

Date: May 11, 2001
RECEIVED**ARCO QUARTERLY GROUNDWATER MONITORING REPORT - 2ND QUARTER 2001**

01 JUN -4 AIO :20

Facility No:	0855
Address:	4603 Ocean Beach Highway Longview, Washington
ARCO Environmental Engineer:	Mr. Chuck Hutchens
Consulting Co./Contact Person:	SECOR International Incorporated/Scott Miller
Consultant Project No.:	015.08921.702
Primary Agency:	Washington Department of Ecology (Ecology)
Ecology LUST File No:	5421

WORK PERFORMED 2ND QUARTER 2001:

1. Groundwater monitoring and sampling of wells MW-1 through MW-7 on April 18, 2001.

WORK PROPOSED FOR 3RD QUARTER 2001:

1. Quarterly groundwater monitoring and sampling.

Current Phase of Project:	Groundwater monitoring
Is Free Product (FP) Present On-Site:	No
FP Recovered this Quarter (gallons):	Not applicable (NA)
Cumulative FP Recovered to Date (gallons):	NA
Current Remediation Techniques:	NA
Approximate Depth to Groundwater (feet below top of casing):	3.83 (MW-2) to 6.90 (MW-4).
Groundwater Gradient (direction):	East
Groundwater Gradient (magnitude):	0.03 ft/ft

DISCUSSION:

Groundwater monitoring field activities conducted on April 18, 2001 included measuring the water levels and collecting groundwater samples from MW-1 through MW-7. The water samples collected from MW-1 through MW-7 were analyzed for volatile organic compounds (VOCs) by Environmental Protection Agency (EPA) Method 8026B. The groundwater samples were collected under field procedures in accordance with SECOR's standard operating procedures for quality assurance and quality control. Samples were transported to the laboratory using strict chain-of-custody protocols.

Benzene was detected at concentrations above the laboratory method reporting limit (MRL) in monitoring wells MW-3, MW-4 and MW-5 at 7,700 micrograms per liter ($\mu\text{g/L}$), 1,280 $\mu\text{g/L}$, and 9.42 $\mu\text{g/L}$, respectively. Naphthalene was detected above the laboratory MRL in four of the sampled wells at concentrations ranging from 2.42 $\mu\text{g/L}$ (MW-5) to 405 $\mu\text{g/L}$ (MW-3). The VOCs analysis by EPA Method 8260B indicates that only gasoline constituents are found in the groundwater at the site. Groundwater levels and concentrations found in monitoring wells are relatively consistent with previous monitoring events.

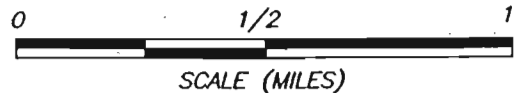
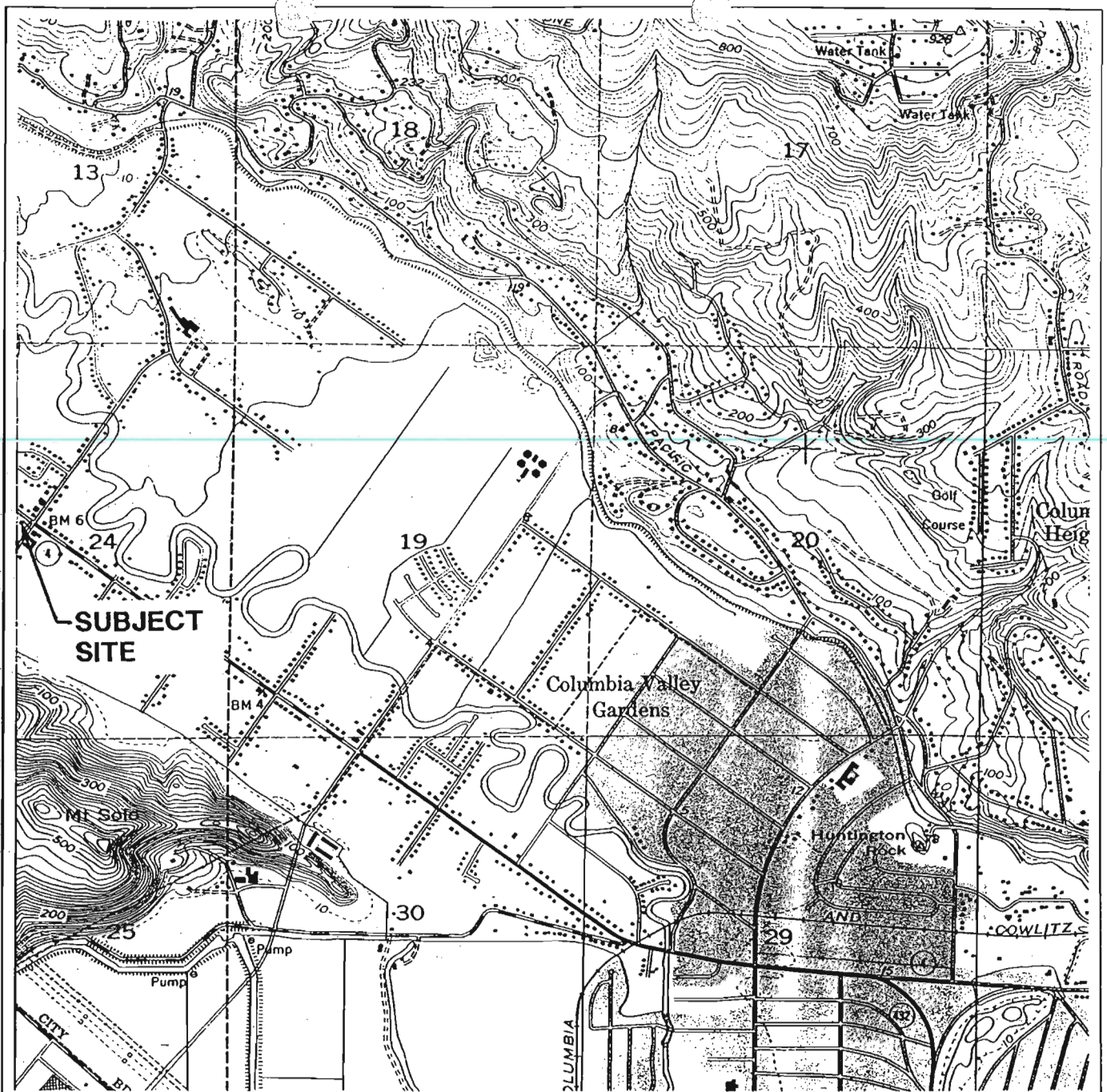
The purge water generated from site groundwater activities was transported to ARCO #5893 in Vancouver, Washington for storage. SECOR coordinates transport of the purge water with Philip Environmental to their facility in Kent, Washington for treatment and disposal.

ATTACHMENTS:

- Figure 1: Site Location Map
- Figure 2: Groundwater Contour and Groundwater Analytical Results Map
- Table 1: Historical Water Sample Analyses
- Table 2: Historical Water Level Elevations
- Laboratory Report and Chain of Custody
- Groundwater Sampling Field Data Sheets

cc: ✓ Ms. Patty Martin, Washington Department of Ecology, Olympia, Washington
Mr. David McDowell, Attorney for Wakefield Trust, Vancouver, Washington

FIGURES



REFERENCE: USGS 7.5 MINUTE QUADRANGLE; KELSO, WASHINGTON; 1970

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SITE LOCATION MAP
FORMER ARCO SERVICE STATION 0855
4803 OCEAN BEACH HIGHWAY
LONGVIEW, WASHINGTON

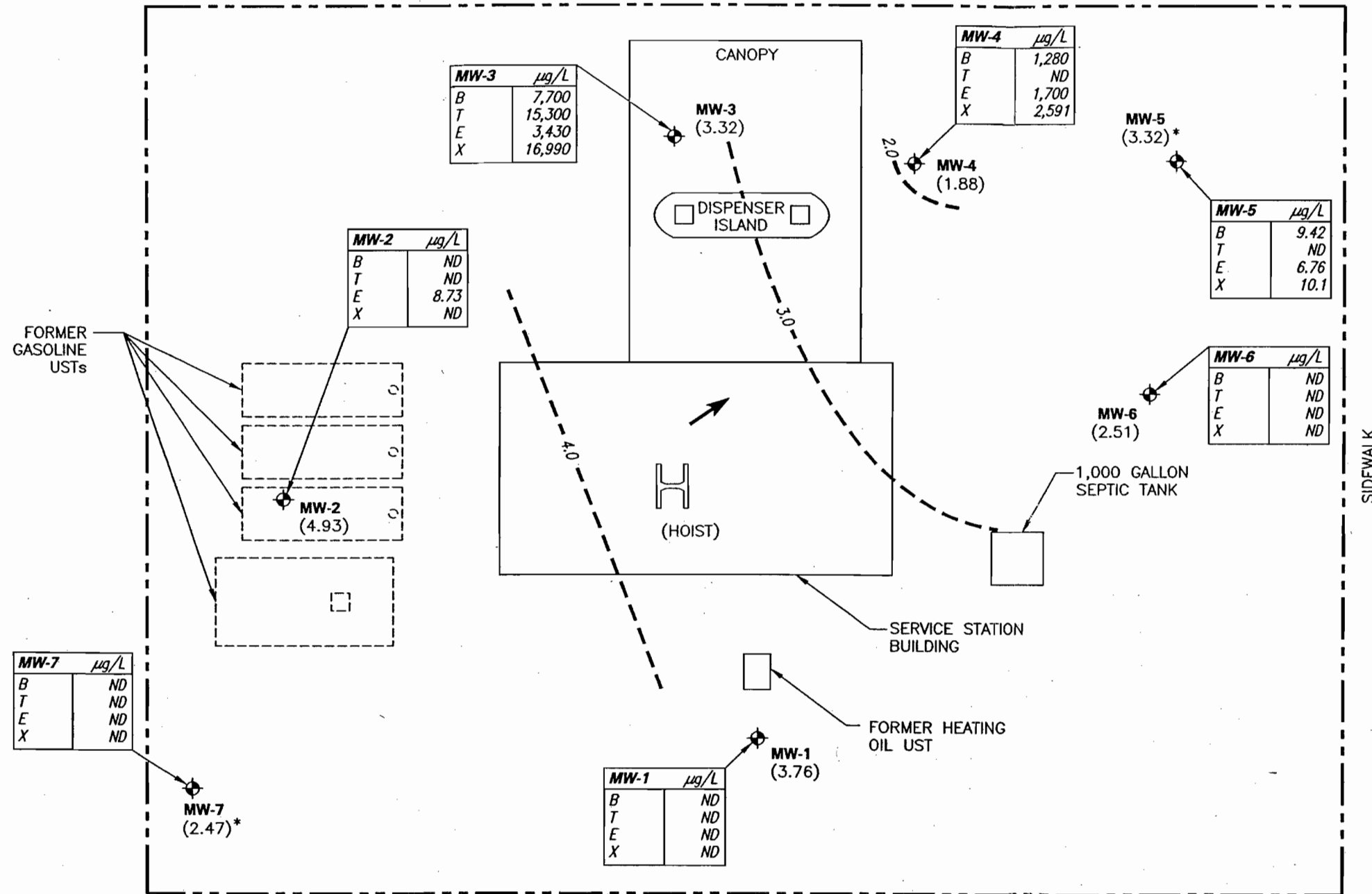
FIGURE:

1

JOB#: 015.08698.702 APPR: CWG DWN: KPM DATE: 07/28/00

OCEAN BEACH HWY.

SIDEWALK



LEGEND

- SUBJECT PROPERTY LINE BOUNDARY
- MW-5 GROUNDWATER MONITORING WELL LOCATION
- INFERRED GROUNDWATER FLOW DIRECTION
- INFERRED GROUNDWATER ELEVATION CONTOUR (FEET)
- (3.70) RELATIVE GROUNDWATER ELEVATION (FEET)
- (NM) NOT MEASURED

ANALYTE

B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	XYLENES

(ND) NOT DETECTED AT OR ABOVE THE LABORATORY METHOD REPORTING LIMIT

NOTES

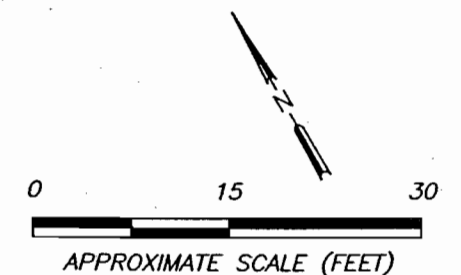
CONTOUR INTERVAL = 1.0 FT

* GROUNDWATER ELEVATION NOT USED TO GENERATE CONTOURS.

GROUNDWATER ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL

46TH AVENUE

SIDEWALK



NOTE: MONITORING WELL LOCATIONS AND CORNERS OF BUILDING SURVEYED APRIL 2000 BY GIBBS & OLSEN, INC. OF LONGVIEW, WASHINGTON.

SOURCE: MAP BASED ON ATLANTIC RICHFIELD "GENERAL ARRANGEMENT" DRAWING, NOVEMBER 30, 1966, 1/8"-1'.

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GROUNDWATER CONTOUR AND GROUNDWATER ANALYTICAL RESULTS MAP (04/18/01)
FORMER ARCO SERVICE STATION 0855
4603 OCEAN BEACH HIGHWAY
LONGVIEW, WASHINGTON

FIGURE:

2

JOB#: 015.08921.701 APPR: TV DWN: KPM

DATE: 05/16/01

N:/ARCO/WASHINGTON/08921/701/

DWG: 15-08921-7012-0401

TABLES

Table 1. Historical Water Sample Analyses
Former ARCO Station No. 0855
4603 Ocean Beach Highway, Longview, Washington

Well Number	Sample Date	BTEX (µg/L)				VOCs (µg/L)				TPH-G (µg/L)	TPH-D (µg/L)	TPH-O (µg/L)
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	EDB	EDC	MTBE			
MW-1	03/27/00	ND	ND	ND	ND	—	—	—	—	ND	ND	ND
	05/23/00	ND	ND	ND	ND	—	—	—	—	ND	—	—
	07/20/00	ND	ND	ND	ND	—	—	—	—	ND	—	—
	10/18/00	ND	ND	1.61	ND	—	—	—	—	404	—	—
	01/18/01	ND	ND	ND	ND	ND	ND	ND	ND	95.6	—	—
MW-2	04/18/01	ND	ND	ND	ND	4.30	ND	ND	ND	—	—	—
	03/27/00	6.89	49.5	599	2,490	—	—	—	—	17,100	ND	ND
	05/23/00	26.2	16.2	614	1,770	—	—	—	—	13,200	—	—
	07/20/00	11.9	11.8	304	330	—	—	—	—	7,220	—	—
	10/18/00	3.67	1.23	13.9	7.55	—	—	—	—	743	—	—
MW-3	01/18/01	ND	ND	41.1	5.62	ND	ND	ND	ND	691	—	—
	04/18/01	ND	ND	8.73	ND	ND	ND	ND	ND	—	—	—
	03/27/00	7,520	12,900	2,780	14,500	—	—	—	—	93,700	ND	ND
	05/23/00	4,710	8,330	2,280	11,200	—	—	—	—	65,200	—	—
	07/20/00	10,700	22,600	3,160	17,400	—	—	—	—	145,000	—	—
MW-4	10/18/00	12,900	33,000	4,890	26,700	—	—	—	—	179,000	—	—
	01/18/01	9,380	17,200	3,940	20,230	607	ND	155	ND	121,000	—	—
	04/18/01	7,700	15,300	3,430	16,990	405	ND	101	ND	—	—	—
	11/15/00 ^a	1,310	53.6	2,430	7,250	—	—	—	—	45,500	—	—
	01/18/01	1,130	ND	2,030	2,764	331	ND	ND	ND	29,400	—	—
MW-5	04/18/01	1,280	ND	1,700	2,591	289	ND	ND	ND	—	—	—
	11/15/00 ^a	ND	ND	ND	ND	—	—	—	—	ND	—	—
	01/18/01	ND	ND	ND	ND	2.44	ND	ND	ND	786	—	—
	04/18/01	9.42	ND	6.76	10.1	2.42	ND	ND	ND	—	—	—
	11/15/00 ^a	ND	ND	ND	ND	—	—	—	—	131	—	—
MW-6	01/18/01	ND	ND	ND	ND	ND	ND	ND	ND	732	—	—
	04/18/01	ND	ND	ND	ND	ND	ND	ND	ND	—	—	—
		ND	ND	ND	ND	ND	ND	ND	ND	—	—	—

Table 1. Historical Water Sample Analyses
Former ARCO Station No. 0855
4603 Ocean Beach Highway, Longview, Washington

Well Number	Sample Date	BTEX (µg/L)			VOCs (µg/L)				TPH-G (µg/L)	TPH-D (µg/L)	TPH-O (µg/L)
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	EDB	EDC			
MW-7	11/15/00 ^a	ND	ND	ND	1.35	—	—	—	113	—	—
	01/18/01	ND	ND	ND	ND	ND	ND	ND	242	—	—
	04/18/01	ND	ND	ND	ND	ND	ND	ND	—	—	—
Current Laboratory MRLs		1.0	1.0	1.0	1.0	2.0	1.0	1.0	—	—	—

ND or < = Less than laboratory method reporting limit (MRL).

— = Not sampled or not available.

Benzene, toluene, ethylbenzene, and total xylenes (BTEX) analysis by EPA Method 8021B.

VOCs analyzed by EPA Method 8062B.

EDB = 1,2-dibromoethane and EDC = 1,2-dichloroethane.

Total petroleum hydrocarbons-gasoline range (TPH-G) analysis by Method NWTPH-Gx.

TPH-diesel range (TPH-D) and TPH-oil range (TPH-O) analysis by Method NWTPH-Dx.

a Monitoring wells MW-4 through MW-7 were installed on October 24 and sampled on November 15, 2000.

Note: Results in micrograms per liter (µg/L), or approximately parts per billion (ppb).

Table 2. Historical Water Level Elevations
Former ARCO Service Station No. 0855
4603 Ocean Beach Highway, Longview, Washington

Well Number/ TOC Elevation ^a (feet)	Date Measured	Static Water Level (feet BTOC) ^b	Floating Product Thickness (feet)	Groundwater Elevation (feet) ^c	Change in Water Level Elevation (feet)
MW-1 8.34	03/27/00	4.36	0.00	3.98	— ^d
	05/23/00	5.20	0.00	3.14	-0.84
	07/20/00	5.55	0.00	2.79	-0.35
	10/18/00	5.41	0.00	2.93	0.14
	01/18/01	4.81	0.00	3.53	0.60
	04/18/01	4.58	0.00	3.76	0.23
MW-2 8.76	03/27/00	3.61	0.00	5.15	—
	05/23/00	4.64	0.00	4.12	-1.03
	07/20/00	5.06	0.00	3.70	-0.42
	10/18/00	5.19	0.00	3.57	-0.13
	01/18/01	3.96	0.00	4.80	1.23
	04/18/01	3.83	0.00	4.93	0.13
MW-3 8.78	03/27/00	5.61	0.00	3.17	—
	05/23/00	6.46	0.00	2.32	-0.85
	07/20/00	7.05	0.00	1.73	-0.59
	10/18/00	6.84	0.00	1.94	0.21
	01/18/01	6.37	0.00	2.41	0.47
	04/18/01	5.46	0.00	3.32	0.91
MW-4 8.78	11/15/00 ^e	6.88	0.00	1.90	—
	01/18/01	6.78	0.00	2.00	0.10
	04/18/01	6.90	0.00	1.88	-0.12
MW-5 8.78	11/15/00 ^e	6.54	0.00	2.24	—
	01/18/01	6.07	0.00	2.71	0.47
	04/18/01	5.46	0.00	3.32	0.61
MW-6 8.21	11/15/00 ^e	6.15	0.00	2.06	—
	01/18/01	5.85	0.00	2.36	0.30
	04/18/01	5.70	0.00	2.51	0.15

Table 2. Historical Water Level Elevations
Former ARCO Service Station No. 0855
4603 Ocean Beach Highway, Longview, Washington

Well Number/ TOC Elevation ^a (feet)	Date Measured	Static Water Level (feet BTOC) ^b	Floating Product Thickness (feet)	Groundwater Elevation (feet) ^c	Change in Water Level Elevation (feet)
MW-7 8.45	11/15/00 ^e	6.52	0.00	1.93	—
	01/18/01	6.24	0.00	2.21	0.28
	04/18/01	5.98	0.00	2.47	0.26

a. Top of casing (TOC) elevations, NAVD, 1988

b. Measurements in feet below top of well casing.

c. Elevation relative to mean sea level. Static water level corrected if floating product thickness (FPT) is present, corrected water level elevation = TOC - Static Water Level + (FPT x 0.80).

d. — = Data not applicable or not measured.

e. Monitoring wells MW-4 through MW-7 were installed on October 24 and measured on November 15, 2000.

**LABORATORY REPORT AND
CHAIN OF CUSTODY**



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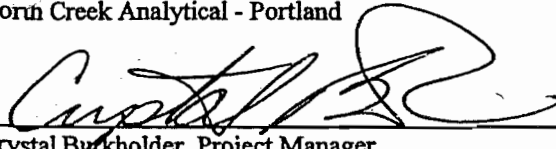
Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1-0855	P1D0637-01	Water	04/18/01 10:29	04/19/01 14:10
MW-2-0855	P1D0637-02	Water	04/18/01 10:39	04/19/01 14:10
MW-3-0855	P1D0637-03	Water	04/18/01 10:53	04/19/01 14:10
MW-4-0855	P1D0637-04	Water	04/18/01 10:47	04/19/01 14:10
MW-5-0855	P1D0637-05	Water	04/18/01 10:12	04/19/01 14:10
MW-6-0855	P1D0637-06	Water	04/18/01 10:21	04/19/01 14:10
MW-7-0855	P1D0637-07	Water	04/18/01 10:34	04/19/01 14:10

North Creek Analytical - Portland


Crystal Burkholder, Project Manager

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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Tualatin, OR 97062

Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW-1-0855 (P1D0637-01) Water					Sampled: 04/18/01 Received: 04/19/01				
Acetone	ND	10.0	ug/l	1	EPA 8260B	04/23/01	04/23/01	1040763	
Benzene	ND	1.00	"	"	"	"	"	"	
Bromobenzene	ND	1.00	"	"	"	"	"	"	
Bromochloromethane	ND	1.00	"	"	"	"	"	"	
Bromodichloromethane	ND	1.00	"	"	"	"	"	"	
Bromoform	ND	1.00	"	"	"	"	"	"	
Bromomethane	ND	5.00	"	"	"	"	"	"	
2-Butanone	ND	10.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.00	"	"	"	"	"	"	
sec-Butylbenzene	ND	1.00	"	"	"	"	"	"	
tert-Butylbenzene	ND	1.00	"	"	"	"	"	"	
Carbon disulfide	ND	10.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
Cumyl benzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
2-Chlorotoluene	ND	1.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	1.00	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.00	"	"	"	"	"	"	
Dibromochloromethane	ND	1.00	"	"	"	"	"	"	
1,2-Dibromoethane	ND	1.00	"	"	"	"	"	"	
Dibromomethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1.00	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	

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Crystal Burkholder, Project Manager

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Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

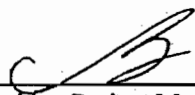
Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW-1-0855 (P1D0637-01) Water						Sampled: 04/18/01 Received: 04/19/01			
Ethylbenzene	ND	1.00	ug/l	1	EPA 8260B	04/23/01	04/23/01	1040763	
Hexachlorobutadiene	ND	2.00	"	"	"	"	"	"	
2-Hexanone	ND	10.0	"	"	"	"	"	"	
Isopropylbenzene	ND	2.00	"	"	"	"	"	"	
p-Isopropyltoluene	ND	2.00	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
Naphthalene	4.30	2.00	"	"	"	"	"	"	
n-Propylbenzene	ND	1.00	"	"	"	"	"	"	
Styrene	ND	1.00	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Toluene	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
o-Xylene	ND	1.00	"	"	"	"	"	"	
m,p-Xylene	ND	2.00	"	"	"	"	"	"	
Surr: 4-BFB	99.0 %	75-125							
Surr: 1,2-DCA-d4	102 %	75-125							
Surr: Dibromofluoromethane	97.5 %	75-125							
Surr: Toluene-d8	99.5 %	75-125							

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3 of 22



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Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW-2-0855 (PID0637-02RE1) Water						Sampled: 04/18/01 Received: 04/19/01			
Acetone	ND	10.0	ug/l	1	EPA 8260B	04/24/01	04/24/01	1040815	
Benzene	ND	1.00	"	"	"	"	"	"	
Bromobenzene	ND	1.00	"	"	"	"	"	"	
Bromochloromethane	ND	1.00	"	"	"	"	"	"	
Bromodichloromethane	ND	1.00	"	"	"	"	"	"	
Bromoform	ND	1.00	"	"	"	"	"	"	
Bromomethane	ND	5.00	"	"	"	"	"	"	
2-Butanone	ND	10.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.00	"	"	"	"	"	"	
sec-Butylbenzene	ND	1.00	"	"	"	"	"	"	
tert-Butylbenzene	ND	1.00	"	"	"	"	"	"	
Carbon disulfide	ND	10.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
Cyclohexane	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
2-Chlorotoluene	ND	1.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	1.00	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.00	"	"	"	"	"	"	
Dibromochloromethane	ND	1.00	"	"	"	"	"	"	
1,2-Dibromoethane	ND	1.00	"	"	"	"	"	"	
Dibromomethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1.00	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
Toluene	8.73	1.00	"	"	"	"	"	"	

North Creek Analytical - Portland

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541.383.9310 fax 541.382.7588

Secor
P.O. Box 1508
Tualatin, OR 97062

Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW-2-0855 (PID0637-02RE1) Water						Sampled: 04/18/01 Received: 04/19/01			
Hexachlorobutadiene	ND	2.00	ug/l	1	EPA 8260B	04/24/01	04/24/01	1040815	
2-Hexanone	ND	10.0	"	"	"	"	"	"	
Isopropylbenzene	ND	2.00	"	"	"	"	"	"	
p-Isopropyltoluene	ND	2.00	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
Naphthalene	ND	2.00	"	"	"	"	"	"	
n-Propylbenzene	2.80	1.00	"	"	"	"	"	"	
Styrene	ND	1.00	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Toluene	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	1.10	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
o-Xylene	ND	1.00	"	"	"	"	"	"	
m,p-Xylene	ND	2.00	"	"	"	"	"	"	
Surr: 4-BFB	98.0 %	75-125							
Surr: 1,2-DCA-d4	99.5 %	75-125							
Surr: Dibromofluoromethane	95.0 %	75-125							
Surr: Toluene-d8	98.5 %	75-125							

North Creek Analytical - Portland

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Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW-3-0855 (PID0637-03RE1) Water						Sampled: 04/18/01 Received: 04/19/01			
Acetone	ND	1000	ug/l	100	EPA 8260B	04/24/01	04/24/01	1040815	
Benzene	7700	100	"	"	"	"	"	"	
Bromobenzene	ND	100	"	"	"	"	"	"	
Bromochloromethane	ND	100	"	"	"	"	"	"	
Bromodichloromethane	ND	100	"	"	"	"	"	"	
Bromoform	ND	100	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
2-Butanone	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	100	"	"	"	"	"	"	
tert-Butylbenzene	ND	100	"	"	"	"	"	"	
Carbon disulfide	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
Cyclohexane	ND	100	"	"	"	"	"	"	
Chloroethane	ND	100	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	100	"	"	"	"	"	"	
4-Chlorotoluene	ND	100	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	500	"	"	"	"	"	"	
Dibromochloromethane	ND	100	"	"	"	"	"	"	
1,2-Dibromoethane	ND	100	"	"	"	"	"	"	
Dibromomethane	ND	100	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	100	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane	101	100	"	"	"	"	"	"	
1,1-Dichloroethene	ND	100	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	100	"	"	"	"	"	"	
1,3-Dichloropropane	ND	100	"	"	"	"	"	"	
2,2-Dichloropropane	ND	100	"	"	"	"	"	"	
1,1-Dichloropropene	ND	100	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
Ethylbenzene	3430	100	"	"	"	"	"	"	

North Creek Analytical - Portland

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Secor
P.O. Box 1508
Tualatin, OR 97062

Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW-3-0855 (P1D0637-03RE1) Water						Sampled: 04/18/01 Received: 04/19/01			
Hexachlorobutadiene	ND	200	ug/l	100	EPA 8260B	04/24/01	04/24/01	1040815	
2-Hexanone	ND	1000	"	"	"	"	"	"	
Isopropylbenzene	ND	200	"	"	"	"	"	"	
p-Isopropyltoluene	ND	200	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	100	"	"	"	"	"	"	
Methylene chloride	ND	500	"	"	"	"	"	"	
Naphthalene	405	200	"	"	"	"	"	"	
n-Propylbenzene	461	100	"	"	"	"	"	"	
Styrene	ND	100	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
Trichloroethene	ND	100	"	"	"	"	"	"	
Toluene	15300	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	100	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	100	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	100	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	100	"	"	"	"	"	"	
Trichloroethene	ND	100	"	"	"	"	"	"	
Trichlorofluoromethane	ND	100	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	100	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	3220	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	765	100	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
o-Xylene	4990	100	"	"	"	"	"	"	
m,p-Xylene	12000	200	"	"	"	"	"	"	
Surr: 4-BFB	99.5 %	75-125							
Surr: 1,2-DCA-d4	102 %	75-125							
Surr: Dibromofluoromethane	95.5 %	75-125							
Surr: Toluene-d8	98.0 %	75-125							

North Creek Analytical - Portland

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Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW-4-0855 (PID0637-04RE1) Water						Sampled: 04/18/01 Received: 04/19/01			
Acetone	ND	200	ug/l	20	EPA 8260B	04/24/01	04/24/01	1040815	
Benzene	1280	20.0	"	"	"	"	"	"	
Bromobenzene	ND	20.0	"	"	"	"	"	"	
Bromochloromethane	ND	20.0	"	"	"	"	"	"	
Bromodichloromethane	ND	20.0	"	"	"	"	"	"	
Bromoform	ND	20.0	"	"	"	"	"	"	
Bromomethane	ND	100	"	"	"	"	"	"	
2-Butanone	ND	200	"	"	"	"	"	"	
n-Butylbenzene	139	100	"	"	"	"	"	"	
sec-Butylbenzene	ND	20.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	20.0	"	"	"	"	"	"	
Carbon disulfide	ND	200	"	"	"	"	"	"	
() tetrachloride	ND	20.0	"	"	"	"	"	"	
Chlorobenzene	ND	20.0	"	"	"	"	"	"	
Chloroethane	ND	20.0	"	"	"	"	"	"	
Chloroform	ND	20.0	"	"	"	"	"	"	
Chloromethane	ND	100	"	"	"	"	"	"	
2-Chlorotoluene	ND	20.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	20.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	100	"	"	"	"	"	"	
Dibromochloromethane	ND	20.0	"	"	"	"	"	"	
1,2-Dibromoethane	ND	20.0	"	"	"	"	"	"	
Dibromomethane	ND	20.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	20.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	20.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	20.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	100	"	"	"	"	"	"	
1,1-Dichloroethane	ND	20.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	20.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	20.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	20.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	20.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	20.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	20.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	20.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	20.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	20.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	20.0	"	"	"	"	"	"	
Styrene	1700	20.0	"	"	"	"	"	"	

North Creek Analytical - Portland

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Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW-4-0855 (PID0637-04RE1) Water					Sampled: 04/18/01 Received: 04/19/01				
Hexachlorobutadiene	ND	40.0	ug/l	20	EPA 8260B	04/24/01	04/24/01	1040815	
2-Hexanone	ND	200	"	"	"	"	"	"	
Isopropylbenzene	226	40.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	40.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	100	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	20.0	"	"	"	"	"	"	
Methylene chloride	ND	100	"	"	"	"	"	"	
Naphthalene	289	40.0	"	"	"	"	"	"	
n-Propylbenzene	639	20.0	"	"	"	"	"	"	
Styrene	ND	20.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	20.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	20.0	"	"	"	"	"	"	
Chloroethene	ND	20.0	"	"	"	"	"	"	
Toluene	ND	20.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	20.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	20.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	20.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	20.0	"	"	"	"	"	"	
Trichloroethene	ND	20.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	20.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	20.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	1500	20.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	279	20.0	"	"	"	"	"	"	
Vinyl chloride	ND	20.0	"	"	"	"	"	"	
o-Xylene	301	20.0	"	"	"	"	"	"	
m,p-Xylene	2290	40.0	"	"	"	"	"	"	
Surr: 4-BFB	98.5 %	75-125							
Surr: 1,2-DCA-d4	99.5 %	75-125							
Surr: Dibromofluoromethane	95.5 %	75-125							
Surr: Toluene-d8	99.5 %	75-125							

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Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

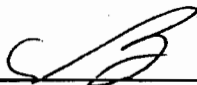
Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW-5-0855 (P1D0637-05) Water					Sampled: 04/18/01 Received: 04/19/01				
Acetone	ND	10.0	ug/l	1	EPA 8260B	04/23/01	04/23/01	1040763	
Benzene	9.42	1.00	"	"	"	"	"	"	
Bromobenzene	ND	1.00	"	"	"	"	"	"	
Bromochloromethane	ND	1.00	"	"	"	"	"	"	
Bromodichloromethane	ND	1.00	"	"	"	"	"	"	
Bromoform	ND	1.00	"	"	"	"	"	"	
Bromomethane	ND	5.00	"	"	"	"	"	"	
2-Butanone	ND	10.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.00	"	"	"	"	"	"	
sec-Butylbenzene	2.17	1.00	"	"	"	"	"	"	
tert-Butylbenzene	ND	1.00	"	"	"	"	"	"	
Carbon disulfide	ND	10.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
2-Chlorotoluene	ND	1.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	1.00	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.00	"	"	"	"	"	"	
Dibromochloromethane	ND	1.00	"	"	"	"	"	"	
1,2-Dibromoethane	ND	1.00	"	"	"	"	"	"	
Dibromomethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1.00	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
Styrene	6.76	1.00	"	"	"	"	"	"	

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

North Creek Analytical, Inc.

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Secor
P.O. Box 1508
Tualatin, OR 97062

Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW-5-0855 (PID0637-05) Water						Sampled: 04/18/01 Received: 04/19/01			
Hexachlorobutadiene	ND	2.00	ug/l	1	EPA 8260B	04/23/01	04/23/01	1040763	
2-Hexanone	ND	10.0	"	"	"	"	"	"	
Isopropylbenzene	11.3	2.00	"	"	"	"	"	"	
p-Isopropyltoluene	ND	2.00	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
Naphthalene	2.42	2.00	"	"	"	"	"	"	
n-Propylbenzene	25.7	1.00	"	"	"	"	"	"	
Styrene	ND	1.00	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
Toluene	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	1.81	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
o-Xylene	2.04	1.00	"	"	"	"	"	"	
m,p-Xylene	8.06	2.00	"	"	"	"	"	"	
Surr: 4-BFB	100 %	75-125							
Surr: 1,2-DCA-d4	105 %	75-125							
Surr: Dibromofluoromethane	98.5 %	75-125							
Surr: Toluene-d8	100 %	75-125							

North Creek Analytical - Portland

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Crystal Burkholder Project Manager

North Creek Analytical, Inc.

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Tualatin, OR 97062

Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW-6-0855 (PID0637-06) Water						Sampled: 04/18/01 Received: 04/19/01			
Acetone	ND	10.0	ug/l	1	EPA 8260B	04/23/01	04/23/01	1040763	
Benzene	ND	1.00	"	"	"	"	"	"	
Bromobenzene	ND	1.00	"	"	"	"	"	"	
Bromochloromethane	ND	1.00	"	"	"	"	"	"	
Bromodichloromethane	ND	1.00	"	"	"	"	"	"	
Bromoform	ND	1.00	"	"	"	"	"	"	
Bromomethane	ND	5.00	"	"	"	"	"	"	
2-Butanone	ND	10.0	"	"	"	"	"	"	
n-Butylbenzene	6.61	5.00	"	"	"	"	"	"	
sec-Butylbenzene	3.98	1.00	"	"	"	"	"	"	
tert-Butylbenzene	ND	1.00	"	"	"	"	"	"	
Carbon disulfide	ND	10.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
2-Chlorotoluene	ND	1.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	1.00	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.00	"	"	"	"	"	"	
Dibromochloromethane	ND	1.00	"	"	"	"	"	"	
1,2-Dibromoethane	ND	1.00	"	"	"	"	"	"	
Dibromomethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1.00	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
Styrene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

North Creek Analytical, Inc.

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Secor
P.O. Box 1508
Tualatin, OR 97062

Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW-6-0855 (P1D0637-06) Water						Sampled: 04/18/01 Received: 04/19/01			
Hexachlorobutadiene	ND	2.00	ug/l	1	EPA 8260B	04/23/01	04/23/01	1040763	
2-Hexanone	ND	10.0	"	"	"	"	"	"	
Isopropylbenzene	5.26	2.00	"	"	"	"	"	"	
p-Isopropyltoluene	ND	2.00	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
Naphthalene	ND	2.00	"	"	"	"	"	"	
n-Propylbenzene	3.11	1.00	"	"	"	"	"	"	
Styrene	ND	1.00	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Toluene	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	1.10	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	1.42	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
o-Xylene	ND	1.00	"	"	"	"	"	"	
m,p-Xylene	ND	2.00	"	"	"	"	"	"	
Surr: 4-BFB	102 %	75-125							
Surr: 1,2-DCA-d4	103 %	75-125							
Surr: Dibromofluoromethane	98.5 %	75-125							
Surr: Toluene-d8	100 %	75-125							

North Creek Analytical - Portland

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Crystal Burkholder Project Manager

North Creek Analytical, Inc.

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Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW-7-0855 (P1D0637-07) Water						Sampled: 04/18/01 Received: 04/19/01			
Acetone	ND	10.0	ug/l	1	EPA 8260B	04/23/01	04/23/01	1040763	
Benzene	ND	1.00	"	"	"	"	"	"	
Bromobenzene	ND	1.00	"	"	"	"	"	"	
Bromochloromethane	ND	1.00	"	"	"	"	"	"	
Bromodichloromethane	ND	1.00	"	"	"	"	"	"	
Bromoform	ND	1.00	"	"	"	"	"	"	
Bromomethane	ND	5.00	"	"	"	"	"	"	
2-Butanone	ND	10.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.00	"	"	"	"	"	"	
sec-Butylbenzene	1.22	1.00	"	"	"	"	"	"	
tert-Butylbenzene	ND	1.00	"	"	"	"	"	"	
Carbon disulfide	ND	10.0	"	"	"	"	"	"	
() tetrachloride	ND	1.00	"	"	"	"	"	"	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
2-Chlorotoluene	ND	1.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	1.00	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.00	"	"	"	"	"	"	
Dibromochloromethane	ND	1.00	"	"	"	"	"	"	
1,2-Dibromoethane	ND	1.00	"	"	"	"	"	"	
Dibromomethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1.00	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
Fluorobenzene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Portland

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Crystal Burkholder Project Manager

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Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW-7-0855 (P1D0637-07) Water						Sampled: 04/18/01 Received: 04/19/01			
Hexachlorobutadiene	ND	2.00	ug/l	1	EPA 8260B	04/23/01	04/23/01	1040763	
2-Hexanone	ND	10.0	"	"	"	"	"	"	
Isopropylbenzene	2.47	2.00	"	"	"	"	"	"	
p-Isopropyltoluene	ND	2.00	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
Naphthalene	ND	2.00	"	"	"	"	"	"	
n-Propylbenzene	2.92	1.00	"	"	"	"	"	"	
Styrene	ND	1.00	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
Toluene	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
o-Xylene	ND	1.00	"	"	"	"	"	"	
m,p-Xylene	ND	2.00	"	"	"	"	"	"	
Surr: 4-BFB	97.0 %	75-125							
Surr: 1,2-DCA-d4	105 %	75-125							
Surr: Dibromofluoromethane	98.5 %	75-125							
Surr: Toluene-d8	102 %	75-125							

North Creek Analytical - Portland

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North Creek Analytical, Inc.

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Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1040763 - EPA 5030B

Blank (1040763-BLK1)

Prepared & Analyzed: 04/23/01

Acetone	ND	10.0	ug/l
Benzene	ND	1.00	"
Bromobenzene	ND	1.00	"
Bromochloromethane	ND	1.00	"
Bromodichloromethane	ND	1.00	"
Bromoform	ND	1.00	"
Bromomethane	ND	5.00	"
2-Butanone	ND	10.0	"
n-Butylbenzene	ND	5.00	"
sec-Butylbenzene	ND	1.00	"
tert-Butylbenzene	ND	1.00	"
Carbon disulfide	ND	10.0	"
Carbon tetrachloride	ND	1.00	"
Chlorobenzene	ND	1.00	"
Chloroethane	ND	1.00	"
Chloroform	ND	1.00	"
Chloromethane	ND	5.00	"
2-Chlorotoluene	ND	1.00	"
4-Chlorotoluene	ND	1.00	"
1,2-Dibromo-3-chloropropane	ND	5.00	"
Dibromochloromethane	ND	1.00	"
1,2-Dibromoethane	ND	1.00	"
Dibromomethane	ND	1.00	"
1,2-Dichlorobenzene	ND	1.00	"
1,3-Dichlorobenzene	ND	1.00	"
1,4-Dichlorobenzene	ND	1.00	"
Dichlorodifluoromethane	ND	5.00	"
1,1-Dichloroethane	ND	1.00	"
1,2-Dichloroethane	ND	1.00	"
1,1-Dichloroethene	ND	1.00	"
cis-1,2-Dichloroethene	ND	1.00	"
trans-1,2-Dichloroethene	ND	1.00	"
1,2-Dichloropropane	ND	1.00	"
1,3-Dichloropropane	ND	1.00	"
2,2-Dichloropropane	ND	1.00	"

North Creek Analytical - Portland

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.

Crystal Burkholder, Project Manager

North Creek Analytical, Inc.

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541.383.9310 fax 541.382.7588

Secor
P.O. Box 1508
Tualatin, OR 97062

Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1040763 - EPA 5030B

Blank (1040763-BLK1)

Prepared & Analyzed: 04/23/01

1,1-Dichloropropene	ND	1.00	ug/l							
cis-1,3-Dichloropropene	ND	1.00	"							
trans-1,3-Dichloropropene	ND	1.00	"							
Ethylbenzene	ND	1.00	"							
Hexachlorobutadiene	ND	2.00	"							
2-Hexanone	ND	10.0	"							
Isopropylbenzene	ND	2.00	"							
p-Isopropyltoluene	ND	2.00	"							
4-Methyl-2-pentanone	ND	5.00	"							
tert-butyl ether	ND	1.00	"							
chloride	ND	5.00	"							
Na-muialene	ND	2.00	"							
n-Propylbenzene	ND	1.00	"							
Styrene	ND	1.00	"							
1,1,1,2-Tetrachloroethane	ND	1.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
Toluene	ND	1.00	"							
1,2,3-Trichlorobenzene	ND	1.00	"							
1,2,4-Trichlorobenzene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
1,1,2-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Trichlorofluoromethane	ND	1.00	"							
1,2,3-Trichloropropane	ND	1.00	"							
1,2,4-Trimethylbenzene	ND	1.00	"							
1,3,5-Trimethylbenzene	ND	1.00	"							
Vinyl chloride	ND	1.00	"							
o-Xylene	ND	1.00	"							
m,p-Xylene	ND	2.00	"							
Surr: 4-BFB	19.8		"	20.0		99.0	75-125			
Surr: 1,2-DCA-d4	19.8		"	20.0		99.0	75-125			
Surr: Dibromofluoromethane	19.3		"	20.0		96.5	75-125			
Surr: Toluene-d8	20.3		"	20.0		102	75-125			

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

North Creek Analytical, Inc.

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Secor
P.O. Box 1508
Tualatin, OR 97062

Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1040763 - EPA 5030B

LCS (1040763-BS1)

Prepared & Analyzed: 04/23/01

Benzene	21.2	1.00	ug/l	20.0		106	80-125			
Chlorobenzene	20.9	1.00	"	20.0		104	80-125			
1,1-Dichloroethene	20.0	1.00	"	20.0		100	70-135			
Toluene	21.6	1.00	"	20.0		108	80-125			
Trichloroethene	18.4	1.00	"	20.0		92.0	70-130			
Surr: 4-BFB	19.8		"	20.0		99.0	75-125			
Surr: 1,2-DCA-d4	19.0		"	20.0		95.0	75-125			
Surr: Dibromofluoromethane	19.0		"	20.0		95.0	75-125			
Surr: Toluene-d8	20.2		"	20.0		101	75-125			

Dup (1040763-BSD1)

Prepared & Analyzed: 04/23/01

Benzene	21.1	1.00	ug/l	20.0		106	80-125	0.473	25	
Chlorobenzene	20.0	1.00	"	20.0		100	80-125	4.40	25	
1,1-Dichloroethene	20.4	1.00	"	20.0		102	70-135	1.98	25	
Toluene	21.2	1.00	"	20.0		106	80-125	1.87	25	
Trichloroethene	18.5	1.00	"	20.0		92.5	70-130	0.542	25	
Surr: 4-BFB	19.8		"	20.0		99.0	75-125			
Surr: 1,2-DCA-d4	20.4		"	20.0		102	75-125			
Surr: Dibromofluoromethane	19.2		"	20.0		96.0	75-125			
Surr: Toluene-d8	20.0		"	20.0		100	75-125			

Batch 1040815 - EPA 5030B

Blank (1040815-BLK1)

Prepared & Analyzed: 04/24/01

Acetone	ND	10.0	ug/l							
Benzene	ND	1.00	"							
Bromobenzene	ND	1.00	"							
Bromochloromethane	ND	1.00	"							
Bromodichloromethane	ND	1.00	"							
Bromoform	ND	1.00	"							
Bromomethane	ND	5.00	"							
2-Butanone	ND	10.0	"							
n-Butylbenzene	ND	5.00	"							
sec-Butylbenzene	ND	1.00	"							
tert-Butylbenzene	ND	1.00	"							
Carbon disulfide	ND	10.0	"							

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Methods

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Secor
P.O. Box 1508
Tualatin, OR 97062

Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1040815 - EPA 5030B

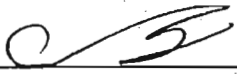
Blank (1040815-BLK1)

Prepared & Analyzed: 04/24/01

Carbon tetrachloride	ND	1.00	ug/l
Chlorobenzene	ND	1.00	"
Chloroethane	ND	1.00	"
Chloroform	ND	1.00	"
Chloromethane	ND	5.00	"
2-Chlorotoluene	ND	1.00	"
4-Chlorotoluene	ND	1.00	"
1,2-Dibromo-3-chloropropane	ND	5.00	"
Dibromochloromethane	ND	1.00	"
1,2-Dibromoethane	ND	1.00	"
I omethane	ND	1.00	"
1,2- chlorobenzene	ND	1.00	"
1,3-Dichlorobenzene	ND	1.00	"
1,4-Dichlorobenzene	ND	1.00	"
Dichlorodifluoromethane	ND	5.00	"
1,1-Dichloroethane	ND	1.00	"
1,2-Dichloroethane	ND	1.00	"
1,1-Dichloroethene	ND	1.00	"
cis-1,2-Dichloroethene	ND	1.00	"
trans-1,2-Dichloroethene	ND	1.00	"
1,2-Dichloropropane	ND	1.00	"
1,3-Dichloropropane	ND	1.00	"
2,2-Dichloropropane	ND	1.00	"
1,1-Dichloropropene	ND	1.00	"
cis-1,3-Dichloropropene	ND	1.00	"
trans-1,3-Dichloropropene	ND	1.00	"
Ethylbenzene	ND	1.00	"
Hexachlorobutadiene	ND	2.00	"
2-Hexanone	ND	10.0	"
Isopropylbenzene	ND	2.00	"
p-Isopropyltoluene	ND	2.00	"
4-Methyl-2-pentanone	ND	5.00	"
Methyl tert-butyl ether	ND	1.00	"
Methylene chloride	ND	5.00	"
Naphthalene	ND	2.00	"
ulbenzene	ND	1.00	"

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

North Creek Analytical, Inc.

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Secor
P.O. Box 1508
Tualatin, OR 97062

Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1040815 - EPA 5030B

Blank (1040815-BLK1)

Prepared & Analyzed: 04/24/01

Styrene	ND	1.00	ug/l							
1,1,1,2-Tetrachloroethane	ND	1.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
Toluene	ND	1.00	"							
1,2,3-Trichlorobenzene	ND	1.00	"							
1,2,4-Trichlorobenzene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
1,1,2-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
perfluoromethane	ND	1.00	"							
1,1,1-Trichloropropane	ND	1.00	"							
1,2,4-Trimethylbenzene	ND	1.00	"							
1,3,5-Trimethylbenzene	ND	1.00	"							
Vinyl chloride	ND	1.00	"							
o-Xylene	ND	1.00	"							
m,p-Xylene	ND	2.00	"							
Surr: 4-BFB	19.0		"	20.0		95.0	75-125			
Surr: 1,2-DCA-d4	20.0		"	20.0		100	75-125			
Surr: Dibromofluoromethane	18.9		"	20.0		94.5	75-125			
Surr: Toluene-d8	20.2		"	20.0		101	75-125			

LCS (1040815-BS1)

Prepared & Analyzed: 04/24/01

Benzene	20.7	1.00	ug/l	20.0		104	80-125			
Chlorobenzene	19.6	1.00	"	20.0		98.0	80-125			
1,1-Dichloroethene	19.8	1.00	"	20.0		99.0	70-135			
Toluene	20.2	1.00	"	20.0		101	80-125			
Trichloroethene	17.8	1.00	"	20.0		89.0	70-130			
Surr: 4-BFB	19.3		"	20.0		96.5	75-125			
Surr: 1,2-DCA-d4	20.0		"	20.0		100	75-125			
Surr: Dibromofluoromethane	19.3		"	20.0		96.5	75-125			
Surr: Toluene-d8	19.6		"	20.0		98.0	75-125			

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

North Creek Analytical, Inc.

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Secor
P.O. Box 1508
Tualatin, OR 97062

Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Volatile Organic Compounds, per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1040815 - EPA 5030B

LCS Dup (1040815-BSD1)

Prepared & Analyzed: 04/24/01

Benzene	21.0	1.00	ug/l	20.0		105	80-125	1.44	25	
Chlorobenzene	19.3	1.00	"	20.0		96.5	80-125	1.54	25	
1,1-Dichloroethene	19.9	1.00	"	20.0		99.5	70-135	0.504	25	
Toluene	20.3	1.00	"	20.0		102	80-125	0.494	25	
Trichloroethene	18.0	1.00	"	20.0		90.0	70-130	1.12	25	
Surr: 4-BFB	19.6		"	20.0		98.0	75-125			
Surr: 1,2-DCA-d4	19.7		"	20.0		98.5	75-125			
Surr: Dibromofluoromethane	18.5		"	20.0		92.5	75-125			
Surr: Toluene-d8	19.8		"	20.0		99.0	75-125			

North Creek Analytical - Portland

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Crystal Burkholder, Project Manager

North Creek Analytical, Inc.

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Secor
P.O. Box 1508
Tualatin, OR 97062

Project: ARCO #0855, Longview, WA
Project Number: 015.08921
Project Manager: Scott Miller

Reported:
04/30/01 12:30

Notes and Definitions

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

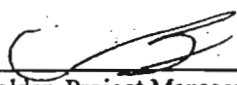
dry Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.

wet Sample results reported on a wet weight basis (as received)

RPD Relative Percent Difference

North Creek Analytical - Portland

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.


Crystal Burkholder, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

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O Products Co		Work Authorization No. 27003 Of		Chain of Custody		Page 1 of 1	
Facility No.	City, State (Facility)	Project Manager (Consultant)	Project No. (Consultant)	Laboratory Name	Laboratory Name		
Engineer	ARCO Telephone No.	Telephone No. (Consultant)	Fax No. (Consultant)	Northcreek Analytical	Northcreek Analytical		
Chuck Hutchens	(425) 485-8792	(503) 691-2030	(503) 692-7074	Method of Shipment	Method of Shipment		
SECOR International, Inc.		7730 SW Mohawk St, Portland, Oregon 97062		Laboratory Courier	Laboratory Courier		
Matrix		Sampling Date		Sampling Time		Special QA/QC	
Soil	Water	Air	Other	Yes	No		
No. of Containers	Lab Sample No.	Sample I.D.	Temperature received:	Ice	No ice		
1 0855	3	4/10/01	1029	X		10	Special QA/QC
2 0855	3		1037	X		10	Sub'd COC Attached:
3 0855	3		1053	X		10	
4 0855	3		1047	X		10	
5 0855	3		1012	X		10	
6 0855	3		1024	X		10	
7 0855	3		1034	X		10	
REMARKS							
Received by (Sign & Print Name) 9/10/01 1200300 9/10/01 1200300 4-18-01 4/11/01							
Received by (Sign & Print Name) Received by Laboratory Received by Laboratory							
Lab Work No.							

8.2

**GROUNDWATER SAMPLING
FIELD DATA SHEETS**

'COR
7730 SW MOHAWK ST
TUALATIN, OREGON 97062

GROUNDWATER LEVEL DATA

PROJECT: QGWM

SITE: ARCO Facility 0855

PROJECT #: 015.08921.050

CLIENT: ARCO

RECORDED BY: 无

MEASURING DEVICE: *Hand* *Drw*

SITE LOCATION: 4603 Ocean Beach Hwy, Longview, Washington

[illegible]

* All measurements from top of PVC casing unless noted.

SECOR GROUNDWATER SAMPLING FIELD DATA SHEET

SECOR PN: 015.08921.050 DATE: 4/18/01 WELL NO. mw1
 FACILITY NAME: Arco 0855, Longview, Washington TEMPERATURE: 52°F or °C
 FIELD PERSONNEL: JE WEATHER: overcast

FIELD MEASUREMENTS:

A. Static Water Level (SWL) below top of casing/piezometer: 4.58 FT.
 B. Thickness of Free Product, if present: Inches FT.
 C. Total Depth of well (TD) from top of casing/piezometer: 20.4 FT.
 D. Height of Water Column in casing ($h = TD - SWL$): FT.
 E. Casing Size (in.):
 F. Calculated Purge Volume (3 Well Volumes): gal

PURGING METHOD: DURATION:

OBSERVATIONS:

	Time	Turbidity	Color	Sheen	pH	Temp.	Conduct.	SWL
1st Volume:								
2nd Volume:								
3rd Volume:	<u>NP</u>	<u>Sampling</u>						
4th Volume:								
Addl. Volumes:								

TOTAL VOLUME OF WATER PURGED FROM WELL:

PURGE WATER STORED/DISPOSED OF WHERE/HOW: ARCO 5893, Vancouver, Washington

SAMPLES COLLECTED: Depth to Water at time of sample collection:

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>mw1-0855</u>	<u>1029</u>	<u>3x40ml van</u>	<u>HCO</u>

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.
 4-inch hole.....0.65 gal/lin ft.
 6.5-inch hole.....1.70 gal/lin ft.
 8-inch hole.....2.60 gal/lin ft.
 10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well:
 Original Water Column: x 0.80 = -- ()
 Collect sample when Depth to Water measures
Less than or equal to:

Signature: _____

SECOR GROUNDWATER SAMPLING FIELD DATA SHEET

SECOR PN: 015.08921.050 DATE: 4/18/01 WELL NO. MW2
 FACILITY NAME: Arco 0855, Longview, Washington TEMPERATURE: 53.0 or °C
 FIELD PERSONNEL: JE WEATHER: overcast

FIELD MEASUREMENTS:

A. Static Water Level (SWL) below top of casing/piezometer: 3.83 FT.
 B. Thickness of Free Product, if present: _____ Inches 19.4 FT.
 C. Total Depth of well (TD) from top of casing/piezometer: _____ FT.
 D. Height of Water Column in casing ($h = TD - SWL$): _____ FT.
 E. Casing Size (in.): _____
 F. Calculated Purge Volume (3 Well Volumes): _____ gal

PURGING METHOD: _____ DURATION: _____

OBSERVATIONS:

	Time	Turbidity	Color	Sheen	pH	Temp.	Conduct.	SWL
1st Volume:								
2nd Volume:								
3rd Volume:		<u>NP</u>	<u>Sampling</u>					
4th Volume:								
Addl. Volumes:								

TOTAL VOLUME OF WATER PURGED FROM WELL: _____

PURGE WATER STORED/DISPOSED OF WHERE/HOW: ARCO 5893, Vancouver, Washington

SAMPLES COLLECTED: Depth to Water at time of sample collection: _____

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MW2-0855</u>	<u>1039</u>	<u>3x40ml vials</u>	<u>hcl</u>

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.
 4-inch hole.....0.65 gal/lin ft.
 6.5-inch hole.....1.70 gal/lin ft.
 8-inch hole.....2.60 gal/lin ft.
 10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: _____
 Original Water Column: _____ x 0.80 = _____
 Collect sample when Depth to Water measures
Less than or equal to:

Signature: _____

SECOR GROUNDWATER SAMPLING FIELD DATA SHEET

SECOR PN: 015.08921.050 DATE: 4/18/01 WELL NO. MW3
 FACILITY NAME: Arco 0855, Longview, Washington TEMPERATURE: 53 °F or °C
 FIELD PERSONNEL: A WEATHER: overcast

FIELD MEASUREMENTS:

A. Static Water Level (SWL) below top of casing/piezometer: 5.46 FT.
 B. Thickness of Free Product, if present: _____ Inches 2.0 FT.
 C. Total Depth of well (TD) from top of casing/piezometer: 20.0 FT.
 D. Height of Water Column in casing (h = TD - SWL): _____ FT.
 E. Casing Size (in.): _____
 F. Calculated Purge Volume (3 Well Volumes): _____ gal

PURGING METHOD: _____ DURATION: _____

OBSERVATIONS:

	Time	Turbidity	Color	Sheen	pH	Temp.	Conduct	SWL
1st Volume:								
2nd Volume:								
3rd Volume:		<u>NP Sampling</u>						
4th Volume:								
Addl. Volumes:								

TOTAL VOLUME OF WATER PURGED FROM WELL: _____

PURGE WATER STORED/DISPOSED OF WHERE/HOW: ARCO 5893, Vancouver, Washington

SAMPLES COLLECTED: Depth to Water at time of sample collection: _____

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MW3-0855</u>	<u>1053</u>	<u>3x4one von</u>	<u>l+ce</u>

COMMENTS:

odor

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.
 4-inch hole.....0.65 gal/lin ft.
 6.5-inch hole.....1.70 gal/lin ft.
 8-inch hole.....2.60 gal/lin ft.
 10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Original Water Column: _____ x 0.80 = -()
 Total Depth of Well: _____
 Collect sample when Depth to Water measures
Less than or equal to:

Signature: _____

SECOR GROUNDWATER SAMPLING FIELD DATA SHEET

SECOR PN: 015.08921.050

DATE: 4/18/01

WELL NO. MW4

FACILITY NAME: Arco 0855, Longview, Washington

TEMPERATURE: 53.0 °F or °C

FIELD PERSONNEL: JA

WEATHER: overcast

FIELD MEASUREMENTS:

- A. Static Water Level (SWL) below top of casing/piezometer: 6.90 FT.
 B. Thickness of Free Product, if present: _____ Inches 20.0 FT.
 C. Total Depth of well (TD) from top of casing/piezometer: 20.0 FT.
 D. Height of Water Column in casing ($h = TD - SWL$): _____ FT.
 E. Casing Size (in.): _____
 F. Calculated Purge Volume (3 Well Volumes): _____ gal

PURGING METHOD: _____

DURATION: _____

OBSERVATIONS:

	Time	Turbidity	Color	Sheen	pH	Temp.	Conduct.	SWL
1st Volume:								
2nd Volume:								
3rd Volume:		WP	Sampling					
4th Volume:								
Addl. Volumes:								

TOTAL VOLUME OF WATER PURGED FROM WELL: _____

PURGE WATER STORED/DISPOSED OF WHERE/HOW: ARCO 5893, Vancouver, Washington

SAMPLES COLLECTED: Depth to Water at time of sample collection: _____

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
MW4-0855	1047	3x40ml WVA	HCl

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.
 4-inch hole.....0.65 gal/lin ft.
 6.5-inch hole.....1.70 gal/lin ft.
 8-inch hole.....2.60 gal/lin ft.
 10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Original Water Column: _____ x 0.80 = -- ()
 Total Depth of Well: _____
 Collect sample when Depth to Water measures
 Less than or equal to: _____

Signature: _____

SECOR GROUNDWATER SAMPLING FIELD DATA SHEET

SECOR PN: 015.08921.050

DATE: 4/18/01

WELL NO. MW5

FACILITY NAME: Arco 0855, Longview, Washington

TEMPERATURE: 53.0 F or °C

FIELD PERSONNEL: JE

WEATHER: overcast

FIELD MEASUREMENTS:

- A. Static Water Level (SWL) below top of casing/piezometer: 5.46 FT.
- B. Thickness of Free Product, if present: _____ Inches _____ FT.
- C. Total Depth of well (TD) from top of casing/piezometer: 20.00 FT.
- D. Height of Water Column in casing (h = TD - SWL): _____ FT.
- E. Casing Size (in.): _____
- F. Calculated Purge Volume (3 Well Volumes): _____ gal

PURGING METHOD: _____

DURATION: _____

OBSERVATIONS:

	Time	Turbidity	Color	Sheen	pH	Temp.	Conduct.	SWL
1st Volume:								
2nd Volume:		NP	sampling					
3rd Volume:								
4th Volume:								
Addl. Volumes:								

TOTAL VOLUME OF WATER PURGED FROM WELL: _____

PURGE WATER STORED/DISPOSED OF WHERE/HOW: ARCO 5893, Vancouver, Washington

SAMPLES COLLECTED: Depth to Water at time of sample collection: _____

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
MW5-0855	10/12	3x40ml VOA	HCO

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.
 4-inch hole.....0.65 gal/lin ft.
 6.5-inch hole.....1.70 gal/lin ft.
 8-inch hole.....2.60 gal/lin ft.
 10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: _____
 Original Water Column: _____ x 0.80 = -- ()
 Collect sample when Depth to Water measures
 Less than or equal to:

Signature:

SECOR GROUNDWATER SAMPLING FIELD DATA SHEET

SECOR PN: 015.08921.050 DATE: 4/18/01 WELL NO. MW6
 FACILITY NAME: Arco 0855, Longview, Washington TEMPERATURE: 53°F or °C
 FIELD PERSONNEL: JA WEATHER: overcast

FIELD MEASUREMENTS:

A. Static Water Level (SWL) below top of casing/piezometer: 5.70 FT.
 B. Thickness of Free Product, if present: _____ Inches _____ FT.
 C. Total Depth of well (TD) from top of casing/piezometer: 20.00 FT.
 D. Height of Water Column in casing (h = TD - SWL): _____ FT.
 E. Casing Size (in.): _____
 F. Calculated Purge Volume (3 Well Volumes): _____ gal

PURGING METHOD: — DURATION: —

OBSERVATIONS:

	Time	Turbidity	Color	Sheen	pH	Temp.	Conduct.	SWL
1st Volume:								
2nd Volume:								
3rd Volume:		<u>NP</u>	<u>Sampling</u>					
4th Volume:								
Addl. Volumes:								

TOTAL VOLUME OF WATER PURGED FROM WELL: —

PURGE WATER STORED/DISPOSED OF WHERE/HOW: ARCO 5893, Vancouver, Washington

SAMPLES COLLECTED: Depth to Water at time of sample collection: —

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MW6-0855</u>	<u>1021</u>	<u>3x90ml vials</u>	<u>HCl</u>

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.
 4-inch hole.....0.65 gal/lin ft.
 6.5-inch hole.....1.70 gal/lin ft.
 8-inch hole.....2.60 gal/lin ft.
 10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Original Water Column: _____ x 0.80 = — ()
 Total Depth of Well:
 Collect sample when Depth to Water measures
Less than or equal to:

Signature: _____

SECOR GROUNDWATER SAMPLING FIELD DATA SHEET

SECOR PN: 015.08921.050 DATE: 4/18/01 WELL NO. MW7
 FACILITY NAME: Arco 0855, Longview, Washington TEMPERATURE: 53°F or °C
 FIELD PERSONNEL: JK WEATHER: overcast

FIELD MEASUREMENTS:

A. Static Water Level (SWL) below top of casing/piezometer: 5.98 FT.
 B. Thickness of Free Product, if present: _____ Inches _____ FT.
 C. Total Depth of well (TD) from top of casing/piezometer: 20.0 FT.
 D. Height of Water Column in casing (h = TD - SWL): _____ FT.
 E. Casing Size (in.): _____
 F. Calculated Purge Volume (3 Well Volumes): _____ gal

PURGING METHOD: _____ DURATION: _____

OBSERVATIONS:

	Time	Turbidity	Color	Sheen	pH	Temp.	Conduct.	SWL
1st Volume:								
2nd Volume:								
3rd Volume:		<u>NP</u>	<u>Sampling</u>					
4th Volume:								
Addl. Volumes:								

TOTAL VOLUME OF WATER PURGED FROM WELL: _____

PURGE WATER STORED/DISPOSED OF WHERE/HOW: ARCO 5893, Vancouver, Washington

SAMPLES COLLECTED: Depth to Water at time of sample collection: _____

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MW7-0855</u>	<u>1034</u>	<u>3x40ml vials</u>	<u>HCl</u>

COMMENTS:

Casing Capacities:

2-inch hole.....0.16 gal/lin ft.
 4-inch hole.....0.65 gal/lin ft.
 6.5-inch hole.....1.70 gal/lin ft.
 8-inch hole.....2.60 gal/lin ft.
 10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well: _____
 Original Water Column: _____ x 0.80 = -- ()
 Collect sample when Depth to Water measures
Less than or equal to:

Signature: _____