry Dr Tukwila WA, 98188	Project: TOSCO #5353 Project Number: 1020 Project Manager: John Meyer	Reported: 09/21/01 17:14
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**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SMW2 (B1I0126-01) Water**    **Sampled: 09/07/01 12:00**    **Received: 09/07/01 13:30**

Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	1118006	09/18/01	09/18/01	NWTPH-Gx/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	86.7 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	88.3 %	62-125			"	"	"	"	

**MW32A (B1I0126-02) Water**    **Sampled: 09/07/01 12:00**    **Received: 09/07/01 13:30**

Gasoline Range Hydrocarbons	17100	500	ug/l	10	1118006	09/18/01	09/18/01	NWTPH-Gx/8021B	
Benzene	5870	100	"	200	"	"	09/18/01	"	
Toluene	19.9	5.00	"	10	"	"	09/18/01	"	
Ethylbenzene	684	5.00	"	"	"	"	"	"	
Xylenes (total)	110	10.0	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	126 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	102 %	62-125			"	"	"	"	

**MW34 (B1I0126-03) Water**    **Sampled: 09/07/01 07:45**    **Received: 09/07/01 13:30**

Gasoline Range Hydrocarbons	17800	500	ug/l	10	1118006	09/18/01	09/18/01	NWTPH-Gx/8021B	
Benzene	3540	50.0	"	100	"	"	09/18/01	"	
Toluene	44.9	5.00	"	10	"	"	09/18/01	"	
Ethylbenzene	1510	50.0	"	100	"	"	09/18/01	"	
Xylenes (total)	2180	100	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	115 %	62-139			"	"	09/18/01	"	
Surrogate: 4-BFB (PID)	97.1 %	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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 425.420.9200 fax 425.420.9210  
 Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
 509.924.9200 fax 509.924.9290  
 Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
 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

ERI Project: TOSCO #5353  
 905 Industry Dr Project Number: 1020  
 Tukwila WA, 98188 Project Manager: John Meyer  
 Reported: 09/21/01 17:14

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>MW35 (B110126-04) Water</b> Sampled: 09/07/01 12:00 Received: 09/07/01 13:30										
Gasoline Range Hydrocarbons	263	50.0		ug/l	1	1118006	09/18/01	09/18/01	NWTPH-Gx/8021B	
Benzene	2.36	0.500		"	"	"	"	"	"	
Toluene	ND	0.500		"	"	"	"	"	"	
Ethylbenzene	ND	0.500		"	"	"	"	"	"	
Xylenes (total)	ND	1.00		"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	96.7 %	62-139				"	"	"	"	
Surrogate: 4-BFB (PID)	92.5 %	62-125				"	"	"	"	
<b>MW36 (B110126-05) Water</b> Sampled: 09/07/01 12:00 Received: 09/07/01 13:30										
Gasoline Range Hydrocarbons	ND	50.0		ug/l	1	1118006	09/18/01	09/18/01	NWTPH-Gx/8021B	
Benzene	0.897	0.500		"	"	"	"	"	"	
Toluene	ND	0.500		"	"	"	"	"	"	
Ethylbenzene	ND	0.500		"	"	"	"	"	"	
Xylenes (total)	ND	1.00		"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	87.3 %	62-139				"	"	"	"	
Surrogate: 4-BFB (PID)	90.8 %	62-125				"	"	"	"	
<b>MW37 (B110126-06) Water</b> Sampled: 09/07/01 04:45 Received: 09/07/01 13:30										
Gasoline Range Hydrocarbons	159000	25000		ug/l	500	1118006	09/18/01	09/18/01	NWTPH-Gx/8021B	
Benzene	3420	250		"	"	"	"	"	"	
Toluene	12600	250		"	"	"	"	"	"	
Ethylbenzene	4440	250		"	"	"	"	"	"	
Xylenes (total)	27000	500		"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	91.0 %	62-139				"	"	"	"	
Surrogate: 4-BFB (PID)	89.2 %	62-125				"	"	"	"	

North Creek Analytical - Bothell

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Amar Gill, Project Manager

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 Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
 425.420.9200 fax 425.420.9210  
 Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
 509.924.9200 fax 509.924.9290  
 Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
 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

ERI  
 905 Industry Dr  
 Tukwila WA, 98188

Project: TOSCO #5353  
 Project Number: 1020  
 Project Manager: John Meyer

Reported:  
 09/21/01 17:14

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW43 (B110126-07) Water Sampled: 09/07/01 12:00 Received: 09/07/01 13:30</b>									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	1118006	09/18/01	09/18/01	NWTPH-Gx/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	"
Toluene	ND	0.500	"	"	"	"	"	"	"
Ethylbenzene	ND	0.500	"	"	"	"	"	"	"
Xylenes (total)	ND	1.00	"	"	"	"	"	"	"
Surrogate: 4-BFB (FID)	85.4 %	62-139			"	"	"	"	"
Surrogate: 4-BFB (PID)	90.4 %	62-125			"	"	"	"	"
<b>MW44 (B110126-08) Water Sampled: 09/07/01 12:00 Received: 09/07/01 13:30</b>									
Gasoline Range Hydrocarbons	10300	500	ug/l	10	1118006	09/18/01	09/18/01	NWTPH-Gx/8021B	
Benzene	1050	25.0	"	50	"	"	09/18/01	"	
Toluene	6.97	5.00	"	10	"	"	09/18/01	"	
Ethylbenzene	945	5.00	"	"	"	"	"	"	
Xylenes (total)	51.0	10.0	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	131 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	105 %	62-125			"	"	"	"	
<b>MW45 (B110126-09) Water Sampled: 09/07/01 12:00 Received: 09/07/01 13:30</b>									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	1118006	09/18/01	09/18/01	NWTPH-Gx/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	88.3 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	90.6 %	62-125			"	"	"	"	

North Creek Analytical - Bothell

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Amar Gill, Project Manager

North Creek Analytical, Inc.  
 Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
 425.420.9200 fax 425.420.9210  
 Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
 509.924.9200 fax 509.924.9290  
 Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
 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

ERI 905 Industry Dr Tukwila WA, 98188	Project: TOSCO #5353 Project Number: 1020 Project Manager: John Meyer	Reported: 09/21/01 17:14
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**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>MW47 (B110126-10) Water Sampled: 09/07/01 12:00 Received: 09/07/01 13:30</b>										
Gasoline Range Hydrocarbons	ND	50.0		ug/l	1	1118006	09/18/01	09/18/01	NWTPH-Gx/8021B	
Benzene	ND	0.500		"	"	"	"	"	"	
Toluene	ND	0.500		"	"	"	"	"	"	
Ethylbenzene	ND	0.500		"	"	"	"	"	"	
Xylenes (total)	ND	1.00		"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	88.1 %	62-139								
Surrogate: 4-BFB (PID)	90.4 %	62-125								

North Creek Analytical - Bothell

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 Amar Gill, Project Manager



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 425.420.9200 fax 425.420.9210  
 Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
 509.924.9200 fax 509.924.9290  
 Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
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 Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
 541.383.9310 fax 541.382.7588

ERI  
 905 Industry Dr  
 Tukwila WA, 98188

Project: TOSCO #5353  
 Project Number: 1020  
 Project Manager: John Meyer

Reported:  
 09/21/01 17:14

**Semivolatle Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>SMW2 (B110126-01) Water</b> Sampled: 09/07/01 12:00 Received: 09/07/01 13:30									
Diesel Range Hydrocarbons	0.385	0.286	mg/l	1	1113013	09/13/01	09/16/01	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.571	"	"	"	"	"	"	
Surrogate: 2-FBP	85.2 %	50-121			"	"	"	"	
Surrogate: Octacosane	75.1 %	56-123			"	"	"	"	
<b>MW32A (B110126-02) Water</b> Sampled: 09/07/01 12:00 Received: 09/07/01 13:30									
Diesel Range Hydrocarbons	4.22	0.291	mg/l	1	1113013	09/13/01	09/16/01	NWTPH-Dx	
Lube Oil Range Hydrocarbons	0.822	0.581	"	"	"	"	"	"	
Surrogate: 2-FBP	98.1 %	50-121			"	"	"	"	
Surrogate: Octacosane	83.9 %	56-123			"	"	"	"	
<b>MW34 (B110126-03) Water</b> Sampled: 09/07/01 07:45 Received: 09/07/01 13:30									
Diesel Range Hydrocarbons	4.51	0.284	mg/l	1	1113013	09/13/01	09/16/01	NWTPH-Dx	
Lube Oil Range Hydrocarbons	0.722	0.569	"	"	"	"	"	"	
Surrogate: 2-FBP	90.7 %	50-121			"	"	"	"	
Surrogate: Octacosane	83.5 %	56-123			"	"	"	"	
<b>MW35 (B110126-04) Water</b> Sampled: 09/07/01 12:00 Received: 09/07/01 13:30									
Diesel Range Hydrocarbons	0.903	0.282	mg/l	1	1113013	09/13/01	09/16/01	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.564	"	"	"	"	"	"	
Surrogate: 2-FBP	61.8 %	50-121			"	"	"	"	
Surrogate: Octacosane	51.2 %	56-123			"	"	"	"	X
<b>MW36 (B110126-05) Water</b> Sampled: 09/07/01 12:00 Received: 09/07/01 13:30									
Diesel Range Hydrocarbons	ND	0.250	mg/l	1	1113013	09/13/01	09/16/01	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	86.0 %	50-121			"	"	"	"	
Surrogate: Octacosane	86.6 %	56-123			"	"	"	"	

North Creek Analytical - Bothell

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 425.420.9200 fax 425.420.9210  
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ERI 905 Industry Dr Tukwila WA, 98188	Project: TOSCO #5353 Project Number: 1020 Project Manager: John Meyer	Reported: 09/21/01 17:14
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**Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW37 (B1I0126-06) Water</b> Sampled: 09/07/01 04:45 Received: 09/07/01 13:30									
Diesel Range Hydrocarbons	22.1	2.75	mg/l	11	1113013	09/13/01	09/17/01	NWTPH-Dx	D-08
Lube Oil Range Hydrocarbons	14.6	5.50	"	"	"	"	"	"	
Surrogate: 2-FBP	126 %	50-121			"	"	"	"	S-06
Surrogate: Octacosane	110 %	56-123			"	"	"	"	
<b>MW43 (B1I0126-07) Water</b> Sampled: 09/07/01 12:00 Received: 09/07/01 13:30									
Diesel Range Hydrocarbons	ND	0.293	mg/l	1	1113013	09/13/01	09/16/01	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.587	"	"	"	"	"	"	
Surrogate: 2-FBP	86.4 %	50-121			"	"	"	"	
Surrogate: Octacosane	79.3 %	56-123			"	"	"	"	
<b>MW44 (B1I0126-08) Water</b> Sampled: 09/07/01 12:00 Received: 09/07/01 13:30									
Diesel Range Hydrocarbons	4.25	0.292	mg/l	1	1113013	09/13/01	09/16/01	NWTPH-Dx	
Lube Oil Range Hydrocarbons	0.849	0.583	"	"	"	"	"	"	
Surrogate: 2-FBP	91.2 %	50-121			"	"	"	"	
Surrogate: Octacosane	70.8 %	56-123			"	"	"	"	
<b>MW45 (B1I0126-09) Water</b> Sampled: 09/07/01 12:00 Received: 09/07/01 13:30									
Diesel Range Hydrocarbons	0.375	0.303	mg/l	1	1113013	09/13/01	09/17/01	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.606	"	"	"	"	"	"	
Surrogate: 2-FBP	85.3 %	50-121			"	"	"	"	
Surrogate: Octacosane	82.5 %	56-123			"	"	"	"	
<b>MW47 (B1I0126-10) Water</b> Sampled: 09/07/01 12:00 Received: 09/07/01 13:30									
Diesel Range Hydrocarbons	0.356	0.250	mg/l	1	1113013	09/13/01	09/17/01	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	80.2 %	50-121			"	"	"	"	
Surrogate: Octacosane	75.6 %	56-123			"	"	"	"	

North Creek Analytical - Bothell

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Amar Gill, Project Manager

North Creek Analytical, Inc.  
 Environmental Laboratory Network





Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
 425.420.9200 fax 425.420.9210  
 Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
 509.924.9200 fax 509.924.9290  
 Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
 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

ERI 905 Industry Dr Tukwila WA, 98188	Project: TOSCO #5353 Project Number: 1020 Project Manager: John Meyer	Reported: 09/21/01 17:14
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**Volatile Petroleum Products and BTEX by NWTPH-Gx 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
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**Batch 1I18006: Prepared 09/18/01 Using EPA 5030B (P/T)**

**Blank (1I18006-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)	41.3		"	48.0		86.0	62-139			
Surrogate: 4-BFB (PID)	43.3		"	48.0		90.2	62-125			

**LCS (1I18006-BS1)**

Gasoline Range Hydrocarbons	483	50.0	ug/l	500		96.6	80-120			
Benzene	6.02	0.500	"	6.01		100	80-120			
Toluene	32.1	0.500	"	36.1		88.9	80-120			
Ethylbenzene	8.69	0.500	"	8.37		104	80-120			
Xylenes (total)	39.9	1.00	"	42.0		95.0	80-120			
Surrogate: 4-BFB (FID)	46.0		"	48.0		95.8	62-139			
Surrogate: 4-BFB (PID)	41.3		"	48.0		86.0	62-125			

**LCS Dup (1I18006-BSD1)**

Gasoline Range Hydrocarbons	498	50.0	ug/l	500		99.6	80-120	3.06	25	
Benzene	5.94	0.500	"	6.01		98.8	80-120	1.34	40	
Toluene	31.7	0.500	"	36.1		87.8	80-120	1.25	40	
Ethylbenzene	8.62	0.500	"	8.37		103	80-120	0.809	40	
Xylenes (total)	39.4	1.00	"	42.0		93.8	80-120	1.26	40	
Surrogate: 4-BFB (FID)	47.4		"	48.0		98.8	62-139			
Surrogate: 4-BFB (PID)	41.6		"	48.0		86.7	62-125			

**Matrix Spike (1I18006-MS1)**

Source: B1I0126-05

Gasoline Range Hydrocarbons	457	50.0	ug/l	500	ND	91.4	70-130			
Benzene	6.96	0.500	"	6.01	0.897	101	80-120			
Toluene	31.5	0.500	"	36.1	ND	86.8	75-117			
Ethylbenzene	8.38	0.500	"	8.37	ND	100	80-120			
Xylenes (total)	38.5	1.00	"	42.0	ND	91.7	80-120			
Surrogate: 4-BFB (FID)	45.6		"	48.0		95.0	62-139			
Surrogate: 4-BFB (PID)	41.8		"	48.0		87.1	62-125			

North Creek Analytical - Bothell

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**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
 425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
 509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
 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

ERI 905 Industry Dr Tukwila WA, 98188	Project: TOSCO #5353 Project Number: 1020 Project Manager: John Meyer	<b>Reported:</b> 09/21/01 17:14
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**Volatile Petroleum Products and BTEX by NWTPH-Gx 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
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**Batch 1I18006: Prepared 09/18/01 Using EPA 5030B (P/T)**

**Matrix Spike Dup (1I18006-MSD1)**

**Source: B1I0126-05**

Gasoline Range Hydrocarbons	465	50.0	ug/l	500	ND	93.0	70-130	1.74	25	
Benzene	7.49	0.500	"	6.01	0.897	110	80-120	7.34	40	
Toluene	31.9	0.500	"	36.1	ND	87.9	75-117	1.26	40	
Ethylbenzene	8.48	0.500	"	8.37	ND	101	80-120	1.19	40	
Xylenes (total)	38.9	1.00	"	42.0	ND	92.6	80-120	1.03	40	
Surrogate: 4-BFB (FID)	46.3		"	48.0		96.5	62-139			
Surrogate: 4-BFB (PID)	41.6		"	48.0		86.7	62-125			

North Creek Analytical - Bothell

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Page 9 of 11



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 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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 541.383.9310 fax 541.382.7588

ERI  
 905 Industry Dr  
 Tukwila WA, 98188

Project: TOSCO #5353  
 Project Number: 1020  
 Project Manager: John Meyer

Reported:  
 09/21/01 17:14

**Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1113013: Prepared 09/13/01 Using EPA 3520C**

**Blank (1113013-BLK1)**

Diesel Range Hydrocarbons	ND	0.250	mg/l							
Lube Oil Range Hydrocarbons	ND	0.500	"							
Surrogate: 2-FBP	0.246		"	0.320		76.9	50-121			
Surrogate: Octacosane	0.239		"	0.320		74.7	56-123			

**LCS (1113013-BS1)**

Diesel Range Hydrocarbons	1.49	0.250	mg/l	2.00		74.5	62-122			
Surrogate: 2-FBP	0.234		"	0.320		73.1	50-121			

**LCS Dup (1113013-BS1)**

Diesel Range Hydrocarbons	1.60	0.250	mg/l	2.00		80.0	62-122	7.12	40	
Surrogate: 2-FBP	0.248		"	0.320		77.5	50-121			

North Creek Analytical - Bothell

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 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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 541.383.9310 fax 541.382.7588

ERI 905 Industry Dr Tukwila WA, 98188	Project: TOSCO #5353 Project Number: 1020 Project Manager: John Meyer	Reported: 09/21/01 17:14
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**Notes and Definitions**

- D-08 Results in the diesel organics range are primarily due to overlap from a gasoline range product.
- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interferences.
- 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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11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8223  
 East 11115 Montgomery, Suite B, Spokane, WA 98206-4776  
 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132  
 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

(425) 420-9200 FAX 420-9210  
 (509) 924-9200 FAX 924-9290  
 (503) 906-9200 FAX 906-9210  
 (541) 383-9310 FAX 382-7588

# TOSCO CHAIN OF CUSTODY REPORT

B110126

**TOSCO INFORMATION**

Facility Number: 5353

Site Address: 600 WESTLAKE AVE

City, State, ZIP: SEATTLE, WA

Project/AWO Code: \_\_\_\_\_

Tosco Manager: TIM JOHNSON

FACILITY TYPE: (check one)  BP  Terminal/Bulk Plant

Brown Bear  76 Site  Other

**CONSULTANT INFORMATION**

Firm: ELI Project# 1020

Address: 905 INDUSTRY DR  
TICKWILA, WA 98188

Phone: (206) 575-6220 Fax: X6423

Project Manager: JOHN MEYER E-mail: \_\_\_\_\_

Sample Collection by: ROY MORSE

Quality Assurance Data Level:

A: Standard Summary

B: Standard + Chromatograms

Laboratory Turnaround Days:

1  2  3  4  5  10

10 Day - Standard

SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W.S.O)	# OF CON-TAINERS
1. SMW2	9/7/01	W	3
2. MW 32A			3
3. MW 34	7:45AM		3
4. MW 35			3
5. MW 36			3
6. MW 37	4:45AM		3
7. MW 43			3
8. MW 44			3
9. MW 45			3
10. MW 47			3

OR	WA	AK	NW Series	ID	TPH-HCID	TPH-Gas	BTEX	EPA 8021 Mod.	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel-Ext.	TPH-Diesel	Extended	Halogen. Volatiles	EPA 8021	Pesticides/PCBs or PCBs Only	G/CMS Volatiles	EPA 8260	G/CMS SemiVols	EPA 8270	PAH's	8270 SIM or 8310	Lead:	Total or Dissolved	TCLP or RCRA	Metals (8)	
			<input checked="" type="checkbox"/>						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NCA SAMPLE NUMBER
B110126 -01
-02
-03
-04
-05
-06
-07
-08
-09
-10

Relinquished by: Tim Johnson Firm: ELI Date & Time: 9/7/01 13:30

Received by: John Meyer Firm: NCA Date & Time: 9-7-01 12:15

Comments: 1. Roy Morse - NCA 9/7/01 13:30  
2. John Meyer - NCA 9/7/01 12:15

Comments:

15.5

1/3

Samples were not @ 2-6C Upon Receipt

GROUNDWATER SAMPLING - FIELD LOG

Client Name: TOSCO 5353 ERI Job No. 1020 Date: 7/17/01 Page 1 of 1  
 Location: 600 WESTLAKE AVE Field Cleaning Performed: \_\_\_\_\_  
 Field Crew: ROY MORSE Analysis: \_\_\_\_\_

\* - Case Volume =  $(d_{inner} - d_{outer}) \times L \times F$  where F =  
 0.163 for a 2" inside diameter well casing  
 0.652 for a 4" inside diameter well casing  
 1.667 for a 6" inside diameter well casing

Well No.	Time	Depth Water (ft.)	Depth Well (ft.)	Case Dia. (in)	Case Vol* gal	Purge Vol. (gal)	Conduct. FS/CM (X1000)	Temp. Deg F	pH	TURB. NTU	PID PPH	Comments
MW 37		11.43										
MW 47		11.14										
MW 36		8.70										
MW 33		9.19										
MW 44	9.48	<del>11.46</del>										
MW 48		11.46										
MW 35		10.54										0.367 LPH
MW 33												
MW 34		11.86										
MW 45		10.81										
MW 45		9.80										
MW 45		9.60										
MW 46												UNABLE MONITOR gate blocking
MW 46												N/S

Revised 4/20/92