URS

May 8, 2003

Mr. Nnamdi Madakor
Department of Ecology
P.O. Box 47600
300 Desmond Drive
Lacey, Washington 98504-7600

Letter Report
Final Post Remedial Monitoring
Indoor Air Sampling and 1st Quarter of
2003 Groundwater Monitoring Data
Former Forest Park Cleaners
TCP I.D. # NW0167
URS Job 33749307

Dear Mr. Madakor:

INTRODUCTION

This letter report presents the results of the indoor air monitoring performed at the former Forest Park Cleaners as described in URS' "Final Post Remedial Monitoring Plan" and our amendments to the plan dated December 23, 2002 and February 13, 2003, respectively. Also provided herein are the 1st quarter results of the additional year of confirmational groundwater monitoring at monitoring well location FPC-9S.

SAMPLING PROCEDURES

Air Sampling

Indoor air sampling was conducted within the former Forest Park Cleaners tenant space that was vacant at the time of sampling. Four samples were collected within the building interior at the locations shown on Figure 1. Two of the samples were collected near the floor surface at approximately 2.5 inches above the concrete (FPC-Air-1-Floor and FPC-Air-2-Floor). The other two samples were collected at typical breathing zone (BZ) heights at approximately 5.5 feet above the floor surface (FPC-Air-1-BZ and FPC-Air-2-BZ). One background sample (FPC-Air-Background) was located on the roof at the northeastern corner of the mall building.

The sampling was accomplished using 6-liter Summa canisters with 8-hour flow controllers. The samples were collected between 11:00AM and 6:30 PM on April 1, 2003 and the barometric pressure data during the sampling event is depicted on the graph provided in Appendix A. The Summa canisters were provided and the air testing performed by Air Toxics Ltd. of Folsom, CA. The samples were analyzed for chlorinated volatile organic compounds (VOCs) associated with the biodegradation of tetrachloroethene (PCE), including: trichloroethene (TCE); cis-1, 2-dichloroethene (DCE); 1,1-DCE; trans-1, 2-DCE and VC by Method TO-14A-SIM. The analytical results and the

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[redacted]

applicable Model Toxics Control Act (MTCA) Method B Air Cleanup levels are summarized in Table 1. The analytical laboratory report is provided in Appendix B. The laboratory report also contains information regarding the starting and ending vacuum pressures in the Summa canisters and other relevant sampling and quality assurance data.

Groundwater Sampling

The first quarter of the final four quarters of confirmational groundwater monitoring at FPC-9S was accomplished on April 11, 2003 using low flow sampling methods in general conformance with URS' Final Post Remedial Monitoring Plan. North Creek Analytical, an Ecology-accredited laboratory analyzed the sample for VOCs and low-level VC using Method 8260B. The groundwater sampling log form and the laboratory report are provided in Appendix C. The current and previous confirmational monitoring results are summarized in Table 2.

FINDINGS AND CONCLUSIONS

Indoor Air Sampling Results

VC was not detected above the method detection limit (<0.056 ug/m^3) in the four air samples performed within the former dry cleaner (Table 1). Low concentrations of PCE (ranging from 2.1 to 2.6 ug/m^3), TCE (ranging from 0.36 to 0.5 ug/m^3) and DCE (ranging from 0.52 to 0.76 ug/m^3) were detected in the indoor air samples. No other chlorinated VOCs were detected in these samples above method detection limits (Table 1). TCE concentrations were below the MTCA Method B air cleanup level and no Method B cleanup levels exist for PCE or DCE. For comparison purposes, the State of Washington 8-hour permissible exposure limits (PEL) for PCE and DCE are provided on Table 1. The PEL is established to limit worker exposure to chemical agents (WA 296-62-07515). The levels of PCE and DCE detected in the air samples are well below the PEL of 170,000 ug/m^3 and 790,000 ug/m^3, respectively. Chlorinated VOCs were not detected in the background air sample, FPC-Air-Background.

Based on the results of the indoor air sampling conducted within the former dry cleaner, URS has drawn the following conclusions:

- The field data supports the results of the prior Subsurface Vapor Intrusion modeling (Johnson & Ettinger, 1997) provided in Brown, Reavis & Manning's letter to Ecology dated November 13, 2002. The model used a conservative concentration of VC in groundwater (2.97 ug/l) and still yielded a predicted concentration of VC in air (0.184 ug/m^3) well below the MTCA Method B air cleanup level. With the actual levels of VC in groundwater currently being significantly lower than the value used for modeling, the absence of VC in the indoor air is not surprising.

- The levels of PCE, TCE, and DCE were below the applicable MTCA Method B air cleanup levels and PELs. The air sampling conducted inside the building confirms that the tenant

space is safe for occupancy and as such, Trammel Crow, the property management firm, plans to renovate the space for a new tenant in the near future. It should be noted that neither PCE nor TCE are present in the groundwater beneath the building and thus, are not associated with vapor intrusion from the groundwater table beneath the building. While their exact source has not been determined, low levels of VOCs are known to be associated with build-out materials (e.g. paints, fabrics, and adhesives) and are acceptable at low levels.

Confirmational Groundwater Monitoring Results

Only one VOC was detected during the first quarter groundwater sampling at FPC-9S (Table 2). VC was detected in the sample at a concentration of 0.428 ug/l, which exceeds the MTCA Method A groundwater cleanup level of 0.2 ug/l, but is well below the Method B surface water cleanup level of 3.69 ug/l.

A trend analysis of VC concentrations in groundwater at FPC-9S from 2001 through the most recent sampling event is depicted on the graph provided in Appendix D. The graph displays a steady decline in VC concentrations during this monitoring period. The R^2 value shown on the graph is the coefficient of determination and represents the closeness of fit of the data to the assumed trend line. R^2 values approaching 0.9 are considered to have a good degree of fit. Based on the site data, the R^2 value obtained by the trend analysis was 0.8725. This value confirms that concentrations are decreasing with time with minimal variability. This trend is anticipated to continue as the concentrations approach 0.2 ug/l.

As the results of our sampling have indicated that vapor intrusion into the tenant space is not a risk, no further air sampling or remedial actions are warranted.

♦♦♦

We trust this information meets Ecology's additional requirements for site closure. Pending the results of the remaining three quarters of groundwater monitoring, we understand that a No Further Action will be forthcoming. Please contact us if you have any questions or require additional information.

Respectfully submitted,
URS CORPORATION

David Raubvogel
Senior Geologist

Kevin Lundmark
Project Chemist

Attachments: Tables 1 and 2
Figure 1
Appendix A
Appendix B
Appendix C
Appendix D

Copy: Ms. Rebecca Coles
Roland Siegl

TABLES

TABLES

Table 1
Summary of Ambient Air Quality Results
Former Forest Park Cleaners
Lake Forest Park, Washington

Date	Sample ID	Location	Sampling Height	Volatile Organic Compounds (ug/m^3)					
				VC	1,1-DCE	cis-1,2-DCE	TCE	PCE	trans -1,2-DCE
04/01/03	FPC-Air-Background	NE Property Corner [1]	--	< 0.056	< 0.087	< 0.17	< 0.24	< 0.30	< 0.87
04/01/03	FPC-Air-1-BZ	Front of Tenant Space (Near FPC-9S/D)	Breathing Zone	< 0.046	< 0.072	0.76	0.44	2.5	< 0.72
04/01/03	FPC-Air-1-Floor		Floor	< 0.046	< 0.072	0.52	0.36	2.1	< 0.72
04/01/03	FPC-Air-2-BZ	Back of Tenant Space (Near FPC-8S/D)	Breathing Zone	< 0.046	< 0.072	0.64	0.43	2.5	< 0.072
04/01/03	FPC-Air-2-Floor		Floor	< 0.046	< 0.072	0.73	0.50	2.6	< 0.072
MTCA Method B Cleanup Level				0.284	0.05	NE	0.515	NE	NE
8-Hour PEL (WAC 296-62-07515)				2,560	400	790,000	270,000	170,000	790,000

Notes:
NE - Not Established
PEL - Permissible Exposure Limit
[1] Background sample location

[redacted]

[redacted]

Table 2

Summary of Confirmational Groundwater Sampling Results
Former Forest Park Cleaners

Analyte	Sample ID	FPC-9S								MTCA Method A or B Groundwater
	Sample Intake (feet, bgs)	5.5								
	Sample Date	08/31/00	11/30/00	02/27/01 [2]	06/18/01	09/27/01	12/18/01	03/29/02	10/23/02	04/11/03
Volatile Organic Compounds[1] (µg/L)										
cis-1,2-Dichloroethene		0.592	0.531	0.450	0.276	ND	0.207	ND	ND	ND	80 (B)
Vinyl chloride		**0.721**	**2.97**	**2.47**	**2.90**	**1.22**	**1.53**	**0.832**	**0.953**	**0.428**	0.2 (A), 3.69 [3], 2 [4]
Carbon Disulfide		ND	ND	ND	0.516	ND	ND	ND	1.21	ND	800 (B)

Notes:

[1] Analyses performed by using EPA method 8260.
[2] Methylene chloride was detected and considered to be a suspect laboratory contaminant.
[3] 2001 MTCA Method B Surface Water Cleanup Level
[4] USEPA Maximum Contaminant Level (MCL) for Drinknig Water
MTCA - Model Toxics Control Act
(A) - MTCA Method A groundwater cleanup level
(B) - MTCA Method B groundwater cleanup level
FPC = Forest Park Cleaners
bgs = below ground surface
S = Shallow
ND = Not Detected
Numbers in **bold** font indicate that the result reported exceeds the MTCA cleanup level.

[redacted]

[redacted]

FIGURES

FIGURES

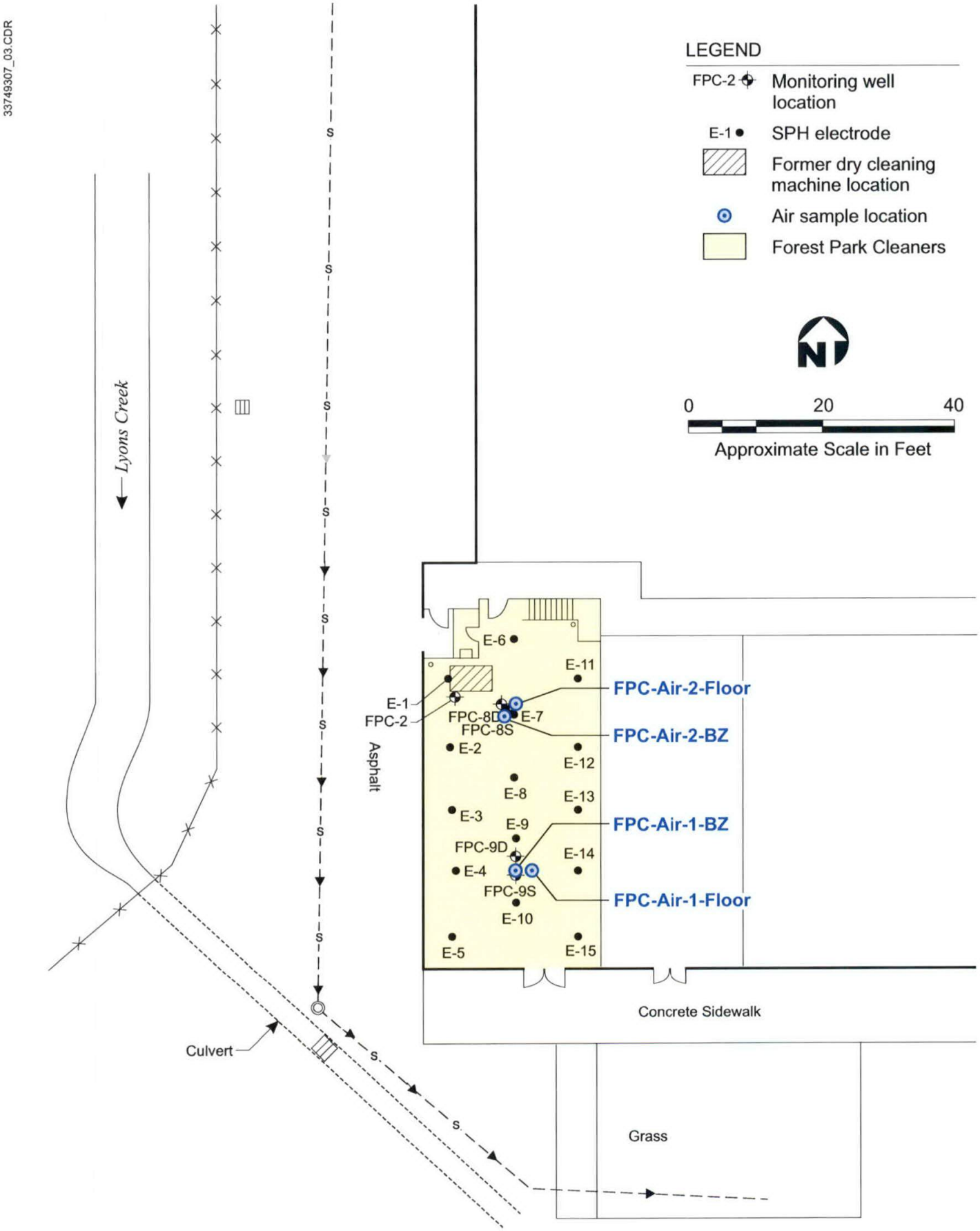

Figure 1

Air Sampling Locations

Job No. 33749307

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Former Forest Park Cleaners
Seattle, Washington

APPENDIX A

APPENDIX A

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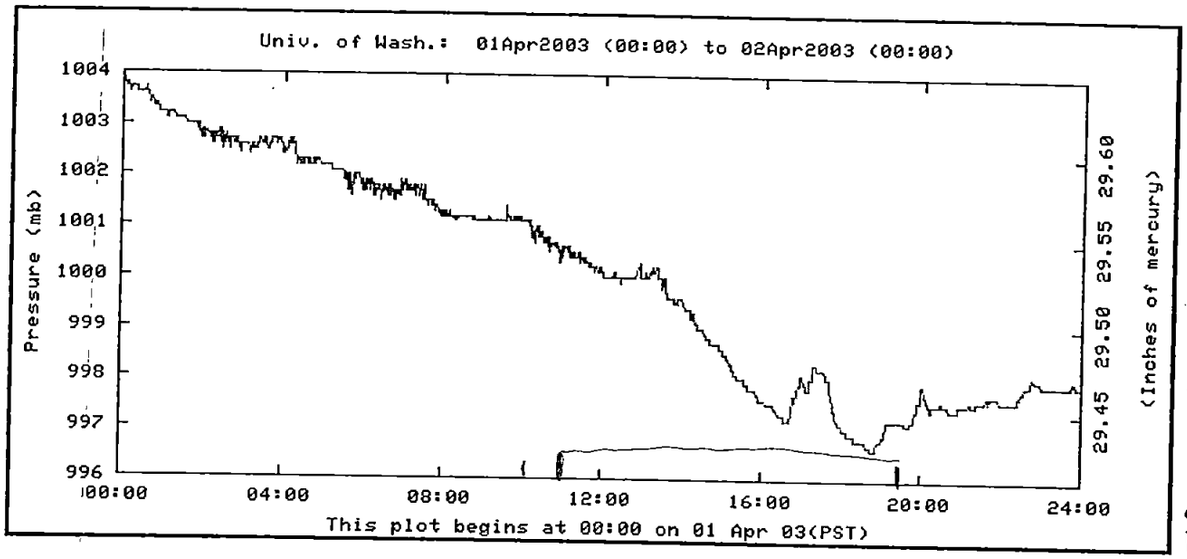
APPENDIX A

BAROMETRIC PRESSURE DATA FOR APRIL 1, 2003

Weather data from: Univ. of Wash.

Pressure (millibars)



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Clicking on a plot brings up the data file that was used to create that plot and available station information.

Current time GMT/UTC Thu Apr 3 00:29:40 2003
Local (Pacific Standard Time) Wed Apr 2 16:29:40 2003

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APPENDIX B

AIR TOXICS ANALYTIC REPORT

AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Air Toxics Ltd. Introduces the Electronic Report

Thank you for choosing Air Toxics Ltd. To better serve our customers, we are providing your report by e-mail. This document is provided in Portable Document Format which can be viewed with Acrobat Reader by Adobe.

This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

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Hours 8:00 A.M to 6:00 P.M. Pacific
E-mail to:samplereceiving@airtoxics.com

@ AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0304095

Work Order Summary

CLIENT:	Mr. Kevin Lundmark URS Corporation 1501 4th Avenue Suite 1400 Seattle, WA 98101-1616	**BILL TO:**	Mr. Kevin Lundmark URS Corporation 1501 4th Avenue Suite 1400 Seattle, WA 98101-1616
PHONE:	206-438-2700	**P.O. #**	42478-US
FAX:	866-495-5288	**PROJECT #**	33749307 LFP-Forest Park Cleaners
DATE RECEIVED:	4/3/2003	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	4/15/2003		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.
01A	FPC-Air-Background	Modified TO-14A-S SIM	11.5 "Hg
02A	FPC-Air-1-BZ	Modified TO-14A-S SIM	7.5 "Hg
03A	FPC-Air-1-Floor	Modified TO-14A-S SIM	7.5 "Hg
04A	FPC-Air-2-BZ	Modified TO-14A-S SIM	7.5 "Hg
05A	FPC-Air-2-Floor	Modified TO-14A-S SIM	8.5 "Hg
06A	Lab Blank	Modified TO-14A-S SIM	NA
07A	CCV	Modified TO-14A-S SIM	NA
08A	LCS	Modified TO-14A-S SIM	NA

CERTIFIED BY: Linda A. Truman DATE: 04/17/03

Laboratory Director

Certfication numbers: AR DEQ, CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/02, Expiration date: 06/30/03
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE
Modified TO-14A-S SIM
URS Corporation
Workorder# 0304095

Five 6 Liter Summa Canister (SIM Certified) samples were received on April 03, 2003. The laboratory performed analysis via modified EPA Method TO-14/15 using GC/MS in the SIM acquisition mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. See the data sheets for the reporting limits for each compound.

Method modifications taken to run these samples include:

Requirement	*TO-14/15 SIM*	*ATL Modifications*
Sample load volume	400 mL	Up to 0.5 liter
Blank	Humid air blank	Dry air blank for low level analysis.
BFB absolute abundance criteria	Within 10% of that from previous day.	CCV surrogate recoveries demonstrate stability from one day to the next
BFB acceptance criteria	CLP protocol	SW-846 protocol
Dilutions for initial calibration	Dynamic dilutions or static using canisters	Syringe dilutions
IS recoveries	Within 40% of mean over ICAL for blanks, and w/in 40% of daily CCV for samples.	Within 40% of CCV recoveries for blank and samples.
IS RTs	Within .33 min from most recent calibration (either ICAL or daily)	Within 0.33 min. of RT in daily CCV
Daily CCV	70 - 130%	Standard compounds:70 - 130% for at least 90%; Non-standard and polar compounds: 60 - 140% for at least 80%
MSD scan range	35 - 300 amu	35 - 350 amu
Sampling/concentrator system	Nafion Drier	Multisorbent concentrator

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Six qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank or media certification greater than reporting lim (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the reporting limit.
UJ- Non-detected compound associated with low bias in the CCV

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

AIR TOXICS LTD.

SAMPLE NAME: FPC-Air-Background

ID#: 0304095-01A

MODIFIED EPA METHOD TO-14A GC/MS SIM

File Name:	w041412	Date of Collection:	4/1/03
Dil. Factor:	2.17	Date of Analysis:	4/14/03

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Vinyl Chloride	0.022	0.056	Not Detected	Not Detected
1,1-Dichloroethene	0.022	0.087	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.043	0.17	Not Detected	Not Detected
Trichloroethene	0.043	0.24	Not Detected	Not Detected
Tetrachloroethene	0.043	0.30	Not Detected	Not Detected
trans-1,2-Dichloroethene	0.22	0.87	Not Detected	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	105	70-130

AIR TOXICS LTD.

SAMPLE NAME: FPC-Air-1-BZ

ID#: 0304095-02A

MODIFIED EPA METHOD TO-14A GC/MS SIM

File Name:	w041413	Date of Collection:	4/1/03
Dil. Factor:	1.79	Date of Analysis:	4/14/03

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Vinyl Chloride	0.018	0.046	Not Detected	Not Detected
1,1-Dichloroethene	0.018	0.072	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.036	0.14	0.19	0.76
Trichloroethene	0.036	0.20	0.082	0.44
Tetrachloroethene	0.036	0.25	0.36	2.5
trans-1,2-Dichloroethene	0.18	0.72	Not Detected	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	103	70-130

AIR TOXICS LTD.

SAMPLE NAME: FPC-Air-1-Floor

ID#: 0304095-03A

MODIFIED EPA METHOD TO-14A GC/MS SIM

File Name: w041414 Date of Collection: 4/1/03

Dil. Factor: 1.79 Date of Analysis: 4/14/03

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Vinyl Chloride	0.018	0.046	Not Detected	Not Detected
1,1-Dichloroethene	0.018	0.072	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.036	0.14	0.13	0.52
Trichloroethene	0.036	0.20	0.067	0.36
Tetrachloroethene	0.036	0.25	0.30	2.1
trans-1,2-Dichloroethene	0.18	0.72	Not Detected	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	104	70-130

AIR TOXICS LTD.

SAMPLE NAME: FPC-Air-2-BZ

ID#: 0304095-04A

MODIFIED EPA METHOD TO-14A GC/MS SIM

File Name:	w041415	Date of Collection:	4/1/03
Dil.Factor:	1.79	Date of Analysis:	4/14/03

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Vinyl Chloride	0.018	0.046	Not Detected	Not Detected
1,1-Dichloroethene	0.018	0.072	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.036	0.14	0.16	0.64
Trichloroethene	0.036	0.20	0.078	0.43
Tetrachloroethene	0.036	0.25	0.36	2.5
trans-1,2-Dichloroethene	0.18	0.72	Not Detected	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	102	70-130

AIR TOXICS LTD.

SAMPLE NAME: FPC-Air-2-Floor

ID#: 0304095-05A

MODIFIED EPA METHOD TO-14A GC/MS SIM

File Name:	w041416	Date of Collection:	4/1/03
Dil. Factor:	1.87	Date of Analysis:	4/14/03

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Vinyl Chloride	0.019	0.048	Not Detected	Not Detected
1,1-Dichloroethene	0.019	0.075	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.037	0.15	0.18	0.73
Trichloroethene	0.037	0.20	0.092	0.50
Tetrachloroethene	0.037	0.26	0.37	2.6
trans-1,2-Dichloroethene	0.19	0.75	Not Detected	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	95	70-130

AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 0304095-06A

MODIFIED EPA METHOD TO-14A GC/MS SIM

File Name:	w041406	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	4/14/03

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Vinyl Chloride	0.010	0.026	Not Detected	Not Detected
1,1-Dichloroethene	0.010	0.040	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.020	0.080	Not Detected	Not Detected
Trichloroethene	0.020	0.11	Not Detected	Not Detected
Tetrachloroethene	0.020	0.14	Not Detected	Not Detected
trans-1,2-Dichloroethene	0.10	0.40	Not Detected	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	89	70-130

AIR TOXICS LTD.

SAMPLE NAME: CCV

ID#: 0304095-07A

MODIFIED EPA METHOD TO-14A GC/MS SIM

File Name:	w041403	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	4/14/03

Compound	%Recovery
Vinyl Chloride	103
1,1-Dichloroethene	96
cis-1,2-Dichloroethene	100
Trichloroethene	110
Tetrachloroethene	113
trans-1,2-Dichloroethene	104

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	101	70-130

AIR TOXICS LTD.

SAMPLE NAME: LCS

ID#: 0304095-08A

MODIFIED EPA METHOD TO-14A GC/MS SIM

File Name:	w041404	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	4/14/03

Compound	%Recovery
Vinyl Chloride	95
1,1-Dichloroethene	79
cis-1,2-Dichloroethene	86
Trichloroethene	96
Tetrachloroethene	102
trans-1,2-Dichloroethene	95

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	100	70-130

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APPENDIX C

GROUNDWATER ANALYTICAL REPORT

URS Corporation
Ground Water Sampling Log

Well ID FPC-95

URS Job # | Job Name LFP - FPC | Date 4-11-03

Well Depth — | Screened Interval — | Well Dia. 2" | Casing Type PVC

Type of Pump Peristaltic | Tubing Type | Water Level dtw = 3.75 @ 1030

Measuring Point N side Top of Adapter | Sampling Depth — | Sampling Personnel KWL

Notes

Time	pH	Cond us/cm	DO mg/L	Eh (Mv)	Turbidity (NTU)	Temp°C	DTW (ft)	Flow Rate ml/Min	Notes
1045	4.75	242	.65			16.3	3.81		rate = 150 mL/min
1050	6.32	196	0.53			16.1	3.81		
1055	6.59	181	0.42			16.2	3.81		
1100	6.78	173.5	0.34			16.0	3.82		
1105	6.86	167.8	0.31			15.8	3.83		
1110	5.66	~~181~~ 172.3	0.29			15.8	3.84		
1115	6.48	166.9	0.29			15.8	3.83		
1120	6.72	166.1	0.27			15.8	3.85		
Samples collected 1120 no sheen / No odor observed									
clear, colorless 3 x 40 mL VOA vials, preserved.									

Parameters Collected	Total Gallons Purged		Parameters Taken With		Serial Number	
				Calibration Solution Used	Measured	
	Time Sampling Began			pH		
				Cond		
	Time Sampling Ended			Turb		
				DO		
				Eh		
				Notes		

www.ncalabs.com

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Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
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Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588
Anchorage 3209 Denali Street, Anchorage, AK 99503
907.334.9200 fax 907.334.9210

25 April 2003

David Raubvogel
URS Corporation
1501 4th Ave, Suite 1400
Seattle, WA/USA 98101-1616

RE: LFP-Forest Park Cleaners

Enclosed are **amended** results of analyses for samples received by the laboratory on 04/11/03 12:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

S. Wo

Scott A. Woerman For Emanuel Hignutt
PM

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URS Corporation
1501 4th Ave, Suite 1400
Seattle WA/USA, 98101-1616

Project: LFP-Forest Park Cleaners
Project Number: 53-28171927.00
Project Manager: David Raubvogel

Amended Report
Issued: 04/25/03 13:55

ANALYTICAL REPORT FOR SAMPLES - Amended

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FPC-9S	B3D0279-01	Water	04/11/03 11:20	04/11/03 12:55

North Creek Analytical - Bothell

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.

Scott A. Woerman For Emanuel Hignutt, PM

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Project: LFP-Forest Park Cleaners
Project Number: 53-28171927.00
Project Manager: David Raubvogel

Amended Report
Issued: 04/25/03 13:55

Volatile Organic Compounds by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
FPC-9S (B3D0279-01) Water Sampled: 04/11/03 11:20 Received: 04/11/03 12:55									
1,1,1,2-Tetrachloroethane	ND	1.00	ug/l	1	3D18014	04/18/03	04/18/03	EPA 8260B	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.00	"	"	"	"	"	"	
1,2-Dibromoethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
2-Butanone	ND	10.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	1.00	"	"	"	"	"	"	
2-Hexanone	ND	10.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	1.00	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	10.0	"	"	"	"	"	"	
Acetone	ND	25.0	"	"	"	"	"	"	
Benzene	ND	1.00	"	"	"	"	"	"	
Bromobenzene	ND	1.00	"	"	"	"	"	"	
Bromochloromethane	ND	1.00	"	"	"	"	"	"	
Bromodichloromethane	ND	1.00	"	"	"	"	"	"	
Bromoform	ND	1.00	"	"	"	"	"	"	
Bromomethane	ND	2.00	"	"	"	"	"	"	
Carbon disulfide	ND	1.00	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	1.00	"	"	"	"	"	"	

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URS Corporation	Project: LFP-Forest Park Cleaners	
1501 4th Ave, Suite 1400	Project Number: 53-28171927.00	**Amended Report**
Seattle WA/USA, 98101-1616	Project Manager: David Raubvogel	Issued: 04/25/03 13:55

Volatile Organic Compounds by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
FPC-9S (B3D0279-01) Water Sampled: 04/11/03 11:20 Received: 04/11/03 12:55									
Chloromethane	ND	5.00	ug/l	1	3D18014	04/18/03	04/18/03	EPA 8260B	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
Dibromochloromethane	ND	1.00	"	"	"	"	"	"	
Dibromomethane	ND	1.00	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	1.00	"	"	"	"	"	"	
Ethylbenzene	ND	1.00	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1.00	"	"	"	"	"	"	
Isopropylbenzene	ND	1.00	"	"	"	"	"	"	
m,p-Xylene	ND	2.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
n-Butylbenzene	ND	1.00	"	"	"	"	"	"	
n-Propylbenzene	ND	1.00	"	"	"	"	"	"	
Naphthalene	ND	1.00	"	"	"	"	"	"	
o-Xylene	ND	1.00	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1.00	"	"	"	"	"	"	
sec-Butylbenzene	ND	1.00	"	"	"	"	"	"	
Styrene	ND	1.00	"	"	"	"	"	"	
tert-Butylbenzene	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
Toluene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*94.0 %*	*70-130*			"	"	"	"	
Surrogate: Toluene-d8	*97.2 %*	*70-130*			"	"	"	"	
Surrogate: 4-BFB	*95.8 %*	*70-130*			"	"	"	"	

North Creek Analytical - Bothell

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1501 4th Ave, Suite 1400	Project Number: 53-28171927.00	**Amended Report**
Seattle WA/USA, 98101-1616	Project Manager: David Raubvogel	Issued: 04/25/03 13:55

Volatile Organic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
FPC-9S (B3D0279-01) Water Sampled: 04/11/03 11:20 Received: 04/11/03 12:55									
Vinyl chloride	**0.428**	0.100	ug/l	1	3D24023	04/24/03	04/24/03	EPA 8260 Mod	
Surrogate: 1,2-DCA-d4	*102 %*	*70-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*70-130*			"	"	"	"	
Surrogate: 4-BFB	*100 %*	*70-130*			"	"	"	"	

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Amended Report
Issued: 04/25/03 13:55

Volatile Organic Compounds by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3D18014: Prepared 04/18/03 Using EPA 5030B										
Blank (3D18014-BLK1)										
Methyl tert-butyl ether	ND	2.00	ug/l							
n-Hexane	ND	2.00	"							
1,1,1,2-Tetrachloroethane	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
1,1,2-Trichloroethane	ND	1.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
1,1-Dichloropropene	ND	1.00	"							
1,2,3-Trichlorobenzene	ND	1.00	"							
1,2,3-Trichloropropane	ND	1.00	"							
1,2,4-Trichlorobenzene	ND	1.00	"							
1,2,4-Trimethylbenzene	ND	1.00	"							
1,2-Dibromo-3-chloropropane	ND	5.00	"							
1,2-Dibromoethane	ND	1.00	"							
1,2-Dichlorobenzene	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
1,3,5-Trimethylbenzene	ND	1.00	"							
1,3-Dichlorobenzene	ND	1.00	"							
1,3-Dichloropropane	ND	1.00	"							
1,4-Dichlorobenzene	ND	1.00	"							
2,2-Dichloropropane	ND	1.00	"							
2-Butanone	ND	10.0	"							
2-Chlorotoluene	ND	1.00	"							
2-Hexanone	ND	10.0	"							
4-Chlorotoluene	ND	1.00	"							
4-Methyl-2-pentanone	ND	10.0	"							
Acetone	ND	25.0	"							
Benzene	ND	1.00	"							
Bromobenzene	ND	1.00	"							
Bromochloromethane	ND	1.00	"							
Bromodichloromethane	ND	1.00	"							
Bromoform	ND	1.00	"							

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Amended Report
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Volatile Organic Compounds by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3D18014: Prepared 04/18/03 Using EPA 5030B										
Blank (3D18014-BLK1)										
Bromomethane	ND	2.00	ug/l							
Carbon disulfide	ND	1.00	"							
Carbon tetrachloride	ND	1.00	"							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloroform	ND	1.00	"							
Chloromethane	ND	5.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
cis-1,3-Dichloropropene	ND	1.00	"							
Dibromochloromethane	ND	1.00	"							
Dibromomethane	ND	1.00	"							
Dichlorodifluoromethane	ND	1.00	"							
Ethylbenzene	ND	1.00	"							
Hexachlorobutadiene	ND	1.00	"							
Isopropylbenzene	ND	1.00	"							
m,p-Xylene	ND	2.00	"							
Methylene chloride	ND	5.00	"							
n-Butylbenzene	ND	1.00	"							
n-Propylbenzene	ND	1.00	"							
Naphthalene	ND	1.00	"							
o-Xylene	ND	1.00	"							
p-Isopropyltoluene	ND	1.00	"							
sec-Butylbenzene	ND	1.00	"							
Styrene	ND	1.00	"							
tert-Butylbenzene	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
Toluene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
trans-1,3-Dichloropropene	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Trichlorofluoromethane	ND	1.00	"							
Vinyl chloride	ND	1.00	"							
Surrogate: 1,2-DCA-d4	*37.6*		"	*40.0*		*94.0*	*70-130*			
Surrogate: Toluene-d8	*38.6*		"	*40.0*		*96.5*	*70-130*			
Surrogate: 4-BFB	*38.3*		"	*40.0*		*95.8*	*70-130*			

North Creek Analytical - Bothell

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Amended Report
Issued: 04/25/03 13:55

Volatile Organic Compounds by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3D18014: Prepared 04/18/03 Using EPA 5030B										
LCS (3D18014-BS1)										
1,1-Dichloroethene	20.8	1.00	ug/l	20.0		104	80-120			
Benzene	20.5	1.00	"	20.0		102	80-120			
Chlorobenzene	20.0	1.00	"	20.0		100	77-120			
Toluene	19.9	1.00	"	20.0		99.5	80-120			
Trichloroethene	20.1	1.00	"	20.0		100	80-120			
Surrogate: 1,2-DCA-d4	*37.8*		"	*40.0*		*94.5*	*70-130*			
Surrogate: Toluene-d8	*39.4*		"	*40.0*		*98.5*	*70-130*			
Surrogate: 4-BFB	*42.3*		"	*40.0*		*106*	*70-130*			
LCS Dup (3D18014-BSD1)										
1,1-Dichloroethene	19.6	1.00	ug/l	20.0		98.0	80-120	5.94	20	
Benzene	19.7	1.00	"	20.0		98.5	80-120	3.98	20	
Chlorobenzene	19.3	1.00	"	20.0		96.5	77-120	3.56	20	
Toluene	19.2	1.00	"	20.0		96.0	80-120	3.58	20	
Trichloroethene	19.2	1.00	"	20.0		96.0	80-120	4.58	20	
Surrogate: 1,2-DCA-d4	*37.7*		"	*40.0*		*94.2*	*70-130*			
Surrogate: Toluene-d8	*39.3*		"	*40.0*		*98.2*	*70-130*			
Surrogate: 4-BFB	*39.4*		"	*40.0*		*98.5*	*70-130*			
Matrix Spike (3D18014-MS1)					**Source: B3D0374-03**					
1,1-Dichloroethene	20.5	1.00	ug/l	20.0	ND	102	59-158			
Benzene	19.8	1.00	"	20.0	ND	99.0	63-148			
Chlorobenzene	19.6	1.00	"	20.0	ND	98.0	80-128			
Toluene	19.7	1.00	"	20.0	ND	98.5	72-127			
Trichloroethene	19.6	1.00	"	20.0	ND	98.0	80-126			
Surrogate: 1,2-DCA-d4	*37.7*		"	*40.0*		*94.2*	*70-130*			
Surrogate: Toluene-d8	*40.2*		"	*40.0*		*100*	*70-130*			
Surrogate: 4-BFB	*41.1*		"	*40.0*		*103*	*70-130*			

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Amended Report
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Volatile Organic Compounds by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3D18014: Prepared 04/18/03 Using EPA 5030B										
Matrix Spike Dup (3D18014-MSD1)					**Source: B3D0374-03**					
1,1-Dichloroethene	19.2	1.00	ug/l	20.0	ND	96.0	59-158	6.55	30	
Benzene	18.2	1.00	"	20.0	ND	91.0	63-148	8.42	20	
Chlorobenzene	18.1	1.00	"	20.0	ND	90.5	80-128	7.96	20	
Toluene	18.2	1.00	"	20.0	ND	91.0	72-127	7.92	20	
Trichloroethene	18.1	1.00	"	20.0	ND	90.5	80-126	7.96	20	
Surrogate: 1,2-DCA-d4	*38.1*		"	*40.0*		*95.2*	*70-130*			
Surrogate: Toluene-d8	*40.1*		"	*40.0*		*100*	*70-130*			
Surrogate: 4-BFB	*39.9*		"	*40.0*		*99.8*	*70-130*			

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URS Corporation
1501 4th Ave, Suite 1400
Seattle WA/USA, 98101-1616

Project: LFP-Forest Park Cleaners
Project Number: 53-28171927.00
Project Manager: David Raubvogel

Amended Report
Issued: 04/25/03 13:55

Volatile Organic Compounds by GC/MS with Selected Ion Monitoring - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3D24023: Prepared 04/24/03 Using EPA 5030B										
Blank (3D24023-BLK1)										
Vinyl chloride	ND	0.100	ug/l							
Surrogate: 1,2-DCA-d4	*1.99*		"	*2.00*		*99.5*	*70-130*			
Surrogate: Toluene-d8	*2.03*		"	*2.00*		*102*	*70-130*			
Surrogate: 4-BFB	*1.96*		"	*2.00*		*98.0*	*70-130*			
LCS (3D24023-BS1)										
Vinyl chloride	1.11	0.100	ug/l	1.02		109	60-140			
Surrogate: 1,2-DCA-d4	*1.96*		"	*2.00*		*98.0*	*70-130*			
Surrogate: Toluene-d8	*2.03*		"	*2.00*		*102*	*70-130*			
Surrogate: 4-BFB	*2.00*		"	*2.00*		*100*	*70-130*			
LCS Dup (3D24023-BSD1)										
Vinyl chloride	1.04	0.100	ug/l	1.02		102	60-140	6.51	30	
Surrogate: 1,2-DCA-d4	*1.97*		"	*2.00*		*98.5*	*70-130*			
Surrogate: Toluene-d8	*2.07*		"	*2.00*		*104*	*70-130*			
Surrogate: 4-BFB	*1.99*		"	*2.00*		*99.5*	*70-130*			
Matrix Spike (3D24023-MS1)					**Source: B3D0414-02**					
Vinyl chloride	1.38	0.100	ug/l	1.02	ND	135	60-140			
Surrogate: 1,2-DCA-d4	*2.04*		"	*2.00*		*102*	*70-130*			
Surrogate: Toluene-d8	*2.00*		"	*2.00*		*100*	*70-130*			
Surrogate: 4-BFB	*2.00*		"	*2.00*		*100*	*70-130*			
Matrix Spike Dup (3D24023-MSD1)					**Source: B3D0414-02**					
Vinyl chloride	1.32	0.100	ug/l	1.02	ND	129	60-140	4.44	30	
Surrogate: 1,2-DCA-d4	*2.04*		"	*2.00*		*102*	*70-130*			
Surrogate: Toluene-d8	*1.73*		"	*2.00*		*86.5*	*70-130*			
Surrogate: 4-BFB	*1.98*		"	*2.00*		*99.0*	*70-130*			

Scott A. Woerman For Emanuel Hignutt, PM

www.ncalabs.com

Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244
425.420.9200 fax 425.420.9210
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503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588
Anchorage 3209 Denali Street, Anchorage, AK 99503
907.334.9200 fax 907.334.9210

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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
RPD	Relative Percent Difference

North Creek Analytical, Inc.
Environmental Laboratory Network
www.ncalabs.com

117) Cre ƒ N, ! D, Bo A 98 4 , 420- FAJ 210
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210
20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 (541) 383-9310 FAX 382-7588

Revised Chain of Custody

CHAIN OF CUSTODY REPORT

Work Order #: B3D0279

CLIENT: URS

REPORT TO: David Rambo/Jet / Kevin Lundmark

ADDRESS:

PHONE: 206-438-2700 FAX:

INVOICE TO: Same as report to

P.O. NUMBER:

PROJECT NAME: LFP-EPC

PROJECT NUMBER:

SAMPLED BY: Lundmark

TURNAROUND REQUEST in Business Days*

Organic & Inorganic Analyses: ~~10~~ STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1

Petroleum Hydrocarbon Analyses: 5 STD. | 4 | 3 | 2 | 1 | <1

OTHER Please Specify

*Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	REQUESTED ANALYSES: VOCs 8260B (low-level) Dissolved Chloride	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA WO ID
1. EPC-9S	4-11-03 1120	X	W	3	B3D0279	01
2. Trip Blank (CW)	4-11-03 12PM		W	1		02
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						

RELINQUISHED BY: [signature] DATE: 4-11-03 RECEIVED BY: [signature] DATE: 4/11/03

PRINT NAME: Kevin Lundmark FIRM: URS TIME: 1130 PRINT NAME: Scott Workman FIRM: NCA TIME: 11:30

RELINQUISHED BY: [signature] DATE: 4/11/03 RECEIVED BY: Cathy Gamble DATE: 4/11/03

PRINT NAME: Scott Workman FIRM: NCA TIME: 1255 PRINT NAME: Cathy Gamble FIRM: NCA TIME: 12:55

ADDITIONAL REMARKS:

TEMP: 3.7°C

COC REV 3/99

URS

APPENDIX D

TREND ANALYSIS GRAPH

Vinyl Chloride in Groundwater, FPC-9S Trend Analysis
Forest Park Cleaners
Lake Forest Park, Washington