2603130

BASELINE ASSESSMENT REPORT
Station Number 03130
12412 116th Avenue Northeast
Kirkland, Washington

1. Site Features and History

The facility is an operating service station located on the northeast corner of 116th Avenue Northeast and Northeast 124th Street in Kirkland, Washington. The service station facility consists of a station building housing an office and three auto service bays equipped with hoists and a canopy area with a concrete drive slab and two pump islands. Existing USTs at the station include one 12,000-gallon, one 10,000-gallon, and one 8,000-gallon fiberglass UST installed at an unknown time. The USTs store unleaded, super unleaded, and regular leaded gasoline. The station manager reported that a waste oil UST (approximate 500-gallon capacity) is present on the east side of the station building. An oil/water separator was noted west of the pump islands during the EMCON site visit on March 31, 1993, and an aboveground propane tank (approximate 500-gallon capacity) was noted on the east side of the service station. Two 55-gallon drums containing waste oil and antifreeze were observed on the north side of the station building. Three 55-gallon drums were observed on the east side of the station building. They were labelled by SEACOR as containing soil, and the labels were dated November 22, 1993. The station manager reported that a Stage II vapor recovery system was installed in October 1993, but that the dispensers did not have spill containment boxes. He also indicated that the USTs are equipped with spill protection and are monitored by inventory reconciliation. A site plan (Figure A-1) is included with this report as Attachment A. Site photographs are included as Attachment B. Copies of figures and tabulated data from previous investigations are included as Attachment C.

BP purchased the service station from Exxon sometime in 1992 (references h and i). Surrounding properties consist of an ARCO service station to the west across 116th Avenue Northeast, and fast food restaurants and commercial businesses to the west, north, and northeast.

2. Previous Investigations and Remediation Activities

Exxon maintenance invoices dated August 9, 1984, and an Exxon retail maintenance incident report dated August 11, 1984, indicate that a release occurred along the regular leaded product lines (references c and d). A hand-written memorandum dated August 20, 1984 (reference e), states that the release occurred along the regular product line extension on the pump island closest to the street (which EMCON interprets to be 116th Avenue Northeast). The dealer indicated that approximately 2,000 gallons were released, but the findings of a retail audit to confirm the amount of the release were not reported in the memorandum The memorandum also stated that two monitoring wells were installed on August 20, 1984, to a depth of approximately 14 feet bgs north of the source of the release. The name of the driller or consultant was not indicated, and well numbers were not provided. A product odor was noted in soil in the well boring drilled closest to the source of the release (reference e). EMCON was not provided with documentation describing well construction, well identification, or soil and groundwater data.

Exxon completed an environmental engineering file search summary sheet on November 30, 1990. The summary sheet indicated that the USTs were replaced in 1985 (reference a). The summary sheet indicated that one 10,000-gallon, one 8,000-gallon, one 6,000-gallon, one 1,000-gallon, and one 550-gallon steel UST previously installed in 1973 were removed and replaced with one 12,000-gallon, one 10,000-gallon, one 8,000-gallon, and one 1,000-gallon fiberglass UST. The new 1,000-gallon UST may be the 500-gallon waste oil UST described by the station manager, but the information was not adequate to make a determination. No other documentation of these activities was provided to EMCON. In an Exxon inventory verification report, dated December 19, 1990, the fiberglass USTs were reported to store unleaded, regular leaded, and super unleaded gasoline (reference b). The inventory report also indicated a discrepancy of 1,499 gallons in the regular leaded gasoline inventory in September 1990. The report stated that the lines tested tight on October 16, 1990. The line testing data were not provided to EMCON.

Between October 1991 and February 1992, SEACOR conducted a subsurface investigation at the site (reference g) involving drilling nine soil borings and converting each of the borings to groundwater monitoring wells (MW-1 through MW-9; Figure A-1) Soil types encountered during drilling generally consisted of loose silty sand to approximately 8 to 15 feet bgs, underlain by stiff sandy silt to at least 41 feet bgs. Groundwater was encountered in each boring except MW-5 at approximately 5 feet bgs. Groundwater was not encountered in well boring MW-5 during drilling, but was subsequently present during groundwater sampling rounds. The groundwater gradient was reported by SEACOR to be directed generally to the west (reference g).

Laboratory analyses of soil samples collected from well borings MW-2, MW-3, and MW-8 detected TPH-G (Table C-1). BTEX were detected in soil samples collected from well borings MW-2, MW-3, MW-4, MW-7, MW-8, and MW-9. Total lead was detected in soil samples collected from well borings MW-5, MW-6, MW-8, and MW-9 Soil samples collected from the well borings were not analyzed for HVOCs Footnotes to the groundwater data tables in SEACOR's subsurface investigation report, dated March 16, 1992, and quarterly report, dated August 17, 1992, suggest that the laboratory data for soil samples from borings MW-4 and MW-5 are transposed in SEACOR's tabulated soil data (Table C-1; references g and h) Additionally, the locations of wells MW-4 and MW-5 on the site plan for SEACOR's subsurface investigation report are the reverse of how they appear on site plans for subsequent (and apparently corrected) quarterly reports.

As part of the subsurface investigation, groundwater samples were collected from wells MW-1 through MW-5 in November 1991 and from wells MW-1 through MW-9 in February 1992 (reference g). Laboratory analyses of groundwater samples collected from wells MW-3 and MW-4 detected TPH-G (Table C-2). TPH-D was detected in a groundwater sample collected from well MW-2. Groundwater samples from the remaining eight wells were not analyzed for TPH-D. BTEX were detected in groundwater samples collected from wells MW-3, MW-4, MW-7, MW-8, and MW-9. Total lead was detected in groundwater samples collected from each of the wells except MW-7, and dissolved lead was detected in groundwater samples collected from wells MW-1, MW-2, MW-3, MW-6, and MW-8

PNAs, including naphthalene, acenaphthene, fluorene, and phenanthrene, were detected in groundwater samples collected from wells MW-3, MW-4, and MW-6 (Table C-3). HVOCs (chloroform and EDC) were detected in the groundwater samples collected from wells MW-1, MW-2, MW-4, and MW-8 MTBE was detected in groundwater samples collected from well MW-4. SEACOR reported that the groundwater contour pattern beneath the site was very irregular due to abnormally high precipitation that had occurred before the measurements. SEACOR subsequently did not estimate the groundwater gradient (reference g)

SEACOR conducted quarterly groundwater sampling rounds during July 1992, December 1992, February 1993, May 1993, and August 1993 (references h, i, j, k, and l). A review of the SEACOR reports from these sampling rounds found that TPH-G was detected in groundwater samples collected from wells MW-2, MW-3, MW-4, MW-7, MW-8, and MW-9 (Table C-2) TPH-D was detected in a groundwater sample collected from well MW-2. Groundwater samples from the remaining eight wells were not analyzed for TPH-D BTEX were detected in groundwater samples collected from each well. Dissolved lead was detected in groundwater samples collected from wells MW-3 through MW-6, and well MW-8 PNAs (naphthalene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, and pyrene) were detected in groundwater

samples collected from wells MW-3 and MW-4 (Table C-3). HVOC (EDC, chloroethane, cis-1,2-dichloroethane, and dibromochloromethane) were detected in groundwater samples collected from wells MW-1, MW-3, MW-4, and MW-5 MTBE was detected in groundwater samples collected from wells MW-3, MW-4, MW-7, and MW-9. The groundwater samples collected during these sampling rounds were not analyzed for total lead. SEACOR reported the groundwater gradient to be directed to the northwest during August 1993 (reference l), consistent with other periods (Figure C-1)

3. Regulatory Status and Other Issues

Ecology lists BP Station 03130 as a LUST site (Incident Number 2776). Based on a review of records made available to EMCON on November 9, 1993, the most recent document in Ecology's file is SEACOR's quarterly status report, dated May 5, 1993. A site status (20-day) report dated December 13, 1991, indicated that contamination was observed and reported by SEACOR on October 22, 1991, during soil and groundwater sampling operations at the site. Other documents in the file included SEACOR's subsurface investigation report, dated March 16, 1992; SEACOR's quarterly monitoring and sampling report, dated August 17, 1992; and SEACOR's quarterly status report, dated February 3, 1993. No documentation of the previous UST replacement work was found in the Ecology file.

An undated sensitive receptor survey SEACOR prepared for Exxon indicated that no water supply wells were present within 2,000 feet of the site, and no basements were present within 1,000 feet of the site (reference f) Juanita Creek was identified as a surface water body located 500 to 1,000 feet north of the site. The depth to the aquifer beneath the site was listed as 5 feet, and a Class II designation (current and potential drinking water source) was assigned to the aquifer (reference f).

4. Baseline Summary

Based on our review of the most recent relevant data available in existing files and observations made during a site visit, hazardous substance contamination is present in the soil and groundwater at this site. Our review has also determined evidence of contamination and sources of contamination which could result in the presence of hazardous substance contamination which has not yet been detected.

Although the complete extent of contamination is not known at this time, there is sufficient evidence to demonstrate that the site was contaminated before the time of Tosco's purchase. Areas at the site for which evidence of contamination exists include:

the former UST complex area adjacent to the existing UST complex, the pump islands, east of the service station building, and mid-way along the west property line.

Soil samples collected from borings MW-2 through MW-4, and MW-7 through MW-9 contained TPH-G and/or BTEX at concentrations above method detection limits. Total lead was detected at concentrations above the method detection limit in soil samples collected from borings MW-5, MW-6, MW-8, and MW-9

Groundwater samples collected from monitoring wells MW-1 through MW-9 contained one or more of the following constituents at concentrations above the method detection limits: TPH-G, TPH-D, BTEX, total lead, dissolved lead, PNAs, HVOCs, and MTBE.

The extent of evidence of actual contamination levels present and of sources of contamination include the following:

- Soil and groundwater data as summarized earlier in this report and detailed in existing files
- Inclusion of the site in the Ecology LUST list
- Documentation of a release from a product line during August 1984
- An inventory discrepancy reported during September 1990
- Field observations during soil and groundwater sampling

In conclusion, existing and developed evidence establishes a contamination baseline consisting of the measured presence of hazardous substance contamination in soil and groundwater and evidence of historic sources and/or releases of hazardous substances This report establishes a contamination baseline consisting of:

1. Known areas of contamination from measured or observed direct evidence, and
2. On-site or off-site areas of contamination which have not yet been detected but which are associated with or are consistent with evidence of existing areas of contamination and historic releases of hazardous substances

References Cited in Report

a Exxon. November 30, 1990. *Environmental Engineering File Search Summary, Store No. 7-2428, 12412 116th Avenue NE, Kirkland, Washington.*

b Exxon. December 19, 1990. *Underground Tank Program Inventory Verification Report* (with attached Inventory Variation Calculation).

c Exxon. August 9, 1984. Job Ticket/Invoices for Astec Petroleum Specialties (Invoice SC 23407)

d Exxon. August 11, 1984. *Retail Maintenance Incident Report #1, Dealer #7-2428, Kirkland, Washington*

e Exxon. August 20, 1984. Memorandum regarding Monitoring Wells - Regular Line Leak, RAS 7-2428, Kirkland, Washington

f SEACOR. Undated. *Scope of Work Sensitive Receptor Survey, Exxon Location No. 7-2428, 12412 116th Avenue NE, Kirkland, King County, Washington.*

g SEACOR. March 16, 1992. *Subsurface Investigation, Exxon Service Station 7-2428, 12412 116th Avenue Northeast, Kirkland, Washington* (SEACOR Job No. 00091-015-01)

h SEACOR. August 17, 1992. *Quarterly Monitoring and Sampling - July through September 1992, Exxon Service Station 7-2428, 12412 116th Avenue NE, Kirkland, Washington* (SEACOR Job No. 00091-042-01).

i SEACOR. February 3, 1993. *Quarterly Status Report - Fourth Quarter 1992, Former Exxon Service Station 7-2428, 12412 116th Avenue NE, Kirkland, Washington* (SEACOR Job No. 00091-060-01)

j SEACOR. May 5, 1993. *Quarterly Status Report - First Quarter 1993, Former Exxon Service Station 7-2428, 12412 116th Avenue NE, Kirkland, Washington* (SEACOR Job No. 00091-060-01).

k SEACOR August 18, 1993. *Quarterly Status Report - Second Quarter 1993, Former Exxon Service Station 7-2428, 12412 116th Avenue NE, Kirkland, Washington* (SEACOR Job No. 00091-060-01)

1 SEACOR. November 18, 1993 *Quarterly Status Report - Third Quarter 1993, Former Exxon Service Station 7-2428, 12412 116th Avenue NE, Kirkland, Washington* (SEACOR Job No 00091-060-01).

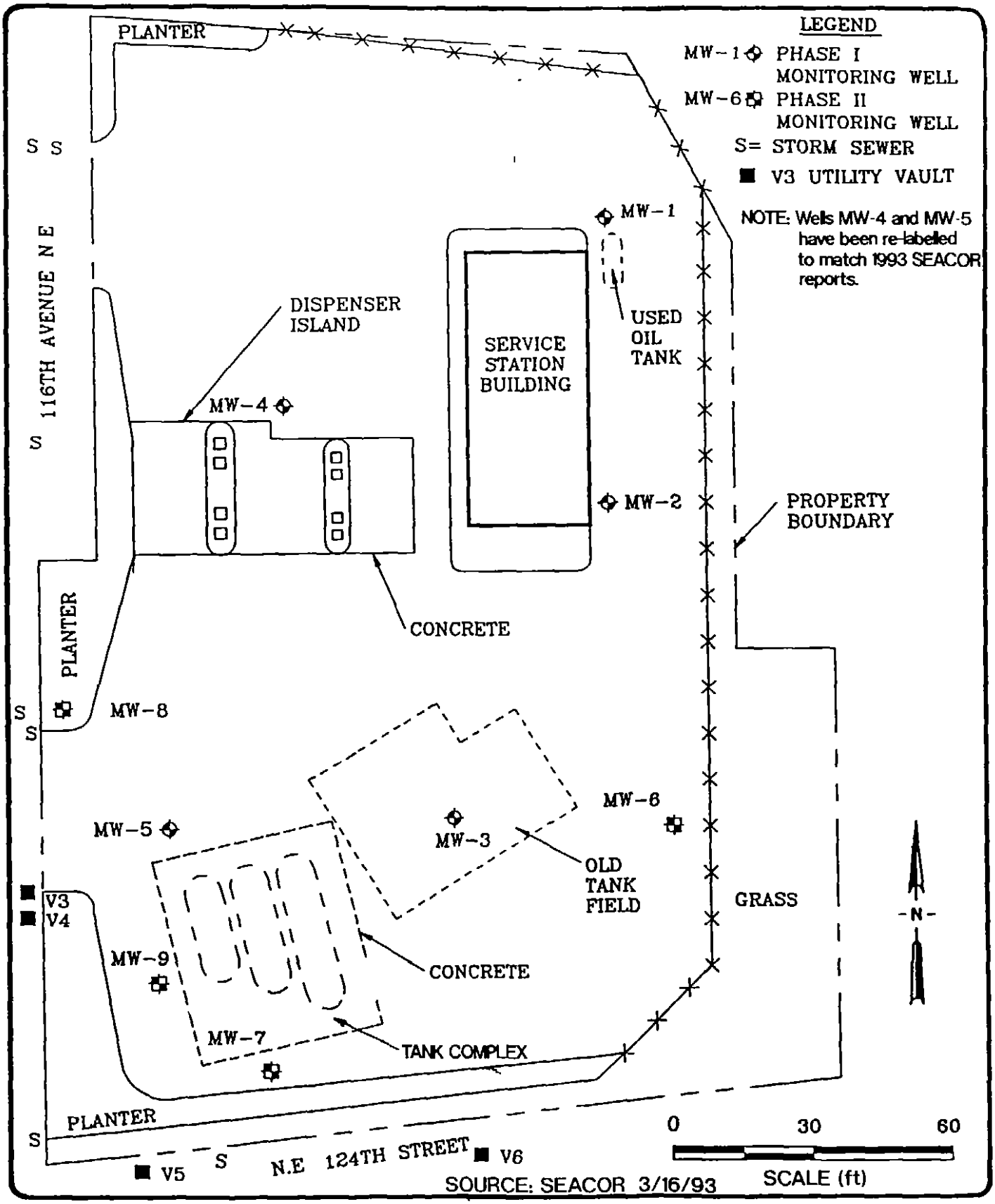
Other Documents Reviewed

Exxon. Undated. *Assessments Review Comments, Site #72428, 12412 116th Avenue NE, Kirkland*

ATTACHMENT A

SITE PLAN

142322



EMCON Northwest, Inc

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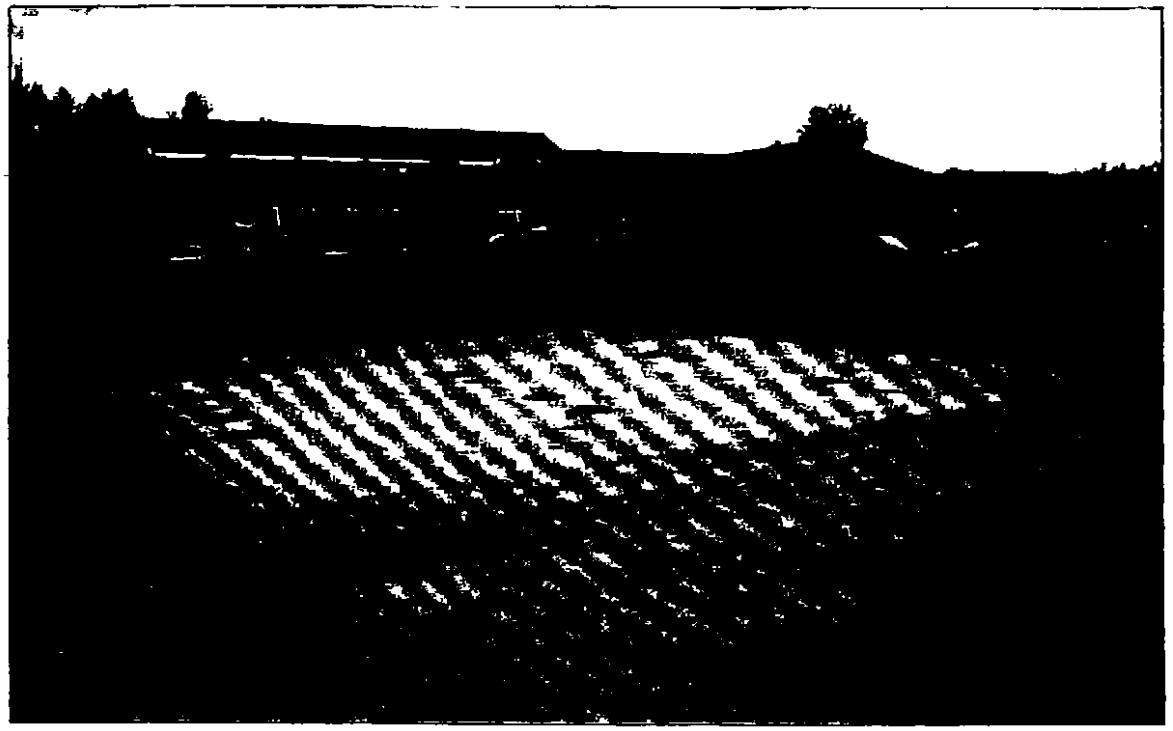
Figure A-1
TOSCO #03130
12412-116TH AVENUE NORTHEAST
KIRKLAND, WASHINGTON
SITE PLAN

ATTACHMENT B

SITE PHOTOGRAPHS

142322



PUMP ISLANDS AND STATION BUILDING
TANK COMPLEX IN FOREGROUND

PUMP ISLANDS AND STATION BUILDING
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Figure B-1
TOSCO #03130
12412-116TH AVENUE NORTHEAST
KIRKLAND, WASHINGTON
SITE PHOTOGRAPHS

ATTACHMENT C

SUMMARY TABLES AND FIGURES FROM PREVIOUS INVESTIGATIONS

TABLE 4
SOIL ANALYTICAL RESULTS
Exxon Service Station 7-2428
12412 116th Avenue NE, Kirkland, Washington

Boring/ Well I D	Date Sampled	Sample Depth (ft)	TRPH (mg/kg)	TPHd (mg/kg)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl benzene (mg/kg)	Xylenes (mg/kg)	Total Lead (mg/kg)
MW-1	10/19/91	5	(50)	--	(1)	(0 005)	(0 005)	(0 005)	(0 005)	(10)
MW-2	10/19/91	5	--	(5 0)	9 6	(0 02)	0 026	(0 02)	0 066	(10)
MW-3	10/17/91	5	--	--	220	0 67	2.6	2.7	22	(10)
MW-4	10/18/91	10	--	--	(1)	0 025	0 058	0 015	0 096	(10)
	10/18/91	20	--	--	(1)	(0 005)	(0 005)	(0 005)	0 026	(10)
MW-5	10/18/91	5	--	--	(1)	(0 005)	(0 005)	(0 005)	(0 005)	55
	10/18/91	20	--	--	(1)	(0 005)	(0 005)	(0.005)	(0 005)	(10)
MW-6	01/13/92	4.5	--	--	(1)	(0 005)	(0 005)	(0 005)	(0 005)	13
MW-7	01/13/92	4	--	--	(1)	(0.005)	(0 005)	(0 005)	0.0084	(10)
MW-8	01/13/92	4.5	--	--	1 4	0 19	0 011	0 025	0.47	16
MW-9	01/13/92	4.5	--	--	(1)	0.032	(0 005)	(0 005)	0 048	20
Cleanup Level *			200.0	200 0	100 0	0 5	40 0	20 0	20 0	250 0

NOTES TRPH = Total Recoverable Petroleum Hydrocarbons
TPHg = Total Petroleum Hydrocarbons as gasoline
TPHd = Total Petroleum Hydrocarbons as diesel
mg/kg = milligram per kilogram, wet weight basis
( ) = constituent not detected above the enclosed analytical detection limit
-- = constituent not analyzed
[ ] = Result above Cleanup level
* Model Toxics Control Act Method A soil cleanup level from WAC 173-340-740(2)(a)(i), dated 1/28/91

Source: SEACOR, March 16, 1992

TABLE C-1

TABLE 5
HISTORICAL GROUNDWATER ANALYTICAL RESULTS - UST REQUIRLMENTS
Exxon Service Station 7 2428
12412 116th Avenue NE, Kirkland, Washington

Well I D	Date Sampled	TRPH (ug/l)	TPHd (ug/l)	TPHg (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl-benzene (ug/l)	Xylenes (ug/l)	Total Lead (ug/l)	Dissolved Lead (ug/l)
MW 1	11/12/91	--	--	(50)	(0 5)	(0 5)	(0 5)	(0 5)	200	--
	11/21/91	(5,000)	--	--	-	--	--	--	--	--
	02/07/92	(500)	--	(50)	(0 5)	(0 5)	(0 5)	(0 5)	21	8
	07/10/92	(500)	--	(50)	0.5	(0 5)	(0 5)	(0 5)	--	(3)
	12/01/92	(500)	--	(50)	1 0	(0 5)	(0.5)	(0 5)	--	(3)
	02/10/93	(500)	--	(50)	0 7	(0.5)	(0.5)	(0 5)	--	(3)
	05/12/93	(500)	--	(50)	0 6	(0.5)	(0.5)	(0.5)	--	(3)
	08/13/93	(500)	--	(50)	0 6	(0.5)	(0.5)	(0 5)	--	(3)
MW-2	11/12/91	--	74	(50)	(0.5)	(0.5)	(0.5)	(0.5)	57	--
	02/07/92	--	(50)	(50)	(0.5)	(0.5)	(0.5)	(0.5)	12	15
	07/10/92	--	(50)	(50)	(0.5)	(0.5)	(0.5)	(0.5)	--	(3)
	12/01/92	--	460	(50)	(0.5)	(0.5)	(0.5)	(0.5)	--	(3)
	02/10/93	--	(50)	(50)	(0.5)	(0.5)	(0.5)	(0.5)	--	(3)
	05/12/93	--	(50)	(50)	(0.5)	(0.5)	(0.5)	(0.5)	--	(3)
	08/13/93	--	(50)	110	0.6	2.5	0 9	5 7	--	(3)
MW-3	11/12/91	--	--	26,000	730	830	820	6,400	89	--
	02/07/92	--	--	17,000	940	560	710	3,200	9	5
	07/10/92	--	--	39,000	1,200	730	950	5,800	--	(3)
	12/01/92	--	--	25,000	1,200	700	900	4,700	--	(3)
	02/10/93	--	--	33,000	1,200	750	1,200	6,900	--	4
	05/12/93	--	--	30,000	670	440	840	5,000	--	6
	08/13/93	--	--	48,000	980	720	1,100	6,500	--	3
MW-4	11/12/91	--	--	65,000	19,000	14,000	760	5,000	22	--
	02/07/92	--	--	65,000	24,000	14,000	1,200	6,400	14	(3)
	07/10/92	--	--	190,000	57,000	52,000	3,700	21,000	14	(3)
	12/01/92	--	--	110,000	32,000	2,700	2,100	11,000	--	(3)
	02/10/93	--	--	170,000	38,000	34,000	2,600	15,000	--	(3)
	05/12/93	--	--	120,000	20,000	28,000	2,400	13,000	--	5
	08/13/93	--	--	940,000	37,000	54,000	11,000	65,000	--	6
MTCA Cleanup Level		1,000.0	1,000.0	1,000.0	5.0	40.0	30.0	20.0	5.0	5 0

NOTES: TRPH = Total Recoverable Petroleum Hydrocarbons by EPA Method 418.1
TPHg = Total Petroleum Hydrocarbons as gasoline by EPA Method 8015 modified
TPHd = Total Petroleum Hydrocarbons as diesel by EPA Method 8015 modified
BTEX by EPA Method 8020
Lead by EPA Method 7421
ug/l = microgram per liter
( ) = constituent not detected above the enclosed analytical detection limit
-- = constituent not analyzed
Model Toxics Control Act Method A groundwater cleanup level from WAC 173-340-720(2)(a)(i), dated 1/28/91.
MTCA Method A groundwater cleanup level for Total Petroleum Hydrocarbons is the total of TPH as gasoline, diesel and oil

Source: SEACOR, November 18, 1993

TABLE C-2

TABLE 5
HISTORICAL GROUNDWATER ANALYTICAL RESULTS - UST REQUIREMENTS
Exxon Service Station 7 2428
12412 116th Avenue NE, Kirkland, Washington

Well ID	Date Sampled	TRPH (ug/l)	TPHd (ug/l)	TPHg (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl benzene (ug/l)	Xylenes (ug/l)	Total Lead (ug/l)	Dissolved Lead (ug/l)
MW-5	11/12/91	--	--	(50)	(0 5)	(0 5)	(0 5)	(0 5)	19	--
	02/07/92	--		(50)	(0 5)	(0 5)	(0 5)	(0 5)	4	(3)
	07/10/92	--	--	(50)	(0 5)	(0 5)	(0 5)	(0 5)	--	(3)
	12/01/92	--	-	(50)	(0 5)	(0.5)	(0 5)	(0 5)	--	(3)
	02/10/93	--	--	(50)	(0 5)	1 6	(0 5)	1 2	--	(3)
	05/12/93	--	-	(50)	(0 5)	(0.5)	(0 5)	(0 5)	--	4
	08/13/93	--	--	(50)	(0.5)	1.2	(0.5)	(0 5)	--	(3)
MW-6	02/07/92	--	--	(50)	(0.5)	(0.5)	(0 5)	(0.5)	5	8
	07/10/92	--	--	(50)	(0.5)	(0.5)	(0 5)	(0.5)	--	(3)
	12/01/92	--	--	(50)	(0.5)	(0.5)	(0.5)	(0 5)	--	(3)
	02/10/93	--	--	(50)	(0.5)	(0.5)	(0.5)	(0.5)	--	(3)
	05/12/93	--	--	(50)	(0.5)	(0.5)	(0.5)	(0.5)	--	4
	08/13/93	--	--	(50)	(0.5)	0.5	(0.5)	(0.5)	--	(3)
MW-7	02/07/92	--	--	(50)	1 4	(0 5)	(0.5)	(0 5)	(3)	(3)
	07/10/92	--	--	(50)	(0.5)	(0.5)	(0.5)	(0 5)	--	(3)
	12/01/92	--	--	200	24	30	2.6	15	--	(3)
	02/10/93	--	--	(50)	2.2	0.8	(0.5)	0 8	--	(3)
	05/12/93	--	--	53	(0.5)	(0.5)	0 9	3 4	--	(3)
	08/13/93	--	--	(50)	(0.5)	(0.5)	(0.5)	(0.5)	--	(3)
MW-8	02/07/92	--	--	(50)	9 0	(0.5)	(0.5)	(0.5)	3	3
	07/10/92	--	--	190	79	(0.5)	0.8	2.6	--	(3)
	12/01/92	--	--	150	35	1.5	1 4	9.5	--	(3)
	02/10/93	--	--	100	38	(0.5)	1 1	4 7	--	(3)
	05/12/93	--	--	(50)	20	(0.5)	(0.5)	1 6	--	14
	08/13/93	--	--	73	13	0.9	0.6	4 6	--	(3)
MW-9	02/07/92	--	--	(50)	2.6	(0.5)	(0.5)	0 6	4	(3)
	07/10/92	--	--	(50)	1 4	(0.5)	(0.5)	(0.5)	--	(3)
	12/01/92	--	--	(50)	(0.5)	(0.5)	(0.5)	(0.5)	--	(3)
	02/10/93	--	--	(50)	1 9	(0.5)	(0.5)	1.7	--	(3)
	05/12/93	--	--	(50)	20	(0.5)	(0.5)	(0.5)	--	(3)
	08/13/93	--	--	60	3.6	0.6	(0 5)	2.2	--	(3)
MTCA Cleanup Level		1,000 0	1,000 0	1,000 0	5 0	40 0	30 0	20 0	5 0	5 0

NOTES TRPH = Total Recoverable Petroleum Hydrocarbons by EPA Method 418.1
TPHg = Total Petroleum Hydrocarbons as gasoline by EPA Method 8015 modified
TPHd = Total Petroleum Hydrocarbons as diesel by EPA Method 8015 modified
BTEX by EPA Method 8020
Lead by EPA Method 7421
ug/l = microgram per liter
( ) = constituent not detected above the enclosed analytical detection limit
-- = constituent not analyzed
Model Toxics Control Act Method A groundwater cleanup level from WAC 173-340-720(2)(a)(i), dated 1/28/91
MTCA Method A groundwater cleanup level for Total Petroleum Hydrocarbons is the total of TPH as gasoline, diesel and oil.

Source: SEACOR, November 18, 1993

TABLE C-2

TABLE 6
HISTORICAL GROUNDWATER ANALYTICAL RESULTS - WCEP WORK SCOPE
Exxon Service Station 7-2428
12412 116th Avenue NE, Kirkland, Washington

Well I.D	Date Sampled	PNAs							VOCs					MTBE (ug/l)
		Naphthalene (ug/l)	Acenaphthene (ug/l)	Fluorene (ug/l)	Phenanthrene (ug/l)	Anthracene (ug/l)	Fluoranthene (ug/l)	Pyrene (ug/l)	EDC (ug/l)	Chloroform (ug/l)	Chloroethane (ug/l)	cis-1,2-Dichloroethene (ug/l)	Dibromochloromethane (ug/l)	
MW-1	11/12/91	--	--	--	--	--	--	--	(0.5)	6.0	ND	ND	ND	(4.0)
	11/18/91	(10)	(10)	(10)	(10)	ND	ND	ND	--	--	--	--	ND	--
	02/07/92	(10)	(10)	(10)	(10)	ND	ND	ND	(0.5)	(0.5)	ND	ND	ND	(5.0)
	07/10/92	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(2.0)	1.2	ND	(5.0)
	12/01/92	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	1.4	(0.5)	(5.0)
	02/10/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	1.8	(0.5)	(5.0)
	05/12/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	2.2	(0.5)	(5.0)
	08/13/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	1.3	(0.5)	(5.0)
MW-2	11/12/91	(10)	(10)	(10)	(10)	ND	ND	ND	(0.5)	0.9	ND	ND	ND	(4.0)
	02/07/92	(10)	(10)	(10)	(10)	ND	ND	ND	(0.5)	(0.5)	ND	ND	ND	(5.0)
	07/10/92	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(2.0)	(0.5)	ND	(5.0)
	12/01/92	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
	02/10/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
	05/12/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
	08/13/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
MW-3	11/12/91	2,500	500	320	490	ND	ND	ND	(0.5)	(0.5)	ND	ND	ND	(800)
	02/07/92	2,300	490	300	520	ND	ND	ND	(0.5)	(0.5)	ND	ND	ND	(250)
	07/10/92	1,700	320	130	150	(10)	(10)	(10)	0.9	(0.5)	(2.0)	(0.5)	ND	450
	12/01/92	2,500	260	150	140	23	21	17	0.9	(0.5)	(0.5)	(0.5)	(0.5)	300
	02/10/93	730	84	70	80	17	24	15	0.8	(0.5)	(0.5)	(0.5)	(0.5)	140
	05/12/93	840	110	91	120	22	31	18	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(50)
	08/13/93	630	81	69	85	15	17	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(50)
MW-4	11/12/91	250	(100)	(100)	(100)	ND	ND	ND	18	(0.5)	ND	ND	ND	1,000
	02/07/92	79	(10)	(10)	(10)	ND	ND	ND	21	(0.5)	ND	ND	ND	860
	07/10/92	590	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	3.8	(0.5)	ND	6,600
	12/01/92	620	(10)	(10)	(10)	(10)	(10)	(10)	10	(0.5)	2.7	(0.5)	0.5	1600
	02/10/93	430	(10)	(10)	(10)	(10)	(10)	(10)	25	(0.5)	9.0	(0.5)	(0.5)	(500)
	05/12/93	620	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	2.8	(0.5)	(0.5)	2300
	08/13/93	1,600	(200)	(200)	(200)	(200)	(200)	(200)	(50)	(50)	(200)	(50)	(50)	(5,000)
MTCA Cleanup Level		NA	NA	NA	NA	NA	NA	NA	5.0	NA	NA	NA	NA	NA

NOTES Only those constituents that have historically been detected are listed.
For a complete list of analyzed compounds, see attached laboratory report in Attachment B.
PNAs = Polynuclear Aromatics by EPA Method 625
VOCs = Volatile Organic Compounds by EPA Method 8010
EDC = 1,2-dichloroethane
MTBE = Methyl tert-butyl ether
ug/l = microgram per liter
-- = constituent not analyzed
( ) = constituent not detected above the enclosed analytical detection limit
ND = constituent not detected above laboratory detection limits
Model Toxics Control Act (MTCA) Method A groundwater cleanup level from WAC 173-340-720(2)(a)(i), dated 1/28/91
NA = Published MTCA cleanup level not available

Source: SEACOR, November 18, 1993

TABLE C-3

TABLE 6
HISTORICAL GROUNDWATER ANALYTICAL RESULTS WCEP WORK SCOPE
Exxon Service Station 7-2428
12412 116th Avenue NE, Kirkland, Washington

		PNAs							VOCs					
Well ID	Date Sampled	Naphthalene (ug/l)	Acenaphthene (ug/l)	Fluorene (ug/l)	Phenanthrene (ug/l)	Anthracene (ug/l)	Fluoranthene (ug/l)	Pyrene (ug/l)	EDC (ug/l)	Chloroform (ug/l)	Chloroethane (ug/l)	cis-1,2-Dichloroethene (ug/l)	Dibromochloromethane (ug/l)	MTBE (ug/l)
MW-5	11/12/91	(10)	(10)	(10)	(10)	ND	ND	ND	(0.5)	(0.5)	ND	ND	ND	(4.0)
	02/07/92	(10)	(10)	(10)	(10)	ND	ND	ND	(0.5)	(0.5)	ND	ND	ND	(5.0)
	07/10/92	(10)	(10)	(10)	(10)	(10)	(10)	(10)	0.7	(0.5)	(2.0)	(0.5)	ND	(5.0)
	12/01/92	(10)	(10)	(10)	(10)	(10)	(10)	(10)	0.7	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
	02/10/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	0.6	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
	05/12/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
	08/13/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	0.6	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
MW-6	02/07/92	95	(10)	(10)	(10)	ND	ND	ND	(0.5)	(0.5)	ND	ND	ND	(5.0)
	07/10/92	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	ND	(5.0)
	12/01/92	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
	02/10/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
	05/12/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
	08/13/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
MW-7	02/07/92	(10)	(10)	(10)	(10)	ND	ND	ND	(0.5)	(0.5)	ND	ND	ND	(5.0)
	07/10/92	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	ND	(5.0)
	12/01/92	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	9.1
	02/10/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	7.5
	05/12/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
	08/13/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	6.1
MW-8	02/07/92	(10)	(10)	(10)	(10)	ND	ND	ND	(0.5)	2.0	ND	ND	ND	(5.0)
	07/10/92	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	ND	(5.0)
	12/01/92	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
	02/10/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
	05/12/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
	08/13/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
MW-9	02/07/92	(10)	(10)	(10)	(10)	ND	ND	ND	(0.5)	(0.5)	ND	ND	ND	(5.0)
	07/10/92	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	ND	18
	12/01/92	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
	02/10/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
	05/12/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
	08/13/93	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(5.0)
MTCA Cleanup Level		NA	NA	NA	NA	NA	NA	NA	5.0	NA	NA	NA	NA	NA

NOTES Only those constituents that have historically been detected are listed.
For a complete list of analyzed compounds, see attached laboratory report in Attachment B.
PNAs = Polynuclear Aromatics by EPA Method 625
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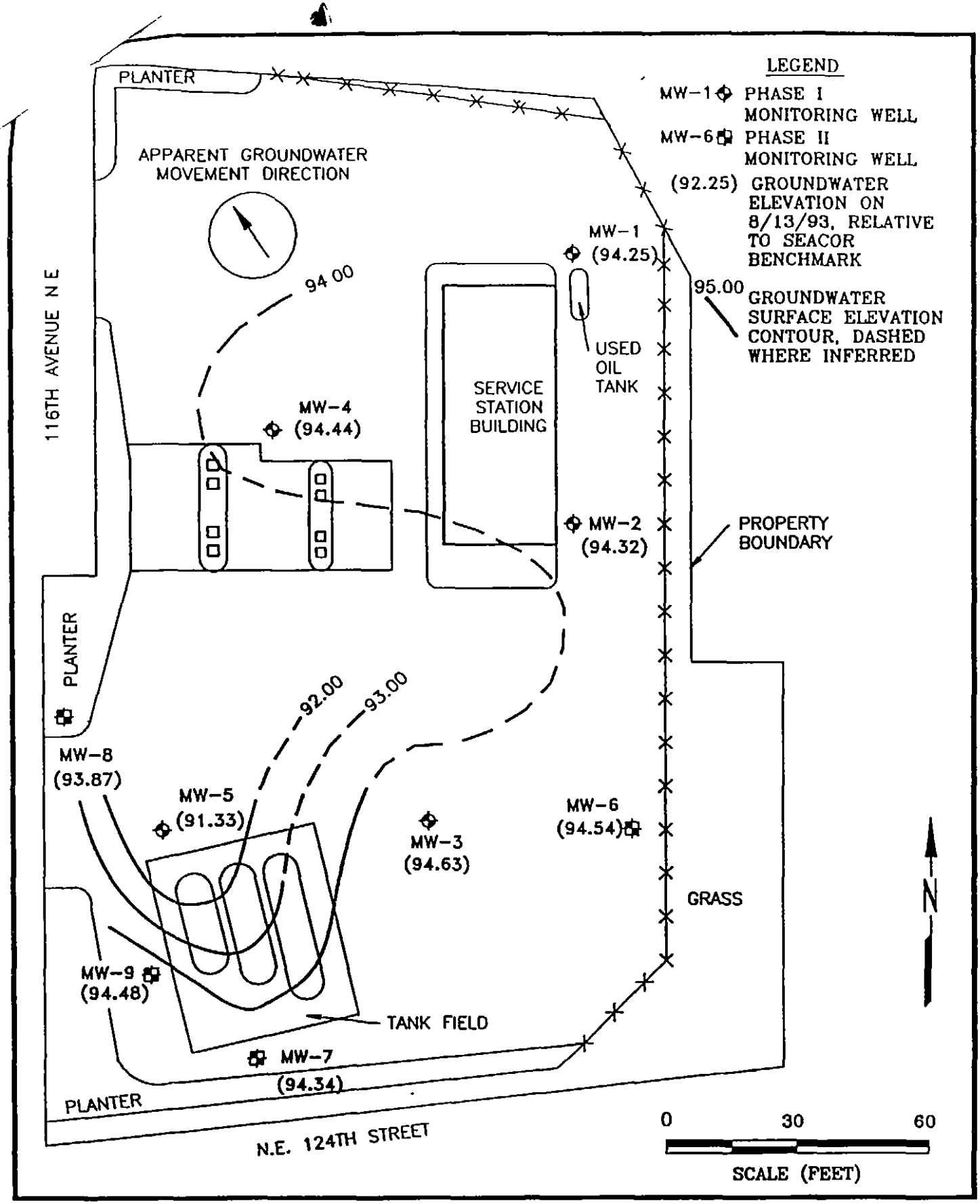
Source: SEACOR, November 18, 1993 TABLE C-3



SEACOR	DWN AJW APPR DATE 11/11/93 JOB# 00091-060-01	FIGURE 1 GROUNDWATER ELEVATION CONTOUR MAP EXXON SERVICE STATION 7-2428 12412 116TH AVENUE N.E. KIRKLAND, WASHINGTON

DWG EXX6001A

Source, SEACOR, November 18, 1993

FIGURE C-1