

January 12, 2007

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JAN 26 2007
DEPT. OF ECOLOGY

Mr. Mark Adams
Toxics Cleanup Program
Northwest Regional Office
Washington State Department of Ecology
3190 160th Avenue SE
Bellevue, WA 98008

**Re: Summary of Findings
Additional Groundwater Sampling and Analyses
Former Fabricare Dry Cleaning Facility
Silverdale, Washington
17300-01**

Dear Mark:

This report summarizes our findings from the groundwater sample collected in the one location previously agreed upon in our conversation with Mark Adams of the Washington State Department of Ecology (Ecology) to further assess this area tested in our continued pursuit of a No Further Action for the former dry cleaner at the subject property.

SUMMARY OF FINDINGS

On August 7, 2006, one strataprobe was advanced to 15 feet below grade at SP-1 adjacent to and along the east side of the subgrade horizontal stormwater pipe through the pipe backfill (Figure 1). The top of the stormwater pipe is estimated to be approximately 4 to 6 feet below grade at this location. Groundwater was initially noted at a depth of 11 feet, and the groundwater was measured at the time of sampling also at 11 feet. No odors were detected in the soil cuttings or during groundwater sampling.

A grab groundwater sample was collected from SP-1 and submitted for volatile organic compound (VOC) analyses. The results indicated detections of chlorinated solvents above MTCA cleanup levels. Summaries of the results are as follows:



SP-1

Tetrachloroethene – 160 ug/L
Trichloroethene – 17.0 ug/L
Cis-1,2-Dichloroethene – 81.0 ug/L
Vinyl Chloride – 17.0 ug/L

The groundwater sample SP-1 is located not only in the downgradient flow direction of the potential preferential pathway within the backfill of the storm drain pipe but also just downgradient of the former remediation excavation. The former MW-7 and MW-3 monitoring wells (which were removed during soil remediation activities in 2001) were located (approximately 30 to 50 feet) upgradient of SP-1. Concentrations of the same constituents detected in MW-7 and MW-3 (pre-remediation) were:

MW-3 (former wells pre-remediation)

Tetrachloroethene – 12,000 ug/L
Trichloroethene – 210 ug/L
Cis-1,2-Dichloroethene – 150 ug/L
Vinyl Chloride – <2.0 ug/L

MW-7 (former wells pre-remediation)

Tetrachloroethene – 2,200 ug/L
Trichloroethene – 44.0 ug/L
Cis-1,2-Dichloroethene – 11.0 ug/L
Vinyl Chloride – <2.0 ug/L

Therefore, the groundwater analytical results from the recent grab groundwater sample from SP-1 indicate a significant decrease in VOCs in the groundwater since the remediation activities in 2002. Another indicator of ongoing natural attenuation is that not only have PCE and TCE concentrations decreased, slight increases of the degradation products cis-1,2-dichloroethene and vinyl chloride concentrations were noted. Thus, the results from the SP-1 show that the previously completed remediation was effective.

Groundwater level measurements were also collected during the current sampling event. Groundwater level measurements were collected from existing monitoring wells MW-1, MW-6, MW-9, and MW-10. We also collected a groundwater level measurement from SP-1. Based on these measurements, we confirmed that the relative groundwater flow direction is toward the



west/northwest. We note that MW-10 is west/northwest of the source area, approximately 30 feet further downgradient of the source than is SP-1, and that MW-10 has been ND for all VOCs in each sampling event. Thus, it appears that the extent of contaminated groundwater has been defined.

Former monitoring wells MW-3 and MW-7 locations are shown on Figure 1. These monitoring wells were removed at the time of soil removal activities. VOC concentrations have not been detected in the existing monitoring wells MW-1, MW-6, MW-9, or MW-10 in past sampling events.

If you have any questions or need additional information or clarification of this report, please contact us.

Sincerely,

HART CROWSER, INC.

A handwritten signature in blue ink, reading "Julie K. W. Wukelic".

JULIE K. W. WUKELIC

Principal

jkw@hartcrowser.com

CC: Jon Wactor, Wactor & Wick, LLP
Anna Nguyen, Wactor & Wick, LLP

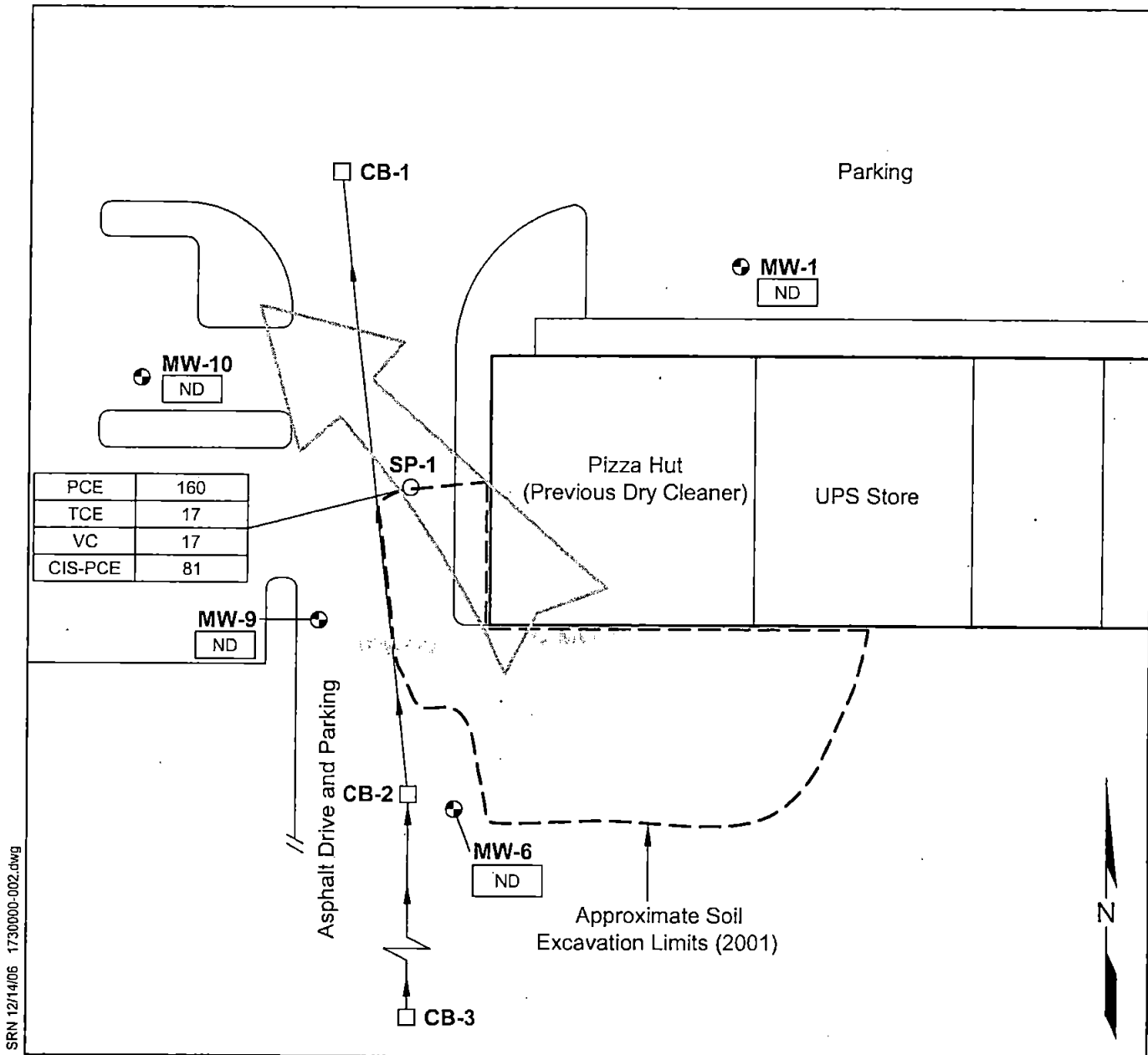
Attachments:

Figure 1 – Site Plan

Appendix A – Advanced Analytical Laboratory Certificate

Site Plan

Summary of Groundwater (SP-1 & MW-1, MW-6, MW-9, MW-10) Results



Exploration Location and Number

0 30 60
Scale in Feet

Former Monitoring Well

MW-6 Existing Monitoring Well

SP-1 Grab Groundwater Sample

Inferred Groundwater Flow Direction

Constituent Concentration in $\mu\text{g/L}$

PCE	160
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ND Non-detect

HARTCROWSER

17300-01

1/07

Figure 1

APPENDIX A ADVANCED ANALYTICAL LABORATORY CERTIFICATE

ADVANCED ANALYTICAL

Environmental Testing Laboratory

August 09, 2006

Julie Wukelic
Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, WA 98102

Dear Ms. Wukelic:

Please find enclosed the analytical data report for the *Silverdale Plaza, 17300 (A60808-3)* Project.

Samples were received on *August 08, 2006*. The results of the analyses are presented in the attached tables. Applicable reporting limits, QA/QC data and data qualifiers are included. A copy of the chain-of-custody and an invoice for the work is also enclosed.

ADVANCED ANALYTICAL LABORATORY appreciates the opportunity to provide analytical services for this project. Should there be any questions regarding this report, please contact me at (425) 497-0110.

It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,

V. Ivanov

Val G. Ivanov, Ph.D.
Laboratory Manager

Overlake Business Center ■ 2821 152 Avenue NE ■ Redmond, WA 98052
ph 425.497.0110 fax 425.497.8089
E-mail: aachemlab@yahoo.com

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AAL



A60808-3

Phone: 206-324-9530 FAX: 206-328-5581

White and Yellow Copies to Lab	Pink to Project Manager	Lab to Return White Copy to Hart Crowser	Gold to Sample Custodian
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AAL Job Number: A60808-3
Client: Hart Crowser
Project Manager: Julie Wukelic
Client Project Name: Silverdale Plaza
Client Project Number: 17300
Date received: 08/08/06

Analytical Results		MS		MSD		RPD	
8260B, µg/L		MTH BLK	LCS	HC06-SP1	HC06-SP1	HC06-SP1	HC06-SP1
Matrix	Water	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	08/09/06	08/09/06	08/09/06	08/09/06	08/09/06	08/09/06
Date analyzed	Limits	08/09/06	08/09/06	08/09/06	08/09/06	08/09/06	08/09/06
Dichlorodifluoromethane	1.0	nd		nd			
Chloromethane	1.0	nd		nd			
Vinyl chloride (*)	0.2	nd		17			
Bromomethane	1.0	nd		nd			
Chloroethane	1.0	nd		nd			
Trichlorofluoromethane	1.0	nd		nd			
1,1-Dichloroethene	1.0	nd		nd			
Methylene chloride	1.0	nd		nd			
trans-1,2-Dichloroethene	1.0	nd		nd			
1,1-Dichloroethane	1.0	nd		nd			
2,2-Dichloropropane	1.0	nd		nd			
cis-1,2-Dichloroethene	1.0	nd		81			
Chloroform	1.0	nd		nd			
1,1,1-Trichloroethane	1.0	nd		nd			
Carbontetrachloride	1.0	nd		nd			
1,1-Dichloropropene	1.0	nd		nd			
Benzene	1.0	nd	89%	nd	70%	79%	12%
1,2-Dichloroethane(EDC)	1.0	nd		nd			
Trichloroethene	1.0	nd	81%	17	98%	83%	17%
1,2-Dichloropropane	1.0	nd		nd			
Dibromomethane	1.0	nd		nd			
Bromodichloromethane	1.0	nd		nd			
cis-1,3-Dichloropropene	1.0	nd		nd			
Toluene	1.0	nd	74%	nd	71%	78%	9%
trans-1,3-Dichloropropene	1.0	nd		nd			
1,1,2-Trichloroethane	1.0	nd		nd			
Tetrachloroethene	1.0	nd		160			
1,3-Dichloropropane	1.0	nd		nd			
Dibromochloromethane	1.0	nd		nd			
1,2-Dibromoethane (EDB)*	0.01	nd		nd			
Chlorobenzene	1.0	nd	84%	nd	76%	83%	8%
1,1,1,2-Tetrachloroethane	1.0	nd		nd			
Ethylbenzene	1.0	nd		nd			
Xylenes	1.0	nd		nd			
Styrene	1.0	nd		nd			
Bromoform	1.0	nd		nd			
Isopropylbenzene	1.0	nd		nd			
1,2,3-Trichloropropane	1.0	nd		nd			
Bromobenzene	1.0	nd		nd			
1,1,2,2-Tetrachloroethane	1.0	nd		nd			
n-Propylbenzene	1.0	nd		nd			
2-Chlorotoluene	1.0	nd		nd			
4-Chlorotoluene	1.0	nd		nd			
1,3,5-Trimethylbenzene	1.0	nd		nd			

AAL Job Number: A60808-3
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8260B, µg/L		MTH BLK	LCS	HC06-SP1	HC06-SP1	HC06-SP1	HC06-SP1
Matrix	Water	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	08/09/06	08/09/06	08/09/06	08/09/06	08/09/06	08/09/06
Date analyzed	Limits	08/09/06	08/09/06	08/09/06	08/09/06	08/09/06	08/09/06
tert-Butylbenzene	1.0	nd		nd			
1,2,4-Trimethylbenzene	1.0	nd		nd			
sec-Butylbenzene	1.0	nd		nd			
1,3-Dichlorobenzene	1.0	nd		nd			
Isopropyltoluene	1.0	nd		nd			
1,4-Dichlorobenzene	1.0	nd		nd			
1,2-Dichlorobenzene	1.0	nd		nd			
n-Butylbenzene	1.0	nd		nd			
1,2-Dibromo-3-Chloropropane	1.0	nd		nd			
1,2,4-Trichlorobenzene	1.0	nd		nd			
Hexachloro-1,3-butadiene	1.0	nd		nd			
Naphthalene	1.0	nd		nd			
1,2,3-Trichlorobenzene	1.0	nd		nd			
*-instrument detection limits							
Surrogate recoveries							
Dibromofluoromethane		115%	108%	99%	97%	89%	
Toluene-d8		108%	107%	97%	96%	90%	
1,2-Dichloroethane-d4		81%	81%	96%	99%	93%	
4-Bromofluorobenzene		111%	108%	102%	100%	91%	

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%