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

November 9, 1995
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 September 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 September 11, 1995, 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 September 11, 1995, sampling event.

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

Sincerely,

EMCON

Lisa Rutan for

Holly Corner
Project Geologist

James Bailey, R.G.
Supervising Hydrogeologist

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

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

November 27, 1995

ENV - SERVICE STATIONS
Third Quarter 1995 Groundwater Monitoring and Sampling Data and Remediation Status Reports
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:

Enclosed please find referenced Remediation Status and Groundwater Sampling (Third Quarter 1995) Reports. Operation of a combination airsparging and vapor extraction system was initiated in December 1994. This system was installed in the pea gravel of the former tank pit to remediate low concentrations of hydrocarbons in groundwater. The enclosed reports detail the installation, operation and monitoring of the remediation system. The system was shut down and removed at the end of June 1995 to allow for property development.

The most recent groundwater monitoring and sampling was conducted on September 11, 1995. Depth to water in five on-site monitoring wells (AGW-1, AGW-2, AGW-5, AGW-6 and AGW-7) ranged from approximately 0 to 3.6 feet bgs (below ground surface). As indicated by the groundwater contour map (Figure 2) in the enclosed Groundwater Sampling Report, the September 1995 groundwater flow direction was toward the south.

Groundwater samples collected from the five wells in September 1995 were submitted for chemical analysis of gasoline- (TPH-G), diesel-, and oil-range hydrocarbons, BTEX (benzene, toluene, ethylbenzene and xylenes) compounds and total lead. None of the analytes were detected at or above respective MTCA Method A Cleanup Levels. Chemical analytical data for the September event are shown in Figure 2. Table 2 lists chemical analytical data for this and previous sampling events. Concentrations of TPH-G and BTEX have shown a decreasing trend in all wells since 1991, with concentrations at or below the MTCA Method A Cleanup Levels during the last two quarters (September and June 1995).

Texaco will continue quarterly monitoring and sampling of groundwater. The next event is scheduled for December 1995. Texaco plans to request an 'NFA' letter if analytical data from the next two sampling events are consistent with the Third Quarter 1995 data. Texaco is anxious facilitate the property owners plans to develop this site in the near future. At the Friday December 1, 1995 (9:30 am) meeting at your office we will further discuss the plans for this site.

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

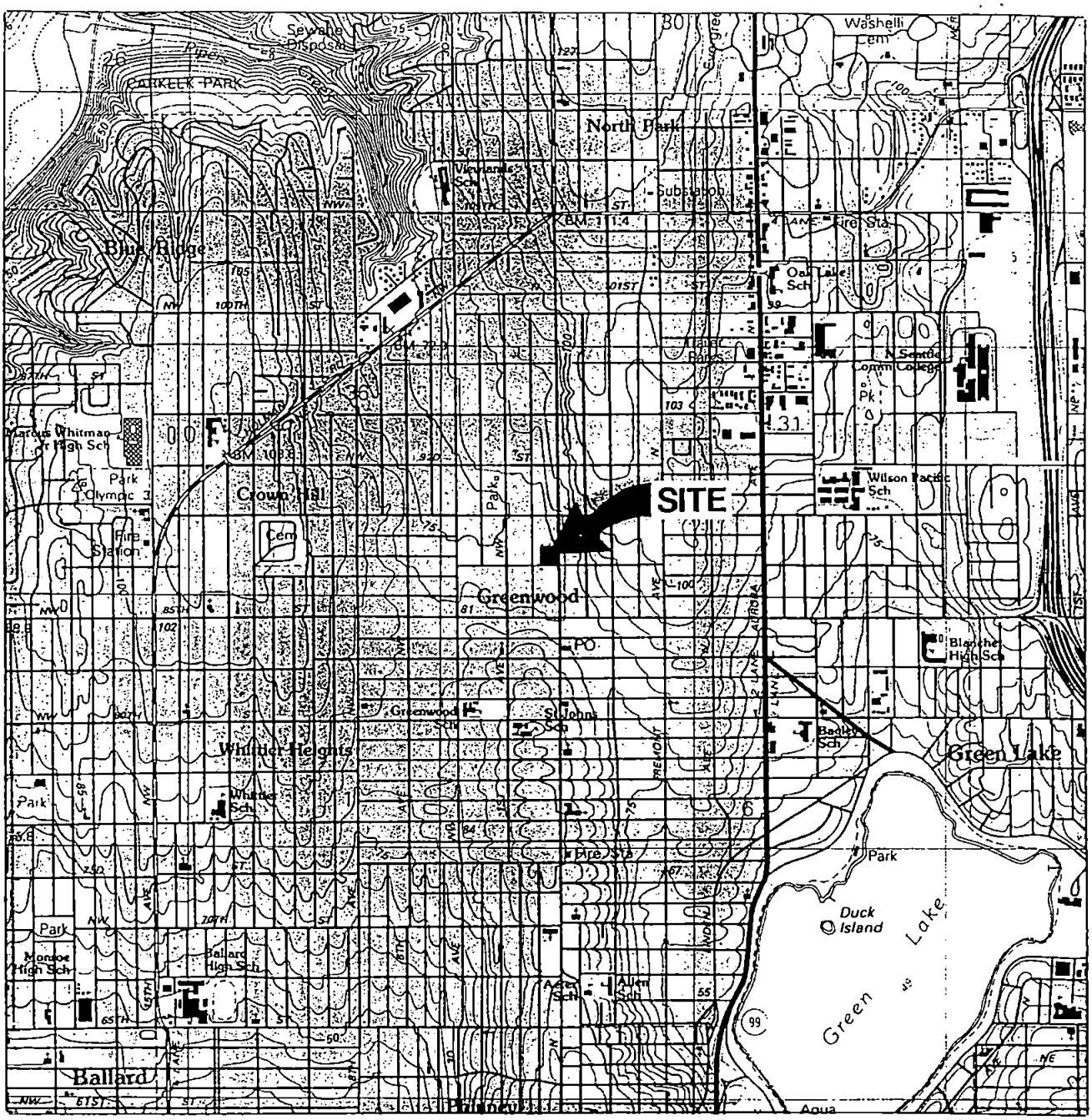
TAG:tag
p:\tag\greenw\rem395gw.cov

Enclosures

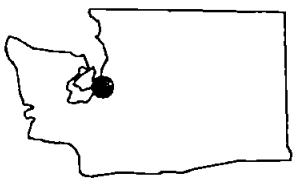
RLane-File-UCPFile (w/enclosures)
PNWRead (w/o enclosures)

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

PR: Hws



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



WASHINGTON

N

0 2000 4000

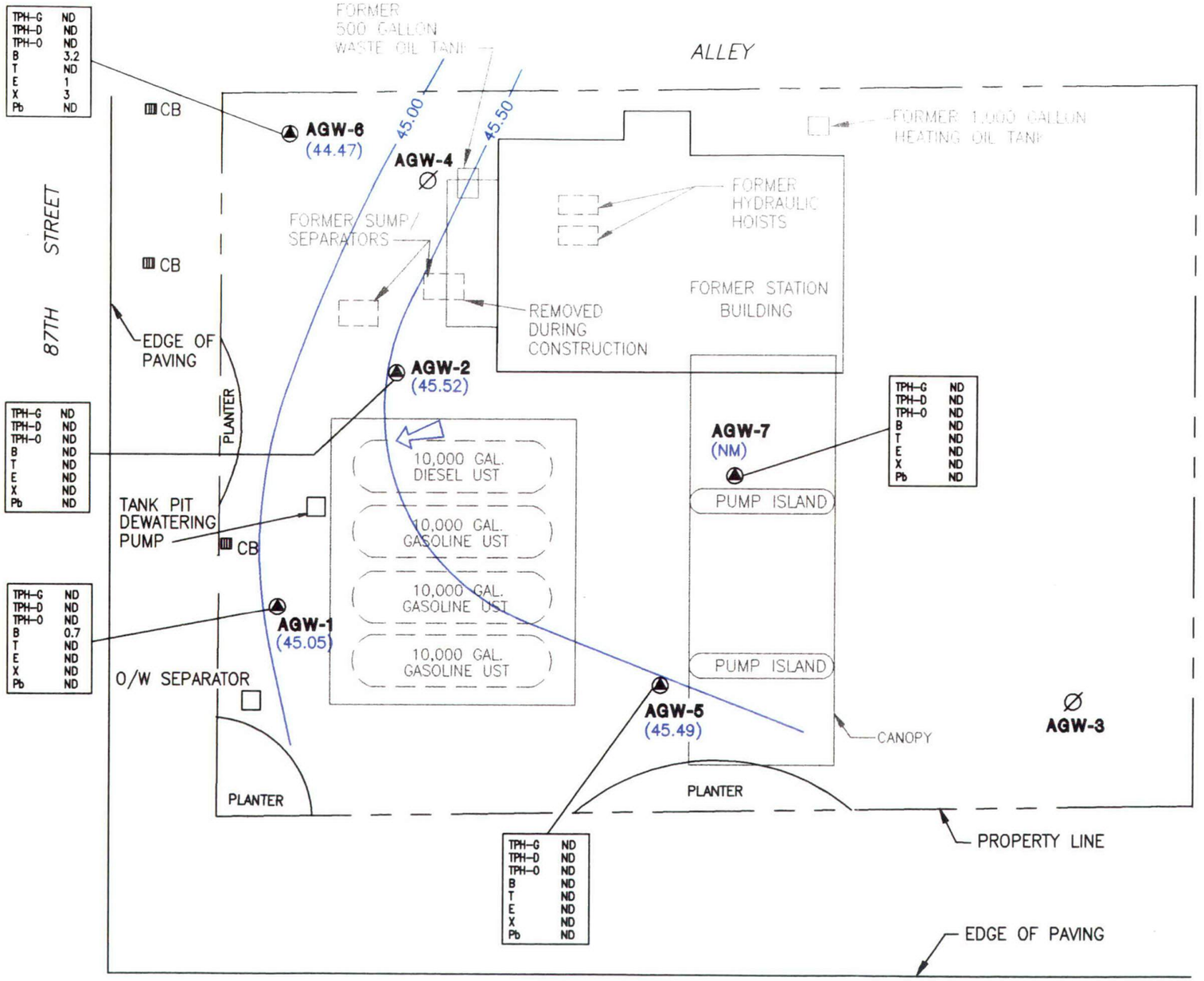
SCALE (Ft.)

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	80
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

N

0 20 40

SCALE (ft)

EMCON

DATE 10-95
DWN.
REV.
APPR.
PROJECT NO.
40368-013.011

Figure 2
8701 GREENWOOD AVENUE NORTH
SEATTLE, WASHINGTON
GROUNDWATER DATA (SEPTEMBER 11, 1995)

I=20 11-10-95 G:\DWG\0368\013\11BLC10A

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
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

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*	03/17/94	2.18	None	45.46	-0.07
(continued)			11/10/94	1.57	None	46.07	+0.61
			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
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

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			11/06/92	2.27	None	47.20	-0.82
(continued)			03/26/93	2.05	None	47.42	+0.22
			06/09/93	1.95	None	47.52	+0.10
		49.11*	03/17/94	1.65*	None	47.46	-0.06
			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
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
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

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

Monitoring Well		Results of Analyses (µg/L)							
		Ecology Method WTPH-G	Ecology Method WTPH-D (extended)		EPA Method 5030/602				EPA Method 7421
Well Number	Date	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
1	11/10/94	ND	840	ND	2.2	ND	ND	2	ND
	*11/10/94	ND	—	—	2.2	ND	ND	2	—
(2)	02/24/95	180	ND	ND	4.8	ND	6	6	ND
	02/24/95	190	—	—	5.3	ND	6	7	—
(3)	06/28/95	60	ND	ND	5.3	ND	2	3	ND
	06/28/95	60	ND	ND	5.3	ND	2	3	ND
4	09/11/95	ND	ND	ND	0.7	ND	ND	ND	ND
	09/11/95	ND	—	—	0.8	ND	ND	ND	—
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

Monitoring Well		Results of Analyses (µg/L)							
		Ecology Method WTPH-G	Ecology Method WTPH-D (extended)		EPA Method 5030/602				EPA Method 7421
Well Number	Date	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
1	02/24/95	110	ND	ND	2.8	ND	2	14	ND
2	06/28/95	60	440	ND	0.6	ND	ND	1	ND
3	09/11/95	ND	ND	ND	ND	ND	ND	ND	ND
AGW-3 Well Decommissioned	03/29/91	—	—	—	ND	ND	ND	ND	—
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

Monitoring Well		Results of Analyses (µg/L)							
		Ecology Method WTPH-G	Ecology Method WTPH-D (extended)		EPA Method 5030/602				EPA Method 7421
Well Number	Date	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
1	11/21/91	100	ND	ND	2.5	ND	ND	ND	—
2	03/06/92	ND	ND	ND	0.9	ND	ND	ND	ND
3	11/06/92	ND	—	—	ND	ND	ND	ND	ND
4	03/26/93	ND	—	—	ND	ND	ND	ND	ND
5	06/09/93	ND	—	—	ND	ND	ND	ND	ND
6	03/17/94	ND	ND	ND	ND	ND	ND	ND	ND
7	11/10/94	ND	ND	ND	ND	ND	ND	ND	ND
8	02/24/95	ND	ND	ND	30.6	1	2	ND	ND
9	06/28/95	ND	ND	ND	ND	ND	ND	ND	ND
10	09/11/95	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

Monitoring Well		Results of Analyses (µg/L)							
		Ecology Method WTPH-G	Ecology Method WTPH-D (extended)		EPA Method 5030/602				EPA Method 7421
Well Number	Date	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
2	09/11/95	ND	ND	ND	3.2	ND	ND	3	ND
AGW-7 /	03/17/94	ND	ND	ND	ND	ND	ND	ND	ND
2	11/10/94	ND	ND	ND	ND	ND	ND	ND	ND
3	02/24/95	ND	ND	ND	ND	ND	ND	ND	ND
4	06/28/95	ND	ND	ND	ND	ND	ND	ND	ND
5	09/11/95	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- /

Site Address: 8701 Greenwood Ave. N Seattle, WA **Sample ID** AGW- / -0995

EMCON Contact: John Meyer **Client Contact:** Theresa Geijer **Project #:** 0368-013.009

Weather: (Part) Sun | (Part) Cloudy | Rain | | Temperature: 72 F

WATER LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

Date	Time	DT-Bottom	DT-Water	DTB-DTW	DT-Product	DTP-DTW
9/[illegible]/95	1326	19.40	2.31	17.09		

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
X 3	33

WATER QUALITY DATA

Pore Vol	Method §	Purged (gal)	pH	Temp (°C)	E Cond (µS)	Turbidity (NTU)	Diss O2 (mg/l)	Other
1	PP	11	7.04	17	279			
2	"	22	7.40	15	305			
3	"	33	7.30	15	283			
4								
5								

§ 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	9/[illegible]/95	1500	DB	2	40	glass	HCl	yes	no
WTPH-D ext	"	"	PP	1	1000	amber	none	"	"
Total Pb	"	"	PP	1	500	poly	HNO3	"	"

Total Bottles (include duplicate count): 6 **Duplicate ID:** AGW-8-0995 **Time:** 1330

Water Characterization			Decontamination Materials			
Color	Clarity	Odor	Liquinox	Methanol	HCl	Nitric
none	clear	[illegible] sulfur-like	D.I. Water	Distilled water	Hexane	

Notes:

SAMPLER: Matthew Melton
(PRINTED NAME) (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, WA **Sample ID** AGW- 2 -0995
EMCON Contact: John Meyer **Client Contact:** Theresa Geijer **Project #:** 0368-013.009

Weather: (Part) Sun (Part) Cloudy Rain Temperature: 75 F

WATER LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

Date	Time	DT-Bottom	DT-Water	DTB-DTW	DT-Product	DTP-DTW
9/11/95	1327	19.65	2.12	17.53		

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
X 3	33

WATER QUALITY DATA

Pore Vol	Method §	Purged (gal)	pH	Temp (°C)	E Cond (µS)	Turbidity (NTU)	Diss O2 (mg/l)	Other
1	PP	11	6.84	15	336			
2	↓	22	6.75	15	301			
3	↓	33	6.95	14	301			
4								
5								

§ 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	9/11/95	1545	DB	2	40	glass	HCl	yes	no
WTPH-D ext	↓	↓	PP	1	1000	amber	none	↓	↓
Total Pb	↓	↓	PP	1	500	poly	HNO3	↓	↓

Total Bottles (include duplicate count): 4 **Duplicate ID:** Time:

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

Notes:

SAMPLER: Matthew Melton
(PRINTED NAME) (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, WA **Sample ID** AGW-5-0995
EMCON Contact: John Meyer **Client Contact:** Theresa Geijer **Project #:** 0368-013.009

Weather: (Part) Sun | (Part) Cloudy | Rain | | Temperature: 70 °F

WATER LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

Date	Time	DT-Bottom	DT-Water	DTB-DTW	DT-Product	DTP-DTW
9/11/95	1329	19.11	3.62	15.49		

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	10
X 3	30

WATER QUALITY DATA

Pore Vol	Method §	Purged (gal)	pH	Temp (°C)	E Cond (µS)	Turbidity (NTU)	Diss O2 (mg/l)	Other
1	PP	10	7.98	15.5	263			
2	↓	20	↓	↓	↓			
3	↓	30						
4								
5								

§ 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	9/11/95	1405	DB	2	40	glass	HCl	yes	no
WTPH-D ext	↓	↓	PP	1	1000	amber	none	↓	↓
Total Pb	↓	↓	PP	1	500	poly	HNO3	↓	↓

Total Bottles (include duplicate count): 4 **Duplicate ID:** Time:

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

Notes:

Dry @ 1.5 p.v. - RECHARGE - sample

SAMPLER: Matthew Melton
(PRINTED NAME) (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, WA **Sample ID** AGW- 6 -0995
EMCON Contact: John Meyer **Client Contact:** Theresa Geijer **Project #:** 0368-013.009

Weather:	(Part) Sun	(Part) Cloudy	Rain		Temperature: 70 °F

WATER LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

Date	Time	DT-Bottom	DT-Water	DTB-DTW	DT-Product	DTP-DTW
9/7/95	1328	23.82	1.70	22.12		

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
X 3	42

WATER QUALITY DATA

Pore Vol	Method §	Purged (gal)	pH	Temp (°C)	E Cond (µS)	Turbidity (NTU)	Diss O2 (mg/l)	Other
1	PP	14	7.28	17	280			
2		28	7.25	15	284			
3		42						
4								
5								

§ 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	9/7/95	1450	DB	2	40	glass	HCl	yes	no
WTPH-D ext		↓	PP	1	1000	amber	none	↓	↓
Total Pb	↓	↓	PP	1	500	poly	HNO3	↓	↓

Total Bottles (include duplicate count): 4 **Duplicate ID:** Time:

Water Characterization			Decontamination Materials			
Color	Clarity	Odor	Liquinox	Methanol	HCl	Nitric
None	Clear	slight sulfur	D.I. Water	Distilled water	Hexane	

Notes: Dry at 2 pore volumes. Allow to recharge, then sample

SAMPLER: Matthew Melton
(PRINTED NAME) (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- 7
Site Address: 8701 Greenwood Ave. N Seattle, WA **Sample ID** AGW- 7 -0995
EMCON Contact: John Meyer **Client Contact:** Theresa Geijer **Project #:** 0368-013.009

Weather:	(Part) Sun	(Part) Cloudy	Rain		Temperature: 70 °F

WATER LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

Date	Time	DT-Bottom	DT-Water	DTB-DTW	DT-Product	DTP-DTW
9/11/95	1330	25.40	0.00	25.40		
"						

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	16.5
X 3	49.5

WATER QUALITY DATA

Pore Vol	Method §	Purged (gal)	pH	Temp (°C)	E Cond (µS)	Turbidity (NTU)	Diss O2 (mg/l)	Other
1	PP	16.5	7.88	14	276			
2		33	7.62	14	253			
3		49.5	7.46	13.5	253			
4								
5								

§ 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	9/11/95	1420	DB	2	40	glass	HCl	yes	no
WTPH-D ext	"	"	PP	1	1000	amber	none	"	"
Total Pb	"	"	PP	1	500	poly	HNO3	"	"

Total Bottles (include duplicate count): 4 **Duplicate ID:** Time:

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

Notes:

WATER IS OVERFLOWING CASING.

SAMPLER: Matthew Melton
(PRINTED NAME) (SIGNATURE)

Columbia Analytical Services, Inc.

September 26, 1995

Service Request No.: B950697

John Meyer
EMCON Northwest
18912 N Creek Parkway
Suite 210
Bothell, WA 98011

Re: **Texaco - Greenwood/Project #0368-013.011**

Dear John:

Attached are the results of the sample(s) submitted to our laboratory on September 14, 1995. Preliminary results were transmitted via facsimile on September 25, 1995. For your reference, these analyses have been assigned our service request number B950697.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and CAS is not responsible for use of less than the complete report. Results only apply to samples analyzed.

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Colin B. Elliott
Laboratory Manager

CBE/bdr

18912 North Creek Parkway, Suite 110 • Bothell, WA 98011 • 206/486-1903 • Fax 206/

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON	**Service Request:**	B950697
Project:	Texaco - Greenwood	**Date Collected:**	9/11/95
Sample Matrix:	Water	**Date Received:**	9/14/95
		Date Extracted:	NA
		Date Analyzed:	9/18,19/1995

BTEX and Total Petroleum Hydrocarbons as Gasoline
EPA Methods 5030A/8020 and Washington DOE Method WTPH-G
Units: µg/L (ppb)

Analyte:	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH as Gasoline
Method Reporting Limit:	0.5	1	1	1	50
Sample Name	**Lab Code**				
AGW-1-0995	B950697-01	0.7	ND	ND	ND	ND
AGW-2-0995	B950697-02	ND	ND	ND	ND	ND
AGW-5-0995	B950697-03	ND	ND	ND	ND	ND
AGW-6-0995	B950697-04	3.2	ND	ND	3	ND
AGW-7-0995	B950697-05	ND	ND	ND	ND	ND
AGW-8-0995	B950697-06	0.8	ND	ND	ND	ND
Method Blank	B950697-MB	ND	ND	ND	ND	ND

Approved By: Chris Elliott Date: 9/26/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON	**Service Request:**	B950697
Project:	Texaco - Greenwood	**Date Collected:**	9/11/95
Sample Matrix:	Water	**Date Received:**	9/14/95
		Date Extracted:	9/18/95
		Date Analyzed:	9/18,19,20/95

Total Petroleum Hydrocarbon as Diesel and Oil
Washington DOE Method WTPH-D
Units: µg/L (ppb)

Analyte:	**Diesel**	**Oil***
Method Reporting Limit:	250	750

Sample Name	**Lab Code**		
AGW-1-0995	B950697-01	ND	ND
AGW-2-0995	B950697-02	ND	ND
AGW-5-0995	B950697-03	ND	ND
AGW-6-0995	B950697-04	ND	ND
AGW-7-0995	B950697-05	ND	ND
Method Blank	B950697-MB	ND	ND

* Quantified using 30 weight motor oil as a standard.

Approved By: Col. Elliott Date: 9/26/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: Texaco-Greenwood / #0368-013.011
Sample Matrix: Water

Service Request: K9505761
Date Collected: 9/11/95
Date Received: 9/15/95
Date Extracted: 9/19/95
Date Analyzed: 9/20/95

Total Lead
EPA Method 7421
Units: µg/L (ppb)

Sample Name	Lab Code	MRL	Result
AGW-1-0995	K9505761-001	2	ND
AGW-2-0995	K9505761-002	2	ND
AGW-5-0995	K9505761-003	2	ND
AGW-6-0995	K9505761-004	2	ND
AGW-7-0995	K9505761-005	2	ND
Method Blank	K9505761-MB	2	ND

Approved By: _____ Date: 9/25/95

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: Texaco - Greenwood
Sample Matrix: Water

Service Request: B950697
Date Collected: 9/11/95
Date Received: 9/14/95
Date Extracted: NA
Date Analyzed: 9/18,19/1995

Surrogate Recovery Summary
BTEX and Total Petroleum Hydrocarbons as Gasoline
EPA Methods 5030A/8020 and Washington DOE Method WTPH-G

Sample Name	Lab Code	Percent Recovery 4-BFB (PID - BTEX)	Percent Recovery 4-BFB (FID - GAS)
AGW-1-0995	B950697-01	102	95
AGW-2-0995	B950697-02	104	97
AGW-5-0995	B950697-03	99	91
AGW-6-0995	B950697-04	105	96
AGW-7-0995	B950697-05	106	98
AGW-8-0995	B950697-06	104	96
Method Blank	B950697-MB	105	93
CAS Acceptance Limits:		86-116	86-116

Approved By: A. Elliot Date: 9/26/95

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON	**Service Request:**	B950697
Project:	Texaco - Greenwood	**Date Collected:**	9/11/95
Sample Matrix:	Water	**Date Received:**	9/14/95
		Date Extracted:	9/18/95
		Date Analyzed:	9/18,19,20/95

Surrogate Recovery Summary
Total Petroleum Hydrocarbons as Diesel and Oil
Washington DOE Method WTPH-D

Sample Name	Lab Code	Percent Recovery p-Terphenyl
AGW-1-0995	B950697-01	89
AGW-2-0995	B950697-02	88
AGW-5-0995	B950697-03	94
AGW-6-0995	B950697-04	94
AGW-7-0995	B950697-05	91
Method Blank	B950697-MB	79

CAS Acceptance Limits: 59-124

Approved By: C. Elliott Date: 9/26/95

EMCON — CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

DATE 9-11-95 PAGE 1 OF 1

PROJECT NAME TEXACO-GREENWOOD #0368-013.011
PROJECT # 63-232-0037
COMPANY/ADDRESS 8701 GREENWOOD AVE. N SEATTLE, WA
JOHN MEYER PHONE 485-5000
SAMPLERS SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	ANALYSIS REQUEST: PETROLEUM HCS — TPH - HCID State:	TPH - G BTEX State: WA	TPH - D OIL State: WA	TPH - 418.1 State:	TPH - Other	ORGANIC — Halogenated or Aromatic Volatiles 601/8010 602/8020	Volatile Organics GC/MS 624-8240	Base/Neu/Acid Organics GC/MS 625/8270	Pesticides/PCBS 8080 PCB ONLY	PAH 8310 8100 GC HPCL	TCLP Metals Semi VOA VOA Pest/Herb	ORGANIC METALS/INORGANICS — Metals Total DISS List Below Pb	Cyanide	pH, Cond Cl, SO_4, PO_4 F, Br NO_2 NO_3 (Circle)	NH_3 - N, COD, Total-P TKN, TOC TOX (Circle)	REMARKS
AGW-1-0995	09/11/95	1500	B50697-1	WATER	7		X	X								X					
-2-		1545	2		7		X	X								X					
-5-		1405	3		7		X	X								X					
-6-		1450	4		7		X	X								X					
-7-		1420	5		7		X	X								X					
-8-		1330	6		7		X	X								X					

RELINQUISHED BY:
Signature
MATTHEW MELDON
Printed Name
EMCON
Firm
9-12-95 / 0930
Date/Time

RECEIVED BY:
Signature
B. Regan
Printed Name
CAS Bothell
Firm
09/14/95
Date/Time

RELINQUISHED BY:
Signature
B. Regan
Printed Name
CAS Bothell
Firm
09/14/95 1630
Date/Time

RECEIVED BY:
Signature
Cindy Richardson
Printed Name
NET
Firm
9/13/95 10:30
Date/Time

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr. ___ 5 day
✓ Standard (10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX preliminary Results
Requested Report Date ___

REPORT REQUIREMENTS
✓ I. Routine Report
___ II. Report (includes DUP.MAS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O.# ___
Bill To ___

SAMPLE RECEIPT:
Shipping VIA: ___
Shipping to: ___
Condition: 7°
Lab No: B950697

SPECIAL INSTRUCTIONS/COMMENTS:
METALS : TOTAL Pb.
Received by:
Lori K. Hawn
CAS-K
Date: 091595 Time: 1030

* Releasing sample containers for Pb only to Kelso CAS.
B. Regan

TEXACO ENVIRONMENTAL SERVICES - WELL INSPECTION FORM

Date: 9-11-95
Inspector: MAT MELTON / ENVICON
Site Address: 8701 GREENWOOD N. SEATTLE WA

Well #	EQUIPMENT TYPE & CONDITION								
	Pad & Cover					Well Box			
	Well Box Type	Concrete Pad	Well Box Lid	Lid Gasket	Bolt Gaskets (Replaced / OK)	Locking Cap (Replaced / OK)	Lock #2396	Casing Gauging Mark (Present/Unmarked)	Cond Of CSG
AGW-1	MORALS	OK	OK	OK	OK	OK	OK	OK	
-2									
-3									
-6									
-7									

OTHER CONDITIONS (ie; well phases): _____

COMMENTS: _____

Revised, 7/22/92