

# Soil Completion Report Alexander Farm Site

March 2005



EXPIRES 11/29/05

## Site Location:

Alexander Farms Facility  
179101 West King Tull Road  
Prosser, Washington 99350

RCI Job No. 104-001-01

## Prepared For:

Dan Alexander 691 Winslow Way West  
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## Prepared By:



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**ACRONYMS**

<b>BGS</b>	Below Ground Surface
<b>CAP</b>	Cleanup Action Plan
<b>CMP</b>	Compliance Monitoring Plan
<b>COC</b>	Constituent of Concern
<b>CPAS</b>	Construction Plans and Specifications
<b>CSSR</b>	Concrete and Surface Sampling Report
<b>E&amp;E</b>	Environment and Ecology
<b>EPA</b>	Environmental Protection Agency
<b>EDR</b>	Engineering Design Report
<b>FFSR</b>	Final Feasibility Study Report
<b>FRAR</b>	Final Removal Action Report
<b>GSCR</b>	Groundwater Sampling and Characterization Report
<b>HASP</b>	Health and Safety Plan
<b>MNA</b>	Monitored Natural Attenuation
<b>MTCA</b>	Model Toxic Control Act
<b>PQL</b>	Practical Quantitation Limit
<b>QA/QC</b>	Quality Assurance/Quality Control Plan
<b>RCRA</b>	Resource Conservation and Recovery Act
<b>RI</b>	Remedial Investigation
<b>RPD</b>	Relative Percent Difference
<b>RCI</b>	Riverside Consulting, Inc.
<b>SAP</b>	Sampling and Analysis Plan
<b>START</b>	Superfund Technical Assessment and Response Team
<b>SVID</b>	Sunnyside Valley Irrigation District
<b>USEPA</b>	U.S. Environmental Protection Agency
<b>WSDOE</b>	Washington State Department of Ecology
<b>WSI</b>	White Shield, Inc.

## 1.0 Introduction

On May 7, 1998, Dan Alexander, owner of the Alexander Farms Facility, was issued an emergency order by Ecology to investigate and cleanup dinoseb contaminated soil and groundwater originating from his property. The emergency order was issued by Ecology following the discovery of dinoseb contaminated drinking water in two wells, one well on the property and the other approximately 1.5 miles south of the property (RI; WSI, 2003).

The Alexander Farms Facility is located in Prosser, Washington (See Figure 1-1). The Alexander Farms Facility Project consisted of two cleanup components, soil and groundwater. This report will conclude the soil cleanup action at the Alexander Farms Facility. Final cleanup action was guided by the Cleanup Action Plan written and prepared by the Washington State Department of Ecology. Groundwater monitoring is anticipated to begin in January 2005. "Groundwater shall be monitored until the cleanup level (7 ug/L Dinoseb in groundwater) is reached in all wells for eight consecutive quarters (two years)", as stated in the Consent Decree from Ecology.

## 2.0 Purpose

The Soil Cleanup Completion Report has been prepared to meet the requirements of WAC 173-340 applicable to the Alexander Farms site and Consent Decree filed October 29, 2004 in Thurston County Superior Court in the State of Washington. Actions taken are also based on information provided by previous investigations, reports and analytical data from WSI and USEPA.

This report describes the actions taken to achieve soil cleanup levels at the site. This report will also briefly describe groundwater monitoring practices to be conducted over the course of the next eight consecutive quarters. In addition, Riverside Consulting, Inc. has performed and implemented the necessary sampling, excavation, and disposal measures in order to demonstrate that the soil cleanup action achieved compliance with the applicable cleanup requirements.

## 3.0 Contamination/Areas of Concern

The contaminant of concern is dinoseb. Dinoseb is an organic solid, which forms yellowish - orange crystals with a pungent odor. Acute exposure health effects include sweating, headache, and mood changes. Chronic health effects include decreased body and thyroid weight, degeneration of testes, and thickening of the intestinal lining. There is inadequate evidence to evaluate whether or not dinoseb has the potential to cause cancer due to lifetime exposure in drinking water.

Potential areas of concern included the following (Refer to Figure 3-1):

- Various areas south and southeast of the Hop Kiln Pad;
- Cinder blocks from the hop picker walls;
- Soil located under the northeastern portion of the hop picker foundation.

#### 4.0 Selected Cleanup Actions

Ecology has selected Alternative 3, excavation and off-site disposal, for the remediation of soil contamination at the site. Excavation and off-site disposal of dinoseb contaminated soil will eliminate the risk of human exposure by permanently removing it from the site in addition to removing the dinoseb that could potentially leach into the groundwater.

Alternative 3, monitored natural attenuation, has been selected for groundwater remediation. Based upon the analysis of historical groundwater data, Ecology believes natural attenuation processes occurring within the aquifer beneath the site will reduce groundwater contamination levels below 7 µg/L within a twenty year time period.

#### 5.0 Work to Be Performed (according to the EDR & CPAS)

The following "work to be performed" was developed through previous assessments, sampling performed by White Shield Inc. (WSI), and sampling performed by Riverside Consulting, Inc. (RCI).

##### 5.1 Building Demolition

Several cinder blocks from the walls of the hop picker building are visibly contaminated with dinoseb. Therefore, the hop picker building will be demolished as part of the cleanup work. The contaminated cinder blocks will be segregated and disposed of according to the EDR and CPAS submitted to WSDOE. The location of the hop picker building is shown in Figure 3-1.

##### 5.2 Preliminary Soil Sampling

Pre-excavation soil sampling will be performed in areas previously sampled by WSI with analytical data above applicable cleanup levels. Preliminary excavation soil sampling will provide additional information regarding the depth and extent of dinoseb contamination to help guide excavation activities. For proposed excavations, refer to Figure 3-1.

##### 5.3 Waste Designation

Prior to off-site disposal of the demolished hop picker contaminated

materials and excavated contaminated soils, waste profiling of the impacted materials will be performed in accordance with the requirements of the licensed waste disposal facility.

Representative composite samples of the stockpiled materials will be collected and delivered to the laboratory for analytical testing to determine disposal options. Details of the sampling procedures are included in the Sampling and Analysis Plan (SAP), Appendix A of the Construction Plans and Specifications Report (CPAS). The "Warm Stockpile" will contain materials with Dinoseb concentrations in the range of 1.6 mg/kg (ppm) to less than 80 mg/kg (ppm). These materials will be considered to no longer contain a listed waste according to the WSDOE. The "Warm Stockpile" will be disposed of at an appropriate Subtitle D Landfill. A "Hot Stockpile" will contain materials with Dinoseb concentrations above 80 mg/kg (ppm). A "Hot Stockpile" is not anticipated, but if a "Hot Stockpile" is necessary, then it will be handled as a listed hazardous waste and properly disposed of at a Subtitle "C" landfill.

#### 5.4 Backfill

Backfilling and grading will occur upon confirmation removal of contaminated soil is complete. Soils and crushed building materials that do not exceed 1.6 mg/kg will be used as backfill. Backfilling and grading will be performed by the excavation subcontractors.

### 6.0 Work Performed

Work performed included demolition of the hop picker building, partially filling the old excavation pit south of the former pesticide shed, preliminary soil sampling, excavation of soils at the northeast corner of the hop picker building, and sidewall and floor soil sampling at the northeast corner excavations of the hop picker building.

#### 6.1 Demolition

The purpose for demolishing the hop picker building was to segregate contaminated cinder blocks, from the walls of the hop picker building, from clean cinder blocks. Demolition began October 4, 2004 and ended October 5, 2004 (Refer to Appendix A). Demolition procedures were as follows:

##### STEP 1

Prior to demolishing the building, the dinoseb contaminated constituents of the hop picker building were located visually by observing yellow stained areas. These yellow stained portions of the hop picker building were considered contaminated with dinoseb. The yellow dinoseb stained

materials were outlined with fluorescent orange spray paint. This included the southwest and southeast walls of the hop picker building where yellow staining was visible. This ensured subcontractors demolishing the building could readily distinguish between dinoseb contaminated building materials and non-contaminated building materials.

### **STEP 2**

The demolition of the building was conducted by K Kaser Co, Inc. (KKCI) of Kennewick. In accordance with the plans and specifications provided by KKCI, they furnished appropriate labor and material to conduct the demolition. Equipment included a thumb equipped 50,000 lb. excavator.

### **STEP 3**

The contaminated materials from the hop picker building were segregated into a stockpile designated for contaminated products located on the hop kiln foundation. An impermeable liner was placed over the stockpile to prevent migration of contaminated materials.

Clean and contaminated stockpiles were covered and temporarily left on site. The contaminated stockpiles were properly disposed of at the Subtitle D Landfill in Roosevelt, WA. The clean stockpiles were used for backfilling previous excavations performed by USEPA in the former pesticide shed area. Materials used for backfill included:

- Clean, crushed cinder block from hop picker building demolition;
- Clean soil stockpiled against former hop picker building walls (located at the south end of the building);
- Clean soil and crushed cinder block previously stockpiled by USEPA on eastern boundary of the site.

## **6.2 Preliminary Soil Sampling**

Preliminary soil sampling locations were chosen based on previous soil sampling investigations and performed in several areas (Refer to Figure 6-1). The purpose of the preliminary soil sampling was to help delineate the horizontal and vertical extent of remaining dinoseb contamination on site. Upon receipt of analytical data from the preliminary soil sampling, the dimensions for the excavations were calculated. Results of the soil sampling are in the following Table.

**Table 6-1: Preliminary Soil Sampling Results**

- Units: **ug/Kg (ppb)**
- Sample matrix: **Soil**
- PQL (Practical Quantitation Limit): **2.5**

<b>Sample ID (RCI ID#)</b>	<b>µg/kg (ppb)</b>
104-001-01-E41	ND
104-001-01-E42	ND
104-001-01-E43	ND
104-001-01-E51	ND
104-001-01-E52	ND
104-001-01-E521	ND
104-001-01-E522	ND
104-001-01-E53	ND
104-001-01E11	62
104-001-01-E21	ND

<b>Contaminated Cinder Block Stockpile:</b>	
104-001-01-SP1	2300
104-001-01-SP2	10000

Note: Sample ID# 104-001-01-E522 was an equipment rinsate sample and Sample ID# 104-001-01-E521 was a field duplicate for Quality Assurance/Quality Control purposes.

### 6.2.1 Results

According to the results of the preliminary soil sampling, the contaminated cinder block stockpile appears to be the only area of concern. Photodegradation and microbial breakdown may have played a role in reducing the concentration of dinoseb in the soil environment. Due to this apparent dinoseb degradation, the variation in previous soil sampling results compared with current sampling results is reasonable. The time lag between previous soil sampling and current soil sampling of the same areas is approximately four years. This is a sufficient amount of time for the degradation processes to occur.

### 6.3 Hop Picker Excavation & Soil Sampling

Before sampling could be conducted at the northeast corner of the former hop picker building the foundation had to be demolished. Demolition was



done using the bucket and thumb of KKI's 50,000 lb. excavator. Following the removal of the foundation two trenches were excavated (Refer to figure 6-2). Results of the hop picker building excavation soil sampling are located in Table 6-2.

**Table 6-2: Excavation Trench Soil Sampling Results**

- Units: **ug/Kg (ppb)**
- Sample matrix: **Soil**
- PQL (Practical Quantitation Limit): **2.5**

Sample ID (RCI ID#)	µg/kg (ppb)
104-001-01-FL2	ND
104-001-01-SW1	ND
104-001-01-SW2	ND
104-001-01-SW3	ND
104-001-01-SW8	ND
104-001-01-FL1	2000
104-001-01-SW4	ND
104-001-01-SW5	ND
104-001-01-SW6	ND
104-001-01-SW7	ND
104-001-01-SP3	11000
104-001-01-SP4	15000
104-001-01-FL3	330
104-001-01-FL4	720
104-001-01-SP5	230

### 6.3.1 Results

Sample locations can be found on Figure 6-3. According to the results of the sampling, the areas of concern include the old contaminated soil stockpile located on the eastern boundary of the site and sample ID# 104-001-01-FL1. Sample ID# 104-001-01-FL1 was collected 7 feet bgs in the trench excavated under the NE corner of the former hop picker building foundation. This sample exceeded the 1600 µg/kg (ppb) cleanup level for soil by 400 µg/kg (ppb). As a result of the analytical data from this sample, further sampling of this area was performed (See Figure 6-4). Sample ID# 104-001-01-FL3 was taken 1 foot west of Sample ID# 104-001-01-FL1 and Sample ID# 104-001-01-FL4 was taken 1 foot east of Sample ID# 104-001-01-FL1. The additional sampling results concluded this area was actually below the required cleanup level.

## 6.4 Waste Designation/Management

### Waste Designation

Prior to off-site disposal of the demolished hop picker building materials and contaminated soils, waste profiling of the contaminated materials will be performed in accordance with the requirements of the licensed waste disposal facility.

Representative composite samples of the stockpiled contaminated materials were collected and delivered to the laboratory for analytical testing (Refer to Sections 6.2 & 6.3). Details of the sampling procedures are included in the Sampling and Analysis Plan (SAP), and Appendix A of the Construction Plans and Specifications Report (CPAS).

There is only one classification for the contaminated stockpiles on site, "Warm Stockpile". The "Warm Stockpiles" contain materials with dinoseb concentrations in the range of 1600 µg/kg (ppb) to less than 80,000 µg/kg (ppb) and include the following:

- Segregated, crushed cinder block from the former hop picker building.
- Old soil stockpile located on the eastern boundary of site.

These materials are considered to no longer contain a listed waste and will not have to be handled as such, according to the WSDOE. The "Warm Stockpile" has been disposed of at an appropriate Subtitle D Landfill in Roosevelt, WA.

### Waste Management

The waste generated from the cleanup action included segregated, contaminated stockpiles previously described in Waste Designation. Waste materials generated during the cleanup action, have been designated in accordance with WAC 173-303 and are designated as Non-Listed.

Work activities included safe sampling, excavation, transportation, and disposal of dinoseb contaminated products. A subtitle "D" Landfill will provide a safe and secure location for dinoseb contaminated materials. The Landfill chosen is the Rabanco Landfill in Roosevelt, WA. Their landfill is engineered to protect surface and ground water through applicable environmental control(s). The liner system includes a composite HD PE liner, as well as, a leachate collection and removal system.

## 6.5 Backfill

Backfilling of the NE hop picker building excavations took place upon receipt of the analytical results. Soils and crushed cinder block building materials not exceeding 1600 µg/kg (ppb) were used to partially backfill the previous excavations by the USEPA in the area of the former pesticide shed.

## 7.0 Previous & Final Soil Assessments

According to the USEPA Final Removal Action Report, about 9,300 cubic yards of soil containing Dinoseb in concentrations higher than 1.6 mg/kg (ppm), but lower than 80 mg/kg (ppm) were shipped to an EPA-approved landfill (E&E, 2000).

Of the 9,300 cubic yards excavated from the site, approximately 4,860 cubic yards of soil containing Dinoseb at a concentration higher than 80 mg/kg (ppm) was thermally treated onsite (E&E, 2000).

WSI's assessment and removal action consisted of segregating contaminated soils into separate stockpiles. One of the stockpiles contained about 250 cubic yards of soil with Dinoseb concentrations below 80 mg/kg (ppm). The other contained about 210 cubic yards of soil with Dinoseb concentrations above 80 mg/kg (ppm) (RI; WSI, 2003).

RCI's assessment and removal action consisted of an old contaminated soil stockpile left on site from previous assessments, contaminated cinder block crushed from the demolition of the hop picker building, and partial backfill of the excavation pit south of the former pesticide shed. The old contaminated soil stockpile consisted of approximately 15 cubic yards with approximately 23 cubic yards of crushed, contaminated cinder block.. All materials were transported to Roosevelt, Washington, for disposal at the Subtitle D Landfill.

## References

WSI, 2003, Remedial Investigation Report, Alexander Farms Site, Prosser, Washington.

Superfund Technical Assessment and Response Team (START), Final Removal Action Report, Alexander Farms Site, Grandview, Washington.

State of Washington Thurston County Superior Court, State of Washington Departments of Ecology v. Dan Alexander and Harriet Alexander, husband and wife, formerly dba Yakima Chief Ranches, Consent Decree, No. 04-2-02240-9, October 29, 2004.

RCI, 2005, Engineering Design Report, Alexander Farms Site, Prosser, Washington.

RCI, 2005, Construction Plans and Specifications Report, Alexander Farms Site, Prosser, Washington.

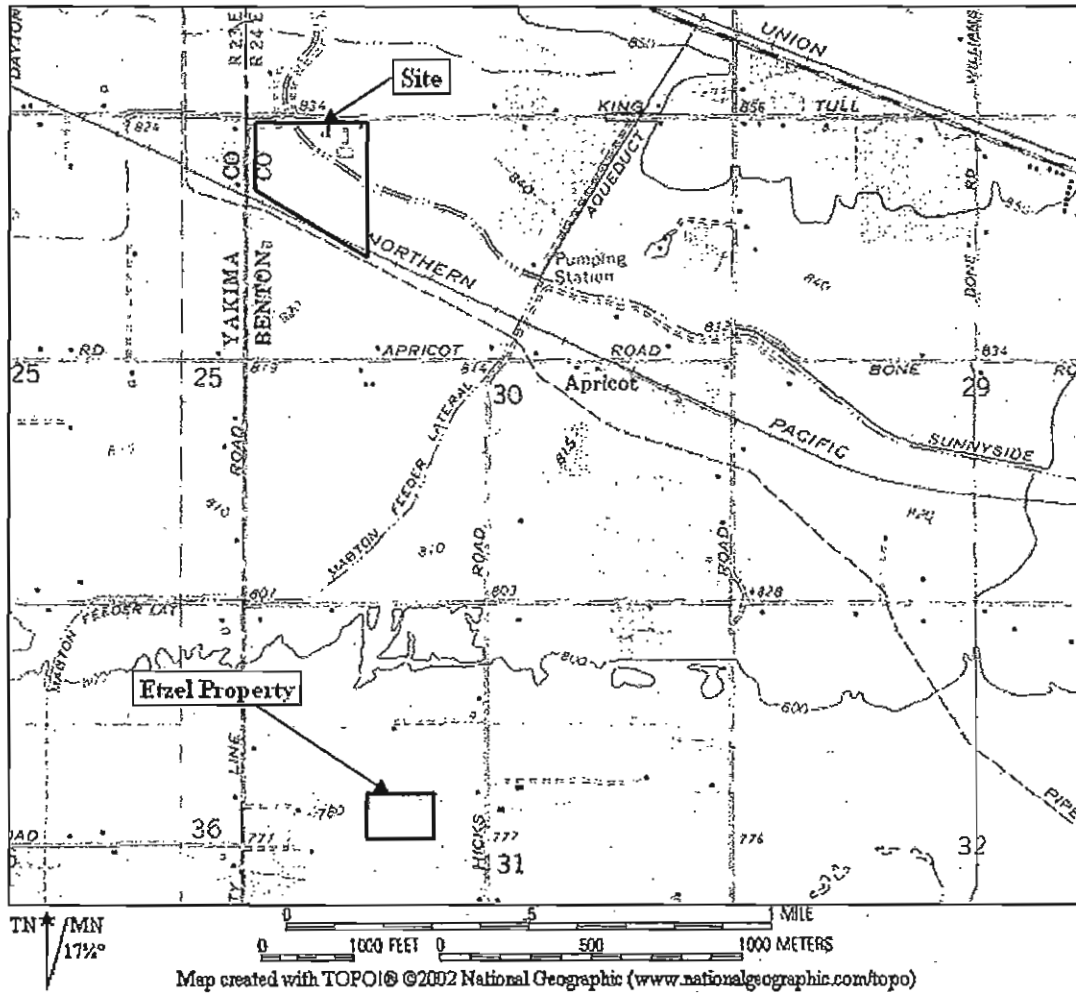
# Soil Completion Report

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## Figures

Figure 1-1	Site Location Map
Figure 3-1	Proposed Excavation Sites
Figure 6-1	Preliminary Soil Sampling Location
Figure 6-2	Excavation Trench Locations
Figure 6-3	Soil Sample Location of Excavation Trenches
Figure 6-4	Further Soil Sampling of the Excavation Trench

**Site Location Map**  
**Alexander Farms Site**  
**Benton County, Washington**



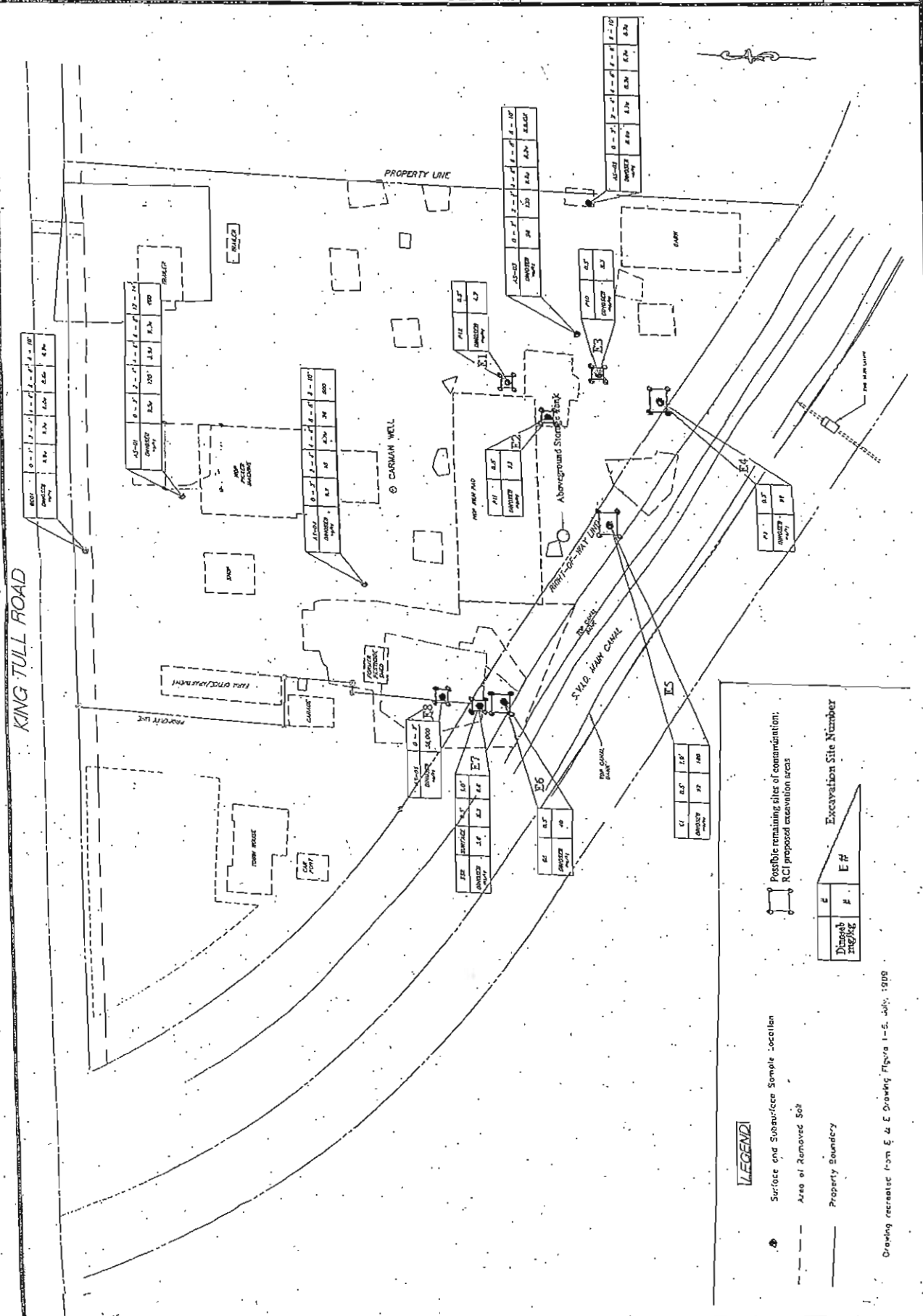
**Figure 1-1**

ESTIMATED EXTENT OF DINOSEB IMPACTED SOIL, AUGUST 2000  
 CLIENT: ALEXANDER FARMS GRANDVIEW, WA  
 SCALE: H. 1" = 80'  
 JOB # YCR  
 AS-BUILT 9/2000  
 DRAWN BY: RIF

WHITE SHIELD, INC.  
 P.O. BOX 477  
 GRANDVIEW, WA 98930  
 PHONE (509) 882-1144  
 FAX (509) 882-4588

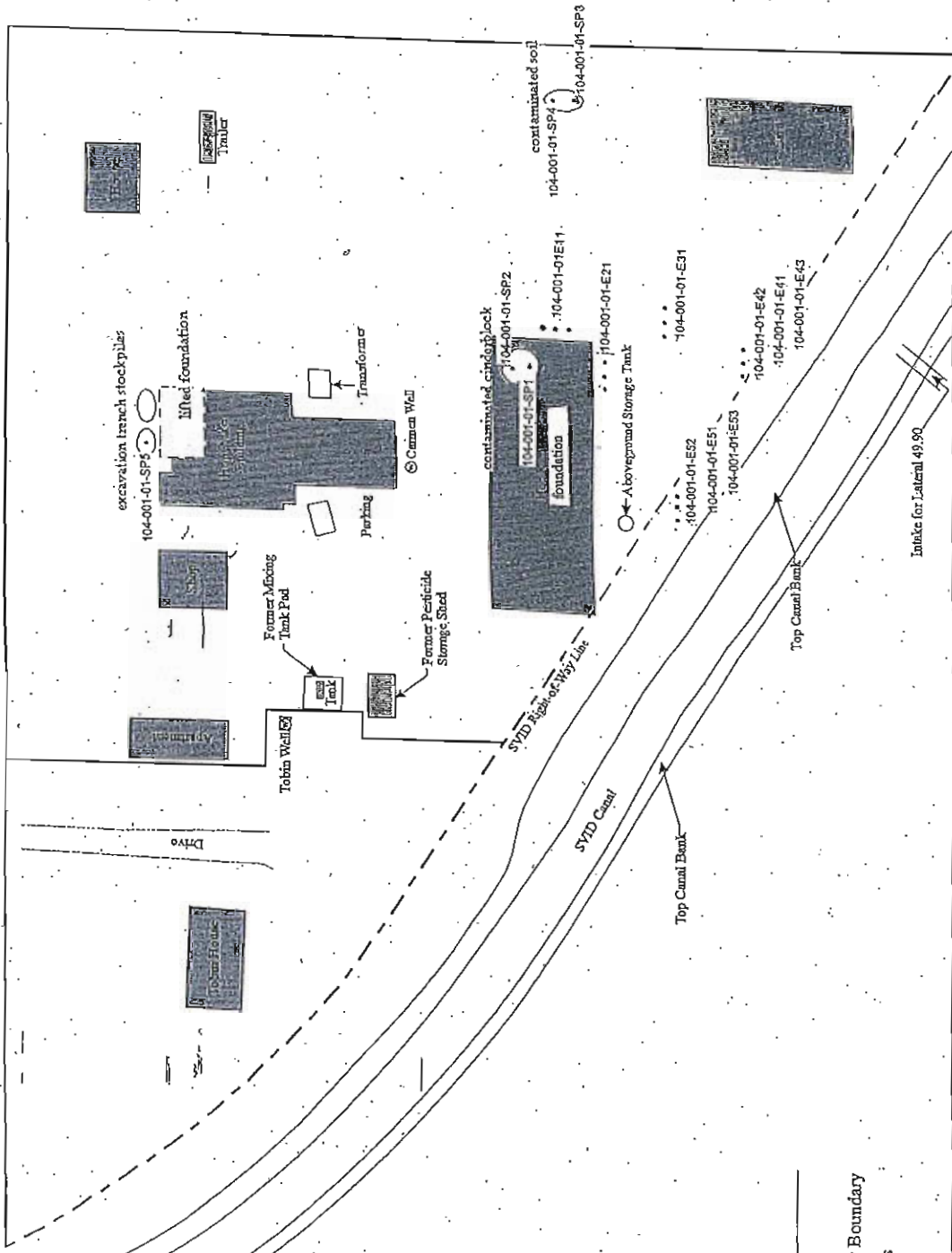


FIGURE 3-1



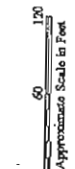
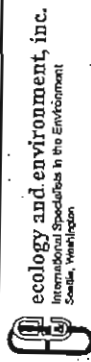
Drawing recreated from E & E Drawing Figures 1-5, July, 1998

# Preliminary Soil Sampling Locations, Clean and Contaminated Stockpile Locations



Sample ID (RCI ID#)	Depth
104-001-01-FL2	ND
104-001-01-SW1	ND
104-001-01-SW2	ND
104-001-01-SW3	ND
104-001-01-SW8	ND
104-001-01-FL1	2000
104-001-01-SW4	ND
104-001-01-SW5	ND
104-001-01-SW6	ND
104-001-01-SW7	ND
104-001-01-SP3	11000
104-001-01-SP4	15000
104-001-01-FL3	330
104-001-01-FL4	720
104-001-01-SP5	230
104-001-01-E41	ND
104-001-01-E42	ND
104-001-01-E43	ND
104-001-01-E51	ND
104-001-01-E52	ND
104-001-01-E521	ND
104-001-01-E522	ND
104-001-01-E53	ND
104-001-01-E11	62
104-001-01-E21	ND
104-001-01-E31	7.1
104-001-01-SP1	2300
104-001-01-SP2	10000

- KEY:**
- Well Location
  - - - SVID Right-of-Way Boundary
  - Property Boundaries






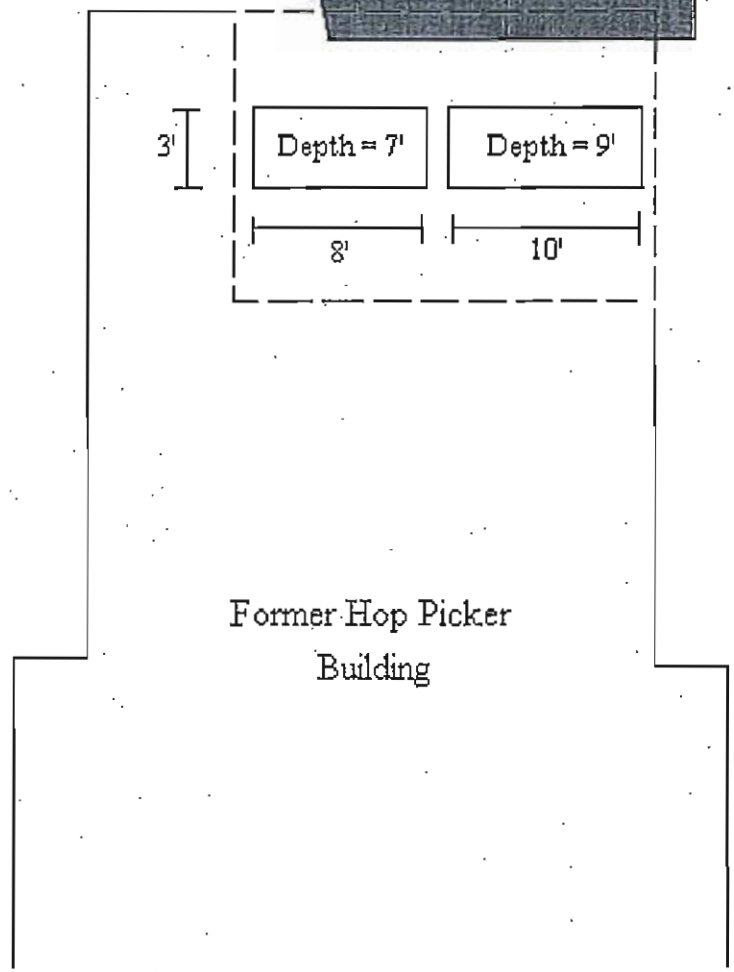
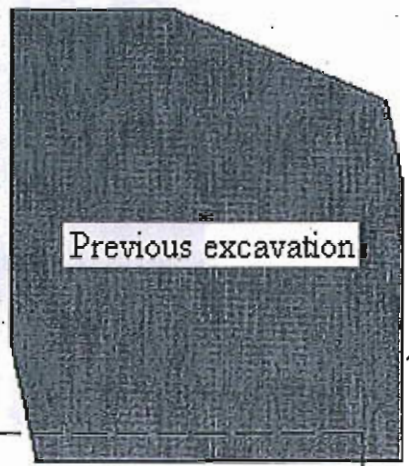
ALEXANDER FARMS  
Grandview, Washington

Figure 6-1  
SITE LAYOUT MAP

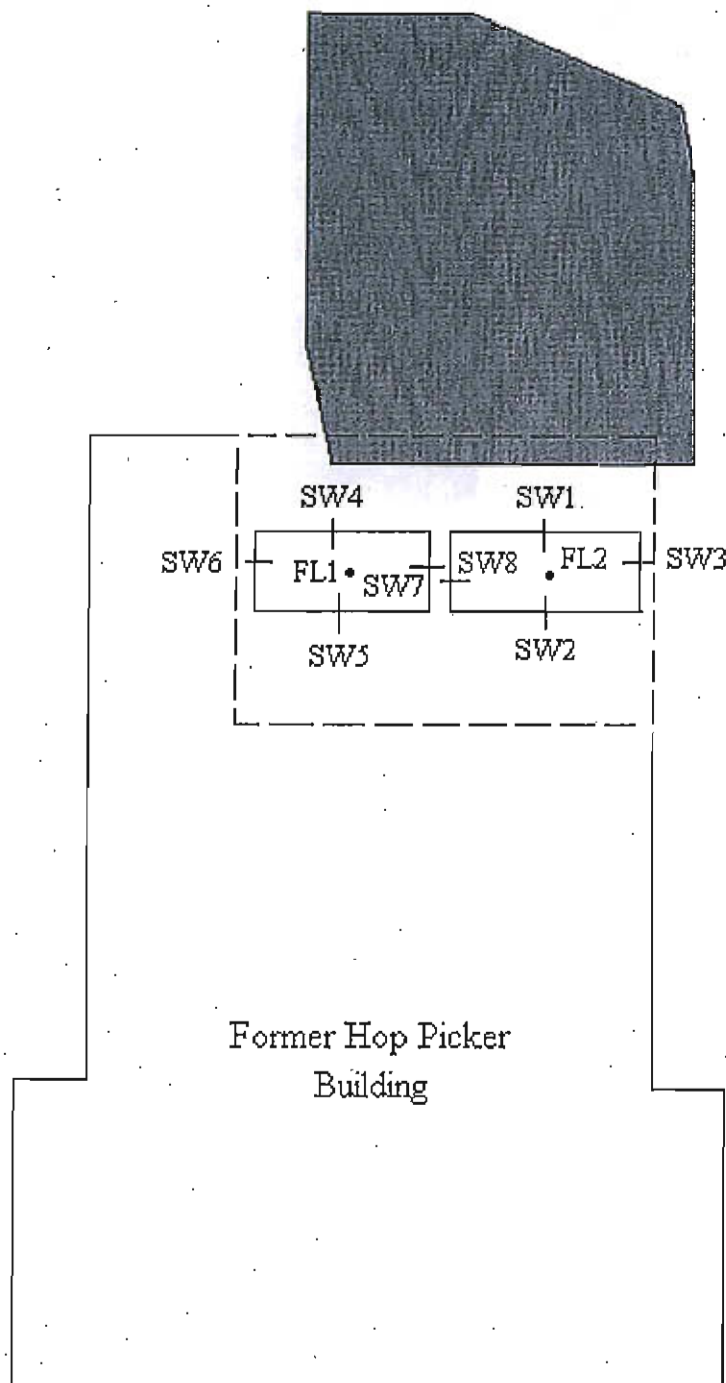
Date: 8/4/00  
Drawn by: AES  
Job No.: 104-001-01



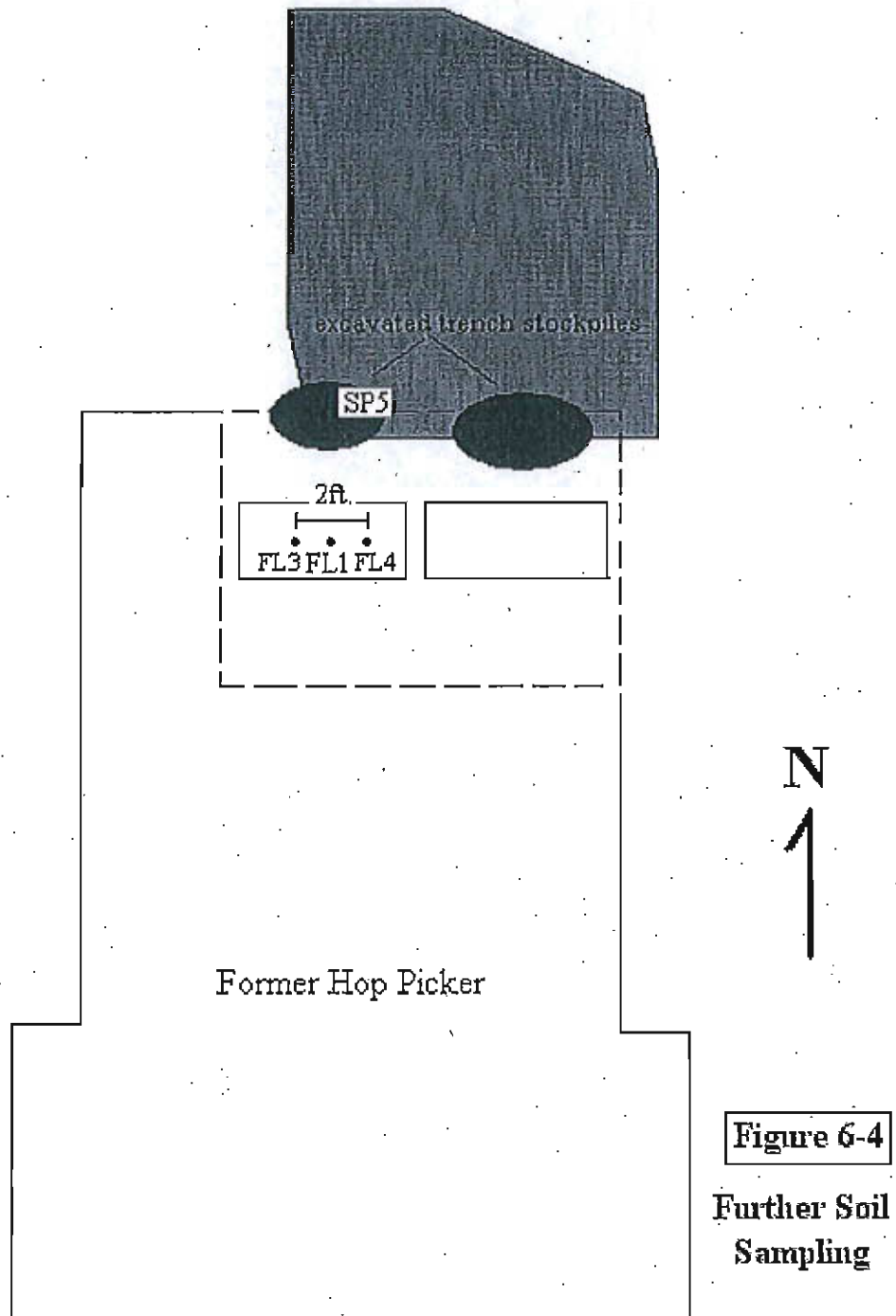
-  Past excavation done by EPA (has been backfilled)
-  Removed foundation
-  Present excavation trenches



**Figure 6-2**  
**Excavation Trench Locations**



**Figure 6-3**  
**Soil Sample**  
**Locations**



**Figure 6-4**

**Further Soil  
Sampling**

# Soil Completion Report

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## Appendices

Appendix A	Photographs for Demolition
Appendix B	Bill of Lading for Disposal

**Appendix A**  
**Photographs for Demolition**



**Photo 1**

Demolition of hop picker building starts at 9:15 am Monday, October 4, 2004.  
Photo taken by Breean Zimmerman

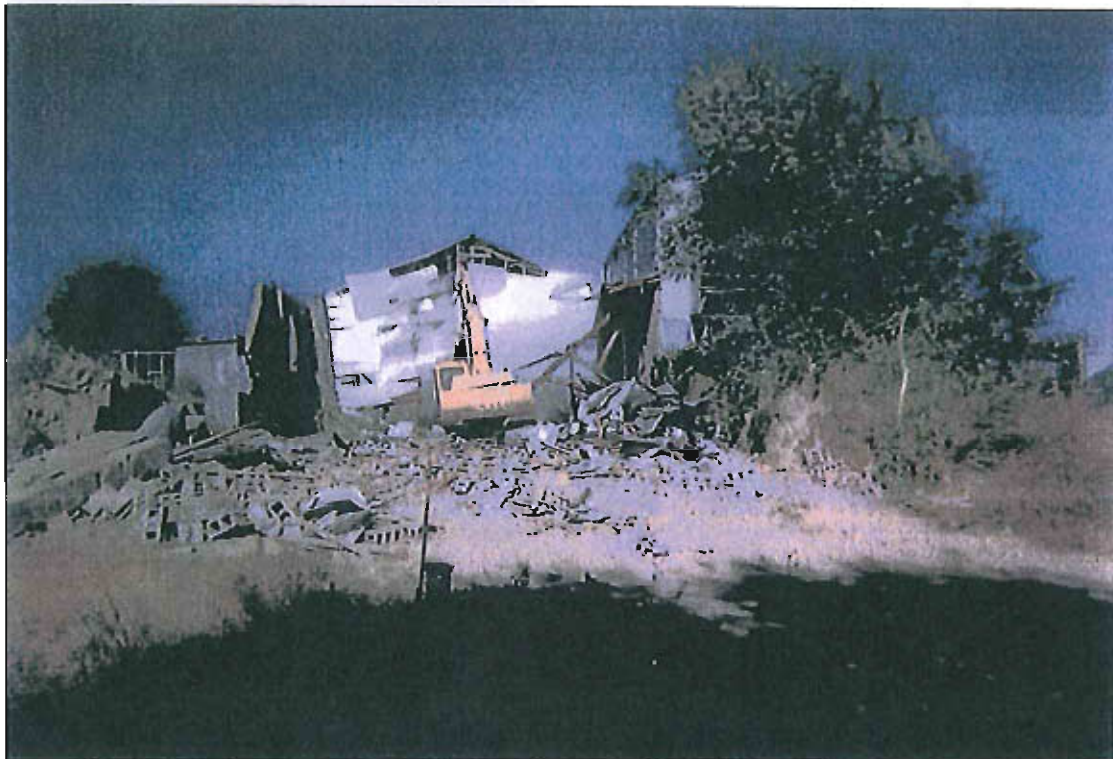


**Photo 2**

Demolition resumes (10/04/04)  
Photo taken by Breean Zimmerman

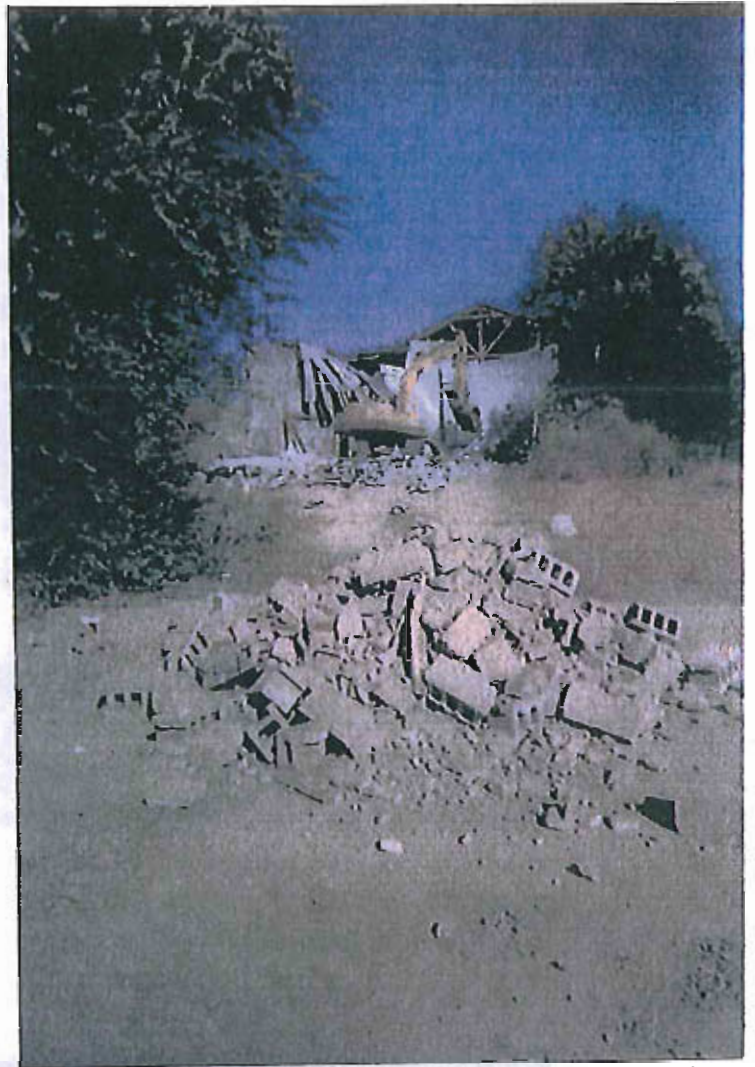


**Photo 3**  
Demolition resumes (10/04/04)  
Photo taken by Breean Zimmerman



**Photo 4**  
Demolition resumes (10/04/04)  
Photo taken by Breean Zimmerman

**Photo 5**  
Demolition resumes (10/04/04)  
Photo taken by Breean Zimmerman



**Photo 6**  
Demolition resumes (10/04/04)





**Photo 7**  
Demolition resumes (10/04/04)  
Photo taken by Breean Zimmerman



**Photo 8**  
Demolition of hop picker building completed at 3:45pm Monday, October 4, 2004.  
Demolition of NE corner of former hop picker building foundation begins October 5,  
2004. Demolition of the NE corner foundation takes approximately 40 minutes to  
complete.

**Appendix B**  
**Bill of Lading for Disposal**

Certification No. 05-1008  
Billing Acct. No. 1546  
Product Code. 71

BILL OF LADING  
Industrial Waste

REGIONAL DISPOSAL COMPANY  
54 South Dawson Street  
Seattle, WA. 98134  
Telephone: (206) 332-7700 / Fax: (206) 332-7600

This Bill of Lading augments the Master Service Agreement ("Agreement") entered into by Riverside Consulting ("Customer") and Regional Disposal Company ("RDC") on 1/7/05 (date). The terms herein are made a part of the Agreement. In the event of conflict between this Bill of Lading and the Agreement, the terms of the Agreement prevail.

RDC hereby authorizes the Wastes ("Waste") described in Certification No. 05-1008, signed by Customer on 1/7/05 (date), for disposal at Roosevelt Regional Landfill. Customer shall present a copy of this Bill of Lading with each shipment delivered.

Location of Waste: 179101 W. King Tull Rd. Prosser WA  
Method of Shipment: Customer Haul / K. Kaser

Additional Fees (e.g., laboratory fees, transportation fees, special handling fees, etc. If none, so state):

PERFORMANCE DATE

FOR RDC TRANSPORTATION: Customer shall make the Waste available for shipment no later than \_\_\_\_\_ (date). RDC shall transport the Waste no later than \_\_\_\_\_ (date), unless RDC notifies the Customer in writing that Waste transport shall be suspended or canceled due to RDC's exercise of its right to inspect or analyze the Waste (as provided in the Agreement).

FOR CUSTOMER TRANSPORTATION: Customer shall begin delivery of the Waste at [check one]:

- Roosevelt Regional Landfill.  Seattle Transfer Station located at Third and Lander.

Waste delivery shall begin no later than 1/7/05 (date), and shall complete delivery of the Waste no later than 1/20/05 (date), unless RDC notifies Customer in writing to suspend or cancel the waste delivery due to RDC's exercise of its right to inspect or analyze the Waste (As provided in the Agreement).

CUSTOMER

REGIONAL DISPOSAL COMPANY

Breann Zimmerman  
Signature

Leslie Whiteman  
Signature

BREANN ZIMMERMAN, ENVIRONMENTAL SCIENTIST  
Printed Name and Title

Leslie A. Whiteman - Sales Coordinator  
Printed Name and Title

1/7/05  
Date

1/7/05  
Date

ALL TRUCKS MUST HAVE A COPY OF THIS BILL OF LADING WHEN DELIVERING WASTE TO THE TRANSFER STATION OR TO THE LANDFILL.

Revised: 1/26/96

