TEXACO STATION #63232 0037
KING CO, Seattle
LUST# 2298

EMCON
18912 North Creek Parkway • Suite 100 • Bothell, Washington 98011-8016 • (206) 485-5000 • Fax (206) 486-9766

SR 4/22/96 RN

January 25, 1996
Project 40368-013.009

Ms. Theresa Geijer
Texaco Environmental Services
3400 188th Street SW, Suite 630
Lynnwood, Washington 98037

Re: Groundwater Sampling Report
Texaco Service Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Dear Ms. Geijer:

This letter report documents recent groundwater sampling activities that EMCON conducted at Texaco Service Station 63-232-0037, 8701 Greenwood Avenue North, Seattle, Washington (Figure 1). On December 11, 1995, EMCON measured the groundwater depth in five monitoring wells, obtained groundwater samples, and submitted the samples for laboratory analysis.

Attached are a site vicinity map, a groundwater data map, historical tables of groundwater monitoring data and groundwater laboratory results, the field sampling data sheets, a chain-of-custody form, and laboratory report for the December 11, 1995, sampling event.

If you have any questions about this report, please call.

Sincerely,

EMCON

Holly Corner
Project Geologist

Michael Paulsen
Project Chemist

Attachments: Figures 1 and 2
Tables 1 and 2
Field Sample Data Sheets, December 11, 1995
Laboratory Report and Chain-of-custody Documentation

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Texaco Refining and Marketing Inc
3400 188th Street SW
Suite 630
Lynnwood WA 98037

February 2, 1996

ENV - SERVICE STATIONS
Fourth Quarter 1995 Groundwater Sampling Report
8701 Greenwood Avenue North
Seattle, Washington (Texaco Facility #63-232-0037)

Mr. Roger Nye
Washington Department of Ecology- Northwest Region
3190 - 160th Avenue Southeast
Bellevue, Washington 98008-5452

Dear Mr. Nye:

The enclosed Groundwater Sampling Report documents the procedures and results of groundwater monitoring and sampling conducted on December 11, 1995 by EMCON at referenced site. Groundwater samples collected from the five onsite monitoring wells (AGW-1, AGW-2, AGW-5, AGW-6, and AGW-7) were analyzed for TPH-G, TPH-D, TPH-O, BTEX (benzene, toluene, ethylbenzene and total xylenes) and Total Lead. None of these analytes were detected at concentrations above the MTCA Method A Cleanup Levels in any of the groundwater samples from the wells.

An Independent Remedial Action Program report dated January 5, 1996 was submitted to Ecology for this site. The report requested that Ecology issue a 'no further action' determination concerning soil at the site, with an 'interim no further action' determination concerning groundwater. A final 'no further action' determination for groundwater would be granted based on results of fourth quarter 1995 and first quarter 1996 groundwater sampling events demonstrating compliance with Model Toxics Control Act Method A cleanup standards. The enclosed groundwater report demonstrates that the fourth quarter 1995 groundwater results were in compliance with the cleanup standards.

If you have any questions please contact me at (206) 774-6090, extension 224.

Sincerely,

T. A. Geijer

Theresa A. Geijer, R.G.
Project Coordinator

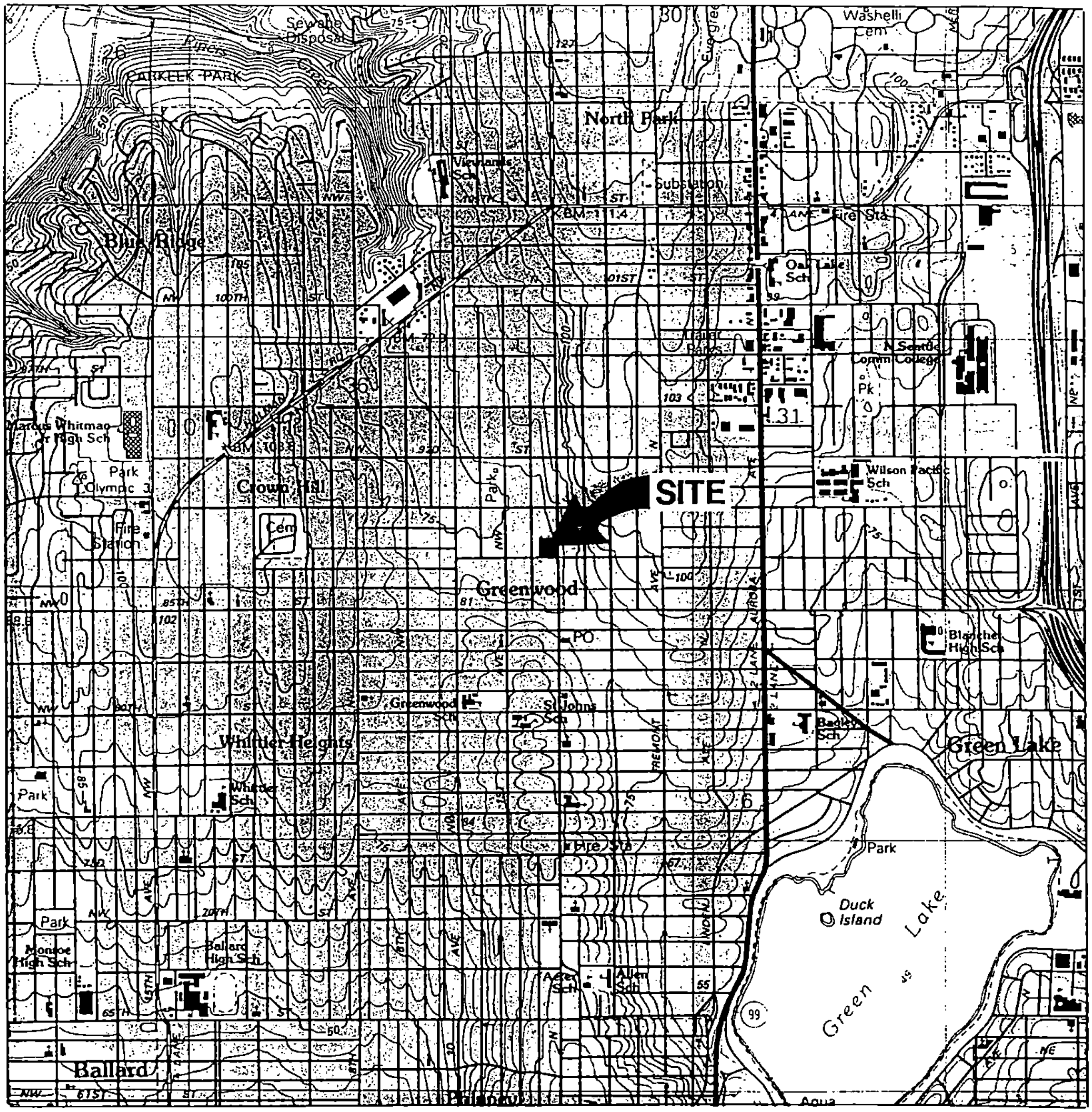
TAG:tag
p:\tag\greenw\4qt95gw.cov

Enclosure

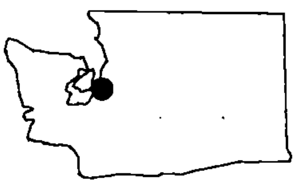
RLane-File-UCPFile (w/enclosure)
PNWRead (w/o enclosure)

cc: Mr. R. Isackson (w/enclosure)
Mr. R. Beighle (w/enclosure)

PR:



SOURCE: U.S.G.S. 7.5' x 15' Quadrangle, Seattle North, WA.



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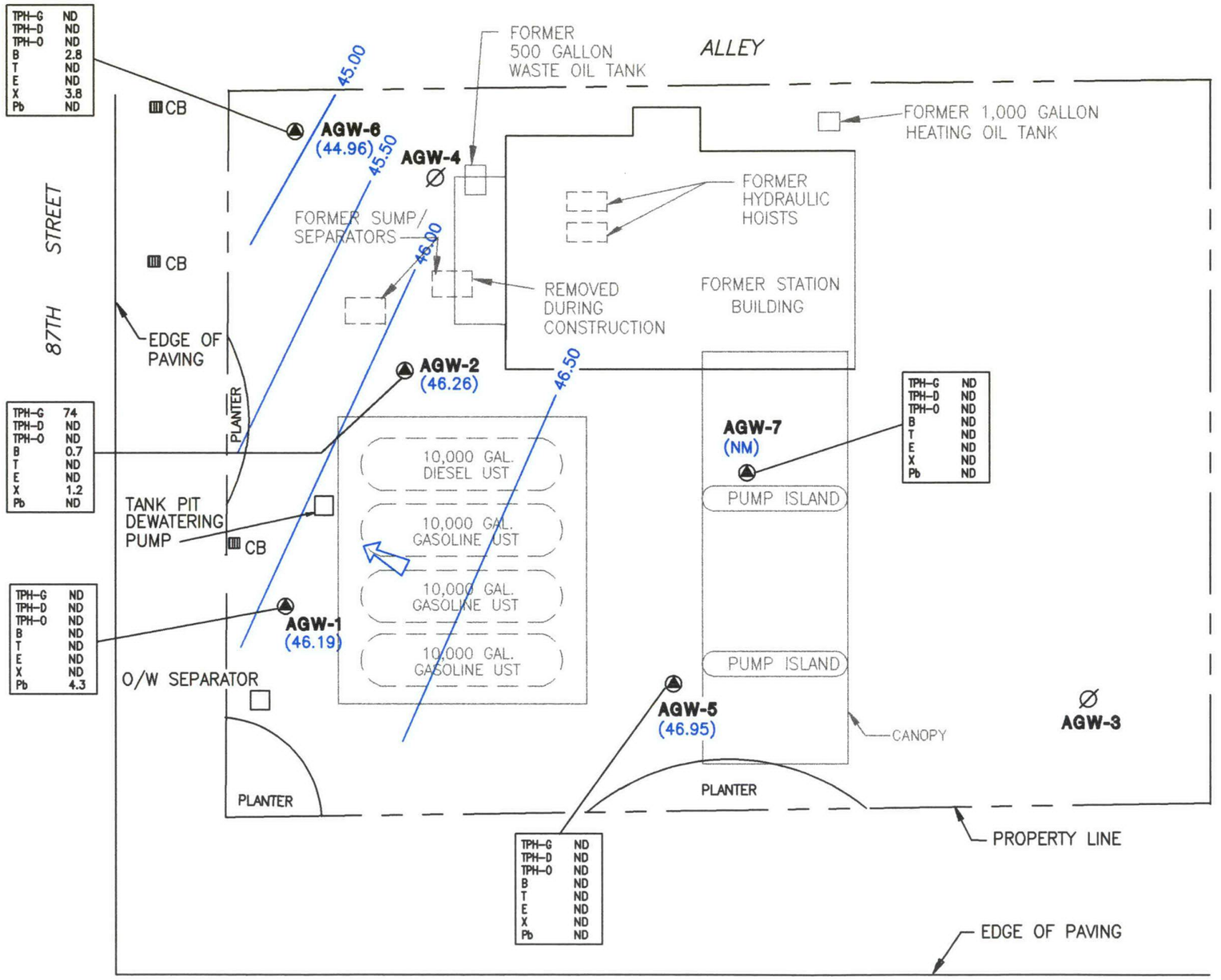
SCALE (Ft.)

EMCON

DATE 3-95
DWN. MLP
REV.
APPR.
PROJECT NO.
0368-013.11

Figure 1
TEXACO SERVICE STATION
8701 GREENWOOD AVENUE NORTH
SEATTLE, WASHINGTON

SITE LOCATION MAP



LEGEND:

- **AGW-1** ▲ Monitoring Well Location and Well Number
- **AGW-3** ∅ Decommissioned Monitoring Well
- CB ▥ Catch Basin
- —— 45.00 —— Groundwater Elevation Contour
- (41.43) Relative Groundwater Elevation
- ◁ Inferred Groundwater Flow Direction
- (NM) Actual elevation could not be calculated because of flowing conditions at the well.

Contours may not reflect potential effects of the former UST basin.

TPH-G	60
TPH-D	ND
TPH-O	ND
B	5.3
T	ND
E	2
X	3
Pb	ND

Laboratory Results in Parts per Billion

TPH-G = Total Petroleum Hydrocarbons as Gasoline
TPH-D = Total Petroleum Hydrocarbons as Diesel
TPH-O = Total Petroleum Hydrocarbons as Oil
B = Benzene
T = Toluene
E = Ethylbenzene
X = Total Xylenes
Pb = Total Lead
ND = Not Detected at or Above Method Reporting Limits
-- = Not Analyzed

EMCON

DATE 1-96
DWN.
REV.
APPR.
PROJECT NO.
40368-013.011

Figure 2
TEXACO SITE # 63-232-0037
8701 GREENWOOD AVENUE NORTH
SEATTLE, WASHINGTON
GROUNDWATER DATA, DECEMBER 11, 1995

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Table 1

Groundwater Monitoring Data
Texaco Service Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Well Number	Screened Interval (feet bgs)	Top of Casing Elevation (feet)	Date	Depth to Water (feet)	Depth to Product (feet)	Groundwater Elevation (feet)	Groundwater Elevation Change Since Last Measurement (feet)
AGW-1	4.5 - 19.5	47.36	04/03/91	3.18	None	44.18	—
			05/15/91	—	None	—	—
			08/15/91	0.62	None	46.74	+2.56
			11/21/91	0.70	None	46.88	+0.14
			03/06/92	0.47	None	46.89	+0.01
			11/06/92	0.46	None	46.90	+0.01
			03/26/93	0.49	None	46.87	-0.03
			06/09/93	0.42	None	46.94	+0.07
		47.36*	03/17/94	1.99	None	45.37	-1.57
			11/10/94	1.21	None	46.15	+0.78
			02/24/95	6.90	None	40.46	-5.69
			06/28/95	5.93	None	41.43	+0.97
			9/11/95	2.31	None	45.05	+3.62
			12/11/95	1.17	None	46.19	1.14
AGW-2	4.5 - 19.0	47.59	04/03/91	3.43	None	44.16	—
			05/15/91	—	None	—	—
			08/15/91	1.65	None	45.94	+1.78
			11/21/91	1.30	None	46.29	+0.35
			03/06/92	1.14	None	46.45	+0.16
			11/06/92	1.18	None	46.41	-0.04
			03/26/93	1.18	None	46.41	0.00
			06/09/93	1.06	None	46.53	+0.12
			03/17/94	2.18	None	45.46	-0.07

Table 1

Groundwater Monitoring Data
Texaco Service Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Well Number	Screened Interval (feet bgs)	Top of Casing Elevation (feet)	Date	Depth to Water (feet)	Depth to Product (feet)	Groundwater Elevation (feet)	Groundwater Elevation Change Since Last Measurement (feet)
AGW-2		47.64*	11/10/94	1.57	None	46.07	+0.61
(continued)			02/24/95	5.84	None	41.80	-4.27
			06/28/95	5.41	None	42.23	+0.43
			09/11/95	2.12	None	45.52	+3.29
			12/11/95	1.38	None	46.26	+0.74
AGW-3	4.5 - 19.0	49.10	03/29/91	—	None	49.10	—
Well Decommissioned							
AGW-4	4.5 - 19.5	47.97	04/03/91	4.61	None	43.36	—
			05/15/91	—	None	—	—
			08/15/91	2.76	None	45.21	+1.85
			11/21/91	2.45	None	45.52	+0.31
			03/06/92	2.45	None	45.52	0.00
			11/06/92	3.21	None	44.79	-0.76
			03/26/93	3.03	None	44.94	+0.18
			06/09/93	2.66	None	45.31	+0.37
Well Decommissioned							
AGW-5	4.5 - 19.5	49.47	04/03/91	2.78	None	46.69	—
			05/15/91	—	None	—	—
			08/15/91	1.53	None	47.94	+1.25
			11/21/91	2.40	None	47.07	-0.87
			03/06/92	1.45	None	48.02	+0.95
			11/06/92	2.27	None	47.20	-0.82
			03/26/93	2.05	None	47.42	+0.22
			06/09/93	1.95	None	47.52	+0.10

Table 1

Groundwater Monitoring Data
Texaco Service Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Well Number	Screened Interval (feet bgs)	Top of Casing Elevation (feet)	Date	Depth to Water (feet)	Depth to Product (feet)	Groundwater Elevation (feet)	Groundwater Elevation Change Since Last Measurement (feet)
AGW-5		49.11*	03/17/94	1.65*	None	47.46	-0.06
(continued)			11/10/94	3.52	None	45.59	-1.87
			02/24/95	3.79	None	45.32	-0.27
			06/28/95	3.61	None	45.50	+0.18
			09/11/95	3.62	None	45.49	-0.01
			12/11/95	2.16	None	46.95	+1.46
AGW-6	14.0 - 24.0	46.17*	03/17/94	.51	None	45.66	—
			11/10/94	1.58	None	44.59	-1.07
			02/24/95	2.62	None	43.55	-1.04
			06/28/95	3.97	None	42.20	-1.35
			09/11/95	1.70	None	44.47	+2.27
			12/11/95	1.21	None	44.96	+0.49
AGW-7	16.0 - 26.0	48.70	03/17/94	.05	None	48.65	—
			11/10/94	0.00	None	48.70	+0.05
			02/24/95	1.64	None	47.06	-1.64
			06/28/95	1.26	None	47.44	+0.38
			09/11/95	0.00	None	NM	NM
			12/11/95	0.00	None	NM	NM

NOTE: * = resurveyed March 16, 1994.
NM = not measurable due to flowing conditions.

Table 2

Groundwater Laboratory Results
Texaco Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Well Number	Date	Results of Analyses (µg/L)							
		Ecology Method WTPH-G	Ecology Method WTPH-D (extended)		EPA Method 5030/602				EPA Method 7421
		TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total Lead
MTCA Method A Cleanup Levels[a]		1,000	1,000	1,000	5	40	30	20	5
AGW-1	04/03/91	ND	—	—	ND	ND	ND	ND	—
	05/15/91	—	—	—	440	1,000	92	670	—
	08/15/91	361,000	—	—	1,400	7,400	1,000	8,100	ND
	11/21/91	47,000	ND	ND	680	6,400	2,000	13,000	—
	03/06/92	48,000	ND	ND	710	3,200	1,400	8,700	ND
	11/06/92	37,000	—	—	95.1	260	1,400	8,200	ND
	03/26/93	18,400	—	—	42.8	27	397	1,450	ND
	06/09/93	15,000	—	—	35.2	23	415	1,530	ND
	03/17/94	1,960	730	ND	17.8	8	24	104	ND
	11/10/94	ND	840	ND	2.2	ND	ND	2	ND
	*11/10/94	ND	—	—	2.2	ND	ND	2	—
	02/24/95	180	ND	ND	4.8	ND	6	6	ND
	02/24/95	190	—	—	5.3	ND	6	7	—
	06/28/95	60	ND	ND	5.3	ND	2	3	ND
	06/28/95	60	ND	ND	5.3	ND	2	3	ND
	09/11/95	ND	ND	ND	0.7	ND	ND	ND	ND
	09/11/95	ND	—	—	0.8	ND	ND	ND	—
	12/11/95	ND	ND	ND	ND	ND	ND	ND	4.3
AGW-2	04/03/91	—	—	—	ND	ND	ND	ND	—
	05/15/91	—	—	—	ND	ND	ND	ND	—
	08/15/91	1,030	—	—	250	220	15	86	ND

Table 2

Groundwater Laboratory Results
Texaco Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Well Number	Date	Results of Analyses (µg/L)							
		Ecology Method WTPH-G	Ecology Method WTPH-D (extended)		EPA Method 5030/602				EPA Method 7421
		TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total Lead
MTCA Method A Cleanup Levels[a]		1,000	1,000	1,000	5	40	30	20	5
AGW-2, cont.	11/21/91	7,300	ND	1,200	910	1,300	260	1,200	—
	03/06/92	24,000	ND	1,100	870	3,700	760	4,900	ND
	11/06/92	3,230	—	—	152	98	175	804	ND
	03/26/93	3,390	340	ND	113	33	149	642	ND
	06/09/93	3,270	ND	ND	108	18	164	666	3
	03/17/94	470	270	ND	18.4	ND	17	68	ND
	11/10/94	470	ND	ND	11.5	ND	10	72	ND
	02/24/95	110	ND	ND	2.8	ND	2	14	ND
	06/28/95	60	440	ND	0.6	ND	ND	1	ND
	09/11/95	ND	ND	ND	ND	ND	ND	ND	ND
	12/11/95	74	ND	ND	0.7	ND	ND	1.2	ND
AGW-3	03/29/91	—	—	—	ND	ND	ND	ND	—
Well Decommissioned									
AGW-4	04/03/91	—	—	—	2.6	20	2.7	31	—
	05/15/91	—	—	—	8.4	19	2.4	20	—
	08/15/91	1,200	3,260	—	11	4	1	7	4
	11/21/91	3,500	ND	2,040	660	700	21	133	—
	03/06/92	ND	ND	800	139	182	3	18	ND
	11/06/92	90	—	—	20.9	13	4	17	ND
	03/26/93	999	480	ND	31.8	35	51	246	ND

Table 2

Groundwater Laboratory Results
Texaco Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Well Number	Date	Results of Analyses (µg/L)							
		Ecology Method WTPH-G	Ecology Method WTPH-D (extended)		EPA Method 5030/602				EPA Method 7421
		TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total Lead
MTCA Method A Cleanup Levels[a]		1,000	1,000	1,000	5	40	30	20	5
AGW-4, cont.	06/09/93	1,900	1,060	ND	61.1	64	108	533	ND
	03/17/94	—	—	—	—	—	—	—	—
Well Decommissioned									
AGW-5	04/03/91	—	—	—	30	10	5	7	—
	05/15/91	—	—	—	220	53	3.5	12	—
	08/15/91	—	—	—	9.4	ND	ND	ND	ND
	11/21/91	100	ND	ND	2.5	ND	ND	ND	—
	03/06/92	ND	ND	ND	0.9	ND	ND	ND	ND
	11/06/92	ND	—	—	ND	ND	ND	ND	ND
	03/26/93	ND	—	—	ND	ND	ND	ND	ND
	06/09/93	ND	—	—	ND	ND	ND	ND	ND
	03/17/94	ND	ND	ND	ND	ND	ND	ND	ND
	11/10/94	ND	ND	ND	ND	ND	ND	ND	ND
	02/24/95	ND	ND	ND	30.6	1	2	ND	ND
	06/28/95	ND	ND	ND	ND	ND	ND	ND	ND
	09/11/95	ND	ND	ND	ND	ND	ND	ND	ND
	12/11/95	ND	ND	ND	ND	ND	ND	ND	ND
AGW-6	03/17/94	300	ND	ND	10.6	1	14	56	4
	11/10/94	200	ND	ND	7.4	ND	6	29	ND
	02/24/95	460	ND	ND	8.3	2	8	20	ND

Table 2

Groundwater Laboratory Results
Texaco Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Well Number	Date	Results of Analyses (µg/L)							
		Ecology Method WTPH-G	Ecology Method WTPH-D (extended)		EPA Method 5030/602				EPA Method 7421
		TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total Lead
MTCA Method A Cleanup Levels[a]		1,000	1,000	1,000	5	40	30	20	5
AGW-6, cont.	06/28/95	80	ND	ND	4.7	ND	1	7	ND
	09/11/95	ND	ND	ND	3.2	ND	ND	3	ND
	12/11/95	ND	ND	ND	2.8	ND	ND	3.8	ND
AGW-7	03/17/94	ND	ND	ND	ND	ND	ND	ND	ND
	11/10/94	ND	ND	ND	ND	ND	ND	ND	ND
	02/24/95	ND	ND	ND	ND	ND	ND	ND	ND
	06/28/95	ND	ND	ND	ND	ND	ND	ND	ND
	09/11/95	ND	ND	ND	ND	ND	ND	ND	ND
	12/11/95	ND	ND	ND	ND	ND	ND	ND	ND

NOTE: Shaded values equal or exceed MTCA Method A Cleanup Levels.
- ND = not detected at or above method reporting limit.
- µg/L = micrograms per liter; approximates parts per billion.
- — = not analyzed.
- * = results for duplicate sample, designated AGW-8-1194.
- TPH-G = total petroleum hydrocarbons as gasoline.
- TPH-D = total petroleum hydrocarbons as diesel.
- TPH-O = total petroleum hydrocarbons as oil.

[a] Chapter 173-340 WAC, "The Model Toxics Control Act Cleanup Regulation; Method A Cleanup Levels." Amended December 1993.

FIELD SAMPLING DATA SHEET

EMCON
18912 North Creek Parkway, Suite 100
Bothell, Washington 98011-8016
Office: (206) 485-5000 Fax: (206) 486-9766

Project Name: Texaco-Greenwood **Well ID:** AGW- 1

Site Address: 8701 Greenwood Ave. N., Seattle, Washington **Sample ID:** AGW- 1 -1295

EMCON Contact: Holly Corner **Client Contact:** Theresa Geijer **Project #:** 40368-113.009

Weather: (Part) Sun | (Part) Cloudy | Rain | | Temperature: 50 °F

WATER LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

Date	Time	DT-Bottom	DT-Water	DTB-DTW	DT-Product	DTP-DTW
12/11/95	1155	19.4	1.17	18.22	18.23	

Well dia. = Gal/ft: 1"=0.041 2"=0.163 4"=0.653 6"=1.469 10"=4.080 12"=5.875

[Water Col x Gal/ft]

	Volume (gal)
x 1	11.90
x 3	35.7

WATER QUALITY DATA

Pore Vol	Method §	Purged (gal)	pH	Temp (°C)	E Cond (µS)			Other
1	PP	12	6.50	13	295			
2	PP	24	6.80	12.5	232			
3	PP	36	6.97	12	177			
4	PP	44	6.93	13	238			
5	PP							

§ METHOD: (SB) Submersible Pump (PP) Peristaltic Pump (DB) Disposable Bailer (PTB) PVC/Teflon Bailer (Ded B) Dedicated Bailer (DP) Dedicated Pump

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Parameter	Date	Time	Method §	# Bottles	Volume (ml)	Type	Preservative	Ice	Filter
GAS/BTEX	12/11/95	1540	DB	2	40	glass	HCl	Yes	No
WTPH-D (ext)			PP	1	1000	glass	none	Yes	No
Lead (Total)			PP	1	500	poly	none	Yes	No

Total Bottles (include duplicate count): | **Duplicate ID:** Time:

Water Characterization			Decontamination Materials			
Color	Clarity	Odor	Liquinox	Methanol	HCl	Nitric
clear	clear	NONE	D.I. Water	Distilled water	Hexane	

Notes:

SAMPLER: Michelle Lange (PRINTED NAME) Michelle Lange (SIGNATURE)

FIELD SAMPLING DATA SHEET

EMCON
18912 North Creek Parkway, Suite 100
Bothell, Washington 98011-8016
Office: (206) 485-5000 Fax: (206) 486-9766

Project Name: Texaco-Greenwood **Well ID:** AGW- 2
Site Address: 8701 Greenwood Ave. N., Seattle, Washington **Sample ID:** AGW- 2 -1295
EMCON Contact: Holly Corner **Client Contact:** Theresa Geijer **Project #:** 40368-113.009

Weather: (Part) Sun | (Part) Cloudy | Rain | | Temperature: 50 °F

WATER LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

Date	Time	DT-Bottom	DT-Water	DTB-DTW	DT-Product	DTP-DTW
12/11/95		19.65	1.38	18.27		

Well dia. = Gal/ft: 1"=0.041 2"=0.163 4"=0.653 6"=1.469 10"=4.080 12"=5.875

[Water Col x Gal/ft]

	Volume (gal)
X 1	11.93
X 3	35.79

WATER QUALITY DATA

Pore Vol	Method §	Purged (gal)	pH	Temp (°C)	E Cond (µS)			Other
1	PP	12	6.86	12.5	302			
2	PP	24	6.84	13	340			
3	PP	36	6.90	12	350			
4	PP							
5	PP							

§ METHOD: (SB) Submersible Pump (PP) Peristaltic Pump (DB) Disposable Bailer (PTB) PVC/Teflon Bailer (Ded B) Dedicated Bailer (DP) Dedicated Pump

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Parameter	Date	Time	Method §	# Bottles	Volume (ml)	Type	Preservative	Ice	Filter
GAS/BTEX	12/11/95	1610	DB	2	40	glass	HCl	Yes	No
WTPH-D (ext)			PP	1	1000	glass	none	Yes	No
Lead (Total)			PP	1	500	poly	none	Yes	No

Total Bottles (include duplicate count): | **Duplicate ID:** Time:

Water Characterization			Decontamination Materials			
Color	Clarity	Odor	Liquinox	Methanol	HCl	Nitric
clear-grey	Slightly turbid	Slightly sulfur-like	D.I. Water	Distilled water	Hexane	

Notes:

SAMPLER: Michelle Lange
(PRINTED NAME)

Michelle Lange
(SIGNATURE)

FIELD SAMPLING DATA SHEET

EMCON
18912 North Creek Parkway, Suite 100
Bothell, Washington 98011-8016
Office: (206) 485-5000 Fax: (206) 486-9766

Project Name: Texaco-Greenwood **Well ID:** AGW-5
Site Address: 8701 Greenwood Ave. N., Seattle, Washington **Sample ID:** AGW-5 -1295
EMCON Contact: Holly Corner **Client Contact:** Theresa Geijer **Project #:** 40368-113.009

Weather: | (Part) Sun | (Part) Cloudy | Rain | — | Temperature: 50 °F

WATER LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

Date	Time	DT-Bottom	DT-Water	DTB-DTW	DT-Product	DTP-DTW
12/11/95	1200	19.11	2.16	16.95		

Well dia. = Gal/ft: 1"=0.041 2"=0.163 4"=0.653 5"=1.469 10"=4.080 12"=5.875

[Water Col x Gal/ft]

	Volume (gal)
X 1	11.06
X 3	33.18

WATER QUALITY DATA

Pore Vol	Method §	Purged (gal)	pH	Temp (°C)	E Cond (µS)			Other
1	PP	11	5.47	14	251			
2	PP	22	6.05	13	249			
3	PP	33	6.25	13	273			
4	PP	44						
5	PP							

§ METHOD: (SB) Submersible Pump (PP) Peristaltic Pump (DB) Disposable Bailer (PTB) PVC/Teflon Bailer (Ded B) Dedicated Bailer (DP) Dedicated Pump.

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Parameter	Date	Time	Method §	# Bottles	Volume (ml)	Type	Preservative	Ice	Filter
GAS/BTEX	12/11/95	1445	DB	2	40	glass	HCl	Yes	No
WTPH-D (ext)			PP	1	1000	glass	none	Yes	No
Lead (Total)			PP	1	500	poly	none	Yes	No

Total Bottles (include duplicate count): | **Duplicate ID:** | Time:

Water Characterization			Decontamination Materials			
Color	Clarity	Odor	Liquinox	Methanol	HCl	Nitric
none	clear	none	D.I. Water	Distilled water	Hexane	

Notes: went dry

SAMPLER: Michelle Lange (PRINTED NAME) Michelle Lange (SIGNATURE)

FIELD SAMPLING DATA SHEET

EMCON
18912 North Creek Parkway, Suite 100
Bothell, Washington 98011-8016
Office: (206) 485-5000 Fax: (206) 486-9766

Project Name: Texaco-Greenwood **Well ID:** AGW-6
Site Address: 8701 Greenwood Ave. N., Seattle, Washington **Sample ID:** AGW-6 -1295
EMCON Contact: Holly Corner **Client Contact:** Theresa Geijer **Project #:** 40368-113.009

Weather: | (Part) Sun | (Part) Cloudy | (Rain) | | Temperature: 50 °F

WATER LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

Date	Time	DT-Bottom	DT-Water	DTB-DTW	DT-Product	DTP-DTW
12/11/95	12.05	23.82	1.21	22.61		

Well dia. = Gal/ft: 1"=0.041 2"=0.163 (4"=0.653) 6"=1.469 10"=4.080 12"=5.875

[Water Col x Gal/ft]

	Volume (gal)
X 1	14.76
X 3	44.28

WATER QUALITY DATA

Pore Vol	Method §	Purged (gal)	pH	Temp (°C)	E Cond (µS)			Other
1	PP	14.75	7.00	12	330			
2	PP		7.00	13	311			
3	PP	44.25	7.30	13	319			
4	PP							
5	PP							

§ METHOD: (SB) Submersible Pump (PP) Peristaltic Pump (DB) Disposable Bailer (PTB) PVC/Teflon Bailer (Ded B) Dedicated Bailer (DP) Dedicated Pump

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Parameter	Date	Time	Method §	# Bottles	Volume (ml)	Type	Preservative	Ice	Filter
GAS/BTEX	12/11/95	1720	DB	2	40	glass	HCl	Yes	No
WTPH-D (ext)		↓	PP	1	1000	glass	none	Yes	No
Lead (Total)		↓	PP	1	500	poly	none	Yes	No

Total Bottles (include duplicate count): | **Duplicate ID:** Time:

Water Characterization			Decontamination Materials			
Color	Clarity	Odor	Liquinox	Methanol	HCl	Nitric
—	clear	—	D.I. Water	Distilled water	Hexane	

Notes:

SAMPLER: Michelle Lange (PRINTED NAME) (SIGNATURE) Michelle Lange

FIELD SAMPLING DATA SHEET

EMCON
18912 North Creek Parkway, Suite 100
Bothell, Washington 98011-8016
Office: (206) 485-5000 Fax: (206) 486-9766

Project Name: Texaco-Greenwood **Well ID:** AGW- 7
Site Address: 8701 Greenwood Ave. N., Seattle, Washington **Sample ID:** AGW- 7 -1295
EMCON Contact: Holly Corner **Client Contact:** Theresa Geijer **Project #:** 40368-113.009

Weather: (Part) Sun | (Part) Cloudy | (Rain) | Temperature: 50 °F

WATER LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

Date	Time	DT-Bottom	DT-Water	DTB-DTW	DT-Product	DTP-DTW
12/11/95	1310	25.40	0	25.4		

Well dia. = Gal/ft: 1"=0.041 2"=0.163 (4"=0.653) 6"=1.469 10"=4.080 12"=5.875

[Water Col x Gal/ft]

	Volume (gal)
X 1	16.58
X 3	49.74

WATER QUALITY DATA

Pore Vol	Method §	Purged (gal)	pH	Temp (°C)	E Cond (µS)			Other
1	PP	16.5	5.78	13	259			
2	PP	33.0	6.12	13	285			
3	PP	49.75	6.13	13	301			
4	PP	66		13	287			
5	PP							

§ METHOD: (SB) Submersible Pump (PP) Peristaltic Pump (DB) Disposable Bailer (PTB) PVC/Teflon Bailer (Ded B) Dedicated Bailer (DP) Dedicated Pump

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Parameter	Date	Time	Method §	# Bottles	Volume (ml)	Type	Preservative	Ice	Filter
GAS/BTEX	12/11/95	1413	DB	2	40	glass	HCl	Yes	No
WTPH-D (ext)			PP	1	1000	glass	none	Yes	No
Lead (Total)			PP	1	500	poly	none	Yes	No

Total Bottles (include duplicate count): | **Duplicate ID:** | Time:

Water Characterization			Decontamination Materials			
Color	Clarity	Odor	Liquinox	Methanol	HCl	Nitric
none	clear	none	D.I. Water	Distilled water	Hexane	

Notes: Sample taken after 66 gal.

SAMPLER: Michelle Lange (PRINTED NAME) Michelle Lange (SIGNATURE)

NORTH CREEK ANALYTICAL

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EMCON Northwest
18912 N. Creek Parkway, #100
Bothell, WA 98011
Attention: John Meyer

Project Name: Texaco Greenwood, #63-232-0037
Client Project : #40368-013.011

NCA Project #: B512181

Received: Dec 12, 1995
Reported: Dec 27, 1995

PROJECT SUMMARY PAGE

Laboratory Sample Number	Sample Description	Sample Matrix	Date Sampled
B512181-01	AGW-1-1295	Water	12/11/95
B512181-02	AGW-2-1295	Water	12/11/95
B512181-03	AGW-5-1295	Water	12/11/95
B512181-04	AGW-6-1295	Water	12/11/95
B512181-05	AGW-7-1295	Water	12/11/95

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.

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Matthew T. Essig
Project Manager

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EMCON Northwest	Client Project ID:	Texaco Greenwood, #63-232-0037	Sampled: Dec 11, 1995
18912 N. Creek Parkway, #100	Sample Matrix:	Water	Received: Dec 12, 1995
Bothell, WA 98011	Analysis Method:	WTPH-G	Analyzed: Dec 26-27, 1995
Attention: John Meyer	First Sample #:	B512181-01	Reported: Dec 27, 1995

TOTAL PETROLEUM HYDROCARBONS-GASOLINE RANGE

Sample Number	Sample Description	Sample Result µg/L (ppb)	Surrogate Recovery %
B512181-01	AGW-1-1295	N.D.	94
B512181-02	AGW-2-1295	74	116
B512181-03	AGW-5-1295	N.D.	91
B512181-04	AGW-6-1295	N.D.	105
B512181-05	AGW-7-1295	N.D.	88
BLK122695	Method Blank	N.D.	95

Reporting Limit:	**50**

4-Bromofluorobenzene surrogate recovery control limits are 50 - 150 %.
Volatile Total Petroleum Hydrocarbons are quantitated as Gasoline Range Organics (toluene - dodecane).
Analytes reported as N.D. were not detected above the stated Reporting Limit.

NORTH CREEK ANALYTICAL Inc.

Matthew T. Essig
Project Manager

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EMCON Northwest	Client Project ID: Texaco Greenwood, #63-232-0037	Analyst: B. Christlieb
18912 N. Creek Parkway, #100	Sample Matrix: Water	F. Shino
Bothell, WA 98011	Analysis Method: WTPH-G	
Attention: John Meyer	Units: µg/L (ppb)	Analyzed: Dec 26, 1995
		Reported: Dec 27, 1995

HYDROCARBON QUALITY CONTROL DATA REPORT

ACCURACY ASSESSMENT
Laboratory Control Sample

Gasoline	
Spike Conc. Added:	100
Spike Result:	100
% Recovery:	100
Upper Control Limit %:	132
Lower Control Limit %:	56

PRECISION ASSESSMENT
Sample Duplicate

Gasoline Range Organics	
Sample Number:	B512199-01
Original Result:	2,200
Duplicate Result:	2,200
Relative % Difference	0.0
Maximum RPD:	50

NORTH CREEK ANALYTICAL In

Matthew T. Essig
Project Manager

% Recovery: $\frac{\text{Spike Result}}{\text{Spike Concentration Added}} \times 100$

Relative % Difference: $\frac{\text{Original Result - Duplicate Result}}{(\text{Original Result + Duplicate Result}) / 2} \times 100$

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EMCON Northwest	Client Project ID:	Texaco Greenwood, #63-232-0037	Sampled:	Dec 11, 1995
18912 N. Creek Parkway, #100	Sample Matrix:	Water	Received:	Dec 12, 1995
Bothell, WA 98011	Analysis Method:	EPA 8020	Analyzed:	Dec 22, 1995
Attention: John Meyer	First Sample #:	B512181-01	Reported:	Dec 27, 1995

BTEX DISTINCTION

Sample Number	Sample Description	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)	Surrogate Recovery %
B512181-01	AGW-1-1295	N.D.	N.D.	N.D.	N.D.	99
B512181-02	AGW-2-1295	0.70	N.D.	N.D.	1.2	108
B512181-03	AGW-5-1295	N.D.	N.D.	N.D.	N.D.	102
B512181-04	AGW-6-1295	2.8	N.D.	N.D.	3.8	109
B512181-05	AGW-7-1295	N.D.	N.D.	N.D.	N.D.	106
BLK122295	Method Blank	N.D.	N.D.	N.D.	N.D.	109
Reporting Limits:		**0.50**	**0.50**	**0.50**	**1.0**	

4-Bromofluorobenzene surrogate recovery control limits are 59 - 144 %.
Analytes reported as N.D. were not detected above the stated Reporting Limit.

NORTH CREEK ANALYTICAL Inc.

Matthew T. Essig
Project Manager

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EMCON Northwest
18912 N. Creek Parkway, #100
Bothell, WA 98011
Attention: John Meyer

Client Project ID: Texaco Greenwood, #63-232-0037
Sample Matrix: Water
Analysis Method: EPA 8020
Units: µg/L (ppb)
QC Sample #: B512397-01

Analyst: B. Christlieb, F. Shino
Analyzed: Dec 22, 1995
Reported: Dec 27, 1995

MATRIX SPIKE QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Sample Result:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10.0	10.0	10.0	30.0
Spike Result:	9.1	9.8	9.4	29.0
Spike % Recovery:	91%	98%	94%	97%
Spike Dup. Result:	9.7	10.5	10.2	31.8
Spike Duplicate % Recovery:	97%	105%	102%	106%
Upper Control Limit %:	115	116	122	122
Lower Control Limit %:	82	81	85	85
Relative % Difference:	6.4%	6.9%	8.2%	8.8%
Maximum RPD:	16	16	16	17

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Matthew T. Essig
Project Manager

% Recovery: $\frac{\text{Spike Result - Sample Result}}{\text{Spike Conc. Added}} \times 100$

Relative % Difference: $\frac{\text{Spike Result - Spike Dup. Result}}{(\text{Spike Result + Spike Dup. Result}) / 2} \times 100$

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EMCON Northwest	Client Project ID:	Texaco Greenwood, #63-232-0037	Sampled: Dec 11, 1995
18912 N. Creek Parkway, #100	Sample Matrix:	Water	Received: Dec 12, 1995
Bothell, WA 98011	Analysis Method:	WTPH-D Extended	Extracted: Dec 18, 1995
Attention: John Meyer	First Sample #:	B512181-01	Analyzed: Dec 24-25, 1995
			Reported: Dec 27, 1995

TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE EXTENDED

Sample Number	Sample Description	Diesel Result mg/L (ppm)	Heavy Oil Result mg/L (ppm)	Surrogate Recovery %
B512181-01	AGW-1-1295	N.D.	N.D.	95
B512181-02	AGW-2-1295	N.D.	N.D.	91
B512181-03	AGW-5-1295	N.D.	N.D.	85
B512181-04	AGW-6-1295	N.D.	N.D.	89
B512181-05	AGW-7-1295	N.D.	N.D.	88
BLK121895	Method Blank	N.D.	N.D.	83

Reporting Limit:	**0.25**	**0.75**

2-Fluorobiphenyl surrogate recovery control limits are 50 - 150%.
Extractable Hydrocarbons are quantitated as Diesel Range Organics (C12 - C24) and Heavy Oil Range Organics (>C24).
Analytes reported as N.D. were not detected above the stated Reporting Limit.

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Matthew T. Essig
Project Manager

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EMCON Northwest
18912 N. Creek Parkway, #100
Bothell, WA 98011
Attention: John Meyer

Client Project ID: Texaco Greenwood, #63-232-0037
Sample Matrix: Water
Analysis Method: WTPH-D
Units: mg/L (ppm)

Analyst: T. Fitzgibbon
Extracted: Dec 18, 1995
Analyzed: Dec 24-25, 1995
Reported: Dec 27, 1995

HYDROCARBON QUALITY CONTROL DATA REPORT

ACCURACY ASSESSMENT
Laboratory Control Sample

Diesel

Spike Conc. Added:	2.04
Spike Result:	1.97
% Recovery:	96
Upper Control Limit %:	107
Lower Control Limit %:	69

PRECISION ASSESSMENT
Sample Duplicate

Diesel Range Organics

Sample Number:	B512181-03
Original Result:	N.D.
Duplicate Result:	N.D.
Relative % Difference	Relative Percent Difference values are not reported at sample concentration levels less than 10 times the Reporting Limit.
Maximum RPD:	44

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Matthew T. Essig
Project Manager

% Recovery: $\frac{\text{Spike Result}}{\text{Spike Concentration Added}} \times 100$

Relative % Difference: $\frac{\text{Original Result - Duplicate Result}}{(\text{Original Result + Duplicate Result}) / 2} \times 100$

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9405 S.W. Nimbus Avenue • Beaverton, OR 97008-7132 (503) 643-9200 • FAX 644-2202

EMCON Northwest	Client Project ID:	Texaco Greenwood, #63-232-0037	Sampled: Dec 11, 1995
18912 N. Creek Parkway, #100	Sample Matrix:	Water	Received: Dec 12, 1995
Bothell, WA 98011	Analysis Method:	EPA 7421	Digested: Dec 14, 1995
Attention: John Meyer	First Sample #:	B512181-01	Analyzed: Dec 14, 1995
			Reported: Dec 27, 1995

METALS ANALYSIS FOR: TOTAL LEAD

Sample Number	Sample Description	Reporting Limit µg/L (ppb)	Sample Result µg/L (ppb)
B512181-01	AGW-1-1295	2.0	4.3
B512181-02	AGW-2-1295	2.0	N.D.
B512181-03	AGW-5-1295	2.0	N.D.
B512181-04	AGW-6-1295	2.0	N.D.
B512181-05	AGW-7-1295	2.0	N.D.
BLK121495	Method Blank	2.0	N.D.

Analytes reported as N.D. were not detected above the stated Reporting Limit.

NORTH CREEK ANALYTICAL Inc.

Matthew T. Essig
Project Manager

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EMCON Northwest
18912 N. Creek Parkway, #100
Bothell, WA 98011
Attention: John Meyer

Client Project ID: Texaco Greenwood, #63-232-0037
Sample Matrix : Water
Units: µg/L (ppb)

Analyst: K. Gendron, S. Davis
Digested: Dec 14, 1995
Reported: Dec 27, 1995

METALS QUALITY CONTROL DATA REPORT

ANALYTE Lead

EPA Method: 7421
Date Analyzed: Dec 14, 1995

ACCURACY ASSESSMENT

LCS Spike Conc. Added:	25
LCS Spike Result:	26.4
LCS Spike % Recovery:	106
Upper Control Limit:	122
Lower Control Limit:	88
Matrix Spike Sample #:	B512159-01
Matrix Spike % Recovery:	95

PRECISION ASSESSMENT

Sample #:	B512159-01
Original:	14
Duplicate:	14
Relative % Difference:	RPD values are not reported at sample concentration levels <10 X the Reporting Limit.

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Matthew T. Essig
Project Manager

Lab Control Sample % Recovery: $\frac{\text{Conc. of L.C.S.}}{\text{L.C.S. Spike Conc. Added}} \times 100$

Relative % Difference: $\frac{\text{Original Result - Duplicate Result}}{(\text{Original Result + Duplicate Result}) / 2} \times 100$

NORTH CREEK ANALYTICAL

...939 1...enue ..., Suite 1... ...ell, W... ...11-95... (...5) 48... FAX ...02
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TEXACO CHAIN OF CUSTODY REPORT Work Order #:

CONSULTANT: EMCON

PROJECT MANAGER: John Meyer

ADDRESS: 18912 N. Creek Parkway #100 Bothell, WA

PHONE: 485-5000 FAX:

PROJECT NAME: Texaco - Greenwood

PROJECT NUMBER: 40368-013.011

SAMPLED BY: Michelle Lange

TEXACO INFORMATION

TEXACO PROJECT MANAGER: Theresa Greiner 425-232-0037

TEXACO FACILITY NUMBER: ~~40368-013.011~~

SITE ADDRESS: 8701 Greenwood Ave. N Seattle, WA

State Hydrocarbon Methods (please circle): WA OR AK ID

TURNAROUND REQUEST in Business Days

Organic & Inorganic Analyses *: (10) 5 3 1

Air Analyses *: 3 1

OTHER Specify:

* Standard Turnaround for Organic & Inorganic Analyses is 10 Days

* Standard Turnaround for Air Analyses is 3 Days

NCA SAMPLE NUMBER	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	TPH-G/BTEX	TPH-D	TPH-D Extended	TPH-418.1	TPH-HCID	Tot Diss Lead				MATRIX (W, S, O)	# OF CONTAINERS	COMMENTS & PRESERVATIVES USED
BS1R181-01	1. AGW-1-1295	12-11-95	X	X	X			X				W	4	
-02	2. AGW-2-1295	1610	X	X	X			X						
-03	3. AGW-5-1295	1445	X	X	X			X						
-04	4. AGW-6-1295	1540	X	X	X			X						
-05	5. AGW-7-1295	1413	X	X	X			X						
	6.													
	7.													
	8.													
	9.													
	10.													

RELINQUISHED BY: Michelle Lange DATE: 12-12-95

PRINT NAME: Michelle Lange FIRM: EMCON TIME: 0730

RECEIVED BY: Richelle M Rose DATE: 12/12/95

PRINT NAME: Richelle M Rose FIRM: NCA TIME: 0730

RELINQUISHED BY: DATE:

PRINT NAME: FIRM: TIME:

RECEIVED BY: DATE:

PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

PAGE 1 OF 1

TEXCOC.REV2, 11/95