

LEUST-1915-UNOCAL-5472-
Seattle

DATE: May 29, 2002

**TOSCO CORPORATION
GROUNDWATER MONITORING REPORT**

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

WORK PERFORMED THIS QUARTER(S) [First - 2002]:

- Monitored, purged, and sampled 7 groundwater monitoring wells.

WORK PROPOSED FOR NEXT QUARTER [Second - 2002]:

- Monitor, purge, and sample 8 groundwater monitoring wells.

SUMMARY:

Frequency of Sampling Events:	Quarterly	(Quarterly, etc.)
Approximate Depth to Groundwater:	4 to 7 ft	(Measured Feet)
Groundwater Gradient:	Northerly and Westerly	(Direction)
	0.006 ft/ft	(Magnitude)
Maximum TPH-G/Benzene Concentrations:	958/16.0	(ppb)
Measurable Free Product Detected:	No	(Yes - ID well(s)/No)
Free Product Recovered This Quarter:	Unknown	(gallons)
Cumulative Free Product Recovered to Date:	Unknown	(gallons)
Bulk Soil Removed This Quarter:	None	(cubic yards)
Water Wells or Surface Waters w/in 2,000 ft:	Unknown	(Distance &
Radius and Respective Direction:	Unknown	Direction)
Current Remedial Action:	SVE/AS	(SVE/AS/P&T etc.)
Permits for Discharge:	PSCAA #8121	(NPDES, POTW, etc.)

DISCUSSION:

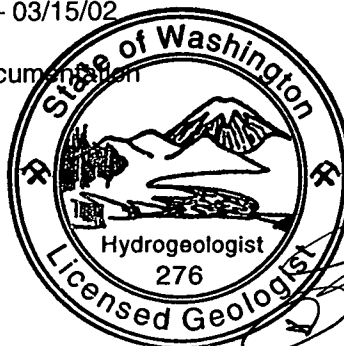
- 5 of 7 wells sampled contained hydrocarbon concentrations exceeding MTCA Method A Cleanup Levels.

ATTACHMENT:

Plate 1: Groundwater Sample Analysis Map - 03/15/02
Table 1: Groundwater Analytical Results
Laboratory Reports and Chain of Custody Documentation
Field Data Records

Prepared By:

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Yukiko Noguchi
Staff Scientist



Reviewed By:

John K. Meyer
John K. Meyer, R.G.
Branch Manager

cc: Washington State Department of Ecology, Northwest Regional Office
Lisa Bona, GeoEngineers
Vasco Properties

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TABLE 1
GROUNDWATER ANALYTICAL RESULTS
Tosco Site No. 5472
3480 1st Avenue South
Seattle, Washington
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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	UPH Present							
	10/19/92	7.20	92.60	UPH Present							
	08/26/93	7.36	92.27	UPH Present							
	10/13/94	8.23	91.55	UPH Present							
	04/25/95	5.62	93.90	30,000	15,000	9,500	890	<4.0	340	290	
	07/12/95	NM	--	13,000	4,900	<8,000	1,000	<8.0	380	210	<2.0
	10/12/95	6.15	93.41	UPH Present							
	01/22/96	5.10	94.35	UPH Present							
	04/10/96	5.86	93.76	UPH 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	UPH Present							
	03/05/97	4.96	94.56	4,240	3,650	2,100	114	<2.50	18.7	<5.00	
	03/05/97 ^{PP}	4.96	94.58	8,150	534	<750	40.7	<2.50	58.9	15.3	
	06/19/97	5.66	93.87	UPH Present							
	09/16/97	6.56	92.96	UPH Present							
	12/18/97	5.54	93.98	3,060	3,450	1,660	142	1.31	2.65	3.54	
	03/11/98	5.14	94.38	2,720	5,930	3,890	120	2.77	4.23	5.20	
	06/24/98	6.25	93.27	1,950	1,340	<750	22.8	1.83	1.05	3.33	
	09/18/98	6.88	92.66	1,660	<250	<750	12.7	<2.50	<2.50	<5.00	
	12/14/98	3.70	95.82	2,840	8,850	3,890	327	<5.00	11.7	<10.0	
	03/26/99	4.50	95.02	2,480	4,130	2,280	180	1.87	20.8	6.13	
	06/23/99	5.99	93.53	962	1,410	844	87.6	<2.50	<2.50	<5.00	
	09/23/99	6.85	92.67	1,540	1,380	<750	7.29	0.731	2.13	2.07	
	12/06/99	9.15	90.37	<50.0	525	<750	1.33	0.626	0.937	2.32	
	03/13/00	5.24	94.28	700	4,340	2,260	186	<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	6.86	92.56	148	651	<750	1.04	<0.500	<0.500	<1.00	
	03/27/01	Obstructed by vehicle	--	--	--	--	--	--	--	--	
	06/22/01	NM	--	--	--	--	--	--	--	--	
	09/19/01	Obstructed by vehicle	--	--	--	--	--	--	--	--	
	12/28/01	5.14	94.38	91.0	4,720	2,280	0.591	0.775	<0.500	1.54	
	03/15/02	5.05	94.47	207	3,200	975	16.0	0.519	1.04	<1.00	
MW6 99.67	02/25/91	5.69	92.5	--	--	--	<1.0	<1.0	<1.0	<1.0	
	10/19/92	7.64	92.03	<1,000	<250	--	<1.0	<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	5.83	94.04	<50	330	1,500	<0.50	<0.50	<0.50	<1.0	<2.0
	07/12/95	NM	--	<50	350	1,200	<0.50	<0.50	<0.50	<1.0	<2.0
	10/12/95	6.50	93.17	<50	530	970	<0.50	<0.50	<0.50	<1.0	
	01/22/96	5.08	94.59	<50	810	<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	6.25	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 ^{PP}	5.52	94.15	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	
	06/19/97 ^{PP}	5.52	94.15	<50	<250	<750	<0.5	<0.5	<0.5	<1.0	
	09/16/97 ^{PP}	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	1,500	<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	6.59	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	974	<0.500	<0.500	<0.500	<1.00	
	09/13/00	6.81	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	
	09/19/01	5.82	93.75	<50.0	678	<500	<0.500	<0.500	<0.500	<1.00	
	12/28/01	5.12	94.55	<50.0	487	587	<0.500	<0.500	<0.500	<1.00	
	03/15/02	5.15	94.52	<50.0	313	<500	<0.500	<0.500	<0.500	<1.00	
MW7 98.50	02/25/91	4.33	92.68	--	--	--	11	<1.0	<1.0	<1.0	
	10/19/92	5.88	92.52	<1,000	620	--	8	<1.0	<1.0	<1.0	<5
	08/26/93	6.16	92.34	<100	<250	<750	12	<0.50	<0.50	<0.50	
	10/13/94	6.56	91.94	<50	540	<750	3.3	<0.50	<0.50	<1.0	<10.0
	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	4.80	93.60	<50	<250	950	<0.50	<0.50	<0.50	<1.0	
	01/22/96	3.89	94.81	<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	<0.50	<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 ^{PP}	3.94	94.56	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	
	06/19/97 ^{PP}	4.57	93.93	<50	<250	<750	<0.50	<0.50	<0.50	<1.0	
	09/16/97 ^{PP}	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	5.88	92.64	<50.0	284	<750	<0.500	<0.500	<0.500	<1.00	
	03/27/01	NM	--	--	--	--	--	--	--	--	
	06/22/01	NM	--	--	--	--	--	--	--	--	
	09/19/01	Obstructed by vehicle	--	--	--	--	--	--	--	--	
	12/28/01	4.15	94.35	<50.0	<250	<500	<0.500	0.558	<0.500	<1.00	
	03/15/02	NM	--	--	--	--	--	--	--	--	

MTCA Method A Cleanup Level
Continued on Page 2.

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
Tosco Site No. 5472
3460 1st Avenue South
Seattle, Washington
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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	92.08	—	—	—	17	18	28	32	—
	10/19/92	7.17	91.79	1,900	330	—	7,200	32	510	1,500	<5
	08/26/93	6.91	92.05	7,500	960	—	16,000	410	800	670	<3
	10/13/94	7.40	91.58	2,200	740	1,200	19,000	<40	<40	63	4.6
	04/25/95	5.41	93.55	6,700	1,500	1,200	16,000	200	340	1,000	<2.0
	07/12/95	NM	—	4,800	1,500	1,000	8,700	<8.0	130	190	<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	8,500	<20	<20	23	—
	04/10/96	5.63	93.33	2,300	2,000	750	3,400	<20	<20	21	—
	07/28/96	4.22	94.74	3,000	1,000	<750	6,550	<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	3,480	398	<750	3,970	<10.0	<10.0	<20.0	—
	03/05/97 ^{NP}	4.91	94.05	7,730	375	<750	830	<5.0	11.5	<10.0	—
	06/19/97 ^{NP}	5.46	93.50	6,220	621	<750	1,870	<12.5	13.1	<25.0	—
	09/16/97 ^{NP}	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	2,640	<25.0	<25.0	<50.0	—
	06/24/98	6.15	92.81	2,650	1,700	<750	2,230	<25.0	<25.0	<50.0	—
	09/18/98	6.58	92.40	1,940	<750	<750	770	<12.5	<12.5	<25.0	—
	12/14/98	Obstructed by surface water	—	—	—	—	—	—	—	—	—
	03/26/99	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	—
	09/23/99	6.52	92.44	1,420	1,020	<750	2.67	<2.00	<2.00	<7.00	—
	12/06/99	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	—	—	140	<2.50	<2.50	<5.00	—
	09/13/00	7.29	91.67	428	1,380	1,380	<1.42	<0.770	<1.35	<2.84	—
	03/27/01	2.53	96.43	451	6,830	764	<0.500	<0.500	<0.500	<1.00	—
	06/22/01	2.19	96.77	<50.0	1,160	1,210	<0.500	<0.500	<0.500	<1.00	—
	09/19/01 ^{NP}	6.80	92.06	<50.0	1,420	<500	0.894	0.580	0.552	1.59	—
	12/26/01	5.70	93.28	99.4	4,010	602	0.839	0.685	<0.500	1.32	—
	03/15/02	5.62	93.34	958	1,520	<500	3.94	0.929	2.08	8.27	—
MW9 98.86	02/25/91	4.55	92.82	—	—	—	14,100	19,400	1,300	10,320	<5
	10/19/92	6.47	92.19	5,800	35,000	—	6,000	150	350	1,500	<3
	08/26/93	6.48	92.05	5,800	4,400	<750	7,100	100	630	1,300	<3
	10/13/94	7.00	91.68	2,700	4,100	<750	3,000	11	190	140	7.9
	04/25/95	4.70	93.96	6,300	2,500	1,000	350	3.7	210	310	<2.0
	07/12/95	NM	—	1,600	2,600	1,300	98	<2.0	62	72	<2.0
	10/12/95	5.15	93.51	4,600	6,800	6,000	930	17	240	310	—
	01/22/96	4.06	94.60	4,000	9,200	1,900	110	<2.0	100	100	—
	04/10/96	4.88	93.80	3,600	3,000	1,000	170	<2.0	170	48	—
	07/28/96	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	687	9.31	9.91	<10.0	—
	03/05/97	4.11	94.55	1,030	22,400	2,240	49.4	<0.50	15.8	<1.0	—
	03/05/97 ^{NP}	4.11	94.55	2,120	8,150	1,060	48.4	<1.0	17.9	2.11	—
	06/19/97 ^{NP}	4.78	93.88	710	1,450	<750	104	<2.5	13.8	5.14	—
	09/16/97 ^{NP}	5.59	93.07	778	459	<750	684	6.27	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	215	2,180	<750	12.5	<0.500	0.761	<1.00	—
	06/24/98	5.04	93.82	383	603	<750	155	3.68	<2.50	<5.00	—
	09/18/98	6.02	92.84	443	1,060	<750	188	<2.50	<2.50	6.45	—
	12/14/98	3.94	94.72	977	2,870	<750	3.27	0.650	0.812	1.05	—
	03/28/99	3.81	95.05	257	4,150	820	1.66	1.04	<0.600	2.31	—
	06/23/99	5.11	93.55	123	4,040	<750	75.5	0.693	<0.500	<1.00	—
	09/23/99	6.08	92.58	279	785	<750	31.3	1.35	0.549	3.77	—
	12/06/99	3.87	94.89	231	2,230	<750	6.73	1.48	<0.500	<1.00	—
	03/13/00	4.67	93.99	<250	5,030	<750	5.82	<2.50	<2.50	<5.00	—
	06/28/00	5.26	93.40	<50	1,680	<750	28.4	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	—	—	—	—	—	—	—	—	—
	09/19/01	Obstructed by vehicle	—	—	—	—	—	—	—	—	—
	12/26/01	Obstructed by vehicle	—	—	—	—	—	—	—	—	—
	03/15/02	4.20	94.46	<50.0	1,080	<625	<0.500	<0.500	<0.500	<1.00	—
MW10 99.62	02/25/91	NM	—	<200	<250	—	2,000	9.0	200	1,300	7.2
	10/19/92	7.52	92.10	—	—	—	—	—	—	—	—
	08/26/93	7.44	92.18	1,700	<250	<750	89	3.7	<50	97	<3
	10/13/94	7.96	91.68	720	280	<750	730	6.1	1.1	150	25
	04/25/95	5.79	93.83	3,000	45	990	2,100	21	372	270	<2.0
	07/12/95	NM	—	1,800	55	<750	2,500	27	<20	290	<2.0
	10/12/95	6.85	92.77	2,200	420	<750	2,100	19	7.8	89	—
	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	3,660	27.6	<25.0	<50.0	—
	10/25/96	NM	—	—	—	—	—	—	—	—	—
	03/05/97	NM	—	—	—	—	—	—	—	—	—
	06/19/97 ^{NP}	5.95	93.67	53	<250	<750	691	7.48	<5.0	20.3	—
	09/16/97 ^{NP}	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	6.64	92.98	301	378	<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	—
	03/28/99	5.08	94.56	331	300	<750	261	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	386	<750	459	2.68	0.877	7.58	—
	12/06/99	5.62	94.00	266	376	<750	190	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	—
	09/19/01	9.39	90.23	<50.0	284	<500	<0.500	<0.500	<0.500	1.28	—
	12/26/01	Obstructed	—	—	—	—	—	—	—	—	—
	03/15/02	Obstructed	—	—	—	—	—	—	—	—	—

MTCA Method A Cleanup Level
Continued on Page 3.

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
Tosco Site No. 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
	08/28/93	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	8.00	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	--
	07/28/96	5.84	93.88	<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	--
	09/16/97 ^{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	1,380	<750	<0.500	<0.500	<0.500	<1.00	--
	12/14/98	4.90	94.80	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--
	03/28/99	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	--	--	--	--	--	--	--	--	--
	09/19/01	NM	--	--	--	--	--	--	--	--	--
	12/26/01	NM	--	--	--	--	--	--	--	--	--
	03/15/02	NM	--	--	--	--	--	--	--	--	--
MW12 100.32	02/25/91	NM	--	--	--	--	--	--	--	--	--
	10/19/92	8.37	91.95	8,500	830	--	7,500	1,800	180	1,810	<5
	08/28/93	8.11	92.21	--	--	--	--	--	--	--	--
	10/13/94	8.66	91.66	18,000	3,000	<750	3,300	91	1,100	380	<2.0
	04/25/95	8.40	93.92	32,000	2,600	2,600	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	7,400	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	1,300	<750	390	7.7	590	940	--
	07/28/96	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	2,600	<25.0	492	1,040	--
	03/05/97	5.78	94.54	17,800	372	<750	652	227	15	1,610	--
	03/05/97 ^{RP}	5.78	94.54	14,500	431	<750	637	<10.0	648	988	--
	06/19/97 ^{RP}	6.45	93.87	14,900	556	<750	335	<10.0	525	557	--
	09/18/97 ^{RP}	7.30	93.02	8,450	556	<750	585	<10.0	344	248	--
	12/18/98	6.48	93.84	9,390	1,490	918	490	10.8	362	585	--
	03/11/98	5.98	94.34	7,540	1,380	808	625	10.7	322	382	--
	06/24/98	7.15	93.17	2,490	1,280	<750	203	3.49	35.1	11.4	--
	09/18/98	7.49	92.83	848	<250	<750	88.6	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	2.68	<87.0	35.6	--
	06/23/99	6.71	93.81	<2,500	850	<750	77.8	<25.0	78.2	<50.0	--
	09/23/99	7.53	92.79	1,180	982	<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	378	890	<750	102	5.18	83.7	38.9	--
	06/28/00	6.40	93.92	<50.0	748	<750	10.8	<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	--
	09/19/01	8.98	93.34	52.0	786	811	0.517	<0.500	<0.500	1.20	--
	12/26/01	Obstructed			--	--	--	--	--	--	--
	03/15/02	5.60	94.72	77.0	2,520	826	11.3	<0.500	1.37	1.35	--
MW13 100.24	06/24/98	7.80	92.44	615	802	<750	<2.50	<2.50	<2.50	<5.00	--
	09/18/98	8.18	92.08	889	1,130	<750	<2.25	<1.25	<1.25	3.51	--
	12/14/98	6.75	93.49	853	508	<750	1.88	0.640	<0.500	3.43	--
	03/28/99	6.30	93.94	885	839	<750	<2.50	1.25	<1.75	4.38	--
	06/23/99	7.38	92.88	385	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	7.35	92.89	151	1,890	<750	<0.500	<0.500	<0.500	<1.00	--
	06/22/01	7.48	92.78	83.9	281	<750	<0.500	<0.500	<0.500	<1.00	--
	09/19/01	7.78	92.48	97.7	815	<500	<0.500	<0.500	<0.500	1.11	--
	12/26/01	6.75	93.49	99.2	683	<500	<0.500	1.20	<0.500	2.79	--
	03/15/02	6.78	93.48	101	1,870	<500	0.502	<0.500	<0.500	1.28	--

MTCA Method A Cleanup Level
Continued on Page 4.

1,000* 5 40 30 20 5

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
Tosco Site No. 5472
3460 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	08/24/98	7.80	92.34	2,230	1,505	<750	422	<10.0	<10.0	<20.0	--
	09/18/98	8.03	91.91	1,500	748	<750	75.4	<2.50	<2.50	13.3	--
	12/14/98	6.68	93.26	1,580	587	<750	182	<2.50	<2.50	9.39	--
	03/26/99	6.20	93.74	1,190	752	<750	5.53	<0.500	<0.900	4.84	--
	06/23/99	7.15	92.79	1,180	464	<750	21.1	<2.50	<2.50	<5.00	--
	09/23/99	7.91	92.03	2,950	512	<750	29.2	<1.00	<2.00	<8.00	--
	12/06/99	6.90	93.04	2,740	623	<750	127.0	0.503	<1.00	5.62	--
	03/13/00	6.74	93.20	1,780	889	<750	1,105	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	1,060	<872	<0.570	<0.500	<0.800	<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	--
	09/18/01	7.85	92.09	247	1,990	<577	<0.500	<0.500	<0.500	1.60	--
	12/26/01	6.66	93.28	148	1,970	<500	1.42	2.15	0.860	4.27	--
	03/15/02	6.65	93.29	107	855	<500	<0.500	<0.500	<0.500	<1.00	--
MW15 99.29	08/24/98	6.52	92.77	74.0	477	<750	14.1	1.03	0.588	1.72	--
	09/18/98	7.06	92.23	<50.0	648	<750	10.5	0.676	<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	58.8	344	<750	2.86	1.90	1.83	3.28	--
	06/23/99	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	0.851	<0.500	<0.500	1.01	--
	03/13/00	5.74	93.55	<50.0	<455	<1,330	5.91	<0.500	1.05	3.77	--
	06/28/00	6.41	92.88	973	<250	<750	1,670	<5.00	259	87.0	--
	09/13/00	7.05	92.24	<50.0	833	<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	588	1,640	<0.500	<0.500	<0.500	<1.00	--
	09/18/01	6.90	92.39	<50.0	497	<500	<0.500	0.558	1.19	3.17	--
	12/26/01	5.88	93.61	<50.0	578	<500	0.713	1.48	0.522	2.50	--
	03/15/02	Obstructed	--	--	--	--	--	--	<0.500	--	--

MTCA Method A Cleanup Level

1,000*

5

40

30

20

5

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 NWTPH-Gx.

TPH-D and TPH-O = Total Petroleum Hydrocarbons as Diesel and Oil, respectively, by Ecology Method NWTPH-Dx.

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

BTEX = Aromatic compounds by EPA Method 8021B.

Diss Pb = Dissolved Lead by EPA Method 7421.

NM = Not measured, -- = Not analyzed or sampled.

< = Less than the stated laboratory reporting limit.

* = Sample collected without purging.

* Total Petroleum Hydrocarbons.

Shaded values equal or exceed MTCA Method A Cleanup Levels.

Dissolved lead results on 10/13/94 are for total lead.

Samples collected from MW13, MW14, and MW15 on 08/24/98 identified as MWB, MWA, and MWC, respectively, on laboratory report.

Samples collected from MW14 on 03/15/02 identified as MW15 on laboratory report.

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



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28 March 2002

John Meyer
ERI
815 Industry Dr
Tukwila, WA/USA 98188
RE: TOSCO #5472

Enclosed are the results of analyses for samples received by the laboratory on 03/18/02 16:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Amar Gill
Project Manager



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ERI
815 Industry Dr
Tukwila WA/USA, 98188

Project: TOSCO #5472
Project Number: 1023
Project Manager: John Meyer

Reported:
03/28/02 16:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	B2C0350-01	Water	03/15/02 12:00	03/18/02 16:15
MW-6	B2C0350-02	Water	03/15/02 12:00	03/18/02 16:15
MW-8	B2C0350-03	Water	03/15/02 12:00	03/18/02 16:15
MW-12	B2C0350-04	Water	03/15/02 16:00	03/18/02 16:15
MW-13	B2C0350-05	Water	03/15/02 14:00	03/18/02 16:15
MW-9	B2C0350-06	Water	03/15/02 15:30	03/18/02 16:15
MW-15	B2C0350-07	Water	03/15/02 12:00	03/18/02 16:15

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



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ERI
815 Industry Dr
Tukwila WA/USA, 98188

Project: TOSCO #5472
Project Number: 1023
Project Manager: John Meyer

Reported:
03/28/02 16:33

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
MW-1 (B2C0350-01) Water Sampled: 03/15/02 12:00 Received: 03/18/02 16:15									
Gasoline Range Hydrocarbons	207	50.0	ug/l	1	2C26005	03/26/02	03/26/02	NWTPH-Gx/8021B	
Benzene	16.0	0.500	"	"	"	"	"	"	
Toluene	0.519	0.500	"	"	"	"	"	"	I-06
Ethylbenzene	1.04	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	104 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	106 %	62-125			"	"	"	"	
MW-6 (B2C0350-02) Water Sampled: 03/15/02 12:00 Received: 03/18/02 16:15									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	2C26005	03/26/02	03/26/02	NWTPH-Gx/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	99.6 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	99.2 %	62-125			"	"	"	"	
MW-8 (B2C0350-03) Water Sampled: 03/15/02 12:00 Received: 03/18/02 16:15									
Gasoline Range Hydrocarbons	958	50.0	ug/l	1	2C26005	03/26/02	03/26/02	NWTPH-Gx/8021B	
Benzene	3.94	0.500	"	"	"	"	"	"	I-06
Toluene	0.929	0.500	"	"	"	"	"	"	I-06
Ethylbenzene	2.08	0.500	"	"	"	"	"	"	I-06
Xylenes (total)	8.27	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	133 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	111 %	62-125			"	"	"	"	

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Amar Gill, Project Manager



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ERI
815 Industry Dr
Tukwila WA/USA, 98188

Project: TOSCO #5472
Project Number: 1023
Project Manager: John Meyer

Reported:
03/28/02 16:33

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
MW-12 (B2C0350-04) Water Sampled: 03/15/02 16:00 Received: 03/18/02 16:15									
Gasoline Range Hydrocarbons	77.0	50.0	ug/l	1	2C26005	03/26/02	03/26/02	NWTPH-Gx/8021B	
Benzene	11.3	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	1.37	0.500	"	"	"	"	"	"	
Xylenes (total)	1.35	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	100 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	103 %	62-125			"	"	"	"	
MW-13 (B2C0350-05) Water Sampled: 03/15/02 14:00 Received: 03/18/02 16:15									
Gasoline Range Hydrocarbons	101	50.0	ug/l	1	2C26005	03/26/02	03/26/02	NWTPH-Gx/8021B	
Benzene	0.502	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	I-06
Xylenes (total)	1.28	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	100 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	103 %	62-125			"	"	"	"	
MW-9 (B2C0350-06) Water Sampled: 03/15/02 15:30 Received: 03/18/02 16:15									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	2C26005	03/26/02	03/26/02	NWTPH-Gx/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	99.2 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	102 %	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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541.383.9310 fax 541.382.7588

ERI
815 Industry Dr
Tukwila WA/USA, 98188

Project: TOSCO #5472
Project Number: 1023
Project Manager: John Meyer

Reported:
03/28/02 16:33

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
MW-15 (B2C0350-07) Water Sampled: 03/15/02 12:00 Received: 03/18/02 16:15									
Gasoline Range Hydrocarbons	107	50.0	ug/l	1	2C26005	03/26/02	03/26/02	NWTPH-Gx/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	101 %	62-139			"	"	"	"	
Surrogate: 4-BFB (PID)	104 %	62-125			"	"	"	"	

North Creek Analytical - Bothell

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ERI
815 Industry Dr
Tukwila WA/USA, 98188

Project: TOSCO #5472
Project Number: 1023
Project Manager: John Meyer

Reported:
03/28/02 16:33

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
MW-1 (B2C0350-01) Water Sampled: 03/15/02 12:00 Received: 03/18/02 16:15									
Diesel Range Hydrocarbons	3.20	0.250	mg/l	1	2C19007	03/19/02	03/20/02	NWTPH-Dx	D-06
Lube Oil Range Hydrocarbons	0.975	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	105 %	52-126			"	"	"	"	
Surrogate: Octacosane	101 %	53-122			"	"	"	"	
MW-6 (B2C0350-02) Water Sampled: 03/15/02 12:00 Received: 03/18/02 16:15									
Diesel Range Hydrocarbons	0.313	0.250	mg/l	1	2C19007	03/19/02	03/20/02	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	77.3 %	52-126			"	"	"	"	
Surrogate: Octacosane	76.9 %	53-122			"	"	"	"	
MW-8 (B2C0350-03) Water Sampled: 03/15/02 12:00 Received: 03/18/02 16:15									
Diesel Range Hydrocarbons	1.52	0.250	mg/l	1	2C19007	03/19/02	03/20/02	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	99.7 %	52-126			"	"	"	"	
Surrogate: Octacosane	100 %	53-122			"	"	"	"	
MW-12 (B2C0350-04) Water Sampled: 03/15/02 16:00 Received: 03/18/02 16:15									
Diesel Range Hydrocarbons	2.52	0.250	mg/l	1	2C19007	03/19/02	03/20/02	NWTPH-Dx	D-06
Lube Oil Range Hydrocarbons	0.826	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	77.9 %	52-126			"	"	"	"	
Surrogate: Octacosane	81.9 %	53-122			"	"	"	"	
MW-13 (B2C0350-05) Water Sampled: 03/15/02 14:00 Received: 03/18/02 16:15									
Diesel Range Hydrocarbons	1.67	0.250	mg/l	1	2C19007	03/19/02	03/20/02	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	
Surrogate: 2-FBP	96.6 %	52-126			"	"	"	"	
Surrogate: Octacosane	101 %	53-122			"	"	"	"	

North Creek Analytical - Bothell

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ERI
815 Industry Dr
Tukwila WA/USA, 98188

Project: TOSCO #5472
Project Number: 1023
Project Manager: John Meyer

Reported:
03/28/02 16:33

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
MW-9 (B2C0350-06) Water Sampled: 03/15/02 15:30 Received: 03/18/02 16:15									
Diesel Range Hydrocarbons	1.06	0.312	mg/l	1	2C20005	03/20/02	03/21/02	NWTPH-Dx	D-06
Lube Oil Range Hydrocarbons	ND	0.625	"	"	"	"	"	"	"
Surrogate: 2-FBP	78.5 %	52-126			"	"	"	"	"
Surrogate: Octacosane	79.2 %	53-122			"	"	"	"	"
MW-15 (B2C0350-07) Water Sampled: 03/15/02 12:00 Received: 03/18/02 16:15									
Diesel Range Hydrocarbons	0.855	0.250	mg/l	1	2C20005	03/20/02	03/21/02	NWTPH-Dx	D-06
Lube Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	"
Surrogate: 2-FBP	88.2 %	52-126			"	"	"	"	"
Surrogate: Octacosane	89.2 %	53-122			"	"	"	"	"

North Creek Analytical - Bothell

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ERI
815 Industry Dr
Tukwila WA/USA, 98188

Project: TOSCO #5472
Project Number: 1023
Project Manager: John Meyer

Reported:
03/28/02 16:33

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 2C26005: Prepared 03/26/02 Using EPA 5030B (P/T)

Blank (2C26005-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)	42.1		"	48.0		87.7	62-139			
Surrogate: 4-BFB (PID)	50.2		"	48.0		105	62-125			

LCS (2C26005-BS1)

Gasoline Range Hydrocarbons	506	50.0	ug/l	500		101	80-120			
Benzene	6.36	0.500	"	6.01		106	80-120			
Toluene	32.2	0.500	"	35.8		89.9	80-120			
Ethylbenzene	8.73	0.500	"	8.37		104	80-120			
Xylenes (total)	40.7	1.00	"	41.4		98.3	80-120			
Surrogate: 4-BFB (FID)	52.7		"	48.0		110	62-139			
Surrogate: 4-BFB (PID)	47.2		"	48.0		98.3	62-125			

LCS Dup (2C26005-BSD1)

Gasoline Range Hydrocarbons	520	50.0	ug/l	500		104	80-120	2.73	25	
Benzene	6.55	0.500	"	6.01		109	80-120	2.94	40	
Toluene	33.6	0.500	"	35.8		93.9	80-120	4.26	40	
Ethylbenzene	9.17	0.500	"	8.37		110	80-120	4.92	40	
Xylenes (total)	42.7	1.00	"	41.4		103	80-120	4.80	40	
Surrogate: 4-BFB (FID)	52.7		"	48.0		110	62-139			
Surrogate: 4-BFB (PID)	47.5		"	48.0		99.0	62-125			

Source: B2C0350-02

Matrix Spike (2C26005-MS1)

Gasoline Range Hydrocarbons	497	50.0	ug/l	500	ND	99.4	70-130			
Benzene	6.59	0.500	"	6.01	ND	108	80-120			
Toluene	33.9	0.500	"	35.8	ND	94.3	75-117			
Ethylbenzene	9.16	0.500	"	8.37	ND	108	80-120			
Xylenes (total)	42.6	1.00	"	41.4	ND	102	80-120			
Surrogate: 4-BFB (FID)	52.7		"	48.0		110	62-139			
Surrogate: 4-BFB (PID)	48.0		"	48.0		100	62-125			

North Creek Analytical - Bothell

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ERI
815 Industry Dr
Tukwila WA/USA, 98188

Project: TOSCO #5472
Project Number: 1023
Project Manager: John Meyer

Reported:
03/28/02 16:33

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
Batch 2C26005: Prepared 03/26/02 Using EPA 5030B (P/T)										
Matrix Spike Dup (2C26005-MSD1)										
Source: B2C0350-02										
Gasoline Range Hydrocarbons	507	50.0	ug/l	500	ND	101	70-130	1.99	25	
Benzene	6.55	0.500	"	6.01	ND	107	80-120	0.609	40	
Toluene	33.6	0.500	"	35.8	ND	93.5	75-117	0.889	40	
Ethylbenzene	9.11	0.500	"	8.37	ND	107	80-120	0.547	40	
Xylenes (total)	42.2	1.00	"	41.4	ND	101	80-120	0.943	40	
Surrogate: 4-BFB (FID)	53.5		"	48.0		111	62-139			
Surrogate: 4-BFB (PID)	48.0		"	48.0		100	62-125			

North Creek Analytical - Bothell

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815 Industry Dr
Tukwila WA/USA, 98188

Project: TOSCO #5472
Project Number: 1023
Project Manager: John Meyer

Reported:
03/28/02 16:33

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 2C19007: Prepared 03/19/02 Using EPA 3520C

Blank (2C19007-BLK1)

Diesel Range Hydrocarbons	ND	0.250	mg/l							
Lube Oil Range Hydrocarbons	ND	0.500	"							
Surrogate: 2-FBP	0.243		"	0.320		75.9	52-126			
Surrogate: Octacosane	0.243		"	0.320		75.9	53-122			

LCS (2C19007-BS1)

Diesel Range Hydrocarbons	1.63	0.250	mg/l	2.00		81.5	60-122			
Surrogate: 2-FBP	0.257		"	0.320		80.3	52-126			

LCS Dup (2C19007-BSD1)

Diesel Range Hydrocarbons	1.58	0.250	mg/l	2.00		79.0	60-122	3.12	40	
Surrogate: 2-FBP	0.262		"	0.320		81.9	52-126			

Batch 2C20005: Prepared 03/20/02 Using EPA 3520C

Blank (2C20005-BLK1)

Diesel Range Hydrocarbons	ND	0.250	mg/l							
Lube Oil Range Hydrocarbons	ND	0.500	"							
Surrogate: 2-FBP	0.260		"	0.320		81.2	52-126			
Surrogate: Octacosane	0.280		"	0.320		87.5	53-122			

LCS (2C20005-BS1)

Diesel Range Hydrocarbons	1.70	0.250	mg/l	2.00		85.0	60-122			
Surrogate: 2-FBP	0.264		"	0.320		82.5	52-126			

LCS Dup (2C20005-BSD1)

Diesel Range Hydrocarbons	1.69	0.250	mg/l	2.00		84.5	60-122	0.590	40	
Surrogate: 2-FBP	0.283		"	0.320		88.4	52-126			

North Creek Analytical - Bothell

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ERI
815 Industry Dr
Tukwila WA/USA, 98188

Project: TOSCO #5472
Project Number: 1023
Project Manager: John Meyer

Reported:
03/28/02 16:33

Notes and Definitions

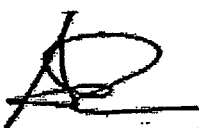
- D-06 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
- D-09 Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
- I-06 The analyte concentration may be artificially elevated due to coeluting compounds or components.
- 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

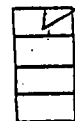
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Environmental Laboratory Network

Page 10 of 10


Amar Gill, Project Manager



TOSCO CHAIN OF CUSTODY REPORT

B2C0350

TOSCO INFORMATION	
Facility Number:	5472
Site Address:	3460 1st Ave S.
City, State, ZIP:	SEATTLE, WA 98102
Project/AWO Code	
Tosco Manager:	JIM JOHNSON
FACILITY TYPE: (check one) ☐ BP ☒ Terminal/Bulk Plant	
☐ Brown Bear ☒ Former 76 Site ☐ Other	

CONSULTANT INFORMATION	
Firm:	ELT
Project#	1023
Address:	815 INDUSTRY DR TUKWILA, WA 98188
Phone:	(206) 575-6220
Fax:	X 6423
Project Manager:	JM2
E-mail:	
Sample Collection by:	Roy Morse / YN

Quality Assurance Data Level:

☒ A ☐ B

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 CONTAINERS
1. MW1	3/15/02	W	5
2. MW6		W	
3. MW8		W	
4. MW12	16:00	W	
5. MW13	1400	W	
6. MW14		W	
7. MW9		W	5
8.			
9.			
10.			

	OR	WA	AK	NW Series	ID
TPH-HCID					
TPH-Gas					
BTEX EPA 8021 Mod.					
TPH-Gas + BTEX					
TPH-Diesel					
TPH-Diesel Extended					
TPH-Diesel-Ext. w/SG Cleanup					
Halogen Volatiles EPA 8021					
Pesticides/PCBs or PCBs Only					
GC/MS Volatiles EPA 8260					
GC/MS Semi Vols. EPA 8270					
PAH's EPA 8270 SIM or 8310					
Lead: Total or Dissolved TCLP or RCRA Metals (3)					

NCA SAMPLE NUMBER

B2C0350 - 01

02

03

04

05

06

Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1. Roy Morse	ELT	3/15/02	Roy Morse	NCA	3/18/02 14:00
2. [Signature]	NCA	3/18/02 16:15	[Signature]	NCA	3-18-02 16:15
3.					

Comments:

n/a 2.7

Comments:

18
72 56
24 20

ERI Job No. 31023
Field Cleaning Performed:
Analysis:

Page 1 of 1

Well No.	Time	Depth Water (ft.)	Depth Well (ft.)	Case Dia. (in)	Case Vol* gal	Purge Vol. (gal)	Conduct. μ S/CM (X1000)	Temp. Deg F	pH	TURB. NTU	PID PPH	Comments
MW 14		6.65	15	2	1.5	4.5						
MW 13		6.76	15	2	1.5	4.5						
MW 5		—	15	2	—	—						NO ACCESS
MW 10		—	20	2	—	—						NO ACCESS
MW 8		5.62	20	2	2	6						
MW 12		5.60	20	4	8	24						
MW 6		5.15	20	2	2	6						
MW 9		4.20	20	2	3	9						
MW 1		5.05	20	2	2	96						

REVISED 4/20/94

14
6i