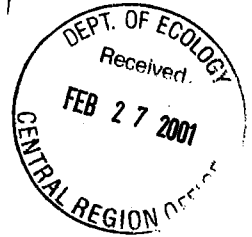




P.O. Box 1644, Zillah, WA 98953  
Phone (509) 829-6400

copy to  
HQ 4-19-01



October 20, 2000

**Northwest Petroleum Equipment**

265 Johnson Road  
Selah, WA 98942

**COPY**

#717

Attention: Mr. Jim Ingberg

**SUBJECT: CLOSURE SITE ASSESSMENT REPORT FOR THE ELLENSBURG  
SCHOOL DISTRICT #401 TRANSPORTATION FACILITY,  
ELLENSBURG, WA.**

Dear Mr. Ingberg,

Enclosed, please find the original and four (4) copies of the above mentioned report. Please transmit the original and one (1) copy to your client (the site owner/operator) and one (1) copy to each of the following regulatory agencies to fulfill reporting requirements.

Department of Ecology  
Toxics Cleanup Program  
Mail Stop PV-11  
Olympia, WA 98504-8711

&

Department of Ecology  
Toxics Cleanup Program  
15 West Yakima Avenue, Suite 200  
Yakima, WA 98902-3401

The additional copy is for your records. Comparison of analytical results with the Method A Soil Cleanup Levels of WAC 173-340-740 indicates that remedial action is required to reduce diesel/motor oil range petroleum hydrocarbon concentrations to acceptable levels beneath the original position of the diesel dispenser. In addition, comparison of the analytical results with the Method A Groundwater Cleanup Levels of WAC 173-340-720 indicates that groundwater remediation is required in the area of the gasoline/diesel UST excavation location to reduce benzene, toluene and xylene concentrations to acceptable levels.

The extent of benzene, toluene and xylene impacted groundwater is unknown. However, based upon contaminant concentrations found in groundwater, it is Sage's opinion that benzene, toluene and xylene impacted groundwater is likely limited to the vicinity of the Tank #1 through Tank #3 removal location.

The extent of diesel impacted soil beneath the original position of the diesel dispenser is also unknown. If impacted soil extends to the groundwater, it is likely that groundwater has also been impacted.

Project Number: NWP-1700

Although the existing canopy structure may hinder excavation of all accessible diesel impacted soil, Sage recommends removal of diesel impacted soil from the area of the diesel dispenser if reasonably possible. Removal of diesel impacted soil will prevent, or reduce ongoing contamination of groundwater as a result of this release.

To determine the extent of petroleum impacted groundwater will require installation of at least three (3) to four (4) groundwater monitoring wells. Upon installation of the groundwater monitoring wells, their vertical positions must be surveyed to allow precise determination of groundwater flow characteristics. This will ensure that monitoring wells have been installed downgradient of the areas of concern. Upon determination of the extent of petroleum impacted soil and groundwater, an appropriate corrective action plan and/or monitoring program may be developed.

Sage Earth Sciences, Inc. appreciates the opportunity to provide you with environmental services for your environmental projects. If you have any questions, or comments regarding the content of this document, please call us at (509) 829-6400.

Respectfully,  
SAGE EARTH SCIENCES, INC.

A handwritten signature in black ink, appearing to read 'D. Green', with a long horizontal flourish extending to the right.

David L. Green  
Geologist

cc: file

# Closure Site Assessment Report

Associated With Removal of Four UST's at the  
Ellensburg School District #401 Transportation Facility,  
Ellensburg, WA

Prepared For:

Northwest Petroleum Equipment  
265 Johnson Road  
Selah, WA 98942

Prepared By:



P.O. BOX 1644, ZILLAH, WA 98953  
PHONE (509) 829-6400

October, 2000

## Executive Summary

The Ellensburg School District #401 Transportation facility (Schroeder Transportation Center) is located at 1501 East Capitol Ave., Ellensburg, WA. The WSDOE Site Identification number is 000717. The facility is occupied by a school bus parking and maintenance facility. Four (4) Underground Storage Tanks (UST's) were located on the property. The UST's Consisted of:

- ♦ one (1) 2,000 gallon regular (leaded) gasoline tank (Tank #1),
- ♦ one (1) 12,000 gallon diesel tank (Tank #2),
- ♦ one (1) 12,000 gallon unleaded gasoline tank (Tank #3) and
- ♦ one (1) 1,500 gallon waste oil tank (Tank #4).

Three (3) UST's (Tank #1 through Tank #3), and a fuel dispenser island, were positioned in the southeast portion of the property. Tank #4 was positioned immediately east of the Schroeder Transportation Center.

Northwest Petroleum Equipment (NWP) removed the fuel dispensers on August 17, 2000. Sage Earth Sciences, Inc. (Sage) collected soil samples from beneath each dispenser and submitted them to Friedman & Bruya, Inc. (FBI) for independent laboratory analysis. Comparison of the FBI analytical results with the Method A Soil Cleanup Levels of WAC 173-340-740 indicates that no remedial action is required at the original position of the gasoline fuel dispenser. However, the comparison indicates that remedial action is required beneath the original position of the diesel dispenser to reduce diesel concentrations to acceptable levels.

NWP and Smith Excavating, Inc. (SEI) decommissioned and removed the UST's on August 24, 2000. Moin Kadri Consulting (MKC) collected seven (7) soil samples and one groundwater sample from within the Tank #1 through Tank #3 excavation. Comparison of the FBI analytical results with the Method A Soil Cleanup Levels of WAC 173-340-740 indicates that no soil remediation is required within the Tank #1 through Tank #3 excavation. However, comparison of analytical results for the groundwater sample with the Method A Groundwater Cleanup Levels of WAC 173-340-720 indicates that groundwater remediation is required at the Tank #1 through Tank #3 removal location to reduce benzene, toluene and xylene concentrations to acceptable levels.

NWP and SEI decommissioned and removed the waste oil UST (Tank #4) on August 24, 2000. MKC collected five (5) soil samples and one sample of groundwater from within the Tank #4 excavation. Comparison of the FBI analytical results with the Method A Soil & Groundwater Cleanup Levels of WAC 173-340-740 & 720 indicates that no soil or groundwater remediation is required within the Tank #4 excavation.

MKC collected three (3) soil samples from each of two (2) stockpiles of soil generated during removal of the UST's. Comparison of the FBI analytical results with the WSDOE *End Use Criteria for Petroleum Contaminated Soils* indicates that each of these stockpiles is designated as "Class 2 or lower" soil. The soil stockpiles were used as fill for the UST excavations.

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Appendix C: Analytical Methods  
Appendix D: FBI Analytical Data Reports  
Appendix E: Method A Cleanup Levels of WAC 173-340-740 & 720  
Appendix F: WSDOE End Use Criteria for Petroleum Contaminated Soils  
Appendix G: WSDOE UST Site Check/Site Assessment Checklist

## **1.0 Introduction**

### **1.1 Purpose**

The purpose of this closure site assessment report is to describe findings and actions taken associated with the removal of four (4) Underground Storage Tanks (UST's), associated fuel lines and pump island at the Schroeder Transportation Center facility located in Ellensburg, Washington. The limited investigation was performed to comply with regulatory requirements established by the Washington State Department of Ecology (WSDOE).

### **1.2 Scope of Work**

Northwest Petroleum Equipment (NWP) of Yakima, WA provided UST decommissioning services. Smith Excavating, Inc. (SEI) of Ellensburg, WA provided excavating services for UST removals. Sage Earth Sciences, Inc. (Sage) and Moin Kadri Consulting of Seattle, WA provided field screening and soil sampling services upon removal of each UST. Soil samples were submitted to Friedman and Bruya, Inc. (FBI), Seattle, WA for independent laboratory analysis.

## **2.0 Background Information**

### **2.1 Site Location**

The facility is located at 1501 East Capitol Ave., Ellensburg, WA. It is situated within the SW 1/4 of the NE 1/4, Section 1, Township 17 North, Range 18 East, Willamette Meridian. The site latitude is approximately 47° 59' 38" and the longitude is 120° 31' 18". The location of the site is shown by Figure 1.

### **2.2 Site Description & Adjacent Land Use**

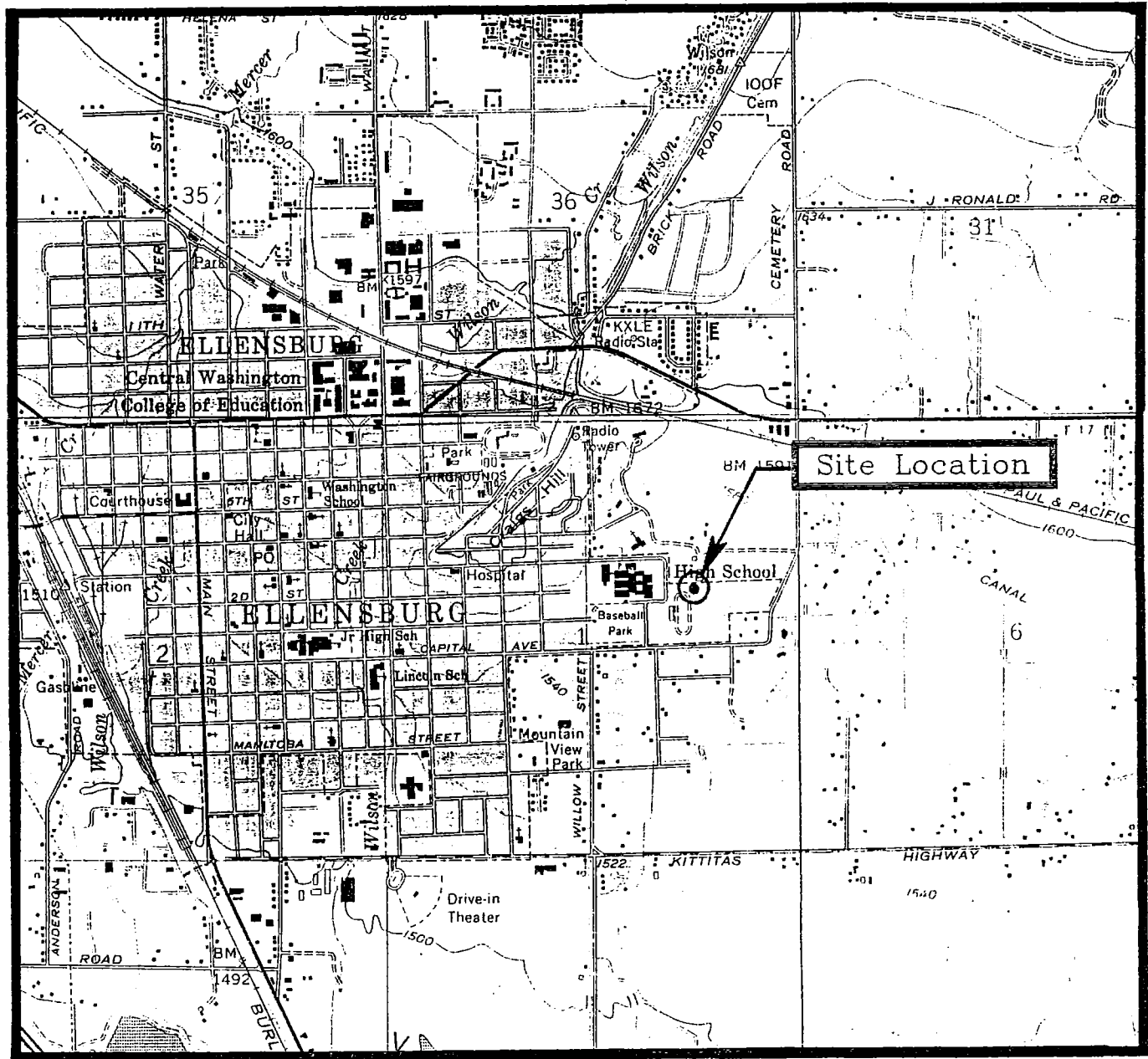
The facility is owned and operated by:

**Ellensburg School District #401**

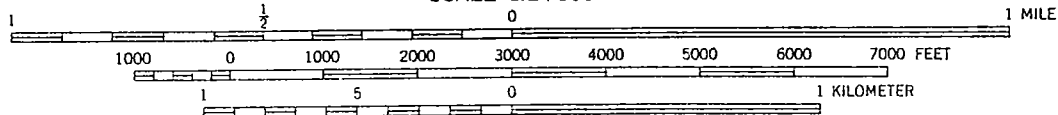
506 North Sprague  
Ellensburg, WA 98926  
(509) 925-8100

The authorized site contact is Mr. Dale Lesley. The property is currently occupied by the Ellensburg School District #401 Bus facility (Shroeder Transportation Center) as shown by Figure 2. An asphalt access road lies immediately east of the site. Valley View Elementary School lies east of the site, across the access road. Third Avenue lies north of the site. Residential dwellings lie north of the site, across Third Avenue. Ellensburg High School property, consisting of tennis courts, football and track fields lies west and south of the site.

Ellensburg School District #401 Transportation Facility, Ellensburg, WA

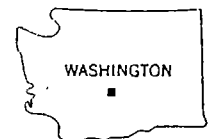


SCALE 1:24 000



CONTOUR INTERVAL 20 FEET  
DOTTED LINES REPRESENT 10-FOOT CONTOURS  
NATIONAL GEODETIC VERTICAL DATUM OF 1929

FOR SALE BY U.S. GEOLOGICAL SURVEY



QUADRANGLE LOCATION

UTM GRID AND 1978 MAGNETIC NORTH  
DECLINATION AT CENTER OF SHEET

Figure 1. Site Location Map

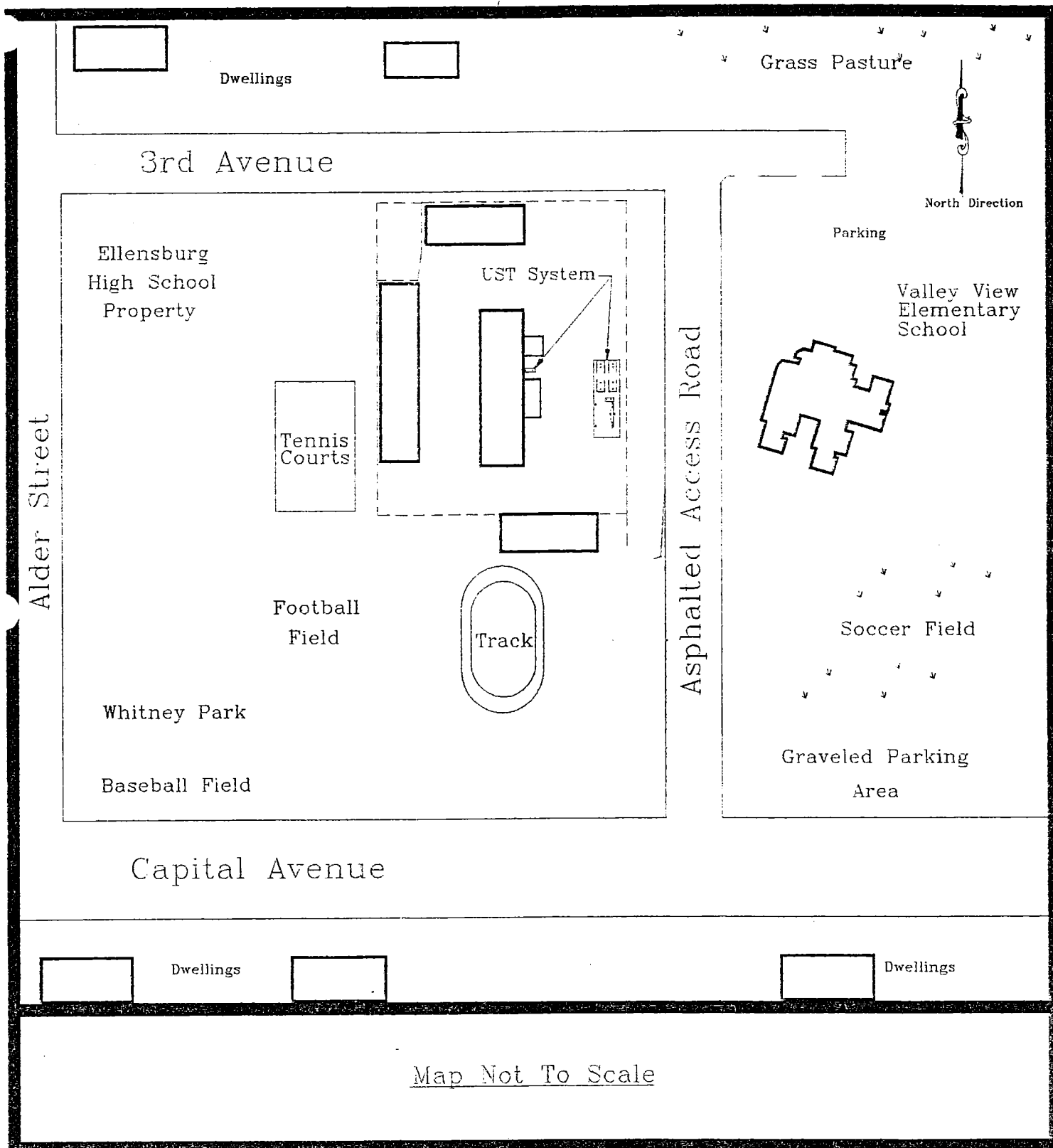


Figure 2. Site Vicinity Map



The local topography slopes gently southwest. An un-named tributary to Wilson Creek lies approximately one-tenth (1/10) of a mile south of the site.

### 2.3 UST System Information

The WSDOE Site Identification Number is 000717. Three (3) UST's were positioned in the southeast portion of the property as shown by Figure 2. These UST's were used to refuel school vehicles/equipment and consisted of:

- ♦ one (1) 2,000 gallon regular (leaded) gasoline tank (Tank #1),
- ♦ one (1) 12,000 gallon diesel tank (Tank #2) and
- ♦ one (1) 12,000 gallon unleaded gasoline tank (Tank #3).

Fuel lines extended from the UST's to a fuel dispenser island located south of the UST's as shown by Figure 3.

In addition, one (1) 1,500 gallon waste oil tank (Tank #4) was positioned immediately east of the Schroeder Transportation Center as shown by Figure 3.

### 2.4 Soils Description

Soil observed within the final remedial excavations consisted of:

- ♦ Imported fill material composed of crushed gravel aggregate. This soil underlies approximately three (3) inches of asphalt and extends to a depth of approximately one and one-half (1.5) feet Below Ground Surface (BGS). This soil unit is classified as "GW" according to the *Unified Soil Classification System*.
- ♦ Native soil consists of cobbles and small boulders up to eight (8) inches in diameter. The matrix of this unit consists of silty-sand. This soil unit underlies the imported fill material and extends to depths beyond nine (9) feet BGS. The soil is classified as "GP" according to the *Unified Soil Classification System*.

### 2.5 Hydrogeology

Groundwater was encountered during excavation activities at a depth of approximately five and one-half (5.5) feet BGS at the site. Determination of additional site hydrogeologic characteristics was not included in Sage's scope of work for this project.

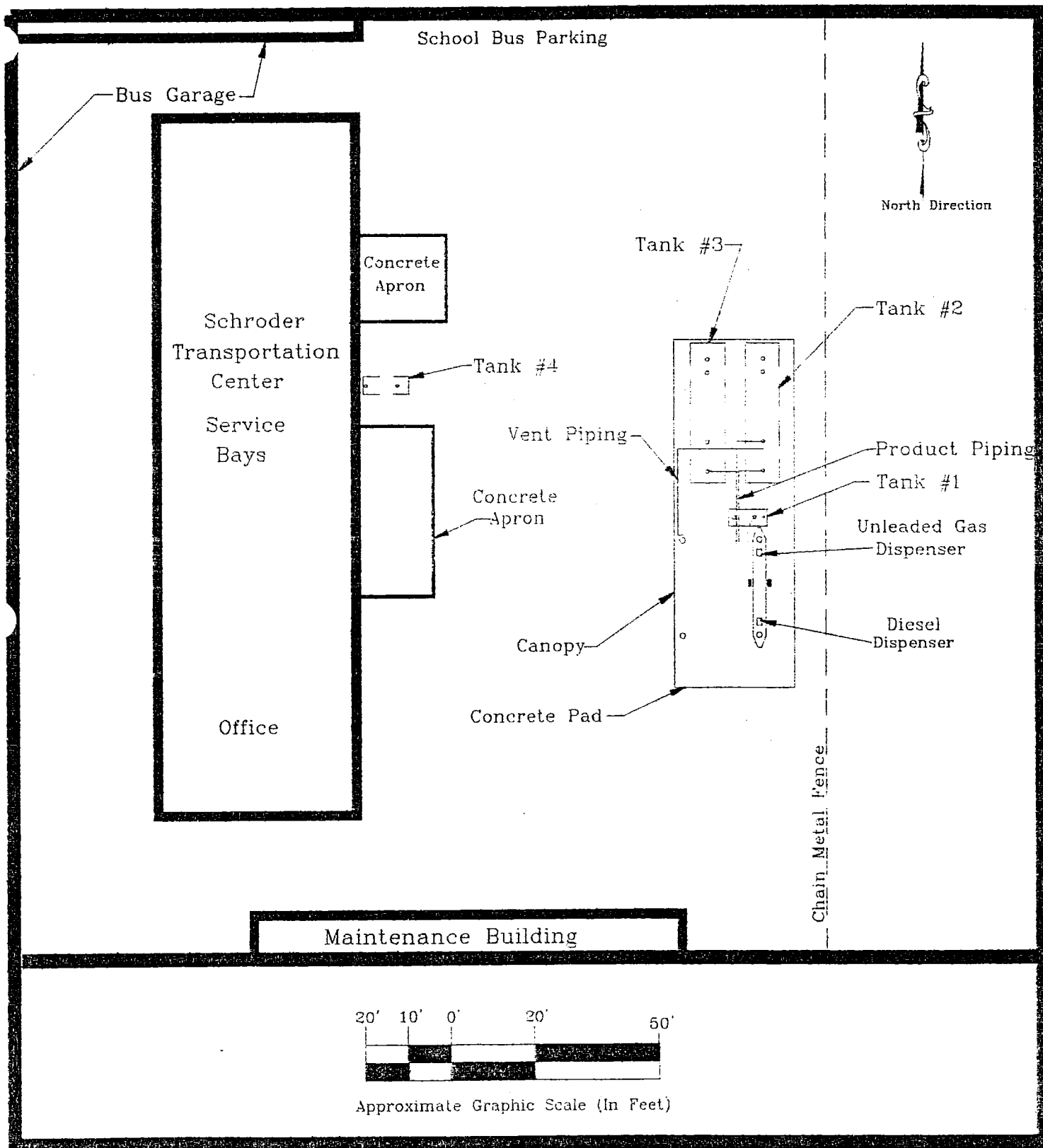


Figure 3. Site Map Showing UST System Locations

### 3.0 Closure Site Assessment

Rodney L. Heit, an environmental assessor licensed by the International Fire Code Institute performed initial closure site assessment services upon removal of the fuel dispensers. Sage retained Moin Kadri Consulting (MKC) of Seattle, WA to perform additional sampling services upon removal of the UST's. Sage and MKC collected soil samples and performed field screening using a Photo-Ionization Detector (PID). Soil sampling methods are described by Appendix A. Sample descriptions and field screening results are documented by the *Daily Field Sampling Log* (Appendix B). The analytical methods employed during this investigation are described by Appendix C.

#### 3.1 Fuel Lines and Fuel Pumps

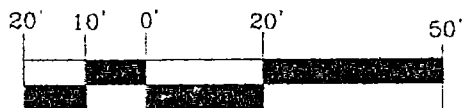
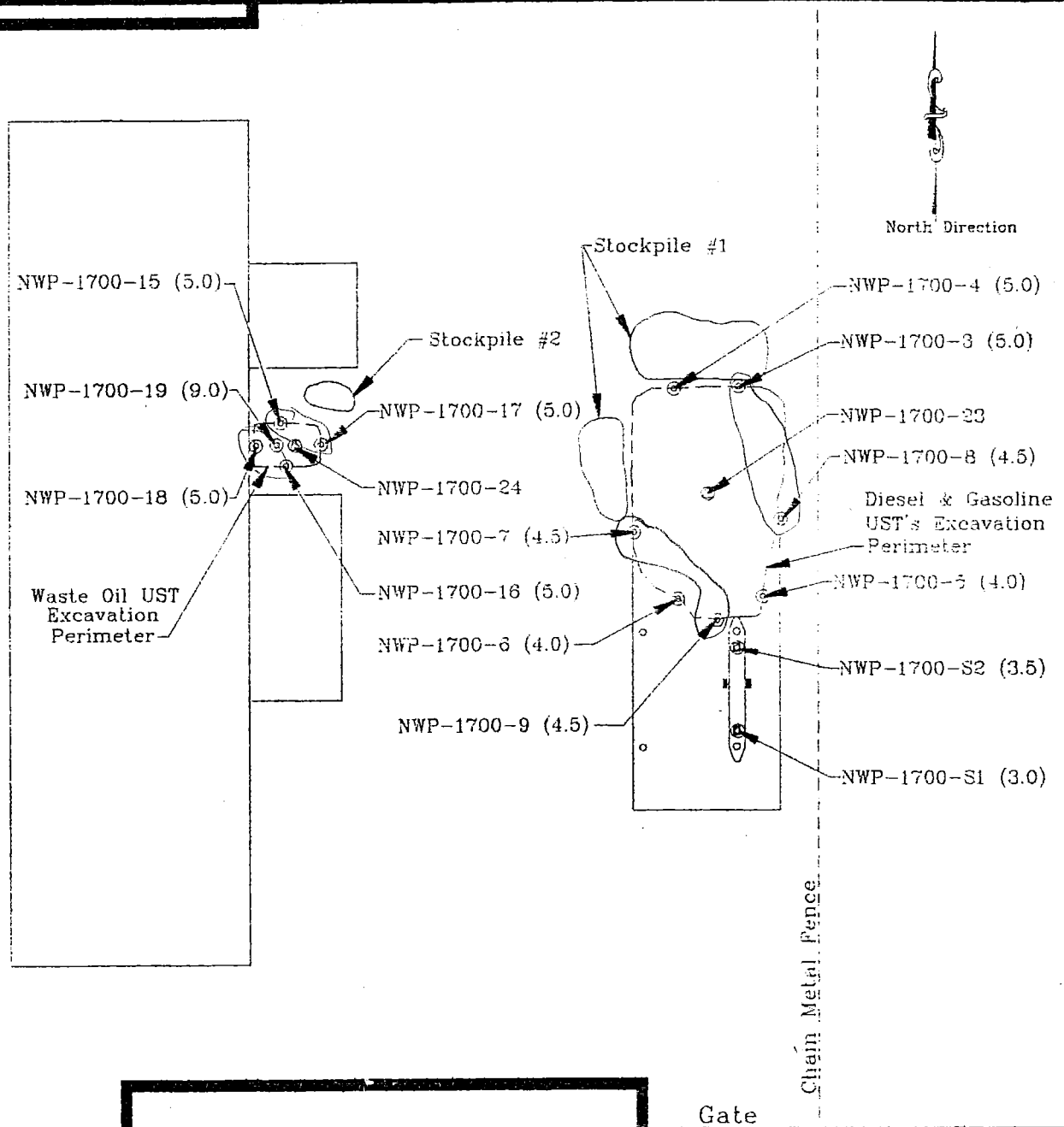
NWP decommissioned and removed the fuel dispensers on August 17, 2000. Soil staining and petroleum odors were observed beneath the diesel dispenser. Sage collected one (1) soil sample (NWP-1700-S1) from beneath the diesel dispenser and one (1) soil sample from beneath the gasoline dispenser at locations shown by Figure 4.

Analysis of the sample (NWP-1700-S1) collected beneath the diesel dispenser found diesel/motor oil range petroleum hydrocarbons at a concentration of 12,000 ppm. ✓ Comparison of the analytical results (Appendix E) with the Method A Soil Cleanup Levels (Cleanup Levels) of WAC 173-340-740 (Appendix F) indicates that soil remediation is required beneath the original position of the diesel dispenser.

Analysis of the sample (NWP-1700-S2) collected beneath the gasoline dispenser found:

- ♦ no detectable (less than 1 part per million (ppm)) gasoline range petroleum hydrocarbons,
- ♦ no detectable (less than 0.02 ppm) benzene,
- ♦ no detectable (less than 0.02 ppm) toluene,
- ♦ no detectable (less than 0.02 ppm) ethylbenzene,
- ♦ no detectable (less than 0.02 ppm) total xylenes and
- ♦ no detectable (less than 27 ppm) total lead.

Comparison of the analytical results (Appendix D) with the Method A Soil Cleanup Levels (Cleanup Levels) of WAC 173-340-740 (Appendix E) indicates that no soil remediation is required beneath the original position of the gasoline dispenser.



Approximate Graphic Scale (In Feet)

### LEGEND

- ⊙ = Soil Sampling Location
- ⊗ = Groundwater Sampling Location

Note: Sampling depths are indicated in ( ) parenthesis in feet.

Figure 4. Closure Site Assessment Sampling Locations

### 3.2 Tank #1 through Tank #3 Excavation

NWP decommissioned and removed the gasoline and diesel UST's (Tank #1 through Tank #3) on August 24, 2000. These UST's were removed from a single excavation. Visual inspection of the UST's found them to be in good condition with slight corrosion on the tank surfaces. No holes were observed in the UST's. The soil generated during removal of the UST's (Soil Stockpile #1) was temporarily stockpiled at the site. No petroleum staining or odors were observed within the UST excavation.

MKC collected seven (7) soil samples (NWP-1700-3 through NWP-1700-9) and one sample (NWP-1700-23) of groundwater from within the UST excavation at the locations shown by Figure 4. The following samples were composited at the FBI laboratory for Hydrocarbon Identification (HCID) analyses:

- ♦ NWP-1700-3 & 8 and
- ♦ NWP-1700-7 & 9.

Analysis of the composite samples found:

- ♦ no detectable (less than 20 ppm) gasoline range petroleum hydrocarbons,
- ♦ no detectable (less than 50 ppm) diesel range petroleum hydrocarbons and
- ♦ no detectable (less than 100 ppm) heavy oil range petroleum hydrocarbons.

Additional analysis of samples NWP-1700-4, 6 & 7 found total lead at concentrations ranging from 2.4 ppm up to 7.3 ppm.

Comparison of the analytical results (Appendix D) with the Method A Soil Cleanup Levels (Cleanup Levels) of WAC 173-340-740 (Appendix E) indicates that no soil remediation is required at the Tank #1 through Tank #3 removal location.

Analysis of the groundwater sample (NWP-1700-23) found:

- ♦ no detectable (less than 250 parts per billion (ppb)) diesel range petroleum hydrocarbons,
- ♦ gasoline range petroleum hydrocarbons at a concentration of 220 ppb,
- ♦ benzene at a concentration of 21 ppb,  $> 5$
- ♦ toluene at a concentration of 51 ppb,  $> 40$
- ♦ ethylbenzene at a concentration of 4.6 ppb,
- ♦ total xylenes at a concentration of 24 ppb.  $> 20$

Comparison of the analytical results (Appendix D) with the Method A Groundwater Cleanup Levels (Cleanup Levels) of WAC 173-340-720 (Appendix E) indicates that groundwater remediation is required at the Tank #1 through Tank #3 removal location to reduce benzene, toluene and xylene concentrations to acceptable levels.

### 3.3 Tank #4 Excavation

NWP and SEI decommissioned and removed the waste oil UST (Tank #4) on August 24, 2000. Visual inspection of the UST found it to be in good condition with slight corrosion on the tank surface. No holes were observed in the UST's. The soil generated during removal of the UST's (Soil Stockpile #2) was temporarily stockpiled at the site. No petroleum staining or odors were observed within the UST excavation.

MKC collected five (5) soil samples (NWP-1700-15 through NWP-1700-19) and one sample (NWP-1700-24) of groundwater from within the UST excavation at the locations shown by Figure 4. The following samples were composited at the FBI laboratory for Hydrocarbon Identification (HCID) analyses:

- ♦ NWP-1700-15 & 17 and
- ♦ NWP-1700-16 & 18.

Analysis of the composite samples found:

- ♦ no detectable (less than 20 ppm) gasoline range petroleum hydrocarbons,
- ♦ no detectable (less than 50 ppm) diesel range petroleum hydrocarbons and
- ♦ no detectable (less than 100 ppm) heavy oil range petroleum hydrocarbons.

HCID analysis of a soil sample (NWP-1700-19) collected from the floor of this UST excavation found:

- ♦ no detectable (less than 20 ppm) gasoline range petroleum hydrocarbons,
- ♦ no detectable (less than 50 ppm) diesel range petroleum hydrocarbons and
- ♦ no detectable (less than 100 ppm) heavy oil range petroleum hydrocarbons.

Comparison of the analytical results (Appendix D) with the Method A Soil Cleanup Levels (Cleanup Levels) of WAC 173-340-740 (Appendix E) indicates that no soil remediation is required at the Tank #1 through Tank #3 removal location.

Analysis of the groundwater sample (NWP-1700-24) found no detectable (less than 250 ppb) diesel and/or motor oil range petroleum hydrocarbons.

Comparison of the analytical results (Appendix D) with the Method A Groundwater Cleanup Levels (Cleanup Levels) of WAC 173-340-720 (Appendix E) indicates that no groundwater remediation is required at the Tank #4 removal location.

#### 4.0 Disposition of Project Generated Wastes

##### 4.1 Soil Stockpile #1

Soil Stockpile #1 is composed of approximately 100 cubic yards of apparently non-impacted soil generated during removal of Tank #1 through Tank #3. MKC collected five (5) soil samples (NWP-1700-10 through NWP-1700-14) from this stockpile and submitted them to FBI for laboratory analysis.

Analysis of samples NWP-1700-11 through NWP-1700-13 found:

- ♦ no detectable (less than 20 ppm) gasoline range petroleum hydrocarbons,
- ♦ no detectable (less than 50 ppm) diesel range petroleum hydrocarbons,
- ♦ no detectable (less than 100 ppm) heavy oil range petroleum hydrocarbons and
- ♦ total lead at concentrations ranging from 4.1 ppm up to 5.9 ppm.

Comparison of the analytical results (Appendix D) with the WSDOE *End use Criteria for Petroleum Contaminated Soils* (Appendix F) indicates that this soil stockpile is designated as "Class 2 Soil" or lower.

For Class 2 Soils, the WSDOE recommends that the soil may be used for:

- ♦ backfill at the cleanup site,
- ♦ fill in commercial or industrial areas,
- ♦ cover or fill in permitted landfills,
- ♦ road subgrade or other road construction fill.

However, fill in or near wetlands, surface water, groundwater, drinking water wells, utility trenches as residential topsoil is NOT recommended. Soil Stockpile #1 was used to backfill the UST excavation.

##### 4.2 Soil Stockpile #2

Soil Stockpile #2 is composed of approximately fifty (50) cubic yards of apparently non-impacted soil generated during removal of Tank #4. MKC collected three (3) soil samples (NWP-1700-20 through NWP-1700-22) from this stockpile and submitted them to FBI for laboratory analysis. FBI analysis of these samples found:

- ♦ no detectable (less than 20 ppm) gasoline range petroleum hydrocarbons,
- ♦ no detectable (less than 50 ppm) diesel range petroleum hydrocarbons and
- ♦ no detectable (less than 100 ppm) heavy oil range petroleum hydrocarbons.

Comparison of the analytical results (Appendix D) with the WSDOE *End use Criteria for Petroleum Contaminated Soils* (Appendix F) indicates that this soil stockpile is designated as "Class 2 Soil" or lower.

For Class 2 Soils, the WSDOE recommends that the soil may be used for:

- ♦ backfill at the cleanup site,
- ♦ fill in commercial or industrial areas,
- ♦ cover or fill in permitted landfills,
- ♦ road subgrade or other road construction fill.

However, fill in or near wetlands, surface water, groundwater, drinking water wells, utility trenches as residential topsoil is NOT recommended. Soil Stockpile #2 was used to backfill the UST excavation.

Upon completion of the project, Sage completed copies of the WSDOE *UST Site Check/Site Assessment Checklist*. This document is attached as Appendix G.

## 5.0 Limitations

In performance of this project, Sage Earth Sciences has conducted its activities in accordance with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. The conclusions and recommendations are based upon our field observations and independent laboratory analyses. Since the scope of work for this project is confined to closure site assessment of UST excavations, this document does not imply that the property is free of other environmental constraints. This report is solely for the use and information of our client. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and other parameters indicated. Sage Earth Sciences, Inc. is not responsible for the impacts of changes in environmental standards, practices, or regulations subsequent to the performance of services. Sage Earth Sciences, Inc. does not warrant the accuracy of information supplied by others, nor use of segregated portions of this report. Sage Earth Sciences, Inc. assumes no liability for conditions we were not authorized to evaluate, or conditions not generally recognized as predictable when services were performed.



## Appendix A

## **Soil Sampling Methodology**

Soil sampling locations were chosen at locations considered representative of soil conditions. To collect representative soil samples, Sage Earth Sciences uses the methodology outlined below.

1. Select a new sample jar whose volume is adequate for the appropriate analysis.
2. Remove a minimum of six (6) inches of soil to minimize the loss of volatile compounds.
3. Immediately transfer soil to the sample container, using the container itself to collect the sample. Using new nitrile gloves, pack the soil tightly into the container to prevent the loss of volatile compounds. Ensure that the container is filled completely to exclude any airspace in the sample.
4. Label the jar with a unique identification number, the analytical procedure to be used, the time and date of sample collection and the person who collected the sample.
5. Enter the sample on the Chain-of-Custody form and the Daily Field Sampling Log.
6. Place the sample in wet ice to cool the samples to approximately four (4) degrees Celsius.
7. Place the samples in a shipping cooler packed with absorbent material and blue ice for shipment.
8. Secure the Chain-of-Custody form to the underside of the cooler lid in a sealable plastic bag with tape.
9. Upon completion of sampling activities, secure the lid of the cooler with strapping tape and affix custody seals across the lid/cooler interface. Place appropriate shipping waybills atop the cooler.
10. Ship the samples to the laboratory via commercial courier.

## **Appendix B**

## Daily Field Sampling Log

Project # NWP-1700

Date 8-17-00

Sampler Rodney Heit

Sheet 15 of 1

[illegible]Ambient Vapors NA UnitsTLC Standards NA

 = Soil Sample

SP = Soil Stockpile Sample

W = Water Sample

GW = Groundwater Sample

D = Duplicate Sample

TB = Travel Blank

## Daily Field Sampling Log

Project # Schroeder Transp. Cont.

Date 8/25/00

Sampler Mou Kadi

Sheet 1 of 1

Time	Sample #	Location	Matrix	Staining	Odors	Depth	TOV	TLC
	NWP-1700-3	north end of diesel tank exc. wall	Soil		0 ppb	5'		
	4	north end of gas tank exc. wall				5'		
	5	east wall of excavation (south end)				4		
	6	west wall of excavation (south end)				4		
	7	west wall of excavation				4.5		
	8	East wall of excavation				4.5		
	9	South wall of excavation				4.5		
	10	stockpile						
	11							
	12							
	13				0.7 ppm			
	14				0 ppm			
	15	waste oil tank excavation north wall				5'		
	16	" " " " south wall						
	17	" " " " East wall						
	18	" " " " West wall						
	19	" " " " Bottom of excav				29'		
	20	" " stockpile sample						
	21	" " " "						
	22	" " " "						
	23	gas/diesel tank excavation	water					
	24	waste oil tank excavation	water					

Ambient Vapors \_\_\_\_\_ Units

TLC Standards

---

S = Soil Sample

SP = Soil Stockpile Sample

W = Water Sample

GW = Groundwater Sample

D = Duplicate Sample

TB = Travel Blank

## **Appendix C**

### **Analytical Methods**

For confirmatory laboratory analysis, Sage submitted representative soil samples to:

**Friedman & Bruya, Inc.**  
3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282

The analytical methods requested for selected soil samples consist of:

- ♦ NWTPH-HCID (Hydrocarbon Identification),
- ♦ NWTPH-Gx (Gasoline range petroleum hydrocarbons),
- ♦ NWTPH-Dx (Diesel range petroleum hydrocarbons extended to include motor oil range hydrocarbons),
- ♦ Method 8021B (Benzene, Toluene, Ethylbenzene and Total Xylenes) and
- ♦ Method 6010 (Total Lead).

## **Appendix D**



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Charlene Jensen, M.S.  
Bradley T. Benson, B.S.  
Kurt Johnson, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
FAX: (206) 283-5044  
e-mail: fbi@isomedia.com

August 25, 2000

Rodney Heit, Project Manager  
Sage Earth Sciences, Inc.  
601 Glenwood Drive  
Zillah, WA 98953

Dear Mr. Heit:

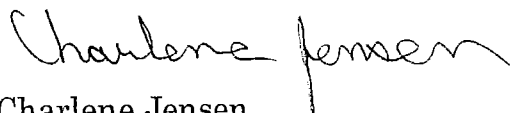
Included are the results from the testing of material submitted on August 18, 2000 from your NWP-1700 project. Sample NWP-1700-S2 was sent to NVL Laboratories for total lead analysis. The report generated by NVL will be forwarded to your office upon receipt.

Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Charlene Jensen  
Chemist

Enclosures  
SES0825R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/25/00  
Date Received: 08/18/00  
Project: NWP-1700  
Date Extracted: 08/22/00  
Date Analyzed: 08/22/00

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLE  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING METHOD NWTPH-Dx**

**Extended to Include Motor Oil Range Compounds**

Results Reported on a Dry Weight Basis

Results Reported as  $\mu\text{g/g}$  (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Extended</u>	<u>Surrogate</u> (% Recovery)
NWP-1700-S1 008094-01	12,000 d	ip
Method Blank	<50	95

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

d - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/25/00  
Date Received: 08/18/00  
Project: NWP-1700  
Date Extracted: 08/21/00  
Date Analyzed: 08/21/00

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLE  
FOR BENZENE, TOLUENE, ETHYLBENZENE,  
XYLENES AND TPH AS GASOLINE  
USING EPA METHOD 8021B AND NWTPH-Gx  
Results Reported on a Dry Weight Basis  
Results Reported as  $\mu\text{g/g}$  (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate</u> (% Recovery)
NWP-1700-S2 008094-02	<0.02	<0.02	<0.02	<0.02	<1	95
Method Blank	<0.02	<0.02	<0.02	<0.02	<1	94

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

Date of Report: 08/25/00

Date Received: 08/18/00

Project: NWP-1700

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR BENZENE, TOLUENE, ETHYLBENZENE,  
XYLENES AND TPH AS GASOLINE  
USING EPA METHOD 8021B AND NWTPH-Gx**

Laboratory Code: 008068-03 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD	Acceptance Criteria
Benzene	µg/g (ppm)	<0.02	<0.02	nm	0-20
Toluene	µg/g (ppm)	<0.02	<0.02	nm	0-20
Ethylbenzene	µg/g (ppm)	<0.02	<0.02	nm	0-20
Xylenes	µg/g (ppm)	<0.06	<0.06	nm	0-20
Gasoline	µg/g (ppm)	<1	<1	nm	0-20

Laboratory Code: 008068-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	RPD
Benzene	µg/g (ppm)	1	<0.02	79	74	55-104	7
Toluene	µg/g (ppm)	1	<0.02	80	77	56-107	4
Ethylbenzene	µg/g (ppm)	1	<0.02	83	80	57-108	4
Xylenes	µg/g (ppm)	3	<0.06	83	81	53-111	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD
Benzene	µg/g (ppm)	1	94	98	57-118	4
Toluene	µg/g (ppm)	1	94	98	67-114	4
Ethylbenzene	µg/g (ppm)	1	94	98	68-114	4
Xylenes	µg/g (ppm)	3	95	99	68-112	4
Gasoline	µg/g (ppm)	10	96	90	68-113	6

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

Date of Report: 08/25/00

Date Received: 08/18/00

Project: NWP-1700

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING METHOD NWTPH-Dx**

Laboratory Code: 008098-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Diesel Extended	µg/g (ppm)	<50	<50	nm	0-20

Laboratory Code: 008098-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Diesel Extended	µg/g (ppm)	500	<50	112	136	60-187	19

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	Acceptance Criteria
Diesel Extended	µg/g (ppm)	500	111	67-140

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

27 00.81.8 I2



*P.O. Box 1644  
601 Glenwood Drive  
Zillah, WA 98953  
Phone (509) 829-6400  
Fax (509) 829-6443*

## CHAIN-OF-CUSTOMY FORM

Project Name Ellersburg Maintenance Center  
Project Number NWP-1700  
Sampler Rodney Hest  
Date 8-17-00 Time 11:00 AM - 3:56 PM  
Destination FBI

[illegible]

Relinquished by: Lodney L. Hest Date: 8-17-00  
Firm: Sage Earth Sciences Inc. Time: 3:56 PM

Received By: D. Olson Date: 8/18/00  
Firm: EdB, Inc. Time: 10:30A

Relinquished by:  
Firm:

Date: \_\_\_\_\_  
Time: \_\_\_\_\_

Received By: \_\_\_\_\_  
Firm: \_\_\_\_\_

Date: \_\_\_\_\_  
Time: \_\_\_\_\_

Container	Condition:	Good	Violated
1	Good		
2	Good		
3	Good		
4	Good		
5	Good		
6	Good		
7	Good		
8	Good		
9	Good		
10	Good		
11	Good		
12	Good		
13	Good		
14	Good		
15	Good		
16	Good		
17	Good		
18	Good		
19	Good		
20	Good		
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32	Good		
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34	Good		
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36	Good		
37	Good		
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80	Good		
81	Good		
82	Good		
83	Good		
84	Good		
85	Good		
86	Good		
87	Good		
88	Good		
89	Good		
90	Good		
91	Good		
92	Good		
93	Good		
94	Good		
95	Good		
96	Good		
97	Good		
98	Good		
99	Good		
100	Good		

Cool ( $4^{\circ}\text{C}$ ): Yes No

Custody Seals: Intact, Violated

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Charlene Jensen, M.S.  
Bradley T. Benson, B.S.  
Kurt Johnson, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
FAX: (206) 283-5044  
e-mail: fbi@isomedia.com

August 31, 2000

Dave Green, Project Manager  
Sage Earth Sciences, Inc.  
601 Glenwood Drive  
Zillah, WA 98953

Dear Mr. Green:

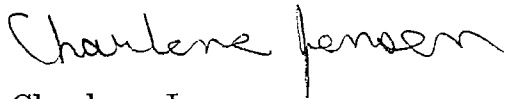
Included are the results from the testing of material submitted on August 28, 2000 from your NWP-1700 project. Please note that insufficient sample was available for NWTPH-G/BTEX analysis of sample NWP-1700-24.

Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Charlene Jensen  
Chemist

Enclosures  
SES0831R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/31/00  
 Date Received: 08/28/00  
 Project: NWP-1700  
 Date Extracted: 08/29/00  
 Date Analyzed: 08/30/00

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES  
 FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID  
 Results Reported as Not Detected (ND) or Detected (D)**

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY  
 THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE  
 INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL  
 PRESENT

<u>Sample ID</u> Laboratory ID	<u>Gasoline</u>	<u>Diesel</u>	<u>Heavy Oil</u>	<u>Surrogate</u> (% Recovery)
NWP-1700-3/8 Comp. 008128-01/06 Comp.	ND	ND	ND	103
NWP-1700-7/9 Comp. 008128-05/07 Comp.	ND	ND	ND	119
NWP-1700-11 008128-09	ND	ND	ND	108
NWP-1700-12 008128-10	ND	ND	ND	93
NWP-1700-13 008128-11	ND	ND	ND	83
NWP-1700-15/17 Comp. 008128-13/15 Comp.	ND	ND	ND	84
NWP-1700-16/18 Comp. 008128-14/16 Comp.	ND	ND	ND	95
NWP-1700-19 008128-17	ND	ND	ND	91
NWP-1700-20 008128-18	ND	ND	ND	93
NWP-1700-21 008128-19	ND	ND	ND	95
NWP-1700-22 008128-20	ND	ND	ND	89
Method Blank	ND	ND	ND	100

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 100 mg/kg heavy oil.



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/31/00  
Date Received: 08/28/00  
Project: NWP-1700  
Date Extracted: 08/29/00  
Date Analyzed: 08/30/00

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE  
FOR BENZENE, TOLUENE, ETHYLBENZENE  
XYLENES AND TPH AS GASOLINE  
USING EPA METHOD 8021B AND NWTPH-Gx

Results Reported as µg/L (ppb)

<u>Sample ID</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u>
Laboratory ID						
NWP-1700-23 008128-21	21	51	4.6	24	220	101
Method Blank	<0.5	<0.5	<0.5	<0.5	<50	97

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/31/00  
Date Received: 08/28/00  
Project: NWP-1700  
Date Extracted: 08/28/00  
Date Analyzed: 08/29/00

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING METHOD NWTPH-Dx  
Extended to Include Motor Oil Range Compounds  
Results Reported as  $\mu\text{g/L}$  (ppb)**

<u>Sample ID</u> Laboratory ID	<u>Diesel Extended</u>	<u>Surrogate</u> (% Recovery)
NWP-1700-23 008128-21	<250	51
NWP-1700-24 008128-22	<250	71
Method Blank	<250	83

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/31/00

Date Received: 08/28/00

Project: NWP-1700

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE,  
XYLENES AND TPH AS GASOLINE  
USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	Relative Percent Difference
Benzene	µg/L (ppb)	50	97	94	78-117	3
Toluene	µg/L (ppb)	50	97	93	73-131	4
Ethylbenzene	µg/L (ppb)	50	97	93	71-135	4
Xylenes	µg/L (ppb)	150	99	95	74-134	4
Gasoline	µg/L (ppb)	1,000	98	90	65-145	9

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/31/00

Date Received: 08/28/00

Project: NWP-1700

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED  
USING EPA METHOD 8015M

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	Relative Percent Difference
Diesel Extended	µg/L (ppb)	5,000	107	99	58-142	8

RECEIVED

AUG 31 2000

**NVL Laboratories, Inc.**

4708 Aurora Ave. N., Seattle, WA 98103  
Tel: 206.547.0100 • Fax: 206.634.1936

AIHA ELLAP  
#101861

Batch#:00- 10975.00

**ANALYSIS REPORT**

Total Lead (Pb)

Client: Friedman & Bruya, Inc.  
3012 16th Ave. W.  
Seattle, WA 98119-2029

Matrix: Soil  
Method: EPA 7420  
Date Received: August 25, 2000  
Date Reported: August 28, 2000

Attention: Charlene Jensen

Total samples: 1

Project #: B-808

Location: 008094

Sample #	Lab ID	Sample Wt.(g)	LoD in mg/kg	Results in mg/kg
NWP-1700-S 2	20087085	.50270	27.00	<27

Method Blank <27.00mg/kg

Post Digestion Matrix Spike: 102%

Instrument/Bench Run: 20082805

mg/kg = Milligrams per kilogram  
PPM = Parts per million  
LoD = Limit of Detection  
'<' = Below the detection limit

NOTES: All standard and spike values are reported for quality control purposes. Results for QC samples represent Percent Recovery.

Analyst: Jim Haury

Date Analyzed: August 28, 2000

Reviewed by:

  
Nick Ly, Technical Director

00-10975

**Send Report To:**

SITE NO.

PROJECT NAME

PURCHASE ORDER #

008094

~~B-808~~ B-808

**SAMPLERS** (signature)

### PROJECT LOCATION

REMARKS

### SAMPLE DISPOSAL INFORMATION

Please fax results by 8-31  
4 day TAT

- ☐ Dispose after 30 days
- ☐ Return Samples
- ☐ Call for Instructions

**Sample #**

Date/Time  
Sampled

Type of Sample

# of  
Jars

Lab  
Sample #

### Analyses Requested

NWP-1700-52

8-17-00

soil

1

Total Lead  
by ~~6070~~ AA

**SIGNATURE**

PRINT NAME

COMPANY

Date \_\_\_\_\_

Time

Relinquished by:

Charlene Jensen

Charlene Jensen

Feb 21

8-25-00

11:30 am

Received by:

Thomas Lee

Thomas Gruber

NU

8/25/00

3:00 p.m.

Relinquished by:

Received by:



P.O. Box 1647  
601 Glenwood Drive  
Zillah, WA 98953  
Phone (509) 829-6400  
Fax (509) 829-6443

**RUSH**  
KID

Sample Number	Matrix	Number of Containers	Container Size	Analyses Requested
NWP-1700-3	Soil	1	01	✓
4	✓	1	02	
5	✓	1	03	
6	✓	1	04	
7	✓	1	05	✓
8	✓	1	06	✓
9	✓	1	07	✓
10	✓	1	08	
11	✓	1	09	✓
12	✓	1	10	✓
13	✓	1	11	✓
14	✓	1	12	
15	✓	1	13	✓
16	✓	1	14	✓
NWP-1700-17	✓	1	15	✓

Analyses Requested

Composites with NWP-1700-8

Composites with NWP-1700-9

Composites with NWP-1700-3

Composites with NWP-1700-7

Composites with NWP-1700-17

Composites with NWP-1700-18

Composites with NWP-1700-15

Charles per Gove  
Shed 8-28-80

Relinquished by: Moch CAD/24  
Firm: Date: 8/28/00  
Time: 9:14am

Received By: EPC  
Firm: Date: 8/28/00  
Time: 9:19

Relinquished by:  
Firm: Date:  
Time:

Received By:  
Firm: Date:  
Time:

Container Condition: Good Violated Cool (4°C): Yes No Custody Seals: Intact Violated



*Earth Sciences, Inc.*

P.O. Box 1644  
601 Glenwood Drive  
Zillah, WA 98953  
Phone (509) 829-6400  
Fax (509) 829-6443

~~CHAIN-OF-CUSTODY FORM~~

Project Name Schweizer Transportable Radio  
 Project Number \_\_\_\_\_  
 Sampley Alvin Ketch  
 Date 5/8/60 Time \_\_\_\_\_  
 Destination Frischman & Sons Radio

[illegible]



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Charlene Jensen, M.S.  
Bradley T. Benson, B.S.  
Kurt Johnson, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
FAX: (206) 283-5044  
e-mail: fbi@isomedia.com

September 13, 2000

Dave Green, Project Manager  
Sage Earth Sciences, Inc.  
601 Glenwood Drive  
Zillah, WA 98953

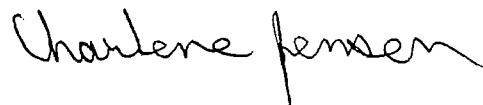
Dear Mr. Green:

Included are the results from the additional testing of material submitted on August 28, 2000 from your NWP-1700 project.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Charlene Jensen  
Chemist

Enclosures  
SES0913R.DOC

Date of Report: 09/13/00  
Date Received: 08/28/00  
Project: NWP-1700  
Date Extracted: 09/05/00  
Date Analyzed: 09/05/00

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES  
FOR TOTAL METALS  
BY INDUCTIVELY COUPLED PLASMA (ICP)  
(METHOD 6010)**

Results Reported as  $\mu\text{g/g}$  (ppm)

<u>Sample ID</u> Laboratory ID	<u>Total Lead</u>
NWP-1700-4 008128-02	2.4
NWP-1700-6 008128-04	7.3
NWP-1700-7 008128-05	3.4
NWP-1700-11 008128-09	5.9
NWP-1700-12 008128-10	4.9
NWP-1700-13 008128-11	4.1
Method Blank	<2.0

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

Date of Report: 09/13/00

Date Received: 08/28/00

Project: NWP-1700

**QUALITY ASSURANCE RESULTS  
FOR TOTAL METALS BY  
INDUCTIVELY COUPLED PLASMA (ICP)  
(METHOD 6010)**

Laboratory Code: 009005-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Lead	µg/g (ppm)	20	22	4	0-20

Laboratory Code: 009005-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	RPD
Lead	µg/g (ppm)	10	20	84	82	50-150	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD
Lead	µg/g (ppm)	10	119	117	80-120	2



P.O. Box 1647  
601 Glenwood Drive  
Zillah, WA 98953  
Phone (509) 829-6400  
Fax (509) 829-6443

CHAIN-OF-CUSTODY FORM  
Project Name Schmiedt, Isaac  
Project Number \_\_\_\_\_  
Sampler Allen Kester  
Date 8/28/00 Time \_\_\_\_\_  
Destination Environmental Agency Lab

**Rush**

Sample Number	Matrix	Number of Containers	Container Size	Analyses Requested
NWP-1700-3	Soil	1	61	Composite with NWP-1700-8
4			62	
5			63	
6			64	
7			65	Composite with NWP-1700-9
8			66	Composite with NWP-1700-3
9			67	Composite with NWP-1700-7
10			68	
11			69	
12			70	
13			71	
14			72	
15			73	Composite with NWP-1700-17
16			74	Composite with NWP-1700-18
NWP-1700-17			75	Composite with NWP-1700-15

Relinquished by: Moan Kester Date: 8/28/00  
Firm: FR Time: 9:19

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_  
Firm: \_\_\_\_\_ Time: \_\_\_\_\_

Container Condition: Good Violated  
Cool (4°C): Yes No  
Custody Seals: Intact Violated

## **Appendix E**

Method A Cleanup Levels - Soil <sup>a</sup>

Hazardous Substance	CAS Number	Cleanup Level
Arsenic	7440-38-2	20.0 mg/kg <sup>b</sup>
Benzene	71-43-2	0.5 mg/kg <sup>c</sup>
Cadmium	7440-43-9	2.0 mg/kg <sup>d</sup>
Chromium	7440-47-3	100.0 mg/kg <sup>e</sup>
DDT	50-29-3	1.0 mg/kg <sup>f</sup>
Ethylbenzene	100-41-4	20.0 mg/kg <sup>g</sup>
Ethylene dibromide	106-93-4	0.001 mg/kg <sup>h</sup>
Lead	7439-92-1	250.0 mg/kg <sup>i</sup>
Lindane	58-89-9	1.0 mg/kg <sup>j</sup>
Methylene chloride	75-09-2	0.5 mg/kg <sup>k</sup>
Mercury (inorganic)	7439-97-6	1.0 mg/kg <sup>l</sup>
PAHs (carcinogenic)		1.0 mg/kg <sup>m</sup>
PCB Mixtures		1.0 mg/kg <sup>n</sup>
Tetrachloroethylene	127-18-4	0.5 mg/kg <sup>o</sup>
Toluene	108-88-3	40.0 mg/kg <sup>p</sup>
TPH (gasoline)		100.0 mg/kg <sup>q</sup>
TPH (diesel)		200.0 mg/kg <sup>r</sup>
TPH (other)		200.0 mg/kg <sup>s</sup>
1,1,1 Trichloroethane	71-55-6	20.0 mg/kg <sup>t</sup>
Trichloroethylene	79-01-5	0.5 mg/kg <sup>u</sup>
Xylenes	1330-20-7	20.0 mg/kg <sup>v</sup>

Table 1  
Method A Cleanup Levels – Ground Water<sup>a</sup>

Hazardous Substance	CAS Number	Cleanup Level
Arsenic	7440-38-2	5.0 ug/liter <sup>b</sup>
Benzene	71-43-2	5.0 ug/liter <sup>c</sup>
Cadmium	7440-43-9	5.0 ug/liter <sup>d</sup>
Chromium (Total)	7440-47-3	50.0 ug/liter <sup>e</sup>
DDT	50-29-3	0.1 ug/liter <sup>f</sup>
1,2 Dichloroethane	107-06-2	5.0 ug/liter <sup>g</sup>
Ethylbenzene	100-41-4	30.0 ug/liter <sup>h</sup>
Ethylene dibromide	106-93-4	0.01 ug/liter <sup>i</sup>
Gross Alpha Particle Activity		15.0 pCi/liter <sup>j</sup>
Gross Beta Particle Activity		4.0 mrem/yr <sup>k</sup>
Lead	7439-92-1	5.0 ug/liter <sup>l</sup>
Lindane	58-89-9	0.2 ug/liter <sup>m</sup>
Methylene chloride	75-09-2	5.0 ug/liter <sup>n</sup>
Mercury	7439-97-6	2.0 ug/liter <sup>o</sup>
PAHs (carcinogenic)		0.1 ug/liter <sup>p</sup>
PCB mixtures		0.1 ug/liter <sup>q</sup>
Radium 226 and 228		5.0 pCi/liter <sup>r</sup>
Radium 226		3.0 pCi/liter <sup>s</sup>
Tetrachloroethylene	127-18-4	5.0 ug/liter <sup>t</sup>
Toluene	108-88-3	40.0 ug/liter <sup>u</sup>
Total Petroleum Hydrocarbons		1000.0 ug/liter <sup>v</sup>
1,1,1 Trichloroethane	71-55-6	200.0 ug/liter <sup>w</sup>
Trichloroethylene	79-01-5	5.0 ug/liter <sup>x</sup>
Vinyl chloride	75-01-4	0.2 ug/liter <sup>y</sup>
Xylenes	1330-20-7	20.0 ug/liter <sup>z</sup>

## **Appendix F**



TABLE V. END USE CRITERIA FOR PETROLEUM-CONTAMINATED SOILS

Analyte	Analytical Method	Soil Class (ppm)			
		1	2	3	4
Heavy fuel hydrocarbons (C24-C30)	WTPH-418.1 mcd.	<60	60-200	200-2000	>2000
Diesel (C12-C24)	WTPH-D	<25	25-200	200-500	>500
Gasoline (C6-C12)	WTPH-G	<5	5-100	100-250	>250
Benzene	8020	<0.005	0.005-0.5	≤0.5	>0.5
Ethylbenzene	8020	<0.005	0.005-20	≤20	>20
Toluene	8020	<0.005	0.005-40	≤40	>40
Xylenes (total)	8020	<0.005	0.005-20	≤20	>20

Treatment is recommended for all Class 3 and 4 soils.

#### NOTES:

##### Class 1 Soil Uses:

Any use which will not cause threat to human health or the environment.

##### Class 2 Soil Uses:

Backfill at the cleanup site

Fill in commercial or industrial areas

Cover or fill in permitted landfills

Road subgrade or other road construction fill

Fill in or near: wetlands, surface water, ground water, drinking water wells or utility trenches is NOT recommended. Use as residential topsoil is also NOT recommended.

##### Class 3 Soil Uses:

Treatment

Disposal at the original site (no solid waste disposal permit needed)

Road construction (no solid waste disposal permit needed)

Use or disposal in permitted, municipal landfills

Permitted as a new PCS landfill

(An evaluation should be made to ensure that disposal will not cause a threat to human health or the environment, e.g. use near water bodies)

##### Class 4 Soil Uses:

Treatment

Disposal in a permitted, municipal landfill

Permitted as a new PCS landfill

## **Appendix G**



# UNDERGROUND STORAGE TANK Site Check/Site Assessment Checklist

For Office Use Only

Owner #

Site #

717

## INSTRUCTIONS:

When a release has **not** been confirmed and reported, this Site Check/Site Assessment Checklist must be completed and signed by a person registered with the Department of Ecology. **The results of the site check or site assessment must be included with this checklist.** This form must be submitted to Ecology at the address shown below within 30 days after completion of the site check/site assessment.

**SITE INFORMATION:** Include the Ecology site ID number if the tanks are registered with Ecology. This number may be found on the tank owner's invoice or tank permit.

**TANK INFORMATION:** Please list all the tanks for which the site check and site assessment is being conducted. Use the tank ID number if available, and indicate tank capacity and substance stored.

**REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT:** Please check the appropriate item.

**CHECKLIST:** Please initial each item in the appropriate box.

**SITE ASSESSOR INFORMATION:** This form must be signed by the registered site assessor who is responsible for conducting the site check/site assessment.

Underground Storage Tank Section  
Department of Ecology  
P. O. Box 47655  
Olympia, WA 98504-7655

## SITE INFORMATION

Site ID Number (on invoice or available from Ecology if the tanks are registered): 000717

Site/Business Name: Schroeder Ellensburg Transportation Center

Site Address: 1501 East Capitol Ave Telephone: (509) 925-8014  
Street 925-8100  
Ellensburg WA 98926  
City State ZIP-Code

## TANK INFORMATION

Tank ID No.	Tank Capacity	Substance Stored
#1	12,000	Unleaded GAS
#2	12,000	Diesel
#3	2,000	Unleaded GAS
#4	1,500	Waste OIL

## REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT

Check one:

- ☐ Investigate suspected release due to on-site environmental contamination.
- ☐ Investigate suspected release due to off-site environmental contamination.
- ☐ Extend temporary closure of UST system for more than 12 months.
- ☒ UST system undergoing change-in-service.
- ☒ UST system permanently closed-in-place.
- ☒ UST system permanently closed with tank removed.
- ☐ Abandoned tank containing product.
- ☐ Required by Ecology or delegated agency for UST system closed before 12/22/88.
- ☐ Other (describe): NEW UST SYSTEM TO BE INSTALLED

**CHECKLIST**

Each item of the following checklist shall be initialed by the person registered with the Department of Ecology whose signature appears below.

	YES	NO
1. The location of the UST site is shown on the vicinity map.	RET	
2. A brief summary of information obtained during the site inspection is provided. (see Section 3.2 in the Site Assessment Guidance)	RET	
3. A summary of UST system data is provided. (see Section 3.1)	RET	
4. The soils characteristics at the UST site are described. (see Section 5.2)	RET	
5. Is there apparent groundwater in the tank excavation?	RET	
6. A brief description of the surrounding land is provided. (see Section 3.1)	RET	
7. Information has been provided indicating the number and types of samples collected, methods used to collect and analyze the samples, and the name and address of the laboratory used to perform the analyses.	RET	
8. A sketch or sketches showing the following items is provided:		
- location and ID number for all field samples collected	RET	
- groundwater samples distinguished from soil samples (if applicable)	RET	
- samples collected from stockpiled excavated soil	RET	
- tank and piping locations and limits of excavation pit	RET	
- adjacent structures and streets	RET	
- approximate locations of any on-site and nearby utilities	RET	
9. If sampling procedures different from those specified in the guidance were used, has justification for using these alternative sampling procedures been provided? (see Section 3.4)	RET	
10. A table is provided showing laboratory results for each sample collected including: sample ID number, constituents analyzed for and corresponding concentration, analytical method and detection limit for that method.	RET	
11. Any factors that may have compromised the quality of the data or validity of the results are described.	RET	
12. The results of this site check/site assessment indicate that a confirmed release of regulated substance has occurred.	RET	

**SITE ASSESSOR INFORMATION**

<u>Rooney L Hunt</u> PERSON REGISTERED WITH ECOLOGY		<u>Sage Earth Sciences, Inc</u> FIRM AFFILIATED WITH
BUSINESS ADDRESS: <u>P.O. Box 1644</u>		TELEPHONE: <u>(509) 829-6400</u>
<u>Zillah</u> CITY	<u>WA.</u> STATE	<u>98953</u> ZIP+CODE
I hereby certify that I have been in responsible charge of performing the site check/site assessment described above. Persons submitting false information are subject to penalties under Chapter 173-360 WAC.		
<u>10/20/00</u> Date	<u>Rooney L Hunt</u> Signature of Person Registered with Ecology	

ATTN: D. BRA - Ecology



# UNDERGROUND STORAGE TANK Closure and Site Assessment Notice

FOR OFFICE USE ONLY  
SERIAL NO. 717  
DATE ID #

See back of form for instructions

Please ☒ the appropriate box(es)

☐ Temporary Tank Closure ☐ Change-In-Service ☒ Permanent Tank Closure ☐ Site Check/Site Assessment

## Site Information

Site ID Number 000717  
(Available from Ecology if the tanks are registered)  
Site/Business Name SCHROEDER TRANSP. CENTER  
Site Address 1501 EAST CAPITAL AVE  
City/State ELLENSBURG WA  
Zip Code 98926 Telephone (509) 925-8100

## Owner Information

(This form will be returned to this address)

UST Owner/Operator ELLENSBURG SCHOOL DIST 401  
Mailing Address 506 NORTH SPRAGUE  
City/State ELLENSBURG WA  
Zip Code 98926 Telephone (509) 925-48014

Owner's Signature \_\_\_\_\_

## Tank Closure/Change-In-Service Company

Service Company NORTHWEST PETROLEUM EQUIPMENT INC

Certified Supervisor JAMES INGBERG

Decommissioning Certification No. 1039454-26

Supervisor's Signature James Ingerberg  
Address 265 JOHNSON ROAD SELAH WA  
City SELAH State WA Zip Code 98942

James R. Baker  
Ellensburg S.D.  
Telephone (509) 697-9002

## Site Check/Site Assessor

Certified Site Assessor RODNEY HEIGHT SAGE EARTH SCIENCES INC

Address P.O. BOX 1644

City ZILLA State WA Zip Code 98953 Telephone (509) 829-6400

## Tank Information

Tank ID	Closure Date	Closure Method	Tank Capacity	Substance Stored
1	8/25/00	REMOVAL	12,000	UNLEADED GAS
2	8/25/00	REMOVAL	12,000	DIESEL
3	8/25/00	REMOVAL	2,000	UNLEADED GAS
4	8/25/00	REMOVAL	1,500	WASTE OIL

## Contamination Present at the Time of Closure

☐ Yes ☐ No ☒ Unknown  
Check Unknown if no obvious contamination was observed and sample results have not yet been received from analytical lab.

☐ Yes ☐ No  
If contamination is present, has the release been reported to the appropriate regional office?