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LUST CLOSURE/INTERIM REMEDIAL ACTION REPORT

SUNNYSIDE VALLEY IRRIGATION DISTRICT
GRANDVIEW YARD
405 N. ELM
GRANDVIEW, WA 98930

Prepared For:
Mr. Damon Smith
Sunnyside Valley Irrigation District
P.O. Box 239
Sunnyside, WA 98944

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WHITE SHIELD INC.
P.O. BOX 477, 801 GRANDRIDGE ROAD, GRANDVIEW, WA 98930
TELEPHONE: (509) 882-1144 VOICE (509) 882-4566 FAX

EXECUTIVE SUMMARY

White Shield, Inc. (WSI) provided site assessment and decommissioning services upon removal of two Underground Storage Tanks (USTs), one 675 gallon unleaded gasoline tank and one 1000 gallon diesel fuel tank, located at the Sunnyside Valley Irrigation District (SVID), Grandview Shop, 405 Elm Street, Grandview, Washington. The Washington State Department of Ecology (WSDOE) Site ID is #007479.

The fuel dispensers for both USTs were approximately 38 feet southeast of the UST excavation. The dispensers had been removed prior to the arrival of WSI personnel at the site. The piping was disconnected and removed after the arrival of WSI personnel. Soil samples were obtained for field screening and laboratory analyses from beneath the pipeline and each dispenser.

The two USTs were in a single excavation. Petroleum contamination was detected during the UST removal in the excavation and beneath the former location of the diesel pump. The excavation was extended to the north and west and approximately 160 cu. yds. of petroleum contaminated soil was removed and transported to a nearby SVID site for remediation. Approximately 1/2 cu. yd., of petroleum contaminated soil was removed from the diesel pump location.

Petroleum contaminated groundwater was encountered in the bottom of the excavation. WSI recommends the installation of borings and monitoring wells to characterize the lateral and vertical extent of the contamination in the groundwater. Once the extent of the contamination is determined, WSI recommends in situ bioremediation of the groundwater until groundwater cleanup levels are achieved, followed by Quarterly monitoring for 5 years as required by the Model Toxics Control Act (MTCA), WAC 173-340.

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1.0 Introduction

1.1 Purpose

This report describes findings and actions taken for work associated with the removal of two Underground Storage Tanks (USTs). The work and investigation responds to regulatory requirements set forth by the United States Environmental Protection Agency (EPA) and in compliance with Chapter 173-360 WAC and Chapter 173-340 WAC of the State of Washington and enforced by the Department of Ecology (WSDOE).

1.2 Scope of Work

White Shield, Inc. (WSI) provided site assessment services for the removal of one 675 gallon unleaded gasoline UST and one 1000 gallon diesel fuel UST. WSI also provided UST decommissioning services and Sunnyside Valley Irrigation District (SVID) provided the excavation and backhoe services. The two USTs were removed from the site for cleaning and disposal by Petroleum Pump Company (PPC), Kennewick, Washington. Superior Precision Analytical, Inc. (Superior), Martinez, California, OnSite Environmental, Inc. (OnSite), Seattle, Washington, and Friedman & Bruya, Environmental Chemists (F&B), Seattle, Washington provided laboratory analytical services.

The initial site assessment UST closure services provided by WSI technicians included field screening 17 soil samples for volatile organics (OVA) and performing 14 Thin Layer Chromotagraphy (TLC) field screening tests for diesel fuel components. A total of 13 samples were sent to Superior for analysis.

The services provided by WSI for the interim remedial action include supervision of the removal of petroleum contaminated soil, field screening 8 soil samples for volatile organics and performing 7 TLC field screening tests. Nine soil samples and one water sample were sent to OnSite for analysis. One soil sample was sent to F&B for identification and characterization.

2.0 Background Information

2.1 Site Location

The site is located at the Sunnyside Valley Irrigation District, Grandview Yard at 405 N. Elm Street, Grandview, Washington. The Washington State Department of Ecology Underground Storage Tank Site ID is #007479. The site is described as the SW 1/4, SW 1/4, Section 13, T9N, R23E, W.M. Refer to Figure 1, Site Location Map.

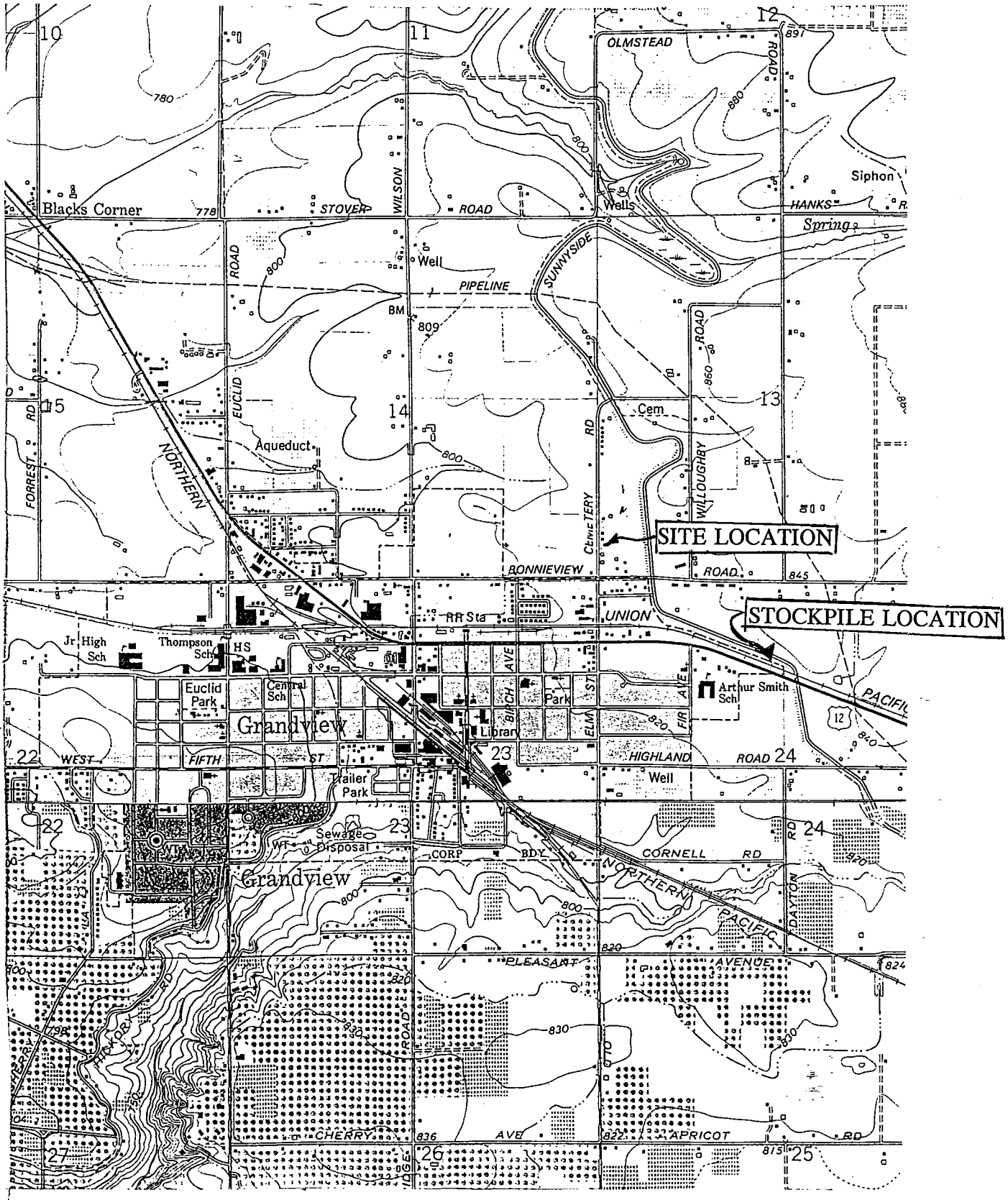

FIGURE 1 - SITE LOCATION & STOCKPILE LOCATION MAP

WHITE SHIELD INC.
P.O. BOX 477, 801 GRANDRIDGE ROAD, GRANDVIEW, WA 98930
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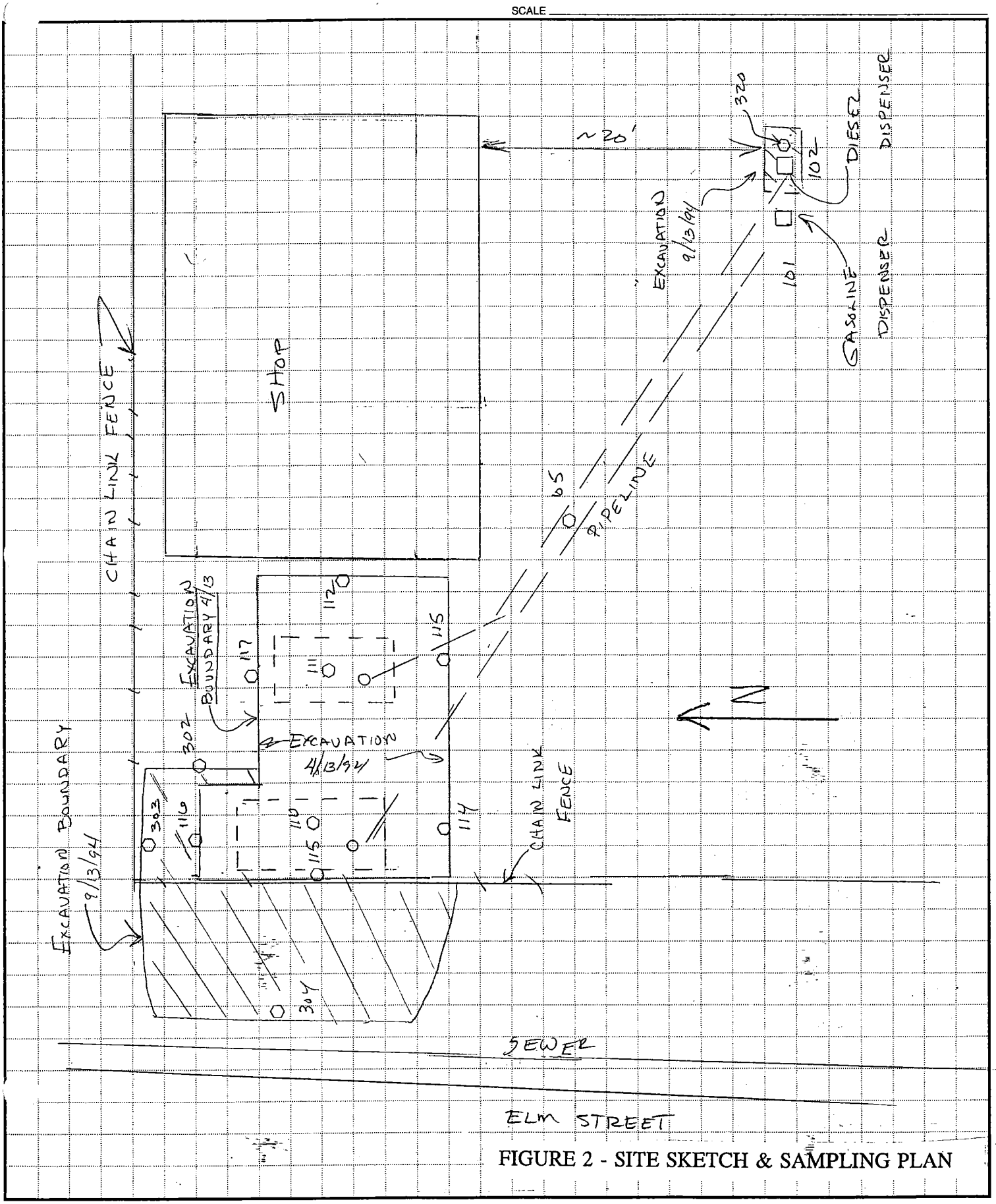

FIGURE 2 - SITE SKETCH & SAMPLING PLAN

2.2 Site Description and History

The Grandview yard is located in the City of Grandview approximately 800 feet west of the SVID Main Canal and approximately 500 feet north of an SVID lateral canal. The site is at the edge of a low density residential area, with residences on the north, east, and south. There is a mint field located across Elm Street on the west. The Nazarene church is across Elm Street northwest of the site.

The two USTs were located west of the shop building at the northwest corner of the property. They were oriented north and south in a single excavation. This UST system was used to fuel SVID equipment and vehicles. The entire yard is surrounded with chain link fence. Refer to Figure 2, Site Sketch & Sampling Plan.

The USTs are described as follows:

TANK #	WSDOE UST SITE REGISTER #	CONTENTS	VOLUME (gallons)
7	7	Unleaded Gasoline	675
8	8	Diesel Fuel	1000

The underground storage tanks were installed in 1985 and were removed April 13, 1994. SVID personnel at the site thought there may have been some problems with leakage associated with an earlier UST on the site. The older tanks were removed prior to installing the current USTs without completing any sampling or remediation and may be the cause of the soil and groundwater contamination described within this report.

2.3 Soils Description

The soil in the excavation is a brown fine sandy silt loam from the surface to a depth of approximately 6 feet. From 6 feet to the bottom of the excavation at 10 feet, the soil is a very dark brown/black fine sandy silt loam with few cobbles.

3.0 Field Activities

3.1 General Investigative Methods

We visually inspected each UST, the soil and the fill. We also used field screening, analytical laboratory analyses and interviews for data. The methods and general conclusions are discussed below.

3.1.1 Field Screening

For field analysis of compounds containing volatile organics, WSI uses a Foxboro Organic Vapor Analyzer (OVA) in conjunction with the interim headspace method as recommended by the manufacturer. This method is used to confirm the presence or absence of volatile components in the soil and provides only a rough indication of the contaminant concentrations. The analysis procedure involves:

1. Selecting a clean, wide mouth jar (1 qt.) and filling the bottom 1/3 with a discrete soil sample.
2. Place aluminum foil over the top of the jar and place a ring over the jar to create a seal.
3. Boil the sample for 10 minutes. This causes the volatile compounds to become vapors and collect in the space above the soil.
4. Remove the sample from the boiling water and insert the instrument probe through the aluminum foil for vapor analysis.
5. Record the instrument response on the Field Form.

For field analysis of semi-volatile (diesel) and non-volatile compounds (motor oil), WSI uses Thin Layer Chromatography (TLC) for qualitative and quantitative analysis. This analytical technique utilizes the principle of chromatography to separate individual components for comparison to known standards.

TLC is classified as a solid-liquid chromatographic system, meaning there are two phases through which an extract of the sample is passed; a solid phase (silica gel) and a liquid phase (a solvent such as hexane).

The solid phase is stationary and is coated on a glass plate. During the chromatography process, the liquid phase carries the sample through the solid phase. The solvent moves at a fairly constant rate through the solid phase. However, the compound in the sample (analyte) are partitioned by a relative attractiveness of the analyte between the solid phase and the liquid phase.

Analytes strongly attracted to the silica will remain on the silica longer and move more slowly than analytes that are not as strongly attracted to the silica. When the chromatography is stopped, the distance the analyte has moved relative to the distance the solvent has moved is used to identify the compound. When the plate is viewed under ultraviolet light, the Analytes can be seen and compared to standards of known concentration for quantitative analysis.

3.1.2 Soil Sampling

The Sampling Plan (Figure 3) and the attached Field Sampling Log (Appendix A) show the location, depth and types of samples taken. In general, sample collection and control followed the following protocol:

1. Select a laboratory certified clean sample jar for sample collection.

2. Using clean latex gloves and clean sampling utensils tightly pack the soil sample in the sample jar (8 oz.) to the top of the jar to prevent any airspace. Collect co-located samples using the same procedure.

3. Label the jar with the soil sample number, the type of laboratory test required, the date, name of site and sampler. The sample is then entered on the chain of custody form.

4. Cool the sample in wet ice to approximately 4 degrees centigrade.

5. Repack the samples for shipment to the laboratory in blue ice and a cooler.

6. Relinquish sample to courier for shipment to the laboratory.

3.2 Tank Removals

Charles Robinson, a site assessor registered with the Washington State Department of Ecology Underground Storage Tank Program and a licensed decommissioning supervisor, performed the UST decommissioning on April 13, 1994 and the initial site assessment on April 13 and 14, 1994 during the removal of the USTs. The top of both USTs had been exposed and the fuel dispensers had been removed prior to the arrival of WSI personnel. Two dispenser pipelines, each approximately 38 feet in length, were removed after the arrival of WSI personnel.

The two USTs were removed from a single excavation measuring approximately 20 feet x 12 feet x 10 feet deep. The soil was noticeably stained from a depth of approximately 6 feet to the bottom of the excavation and exhibited a strong smell of petroleum.

3.3 Tank Inspection

We removed attached soil and scale to completely expose the tanks. With the soil and scale removed, we carefully examined each tank. The tanks were in good condition with little evidence of corrosion and pitting. A layer of a black "tar" like substance was discovered beneath the diesel fuel tank, Tank #8. The layer was approximately 1 inch thick and was mixed with soil.

Sample SVI-0494-201 consisting of the soil/tar material was analyzed by F&B. The analysis revealed 1) gasoline range hydrocarbons appearing to be highly weathered, indicative of an old spill, and 2) the tar-like tank coating material reacted with the lighter fractions of gasoline, which weakened its structure and caused it to "melt" off the tank. The Fingerprint Characterization Report and gas chromatograms from Friedman & Bruya are included in Appendix B, Laboratory Reports and Chain of Custody.

3.4 Intitial Sampling/Site Assessment

3.4.1 Tank #7 - Gasoline Tank

Four soil samples were collected on April 14, 1994 from the excavation in the proximity of Tank #7 for OVA and TLC field screening and laboratory analysis. Sample SVI-0494-110 was collected from approximately 2 feet below the tank at a depth of 10 feet. Sample SVI-0494-114 was collected approximately 2 feet from the south end of the tank at a depth of 8 feet. Sample SVI-0494-115 was collected from the west wall at a depth of 6 feet and SVI-0495-116 from the north wall at a depth 5 feet. Refer to Figure 3, Sampling Plan - Excavation Detail.

The OVA screening, using the technique described in Section 3.1.1 for volatile organic compounds, revealed organic vapors in soil sample SVI-0494-110 at greater than 1000 ppm, in soil sample SVI-0494-114 at 600 ppm, in soil sample SVI-0494-115 at greater than 1000 ppm, and in soil sample SVI-0494-116 at greater than 1000 ppm.

The TLC screening, using the technique described in Section 3.1.1 for non-volatile compounds, revealed contaminants in soil sample SVI-0494-110 at approximately 500 ppm, no contaminants in soil sample SVI-0494-114, and approximately 500

ppm in soil samples SVI-0494-115 and SVI-0494-116. The TLC pattern for sample SVI-0494-110 resembled that of diesel fuel, while the pattern for samples SVI-0494-115 and SVI-0494-116 more closely resembled that of pesticides rather than the typical pattern for diesel fuel.

Soil samples SVI-0494-110, 115, and 116 were sent to Superior for laboratory analyses. The laboratory results revealed 10,000 ppm gasoline and 1400 ppm diesel fuel in sample SVI-0494-110 at the bottom of the excavation; and up to 7900 ppm gasoline and 1300 ppm diesel fuel in sample SVI-0494-116, located in the side wall at the northwest corner of the excavation. Superior also did a pesticide scan (EPA method 8080), which indicated that no pesticides were present in the sample. The TLC screening was most likely affected by the high concentrations of gasoline in the sample.

The field screening and laboratory results are summarized in Table I, Initial Field Screening and Laboratory Analytical Results, and Appendix A Field Sampling Log. Refer also to Appendix A, Laboratory Reports.

3.4.2 Tank #8 - Diesel Fuel Tank

Four soil samples were collected on April 14, 1994 from the excavation in the proximity of Tank #8 for OVA and TLC field screening and laboratory analysis. Sample SVI-0494-111 was collected from approximately 2 feet below the tank at a depth of 10 feet. Sample SVI-0494-113 was collected approximately 2 feet from the south end of the tank at a depth of 7 feet. Sample SVI-0494-112 was collected from the east wall at a depth of 7 feet and SVI-0495-117 from the north wall at a depth 6 feet. Refer to Figure 3, Sampling Plan - Excavation Detail.

The OVA screening, using the technique described in Section 3.1.1 for volatile organic compounds, revealed organic vapors in soil sample SVI-0494-111 at greater than 1000 ppm, in soil sample SVI-0494-113 at 29 ppm, in soil sample SVI-0494-112 at 76 ppm, and no organic vapors in soil sample SVI-0494-117.

The TLC screening, using the technique described in Section 3.1.1 for non-volatile compounds, revealed contaminants in soil sample SVI-0494-111 at approximately 200 ppm, no contaminants in soil samples SVI-0494-113, SVI-0494-112, and SVI-0494-117. The TLC pattern for sample SVI-0494-111 was not typical of the pattern for diesel fuel, and WSI was unable to match it to a known standard.

Soil samples SVI-0494-111, 112, and 113 were sent to Superior for laboratory analyses. The results revealed 220 ppm gasoline and no diesel fuel in sample

SVI-0494-111 at the bottom of the excavation and no significant petroleum contamination in the south or east side walls of the excavation.

The field screening and laboratory results are summarized in Table I, Initial Field Screening and Laboratory Analytical Results, and Appendix A Field Sampling Log. Refer also to Appendix A, Laboratory Reports and Chain of Custody.

3.4.3 Fuel Dispensers

The fuel dispensers for both tanks were located approximately 38 feet south east of the USTs south of the shop building. The dispensers were located approximately 5 feet apart directly on the gravel parking lot. There was no concrete pad beneath them. Soil sample SVI-0494-101 was collected for field screening and laboratory analysis from a depth of approximately 2 1/2 feet directly beneath the gasoline dispenser. Soil sample SVI-0494-102 was collected for field screening and laboratory analysis from a depth of approximately 2 1/2 feet directly beneath the diesel fuel dispenser. Refer to Figure 2, Site Sketch & Sampling Plan.

The OVA field screening results revealed no volatile organics on sample SVI-0494-101 and 200 ppm, on sample SVI-0494-102. The TLC field screeningrevealed no contamination on sample SVI-0494-101 and 100 ppm, on sample SVI-0494-102.

Samples SVI-0494-101 and 102 were sent to Superior for laboratory analysis. The laboratory analytical results did not reveal any contamination in sample 101 and revealed only diesel fuel contamination at 490 ppm in sample SVI-0494-102 at a depth of 2 1/2 feet beneath the diesel fuel dispenser.

The field screening and laboratory results are summarized in Table I, Field Screening and Laboratory Analytical Results and Locations, and Appendix A Field Sampling Log. Refer also to Appendix A, Laboratory Reports and Chain of Custody.

3.4.4 Product Pipelines

There were two parallel product pipelines running approximately 38 feet in a southeasterly direction from the UST to the fuel dispensers. The lines were entirely removed. Soil sample SVI-0494-105 was collected between the two lines, midway between the USTs and the dispensers from a depth of 3 feet, approximately 1 foot below the lines. Refer to Figure 3, Sampling Plan - Excavation Detail.

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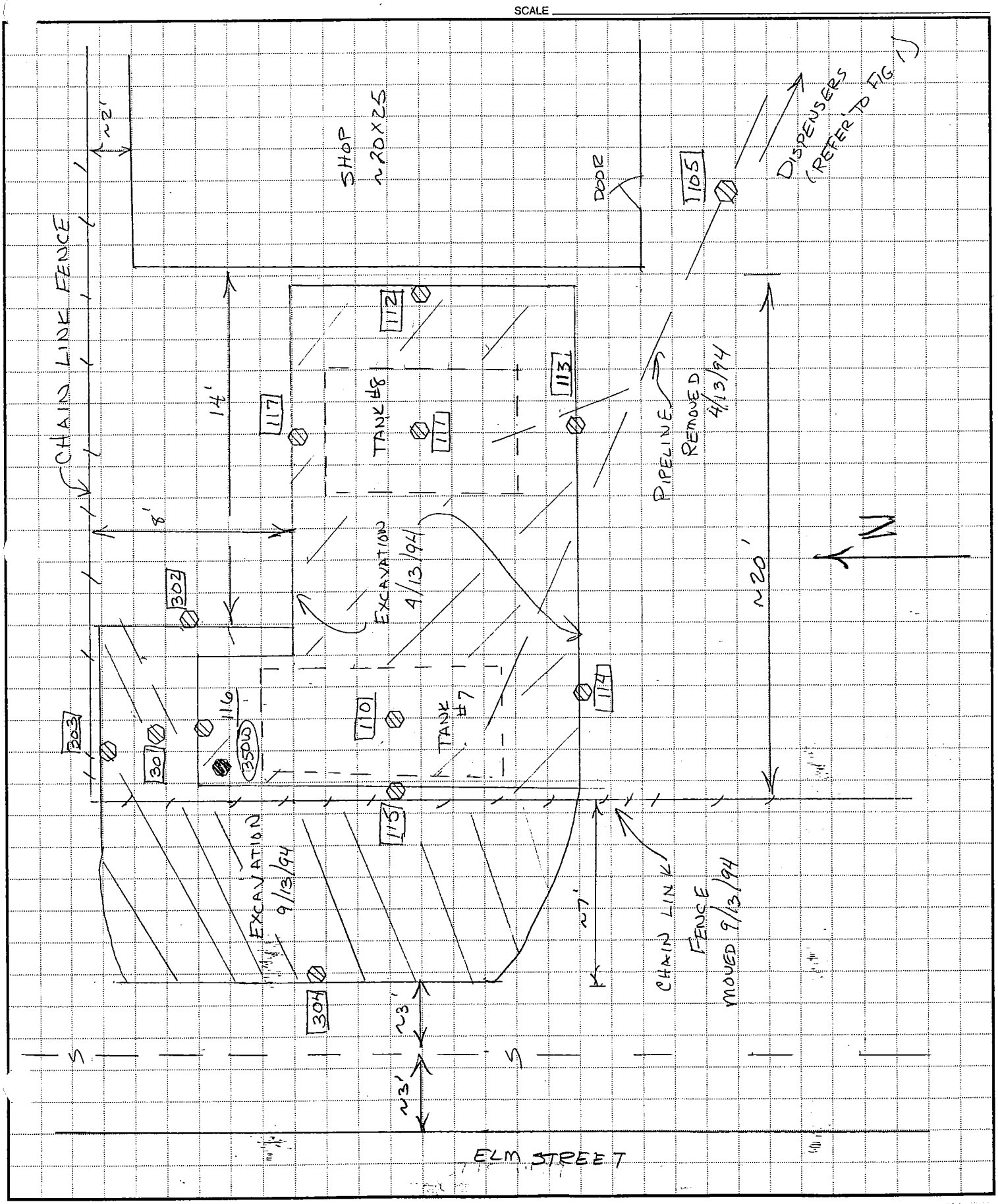


FIGURE 3 - SAMPLING PLAN - EXCAVATION DETAIL

The OVA field screening revealed no volatile organic compounds in the sample. The sample was not screened using the TLC field screening technique.

Sample SVI-0494-105 was sent to Superior for laboratory analysis, which did not reveal gasoline or diesel fuel in the sample.

The field screening and laboratory results are summarized in Table I, Field Screening and Laboratory Analytical Results and Locations, and Appendix A Field Sampling Log. Refer also to Appendix A, Laboratory Reports and Chain of Custody.

3.4.5 Stockpiles from UST Removal

During the initial site assessment phase of the project, a total of approximately 70 cu. yds. of soil was removed from the UST excavation, including approximately 15 cu. yds. of soil from around the top of the USTs, which had been placed into dump trucks prior to the arrival of WSI at the site. Soil samples SVI-0494-132SP and 133SP were collected from the soil in the trucks. Soil samples SVI-0494-130SP, 131SP, 134SP, and 135SP were collected intermittently from the remaining 55 cu. yds. of soil generated during this phase. The soil was transported to the nearby remediation site shown in Figure 1, Site Location and Stockpile Location Map, on April 13 and September 13, 1994, prior to beginning the interim cleanup action.

The field screening of all of the stockpile samples, SVI-0494-130SP through 135SP indicated the presence of organic vapors in excess of 1000 ppm. The laboratory analyses of the same samples, SVI-0494-130SP through 135SP revealed that no petroleum was present above the MTCA Cleanup Levels.

The field screening and laboratory results are summarized in Table I, Field Screening and Laboratory Analytical Results, and Appendix A Field Sampling Log. Refer also to Appendix A, Laboratory Reports and Chain of Custody.

3.5 Sampling/Interim Cleanup Action

3.5.1 UST Excavation

On September 13, 1994, Sunnyside Valley Irrigation District returned to the site to remove additional petroleum contaminated soil from the excavation to establish the lateral extent of the soil contamination. Charles Robinson, WSI, provided

oversite of the project and collected samples for field screening and laboratory analysis.

The northwest corner of the excavation was extended approximately 8 feet north to the boundary fence. The fence on the west side of the property was removed and the excavation was extended approximately 7 feet west toward Elm Street. Refer to Figure 3, Sampling Plan - Excavation Detail. A total of approximately 160 cu. yds. of petroleum contaminated soil was removed. The soil was transported to a site owned by SVID along the irrigation canal approximately 1 mile west of the site for characterization and remediation.

Soil sample SVI-0494-302 was collected from a depth of 8 feet on the east side of the extended excavation and SVI-0494-303, at a depth of 8 feet from the north side of extended excavation. The field screening revealed that no petroleum hydrocarbons in excess of MTCA Cleanup Levels are present. The field screening of sample #SVI-0494-117 on August 13, 1994 indicated that there was no petroleum contamination in the northeast corner of the excavation, east of sample SVI-0494-302. Soil samples SVI-0494-302 and 303 were sent to OnSite for laboratory analysis. The results did not reveal any petroleum contamination in the soil.

Soil sample SVI-0494-304 was collected at a depth of 8 feet from the west wall of the extended excavation. The field screening and laboratory analytical results did not reveal any petroleum contamination in the soil.

The field screening and laboratory results are summarized in Table II, Final Field Screening and Laboratory Analytical Results and Locations, and Appendix A Field Sampling Log. Refer also to Appendix A, Laboratory Reports and Chain of Custody.

During the excavation of the petroleum contaminated soil, groundwater was encountered in the excavation at a depth of approximately 10 feet. A pool was excavated in the northwest corner of the excavation and water sample SVI-0494-350W was collected for laboratory analysis. The groundwater had a visible sheen on the surface, however no floating liquid hydrocarbons (FLH) were observed. The water sample was sent to OnSite for analysis. The analysis revealed 99,000 ppb gasoline and approximately 11,000 ppb diesel fuel, however the reported quantity for diesel fuel may be slightly elevated because of the excessive hydrocarbons in the gasoline range.

3.5.2 Diesel Fuel Dispenser

On September 13, 1994, approximately 1/2 cu. yds. of soil were removed from the site of the former location of the diesel fuel dispenser. Refer to Figure 3, Sampling Plan - Excavation Detail. The field screening and laboratory analysis of soil sample SVI-0494-320 from a depth of 4 feet at this location revealed no diesel fuel remaining in excess of the MTCA Cleanup level.

The field screening and laboratory results are summarized in Table II, Final Field Screening and Laboratory Analytical Results and Locations, and Appendix A Field Sampling Log. Refer also to Appendix A, Laboratory Reports and Chain of Custody.

3.5.3 Stockpile from Interim Cleanup

Approximately 160 cu. yds. of soil was removed from the excavation on September 13, 1994 during the interim cleanup action and transported to the same remediation site as the soil from the UST excavation. Soil samples SVI-0494-310SP through 314SP were collected from the Interim Cleanup soil at the remediation site. The field screening and laboratory results are summarized in Table II, Final Field Screening and Laboratory Analytical Results and Locations, and Appendix A Field Sampling Log. Refer also to Appendix A, Laboratory Reports and Chain of Custody.

4.0 Ground Water

The laboratory analytical results revealed 99,000 ppb gasoline and approximately 11,000 ppm of diesel fuel contamination in the groundwater within the excavation at a depth of 10 feet below the surface. The laboratory results are summarized in Table III, and shown in Appendix A. The contamination may be a result of leakage from the previous UST system, which was removed in 1985.

WSI checked the well logs recorded at the WSDOE Water Resources Department for the wells in the vicinity of the UST site. The well logs show that the static level of the groundwater in the vicinity ranges from a depth of 6 feet to 40 feet. Refer to Appendix G. The review of the well logs revealed inconclusive evidence of the direction of flow of the groundwater; however, groundwater would be expected to flow in a southerly to southeasterly direction toward the Yakima River. The SVID irrigation canal lateral located approximately 500 feet south of the site would be expected to act as physical barrier to the migration of the petroleum plume in a southerly direction toward the City of Grandview. Groundwater flow may reverse direction with the winter/summer seasons due to the seasonal operation of the canal.

5.0 End Use of Soil

A total of approximately 70 cu. yds. of soil from the initial UST site assessment on April 13 and 14, 1994 were transported to a site on SVID property adjacent to the canal east of the site. Refer to Figure 1, Site Location. The laboratory analyses of the samples SVI-0494-130SP through 135SP from this soil did not reveal any petroleum contamination above MTCA Cleanup Level. This soil is a Class 2 soil and may be used for any purpose in accordance with the Appendix F, WSDOE End Use Criteria for Petroleum Contaminated Soils.

A total of 160 cu. yds. of petroleum contaminated soil from the excavation extension generated on September 13, 1994 were stockpiled at the remediation site. The laboratory analytical results of samples SVI-0494-310SP through 314SP revealed gasoline contamination up to 880 ppm. The soil is a Class 4 soil. In accordance with Appendix F, WSDOE End Use Criteria for Petroleum Contaminated Soils, this 160 cu.yds. of soil is intended to be spread for remediation on the site. A treatment plan, temporarily air quality permit and SEPA Environmental Checklist will be required before proceeding with on-site treatment.

6.0 Conclusion

6.1 Summary

The majority of the petroleum contaminated soil discovered in the UST excavation has been removed to the present groundwater table level. No petroleum contaminated soil remains at the former fuel dispenser locations and no petroleum contamination was discovered in the soil surrounding the pipelines connecting the UST's to the fuel dispensers. The groundwater in the vicinity of the former UST location is contaminated with a mixture of diesel fuel and gasoline. The extent of this contamination is unknown.

6.2 Recommendations

The petroleum contamination in the groundwater should be characterized and remediated to levels which are below the maximum allowable concentrations established by the Washington Model Toxics Control Act, Chapter 173-340 WAC. To accomplish this, WSI recommends the following procedure:

1. Establish soil borings to below the groundwater table and obtain soil and groundwater samples for analysis. The borings will be used to establish the perimeter of contamination. Approximately 6-10 borings will be necessary for this task.

2. Install monitoring and injection wells within the contamination plume as well as one upgradient well and one downgradient well located outside of the plume. Approximately 5 wells will be required for this task.
3. Develop an in situ bioremediation plan for soil and groundwater treatment within the contamination area. The volume of inoculation solution, number of treatments and time to complete the remediation is dependent upon the size and concentration of contaminants within the plume.
4. Mobilize mixing and injection equipment and inoculate the site with the required bio-treatment solution.
5. Sample and analyze groundwater samples at critical intervals during the bio treatment process. The results of these analyses will determine the effectiveness of the treatment and the inoculation concentration for secondary or tertiary treatment.
6. After remediation is complete, the groundwater quality must be monitored for 5 years. The Washington State Department of Ecology can issue a notice of "no further action" after the monitoring period is complete.

The petroleum contaminated soil which was removed from the UST excavation and stockpiled at a nearby site must be properly disposed of at an approved facility or remediated on-site. If on-site remediation is chosen, the procedure must be approved by the WSDOE. Chapter 173-400 WAC, General Regulations for Air Pollution Sources, requires the submission of a bioremediation plan, a temporary air quality permit and a SEPA Environmental Checklist to the WSDOE for review and approval. The soil must remain covered and protected from stormwater runoff until remediation can be initiated.

The excavations created during the UST system removal should be backfilled with clean soil. The in situ bioremediation process for the contaminated groundwater will not require further excavations.

7.0 Limitations

In performing our professional services, WSI uses a degree of care ordinarily exercised under similar circumstances by members of our profession. No warranty, expressed or implied, is made or intended. Our conclusions and recommendations, developed from our field and laboratory investigation reported herein, are based upon this firm's understanding of the project and are in concurrence with generally accepted practice.

TABLE I: INITIAL SOIL FIELD SCREENING & LABORATORY ANALYTICAL RESULTS

* = Test Not Run
nd = Not Detected

LOCATION AND DEPTH	SAMPLE #	DATE	OVA ppm	TLC ppm	WTPH-G ppm	WTPH-D ppm	B ppm	E ppm	T ppm	X ppm	Pb
Gasoline Dispenser 2 1/2 feet	SVI-0494-101	4/13	nd	nd	nd	nd	nd	nd	nd	nd	*
Diesel Dispenser 2 1/2 feet	SVI-0404-102	4/13	200	100	nd	490	nd	nd	nd	nd	*
Product Line 3 feet	SVI-0494-105	4/13	nd	*	nd	nd	*	*	*	*	*
Tank #7 10 feet/Bottom	SVI-0494-110	4/14	>1000	500	10000	1400	120	120	460	730	*
Tank #8 10 feet/Bottom	SVI-0494-111	4/14	>1000	200	220	nd	nd	2.4	4.6	11	*
Tank #8 7 feet/ E wall	SVI-0494-112	4/14	76	nd	4	nd	nd	.015	.009	.031	*
Tank #8 7 feet/ S wall	SVI-0494-113	4/14	29	nd	nd	nd	nd	nd	nd	nd	*
Tank #7 8 feet/ S wall	SVI-0494-114	4/14	600	nd	*	*	*	*	*	*	*

LOCATION AND DEPTH	SAMPLE #	DATE	OVA ppm	TLC ppm	WTPH-G ppm	WTPH-D ppm	B ppm	E ppm	T ppm	X ppm	Pb
Tank #7 6 feet/ E wall	SVI-0494-115	4/14	>1000	500	2700	580	3	46	89	310	*
Tank #7 5 feet/ N wall	SVI-0494-116	4/14	>1000	500	7900	1300	11	84	200	500	*
Tank #8 6 feet/ N wall	SVI-0495-117	4/14	nd	nd	*	*	*	*	*	*	*
Stockpile	SVI-0494-130SP	4/13	>1000	200	13	76	nd	.015	nd	.27	*
Stockpile	SVI-0494-134SP	4/13	>1000	*							
Soil on Truck	SVI-0494-133SP	4/13	>1000	*	*	*	*	*	*	*	*
Stockpile	SVI-0494-135SP	4/13	>1000	*	*	*	*	*	*	*	*
Stockpile	SVI-0494-131SP	4/13	80	<100	nd	nd	nd	nd	nd	nd	nd
Soil on Truck	SVI-0494-132SP	4/13	nd	nd							

TABLE II: FINAL SOIL FIELD SCREENING & LABORATORY ANALYTICAL RESULTS

* = Test Not Run
nd = Not Detected

LOCATION AND DEPTH	SAMPLE #	DATE	OVA ppm	TLC ppm	WTPH-G ppm	WTPH-D ppm	B ppm	E ppm	T ppm	X ppm	Pb
Excavation East Wall/8 feet	SVI-0494-302	9/13	10	nd	nd	nd	nd	nd	nd	nd	*
Excavation North Wall/8 feet	SVI-0404-303	9/13	15	--	nd	nd	nd	nd	nd	nd	*
Excavation West Wall/8 feet	SVI-0494-304	9/13	12	nd	nd	nd	nd	nd	nd	nd	*
Diesel Fuel Dispenser/4 feet	SVI-0494-320	9/13	*	nd	nd	82	nd	nd	nd	nd	*
Stockpile	SVI-0494-310SP	9/13	>1000	nd	34	nd	nd	nd	nd	1.7	*
Stockpile	SVI-0494-311SP	9/13	>1000	nd							
Stockpile	SVI-0494-312SP	9/13	>1000	nd	880	nd	7	13	40	81	*
Stockpile	SVI-0494-313SP	9/13	>1000	100							
Stockpile	SVI-0494-314SP	9/13	*	*	81	nd	.39	.96	2.9	6.3	*

TABLE III: WATER SAMPLE LABORATORY ANALYTICAL RESULTS

* = Test Not Run
nd = Not Detected

LOCATION AND DEPTH	SAMPLE #	DATE	OVA	TLC	WTPH-G ppb	WTPH-D ppb	B	E	T	X	Pb
Excavation Bottom/10 feet	SVI-0494-350W	9/13	*	*	99,000	<11,000	8,900	2,600	22,000	17,000	*
MTCA Cleanup Level (for comparison)	--	--	--	--	1,000	1,000	5	30	40	20	--

APPENDIX A

4/13/94 SWI-0494 - SUID: Grandview C. Robinson

8:30 Arrive @ site - Tanks had been partially uncovered
- Diesel pump on east, Gasoline on west
- pumps removed
- yesterday dispensers removed & capped
- material from spill spout stockpiled - on plastic
- material from sides in dump truck
- hydraulic hose on backhoe broke creating small spill
Currently pumping sludge out
Installed in 1985 - 405 NI Elm

Diesel - 96" long

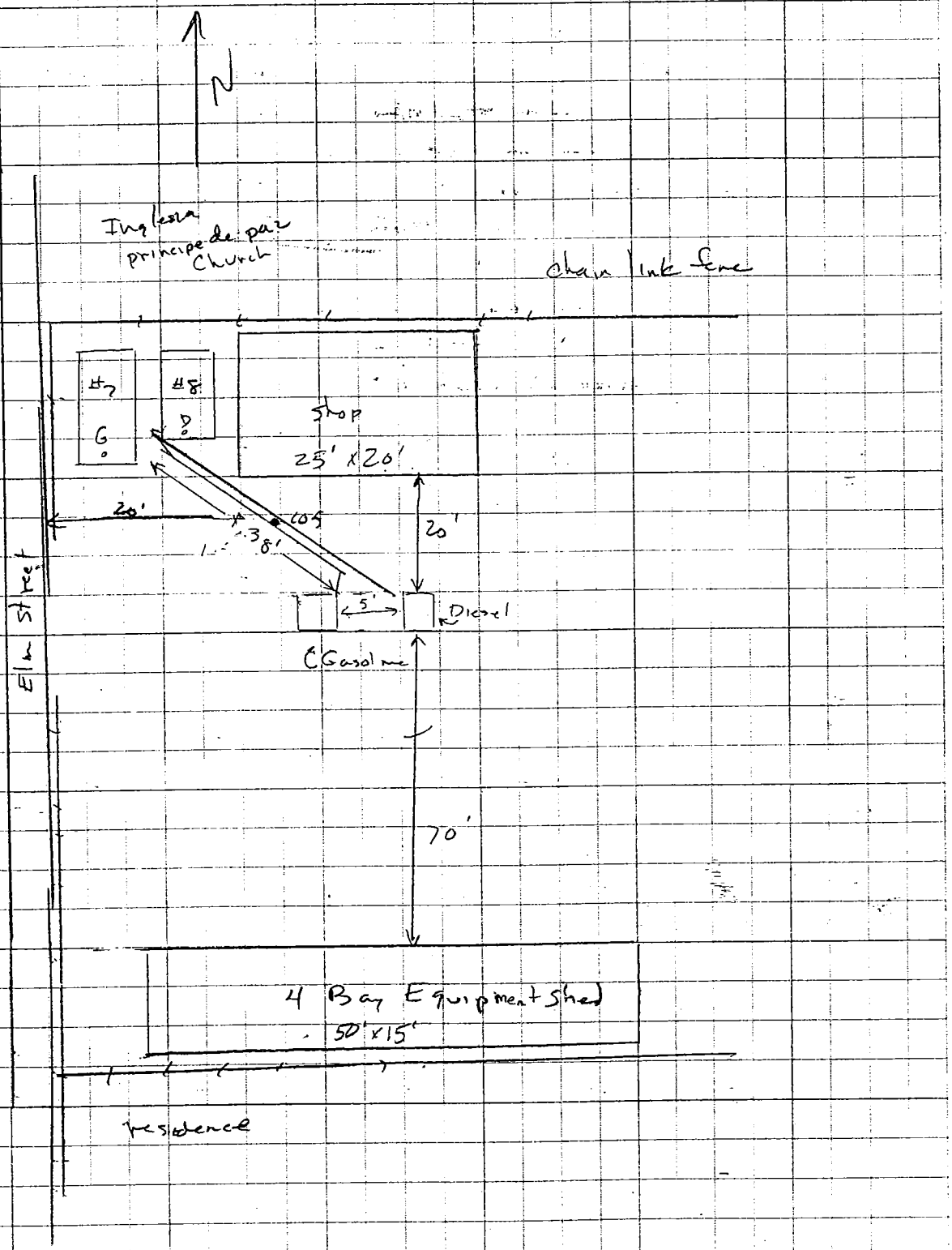
9:15 Dry ice arrived - still pumping residual fuel - diesel was lower at vent end
Collecting samples from dispensers - no odor @ 8'
9:30 Started excavating the approx 38' of product line
9:45 Put dry ice in Tank #7

Sampled beneath pipeline depth of 3' approx 1' below line
- no joints visible in line

10:00 Put dry ice in Tank #8
Removing pipelines - drained & removed
11:00 Returned to office to pick up O2 meter from charger
11:30 Returned to site
- Approximately 20 yds of soil from top of tanks had been placed in trucks prior to WSI Arrival - Samples 1335P & 1335P from the soil in trucks ~ 20 yds
- Stock pile #1 was loaded onto trucks to make room to get to tanks for removal (~ yds)
12:00 - Screen sample - Crews at lunch - ~200 ppm showing under gasoline disp.
SOIL - SAND & SILT LOAM - Dark Brown

1:00 Digging out west side of Tank #7 - Ran into Black layer of smelly soil at a depth of about 5' - appears to be PCS to below tank. - SOIL VERY STRONG
East side of tank #7 soil is black & very strong odor
- Ridge between tanks very dark & strong
1:40 Backhoe died & would not start
1:50 back in operation

SVI -0494 – SVID ; Grandview 4/13/94 C. Robinson



4/14/94
4/13/94 SUID (Grand View) SUI-0494 C. Robinson

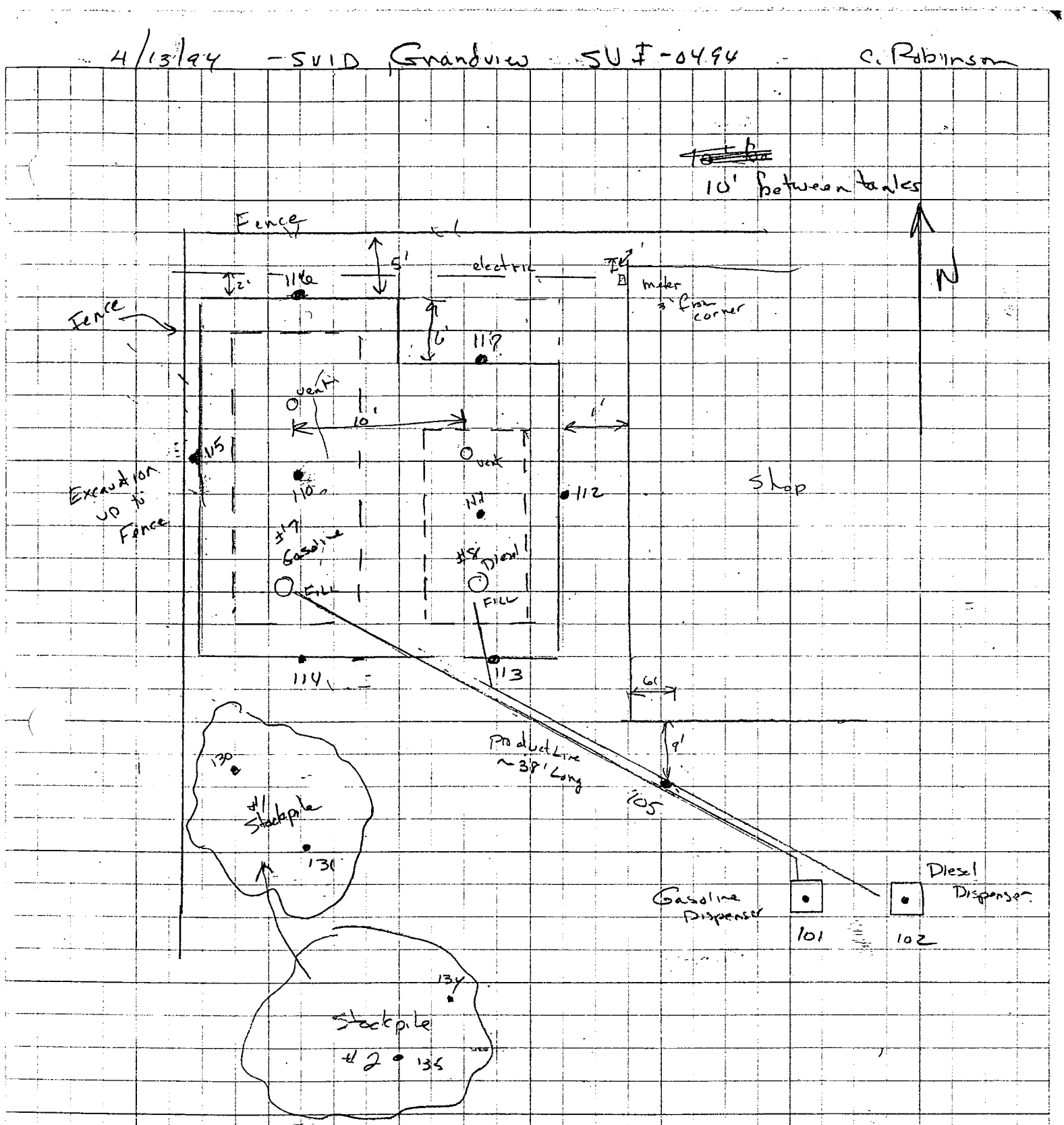
SAMPLE #	LOCATION	DEPTH	OVA	Background TLC	4.0 ODOR
UI-0494-101	Gasoline Dispenser	2½'	ND	ND	None
UI-0494-102	Diesel Dispenser	2½'	200	100	None
105	Product Line	3'	ND	—	None
UI-0494-110 (4/14)	Bottom Tank #7 (Gasoline)	10'	>1000	500	—
UI-0494-111 4/14	Bottom Tank #8	10'	>1000	ND w/UV 200 w/ Iodine	Strong
UI-0494 112 4/14/94	E. Wall Tank #8	7'	76	ND	—
UI-0494 113 4/14/94	S. Wall Tank #8	7'	29	ND	—
114 4/14/94	S. Wall Tank #7	8'	598	ND	—
115 4/14/94	W. Wall Tank #7	6'	>1000	500	—
116 4/14/94	N. Wall Tank #7	5'	>1000	500	—
117 4/14/94	N. Wall -- Tank #8	6'	ND	ND	—

Background 7.0 after tanks uncovered

UI-0494-130 SP	Stockpile #1	—	>1000	200 >100	None
131 SP	" #1	—	80	~~ND~~	None
132 SP	Stockpile (Trucks)		ND	ND	None
133 SP	Stockpile (Trucks)		30	ND	None
134 SP	Stockpile #2	3'	>1000	—	
135 SP	Stockpile #2	3	>1000	—	

UI-0494-201 - Scraping from Bottom Tank #8

4/13/94 - SVID, Grandview - SVE-0494 - C. Robinson



4/13/94 SUI-0494 SUID, Grandview C. Robinson

0900 - Petroleum Pumps arrived for Tank pickup

0915 - Check both tanks w/ O_2 - Tank #6 Diesel = 3% O_2 &
Tank #7 = 4% O_2 - OK to pull

Vent pipe removed and tanks seeded

0930 Hydraulic hose blew on backhoe

0940 - 2 samples from stockpile #2. - stockpile #2 is in same location as stockpile #1 ~~was~~, consisting of soil from around tanks - appears to be be contaminated
~ 30 cu. yds.

1030 Proposed remediation site between ditch & abandoned railroad where canal crosses Old highway - east of Grandview (main Canal)
- Drove to site w/ Damon
- Told Damon it would be necessary to ~~go~~ go through permit process for bioremediation: - & may need enhanced bioremediation such as fertilization

1325 Pulled Tank #6 w/ crane
- No visible leaks in good condition
- ~~Dirt~~ bottom covered with black soil mixed with ~~tarry~~ viscous tar - bottom of excavation - shows tar

1335 Pulled Tank #7 w/ crane - no tar on bottom
- good condition.

1350 Will plan to return tomorrow to take samples & remove more soil

Two clean trucks can be used as fill based on field screening
Truck containing stockpile #1, must be remediated

4/14/94 - SUI-0494 SUID Grandview C. Robinson
R. Funderburk

10:30 Return to site to characterize pit.

#112 - Below Tank #8 very dark } Both 2' below tank
#110 - Below Tank #3 brown } Bottom

#111 - very moist at 10' - may be near water
- hard just above sample - sample #111 was moist

11:30 Perform field screening both OVA & TLC on all samples

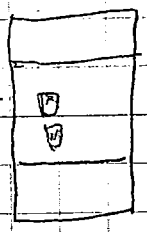
soil at South end of excavation - samples #113 & 114 was disturbed. It was difficult to define end wall because soil was pulled toward south during tank removal
-113 was just above bottom of tank and approx 3' south of Tank #8
114 was at same elevation as bottom of tank #8 and approx 2' South of Tank #8

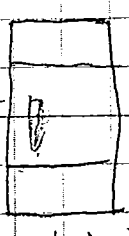
-Samples 116 & 117 were approx 2' into rounded imprint of each tank on north wall of excavation

- East & West side wall samples were approx 1' into compacted soil of side walls (#112 & 115)
- #115 & #116 not typical diesel pattern

TLC

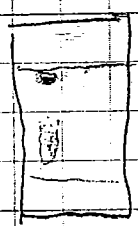
Shortwave
UV

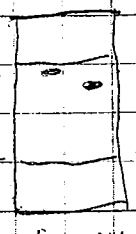




#111 showed ND on shortwave

Iodine





12:45 - Lv. site

SVI - 0494 - Sunnyside Valley Irrigation Dist. 9/13/94

Grandview C. Robinson

0[7] Arrive @ site
- Crew on hand to start moving stockpile from 4/13 & 4/14 excavation
- All utility lines have been located
- fence on west side will be removed
- major sewer line along road; + water & phone - proceed w/ caution
- telephone line along fence @ North side

0[45] Return to Office

0[40] Return to site - stockpile almost gone - fence removed

10[00] Go w/ Damon to soil dump site along canal

10[40] Start excavation NW corner
- odor

11[15] - Seem to be getting better to NW & NE
- Sample # 303 Beneath phone line beneath North fence

11[30] Field screen NE with TLC & OVA - Nondetect

11[50] Continuing excavation along west line
- it appears that we have our North & east boundary
- dark spot on west wall about 8'

12[00] Lunch break

1[32] Begin Excavation

3[40] Extended excavation approx 7' west - Sample # 304 @ 5' from west wall - soil very dark but no odor - this soil at bottom of excavation has strong petroleum odor
- approx 3' from sewer line

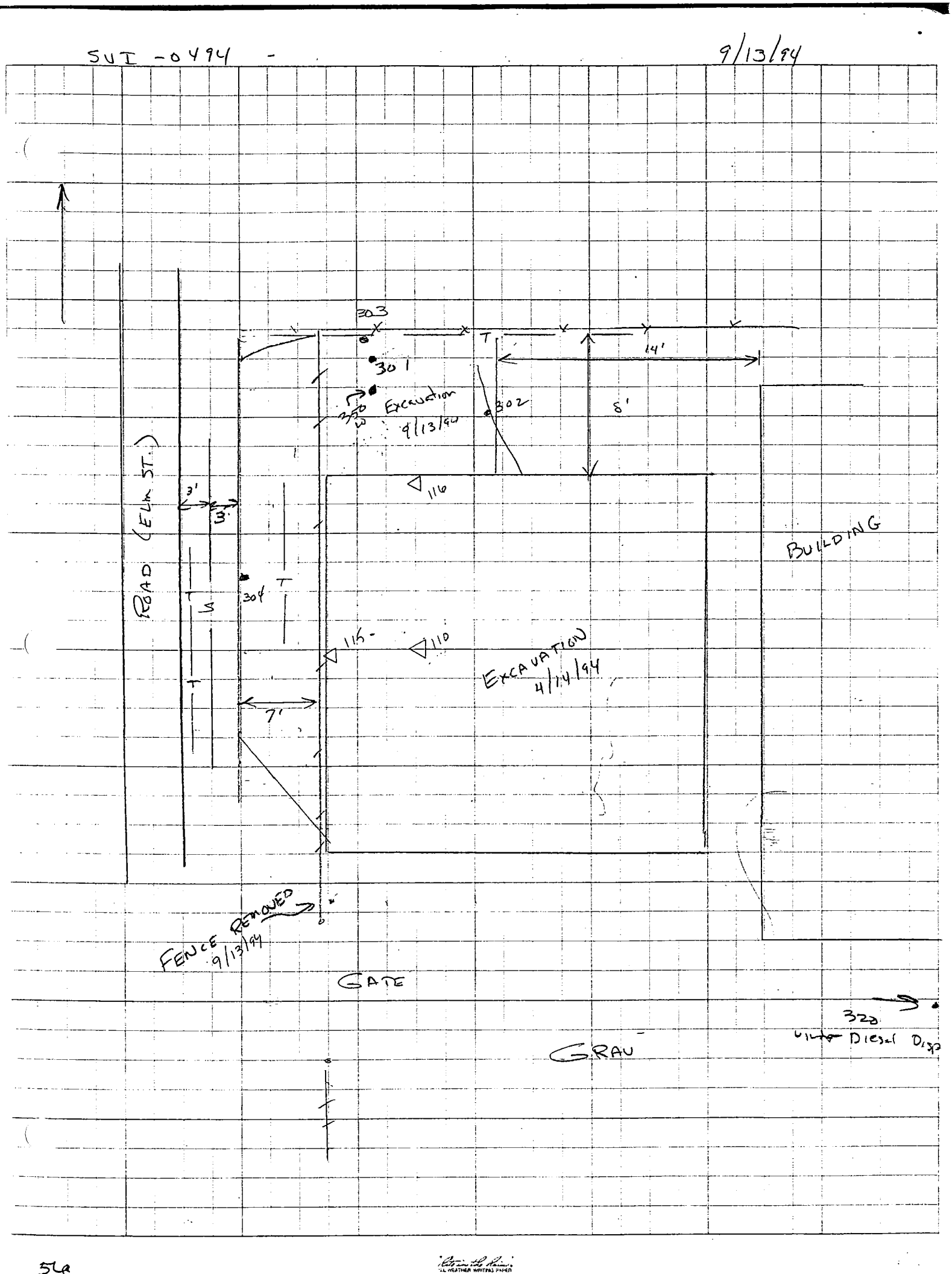
1[345] Cleaning out bottom

4[00] Field screen # 304 - OVA & TLC both ND
- It appears that we have the boundaries
- Crew is erecting temporary security fence
- Will continue with excavation of bottom tomorrow

5

SUI -0494 -

9/13/94



SUI-0494 Sunnyside Valley Irrigation Dist 9/13/94

SAMPLE	LOCATION	DEPTH	TIME	ODOR	Background OVA	1.0 ppm TLC
I-[4-301	NW Corner	8'	10:55	Some	800	-
UI-0494-302	NE Side	8'	1110	None	10	ND
UI-0494-303	NW Corner	8'	1120	None	15	-
SUI-0494-304	West wall	8'	1340	slight	12	ND
9/14/94						
SUI-0494-320	Diesel Disp.	4'	1030	None	—	ND
9/13/94						
UI-0494-310 SP	Stockpile	—	1510	Strong	>1000	ND
-311 SP	"	-	1520	Strong	1000	ND
312 SP	"	-	1525	Strong	>1000	ND
313 SP	"	-	1535	"	>1000	100
9/14/94		—				
314 SP	"	—	1110	Strong	—	—
9/14/94						
I-0494-350W	Water	10½	1000	Sheen		

SUI-0494 — 9/13/94

01:15 Water coming in at bottom @ Depth of 10'
2:30 In site - go to stockpile area
2:45 At stockpile site 10 truck loads ⇒ ~ 100 cu. yds
5:00 Crew brought another truck load ⇒ 110 cu. yds
4:30 Complete sampling and field screening 4 stockpile Samples

SUI-0494 9/14/94

8:30 Return to site - crew cleaning out remaining soil from excavation
- Water in excavation - definitely has a sheen
LOADS OF SOIL TODAY ||||
TOTAL STOCKPILE 160 cu. yds
10:00 Water sample w/ Bailer from NW corner
- Sheen on water

1030 Excavated & removed ~~3~~ 4 scoops of contaminated soil from former dispenser site - ILC field screen shows Nothing @ 4' - Sample SUI-0494-320

11:00 - Leave site
11:10 - Retrieve one more sample from stockpile along canal - total 5 samples / 160 cu yds
± 314 SP not Field screened but very strong & dark colored

APPENDIX B

OnSite
Environmental Inc.

September 22, 1994
Lab Traveler #:09-041

Chuck Robinson
White Shield, Inc.
P.O. Box 477
Grandview, WA 98930

Dear Chuck:

Enclosed are the results of the analyses of samples submitted on September 14, 1994 from Project SVI-0494.

We appreciate the opportunity to be of service to you on this project. If you have any questions regarding this report, please feel free to call me.

Sincerely,

Karl P. Hornyik
Project Chemist

Enclosures

14924 NE 31st Circle • Redmond, WA 98052 • (206) 883-3881 • Fax (206) 885-4603

Date of Report: September 22, 1994
Samples Submitted: September 14, 1994
Lab Traveler: 09-041
Project: SVI-0494

EPA 8020 & WTPH-G

Date Extracted: 9-15-94
Date Analyzed: 9-15-94

Matrix: Soil
Units: mg/Kg (ppm)

Client ID	SVI-0494-302	SVI-0494-303	SVI-0494-304	SVI-0494-310SP / SVI-0494-311SP	Method PQL
Dilution Factor	50	50	50	250	
Benzene	ND	ND	ND	ND	.001
Toluene	ND	ND	ND	ND	.001
Ethyl Benzene	ND	ND	ND	ND	.001
m,p-Xylene	ND	ND	ND	1.1	.001
o-Xylene	ND	ND	ND	0.59	.001
TPH-Gas	ND	ND	ND	34	.100
4-BFB Surrogate Recovery	101%	92%	90%	S	

Note: Sample PQL(practical quantitation limit)= Method PQL x dilution factor

S-Surrogate recovery data not available due to the necessary dilution of the sample.

Date of Report: September 22, 1994
Samples Submitted: September 14, 1994
Lab Traveler: 09-041
Project: SVI-0494

EPA 8020 & WTPH-G

Date Extracted: 9-15-94
Date Analyzed: 9-15-94

Matrix: Soil
Units: mg/Kg (ppm)

Client ID	SVI-0494-312SP / SVI-0494-313SP	SVI-0494-314SP	SVI-0494-320	Method PQL
Dilution Factor	250	250	50	
Benzene	**7**	**0.39**	**ND**	.001
Toluene	**40** E	**2.9**	**ND**	.001
Ethyl Benzene	**13**	**0.96**	**ND**	.001
m,p-Xylene	**57** E	**4.4**	**ND**	.001
o-Xylene	**24**	**1.9**	**ND**	.001
TPH-Gas	**880**	**81**	**ND**	.100
4-BFB Surrogate Recovery	S	S	97%	

Note: Sample PQL(practical quantitation limit)= Method PQL x dilution factor

E-Value reported exceeds the quantitation range. Value is an estimate.

S-Surrogate recovery data not available due to the necessary dilution of the sample.

Date of Report: September 22, 1994
Samples Submitted: September 14, 1994
Lab Traveler: 09-041
Project: SVI-0494

EPA 8020 & WTPH-G
QUALITY CONTROL

Date Extracted: 9-15-94
Date Analyzed: 9-15-94

Matrix: Soil
Units: mg/Kg (ppm)

Sample Number	Blank	09-041-9 Original	09-041-9 Duplicate	RPD
Dilution Factor	50	50	50	
Benzene	ND	ND	ND	NA
Toluene	ND	ND	ND	NA
Ethyl Benzene	ND	ND	ND	NA
m,p-Xylene	ND	ND	ND	NA
o-Xylene	ND	ND	ND	NA
TPH-Gas	ND	ND	ND	NA
4-BFB Surrogate Recovery	117%	97%	97%	

Date of Report: September 22, 1994
Samples Submitted: September 14, 1994
Lab Traveler: 09-041
Project: SVI-0494

EPA 8020 & WTPH-G
QUALITY CONTROL

Date Extracted: 9-15-94
Date Analyzed: 9-15-94

Matrix: Soil
Units: mg/Kg (ppm)

Sample Number	09-041-9		09-041-9		
spiked @ 1 ppm	**MS**	Percent	**MSD**	Percent	
Dilution Factor	50	Recovery	50	Recovery	RPD
Benzene	**0.853**	**85%**	**0.841**	**84%**	1.4
Toluene	**0.822**	**82%**	**0.814**	**81%**	0.91
Ethyl Benzene	**0.870**	**87%**	**0.867**	**87%**	0.36
m,p-Xylene	**0.852**	**85%**	**0.844**	**84%**	1.0
o-Xylene	**0.863**	**86%**	**0.862**	**86%**	0.13
4-BFB Surrogate Recovery	100%		98%		

Date of Report: September 22, 1994
Samples Submitted: September 14, 1994
Lab Traveler: 09-041
Project: SVI-0494

EPA 602 & WTPH-G

Date Extracted: 9-15-94
Date Analyzed: 9-15-94

Matrix: Water
Units: ug/L (ppb)

Client ID	SVI-0494-350W	Method PQL
Dilution Factor	500	
Benzene	**8900**	1.00
Toluene	**22000**	1.00
Ethyl Benzene	**2600**	1.00
m,p-Xylene	**12000**	1.00
o-Xylene	**4800**	1.00
TPH-Gas	**99000**	100
4-BFB Surrogate Recovery	97%	

Note: Sample PQL(practical quantitation limit)= Method PQL x dilution factor

Date of Report: September 22, 1994
Samples Submitted: September 14, 1994
Lab Traveler: 09-041
Project: SVI-0494

EPA 602 & WTPH-G
QUALITY CONTROL

Date Extracted: 9-15-94
Date Analyzed: 9-15-94

Matrix: Water
Units: ug/L (ppb)

Sample Number	Blank	09-041-10 Original	09-041-10 Duplicate	RPD
Dilution Factor	1	500	500	
Benzene	ND	8900	8500	5.3
Toluene	ND	22000	21000	5.2
Ethyl Benzene	ND	2600	2500	NA
m,p-Xylene	ND	12000	11000	5.8
o-Xylene	ND	4800	4400	6.8
TPH-Gas	ND	99000	91000	NA
4-BFB Surrogate Recovery	93%	87%	91%	

MS/MSD not analyzed due to high concentration in sample.

Date of Report: September 22, 1994
Samples Submitted: September 14, 1994
Lab Traveler: 09-041
Project: SVI-0494

WTPH-D

Date Extracted: 9-15-94
Date Analyzed: 9-15-94

Matrix: Soil
Units: mg/Kg (ppm)

Client ID	Dilution Factor	TPH	o-terphenyl Surrogate Recovery
SVI-0494-302	1	<25	93%
SVI-0494-303	1	<25	91%
SVI-0494-304	1	<25	86%
SVI-0494-310SP/ SVI-0494-311SP	1	<25	77%
SVI-0494-312SP/ SVI-0494-313SP	1	<25 C	81%
SVI-0494-314SP	1	<25	88%
SVI-0494-320	1	82	90%

Date of Report: September 22, 1994
Samples Submitted: September 14, 1994
Lab Traveler: 09-041
Project: SVI-0494

WTPH-D
QUALITY ASSURANCE

Date Extracted: 9-15-94
Date Analyzed: 9-15-94

Matrix: Soil
Units: mg/Kg (ppm)

	Dilution Factor	TPH	o-terphenyl Surrogate Recovery
Method Blank	1	<25	90%
Sample: 09-039-1	1	<100 Z	90%
Duplicate	1	<100 Z	86%
RPD		0%	

	Dilution Factor	TPH	o-terphenyl Surrogate Recovery
Spiked @ 100 PPM			
Spike Blank	1	86.4	104%
Percent Recovery		86%	
Spike Blank Duplicate	1	92.1	108%
Percent Recovery		92%	
RPD		6.4%	

Z-Interferences were present which prevented the quantitation of the analyte indicated below the given detection limit.

Date of Report: September 22, 1994
Samples Submitted: September 14, 1994
Lab Traveler: 09-041
Project: SVI-0494

WTPH-D

Date Extracted: 9-16-94
Date Analyzed: 9-20-94

Matrix: Water
Units: mg/L (ppm)

Client ID	Dilution Factor	TPH	o-terphenyl Surrogate Recovery
SVI-0494-350W	.02	10.7 C1	76%

C-Hydrocarbons in the gasoline region(C7-toluene) present in the sample which are elevating diesel result.

Date of Report: September 22, 1994
Samples Submitted: September 14, 1994
Lab Traveler: 09-041
Project: SVI-0494

WTPH-D
QUALITY ASSURANCE

Date Extracted: 9-16-94
Date Analyzed: 9-20-94

Matrix: Water
Units: mg/L (ppm)

	Dilution Factor	TPH	o-terphenyl Surrogate Recovery
Method Blank	.02	<.50	76%
Sample: 09-042-1	.02	<.50	83%
Duplicate	.02	<.50	68%
RPD		0%	

Date of Report: September 22, 1994
Samples Submitted: September 14, 1994
Lab Traveler: 09-041
Project: SVI-0494

Date Analyzed: 9-15-94

RESULTS OF DRY WEIGHT

Client ID	% Moisture
SVI-0494-302	13
SVI-0494-303	24
SVI-0494-304	23
SVI-0494-310SP/ SVI-0494-311SP	18
SVI-0494-312SP/ SVI-0494-313SP	21
SVI-0494-314SP	21
SVI-0494-320	15

COMPANY White Shield, Inc

PROJECT # SVI-0494

PROJECT NAME SVID

MANAGER Chuck

PM (xtt)

OnSite Environmental Inc.

14924 NE 31st CIRCLE, REDMOND, WA 98052
PHONE (206) 883-3881 FAX (206) 885-4603

REQUESTED TURNAROUND? 5 Day

TRAVELER # 04-041

Dash	Sample Number	Date Sampled	Time Sampled	Type	# Jars	WTPH-HCID	WTPH-G/BTEX	WTPH-G	WTPH-D	WTPH-418.1			DRY WEIGHT	Comments
						Analysis Required								
1	SVI-0494-302	9/13/94	1110	S	1		✓		✓				X	
2	SVI-0494-303	9/13/94	1120	S	1		✓		✓				X	
3	SVI-0494-304	9/13/94	1340	S	1		✓		✓				X	
4	SVI-0494-310SP	9/13/94	1510	S	1		✓		✓				X	Composite 310 & 311
5	SVI-0494-311SP	9/13/94	1520	S	1								X	
6	SVI-0494-312SP	9/13/94	1525	S	1		✓		✓				X	Composite 312 & 313
7	SVI-0494-313SP	9/13/94	1535	S	1								X	
8	SVI-0494-314SP	9/14/94	1110	S	1		✓		✓				X	
9	SVI-0494-320	9/14/94	1030	S	1		(✓)		✓				X	
10	SVI-0494-350W	9/14/94	1000	W	2		✓							
11	SVI-0494-350W	9/14/94	1060	W	1				✓					(✓) Added per Bill G. 9/15/94 DG

Submitted Chuck Ro — Date 9/14/94 — Received by [signature] — Date 9/14/94

Firm White Shield — Time 12 60 — Firm OnSite Environmental — Time 12:30 pm

Submitted _____ — Date _____ — Received by _____ — Date _____

Firm _____ — Time _____ — Firm _____ — Time _____

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 ▪ Martinez, California 94553 ▪ (510) 229-1512 / fax (510) 229-1526

WHITE SHIELD INC.
Attn: STUART FRICKE

Project SVI-0494
Reported 22-April-1994

WASHINGTON TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE
(WTPH-D)

Chronology

Laboratory Number 91490

Identification	Sampled	Received	Extracted	Analyzed	Run #	Lab #
SVI-0494-110	04/14/94	04/15/94	04/19/94	04/21/94		1
SVI-0494-111	04/14/94	04/15/94	04/19/94	04/21/94		2
SVI-0494-112	04/14/94	04/15/94	04/19/94	04/21/94		3
SVI-0494-113	04/14/94	04/15/94	04/19/94	04/21/94		4
SVI-0494-115	04/14/94	04/15/94	04/19/94	04/21/94		5
SVI-0494-116	04/14/94	04/15/94	04/19/94	04/21/94		6
SVI-0494-102	04/13/94	04/15/94	04/19/94	04/21/94		7
SVI-0494-105	04/13/94	04/15/94	04/19/94	04/21/94		8
SVI-0494-101	04/13/94	04/15/94	04/19/94	04/21/94		9
SVI-0494-130SP+ 134SP	04/13/94	04/15/94	04/19/94	04/21/94		10
SVI-0494-131SP+ 132SP	04/13/94	04/15/94	04/19/94	04/21/94		11

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825 Arnold Drive, Suite 114 ▪ Martinez, California 94553 ▪ (510) 229-1512 / fax (510) 229-1526

WHITE SHIELD INC.
Attn: STUART FRICKE

Project SVI-0494
Reported 22-April-1994

WASHINGTON TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE
(WTPH-D)

Laboratory Number	Sample Identification	Matrix
91490- 1	SVI-0494-110	Soil
91490- 2	SVI-0494-111	Soil
91490- 3	SVI-0494-112	Soil
91490- 4	SVI-0494-113	Soil
91490- 5	SVI-0494-115	Soil
91490- 6	SVI-0494-116	Soil
91490- 7	SVI-0494-102	Soil
91490- 8	SVI-0494-105	Soil
91490- 9	SVI-0494-101	Soil
91490-10	SVI-0494-130SP+134SP	Soil

RESULTS OF ANALYSIS

Laboratory Number:	91490- 1	91490- 2	91490- 3	91490- 4	91490- 5
Diesel Range:	* 1400	ND<25	ND<25	ND<25	*580
Concentration:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
-- Surrogate % Recoveries --					
Tetracosane Recovery:	87	87	88	84	88

Laboratory Number:	91490- 6	91490- 7 **	91490- 8	91490- 9	91490-10
Gasoline Range:	NA	NA	ND<10	NA	NA
Diesel Range:	*1300	490	ND<25	ND<25	76
Waste Oil Range:	NA	NA	ND<200	NA	NA
Concentration:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
-- Surrogate % Recoveries --					
Tetracosane Recovery:	88	96	89	86	89

* No diesel pattern present. The majority of peaks were observed in the gasoline range of the chromatogram.

** WTPH-HCID

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 ▪ Martinez, California 94553 ▪ (510) 229-1512 / fax (510) 229-1526

WHITE SHIELD INC.
Attn: STUART FRICKE

Project SVI-0494
Reported 22-April-1994

WASHINGTON TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE (WTPH-D)

Laboratory Number	Sample Identification	Matrix
91490-11	SVI-0494-131SP+132SP	Soil

RESULTS OF ANALYSIS

Laboratory Number: 91490-11

Diesel Range: ND<25

Concentration: mg/Kg

-- Surrogate % Recoveries --
Tetracosane Recovery: 92

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 ▪ Martinez, California 94553 ▪ (510) 229-1512 / fax (510) 229-1526

WASHINGTON TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE (WTPH-D)

Quality Assurance and Control Data - Soil

Laboratory Number 91490

Compound	Method Blank (mg/Kg)	RL (mg/Kg)	Spike Recovery (%)	Limits (%)	RPD (%)
Diesel Range:	ND<25	25	82/101	70-130	21%

Definitions:
ND = Not Detected
RPD = Relative Percent Difference
RL = Reporting Limit
mg/Kg = Parts per million (ppm)
QC File No. 91490

Afsaneh Sahk
Senior Chemist
Account Manager

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 ▪ Martinez, California 94553 ▪ (510) 229-1512 / fax (510) 229-1526

WHITE SHIELD INC.
Attn: STUART FRICKE

Project SVI-0494
Reported 20-April-1994

WASHINGTON TOTAL PETROLEUM HYDROCARBONS - GASOLINE
(WTPH-G)
and Benzene, Toluene, Ethyl Benzene, and Xylenes

Chronology

Laboratory Number 91490

Identification	Sampled	Received	Extracted	Analyzed	Run #	Lab #
SVI-0494-110	04/14/94	04/15/94	04/19/94	04/19/94		1
SVI-0494-111	04/14/94	04/15/94	04/19/94	04/19/94		2
SVI-0494-112	04/14/94	04/15/94	04/19/94	04/19/94		3
SVI-0494-113	04/14/94	04/15/94	04/19/94	04/19/94		4
SVI-0494-115	04/14/94	04/15/94	04/19/94	04/19/94		5
SVI-0494-116	04/14/94	04/15/94	04/19/94	04/19/94		6
SVI-0494-102	04/13/94	04/15/94	04/19/94	04/19/94		7
SVI-0494-101	04/13/94	04/15/94	04/19/94	04/19/94		9
SVI-0494-130SP+1	04/13/94	04/15/94	04/19/94	04/19/94		10
SVI-0494-131SP+1	04/13/94	04/15/94	04/19/94	04/19/94		

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 ▪ Martinez, California 94553 ▪ (510) 229-1512 / fax (510) 229-1526

WHITE SHIELD INC.
Attn: STUART FRICKE

Project SVI-0494
Reported 20-April-1994

WASHINGTON TOTAL PETROLEUM HYDROCARBONS - GASOLINE (WTPH-G)

Laboratory Number	Sample Identification	Matrix
91490- 1	SVI-0494-110	Soil
91490- 2	SVI-0494-111	Soil
91490- 3	SVI-0494-112	Soil
91490- 4	SVI-0494-113	Soil
91490- 5	SVI-0494-115	Soil
91490- 6	SVI-0494-116	Soil
91490- 7	SVI-0494-102	Soil
91490- 9	SVI-0494-101	Soil
91490-10	SVI-0494-130SP+134SP	Soil
91490-11	SVI-0494-131SP+132SP	Soil

RESULTS OF ANALYSIS

Laboratory Number:	91490- 1	91490- 2	91490- 3	91490- 4	91490- 5
Gasoline:	10000	220	4*	ND<1	2700
Benzene:	120	ND<0.25	ND<.005	ND<.005	3
Toluene:	460	4.6	0.015	ND<.005	89
Ethyl Benzene:	120	2.4	0.009	ND<.005	46
Total Xylenes:	730	11	0.031	0.007	310
Concentration:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
-- Surrogate % Recoveries --					
Trifluorotoluene (SS):	MI	129	83	93	MI

Laboratory Number:	91490- 6	91490- 7	91490- 9	91490-10	91490-11
Gasoline:	7900	ND<1	ND<1	13*	ND<1
Benzene:	11	ND<.005	ND<.005	ND<.005	ND<.005
Toluene:	200	ND<.005	ND<.005	ND<.005	ND<.005
Ethyl Benzene:	84	ND<.005	ND<.005	0.015	ND<.005
Total Xylenes:	500	ND<.005	ND<.005	0.27	ND<.005
Concentration:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
-- Surrogate % Recoveries --					
Trifluorotoluene (SS):	MI	82	94	MI	94

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 ▪ Martinez, California 94553 ▪ (510) 229-1512 / fax (510) 229-1526

WASHINGTON TOTAL PETROLEUM HYDROCARBONS - GASOLINE (WTPH-G)

Quality Assurance and Control Data - Soil/Water

Laboratory Number 91490

Compound	Method Blank (mg/kg)	RL (mg/kg)	Spike Recovery (%)	Limits (%)	RPD (%)
Gasoline:	ND<1	1	71/78	70-130	9%
Benzene:	ND<.005	.005	93/96	70-130	3%
Toluene:	ND<.005	.005	91/96	70-130	5%
Ethyl Benzene:	ND<.005	.005	91/96	70-130	5%
Total Xylenes:	ND<.005	.005	99/105	70-130	6%

Definitions:
MI = Matrix Interference
* = Late gasoline range hydrocarbons not indicative of a gasoline pattern
ND = Not Detected
RPD = Relative Percent Difference
RL = Reporting Limit
mg/kg = Parts per million (ppm)
QC File No. 91490

Afsaneh Sal
Senior Chemist
Account Manager

Chain of Custody and Analysis Request

Page 1 of 2

White Shield, Inc.
Address: P. O. Box 477
City : Grandview State Zip: WA 98930
Phone: (509) 882-1144 Fax: (509) 882-4566
Project Manager: Stuart Fricke
Alternate Contact: Terry / Chuck
Project No.: SVI-0494 P.O. No.

TURN AROUND TIME
(circle one)
Same Day 72 Hrs.
24 Hrs. 48 Hrs.
Normal 5 Day

Superior Precision Analytical Inc.
P.O. Box 1545
Martinez, California 94553

Martinez I: (510) 229-1512
Martinez II: (510) 229-0166
San Francisco: (415) 647-2081

Section II: Analysis Request

Sampler: Chuck O'Brien
Regulatory Agency: DOE

Sample Identification	S=Soil A=Air W=Water Matrix	EPA 418.1	WTPH-G	WTPH-D	BTEX	WTPH G/BTEX	EPA 601	EPA 8080 (PCBs) Pesticide Screen	TCLP Metals	EPA 7421 (Pb)	WTPH - Acid			Date Sampled	Time Sampled	# of Containers	Preservatives (yes or no)	Sampling Remarks: Bioremediation, UST, Monitoring, Recent Contamination, Unknown Compounds, COMMENTS:
1 SVI-0494-110	1			X		X								4/14		1	No	
2 SVI-0494-111	2			X		X										1		
3 SVI-0494-112	3			X		X										1		
4 SVI-0494-113	4			X		X										1		
5 SVI-0494-115	5			X		X		X								2		
6 SVI-0494-116	6			X		X										1		
7 SVI-0494-102	7			X		X								4/13		1		
8 SVI-0494-105	8										X					1		
~~9 SVI-0494-103~~	~~9~~			~~X~~		~~X~~										~~1~~		
10 SVI-0494-101	9			X		X								4/13		1	No	
11																		
12																		

Relinquished By: Chuck O'Brien
Organization: White Shield
Date/Time: 4/14/94 3:20 PM

Reliquished By:
Organization:
Date/Time:

Relinquished By:
Organization:
Date/Time:

Received By:
Organization:
Date/Time:

Received By:
Organization:
Date/Time:

Received By:
Laboratory: Superior
Date/Time: 4-15-94 3:45 pm

Lab: Please initial the following:

Samples Stored in Ice: W BC
Appropriate Containers:
Samples Preserved:
VOAs without headspace:
Comments: DIC

Chain of Custody and Analysis Request

White Shield, Inc.
Address: P. O. Box 477
City : Grandview State Zip: WA 98930
Phone: (509) 882-1144 Fax: (509) 882-4566
Project Manager: Stuart Fricke
Alternate Contact: Terry
Project No.: SVI-0494 P.O. No.

TURN AROUND TIME
(circle one)
Same Day 72 Hrs.
24 Hrs. 48 Hrs.
Normal 5 Day

Superior Precision Analytical Inc.
P.O. Box 1545
Martinez, California 94553

Martinez I: (510) 229-1512
Martinez II: (510) 229-0166
San Francisco: (415) 647-2081

Section II: Analysis Request

Sampler: Chuck O'Rourke
Regulatory Agency:

Sample Identification	S = Soil A = Air W = Water Matrix	EPA 418.1	WTPH-G	WTPH-D	BTEX	WTPH G/BTEX	EPA 601	EPA 8080 (PCBs)	TCLP Metals	EPA 7421 (Pb)				Date Sampled	Time Sampled	# of Containers	Preservatives (yes or no)	Sampling Remarks Bioremediation UST Monitoring Recent Contamination Unknown Compounds COMMENTS:
1 SVI-0494-1305P	S	10		X		X								4/13		1	None	Composite #
2 SVI-0494-1345P	S					~~X~~										1		1305P & 1345P
3																		
4 SVI-0494-1315P	S	11		X		X										1		Composite #
5 SVI-0494-1325P	S															1		1315P & 1325P
6																		
7																		
8																		
9																		
10																		
11																		
12																		

Relinquished By: Chuck O'Rourke
Organization: White Shield
Date/Time 4/14/94 3:00 PM

Reliquished By:
Organization:
Date/Time

Relinquished By:
Organization:
Date/Time

Received By:
Organization:
Date/Time

Received By:
Organization:
Date/Time

Received By:
Laboratory: Sylvia
Date/Time 4-15-94 3:45 pm

Lab: Please initial the following:

Samples Stored in Ice: 6°C
Appropriate Containers:
Samples Preserved:
VOAs without headspace: N/A
Comments:

Superior Precision Analytical, Inc.
1555 Burke, Unit I ▪ San Francisco, California 94124 ▪ (415) 647-2081 / fax (415) 821-7123

WHITE SHIELD
Attn: STUART FRICKE

Project SVI-0494
Reported 21-April-1994

Pesticides by EPA Method 8080

Chronology

Laboratory Number 91490

Identification	Sampled	Received	Extracted	Analyzed	Run #	Lab #
SVI-0494-115	04/14/94	04/15/94	04/19/94	04/21/94		5

Superior Precision Analytical, Inc.
1555 Burke, Unit I ▪ San Francisco, California 94124 ▪ (415) 647-2081 / fax (415) 821-7123

WHITE SHIELD
Attn: STUART FRICKE

Project SVI-0494
Reported 21-April-1994

Pesticides by EPA Method 8080

Laboratory Number	Sample Identification	Matrix
91490- 5	SVI-0494-115	Soil

RESULTS OF ANALYSIS

Laboratory Number: 91490- 5

a-BHC:	ND<5
b-BHC:	ND<5
g-BHC:	ND<5
d-BHC:	ND<5
Heptachlor:	ND<5
Aldrin:	ND<5
Heptachlor epoxide:	ND<5
Endosulfan I:	ND<5
Dieldrin:	ND<5
4,4-DDE:	ND<5
Endrin:	ND<5
Endosulfan II:	ND<5
Endrin Aldehyde:	ND<5
4,4-DDD:	ND<5
Endosulfan Sulfate:	ND<5
4,4-DDT:	ND<5
Endrin Ketone:	ND<5
Methoxychlor:	ND<5
Chlordane:	ND<10
Toxaphene:	ND<100
Concentration:	ug/kg

-- Surrogate % Recoveries --

Tetrachloro-m-xylene:	86
Decachlorobiphenyl:	92

Superior Precision Analytical, Inc.
1555 Burke, Unit I ▪ San Francisco, California 94124 ▪ (415) 647-2081 / fax (415) 821-7123

Pesticides by EPA Method 8080
Quality Assurance and Control Data - Soil

Laboratory Number 91490

Compound	Method Blank (ug/kg)	RL (ug/kg)	Spike Recovery (%)	Limits (%)	RPD (%)
a-BHC:	ND<5	5			
b-BHC:	ND<5	5			
g-BHC:	ND<5	5	101/95	40-153	6%
d-BHC:	ND<5	5			
Heptachlor:	ND<5	5	103/98	75-143	5%
Aldrin:	ND<5	5	100/94	69-147	6%
Heptachlor epoxide:	ND<5	5			
Endosulfan I:	ND<5	5			
Dieldrin:	ND<5	5	85/80	62-122	6%
4,4-DDE:	ND<5	5			
Endrin:	ND<5	5	89/86	52-152	3%
Endosulfan II:	ND<5	5			
Endrin Aldehyde:	ND<5	5			
4,4-DDD:	ND<5	5			
Endosulfan Sulfate:	ND<5	5			
4,4-DDT:	ND<5	5	89/84	37-140	6%
Endrin Ketone:	ND<5	5			
Methoxychlor:	ND<5	5			
Chlordane:	ND<10	10			
Toxaphene:	ND<100	100			
Tetrachloro-m-xylene:	101		100/94		6%
Decachlorobiphenyl:	101		92/86		7%

Definitions:
ND = Not Detected
RPD = Relative Percent Difference
RL = Reporting Limit
ug/kg = Parts per billion (ppb)
QC File No. 91490

4/21/94
Senior Chemist
Account Manager

Certified Laboratories

FRIEDMAN & BRUYA, INC.
ENVIRONMENTAL CHEMISTS

Andrew John Friedman
James E. Bruya, Ph.D.
(206) 285-8282

3012 16th Avenue West
Seattle, WA 98119-2029
FAX: (206) 283-5044

April 21, 1994

Terry Miller, Project Leader
White Shield, Inc.
P.O. Box 477
Grandview, WA 98930

Dear Ms. Miller:

Enclosed are the results from the testing of material submitted on April 15, 1994 from Project SVI-0494, Sunnside Valley Irrigation District.

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

Sincerely,

Bradley T. Benson
Chemist

BTB/dp

Enclosures

FRIEDMAN & BRUYA, INC.
ENVIRONMENTAL CHEMISTS

Date of Report: April 21, 1994
Date Received: April 15, 1994
Project: SVI-0494, Sunnside Valley Irrigation District
Date Samples Extracted: April 15, 1994
Date Extracts Analyzed: April 15, 1994

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR FINGERPRINT CHARACTERIZATION BY CAPILLARY GAS CHROMATOGRAPHY USING A FLAME IONIZATION DETECTOR (FID) AND ELECTRON CAPTURE DETECTOR (ECD)

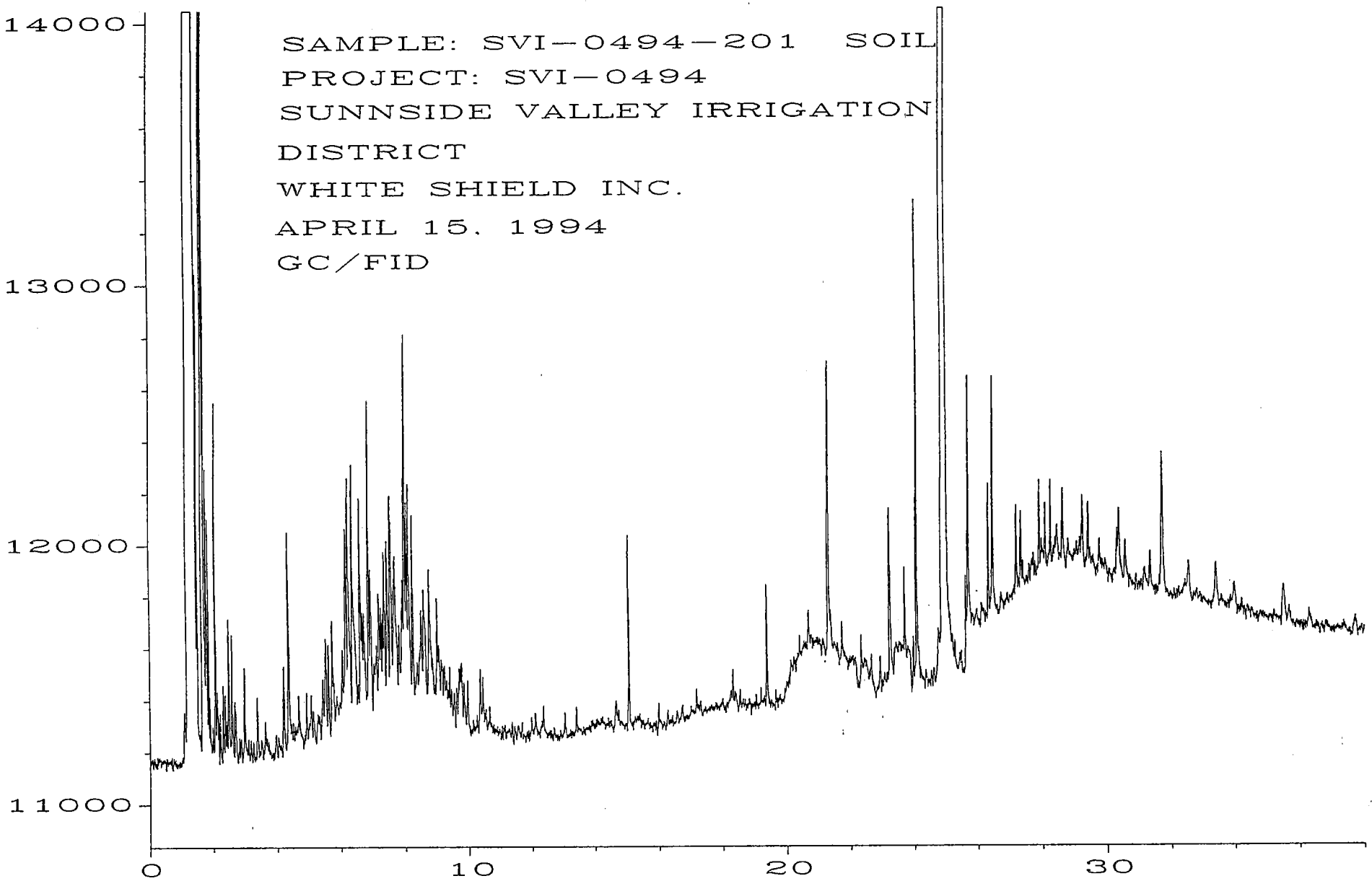
Sample ID	GC Characterization
SVI-0494-201 Soil	The GC trace using the flame ionization detector (FID) showed the presence of low boiling compounds. The patterns displayed by these peaks are indicative of weathered gasoline, mineral spirits or Stoddard solvent. Low levels of a higher boiling petroleum residuum also appears to be present. The low boiling compounds appeared as a ragged pattern of peaks eluting from *n*-C_8 to *n*-C_{10} showing a maximum near *n*-C_9. The high boiling compounds appeared as a regular pattern of peaks from C_{28} to beyond C_{35}. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis.
SVI-0494-201 Soil & Tar	The GC trace using the flame ionization detector (FID) showed the presence of low and high boiling compounds. The patterns displayed by these peaks are indicative of weathered gasoline, mineral spirits or Stoddard solvent and a heavier petroleum residuum. The low boiling compounds appeared as a ragged pattern of peaks eluting from *n*-C_8 to *n*-C_{10} showing a maximum near *n*-C_9. The high boiling compounds appeared as a regular pattern of peaks eluting from *n*-C_{18} to beyond *n*-C_{35} showing a maximum near *n*-C_{29}. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis.

FRIEDMAN & BRUYA, INC
ENVIRONMENTAL CHEMISTS

Date of Report: April 21, 1994
Date Received: April 15, 1994
Project: SVI-0494, Sunnside Valley Irrigation District
Date Samples Extracted: April 15, 1994
Date Extracts Analyzed: April 15, 1994

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR FINGERPRINT CHARACTERIZATION BY CAPILLARY GAS CHROMATOGRAPHY USING A FLAME IONIZATION DETECTOR (FID) AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID	GC Characterization
SVI-0494-201 Tar	The GC trace using the flame ionization detector (FID) showed the presence of low and high boiling compounds. The patterns displayed by these peaks are indicative of weathered gasoline, mineral spirits or Stoddard solvent and a heavier petroleum residuum like a tar or diesel 6. The low boiling compounds appeared as a ragged pattern of peaks eluting from *n*-C_8 to *n*-C_{10} showing a maximum near *n*-C_9. The high boiling compounds appeared as a regular pattern of peaks eluting from *n*-C_{18} to beyond *n*-C_{35} showing a maximum near *n*-C_{29}. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis.



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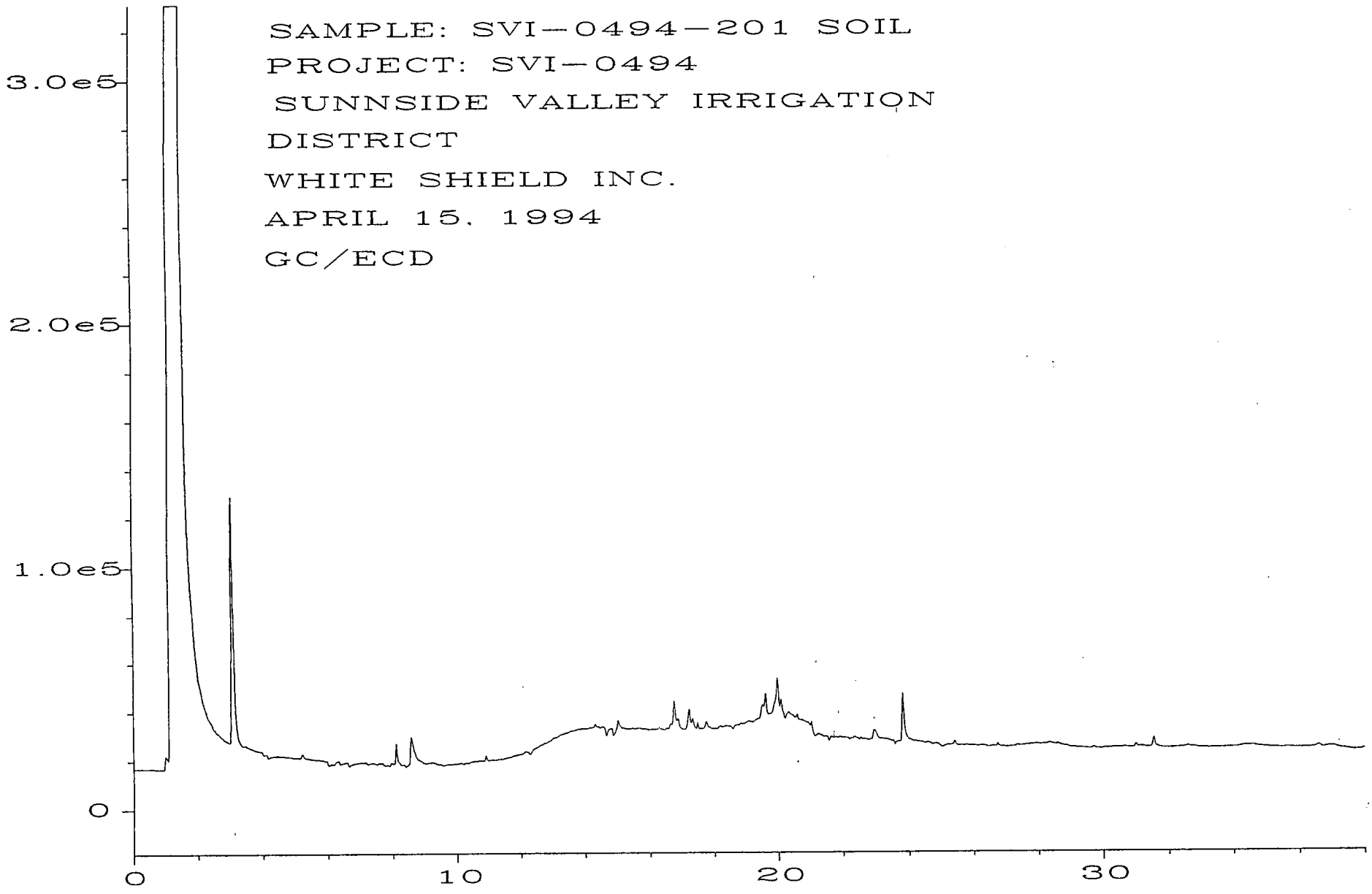

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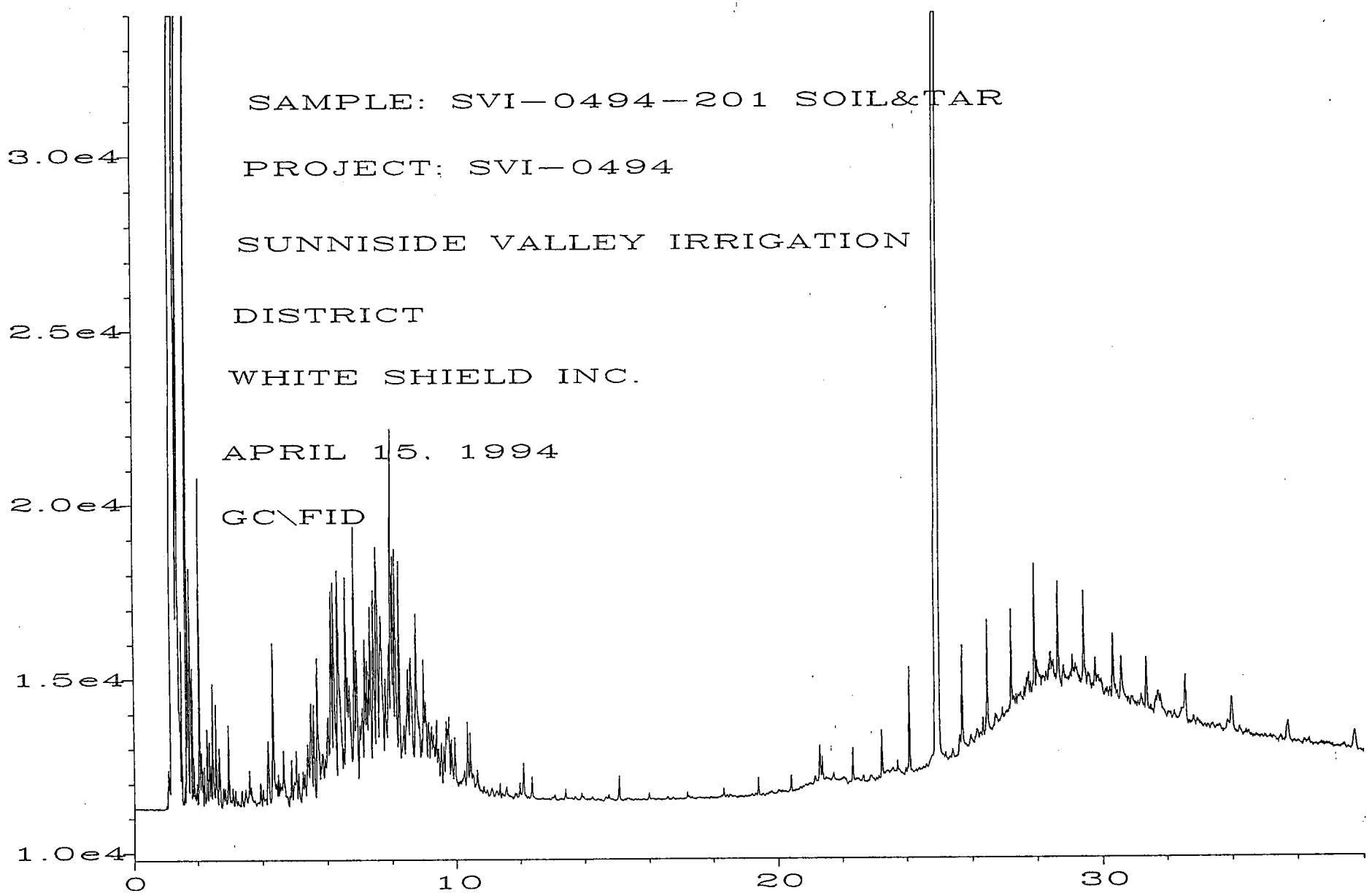

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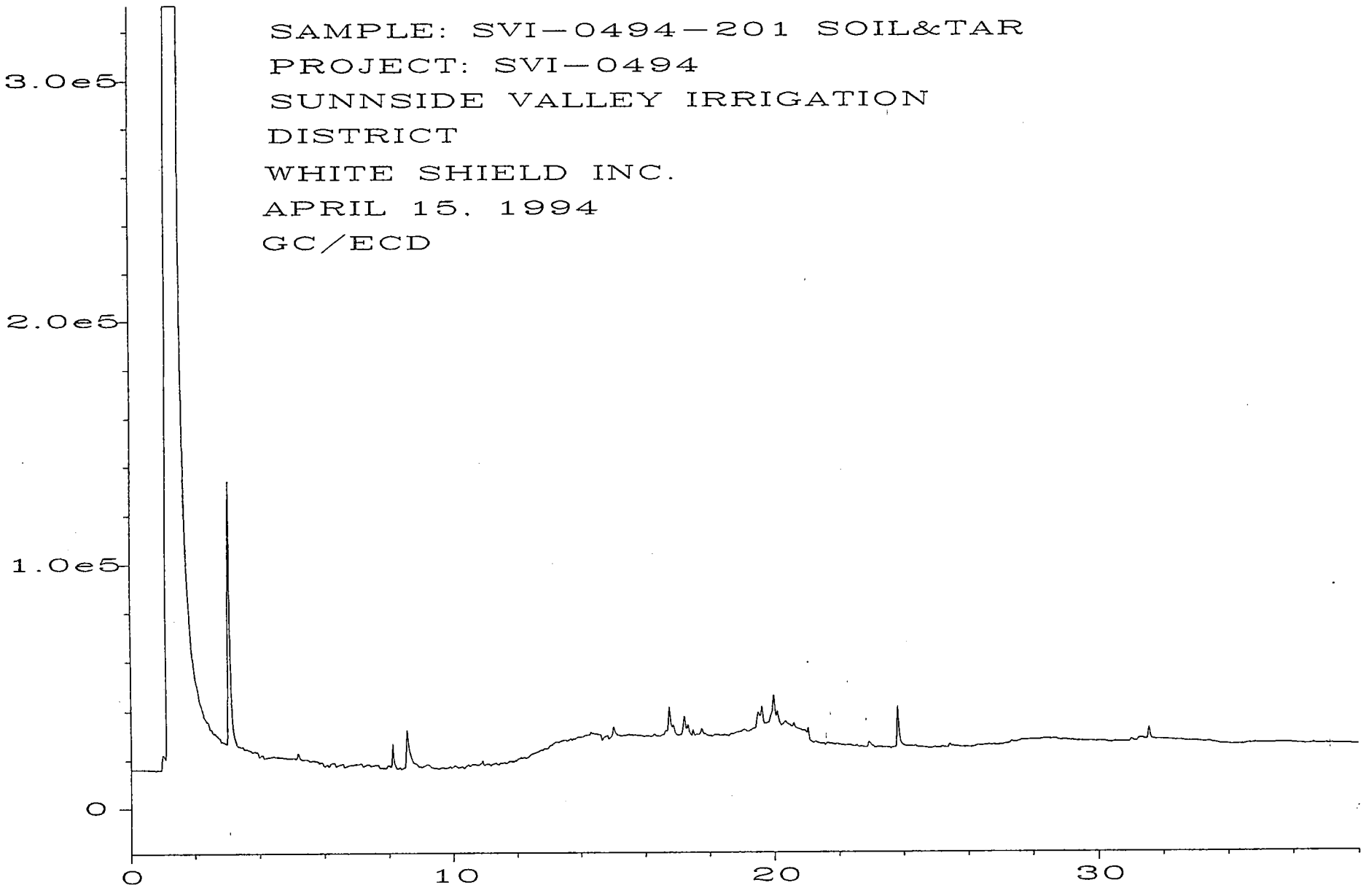

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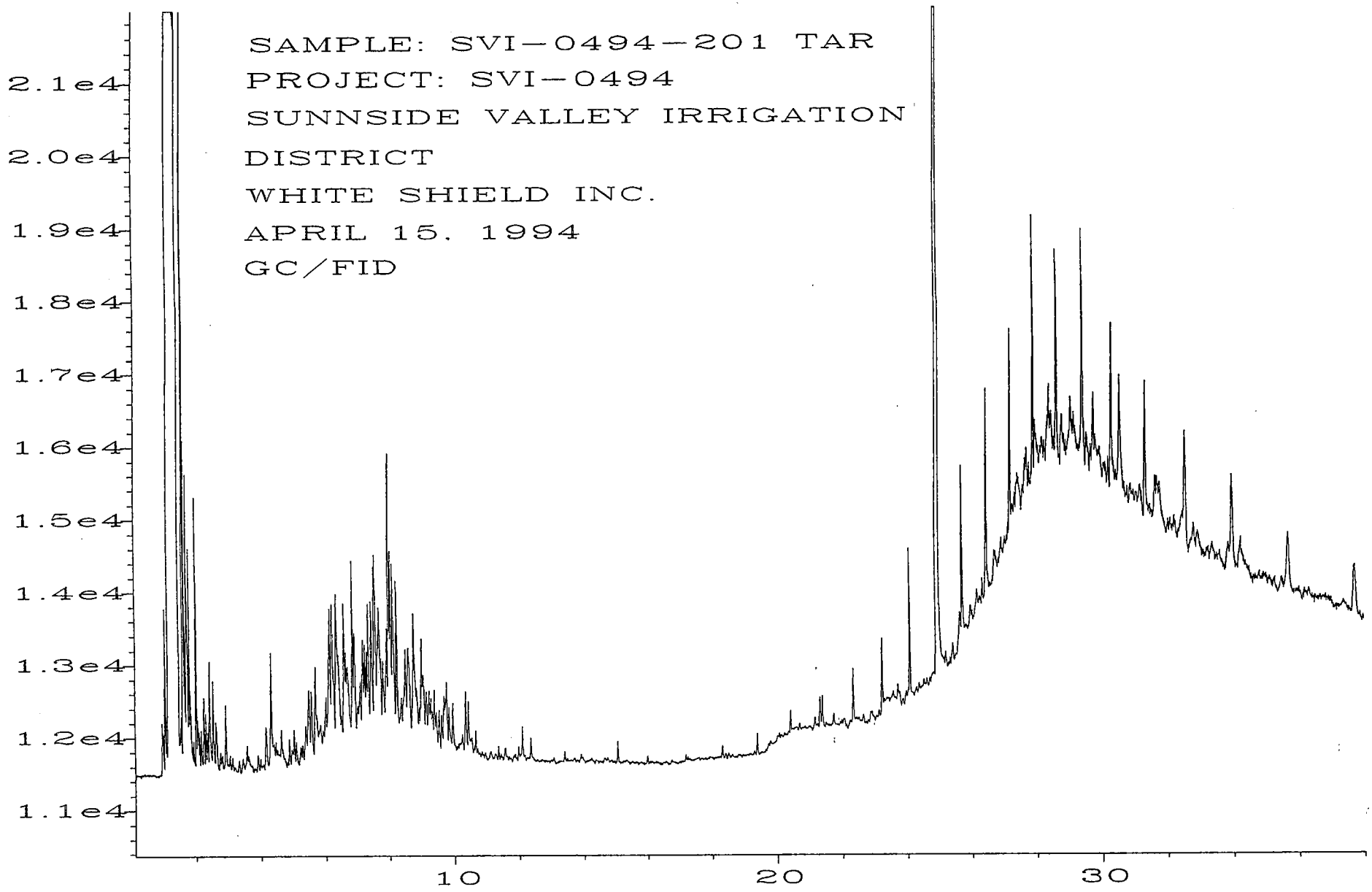
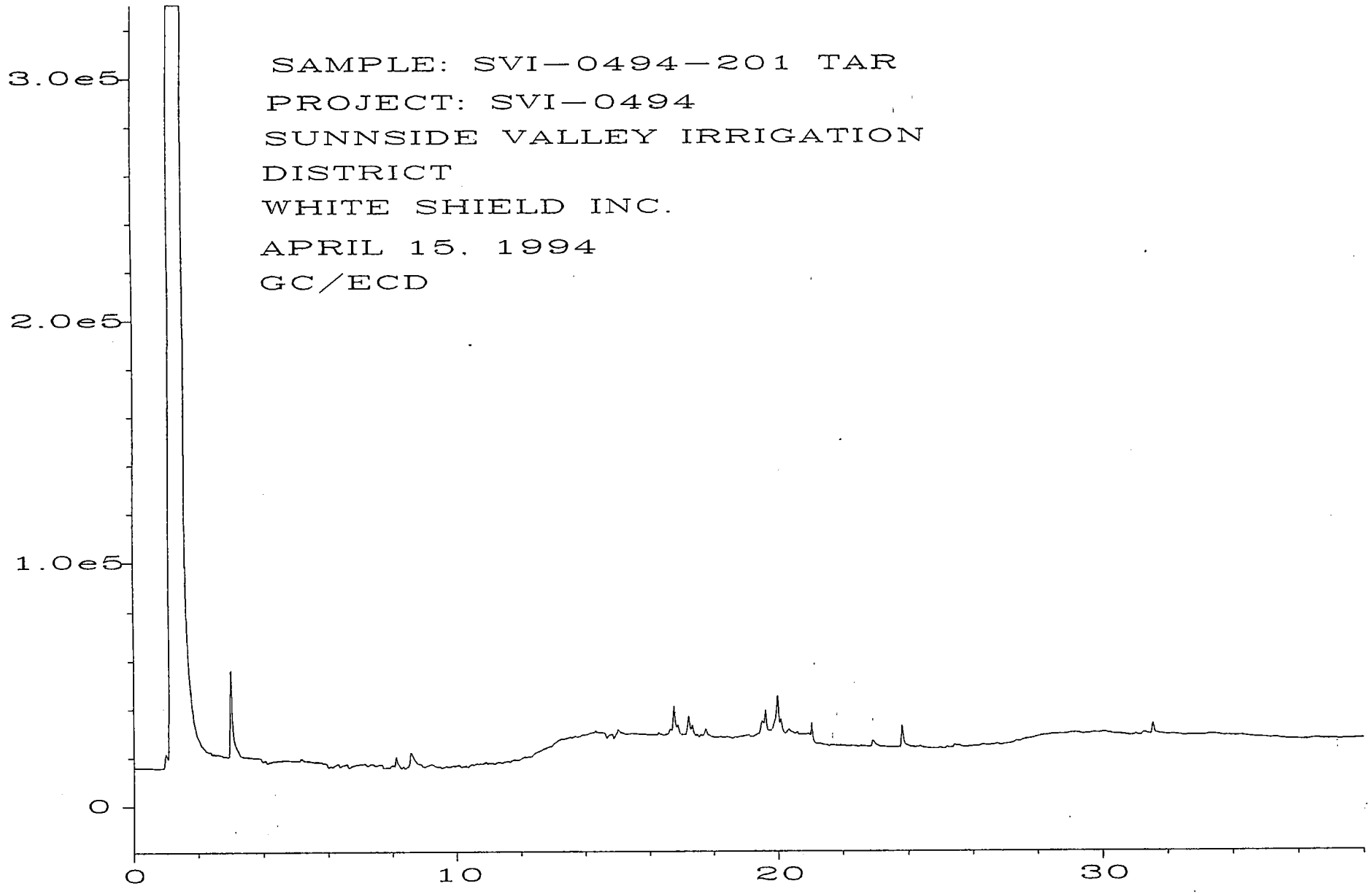


Sig. 1 in C:\HPCHEM\4\DATA\04-15-94\014F0501.D



Sig. 2 in C:\HPCHEM\4\DATA\04-15-94\014R0501.D

FRIEDMAN & BRUYA, INC.
3008-B 16th Avenue West
Seattle, WA 98119

4.BTB.A
4.15.94
09:50

SAMPLE CHAIN OF CUSTODY

Send Report To:
Company White Shield Inc Contact Terry Miller
Address P.O. Box 477
City, State, Zip Grandview, WA 98930
Phone # 509-882-1144 Date 4/14/94
FAX # 509-882-4566

SITE NO.	PROJECT NAME	PURCHASE ORDER #
SVI-0494	Sunnyside Valley Irrigation District	

SAMPLERS (signature)	PROJECT LOCATION
Charles O Robinson	Grandview Yard

REMARKS

We are particularly concerned about the Black film - what is it and where would it come from - It may be a UST coating, but why would it run-off

SAMPLE DISPOSAL INFORM.

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

SAMPLE #	Date/Time Sampled	Type of Sample	# of Jars	Lab Sample #	Analyses Requested
SVI-0494-201	4/13 & 4/14	Soil/Film	2	48818	HFS - Request Identification
				48819	
		ATTENTION:		BRAD	per phone
		conversation			4/13/94 ; 4:45 pm
			3-4	Day turnaround	
		CALL	AFTER	RUNNING	HFS Analysis
		The two containers are the same			
		material.			

SIGNATURE	PRINT NAME	COMPANY	Date	Time
Relinquished by: Charles Robinson	Charles Robinson	White Shield, Inc	4/14/94	10^00 Am
Received by: S. Oborn	S. Oborn	Ed B, Inc.	4/15/94	9:30A
Relinquished by:				
Received by:				

APPENDIX C

Method A Cleanup Levels - Soil [a]

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

Method A Cleanup Levels – Ground Water[a]

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

[a] Caution on misusing method A tables. Method A tables have been developed for specific purposes. They are intended to provide conservative cleanup levels for sites undergoing routine cleanup actions or those sites with relatively few hazardous substances. The tables may not be appropriate for defining cleanup levels at other sites. For these reasons, the values in these tables should not automatically be used to define cleanup levels that must be met for financial, real estate, insurance coverage or placement, or similar transactions or purposes. Exceedances of the values in these tables do not necessarily trigger requirements for cleanup action under this chapter.

APPENDIX D

UNDERGROUND STORAGE TANK
Site Check/Site Assessment Checklist

For Office Use Only	
Owner #	
Site #	

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 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 tanks for which the site check or site assessment is being conducted. Use the owner's tank ID numbers 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): 007479

Site/Business Name: Sunnyside Valley Irrigation District

Site Address: 405 N. Elm (Street) Telephone: (509) 837-6980

Grandview (City) WA (State) 98930 (ZIP Code)

TANK INFORMATION

Tank ID No.	Tank Capacity	Substance Stored
7	675	Unleaded Gasoline
8	1000	Diesel Fuel

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): ____

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 a vicinity map.	CR	
2.	A brief summary of information obtained during the site inspection is provided. (see Section 3.2 in site assessment guidance)	CR	
3.	A summary of UST system data is provided. (see Section 3.1)	CR	
4.	The soils characteristics at the UST site are described. (see Section 5.2)	CR	
5.	Is there any apparent groundwater in the tank excavation?	CR	
6.	A brief description of the surrounding land use is provided. (see Section 3.1)	CR	
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.	CR	
8.	A sketch or sketches showing the following items is provided:		
	- location and ID number for all field samples collected	CR	
	- groundwater samples distinguished from soil samples (if applicable)	CR	
	- samples collected from stockpiled excavated soil	CR	
	- tank and piping locations and limits of excavation pit	CR	
	- adjacent structures and streets	CR	
	- approximate locations of any on-site and nearby utilities	CR	
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)	CR	
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.	CR	
11.	Any factors that may have compromised the quality of the data or validity of the results are described.	CR	
12.	The results of this site check/site assessment indicate that a confirmed release of a regulated substance has **not** occurred.		CR

SITE ASSESSOR INFORMATION

Charles O. Robinson — White Shield, Inc.

Person registered with Ecology — Firm Affiliated with

Business Address: P.O. Box 477 (Street) — Telephone: (509) 882-1144

Grandview (City) — WA (State) — 98930 (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.

9/13/94 (Date) — Charles O Robinson (Signature of Person Registered with Ecology)

APPENDIX E

UNDERGROUND STORAGE TANK TEMPORARY/PERMANENT CLOSURE and SITE ASSESSMENT NOTICE

WASHINGTON STATE DEPARTMENT OF ECOLOGY

See back of form for instructions
Please ☑ the appropriate box(es)
Please type or print information

For Office Use Only
Owner #:
Site #:

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

SITE INFORMATION

Site ID Number (on invoice or available from Ecology if the tanks are registered): ØØ7479

Site/Business Name: Sunnyside Valley Irrigation District

Site Address: 405 N. Elm (Street) Telephone: (509) 837-6980

Grandview (City) WA (State) 98930 (ZIP-Code)

TANK INFORMATION

Tank ID	Closure Date	Tank Capacity	Substance Stored
7	8/14/94	6075	Unleaded gasoline
8	8/14/94	1000	Diesel fuel

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.

UST SYSTEM OWNER/OPERATOR:

UST Owner/Operator: Sunnyside Valley Irrigation District

Owners Signature: Dana Swan Telephone: (509) 837-6980

Address: 120 S. 11th St (Street) P.O. Box 239 (P.O. Box)

Sunnyside (City) WA (State) 98944 (ZIP-Code)

TANK CLOSURE/CHANGE-IN-SERVICE PERFORMED BY:

Service Provider: White Shield Inc License Number: SØØØ337

Licensed Supervisor: Charles O Robinson Decommissioning License Number: WØØ1268

Supervisors Signature: Charles O Robinson

Address: 801 Grandridge Rd (Street) P.O. Box 477 (P.O. Box)

Grandview (City) WA (State) 98930 (ZIP-Code)

Telephone: (____)

SITE CHECK/SITE ASSESSMENT CONDUCTED BY:

Name of Registered Site Assessor: Charles O Robinson for White Shield, Inc

Telephone: (509) 882-1144

Address: 801 Grandridge Road (Street) P.O. Box 477 (P.O. Box)

Grandview (City) WA (State) 98930 (ZIP-Code)

ECY 020-34

PLEASE READ CAREFULLY

INSTRUCTIONS

Return this completed form to:

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

This form is to be completed by the Tank Owner and submitted to Ecology within 30 days of tank closure.

Mark the appropriate box(es) for temporary tank closure, permanent tank closure, change-in-service, or site assessment.

Permanent Closure and Change-in-Service require a site assessment be performed.

SITE INFORMATION:

Fill in the site information. Be sure to include the Ecology site ID number. This number may be found on the invoice or permit. Include a contact telephone number so any problems may be resolved quickly.

TANK INFORMATION:

List the tanks that were closed. Please use tank ID numbers and indicate the date of permanent closure. Be sure to attach your Underground Storage Tank Permits for any tanks that are now closed.

UST SYSTEM OWNER/OPERATOR:

Please fill in the owner's/operator's name, address, and telephone number. Be sure to sign this form.

TANK CLOSURE/CHANGE-IN-SERVICE PERFORMED BY:

List the closure company. Companies that provide UST services MUST be licensed by Ecology. Ask to see their supervisor's license. Make sure the licensed supervisor signs this form.

SITE CHECK/SITE ASSESSMENT CONDUCTED BY:

Fill in the site assessor information for permanent closure or change-in-service. Mark the appropriate box showing whether contamination from the underground tank(s) was or is present at the site. A site check/site assessment MUST be conducted by a site assessor who is registered with Ecology.

If contamination at the site is found or suspected, the appropriate Ecology Regional Office must be notified within 24 hours. If the contamination is confirmed, a site characterization report must be submitted to the regional office within 90 days. If contamination is not confirmed, a site assessment report must be submitted to the above address within 30 days.

Tanks exempt from notification requirements are:

Farm or residential tanks, 1100 gallons or less, used to store motor fuel for personal or farm use only. The fuel must not be for resale or used for business purposes.

Tanks used for storing heating oil that is used on the premises where the tank is located.

Tanks with a capacity of 110 gallons or less.

Equipment or machinery tanks such as hydraulic lifts or electrical equipment tanks.

Emergency overflow tanks, catch basins, or sumps.

For more information call toll free in the state of Washington 1-800-826-7716 or (206) 438-7137

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 mod.	<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 diposal permit needed)
Road construction (no solid waste diposal 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

ile Original and First Copy with
Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Application No. /
Permit No. .... /

(1) **OWNER:** Name ERNEST W. PETERSON Address RT 3 Box 3128 Grandview, Wa.

(2) **LOCATION OF WELL:** County YAKIMA – SW¼ SW¼ Sec. 13 T. 9 N., R. 23 W.M. N

ear nd distance from section or subdivision corner 100' W & 30' N OF SUB DIVISION LINE

(3) **PROPOSED USE:** Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [ ] Test Well [ ] Other [ ]

(4) **TYPE OF WORK:** Owner's number of well (if more than one)....
New well [X] Method: Dug [ ] Bored [ ]
Deepened [ ] Cable [X] Driven [ ]
Reconditioned [ ] Rotary [ ] Jetted [ ]

(5) **DIMENSIONS:** Diameter of well 6 inches.
Drilled 70 ft. Depth of completed well 70 ft.

(6) **CONSTRUCTION DETAILS:**

Casing installed: ..." Diam. from .... ft. to .... ft.
Threaded [ ] ..." Diam. from .... ft. to .... ft.
Welded [X] 6" Diam. from 0 ft. to 30 ft.

Perforations: Yes [ ] No [X]
Type of perforator used....
SIZE of perforations .... in. by .... in.
.... perforations from .... ft. to .... ft.
.... perforations from .... ft. to .... ft.
.... perforations from .... ft. to .... ft.

Screens: Yes [ ] No [X]
Manufacturer's Name....
Type.... Model No....
Diam. .... Slot size .... from .... ft. to .... ft.
Diam. .... Slot size .... from .... ft. to .... ft.

Gravel packed: Yes [ ] No [X] Size of gravel: ....
Gravel placed from .... ft. to .... ft.

Surface seal: Yes [X] No [ ] To what depth? 20 ft.
Material used in seal CEMENT
Did any strata contain unusable water? Yes [ ] No [X]
Type of water?.... Depth of strata....
Method of sealing strata off....

(7) **PUMP:** Manufacturer's Name BERK
Type: JET H.P. 1/2

(8) **WATER LEVELS:** Land-surface elevation above mean sea level.... ft.
Static level 60 ft. below top of well Date 4-28-77
Artesian pressure .... lbs. per square inch Date....
Artesian water is controlled by.... (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [ ] No [X] If yes, by whom?....
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

e of test....
Bailer test 40 gal./min. with 25 ft. drawdown after 2 hrs.
Artesian flow.... g.p.m. Date....
Temperature of water.... Was a chemical analysis made? Yes [ ] No [X]

(10) **WELL LOG:**

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Top Soil	0	18
Brown Rock	18	65
Brown Honey comb	65	70
Black Basalt	70	71

RECEIVED
MAY 2 1977
DEPARTMENT OF ECOLOGY
CENTRAL REGIONAL OFFICE

Work started 4-24-77 Completed 4-28-77

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME WATKINS WELL DRILLING
(Person, firm, or corporation) (Type or print)

Address Rt. 2 Box 2457A Grandview

[Signed] Kenneth L. Watkins
(Well Driller)

License No. 0516 Date 4-28-, 1977

(USE ADDITIONAL SHEETS IF NECESSARY)

S. F. No. 7356—OS—(Rev. 4-71).

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Application No. /
Permit No. /

(1) **OWNER:** Name Ed Frasl Address Rt. 3 Box 3424 Grandview, Wa

(2) **LOCATION OF WELL:** County Yakima — W ½ SW ¼ Sec. 13 T. 9 N., R. 23 W.M. MN

and distance from section or subdivision corner 200'N & 100'S OF SUBDIVISION CORNER

(3) **PROPOSED USE:** Domestic X Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) **TYPE OF WORK:** Owner's number of well (if more than one) ....
New well X Method: Dug ☐ Bored ☐
Deepened ☐ Cable X Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) **DIMENSIONS:** Diameter of well 6 inches.
Drilled 70 ft. Depth of completed well 70 ft.

(6) **CONSTRUCTION DETAILS:**

Casing installed: ..." Diam. from .... ft. to .... ft.
Threaded ☐ ..." Diam. from .... ft. to .... ft.
Welded X 6 " Diam. from 0 ft. to 28 ft.

Perforations: Yes ☐ No X
Type of perforator used ....
SIZE of perforations .... in. by .... in.
.... perforations from .... ft. to .... ft.
.... perforations from .... ft. to .... ft.
.... perforations from .... ft. to .... ft.

Screens: Yes ☐ No X
Manufacturer's Name ....
Type .... Model No. ....
Diam. .... Slot size .... from .... ft. to .... ft.
Diam. .... Slot size .... from .... ft. to .... ft.

Gravel packed: Yes ☐ No X Size of gravel: ....
Gravel placed from .... ft. to .... ft.

Surface seal: Yes X No ☐ To what depth? 20 ft.
Material used in seal CEMENT
Did any strata contain unusable water? Yes ☐ No X
Type of water? .... Depth of strata ....
Method of sealing strata off ....

(7) **PUMP:** Manufacturer's Name Sears
Type: To H.P. /

(8) **WATER LEVELS:** Land-surface elevation above mean sea level .... ft.
Static level 15 ft. below top of well Date 1-19-78
Artesian pressure .... lbs. per square inch Date ....
Artesian water is controlled by .... (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No X If yes, by whom? ....
Yield: .... gal./min. with .... ft. drawdown after .... hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

e of test ....
aller test 15 gal./min. with 25 ft. drawdown after 2 hrs.
Artesian flow .... g.p.m. Date ....
Temperature of water .... Was a chemical analysis made? Yes ☐ No X

(10) **WELL LOG:**

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Clay	0'	28'
Brown Basalt	28'	72'

RECEIVED
MAR 29 1978
DEPARTMENT OF ECOLOGY
CENTRAL REGIONAL OFFICE

Work started 1-9- 19 78 Completed 1-19- 19 78

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Watkins Well Drilling
(Person, firm, or corporation) (Type or print)

Address Rt. 2 Box 2457A Grandview, Wa.

[Signed] Kenneth L. Watkins
(Well Driller)

License No. 0516 Date 1-19- 19 78

(USE ADDITIONAL SHEETS IF NECESSARY) OR

S. F. No. 7356—OS—(Rev. 4-71).

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Application No. /
Permit No. ....

(1) **OWNER:** Name Gary L Schoepflin Address 109 N. Elm Grandview, Wa.

(2) **LOCATION OF WELL:** County Yakima N ½ – NE ¼ NW ¼ Sec. 14 T. 9 N., R. 23 W.M.

and distance from section or subdivision corner 500' E. & 400' N of Sub Division Corner

(3) **PROPOSED USE:** Domestic X Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) **TYPE OF WORK:** Owner's number of well (if more than one) ....
New well X Method: Dug ☐ Bored ☐
Deepened ☐ Cable X Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) **DIMENSIONS:** Diameter of well 6 inches.
Drilled 148 ft. Depth of completed well 148 ft.

(6) **CONSTRUCTION DETAILS:**

Casing installed: ..." Diam. from .... ft. to .... ft.
Threaded ☐ ..." Diam. from .... ft. to .... ft.
Welded X 6" Diam. from 0 ft. to 51 ft.

Perforations: Yes ☐ No X
Type of perforator used....
SIZE of perforations .... in. by .... in.
.... perforations from .... ft. to .... ft.
.... perforations from .... ft. to .... ft.
.... perforations from .... ft. to .... ft.

Screens: Yes ☐ No X
Manufacturer's Name....
Type.... Model No....
Diam. .... Slot size .... from .... ft. to .... ft.
Diam. .... Slot size .... from .... ft. to .... ft.

Gravel packed: Yes ☐ No X Size of gravel: ....
Gravel placed from .... ft. to .... ft.

Surface seal: Yes X No ☐ To what depth? 3 ft.
Material used in seal CEMENT
Did any strata contain unusable water? Yes ☐ No X
Type of water?.... Depth of strata....
Method of sealing strata off....

(7) **PUMP:** Manufacturer's Name BERK
Type: SUB H.P. 1

(8) **WATER LEVELS:** Land-surface elevation above mean sea level.... ft
Static level 40 ft. below top of well Date 12/22/77
Artesian pressure .... lbs. per square inch Date....
Artesian water is controlled by.... (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No X If yes, by whom?....
Yield: .... gal./min. with .... ft. drawdown after .... hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ....
Bailer test 20 gal./min. with 50 ft. drawdown after 2 hrs.
Artesian flow.... g.p.m. Date....
Temperature of water.... Was a chemical analysis made? Yes ☐ No X

(10) **WELL LOG:**

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Top Soil	0	4
Shale	4	18
Hard Pan	18	46
Brown Basalt	46	92
Black Basalt	92	133
Grey Basalt	133	143
Sand & Gravel	143	148

RECEIVED
JAN 25 1978
DEPARTMENT OF ECOLOGY
CENTRAL REGIONAL OFFICE

Work started 11-17-, 19 77 Completed 12-22-, 19 77

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Watkins Well Drilling
(Person, firm, or corporation) (Type or print)

Address Rt. 2 Box 2457A Grandview, Wa

[Signed] Kenneth L. Watkins
(Well Driller)

License No. 0516 Date 12/22/, 19 77

(USE ADDITIONAL SHEETS IF NECESSARY) OR

S. F. No. 7356—OS—(Rev. 4-71).

4714

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 081109

Water Right Permit No. 6

(1) OWNER: Name EVERETT DOYLE KELLEY Address 951 wilson hiway, Grandview WA 98930

(2) LOCATION OF WELL: County [redacted] YAKIMA N½ SW ¼ NE ¼ Sec 14 T. 09 N., R. 23 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) PARCEL # 230914-13001

(3) PROPOSED USE: ☒ Domestic ☐ Irrigation ☐ DeWater ☐ Industrial ☐ Test Well ☐ Municipal ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) _____

Abandoned ☐ New well ☒ Deepened ☐ Reconditioned ☐ Method: Dug ☐ Cable ☐ Rotary ☐ Bored ☐ Driven ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 200 feet. Depth of completed well 200 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from +1 ft. to 59 ft.
Welded ☒ PVC 4 " Diam. from -60 ft. to 200 ft.
Liner installed ☐
Threaded ☐ _____ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☒ No ☐ PVC LINER
Type of perforator used skillsaw
SIZE of perforations 1/8 in. by 6 in.
172 perforations from 160 ft. to 200 ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☐ No ☒
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☐ No ☒ Size of gravel _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 40 ft.
Material used in seal BENTONITE & cement
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
Static level 30 ft. below top of well Date _____
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.))

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☒ If yes, by whom? _____
Yield: 60 gal./min. with _____ ft. drawdown after _____ hrs.
" ESTIMATED AIRIFT " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Top soil, brown, soft	0	1
Sandy clay, brown, medium soft	1	31
Caliche, Black, hard	31	33
Fractured Basalt, brown, hard	33	44
Basalt, gray, very hard	44	80
Pouris basalt, brown, hard	80	84
Basalt, black, hard	84	133
Sandstone, gray, medium	133	163
Sandstone, tan, soft medium	163	176
Sandstone, brown, soft medium	176	200
6" Drive Shoe Utilized		

RECEIVED
3 1991
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work started 12/11/90, 19. Completed 12/13/90, 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME PONDEROSA DRILLING & DEVELOPMENT INC.
(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address E. 6010 BROADWAY SPOKANE WA 99212

(Signed) Steve Mills (WELL DRILLER) License No. 1335

Contractor's Registration No. PO-ND-EI *248JE (Steve Mills) Date 12/20, 1990

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329- 3

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Application No. .....
Permit No. .....

(1) OWNER: Name GERALD OWENS Address 2144 EVERETT AVE. WICHITA, KAN

(2) LOCATION OF WELL: County YAKIMA SE ¼ NW ¼ Sec. 24 T. 9 N., R. 23 W.M.

Bearing and distance from section or subdivision corner 200' FROM S.E. CORNER OF THE SE ¼ SECT

PROPOSED USE: Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [ ] Test Well [ ] Other [ ]

(4) TYPE OF WORK: Owner's number of well (if more than one) ....
New well [X] Method: Dug [ ] Bored [ ]
Deepened [ ] Cable [X] Driven [ ]
Reconditioned [ ] Rotary [ ] Jetted [ ]

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 65 ft. Depth of completed well 62 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from 1 ft. to 21 ft.
Threaded [ ] " Diam. from ... ft. to ... ft.
Welded [X] " Diam. from ... ft. to ... ft.

Perforations: Yes [ ] No [X]
Type of perforator used ...
SIZE of perforations ... in. by ... in.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.

Screens: Yes [ ] No [X]
Manufacturer's Name ...
Type ... Model No ...
Diam. ... Slot size ... from ... ft. to ... ft.
Diam. ... Slot size ... from ... ft. to ... ft.

Gravel packed: Yes [ ] No [X] Size of gravel: ...
Gravel placed from ... ft. to ... ft.

Surface seal: Yes [X] No [ ] To what depth? 20 ft.
Material used in seal CEMENT
Did any strata contain unusable water? Yes [ ] No [X]
Type of water? ... Depth of strata ...
Method of sealing strata off ...

(7) PUMP: Manufacturer's Name BERK
Type: JET H.P. 1/2

(8) WATER LEVELS: Land-surface elevation above mean sea level .... ft.
Static level 10 ft. below top of well Date 5/26/76
Artesian pressure ... lbs. per square inch Date ...
Artesian water is controlled by ... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [ ] No [X] If yes, by whom? ...
Yield: ... gal./min. with ... ft. drawdown after ... hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ...
test 20 gal./min. with 35 ft. drawdown after 2 hrs.
Artesian flow ... g.p.m. Date ...
Temperature of water ... Was a chemical analysis made? Yes [ ] No [X]

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Top Soil & Clay	0'	18'
Brown Rock	18'	60'
Brown Broken Rock	60'	65'

RECEIVED
JUL 9 1976
DEPARTMENT OF ECOLOGY
CENTRAL REGIONAL OFFICE

Work started 5/22/ 19 76 Completed 5/26/ 19 76

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Watkins Drilling Co.
(Person, firm, or corporation) (Type or print)

Address Rt 2 Box 2457A Grandview

[Signed] Kenneth L. Watkins
(Well Driller)

License No. 0516 Date 5/27/ 19 76

(USE ADDITIONAL SHEETS IF NECESSARY)

S. F. No. 7356—OS—(Rev. 4-71).

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 03927

UNIQUE WELL I.D. # AAF028

Water Right Permit No. _____

(1) OWNER: Name Apol-Richards Realty Address P.O. Box 367, Sunnyside WA

(1a) LOCATION OF WELL: County Yakima NW ¼ SE ¼ Sec. 24 T. 9 N., R. 23 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) 1270 Highland Rd., Grandview WA

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) _____

Abandoned [ ] New well [X] Method: Dug [ ] Bored [ ] Deepened [ ] Cable [ ] Driven [ ] Reconditioned [ ] Rotary [X] Jetted [ ]

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 150 feet. Depth of completed well 150 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from +1 ft. to 25 ft.
Welded [X] 4½ PVC " Diam. from 10 ft. to 150 ft.
Liner installed [X]
Threaded [ ] _____ " Diam. from _____ ft. to _____ ft.

Perforations: Yes [X] No [ ]
Type of perforator used Saw Cut
SIZE of perforations 3/16 in. by 5 in.
80 perforations from 120 ft. to 150 ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes [ ] No [X]
Manufacturer's Name _____
Type _____ Model No. _____
_____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes [ ] No [X] Size of gravel _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes [X] No [ ] To what depth? 23 ft.
Material used in seal Bentonite Clay
Did any strata contain unusable water? Yes [ ] No [X]
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
Static level 11 ft. below top of well Date 8/23/93
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [ ] No [X] If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest 33 gal./min. with stem set at 150 ft. for 1 hrs.
Artesian flow _____ g.p.m. Date 8/23/93
Temperature of water 62° Was a chemical analysis made? Yes [ ] No [X]

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Soil, Brown Clay & Sand	0	16
Brown Basalt	16	24
Medium Gray Basalt	24	45
Brown Basalt	45	55
Brown & Gray Basalt & Water	55	63
Medium Gray Basalt	63	73
Brown Basalt	73	83
Medium Gray Basalt	83	98
Medium Gray Basalt w/Brown Basalt Strips	98	115
Brown Sandstone & Water	115	130
Gray Sandstone & Water	130	142
Light Gray Clay	142	145
Gray Clay	145	150

RECEIVED AUG 31 1993 DEPARTMENT OF ECOLOGY CENTRAL REGION

Work started 8/20/93, 19. Completed 8/23/93, 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME OASIS DRILLING (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 340 Lamb Lane Moxee, WA 98936

(Signed) _____ (WELL DRILLER) License No. 1435

Contractor's Registration No. OASISD*072J9 Date 8/30/93, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

050-1-20 (10/87) -1329- 18

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Application No. .....

Permit No. ....

(1) OWNER: Name Kranz, Dale Address Rt. 2 Box 3573-B Grandview Wa

(2) LOCATION OF WELL: County Yakima • SW ¼ NE ¼ Sec 24 T 9 N., R 23 W.M. G

and distance from section or subdivision corner 200' South & 100' East of the North west Boundry

(3) PROPOSED USE: Domestic ☑ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one).... 1
New well ☑ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☑ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 140 ft. Depth of completed well 140 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from +18 ft. to 37 ft.
Threaded ☐ ..... " Diam. from ..... ft. to ..... ft.
Welded ☐ ..... " Diam. from ..... ft. to ..... ft.

Perforations: Yes ☐ No ☑
Type of perforator used .....
SIZE of perforations ..... in. by ..... in.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.

Screens: Yes ☐ No ☑
Manufacturer's Name .....
Type ..... Model No .....
Diam. ..... Slot size ..... from ..... ft. to ..... ft.
Diam. ..... Slot size ..... from ..... ft. to ..... ft.

Gravel packed: Yes ☑ No ☐ Size of gravel: .....
Gravel placed from ..... ft. to ..... ft.

Surface seal: Yes ☑ No ☐ To what depth? 37 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☑
Type of water? ..... Depth of strata .....
Method of sealing strata off .....

(7) PUMP: Manufacturer's Name .....
Type: ..... H.P. .....

(8) WATER LEVELS: Land-surface elevation above mean sea level.... ..... ft.
Static level 20 ft. below top of well Date 4-12-79
Artesian pressure ..... lbs. per square inch Date .....
Artesian water is controlled by ..... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☑ If yes, by whom? .....
Yield: ..... gal./min. with ..... ft. drawdown after ..... hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

.e of test .....
..ller test ..... gal./min. with ..... ft. drawdown after ..... hrs.
Artesian flow ..... g.p.m. Date .....
Temperature of water ..... Was a chemical analysis made? Yes ☐ No ☑

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
soil	0	18
Caliche + sand rock	18	21
broken basalt	21	37
hard grey basalt	37	80
brown basalt (little water 1 to 2 g.p.m.)	80	83
hard grey basalt	83	134
brown sand rock (water)	134	140
Blowed approx 40 g.p.m. with air		

RECEIVED
JUN 11 1979
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work started 4-10, 1979 Completed 4-11, 1979

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Henry Bach Well Drilling
(Person, firm, or corporation) (Type or print)

Address Rt 1 Box 360 H Wapato, Wa. 98951

[Signed] Henry Bach
(Well Driller)

License No. 0055 Date 4-20, 1979

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20

3

000277

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Application No. .....
Permit No. .... H

(1) **OWNER:** Name Daniel W Neil Address Dayton Rd Grandview Wa.

(2) **LOCATION OF WELL:** County Yakima. — SE ¼ NE ¼ Sec 24 T 9 N., R 23 W.M.
Bearing and distance from section or subdivision corner

(3) **PROPOSED USE:** Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [ ] Test Well [ ] Other [ ]

(4) **TYPE OF WORK:** Owner's number of well (if more than one) ....
New well [X] Method: Dug [ ] Bored [ ]
Deepened [ ] Cable [ ] Driven [ ]
Reconditioned [ ] Rotary [ ] Jetted [ ]

(5) **DIMENSIONS:** Diameter of well 6 inches.
Drilled 145 ft. Depth of completed well 145 ft.

(6) **CONSTRUCTION DETAILS:**
Casing installed: 6" " Diam. from +18 ft. to 33 ft.
Threaded [ ] " Diam. from ... ft. to ... ft.
Welded [X] " Diam. from ... ft. to ... ft.

Perforations: Yes [X] No [ ]
Type of perforator used ...
SIZE of perforations ¼ in. by ¼ in.
80 perforations from 80 ft. to 120 ft.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.

Screens: Yes [ ] No [X]
Manufacturer's Name ...
Type ... Model No ...
Diam. ... Slot size ... from ... ft. to ... ft.
Diam. ... Slot size ... from ... ft. to ... ft.

Gravel packed: Yes [ ] No [X] Size of gravel: ...
Gravel placed from ... ft. to ... ft.

Surface seal: Yes [X] No [ ] To what depth? 20 ft.
Material used in seal Bent Tonite
Did any strata contain unusable water? Yes [ ] No [ ]
Type of water? ... Depth of strata ...
Method of sealing strata off ...

(7) **PUMP:** Manufacturer's Name ...
Type: ... H.P. ...

(8) **WATER LEVELS:** Land-surface elevation above mean sea level .... ft.
Static level 25 ft. below top of well Date 1-8-88
Artesian pressure ... lbs. per square inch Date ...
Artesian water is controlled by ... (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [ ] No [X] If yes, by whom? ...
Yield: ... gal./min. with ... ft. drawdown after ... hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
	A.I.L.	FT	504	GPM.	

Date of test ...
Bailer test ... gal./min. with ... ft. drawdown after ... hrs.
Artesian flow ... g.p.m. Date ...
Temperature of water ... Was a chemical analysis made? Yes [ ] No [ ]

(10) **WELL LOG:**
Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Over Burdon	0	10
Sand & Clay	10	25
Basalt Sand.	25	32
Broken Basalt.	32	50
Soft Basalt.	50	85
Basalt. water.	85	90
Hard Basalt.	90	105
Cap Basalt. Some Clay	105	125
Hard Pan Clay. Water.	125	145

RECEIVED
FEB - 8 1988
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work started ..., 19... Completed ..., 19...

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Cammand Development Co Inc.
(Person, firm, or corporation) (Type or print)

Address Rt 1 Box 1287 Prosser Wa.

[Signed] John Cammon
(Well Driller)

License No. 1452 Date 1-9 ; 1988

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

RECEIVED
JUN 30 1982
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

WATER WELL REPORT
STATE OF WASHINGTON

Application No. /
Permit No. ....

(1) **OWNER:** Name City of Grandview Address 207 West 2nd St. Grandview, Wa.

(2) **LOCATION OF WELL:** County ..... — ..... ¼ SW ¼ Sec. 13 T. 9 N., R. 23 W.M.

Bearing and distance from section or subdivision corner

(3) **PROPOSED USE:** Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(4) **TYPE OF WORK:** Owner's number of well (if more than one).... DW #14
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) **DIMENSIONS:** Diameter of well 16 inches.
Drilled 954 ft. Depth of completed well 954 ft.

(6) **CONSTRUCTION DETAILS:**

Casing installed: 22 " Diam. from 0 ft. to 24 ft.
Threaded ☐ 12 " Diam. from 0 ft. to 683 ft.
Welded ☒ ..... " Diam. from ..... ft. to ..... ft.

Perforations: Yes ☐ No ☒
Type of perforator used .....
SIZE of perforations ..... in. by ..... in.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.

Screens: Yes ☐ No ☒
Manufacturer's Name .....
Type ..... Model No .....
Diam. ..... Slot size ..... from ..... ft. to ..... ft.
Diam. ..... Slot size ..... from ..... ft. to ..... ft.

Gravel packed: Yes ☐ No ☒ Size of gravel: .....
Gravel placed from ..... ft. to ..... ft.

Surface seal: Yes ☒ No ☐ To what depth? 683 ft.
Material used in seal Cement grout
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? ..... Depth of strata .....
Method of sealing strata off .....

(7) **PUMP:** Manufacturer's Name .....
Type: ..... H.P. .....

(8) **WATER LEVELS:** Land-surface elevation above mean sea level.... 855 ft.
Static level 197 ft. below top of well Date 5/24/82
Artesian pressure ..... lbs. per square inch Date .....
Artesian water is controlled by ..... (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Layne
Yield: 5000 gal./min. with 349 ft. drawdown after 24 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
2:00	536				
3:00	197				

Date of test 5/20-21
Bailer test ..... gal./min. with ..... ft. drawdown after ..... hrs.
Artesian flow ..... g.p.m. Date .....
Temperature of water ..... Was a chemical analysis made? Yes ☐ No ☐

(10) **WELL LOG:** LMVP

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Soil sandy, med brn	0	17
Basalt fract. grey-brn	17	71
Basalt weath. brn-red, yell	71	76
Basalt semi fract. grey-brn	76	91
Basalt med-hrd grey	91	118
Sandstone soft, brn-grey-white-green, sand conglom.	118	144
Claystone med brn	144	217
Basalt fract. grey-red	217	251
Basalt hrd black	251	364
Basalt hrd grey	364	380
Basalt weath. brn-grey	380	401
Basalt hrd grey	401	426
Basalt fract. grey-brn	426	432
Basalt hrd grey	432	564
Basalt semi fract. red-grn	564	576
Basalt fract. brn-green-grey, blue claystn strks	576	606
Sand packed, green	606	622
Claystn blue-green	622	665
Ash, coal, red med	665	672
Basalt hrd grey	672	707
Basalt fract. black	707	716
Basalt hrd black, seamy	716	824
Basalt med black	824	841
Basalt hrd black	841	891
Basalt porous, grey-brn	891	898
Basalt hrd grey	898	910
Basalt fract. grey	910,	917
Basalt fract. black, with red & brn inseames	917	932
Basalt hrd grey	932	954

Work started 2/17, 1982 Completed 5/24, 1982

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME West Coast Drilling Co. Inc.
(Person, firm, or corporation) (Type or print)

Address 220 Academy St. Mt. Angel, Or.

[Signed] Steve Stadeli
(Well Driller)

License No. 0260 Date 6/15, 1982

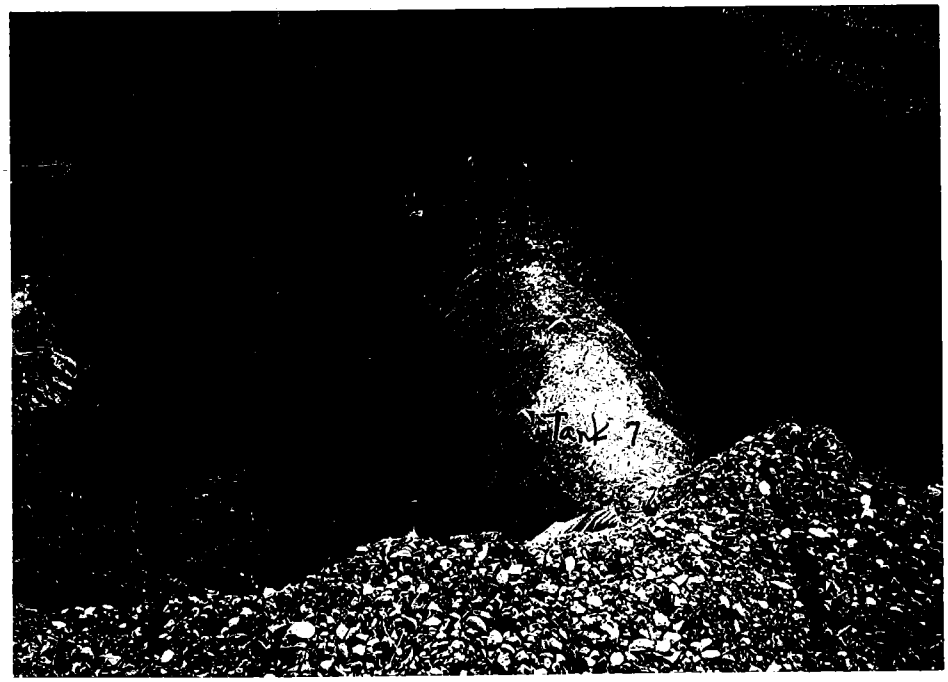
(USE ADDITIONAL SHEETS IF NECESSARY) EP 7.28.82

ECY 050-1-20

APPENDIX H

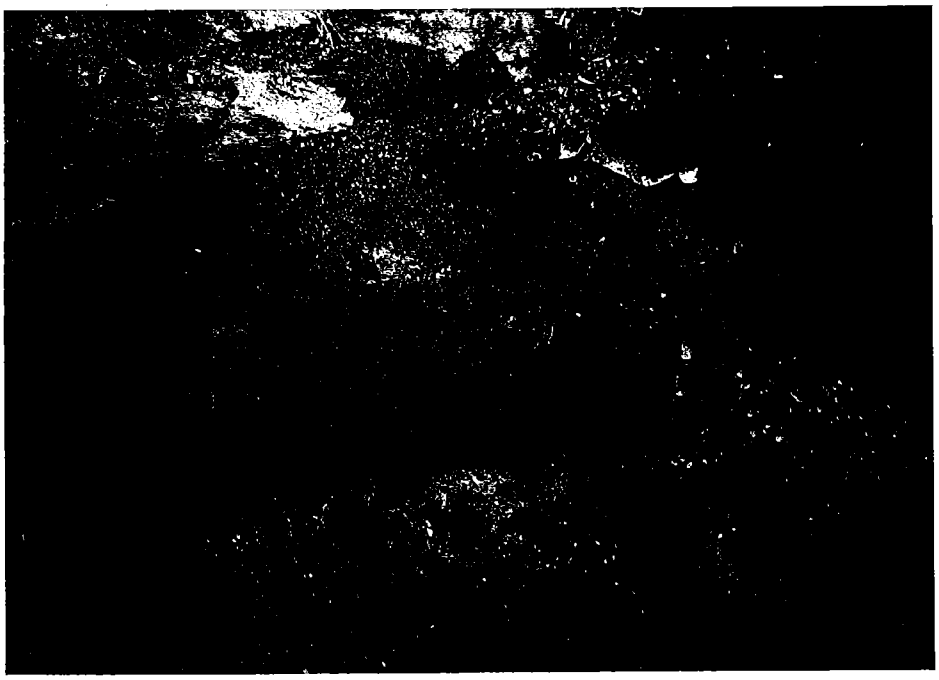
1) Site facing easterly · UST's located beneath backhoe bucket - dispens formerly located at cone

2) UST location on west side of job 4/13/94



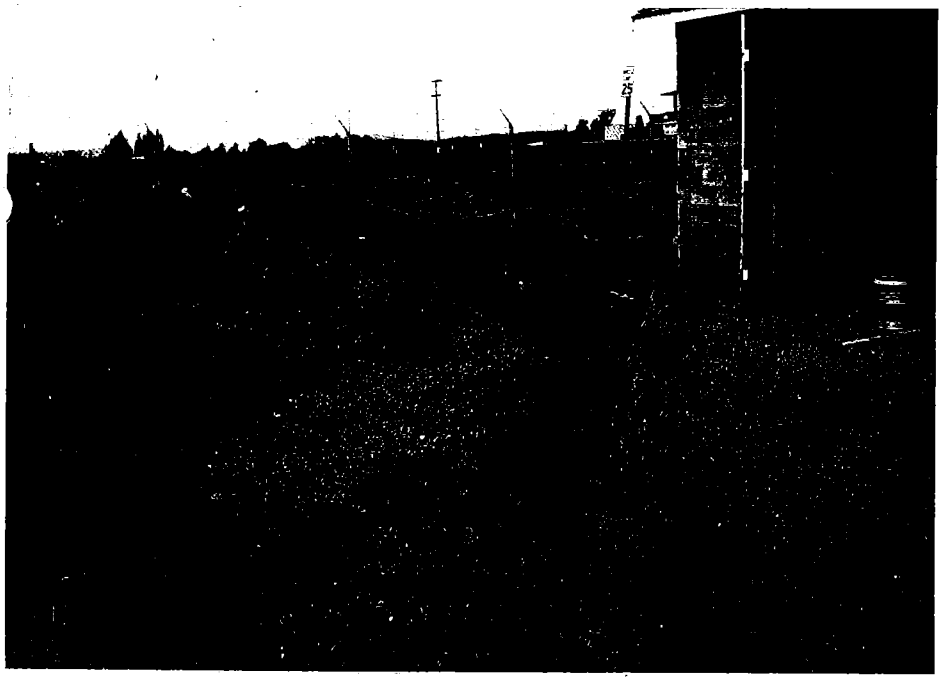
3) UST's in excavation facing south 4/13/94

4) UST #8 4/13/94



5) Soil/tar material beneath tank #8

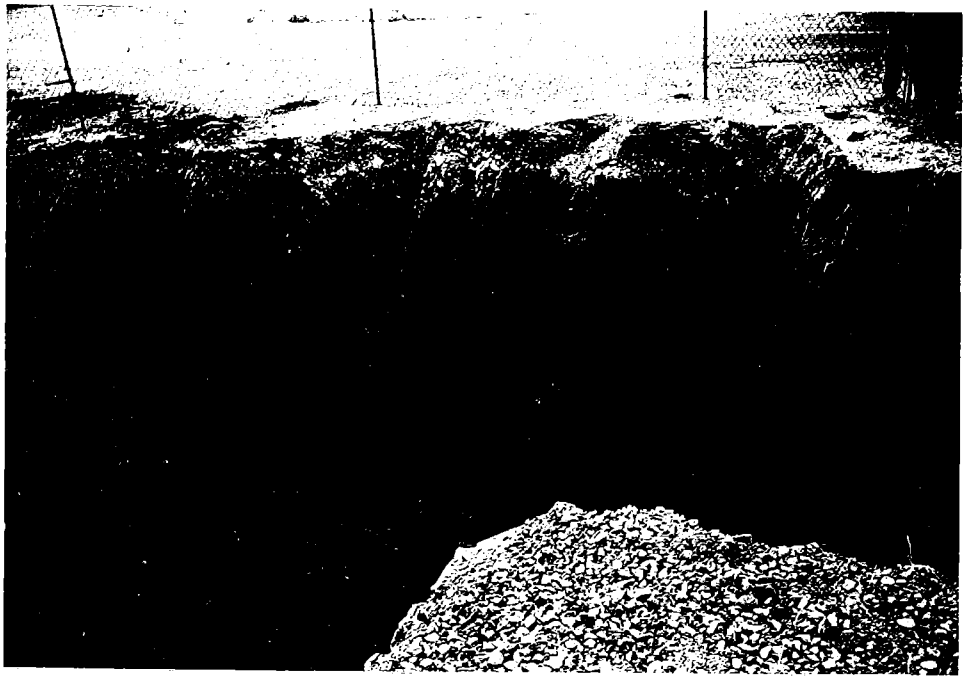
6) Tank #8 4/13/94



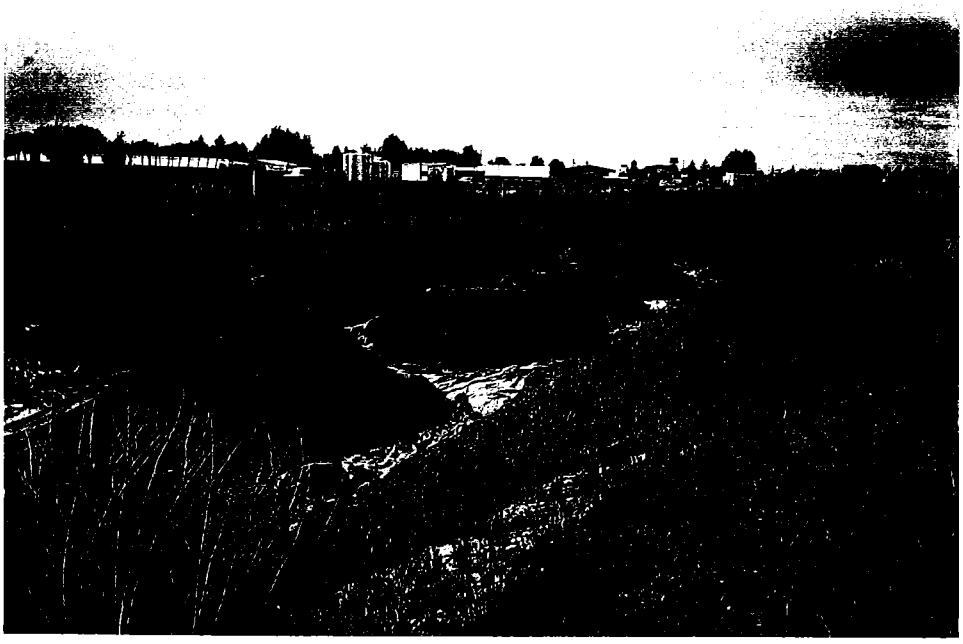
7) Pipeline trench from UST's to dispensers 4/13/

8) Area west of fence pri to expanding excavation 9/13/94 - outlined area i approximate extent of expanded excavation

9) Area north of excavati prior to expanding excavation 9/18/94 - outlined area is approxim extent of expanded excavation



10) Expanded excavation 9/14/94 facing westerly



11) Stockpile site