# ENVIRONMENTAL ASSOCIATES, INC.

1380 - 112<sup>th</sup> Avenue Northeast, Suite 300 Bellevue, Washington 98004 (425) 455-9025 Office (888) 453-5394 Toll Free (425) 455-2316 Fax

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JN-24034

March 3, 2004

Spencer Retirement Group Limited Partnership c/o Mr. Keith Therrien - Attorney Law Offices of Powers & Therrien, P.S. 3502 Tieton Drive Yakima, Washington 98902-3661

Subject:

SOIL & GROUNDWATER SAMPLING & TESTING Daniels Dry Cleaner (Heritage Square Shopping Center) 730 NW Gilman Boulevard Issaquah, Washington

Dear Mr. Therrien:

Environmental Associates, Inc. (EAI), has completed sampling and laboratory testing of soil and groundwater obtained from selected localities at the subject property in Issaquah, Washington. This report, prepared in accordance with the terms of our proposals dated January 30, 2004, summarizes our approach to the project along with results and conclusions. This letter is governed by the same limitations included in the attached report of which it is a part.

The contents of this report are confidential and are intended solely for your use and those of your representatives. Four (4) copies of this report are being distributed to you. No other distribution or discussion of this report will take place without your prior approval in writing. Additional copies are available for a small fee.

Based upon the information developed thus far, it would appear that shallow soil at all four (4) interior boring locations depicted on Plate 3, Site Plan-Detailed, contains residual concentrations of perchloroethlyene (PCE) a common dry-cleaning solvent, at concentrations <u>above</u> the Washington State Department of Ecology's target compliance level. Groundwater collected and analyzed from three (3) of the borings also contained PCE in concentrations <u>at or above</u> the WDOE's groundwater target compliance level.

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The extent of PCE impacted soil and groundwater at this facility is unknown. Additional site assessment of soil and groundwater along with the initiation of remedial action and/or implementation of engineering / institutional controls may be required to achieve compliance with the Washington State Model Toxics Control Act (WAC-173-340).

Additional discussions regarding these findings are offered in the Conclusions/Recommendations section of the enclosed report.

We appreciate the opportunity to be of service on this assignment. If you have any questions or if we may be of additional service, please do not hesitate to contact us.

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DON W. SPENCER

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Respectfully submitted, ENVIRONMENTAL ASSOCIATES, INC.

Don W. Spencer, M.Sc., P.G., R.E.A. Principal

EPA-Certified Asbestos Inspector/Management Planner I.D. # AM 48151

Registered Site Assessor/Licensed UST Supervisor State Certification #0878545-U7

License: 604 License: 11464 License: 876 License: 5195	(Washington) (Oregon) (California) (Illinois) (Mississippi)
License: 0327	(Mississippi)



Daniels Dry Cleaners (Heritage Square Shopping Center) 730 NW Gilman Boulevard Issaquah, Washington

Prepared for:

Spencer Retirement Group Limited Partnership c/o Law Offices of Powers & Therrien, P.S. 3502 Tieton Drive Yakima, Washington 98902-3661

Questions regarding this investigation, the conclusions reached and the recommendations given should be addressed to one of the following undersigned.

Robert B. Roe, M. Sc., P.G. Project Manager - Hydrogeologist

License: 1125

(Washington)





Don W. Spencer, M.Sc., P.G., R.E.A. Principal

EPA-Certified Asbestos Inspector/Management Planner I.D. # AM 48151

Registered Site Assessor/Licensed UST Supervisor State Certification #0878545-U7

License: 604	(Washington)
License: 11464	(Oregon)
License: 876	(California)
License: 5195	(Illinois)
License: 0327	(Mississippi)

Reference Job Number: JN-24034

March 3, 2004

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# INTRODUCTION/SCOPE OF WORK

#### SITE DESCRIPTION

Daniels Dry Cleaners (subject facility) is located in the Heritage Square Shopping Center, which is approximately 3/4 of a mile northwest of downtown Issaquah, Washington. The approximate location is depicted schematically on Plate-1 Vicinity/Topographic Map, attached to this report. The approximate location of Daniels Dry Cleaners within Heritage Square is depicted on Plate 2, Site Plan.

Heritage Square is a triangular-shaped parcel bounded to the north by Interstate Highway I-90 and to the south by NW Gilman Boulevard. Land use on adjacent parcels is primarily commercial / retail.

#### BACKGROUND

The 5.79 acre Heritage Square Shopping Center was developed in 1985. Daniels Dry Cleaners has operated at their current location since that time. Historically, on-site dry cleaning occurred at this facility, however, the site currently operates as a pickup and drop off location.

In 1994, the dry cleaning solvent tetrachloroethene (PCE) was detected in soil within a landscaping strip that runs along the north side of the subject facility. The source of the PCE was not determined, though drums of dry-cleaning waste (filters) were reported stored along the landscaping strip. The owner of Daniels Dry Cleaners (Mr. Ferrelli) conducted a limited cleanup of PCE-impacted soil within the landscaping stripe east of the rear door to the facility (Plate 3, Site Plan-Detailed). Approximately 1 cubic yard of soil was reportedly removed from that area. AGRA Earth and Environment opined that the cleanup effort had been successful, based upon their confirmation sampling.

A Phase-I Report by Building Analytics in 1996 summarized the above findings and opined that additional areas of PCE impacted soil and/or groundwater could exist "beneath the area of excavation, the building, and the asphalt driveway." Building Analytic's furthered stated that since the WDOE anticipated "file closure" for the facility, no further work regarding Daniels Dry Cleaners was recommended by them. However, the report also acknowledged that a formal request for site closure had not been presented to the WDOE at that time.

In 1997 GeoTech Consultants, Inc., acting on behalf of Heritage Square Associates, formally applied to the WDOE for a determination of no further action (NFA). Subsequently in 1997 the WDOE issued a determination of no further action letter for the site conditions known at that time.

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Heritage Square Shopping Center is currently the subject of a pending real estate transaction. A review of known environmental conditions by the lender's consultant (PH7) identified the lack of environmental explorations under the existing dry cleaners facility as a potential "data gap" in the body of environmental work preformed by others to date.

EAI was subsequently retained by the property owners representatives to perform additional sampling and testing of soil and groundwater underlying the dry cleaner's lease space.

#### METHODOLOGY/SCOPE OF WORK

The previously discussed background information led to development of the following scope of work, as outlined in our proposal dated January 30, 2004:

Complete four (4) Strataprobe borings at the approximate locations depicted as SP1 through SP4 on Plate 3 Site Plan-Detailed, attached to this report.

Select two (2) soil samples from each boring for laboratory analysis. Analyze the selected soil samples for chlorinated volatile organic compounds by EPA method 8260. Upon encountering dry-cleaning solvent in the soil, the client authorized the additional analysis of three (3) recovered groundwater samples.

Prepare a summary report documenting methodology, findings, conclusions, and recommendations.

#### **GEOLOGIC SETTING**

During the Pleistocene epoch (2 million to 10,000 years before present), most of the Puget Sound was affected by intrusion of continental glaciation. The last period of glaciation, the Vashon Stade of the Fraser Glaciation, ended approximately 10,000 years ago. Many of the topographic features present today are a result of scouring and overriding by glacial ice. During the Vashon, the Puget Sound Region was overridden by more than 3,000 feet of ice thickness in places.

Depth to bedrock in the vicinity of the subject site is estimated to be approximately 600 feet (Jones, 1999). The overlying unconsolidated sediments consist of a series of glacial, fluvial, and lacustrine deposited sediment. The near surface alluvium in the vicinity of the subject property may consist of sands, gravels and finer grained silts and clayey-silts, with localized occurrences of peat / organic silts.

Sediment encountered during this study included fill (silt, sand, and gravel) to a depth of approximately 5 feet below the ground surface. A clayey, organic-silt, with occasional peat was then encountered from 5 feet to 8 to 9 feet below the ground surface, a silty sand and sandy gravel was encountered to a depth of approximately 12 feet, at which depth peat was encountered. Deeper exploration was not performed in this preliminary effort.

Groundwater was encountered at a depth of approximately 7 to 8 feet below the ground surface.

A review of water well logs at the WDOE suggests similar subsurface conditions within the vicinity of the subject property.

# SUBSURFACE EXPLORATION

#### SOIL & GROUNDWATER SAMPLING

On February 16, 2004, EAI completed four (4) Strataprobe borings within Daniels Dry Cleaners at the approximate locations depicted as SP1 through SP4 on Plate 3-Site Plan-Detailed, using a limited access Strataprobe hydraulic ram soil boring unit.

Boring SP1 was positioned adjacent to a floor drain sump in the former cleaner's boiler room. Borings SP2 through SP4 where positioned around the suspected former location of the dry cleaning machine. EAI had initially intended to place a boring in the bathroom in proximity to a utility sink and the sanitary sewer alignment, however the locations of numerous utilities, such as water and power, sensibly precluded exploration in that area.

Under the supervision of EAI's Washington State-licensed Hydrogeologist, the Strataprobe unit was brought into position over each selected drilling location, and temporarily bolted to the concrete floor slab before drilling. Following set-up preparations, the boring technique consisted of advancing a 1-inch diameter soil sampling tube in 3 or 4-foot intervals beginning at the ground surface. This sampling method allowed for the collection of a continuous soil sample core beginning at the ground surface and extending to the maximum depth explored in each soil boring. After each sampling interval the sampling assembly was removed and the core extracted for examination. Discrete soil samples were collected from each sampling interval of the core.

Borings SP1, SP2, and SP4 were completed to depths of approximately 12 feet below the ground surface. In the vicinity of SP3 the concrete floor slab to which the Limited Access Strataprobe is temporarily bolted, was found to be too thin and weak to support the reaction force exerted by the Strataprobe, thus exploration at SP3 was limited to 2 feet below the ground surface.

Following completion of borings SP1, SP2, and SP4, a groundwater sample was collected from those borings by extending a temporary stainless steel well screen to the bottom of each boring. A peristaltic pump was then used to extract a groundwater sample. Groundwater samples were recovered from SP1, SP2 and SP4.

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In an effort to preserve sample integrity, the soil and groundwater samples were stored on-site in an insulated chest maintained at or below 4 degrees centigrade, and were transported to the project laboratory in this condition. Each sample was clearly identified with respect to project, boring number, date, time, etc. EPA-recommended sample management protocol, including maintenance of chain-of- custody documentation, was observed at each stage of the project.

### LABORATORY ANALYSIS/RESULTS/DISCUSSION

EAI initially selected two (2) soil samples from each boring. For borings SP1, SP2, and SP4 the selected soil samples were from depths of 1 to 2 feet below the ground surface, along with a deeper soil sample collected between 4 to 6 feet below the ground surface. At boring SP3 samples collected from 0.5 feet to 1 foot and from 1 foot to 2 feet below the ground surface were selected.

The six (6) selected soil samples were analyzed by the project laboratory for volatile chlorinated organic compounds by EPA test method 8260-B. Upon preliminary laboratory results suggesting that some of the soil samples contained the dry-cleaning solvent PCE at concentrations above the WDOE's Method-A target compliance level, EAI recommended to the client the analysis of the three (3) collected groundwater samples. Upon obtaining the clients authorization, the three (3) groundwater samples were also analyzed by method 8260-B.

As summarized in Table 1, chlorinated VOCs were detected in five (5) of the six (6) selected soil samples and were detected at all four (4) boring locations. The concentrations of detectable PCE ranged between 0.16 parts per million (ppm) to 2.4 ppm. The concentrations of PCE in the upper 2 feet of soil at the locations explored by EAI to date, are also depicted on Plate-3 Site Plan-Detailed.

With regard to WDOE target compliance levels for PCE in soil, two (2) are commonly referenced; the Method-A level of 0.05 ppm and the Method-B level of 19.6 ppm. Method-A levels are typically for unrestricted land use and are intended to be protective of human health and groundwater resources whereas Method-B is often applied in commercial/industrial settings.

The detected concentrations of PCE exceed the WDOE's Method-A target compliance level for unrestricted land use, but are below (i.e., compliant with) the WDOE's Method-B target compliance level (19.6 ppm) established for the protection of human health through direct contact. However, under Method-B, these concentrations of PCE are still not considered protective of groundwater resources.

Concentrations of trichloroethene (TCE) and vinyl chloride were also detected in some of the soil samples from SP1 and SP2 at concentrations of their target compliance levels. These compounds essentially represent degradation by-products of PCE.

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As summarized in Table 2 and on Plate 4, Site Plan-Detailed, PCE was present in all three (3) groundwater samples analyzed. The concentrations of PCE ranged between 5 parts per billion (ppb) and 22 ppb. For reference, the WDOE target compliance level for PCE in groundwater is 5 ppb. Viewing these finding in the context of risk assessment criteria adopted by the WDOE, the presence of PCE in the shallow groundwater at concentrations above the WDOE compliance levels appears to undermine any errant supposition that the concentrations of PCE in the overlying soil might be protective of groundwater resources. The breakdown product TCE was present in the groundwater samples from SP1 (7 ppb) and SP2 (5 ppb) at concentrations at or above its target compliance level of 5 ppb. The breakdown product vinyl chloride was present at SP1 at a concentration of 18 ppb, which is above its WDOE target compliance level of 0.2 ppb.

PCE is denser than water (i.e. will sink to the bottom of a saturated soil zone) and therefore is capable of functioning as what is referred to in the environmental industry as "dense non-aqueous phase liquid (or DNAPL). DNAPL in many cases is essentially pure PCE liquid that can "pool" along the contacts with less permeable strata and can be a substantial concern at sites where large volumes or systemic chronic releases of PCE have occurred. Previous interviews with the facility operator as referenced in earlier environmental reports suggest that such "large-scale" releases PCE have not been documented to have occurred. It may be reasonable to consider that the observed concentrations of PCE in soil and shallow groundwater at this facility may simply be the accumulative effects of historic minor spills and releases associated with PCE handling and storage practices.

# CONCLUSIONS/RECOMMENDATIONS

Relying upon the results of the work completed by EAI to date, the following conclusions and expanded discussions are offered for your consideration.

The operation of a dry-cleaner on the subject property has resulted in impacts to subject property soil and groundwater underlying the subject building. The areal and vertical extent of the chlorinated solvent impacted soil and groundwater has not been fully determined, nor was such a determination envisioned within the scope of work solicited or proposed for this "preliminary" assessment of environmental conditions below the dry cleaner's lease space.

Additional work, which may include further site characterization, initiation of active remediation, and/or implementation of more passive engineering and/or administrative solutions, may be required to achieve lawful regulatory compliance.

In terms of further site characterization, EAI offers the following recommendations for consideration:

1.

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Acknowledging that the full extent of chlorinated solvent impacted soil and groundwater has not been assessed, further site explorations both within the subject building and in exterior areas of the property may be warranted. Further evaluation of the lateral extent of PCE impacted soil and groundwater may require additional borings both within the dry-cleaners space and possibly in adjacent tenant spaces as well. It should be noted that the presence of underground utilities and other access limiting factors, and restrictions on the selection of drilling locations that could be imposed upon EAI in consideration of minimizing the disruption of tenants will likely influence that work.

Proposed locations for further exterior explorations include areas along the north side of the subject building (suspected down-gradient side), such as the landscaped areas and/or the asphalt drive lane north and adjacent to the dry-cleaners space. Explorations along the south side of the dry-cleaner (suspected up-gradient side) may also be warranted in assessing the extent of impacted groundwater.

With the presence of impacted groundwater, some form of periodic groundwater monitoring will most likely be a component of working toward regulatory closure at this property. Therefore, <u>EAI recommends</u> the installation of a <u>minimum</u> of three (3) groundwater monitoring wells. This number of wells corresponds to the minimum required to deduce the local groundwater flow direction, which is an important factor in evaluating the extent and sources of groundwater contamination. These monitoring wells could also serve as a means to assess physical (hydraulic conductivity, flow velocity, etc.) and chemical properties of the aquifer and would also provide a means to re-evaluate the environmental quality of groundwater on a regularly scheduled basis (i.e. compliance monitoring). Depending upon the actual extent of impacted groundwater additional monitoring wells may ultimately be necessary to provide "adequate" monitoring of the contaminant plume, or establishing conditional "points of compliance."

Once the extent of chlorinated solvent impacted soil and groundwater has been more fully accessed, a plan to mitigate this environmental condition can begin to be formulated. Acknowledging the limitations imposed by the current unknown extent of contamination, no specific cleanup plan is offered at this time. However, in broad generalities, regulatory closure at this facility could be as simple as conducting periodic groundwater monitoring or could conceivably require some form of active remediation and/or implementation of engineering and/or institutional controls.

Some examples of "active remediation" include partial or total excavation of solvent-impacted soil, extraction and treatment of contaminated groundwater, in-situ treatment of impacted soil/groundwater, possibly through enhanced bio-degradation, and other "hands-on" actions that could be initiated. Engineering controls include initiating actions to control or restrict the spread of contamination or restrict public exposure to the contamination. Similarly, institutional controls, such as recording restrictive covenants on the property may also be utilized as a means of mitigating the risk of public exposure to the contaminants present on this site. Depending upon conditional and limiting factors unique to each site, this management tool is in common usage in the state.

Although it may be premature to discuss potential "cleanup costs" with any degree of accuracy, in terms of broad industry averages, and based on EAI's experience on performing "cleanups" of soil and groundwater on numerous former chlorinated solvent-impacted sites, potential costs for performing remediation on soil and groundwater could conceivably <u>exceed</u> \$100,000. The cost would be highly dependent upon the actual extent and volume of impacted soil and groundwater requiring treatment, method of treatment, and performance standards selected for the project. Obviously the actual cost to achieve some form of regulatory compliance would only be known upon successful completion.

The time frame for achieving regulatory compliance depends upon many factors, such as the types of contaminants present, media affected, extent of contamination, physical and chemical characteristics of the soil and groundwater, remediation methods selected, and performance goals for the cleanup. Acknowledging that many of these factors have not been fully assessed to date at this site, predicting an actual time line with any degree of accuracy at this juncture would be speculative at best. That caveat noted, from our own experience in conducting similar cleanups, the following rudimentary time line may be applicable to this site.

Provided that the partes involved are motivated, completion of additional site characterization and preparation of preliminary remediation approach, could possibly occur within a 1 to 2 month period. It may then take up to 6-months or longer (depending upon the permits required and cleanup approach selected) to implement the selected strategy. It is not unusual for remedial actions on this type of property to take several years, perhaps as many as 5 to 10 years or longer to achieve some form of final regulatory compliance closure. At the end of the process there is no guarantee that the property will qualify for a determination of "no further action" (NFA) by the WDOE.

With regard to NFAs, the client should also consider that if for any reason, contaminated soil and/or groundwater remains on-site at the time of application for the NFA, the WDOE will typically require that a restrictive covenant on the property be filed at the County Assessor's Office. Typically this scenario can occur if areas of contaminated soil and/or groundwater extend under an on-site structure, which would make further conventional remediation efforts impossible or extremely cost-prohibitive. A restrictive covenant is an institutional control that sets various performance standards to ensure that any remaining impacted soil/groundwater is properly managed and not" forgotten about".

Typically the terms of the restrictive covenant require the property owner to inform the WDOE if site use were to substantially change or the property redeveloped. If areas of impacted soil and groundwater become accessible during future redevelopment, the WDOE could require additional remedial action at that time. Some form of long term groundwater monitoring could also be a requirement in consideration for receiving a "conditional" NFA.

Decision-making authority with regard to efficacy and/or applicability of the foregoing discussions or consideration of other approaches, clearly lies with the client, property owner/operator, and/or lender, depending upon their individual risk tolerances.

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Finally, to achieve lawful compliance with Chapter 173-340-300, WAC, EAI recommends that copies of this report along with any future reports regarding the environmental conditions thus far encountered be forwarded to the Department of Ecology by the owner.

LIMITATIONS

This report has been prepared for the exclusive use of Spencer Retirement Group Limited Partnership, Glacier Real Estate Finance, and GE Financial Assurance Holdings, Inc., and its Subsidiaries, along with their several representatives, for specific application to this site. Our work for this project was conducted in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area, and in accordance with the terms and conditions set forth in our proposal dated January 30, 2004. The opinions expressed in this report are based upon the results of sampling and testing conducted at separated sampling localities and conditions may vary between those locations or at other locations and depths. EAI makes no warranty with respect to future actions of regulatory agencies with respect to this property. No other warranty, expressed or implied, is made. If new information is developed in future site work that may include excavations, borings, studies, etc., Environmental Associates, Inc., must be retained to reevaluate the conclusions of this report and to provide amendments as required.

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# REFERENCES

- AGRA Earth & Environmental, 1994, Soil Testing Results, Daniels Dry Cleaners, Issaquah, Washington.
- Building Analytics, 1996, Phase I Environmental Site Assessment Report, Heritage Square Shopping Center, 700-740 NW Gilman Boulevard, Issaquah, Washington.
- GeoTech Consultants, Inc., 1997, Independent Remedial Action Report, Daniels Dry Cleaners, 730 NW Gilman Boulevard.
- Jones, M.A., 1999, Geological Framework for The Puget Sound Aquifer System, Washington and British Columbia, USGS, Professional Paper 1424-C, plate 11.
- Sound Environmental and Safety, 1995, Site Characterization Report, Daniels Dry Cleaners, 730 Gilman Blvd., Issaquah, Washington.
- Washington State Department of Ecology, 1997, Determination of No Further Action letter, Daniels Dry Cleaners, 730 NW Gilman Boulevard, Issaquah, Washington.

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TABLE 1 - VOC	e - Soil Sa	mpling Re	eulte				
All results and limits in parts per million (ppm)							
Strataprobe Boring	Tetrachloroethene (PCE)	Trichloroethene (TCE)	(cis) 1,2 Dichloroethene	(trans) 1,2 Dichloroethene	Vinyl Chloride		
'SP1- 1' to 2'	2.4	0.06	0.024	<0.005	<0.005		
SP1 - 4' to 5'	0.16	0.014	0.027	<0.005	0.006		
SP2 - 1' to 2'	0.99	0.012	<0.005	< 0.005	<0.005		
SP2 - 4' to 5'	1.9	0.059	0.028	<0.005	<0.005		
SP3- 0.5' to 1'	0.074	<0.005	< 0.005	<0.005	<0.005		
SP3 - 1' to 2'	0.29	0.014	< 0.005	<0.005	<0.005		
SP4 - 1' to 2'	0.54	0.012	<0.005	<0.005	<0.005		
SP4 - 5' to 6'	<0.005	<0.005	<0.005	<0.005	<0.005		
Reporting Limit <sup>3</sup>	0.005	0.005	0.005	0.005	0.005		
Cleanup Level for Unrestricted Land Use (Method-A) <sup>4</sup>	0.05	0.03			·		
Cleanup Level - Direct Contact (Method-B) <sup>5</sup>	19.6	, 90	35000	70000	0.667		
Cleanup Level - Protection of Groundwater (Method-B) <sup>6</sup>	0.0091	0.0263	0.400	0.868	0.000184		

Notes:

"ND" denotes analyte not detected at or above listed Reporting Limit. 1.

2.

"ND" denotes analyte not detected at or above listed Reporting Limit. "NA" denotes sample not analyzed for specific analyte. "Reporting Limit" represents the laboratory lower quantitation limit. Method A soil cleanup levels for unrestricted land use as published in the Model Toxics Control Act (MTCA) 173-340-WAC, Table 740-1. Amended February 12, 2001. Method-B soil cleanup levels for the "direct contact pathway", as published in Ecology's CLARC version 3.0, August 2001 4.

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dalabase. Method-B soll cleanup level for the protection of groundwater based upon the Method-B groundwater cleanup levels. Values as published in Ecology's CLARC version 3.0, August 2001, database. 6-

Bold and Italics denotes concentrations above existing MTCA Method A or B soll cleanup levels.

Enviornmental Associates, Inc.

TABLE 2 - VOCs - Grour All results and limits i					
Sample Name	Tetrachloroethene (PCE)	Trichloroethene (TCE)	(cis) 1,2 Dichloroethene	(trans) 1,2 Dichloroethene	Vinyl Chloride
SP1	19	7	74	<1	· 18
SP2	22	5	13	<1	<1
SP4	5	<1	2	<1	<1
Reporting Limit <sup>3</sup>	1	1	1	1	. 1
Existing Cleanup Level <sup>4</sup>	5 (A)	5 (A)	80 (B)	-160 (B)	0.2 (A)

Notes:

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1 - "ND" denotes analyte not detected at or above listed Reporting Limit.

2- "NA" denotes sample not analyzed for specific analyte.

3- "Reporting Limit" represents the laboratory lower quantitation limit.

4- Method A or B groundwater cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC. Method B levels are referenced for compounds where Method-A levels have not been established.

Bold and Italics denotes concentrations above existing MTCA Method A or B groundwater cleanup levels.

# Environmental Associates, Inc.









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# APPENDIX A

# Laboratory Report

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James E. Bruya, Ph.D.				3012 16th /	Avenue Wei
Charlene Morrow, M.S. Yelena Aravkina, M.S.		•	• • •	Seattle, WA	
Bradley T. Benson, B.S. Kurt Johnson, B.S.					16) 283-504
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Client Sample ID: SP1-1- Date Received: 02/18/ Date Extracted: 02/20/ Date Analyzed: 02/20/ Matrix: Soil Units: ug/g (j	04 04 04	Client: Project: Lab ID: Data File: Instrument: Operator:	Environmental Associates, Inc Daniel's Dry Cleaners, F&BI 402149 402149-01 022017.D GCMS4 YA	
Surrogates: Dibromofluoromethane 1,2-Dichloroethane-d4 Toluenc-d8	% Recovery: 107 101 116	Lower Limit: 65 65 64		
Compounds:	Concentration ug/g (ppm)	т. 		
<ul> <li>Vinyl chloride Chloroethane</li> <li>1,1-Dichloroethane</li> <li>Mcthylene chloride</li> <li>trans-1,2-Dichloroethane</li> <li>1,1-Dichloroethane</li> <li>cis-1,2-Dichloroethane</li> <li>1,2-Dichloroethane (EDC)</li> <li>1,1,1-Trichloroethane</li> <li>Trichloroethane</li> <li>Tetrachloroethane</li> </ul>	<0.005 <0.005 <0.005 0.18 In <0.005 <0.005 0.024 <0.005 <0.005 <0.005 0.060 2.4			
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Client Sample ID:SP1-4-5Date Received:02/18/04Date Extracted:02/20/04Date Analyzed:02/20/04Matrix:SoilUnits:ug/g (ppn)	Ŋ	Client: Project: Lab ID: Data File: Instrument: Operator:	Environmental Ast Daniel's Dry Clean 402149-02 022018.D GCMS4 YA	
Surrogates; Dibromofluoromethane 1,2-Dichloroethane-d4 Toluene-d8	% Recovery: 104 98 113	Lower Limit: 55 65 64	Upper Limit: 151 130 191	
Compounds:	Concentration ug/g (ppm)		• • • •	
Vinyl chloride Chloroethane 1,1-Dichloroethane Methylene chloride trans-1,2-Dichloroethane 1,1-Dichloroethane cis-1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,1,1-Trichloroethane Trichloroethane Tetrachloroethane	0.006 <0.005 <0.005 0.17 lc <0.005 <0.005 0.027 <0.005 <0.005 <0.005 0.014 0.16			
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le - The reported value is likely due to exposure from the laboratory.

Client Sample ID:SP2-1-2Date Received:02/18/04Date Extracted:02/20/04Date Analyzed:02/20/04Matrix:SoilUnits:ug/g (ppm)	Received:02/18/04Project:Extracted:02/20/04Lab ID:Analyzed:02/20/04Data File:rix:SoilInstrument:		ceived: 02/18/04 Project: Daniel tracted: 02/20/04 Lab ID: 402149 alyzed: 02/20/04 Data File: 022019 Soil Instrument: GCMS		
Surrogates: % Recovery: Dibromofluoromethane 91 1,2-Dichloroethane-d4 100 Toluene-d8 116	Lower Limit: 55 65 64	Upper Limit; 151 180 181			
Compounds: ug/g (ppm)					
 Vinyl chloride<0.005Chloroethane<0.005					

le • The reported value is likely due to exposure from the laboratory.

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	Client Sample ID:SP2-4Date Received:02/18/Date Extracted:02/20/Date Analyzed:02/20/Matrix:SollUnits:ug/g (	/04 /04 /04		Cliont: Project: Lab ID: Data File: Instrument: Operator:	Environma Daniel's D 402149-05 022020.D GCMS4 YA		iates, Inc. 3, F&BI 40214
				Lower	2 2	Upper	
	Surrogates:	% Re	covery:	Limit:		Limit;	
	Dibromofluoromethane		106 -			151 -	· · · · ·
•	1,2-Dichloroethans-d4	•	95	65		190	• .
• • •	Toluono-d8		117	64		i 181	
		Conce	ntration				
	Compounds:		s (ppm)				
	Vinyl chloride	•	0.005			·. · ·	•
•	Chloroethane	•	0.005				•
,	1,1-Dichloroethene	•	0.005	. ,	A	3. <sub>1</sub> . 1	
	Methylene chloride		0.11 le		· [-		
•	trans-1,2-Dichloroethene		0,005	•			
۰.	1,1-Dichloroéthane		:0.005	· · · · ·		전 고려 가기	
	cis-1,2-Dichloroethene		0.028				
٠	1,2-Dichloroethane (EDC)	n i si s	0,005				
	1,1,1 Trichloroethane		0.005		Yj + jah		
•	Trichlorosthene		0,059			······································	· ·
	Tetrachloroethene		1.9	•		•	· · · · ·
•				<i>.</i> .		1 N 1 1 1 1	· · · · · · · · · · · · · · · · · · ·

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le - The reported value is likely due to exposure from the laboratory.

• •	Client Sample ID: Date Received:SP3-0.5- 02/18/04Date Extracted: Date Analyzed:02/20/04Matrix: Units:Soil ug/g (pp)		Client: Project: Lab ID: Data File: Instrument: Oporator:	Environmental A Daniel's Dry Clea 402149-07 022021.D GCMS4 YA	Associates. Inc. aners, F&BI 402149
	Surrogates: Dibromofluoromethane 1,2-Dichlorosthane-d4 Toluene-d8	% Recovery: 58 111 129	Lower Limit: 55 65 64	Upper Limit 15] 130 181	
	Compounds:	Concentration ug/g (ppm)			5
•	Vinyl chloride Chloroethane 1,1-Dichloroethane Methylane chloride trans-1,2-Dichloroethane 1,1-Dichloroethane cis-1,2-Dichloroethane 1,2-Dichloroethane (EDC) 1,1,1-Trichloroethane Trichloroethane Tetrachloroethane	<0.005 <0.005 0.11 le <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005			
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le . The reported value is likely due to exposure from the laboratory.

Client Sample II); Date Received: Date Extracted: Date Analyzed: Matrix: Units:	SP8-1-2 02/18/04 02/20/04 02/20/04 Soil ug/g (ppm)		Client: Project; Lab ID; Data File: Instrument; Oporator:	Environmental Associatos, Daniel's Dry Cleaners, F& 402149-08 022022.D GCMS4 YA	, Inc. Bí 402149
Surrogates: Dibromofluorometh 1,2-Dichloroethane Toluene-d8	iano	% Recovery: 99 110 131	Lower Limit: 55 65 64	Upper Limit; 151 130 131	
Compounds:	•	Concentration ug/g (ppm)		,	
 Vinyl chloride Chloroethane 1,1-Dichloroethane Methylene chloride trans-1,2-Dichloroe 1,1-Dichloroethane cis-1,2-Dichloroethane 1,2-Dichloroethane 1,1,1-Trichloroethane Trichloroethane Tetrachloroethane	thono me (EDC)	<0.005 <0.005 <0.005 0.12 le <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 0.014 0.29			

le - The reported value is likely due to exposure from the laboratory.

Client Sample ID:SF4-1Date Received:02/18/Date Extracted:02/20/Date Analyzed:02/20/Matrix:SoilUnits:ug/g ()	04 04 04	Client: Project: Lab ID: Data File: Instrument: Operator:	Environmental Associates, Inc. Daniel's Dry Cleaners, F&BI 402149 402149-09 022023.D GCMS4 YA
Surrogates: Dibromofluoromethane 1,2-Dichloroethane-d4 Toluene-d8	% Recovery: 113 106 122	Lower Limit: 55 65 64	Upper Limit: 151 180 181
Compounds:	Concentration ug/g (ppm)		
Vinyl chloride Chloroethane 1,1-Dichloroethene Methylene chloride trans-1,2-Dichloroethene 1,1-Dichloroethene 1,2-Dichloroethene 1,2-Dichloroethene 1,2-Dichloroethene Trichloroethene Trichloroethene Tetrachloroethene	<0.005 <0.005 <0.005 0.11 lc <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <	, 	

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le - The reported value is likely due to exposure from the laboratory.

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Oliont Sample ID:SP4-5-6Date Received:02/18/04Date Extracted:02/20/04Date Analyzed:02/20/04Matrix:SoilUnits:ug/g (ppm)	۲, ۲ ,	Client: Project: Lab ID: Data File: Instrument: Operator:	Environmental Associates, Daniel's Dry Cloaners, F&I 402149-10 022024.D GCMS4 YA	
Surrogates: Dibromofluoromethane 1,2-Dichloroethane-d4 Toluene-d8	% Recovery: 105 96 115	Lower Limit: 55 65 64	Upper Limit: 151 130 131	
Compounds: Vinyl chloride Chloroethane I, I-Dichloroethene Methylene chloride trans-1,2-Dichloroethene I, I-Dichloroethene i,2-Dichloroethene I,2-Dichloroethene I,2-Dichloroethane Trichloroethene	Concentration ug/g (ppm) <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005	4. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Tetrachlorcethene	<0.005			

# le - The reported value is likely due to exposure from the laboratory.

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, ;	Cliant Sample ID:Method BlankDate Received:Not ApplicableDate Extracted:02/20/04Date Analyzed:02/20/04Matrix:SoilUnits:ug/g (ppm)		Lab Dat Inst	nt: ject: ID: a File: rument: rator:	Environmental Associates, Inc. Danial's Dry Cleaners, F&BI 402146 04-141 mb3 022016.D GCMS4 YA				
	Surrogates: Dibromofluorometh 1,2-Dichlorosthans Toluene-d8			Lower Limit: 55 65 64	n an	Upper Limit: 151 130 181			,
	Compounds:	Concentr ug/g (p)			· · · ·	· .	: (	• •	
	Vinyl chloride Chloroethane 1,1-Dichloroethane Methylene chloride trans-1,2-Dichloroethane cis-1,2-Dichloroethane 1,2-Dichloroethane 1,1,1-Trichloroethane	e 0.1 ethene <0.0 smé <0.0 (EDC) <0.0 ne <0.0 <0.0	05 05 3 lc 05 05 05 05 05 05				••		
	Tetrachloroathene	<0.0	VU			· · · ·		•	

le . The reported value is likely due to exposure from the laboratory.

Olient Sample ID:SP1Date Received:02/18/04Date Extracted:02/20/04Date Analyzed:02/23/04Matrix:WaterUnits:ug/L (ppb)	Client: Project: Leb ID: Data File: Instrument: Operator:	Environmental Associates, Inc. Daniel's Dry Cleaners, F&BI 402149 402149-11 022317.D GCMS4 YA
Surrogates: Dibromofluoromethane 1,2-Dichloroethane-d4 Toluene-d8	Lower % Recovery: Limit: 90 81 91 92 94 92	Upper Limit: 181 109 110
Compounds:	Concentration ug/L (ppb)	
Vinyl chloridø Chloroethane 1, 1-Dichloroethene Methylene chlorida trans-1,2-Dichloroethane i,1-Dichloroethane cis-1,2-Dichloroethane 1,2-Dichloroethane (EDC) 1,1,1-Trichloroethane Trichloroethene Tetrachloroethene	18 <1 <1 <5 <1 <1 <1 74 <1 <1 7 19	

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	SP2 02/18/04 02/20/04 02/25/04 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Environment Daniel's Dry ( 402149-12 022318.D GCMS4 YA	al Associates, Inc Cleaners, F&BI 4	). 102149
Surrogates: Dibromofluorometl 1,2-Dichloroethane Toluene-d8		% Recovery: 100 92 96	Lower Limit: 81 92 02	Li 1	oper mit: 31 09 10	
Compounds:		Concentration ug/L (ppb)			· · · ·	
Vinyl chloride Chloroethane 1, 1-Dichloroethane Methylene chloridd trans-1,2-Dichloroethane cis-1,2-Dichloroethane 1,2-Dichloroethane 1,1,1-Trichloroethane Trichloroethene Tetrachloroethene	s ene (ED()) ane	<1 <1 <1 <5 <1 <1 13 <1 <1 5 22				
£.,	• • •		•	•		
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Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	SP4 02/18/04 02/20/04 02/28/04 Water ug/L (ppb)		Client: Project; Lab ID; Data File: Instrument; Operator;	Environmental Associate Daniel's Dry Cleaners, F 402149-18 022819 D GCMS4 YA	s, Inc. &BI 402149
Surrogates: Dibromofluorometh 1,2-Dichloroethane Tolueno-d8	ane d4	% Recovery: 100 90 96	Lower Limit: 81 92 92	Upper Limit: 131 109 110	2000 - 2000 2000
Compounds:		Concentration ug/L (ppb)	· · ·	· · ·	÷، يە
Vinyl chloride Chlorosthane 1,1-Dichlorosthane Methylene chloride trans-1,2-Dichlorosthane cis-1,2-Dichlorosthane 1,2-Dichlorosthane 1,2-Dichlorosthane 1,1,1-Trichloroothane Trichlorosthene Tetrachlorosthene	hene ne (EDC)	<1 <1 <5 <1 <1 <1 2 <1 <1 <1 <1 <1 5			

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Client Sample ID: Method Bla Date Received: Not Applic Date Extracted: 02/24/04 Date Analyzed: 02/24/04 Matrix: Water Units: ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Environmental Ass Daniel's Dry Clean 04-153 mb3 022410.D GCMS4 YA	
Surrogates: Dibromofluoromethane 1,2-Dichloroethane-d4 Toluene-d8	% Recovery: 93: 87 91	Lower Limit: 70 70 70	Upper Limit: 130 130 180 180	
Compounds:	Concentration ug/L (ppb)		· · ·	
Vinyl chloride Chloroethane 1,1-Dichloroethano Methylene chloride trans-1,2-Dichloroethane cis-1,2-Dichloroethane 1,2-Dichloroethane (EDC) 1,1,1-Trichloroethane Trichloroethane Tetrachloroethane	<1 <1 <5 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1			