Property Review

ARCO #5218

7200 East Marginal Way S.
Seattle, WA 98108

Prepared for

Toxics Cleanup Program
Northwest Regional Office
Washington State Department of Ecology
Bellevue, Washington

Prepared by

Science Applications International Corporation
18912 North Creek Parkway, Suite 101
Bothell, WA 98011

October 2006

General Facility Information

Facility Name:	ARCO #5218
Alternate Names:	ARCO AM/PM; ARCO Station #5218; Marginal Way ARCO; PSI 685
Facility Physical Address:	7200 East Marginal Way S. Seattle, WA 98108-3510
Facility Mailing Address:	Same
Facility Telephone Number:	206-763-4431
Facility Owner:	LAXMI, Inc. 7200 East Marginal Way S. Seattle, WA 98108-3510
Facility Operator:	Same
Property Owner:	Same
Site Drainage:	I-5 Storm Drain

Current Facility Information

NPDES Permit Number: None
Hazardous Waste Generator ID Number: WAD988514758
UST Site ID: 8788

This 0.64-acre site is used as an ARCO gas station and AM/PM Mini-Mart. Site features include the store building, four fuel dispensers under a single canopy, fiberglass underground fuel distribution lines, and two 20,000-gallon double-walled fiberglass underground storage tanks (USTs). The site surface is paved with asphalt and concrete.

The site area is commercial/industrial. It is bounded by East Marginal Way S. and Ellis Ave. S. on the south and west, the Aero Motel on the east, and a warehouse to the north. Cascade Transmission is located across Ellis Ave. S., and Sternoff Metals is located across East Marginal Way S. The site is located approximately 300 feet west of the Georgetown Flume and approximately 1,200 feet northwest of Slip 4 (Figure 1).

The facility currently has two double-walled gasoline USTs. Specific information on the materials currently stored in these tanks was not available; however, they are presumed to contain unleaded gasoline and diesel fuel. The tanks were installed in April 2002. One tank has a 20,000-gallon capacity, and the other is a 10,000/10,000 dual tank. These tanks appear to be in compliance with applicable regulatory requirements.

Stormwater runoff from the site drains to the I-5 Storm Drain.

Inspections

The facility has been inspected by the Seattle Public Utilities & King County joint inspection team.[1] An initial visit was conducted on October 12, 2004. The following corrective measures were identified: (1) improve or create spill response procedures; (2) improve or purchase adequate spill response materials; (3) properly educate employees; (4) storm drain facility needs to be cleaned; (5) properly store containerized materials. A follow-up inspection was conducted on April 21, 2005, and the facility was found to be in compliance.

Past Site Use

No information on site use prior to 1984 was available. The Atlantic Richfield Company purchased the site in October 1984; three 12,000-gallon USTs were installed on March 1, 1985. The facility was operated as an ARCO AM/PM Mini-Mart by Prestige Stations, Inc. The three tanks were used to store leaded (Tank 1) and unleaded (Tanks 2 and 3) gasoline. The tanks were constructed of single-walled fiberglass-reinforced plastic with no cathodic protection or spill/overfill protection.

In 1993, the tanks were retrofitted to meet regulatory requirements, including the installation of a catchment basin for spill and overfill prevention, vapor monitoring equipment, automatic line leak detectors, and replacement of original fiberglass pipe sections with double-wall fiberglass [6]. In 1998, the tanks were certified by Ecology to be in compliance with the December 22, 1998, UST standards [10].

In January 2002, the property was transferred to BP West Coast Products, LLC. In April 2002, the tanks were removed and replaced with two 20,000-gallon double-walled USTs [15]. On May 30, 2002, the property was sold by BP West Coast Products to Naboulsi Nourdine, LLC, Tigard, OR. On June 9, 2006, the property was purchased by LAXMI, Inc., Seattle, WA.[2]

Spills and Releases

The only reported spill documented in the project files was a 2-gallon gasoline spill to concrete on June 13, 1994. No release to storm drains, soil, or waterways occurred, and no additional action was indicated.

Ecology's LUST database lists a release to both soil and groundwater, dated August 30, 1993[3]; cleanup was started on February 8, 1994. No additional information was available. As described above, the USTs and associated piping were retrofitted to meet regulatory requirements in September 1993, and all three tanks were certified as in compliance with UST standards in December 1998. The tanks and associated piping, as well as piping associated with the fuel dispenser island, were replaced in 2002.

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[1] King County and Seattle Public Utilities, Source Control Program for the Lower Duwamish Waterway, January 2005 and June 2005 Progress Reports
[2] King County Assessor Property Sales Records
[3] Ecology Facility/Site Database

Groundwater monitoring conducted between 1994 and 2001 shows consistently high concentrations of BTEX and gasoline-range hydrocarbons in wells located near the dispenser island, indicating that releases from the fuel piping likely occurred over a period of several years [11].

There was no information in the files regarding any spills or releases associated with the tanks or piping since their replacement in 2002.

Environmental Sampling and Remediation

According to available documents, quarterly groundwater monitoring was conducted by Delta Environmental Consultants between September 1994 and March 1997. Semi-annual monitoring was conducted beginning in August 1997; data were available through March 2001 [11]. A summary of the groundwater data is provided as Attachment A. Additional groundwater sampling was reportedly conducted until 2002 [15]. A map provided with the March 2001 monitoring report (Figure 2) indicates that three groundwater monitoring wells (MW-1, MW-2, and MW-3) were located near the north, west, and southeast facility boundary. Four vapor extraction wells (BV-1, BV-2, BV-3, BV-4) were located around the dispenser island. In addition, the map shows three soil vapor extraction wells and two temporary monitoring wells located around the pump island; however, no analytical data were provided for these wells. The approximate depth to groundwater was 11.0 to 12.2 feet bgs, with a gradient of less than 0.01 feet per linear foot to the southwest. Analytical results show detections of benzene (<0.5 to 980 ug/L), toluene (<0.5 to 10,000 ug/L), ethylbenzene (<0.5 to 4,500 ug/L), xylenes (<0.5 to 22,000 ug/L), MTBE (< 1 to 22.4 ug/L), gasoline-range hydrocarbons (<50 to 100,000 ug/L), and lead (<2 to 29 ug/L) [11].

In April 2002, the three 12,000-gallon USTs were excavated and removed and were replaced with two new 20,000-gallon USTs in the same location [15]. The product lines near the four dispenser islands were exposed for re-piping activities and the distribution lines close to the UST basin were also exposed for piping alterations. Delta Environmental Consultants collected a total of 19 soil samples from the areas adjacent to the dispenser islands and distribution lines, and from the sides and bottom of the UST excavation. Samples were analyzed for BTEX, gasoline hydrocarbons (benzene to naphthalene), selected VOCs (EDB, EDC, and MTBE), and total metals. Soil sample analytical results indicated only one sample slightly above Ecology's MTCA Method A cleanup level for benzene of 0.03 mg/kg (0.0452 mg/kg at DIS-1-3, collected 3 feet bgs at the southern dispenser island) [15]. All other analytes in soil were reportedly below Ecology cleanup levels or did not contain any detectable hydrocarbon concentrations [15]. All excavated soil was either used on site as clean fill material or was transported off site as clean fill material, based on the stockpile sample analyses. Data tables and laboratory reports were not included in the file.

Approximately 20,000 gallons of groundwater and surface water runoff from the excavation area were pumped into an onsite holding tank. Delta Environmental Consultants collected and analyzed a water sample from this tank; the laboratory report was not in the file. King County Department of Natural Resources, Industrial Waste Program, authorized discharge of this water to the sanitary sewer (Authorization 10278-01, not in file; [15]).

Potential for Sediment Recontamination

Soil and groundwater at the facility have been analyzed for BTEX, gasoline-range hydrocarbons, total metals, and selected VOCs (EDB, EDC, and MTBE). Benzene was detected above the MTCA Method A cleanup level in one soil sample; however, volatile organics are not expected to partition into or accumulate in sediments. Lead was detected in groundwater at concentrations above the draft sediment recontamination screening level of 13 ug/L in a single sample, collected from MW-2 on December 22, 1995. Subsequent samples collected from this monitoring well in 1996 did not detect lead.

None of the samples collected at this site were analyzed for PCBs, however past practices do not indicate a potential for PCB contamination. Based on the types of activities conducted at this site and the results of soil and groundwater sampling, no chemicals of concern for sediment recontamination were identified. No data gaps have been identified.

Based on the facility's current and past use, the contaminants potentially associated with these uses, and the record of environmental sampling and remediation at the site, this facility does not represent a significant risk of sediment recontamination.

Facility Name	ARCO #5218
Current Use	Gasoline station with mini-mart
Chemicals of Concern for Sediment Recontamination	None
Pathways to Sediments	I-5 Storm Drain
Data Gaps	None identified

Documents Reviewed:

[1] April 28, 1986 – Washington State Underground Tank Notification Form

[2] May 13, 1991 – Underground Storage Tank Self-Certification Compliance Form

[3] May 7, 1992 – Underground Storage Tank Information Update

[4] November 9, 1992 – Notification of Dangerous Waste Activities

[5] April 27, 1993 – Underground Storage Tank Information Update

[6] September 3, 1993 – Underground Storage Tank Retrofitting/Repair Checklist

[7] April 11, 1994 – Underground Storage Tank Information Update

[8] May 14, 1998 – Letter from Barry Rogowski, Washington Department of Ecology, to Derek Reichart, Arco, P.O. Box 6038, Artesia, CA 90702. RE: Facility Compliance Tagging Program.

[9] June 14, 1994 – ERT System – Initial Report/Followup.

[10] September 23, 1998 – Certified Mail Letter from Barry Rogowski, Washington Department of Ecology, to ARCO #5218/PSI #685 (Site ID: 8788), 7200 E. Marginal Way S., Seattle, WA 98108.

[11] May 17, 2001 – Groundwater Monitoring Report, Delta Environmental Consultants, Inc.

[12] January 11, 2002 – Underground Storage Tank Addendum

[13] February 22, 2002 – Letter from Alexia Inigues, Barghausen Consulting Engineers, Inc., to Gail Jaskar, Washington Department of Ecology. Re: Underground storage tank 30-day notice.

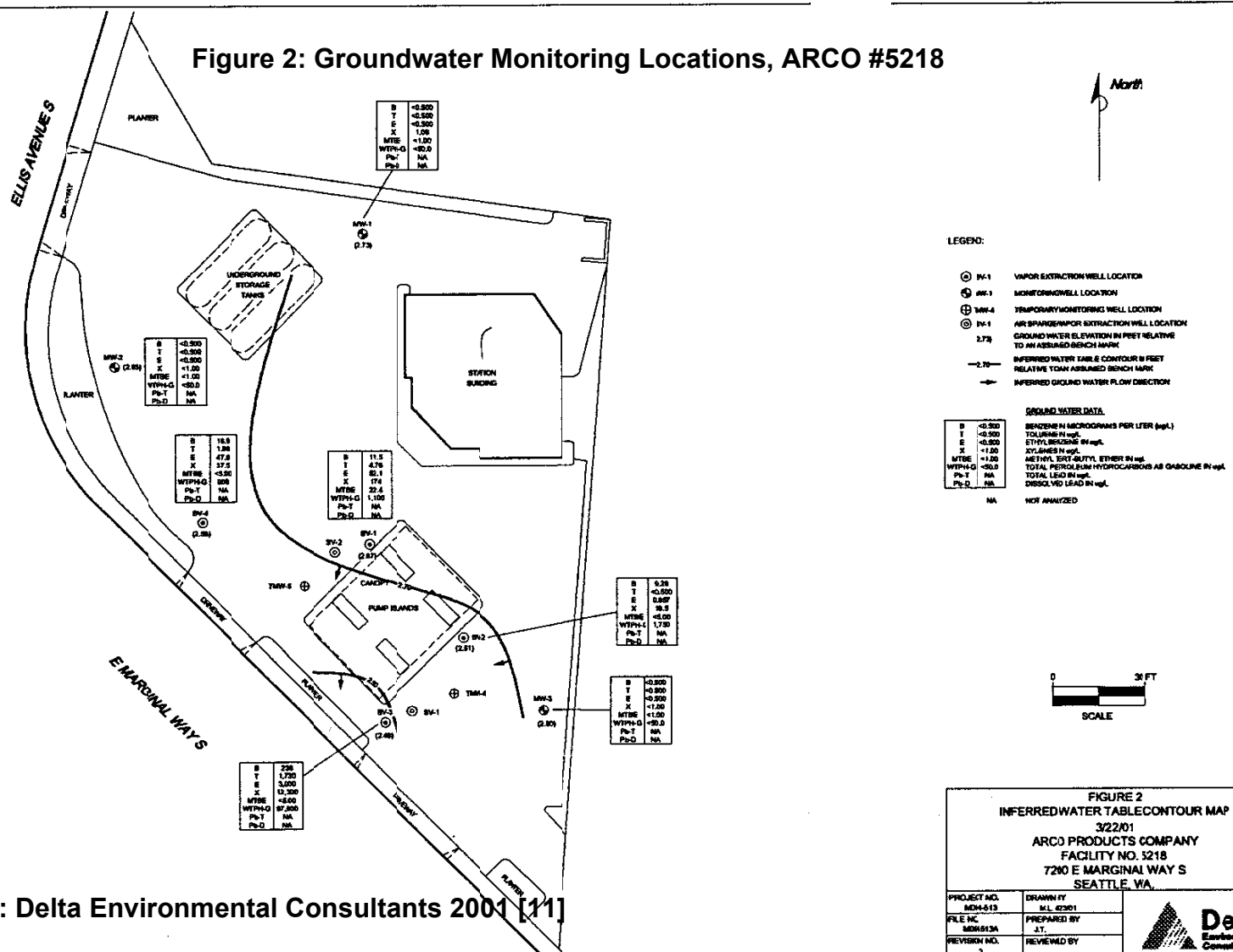
[14] June 5, 2002 – Underground Storage Tank Addendum

[15] December 3, 2002 – Letter from James D. Coppernoll, Delta Environmental Consultants, Inc., to J. David Carroll, BP West Coast Products, LLC. RE: UST Removal/Replacement and Subsurface Assessment.

[16] September 27, 2005 – Underground Storage Tank Addendum

Figure 1
Site Location: ARCO #5218

Figure 2: Groundwater Monitoring Locations, ARCO #5218



Source: Delta Environmental Consultants 2001 [11]

ATTACHMENT A: GROUNDWATER MONITORING DATA

ARCO #5218

Source: Delta Environmental Consultants, 2001

TABLE 1
SUMMARY OF GROUND WATER DATA
ARCO FACILITY NO. 5118
7200 E. MARGINAL WAY S.
SEATTLE, WASHINGTON
DELTA PROJECT NO. M094-513

MONITORING WELL	DATE SAMPLED	DISSOLVED OXYGEN (mg/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	XYLENES (ug/L)	METHYL TERT-BUTYL ETHER (ug/L)	GASOLINE-RANGE HYDROCARBONS (ug/L)	LEAD (ug/L)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION (feet)	TOC (feet)
MW-1	03/22/01 np	1.36	<0.500	<0.500	<0.500	1.08	<1.00	<50.0	NA	11.02	2.73	13.75
MW-2	03/22/01 np	0.40	<0.500	<0.500	<0.500	<1.00	<1.00	<50.0	NA	11.31	2.63	13.94
MW-3	03/22/01 np	0.72	<0.500	<0.500	<0.500	<1.00	<1.00	<50.0	NA	11.41	2.80	14.21
BV-1	03/22/01 np	0.43	11.5	4.76	52.1	174	22.4	1,100	NA	11.36	2.87	14.23
BV-2	03/22/01 np	0.38	9.28	<0.500	0.657	18.5	<5.00(a)	1,750	NA	11.42	2.51	13.93
BV-3	03/22/01 np	0.52	238	1,730	3,000	12,300	<5.00(a)	67,900	NA	12.17	2.48	14.65
BV-4	03/22/01 np	0.48	16.9	1.86	47.6	37.5	<5.00(a)	908	NA	11.91	2.56	14.47
Laboratory Methods			8021B	8021B	8021B	8021B	8021B/8260B	WTPH-G	6020			
MTCA Method A Cleanup Levels			5.0	40.0	30.0	20.0	20.0	1,000*	5.0			

8021B = EPA method for volatile aromatic hydrocarbons.
8260B = EPA method for volatile organic compounds. Samples with MTBE detections above the method reporting limit using 8021B were re-analyzed using 8260B to confirm the MTBE concentration.
WTPH-G = Washington State method for gasoline-range hydrocarbons.
6020 = EPA method for total lead (T = total lead and D = dissolved lead).
<1.00 = Concentrations were not detected above the laboratory reporting limit.
mg/L = Milligrams per liter.
ug/L = Micrograms per liter.
TOC = Top of Casing Elevation referenced to the National Geodetic Vertical Datum, 1929.
* = The sum of gasoline-range, diesel-range and heavy oil-range hydrocarbons must not exceed 1,000 ug/L.
NA = Not analyzed.
np = non-purge sampling methods were used.
a = MTBE false positive detected by Method 8021B and confirmed below method detection limits by Method 8260B.

REV.05/17/01
PROJECTS\ARCO\94513\TABLES\2001\1QTR01GW513.X

TABLE 2
SUMMARY OF HISTORICAL GROUND WATER DATA
ARCO FACILITY NO. 5218
7200 E. MARGINAL WAY S.
SEATTLE, WASHINGTON
DELTA PROJECT NO. M094-513

MONITORING WELL	DATE SAMPLED	DISSOLVED OXYGEN (mg/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	XYLENES (ug/L)	METHYL TERT-BUTYLETHER (ug/L)	GASOLINE-RANGE HYDROCARBONS (ug/L)	LEAD (ug/L)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION (feet)	TOC (feet)
MW-1	09/13/94 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	<2.0	11.54	2.21	13.75
	12/09/94 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	5.9	10.94	2.81	
	03/17/95	NM	NS	NS	NS	NS	NS	NS	NS	9.73	4.02	
	06/20/95	NM	NS	NS	NS	NS	NS	NS	NS	10.99	2.76	
	09/15/95	NM	NS	NS	NS	NS	NS	NS	NS	11.41	2.34	
	12/22/95 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	<2.0	10.20	3.55	
	03/15/96	NM	NS	NS	NS	NS	NS	NS	NS	10.15	3.60	
	06/14/96	NM	NS	NS	NS	NS	NS	NS	NS	10.78	2.97	
	09/04/96 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	NA	11.14	2.61	
	12/03/96 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	NA	10.65	3.10	
	03/10/97	0.5	NS	NS	NS	NS	NS	NS	NS	10.04	3.71	
	08/18/97 np	0.6	<0.5	<0.5	<0.5	<1.0	NA	<50	NA	10.92	2.83	
	03/13/98	0.9	NS	NS	NS	NS	NS	NS	NS	10.03	3.72	
	09/18/98	1.2	NS	NS	NS	NS	NS	NS	NS	11.42	2.33	
	03/02/99	0.6	NS	NS	NS	NS	NS	NS	NS	9.27	4.48	
	09/28/99	NM	NS	NS	NS	NS	NS	NS	NS	11.50	2.25	
	03/15/00	1.29	NS	NS	NS	NS	NS	NS	NS	10.37	3.38	
	8/25/00 np	2.06	<0.500	<0.500	<0.500	<1.00	NA	<50.0	NA	11.38	2.37	
	03/22/01 np	1.36	<0.500	<0.500	<0.500	1.08	<1.00	<50.0	NA	11.02	2.73	

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MONITORING WELL	DATE SAMPLED	DISSOLVED OXYGEN (mg/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	XYLENES (ug/L)	METHYL TERT-BUTYL ETHER (ug/L)	GASOLINE-RANGE HYDROCARBONS (ug/L)	LEAD (ug/L)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION (feet)	TOC (feet)
MW-2	09/13/94 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	2.1	11.80	2.14	13.94
	12/09/94 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	4.4	11.22	2.72	
	03/17/95 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	<2.0	10.04	3.90	
	06/20/95 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	<2.0	11.23	2.71	
	09/15/95 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	<2.0	11.71	2.23	
	12/22/95 p	NM	<0.5	0.74	<0.5	<1.0	NA	<50	29	10.50	3.44	
	03/15/96 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	<2.0	10.47	3.47	
	06/14/96 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	<2.0	11.00	2.94	
	09/04/96	NM	NS	NS	NS	NS	NS	NS	NS	11.46	2.48	
	12/03/96 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	NA	10.97	2.97	
	03/10/97	0.3	NS	NS	NS	NS	NS	NS	NS	10.41	3.53	
	08/18/97np	0.7	<0.5	<0.5	<0.5	<0.1	NA	<50	NA	11.23	2.71	
	03/13/98	0.4	NS	NS	NS	NS	NS	NS	NS	10.30	3.64	
	09/18/98	0.8	NS	NS	NS	NS	NS	NS	NS	11.67	2.27	
	03/02/99	0.3	NS	NS	NS	NS	NS	NS	NS	9.56	4.38	
	09/28/99	NM	NS	NS	NS	NS	NS	NS	NS	11.79	2.15	
	3/15/00 np	0.67	<0.500	<0.500	<0.500	1.23	NA	<50.0	NA	10.62	3.32	
	08/25/00	0.85	NS	NS	NS	NS	NS	NS	NS	11.75	2.19	
	03/22/01 np	0.40	<0.500	<0.500	<0.500	<1.00	<100	<50.0	NA	11.31	2.63	

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MONITORING WELL	DATE SAMPLED	DISSOLVED OXYGEN (mg/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	XYLENES (ug/L)	METHYL TERT-BUTYL ETHER (ug/L)	GASOLINE-RANGE HYDROCARBONS (ug/L)	LEAD (ug/L)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION (feet)	TOC (feet)
MW-3	09/13/94 p	NM	<0.5	0.52	<0.5	<1.0	NA	<50	<2.0	12.19	2.02	14.21
	12/09/94 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	<2.0	11.55	2.66	
	03/17/95 p	NM	<0.5	0.52	<0.5	<1.0	NA	<50	<2.0	10.44	3.77	
	06/20/95 p	NM	0.83	<0.5	<0.5	<1.0	NA	140	<2.0	11.65	2.56	
	09/15/95 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	<2.0	12.09	2.12	
	12/22/95 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	<2.0	10.88	3.33	
	03/15/96 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	11.0	10.95	3.26	
	06/14/96 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	<2.0	11.18	3.03	
	09/04/96 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	NA	11.83	2.38	
	12/03/96 p	NM	<0.5	<0.5	<0.5	<1.0	NA	<50	NA	11.34	2.87	
	03/10/97	0.4	NS	NS	NS	NS	NS	NS	NS	10.79	3.42	
	08/18/97 np	0.6	<0.5	<0.5	<0.5	<1.0	NA	<50	NA	11.64	2.57	
	03/13/98 np	0.3	<0.5	<0.5	<0.5	<1.0	NA	<50	<1.0 (D)	10.76	3.45	
	09/18/98 np	1.0	<0.5	<0.5	<0.5	<1.0	NA	<50	<1.0 (D)	12.14	2.07	
	03/02/99	0.4	NS	NS	NS	NS	NS	NS	NS	10.08	4.13	
	9/28/99 np	NM	<0.500	<0.500	<0.500	<1.00	NA	<50.0	NA	12.18	2.03	
	3/15/00 np	1.45	<0.500	<0.500	<0.500	<1.00	NA	<50.0	NA	11.02	3.19	
	08/25/00	1.21	NS	NS	NS	NS	NS	NS	NS	12.25	1.96	
	03/22/01 np	0.72	<0.500	<0.500	<0.500	<1.00	<1.00	<50.0	NA	11.41	2.80	

TABLE 2
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DELTA PROJECT NO. M094-513

MONITORING WELL	DATE SAMPLED	DISSOLVED OXYGEN (mg/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	XYLENES (ug/L)	METHYL TERT-BUTYL ETHER (ug/L)	GASOLINE-RANGE HYDROCARBONS (ug/L)	LEAD (ug/L)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION (feet)	TOC (feet)
BV-1	09/13/94 p	NM	690	1,100	930	3,400	NA	15,000	<2.0	12.17	2.06	14.23
	12/09/94 p	NM	610	1,700	1,100	5,600	NA	32,000	<2.0	11.53	2.70	
	03/17/95 p	NM	140	110	190	500	NA	2,300	<2.0	10.38	3.85	
	06/20/95 p	NM	390	400	360	1,100	NA	16,000	<2.0	11.60	2.63	
	09/15/95 p	NM	390	740	720	2,000	NA	18,000	<2.0	12.06	2.17	
	12/22/95 p	NM	330	710	680	3,800	NA	23,000	<2.0	10.85	3.38	
	03/15/96 p	NM	200	95	350	640	NA	4,600	2.4	10.86	3.37	
	06/14/96 p	NM	223	217	408	778	NA	5,460	<2.0	11.51	2.72	
	09/04/96 p	NM	170	266	357	957	NA	5,740	NA	11.83	2.40	
	12/03/96 p	NM	393	1,090	1,160	5,190	NA	27,200	NA	11.34	2.89	
	03/10/97 np	0.5	140	144	382	1,080	NA	10,700	NA	10.75	3.48	
	08/18/97 np	0.5	496	1,060	1,540	5,630	NA	35,400	NA	11.57	2.66	
	03/13/98 np	0.3	192	77.6	556	484	NA	5,420	NS	10.70	3.53	
	09/18/98 np	0.9	178	94.1	456	1,260	NA	6,750	<1.0 (D)	12.03	2.20	
	03/02/99	0.3	NS	NS	NS	NS	NA	NS	NS	9.97	4.26	
	9/28/99 np	NM	168	106	496	1760	NA	9190	NA	12.16	2.07	
	3/15/00 np	0.39	95.3	30.6	324	375	NA	3390	NA	11.00	3.23	
	8/25/00 np	0.81	130	54.4	763	1,670	NA	10,800	NA	12.00	2.23	
	03/22/01 np	0.43	11.5	4.76	52.1	174	27.4	1,100	NA	11.36	2.87	

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ARCO FACILITY NO. 5218
7200 E. MARGINAL WAY S.
SEATTLE, WASHINGTON
DELTA PROJECT NO. M094-513

MONITORING WELL	DATE SAMPLED	DISSOLVED OXYGEN (mg/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	XYLENES (ug/L)	METHYL TERT-BUTYL ETHER (ug/L)	GASOLINE-RANGE HYDROCARBONS (ug/L)	LEAD (ug/L)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION (feet)	TOC (feet)
BV-2	09/13/94 p	NM	160	12	16	340	NA	1,100	4.3	11.89	2.04	13.93
	12/09/94 p	NM	150	17	15	240	NA	6,900	7.7	11.24	2.69	
	03/17/95 p	NM	29	4.6	6.2	560	NA	7,400	3.9	10.12	3.81	
	06/20/95 p	NM	86	7.5	9.9	490	NA	13,000	4.6	11.35	2.58	
	09/15/95 p	NM	62	4.0	8.6	340	NA	14,000	<2.0	11.78	2.15	
	12/22/95 p	NM	17	0.93	5.7	130	NA	8,200	8.6	10.57	3.36	
	03/15/96 p	NM	<0.8	0.91	1.1	32	NA	12,000	13	10.62	3.31	
	06/14/96 p	NM	7.56	0.776	1.65	132	NA	3,380	5.10	11.30	2.63	
	09/04/96 p	NM	18.4	<5.0	<5.0	205	NA	7,380	NA	11.55	2.38	
	12/03/96 p	NM	8.32	0.511	1.10	94.4	NA	3,330	NA	11.06	2.87	
	03/10/97 np	0.5	25.6	6.24	8.14	368	NA	14,200	NA	10.51	3.42	
	08/18/97 np	0.5	43.3	5.16	6.38	283	NA	6,300	NA	11.33	2.60	
	03/13/98 np	0.3	60.9	4.50	4.19	272	NA	8,710	8.91(D)	10.45	3.48	
	09/18/98 np	1.3	<30	<0.5	<2.5	170	NA	6,780	3.18 (D)	11.91	2.02	
	03/02/99 np	0.3	46.8	<3.00[1]	<3.10[1]	113	NA	5,740	9.77 (D)	9.70	4.23	
	9/28/99 np	NM	<2.50	223	4.64	210	NA	8,740	NA	11.88	2.05	
	03/15/00	0.31	NS	NS	NS	NS	NS	NS	NS	10.75	3.18	
	8/25/00 np	0.39	8.49	<1.57	1.31	3.98	NA	2,110	NA	11.81	2.12	
	03/22/01 np	0.38	9.28	<0.500	0.657	18.5	<5.00 (a)	1,750	NA	11.42	2.51	

TABLE 2
SUMMARY OF HISTORICAL GROUND WATER DATA
ARCO FACILITY NO. 5218
7200 E. MARGINAL WAY S.
SEATTLE, WASHINGTON
DELTA PROJECT NO. M094-513

MONITORING WELL	DATE SAMPLED	DISSOLVED OXYGEN (mg/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	XYLENES (ug/L)	METHYL TERT-BUTYL ETHER (ug/L)	GASOLINE-RANGE HYDROCARBONS (ug/L)	LEAD (ug/L)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION (feet)	TOC (feet)
BV-3	09/13/94 p	NM	980	12,000	4,200	20,000	NA	87,000	8.5	12.65	2.00	14.65
	12/09/94 p	NM	610	8,300	4,500	22,000	NA	100,000	8.6	12.00	2.65	
	03/17/95 p	NM	370	3,400	3,700	1,800	NA	61,000	7.0	10.88	3.77	
	06/20/95 p	NM	890	6,500	2,800	13,000	NA	91,000	9.4	12.11	2.54	
	09/15/95 p	NM	900	10,000	4,000	17,000	NA	93,000	3.6	12.55	2.10	
	12/22/95 p	NM	520	4,900	3,800	17,000	NA	91,000	8.3	11.34	3.31	
	03/15/96 p	NM	180	2,600	3,200	15,000	NA	69,000	7.1	11.35	3.30	
	06/14/96 p	NM	529	5,050	3,510	17,400	NA	81,100	6.04	12.00	2.65	
	09/04/96 p	NM	579	7,100	3,270	16,200	NA	84,400	NA	12.31	2.34	
	12/03/96 p	NM	<250	1,780	3,030	14,500	NA	66,100	NA	11.82	2.83	
	03/10/97 np	0.4	181	2,370	2,700	13,100	NA	76,000	NA	NM	NM	
	08/18/97 np	0.6	275	1,730	3,270	15,100	NA	80,400	NA	12.09	2.56	
	03/13/98 np	NM	211	1,660	3,380	15,000	NA	78,200	4.62(D)	11.22	3.43	
	09/18/98 np	0.8	330	2,200	3,070	15,000	NA	61,600	6.49 (D)	12.58	2.07	
	03/02/99 np	0.2	247	1,450	3,630	16,600	NA	64,200	3.13 (D)	10.43	4.22	
	9/28/99 np	NM	404	2,010	2,640	11,900	NA	54,600	NA	12.65	2.00	
	3/15/00 np	0.36	182	925	2920	12700	NA	56,300	NA	11.50	3.15	
	8/25/00 np	0.65	303	1,680	2,890	13,100	NA	77,600	NA	12.70	1.95	
	03/22/01 np	0.52	238	1,730	3,000	12,300	<5.00 (a)	67,900	NA	12.17	2.48	

TABLE 2
SUMMARY OF HISTORICAL GROUND WATER DATA
ARCO FACILITY NO. 5218
7200 E. MARGINAL WAY S.
SEATTLE, WASHINGTON
DELTA PROJECT NO. M094-513

MONITORING WELL	DATE SAMPLED	DISSOLVED OXYGEN (mg/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	XYLENES (ug/L)	METHYL TERT-BUTYL ETHER (ug/L)	GASOLINE-RANGE HYDROCARBONS (ug/L)	LEAD (ug/L)	DEPTH TO WATER (feet)	GROUND WATER ELEVATION (feet)	TOC (feet)
BV-4	09/13/94 p	NM	180	14	420	560	NA	4,400	<2.0	12.40	2.07	14.47
	12/09/94 p	NM	190	62	700	1,400	NA	11,000	<2.0	11.80	2.67	
	03/17/95 p	NM	26	5.7	57	48	NA	1,500	<2.0	10.63	3.84	
	06/20/95 p	NM	<0.50	<0.50	<0.50	<1.0	NA	1,000	<2.0	11.86	2.61	
	09/15/95 p	NM	150	18	320	370	NA	4,800	<2.0	12.30	2.17	
	12/22/95 p	NM	210	34	630	1,100	NA	11,000	<2.0	11.09	3.38	
	03/15/96 p	NM	79	12	220	340	NA	3,500	<2.0	11.03	3.44	
	06/14/96 p	NM	31.0	3.12	88.2	63.2	NA	1,050	<2.0	11.73	2.74	
	09/04/96 p	NM	90.6	17.6	286	422	NA	4,020	NA	12.22	2.25	
	12/03/96 p	NM	9.10	2.71	17	42.3	NA	379	NA	11.73	2.74	
	03/10/97 np	0.4	28.9	7.37	108	59.2	NA	1,570	NA	10.97	3.50	
	08/18/97 np	0.6	105	19.7	342	536	NA	5,700	NA	11.81	2.66	
	03/13/98 np	0.3	50.4	10.8	163	200	NA	2,840	NS	10.92	3.55	
	09/18/98 np	2.1	13.1	<3.0	25.3	39.2	NA	606	<1.0 (D)	12.29	2.18	
	03/02/99 np	0.3	7.68	<1.00[1]	5.58	<6.00[1]	NA	426	NA	10.12	4.35	
	9/28/99 np	NM	38.0	11.3	64.0	126	NA	1,820	NA	12.38	2.09	
	3/15/00 np	0.26	16.7	2.53	22.2	19.2	NA	622	NA	11.25	3.22	
	8/25/00 np	0.31	57.6	10.6	176	281	NA	3,240	NA	12.27	2.20	
	03/22/01 np	0.48	16.9	1.86	47.6	37.5	<5.00(a)	908	NA	11.91	2.56	
Laboratory Methods			8021B	8021B	8021B	8021B	8021B/8260B	WTPH-G	6020			
MTCA Method A Cleanup Levels			5.0	40.0	30.0	20.0	20.0	1,000*	5.0			

8021B = EPA method for volatile aromatic hydrocarbons. Analyses prior to 9/18/96 utilized EPA Method 8020A and analyses prior to 6/14/96 utilized EPA Method 8020.
8260B = EPA method for volatile organic compounds. Samples with MTBE detections above the method reporting limit using 8021B were re-analyzed using 8260B to confirm the MTBE concentration.
WTPH-G = Washington State method for gasoline-range hydrocarbons.
6020 = EPA method for total lead (T = total lead and D = dissolved lead). Analyses prior to 9/18/96 utilized EPA Method 7421.
<1.0 = Concentrations were not detected above the laboratory reporting limit.
mg/L = Milligrams per liter.
ug/L = Micrograms per liter.
TOC = Top of Casing Elevation referenced to the National Geodetic Vertical Datum, 1929.
NS = Not sampled.
* = The sum of gasoline-range, diesel-range and heavy oil-range hydrocarbons must not exceed 1,000 ug/L.
a = MTBE false positive detected by Method 8021B and confirmed below method detection limits by Method 8260B.

[1] = Note in laboratory report regarding this sample.
NA = Not analyzed.
NM = Note measured.
p = purge sampling methods were used.
np = non-purge sampling methods were used.

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