

**SOIL REMEDIATION COMPLETION REPORT  
FOR  
WEYERHAEUSER EVERETT EAST SITE**

Prepared for  
Weyerhaeuser Company  
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## SUMMARY

This report describes the soil remediation completed by the Weyerhaeuser Company (Weyerhaeuser) at the Weyerhaeuser East Site in Everett, Washington. The East Site includes former Mill B (survey parcels 1 and 2) and the South End Residual Wood Storage Site (survey parcel 4). The remedial work was undertaken to address specific areas of impacted soil identified during previous site studies.

East Site remediation was completed in accordance with a Consent Decree (No. 97-2-02773-8, April 1997) between the Washington State Department of Ecology (Ecology) and Weyerhaeuser. To achieve the objectives of the Consent Decree, Weyerhaeuser performed the following tasks:

- Surveyed and staked the locations of 20 known areas of impacted soil for the purpose of establishing areas of excavation activities.
- Excavated impacted soil for off-site disposal at an approved landfill.
- Performed confirmation soil sampling and analyses of the excavated areas to establish that the soil cleanup was in compliance with cleanup levels specified in the Consent Decree.
- Installed an additional compliance ground-water monitor well (MWRA-8-3) downgradient of Area 8-3A.
- Abandoned wells HC-17 and HC-35 in accordance with Chapter 173-160 WAC.
- Prepared an East Site specific compliance monitoring plan for long-term (five-year) ground-water monitoring.

Site studies identified total petroleum hydrocarbons (TPH), carcinogenic polycyclic aromatic hydrocarbons (CPAHs), polychlorinated biphenyls (PCBs) and pentachlorophenol (PCP) as the contaminants of concern at the East Site. Soil cleanup/action levels were as follows:

TPH	2,500 mg/kg
PCBs	17 mg/kg
CPAHs	20 mg/kg
PCP	280 mg/kg

Most of the soil excavation was completed between April 15 and May 9, 1997. Area RA7-1 was remediated in September 1996, with Ecology approval, to allow placement of dredged sand from the Snohomish River. The TP-16 area in the South End Residual Wood Storage Site was remediated as required by the Consent Decree. The remaining materials within the

residual wood storage site are being removed under the supervision of the Snohomish County Health Department consistent with the Consent Decree.

Approximately 4,500 cubic yards (6,270 tons) of contaminated soil were disposed of off-site. Based on landfill specific acceptance criteria, two landfills were selected for off-site disposal. Most of the excavated materials (approximately 6,240 tons) were disposed at the Regional Disposal Company's facility located in Roosevelt, Washington. Soils (approximately 31 tons) that exceeded the PCB concentration limitation (50 mg/kg) of the RDC facility were disposed at Chemical Waste Management's bulk PCB landfill located in Arlington, Oregon. The soils disposed of at the Oregon facility were from remediation areas RA7-2A and RA10-2.

In accordance with the requirements of the Consent Decree, Weyerhaeuser conducted a confirmation sampling program to demonstrate that soil excavation at each of the remediation areas achieved the soil cleanup/action levels specified in the Decree. Over 210 soil samples (including 9 field and 20 laboratory duplicates) were analyzed as part of the confirmational sampling program. Confirmation sampling results indicated that the soil cleanup/action levels were achieved. The sampling results were reviewed with Ecology prior to backfilling. The excavations were backfilled with clean dredged sand from the Snohomish River that Weyerhaeuser had stockpiled on the East Site. After backfilling, area RA8-3 was paved with asphalt.

Consistent with the Consent Decree, Weyerhaeuser will implement a long-term compliance ground-water monitoring program at the East Site. The first sampling round is scheduled for June 1997.

# 1. INTRODUCTION

## 1.1. Purpose

This report describes the soil remediation activities completed by the Weyerhaeuser Company (Weyerhaeuser) at the Weyerhaeuser Everett East Site (East Site) in Everett, Washington (Figure 1). These activities were undertaken to remediate specific areas of impacted soil identified during previous studies of Survey Parcels 1, 2, and 4 (Figure 2). This work was performed in compliance with the Consent Decree between the Washington State Department of Ecology (Ecology) and Weyerhaeuser. To achieve objectives of the consent decree, Weyerhaeuser performed the following tasks:

- Surveyed and staked the locations of 20 previously identified areas of impacted soil for the purpose of establishing areas of excavation activities.
- Excavated impacted soil for off-site disposal at an approved landfill.
- Performed confirmation soil sampling and analyses (over 210 soil samples were analyzed) of the excavated areas to establish that the soil remediation was in compliance with action/cleanup levels specified in the Consent Decree.
- Installed an additional compliance ground-water monitor well (MWRA-8-3) downgradient of Area 8-3A (Figure 3).
- Abandoned wells HC-17 and HC-35 in accordance with Chapter 173-160 WAC.
- Prepared an East Site specific compliance monitoring plan for long-term (five-year) ground-water monitoring.

The purpose of this report is to describe the work performed, provide background information pertaining to the East Site investigation activities and findings, describe soil remediation and soil disposal activities, and describe confirmation soil activities and results.

Compliance sampling, analysis, and quality assurance/control (QA/QC) procedures and requirements pertaining to the East Site remediation activities are described in the *Performance Sampling and Analysis Plan and Quality Assurance Procedures, Weyerhaeuser East Site, Everett, Washington (DOF, 1996e)*.

## 1.2. Site Description and History

The East Site is one of several operable units comprising property owned by the Weyerhaeuser Company in Everett, Washington (Figure 1) and includes Parcels 1, 2 and 4 as shown on Figure 2. Parcels 1 and 2 were divided into eight subareas (3 to 10) based on historical site activities (Figure 3). Once the East Site soil remediation is approved by Ecology, the site will be transferred to the

Port of Everett (Port) according to the terms of a purchase/sale agreement between the Port and Weyerhaeuser.

Most of Parcels 1 and 2 are located in former Mill B that included a saw mill; planing mill; power house; dip tanks, spray booths, lumber end-sealing and sap stain application facilities; lumber storage and drying sheds; and other support facilities (EMCON 1995a; DOF 1995a). Several above ground and below ground tanks were used to store fuels. Weyerhaeuser began operations in Everett, Washington in 1902. Mill B was shut down in 1979. In 1982 during demolition, a fire destroyed the Mill B remanufacturing building, the power house, the machine shop and other small buildings (Hart Crowser 1990a) located in the vicinity of remediation area RA7-2.

Parcel 4 (herein included with the "East Site") is also known as the South End Residual Wood Storage Site where wood chips, sawdust, lime debris and mill trash were deposited (DOF 1996b). These materials are being removed from the site under the oversight of the Snohomish County Health Department.

While not part of the East Site, two other facilities of environmental interest are located in the vicinity. These include a former lead smelter, ore refinery and arsenic processing plant and a former wood treatment plant and machine shop (Mill E). The smelter and associated facilities are owned by ASARCO and are located off-site to the west of the East Site. Mill E and the former wood treating facilities are owned by Weyerhaeuser. The wood treating plant was historically operated by the American Lumber and Treating Company; now Beazer East, Inc. Mill E is located adjacent to the East Site area (Figure 2). Separate soil and ground water studies are being conducted to assess the environmental conditions associated with these sites.

### **1.3. Previous Investigations**

The Cleanup Action Plan (CAP) (Ecology 1997) for the East site was approved by Ecology after completion of a Remedial Investigation (RI) (DOF 1995a) and Feasibility Study (FS) (DOF 1995b) and after public review. The cleanup actions contained in the CAP include:

- Excavating soil above cleanup/action levels and disposing off-site.
- Conducting five years of ground-water quality monitoring; and
- Implementing institutional controls. These controls are described in the Restrictive Covenant (Exhibit G to the Consent Decree). The provisions of the Restrictive Covenant include, among several other provisions, prohibiting residential development on the East Site and restricting on-site extraction of ground water for drinking water purposes.

The RI and FS summarize the results of soil and ground-water sampling completed by Hart Crowser (1990 a, b, c) and by EMCON (1995a, b). After the RI/FS documents were prepared, additional sampling and analysis was completed to refine the CAP.

- Additional soil sampling was completed in Remediation Areas RA10-2 and RA8-3 (DOF 1995c; 1996c);
- An environmental assessment of the South End Residual Wood Storage Operable Unit was made (DOF 1996a); and
- Additional ground-water sampling and analysis was completed on the South End Residual Wood Storage Site (DOF 1996b).

#### **1.4. Project Organization**

Weyerhaeuser directed the East Site soil remediation project in accordance with the Consent Decree. The following companies were contracted by Weyerhaeuser to assist in completing the remediation:

- Dalton, Olmsted & Fuglevand, Inc. (DOF) of Bothell, Washington prepared the Performance Sampling and Analysis Plan and Quality Assurance Procedures, completed confirmation soil sampling, evaluated confirmation soil sampling laboratory data, and prepared this closure report.
- Golder Associates (Golder) of Bellevue, Washington, provided contractor services. These services included soil excavation, loading of rail containers, backfilling of excavations and paving of area RA8-3. Golder subcontracted Yates Custom Backhoe of Bellevue, Washington to perform the excavation and backfilling activities.
- W&H Pacific of Bellevue, Washington surveyed and staked the location of previous test sites where soils were impacted above action/cleanup levels and surveyed the locations of the excavated areas.
- Laboratory analyses of the confirmation soil samples were performed primarily by Weyerhaeuser Analytical Testing Services (WATS) of Federal Way, Washington. CCI laboratories of Everett, Washington also analyzed a portion of the soil samples.

Soil was disposed at two Ecology approved landfills; one operated by Regional Disposal Company (RDC) located in Roosevelt, Washington, and one operated by Chemical Waste Management in Arlington, Oregon



## 2. WORK PERFORMED

Remediation activities conducted at the East Site were performed as described in the Consent Decree. These activities are described in the following sections.

### 2.1. Area of Soil Remediation

Twenty specific areas [Remediation Areas (RA) 7-1, 7-2A, 7-2B, 7-2C, 8-1, 8-2, 8-3A, 8-3B, 8-4, 9-1, 10-1, 10-2, 10-3A, 10-3B, 10-3C, 10-4A, 10-4B, 10-4C, 10-4D, and TP-16], where impacted soil was identified during previous sampling activities, were surveyed and staked. The general locations of these areas are shown on Figure 3. Based on calculations made using survey data generally collected after excavation and prior to backfilling, drawings provided by W&H Pacific, and/or calculations based on weight of materials removed from specific areas, an estimated 4,500 cubic yards of soil were excavated and disposed off site. The survey drawings are provided in Appendix C of this report. A summary of area-specific constituents and estimated excavated soil volumes is presented in Table 2-1 below.

**Table 2-1**  
**Summary of Area Specific Constituents and Excavated Soil Volumes**  
**Weyerhaeuser Everett East Site**

Remediation Area Designation	Constituent of Concern	Estimated Volume Excavated (Cubic Yards)
7-1	TPH	370
7-2A	TPH, PCBs and CPAHs	1300
7-2B	TPH, PCBs and CPAHs	90
7-2C	TPH and CPAHs	9
8-1	TPH and CPAHs	150
8-2	TPH	45
8-3A	TPH and CPAHs	1650
8-3B	TPH	6
8-4	CPAHs and PCP	7
9-1	TPH	30
10-1	TPH	310
10-2	PCBs	9
10-3A	TPH	230
10-3B	TPH	40
10-3C	TPH	Confirmation Trenches - backfilled
10-4A	TPH	160
10-4B	TPH	Confirmation Trenches - backfilled
10-4C	TPH	80
10-4D	TPH	20
TP-16 (S. End Residual Wood Storage Site)	TPH	Confirmation Test Pit - backfilled
<b>Note:</b>	TPH = Total Petroleum Hydrocarbons	
	PCBs = polychlorinated biphenyls	
	CPAHs = carcinogenic polycyclic aromatic hydrocarbons	
	PCP = pentachlorophenol	

## 2.2. Soil Excavation Summary

Soil excavation activities, with the exception of remediation area 7-1, were completed between April 15, 1997 and May 9, 1997. Excavation of area 7-1 took place on September 9 and 10, 1996, with demolition of a concrete structure taking place on October 18 and 19, 1996. Initial soil excavation activities were performed at staked survey locations for each of the twenty remediation areas. The staked survey locations were based on soil sample data derived from past East Site sampling activities as described in the *Performance Sampling and Analysis Plan* (DOF, 1996e).

The majority of excavated soil was placed directly into truck/railcar containers destined for the RDC regional landfill, located in Roosevelt, Washington. In remediation area 7-2A, soil removed from above a concrete slab and foundations was excavated, and soil was stockpiled and covered until it could be loaded into the disposal containers. In addition, in some of the smaller areas, such as remediation areas 8-3B and 8-4, soil was excavated, placed into a dump truck, and transported to a larger remediation area where it was then loaded into the disposal containers. In area 10-2 and in portions of areas 7-2A and 7-2B, where PCB concentrations potentially exceeded the limit for the RDC regional landfill, excavated soil was loaded into a dump truck and trailer, covered, and transported to the Chemical Waste Management TOSCA waste disposal facility in Arlington, Oregon.

During soil excavation, soil screening analyses using visual and field thin layer chromatography (TLC) analyses were performed to assist in determining soils that exceed soil action/cleanup levels. Following completion of the excavation as indicated by field TLC screening, confirmation soil samples were collected as described in the *Performance Sampling and Analysis Plan* (DOF, 1996e). At confirmation soil sample locations where laboratory results exceeded the Consent Decree soil action/cleanup levels, further soil excavation was performed. Additional confirmation sampling and analyses were then conducted. Excavation and confirmation sampling continued until soil action/cleanup levels were achieved or ground water was encountered.

In remediation area 8-3A, to minimize the possibility of excavation activities impacting soil sample quality, a series of shallow test pits were excavated on approximately 25 foot centers around the expected remediation periphery and confirmation soil samples were taken. Where samples exceeded soil action/cleanup levels, additional test pits were excavated on approximately 25-foot centers and confirmation samples taken until soil action/cleanup levels were achieved. The excavation area was extended to the bounds defined by the confirmation samples meeting soil action/cleanup level requirements. The confirmation soil sampling and analysis activities and procedures are described in Section 3 of this report

For remediation area 10-2, confirmation soil sampling was accomplished on October 3, 1995 in a series of test pits surrounding the 10-2 area (DOF, 1995c). Soils were excavated from this area in April 1997. The excavation extended to the test pit locations that met soil action/cleanup levels.

Large blocks of concrete, such as footings, were either left in place, placed back into excavations and covered during backfilling operations or trucked to concrete stockpiles. In certain areas (RA7-2 and RA8-3) concrete was placed in the excavations. Asphalt removed from remediation area 8-

3A was broken up and hauled to a stockpile area on site. Broken asphalt and concrete will be further processed and used on-site in future roadway and trestle construction.

Photographs of the twenty soil remediation area excavations, taken during the remediation activities, are provided in Appendix A. Daily field reports prepared by Golder are included as Appendix D.

### **2.3. Landfill Disposal**

Based on landfill-specific acceptance criteria, two landfills were selected for off-site soil disposal. All soils, with the exception of soils with PCB concentrations exceeding 50 mg/kg, were disposed at the RDC landfill in Roosevelt, Washington. Soils exceeding the PCB concentration limitation were disposed at the Chemical Waste Management bulk PCB landfill in Arlington, Oregon. These included soils from remediation area 10-2 and a portion of area 7-2.

- Approximately 6240 tons of soil were trucked in truck/rail containers to the RDC rail facility located on the southwestern portion of the East Site in Everett, Washington.
- Approximately 31 tons of soil were trucked to the Chemical Waste Management bulk PCB landfill (Profile No. BR2432).

### **2.4. Excavation Backfill**

Each of the excavated areas were backfilled with clean sand. The clean sand was imported from a stockpile of Snohomish River dredge sands located on the Weyerhaeuser Everett East Site. In remediation area 8-3A, crushed concrete and sand were compacted in lifts and the area was paved with asphalt.

## **3. CONFIRMATION SAMPLING AND ANALYSIS**

In accordance with the requirements of the Consent Decree, Weyerhaeuser conducted a confirmation sampling program to demonstrate that soil excavation activities at each of the twenty areas successfully met the approved soil action/cleanup levels. Parameter-specific soil action/cleanup levels established for the site are shown below in Table 3-1. Results of the confirmation soil sampling program for each area are presented in the following report sections. The laboratory reports and the DOF data quality report are provided in Appendix B.

**Table 3-1**  
**Parameter Specific Action/Cleanup Levels for Soil**  
**Weyerhaeuser Everett East Site**

Parameter	Soil Action/Cleanup Level
Total TPH based on WTPH-D extended	2,500 mg/kg
CPAHs	20
PCBs	17
PCP	280

Note: Area 7-1 was remediated in September and October 1996 (DOF, 1996d)

### **3.1. Area 7-1**

Following excavation of the area of concern, Figure 4, seven confirmation soil samples and one duplicate sample were collected on September 10, 1996, and analyzed for diesel and heavy-oil range TPH (DOF, 1996d). Laboratory results are summarized on Table 1. All samples were well below the soil action/cleanup level of 2,500 mg/kg for TPH. An estimated 370 yards of soil were removed from this area. Oil booms and pads were used to contain oily scums that floated on the surface.

### **3.2. Area 7-2A**

Soil conditions in this area, Figure 5, consisted of a mixture of soil and building demolition debris (including brick, mortar, charcoal, metallic and non-metallic debris, and concrete and wood fragments) covering the building slab and foundation elements of the pre-existing building (powerhouse). Following initial removal of portions of this material, confirmation sampling results (TPH, CPAHs, and PCBs), indicated that additional removal of soil in this area was required. In one area [samples CB6 and CB6(R)] soil was removed to the water table, see Figure 5. Final confirmation sampling, after essentially all of the debris that covered the slab and foundation area was removed, indicated soil action/cleanup level requirements were met. An estimated 1,300 yards of soil materials were removed from this area.

### **3.3. Area 7-2B**

Area 7-2B is located immediately adjacent to, and north of, area 7-2A. Soil conditions in this area, Figure 5, consisted of a mixture of soil and building demolition debris (including brick, mortar, charcoal, metallic and non-metallic debris, and concrete and wood fragments). Following initial removal of portions of this material, confirmation sampling results (TPH, CPAHs, and PCBs), indicated that additional removal of soil in this area was required. In one area along the south side of the area (samples CE1 and CN3) soil was removed to the slab underling the debris. In the eastern and western corners of the site, in the area of samples CW2 and CB1, additional soil removal was required. Final confirmation sampling indicated soil action/cleanup level requirements were met. An estimated 90 yards of soil materials were removed from this area.

### **3.4. Area 7-2C**

After soil was excavated from this area, Figure 5, confirmation sampling (five locations) indicated that soil action/cleanup level requirements for TPH and CPAHs were met. An estimated nine yards of soil were removed from this area.

### **3.5. Area 8-1**

After initial excavation activities, confirmation sampling indicated elevated TPH levels adjacent to a concrete slab/pad, Figure 6. Additional soils were removed to the water table and along the sides of the slab/pad. Confirmation sampling along the walls of the excavation and including beneath the slab indicated soil action/cleanup level requirements of TPH were met. An estimated 150 yards of soil were removed from this area.

### **3.6. Area 8-2**

After initial excavation activities, confirmation sampling and analysis (TPH and PCP) indicated elevated TPH (sample CW1), Figure 6. The excavation was extended to the north and additional confirmation samples obtained. Final confirmation sampling results indicated TPH and PCP levels below required soil action/cleanup levels. An estimated 45 yards was excavated from this area.

### **3.7. Area 8-3A**

Area 8-3A excavation area limits were defined by excavating a series of test pits and obtaining confirmation samples prior to completing excavation activities (see Figure 7). Excavation extended to approximately one foot below the water table in order to maximize removal of soils with elevated TPH and CPAH levels. Oil booms and pads were used to contain oily scums that floated on the surface. Seventeen confirmation samples, plus one duplicate sample, were analyzed for TPH and CPAHs. All samples indicated TPH and CPAHs levels below required soil action/cleanup levels. An estimated 1,650 yards of soil were removed from this area.

### **3.8. Area 8-3B**

Five confirmation samples obtained from area 8-3B excavation, Figure 7, indicated TPH concentrations below required soil action/cleanup levels. Approximately six yards of soil were excavated from this area.

### **3.9. Area 8-4**

Approximately seven yards of soil were excavated from this area, Figure 6. Five confirmation samples were analyzed for CPAHs and PCP. All samples concentrations were below required soil action/cleanup levels.

### **3.10. Area 9-1**

Following excavation of an estimated yards 30 yards from this area, Figure 8, five confirmation samples were obtained and analyzed for TPH. TPH concentrations were found to be below required soil action/cleanup levels.

### **3.11. Area 10-1**

After initial excavation activities, confirmation samples analyzed for TPH, indicated additional soil removal to the south. Confirmation samples taken from the final excavation area, Figure 8, indicated TPH levels below required soil action/cleanup levels. Approximately 310 cubic yards of soil were removed from this area.

### **3.12. Area 10-2**

Previous confirmation sampling (DOF 1995c) done in seven test pits surrounding the remediation area, Figure 8, indicated PCB levels well below soil action/cleanup levels. Approximately nine yards of soil were excavated from this area.

### **3.13. Area 10-3A**

A total estimated volume of 230 yards was excavated from this area, Figure 9. The ten final confirmation samples indicated TPH levels below soil action/cleanup levels.

### **3.14. Area 10-3B**

Approximately 40 yards of soil was removed from this area, Figure 9. Four confirmation samples analyzed for TPH indicated levels below soil action/cleanup levels.

### **3.15. Area 10-3C**

Area 10-3C, Figure 9, consisted of two test trenches to determine if soil TPH levels extended beyond the existing roadway. Results of four confirmation samples indicated that TPH levels were below soil action/cleanup levels. No additional soils were removed from this area.

### **3.16. Area 10-4A**

Approximately 160 yards of soil were removed from this area, Figure 10. Results of eight confirmation samples indicated TPH levels below soil action/cleanup levels.

### **3.17. Area 10-4B**

This area, Figure 10, was trenched around its circumference and within the area. Results of ten confirmation samples indicated TPH levels below soil action/cleanup levels. No additional soils were removed from this area based on the laboratory data, field observations and on-field discussions with Nadine Romero.

### **3.18. Area 10-4C**

Approximately 80 yards of soil were removed from this area, Figure 10. Results of four confirmation soil samples indicated levels below soil action/cleanup levels.

### **3.19. Area 10-4D**

Approximately 20 yards of soil were removed from this area, Figure 10. Results of four confirmation soil samples indicated levels below soil action/cleanup levels.

### **3.20. Area TP-16**

A sample taken from the excavation made in the TP-16 area indicated TPH levels below soil action/cleanup levels. No soils were removed from this area.

### **3.20 Areas That Exceed "Direct Contact" Cleanup Levels**

Section VI.D.11. of the Consent Decree requires that:

*"Institutionally control by recording a restrictive covenant (WAC 173-340-440), within 90 days after completion of the final excavation filling, areas that contain contaminant levels above Method A levels for TPH, 200 mg/kg (or new Method B Direct Contact based numbers per Ecology approval); Method B for PCP, 8.33 mg/kg; Method A for CPAHs, 1.0 mg/kg; and Method A for PCBs, 1.0 mg/kg."* These areas are identified in Appendix E.

#### 4. NEW MONITORING WELL AND WELL ABANDONMENT

On May 2, 1997, an additional compliance ground-water monitor well (MWRA-8-3) was installed downgradient of Area 8-3A (Figure 3). A log of the well and a description of the samples and well installation details are provided in Figure 11. The well was installed by Holt testing of Puyallup, Washington. Terry Olmsted of DOF observed the installation, classified soil samples, and prepared the well log. Survey coordinates and casing elevation are presented in Appendix C.

In addition, on the same date, shallow ground-water monitoring wells HC-17 and HC-35 were abandoned in accordance with Chapter 173-160 WAC. HC17 and HC35 were redundant wells used to evaluate ground-water conditions associated with Parcel 3. HC35 was previously covered by paving.

#### 5. REFERENCES

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TABLE 1 - Summary of Confirmation Sample Analyses

Weyerhaeuser East Site  
Everett, Washington

Sample No.	Date Collected	Type	Depth (feet)	Petroleum Hydrocarbons (mg/kg)		Total TPH (mg/kg)	CPAHs (mg/kg)	PCBs (mg/kg)	PCP (mg/kg)
				Diesel-Range	Heavy-Oil Range				
<b>Soil Action/Cleanup Levels (mg/kg)</b>									
Area RA7-1						2500	20	17	280
<b>Confirmation Samples</b>									
A7-06 S1	9/10/96	sidewall	3.5	20	78	98	na	na	na
A7-06 S1 (F. Dup.)	9/10/96	sidewall	3.5	85	260	345	na	na	na
A7-06 S2	9/10/96	sidewall	2.2	<13	<33	<46	na	na	na
A7-06 S3	9/10/96	sidewall	3	<14	<35	<49	na	na	na
A7-06 S4	9/10/96	sidewall	3	<14	<34	<48	na	na	na
A7-06 S5	9/10/96	sidewall	2.5	<14	<34	<48	na	na	na
A7-06 S6	9/10/96	sidewall	3	<14	<34	<48	na	na	na
A7-06 S7	9/10/96	sidewall	3.5	<14	<34	<48	na	na	na
<b>Area RA7-2A</b>									
<b>Confirmation Samples</b>									
7-2A-CSW-5(R)	4/16/97	sidewall	0-1	170	2000	2170	4.39	0.68 J1	na
7-2A-CSW-6	4/15/97	sidewall	0-2.5	<150	670	<820	3.3 J3	<2.3 J1,2	na
7-2A-CSW-E10	5/7/97	sidewall	0-1.5	110	500	610	7.1	0.9	na
7-2A-CSW-S11	5/7/97	sidewall	0-3.5	42	160	202	16.2	0.7	na
7-2A-CSW-W12	5/7/97	sidewall	0-3.5	<25	<50	<75	0.6	0.2	na
7-2A-CB-1	4/16/97	bottom	2	8.5	22	30.5	<0.25	<0.25 J2	na
7-2A-CB-2	4/16/97	bottom	2	<14	95	<109	<0.28	<0.25 J2	na
7-2A-CB-4	4/17/97	bottom	1	150	520	670	4.5	2.0	na
7-2A-CE-1	4/16/97	sidewall	0-1	30	72	102	<0.92	1.6 J2	na
7-2A-CE-2	4/16/97	sidewall	0-3	390	760	1150	<0.92	3.0 J2	na
7-2A-CE-3	4/17/97	sidewall	1	190	560	750	<0.78	1.6	na
7-2A-CN-1	4/17/97	sidewall	1	140	460	600	4.6	1.7	na
<b>Interim Samples</b>									
7-2A-CSW-1	4/15/97	sidewall	0-0.5	540	1200	1740	12	140 J1	na
7-2A-CSW-2	4/15/97	sidewall	0-2	1100	3700	4800	48.7	20 J1	na
7-2A-CSW-3	4/15/97	sidewall	0-1.5	280	2000	2280	43.1	7.9 J1	na
7-2A-CSW-3(R)	5/1/97	sidewall	0-1.5	270	1500	1770	138.8	5.7 J1	na
7-2A-CSW-4	4/15/97	sidewall	0-0.5	230	1600	1830	61.2	8.7 J1	na
7-2A-CSW-4(R)	5/1/97	sidewall	0-0.5	110	810	920	25.6	9.2 J1	na
7-2A-CSW-5	4/15/97	sidewall	0-2	160	2300	2460	3.9 J3	1.7 J1	na
7-2A-CSW-7	5/6/97	sidewall	0-0.5	89	410	499	25.9	1.2	na
7-2A-CSW-8	5/6/97	sidewall	0-1.5	790	1700	2490	179.8	2.6	na

TABLE 1 - Summary of Confirmation Sample Analyses

Weyerhaeuser East Site  
Everett, Washington

Sample No.	Date Collected	Type	Depth (feet)	Petroleum Hydrocarbons (mg/kg)		Total TPH (mg/kg)	CPAHs (mg/kg)	PCBs (mg/kg)	PCP (mg/kg)
				Diesel-Range	Heavy-Oil Range				
<b>Soil Action/Cleanup Levels (mg/kg)</b>									
7-2A-CSW-9	5/6/97	sidewall	0-0.5	260	960	1220	53.4	3.2	na
7-2A-CB-3	4/17/97	bottom	1	680	1500	2180	5.4	49.0 J1	na
7-2A-CB-5	4/17/97	bottom	1	870	1800	2670	44.2	7.7	na
7-2A-CB-6	4/17/97	bottom	1	300	1300	1600	16.9	22.0	na
7-2A-CB-6(R)	5/1/97	bottom	2	260	540	800	108.4	1.1 J1	na
7-2A-CN-2	4/17/97	sidewall	1	140	750	890	21.0	5.2 J1	na
7-2A-CN-3	4/17/97	sidewall	1	460	920	1380	63.0	17.0 J1	na
7-2A-CN-3 (F. Dup. #1)	4/17/97	sidewall	1	520	1300	1820	155.9	22.0 J1	na
7-2A-CN-3(R)	5/1/97	sidewall	0-0.5	<7.1	<18	<25	<0.37	<0.37	na
7-2A-CN-4	4/17/97	sidewall	1	400	1800	2200	61.3	26.0 J1	na
<b>Area 7-2B</b>									
<b>Confirmation Samples</b>									
7-2B-CB-2	4/18/97	bottom	0.5	77	180	257	12.4 J2	<0.12 J2	na
7-2B-CB-3	4/18/97	bottom	0.5	84	230	314	1.2 J2	1.2 J2	na
7-2B-CB-4	4/18/97	bottom	0.5	29	110	139	<0.97 J2	0.8 J2	na
7-2B-CN-1	4/18/97	sidewall	0.5	<15	<38	<53	<0.50 J2	<0.13 J2	na
7-2B-CN-2	4/18/97	sidewall	0.5	110	410	520	13.8 J2	3.1 J2	na
7-2B-CS-1	4/18/97	sidewall	0.5	32	100	132	4.1 J2	2.6 J2	na
7-2B-CS-2	4/18/97	sidewall	0.5	100	320	420	5.8 J2	1.4 J2	na
7-2B-CW-1	4/18/97	sidewall	0.5	32	95	127	2.8 J2	1.4 J2	na
<b>Interim Samples</b>									
7-2B-SP-Compld.	4/17/97	stockpile	---	na	na	na	na	14.0 J1	na
7-2B-CB-1	4/18/97	bottom	0.5	54	190	244	24.8 J2	3.8 J2	na
7-2B-CB-1 (F. Dup. #2)	4/18/97	bottom	0.5	200	380	580	13.8 J2	6.3 J2	na
7-2B-CB-1(R)	5/1/97	bottom	1.5	150	260	410	18.4	1.8 J1	na
7-2B-CE-1	4/18/97	sidewall	0.5	280	1100	1380	50.8 J2	41.0 J2	na
7-2B-CN-3	4/18/97	sidewall	0.5	360	1600	1960	55.1 J2	26.0 J2	na
7-2B-CW-2	4/18/97	sidewall	0.5	<14	62	<76	0.9 J2	19.0 J2	na
7-2B-CW-2(R)	5/1/97	sidewall	0-1	14	51	65	<0.47	<0.47 J1	na
<b>Area 7-2C</b>									
<b>Confirmation Samples</b>									
7-2C-CB-1	4/17/97	bottom	1	79	340	419	0.84	na	na
7-2C-CE-1	4/17/97	sidewall	0-1	20	88	108	<0.70	na	na
7-2C-CN-1	4/17/97	sidewall	0-1	44	170	214	3.90	na	na

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Sample No.	Date Collected	Type	Depth (feet)	Petroleum Hydrocarbons (mg/kg)		Total TPH (mg/kg)	CPAHs (mg/kg)	PCBs (mg/kg)	PCP (mg/kg)
				Diesel-Range	Heavy-Oil Range				
<b>Soil Action/Cleanup Levels (mg/kg)</b>									
7-2C-CS-1	4/17/97	sidewall	0-1	48	240	288	<0.77	na	na
7-2C-CW-1	4/17/97	sidewall	0-1	41	200	241	<0.84	na	na
<b>Area RA8-1</b>									
<b>Confirmation Samples</b>									
8-1-CE-1(R)	4/29/97	sidewall	0-4	200	390	590	na	na	na
8-1-CE-2	4/29/97	sidewall	0-4	42	110	152	na	na	na
8-1-CN-2	5/2/97	sidewall	0-3.5	6.4	<17	<23	na	na	na
8-1-CS-1	4/21/97	sidewall	0-1.5	200	550	750	na	na	na
8-1-CW-1	4/21/97	sidewall	0-1.5	98	270	368	na	na	na
8-1-CW-2	4/29/97	sidewall	0-4	60	150	210	na	na	na
8-1-CW-3	4/29/97	sidewall	0-4	73	170	243	na	na	na
8-1-CU-1	4/29/97	sidewall	1.5-4	<6.8	<17	<24	na	na	na
8-1-CU-2	4/29/97	sidewall	1.5-4	200	490	690	na	na	na
8-1-CU-3	4/29/97	sidewall	1.5-4	17	26	43	na	na	na
8-1-CU-3 (F. Dup. #7)	4/29/97	sidewall	1.5-4	12	31	43	na	na	na
8-1-CU-4	4/29/97	sidewall	1.5-4	46	100	146	na	na	na
<b>Interim Samples</b>									
8-1-CB-1	4/21/97	bottom	1.5	1400 J1	4400 J1	5800 J1	na	na	na
8-1-CE-1	4/21/97	sidewall	1.5-3	1800 J1	5400 J1	7200 J1	na	na	na
8-1-CN-1	4/21/97	sidewall	0-1.5	1900 J1	4700 J1	6600 J1	na	na	na
8-1-CN-1(R)	4/29/97	sidewall	0-4	4900 J1	4000 J1	8900 J1	na	na	na
<b>Area RA8-2</b>									
<b>Confirmation Samples</b>									
8-2-CB-1	4/30/97	bottom	1.5	8.9	39	47.9	na	na	na
8-2-CB-2	5/2/97	bottom	2.5	14	<17	<31	na	na	12
8-2-CE-1	4/30/97	sidewall	0-1.5	<6.5	<16	<23	na	na	na
8-2-CN-1	4/30/97	sidewall	0-1.5	<6.5	17	<24	na	na	na
8-2-CN-2	5/2/97	sidewall	0-2	49	150	199	na	na	5.7
8-2-CS-1	4/30/97	sidewall	0-1.5	32	130	162	na	na	na
8-2-CS-2	5/2/97	sidewall	0-3.5	12	44	56	na	na	<4.9
8-2-CW-1(R)	5/2/97	sidewall	0-2	760	1500	2260	na	na	92
<b>Interim Samples</b>									
8-2-CW-1	4/30/97	sidewall	0-1.5	2500	650	3150	na	na	na

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Sample No.	Date Collected	Type	Depth (feet)	Petroleum Hydrocarbons (mg/kg)		Total TPH (mg/kg)	CPAHs (mg/kg)	PCBs (mg/kg)	PCP (mg/kg)
				Diesel-Range	Heavy-Oil Range				
Soil Action/Cleanup Levels (mg/kg)									
						2500	20	17	280
<b>Area RA8-3A</b>									
Confirmation Samples									
8-3A-CE-1	4/24/97	sidewall	0-3	<7.1	<18	<25	na	na	<2.5
8-3A-CE-2	4/24/97	sidewall	0-3	34	38	72	na	na	5.7
8-3A-CE-3	4/24/97	sidewall	0-3	160	300	460	na	na	<2.5
8-3A-CE-4	4/24/97	sidewall	0-3	42	41	83	na	na	<2.5
8-3A-CN-1	4/24/97	sidewall	0-3	14	45	59	na	na	<2.5
8-3A-CN-2	4/24/97	sidewall	0-3	130	110	240	na	na	<2.5
8-3A-CN-3	4/24/97	sidewall	0-3	11	26	37	na	na	<2.5
8-3A-CN-4	4/24/97	sidewall	0-3	170	140	310	na	na	6.6
8-3A-CN-5	4/24/97	sidewall	0-3	<6.8	<17	<24	na	na	<2.5
8-3A-CS-1	4/24/97	sidewall	0-3	29	59	88	na	na	<2.4
8-3A-CS-2	4/24/97	sidewall	0-3	30	62	92	na	na	<2.5
8-3A-CS-3	4/24/97	sidewall	0-3	<7.2	<18	<25	na	na	<2.5
8-3A-CS-4	4/24/97	sidewall	0-3	8.4	<18	<26	na	na	<2.5
8-3A-CS-5	4/24/97	sidewall	0-3	<6.9	<17	<24	na	na	<2.4
8-3A-CS-5 (F. Dup. #4)	4/24/97	sidewall	0-3	<7.2	<18	<25	na	na	<2.5
8-3A-CW-1	4/24/97	sidewall	0-3	7.2	<18	<25	na	na	<2.4
8-3A-CW-2	4/24/97	sidewall	0-3	25	40	65	na	na	<2.4
8-3A-CW-3	4/24/97	sidewall	0-3	13	18	31	na	na	<2.4
<b>Area RA8-3B</b>									
Confirmation Samples									
8-3B-CB-1	4/21/97	bottom	2	13	77	90	na	na	na
8-3B-CE-1	4/21/97	sidewall	0-1.5	22	120	142	na	na	na
8-3B-CN-1	4/21/97	sidewall	0-1.5	180	740	920	na	na	na
8-3B-CS-1	4/21/97	sidewall	0-1.5	63	200	263	na	na	na
8-3B-CW-1	4/21/97	sidewall	0-1.5	18	170	188	na	na	na
<b>Area RA8-4</b>									
Confirmation Samples									
8-4-CB-1	4/21/97	bottom	1.5	na	na	na	<0.16	na	<0.16
8-4-CE-1	4/21/97	sidewall	0-1	na	na	na	<0.18	na	<0.18
8-4-CN-1	4/21/97	sidewall	0-1	na	na	na	<0.18	na	<0.18
8-4-CS-1	4/21/97	sidewall	0-1.3	na	na	na	<0.20	na	<0.20
8-4-CW-1	4/21/97	sidewall	0-0.5	na	na	na	<0.18	na	<0.18

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Sample No.	Date Collected	Type	Depth (feet)	Petroleum Hydrocarbons (mg/kg)		Total TPH (mg/kg)	CPAHs (mg/kg)	PCBs (mg/kg)	PCP (mg/kg)
				Diesel-Range	Heavy-Oil Range				
<b>Soil Action/Cleanup Levels (mg/kg)</b>									
<b>Area RA9-1</b>									
<b>Confirmation Samples</b>									
9-1-CB-1	4/18/97	bottom	0.6	<14	<35	<49	na	na	na
9-1-CE-1	4/18/97	sidewall	0-4	20	46	66	na	na	na
9-1-CN-1	4/18/97	sidewall	0-4	60	750	810	na	na	na
9-1-CS-1	4/18/97	sidewall	0-2	20	69	89	na	na	na
9-1-CW-1	4/18/97	sidewall	0-4	<14	<35	<49	na	na	na
<b>Area RA10-1</b>									
<b>Confirmation Samples</b>									
10-1-CE-1	4/22/97	sidewall	0-2	640	140	780	na	na	na
10-1-CN-1(R)	4/30/97	sidewall	0-2	<6.9	<17	<24	na	na	na
10-1-CN-2	4/22/97	sidewall	0-2	<7.2	26	<33	na	na	na
10-1-CN-3	4/22/97	sidewall	0-2	16	45	61	na	na	na
10-1-CN-4	4/23/97	sidewall	0-2	<7.7	<19	<27	na	na	na
10-1-CN-5	4/23/97	sidewall	0-2	16	<16	<32	na	na	na
10-1-CN-6	4/23/97	sidewall	0-2	38	19	57	na	na	na
10-1-CS-1	4/22/97	sidewall	0-2	540	320	860	na	na	na
10-1-CS-2(R)	4/30/97	sidewall	0-2	37	120	157	na	na	na
10-1-CS-3	4/22/97	sidewall	0-2	33	29	62	na	na	na
10-1-CS-4	4/22/97	sidewall	0-2	180	47	227	na	na	na
10-1-CS-5	4/22/97	sidewall	0-2	<8.5	23	<32	na	na	na
10-1-CW-1	4/22/97	sidewall	0-1.5	89	180	269	na	na	na
10-1-CW-2	4/22/97	sidewall	0.4-2	20	25	45	na	na	na
<b>Interim Samples</b>									
10-1-CN-1	4/22/97	sidewall	1-2	4800	3000	7800	na	na	na
10-1-CS-2	4/22/97	sidewall	0-2.5	3500	1400	4900	na	na	na
10-1-CS-2 (F. Dup. #3)	4/22/97	sidewall	0-2.5	3700	1500	5200	na	na	na
<b>Area RA10-2</b>									
<b>Confirmation Samples</b>									
TP10-2-1	10/3/95	sidewall	0.8-1.2	na	na	na	na	<0.05	na
TP10-2-2	10/3/95	sidewall	0.8-1.2	na	na	na	na	<0.05	na
TP10-2-3	10/3/95	sidewall	1-1.5	na	na	na	na	<0.05	na
TP10-2-4	10/3/95	sidewall	1-1.5	na	na	na	na	<0.05	na
TP10-2-5	10/3/95	sidewall	1-1.5	na	na	na	na	<0.05	na

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Sample No.	Date Collected	Type	Depth (feet)	Petroleum Hydrocarbons (mg/kg)		Total TPH (mg/kg)	CPAHs (mg/kg)	PCBs (mg/kg)	PCP (mg/kg)
				Diesel-Range	Heavy-Oil Range				
<b>Soil Action/Cleanup Levels (mg/kg)</b>									
TP10-2-6	10/3/95	sidewall	0.8-1.2	na	na	2500	20	17	280
TP10-2-7	10/3/95	sidewall	0.8-1.2	na	na	na	na	<0.05	na
<b>Area RA10-3A</b>									
<b>Confirmation Samples</b>									
10-3A-CE-1	5/2/97	sidewall	0-3	200	370	570	na	na	na
10-3A-CE-2(R)	5/2/97	sidewall	0-3	240	580	820	na	na	na
10-3A-CE-2(R)(F. Dup. #8)	5/2/97	sidewall	0-3	120	290	410	na	na	na
10-3A-CN-1	4/29/97	sidewall	0-3	120	600	720	na	na	na
10-3A-CN-1(F. Dup. #6)	4/29/97	sidewall	0-3	130	570	700	na	na	na
10-3A-CN-2	4/29/97	sidewall	0-3	82	200	282	na	na	na
10-3A-CS-1	4/29/97	sidewall	0-3	74	220	294	na	na	na
10-3A-CS-2	4/29/97	sidewall	0-3	6.3	22	28.3	na	na	na
10-3A-CW-1	4/29/97	sidewall	0-3	20	39	59	na	na	na
10-3A-CW-2	4/29/97	sidewall	0-3	73	160	233	na	na	na
10-3A-CW-3	4/29/97	sidewall	0-3	28	58	86	na	na	na
10-3A-CW-4	4/29/97	sidewall	0-3	53	130	183	na	na	na
<b>Interim Samples</b>									
10-3A-CE-2	4/29/97	sidewall	0-3	1000	2000	3000	na	na	na
<b>Area RA10-3B</b>									
<b>Confirmation Samples</b>									
10-3B-CE-1	4/29/97	sidewall	0-3.5	<6.5	<16	<23	na	na	na
10-3B-CN-1	4/29/97	sidewall	0-3.5	23	40	63	na	na	na
10-3B-CS-1	4/29/97	sidewall	0-3.5	24	56	80	na	na	na
10-3B-CW-1	4/29/97	sidewall	0-3.5	13	37	50	na	na	na
<b>Area RA10-3C</b>									
<b>Confirmation Samples</b>									
10-3C-CE-1	4/25/97	sidewall	0-3	17	29	46	na	na	na
10-3C-CN-1	4/25/97	sidewall	0-3	290	110	400	na	na	na
10-3C-CN-2	4/25/97	sidewall	0-3	72	86	158	na	na	na
10-3C-CN-3	4/25/97	sidewall	0-3	7.7	16	23.7	na	na	na
10-3C-CN-3 (F. Dup. #5)	4/25/97	sidewall	0-3	<7.1	<18	<25	na	na	na
<b>Area RA10-4A</b>									
<b>Confirmation Samples</b>									
10-4A-CE-1	4/23/97	sidewall	0.5-2	380	810	1190	na	na	na

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Sample No.	Date Collected	Type	Depth (feet)	Petroleum Hydrocarbons (mg/kg)		Total TPH (mg/kg)	CPAHs (mg/kg)	PCBs (mg/kg)	PCP (mg/kg)
				Diesel-Range	Heavy-Oil Range				
<b>Soil Action/Cleanup Levels (mg/kg)</b>									
10-4A-CE-2	4/25/97	sidewall	0-2.5	88	160	248	na	17	280
10-4A-CN-1	4/25/97	sidewall	0-2.5	<6.3	16	<22	na	na	na
10-4A-CN-2	4/25/97	sidewall	0-2.5	28	62	90	na	na	na
10-4A-CN-3	4/25/97	sidewall	0-2.5	9.1	24	33.1	na	na	na
10-4A-CS-1	4/23/97	sidewall	0.5-2	7.6	<18	<26	na	na	na
10-4A-CW-1	4/23/97	sidewall	0.5-2	19	54	73	na	na	na
10-4A-CW-2	4/25/97	sidewall	0-2.5	34	100	134	na	na	na
<b>Area RA10-4B</b>									
<b>Confirmation Samples</b>									
10-4B-CE-1	4/28/97	sidewall	0.5-2	<7.1	<18	<25	na	na	na
10-4B-CN-1	4/28/97	sidewall	0.5-2	13	20	33	na	na	na
10-4B-CN-2	4/28/97	sidewall	0.5-2	41	65	106	na	na	na
10-4B-CN-3	4/28/97	sidewall	0.5-2	<7.2	<18	<25	na	na	na
10-4B-CN-4	4/28/97	sidewall	0.5-2	<7.2	<18	<25	na	na	na
10-4B-CN-5	4/28/97	sidewall	0.5-2	<7.0	<18	<25	na	na	na
10-4B-CS-1	4/28/97	sidewall	0.5-2	57	97	154	na	na	na
10-4B-CS-2	4/28/97	sidewall	0.5-2	<7.5	<19	<27	na	na	na
10-4B-CS-3	4/28/97	sidewall	0.5-2	15	<18	<33	na	na	na
10-4B-CW-1	4/28/97	sidewall	0.5-2	22	47	69	na	na	na
<b>Area RA10-4C</b>									
<b>Confirmation Samples</b>									
10-4C-CE-1	4/28/97	sidewall	0.5-3	6.9	<17	<24	na	na	na
10-4C-CN-1	4/28/97	sidewall	0.5-3	87	150	237	na	na	na
10-4C-CS-1	4/28/97	sidewall	0.5-3	<7.3	<18	<25	na	na	na
10-4C-CW-1	4/28/97	sidewall	0.5-3	<7.3	<18	<25	na	na	na
<b>Area RA10-4D</b>									
<b>Confirmation Samples</b>									
10-4D-CE-1	4/28/97	sidewall	1-4	8.3	<17	<25	na	na	na
10-4D-CN-1	4/28/97	sidewall	1-4	510	680	1190	na	na	na
10-4D-CS-1	4/28/97	sidewall	1-4	15	27	42	na	na	na
10-4D-CW-1	4/28/97	sidewall	1-4	120	360	480	na	na	na



TABLE 1 - Summary of Confirmation Sample Analyses

Sample No.	Date Collected	Type	Depth (feet)	Petroleum Hydrocarbons (mg/kg)		Total TPH (mg/kg)	CPAHs (mg/kg)	PCBs (mg/kg)	PCP (mg/kg)
				Diesel-Range	Heavy-Oil Range				
Soil Action/Cleanup Levels (mg/kg)									
Area TP-16									
Confirmation Samples									
TP-16-C1	4/16/97	sidewall	5	82	170	252	na	na	na

Notes: All concentrations in mg/kg.

na - Not analyzed.

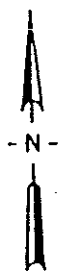
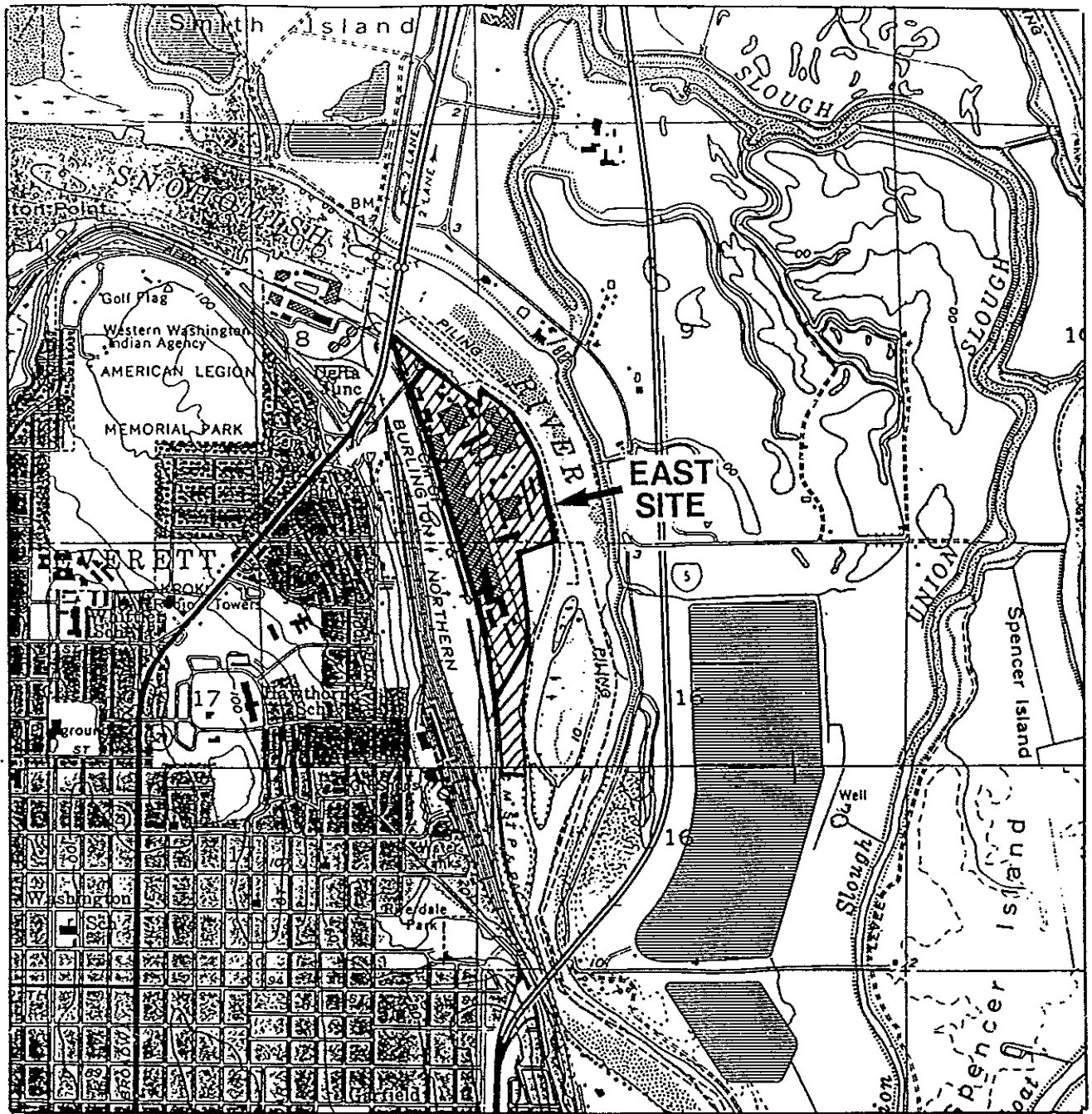
< - Less than indicated value

Soil represented by "Interim Samples" was excavated and disposed of off-site.

J1 - Estimated concentration - Surrogate recovery data not available because of dilution or matrix interference.

J2 - Estimated concentration - Surrogate recoveries outside control limits in samples, laboratory control samples or matrix spike/matrix spike duplicates.

J3 - Estimated concentration - Analyte detected below calibration level.

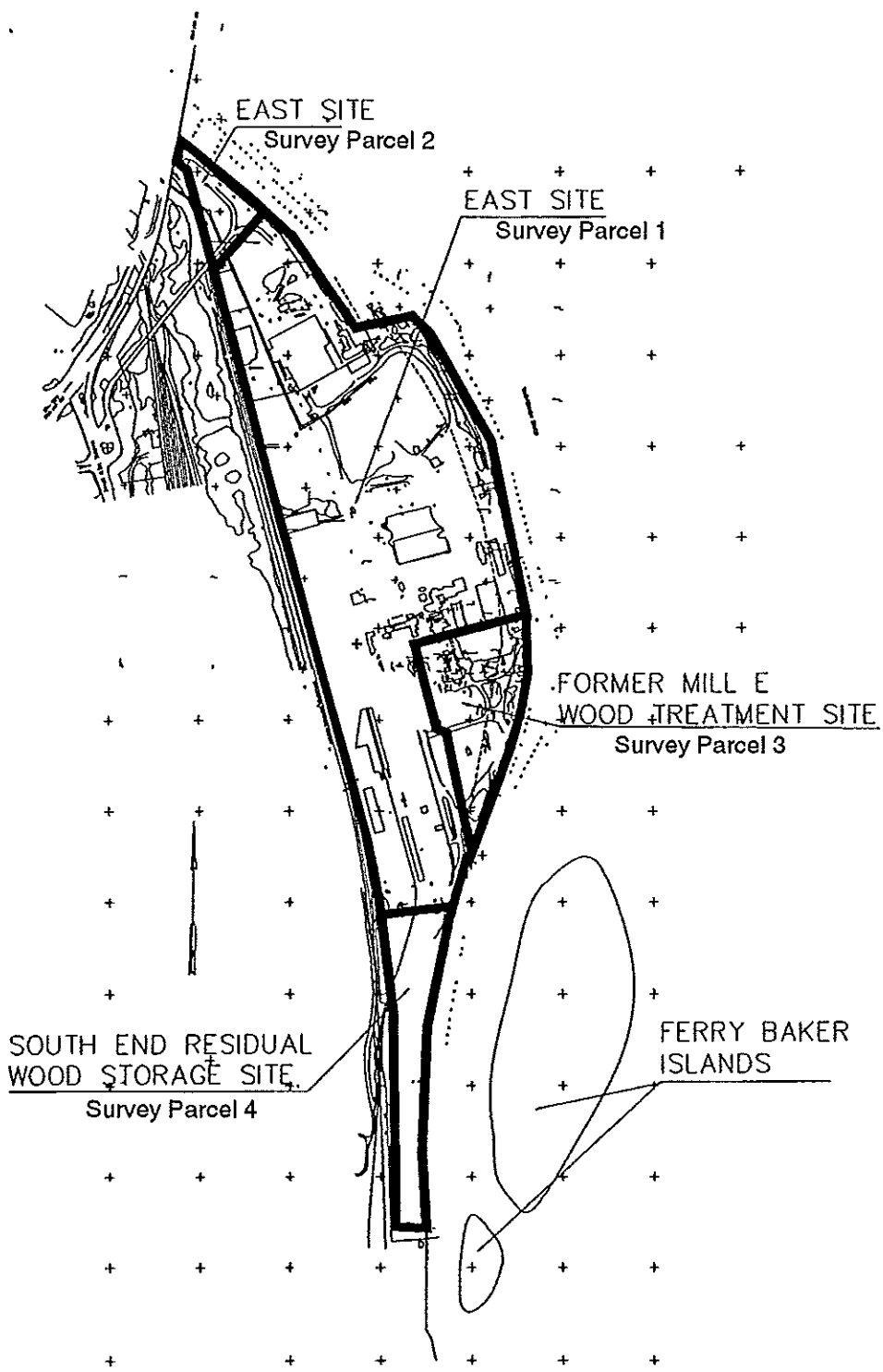


Weyerhaeuser East Site  
Everett, Washington

**SITE VICINITY MAP**

WEY-011      **FIGURE 1**      July 1995  
Dalton, Olmsted & Fuglevand, Inc.

Figure based on Figure 1-1  
EMCON (1995a)



Weyerhaeuser East Site  
 Everett, Washington

**Survey Parcel Numbers**

WEY-011-03      **FIGURE 2**      December 1996  
 Dalton, Olmsted & Fuglevand, Inc.



SNOHOMISH RIVER

SNOHOMISH RIVER

SOUTH END  
RESIDUAL WOOD  
STORAGE SITE

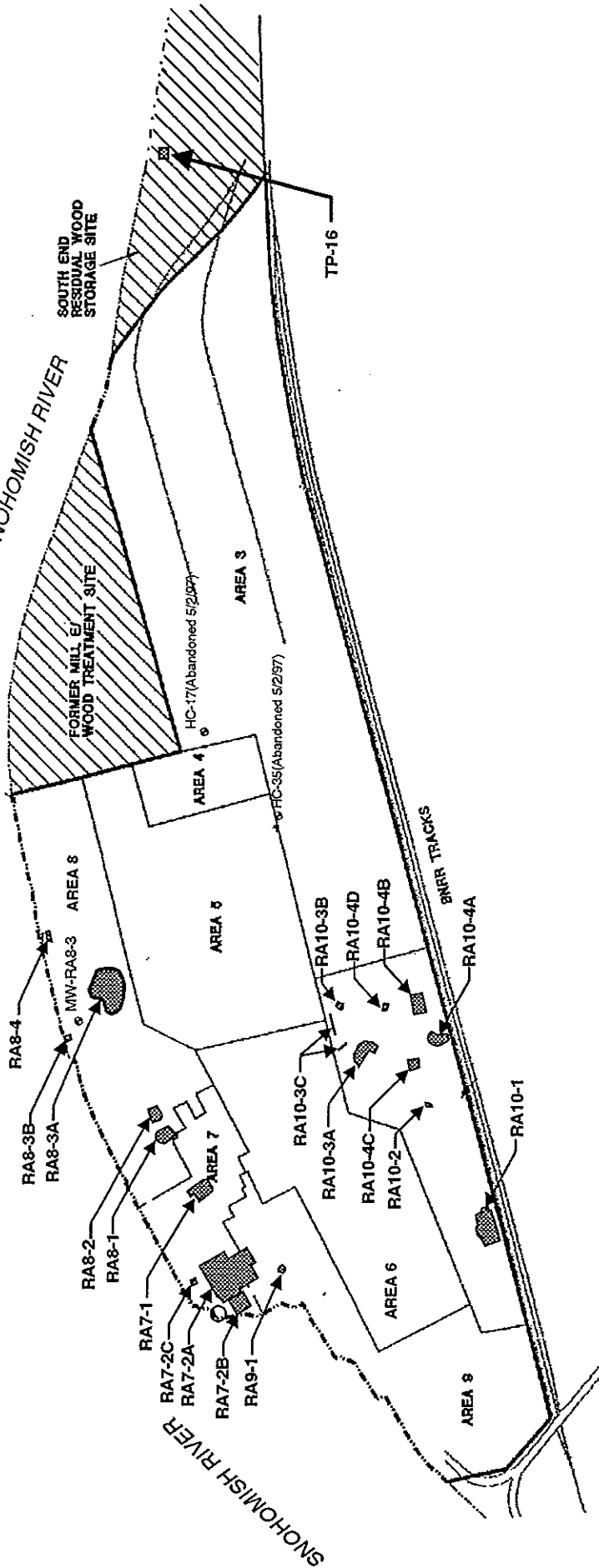
FORMER MILL &  
WOOD TREATMENT SITE

HC-17(Abandoned 5/2/97)


HC-35(Abandoned 5/2/97)

TP-16

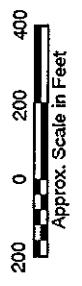
BNRR TRACKS



EXPLANATION

 Remediation Area and Number

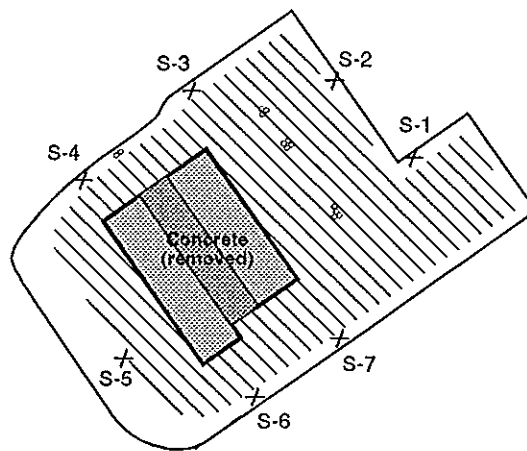
RA10-1





Weyerhaeuser East Site  
Everett, Washington

**EAST SITE  
REMEDIATION AREAS**

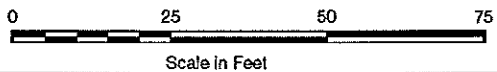
WEY-011 **FIGURE 3** May 1997  
Dalton, Olmsted & Fuglevand, Inc.



*Explanation*

- S-1 Sample designation
- X Sample meeting Cleanup Level
-  Area excavated to water table
-  Piling

Note: Additional discussion of the RA-7-1 area is presented in DOF(1996d)



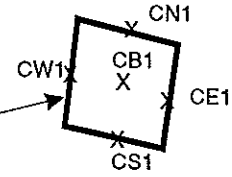
Weyerhaeuser East Site  
Everett, Washington

**REMEDIATION AREA 7-1**

WEY-011 **FIGURE 4** May 1997  
Dalton, Olmsted & Fuglevand, Inc.

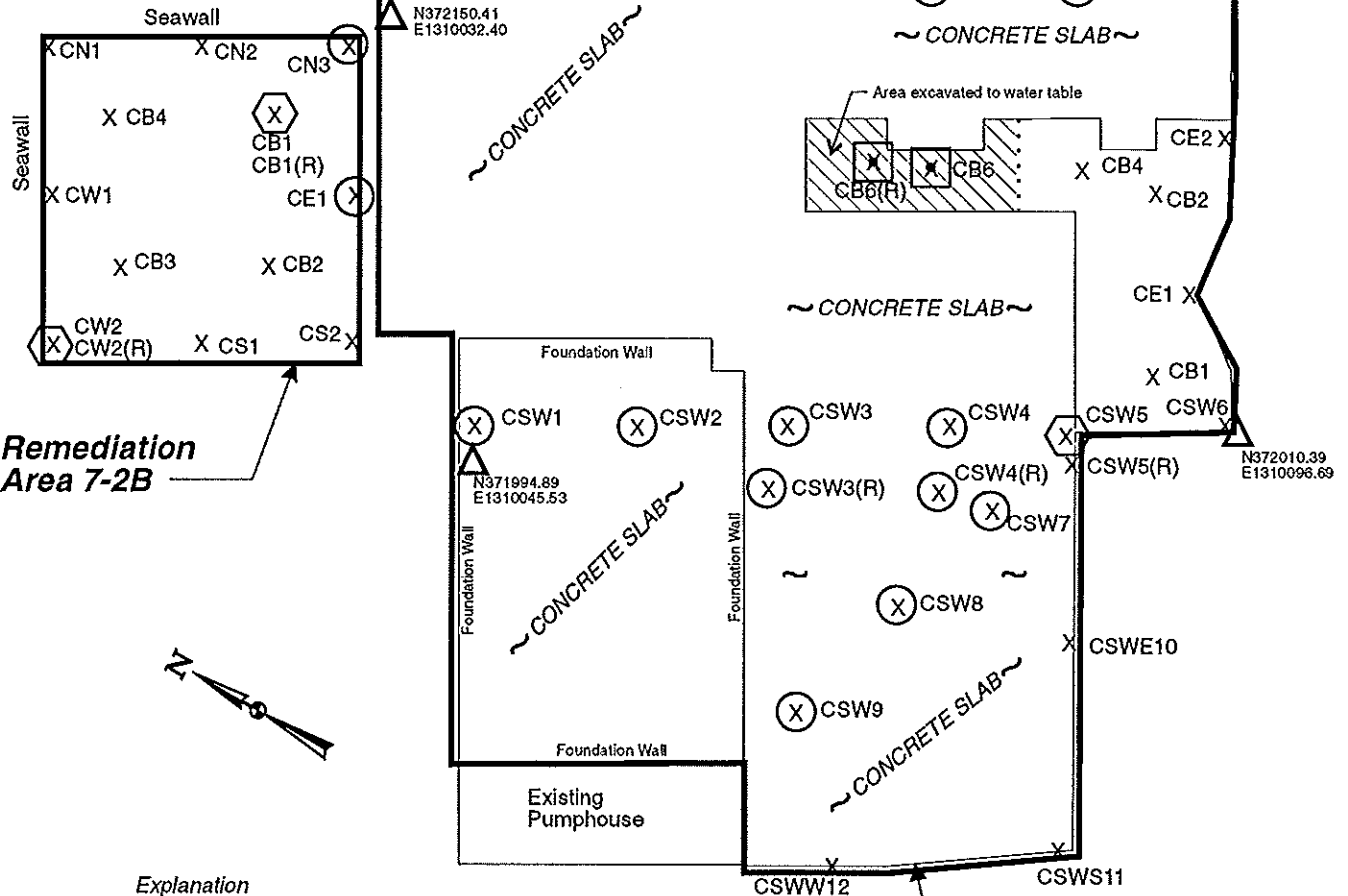
SNOHOMSH RIVER

Remediation Area 7-2C



Remediation Area 7-2A

Remediation Area 7-2B



**Explanation**

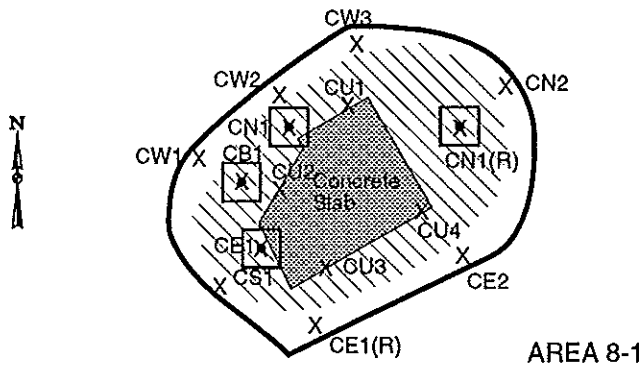
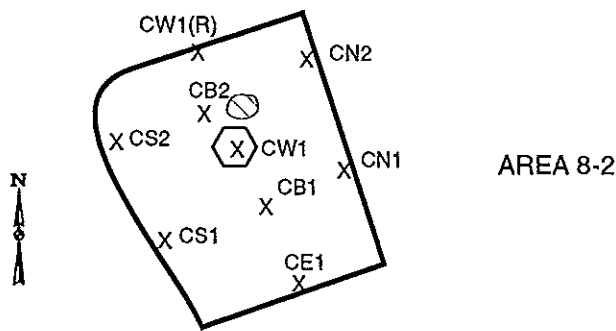
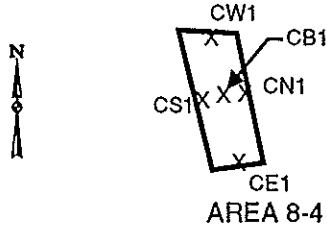
- 7-2A-CS1 Sample designation with area number prefix
- X Sample meeting Cleanup Level
- (X) Sample exceeding Cleanup Level - Soil removed and resampled
- (X) Sample exceeding Cleanup Level - Soil removed to concrete slab
- (X) Sample exceeding Cleanup Level - Soil removed to water table
- ▲ Surveyed Reference Point with Northings and Eastings




N371994.89  
E1310045.53



Weyerhaeuser East Site  
Everett, Washington

**REMEDICATION AREAS  
7-2A, -2B, & -2C**



- Explanation**
- 8-1-CS1 Sample designation with area number prefix
  - X Sample meeting Cleanup Level
  -  Sample exceeding Cleanup Level - Soil removed and resampled
  -  Sample exceeding Cleanup Level - Soil removed to water table
  -  Area excavated to water table
- 0 25 50 75  
Scale in Feet

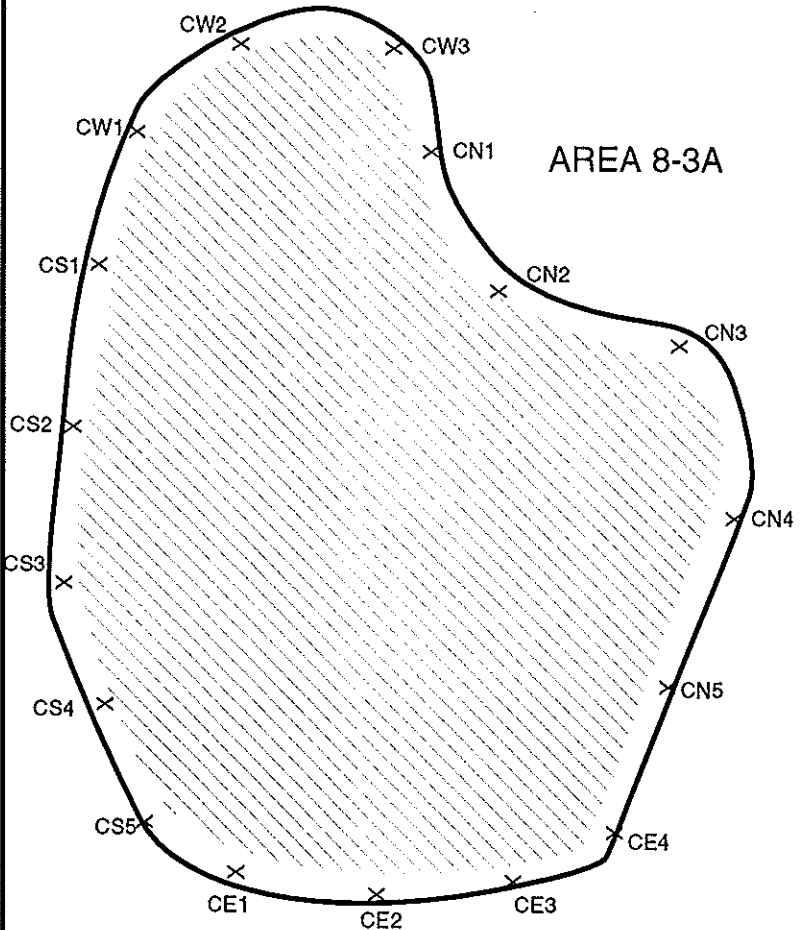
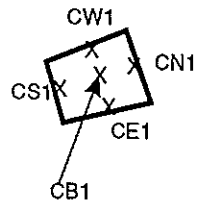
Weyerhaeuser East Site  
Everett, Washington

**REMEDIATION AREAS**  
8-1, 8-2, & 8-4

WEY-011 **FIGURE 6** May 1997  
Dalton, Olmsted & Fuglevand, Inc.

SNOHOMISH RIVER


AREA 8-3B



*Explanation*

8-3A-CS1 Sample designation with area number prefix

X Sample meeting Cleanup Level

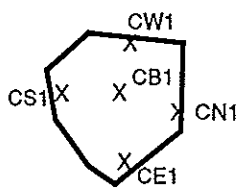
 Area excavated to water table



Weyerhaeuser East Site  
Everett, Washington

**REMEDIATION AREAS  
8-3A & -3B**





AREA 9-1

TP10-2-1 (DOF 1995) X A10-05 (Emcon 1995)

TP10-2-2 (DOF 1995) X TP10-2-6 (DOF 1995)

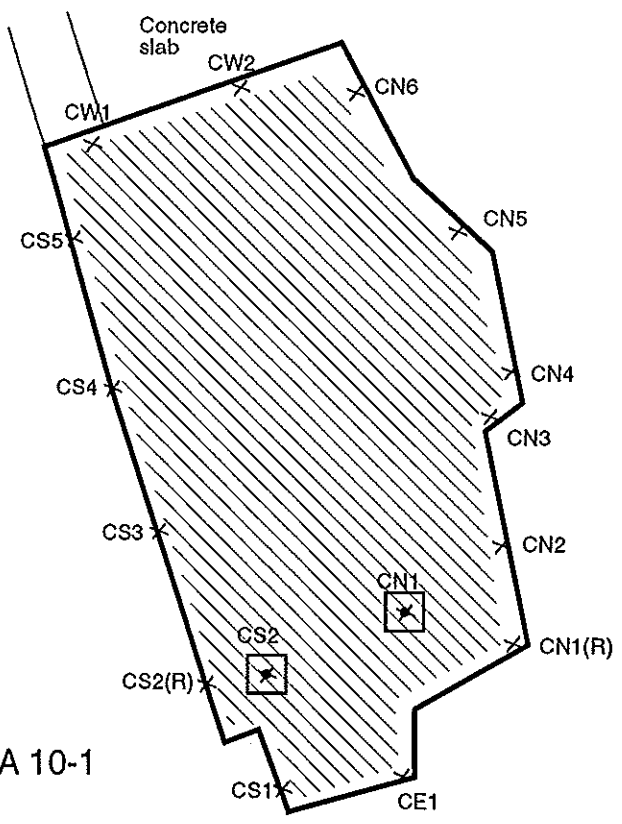
TP10-2-3 (DOF 1995) X TP10-2-5 (DOF 1995)

TP10-2-7 (DOF 1995) X

TP10-2-4 (DOF 1995) X


Note: Area 10-2 previously sampled - see explanation below

AREA 10-2



AREA 10-1

*Explanation*

- 10-1-CS1 Sample designation with area number prefix
- X Sample meeting Cleanup Level
-  Sample exceeding Cleanup Level - Soil removed to water table



Area excavated to water table

TP10-2-4 (DOF 1995) Test Pit - Sampled by DOF (1995)

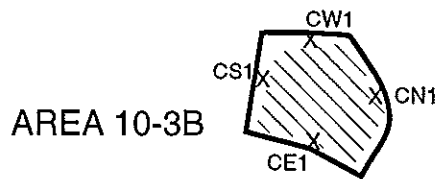
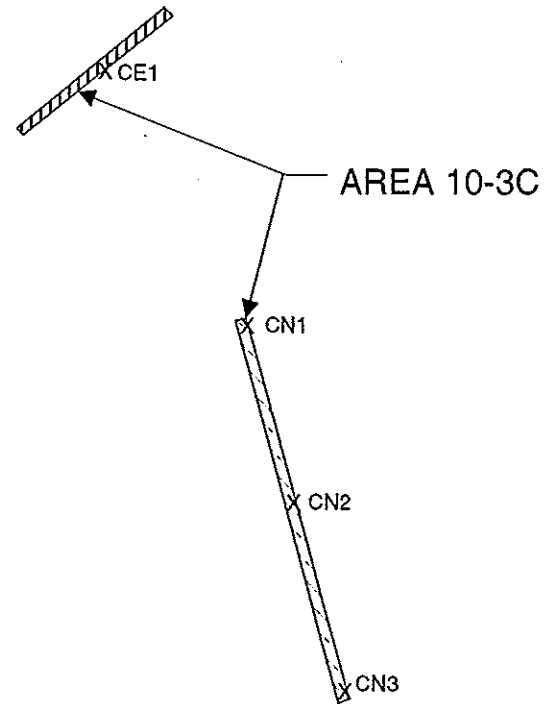
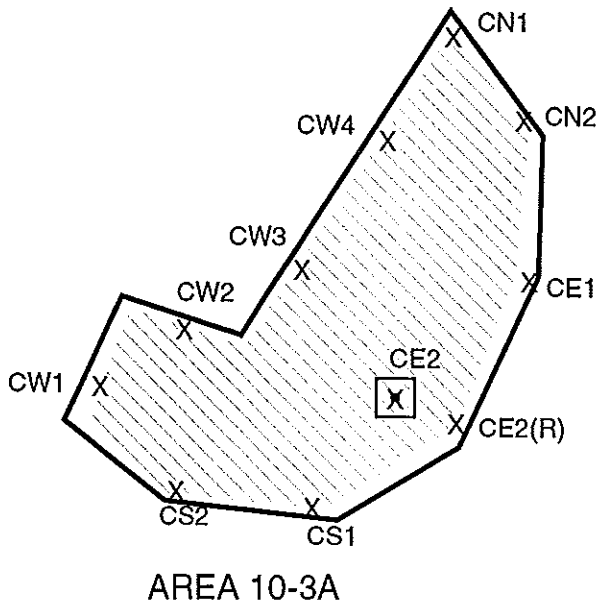
A10-05 (Emcon 1995) Test Pit - Sampled by Emcon (1995)



Scale in Feet

Weyerhaeuser East Site  
Everett, Washington

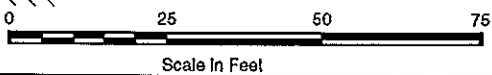
**REMEDIATION AREAS  
9-1, 10-1, & 10-2**



*Explanation*

10-3A-CN1 Sample designation with area number prefix

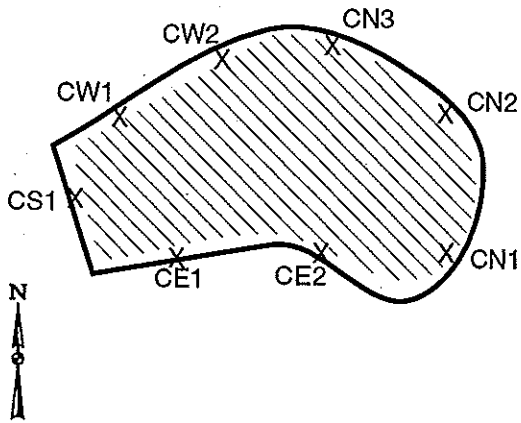
- X Sample meeting Cleanup Level
- X Sample exceeding Cleanup Level - Soil removed to water table
- Area excavated to water table



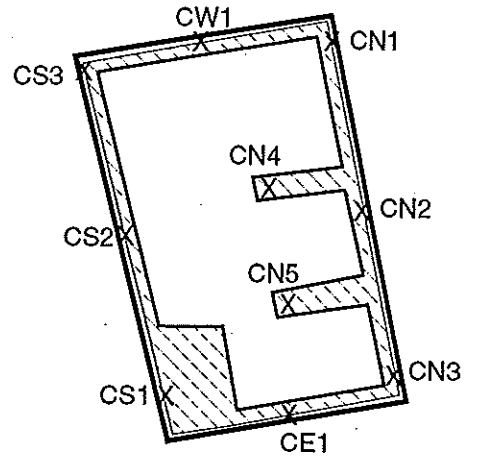
Weyerhaeuser East Site  
Everett, Washington

**REMEDIATION AREAS  
10-3A, -3B, & -3C**

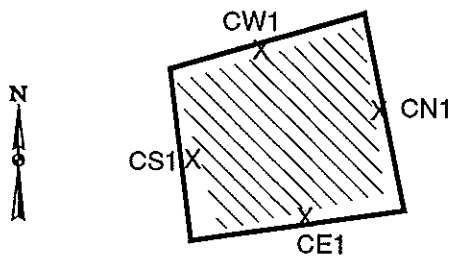
WEY-011 **FIGURE 9** May 1997  
Dalton, Olmsted & Fuglevand, Inc.



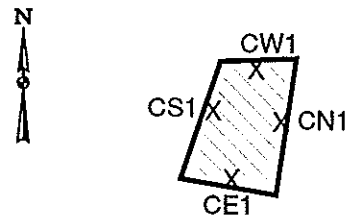
AREA 10-4A



AREA 10-4B



AREA 10-4C




AREA 10-4D



*Explanation*

10-4A-CN1 Sample designation with area number prefix

X Sample meeting Cleanup Level

 Area excavated to water table



Scale in Feet

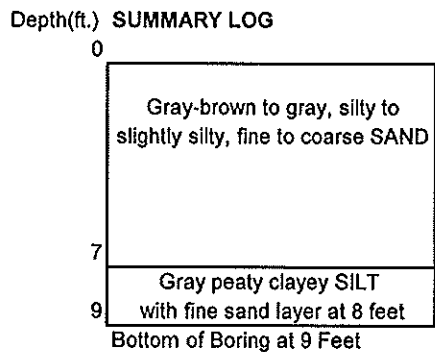
Weyerhaeuser East Site  
Everett, Washington

**REMEDIATION AREAS  
10-4A, -4B, -4C, & -4D**

WEY-011 **FIGURE 10** May 1997  
Dalton, Olmsted & Fuglevand, Inc.

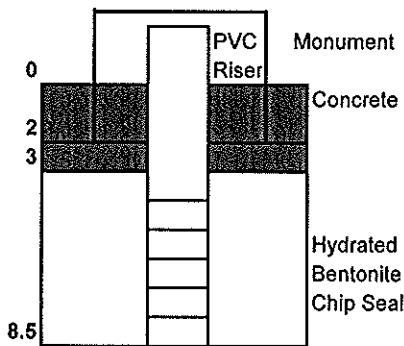
**FIGURE 11 - MONITORING WELL NO. MWRA-8-3 - DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION**

Field Rep: T. Olmsted		Location: N371,227.95 E1,310,608.67					
Drilling Co.: Holt Testing		Elevation ( MLLW) Surf: 15		Top PVC Pipe 17.21			
Driller: Mike Reynolds		(NGVD 29) Surf: 9		Top PVC Pipe 11.28			
Drill Type: Mobile B-59		Date Completed: 5/2/97					
Size/Type Casing: 4" I.D. Hollow-Stem Auger		Weather: Partly Cloudy					
Spl.No.	Type SPT	Drill Action	Spl Depth (FL) From - To	Blows/ 6 inches	Spl length inches	Time	Sample Description
1	Drive	smooth	7-8.5	1-1-3	8	0935	Top 6" Gray, clayey SILT Bot 2" Gray, fine SAND, wet
2	Drive	smooth	8.5-9	1/6"	6	0940	Gray, peaty clayey SILT



NOTE: The summary log is an interpretation based on samples, drill action, and interpolation. Variations between what is shown and actual conditions should be anticipated.

**MONITORING WELL DIAGRAM**



**MONITORING WELL INFORMATION (FT.)**

Riser Length: 3.5.5	Seal: Bentonite/Concrete (top/bot) 0/3
Sandpack: 10-20 Sand (top/bot) 3/8.5	Monument: Steel - Above ground with 4 steel bollards
Screen: PVC/0.020" length: 5 (top/bot) 3.5/8.5	

**FIGURE 11**

**APPENDIX A**

**PHOTOGRAPHS  
WEYERHAEUSER EAST SITE REMEDIATION  
EVERETT, WASHINGTON**



Area 7-1 During Excavation Showing Concrete Structure  
(Looking North)



Area 7-1 Excavation Area Showing Concrete Structure  
(Looking Northwest)

Weyerhaeuser East Site  
Everett, Washington

**AREA 7-1**  
Page 1 of 2

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May 1997

Dalton, Olmsted & Fuglevand, Inc.



Area 7-1 During Excavation Showing Concrete Structure  
(Looking East)



Area 7-1 Excavation Area Concrete Structure Removed  
(Looking East)

Weyerhaeuser East Site  
Everett, Washington

**AREA 7-1**  
Page 2 of 2

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May 1997

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Area 7-2A Initial Stages of Debris Removal  
(Looking Southeast)



Area 7-2A Removal of Debris to Concrete Slab  
(Looking East)

Weyerhaeuser East Site  
Everett, Washington

**AREA 7-2A**  
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Dalton, Olmsted & Fuglevand, Inc.





Area 7-2A Debris Removal in Central Area  
(Looking North)



Area 7-2A Debris Removed to Concrete Slab  
(Looking South)

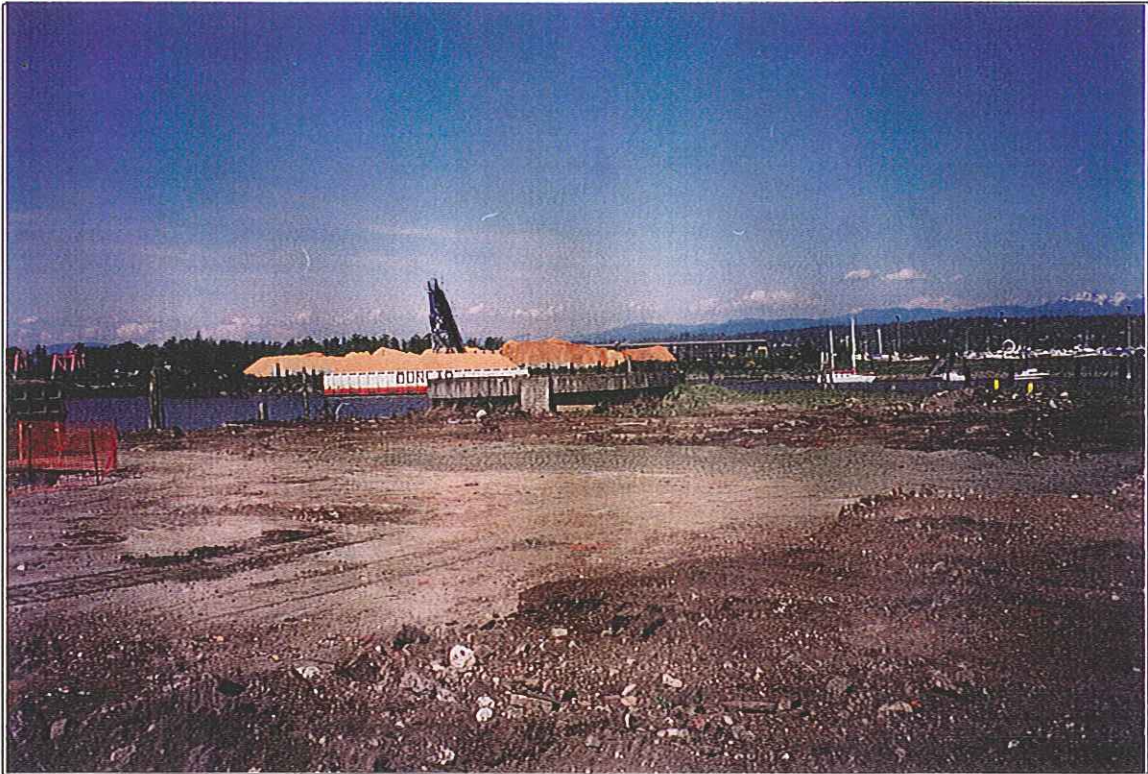
Weyerhaeuser East Site  
Everett, Washington

**AREA 7-2A**  
Page 2 of 3

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May 1997

Dalton, Olmsted & Fuglevand, Inc.



Area 7-2A Debris Removed to Concrete Slab  
(Looking Northeast)



Area 7-2A Debris Removed to Concrete Slab and Initial Backfill  
(Looking North)

Weyerhaeuser East Site  
Everett, Washington

**AREA 7-2A**  
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Area 7-2B During Excavation  
(Looking North)



Area 7-2B Excavation Area  
(Looking East)

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Everett, Washington

**AREA 7-2B**  
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Area 7-2B Excavation Area  
(Looking North)



Area 7-2B Backfilled  
(Looking Northeast)

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Everett, Washington

**AREA 7-2B**  
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Area 7-2C Excavation Area  
(Looking Northeast)



Area 7-2C Excavation Area  
(Looking Southeast)

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Everett, Washington

**AREA 7-2C**  
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Area 8-1 Excavation Area  
(Looking Southwest)



Area 8-1 Excavation Area  
(Looking Northwest)



Area 8-2 Excavation Area  
(Looking Northwest - Fenced Area 8-1 in background)



Areas 8-1 and 8-2 Backfilled



Area 8-3A Removing Asphalt Pavement  
(Looking Northwest)



Area 8-3A Initial Excavation  
(Looking Southeast)

Weyerhaeuser East Site  
Everett, Washington

Areas 8-3A  
Page 1 of 3

WEY-011

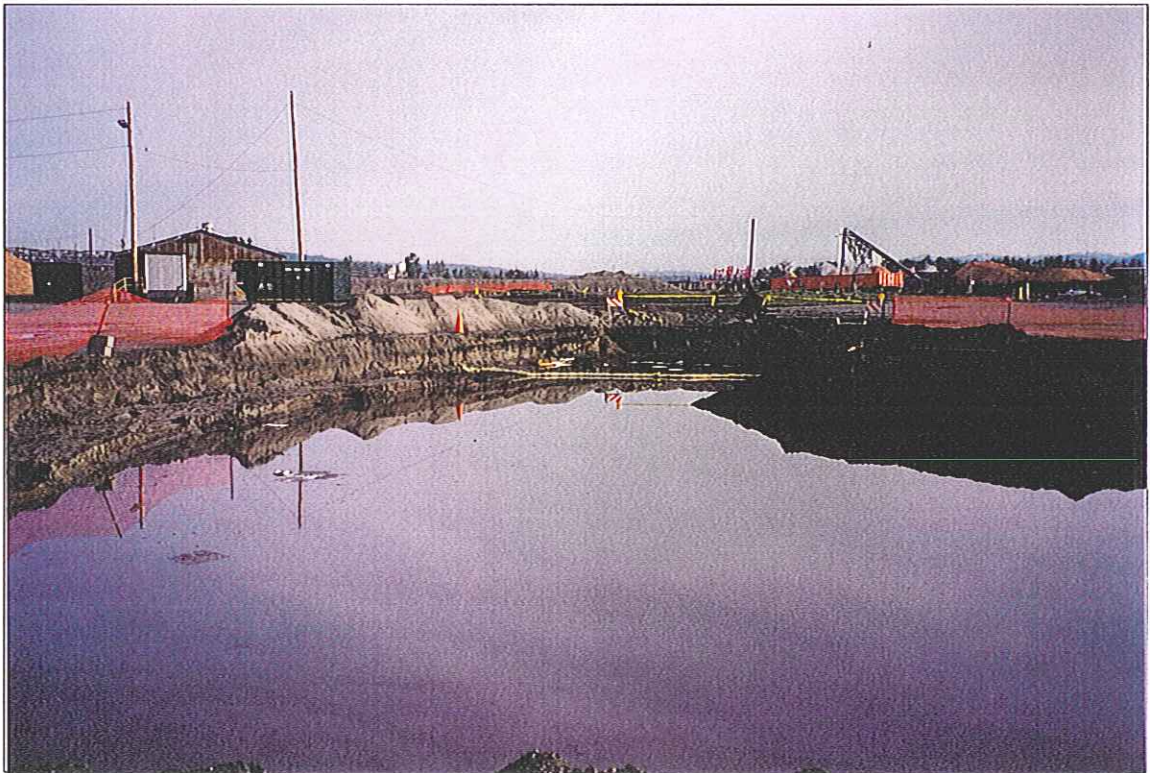
May 1997

Dalton, Olmsted & Fuglevand, Inc.





Area 8-3A During Excavation  
(Looking Northeast)



Area 8-3A During Excavation  
(Looking North)

Weyerhaeuser East Site  
Everett, Washington

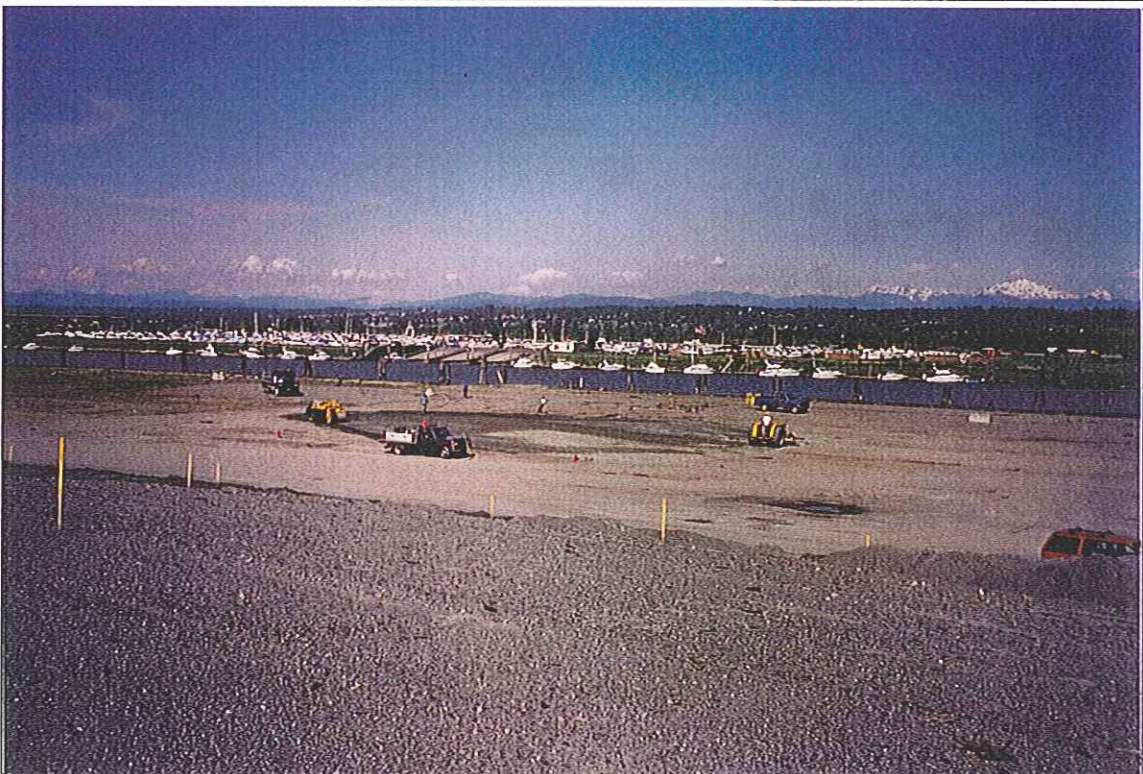
Areas 8-3A  
Page 2 of 3

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Dalton, Olmsted & Fuglevand, Inc. May 1997



Area 8-3A Initial Backfilling  
(Looking Northwest)



Area 8-3A Backfilled and Preparing to Pave

Weyerhaeuser East Site  
Everett, Washington

Areas 8-3A  
Page 3 of 3

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Dalton, Olmsted & Fuglevand, Inc.



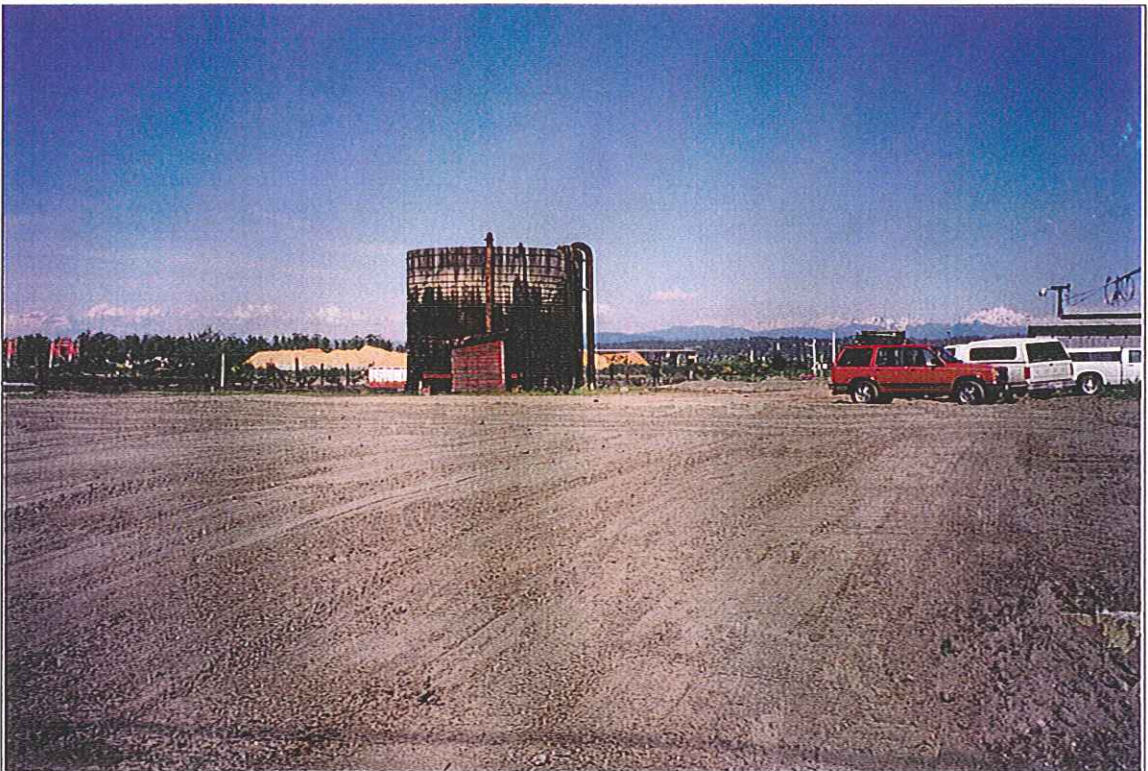
Area 8-3B Excavation Area  
(Looking East)



Area 8-4 Excavation Area  
(Looking East)



Area 9-1 Excavation Area  
(Looking Southeast)



Area 9-1 Backfilled  
(Looking East)

Weyerhaeuser East Site  
Everett, Washington

**AREA 9-1**  
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Dalton, Olmsted & Fuglevand, Inc.



Area 10-1 During Excavation  
(Looking Southeast)



Area 10-1 During Excavation  
(Looking Northwest)

Weyerhaeuser East Site  
Everett, Washington

**AREA 10-1**  
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Dalton, Olmsted & Fuglevand, Inc.



Area 10-1 During Excavation  
(Looking West)



Area 10-1 Backfilled  
(Looking West)

Weyerhaeuser East Site  
Everett, Washington

**AREA 10-1**  
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Area 10-2 During Excavation  
(Looking Southwest)



Area 10-1 During Excavation  
(Looking Northwest)

Weyerhaeuser East Site  
Everett, Washington

**AREA 10-2**  
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Area 10-3A Excavation Area  
(Looking East)



Area 10-3A Excavation Area  
(Looking Southwest)

Weyerhaeuser East Site  
Everett, Washington

AREA 10-3A  
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Area 10-3B Excavation Area  
(Looking Southeast)



Area 10-3B Excavation Area  
(Looking East)

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Everett, Washington

**AREA 10-3B**  
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Dalton, Olmsted & Fuglevand, Inc.



Area 10-3C Trench Parallel to Main Haul Road  
(Looking South)



Area 10-3C Trench Parallel to Access Road  
(Looking Northeast)



Area 10-4A Initial Excavation Area  
(Looking West)



Area 10-4A Extended Excavation Area  
(Looking East)

Weyerhaeuser East Site  
Everett, Washington

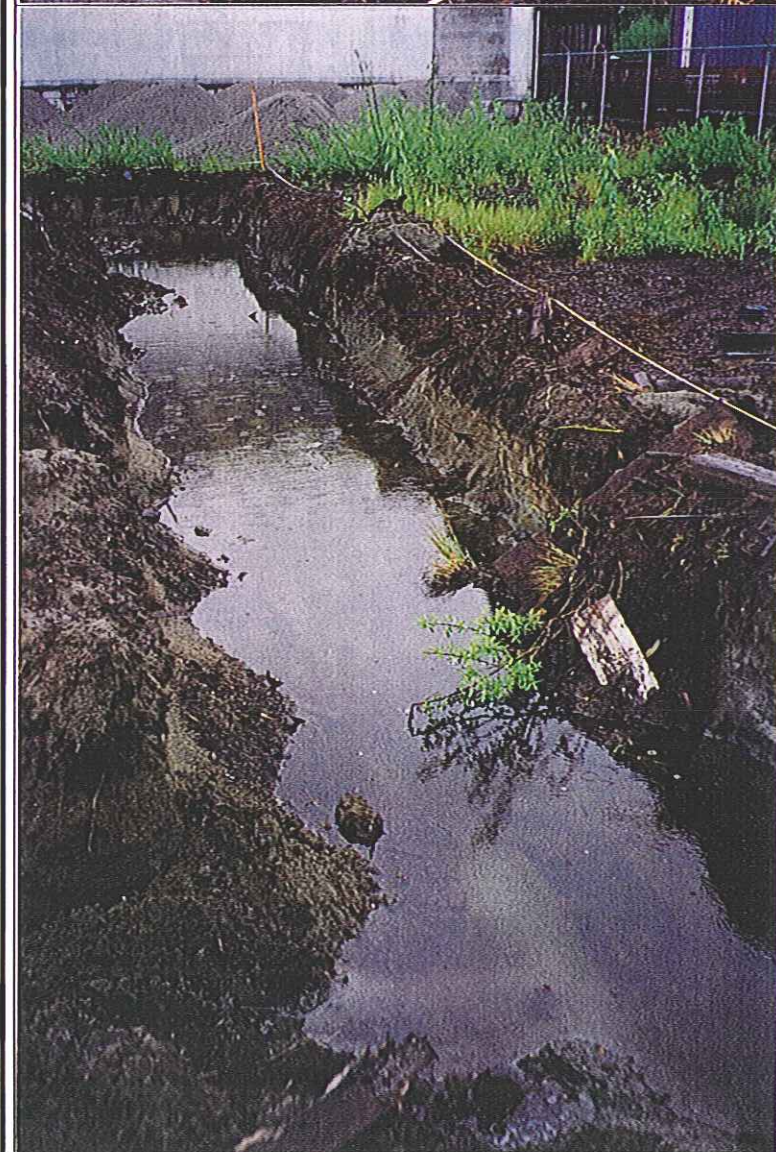
**AREA 10-4A**  
Page 1 of 1

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May 1997  
Dalton, Olmsted & Fuglevand, Inc.



Area 10-4B  
Perimeter Trench  
(Looking Southeast)



Area 10-4B Perimeter Trench  
(Looking South)

Weyerhaeuser East Site  
Everett, Washington

**AREA 10-4B**  
Page 1 of 2

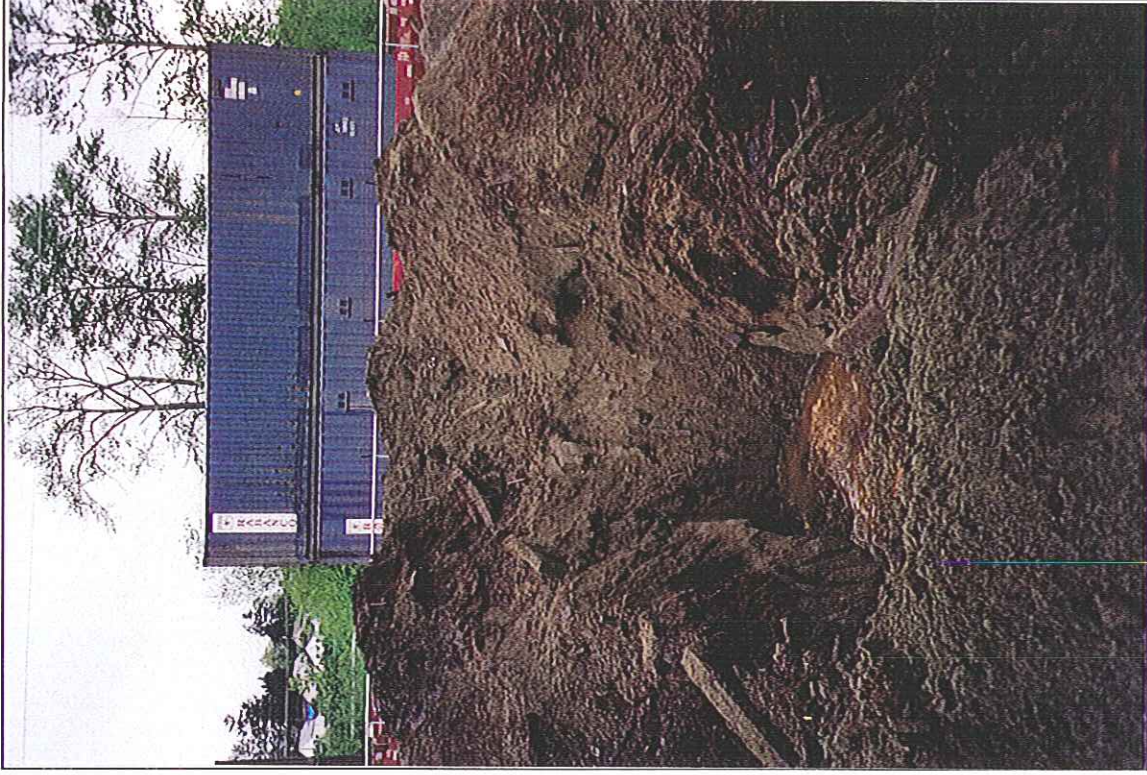
WEY-011

May 1997

Dalton, Olmsted & Fuglevand, Inc.



Area 10-4B Perimeter Trench  
(Looking West)



Area 10-4B Interior Trench  
(Looking West)



Portion of Area 10-3 Backfilled  
(Looking South)



Portion of Area 10-4 Backfilled  
(Looking West)



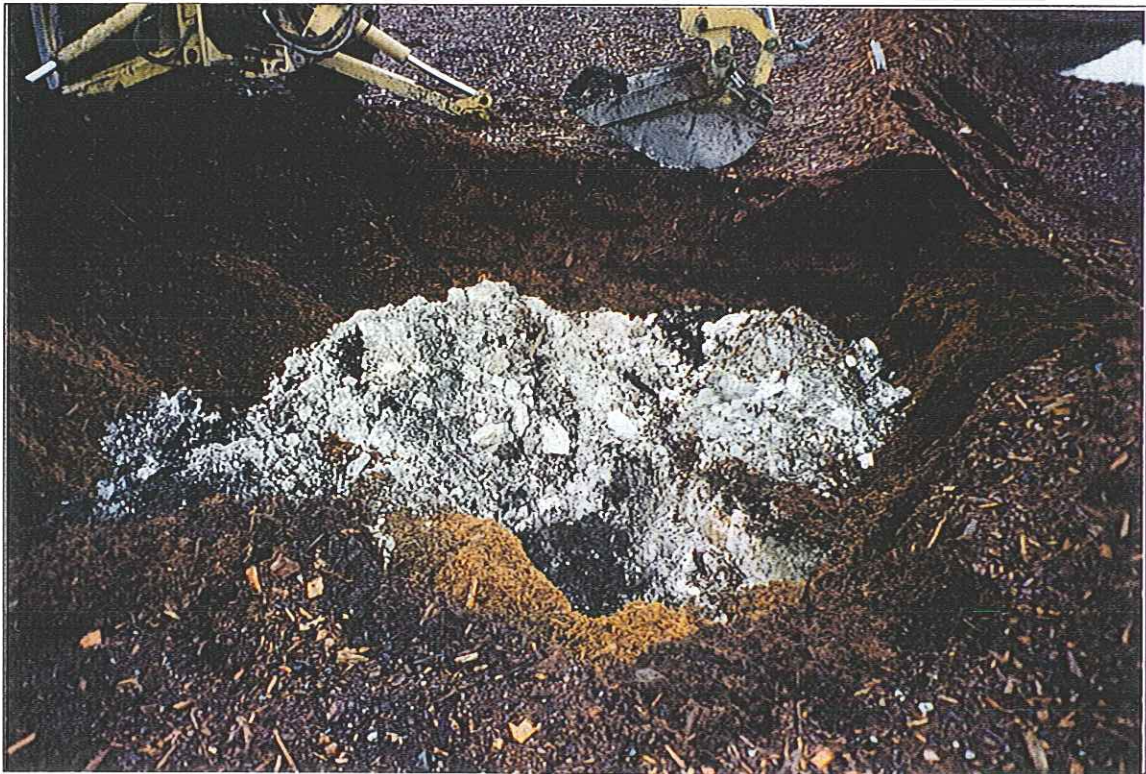
Area 10-4C Excavation Area  
(Looking East)



Area 10-4D Excavation Area  
(Looking South)



TP-16 Area Excavation to Lime Waste



TP-16 Area Excavation through Wood Chips and Lime Waste

Weyerhaeuser East Site  
Everett, Washington

TP-16 Area  
Page 1 of 1

WEY-011

May 1997

Dalton, Olmsted & Fuglevand, Inc.



**APPENDIX B**

**REVIEW OF DATA QUALITY AND LABORATORY DATA SHEETS  
WEYERHAEUSER EAST SITE  
EVERETT, WASHINGTON**

## APPENDIX B

### REVIEW OF DATA QUALITY AND LABORATORY DATA SHEETS WEYERHAEUSER EAST SITE EVERETT, WASHINGTON

#### Introduction

This appendix includes a data quality review of the confirmation soil-sample laboratory analyses and laboratory data sheets for samples collected in April and May 1997. Confirmation sampling for remediation areas RA10-2 and RA7-1 was completed in October 1995 and September/October 1996, respectively. A discussion of the results and laboratory data sheets for these areas are contained in the following reports:

- Results of Soil Sampling, Remediation Areas RA10-2 and RA8-3, Weyerhaeuser East Site, Everett, Washington, Memorandum to Nadine Romero - Department of Ecology, prepared by Dalton, Olmsted & Fuglevand, Inc., November 22, 1995.
- Remediation of Area RA7-1, Weyerhaeuser East Site, Everett, Washington, Memorandum to Nadine Romero - Department of Ecology, prepared by Dalton, Olmsted & Fuglevand, Inc., December 11, 1996.

In all, over 210 soil samples, including 9 field and 20 laboratory duplicate samples, were analyzed as part of the East Site confirmational sampling program. The analytical data is summarized in Table 1 following the main body of the report.

#### April and May 1997 Confirmational Sampling and Analysis

176 confirmation samples were collected in April and May 1997. The majority of samples (170 samples) were analyzed by Weyerhaeuser Analytical and Testing Services (WATS) located in Federal Way, Washington. Six samples were analyzed by CCI Analytical Laboratories, Inc. located in Everett, Washington (because a bomb threat temporarily closed the WATS laboratory in early May 1997).

The samples were submitted to the laboratories in "batches" that correspond to a sampling date. Sample batches are summarized below. Laboratory data sheets are presented chronologically, by sample date, in this appendix.

April 15	April 22	April 29	May 7
April 16	April 23	April 30	
April 17	April 24	May 1	
April 18	April 25	May 2	
April 21	April 28	May 6	

**Overall Assessment.** Our review, based on criteria in the Performance Sampling and Analysis Plan (PSAP) (DOF 1996) indicates that the data are acceptable for their intended use. Some of the data is qualified as discussed below.

**Sample Handling Documentation.** Chain-of Custody forms were complete, signed and dated.

**Sample Holding Times.** All samples were extracted and analyzed within several days of collection, well within the specified 14 day holding time.

**Reporting Limits.** The specified reporting limits were generally achieved. However, the reporting limits were, in some cases, higher than the specified limits. In all cases, the reporting limits were well below cleanup/action levels.

**Field Duplicate Samples.** Eight field duplicate soil-samples (4.5% of confirmation samples) were collected and analyzed, which is slightly below the specified criteria of 5%. The analyses are summarized in Table 1. Relative percent difference (RPD) values ranged from 0% to 85%. The wide range in RPD values is attributed to variability of the soil matrix submitted to the laboratory.

**Laboratory Duplicate Samples.** Twenty laboratory duplicate samples were analyzed for petroleum hydrocarbons (11% of confirmation samples). No QC criteria is specified in the PSAP. The results of the analyzes are reported on the laboratory data sheets contained in this appendix. Relative percent difference (RPD) values ranged from approximately 0% to 47%. The RPD of most samples (15 of 20) was 25% or lower. The higher RPD values are attributed to sample variability.

**Blank Analyses.** One or two method blanks were analyzed with each batch of soil samples analyzed for petroleum hydrocarbons. Diesel and/or motor oil range petroleum hydrocarbons were detected in method blanks for samples collected on April 15, April 16, April 21, April 30, May 1, and May 2. Diesel range hydrocarbon concentrations ranged between 6.1 and 34 mg/kg (most samples were less than 10 mg/kg) and motor oil hydrocarbon concentrations ranged between 17 and 28 mg/kg. The range of blank detections should not adversely effect the use of the data because of the relatively high petroleum hydrocarbon cleanup/action level.

One or two method blanks were analyzed with each batch of soil samples analyzed for CPAHs, PCBs and PCP. No target compounds were detected in the method blanks at a concentration greater than or equal to the reporting limits.

**Matrix Spike/Matrix Spike Duplicates.** Three matrix spike/matrix spike duplicates (MS/MSDs) were analyzed for the larger sample batches where CPAHs, PCBs and/or PCP were analyzed. The samples where MS/MSDs were analyzed were collected on April 17, April 18 and April 24 and represent approximately 60% of the samples analyzed for the indicated constituents.

PCBs and CPAHs were analyzed in the sample batches for April 17 and 18. The MS/MSDs for PCBs indicate little matrix effect. Surrogate recoveries and relative percent difference (RPD) were within control limits for the April 17 batch. Recovery of Aroclor 1254 was below the QC limit for MSD 7-2B-CB-4 in the April 18 batch, which the laboratory attributed to dilution and a relatively high concentration of Aroclor 1254 in the sample compared to the concentration spike.

The MS/MSDs for CPAHs indicate some matrix effect. The recovery of pyrene was above QC limits for matrix spike duplicate sample 7-2C-CW-1 in the April 17 sample batch. However, QC limits were met for the corresponding matrix spike and for the fortified laboratory blanks. The recoveries of acenaphthene, pyrene and 4-chloro-3-methylphenol were above QC limits for the MS and MSD samples analyzed with the April 18 sample batch. The laboratory indicates that the high MS/MSD recoveries are likely related to sample matrix effects. The CPAH results for this sample batch were qualified as estimated in Table 1 with J2 (see below).

PCP was analyzed in the sample batch collected on April 24. Surrogate recoveries and RPDs were within control limits.

**Surrogate Recovery.** Surrogate recovery data is reported on the laboratory data sheets. WATS provides a brief description when surrogate recoveries are outside the specified ranges. Some of the data was qualified as estimated with a "J" based on surrogate recoveries. The following "J" designations are used to qualify the data:

- J1 - Surrogate recoveries not available because of dilution or matrix interference.
- J2 - Surrogate recoveries outside control limits in samples, laboratory control samples or matrix spike/matrix spike duplicates.
- J3 - Analyte detected below calibration level.

## Reference

DOF (Dalton, Olmsted & Fuglevand, Inc.), 1996, Performance Sampling and Analysis Plan and Quality Assurance Procedures, Weyerhaeuser East Site, Everett, Washington, December 1996.

**LABORATORY DATA SHEETS  
CONFIRMATIONAL SAMPLE ANALYSES  
APRIL AND MAY 1997**

STUDY OF THE  
EFFECTS OF  
THE



Date April 18, 1997  
From Rick Bogar  
Location WTC 2F25  
Subject **SR# 03675 - Everett East Site Remediation Soils/Dalton, Olmsted & Fuglevand 120-2974670**  
To Stuart Triolo - Everett 34

Analytical results are attached for the above referenced service request.

Thank you for the opportunity to be of service. Please call me at 924-6521 if you have questions about the results or require any additional information.

Attachment

cc: Matt Dalton  
Dalton, Olmsted and Fuglevand  
11711 North Creek Parkway South  
Bothell WA 98011



32901 Weyerhaeuser Way South  
Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel (206) 924 6872  
Fax (206) 924 6654

## SDG NARRATIVE

### Organic Analysis

WEYERHAEUSER (WEYER)

ANALYTICAL AND TESTING SERVICES

Case Number 3675

SDG Number 80337

PROJECT: EVERETT EAST SITE REMEDIATION SOILS/DALTON, OLMSTED & FUGLEVAND 120-2974670

The samples from this SDG were received on 4/15/97. The SDG was composed of soil samples for analysis of petroleum hydrocarbons by WTPH-D with acid/silica clean-up, CPAHs by EPA 8270b and PCBs by EPA 8081. The following analyses were performed:

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
7-2A-CSW-1	80337	SOIL	EPA8270b,EPA8081,WTPH-D-A/S
7-2A-CSW-1DUP	80337DUP	SOIL	WTPH-D-A/S
7-2A-CSW-2	80338	SOIL	EPA8270b,EPA8081,WTPH-D-A/S
7-2A-CSW-3	80339	SOIL	EPA8270b,EPA8081,WTPH-D-A/S
7-2A-CSW-4	80340	SOIL	EPA8270b,EPA8081,WTPH-D-A/S
7-2A-CSW-5	80341	SOIL	EPA8270b,EPA8081,WTPH-D-A/S
7-2A-CSW-6	80342	SOIL	EPA8270b,EPA8081,WTPH-D-A/S
Fortified Blank	Fortified Blank	Fortified Blank	EPA8270b
PLC1_S041597	PLC1_S041597	Fortified Blank	EPA8081

000001



Laboratory comments for this sample delivery group are listed below. The comments are broken up into categories for ease of explanation.

1. BNA

- a) PCBs were detected and confirmed present by spectral library search for sample 7-2A-CSW-1.
- b) The recoveries of some surrogates were below laboratory generated QC limits for sample 7-2A-CSW-2. The recoveries were within established EPA 8270b QC limits. Recoveries of surrogates were within laboratory and method QC limits for all other samples in the SDG.

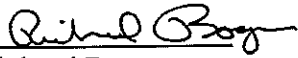
2. WTPH-D

- a) Diesel range organics were detected in the method blank at a concentration approximately one fifth the sample quantitation limit. The sample and method blank reporting limits are different due to different extract final volumes. The sample final extract final volumes were larger due to the relatively high concentration of diesel and motor oil range organics in the samples.

3. PCBs

- a) The surrogates were diluted out for all samples in this sample delivery group due to the large extract dilution required for sample analysis.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

  
Richard Bogar  
Chromatography Team Leader

4/17/97  
Date

000002

Please feel free to contact me with any questions concerning this data report. I can be reached at  
(206) 924-6521

Sincerely,

A handwritten signature in black ink, appearing to read "Richard Bogar". The signature is fluid and cursive, with a long horizontal stroke at the end.

Richard Bogar  
Weyerhaeuser Analytical & Testing Services

000003

Facility: Keweenaw East Side - Sect 34  
 Sampler's Project No.: Stuart Triolo  
 Weyerhaeuser Account No.: 120-2974670  
 Sampled by: Terry Olmsted / DOF  
 Facility: 11711 North Creek Hwy S  
 E&ASWTC: Bothell WA 98011  
 E&ASNB: 206-486-7965 FAX 206-486-7651

Method	Field Sample ID (15 characters max.)	Date (m/d/y)	Time (hr:mm)	Depth (ft:m)	Matrix			Preservative	Number of Containers
					Water	Soil/Sed	Oil		
G	7-2A-CSW-1	4/15/97	1330	0-0.5	X				1
G	7-2A-CSW-2	"	1340	0-2	X				1
G	7-2A-CSW-3	"	1345	0-1.5	X				1
G	7-2A-CSW-4	"	1350	0-0.5	X				1
G	7-2A-CSW-5	"	1400	0-2	X				1
G	7-2A-CSW-6	"	1405	0-2.5	X				1

Method: G, grab; D, depth composite; T, time composite. Depth required for soil or sediment samples.

Reporting and QA/QC Requirements  
 CLP Package  
 NPDES Permit  
 Other: \_\_\_\_\_  
 Electronic Report

RESULTS TO: M. Dalton  
 DOF  
 CC: Fax to Triolo  
337-2796

Sample Chain of Custody and Relinquished By (signature): Terry Olmsted Date: 4/15/97 Time: 1500

Relinquished By (signature): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished By (signature): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Analyses Requested (circle or write in parameters)										Notes			
pH Cond TDS TSS Color Tannins	Volatile Organics / BTEX	Semi-volatile Organics	TPH: 418.1 TPH-G (TPH-DX) * 80	Ca Mg Na K Fe Mn	Metals (list below)	NH <sub>3</sub> HCO <sub>3</sub> CO <sub>2</sub> Cl F NO <sub>3</sub> SO <sub>4</sub>	AOX	TCLP: Metals VOA SVOA Pest Herb PCBs	Dioxin: Total / 2,3,7,8-TCDD / 2,3,7,8-TCDF		CN	BOD P-ortho	TKN P-total TOC COD
			X										X PCB EPA-8081
			X										X CPAH EPA8270
			X										X
			X										X
			X										X
			X										X
			X										X

Remarks/Detection Limit Requirements  
 \*WTPH-DX with Sealed Cleanup/Acid Wash  
 PCB/CPAH 48hr; Turnaround  
 TPH - 24hr. Follow worksheet for Detection limits - See PCBs

Post-It™ brand fax transmittal memo 7671 # of pages > 1

To: Rick Beyer From: T. Olmsted  
 Co. DOF Co. DOF  
 Dept. \_\_\_\_\_ Phone # \_\_\_\_\_  
 Fax # 8924-6654 Fax # 924

000004

WTPH-D Extended

Service Request: 03675  
 Analyst: C. Thomson

Sample ID	Blank	80337	80338	80339
Client ID	04/15/97	7-2A-CSW-1	7-2A-CSW-2	7-2A-CSW-3
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	34	540	1100	280
Motor Oil Range	U	1200	3700	2000
Surrogate Recovery	105%	85%	84%	97%

Date Sampled		04/15/97	04/15/97	04/15/97
Date Extracted	04/15/97	04/15/97	04/15/97	04/15/97
Date Analyzed	04/15/97	04/16/97	04/16/97	04/16/97
Holding Time Days		0	0	0

Reporting Limit

Diesel Range	14	150	160	170
Motor Oil Range	34	370	390	420

Approved by *Clay Thomson* Date 4/17/97

000005

## WTPH-D Extended

Service Request: 03675  
 Analyst: C. Thomson

Sample ID	80340	80341	80342	80337DUP
Client ID	7-2A-CSW-4	7-2A-CSW-5	7-2A-CSW-6	7-2A-CSW-1DUP
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	230	160	U	190
Motor Oil Range	1600	2300	670	900
Surrogate Recovery	94%	96%	114%	105%

Date Sampled	04/15/97	04/15/97	04/15/97	04/15/97
Date Extracted	04/15/97	04/15/97	04/15/97	04/15/97
Date Analyzed	04/16/97	04/16/97	04/16/97	04/16/97
Holding Time Days	0	0	0	0

Reporting Limit

Diesel Range	170	160	150	140
Motor Oil Range	430	390	390	360

000006

**Summary Report - CPAH List**  
**Weyerhaeuser Analytical**  
**SR#03675 - Everett East Site Remediation Soils**  
 Method: EPA8270B  
 Units: ug/Kg (PPB)

Client ID		7-2A-CSW-1	7-2A-CSW-2	7-2A-CSW-3
Sample Date and Time		04/15/97 13:30	04/15/97 13:40	04/15/97 13:45
Lab ID		80337	80338	80339
<u>Analyte</u>	<u>CAS</u>			
Benzo(a)Anthracene	56-55-3	2100	10000	8600
Chrysene	218-01-9	2100	8600	7400
Benzo(b)fluoranthene	205-99-2	2700	11000	10000
Benzo(k)fluoranthene	207-08-9	1100	3200	3100
Benzo(a)pyrene	50-32-8	2300	9000	8000
Indeno(1,2,3-cd)pyrene	193-39-5	1400	5400	4900
Dibenzo(a,h)anthracene	53-70-3	290 J	1500	1100
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	69%	35%	74%
Phenol-d5	(24-113)	65%	37%	83%
Nitrobenzene-d5	(23-120)	65%	33%	74%
2-Fluorobiphenyl	(30-115)	73%	38%	83%
2,4,6-Tribromophenol	(19-122)	85%	39%	100%
Terphenyl-d14	<del>(18-137)</del>	78%	48%	101%
2-Chlorophenol-d4	(advisory)	71%	38%	81%
1,2-Dichlorobenzene-d4	(advisory)	64%	30%	67%
<u>Date Extracted</u>		04/15/97	04/15/97	04/15/97
<u>Date Analyzed</u>		04/16/97	04/16/97	04/16/97

J: Analyte was detected below calibrated level.

**Summary Report - CPAH List**  
**Weyerhaeuser Analytical**  
**SR#03675 - Everett East Site Remediation Soils**  
**Method: EPA8270B**  
**Units: ug/Kg (PPB)**

Client ID		7-2A-CSW-4	7-2A-CSW-5	7-2A-CSW-6
Sample Date and Time		04/15/97 13:50	04/15/97 14:00	04/15/97 14:05
Lab ID		80340	80341	80342
<u>Analyte</u>	<u>CAS</u>			
Benzo(a)Anthracene	56-55-3	15000	740 J	510 J
Chrysene	218-01-9	11000	720 J	700 J
Benzo(b)fluoranthene	205-99-2	14000	920 J	790 J
Benzo(k)fluoranthene	207-08-9	3500	280 J	350 J
Benzo(a)pyrene	50-32-8	10000	660 J	540 J
Indeno(1,2,3-cd)pyrene	193-39-5	6600	550 J	410 J
Dibenzo(a,h)anthracene	53-70-3	1100	940 U	900 U
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	74%	66%	68%
Phenol-d5	(24-113)	81%	77%	71%
Nitrobenzene-d5	(23-120)	71%	65%	66%
2-Fluorobiphenyl ✓	(30-115)	77%	74%	70%
2,4,6-Tribromophenol ✓	(19-122)	88%	85%	84%
Terphenyl-d14 <sup>Met</sup>	( <del>X</del> 18-137)	111%	86%	83%
2-Chlorophenol-d4	(advisory)	80%	74%	73%
1,2-Dichlorobenzene-d4	(advisory)	64%	61%	58%
<b>Date Extracted</b>		04/15/97	04/15/97	04/15/97
<b>Date Analyzed</b>		04/16/97	04/16/97	04/16/97

J: Analyte was detected below calibrated level.

**Summary Report - CPAH List**  
**Weyerhaeuser Analytical**  
**SR#03675 - Everett East Site Remediation Soils**  
 Method: EPA8270B  
 Units: ug/Kg (PPB)

<b>Client ID</b>		Blank
<b>Sample Date and Time</b>		12/08/95 00:00
<b>Lab ID</b>		BL14T_041597
<u>Analyte</u>	<u>CAS</u>	
Benzo(a)Anthracene	56-55-3	400 U
Chrysene	218-01-9	400 U
Benzo(b)fluoranthene	205-99-2	400 U
Benzo(k)fluoranthene	207-08-9	400 U
Benzo(a)pyrene	50-32-8	400 U
Indeno(1,2,3-cd)pyrene	193-39-5	400 U
Dibenzo(a,h)anthracene	53-70-3	400 U
<u>Surrogates %Recovery</u>	<u>Limits</u>	
2-Fluorophenol	(25-121)	61%
Phenol-d5	(24-113)	69%
Nitrobenzene-d5	(23-120)	65%
2-Fluorobiphenyl	(30-115)	61%
2,4,6-Tribromophenol	(19-122)	75%
Terphenyl-d14	( <del>X</del> 18-137)	72%
2-Chlorophenol-d4	(advisory)	65%
1,2-Dichlorobenzene-d4	(advisory)	61%
<b>Date Extracted</b>		04/15/97
<b>Date Analyzed</b>		04/16/97

J: Analyte was detected below calibrated level.



FORM 3  
SOIL SEMIVOLATILE METHOD SPIKE RECOVERY

Lab Name: WEYERHAEUSER

Contract: EPA8270

Lab Code: WEYER

Case No.: 3675

Method: 8270

SDG No.: 80337

Matrix Spike - Dinardo Sample No.: Fortifie Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	% REC #	QC. LIMITS REC.
Phenol	7500	4600	61	34- 84
2-Chlorophenol	7500	4700	63	35- 85
1,4-Dichlorobenzene	5000	3100	62	37- 89
N-Nitrosodipropylamine	5000	3400	68	43-101
1,2,4-Trichlorobenzene	5000	3300	66	40- 98
4-Chloro-3-Methylphenol	7500	5700	76	38- 96
Acenaphthene	5000	3200	64	42- 94 ✓
4-Nitrophenol	7500	5700	76	45- 97
2,4-Dinitrotoluene	5000	3500	70	48- 94
Pentachlorophenol	7500	6600	88	37-121 ✓
Pyrene	5000	4000	80	61-105 ✓

# Column to be used to flag recovery and RPD values with an asterisk  
\* Values outside of QC limits

COMMENTS:

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4B  
SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

BLANK
-------

Lab Name: WEYERHAEUSER

Contract: EPA8270

Lab Code: WEYER

Case No.: 3675

Method: 8270

SDG No.: 80337

Lab File ID: 2SD160401003

Lab Sample ID: BL14T\_041597

Instrument ID: HP2

Date Extracted: 04/15/97

Matrix: (soil/water) SOIL

Date Analyzed: 04/16/97

Level: (low/med) LOW

Time Analyzed: 1311

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	=====	=====	=====	=====
01	FORTIFIED BLANK	LC14T_041597	2SD160501004	04/16/97
02	7-2A-CSW-5	80341	2SD161101010	04/16/97
03	7-2A-CSW-6	80342	2SD161201011	04/16/97
04	7-2A-CSW-4	80340	2SD161301012	04/16/97
05	7-2A-CSW-3	80339	2SD161401013	04/16/97
06	7-2A-CSW-2	80338	2SD161501014	04/16/97
07	7-2A-CSW-1	80337	2SD161601015	04/16/97
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COMMENTS:

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## Summary Report - PCBs in Oil

Weyerhaeuser Analytical

SR #3475 - Everett East Site Remediation Soils

Method: EPA 8081

Units: ug/Kg (PPB)

Client ID		7-2A-CSW-1	7-2A-CSW-2	7-2A-CSW-3
Sample Date and Time		04/15/97 1330	04/15/97 1340	04/15/97 1345
Lab ID		80337	80338	80339
Analyte	CAS			
Aroclor 1016	12674-11-2	21000 U	2200 U	2600 U
Aroclor 1221	91-57-6	42000 U	4400 U	5200 U
Aroclor 1232	83-32-9	21000 U	2200 U	2600 U
Aroclor 1242	132-64-9	21000 U	2200 U	2600 U
Aroclor 1248	86-73-7	21000 U	2200 U	2600 U
Aroclor 1254	87-86-5	140000	20000	7900
Aroclor 1260	85-01-8	21000 U	2200 U	2600 U
Surrogates	QC Limits			
TCMX (column 1)	(50-120)	0% D	0% D	0% D
DCB (column 1)	(50-120)	0% D	0% D	0% D
Date Extracted		04/15/97	04/15/97	04/15/97
Date Analyzed		04/17/97	04/17/97	04/17/97

D - Surrogate diluted out.

**Summary Report - PCBs in Oil**  
**Weyerhaeuser Analytical**  
**SR #3475 - Everett East Site Remediation Soils**  
 Method: EPA 8081  
 Units: ug/Kg (PPB)

<b>Client ID</b>		<b>7-2A-CSW-4</b>	<b>7-2A-CSW-5</b>	<b>7-2A-CSW-6</b>
<b>Sample Date and Time</b>		04/15/97 1350	04/15/97 1400	04/15/97 1405
<b>Lab ID</b>		80340	80341	80342
<b>Analyte</b>	<b>CAS</b>			
Aroclor 1016	12674-11-2	2600 U	2200 U	2300 U
Aroclor 1221	91-57-6	5200 U	4400 U	4600 U
Aroclor 1232	83-32-9	2600 U	2200 U	2300 U
Aroclor 1242	132-64-9	2600 U	2200 U	2300 U
Aroclor 1248	86-73-7	2600 U	2200 U	2300 U
Aroclor 1254	87-86-5	8700	1700 J	2300 U
Aroclor 1260	85-01-8	2600 U	2200 U	2300 U
<b>Surrogates</b>	<b>QC Limits</b>			
TCMX (column 1)	(50-120)	0% D	0% D	0% D
DCB (column 1)	(50-120)	0% D	0% D	0% D
<b>Date Extracted</b>		04/15/97	04/15/97	04/15/97
<b>Date Analyzed</b>		04/17/97	04/17/97	04/17/97

D - Surrogate diluted out.

**Summary Report - PCBs in Oil**  
**Weyerhaeuser Analytical**  
**SR #3475 - Everett East Site Remediation Soils**  
 Method: EPA 8081  
 Units: ug/Kg (PPB)

<b>Client ID</b>		<b>Method Blank</b>
<b>Sample Date and Time</b>		
<b>Lab ID</b>		PBL1_S041597
<b>Analyte</b>	<b>CAS</b>	
Aroclor 1016	12674-11-2	20 U
Aroclor 1221	91-57-6	40 U
Aroclor 1232	83-32-9	20 U
Aroclor 1242	132-64-9	20 U
Aroclor 1248	86-73-7	20 U
Aroclor 1254	87-86-5	20 U
Aroclor 1260	85-01-8	20 U
<b>Surrogates</b>	<b>QC Limits</b>	
TCMX (column 1)	(50-120)	72%
DCB (column 1)	(50-120)	92%
<b>Date Extracted</b>		04/15/97
<b>Date Analyzed</b>		04/16/97

D - Surrogate diluted out.

## Flag Qualifiers For Organic Analysis Reports

- U Indicates that the compound was analyzed for but not detected above the reporting limit. The sample reporting limit corrected for dilution and percent moisture is reported.
- J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds or when the data indicates the presence of a compound but the result is less than the sample quantitation limit but greater than zero.
- N Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search.
- P This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for the detected concentrations between the two GC columns. The lower of the two results is reported.
- C This flag is used for pesticide results that have been confirmed by GC/MS.
- B This flag is used when the analyte is detected in the associated blank as well as the sample.
- E This flag is used for compounds whose concentrations exceed the calibration range of the instrument.
- D This flag identifies all compounds identified in an analysis at a secondary dilution. This flag alerts the data user that any discrepancies between the concentrations reported in the two runs may be due to dilution errors.
- A This flag is used for tentatively identified compounds that suspected to be aldol-condensation products.
- X This flag is assigned by the computer when the program has been manually adjusted by the operator. It has no significance to the number itself.

000015

3F  
SOIL PESTICIDE LAB CONTROL SAMPLE

Lab Name: WEYERHAEUSER

Contract: EVERETT

Lab Code: WEYER

Case No.: 03675

Method: PCB8080

SDG No.: 80337

Matrix Spike - EPA Sample No.: PLC1\_S041597

Instrument ID (1): hpdos1\_1.i      GC Column(1): DB-1701 ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	100	75	75	60-120
Aroclor-1260	100	94	94	60-120

Instrument ID (2): hpdos1\_1.i      GC Column(2): DB-608 ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	100	68	68	60-120
Aroclor-1260	100	93	93	60-120

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 2 out of 4 outside limits

*0 mgd 6/2/97 per conversation w/ D. Catalano*

COMMENTS: \_\_\_\_\_

000016



Date April 23, 1997  
From Rick Bogar  
Location WTC 2F25  
Subject **SR# 03684 - Everett East Site Remediation Soils**  
  
To Stuart Triolo - Everett 34

Analytical results are attached for the above referenced service request.

Thank you for the opportunity to be of service. Please call me at (206) 924-6521 if you have questions about the results or require any additional information.

**Attachment**

cc: Matt Dalton  
Dalton, Olmsted & Fuglevand  
11711 Northcreek Parkway South, Suite 101  
Bothell WA 98011





32901 Weyerhaeuser Way South  
Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel (206) 924 6872  
Fax (206) 924 6654

## SDG NARRATIVE

### Organic Analysis

WEYERHAEUSER (WEYER)

ANALYTICAL AND TESTING SERVICES

Case Number 3684

SDG Number 80382

PROJECT: EVERETT EAST SITE REMEDIATION SOILS/DALTON, OLMSTED &  
FUGLEVAND 120-2974670

The samples from this SDG were received on 4/16/97. The SDG was composed of soil samples for analysis of petroleum hydrocarbons by WTPH-D with acid/silica clean-up, CPAHs by EPA 8270b and PCBs by EPA 8081. The following analyses were performed:

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
TP-16-C1	80382	SOIL	WTPH-D-A/S
7-2A-CB-1	80383	SOIL	EPA8270b,EPA8081,WTPH-D-A/S
7-2A-CB-1DUP	80383DUP	SOIL	WTPH-D-A/S
7-2A-CB-2	80384	SOIL	EPA8270b,EPA8081,WTPH-D-A/S
7-2A-CE-1	80385	SOIL	EPA8270b,EPA8081,WTPH-D-A/S
7-2A-CE-2	80386	SOIL	EPA8270b,EPA8081,WTPH-D-A/S
7-2A-SW-5(R)	80387	SOIL	EPA8270b,EPA8081,WTPH-D-A/S
PLC1_S041597	PLC1_S041597	Fortified Blank	EPA8081
SLC4T1_041697	SLC4T1_041697	Fortified Blank	EPA8270b

000001

Laboratory comments for this sample delivery group are listed below. The comments are broken up into categories for ease of explanation.

1. PAH

- a) Final sample results reported have been updated and are slightly different than the initial analysis results faxed 4/18/97. The samples were re-analyzed because the compound dioctylphthalate (a continuing calibration check compound) did not meet EPA 8270b QC criteria for the initial analysis.


2. WTPH-D

- a) Diesel and motor oil range organics were detected in the method blank at a concentration near the sample quantitation limit. The quantitation limit and the concentration of diesel and motor oil range organics in the sample are both well below the requested 200 mg/Kg reporting limit.

3. PCBs

- a) The surrogates recoveries were outside of QC limits for some samples as a result of the 10 fold sample extract dilution used for sample analysis.
- b) The recovery of Aroclor 1242 was below advisory QC limits on one analytical column for the laboratory fortified blank.
- c) The recovery of the surrogate tetrachloro-m-xylene was below advisory QC limits on one analytical column for the method blank and on both analytical columns for the laboratory fortified blank. The recovery of the surrogate decachlorobiphenyl was within QC limits for both samples.
- d) The samples were re-analyzed to ensure the required 1 mg/Kg reporting limit was achieved. Sample reporting limits are reduced from the initial sample analysis results reported previously via Fax. Higher reporting limits for the initial analysis were a result of sample extract dilutions used during analysis to avoid instrument fouling from unexpectedly high PCB concentrations in the samples.


I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

  
Richard Bogar  
Chromatography Team Leader

4/22/97  
Date

Please feel free to contact me with any questions concerning this data report. I can be reached at (206) 924-6521

Sincerely,

  
Richard Bogar  
Weyerhaeuser Analytical & Testing Services

000003



WTPH-D Extended

Service Request: 03684  
 Analyst: C. Thomson

Sample ID	Blank	80382	80383	80384	80385
Client ID	4/16/97	TP-16-C1	7-2A-CB-1	7-2A-CB-2	7-2A-CE-1
Analytes	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	15	82	8.5	U	30
Motor Oil Range	28	170	22	95	72
Surrogate Recovery	80%	98%	111%	95%	85%

Date Sampled		4/16/97	4/16/97	4/16/97	4/16/97
Date Extracted	4/16/97	4/16/97	4/16/97	4/16/97	4/16/97
Date Analyzed	4/18/97	4/18/97	4/18/97	4/18/97	4/18/97
Holding Time Days		0	0	0	0

Reporting Limit

Diesel Range	6.8	10	7.2	14	16
Motor Oil Range	17	26	18	35	40

Approved by Clay Thomson Date 4/19/97

000005

## WTPH-D Extended

Service Request: 03684  
 Analyst: C. Thomson

Sample ID	80386	80387	80383DUP
Client ID	7-2A-CE-2	7-2A-SW-5(R)	7-2A-CB-1DUP
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	390	170	7.2
Motor Oil Range	760	2000	19
Surrogate Recovery	65%	79%	123%

Date Sampled	4/16/97	4/16/97	4/16/97
Date Extracted	4/16/97	4/16/97	4/16/97
Date Analyzed	4/18/97	4/18/97	4/18/97
Holding Time Days	0	0	0

Reporting Limit

Diesel Range	23	37	7.2
Motor Oil Range	58	93	18

000006

## Summary Report - CPAH List

Weyerhaeuser Analytical

SR#03684 (FINAL REPORT)- Everett East Site Remediation Soils

Method: EPA8270B

Units: ug/Kg (PPB)

Client ID		7-2A-CB-1	7-2A-CB-2	7-2A-CE-1
Sample Date and Time		04/16/97 13:40	04/16/97 13:50	04/16/97 13:55
Lab ID		80383	80384	80385
Analyte	CAS			
Benzo(a)Anthracene	56-55-3	250 U	280 U	920 U
Chrysene	218-01-9	250 U	280 U	920 U
Benzo(b)fluoranthene	205-99-2	250 U	280 U	920 U
Benzo(k)fluoranthene	207-08-9	250 U	280 U	920 U
Benzo(a)pyrene	50-32-8	250 U	280 U	920 U
Indeno(1,2,3-cd)pyrene	193-39-5	250 U	280 U	920 U
Dibenzo(a,h)anthracene	53-70-3	250 U	280 U	920 U
Surrogates %Recovery	Limits			
2-Fluorophenol	(25-121)	59%	68%	66%
Phenol-d5	(24-113)	64%	71%	68%
Nitrobenzene-d5	(23-120)	62%	70%	63%
2-Fluorobiphenyl	(30-115)	57%	62%	66%
2,4,6-Tribromophenol	(19-122)	70%	78%	76%
Terphenyl-d14	( <del>X</del> 18-137)	70%	74%	78%
2-Chlorophenol-d4	(advisory)	62%	68%	70%
1,2-Dichlorobenzene-d4	(advisory)	60%	67%	65%
Date Extracted		04/16/97	04/16/97	04/16/97
Date Analyzed		04/18/97	04/18/97	04/18/97

## Summary Report - CPAH List

Weyerhaeuser Analytical

SR#03684 (FINAL REPORT)- Everett East Site Remediation Soils

Method: EPA8270B

Units: ug/Kg (PPB)

Client ID		7-2A-CE-2	7-2A-SW-5(R)	SBL4T1_041697
Sample Date and Time		04/16/97 14:00	04/16/97 13:20	
Lab ID		80386	80387	SBL4T1_041697
<u>Analyte</u>	<u>CAS</u>			
Benzo(a)Anthracene	56-55-3	920 U	990	270 U
Chrysene	218-01-9	920 U	1200	270 U
Benzo(b)fluoranthene	205-99-2	920 U	1100	270 U
Benzo(k)fluoranthene	207-08-9	920 U	990 U	270 U
Benzo(a)pyrene	50-32-8	920 U	1100	270 U
Indeno(1,2,3-cd)pyrene	193-39-5	920 U	990 U	270 U
Dibenzo(a,h)anthracene	53-70-3	920 U	990 U	270 U
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	64%	62%	71%
Phenol-d5	(24-113)	75%	70%	70%
Nitrobenzene-d5	(23-120)	65%	60%	70%
2-Fluorobiphenyl	(30-115)	63%	66%	63%
2,4,6-Tribromophenol	(19-122)	82%	81%	82%
Terphenyl-d14	(18-137)	79%	90%	76%
2-Chlorophenol-d4	(advisory)	68%	68%	66%
1,2-Dichlorobenzene-d4	(advisory)	59%	59%	67%
Date Extracted		04/16/97	04/16/97	04/16/97
Date Analyzed		04/18/97	04/18/97	04/18/97

*mco 6/2/97 per conversation w/ D. Catolano.*



2D  
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: WEYERHAEUSER

Contract:

Lab Code: WEYER

Case No.: 3684

Method: 8270B

SDG No.: 80382

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SLC4T1_041697	65	71	70	72	69	71	71	69	0
02	SBL4T1_041697	69	73	64	73	74	73	72	70	0
03	7-2A-CB-1	59	64	59	64	63	64	64	62	0
04	7-2A-CB-2	68	72	68	72	73	69	72	71	0
05	7-2A-CE-1	64	62	53	66	71	66	70	65	0
06	7-2A-CE-2	62	67	58	68	71	70	67	59	0
07	7-2A-SW-5 (R)	65	69	52	69	77	76	68	59	0
08										
09										
10										
11										
12										
13										
14										
15										
16										
17										
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20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

QC LIMITS

S1 (2FP) = 2-Fluorophenol (30- 88)  
 S2 (PHL) = Phenol-d5 (38- 92)  
 S3 (NBZ) = Nitrobenzene-d5 (50-104)  
 S4 (FBP) = 2-Fluorobiphenyl (56-104)  
 S5 (TBP) = 2,4,6-Tribromophenol (47-119)  
 S6 (TPH) = Terphenyl-d14 (55-137)  
 S7 (2CP) = 2-Chlorophenol-d4 (45- 95) (advisory)  
 S8 (DCB) = 1,2-Dichlorobenzene-d4 (49- 89) (advisory)

# Column to be used to flag recovery values  
 \* Values outside of contract required QC limits  
 D Surrogate diluted out

Data File: /chem/hp2.i/h2sv041897B.b/2sd181401013.d  
 Report Date: 19-Apr-1997 15:20

Weyerhaeuser Chromatography Laboratory

RECOVERY REPORT

Client Name: Client SDG: 80382  
 Sample Matrix: SOLID Fraction: SV  
 Lab Smp Id: SLC4T1\_041697 Client Smp ID: SLC4T1\_041697  
 Level: LOW Operator: Leong  
 Data Type: MS DATA SampleType: METHSPIKE  
 SpikeList File: 8270s.spk Quant Type: ISTD  
 Method File: /chem/hp2.i/h2sv041897B.b/8270Bh27b.m  
 Misc Info:

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
3 Phenol	5000	3100	62.42	34-84
7 2-Chlorophenol	5000	3200	64.06	35-85
9 1,4-Dichlorobenzen	3300	2200	65.80	37-89
16 N-Nitrosodinpropyl	3300	2100	64.03	43-101
27 1,2,4-Trichloroben	3300	2200	65.63	40-98
32 4-Chloro-3-Methylp	5000	3400	69.19	38-96
45 Acenaphthene	3300	2400	70.69	42-94
47 4-Nitrophenol	5000	3900	78.06	45-97
49 2,4-Dinitrotoluene	3300	2400	71.17	48-94
60 Pentachlorophenol	5000	3300	66.24	37-121
68 Pyrene	3300	2300	69.73	61-105

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 1 2-Fluorophenol	5000	3200	64.78	30-88
\$ 2 Phenol-d5	5000	3500	70.86	38-92
\$ 6 2-Chlorophenol-d4	5000	3600	71.47	45-95
\$ 11 1,2-Dichlorobenzen	3300	2300	69.34	49-89
\$ 19 Nitrobenzene-d5	3300	2300	69.71	50-104
\$ 37 2-Fluorobiphenyl	3300	2400	71.60	56-104
\$ 57 2,4,6-Tribromophen	5000	3400	69.06	47-119
\$ 69 Terphenyl-d14	3300	2400	70.92	55-137

000010

## Summary Report - PCBs

**Weyerhaeuser Analytical**  
**SR #3684 - Everett East Site Remediation Soils**  
 Method: EPA 8081  
 Units: ug/Kg (PPB)

Client ID		7-2A-CB-1	7-2A-CB-2	7-2A-CE-1
Sample Date and Time		04/16/97 1340	04/16/97 1350	04/16/97 1355
Lab ID		80383DL100	80384DL10	80385DL10
Analyte	CAS			
Aroclor 1016	12674-11-2	250 U	280 U	300 U
Aroclor 1221	91-57-6	500 U	550 U	610 U
Aroclor 1232	83-32-9	250 U	280 U	300 U
Aroclor 1242	132-64-9	250 U	280 U	300 U
Aroclor 1248	86-73-7	250 U	280 U	300 U
Aroclor 1254	87-86-5	250 U	280 U	1600
Aroclor 1260	85-01-8	250 U	280 U	300 U
Surrogates	QC Limits			
TCMX (column 2)	(50-150)	104%	107%	107%
DCB (column 2)	(50-150)	136%	139%	147%
Date Extracted		04/16/97	04/16/97	04/16/97
Date Analyzed		04/19/97	04/19/97	04/19/97

D - Surrogate diluted out.

## Summary Report - PCBs

Weyerhaeuser Analytical

SR #3684 - Everett East Site Remediation Soils

Method: EPA 8081

Units: ug/Kg (PPB)

C

Client ID		7-2A-CE-2	7-2A-SW-5(R)	Method Blank
Sample Date and Time		04/16/97 1400	04/16/97 1320	
Lab ID		80386DL10	80387DL10	PBL1_S041697
Analyte	CAS			
Aroclor 1016	12674-11-2	460 U	290 U	27 U
Aroclor 1221	91-57-6	920 U	580 U	53 U
Aroclor 1232	83-32-9	460 U	290 U	27 U
Aroclor 1242	132-64-9	460 U	290 U	27 U
Aroclor 1248	86-73-7	460 U	290 U	27 U
Aroclor 1254	87-86-5	3000	680	27 U
Aroclor 1260	85-01-8	460 U	290 U	27 U
Surrogates	QC Limits			
TCMX (column 2)	(50-150)	91%	117%	48%
DCB (column 2)	(50-150)	150%	172% D	78%
Date Extracted		04/16/97	04/16/97	04/16/97
Date Analyzed		04/19/97	04/19/97	04/17/97

D - Surrogate diluted out.

2F  
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: WEYERHAEUSER

Contract: EVERETT

Lab Code: WEYER

Case No.: 03684

Method: PCB8080

SDG No.: 80382

GC Column(1): DB-608

ID: 0.53 (mm)

GC Column(2): DB-1701

ID: 0.53 (mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	7-2A-CB-1	112	104	128	136			0
02	7-2A-CB-2	111	107	128	139			0
03	7-2A-CE-1	113	107	140	147			0
04	7-2A-CE-2	100	91	148	150			0
05	7-2A-SW-5 (R)	124D	117	183D	172D			0
06	PBL1_S041697	52	48*	67	78			1
07	PLC1_S041697	48*	48*	63	70			2
08								
09								
10								
11								
12								
13								
14								
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16								
17								
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29								
30								

ADVISORY  
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (50-150)  
S2 (DCB) = Decachlorobiphenyl (50-150)

# Column to be used to flag recovery values  
\* Values outside of QC limits  
D Surrogate diluted out

3F  
SOIL PESTICIDE LAB CONTROL SAMPLE

Lab Name: WEYERHAEUSER

Contract: EVERETT

Lab Code: WEYER

Case No.: 03684

Method: PCB8080

SDG No.: 80382

Matrix Spike - EPA Sample No.: PLC1\_S041697

Instrument ID (1): hpdos1\_1.i

GC Column(1): DB-608 ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1242	67	32	48*	60-120
Aroclor-1260	67	41	61	60-120

Instrument ID (2): hpdos1\_1.i

GC Column(2): DB-1701 ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1242	67	41	61	60-120
Aroclor-1260	67	52	78	60-120

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 1 out of 4 outside limits

COMMENTS: \_\_\_\_\_

000014



32901 Weyerhaeuser Way South  
Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel (206) 924 6872  
Fax (206) 924 6654

## SDG NARRATIVE

### Organic Analysis

WEYERHAEUSER (WEYER)

ANALYTICAL AND TESTING SERVICES

Case Number 3699

SDG Number 80446

PROJECT: EVERETT EAST SITE REMEDIATION SOILS/DALTON, OLMSTED & FUGLEVAND 120-2974670

The samples from this SDG were received on 4/17/97. The SDG was composed of soil samples for analysis of petroleum hydrocarbons by WTPH-D with acid/silica clean-up, CPAHs by EPA 8270b and PCBs by EPA 8081. The following analyses were performed:

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
7-2A-CB-3	80446	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2A-CB-3DUP	80446DUP	SOIL	WTPH-D-A/S
7-2A-CB-4	80447	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2A-CB-5	80448	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2A-CB-6	80449	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2C-CE-1	80450	SOIL	EPA8270b;WTPH-D-A/S
7-2A-CE-3	80451	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2A-CN-1	80452	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2A-CN-2	80453	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2A-CN-3	80454	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2A-CN-4	80455	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2A-CN-4DUP	80455DUP	SOIL	WTPH-D-A/S
7-2B-SP-1,2,3,4 C	80456	SOIL	EPA8081

000001

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
7-2C-CB-1	80457	SOIL	EPA8270b; WTPH-D-A/S
7-2C-CN-1	80458	SOIL	EPA8270b; WTPH-D-A/S
7-2C-CS-1	80459	SOIL	EPA8270b; WTPH-D-A/S
7-2C-CW-1	80460	SOIL	EPA8270b; WTPH-D-A/S
7-2C-CW-1MS	80460MS	SOIL	EPA8270b;EPA8081
7-2C-CW-1MSD	80460MSD	SOIL	EPA8270b;EPA8081
→ DUPLICATE #1	80461	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
SLC4T2_041897	SLC4T2_041897	Fortified Blank	EPA8270b
SLC4T1_041797	SLC4T2_041797	Fortified Blank	EPA8270b
LCS 4/17/97	LCS 4/17/97	Fortified Blank	EPA8270b
PLC1_S041897	PLC1_S041897	Fortified Blank	EPA8081

— 7-2A CN3 (Field Duplicate)



Laboratory comments for this sample delivery group are listed below. The comments are broken up into categories for ease of explanation.

1. PAH

- a) The recovery of pyrene is above QC limits for the matrix spike duplicate sample 7-2C-CW-1MSD. The recovery is within QC limits for the corresponding matrix spike and for both laboratory fortified blanks in the SDG.

2. WTPH-D-A/S

- a) Diesel range organics were detected in the method blank at a concentration slightly above the reporting limit. The concentration detected is well below the requested 200 mg/Kg reporting limit.

3. PCBs

- a) Surrogates were completely diluted out for the composite sample 7-2B-SP-1234COMPDL. The surrogate decachlorobiphenyl was diluted out of range and is outside of QC limits on column 2 for samples 7-2A-CN-3 and Duplicate No. 1. and on column 1 for samples 7-2A-CB-3, 7-2A-CN-2, 7-2A-CN-3, 7-2A0CN-4 and Duplicate No. 1.

The surrogate tetrachloro-m-xylene was diluted out of range and is outside of QC limits on column 2 for sample Duplicate No. 1.

- b) The recovery of Aroclor 1242 is below QC limits on one column for the laboratory fortified blank PLC1\_S041897.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.



Richard Bogar  
Chromatography Team Leader

4/24/97  
Date

000003

Please feel free to contact me with any questions concerning this data report. I can be reached at  
(206) 924-6521

Sincerely,

A handwritten signature in cursive script, appearing to read "Richard Bogar".

Richard Bogar  
Weyerhaeuser Analytical & Testing Services

000004



Sample Analysis Request/Chain of Custody Form

Facility Everett East Site SENT 3/4

Sampler's Project No. 120-2974670

Weyerhaeuser Account No. 120-2974670

Sampled by: Terry Olwsred/D.O.F.

Facility 111 Northcreek Pkwy. SR 101

EASAWTC Bohler WA 98041

EASINB 286-486-7705 FAX 486-7651

Project Manager (print) Stuart Diolo

Sampler Name (print) Terry Olwsred

Recorded By (signed) Terry Olwsred

Matrix:  Water  Soil/Sed  Oil  HCl  H<sub>2</sub>SO<sub>4</sub>  HNO<sub>3</sub>  Na<sub>2</sub>S<sub>2</sub>O<sub>8</sub>  Filtered

Preservative: \_\_\_\_\_

Field Sample ID (15 characters max.)	Date (m/d/y)	Time (hr:mm)	Depth (ft:m)	Method
G 7-2C-CW-1	4/17/97	1115	0-1	
7-2C-CN-1		1120	0-1	
7-2C-CS-1		1125	0-1	
7-2C-CE-1		1130	0-1	
7-2C-CB-1		1135	1	
7-2B-SP-1		1325	1	
7-2B-SP-2		1330	1	
7-2B-SP-3		1335	1	
7-2B-SP-4		1340	1	
7-2A-CE-3		1235	1	
7-2A-CN-1		1240	1	

Method: G, grab; D, depth composite; T, time composite.

Reporting and QA/QC Requirements  
 CLP Package  
 NPDES Permit  
 Other: \_\_\_\_\_  
 Electronic Report

RESULTS TO: M. DeLena  
 CC: F. Diolo  
339-2786

Relinquished By Sampler (signature): [Signature] Date: 4/17/97 Time: 1500

Relinquished By (signature): [Signature] Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished By (signature): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Number of Containers: \_\_\_\_\_

Analyses Requested (circle or write in parameters):

PH Cond TDS TSS Color Tannins	
Volatile Organics / BTEX	
Semi-volatile Organics	X
TPH: 418.1 TPH-G TPH-D	X
Ca Mg Na K Fe Mn	
Metals (list below)	
NH <sub>3</sub> HCO <sub>3</sub> CO <sub>3</sub> Cl F NO <sub>3</sub> SO <sub>4</sub>	
AOX	
TCLP: Metals VOA SVOA Pest Herb PCBs	
Dioxin: Total / 2,3,7,8-TCDD / 2,3,7,8-TCDF	
CN	
BOD P-ortho	
TKN P-total TOC COD	X

Notes: PCB 8081, CPAH 8270

Remarks/Detection Limit Requirements  
 \*WTPH-DX w/ Silica Gel/Acid Wash Cleanup  
 PCB/EPAH 48 hr Turnaround  
 TPH 12hr Turnaround  
 NORD - Lab Composite Sp's 7-2B-SP-1 thru 4

Sample Chain of Custody and Shipping Method Record

Received By (signature): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received By (signature): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received For Laboratory By (signature): [Signature] Date: 4/17/97 Time: 1415

Airbill No. \_\_\_\_\_ Cooler Temp: \_\_\_\_\_ °C

000005



Weyerhaeuser

Analytical & Testing Services

Sample Analysis Request/Chain of Custody Form

Date 4/17/97

Page 2 of 2

Facility Everett East Site SECT 34

Sampler's Project No. 120-2974670

Weyerhaeuser Account No. 120-2974670

Sampled by: Terry Olsrud / Terry Olsrud

Facility Address: 1711 Albrecht Hwy, Everett, WA 98001

E&ASWTC Phone No: 486-7905 FAX: 486-7657

E&ASNB

Sample Description (ID, Date, Time are Required)

Method	Field Sample ID (15 characters max.)	Date (m/d/y)	Time (hh:mm)	Depth (ft./m)	Water	Soil/Sed	Oil	HCl	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub>	Filtered
<input checked="" type="checkbox"/>	7-2A-CN-2	4/17/97	1245	1	X							
<input checked="" type="checkbox"/>	7-2A-CN-3	"	1250	1	X							
<input checked="" type="checkbox"/>	7-2A-CN-4	"	1255	1	X							
<input checked="" type="checkbox"/>	7-2A-CB-3	"	1300	1	X							
<input checked="" type="checkbox"/>	7-2A-CB-4	"	1305	1	X							
<input checked="" type="checkbox"/>	7-2A-CB-5	"	1310	1	X							
<input checked="" type="checkbox"/>	7-2A-CB-6	"	1315	1	X							

Matrix: Preservative

Method: G, grab; D, depth composite; T, time composite. Depth required for soil or sediment samples.

Reporting and QA/QC Requirements

RESULTS TO: M. Deaton

CC: Fax to Terry Olsrud

339-2786

Reporting and QA/QC Requirements

CLP Package

NPDES Permit

Other:

Electronic Report

Sample Chain of Custody and Shipping Method Record

Received By (signature): Terry Olsrud Date: 4/17/97 Time: 1500

Received By (signature): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received For Laboratory By (signature): Terry Olsrud Date: 4/17/97 Time: \_\_\_\_\_

Samples Received Intact: Yes Cooler Temp: 4 °C

WATS/NB: 32901 Weyerhaeuser Way South, Federal Way, WA 98003 (206-924-6293) WATS/NB: New Bern R&D Field Station, Highway 43 North, New Bern, NC 28563 (919-633-7238)

900000

## WTPH-D Extended

Service Request: 03699  
 Analyst: C. Thomson

Sample ID	Blank	LCS	80446	80447	80448
Client ID	4/17/97	4/17/97	7-2A-CB-3	7-2A-CB-4	7-2A-CB-5
<u>Analytes</u>	<u>mg/Kg</u>	<u>% Rec.</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	7.4	137%	680	150	870
Motor Oil Range	U		1500	520	1800
Surrogate Recovery	100%	113%	97%	58%	68%

Date Sampled			4/17/97	4/17/97	4/17/97
Date Extracted	4/17/97	4/17/97	4/17/97	4/17/97	4/17/97
Date Analyzed	4/19/97	4/19/97	4/19/97	4/20/97	4/19/97
Holding Time Days			0	0	0

Reporting Limit

Diesel Range	6.8		200	18	210
Motor Oil Range	17		500	45	530

Approved by



Date

4/21/97

000007

## WTPH-D Extended

Service Request: 03699  
 Analyst: C. Thomson

Sample ID	80449	80450	80451	80452
Client ID	7-2A-CB-6	7-2C-CE-1	7-2A-CE-3	7-2A-CN-1
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	300	20	190	140
Motor Oil Range	1300	88	560	460
Surrogate Recovery	78%	87%	62%	74%

Date Sampled	4/17/97	4/17/97	4/17/97	4/17/97
Date Extracted	4/17/97	4/17/97	4/17/97	4/17/97
Date Analyzed	4/21/97	4/20/97	4/20/97	4/20/97
Holding Time Days	0	0	0	0

Reporting Limit

Diesel Range	52	15	17	17
Motor Oil Range	130	38	42	44

000008

## WTPH-D Extended

Service Request: 03699  
 Analyst: C. Thomson

Sample ID	80453	80454	80455	80457
Client ID	7-2A-CN-2	7-2A-CN-3	7-2A-CN-4	7-2C-CB-1
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	140	460	400	79
Motor Oil Range	750	920	1800	340
Surrogate Recovery	68%	70%	84%	88%

Date Sampled	4/17/97	4/17/97	4/17/97	4/17/97
Date Extracted	4/17/97	4/17/97	4/17/97	4/17/97
Date Analyzed	4/20/97	4/21/97	4/19/97	4/20/97
Holding Time Days	0	0	0	0

Reporting Limit

Diesel Range	18	49	190	15
Motor Oil Range	44	120	490	36

000009

## WTPH-D Extended

Service Request: 03699  
 Analyst: C. Thomson

Sample ID	80458	80459	80460	80461
Client ID	7-2C-CN-1	7-2C-CS-1	7-2C-CW-1	Duplicate #1
Analytes	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	44	48	41	520
Motor Oil Range	170	240	200	1300
Surrogate Recovery	98%	80%	80%	78%

Date Sampled	4/17/97	4/17/97	4/17/97	4/17/97
Date Extracted	4/17/97	4/17/97	4/17/97	4/17/97
Date Analyzed	4/20/97	4/21/97	4/21/97	4/19/97
Holding Time Days	0	0	0	0

Reporting Limit

Diesel Range	15	14	16	200
Motor Oil Range	37	36	41	500

000010



## WTPH-D Extended

Service Request: 03699  
 Analyst: C. Thomson

Sample ID	80446Dup	80455Dup
Client ID	7-2A-CB-3Dup	7-2A-CN-4Dup
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	490	380
Motor Oil Range	1200	1200
Surrogate Recovery	103%	91%

Date Sampled	4/17/97	4/17/97
Date Extracted	4/17/97	4/17/97
Date Analyzed	4/19/97	4/19/97
Holding Time Days	0	0

Reporting Limit

Diesel Range	200	190
Motor Oil Range	490	480

000011

**Summary Report - CPAH List**  
**Weyerhaeuser Analytical**  
**SR#03699 - Everett East Site Remediation Soils**  
Method: EPA8270B  
Units: ug/Kg (PPB)

Client ID		7-2A-CB-3	7-2A-CB-4	7-2A-CB-5
Sample Date and Time		4/17/97 13:00	4/17/97 13:05	4/17/97 13:10
Lab ID		80446	80447	80448
<u>Analyte</u>	<u>CAS</u>			
Benzo(a)Anthracene	56-55-3	1300	1000	11000
Chrysene	218-01-9	1500	1200	9900
Benzo(b)fluoranthene	205-99-2	1400	1300	10000
Benzo(k)fluoranthene	207-08-9	880 U	810 U	2600
Benzo(a)pyrene	50-32-8	1200	980	6600
Indeno(1,2,3-cd)pyrene	193-39-5	880 U	810 U	4100
Dibenzo(a,h)anthracene	53-70-3	880 U	810 U	950 U
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	64%	56%	64%
Phenol-d5	(24-113)	81%	77%	87%
Nitrobenzene-d5	(23-120)	68%	68%	78%
2-Fluorobiphenyl	(30-115)	76%	72%	78%
2,4,6-Tribromophenol	(19-122)	90%	85%	86%
Terphenyl-d14	(18-137)	82%	74%	82%
2-Chlorophenol-d4	(advisory)	75%	70%	80%
1,2-Dichlorobenzene-d4	(advisory)	58%	60%	69%
<u>Date Extracted</u>		4/17/97	4/17/97	4/17/97
<u>Date Analyzed</u>		4/19/97	4/19/97	4/19/97

**Summary Report - CPAH List**  
**Weyerhaeuser Analytical**  
**SR#03699 - Everett East Site Remediation Soils**  
**Method: EPA8270B**  
**Units: ug/Kg (PPB)**

Client ID		7-2A-CB-6	7-2C-CE-1	7-2A-CE-3
Sample Date and Time		4/17/97 13:15	4/17/97 11:30	4/17/97 12:35
Lab ID		80449	80450	80451
Analyte	CAS			
Benzo(a)Anthracene	56-55-3	3100	700 U	780 U
Chrysene	218-01-9	3200	700 U	780 U
Benzo(b)fluoranthene	205-99-2	3600	700 U	780 U
Benzo(k)fluoranthene	207-08-9	1300	700 U	780 U
Benzo(a)pyrene	50-32-8	3500	700 U	780 U
Indeno(1,2,3-cd)pyrene	193-39-5	2200	700 U	780 U
Dibenzo(a,h)anthracene	53-70-3	910 U	700 U	780 U
Surrogates %Recovery	Limits			
2-Fluorophenol	(25-121)	63%	70%	73%
Phenol-d5	(24-113)	82%	82%	77%
Nitrobenzene-d5	(23-120)	69%	77%	77%
2-Fluorobiphenyl	(30-115)	75%	77%	74%
2,4,6-Tribromophenol	(19-122)	85%	83%	82%
Terphenyl-d14	(18-137)	73%	66%	74%
2-Chlorophenol-d4	(advisory)	74%	79%	79%
1,2-Dichlorobenzene-d4	(advisory)	55%	76%	73%
Date Extracted		4/17/97	4/18/97	4/18/97
Date Analyzed		4/19/97	4/19/97	4/19/97

**Summary Report - CPAH List**  
**Weyerhaeuser Analytical**  
**SR#03699 - Everett East Site Remediation Soils**  
Method: EPA8270B  
Units: ug/Kg (PPB)

Client ID		7-2A-CN-1	7-2A-CN-2	7-2A-CN-3
Sample Date and Time		4/17/97 12:40	4/17/97 12:45	4/17/97 12:50
Lab ID		80452	80453	80454
<u>Analyte</u>	<u>CAS</u>			
Benzo(a)Anthracene	56-55-3	1100	4500	14000
Chrysene	218-01-9	1400	4400	13000
Benzo(b)fluoranthene	205-99-2	1200	4700	16000
Benzo(k)fluoranthene	207-08-9	820 U	1500	4200
Benzo(a)pyrene	50-32-8	910	3600	9700
Indeno(1,2,3-cd)pyrene	193-39-5	820 U	2300	4900
Dibenzo(a,h)anthracene	53-70-3	820 U	840 U	1200
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	66%	70%	70%
Phenol-d5	(24-113)	79%	85%	85%
Nitrobenzene-d5	(23-120)	74%	79%	79%
2-Fluorobiphenyl	(30-115)	72%	78%	78%
2,4,6-Tribromophenol	(19-122)	80%	82%	81%
Terphenyl-d14	(X18-137)	67%	76%	77%
2-Chlorophenol-d4	(advisory)	74%	79%	79%
1,2-Dichlorobenzene-d4	(advisory)	70%	73%	72%
<b>Date Extracted</b>		4/18/97	4/18/97	4/18/97
<b>Date Analyzed</b>		4/19/97	4/19/97	4/19/97

**Summary Report - CPAH List**  
**Weyerhaeuser Analytical**  
**SR#03699 - Everett East Site Remediation Soils**  
**Method: EPA8270B**  
**Units: ug/Kg (PPB)**

Client ID		7-2A-CN-4	7-2C-CB-1	7-2C-CN-1
Sample Date and Time		4/17/97 12:55	4/17/97 11:35	4/17/97 11:20
Lab ID		80455	80457	80458
<u>Analyte</u>	<u>CAS</u>			
Benzo(a)Anthracene	56-55-3	14000	770 U	780 U
Chrysene	218-01-9	13000	840	930
Benzo(b)fluoranthene	205-99-2	13000	770 U	1300
Benzo(k)fluoranthene	207-08-9	4700	770 U	780 U
Benzo(a)pyrene	50-32-8	9700	770 U	840
Indeno(1,2,3-cd)pyrene	193-39-5	5300	770 U	790
Dibenzo(a,h)anthracene	53-70-3	1600	770 U	780 U
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	72%	78%	83%
Phenol-d5	(24-113)	87%	73%	83%
Nitrobenzene-d5	(23-120)	81%	83%	82%
2-Fluorobiphenyl	(30-115)	82%	85%	88%
2,4,6-Tribromophenol	(19-122)	84%	85%	84%
Terphenyl-d14	( <del>18</del> -137)	81%	86%	85%
2-Chlorophenol-d4	(advisory)	81%	78%	86%
1,2-Dichlorobenzene-d4	(advisory)	74%	79%	82%
<b>Date Extracted</b>		4/18/97	4/18/97	4/18/97
<b>Date Analyzed</b>		4/19/97	4/21/97	4/21/97

**Summary Report - CPAH List**  
**Weyerhaeuser Analytical**  
**SR#03699 - Everett East Site Remediation Soils**  
Method: EPA8270B  
Units: ug/Kg (PPB)

Client ID		7-2C-CS-1	7-2C-CW-1	DUPLICATE #1
Sample Date and Time		4/17/97 11:25	4/17/97 11:15	8/9/95
Lab ID		80459	80460	80461
<u>Analyte</u>	<u>CAS</u>			
Benzo(a)Anthracene	56-55-3	770 U	840 U	35000
Chrysene	218-01-9	770 U	840 U	34000
Benzo(b)fluoranthene	205-99-2	770 U	840 U	31000
Benzo(k)fluoranthene	207-08-9	770 U	840 U	8900
Benzo(a)pyrene	50-32-8	770 U	840 U	26000
Indeno(1,2,3-cd)pyrene	193-39-5	770 U	840 U	17000
Dibenzo(a,h)anthracene	53-70-3	770 U	840 U	4000
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	80%	81%	70%
Phenol-d5	(24-113)	82%	81%	71%
Nitrobenzene-d5	(23-120)	80%	82%	69%
2-Fluorobiphenyl	(30-115)	81%	81%	68%
2,4,6-Tribromophenol	(19-122)	90%	88%	79%
Terphenyl-d14	(18-137)	99%	93%	116%
2-Chlorophenol-d4	(advisory)	85%	83%	73%
1,2-Dichlorobenzene-d4	(advisory)	81%	79%	67%
<u>Date Extracted</u>		4/18/97	4/18/97	4/18/97
<u>Date Analyzed</u>		4/21/97	4/21/97	4/21/97

**Summary Report - CPAH List**  
**Weyerhaeuser Analytical**  
**SR#03699 - Everett East Site Remediation Soils**  
**Method: EPA8270B**  
**Units: ug/Kg (PPB)**

Client ID		Method Blank 1	Method Blank 2
Sample Date and Time		SBL4T1_041797	SBL4T2_041897
Lab ID			
<u>Analyte</u>	<u>CAS</u>		
Benzo(a)Anthracene	56-55-3	600 U	640 U
Chrysene	218-01-9	600 U	640 U
Benzo(b)fluoranthene	205-99-2	600 U	640 U
Benzo(k)fluoranthene	207-08-9	600 U	640 U
Benzo(a)pyrene	50-32-8	600 U	640 U
Indeno(1,2,3-cd)pyrene	193-39-5	600 U	640 U
Dibenzo(a,h)anthracene	53-70-3	600 U	640 U
<u>Surrogates %Recovery</u>	<u>Limits</u>		
2-Fluorophenol	(25-121)	72%	66%
Phenol-d5	(24-113)	84%	78%
Nitrobenzene-d5	(23-120)	81%	73%
2-Fluorobiphenyl	(30-115)	80%	73%
2,4,6-Tribromophenol	(19-122)	83%	75%
Terphenyl-d14	(18-137)	78%	70%
2-Chlorophenol-d4	(advisory)	81%	73%
1,2-Dichlorobenzene-d4	(advisory)	80%	72%
<b>Date Extracted</b>		4/17/97	4/18/97
<b>Date Analyzed</b>		4/19/97	4/19/97

000017.

2D  
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: WEYERHAEUSER

Contract:

Lab Code: WEYER

Case No.: 3699

Method: 8270B

SDG No.: 80446

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SBL4T2_041897	66	78	73	73	75	70	73	72	0
02	SLC4T2_041897	68	78	73	72	76	64	75	73	0
03	SLC4T1_041797	67	78	75	73	78	71	73	72	0
04	SBL4T1_041797	72	84	81	80	83	78	81	80	0
05	7-2C-CE-1	70	82	77	77	83	66	79	76	0
06	7-2A-CE-3	73	77	77	74	82	74	79	73	0
07	7-2A-CN-1	66	79	74	72	80	67	74	70	0
08	7-2A-CB-3	64	81	68	76	90	82	75	58	0
09	7-2A-CB-4	56	77	68	72	85	74	70	60	0
10	7-2A-CB-5	64	87	78	78	86	82	80	69	0
11	7-2A-CB-6	63	82	69	75	85	73	74	55	0
12	7-2A-CN-2	70	85	79	78	82	76	79	73	0
13	7-2A-CN-3	70	85	79	78	81	77	79	72	0
14	7-2A-CN-4	72	87	81	82	84	81	81	74	0
15	7-2C-CB-1	78	73	83	85	85	86	78	79	0
16	7-2C-CN-1	83	83	82	88	84	85	86	82	0
17	7-2C-CS-1	80	82	80	81	90	99	85	81	0
18	7-2C-CW-1	81	81	82	81	88	93	83	79	0
19	7-2C-CW-1MS	80	80	84	85	84	96	83	80	0
20	7-2C-CW-1MSD	80	80	82	80	86	99	84	80	0
21	DUPLICATE #1	70	71	69	68	79	116	73	67	0
22	DUPLICATE #1DL	76	80	74	76	86	126	82	77	0
23										
24										
25										
26										
27										
28										
29										
30										

QC LIMITS

S1 (2FP) = 2-Fluorophenol (30- 88)  
 S2 (PHL) = Phenol-d5 (38- 92)  
 S3 (NBZ) = Nitrobenzene-d5 (50-104)  
 S4 (FBP) = 2-Fluorobiphenyl (56-104)  
 S5 (TBP) = 2,4,6-Tribromophenol (47-119)  
 S6 (TPH) = Terphenyl-d14 (55-137)  
 S7 (2CP) = 2-Chlorophenol-d4 (45- 95) (advisory)  
 S8 (DCB) = 1,2-Dichlorobenzene-d4 (49- 89) (advisory)

# Column to be used to flag recovery values  
 \* Values outside of contract required QC limits  
 D Surrogate diluted out



FORM 3  
SOIL SEMIVOLATILE METHOD SPIKE RECOVERY

Lab Name: WEYERHAEUSER

Contract: EPA8270

Lab Code: WEYER

Case No.: 3699

Method: 8270B

SDG No.: 80446

Matrix Spike - Sample No.: SLC4T1\_041797 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	% REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====
Phenol	6200	4200	68	31- 95
2-Chlorophenol	6200	4200	68	39- 99
1,4-Dichlorobenzene	4200	2800	67	34- 88
N-Nitrosodipropylamine	4200	3300	78	43-103
1,2,4-Trichlorobenzene	4200	3000	71	37-103
4-Chloro-3-Methylphenol	6200	4400	71	46-100
Acenaphthene	4200	3000	71	48-100
4-Nitrophenol	6200	5100	82	29-119
2,4-Dinitrotoluene	4200	2900	69	50-106
Pentachlorophenol	6200	4900	79	59-127
Pyrene	4200	2900	69	46-136

# Column to be used to flag recovery and RPD values with an asterisk  
\* Values outside of QC limits

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_

FORM 3  
SOIL SEMIVOLATILE METHOD SPIKE RECOVERY

Lab Name: WEYERHAEUSER

Contract: EPA8270

Lab Code: WEYER

Case No.: 3699

Method: 8270B

SDG No.: 80446

Matrix Spike - Sample No.: SLC4T2\_041897 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	% REC #	QC. LIMITS REC.
Phenol	6000	4200	70	34- 84
2-Chlorophenol	6000	4200	70	35- 85
1,4-Dichlorobenzene	4000	2800	70	37- 89
N-Nitrosodinpropylamine	4000	3300	82	43-101
1,2,4-Trichlorobenzene	4000	2900	72	40- 98
4-Chloro-3-Methylphenol	6000	4200	70	38- 96
Acenaphthene	4000	2800	70	42- 94
4-Nitrophenol	6000	5000	83	45- 97
2,4-Dinitrotoluene	4000	2800	70	48- 94
Pentachlorophenol	6000	4700	78	37-121
Pyrene	4000	2600	65	61-105

# Column to be used to flag recovery and RPD values with an asterisk  
\* Values outside of QC limits

COMMENTS: \_\_\_\_\_

3ALT  
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: WEYERHAEUSER

Contract: EPA8270

Lab Code: WEYER

Case No.: 3699

Method: 8270B

SDG No.: 80446

Matrix Spike - EPA Sample No.: 7-2C-CW-1

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Phenol	7100	0.00	5100	72	34- 84
2-Chlorophenol	7100	0.00	5400	76	35- 85
1,4-Dichlorobenzene	4800	0.00	3600	75	37- 89
N-Nitrosodinpropylamine	4800	0.00	3700	77	43-101
1,2,4-Trichlorobenzene	4800	0.00	3700	77	40- 98
4-Chloro-3-Methylphenol	7100	0.00	5400	76	38- 96
Acenaphthene	4800	0.00	4000	83	42- 94
4-Nitrophenol	7100	0.00	6100	86	45- 97
2,4-Dinitrotoluene	4800	0.00	3500	73	48- 94
Pentachlorophenol	7100	0.00	6300	89	37-121
Pyrene	4800	740	5500	99	61-105

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	CONC % RPD #	QC LIMITS	
					RPD	REC.
Phenol	7100	5200	73	2	35	34- 84
2-Chlorophenol	7100	5500	77	2	50	35- 85
1,4-Dichlorobenzene	4700	3700	79	3	27	37- 89
N-Nitrosodinpropylamine	4700	3700	79	0	38	43-101
1,2,4-Trichlorobenzene	4700	3700	79	0	23	40- 98
4-Chloro-3-Methylphenol	7100	5900	83	9	33	38- 96
Acenaphthene	4700	4000	85	0	19	42- 94
4-Nitrophenol	7100	6200	87	2	50	45- 97
2,4-Dinitrotoluene	4700	3700	79	6	47	48- 94
Pentachlorophenol	7100	6900	97	9	47	37-121
Pyrene	4700	6600	125*	18	36	61-105

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 11 outside limits

Spike Recovery: 1 out of 22 outside limits

COMMENTS:

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## Summary Report - PCBs

Weyerhaeuser Analytical

SR #3699 - Everett East Site Remediation Soils

Method: EPA 8081

Units: ug/Kg (PPB)

Client ID		7-2A-CB-3	7-2A-CB-4	7-2A-CB-5
Sample Date and Time		04/17/97 1300	04/17/97 1305	04/17/97 1310
Lab ID		80446DL10	80447DL10	80448DL10
Analyte	CAS			
Aroclor 1016	12674-11-2	470 U	440 U	510 U
Aroclor 1221	91-57-6	930 U	880 U	1000 U
Aroclor 1232	83-32-9	470 U	440 U	510 U
Aroclor 1242	132-64-9	470 U	440 U	510 U
Aroclor 1248	86-73-7	470 U	2100 U	510 U
Aroclor 1254	87-86-5	<b>49000</b>	<b>2000</b>	<b>7700</b>
Aroclor 1260	85-01-8	470 U	1800 U	510 U
Surrogates	QC Limits			
TCMX (column 1)	(50-150)	106%	89%	61%
DCB (column 1)	(50-150)	104%	95%	78%
Date Extracted		04/18/97	04/18/97	04/18/97
Date Analyzed		04/20/97	04/20/97	04/20/97

D - Surrogate diluted out.

## Summary Report - PCBs

Weyerhaeuser Analytical

SR #3699 - Everett East Site Remediation Soils

Method: EPA 8081

Units: ug/Kg (PPB)

Client ID		7-2A-CB-6	7-2A-CE-3	7-2A-CN-1
Sample Date and Time		04/17/97 1315	04/17/97 1235	04/17/97 1240
Lab ID		80449DL10	80451DL10	80452DL10
Analyte	CAS			
Aroclor 1016	12674-11-2	480 U	390 U	410 U
Aroclor 1221	91-57-6	970 U	780 U	820 U
Aroclor 1232	83-32-9	480 U	390 U	410 U
Aroclor 1242	132-64-9	480 U	390 U	410 U
Aroclor 1248	86-73-7	480 U	1500 U	410 U
Aroclor 1254	87-86-5	<b>22000</b>	<b>1600</b>	<b>1700</b>
Aroclor 1260	85-01-8	480 U	1400 U	1500 U
Surrogates	QC Limits			
TCMX (column 1)	(50-150)	56%	110%	117%
DCB (column 1)	(50-150)	79%	113%	120%
Date Extracted		04/18/97	04/18/97	04/18/97
Date Analyzed		04/20/97	04/20/97	04/20/97

D - Surrogate diluted out.

## Summary Report - PCBs

Weyerhaeuser Analytical

SR #3699 - Everett East Site Remediation Soils

Method: EPA 8081

Units: ug/Kg (PPB)

Client ID		7-2A-CN-2	7-2A-CN-3	7-2A-CN-4
Sample Date and Time		04/17/97 1245	04/17/97 1250	04/17/97 1255
Lab ID		80453DL10	80454DL10	80455DL10
Analyte	CAS			
Aroclor 1016	12674-11-2	420 U	440 U	440 U
Aroclor 1221	91-57-6	840 U	890 U	880 U
Aroclor 1232	83-32-9	420 U	440 U	440 U
Aroclor 1242	132-64-9	420 U	440 U	440 U
Aroclor 1248	86-73-7	420 U	440 U	440 U
Aroclor 1254	87-86-5	<b>5200</b>	<b>17000</b>	<b>26000</b>
Aroclor 1260	85-01-8	420 U	440 U	440 U
Surrogates	QC Limits			
TCMX (column 1)	(50-150)	112%	127%	104%
DCB (column 1)	(50-150)	126%	152% D	114%
Date Extracted		04/18/97	04/18/97	04/18/97
Date Analyzed		04/20/97	04/20/97	04/20/97

D - Surrogate diluted out.

## Summary Report - PCBs

**Weyerhaeuser Analytical**  
**SR #3699 - Everett East Site Remediation Soils**  
 Method: EPA 8081  
 Units: ug/Kg (PPB)

Client ID		7-2B-SP-COMPDL	DUPLICATE No1	Method Blank 1
Sample Date and Time		04/17/97 1325	04/17/97	
Lab ID		80456DL100	80461DL10	PBL1_S041797
Analyte	CAS			
Aroclor 1016	12674-11-2	2200 U	460 U	13 U
Aroclor 1221	91-57-6	4300 U	920 U	27 U
Aroclor 1232	83-32-9	2200 U	460 U	13 U
Aroclor 1242	132-64-9	2200 U	460 U	13 U
Aroclor 1248	86-73-7	2200 U	460 U	13 U
Aroclor 1254	87-86-5	<b>14000</b>	<b>22000</b>	13 U
Aroclor 1260	85-01-8	2200 U	460 U	13 U
Surrogates	QC Limits			
TCMX (column 1)	(50-150)	0% D	102%	70%
DCB (column 1)	(50-150)	0% D	156% D	52%
Date Extracted		04/17/97	04/18/97	04/17/97
Date Analyzed		04/18/97	04/20/97	04/18/97

D - Surrogate diluted out.

000025

# Summary Report - PCBs

Weyerhaeuser Analytical

SR #3699 - Everett East Site Remediation Soils

Method: EPA 8081

Units: ug/Kg (PPB)

Client ID		Method Blank 2
Sample Date and Time		
Lab ID		PBL1_S041897
Analyte	CAS	
Aroclor 1016	12674-11-2	40 U
Aroclor 1221	91-57-6	80 U
Aroclor 1232	83-32-9	40 U
Aroclor 1242	132-64-9	40 U
Aroclor 1248	86-73-7	40 U
Aroclor 1254	87-86-5	40 U
Aroclor 1260	85-01-8	40 U
Surrogates	QC Limits	
TCMX (column 1)	(50-150)	75%
DCB (column 1)	(50-150)	80%
Date Extracted	04/18/97	
Date Analyzed	04/20/97	

D - Surrogate diluted out.

000026



2F  
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: WEYERHAEUSER

Contract: EVERETT

Lab Code: WEYER

Case No.: 03699

Method: PCB8080

SDG No.: 80446

GC Column(1): DB-608

ID: 0.53 (mm)

GC Column(2): DB-1701

ID: 0.53 (mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	7-2A-CB-3	117	106	155D	104			0
02	7-2A-CB-3DL	0D	0D	0D	0D			0
03	7-2A-CB-4	95	89	120	95			0
04	7-2A-CB-5	72	61	63	78			0
05	7-2A-CB-6	79	56	135	79			0
06	7-2A-CB-6DL	0D	0D	0D	0D			0
07	7-2A-CE-3	118	110	126	113			0
08	7-2A-CN-1	122D	117	146	120			0
09	7-2A-CN-2	140D	112	200D	126			0
10	7-2A-CN-3	136D	127D	204D	152D			0
11	7-2A-CN-3DL	0D	0D	0D	0D			0
12	7-2A-CN-4	125D	104	318D	114			0
13	7-2A-CN-4DL	0D	0D	0D	0D			0
14	7-2B-SP-COMPDL	0D	0D	0D	0D			0
15	7-2B-SP-1	0D	0D	0D	0D			0
16	7-2C-CW-1MSD	113	116	137	118			0
17	7-2C-CW-1MSDDL	0D	0D	0D	0D			0
18	7-2C-CW-1MS	124D	118	153D	137			0
19	7-2C-CW-1MSDL	0D	0D	0D	0D			0
20	DUPLICATE NO1	156D	102	435D	156D			0
21	DUPLICATE NO1DL	0D	0D	0D	0D			0
22	PBL1_S041797	67	70	85	52			0
23	PBL1_S041897	78	75	85	80			0
24	PLC1_S041897	95	85	95	90			0
25								
26								
27								
28								
29								
30								

ADVISORY  
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (50-150)

S2 (DCB) = Decachlorobiphenyl (50-150)

# Column to be used to flag recovery values

\* Values outside of QC limits

D Surrogate diluted out

3ALT  
SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: WEYERHAEUSER

Contract: EVERETT

Lab Code: WEYER

Case No.: 03699

Method: PCB8080

SDG No.: 80446

Matrix Spike - EPA Sample No.: 7-2C-CW-1

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aroclor-1260	10000		11000	110	60-120

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	CONC % RPD #	QC LIMITS RPD	REC.
Aroclor-1260	10000	9400	94	16	40	60-120

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

COMMENTS:

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3F  
SOIL PESTICIDE LAB CONTROL SAMPLE

Lab Name: WEYERHAEUSER

Contract: EVERETT

Lab Code: WEYER

Case No.: 03699

Method: PCB8080

SDG No.: 80446

Matrix Spike - EPA Sample No.: PLC1\_S041897

Instrument ID (1): hpdos1\_1.i

GC Column(1): DB-1701 ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1242	100	48	48*	50-120
Aroclor-1260	100	54	54	50-120

Instrument ID (2): hpdos1\_1.i

GC Column(2): DB-608 ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1242	100	53	53	50-120
Aroclor-1260	100	55	55	50-120

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 2 outside limits

Spike Recovery: 1 out of 4 outside limits

COMMENTS:

000029



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Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel (206) 924 6872  
Fax (206) 924 6654

## SDG NARRATIVE

### Organic Analysis

WEYERHAEUSER (WEYER)

ANALYTICAL AND TESTING SERVICES

Case Number 3712

SDG Number 80549

PROJECT: EVERETT EAST SITE REMEDIATION SOILS/DALTON, OLMSTED & FUGLEVAND 120-2974670

The samples from this SDG were received on 4/18/97. The SDG was composed of soil samples for analysis of petroleum hydrocarbons by WTPH-D with acid/silica clean-up, CPAHs by EPA 8270b and PCBs by EPA 8081. The following analyses were performed:

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
7-2B-CB-1	80549	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2B-CB-2	80550	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2B-CB-2MS	80550MS	SOIL	EPA8270b
7-2B-CB-2MSD	80550MSD	SOIL	EPA8270b
7-2B-CB-3	80551	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2B-CB-4	80552	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2B-CB-4MS	80552MS	SOIL	EPA8081
7-2B-CB-4MSD	80552MSD	SOIL	EPA8081
7-2B-CE-1	80553	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2B-CN-1	80554	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2B-CN-1DUP	80554DUP	SOIL	WTPH-D-A/S
7-2B-CN-2	80555	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2B-CN-2DUP	80555DUP	SOIL	WTPH-D-A/S

000001

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
7-2B-CN-3	80556	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2B-CS-1	80557	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2B-CS-2	80558	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2B-CW-1	80559	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2B-CW-2	80560	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
9-1-CB-1	80561	SOIL	WTPH-D-A/S
9-1-CE-1	80562	SOIL	WTPH-D-A/S
9-1-CN-1	80563	SOIL	WTPH-D-A/S
9-1-CS-1	80564	SOIL	WTPH-D-A/S
9-1-CW-1	80565	SOIL	WTPH-D-A/S
DUPLICATE #2	80566	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
PLC2_S041897	PLC2_S041897	Fortified Blank	EPA8081
SLC3T1_041897	SLC3T1_041897	Fortified Blank	EPA8270b
LCS 4/18/97	LCS 4/18/97	Fortified Blank	WTPH-D-A/S

7-2B CB1 (Field Duplicate)

000002

Laboratory comments for this sample delivery group are listed below. The comments are broken up into categories for ease of explanation.

1. PAH

- a) The recoveries of acenaphthene, pyrene and 4-chloro-3-methylphenol are above QC limits for matrix spike and matrix spike duplicate. The high recoveries appear to be related to a high concentration of the spike compounds (pyrene) in the sample or sample inhomogeneity. The recoveries were within QC limits for the laboratory fortified blank for this sample set indicating that high recoveries for the MS/MSD are likely related to sample matrix effects.

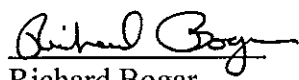
2. PCBs

- a) The recovery of Aroclor 1254 is below advisory QC limits for the matrix spike duplicate 7-2B-CB-4MSD. The low recovery appears to be related to the 10x dilution used for sample analysis and the relatively high concentration of Aroclor 1254 native in the sample compared to the concentration spiked.

3. WTPH-D-A/S

- a) No comments.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

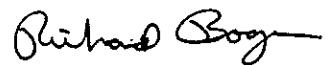
  
Richard Bogar  
Chromatography Team Leader

4/24/97  
Date

000003

Please feel free to contact me with any questions concerning this data report. I can be reached at  
(206) 924-6521

Sincerely,

A handwritten signature in black ink that reads "Richard Bogar". The signature is written in a cursive style with a long horizontal stroke at the end.

Richard Bogar  
Weyerhaeuser Analytical & Testing Services

000004

Sample Analysis Request Chain of Custody Form

Facility: <u>Everett East Site Sat 34</u> Sampler's Project No.: <u>120-2974670</u>		Project Manager (print): <u>Stuart Ingle</u> Sampler Name (print): <u>Telly Olmsred</u>		Recorded By (signed): <u>[Signature]</u>		Matrix: <u>Preservative</u>		Number of Containers: _____		Analyses Requested (circle or write in parameters): Volatile Organics / BTEX _____ Semi-volatile Organics _____ TPH: 418.1 TPH-G, TPH-DX _____ Ca Mg Na K Fe Mn _____ Metals (list below) _____ NH <sub>3</sub> HCO <sub>3</sub> CO <sub>3</sub> Cl F NO <sub>3</sub> SO <sub>4</sub> _____ AOX _____ TCLP: Metals VOA SVOA Pest Herb PCBs _____ Dioxin: Total / 2,3,7,8-TCDD / 2,3,7,8-TCDF _____ CN _____ BOD P-ortho _____ TKN P-total TOC COD _____ PCBs: 8081 _____ CPAH: 8270 _____										Notes: _____
Weyerhaeuser Account No.: <u>120-2974670</u> Consultant: <u>Telly Olmsred / DOF</u> Address: <u>11711 Northwoodhills Skys Str 101</u> City: <u>Bellevue WA 98001</u> Phone No.: <u>206-846-7901</u> FAX: <u>486-7651</u>		Date (m/d/y): <u>4/18/97</u> Time (hh:mm): <u>1045</u> Depth (ft/m): <u>0.5</u>		Matrix: <u>Water</u> Filtered: _____ Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : _____ HNO <sub>3</sub> : _____ H <sub>2</sub> SO <sub>4</sub> : _____ HCl: _____ Oil: _____ Soil/Sed: _____		Method: <u>G</u> Field Sample ID (15 characters max.): <u>7-2B-CS-2</u> <u>7-2B-CE-1</u> <u>7-2B-CB-1</u> <u>Duplicate #2</u> <u>7-2B-CB-2</u> <u>7-2B-CB-3</u> <u>7-2B-CB-4</u>		Reporting and QA/QC Requirements: <input checked="" type="checkbox"/> Samples on Ice or Blue Ice Lab Turn-Around Time: <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 7 Day <input type="checkbox"/> 2-3 wk Date Due: _____ Laboratory: <input type="checkbox"/> WATS/WTC <input type="checkbox"/> WATS/NB <input type="checkbox"/> Other: _____		Remarks/Detection Limit Requirements: WTPHDX w/Silica Gel/Acid Wash 12hr TPH Turnaround 48hr CPAH/PCB Turnaround										
Relinquished By (signature): <u>[Signature]</u> Date: <u>4/18/97</u> Time: <u>1500</u>		Relinquished By (signature): _____ Date: _____ Time: _____		Relinquished By (signature): _____ Date: _____ Time: _____		Received For Laboratory By (signature): <u>[Signature]</u> Date: <u>4/18/97</u> Time: <u>1650</u>		Received By (signature): _____ Date: _____ Time: _____		Received By (signature): _____ Date: _____ Time: _____		Shipping Method: _____ Airbill No.: _____		Cooler Temp: _____ °C						

500000



Facility <u>Everett East Site Sort 34</u> Sampler's Project No. _____ Weyerhaeuser Account No. <u>120-2974679</u> Sampled by: <u>Terry Owsred/DOF</u> <input type="checkbox"/> Facility <u>11711 Northwood Plumb's rd/101</u> <input type="checkbox"/> E&ASWTC <u>Baden WA 98011</u> <input type="checkbox"/> E&ASNB <u>Phone No. 486-7805 FAX 486-7657</u>		Project Manager (print) <u>Steve Trido</u> Sampler Name (print) <u>Terry Owsred</u> Recorded By (signed) <u>[Signature]</u> Preservative _____										
Method	Field Sample ID (15 characters max.)	Date (m/d/y)	Time (hr:mm)	Depth (ft/m)	Water	Soil/Sed	Oil	HCl	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Filtered
	9-1-CN-1	4/18/97	0845	0-4	X							
	9-1-CW-1		0850	0-4	X							
	9-1-CS-1		0855	0-2	X							
	9-1-CE-1		0900	0-4	X							
	9-1-CB-1		0905	0.6	X							
	7-2B-EN-1		1015	0.5	X							
	7-2B-CN-2		1020	0.5	X							
	7-2B-CN-3		1025	0.5	X							
	7-2B-CW-1		1030	0.5	X							
	7-2B-CW-2		1035	0.5	X							
	7-2B-CS-1		1040	0.5	X							

Method: G, grab; D, depth composite; T, time composite. Depth required for soil or sediment samples.

Reporting and QA/QC Requirements  
 CLP Package  
 NPDES Permit  
 Other.  
 Electronic Report

RESULTS TO: Mr. Dalton  
 CC: Steve Trido  
339-2786

Sample Chain of Custody and Shipping Method Record

Relinquished By Sampler (signature): <u>[Signature]</u>	Date: <u>4/18/97</u>	Time: <u>1500</u>
Relinquished By (signature): <u>[Signature]</u>	Date: _____	Time: _____
Relinquished By (signature): _____	Date: _____	Time: _____

Received By (signature): \_\_\_\_\_  
 Received By (signature): \_\_\_\_\_  
 Received For Laboratory By (signature): [Signature]  
 Samples Received Intact: Yes  
 Airbill No. 4/18/97 1050  
 Shipping Method \_\_\_\_\_  
 Cooler Temp: 4 °C

900000

**Summary Report - CPAH List**  
**Weyerhaeuser Analytical**  
**SR#03712 - Everett East Site Remediation Soils**  
Method: EPA8270B  
Units: ug/Kg (PPB)

Client ID		7-2B-CB-1	7-2B-CB-2	7-2B-CB-3
Sample Date and Time		04/18/97 10:55	04/18/97 11:00	04/18/97 11:05
Lab ID		80549	80550	80551
<u>Analyte</u>	<u>CAS</u>			
Benzo(a)Anthracene	56-55-3	4100	2000	990 U
Chrysene	218-01-9	4900	2500	990 U
Benzo(b)fluoranthene	205-99-2	5500	2800	1200
Benzo(k)fluoranthene	207-08-9	1600	980 U	990 U
Benzo(a)pyrene	50-32-8	4100	2600	990 U
Indeno(1,2,3-cd)pyrene	193-39-5	3800	2500	990 U
Dibenzo(a,h)anthracene	53-70-3	780	980 U	990 U
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	74%	76%	98%
Phenol-d5	(24-113)	78%	76%	91%
Nitrobenzene-d5	(23-120)	67%	74%	93%
2-Fluorobiphenyl	(30-115)	79%	79%	91%
2,4,6-Tribromophenol	(19-122)	94%	93%	115%
Terphenyl-d14	<sup>μg/g</sup> (18-137)	112%	100%	125%
2-Chlorophenol-d4	(advisory)	80%	80%	99%
1,2-Dichlorobenzene-d4	(advisory)	60%	65%	89%
<u>Date Extracted</u>		04/18/97	04/18/97	04/18/97
<u>Date Analyzed</u>		04/22/97	04/22/97	04/21/97

000007

**Summary Report - CPAH List**  
**Weyerhaeuser Analytical**  
**SR#03712 - Everett East Site Remediation Soils**  
Method: EPA8270B  
Units: ug/Kg (PPB)

Client ID		7-2B-CB-4	7-2B-CE-1	7-2B-CN-1
Sample Date and Time		04/18/97 11:10	04/18/97 10:50	04/18/97 10:15
Lab ID		80552	80553	80554
<u>Analyte</u>	<u>CAS</u>			
Benzo(a)Anthracene	56-55-3	970 U	7800	500 U
Chrysene	218-01-9	970 U	9700	500 U
Benzo(b)fluoranthene	205-99-2	970 U	11000	500 U
Benzo(k)fluoranthene	207-08-9	970 U	3800	500 U
Benzo(a)pyrene	50-32-8	970 U	8900	500 U
Indeno(1,2,3-cd)pyrene	193-39-5	970 U	7800	500 U
Dibenzo(a,h)anthracene	53-70-3	970 U	1800	500 U
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	93%	80%	78%
Phenol-d5	(24-113)	88%	86%	74%
Nitrobenzene-d5	(23-120)	92%	75%	78%
2-Fluorobiphenyl	(30-115)	89%	83%	83%
2,4,6-Tribromophenol	(19-122)	109%	82%	78%
Terphenyl-d14	( <del>18</del> -137)	115%	111%	78%
2-Chlorophenol-d4	(advisory)	94%	87%	80%
1,2-Dichlorobenzene-d4	(advisory)	76%	68%	74%
<u>Date Extracted</u>		04/18/97	08/16/95	04/18/97
<u>Date Analyzed</u>		04/21/97	04/22/97	04/21/97

**Summary Report - CPAH List**  
**Weyerhaeuser Analytical**  
**SR#03712 - Everett East Site Remediation Soils**  
Method: EPA8270B  
Units: ug/Kg (PPB)

Client ID		7-2B-CN-2	7-2B-CN-3	7-2B-CS-1
Sample Date and Time		04/18/97 10:20	04/18/97 10:25	04/18/97 10:40
Lab ID		80555	80556	80557
<u>Analyte</u>	<u>CAS</u>			
Benzo(a)Anthracene	56-55-3	2400	9400	630 J
Chrysene	218-01-9	2800	10000	960 J
Benzo(b)fluoranthene	205-99-2	3000	12000	1200
Benzo(k)fluoranthene	207-08-9	800	4400	460 J
Benzo(a)pyrene	50-32-8	2600	8800	790 J
Indeno(1,2,3-cd)pyrene	193-39-5	2200	8600	1000 J
Dibenzo(a,h)anthracene	53-70-3	560 U	1900	1100 U
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	80%	91%	96%
Phenol-d5	(24-113)	84%	93%	88%
Nitrobenzene-d5	(23-120)	77%	76%	89%
2-Fluorobiphenyl	(30-115)	81%	85%	91%
2,4,6-Tribromophenol	(19-122)	88%	109%	124%
Terphenyl-d14	(18-137)	107%	117%	135%
2-Chlorophenol-d4	(advisory)	86%	87%	94%
1,2-Dichlorobenzene-d4	(advisory)	70%	77%	80%
<u>Date Extracted</u>		04/18/97	04/18/97	04/18/97
<u>Date Analyzed</u>		04/21/97	04/21/97	04/21/97

**Summary Report - CPAH List**  
**Weyerhaeuser Analytical**  
**SR#03712 - Everett East Site Remediation Soils**  
**Method: EPA8270B**  
**Units: ug/Kg (PPB)**

Client ID		7-2B-CS-2	7-2B-CW-1	7-2B-CW-2
Sample Date and Time		04/18/97 10:45	04/18/97 10:30	04/18/97 10:35
Lab ID		80558	80559	80560
<u>Analyte</u>	<u>CAS</u>			
Benzo(a)Anthracene	56-55-3	960	500 U	430 U
Chrysene	218-01-9	1300	570	430 U
Benzo(b)fluoranthene	205-99-2	1500	1100	510
Benzo(k)fluoranthene	207-08-9	730 U	500 U	430 U
Benzo(a)pyrene	50-32-8	1100	600	420 J
Indeno(1,2,3-cd)pyrene	193-39-5	910	500 J	430 U
Dibenzo(a,h)anthracene	53-70-3	730 U	500 U	430 U
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	70%	70%	70%
Phenol-d5	(24-113)	76%	73%	75%
Nitrobenzene-d5	(23-120)	66%	71%	71%
2-Fluorobiphenyl	(30-115)	74%	78%	76%
2,4,6-Tribromophenol	(19-122)	90%	76%	82%
Terphenyl-d14	<sup>1405</sup> (18-137)	104%	73%	79%
2-Chlorophenol-d4	(advisory)	74%	74%	76%
1,2-Dichlorobenzene-d4	(advisory)	46%	65%	68%
<b>Date Extracted</b>		04/18/97	04/18/97	04/18/97
<b>Date Analyzed</b>		04/22/97	04/21/97	04/21/97

000010

**Summary Report - CPAH List**  
**Weyerhaeuser Analytical**  
**SR#03712 - Everett East Site Remediation Soils**  
**Method: EPA8270B**  
**Units: ug/Kg (PPB)**

<b>Client ID</b>		<b>DUPLICATE #2</b>	<b>Method Blank</b>
<b>Sample Date and Time</b>		08/09/95 00:00	
<b>Lab ID</b>		80566	SBL3T1_041897
<u>Analyte</u>	<u>CAS</u>		
Benzo(a)Anthracene	56-55-3	2300	220 U
Chrysene	218-01-9	2700	220 U
Benzo(b)fluoranthene	205-99-2	3100	220 U
Benzo(k)fluoranthene	207-08-9	950	220 U
Benzo(a)pyrene	50-32-8	2500	220 U
Indeno(1,2,3-cd)pyrene	193-39-5	2200	220 U
Dibenzo(a,h)anthracene	53-70-3	540 U	220 U
<u>Surrogates %Recovery</u>	<u>Limits</u>		
2-Fluorophenol	(25-121)	70%	75%
Phenol-d5	(24-113)	72%	73%
Nitrobenzene-d5	(23-120)	62%	87%
2-Fluorobiphenyl	(30-115)	71%	80%
2,4,6-Tribromophenol	(19-122)	88%	86%
Terphenyl-d14	( <del>18</del> 18-137)	106%	96%
2-Chlorophenol-d4	(advisory)	74%	77%
1,2-Dichlorobenzene-d4	(advisory)	57%	81%
<b>Date Extracted</b>		04/18/97	04/18/97
<b>Date Analyzed</b>		04/22/97	04/21/97

2D  
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: WEYERHAEUSER

Contract:

Lab Code: WEYER

Case No.: 3712

Method: 8270B

SDG No.: 80549

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	7-2B-CB-4	93D	88	92	89	109	115	94	76	0
02	7-2B-CN-3	91D	93D	76	85	109	117	87	77	0
03	7-2B-CB-3	98D	91	93	91	115	125	99D	89	0
04	SBL3T1_041897	75	73	87	80	86	96	77	81	0
05	SLC3T1_041897	74	76	86	82	78	98	79	80	0
06	7-2B-CS-1	96D	88	89	91	124D	135	94	80	0
07	7-2B-CN-1	78	74	78	83	78	78	80	74	0
08	7-2B-CW-1	70	73	71	78	76	73	74	65	0
09	7-2B-CW-2	70	75	71	76	82	79	76	68	0
10	7-2B-CN-2	80	84	77	81	88	107	86	70	0
11	7-2B-CS-2	70	76	66	74	90	104	74	46*	1
12	7-2B-CE-1	80	86	75	83	82	111	87	68	0
13	7-2B-CB-2	76	76	74	79	93	100	80	65	0
14	7-2B-CB-2MS	85	89	81	86	101	123	91	79	0
15	7-2B-CB-2MSD	81	86	77	86	94	113	89	78	0
16	DUPLICATAE #2	70	72	62	71	88	106	74	57	0
17	7-2B-CB-1	74	78	67	79	94	112	80	60	0
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

	QC LIMITS	8270B LIMITS
S1 (2FP) = 2-Fluorophenol	(30- 88)	(25-121)
S2 (PHL) = Phenol-d5	(38- 92)	(24-113)
S3 (NBZ) = Nitrobenzene-d5	(50-104)	(23-120)
S4 (FBP) = 2-Fluorobiphenyl	(56-104)	(30-115)
S5 (TBP) = 2,4,6-Tribromophenol	(47-119)	(19-122)
S6 (TPH) = Terphenyl-d14	(55-137)	(18-137)
S7 (2CP) = 2-Chlorophenol-d4	(45- 95)	(advisory)
S8 (DCB) = 1,2-Dichlorobenzene-d4	(49- 89)	(advisory)

# Column to be used to flag recovery values

\* Values outside of contract required QC limits

D Surrogate diluted out

3ALT  
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: WEYERHAEUSER

Contract:

Lab Code: WEYER

Case No.: 3712

Method: 8270B

SDG No.: 80549

Matrix Spike - EPA Sample No.: 7-2B-CB-2

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Phenol	4700	0.00	3900	83	34- 84
2-Chlorophenol	4700	0.00	4000	85	35- 85
1,4-Dichlorobenzene	3100	0.00	2400	77	37- 89
N-Nitrosodinpropylamine	3100	0.00	2600	84	43-101
1,2,4-Trichlorobenzene	3100	0.00	2500	81	40- 98
4-Chloro-3-Methylphenol	4700	0.00	5200	111*	38- 96
Acenaphthene	3100	450	5200	153*	42- 94
4-Nitrophenol	4700	0.00	4300	91	45- 97
2,4-Dinitrotoluene	3100	0.00	2700	87	48- 94
Pentachlorophenol	4700	460	3700	69	37-121
Pyrene	3100	6500	21000	468*	61-105

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	CONC % RPD #	QC LIMITS RPD REC.	
Phenol	4700	3700	79	5	35	34- 84
2-Chlorophenol	4700	3900	83	2	50	35- 85
1,4-Dichlorobenzene	3100	2300	74	4	27	37- 89
N-Nitrosodinpropylamine	3100	2200	71	17	38	43-101
1,2,4-Trichlorobenzene	3100	2400	77	4	23	40- 98
4-Chloro-3-Methylphenol	4700	5000	106*	4	33	38- 96
Acenaphthene	3100	3800	108*	31*	19	42- 94
4-Nitrophenol	4700	3800	81	12	50	45- 97
2,4-Dinitrotoluene	3100	2500	81	8	47	48- 94
Pentachlorophenol	4700	3600	67	3	47	37-121
Pyrene	3100	15000	274*	33	36	61-105

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 1 out of 11 outside limits

Spike Recovery: 6 out of 22 outside limits

COMMENTS:



FORM 3  
SOIL SEMIVOLATILE METHOD SPIKE RECOVERY

Lab Name: WEYERHAEUSER

Contract: EPA8270

Lab Code: WEYER

Case No.: 3712

Method: 8270B

SDG No.: 80580

Matrix Spike - Sample No.: SLC3T1\_041897 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	% REC #	QC. LIMITS REC.
Phenol	4200	2700	64	34- 84
2-Chlorophenol	4200	2900	69	35- 85
1,4-Dichlorobenzene	2800	2100	75	37- 89
N-Nitrosodipropylamine	2800	2000	71	43-101
1,2,4-Trichlorobenzene	2800	2200	78	40- 98
4-Chloro-3-Methylphenol	4200	3200	76	38- 96
Acenaphthene	2800	2200	78	42- 94
4-Nitrophenol	4200	3700	88	45- 97
2,4-Dinitrotoluene	2800	2400	86	48- 94
Pentachlorophenol	4200	4100	98	37-121
Pyrene	2800	2700	96	61-105

# Column to be used to flag recovery and RPD values with an asterisk  
\* Values outside of QC limits

COMMENTS: \_\_\_\_\_

WTPH-D Extended

Service Request: 03712  
 Analyst: C. Thomson

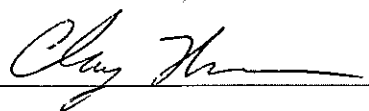
Sample ID	Blank	LCS	80549	80550	80551
Client ID	4/18/97	4/18/97	7-2B-CB-1	7-2B-CB-2	7-2B-CB-3
Analytes	mg/Kg	% Rec.	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	U	129%	54	77	84
Motor Oil Range	U		190	180	230
Surrogate Recovery	99%	89%	67%	65%	76%

Date Sampled			4/18/97	4/18/97	4/18/97
Date Extracted	4/18/97	4/18/97	4/18/97	4/18/97	4/18/97
Date Analyzed	4/20/97	4/20/97	4/21/97	4/21/97	4/21/97
Holding Time Days			0	0	0

Reporting Limit

Diesel Range	6.8		16	15	14
Motor Oil Range	17		40	37	36

Approved by



Date

4/22/97

000015

## WTPH-D Extended

Service Request: 03712  
 Analyst: C. Thomson

Sample ID	80552	80553	80554	80555	80556
Client ID	7-2B-CB-4	7-2B-CE-1	7-2B-CN-1	7-2B-CN-2	7-2B-CN-3
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	29	280	U	110	360
Motor Oil Range	110	1100	U	410	1600
Surrogate Recovery	85%	72%	88%	70%	70%

Date Sampled	4/18/97	4/18/97	4/18/97	4/18/97	4/18/97
Date Extracted	4/18/97	4/18/97	4/18/97	4/18/97	4/18/97
Date Analyzed	4/21/97	4/21/97	4/20/97	4/21/97	4/20/97
Holding Time Days	0	0	0	0	0

Reporting Limit

Diesel Range	15	18	15	15	170
Motor Oil Range	37	45	38	37	420

000016

## WTPH-D Extended

Service Request: 03712  
 Analyst: C. Thomson

Sample ID	80557	80558	80559	80560	80561
Client ID	7-2B-CS-1	7-2B-CS-2	7-2B-CW-1	7-2B-CW-2	9-1-CB-1
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	32	100	32	U	U
Motor Oil Range	100	320	95	62	U
Surrogate Recovery	79%	63%	73%	96%	96%

Date Sampled	4/18/97	4/18/97	4/18/97	4/18/97	4/18/97
Date Extracted	4/18/97	4/18/97	4/18/97	4/18/97	4/18/97
Date Analyzed	4/21/97	4/21/97	4/21/97	4/21/97	4/21/97
Holding Time Days	0	0	0	0	0

Reporting Limit

Diesel Range	14	19	15	14	14
Motor Oil Range	36	48	38	36	35

000017

## WTPH-D Extended

Service Request: 03712  
 Analyst: C. Thomson

Sample ID	80562	80563	80564	80565	80566
Client ID	9-1-CE-1	9-1-CN-1	9-1-CS-1	9-1-CW-1	Duplicate #2
Analytes	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	20	60	20	U	200
Motor Oil Range	46	750	69	U	380
Surrogate Recovery	82%	72%	66%	101%	90%

Date Sampled	4/18/97	4/18/97	4/18/97	4/18/97	4/18/97
Date Extracted	4/18/97	4/18/97	4/18/97	4/18/97	4/18/97
Date Analyzed	4/21/97	4/21/97	4/21/97	4/21/97	4/21/97
Holding Time Days	0	0	0	0	0

Reporting Limit

Diesel Range	14	14	14	14	15
Motor Oil Range	34	35	36	35	39

000018

## WTPH-D Extended

Service Request: 03712  
 Analyst: C. Thomson

Sample ID Client ID	80554Dup 7-2B-CN-1Dup	80555Dup 7-2B-CN-2Dup
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	U	140
Motor Oil Range	U	430
Surrogate Recovery	110%	73%

Date Sampled	4/18/97	4/18/97
Date Extracted	4/18/97	4/18/97
Date Analyzed	4/20/97	4/22/97
Holding Time Days	0	0

Reporting Limit

Diesel Range	16	14
Motor Oil Range	39	35

000019

## Summary Report - PCBs

Weyerhaeuser Analytical

SR #3712 - Everett East Site Remediation Soils

Method: EPA 8081

Units: ug/Kg (PPB)

Client ID		7-2B-CB-1	7-2B-CB-2	7-2B-CB-3
Sample Date and Time		04/18/97 1055	04/18/97 1100	04/18/97 1105
Lab ID		80549DL10	80550DL10	80551DL10
Analyte	CAS			
Aroclor 1016	12674-11-2	150 U	120 U	130 U
Aroclor 1221	91-57-6	300 U	240 U	270 U
Aroclor 1232	83-32-9	150 U	120 U	130 U
Aroclor 1242	132-64-9	150 U	120 U	130 U
Aroclor 1248	86-73-7	150 U	120 U	130 U
Aroclor 1254	87-86-5	<b>3800</b>	120 U	<b>1200</b>
Aroclor 1260	85-01-8	150 U	120 U	130 U
Surrogates	QC Limits			
TCMX (column 2)	(50-150)	113%	112%	111%
DCB (column 2)	(50-150)	127%	133%	118%
Date Extracted		04/18/97	04/18/97	04/18/97
Date Analyzed		04/21/97	04/21/97	04/21/97

000020

# Summary Report - PCBs

Weyerhaeuser Analytical

SR #3712 - Everett East Site Remediation Soils

Method: EPA 8081

Units: ug/Kg (PPB)

Client ID		7-2B-CB-4	7-2B-CE-1	7-2B-CN-1
Sample Date and Time		04/18/97 1110	04/18/97 1050	04/18/97 1015
Lab ID		80552DL10	80553DL10	80554DL10
Analyte	CAS			
Aroclor 1016	12674-11-2	130 U	3400 U	130 U
Aroclor 1221	91-57-6	250 U	290 U	260 U
Aroclor 1232	83-32-9	130 U	150 U	130 U
Aroclor 1242	132-64-9	130 U	150 U	130 U
Aroclor 1248	86-73-7	130 U	150 U	130 U
Aroclor 1254	87-86-5	<b>760</b>	<b>41000</b>	130 U
Aroclor 1260	85-01-8	130 U	150 U	130 U
Surrogates	QC Limits			
TCMX (column 2)	(50-150)	120%	90%	123%
DCB (column 2)	(50-150)	136%	69%	158%
Date Extracted		04/18/97	04/18/97	04/18/97
Date Analyzed		04/21/97	04/21/97	04/21/97

**000021**



## Summary Report - PCBs

Weyerhaeuser Analytical

SR #3712 - Everett East Site Remediation Soils

Method: EPA 8081

Units: ug/Kg (PPB)

Client ID		7-2B-CN-2	7-2B-CN-3	7-2B-CS-1
Sample Date and Time		04/18/97 1020	04/18/97 1025	04/18/97 1040
Lab ID		80555DL10	80556DL10	80557DL10
Analyte	CAS			
Aroclor 1016	12674-11-2	140 U	150 U	120 U
Aroclor 1221	91-57-6	280 U	300 U	230 U
Aroclor 1232	83-32-9	140 U	150 U	120 U
Aroclor 1242	132-64-9	140 U	150 U	120 U
Aroclor 1248	86-73-7	140 U	150 U	120 U
Aroclor 1254	87-86-5	<b>3100</b>	<b>26000</b>	<b>2600</b>
Aroclor 1260	85-01-8	140 U	150 U	120 U
Surrogates	QC Limits			
TCMX (column 2)	(50-150)	118%	113%	85%
DCB (column 2)	(50-150)	111%	130%	102%
Date Extracted		04/18/97	04/18/97	04/18/97
Date Analyzed		04/21/97	04/21/97	04/21/97

## Summary Report - PCBs

Weyerhaeuser Analytical

SR #3712 - Everett East Site Remediation Soils

Method: EPA 8081

Units: ug/Kg (PPB)

Client ID		7-2B-CS-2	7-2B-CW-1	7-2B-CW-2
Sample Date and Time		04/18/97 1045	04/18/97 1030	04/18/97 1035
Lab ID		80558DL10	80559DL10	80560DL10
Analyte	CAS			
Aroclor 1016	12674-11-2	180 U	120 U	110 U
Aroclor 1221	91-57-6	360 U	250 U	210 U
Aroclor 1232	83-32-9	180 U	120 U	110 U
Aroclor 1242	132-64-9	180 U	120 U	110 U
Aroclor 1248	86-73-7	180 U	120 U	110 U
Aroclor 1254	87-86-5	1400	1400	19000
Aroclor 1260	85-01-8	180 U	120 U	110 U
Surrogates	QC Limits			
TCMX (column 2)	(50-150)	89%	112%	124%
DCB (column 2)	(50-150)	94%	132%	128%
Date Extracted		04/18/97	04/18/97	04/18/97
Date Analyzed		04/21/97	04/21/97	04/21/97

## Summary Report - PCBs

Weyerhaeuser Analytical

SR #3712 - Everett East Site Remediation Soils

Method: EPA 8081

Units: ug/Kg (PPB)

Client ID		DUPLICATE 2	Method Blank
Sample Date and Time		04/18/97	
Lab ID		80566DL10	PBL2_S041897
Analyte	CAS		
Aroclor 1016	12674-11-2	140 U	130 U
Aroclor 1221	91-57-6	270 U	270 U
Aroclor 1232	83-32-9	140 U	130 U
Aroclor 1242	132-64-9	140 U	130 U
Aroclor 1248	86-73-7	140 U	130 U
Aroclor 1254	87-86-5	<b>6300</b>	130 U
Aroclor 1260	85-01-8	140 U	130 U
Surrogates	QC Limits		
TCMX (column 2)	(50-150)	115%	107%
DCB (column 2)	(50-150)	104%	122%
Date Extracted		04/18/97	04/18/97
Date Analyzed		04/21/97	04/21/97

3ALT  
SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: WEYERHAEUSER

Contract: EVERETT

Lab Code: WEYER

Case No.: 03712

Method: PCB8080

SDG No.: 80549

Matrix Spike - EPA Sample No.: 7-2B-CB-4

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aroclor-1254	645	760	1100	53	60-120

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	CONC % RPD #	QC LIMITS RPD	REC.
Aroclor-1254	645	980	34*	11.5	40	60-120

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 0 out of 2 outside limits

*0  
1160 rec conversation w/ D. CATALANO 6/2/97*

COMMENTS:

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3F  
SOIL PESTICIDE LAB CONTROL SAMPLE

Lab Name: WEYERHAEUSER

Contract: EVERETT

Lab Code: WEYER

Case No.: 03712

Method: PCB8080

SDG No.: 80549

Matrix Spike - EPA Sample No.: PLC2\_S041897

Instrument ID (1): hpdos1\_1.i

GC Column(1): DB-608 ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1254	670	640	96	60-120

Instrument ID (2): hpdos1\_1.i

GC Column(2): DB-1701 ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1254	670	580	87	60-120

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 2 outside limits

COMMENTS:



Date April 24, 1997  
From Rick Bogar  
Location WTC 2F25  
Subject **SRs# 03716 and 03727 - Everett East Site Remediation Soils**  
To Stuart Triolo - Everett 34

Analytical results are attached for the above referenced service requests.

Thank you for the opportunity to be of service. Please call me at (206) 924-6521 if you have questions about the results or require any additional information.

Attachment

cc: Matt Dalton  
Dalton, Olmsted & Fuglevand  
11711 Northcreek Parkway South, Suite 101  
Bothell WA 98011



32901 Weyerhaeuser Way South  
Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel (206) 924 6872  
Fax (206) 924 6654

## SDG NARRATIVE

### Organic Analysis

WEYERHAEUSER (WEYER)

ANALYTICAL AND TESTING SERVICES

Case Number 3716

SDG Number 80580

PROJECT: EVERETT EAST SITE REMEDIATION SOILS/DALTON, OLMSTED & FUGLEVAND 120-2974670

The samples from this SDG were received on 4/21/97. The SDG was composed of soil samples for analysis of petroleum hydrocarbons by WTPH-D with acid/silica clean-up and CPAHs by EPA 8270b. The following analyses were performed:

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
8-1-CB-1	80580	SOIL	WTPH-D-A/S
8-1-CB-1DUP	80580DUP	SOIL	WTPH-D-A/S
8-1-CE-1	80581	SOIL	WTPH-D-A/S
8-1-CN-1	80582	SOIL	WTPH-D-A/S
8-1-CS-1	80583	SOIL	WTPH-D-A/S
8-1-CW-1	80584	SOIL	WTPH-D-A/S
8-3B-CB-1	80585	SOIL	WTPH-D-A/S
8-3B-CE-1	80586	SOIL	WTPH-D-A/S
8-3B-CN-1	80587	SOIL	WTPH-D-A/S
8-3B-CS-1	80588	SOIL	WTPH-D-A/S
8-3B-CW-1	80589	SOIL	WTPH-D-A/S
8-4-CB-1	80590	SOIL	EPA8270b; WTPH-D-A/S
8-4-CE-1	80591	SOIL	EPA8270b; WTPH-D-A/S

000001

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
8-4-CN-1	80592	SOIL	EPA8270b; WTPH-D-A/S
8-4-CS-1	80593	SOIL	EPA8270b; WTPH-D-A/S
8-4-CW-1	80594	SOIL	EPA8270b; WTPH-D-A/S
LCS 4/21/97	LCS 4/21/97	Fortified Blank	WTPH-D-A/S
Fortified Blank	LC13S_042197	Fortified Blank	EPA8270b

Laboratory comments for this sample delivery group are listed below. The comments are broken up into categories for ease of explanation.

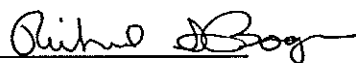
1. PAH

- a) No comments.

2. WTPH-D-A/S

- a) Motor Oil range organics were detected in the method blank at a concentration slightly above the reporting limit. The concentration detected is well below the requested 200 mg/Kg reporting limit.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

  
 Richard Bogar  
 Chromatography Team Leader

9/24/97  
 Date

000002



Please feel free to contact me with any questions concerning this data report. I can be reached at  
(206) 924-6521

Sincerely,

A handwritten signature in cursive script that reads "Richard Bogar". The signature is written in black ink and includes a horizontal flourish at the end.

Richard Bogar  
Weyerhaeuser Analytical & Testing Services

000003

Sample Analysis Request/Chain of Custody Form

Date 1/21/97  
Page 2 of 2

Facility <u>Everett East Site</u> Project Manager (print) <u>Steve Trudo</u>		Project Manager (print) <u>Steve Trudo</u> Sampler Name (print) <u>Ferry Olwsted</u>		Recorded By (signature) <u>[Signature]</u>		Matrix <u>Water</u>		Preservative <u>None</u>		Number of Containers		Analyses Requested (circle or write in parameters)		Notes	
Weyerhaeuser Account No. <u>120-2974670</u>		Consultant Address <u>Olwsted DOT</u>		Phone No. <u>See Sheet</u>		HCl		H <sub>2</sub> SO <sub>4</sub>		HNO <sub>3</sub>		Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>		Filtered	
Sampled by: <u>[Signature]</u>		Date (m/d/y)		Time (hh:mm)		Depth (ft/m)		Matrix		Preservative		pH Cond TDS TSS Color Tannins		Volatile Organics / BTEX	
Method		Date (m/d/y)		Time (hh:mm)		Depth (ft/m)		Matrix		Preservative		Semi-volatile Organics		TPH: 418.1 TPH-G TPH-DX	
8-1-CS-1		4/21/97		1410		0-1.5		X		X		Metals (list below)		NH <sub>3</sub> HCO <sub>3</sub> CO <sub>3</sub> Cl F NO <sub>3</sub> SO <sub>4</sub>	
8-1-CE-1		11		1405		0-1.5		X		X		Ca Mg Na K Fe Mn		AOX	
8-1-CW-1		11		1415		0-1.5		X		X		Dioxin: Total / 2,3,7,8-TCDD / 2,3,7,8-TCDF		CN	
8-1-CB-1		11		1420		1.5		X		X		TCLP: Metals VOA SVOA Pest Herb PCBs		BOD P-ortho	
Method		Date (m/d/y)		Time (hh:mm)		Depth (ft/m)		Matrix		Preservative		TKN P-total TOC COD		Notes	

Method: G, grab; D, depth composite; T, time composite. Depth required for soil or sediment samples.

Reporting and QA/QC Requirements

Samples on Ice or Blue Ice  
 CLP Package  
 NPDES Permit  
 Other: \_\_\_\_\_  
 Electronic Report

RESULTS TO: M. Decker DOT

CC: Steve Trudo

WATS/WTC  
 WATSINB  
 Other: \_\_\_\_\_

Relinquished By Sampler (signature): [Signature] Date: 4/21/97 Time: 1500  
 Relinquished By (signature): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished By (signature): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received By (signature): \_\_\_\_\_  
 Received By (signature): \_\_\_\_\_  
 Received For Laboratory By (signature): Risa Dean  
 Samples Received Intact: yes  
 Shipping Method: \_\_\_\_\_  
 Airbill No.: \_\_\_\_\_  
 Cooler Temp: \_\_\_\_\_ °C

Remarks/Detection Limit Requirements

See Sheet 1

00000A

Sample Analysis Request/Chain of Custody Form

<b>Facility</b> Everett East Side <b>Sampler's Project No.</b> SOST 34 Project Manager (print) Stuart Triola		<b>Analyses Requested</b> (circle or write in parameters) TKN P-total TOC COD BOD P-ortho CN Dioxin: Total / 2,3,7,8-TCDD / 2,3,7,8-TCDF TCLP: Metals VOA SVOA Pest Herb PCBs AOX NH <sub>3</sub> HCO <sub>3</sub> CO <sub>3</sub> Cl F NO <sub>3</sub> SO <sub>4</sub> Metals (list below) Ca Mg Na K Fe Mn TPH: 418.1 TPH-DX Semi-volatile Organics Volatile Organics / BTEX pH Cond TDS Color Tannins		<b>Notes</b> * cut TPH - DX w/s 65 Acid leach cleanup 12 hr TPH turnaround 45 hr CPATH / PEP per turnaround	
<b>Weyerhaeuser Account No.</b> 120-2974670 <b>Sampled by:</b> J. O'Connell / DOF 4711 Northcrest Pkwy Ste 101 Everett WA 98011 Phone No. 425-7905 FAX 425-7617		<b>Sampler Name (print)</b> Terry O'Connell <b>Recorded By (signed)</b> <i>Terry O'Connell</i>		<b>Number of Containers</b>	
<b>Sample Description (ID, Date, Time are Required)</b> Field Sample ID (15 characters max.) Time (hh:mm) Date (m/d/y) Depth (ft/m)		<b>Matrix</b> Water Soil/Sed Oil HCl H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> Na <sub>2</sub> SO <sub>3</sub>		<b>Preservative</b> Filtered	
Method 8-4-CN-1 8-4-CE-1 8-4-CS-1 8-4-CW-1 8-4-CB-1 8-3B-CN-1 8-3B-CE-1 8-3B-CS-1 8-3B-CW-1 8-3B-CB-1 8-1-C4-1		Date 4/21/97 1300 1305 1310 1315 1320 1325 1330 1335 1340 1400		Depth required for soil or sediment samples. 0-1 0-1 0-1.3 0-0.5 1.5 0-1.5 0-1.5 0-1.5 0-1.5 2 0-1.5	
<b>Reporting and QA/QC Requirements</b> Results to: <i>YH Dalton</i> CC: <i>Stuart Triola</i> 339-2786 <input checked="" type="checkbox"/> Samples on Ice or Blue Ice Lab Turn-Around Time <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 7 Day <input type="checkbox"/> 2-3 wk Date Due: <b>Laboratory</b> <input type="checkbox"/> WATSWTC <input type="checkbox"/> WATS/NB <input type="checkbox"/> Other:		<b>Chain of Custody and Shipping Method Record</b> Relinquished By Sampler (signature): <i>[Signature]</i> Date: 4/21/97 Time: 1500 Relinquished By (signature): _____ Date: _____ Time: _____ Relinquished By (signature): _____ Date: _____ Time: _____		Shipping Method Airbill No.	
Lab SR#: _____ Case ID: _____ SDG ID: _____		Received For Laboratory By (signature): <i>Terry O'Connell</i> Samples Received Intact: <i>YH</i> Date: 4-22-97 Time: 4:45 pm Cooler Temp: _____ °C		Received By (signature): _____ Received By (signature): _____ Received For Laboratory By (signature): _____ Samples Received Intact: _____ Date: _____ Time: _____ Cooler Temp: _____ °C	

000005

**Summary Report - CPAH PCP List**  
**Weyerhaeuser Analytical**  
**SR03716 - Everett East Site Remediation Soils**  
Method: EPA8270  
Units: ug/Kg (PPB)

Client ID		8-4-CB-1	8-4-CE-1	8-4-CN-1	8-4-CS-1
Sample Date and Time		04/21/97 13:15	04/21/97 13:00	04/21/97 12:55	04/21/97 13:05
Lab ID		80590	80591	80592	80593
<u>Analyte</u>	<u>CAS</u>				
Pentachlorophenol	87-86-5	160 U	180 U	180 U	200 U
Benzo(a)Anthracene	56-55-3	160 U	180 U	180 U	200 U
Chrysene	218-01-9	160 U	180 U	180 U	200 U
Benzo(b)fluoranthene	205-99-2	160 U	180 U	180 U	200 U
Benzo(k)fluoranthene	207-08-9	160 U	180 U	180 U	200 U
Benzo(a)pyrene	50-32-8	160 U	180 U	180 U	200 U
Indeno(1,2,3-cd)pyrene	193-39-5	160 U	180 U	180 U	200 U
Dibenzo(a,h)anthracene	53-70-3	160 U	180 U	180 U	200 U
<u>Surrogates % Recovery</u>	<u>Limits</u>				
2-Fluorophenol	(25-121)	67%	60%	57%	63%
Phenol-d5	(24-113)	69%	62%	60%	67%
Nitrobenzene-d5	(23-120)	70%	63%	58%	66%
2-Fluorobiphenyl	(30-115)	70%	65%	61%	66%
2,4,6-Tribromophenol	(19-122)	74%	67%	69%	71%
Terphenyl-d14	(18-137)	66%	69%	75%	70%
2-Chlorophenol-d4	(advisory)	72%	63%	60%	68%
1,2-Dichlorobenzene-d4	(advisory)	68%	55%	55%	64%
Date Extracted		04/22/97	04/21/97	04/21/97	04/21/97
Date Analyzed		04/22/97	04/22/97	04/22/97	04/22/97

**Summary Report - CPAH PCP List**  
**Weyerhaeuser Analytical**  
**SR03716 - Everett East Site Remediation Soils**  
**Method: EPA8270**  
**Units: ug/Kg (PPB)**

Client ID		8-4-CW-1	Blank1	Blank2
Sample Date and Time		04/21/97 13:10		
Lab ID		80594	BL13S_042197	BL23S_042297
<u>Analyte</u>	<u>CAS</u>			
Pentachlorophenol	87-86-5	180 U	160 U	160 U
Benzo(a)Anthracene	56-55-3	180 U	160 U	160 U
Chrysene	218-01-9	180 U	160 U	160 U
Benzo(b)fluoranthene	205-99-2	180 U	160 U	160 U
Benzo(k)fluoranthene	207-08-9	180 U	160 U	160 U
Benzo(a)pyrene	50-32-8	180 U	160 U	160 U
Indeno(1,2,3-cd)pyrene	193-39-5	180 U	160 U	160 U
Dibenzo(a,h)anthracene	53-70-3	180 U	160 U	160 U
<u>Surrogates % Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	64%	64%	63%
Phenol-d5	(24-113)	68%	66%	64%
Nitrobenzene-d5	(23-120)	68%	70%	70%
2-Fluorobiphenyl	(30-115)	72%	70%	72%
2,4,6-Tribromophenol	(19-122)	64%	60%	70%
Terphenyl-d14	(18-137)	69%	67%	67%
2-Chlorophenol-d4	(advisory)	70%	68%	68%
1,2-Dichlorobenzene-d4	(advisory)	66%	67%	68%
<b>Date Extracted</b>		04/21/97	04/21/97	04/22/97
<b>Date Analyzed</b>		04/22/97	04/22/97	04/22/97

## WTPH-D Extended

Service Request: 03716  
 Analyst: C. Thomson

Sample ID	Blank	LCS	80580	80581	80582
Client ID	4/21/97	4/21/97	8-1-CB-1	8-1-CE-1	8-1-CN-1
<u>Analytes</u>	<u>mg/Kg</u>	<u>% Rec.</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	U	101%	1400	1800	1900
Motor Oil Range	17		4400	5400	4700
Surrogate Recovery	99%	90%	0 D	0 D	0 D


0 D - No surrogate recovery is available due to matrix interference.

Date Sampled			4/21/97	4/21/97	4/21/97
Date Extracted	4/21/97	4/21/97	4/21/97	4/21/97	4/21/97
Date Analyzed	4/22/97		4/22/97	4/22/97	4/22/97
Holding Time Days			0	0	0

Reporting Limit

Diesel Range	6.8		140	140	130
Motor Oil Range	17		350	360	320

Approved by



Date

4/23/97

000008

## WTPH-D Extended

Service Request: 03716  
 Analyst: C. Thomson

Sample ID	80583	80584	80585	80586	80587
Client ID	8-1-CS-1	8-1-CW-1	8-3B-CB-1	8-3B-CE-1	8-3B-CN-1
Analytes	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	200	98	13	22	180
Motor Oil Range	550	270	77	120	740
Surrogate Recovery	95%	73%	71%	73%	65%

Date Sampled	4/21/97	4/21/97	4/21/97	4/21/97	4/21/97
Date Extracted	4/21/97	4/21/97	4/21/97	4/21/97	4/21/97
Date Analyzed	4/22/97	4/22/97	4/22/97	4/22/97	4/22/97
Holding Time Days	0	0	0	0	0

Reporting Limit

Diesel Range	14	7.4	7.1	6.5	25
Motor Oil Range	35	18	18	16	63

000009

## WTPH-D Extended

Service Request: 03716  
 Analyst: C. Thomson

Sample ID	80588	80589	80580Dup
Client ID	8-3B-CS-1	8-3B-CW-1	8-1-CB-1Dup
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	63	18	1300
Motor Oil Range	200	170	4300
Surrogate Recovery	70%	84%	0 D

Date Sampled	4/21/97	4/21/97	4/21/97
Date Extracted	4/21/97	4/21/97	4/21/97
Date Analyzed	4/22/97	4/22/97	4/22/97
Holding Time Days	0	0	0

Reporting Limit

Diesel Range	7.0	7.3	140
Motor Oil Range	17	18	350

000010





32901 Weyerhaeuser Way South  
Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel (206) 924 6872  
Fax (206) 924 6654

## SDG NARRATIVE

### Organic Analysis

WEYERHAEUSER (WEYER)

ANALYTICAL AND TESTING SERVICES

Case Number 3727

SDG Number 80620

PROJECT: EVERETT EAST SITE REMEDIATION SOILS/DALTON, OLMSTED &  
FUGLEVAND 120-2974670

The samples from this SDG were received on 4/22/97. The SDG was composed of soil samples for analysis of petroleum hydrocarbons by WTPH-D with acid/silica clean-up. The following analyses were performed:

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
10-1-CE-1	80620	SOIL	WTPH-D-A/S
10-1-CE-1DUP	80620DUP	SOIL	WTPH-D-A/S
10-1-CN-1	80621	SOIL	WTPH-D-A/S
10-1-CN-2	80622	SOIL	WTPH-D-A/S
10-1-CN-3	80623	SOIL	WTPH-D-A/S
10-1-CS-1	80624	SOIL	WTPH-D-A/S
10-1-CS-2	80625	SOIL	WTPH-D-A/S
10-1-CS-3	80626	SOIL	WTPH-D-A/S
10-1-CS-4	80627	SOIL	WTPH-D-A/S
10-1-CS-5	80628	SOIL	WTPH-D-A/S
10-1-CW-1	80629	SOIL	WTPH-D-A/S
10-1-CW-2	80630	SOIL	WTPH-D-A/S
10-1-CW-2DUP	80630DUP	SOIL	WTPH-D-A/S

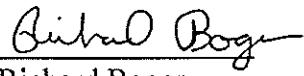
000001

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
→ DUPLICATE 3 LCS 4/22/97	80631 LCS 4/22/97	SOIL Fortified Blank	WTPH-D-A/S WTPH-D-A/S
10-1 CS2 (Field Duplicate)			

Laboratory comments for this sample delivery group are listed below. The comments are broken up into categories for ease of explanation.

1. WTPH-D-A/S
  - a) No comments for this sample delivery group.


I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

  
 Richard Bogar  
 Chromatography Team Leader

4/29/97  
 Date

Please feel free to contact me with any questions concerning this data report. I can be reached at (206) 924-6521

Sincerely,

  
 Richard Bogar  
 Weyerhaeuser Analytical & Testing Services

**Sample Analysis Request/Chain of Custody Form**

Facility <u>Everett East Site</u> Sampler's Project No. <u>20134</u>		Project Manager (print) <u>Stuart T. Old</u>		Analyzes Requested (circle or write in parameters) pH Cond TDS TSS Color Tannins Volatile Organics / BTEX Semi-volatile Organics TPH: 418.1 TPH-G TPH-D Ca Mg Na K Fe Mn Metals (list below) NH <sub>3</sub> HCO <sub>3</sub> CO <sub>3</sub> Cl F NO <sub>3</sub> SO <sub>4</sub> AOX TCLP: Metals VOA SVOA Pest Herb PCBs Dioxin: Total / 2,3,7,8-TCDD / 2,3,7,8-TCDF CN BOD P-ortho TKN P-total TOC COD		Notes
Weyerhaeuser Account No. <u>120-2974670</u> Sampled by: <u>J. P. Innes / DOT</u> <input type="checkbox"/> Facility <input type="checkbox"/> E&ASWTC <input type="checkbox"/> E&ASINB Address <u>1711 Northcross Highway, Ste 101</u> <u>Brookdale WA 98001</u> Phone <u>206-886-7901</u> FAX <u>486-7657</u>		Sampler Name (print) <u>Leah O'Jusied</u> Recorded By (signature) <u>[Signature]</u>		Number of Containers		
Sample Description (ID, Date, Time are Required)		Matrix Water Soil/Sed Oil Filtered		Preservative HCl H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>		
Method	Field Sample ID (15 characters max.)	Date (m/d/y)	Time (hh:mm)	Depth (ft/m)		
G	10-1-CN-1	4/22/97	1200	1-2		
G	10-1-CN-2		1205	0-2		
G	10-1-CN-3		1210	0-2		
G	10-1-CE-1		1215	0-2		
G	10-1-CE-CS-1		1220	0-2		
G	10-1-CS-2		1225	0-2.5		
G	Duplicate 3					
G	10-1-CS-3		1230	0-2		
G	10-1-CS-4		1235	0-2		
G	10-1-CS-5		1240	0-2		
G	10-1-CW-1		1245	0-1.5		
Method: G, grab; D, depth composite; T, time composite. Depth required for soil or sediment samples.						
Reporting and QA/QC Requirements <input checked="" type="checkbox"/> Samples on Ice or Blue Ice Lab Turn-Around Time <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 7 Day <input type="checkbox"/> 2-3 wk Date Due: Laboratory <input type="checkbox"/> WATSWTC <input type="checkbox"/> WATSINB <input type="checkbox"/> Other: Lab SR#: _____ Case ID: _____ SDG ID: _____						
Remarks/Detection Limit Requirements *WTPH-D X W / SG / Acid Wash						
Sample Chain of Custody and Shipping Method Record Relinquished By Sampler (signature) <u>[Signature]</u> Date <u>4/22/97</u> Time <u>1500</u> Relinquished By (signature) <u>[Signature]</u> Date _____ Time _____ Relinquished By (signature): _____ Date _____ Time _____ Received By (signature): _____ Date _____ Time _____ Received By (signature): _____ Date _____ Time _____ Received For Laboratory By (signature): <u>[Signature]</u> Date <u>4/23/97</u> Time <u>15:45</u> Samples Received Intact: <u>yes</u> Cooler Temp: <u>4</u> °C Shipping Method: _____ Airbill No. _____						

000003

Sample Analysis Request/Chain of Custody Form

<b>Facility</b> <u>East Side</u> <b>Sampler's Project No.</b> <u>501</u>		<b>Project Manager (print)</b> <u>Steve Trala</u>		<b>Analyses Requested</b> (circle or write in parameters) TKN P-tolal TOC COD BOD P-ortho CN Dioxin: Total / 2,3,7,8-TCDD / 2,3,7,8-TCDF TCLP: Metals VOA SVOA Pest Herb PCBs AOX NH <sub>3</sub> HCO <sub>3</sub> CO <sub>3</sub> Cl F NO <sub>3</sub> SO <sub>4</sub> Metals (list below) Ca Mg Na K Fe Mn TPH: 418.1 TPH-G TPH-DX Semi-volatile Organics Volatile Organics / BTEX pH Cond TDS TSS Color Tannins Number of Containers		<b>Notes</b>	
<b>Weyerhaeuser Account No.</b> <u>120-2979670</u> <b>Sampled by:</b> <u>Oliver Dief</u> <input type="checkbox"/> Facility <input type="checkbox"/> E&AS/WTC <input type="checkbox"/> E&AS/NB		<b>Sampler Name (print)</b> <u>Tony Dusted</u> <b>Recorded By (signed)</b> 		<b>Matrix</b> Water <input checked="" type="checkbox"/> Oil <input type="checkbox"/> Soil/Sed <input type="checkbox"/> HCl <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> <input type="checkbox"/> Filtered <input type="checkbox"/>		<b>Preservative</b>	
<b>Sample Description (ID, Date, Time are Required)</b> Field Sample ID (15 characters max.) Date (m/d/y) Time (hh:mm) Depth (ft/m)		Date Time Depth		Date Time		Date Time	
Method <u>510-1-CW-2</u>		Date <u>9/22/97</u>		Time <u>1250</u>		Depth <u>04-2</u>	
Method: G, grab; D, depth composite; T, time composite.		Depth required for soil or sediment samples.		Reporting and QA/QC Requirements <input checked="" type="checkbox"/> CLP Package <input type="checkbox"/> NPDES Permit <input type="checkbox"/> Other. <input type="checkbox"/> Electronic Report		Remarks/Detection Limit Requirements <u>WPH-DX w/SG/Acid Wash</u>	
Laboratory <input type="checkbox"/> WATSWTC <input type="checkbox"/> WATSINB <input type="checkbox"/> Other:		Relinquished By Sampler (signature): 		Date <u>9/22/97</u>		Received By (signature): Date Time	
Lab SR#: _____ Case ID: _____ SDG ID: _____		Relinquished By (signature): 		Date Time		Received By (signature): Date Time	
Shipping Method		Airbill No.		Received For Laboratory By (signature): <u>Steve Trala</u>		Received For Laboratory By (signature): <u>Steve Trala</u>	
Samples Received Intact:		Cooler Temp:		Samples Received Intact:		Cooler Temp:	

000004

## WTPH-D Extended

Service Request: 03727  
 Analyst: C. Thomson

Sample ID	Blank	LCS	80620	80621	80622
Client ID	4/22/97	4/22/97	10-1-CE-1	10-1-CN-1	10-1-CN-2
<u>Analytes</u>	<u>mg/Kg</u>	<u>% Rec.</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	U	106%	640	4800	U
Motor Oil Range	U		140	3000	26
Surrogate Recovery	102%	108%	90%	124%	110%

Date Sampled			4/22/97	4/22/97	4/22/97
Date Extracted	4/22/97	4/22/97	4/22/97	4/22/97	4/22/97
Date Analyzed	4/23/97	4/23/97	4/23/97	4/23/97	4/23/97
Holding Time Days			0	0	0

Reporting Limit

Diesel Range	6.8		38	190	7.2
Motor Oil Range	17		94	490	18

Approved by



Date

4/24/97

000005

## WTPH-D Extended

Service Request: 03727  
 Analyst: C. Thomson

Sample ID	80623	80624	80625	80626	80627
Client ID	10-1-CN-3	10-1-CS-1	10-1-CS-2	10-1-CS-3	10-1-CS-4
Analytes	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	16	540	3500	33	180
Motor Oil Range	45	320	1400	29	47
Surrogate Recovery	90%	77%	108%	92%	79%

Date Sampled	4/22/97	4/22/97	4/22/97	4/22/97	4/22/97
Date Extracted	4/22/97	4/22/97	4/22/97	4/22/97	4/22/97
Date Analyzed	4/23/97	4/23/97	4/23/97	4/23/97	4/23/97
Holding Time Days	0	0	0	0	0

Reporting Limit

Diesel Range	6.5	33	140	7.4	7.1
Motor Oil Range	16	83	360	18	18

000006

## WTPH-D Extended

Service Request: 03727  
 Analyst: C. Thomson

Sample ID	80628	80629	80630	80631	80620Dup
Client ID	10-1-CS-5	10-1-CW-1	10-1-CW-2	Duplicate #3	10-1-CE-1Dup
Analytes	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	U	89	20	3700	840
Motor Oil Range	23	180	25	1500	110
Surrogate Recovery	93%	88%	105%	107%	94%

Date Sampled	4/22/97	4/22/97	4/22/97	4/22/97	4/22/97
Date Extracted	4/22/97	4/22/97	4/22/97	4/22/97	4/22/97
Date Analyzed	4/23/97	4/23/97	4/23/97	4/23/97	4/23/97
Holding Time Days	0	0	0	0	0

Reporting Limit

Diesel Range	8.5	7.6	7.3	140	30
Motor Oil Range	21	19	18	350	74

000007

## WTPH-D Extended

Service Request: 03727  
Analyst: C. Thomson

Sample ID	80630Dup
Client ID	10-1-CW-2Dup
<u>Analytes</u>	<u>mg/Kg</u>
Diesel Fuel Range	18
Motor Oil Range	25
Surrogate Recovery	97%

Date Sampled 4/22/97  
Date Extracted 4/22/97  
Date Analyzed 4/23/97  
Holding Time Days 0

Reporting Limit

Diesel Range 7.5  
Motor Oil Range 19  
Dilution 5

000008





Date April 25, 1997  
From Rick Bogar  
Location WTC 2F25  
Subject **SRs# 03699, 03712 and 03742 - Everett East Site Remediation Soils**  
  
To Stuart Triolo - Everett 34

Analytical results are attached for the above referenced service requests.

Thank you for the opportunity to be of service. Please call me at (206) 924-6521 if you have questions about the results or require any additional information.

**Attachment**

cc: Matt Dalton  
Dalton, Olmsted & Fuglevand  
11711 Northcreek Parkway South, Suite 101  
Bothell WA 98011



32901 Weyerhaeuser Way South  
Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel (206) 924 6872  
Fax (206) 924 6654

## SDG NARRATIVE

### Organic Analysis

WEYERHAEUSER (WEYER)

ANALYTICAL AND TESTING SERVICES

Case Number 3742

SDG Number 80714

PROJECT: EVERETT EAST SITE REMEDIATION SOILS/DALTON, OLMSTED & FUGLEVAND 120-2974670

The samples from this SDG were received on 4/23/97. The SDG was composed of soil samples for analysis of petroleum hydrocarbons by WTPH-D with acid/silica clean-up. The following analyses were performed:

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
10-1-CN-4	80714	SOIL	WTPH-D-A/S
10-1-CN-4DUP	80714DUP	SOIL	WTPH-D-A/S
10-1-CN-5	80715	SOIL	WTPH-D-A/S
10-1-CN-6	80716	SOIL	WTPH-D-A/S
10-4A-CE-1	80717	SOIL	WTPH-D-A/S
10-4A-CS-1	80718	SOIL	WTPH-D-A/S
10-4A-CW-1	80719	SOIL	WTPH-D-A/S

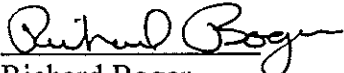
000001

Laboratory comments for this sample delivery group are listed below. The comments are broken up into categories for ease of explanation.

1. WTPH-D-A/S

- a) No comments for this sample delivery group.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

  
Richard Bogar  
Chromatography Team Leader

4/24/97  
Date

Please feel free to contact me with any questions concerning this data report. I can be reached at (206) 924-6521

Sincerely,



Richard Bogar  
Weyerhaeuser Analytical & Testing Services



Weyerhaeuser

Analytical & Consulting Services

Sample Analysis Request Chain of Custody Form

Date 4/23/97 Page 1

<b>Facility</b> Everett East Site Box 34 <b>Sampler's Project No.</b> 120-2974670 <b>Weyerhaeuser Account No.</b> 120-2974670 <b>Sampled by:</b> Terry Olwisted / DAF <input type="checkbox"/> Facility <input type="checkbox"/> E&S/WTC <input type="checkbox"/> E&S/NB		<b>Project Manager (print)</b> Stuart Triolo <b>Sampler Name (print)</b> Terry Olwisted <b>Recorded By (signed)</b> [Signature] <b>Matrix</b>		<b>Preservative</b> Water Soil/Sed Oil HCl H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Filtered		<b>Sample Description (ID, Date, Time are Required)</b> <table border="1"> <thead> <tr> <th>Field Sample ID (15 characters max.)</th> <th>Date (m/d/y)</th> <th>Time (hh:mm)</th> <th>Depth (ft/m)</th> </tr> </thead> <tbody> <tr><td>G 10-1-CN-4</td><td>4/23/97</td><td>0900</td><td>0-2</td></tr> <tr><td>G 10-1-CN-5</td><td>"</td><td>0905</td><td>0-2</td></tr> <tr><td>G 10-1-CN-6</td><td>"</td><td>0910</td><td>0-2</td></tr> <tr><td>G 10-4A-CE-1</td><td>"</td><td>1215</td><td>0.5-2</td></tr> <tr><td>G 10-4A-CS-1</td><td>"</td><td>1220</td><td>0.5-2</td></tr> <tr><td>G 10-4A-CW-1</td><td>"</td><td>1225</td><td>0.5-2</td></tr> </tbody> </table>		Field Sample ID (15 characters max.)	Date (m/d/y)	Time (hh:mm)	Depth (ft/m)	G 10-1-CN-4	4/23/97	0900	0-2	G 10-1-CN-5	"	0905	0-2	G 10-1-CN-6	"	0910	0-2	G 10-4A-CE-1	"	1215	0.5-2	G 10-4A-CS-1	"	1220	0.5-2	G 10-4A-CW-1	"	1225	0.5-2	<b>Number of Containers</b> Volatile Organics / BTEX Semi-volatile Organics TPH: 418.1 TPH-Q TPH-DX Ca Mg Na K Fe Mn Metals (list below) NH <sub>3</sub> HCO <sub>3</sub> CO <sub>3</sub> Cl F NO <sub>3</sub> SO <sub>4</sub> AOX TCLP: Metals VOA SVOA Pest Herb PCBs Dioxin: Total / 2,3,7,8-TCDD / 2,3,7,8-TCDF CN BOD P-ortho TKN P-total TOC COD		<b>Notes</b>	
Field Sample ID (15 characters max.)	Date (m/d/y)	Time (hh:mm)	Depth (ft/m)																																				
G 10-1-CN-4	4/23/97	0900	0-2																																				
G 10-1-CN-5	"	0905	0-2																																				
G 10-1-CN-6	"	0910	0-2																																				
G 10-4A-CE-1	"	1215	0.5-2																																				
G 10-4A-CS-1	"	1220	0.5-2																																				
G 10-4A-CW-1	"	1225	0.5-2																																				
<b>Reporting and QA/QC Requirements</b> <input type="checkbox"/> Samples on Ice or Blue Ice <input checked="" type="checkbox"/> Lab Turn-Around Time <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 7 Day <input type="checkbox"/> 2-3 wk Date Due: <b>Laboratory</b> <input type="checkbox"/> WATS/WTC <input type="checkbox"/> WATS/NB <input type="checkbox"/> Other: Lab SR#: _____ Case ID: _____ SDG ID: _____				<b>Reporting and QA/QC Requirements</b> <input type="checkbox"/> CLP Package <input type="checkbox"/> NPDES Permit <input type="checkbox"/> Other: <input type="checkbox"/> Electronic Report				<b>Method:</b> G, grab; D, depth composite; T, time composite. Depth required for soil or sediment samples.																															
<b>Sample Chain of Custody and Shipping Method Record</b> Relinquished By Sampler (signature): [Signature] Date: 4/23/97 Time: 1500 Relinquished By (signature): [Signature] Date: _____ Time: _____ Relinquished By (signature): _____ Date: _____ Time: _____				<b>Shipping Method</b> Received By (signature): _____ Received By (signature): _____ Received For Laboratory By (signature): [Signature] Date: 4/23/97 Samples Received Intact: [Signature] Cooler Temp: 4 °C				<b>Remarks/Detection Limit Requirements</b> WTPH-DX * w/SG/Acid Wash 24hr Yumaware																															

000003

## WTPH-D Extended

Service Request: 03742  
 Analyst: C. Thomson

Sample ID	Blank	80714	80715	80716	80717
Client ID	4/23/97	10-1-CN-4	10-1-CN-5	10-1-CN-6	10-4A-CE-1
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	U	U	16	38	380
Motor Oil Range	U	U	U	19	810
Surrogate Recovery	81%	105%	106%	95%	61%

Date Sampled		4/23/97	4/23/97	4/23/97	4/23/97
Date Extracted	4/23/97	4/23/97	4/23/97	4/23/97	4/23/97
Date Analyzed	4/23/97	4/23/97	4/23/97	4/24/97	4/24/97
Holding Time Days		0	0	0	0

Reporting Limit

Diesel Range	6.8	7.7	6.5	7.4	30
Motor Oil Range	17	19	16	18	75

Approved by

Date

4/24/97

000004

## WTPH-D Extended

Service Request: 03742  
 Analyst: C. Thomson

Sample ID	80718	80719	80714DUP
Client ID	10-4A-CS-1	10-4A-CW-1	10-1-CN-4DUP
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	7.6	19	U
Motor Oil Range	U	54	U
Surrogate Recovery	101%	86%	110%

Date Sampled	4/23/97	4/23/97	4/23/97
Date Extracted	4/23/97	4/23/97	4/23/97
Date Analyzed	4/24/97	4/24/97	4/24/97
Holding Time Days	0	0	0

Reporting Limit

Diesel Range	7.2	5.9	7.5
Motor Oil Range	18	15	19

000005



Date April 28, 1997  
From Rick Bogar  
Location WTC 2F25  
Subject **SRs# 03759 - Everett East Site Remediation Soils**  
  
To Stuart Triolo - Everett 34

Analytical results are attached for the above referenced service requests.

Thank you for the opportunity to be of service. Please call me at (206) 924-6521 if you have questions about the results or require any additional information.

**Attachment**

cc: Matt Dalton  
Dalton, Olmsted & Fuglevand  
11711 Northcreek Parkway South, Suite 101  
Bothell WA 98011



32901 Weyerhaeuser Way South  
Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel [206] 924 6872  
Fax [206] 924 6654

## SDG NARRATIVE

### Organic Analysis

WEYERHAEUSER (WEYER)

ANALYTICAL AND TESTING SERVICES

Case Number 3759

SDG Number 80788

PROJECT: EVERETT EAST SITE REMEDIATION SOILS/DALTON, OLMSTED & FUGLEVAND 120-2974670

The samples from this SDG were received on 4/24/97. The SDG was composed of soil samples for analysis of pentachlorophenol by EPA 8270b and petroleum hydrocarbons by WTPH-D with acid/silica clean-up. The following analyses were performed:

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
8-3A-CE-1	80788	SOIL	EPA8270b; WTPH-D-A/S
8-3A-CE-1DUP	80788DUP	SOIL	WTPH-D-A/S
8-3A-CE-2	80789	SOIL	EPA8270b; WTPH-D-A/S
8-3A-CE-3	80790	SOIL	EPA8270b; WTPH-D-A/S
8-3A-CE-3MS	80790MS	SOIL	EPA8270b
8-3A-CE-3MSD	80790MSD	SOIL	EPA8270b
8-3A-CE-4	80791	SOIL	EPA8270b; WTPH-D-A/S
8-3A-CN-1	80792	SOIL	EPA8270b; WTPH-D-A/S
8-3A-CN-2	80793	SOIL	EPA8270b; WTPH-D-A/S
8-3A-CN-3	80794	SOIL	EPA8270b; WTPH-D-A/S
8-3A-CN-4	80795	SOIL	EPA8270b; WTPH-D-A/S
8-3A-CN-5	80796	SOIL	EPA8270b; WTPH-D-A/S
8-3A-CS-1	80797	SOIL	EPA8270b; WTPH-D-A/S

**000001**



Laboratory comments for this sample delivery group are listed below. The comments are broken up into categories for ease of explanation.

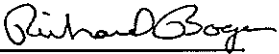
1. PCP (EPA 8270b)

a) No comments.

2. WTPH-D-A/S

a) The motor oil range concentration for the duplicate of sample 8-3A-CS-2 does not agree well with the results for the initial analysis.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

  
Richard Bogar  
Chromatography Team Leader

4/27/97  
Date

Please feel free to contact me with any questions concerning this data report. I can be reached at (206) 924-6521

Sincerely,



Richard Bogar  
Weyerhaeuser Analytical & Testing Services

000003



Weyerhaeuser

Analytical, Consulting Services

Sample Analysis Request/Chain of Custody Form

Date: 12/24/97  
Page 1 of 2

Facility: East Site SAR-34

Project Manager (print): STUART T-10

Analyses Requested (circle or write in parameters):  
 pH Cond TDS TSS Color Tannins  
 Volatile Organics / BTEX  
 Semi-volatile Organics  
 TPH: 418.1 TPH-G TPH-D  
 Ca Mg Na K Fe Mn  
 Metals (list below)  
 NH<sub>3</sub> HCO<sub>3</sub> CO<sub>3</sub> Cl F NO<sub>3</sub> SO<sub>4</sub>  
 AOX  
 TCLP: Metals VOA SVOA Pest Herb PCBs  
 Dioxin: Total / 2,3,7,8-TCDD / 2,3,7,8-TCDF  
 CN  
 BOD P-ortho  
 TKN P-total TOC COD  
 PCB 8270  
 PCP 8270

Sampler's Project No. \_\_\_\_\_

Weyerhaeuser Account No. 120-2974670

000000

Sampled by: Olumsted/Daf

Sampler Name (print): Tern Olumsted

Recorded By (signed): [Signature]

Facility Address: \_\_\_\_\_

Recorded By (signed): [Signature]

E&S/SWTC \_\_\_\_\_

Matrix: [Signature]

Preservative: \_\_\_\_\_

E&S/NB \_\_\_\_\_

Filtered: \_\_\_\_\_

Number of Containers: \_\_\_\_\_

Method	Field Sample ID (15 characters max.)	Date (m/d/y)	Time (h:m)	Depth (ft/m)	Water	Soil/Sed	Oil	HCl	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Filtered	Number of Containers	pH Cond TDS TSS Color Tannins	Volatile Organics / BTEX	Semi-volatile Organics	TPH: 418.1 TPH-G TPH-D	Ca Mg Na K Fe Mn	Metals (list below)	NH <sub>3</sub> HCO <sub>3</sub> CO <sub>3</sub> Cl F NO <sub>3</sub> SO <sub>4</sub>	AOX	TCLP: Metals VOA SVOA Pest Herb PCBs	Dioxin: Total / 2,3,7,8-TCDD / 2,3,7,8-TCDF	CN	BOD P-ortho	TKN P-total TOC COD	PCB 8270	PCP 8270		
	8-3A-CS-1	4/24/97	1345	0-2	X	X	X	X	X	X	X	X	1																	
	8-3A-CS-2		1350		X	X	X	X	X	X	X	X	1																	
	8-3A-CS-3		1355		X	X	X	X	X	X	X	X	1																	
	8-3A-CS-4		1400		X	X	X	X	X	X	X	X	1																	
	8-3A-CS-5		1405		X	X	X	X	X	X	X	X	1																	
	8-3A-CE-1		1410		X	X	X	X	X	X	X	X	1																	
	8-3A-CE-2		1415		X	X	X	X	X	X	X	X	1																	
	8-3A-CE-3		1420		X	X	X	X	X	X	X	X	1																	
	8-3A-CE-4		1422		X	X	X	X	X	X	X	X	1																	
	8-3A-CU-1		1425		X	X	X	X	X	X	X	X	1																	
	8-3A-CU-2				X	X	X	X	X	X	X	X	1																	

Method: G, grab; D, depth composite; T, time composite. Depth required for soil or sediment samples: \_\_\_\_\_

Reporting and QA/QC Requirements  
 CLP Package  
 NPDES Permit  
 Electronic Report

Results to: STUART T-10  
339-2786

Lab Turn-Around Time  
 24 Hr  
 48 Hr  
 7 Day

Laboratory  
 WATSWTC  
 WATS/NB  
 Other: \_\_\_\_\_

Relinquished By (signature): [Signature] Date: 4/24/97 Time: 1500

Relinquished By (signature): [Signature] Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received For Laboratory By (signature): [Signature] Date: 4/24/97 Time: 1640

Received By (signature): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Shipping Method: \_\_\_\_\_

Cooler Temp: 4 °C

Remarks/Detection Limit Requirements: 24 hr on WTPH-DX \* WTPH-DX with SG/acid was 98L on REP

WATSWTC: 32801 Weyerhaeuser Way South, Federal Way, WA 98003 (206-924-6293)

WATS/NB: New Bern R&D Field Station, Highway 43 North, New Bern, NC 28563 (919-633-7236)



## WTPH-D Extended

Service Request: 03759  
 Analyst: C. Thomson

Sample ID	Blank	LCS	80788	80789	80790
Client ID	4/24/97	4/24/97	8-3A-CE-1	8-3A-CE-2	8-3A-CE-3
<u>Analytes</u>	<u>mg/Kg</u>	<u>% Rec.</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	U	108%	U	34	160
Motor Oil Range	U		U	38	300
Surrogate Recovery	110%	114%	102%	80%	78%

Date Sampled			4/24/97	4/24/97	4/24/97
Date Extracted	4/24/97	4/24/97	4/24/97	4/24/97	4/24/97
Date Analyzed	4/24/97		4/25/97	4/25/97	4/25/97
Holding Time Days			0	0	0

Reporting Limit

Diesel Range	6.8		7.1	6.7	7.2
Motor Oil Range	17		18	17	18

Approved by Richard J. Bogen Date 4/27/97

000006

## WTPH-D Extended

Service Request: 03759  
 Analyst: C. Thomson

Sample ID	80791	80792	80793	80794	80795
Client ID	8-3A-CE-4	8-3A-CN-1	8-3A-CN-2	8-3A-CN-3	8-3A-CN-4
Analytes	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	42	14	130	11	170
Motor Oil Range	41	45	110	26	140
Surrogate Recovery	92%	83%	74%	90%	73%

Date Sampled	4/24/97	4/24/97	4/24/97	4/24/97	4/24/97
Date Extracted	4/24/97	4/24/97	4/24/97	4/24/97	4/24/97
Date Analyzed	4/25/97	4/25/97	4/25/97	4/25/97	4/25/97
Holding Time Days	0	0	0	0	0

Reporting Limit

Diesel Range	7.3	7.2	7.1	7.1	7.1
Motor Oil Range	18	18	18	18	18

000007

## WTPH-D Extended

Service Request: 03759  
 Analyst: C. Thomson

Sample ID	80796	80797	80798	80799	80800
Client ID	8-3A-CN-5	8-3A-CS-1	8-3A-CS-2	8-3A-CS-3	8-3A-CS-4
Analytes	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	U	29	30	U	8.4
Motor Oil Range	U	59	62	U	U
Surrogate Recovery	106%	69%	67%	96%	82%

Date Sampled	4/24/97	4/24/97	4/24/97	4/24/97	4/24/97
Date Extracted	4/24/97	4/24/97	4/24/97	4/24/97	4/24/97
Date Analyzed	4/25/97	4/25/97	4/25/97	4/25/97	4/25/97
Holding Time Days	0	0	0	0	0

Reporting Limit

Diesel Range	6.8	7.3	6.9	7.2	7.1
Motor Oil Range	17	18	17	18	18

000008

WTPH-D Extended

Service Request: 03759  
 Analyst: C. Thomson

→ 8-3A-CS-5

Sample ID	80801	80802	80803	80804	80805
Client ID	8-3A-CS-5	8-3A-CW-1	8-3A-CW-2	8-3A-CW-3	Duplicate #4
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	U	7.4	25	13	U
Motor Oil Range	U	U	40	18	U
Surrogate Recovery	107%	96%	79%	94%	95%

Date Sampled	4/24/97	4/24/97	4/24/97	4/24/97	4/24/97
Date Extracted	4/24/97	4/24/97	4/24/97	4/24/97	4/24/97
Date Analyzed	4/25/97	4/25/97	4/25/97	4/25/97	4/25/97
Holding Time Days	0	0	0	0	0

Reporting Limit

Diesel Range	6.9	7.2	7.0	6.9	7.2
Motor Oil Range	17	18	17	17	18

## WTPH-D Extended

Service Request: 03759  
 Analyst: C. Thomson

Sample ID	80788Dup	80798Dup
Client ID	8-3A-CE-1Dup	8-3A-CS-2Dup
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	U	29
Motor Oil Range	U	28
Surrogate Recovery	98%	89%

Date Sampled	4/24/97	4/24/97
Date Extracted	4/24/97	4/24/97
Date Analyzed	4/25/97	4/25/97
Holding Time Days	0	0

Reporting Limit

Diesel Range	6.7	7.0
Motor Oil Range	17	17

000010



**Summary Report - Pentachlorophenol**

Weyerhaeuser Analytical

SR#03759 - Everett East Site Remediation Soils

Method: EPA8270B

Units: ug/Kg (PPB)

Client ID		8-3A-CE-1	8-3A-CE-2	8-3A-CE-3
Sample Date and Time		04/24/97 14:10	04/24/97 14:15	04/24/97 14:20
Lab ID		80788	80789	80790
<u>Analyte</u>	<u>CAS</u>			
Pentachlorophenol	87-86-5	2500 U	5700	2500 U
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	74%	73%	77%
Phenol-d5	(24-113)	80%	77%	80%
Nitrobenzene-d5	(23-120)	78%	77%	80%
2-Fluorobiphenyl	(30-115)	81%	80%	87%
2,4,6-Tribromophenol	(19-122)	72%	90%	85%
Terphenyl-d14	(18-137)	93%	97%	89%
2-Chlorophenol-d4	(advisory)	80%	79%	83%
1,2-Dichlorobenzene-d4	(advisory)	77%	73%	82%
<u>Date Extracted</u>		04/24/97	04/24/97	04/24/97
<u>Date Analyzed</u>		04/26/97	04/25/97	04/26/97

**Summary Report - Pentachlorophenol**  
**Weyerhaeuser Analytical**  
**SR#03759 - Everett East Site Remediation Soils**  
**Method: EPA8270B**  
**Units: ug/Kg (PPB)**

Client ID		8-3A-CE-4	8-3A-CN-1	8-3A-CN-2
Sample Date and Time		04/24/97 14:22	04/24/97 14:32	04/24/97 14:35
Lab ID		80791	80792	80793
<u>Analyte</u>	<u>CAS</u>			
Pentachlorophenol	87-86-5	2500 U	2500 U	2500 U
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	78%	74%	75%
Phenol-d5	(24-113)	83%	79%	80%
Nitrobenzene-d5	(23-120)	81%	78%	80%
2-Fluorobiphenyl	(30-115)	85%	79%	86%
2,4,6-Tribromophenol	(19-122)	88%	90%	87%
Terphenyl-d14	(18-137)	96%	95%	88%
2-Chlorophenol-d4	(advisory)	84%	80%	81%
1,2-Dichlorobenzene-d4	(advisory)	79%	79%	81%
Date Extracted		04/24/97	04/24/97	04/24/97
Date Analyzed		04/25/97	04/25/97	04/26/97

## Summary Report - Pentachlorophenol

Weyerhaeuser Analytical

SR#03759 - Everett East Site Remediation Soils

Method: EPA8270B

Units: ug/Kg (PPB)

Client ID		8-3A-CN-3	8-3A-CN-4	8-3A-CN-5
Sample Date and Time		04/24/97 14:37	04/24/97 14:40	04/24/97 14:45
Lab ID		80794	80795	80796
<u>Analyte</u>	<u>CAS</u>			
Pentachlorophenol	87-86-5	2500 U	6600	2500 U
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	72%	74%	71%
Phenol-d5	(24-113)	77%	79%	79%
Nitrobenzene-d5	(23-120)	75%	78%	75%
2-Fluorobiphenyl	(30-115)	83%	83%	79%
2,4,6-Tribromophenol	(19-122)	70%	84%	69%
Terphenyl-d14	(18-137)	87%	89%	87%
2-Chlorophenol-d4	(advisory)	78%	80%	78%
1,2-Dichlorobenzene-d4	(advisory)	76%	78%	76%
<u>Date Extracted</u>		04/24/97	04/24/97	04/24/97
<u>Date Analyzed</u>		04/26/97	04/26/97	04/26/97

## Summary Report - Pentachlorophenol

Weyerhaeuser Analytical

SR#03759 - Everett East Site Remediation Soils

Method: EPA8270B

Units: ug/Kg (PPB)

Client ID		8-3A-CS-1	8-3A-CS-2	8-3A-CS-3
Sample Date and Time		04/24/97 13:45	04/24/97 13:50	04/24/97 13:55
Lab ID		80797	80798	80799
<u>Analyte</u>	<u>CAS</u>			
Pentachlorophenol	87-86-5	2400 U	2500 U	2500 U
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	74%	78%	76%
Phenol-d5	(24-113)	76%	81%	77%
Nitrobenzene-d5	(23-120)	77%	80%	75%
2-Fluorobiphenyl	(30-115)	79%	84%	79%
2,4,6-Tribromophenol	(19-122)	92%	88%	86%
Terphenyl-d14	(18-137)	104%	103%	100%
2-Chlorophenol-d4	(advisory)	78%	83%	79%
1,2-Dichlorobenzene-d4	(advisory)	77%	82%	77%
<u>Date Extracted</u>		04/24/97	04/24/97	04/24/97
<u>Date Analyzed</u>		04/25/97	04/25/97	04/25/97

**Summary Report - Pentachlorophenol**

Weyerhaeuser Analytical

SR#03759 - Everett East Site Remediation Soils

Method: EPA8270B

Units: ug/Kg (PPB)

Client ID		8-3A-CS-4	8-3A-CS-5	8-3A-CW-1
Sample Date and Time		04/24/97 14:00	04/24/97 14:05	04/24/97 14:25
Lab ID		80800	80801	80802
<u>Analyte</u>	<u>CAS</u>			
Pentachlorophenol	87-86-5	2500 U	2400 U	2400 U
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	74%	58%	77%
Phenol-d5	(24-113)	80%	64%	83%
Nitrobenzene-d5	(23-120)	79%	60%	80%
2-Fluorobiphenyl	(30-115)	88%	66%	88%
2,4,6-Tribromophenol	(19-122)	68%	60%	61%
Terphenyl-d14	(18-137)	88%	85%	93%
2-Chlorophenol-d4	(advisory)	80%	65%	84%
1,2-Dichlorobenzene-d4	(advisory)	84%	65%	85%
Date Extracted		04/24/97	04/24/97	04/24/97
Date Analyzed		04/26/97	04/26/97	04/26/97

## Summary Report - Pentachlorophenol

Weyerhaeuser Analytical

SR#03759 - Everett East Site Remediation Soils

Method: EPA8270B

Units: ug/Kg (PPB)

Client ID		8-3A-CW-2	8-3A-CW-3	DUPLICATE #4
Sample Date and Time		04/24/97 14:27	04/24/97 14:30	
Lab ID		80803	80804	80805
Analyte	CAS			
Pentachlorophenol	87-86-5	2500 U	2500 U	2500 U
Surrogates %Recovery	Limits			
2-Fluorophenol	(25-121)	75%	77%	76%
Phenol-d5	(24-113)	80%	83%	81%
Nitrobenzene-d5	(23-120)	76%	78%	82%
2-Fluorobiphenyl	(30-115)	88%	85%	90%
2,4,6-Tribromophenol	(19-122)	77%	74%	68%
Terphenyl-d14	(18-137)	87%	89%	90%
2-Chlorophenol-d4	(advisory)	81%	84%	82%
1,2-Dichlorobenzene-d4	(advisory)	74%	83%	83%
Date Extracted		04/24/97	04/24/97	04/24/97
Date Analyzed		04/26/97	04/26/97	04/26/97

**Summary Report - Pentachlorophenol**  
**Weyerhaeuser Analytical**  
 SR#03759 - Everett East Site Remediation Soils  
 Method: EPA8270B  
 Units: ug/Kg (PPB)

<b>Client ID</b> <b>Sample Date and Time</b> <b>Lab ID</b>		Blank  BL13S_042497
<u>Analyte</u> Pentachlorophenol	<u>CAS</u> 87-86-5	400 U
<u>Surrogates %Recovery</u> 2-Fluorophenol Phenol-d5 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophenol Terphenyl-d14 2-Chlorophenol-d4 1,2-Dichlorobenzene-d4	<u>Limits</u> (25-121) (24-113) (23-120) (30-115) (19-122) (#18-137) (advisory) (advisory)	70% 76% 77% 77% 62% 73% 76% 76%
<b>Date Extracted</b>		04/24/97
<b>Date Analyzed</b>		04/26/97

2D  
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: WEYERHAEUSER

Contract:

Lab Code: WEYER

Case No.: 3759

Method: 8270B

SDG No.: 80788

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	8-3A-CE-2	73	77	77	80	90	97	79	73	0
02	8-3A-CE-4	78	83	81	85	88	96	84	79	0
03	8-3A-CN-1	74	79	78	79	90	95	80	79	0
04	8-3A-CS-1	74	76	77	79	92	104	78	77	0
05	8-3A-CS-2	78	81	80	84	88	103	83	82	0
06	8-3A-CS-3	76	77	75	79	86	100	79	77	0
07	BLANK	70	76	77	77	62	73	76	76	0
08	FORTIFIED BLANK	74	79	77	78	68	77	81	79	0
09	8-3A-CE-1	74	80	78	81	72	93	80	77	0
10	8-3A-CN-4	74	79	78	83	84	89	80	78	0
11	8-3A-CN-3	72	77	75	83	70	87	78	76	0
12	8-3A-CN-2	75	80	80	86	87	88	81	81	0
13	8-3A-CN-5	71	79	75	79	69	87	78	76	0
14	8-3A-CS-4	74	80	79	88	68	88	80	84	0
15	8-3A-CS-5	58	64	60	66	60	85	65	65	0
16	8-3A-CW-1	77	83	80	88	61	93	84	85	0
17	8-3A-CW-2	75	80	76	88	77	87	81	74	0
18	8-3A-CW-3	77	83	78	85	74	89	84	83	0
19	8-3A-CE-3MSD	76	83	77	89	90	92	84	79	0
20	8-3A-CE-3MS	80	86	80	90	90	93	86	83	0
21	8-3A-CE-3	77	80	80	87	85	89	83	82	0
22	DUPLICATE #4	76	81	82	90	68	90	82	83	0
23										
24										
25										
26										
27										
28										
29										
30										

QC LIMITS

S1 (2FP) = 2-Fluorophenol (30- 88)  
 S2 (PHL) = Phenol-d5 (38- 92)  
 S3 (NBZ) = Nitrobenzene-d5 (50-104)  
 S4 (FBP) = 2-Fluorobiphenyl (56-104)  
 S5 (TBP) = 2,4,6-Tribromophenol (47-119)  
 S6 (TPH) = Terphenyl-d14 (55-137)  
 S7 (2CP) = 2-Chlorophenol-d4 (45- 95) (advisory)  
 S8 (DCB) = 1,2-Dichlorobenzene-d4 (49- 89) (advisory)

# Column to be used to flag recovery values  
 \* Values outside of contract required QC limits  
 D Surrogate diluted out



Weyerhaeuser Chromatography Laboratory

RECOVERY REPORT

Client Name: Client SDG: 80788  
 Sample Matrix: SOLID Fraction: SV  
 Lab Smp Id: LC13S\_042497 Client Smp ID: Fortified Blank  
 Level: LOW Operator: Clawson  
 Data Type: MS DATA SampleType: METHSPIKE  
 SpikeList File: 8270s.spk Quant Type: ISTD  
 Method File: /chem/hp1.i/h1sv042597B.b/h18270ct5.m  
 Misc Info:

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
4 Phenol	7500	5300	70.77	34-84
6 2-Chlorophenol	7500	5500	73.25	35-85
10 1,4-Dichlorobenzen	5000	3600	72.50	37-89
17 N-Nitrosodinpropyl	5000	3900	78.25	43-101
26 1,2,4-Trichloroben	5000	3600	72.23	40-98
32 4-Chloro-3-Methylp	7500	5600	74.76	38-96
45 Acenaphthene	5000	3700	73.90	42-94
49 4-Nitrophenol	7500	6300	83.59	45-97
48 2,4-Dinitrotoluene	5000	3800	76.39	48-94
60 Pentachlorophenol	7500	5600	74.63	37-121
67 Pyrene	5000	3700	74.34	61-105

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 1 2-Fluorophenol	7500	5500	73.83	30-88
\$ 3 Phenol-d5	7500	5900	79.23	38-92
\$ 5 2-Chlorophenol-d4	7500	6100	80.86	45-95
\$ 11 1,2-Dichlorobenzen	5000	3900	78.84	49-89
\$ 19 Nitrobenzene-d5	5000	3800	77.06	50-104
\$ 37 2-Fluorobiphenyl	5000	3900	77.82	56-104
\$ 57 2,4,6-Tribromophen	7500	5100	68.14	47-119
\$ 69 Terphenyl-d14	5000	3800	76.75	55-137

3ALT  
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: WEYERHAEUSER

Contract:

Lab Code: WEYER

Case No.: 3759

Method: 8270B

SDG No.: 80788

Matrix Spike - EPA Sample No.: 8-3A-CE-3

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Phenol	7800	0.00	6200	79	34- 84
2-Chlorophenol	7800	0.00	6300	81	35- 85
1,4-Dichlorobenzene	5200	0.00	4000	77	37- 89
N-Nitrosodinpropylamine	5200	0.00	4200	81	43-101
1,2,4-Trichlorobenzene	5200	0.00	4200	81	40- 98
4-Chloro-3-Methylphenol	7800	0.00	6900	88	38- 96
Acenaphthene	5200	0.00	4600	88	42- 94
4-Nitrophenol	7800	0.00	6400	82	45- 97
2,4-Dinitrotoluene	5200	0.00	3700	71	48- 94
Pentachlorophenol	7800	0.00	7200	92	37-121
Pyrene	5200	0.00	4600	88	61-105

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	CONC % RPD #	QC LIMITS	
					RPD	REC.
Phenol	7900	6000	76	3	35	34- 84
2-Chlorophenol	7900	6100	77	3	50	35- 85
1,4-Dichlorobenzene	5200	3900	75	2	27	37- 89
N-Nitrosodinpropylamine	5200	3900	75	7	38	43-101
1,2,4-Trichlorobenzene	5200	4000	77	5	23	40- 98
4-Chloro-3-Methylphenol	7900	6700	85	3	33	38- 96
Acenaphthene	5200	4600	88	0	19	42- 94
4-Nitrophenol	7900	6200	78	3	50	45- 97
2,4-Dinitrotoluene	5200	3700	71	0	47	48- 94
Pentachlorophenol	7900	7200	91	0	47	37-121
Pyrene	5200	4600	88	0	36	61-105

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 11 outside limits

Spike Recovery: 0 out of 22 outside limits

COMMENTS:

---



Weyerhaeuser

Date April 28, 1997  
From Rick Bogar  
Location WTC 2F25  
Subject **SR# 03769 - Everett East Site Remediation Soils**  
  
To Stuart Triolo - Everett 34

Analytical results are attached for the above referenced service request(s).

Thank you for the opportunity to be of service. Please call me at (253) 924-6521 if you have questions about the results or require any additional information.

Attachment

cc: Matt Dalton  
Dalton, Olmsted & Fuglevand  
11711 Northcreek Parkway South, Suite 101  
Bothell WA 98011



32901 Weyerhaeuser Way South  
Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel (206) 924 6872  
Fax (206) 924 6654

## SDG NARRATIVE

### Organic Analysis

WEYERHAEUSER (WEYER)

ANALYTICAL AND TESTING SERVICES

Case Number 3769

SDG Number 80857

PROJECT: EVERETT EAST SITE REMEDIATION SOILS/DALTON, OLMSTED & FUGLEVAND 120-2974670

The samples from this SDG were received on 4/25/97. The SDG was composed of soil samples for analysis of petroleum hydrocarbons by WTPH-D-A/S. The following analyses were performed:

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
10-3C-CE-1	80857	SOIL	WTPH-D-A/S
10-3C-CE-1DUP	80857DUP	SOIL	WTPH-D-A/S
10-3C-CN-1	80858	SOIL	WTPH-D-A/S
10-3C-CN-2	80859	SOIL	WTPH-D-A/S
10-3C-CN-3	80860	SOIL	WTPH-D-A/S
10-4A-CE-2	80861	SOIL	WTPH-D-A/S
10-4A-CN-1	80862	SOIL	WTPH-D-A/S
10-4A-CN-2	80863	SOIL	WTPH-D-A/S
10-4A-CN-3	80864	SOIL	WTPH-D-A/S
10-4A-CW-2	80865	SOIL	WTPH-D-A/S
→ DUPLICATE #5	80866	SOIL	WTPH-D-A/S
LCS 4/25/97	LCS 4/25/97	Fortified Blank	WTPH-D-A/S

10-3C-CN3 (Field Duplicate)

000001

Laboratory comments for this sample delivery group are listed below. The comments are broken up into categories for ease of explanation.

1. WTPH-D-A/S

- a) No comments for this sample delivery group.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.



Richard Bogar  
Chromatography Team Leader

4/28/97

Date

Please feel free to contact me with any questions concerning this data report. I can be reached at (206) 924-6521

Sincerely,



Richard Bogar  
Weyerhaeuser Analytical & Testing Services

000002



WTPH-D Extended

Service Request: 03769  
 Analyst: C. Thomson

Sample ID	Blank	LCS	80857	80858	80859
Client ID	4/25/97	4/25/97	10-3C-CE-1	10-3C-CN-1	10-3C-CN-2
<u>Analytes</u>	<u>mg/Kg</u>	<u>% Rec.</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	U	115%	17	290	72
Motor Oil Range	U		29	110	86
Surrogate Recovery	81%	72%	74%	70%	74%

Date Sampled			4/25/97	4/25/97	4/25/97
Date Extracted	4/25/97	4/25/97	4/25/97	4/25/97	4/25/97
Date Analyzed	4/26/97	4/26/97	4/26/97	4/26/97	4/26/97
Holding Time Days			0	0	0

Reporting Limit

Diesel Range	6.8		7.5	15	7.0
Motor Oil Range	17		19	37	18

Approved by Clay Thomson Date 4/28/97

000004

## WTPH-D Extended

Service Request: 03769  
 Analyst: C. Thomson

Sample ID	80860	80861	80862	80863
Client ID	10-3C-CN-3	10-4A-CE-2	10-4A-CN-1	10-4A-CN-2
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	7.7	88	U	28
Motor Oil Range	16	160	16	62
Surrogate Recovery	105%	86%	94%	75%

Date Sampled	4/25/97	4/25/97	4/25/97	4/25/97
Date Extracted	4/25/97	4/25/97	4/25/97	4/25/97
Date Analyzed	4/26/97	4/26/97	4/26/97	4/26/97
Holding Time Days	0	0	0	0

Reporting Limit

Diesel Range	6.6	6.6	6.3	7.0
Motor Oil Range	16	17	16	18

000005



## WTPH-D Extended

Service Request: 03769  
 Analyst: C. Thomson

Sample ID	80864	80865	80866	80857Dup
Client ID	10-4A-CN-3	10-4A-CW-2	Duplicate #5	10-3C-CE-1Dup
Analytes	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	9.1	34	U	19
Motor Oil Range	24	100	U	47
Surrogate Recovery	90%	73%	106%	81%

Date Sampled	4/25/97	4/25/97	4/25/97	4/25/97
Date Extracted	4/25/97	4/25/97	4/25/97	4/25/97
Date Analyzed	4/26/97	4/26/97	4/26/97	4/26/97
Holding Time Days	0	0	0	0

Reporting Limit

Diesel Range	6.5	6.7	7.1	7.5
Motor Oil Range	16	17	18	19

000006





32901 Weyerhaeuser Way South  
Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel (206) 924 6872  
Fax (206) 924 6654

May 5, 1997

Matt Dalton  
Dalton, Olmsted & Fuglevand  
11711 Northcreek Parkway South, Suite 101  
Bothell WA 98011

**Subject: Service Requests 03783, 03791 and 03799 Everett East Site Remediation Soils,  
120-2974670**

Dear Matt:

Attached are copies of our final reports for the samples you requested we analyze for you. Invoicing for this work will be directly to Weyerhaeuser. If you have any questions concerning these reports, please feel free to contact me at (206) 924-6521.

Thank you for the opportunity to be of service. I look forward to working with you on future projects.

Sincerely,

A handwritten signature in cursive script that reads "Rick Bogar".

Richard Bogar, Chromatography Team Leader  
Weyerhaeuser Analytical and Testing Services



32901 Weyerhaeuser Way South  
Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel (206) 924 6872  
Fax (206) 924 6654

## SDG NARRATIVE

### Organic Analysis

WEYERHAEUSER (WEYER)

ANALYTICAL AND TESTING SERVICES

Case Number 3783

SDG Number 80981

PROJECT: EVERETT EAST SITE REMEDIATION SOILS/DALTON, OLMSTED &  
FUGLEVAND 120-2974670

The samples from this SDG were received on 4/28/97. The SDG was composed of soil samples for analysis of petroleum hydrocarbons by WTPH-D-A/S. The following analyses were performed.

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
10-4B-CE-1	80981	SOIL	WTPH-D-A/S
10-4B-CE-1DUP	80981DUP	SOIL	WTPH-D-A/S
10-4B-CN-1	80982	SOIL	WTPH-D-A/S
10-4B-CN-2	80983	SOIL	WTPH-D-A/S
10-4B-CN-3	80984	SOIL	WTPH-D-A/S
10-4B-CN-4	80985	SOIL	WTPH-D-A/S
10-4B-CN-5	80986	SOIL	WTPH-D-A/S
10-4B-CS-1	80987	SOIL	WTPH-D-A/S
10-4B-CS-2	80988	SOIL	WTPH-D-A/S
10-4B-CS-3	80989	SOIL	WTPH-D-A/S
10-4B-CW-1	80990	SOIL	WTPH-D-A/S
10-4C-CE-1	80991	SOIL	WTPH-D-A/S
10-4C-CE-1DUP	80991DUP	SOIL	WTPH-D-A/S

000001

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
10-4C-CN-1	80992	SOIL	WTPH-D-A/S
10-4C-CS-1	80993	SOIL	WTPH-D-A/S
10-4C-CW-1	80994	SOIL	WTPH-D-A/S
10-4D-CE-1	80995	SOIL	WTPH-D-A/S
10-4D-CN-1	80996	SOIL	WTPH-D-A/S
10-4D-CS-1	80997	SOIL	WTPH-D-A/S
10-4D-CW-1	80998	SOIL	WTPH-D-A/S
LCS 4/28/97	LCS 4/28/97	Fortified Blank	WTPH-D-A/S


000002

Laboratory comments for this sample delivery group are listed below. The comments are broken up into categories for ease of explanation.

1. WTPH-D-A/S-A/S

- a) No comments for this sample delivery group.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

  
Richard Bogar  
Chromatography Team Leader

5/5/97  
Date

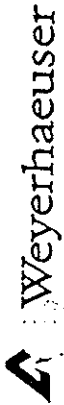
Please feel free to contact me with any questions concerning this data report. I can be reached at (206) 924-6521

Sincerely,



Richard Bogar  
Weyerhaeuser Analytical & Testing Services

000003



Analytical & Testing Services

Sample Analysis Request Chain of Custody Form

Date 4/28/97 Page 1 of 2

Facility <u>SECRET EAST SIDE</u> Sampler's Project No. <u>34</u>		Project Manager (print) <u>Stuart Fiolo</u> Sampler Name (print) <u>TeLLDunstad</u> Recorded By (signed) <u>[Signature]</u>		Matrix <u>Preservative</u> Water <input checked="" type="checkbox"/> Soil/Sed <input checked="" type="checkbox"/> Oil <input type="checkbox"/>		HCl <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> <input type="checkbox"/> Filtered <input type="checkbox"/>		Notes	
Weyerhaeuser Account No. <u>170-2974670</u> Consultant <u>Olav Smed/DORF</u> Address <u>1111 Northwood Hwy S Ste 101</u> <u>Bozeman MT 59701</u> Phone No. <u>406-486-7551 FAX 486-7651</u>		Date (m/d/y) <u>4/28/97</u> Time (hh:mm) <u>0845</u> Depth (ft/m) <u>0.3</u>		Volatile Organics / BTEX <input type="checkbox"/> Semi-volatile Organics <input type="checkbox"/> TPH: 418.1 TPH-G <input checked="" type="checkbox"/> TPH-DX <input checked="" type="checkbox"/>		Metals (list below) <input type="checkbox"/> Ca Mg Na K Fe Mn <input type="checkbox"/> NH <sub>3</sub> HCO <sub>3</sub> CO <sub>3</sub> Cl F NO <sub>3</sub> SO <sub>4</sub> <input type="checkbox"/> AOX <input type="checkbox"/> TCLP: Metals VOA SVOA Pest Herb PCBs <input type="checkbox"/> Dioxin: Total / 2,3,7,8-TCDD / 2,3,7,8-TCDF <input type="checkbox"/> CN <input type="checkbox"/> BOD P-ortho <input type="checkbox"/> TKN P-total TOC COD <input type="checkbox"/>		Analyses Requested (circle or write in parameters)	
Field Sample ID (15 characters max.) <u>10-4C-CN-1</u> <u>10-4C-CE-1</u> <u>10-4C-CS-1</u> <u>10-4C-CW-1</u> <u>10-4B-CN-1</u> <u>10-4B-CN-2</u> <u>10-4B-CN-3</u> <u>10-4B-CE-1</u> <u>10-4B-CS-1</u> <u>10-4B-CS-2</u> <u>10-4B-CS-3</u>		Date (m/d/y) <u>4/28/97</u> Time (hh:mm) <u>0845</u> Depth (ft/m) <u>0.3</u> <u>0.5</u> <u>0.5</u> <u>0.5</u> <u>0.5</u> <u>0.5</u> <u>0.5</u> <u>0.5</u> <u>0.5</u>		pH Cond TDS TSS Color Tannins <input type="checkbox"/> Volatile Organics / BTEX <input type="checkbox"/> Semi-volatile Organics <input type="checkbox"/> TPH: 418.1 TPH-G <input checked="" type="checkbox"/> TPH-DX <input checked="" type="checkbox"/> Metals (list below) <input type="checkbox"/> NH <sub>3</sub> HCO <sub>3</sub> CO <sub>3</sub> Cl F NO <sub>3</sub> SO <sub>4</sub> <input type="checkbox"/> AOX <input type="checkbox"/> TCLP: Metals VOA SVOA Pest Herb PCBs <input type="checkbox"/> Dioxin: Total / 2,3,7,8-TCDD / 2,3,7,8-TCDF <input type="checkbox"/> CN <input type="checkbox"/> BOD P-ortho <input type="checkbox"/> TKN P-total TOC COD <input type="checkbox"/>		Number of Containers <u>1</u>		Remarks/Detection Limit Requirements <u>WTPH-DX w/SS/Acid wash</u>	
Method <u>G</u>		Method: G, grab; D, depth composite; T, time composite. Depth required for soil or sediment samples.		Reporting and QA/QC Requirements <input type="checkbox"/> CLP Package <input type="checkbox"/> NPDES Permit <input type="checkbox"/> Other: <u>Electronic Report</u>		Lab Turn-Around Time <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 7 Day <input type="checkbox"/> 2-3 wk Date Due:		Laboratory <input checked="" type="checkbox"/> WATS/WTC <input type="checkbox"/> WATS/NB <input type="checkbox"/> Other:	
Samples on Ice or Blue Ice <input type="checkbox"/>		RESULTS TO: <u>R. De Oza</u> <u>DORF</u> <u>Stuart Fiolo</u> <u>335-2786</u>		Relinquished By (signature) <u>[Signature]</u> Date <u>4/28/97</u> Time <u>1200</u>		Received By (signature):		Shipping Method	
Relinquished By (signature):		Relinquished By (signature):		Relinquished By (signature):		Received By (signature):		Airbill No.	
Relinquished By (signature):		Relinquished By (signature):		Relinquished By (signature):		Received For Laboratory By (signature):		Samples Received Intact:	
Lab SR#:		Case ID:		SDG ID:		Cooler Temp:		°C	

WATS/WTC: 32901 Weyerhaeuser Way South, Federal Way, WA 98003 (206-924-6293)

WATS/NB: New Bern R&D Field Station, Highway 43 North, New Bern, NC 28563 (919-633-7238)

000004

**Sample Analysis Request Chain of Custody Form**

<b>Facility</b> <u>SEBASTIAN EAST SITE</u> <b>Sampler's Project No.</b> <u>SW-34</u>		<b>Project Manager (print)</b> <u>STUART T. OLO</u>		<b>Analyses Requested</b> (circle or write in parameters) pH Cond TDS TSS Color Tannins Volatile Organics / BTEX Semi-volatile Organics TPH: 418.1 TPH-G TPH-D Ca Mg Na K Fe Mn Metals (list below) NH <sub>3</sub> HCO <sub>3</sub> CO <sub>3</sub> Cl F NO <sub>3</sub> SO <sub>4</sub> AOX TCLP: Metals VOA SVOA Pest Herb PCBs Dioxin: Total / 2,3,7,8-TCDD / 2,3,7,8-TCDF CN BOD P-ortho TKN P-total TOC COD		<b>Notes</b>	
<b>Weyerhaeuser Account No.</b> <b>Sampled by:</b> <u>[Signature]</u> <input type="checkbox"/> Facility <input type="checkbox"/> E&S/MTC <input type="checkbox"/> E&S/INB		<b>Sampler Name (print)</b> <u>TERRY OLYSSEY</u> <b>Recorded By (signature)</b> <u>[Signature]</u>		<b>Number of Containers</b>			
<b>Sample Description (ID, Date, Time are Required)</b>		<b>Matrix</b>		<b>Preservative</b>			
Method	Field Sample ID (15 characters max.)	Date (m/d/y)	Time (hh:mm)	Depth (ft/m)	Water	Sol/Sec	Oil
	10-4B-CU-1	4/28/97	0920	0.5-2	X		
	10-4B-CN-4		0925	0.5-2			
	10-4B-CN-5		1000	0.5-2			
	10-4D-CN-1		1030	1-4			
	10-4D-CF-1		1035	1-4			
	10-4D-CS-1		1040	1-4			
	10-4D-CU-1		1045	1-4	X		
<b>Method:</b> G, grab; D, depth composite; T, time composite.		<b>Reporting and QA/QC Requirements</b> <input checked="" type="checkbox"/> CLP Package <input type="checkbox"/> NPDES Permit <input type="checkbox"/> Other: _____ <input type="checkbox"/> Electronic Report		<b>Depth required for soil or sediment samples.</b>		<b>Remarks/Detection Limit Requirements</b> <u>See Sheet 1</u>	
<b>Results to:</b> <u>See Sheet</u> Lab Turn-Around Time <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 7 Day <input type="checkbox"/> 2-3 wk Date Due: _____		<b>Relinquished By Sampler (signature):</b> <u>[Signature]</u>		<b>Relinquished By (signature):</b> <u>[Signature]</u>		<b>Received By (signature):</b> Date <u>4/28/97</u> Time <u>1200</u>	
<b>Relinquished By (signature):</b> Date _____ Time _____		<b>Relinquished By (signature):</b> Date _____ Time _____		<b>Received For Laboratory By (signature):</b> Date _____ Time _____		<b>Shipping Method</b> Airbill No. _____	
<b>Laboratory</b> <input type="checkbox"/> WATSMTC <input type="checkbox"/> WATS/NB <input type="checkbox"/> Other: _____		<b>Lab SR#:</b> _____ <b>Case ID:</b> _____ <b>SDG ID:</b> _____		<b>Samples Received Intact:</b> _____		<b>Cooler Temp:</b> _____ °C	

000005



WTPH-D Extended

Service Request: 03783  
 Analyst: C. Thomson

Sample ID	Blank	LCS	80981	80982	80983
Client ID	4/28/97	4/28/97	10-4B-CE-1	10-4B-CN-1	10-4B-CN-2
<u>Analytes</u>	<u>mg/Kg</u>	<u>% Rec.</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	U	119%	U	13	41
Motor Oil Range	U		U	20	65
Surrogate Recovery	107%	109%	102%	89%	83%

Date Sampled			4/28/97	4/28/97	4/28/97
Date Extracted	4/28/97	4/28/97	4/28/97	4/28/97	4/28/97
Date Analyzed	4/30/97	4/30/97	4/29/97	4/29/97	4/29/97
Holding Time Days			0	0	0

Reporting Limit

Diesel Range	6.8		7.1	7.2	6.9
Motor Oil Range	17		18	18	17

Approved by Clay Thomson Date 4/30/97

## WTPH-D Extended

Service Request: 03783  
 Analyst: C. Thomson

Sample ID	80984	80985	80986	80987	80988
Client ID	10-4B-CN-3	10-4B-CN-4	10-4B-CN-5	10-4B-CS-1	10-4B-CS-2
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	U	U	U	57	U
Motor Oil Range	U	U	U	97	U
Surrogate Recovery	102%	97%	95%	77%	98%

Date Sampled	4/28/97	4/28/97	4/28/97	4/28/97	4/28/97
Date Extracted	4/28/97	4/28/97	4/28/97	4/28/97	4/28/97
Date Analyzed	4/29/97	4/29/97	4/29/97	4/29/97	4/29/97
Holding Time Days	0	0	0	0	0

Reporting Limit

Diesel Range	7.2	7.2	7.0	6.8	7.5
Motor Oil Range	18	18	18	17	19

000007

WTPH-D Extended

Service Request: 03783  
 Analyst: C. Thomson

Sample ID	80989	80990	80991	80992
Client ID	10-4B-CS-3	10-4B-CW-1	10-4C-CE-1	10-4C-CN-1
Analytes	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	15	22	6.9	87
Motor Oil Range	U	47	U	150
Surrogate Recovery	80%	95%	96%	81%

Date Sampled	4/28/97	4/28/97	4/28/97	4/28/97
Date Extracted	4/28/97	4/28/97	4/28/97	4/28/97
Date Analyzed	4/29/97	4/29/97	4/29/97	4/29/97
Holding Time Days	0	0	0	0

Reporting Limit

Diesel Range	7.0	6.7	6.8	6.7
Motor Oil Range	18	17	17	17

## WTPH-D Extended

Service Request: 03783  
 Analyst: C. Thomson

Sample ID	80993	80994	80995	80996
Client ID	10-4C-CS-1	10-4C-CW-1	10-4D-CE-1	10-4D-CN-1
Analytes	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	U	U	8.3	510
Motor Oil Range	U	U	U	680
Surrogate Recovery	101%	109%	89%	75%

Date Sampled	4/28/97	4/28/97	4/28/97	4/28/97
Date Extracted	4/28/97	4/28/97	4/28/97	4/28/97
Date Analyzed	4/29/97	4/29/97	4/29/97	4/30/97
Holding Time Days	0	0	0	0

Reporting Limit

Diesel Range	7.3	7.3	6.7	28
Motor Oil Range	18	18	17	69

000009

## WTPH-D Extended

Service Request: 03783  
 Analyst: C. Thomson

Sample ID	80997	80998	80981DUP	80991DUP
Client ID	10-4D-CS-1	10-4D-CW-1	10-4B-CE-1DUP	10-4C-CE-1DUP
Analytes	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	15	120	U	15
Motor Oil Range	27	360	U	35
Surrogate Recovery	86%	71%	105%	104%

Date Sampled	4/28/97	4/28/97	4/28/97	4/28/97
Date Extracted	4/28/97	4/28/97	4/28/97	4/28/97
Date Analyzed	4/30/97	4/30/97	4/30/97	4/30/97
Holding Time Days	0	0	0	0

Reporting Limit

Diesel Range	5.9	7.5	7.1	7.0
Motor Oil Range	15	19	18	18

000010



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Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel (206) 924 6872  
Fax (206) 924 6654

## SDG NARRATIVE

### Organic Analysis

WEYERHAEUSER (WEYER)

ANALYTICAL AND TESTING SERVICES

Case Number 3791

SDG Number 81039

PROJECT: EVERETT EAST SITE REMEDIATION SOILS/DALTON, OLMSTEAD & FUGLEVAND 120-2974670

The samples from this SDG were received on 4/29/97. The SDG was composed of soil samples for analysis of petroleum hydrocarbons by WTPH-D-A/S. The following analyses were performed:

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
8-1-CE-1(R)	81039	SOIL	WTPH-D-A/S
8-1-CE-1(R)DUP	81039DUP	SOIL	WTPH-D-A/S
8-1-CE-2	81040	SOIL	WTPH-D-A/S
8-1-CN-1(R)	81041	SOIL	WTPH-D-A/S
8-1-CU-1	81042	SOIL	WTPH-D-A/S
8-1-CU-2	81043	SOIL	WTPH-D-A/S
8-1-CU-3	81044	SOIL	WTPH-D-A/S
8-1-CU-4	81045	SOIL	WTPH-D-A/S
8-1-CW-2	81046	SOIL	WTPH-D-A/S
8-1-CW-3	81047	SOIL	WTPH-D-A/S
10-3A-CE-2	81048	SOIL	WTPH-D-A/S
10-3A-CN-1	81049	SOIL	WTPH-D-A/S
10-3A-CN-1DUP	81049DUP	SOIL	WTPH-D-A/S

000001

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
10-3A-CN-2	81050	SOIL	WTPH-D-A/S
10-3A-CS-1	81051	SOIL	WTPH-D-A/S
10-3A-CS-2	81052	SOIL	WTPH-D-A/S
10-3A-CW-1	81053	SOIL	WTPH-D-A/S
10-3A-CW-2	81054	SOIL	WTPH-D-A/S
10-3A-CW-3	81055	SOIL	WTPH-D-A/S
10-3A-CW-4	81056	SOIL	WTPH-D-A/S
10-3B-CE-1	81057	SOIL	WTPH-D-A/S
10-3B-CN-1	81058	SOIL	WTPH-D-A/S
10-3B-CS-1	81059	SOIL	WTPH-D-A/S
10-3B-CW-1	81060	SOIL	WTPH-D-A/S
DUPLICATE #6	81061	SOIL	WTPH-D-A/S
DUPLICATE #7	81062	SOIL	WTPH-D-A/S
LCS 4/29/97	LCS 4/29/97	Fortified Blank	WTPH-D-A/S

*10-3A-CN-1*  
*8-1-CN-3*

Laboratory comments for this sample delivery group are listed below. The comments are broken up into categories for ease of explanation.

1. WTPH-D-A/S

- a) The surrogate was diluted out for sample 8-1-CN-1(R) due to the relatively high concentration of diesel and motor oil range organics detected in the sample.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

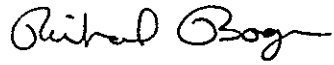
*Richard Bogar*  
 Richard Bogar  
 Chromatography Team Leader

5/5/97  
 Date

000002

Please feel free to contact me with any questions concerning this data report. I can be reached at  
(206) 924-6521

Sincerely,

A handwritten signature in cursive script that reads "Richard Bogar".

Richard Bogar  
Weyerhaeuser Analytical & Testing Services





Sample Analysis Request Chain of Custody Form

Facility <u>Everett East Site</u> Sampler's Project No. <u>34</u>		Project Manager (print) <u>Steve Trold</u> Sampler Name (print) <u>Terry Olusrod</u> Recorded By (signature) <u>[Signature]</u>		Matrix Water <input checked="" type="checkbox"/> Soil/Sed <input type="checkbox"/> Oil <input type="checkbox"/>		Preservative HCl <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> <input type="checkbox"/> Filtered <input type="checkbox"/>		Number of Containers <u>1</u>		Analyses Requested (circle or write in parameters) pH Cond TDS TSS Color Tannins Volatile Organics / BTEX Semi-volatile Organics TPH: 418.1 TPH-G TPH-DX Ca Mg Na K Fe Mn Metals (list below) NH <sub>3</sub> -HCO <sub>3</sub> CO <sub>3</sub> Cl F NO <sub>3</sub> SO <sub>4</sub> AOX TCLP: Metals VOA SVOA Pest Herb PCBs Dioxin: Total / 2,3,7,8-TCDD / 2,3,7,8-TCDF CN BOD P-ortho TKN P-total TOC COD		Notes							
Weyerhaeuser Account No. <u>120-2974670</u> Sampled by: <u>[Signature]</u> <input type="checkbox"/> Facility <input type="checkbox"/> E&ASWTC <input type="checkbox"/> E&ASINB		Consultant Address <u>[Signature]</u> Phone No. <u>[Signature]</u> FAX <u>[Signature]</u>		Sample Description (ID, Date, Time are Required) Field Sample ID (15 characters max.) Date (m/d/y) Time (hh:mm) Depth (ft./m)		Method G 10-3B-CF-1 4/29/97 1050 0-3.5 10-3B-C5-1 1055 0-3.5 10-3B-CW-1 1100 0-3.5 8-1-CF-1(R) 1200 0-4 8-1-CF-2 1205 0-4 8-1-CW-3 1215 0-4 8-1-CW-2 1220 0-4 8-1-CU-1 1225 1.5-4 8-1-CU-2 1230 1.5-4 8-1-CU-3 1235 1.5-4 8-1-CU-4 1240 1.5-4		Method: G, grab; D, depth composite; T, time composite. Depth required for soil or sediment samples.		Reporting and QA/QC Requirements <input checked="" type="checkbox"/> CLP Package <input type="checkbox"/> NPDES Permit <input type="checkbox"/> Other. <input type="checkbox"/> Electronic Report		Remarks/Detection Limit Requirements <u>See sheet 1</u>							
Lab Turn-Around Time <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 7 Day <input type="checkbox"/> 2-3 wk Date Due:		Laboratory <input type="checkbox"/> WATSWTC <input type="checkbox"/> WATSINB <input type="checkbox"/> Other:		Relinquished By Sampler (signature): <u>[Signature]</u> Date: <u>4/29/97</u> Time: <u>1500</u>		Relinquished By (signature): <u>[Signature]</u> Date: <u>[Signature]</u> Time:		Relinquished By (signature): <u>[Signature]</u> Date: <u>[Signature]</u> Time:		Received For Laboratory By (signature): <u>[Signature]</u> Date: <u>4.29.97</u> Time: <u>1735</u>		Received By (signature): <u>[Signature]</u> Date: <u>[Signature]</u> Time:		Received By (signature): <u>[Signature]</u> Date: <u>[Signature]</u> Time:		Airbill No.		Shipping Method	
Lab SR#:		Case ID:		SDG ID:		Samples Received Intact: <u>Yes</u>		Cooler Temp: <u>5</u> °C		WATSINB: 32901 Weyerhaeuser Way South, Federal Way, WA 98003 (206-924-6293)		WATSWTC: New Bern R&D Field Station, Highway 43 North, New Bern, NC 28563 (919-633-7233)		Form 1497 (F)					

000005

Sample Analysis Request/Chain of Custody Form

Facility <u>FURNACE EAST SITE</u> Sampler's Project No. _____		Project Manager (print) <u>STUART MOK</u>		Analyzes Requested (circle or write in parameters) TKN P-total TOC COD BOD P-ortho CN Dioxin: total / 2,3,7,8-TCDD / 2,3,7,8-TCDF TCLP: Metals VOA SVOA Pest Herb PCBs AOX NH <sub>3</sub> HCO <sub>3</sub> CO <sub>2</sub> Cl F NO <sub>3</sub> SO <sub>4</sub> Metals (list below) Ca Mg Na K Fe Mn TPH: 418, 1 TPH-G TPH-DX Semi-volatile Organics Volatile Organics / BTEX pH Cond TDS TSS Color Tannins		Notes	
Weyerhaeuser Account No. <u>120-2974670</u> Consultant Address _____ Phone No. _____ FAX _____		Sampler Name (print) <u>I. Edmsard</u> Received By (signature) <u>[Signature]</u>		Number of Containers 1			
Sampled by: <input type="checkbox"/> Facility <input type="checkbox"/> E&ASWTC <input type="checkbox"/> E&AS/NB		Matrix Water <input checked="" type="checkbox"/> Soil/Sed <input checked="" type="checkbox"/> Oil <input type="checkbox"/> HCl <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> <input type="checkbox"/> Filtered <input type="checkbox"/> Preservative					
Sample Description (ID, Date, Time are Required)		Date (m/d/y) <u>9/29/97</u>		Time (hh:mm) <u>1210</u>		Depth (ft/in) <u>0-4</u>	
Field Sample ID (15 characters max.) <u>GS-1-CN-1(QR)</u> <u>Duplicates #7</u>							
Method <input checked="" type="checkbox"/> Samples on Ice or Blue Ice Lab Turn-Around Time <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 7 Day <input type="checkbox"/> 2-3 wk Date Due: _____		Reporting and QA/QC Requirements <input type="checkbox"/> CLP Package <input type="checkbox"/> NPDES Permit <input type="checkbox"/> Other: _____ <input type="checkbox"/> Electronic Report		Depth required for soil or sediment samples.		Remarks/Detection Limit Requirements <u>See SHT 1</u>	
Laboratory <input type="checkbox"/> WATSWTC <input type="checkbox"/> WATS/NB <input type="checkbox"/> Other: _____		Relinquished By Sampler (signature): <u>[Signature]</u> Date: <u>9/29/97</u> Time: <u>1500</u>		Received By (signature): Received By (signature): Received For Laboratory By (signature): <u>[Signature]</u> Date: <u>4/29/97</u> Time: <u>1735</u>		Shipping Method Airbill No. _____ Cooler Temp: <u>5</u> °C	
Lab SR#: _____ Case ID: _____ SDG ID: _____		Relinquished By (signature): Relinquished By (signature):		Received By (signature): Received By (signature):		Samples Received Intact: <u>Yes</u>	

000006

WTPH-D Extended

Service Request: 03791  
 Analyst: C. Thomson

Sample ID	Blank (1)	Blank (2)	LCS	81039	81040
Client ID	4/29/97	4/29/97	4/29/97	8-1-CE-1 (R)	8-1-CE-2
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>% Rec.</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	U	U	116%	200	42
Motor Oil Range	U	U		390	110
Surrogate Recovery	103%	94%	102%	91%	84%

Date Sampled				4/29/97	4/29/97
Date Extracted	4/29/97	4/29/97	4/29/97	4/29/97	4/29/97
Date Analyzed	4/29/97	4/29/97		4/30/97	4/30/97
Holding Time Days				0	0

Reporting Limit

Diesel Range	6.8	6.8		14	7.0
Motor Oil Range	17	17		35	18

Approved by Clay Thomson Date 5/1/97

000007

## WTPH-D Extended

Service Request: 03791  
 Analyst: C. Thomson

Sample ID	81041	81042	81043	81044	81045
Client ID	8-1-CN-1 (R)	8-1-CU-1	8-1-CU-2	8-1-CU-3	8-1-CU-4
Analytes	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	4900	U	200	17	46
Motor Oil Range	4000	U	490	26	100
Surrogate Recovery	0 D	114%	85%	103%	83%

Date Sampled	4/29/97	4/29/97	4/29/97	4/29/97	4/29/97
Date Extracted	4/29/97	4/29/97	4/29/97	4/29/97	4/29/97
Date Analyzed	4/30/97	4/30/97	4/30/97	4/30/97	4/30/97
Holding Time Days	0	0	0	0	0

Reporting Limit

Diesel Range	280	6.8	13	6.7	6.8
Motor Oil Range	690	17	32	17	17

000008

## WTPH-D Extended

Service Request: 03791  
 Analyst: C. Thomson

Sample ID	81046	81047	81048	81049
Client ID	8-1-CW-2	8-1-CW-3	10-3A-CE-2	10-3A-CN-1
Analytes	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	60	73	1000	120
Motor Oil Range	150	170	2000	600
Surrogate Recovery	79%	82%	111%	92%

Date Sampled	4/29/97	4/29/97	4/29/97	4/29/97
Date Extracted	4/29/97	4/29/97	4/29/97	4/29/97
Date Analyzed	4/30/97	4/30/97	4/30/97	4/30/97
Holding Time Days	0	0	0	0

Reporting Limit

Diesel Range	6.9	6.6	74	29
Motor Oil Range	17	16	190	73

000009

## WTPH-D Extended

Service Request: 03791  
 Analyst: C. Thomson

Sample ID	81050	81051	81052	81053
Client ID	10-3A-CN-2	10-3A-CS-1	10-3A-CS-2	10-3A-CW-1
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	82	74	6.3	20
Motor Oil Range	200	220	22	39
Surrogate Recovery	86%	86%	100%	94%

Date Sampled	4/29/97	4/29/97	4/29/97	4/29/97
Date Extracted	4/29/97	4/29/97	4/29/97	4/29/97
Date Analyzed	4/30/97	4/30/97	4/30/97	4/30/97
Holding Time Days	0	0	0	0

Reporting Limit

Diesel Range	7.1	7.9	6.5	7.2
Motor Oil Range	18	20	16	18

000010

## WTPH-D Extended

Service Request: 03791  
 Analyst: C. Thomson

Sample ID	81054	81055	81056	81057
Client ID	10-3A-CW-2	10-3A-CW-3	10-3A-CW-4	10-3B-CE-1
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	73	28	53	U
Motor Oil Range	160	58	130	U
Surrogate Recovery	72%	77%	75%	99%

Date Sampled	4/29/97	4/29/97	4/29/97	4/29/97
Date Extracted	4/29/97	4/29/97	4/29/97	4/29/97
Date Analyzed	4/30/97	4/30/97	4/30/97	4/30/97
Holding Time Days	0	0	0	0

Reporting Limit

Diesel Range	7.3	7.2	7.3	6.5
Motor Oil Range	18	18	18	16

000011



## WTPH-D Extended

Service Request: 03791  
 Analyst: C. Thomson

Sample ID	81058	81059	81060	81061
Client ID	10-3B-CN-1	10-3B-CS-1	10-3B-CW-1	Duplicate #6
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	23	24	13	130
Motor Oil Range	40	56	37	570
Surrogate Recovery	72%	88%	97%	69%

Date Sampled	4/29/97	4/29/97	4/29/97	4/29/97
Date Extracted	4/29/97	4/29/97	4/29/97	4/29/97
Date Analyzed	4/30/97	4/30/97	4/30/97	4/30/97
Holding Time Days	0	0	0	0

Reporting Limit

Diesel Range	7.0	7.6	6.7	15
Motor Oil Range	17	19	17	37

000012

## WTPH-D Extended

Service Request: 03791  
 Analyst: C. Thomson

Sample ID	81062	81039Dup	81049Dup
Client ID	Duplicate #7	8-1-CE-1 (R)Dup	10-3A-CN-1Dup
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	12	150	94
Motor Oil Range	31	350	800
Surrogate Recovery	87%	84%	89%

Date Sampled	4/29/97	4/29/97	4/29/97
Date Extracted	4/29/97	4/29/97	4/29/97
Date Analyzed	4/30/97	4/30/97	4/30/97
Holding Time Days	0	0	0

Reporting Limit

Diesel Range	6.7	15	30
Motor Oil Range	17	37	75

000013



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Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel [206] 924 6872  
Fax [206] 924 6654

## SDG NARRATIVE

### Organic Analysis

WEYERHAEUSER (WEYER)

ANALYTICAL AND TESTING SERVICES

Case Number 3799

SDG Number 81191

PROJECT: EVERETT EAST SITE REMEDIATION SOILS/DALTON, OLMSTED &  
FUGLEVAND 120-2974670

The samples from this SDG were received on 4/30/97. The SDG was composed of soil samples for analysis of petroleum hydrocarbons by WTPH-D with acid/silica clean-up. The following analyses were performed:

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
8-2-CB-1	81191	SOIL	WTPH-D-A/S
8-2-CB-1DUP	81191DUP	SOIL	WTPH-D-A/S
8-2-CE-1	81192	SOIL	WTPH-D-A/S
8-2-CN-1	81193	SOIL	WTPH-D-A/S
8-2-CS-1	81194	SOIL	WTPH-D-A/S
8-2-CW-1	81195	SOIL	WTPH-D-A/S
10-1-CN-1(R)	81196	SOIL	WTPH-D-A/S
10-1-CS-2(R)	81197	SOIL	WTPH-D-A/S
LCS 4/30/97	LCS 4/30/97	Fortified Blank	WTPH-D-A/S

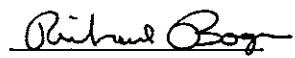
000001

Laboratory comments for this sample delivery group are listed below. The comments are broken up into categories for ease of explanation.

1. WTPH-D-A/S

- a) No comments for this sample delivery group.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

  
Richard Bogar  
Chromatography Team Leader

5/5/97  
Date

Please feel free to contact me with any questions concerning this data report. I can be reached at (206) 924-6521

Sincerely,



Richard Bogar  
Weyerhaeuser Analytical & Testing Services

000002

Sample Analysis Request/Chain of Custody Form

<b>Facility</b> <u>Ferret East Site</u> Project No. <u>34</u> Project Manager (print) <u>Stuart Krole</u>		<b>Analyses Requested</b> (circle or write in parameters) TKN P-total TOC COD BOD P-ortho CN Dioxin: Total / 2,3,7,8-TCDD / 2,3,7,8-TCDF TCLP: Metals VOA SVOA Pest Herb PCBs AOX NH <sub>3</sub> HCO <sub>3</sub> CO <sub>3</sub> Cl F NO <sub>3</sub> SO <sub>4</sub> Metals (list below) Ca Mg Na K Fe Mn TPH: 418.1 TPH-G TPH-DX <u>X</u> Semi-volatile Organics <u>X</u> Volatile Organics / BTEX pH Cond TDS TSS Color Tannins		Notes	
<b>Sampler's Project No.</b> <u>170-2974670</u> Weyerhaeuser Account No. <u>170-2974670</u> Consultant <u>DAF</u> Address <u>DAF</u> Phone No. <u>486-7905</u> Fax <u>486-7651</u>		<b>Matrix</b> (Preservative) Water <u>X</u> H <sub>2</sub> SO <sub>4</sub> <u>X</u> HNO <sub>3</sub> <u>X</u> HCl <u>X</u> Oil <u>X</u> Soil/Sed <u>X</u> Filtered <u>X</u>		Number of Containers <u>1</u>	
<b>Sampled by:</b> <input type="checkbox"/> Facility <input type="checkbox"/> E&S/WTC <input type="checkbox"/> E&S/NB Recorder (signed) <u>[Signature]</u>		<b>Reporting and QA/QC Requirements</b> Method: G, grab; D, depth composite; T, time composite. Depth required for soil or sediment samples. <input checked="" type="checkbox"/> CLP Package <input type="checkbox"/> NPDES Permit <input type="checkbox"/> Other: _____ <input type="checkbox"/> Electronic Report		Remarks/Detection Limit Requirements <u>WTPH-DX @ 5G / Acetic Wash</u>	
<b>Sample Description</b> (ID, Date, Time are Required) Field Sample ID (15 characters max.) Date (m/d/y) Time (h:mm) Depth (ft/m)		<b>Sample Chain of Custody and Shipping Method Record</b> Received By (signature): <u>[Signature]</u> Date: <u>7/30/97</u> Time: <u>12:30</u> Received By (signature): <u>[Signature]</u> Date: _____ Time: _____ Relinquished By (signature): _____ Date: _____ Relinquished By (signature): _____ Date: _____		Shipping Method Airbill No.	
Method G 8-2-CN-1 4/30/97 0945 0-1.5 8-2-CE-1 0950 0-1.5 8-2-CS-1 0955 0-1.5 8-2-CW-1 1000 0-1.5 8-2-CB-1 1005 1.5 10-1-CN-1(R) 1045 0-2 10-1-CS-2(R) 1050 0-2		<b>Laboratory</b> <input type="checkbox"/> WATS/WTC <input type="checkbox"/> WATS/NB <input type="checkbox"/> Other: _____ Lab SR#: _____ Case ID: _____ SDG ID: _____		Samples Received Intact: _____ Cooler Temp: _____ °C	

000003

## WTPH-D Extended

Service Request: 03799  
 Analyst: C. Thomson

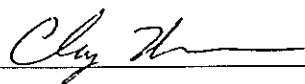
Sample ID	Blank	LCS	81191	81192	81193
Client ID	4/30/97	4/30/97	8-2-CB-1	8-2-CE-1	8-2-CN-1
<u>Analytes</u>	<u>mg/Kg</u>	<u>% Rec.</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	8.3	129%	8.9	U	U
Motor Oil Range	U		39	U	17
Surrogate Recovery	96%	69%	89%	104%	98%

Date Sampled			4/30/97	4/30/97	4/30/97
Date Extracted	4/30/97	4/30/97	4/30/97	4/30/97	4/30/97
Date Analyzed	4/30/97	5/1/97	5/1/97	5/1/97	5/1/97
Holding Time Days			0	0	0

Reporting Limit

Diesel Range	6.8		7.1	6.5	6.5
Motor Oil Range	17		18	16	16

Approved by



Date

5/1/97

000004

## WTPH-D Extended

Service Request: 03799  
 Analyst: C. Thomson

Sample ID	81194	81195	81196	81197	81191DUP
Client ID	8-2-CS-1	8-2-CW-1	10-1-CN-1(R)	10-1-CS-2(R)	8-2-CB-1DUP
Analytes	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	32	2500	U	37	8.1
Motor Oil Range	130	650	U	120	38
Surrogate Recovery	71%	62%	101%	96%	80%

Date Sampled	4/30/97	4/30/97	4/30/97	4/30/97	4/30/97
Date Extracted	4/30/97	4/30/97	4/30/97	4/30/97	4/30/97
Date Analyzed	5/1/97	5/1/97	5/1/97	5/1/97	5/1/97
Holding Time Days	0	0	0	0	0

Reporting Limit

Diesel Range	7.0	150	6.9	15	7.1
Motor Oil Range	18	380	17	38	18

000005



32901 Weyerhaeuser Way South  
Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel (206) 924 6872  
Fax (206) 924 6654

May 8, 1997

Matt Dalton  
Dalton, Olmsted & Fuglevand  
11711 Northcreek Parkway South, Suite 101  
Bothell WA 98011

**Subject: Service Request 03809, Everett East Site Remediation Soils, 120-2974670**

Dear Matt:

Attached is a copy of our final report for the samples you requested we analyze for you. Invoicing for this work will be directly to Weyerhaeuser. If you have any questions concerning these reports, please feel free to contact me at (206) 924-6521.

Thank you for the opportunity to be of service. I look forward to working with you on future projects.

Sincerely,

A handwritten signature in cursive script that reads "Rick Bogar, Jr.".

Richard Bogar, Chromatography Team Leader  
Weyerhaeuser Analytical and Testing Services





32901 Weyerhaeuser Way South  
Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel (206) 924 6872  
Fax (206) 924 6654

## SDG NARRATIVE

### Organic Analysis

WEYERHAEUSER (WEYER)

ANALYTICAL AND TESTING SERVICES

Case Number 3809

SDG Number 81274

PROJECT: EVERETT EAST SITE REMEDIATION SOILS/DALTON, OLMSTED & FUGLEVAND 120-2974670

The samples from this SDG were received on 05/01/97. The SDG was composed of soil samples for analysis of petroleum hydrocarbons by WTPH-D-A/S, PCBs by EPA 8081 and CPAHs by EPA 8270b. The following analyses were performed:

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
7-2A-CB-6(R)	81274	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2A-CB-6(R)DUP	81274DUP	SOIL	WTPH-D-A/S
7-2A-CN-3(R)	81275	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2A-CSW-3(R)	81276	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2A-CSW-4(R)	81277	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2B-CB-1(R)	81278	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
7-2B-CW-2(R)	81279	SOIL	EPA8270b;EPA8081;WTPH-D-A/S
LCS 5/1/97	LCS 5/1/97	Fortified Blank	WTPH-D-A/S
PLC1_S050197	PLC1_S050197	Fortified Blank	EPA8081
SLC4T1_050197	SLC4T1_050197	Fortified Blank	EPA8270b

000001

Laboratory comments for this sample delivery group are listed below. The comments are broken up into categories for ease of explanation.

1. WTPH-D-A/S

- a) No comments for this sample delivery group.

2. CPAH (EPA 8270b)

- a) The recovery of the surrogates nitrobenzene and 2-fluorobiphenyl were below laboratory generated QC limits for sample 7-2B-CW-2(R). The surrogate recoveries are within established EPA method 8270b QC limits.


3. PCBs (EPA 8081)

- a) The recovery of Aroclor 1242 is not reported on one column for the laboratory fortified blank because the concentration spiked was too low. The recovery is reported for the second column. Aroclor 1260 was also spiked into the laboratory fortified blank and is reported for both columns.
- b) The surrogate tetrachloro-m-xylene was diluted out of range for samples 7-2A-CB-6R, 7-2A-CSW-3R and the both method blanks. Reported recoveries are outside of QC limits.

The recovery of the second surrogate decachlorobiphenyl was outside of QC limits on one column for sample 7-2B-CW-2R due to the sample dilution used.

Decachlorobiphenyl recovery could not be reported on one of the two analytical columns for samples 7-2A-CB-6R, 7-2A-CN-3R and 7-2A-CSW-3R due to matrix interference. The recovery is reported for the second analytical column.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

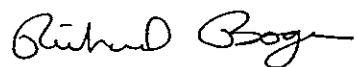
  
Richard Bogar  
Chromatography Team Leader

5/7/97  
Date

000002

Please feel free to contact me with any questions concerning this data report. I can be reached at  
(206) 924-6521

Sincerely,

A handwritten signature in cursive script that reads "Richard Bogar".

Richard Bogar  
Weyerhaeuser Analytical & Testing Services

000003



Weyerhaeuser

Analytical & Testing Services

Sample Analysis Request Chain of Custody Form

Date 5/1/97 Page 1 of 1

Facility Everett Ess. Site

Sampler's Project No. 34

Weyerhaeuser Account No. 170-2974670

Project Manager (print) Stuart Troilo

Sampled by: Almugres / DOF

Sampler Name (print) Ferry Almugres

Facility  E&AS/WTC

Recorded By (signed) [Signature]

Facility  E&AS/NB

Phone No. 206-256-7905 Fax No. 206-256-1657

Sample Description (ID, Date, Time are Required)

Method	Field Sample ID (15 characters max.)	Date (m/d/y)	Time (hh:mm)	Depth (ft/m)	Matrix	Preservative	Water	Soil/Sed	Oil	HCl	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Filtered
	7-ZB-CB-1(R)	5/1/97	0945	1.5				X						
	7-ZB-CN-2(R)		0950	0-1				X						
	7-ZA-CB-6(R)		1100	2				X						
	7-ZA-CN-3(R)		1105	0.5				X						
	7-ZA-CSW-4(R)		1110	0-0.5				X						
	7-ZA-CSW-3(R)		1115	0-1.5				X						

Method: G, grab; D, depth composite; T, time composite. Depth required for soil or sediment samples.

Reporting and QA/QC Requirements

RESULTS TO: M. DeLeon

Samples on Ice or Blue Ice

Lab-Turn-Around Time: DOF

24 Hr  36 Hr  7 Day

2-3 wk Date Due: 339-2786

Laboratory

WATSMTC  WATS/NB

Other: 339-2786

Relinquished By Sampler (signature): [Signature] Date: 5/1/97 Time: 1500

Relinquished By (signature): [Signature] Date: 5/1/97 Time: 1736

Relinquished By (signature): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Sample Chain of Custody and Shipping Method Record

Received By (signature): [Signature] Date: 5/1/97 Time: 1736

Received By (signature): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received For Laboratory By (signature): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Samples Received Intact: \_\_\_\_\_ Cooler Temp: \_\_\_\_\_ °C

Shipping Method: \_\_\_\_\_

Airbill No. \_\_\_\_\_

Notes: \* WTTA-DX U/SB / Acc'd (book)  
24 hr TPH  
4-8 hr PCB/C.P.A.H

400000

WTPH-D Extended

Service Request: 03809  
 Analyst: C. Thomson

Sample ID	Blank	LCS	81274	81275
Client ID	5/1/97	5/1/97	7-2A-CB-6(R)	7-2A-CN-3(R)
<u>Analytes</u>	<u>mg/Kg</u>	<u>% Rec.</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	9.6	117%	260	U
Motor Oil Range	U		540	U
Surrogate Recovery	98%	95%	59%	106%

Date Sampled			5/1/97	5/1/97
Date Extracted	5/1/97	5/1/97	5/1/97	5/1/97
Date Analyzed	5/1/97	5/1/97	5/2/97	5/2/97
Holding Time Days			0	0

Reporting Limit

Diesel Range	6.8		47	7.1
Motor Oil Range	17		120	18

Approved by Clay M Date 5/5/97

000005

## WTPH-D Extended

Service Request: 03809  
 Analyst: C. Thomson

Sample ID	81276	81277	81278
Client ID	7-2A-CSW-3(R)	7-2A-CSW-4(R)	7-2B-CB-1(R)
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	270	110	150
Motor Oil Range	1500	810	260
Surrogate Recovery	113%	76%	62%

Date Sampled	5/1/97	5/1/97	5/1/97
Date Extracted	5/1/97	5/1/97	5/1/97
Date Analyzed	5/2/97	5/2/97	5/2/97
Holding Time Days	0	0	0

Reporting Limit

Diesel Range	42	53	16
Motor Oil Range	100	130	40

000006

## WTPH-D Extended

Service Request: 03809  
 Analyst: C. Thomson

Sample ID	81279	81274Dup
Client ID	7-2B-CW-2(R)	7-2A-CB-6(R)Dup
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	14	240
Motor Oil Range	51	540
Surrogate Recovery	87%	64%

Date Sampled	5/1/97	5/1/97
Date Extracted	5/1/97	5/1/97
Date Analyzed	5/2/97	5/2/97
Holding Time Days	0	0

Reporting Limit

Diesel Range	7.6	47
Motor Oil Range	19	120

000007

**Summary Report - CPAH List**  
**Weyerhaeuser Analytical**  
**SR#03809 - Everett East Site Remediation Soils**  
Method: EPA8270B  
Units: ug/Kg (PPB)

Client ID		7-2A-CB-6(R)	7-2A-CN-3(R)	7-2A-CSW-3(R)
Sample Date and Time		05/01/97 11:00	05/01/97 11:05	05/01/97 11:15
Lab ID		81274	81275	81276
<u>Analyte</u>	<u>CAS</u>			
Benzo(a)Anthracene	56-55-3	20000	370 U	30000
Chrysene	218-01-9	21000	370 U	28000
Benzo(b)fluoranthene	205-99-2	23000	370 U	28000
Benzo(k)fluoranthene	207-08-9	7900	370 U	9000
Benzo(a)pyrene	50-32-8	21000	370 U	26000
Indeno(1,2,3-cd)pyrene	193-39-5	13000	370 U	15000
Dibenzo(a,h)anthracene	53-70-3	2500	370 U	2800
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	71%	61%	70%
Phenol-d5	(24-113)	71%	63%	78%
Nitrobenzene-d5	(23-120)	75%	63%	72%
2-Fluorobiphenyl	(30-115)	83%	68%	84%
2,4,6-Tribromophenol	(19-122)	77%	61%	76%
Terphenyl-d14	<del>(18-137)</del> <sup>μ69</sup>	84%	69%	95%
2-Chlorophenol-d4	(advisory)	76%	64%	81%
1,2-Dichlorobenzene-d4	(advisory)	72%	65%	67%
Date Extracted		05/02/97	05/01/97	05/02/97
Date Analyzed		05/03/97	05/02/97	05/03/97



**Summary Report - CPAH List**  
**Weyerhaeuser Analytical**  
**SR#03809 - Everett East Site Remediation Soils**  
**Method: EPA8270B**  
**Units: ug/Kg (PPB)**

Client ID		7-2A-CSW-4(R)	7-2B-CB-1(R)	7-2B-CW-2(R)
Sample Date and Time		05/01/97 11:10	05/01/97 09:45	05/01/97 09:50
Lab ID		81277	81278	81279
<u>Analyte</u>	<u>CAS</u>			
Benzo(a)Anthracene	56-55-3	5300	3200	470 U
Chrysene	218-01-9	5100	4200	470 U
Benzo(b)fluoranthene	205-99-2	5100	3800	470 U
Benzo(k)fluoranthene	207-08-9	2100	1700	470 U
Benzo(a)pyrene	50-32-8	5000	3200	470 U
Indeno(1,2,3-cd)pyrene	193-39-5	3000	2300	470 U
Dibenzo(a,h)anthracene	53-70-3	930 U	960 U	470 U
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	70%	52%	46%
Phenol-d5	(24-113)	72%	55%	47%
Nitrobenzene-d5	(23-120)	69%	52%	48%
2-Fluorobiphenyl	(30-115)	77%	63%	54%
2,4,6-Tribromophenol	(19-122)	74%	70%	62%
Terphenyl-d14	<sup>M60</sup> (18-137)	79%	73%	66%
2-Chlorophenol-d4	(advisory)	75%	56%	49%
1,2-Dichlorobenzene-d4	(advisory)	64%	50%	49%
<u>Date Extracted</u>		05/02/97	05/01/97	05/01/97
<u>Date Analyzed</u>		05/03/97	05/02/97	05/02/97

**Summary Report - CPAH List**  
**Weyerhaeuser Analytical**  
**SR#03809 - Everett East Site Remediation Soils**  
**Method: EPA8270B**  
**Units: ug/Kg (PPB)**

Client ID		SBL4T1_050197	SBL4T2_050197
Sample Date and Time			
Lab ID		SBL4T1_050197	SBL4T2_050197
<u>Analyte</u>	<u>CAS</u>		
Benzo(a)Anthracene	56-55-3	360 U	320 U
Chrysene	218-01-9	360 U	320 U
Benzo(b)fluoranthene	205-99-2	360 U	320 U
Benzo(k)fluoranthene	207-08-9	360 U	320 U
Benzo(a)pyrene	50-32-8	360 U	320 U
Indeno(1,2,3-cd)pyrene	193-39-5	360 U	320 U
Dibenzo(a,h)anthracene	53-70-3	360 U	320 U
<u>Surrogates %Recovery</u>	<u>Limits</u>		
2-Fluorophenol	(25-121)	61%	63%
Phenol-d5	(24-113)	61%	62%
Nitrobenzene-d5	(23-120)	63%	67%
2-Fluorobiphenyl	(30-115)	64%	71%
2,4,6-Tribromophenol	(19-122)	59%	66%
Terphenyl-d14	(18-137)	64%	76%
2-Chlorophenol-d4	(advisory)	62%	67%
1,2-Dichlorobenzene-d4	(advisory)	64%	71%
<u>Date Extracted</u>		05/01/97	05/02/97
<u>Date Analyzed</u>		05/02/97	05/03/97

2D  
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: WEYERHAEUSER

Contract:

Lab Code: WEYER

Case No.: 3809

Method: 8270B

SDG No.: 81274

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SBL4T1_050197	61	61	63	64	59	64	62	64	0
02	SLC4T1_050197	63	62	65	68	65	72	66	69	0
03	7-2A-CN-3 (R)	61	63	63	68	61	69	64	65	0
04	7-2B-CW-2 (R)	46	47	48*	54*	62	66	49	49	2
05	7-2B-CB-1 (R)	52	55	52	63	70	73	56	50	0
06	SBL4T2_050197	63	62	67	71	66	76	67	71	0
07	7-2A-CSW-4 (R)	70	72	69	77	74	79	75	64	0
08	7-2A-CSW-3 (R)	70	78	72	84	76	95	81	67	0
09	7-2A-CB-6 (R)	71	71	75	83	77	84	76	72	0
10	7-2A-CSW-3 (R) DL	67	68	68	85	71	87	74	66	0
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
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22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	8270B LIMITS
S1 (2FP)	= 2-Fluorophenol	(30- 88)	(25-121)
S2 (PHL)	= Phenol-d5	(38- 92)	(24-113)
S3 (NBZ)	= Nitrobenzene-d5	(50-104)	(23-120)
S4 (FBP)	= 2-Fluorobiphenyl	(56-104)	(30-115)
S5 (TBP)	= 2,4,6-Tribromophenol	(47-119)	(19-122)
S6 (TPH)	= Terphenyl-d14	(55-137)	(18-137)
S7 (2CP)	= 2-Chlorophenol-d4	(45- 95)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(49- 89)	(advisory)

# Column to be used to flag recovery values  
 \* Values outside of contract required QC limits  
 D Surrogate diluted out

Weyerhaeuser Chromatography Laboratory

RECOVERY REPORT

Client Name: Dinardo Client SDG: 81274  
 Sample Matrix: SOLID Fraction: SV  
 Lab Smp Id: SLC4T1\_050197 Client Smp ID: SLC4T1\_050197  
 Level: LOW Operator: Leong  
 Data Type: MS DATA SampleType: METHSPIKE  
 SpikeList File: 8270s.spk Quant Type: ISTD  
 Method File: /chem/hp2.i/h2sv050297.b/8270Bh27c.m  
 Misc Info:

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
3 Phenol	6800	3800	55.19	34-84
7 2-Chlorophenol	6800	4100	60.82	35-85
9 1,4-Dichlorobenzen	4500	2700	60.37	37-89
16 N-Nitrosodinpropyl	4500	2800	61.30	43-101
27 1,2,4-Trichloroben	4500	2800	62.60	40-98
32 4-Chloro-3-Methylp	6800	4300	63.04	38-96
45 Acenaphthene	4500	2900	62.95	42-94
47 4-Nitrophenol	6800	5000	73.61	45-97
49 2,4-Dinitrotoluene	4500	3300	72.94	48-94
60 Pentachlorophenol	6800	5000	73.23	37-121
68 Pyrene	4500	3200	70.81	61-105

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 1 2-Fluorophenol	6800	4300	62.66	30-88
\$ 2 Phenol-d5	6800	4200	61.97	38-92
\$ 6 2-Chlorophenol-d4	6800	4500	65.72	45-95
\$ 11 1,2-Dichlorobenzen	4500	3100	68.87	49-89
\$ 19 Nitrobenzene-d5	4500	3000	65.04	50-104
\$ 37 2-Fluorobiphenyl	4500	3100	67.57	56-104
\$ 57 2,4,6-Tribromophen	6800	4400	64.98	47-119
\$ 69 Terphenyl-d14	4500	3300	71.76	55-137

## Summary Report - PCBs

Weyerhaeuser Analytical

SR #3809 - Everett East Site Remediation Soils

Method: EPA 8081

Units: ug/Kg (PPB)

Client ID		7-2A-CB-6R	7-2A-CN-3R RR	7-2A-CSW-3R
Sample Date and Time		05/01/97 1100	05/01/97 1105	05/01/97 1115
Lab ID		81274REDL10	81275BDL10	81276REDL10
Analyte	CAS			
Aroclor 1016	12674-11-2	220 U	370 U	200 U
Aroclor 1221	91-57-6	450 U	740 U	400 U
Aroclor 1232	83-32-9	220 U	370 U	200 U
Aroclor 1242	132-64-9	220 U	370 U	200 U
Aroclor 1248	86-73-7	220 U	370 U	200 U
Aroclor 1254	87-86-5	1100	370 U	5700
Aroclor 1260	85-01-8	220 U	370 U	200 U
Surrogates	QC Limits			
TCMX (column 1)	(50-150)	49% D	89%	28% D
DCB (column 1)	(50-150)	80%	0% I	100%
Date Extracted		05/02/97	05/01/97	05/02/97
Date Analyzed		05/04/97	05/04/97	05/04/97

D - Surrogate diluted out.

I - Matrix interference.

**Summary Report - PCBs**  
**Weyerhaeuser Analytical**  
**SR #3809 - Everett East Site Remediation Soils**  
 Method: EPA 8081  
 Units: ug/Kg (PPB)

Client ID		7-2A-CSW-4R	7-2B-CB-1R	7-2B-CW-2R
Sample Date and Time		05/01/97 1110	05/01/97 0945	05/01/97 0950
Lab ID		81277REDL10	81278DL10	81279DL10
Analyte	CAS			
Aroclor 1016	12674-11-2	230 U	480 U	470 U
Aroclor 1221	91-57-6	460 U	960 U	940 U
Aroclor 1232	83-32-9	230 U	480 U	470 U
Aroclor 1242	132-64-9	230 U	480 U	470 U
Aroclor 1248	86-73-7	230 U	480 U	470 U
Aroclor 1254	87-86-5	9200	1800	470 U
Aroclor 1260	85-01-8	230 U	480 U	470 U
Surrogates	QC Limits			
TCMX (column 1)	(50-150)	54%	96%	57%
DCB (column 1)	(50-150)	63%	121%	106%
Date Extracted		05/02/97	05/01/97	05/01/97
Date Analyzed		05/04/97	05/03/97	05/03/97

D - Surrogate diluted out.  
 I - Matrix interference.

## Summary Report - PCBs

Weyerhaeuser Analytical

SR #3809 - Everett East Site Remediation Soils

Method: EPA 8081

Units: ug/Kg (PPB)

Client ID		PBL1_S050197	PBL1_S050297
Sample Date and Time			
Lab ID		PBL1_S050197	PBL1_S050297
Analyte	CAS		
Aroclor 1016	12674-11-2	40 U	200 U
Aroclor 1221	91-57-6	80 U	400 U
Aroclor 1232	83-32-9	40 U	200 U
Aroclor 1242	132-64-9	40 U	200 U
Aroclor 1248	86-73-7	40 U	200 U
Aroclor 1254	87-86-5	40 U	200 U
Aroclor 1260	85-01-8	40 U	200 U
Surrogates	QC Limits		
TCMX (column 1)	(50-150)	16% D	42% D
DCB (column 1)	(50-150)	85%	60%
Date Extracted		05/01/97	05/01/97
Date Analyzed		05/03/97	05/03/97

D - Surrogate diluted out.

I - Matrix interference.

2F  
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: WEYERHAEUSER

Contract: EVERETT

Lab Code: WEYER

Case No.: 03809

Method: PCB8080

SDG No.: 81274

GC Column(1): DB-1701

ID: 0.53 (mm)

GC Column(2): DB-608

ID: 0.53 (mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	7-2A-CB-6R	49D	82	80	0I			0
02	7-2A-CN-3R	89	100	0I	100			0
03	7-2A-CSW-3R	28D	150D	100	0I			0
04	7-2A-CSW-4R	54	80	63	98			0
05	7-2B-CB-1R	96	106	121	144			0
06	7-2B-CW-2R	57	64	106	164D			0
07	PBL1_S050197	16D	1D	85	88			0
08	PBL1_S050297	42D	48D	60	65			0
09	PLC1_S050197	22D	24D	82	85			0
10								
11								
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29								
30								

ADVISORY  
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (50-150)

S2 (DCB) = Decachlorobiphenyl (50-150)

# Column to be used to flag recovery values

\* Values outside of QC limits

D Surrogate diluted out

I Indicates matrix interference



3F  
SOIL PESTICIDE LAB CONTROL SAMPLE

Lab Name: WEYERHAEUSER

Contract: EVERETT

Lab Code: WEYER

Case No.: 03809

Method: PCB8080

SDG No.: 81274

Matrix Spike - EPA Sample No.: PLC1\_S050197

Instrument ID (1): hpdos1\_1.i

GC Column(1): DB-1701 ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1242	100	66	66	60-120
Aroclor-1260	100	110	110	60-120

Instrument ID (2): hpdos1\_1.i

GC Column(2): DB-608 ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1242	100	0.00	0*	60-120
Aroclor-1260	100	85	85	60-120

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 1 out of 4 outside limits

COMMENTS:

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000017



32901 Weyerhaeuser Way South  
Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel (206) 924 6872  
Fax (206) 924 6654

May 9, 1997

Matt Dalton  
Dalton, Olmsted & Fuglevand  
11711 Northcreek Parkway South, Suite 101  
Bothell WA 98011

**Subject: Service Request 03821, Everett East Site Remediation Soils, 120-2974670**

Dear Matt:

Attached is a copy of our final report for the samples you requested we analyze for you. Invoicing for this work will be directly to Weyerhaeuser. If you have any questions concerning these reports, please feel free to contact me at (206) 924-6521.

Thank you for the opportunity to be of service. I look forward to working with you on future projects.

Sincerely,

A handwritten signature in cursive script that reads "Rick Bogar" with a small "36" written below the name.

Richard Bogar, Chromatography Team Leader  
Weyerhaeuser Analytical and Testing Services



32901 Weyerhaeuser Way South  
Federal Way, Washington 98003  
Analytical Chemistry Laboratories  
Tacoma, Washington 98477  
Tel (206) 924 6872  
Fax (206) 924 6654

## SDG NARRATIVE

### Organic Analysis

WEYERHAEUSER (WEYER)

ANALYTICAL AND TESTING SERVICES

Case Number 3821

SDG Number 81388

PROJECT: EVERETT EAST SITE REMEDIATION SOILS/DALTON, OLMSTED & FUGLEVAND 120-2974670

The samples from this SDG were received on 05/02/97. The SDG was composed of soil samples for analysis of petroleum hydrocarbons by WTPH-D-A/S and pentachlorophenol by EPA 8270b. The following analyses were performed:

<u>SAMPLE ID</u>	<u>LAB ID</u>	<u>MATRIX</u>	<u>ANALYSIS</u>
8-1-CN-2	81388	SOIL	WTPH-D-A/S;EPA8270b
8-1-CN-2DUP	81388DUP	SOIL	WTPH-D-A/S
8-2-CB-2	81389	SOIL	WTPH-D-A/S;EPA8270b
8-2-CN-2	81390	SOIL	WTPH-D-A/S;EPA8270b
8-2-CS-2	81391	SOIL	WTPH-D-A/S;EPA8270b
8-2-CW-1(R)	81392	SOIL	WTPH-D-A/S;EPA8270b
10-3A-CE-1	81393	SOIL	WTPH-D-A/S;EPA8270b
10-3A-CE-2(R)	81394	SOIL	WTPH-D-A/S;EPA8270b
DUPLICATE #8 <sup>r</sup>	81395	SOIL	WTPH-D-A/S;EPA8270b
LCS 5/2/97	LCS 5/2/97	Fortified Blank	WTPH-D-A/S
SLC4T1_050297	SLC4T1_050297	Fortified Blank	EPA8270b

*10-3A-CE-2 (R)  
(Field Duplicate)*

000001

Laboratory comments for this sample delivery group are listed below. The comments are broken up into categories for ease of explanation.

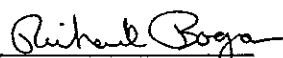
1. Pentachlorophenol (EPA 8270b)

- a) The recovery of the surrogate 2,4,6-tribromophenol is below laboratory generated QC limits for sample 8-2-CB-2. The recovery is within established EPA 8270b QC limits.

2. WTPH-D-A/S

- a) No comments.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

  
Richard Bogar  
Chromatography Team Leader

5/8/97  
Date

Please feel free to contact me with any questions concerning this data report. I can be reached at (206) 924-6521

Sincerely,



Richard Bogar  
Weyerhaeuser Analytical & Testing Services

000002



## WTPH-D Extended

Service Request: 03821  
 Analyst: C. Thomson

Sample ID	Blank	LCS	81388	81389	81390
Client ID	5/2/97	5/2/97	8-1-CN-2	8-2-CB-2	8-2-CN-2
<u>Analytes</u>	<u>mg/Kg</u>	<u>% Rec.</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	6.1	115%	6.4	14	49
Motor Oil Range	U		U	U	150
Surrogate Recovery	103%	72%	88%	75%	65%

Date Sampled			5/2/97	5/2/97	5/2/97
Date Extracted	5/2/97	5/2/97	5/2/97	5/2/97	5/2/97
Date Analyzed	5/4/97	5/3/97	5/3/97	5/3/97	5/3/97
Holding Time Days			0	0	0

Reporting Limit

Diesel Range	6.6		6.9	6.7	13
Motor Oil Range	16		17	17	32

Approved by



Date

5/6/97

000004

## WTPH-D Extended

Service Request: 03821  
 Analyst: C. Thomson

Sample ID	81391	81392	81393	81394
Client ID	8-2-CS-2	8-2-CW-1(R)	10-3A-CE-1	10-3A-CE-2(R)
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	12	760	200	240
Motor Oil Range	44	1500	370	580
Surrogate Recovery	80%	67%	69%	77%

Date Sampled	5/2/97	5/2/97	5/2/97	5/2/97
Date Extracted	5/2/97	5/2/97	5/2/97	5/2/97
Date Analyzed	5/3/97	5/3/97	5/3/97	5/3/97
Holding Time Days	0	0	0	0

Reporting Limit

Diesel Range	6.7	33	15	13
Motor Oil Range	17	82	37	33

000005

WTPH-D Extended

Service Request: 03821  
 Analyst: C. Thomson

Sample ID	81395	81388Dup
Client ID	Duplicate #8	8-1-CN-2Dup
<u>Analytes</u>	<u>mg/Kg</u>	<u>mg/Kg</u>
Diesel Fuel Range	120	7.0
Motor Oil Range	290	U
Surrogate Recovery	73%	81%

Date Sampled	5/2/97	5/2/97
Date Extracted	5/2/97	5/2/97
Date Analyzed	5/3/97	5/3/97
Holding Time Days	0	0

Reporting Limit

Diesel Range	7.3	6.9
Motor Oil Range	18	17



**Summary Report - Pentachlorophenol**  
**Weyerhaeuser Analytical**  
**SR#03821 - Everett East Site Remediation Soils**  
**Method: EPA8270B**  
**Units: ug/Kg (PPB)**

Client ID		8-2-CB-2	8-2-CN-2	8-2-CS-2
Sample Date and Time		05/02/97 13:15	05/02/97 13:10	05/02/97 13:00
Lab ID		81389	81390	81391
<u>Analyte</u>	<u>CAS</u>			
Pentachlorophenol	87-86-5	12000	5700	4900 U
<u>Surrogates %Recovery</u>	<u>Limits</u>			
2-Fluorophenol	(25-121)	60%	62%	61%
Phenol-d5	(24-113)	60%	69%	60%
Nitrobenzene-d5	(23-120)	65%	69%	62%
2-Fluorobiphenyl	(30-115)	72%	76%	70%
2,4,6-Tribromophenol	(19-122)	20%	65%	58%
Terphenyl-d14	( <del>18</del> -137)	74%	77%	68%
2-Chlorophenol-d4	(advisory)	64%	73%	66%
1,2-Dichlorobenzene-d4	(advisory)	77%	76%	68%
Date Extracted		05/02/97	05/02/97	05/02/97
Date Analyzed		05/05/97	05/05/97	05/05/97

# Summary Report - Pentachlorophenol

Weyerhaeuser Analytical

SR#03821 - Everett East Site Remediation Soils

Method: EPA8270B

Units: ug/Kg (PPB)

<b>Client ID</b>		8-2-CW-1(R)	Method Blank
<b>Sample Date and Time</b>		05/02/97 13:05	12/08/95
<b>Lab ID</b>		81392	SBL4T1_050297
<b>Analyte</b>	<b>CAS</b>		
Pentachlorophenol	87-86-5	92000	730 U
<b>Surrogates %Recovery</b>	<b>Limits</b>		
2-Fluorophenol	(25-121)	50%	62%
Phenol-d5	(24-113)	54%	64%
Nitrobenzene-d5	(23-120)	55%	66%
2-Fluorobiphenyl	(30-115)	69%	70%
2,4,6-Tribromophenol	(19-122)	54%	59%
Terphenyl-d14	<del>(18-137)</del>	72%	68%
2-Chlorophenol-d4	(advisory)	58%	68%
1,2-Dichlorobenzene-d4	(advisory)	61%	71%
<b>Date Extracted</b>		05/02/97	05/02/97
<b>Date Analyzed</b>		05/05/97	05/05/97

2D  
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: WEYERHAEUSER

Contract:

Lab Code: WEYER

Case No.: 3821

Method: 8270B

SDG No.: 81388

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	8-2-CN-2	62	69	69	76	65	77	73	76	0
02	8-2-CS-2	61	60	62	70	58	68	66	68	0
03	8-2-CB-2	60	60	65	72	20D	74	64	77	0
04	8-2-CW-1 (R)	50	54	55	69	54	72	58	61	0
05	SLC4T1_050297	61	62	64	68	64	68	66	70	0
06	SBL4T1_050297	62	64	66	70	59	68	68	71	0
07										
08										
09										
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27										
28										
29										
30										

		QC LIMITS	8270B LIMITS
S1	(2FP) = 2-Fluorophenol	(30- 88)	(25-121)
S2	(PHL) = Phenol-d5	(38- 92)	(24-113)
S3	(NBZ) = Nitrobenzene-d5	(50-104)	(23-120)
S4	(FBP) = 2-Fluorobiphenyl	(56-104)	(30-115)
S5	(TBP) = 2,4,6-Tribromophenol	(47-119)	(19-122)
S6	(TPH) = Terphenyl-d14	(55-137)	(18-137)
S7	(2CP) = 2-Chlorophenol-d4	(45- 95)	(advisory)
S8	(DCB) = 1,2-Dichlorobenzene-d4	(49- 89)	(advisory)

# Column to be used to flag recovery values  
 \* Values outside of contract required QC limits  
 D Surrogate diluted out

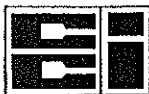
Weyerhaeuser Chromatography Laboratory

RECOVERY REPORT

Client Name: Client SDG: 81388  
 Sample Matrix: SOLID Fraction: SV  
 Lab Smp Id: SLC4T1\_050297 Client Smp ID: SLC4T1\_050297  
 Level: LOW Operator: Leong  
 Data Type: MS DATA SampleType: METHSPIKE  
 SpikeList File: 8270s.spk Quant Type: ISTD  
 Method File: /chem/hp2.i/h2sv050597.b/8270Bh27c.m  
 Misc Info:

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
3 Phenol	6800	3800	56.08	34-84
7 2-Chlorophenol	6800	4200	61.55	35-85
9 1,4-Dichlorobenzen	4500	2800	61.01	37-89
16 N-Nitrosodinpropyl	4500	2700	60.27	43-101
27 1,2,4-Trichloroben	4500	2800	62.57	40-98
32 4-Chloro-3-Methylp	6800	4300	63.15	38-96
45 Acenaphthene	4500	3000	65.01	42-94
47 4-Nitrophenol	6800	5100	74.55	45-97
49 2,4-Dinitrotoluene	4500	3300	71.83	48-94
60 Pentachlorophenol	6800	5000	72.73	37-121
68 Pyrene	4500	3000	67.01	61-105

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 1 2-Fluorophenol	6800	4200	61.00	30-88
\$ 2 Phenol-d5	6800	4200	62.13	38-92
\$ 6 2-Chlorophenol-d4	6800	4500	66.39	45-95
\$ 11 1,2-Dichlorobenzen	4500	3200	70.09	49-89
\$ 19 Nitrobenzene-d5	4500	2900	64.14	50-104
\$ 37 2-Fluorobiphenyl	4500	3100	67.71	56-104
\$ 57 2,4,6-Tribromophen	6800	4400	64.26	47-119
\$ 69 Terphenyl-d14	4500	3100	68.33	55-137



CERTIFICATE OF ANALYSIS

CLIENT: WEYERHAEUSER  
101 EAST MARINE VIEW DRIVE  
EVERETT, WA 98201

DATE: 5/7/97  
CCIL JOB #: 705015  
CCIL SAMPLE #: 1  
DATE RECEIVED: 5/6/97  
WDOE ACCREDITATION #: C142

CLIENT CONTACT: STUART TRIOLO/ TERRY OLMSTED

CLIENT PROJECT ID: EVERETT EAST SITE #34  
CLIENT SAMPLE ID: 7-2A-CSW-7 5/6/97 0900

DATA RESULTS

ANALYTE	METHOD	RESULTS*	UNITS**	ACTION LEVEL***	ANALYSIS DATE	ANALYSIS BY
TPH-DIESEL RANGE	WTPH-D EXT W/ CLEANUP	89	MG/KG		5/6/97	AMR
TPH-OIL RANGE	WTPH-D EXT W/ CLEANUP	410	MG/KG		5/6/97	AMR
BENZO[A]ANTHRACENE	EPA-8270	4600	UG/KG		5/6/97	LRK
CHRYSENE	EPA-8270	4500	UG/KG		5/6/97	LRK
BENZO[B]FLUORANTHENE	EPA-8270	5300	UG/KG		5/6/97	LRK
BENZO[K]FLUORANTHENE	EPA-8270	2000	UG/KG		5/6/97	LRK
BENZO[A]PYRENE	EPA-8270	5500	UG/KG		5/6/97	LRK
INDENO[1,2,3-CD]PYRENE	EPA-8270	4000	UG/KG		5/6/97	LRK
DIBENZ[A,H]ANTHRACENE	EPA-8270	ND(<1300)	UG/KG		5/6/97	LRK
PCB-1016	EPA-8081	ND(<0.1)	MG/KG		5/7/97	AMR
PCB-1221	EPA-8081	ND(<0.1)	MG/KG		5/7/97	AMR
PCB-1232	EPA-8081	ND(<0.1)	MG/KG		5/7/97	AMR
PCB-1242	EPA-8081	ND(<0.1)	MG/KG		5/7/97	AMR
PCB-1248	EPA-8081	ND(<0.1)	MG/KG		5/7/97	AMR
PCB-1254	EPA-8081	1.2	MG/KG		5/7/97	AMR
PCB-1260	EPA-8081	ND(<0.1)	MG/KG		5/7/97	AMR

NOTE: DIESEL RESULT IS PRIMARILY DUE TO FRONT OF OIL RANGE PRODUCT ELUTING IN DIESEL RANGE

\* "ND" INDICATES ANALYTE NOT DETECTED AT LEVEL ABOVE REPORTING LIMIT. REPORTING LIMIT IS GIVEN IN PARENTHESES

\*\* UNITS FOR ALL NON LIQUID SAMPLES ARE REPORTED ON A DRY WEIGHT BASIS

\*\*\* ACTIONS LEVELS ARE PROVIDED ONLY WHEN PARAMETER DATA IS USED FOR A GENERALLY CONSISTENT APPLICATION. WHEN PROVIDED, THEY SHOULD BE USED AS GUIDELINES ONLY. THE APPROPRIATE REGULATORY DOCUMENT SHOULD BE CONSULTED BEFORE MAKING ANY DECISIONS BASED ON ANALYTICAL DATA

APPROVED BY: 







CERTIFICATE OF ANALYSIS

CLIENT: WEYERHAEUSER  
101 EAST MARINE VIEW DRIVE  
EVERETT, WA 98201

DATE: 5/7/97  
CCIL JOB #: 705015

DATE RECEIVED: 5/6/97  
WDOE ACCREDITATION #: C142

CLIENT CONTACT: STUART TRIOLO/ TERRY OLMSTED

CLIENT PROJECT ID: EVERETT EAST SITE #34

QUALITY CONTROL RESULTS

SURROGATE RECOVERY

CCIL SAMPLE ID	ANALYTE	SUR ID	% RECV
705015-01	WTPH-D EXT	C25	82 ✓
705015-01	EPA-8270	TERPHENYL-d14	105 ✓
705015-01	EPA-8081	TCMX	90 ✓
705015-01	EPA-8081	DCB	98 ✓
705015-02	WTPH-D EXT	C25	105 ✓
705015-02	EPA-8270	TERPHENYL-d14	106 ✓
705015-02	EPA-8081	TCMX	54 ✓
705015-02	EPA-8081	DCB	70 ✓
705015-03	WTPH-D EXT	C25	84 ✓
705015-03	EPA-8270	TERPHENYL-d14	105 ✓
705015-03	EPA-8081	TCMX	60 ✓
705015-03	EPA-8081	DCB	82 ✓

APPROVED BY: 





Analytical & Testing Services

Sample Analysis Request/Chain of Custody Form

705015

Date 5/16/97 Page 1 of 1

Facility Everett East-Side Box 34  
 Sampler's Project No. 120-2974670  
 Weyerhaeuser Account No. 120-2974670  
 Sampled by: Terry Owsred / DAF  
 Facility 1111 Northcreek Pkwy Ste 101  
 E&ASWTC Bothell, WA 98011  
 E&ASINB 286-7903 286-7657

Project Manager (print) Stuart Trold  
 Sampler Name (print) Terry Owsred  
 Recorded By (signed) [Signature]  
 Matrix Preservative

Field Sample ID (15 characters max.)	Date (m/d/y)	Time (hh:mm)	Depth (ft m)	Water	Oil	HCl	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub>	Filtered
G 7-2A-CSW-7	5/16/97	0900	0-0.5	X						
G 7-2A-CSW-8	7/11	0905	0-1.5	X						
G 7-2A-CSW-9	11	0910	0-0.5	X						

Method: G, grab; D, depth composite; T, time composite. Depth required for soil or sediment samples.

Reporting and QA/QC Requirements  
 CLP Package  
 NPDES Permit  
 Other: \_\_\_\_\_  
 Electronic Report

RESULT: M. Dalton  
DAF  
Fax Stuart Trold  
339-2786

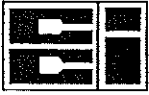
Relinquished By (signature): [Signature] Date: 5/16/97 Time: 11:00  
 Relinquished By (signature): [Signature] Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished By (signature): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Number of Containers: 1

Analyses Requested (circle or write in parameters)	Notes
TKN P-totol TOC COD	
BOD P-ortho	
CN	
Dioxin: Total / 2,3,7,8-TCDF / 2,3,7,8-TCDF	
TCLP: Metals VOA SVOA Post Herb PCBs	
AOX	
NH <sub>3</sub> HCO <sub>3</sub> CO <sub>3</sub> Cl F NO <sub>3</sub> SO <sub>4</sub>	
Metals (list below)	
Ca Mg Na K Fe Mn	
TPH: 418.1 TPH-G TPH-D <u>X</u>	
Semi-volatile Organics	
Volatile Organics / BTEX	
pH Cond TDS TSS Color Tannins	

Remarks/Detection Limit Requirements  
\* WTPH-DX w/SG / Acc'dush  
24hr TPH  
48hr PCB/OPAH

Shipping Method: \_\_\_\_\_  
 Airbill No.: \_\_\_\_\_  
 Received For Laboratory By (signature): \_\_\_\_\_  
 Samples Received Intact: \_\_\_\_\_  
 Cooler Temp: \_\_\_\_\_ °C



CERTIFICATE OF ANALYSIS

CLIENT: WEYERHAEUSER  
101 EAST MARINE VIEW DRIVE  
EVERETT, WA 98201

DATE: 5/9/97  
CCIL JOB #: 705021  
CCIL SAMPLE #: 1  
DATE RECEIVED: 5/7/97  
WDOE ACCREDITATION #: C142

CLIENT CONTACT: STUART TRIOLO/ TERRY OLMSTED

CLIENT PROJECT ID: EVERETT  
CLIENT SAMPLE ID: 7-2A-CSWE10 5/7/97 1:15 1.5'

DATA RESULTS

ANALYTE	METHOD	RESULTS*	UNITS**	ACTION LEVEL***	ANALYSIS DATE	ANALYSIS BY
TPH-DIESEL RANGE	WTPH-D EXT W/ CLEANUP	110	MG/KG		5/8/97	AMR
TPH-OIL RANGE	WTPH-D EXT W/ CLEANUP	500	MG/KG		5/8/97	AMR
BENZO[A]ANTHRACENE	EPA-8270	1300	UG/KG		5/7/97	LRK
CHRYSENE	EPA-8270	1300	UG/KG		5/7/97	LRK
BENZO[B]FLUORANTHENE	EPA-8270	1400	UG/KG		5/7/97	LRK
BENZO[K]FLUORANTHENE	EPA-8270	600	UG/KG		5/7/97	LRK
BENZO[A]PYRENE	EPA-8270	1400	UG/KG		5/7/97	LRK
INDENO[1,2,3-CD]PYRENE	EPA-8270	1100	UG/KG		5/7/97	LRK
DIBENZ[A,H]ANTHRACENE	EPA-8270	ND(<400)	UG/KG		5/7/97	LRK
PCB-1016	EPA-8081	ND(<0.1)	MG/KG		5/8/97	AMR
PCB-1221	EPA-8081	ND(<0.1)	MG/KG		5/8/97	AMR
PCB-1232	EPA-8081	ND(<0.1)	MG/KG		5/8/97	AMR
PCB-1242	EPA-8081	ND(<0.1)	MG/KG		5/8/97	AMR
PCB-1248	EPA-8081	ND(<0.1)	MG/KG		5/8/97	AMR
PCB-1254	EPA-8081	0.9	MG/KG		5/8/97	AMR
PCB-1260	EPA-8081	ND(<0.1)	MG/KG		5/8/97	AMR

NOTE: DIESEL RESULT IS PRIMARILY DUE TO FRONT OF OIL RANGE PRODUCT ELUTING IN DIESEL RANGE

\* "ND" INDICATES ANALYTE NOT DETECTED AT LEVEL ABOVE REPORTING LIMIT. REPORTING LIMIT IS GIVEN IN PARENTHESES

\*\* UNITS FOR ALL NON LIQUID SAMPLES ARE REPORTED ON A DRY WEIGHT BASIS

\*\*\* ACTIONS LEVELS ARE PROVIDED ONLY WHEN PARAMETER DATA IS USED FOR A GENERALLY CONSISTENT APPLICATION. WHEN PROVIDED, THEY SHOULD BE USED AS GUIDELINES ONLY. THE APPROPRIATE REGULATORY DOCUMENT SHOULD BE CONSULTED BEFORE MAKING ANY DECISIONS BASED ON ANALYTICAL DATA

APPROVED BY: 







CERTIFICATE OF ANALYSIS

CLIENT: WEYERHAEUSER  
101 EAST MARINE VIEW DRIVE  
EVERETT, WA 98201

DATE: 5/9/97  
CCIL JOB #: 705021

DATE RECEIVED: 5/7/97  
WDOE ACCREDITATION #: C142

CLIENT CONTACT: STUART TRIOLO/ TERRY OLMSTED

CLIENT PROJECT ID: EVERETT

QUALITY CONTROL RESULTS

SURROGATE RECOVERY

CCIL SAMPLE ID	ANALYTE	SUR ID	% RECV
705021-01	WTPH-D EXT	C25	71 ✓
705021-01	EPA-8270	TERPHENYL-d14	110 ✓
705021-01	EPA-8081	TCMX	86 ✓
705021-01	EPA-8081	DCB	94 ✓
705021-02	WTPH-D EXT	C25	75 ✓
705021-02	EPA-8270	TERPHENYL-d14	108 ✓
705021-02	EPA-8081	TCMX	77 ✓
705021-02	EPA-8081	DCB	81 ✓
705021-03	WTPH-D EXT	C25	67 ✓
705021-03	EPA-8270	TERPHENYL-d14	115 ✓
705021-03	EPA-8081	TCMX	87 ✓
705021-03	EPA-8081	DCB	92 ✓

APPROVED BY: CRH



**APPENDIX C**

**SURVEY DRAWINGS AND COORDINATES/ELEVATION  
OF WELL MW-RA8-3**

**BY W&H PACIFIC  
WEYERHAEUSER EAST SITE REMEDIATION  
EVERETT, WASHINGTON**



# W&H PACIFIC

3025-112th Avenue N.E.  
P.O. Box C-97304  
Bellevue, WA 98009-9304

## Weyerhaeuser East Everett Site Remediation Area's

On April 30, 1997 W&H Pacific located 18 remediation areas with Real Time Kinematic GPS methods. Horizontal positions and elevations were established for the boundaries of each area. Rough volumes were calculated from these exterior measurements. These calculations are by no means accurate, as interior measurements were not possible. These calculations can be used as an indicator only.

### Table of Contents

RA 7-2A ✓

RA 7-2B ✓

RA 7-2C ✓

RA 8-1 ✓

RA 8-2 ✓

RA 8-3A ✓

RA 8-3B ✓

RA 8-4 ✓

RA 9-1 ✓

RA 10-1 ✓

RA 10-2 ✓

RA 10-3A ✓

RA 10-3B ✓

RA 10-3C ✓

RA 10-4A ✓

RA 10-4B ✓

RA 10-4C ✓

RA 10-4D ✓

Coordinates for TP16A





N 372150.41  
E 1310032.40  
ELEV=9.13

N 372115.34  
E 1310093.76  
ELEV=9.93

N 372098.99  
E 1309983.59  
ELEV=10.01

N 372010.39  
E 1310096.69  
ELEV=10.46

N 371994.89  
E 1310045.53  
ELEV=11.88

9.7

9.7

9.8

9.7

9.7



RA 7-2A  
SITE NOT ESCAVATED YET  
AREA=112,210.86 SQ.FT.

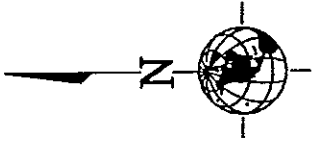
9.3

9.8

N 372166.75  
E 1310026.58  
ELEV=8.22

N 372152.03  
E 1310034.30  
ELEV=9.65

8.6



RA 7-2B

SITE NOT DUG YET

AREA=1466.36 SQ.FT.

8.1

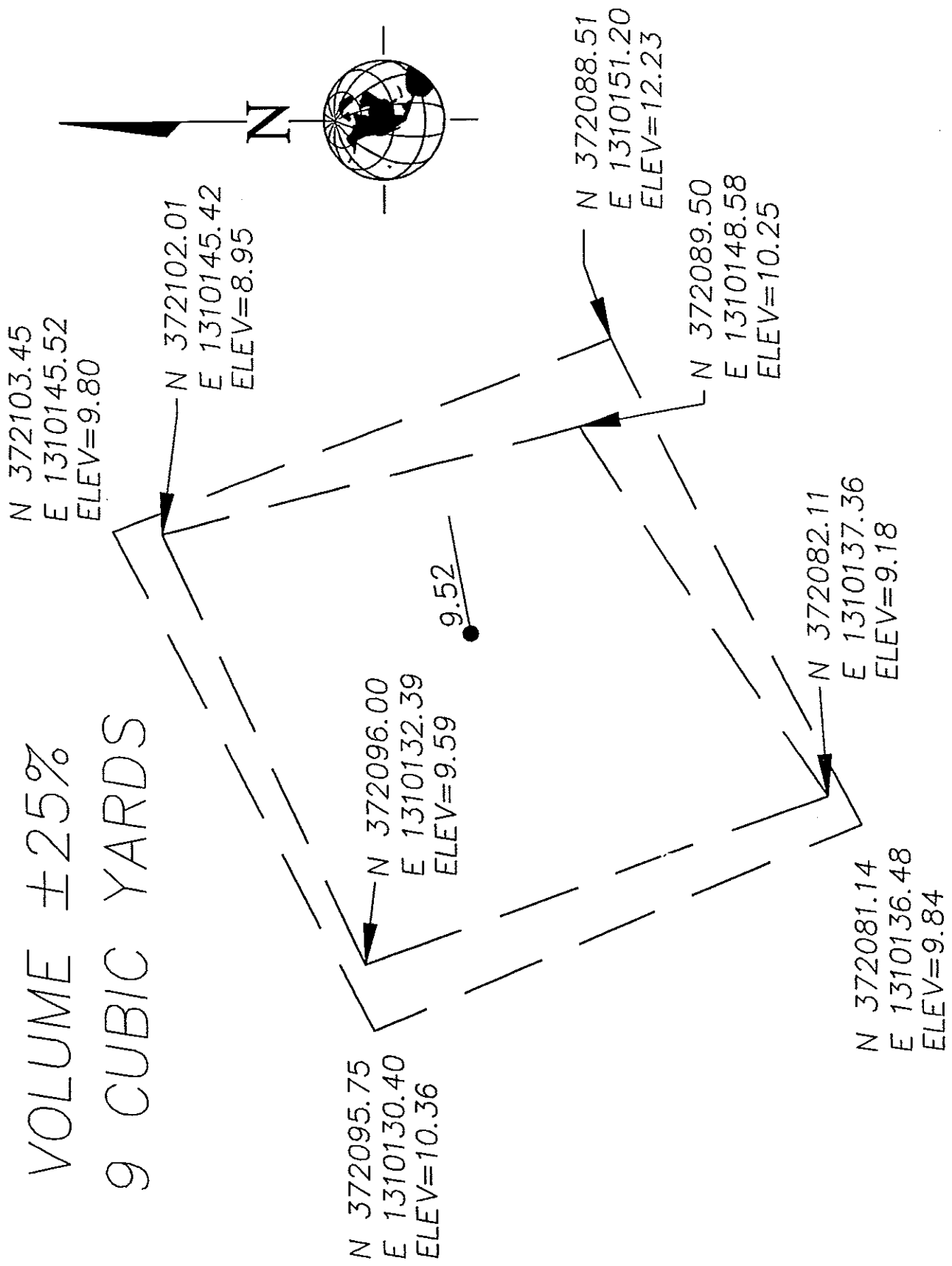
N 372162.80  
E 1309970.46  
ELEV=7.56

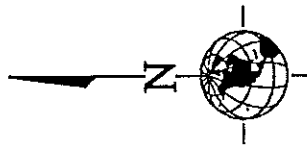
N 372120.51  
E 1309995.00  
ELEV=10.08

RA 7-2C

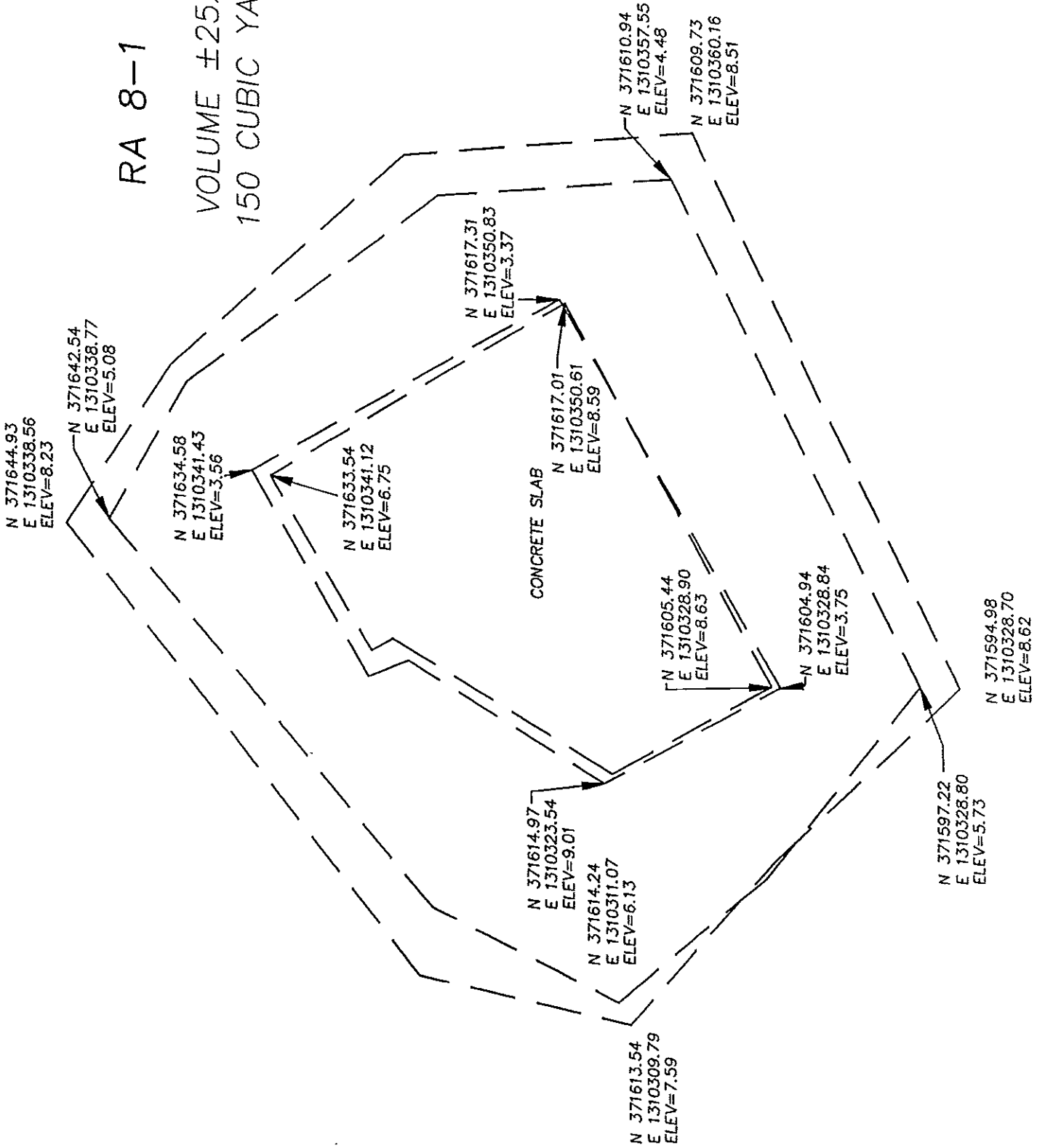
VOLUME ±25%

9 CUBIC YARDS





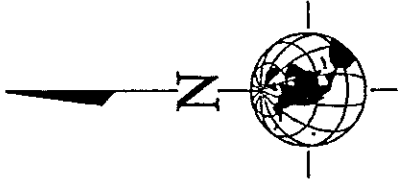
RA 8-1  
VOLUME ±25%  
150 CUBIC YARDS



RA 8-2

VOLUME ±25%

38 CUBIC YARDS



N 371569.61  
E 1310381.07  
ELEV=7.87

N 371568.75  
E 1310381.16  
ELEV=6.60

N 371554.92  
E 1310371.77  
ELEV=4.69

N 371545.53  
E 1310388.24  
ELEV=6.13

N 371544.74  
E 1310389.18  
ELEV=7.04

N 371536.59  
E 1310360.95  
ELEV=5.57

N 371535.05  
E 1310360.42  
ELEV=7.06

N 371558.23  
E 1310349.84  
ELEV=7.59

N 371558.12  
E 1310350.89  
ELEV=6.10

N



RA 8-3B

VOLUME ±25%

6 CUBIC YARDS

N 371359.30  
E 1310615.36  
ELEV=8.30

N 371356.85  
E 1310614.25  
ELEV=5.96

N 371348.82  
E 1310618.10  
ELEV=7.47

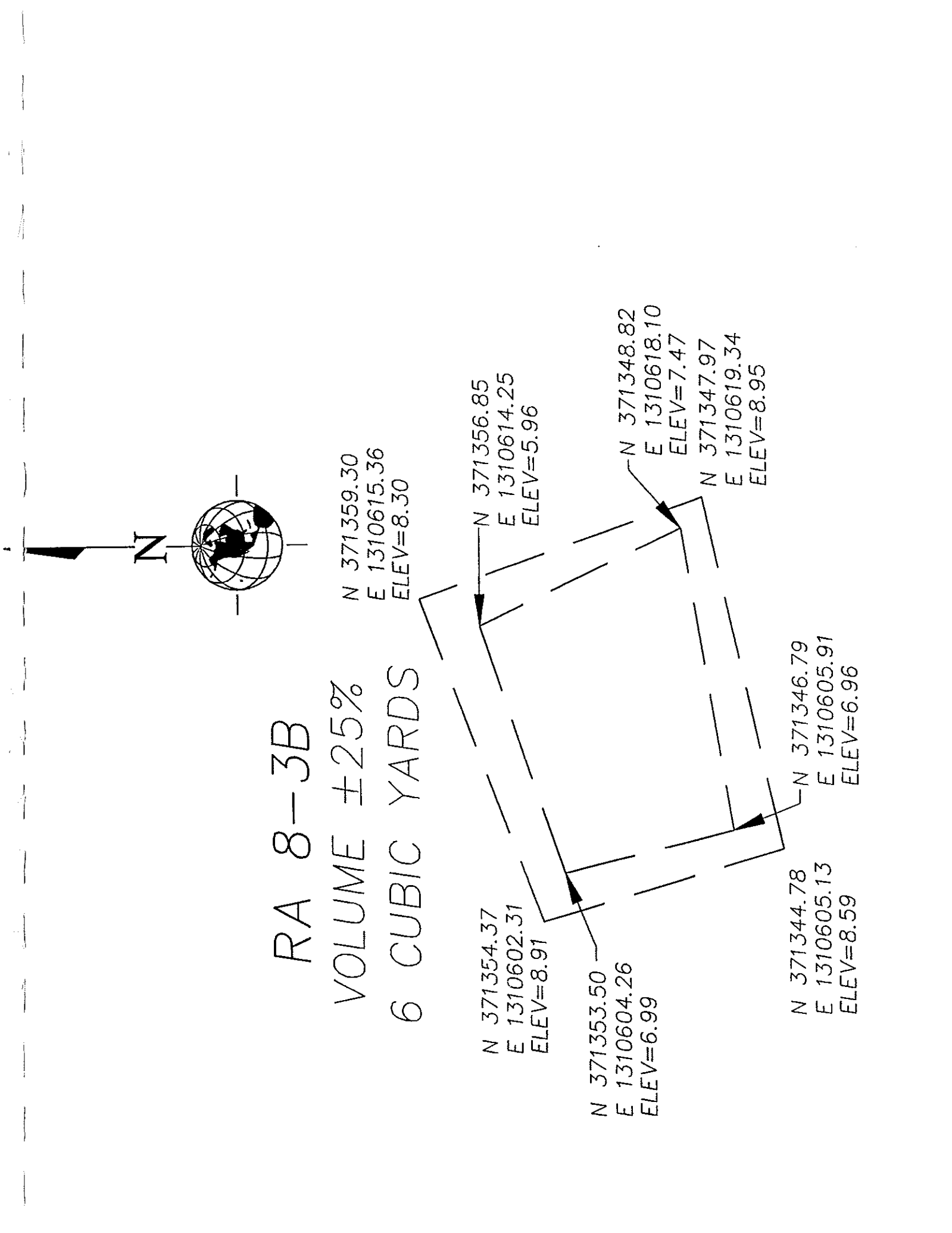
N 371347.97  
E 1310619.34  
ELEV=8.95

N 371354.37  
E 1310602.31  
ELEV=8.91

N 371353.50  
E 1310604.26  
ELEV=6.99

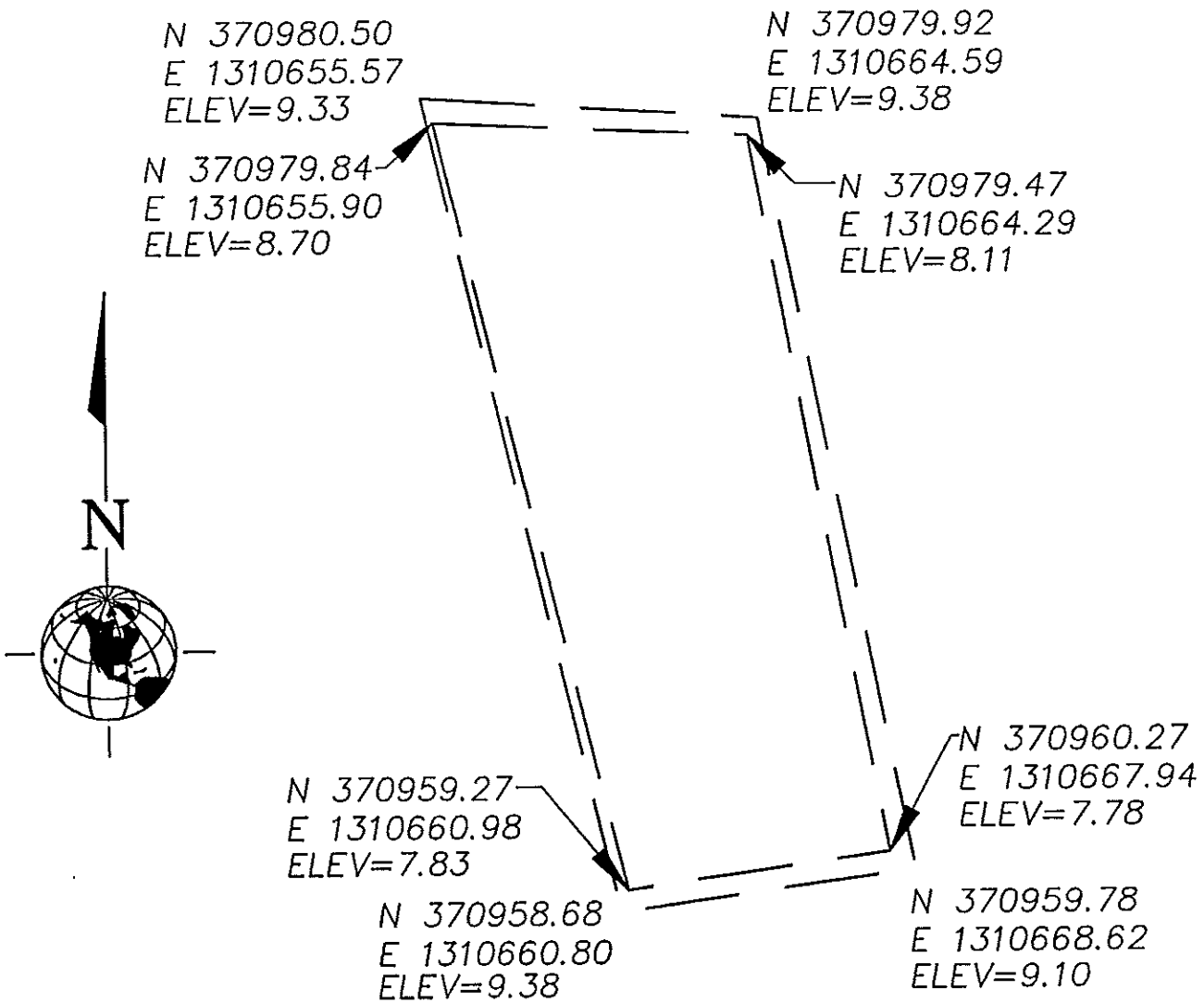
N 371346.79  
E 1310605.91  
ELEV=6.96

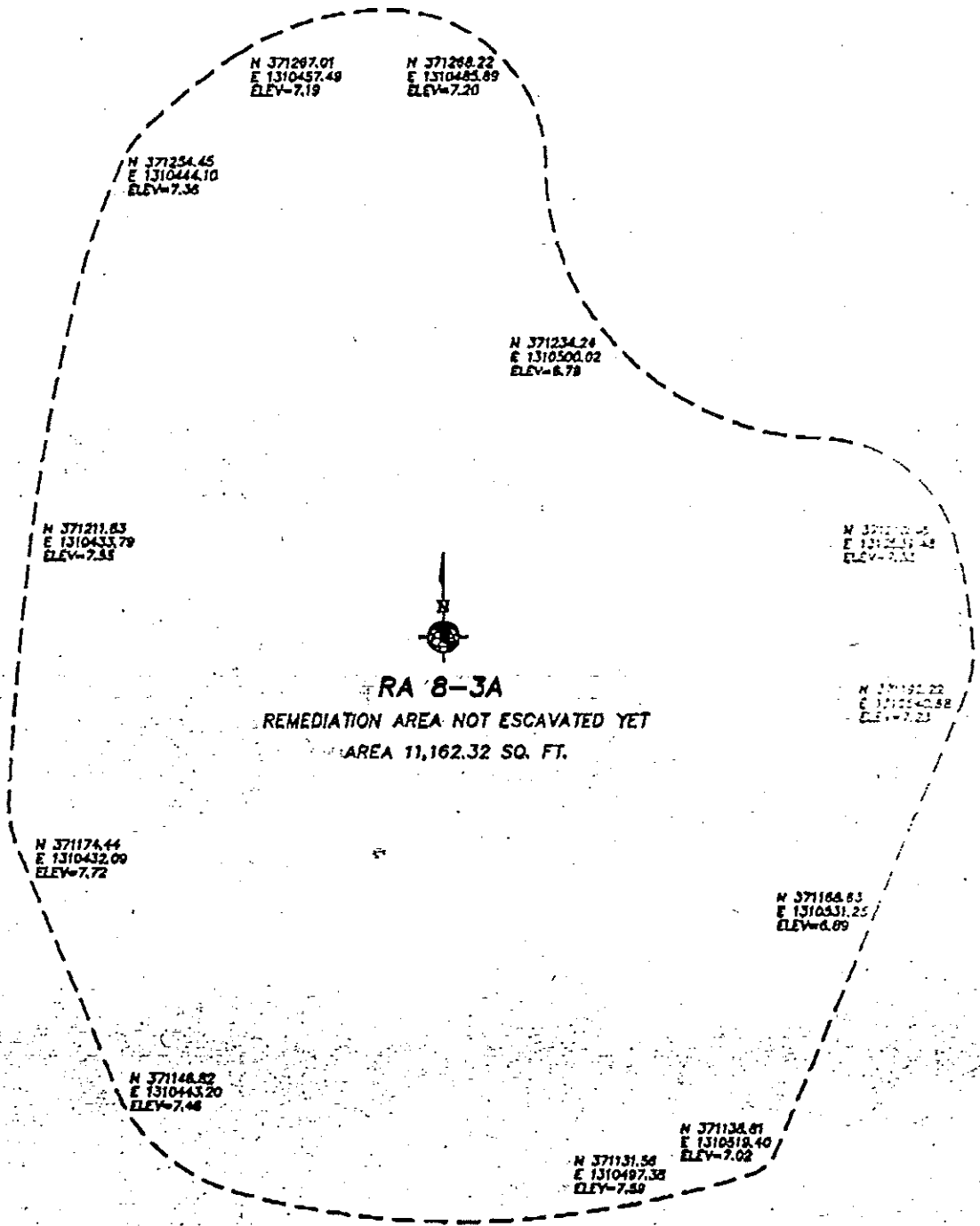
N 371344.78  
E 1310605.13  
ELEV=8.59



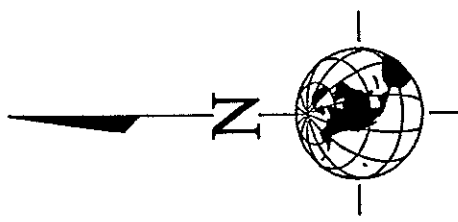
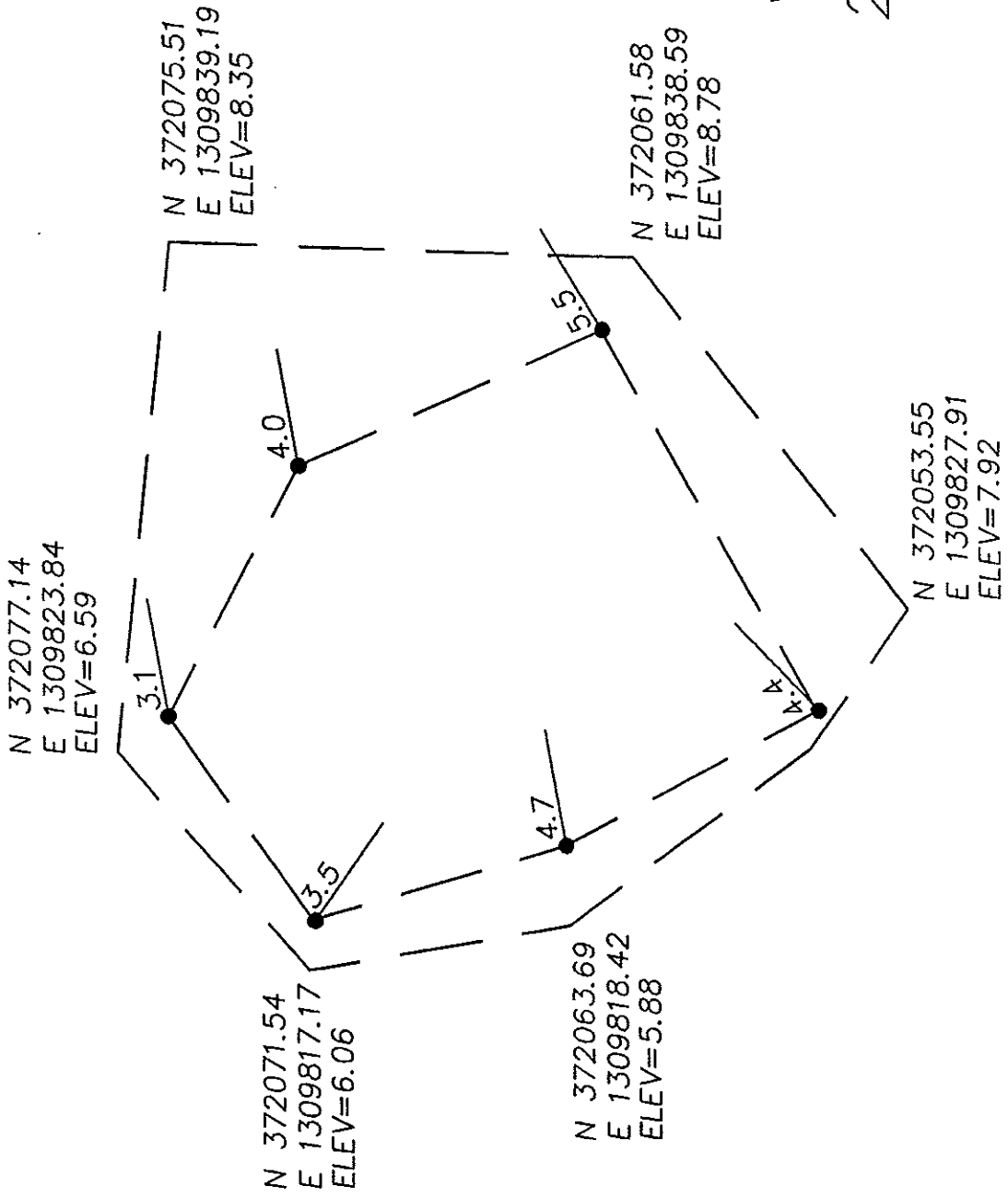
RA 8-4

VOLUME  $\pm 25\%$   
7 CUBIC YARDS









RA 9-1  
 VOLUME ±25%  
 27 CUBIC YARDS

N 371931.70  
E 1309237.96  
ELEV=7.13

N 371931.09  
E 1309239.33  
ELEV=5.25

N 371943.55  
E 1309282.04  
ELEV=5.71

N 371947.79  
E 1309284.64  
ELEV=7.71

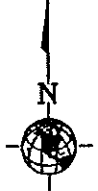
N 371926.56  
E 1309295.99  
ELEV=7.81

N 371914.02  
E 1309301.62  
ELEV=5.46

N 371914.98  
E 1309307.89  
ELEV=7.87

N 371894.47  
E 1309248.33  
ELEV=7.00

N 371894.49  
E 1309249.05  
ELEV=5.41



RA 10-1

VOLUME ±25%  
308 CUBIC YARDS

N 371891.52  
E 1309312.20  
ELEV=4.94

N 371890.74  
E 1309313.05  
ELEV=7.84

N 371888.05  
E 1309304.95  
ELEV=4.99

N 371885.94  
E 1309306.80  
ELEV=7.71

N 371852.72  
E 1309309.30  
ELEV=4.76

N 371852.20  
E 1309313.51  
ELEV=7.49

N 371837.85  
E 1309268.21  
ELEV=4.79

N 371840.49  
E 1309271.29  
ELEV=5.26

N 371844.02  
E 1309293.67  
ELEV=4.92

N 371842.15  
E 1309295.51  
ELEV=6.63

N 371837.05  
E 1309265.72  
ELEV=6.76

N 371839.09  
E 1309271.13  
ELEV=7.23

N 371826.75  
E 1309276.26  
ELEV=4.98

N 371831.93  
E 1309292.92  
ELEV=4.74

N 371831.86  
E 1309295.07  
ELEV=7.16

N 371826.12  
E 1309275.78  
ELEV=7.10

N 371426.60  
E 1309522.76  
ELEV=6.48

N 371426.16  
E 1309542.17  
ELEV=7.05

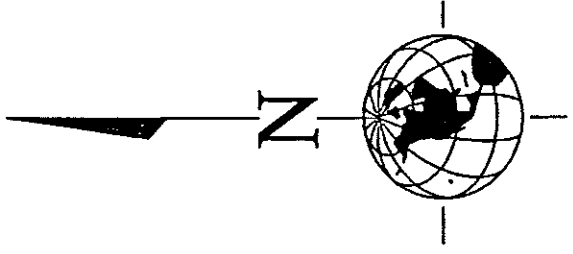
RA 10-2

FILLED IN

AREA 182.3 SQ. FT.

N 371416.60  
E 1309527.68  
ELEV=6.67

N 371415.58  
E 1309544.20  
ELEV=7.32

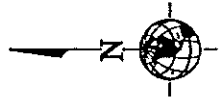


N 371375.45  
E 1309684.58  
ELEV=8.06

N 371373.73  
E 1309684.93  
ELEV=4.64

N 371356.49  
E 1309698.90  
ELEV=7.85

N 371355.80  
E 1309697.46  
ELEV=4.53



N 371328.38  
E 1309682.94  
ELEV=8.09

N 371329.24  
E 1309681.21  
ELEV=5.35

N 371296.85  
E 1309666.31  
ELEV=6.20

N 371297.96  
E 1309664.83  
ELEV=5.61

RA 10-3A  
VOLUME ±25%  
205 CUBIC YARDS

N 371324.69  
E 1309652.28  
ELEV=5.01

N 371326.73  
E 1309651.44  
ELEV=8.09

N 371299.97  
E 1309639.07  
ELEV=7.95

N 371300.97  
E 1309638.23  
ELEV=5.29

N 371312.26  
E 1309627.47  
ELEV=5.92

N 371330.88  
E 1309634.16  
ELEV=5.02

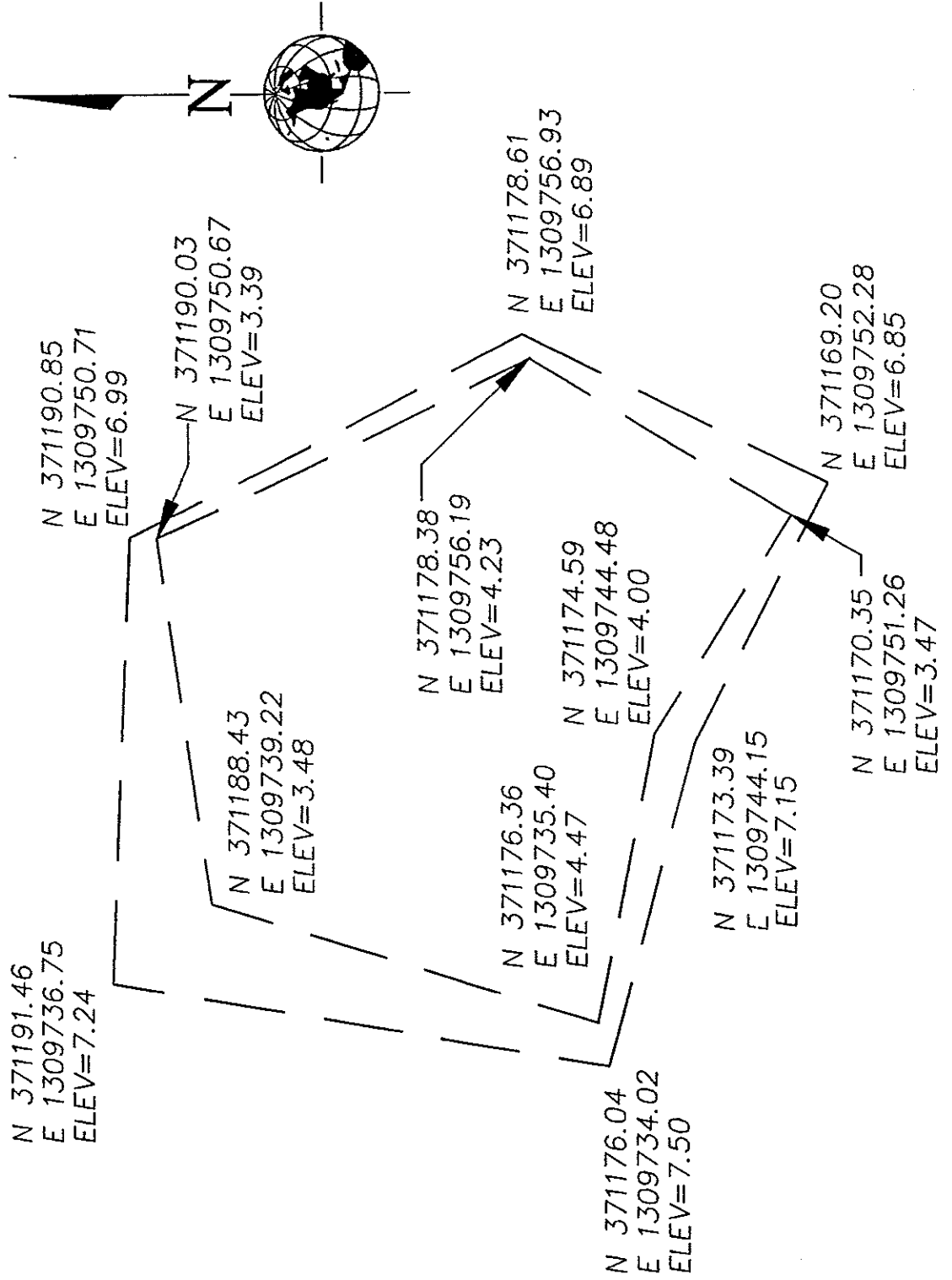
N 371331.76  
E 1309632.86  
ELEV=7.94

N 371312.51  
E 1309623.13  
ELEV=7.82

RA 10-3B

VOLUME ±25%

35 CUBIC YARDS



N 371318.26  
E 1309746.44  
ELEV=7.04

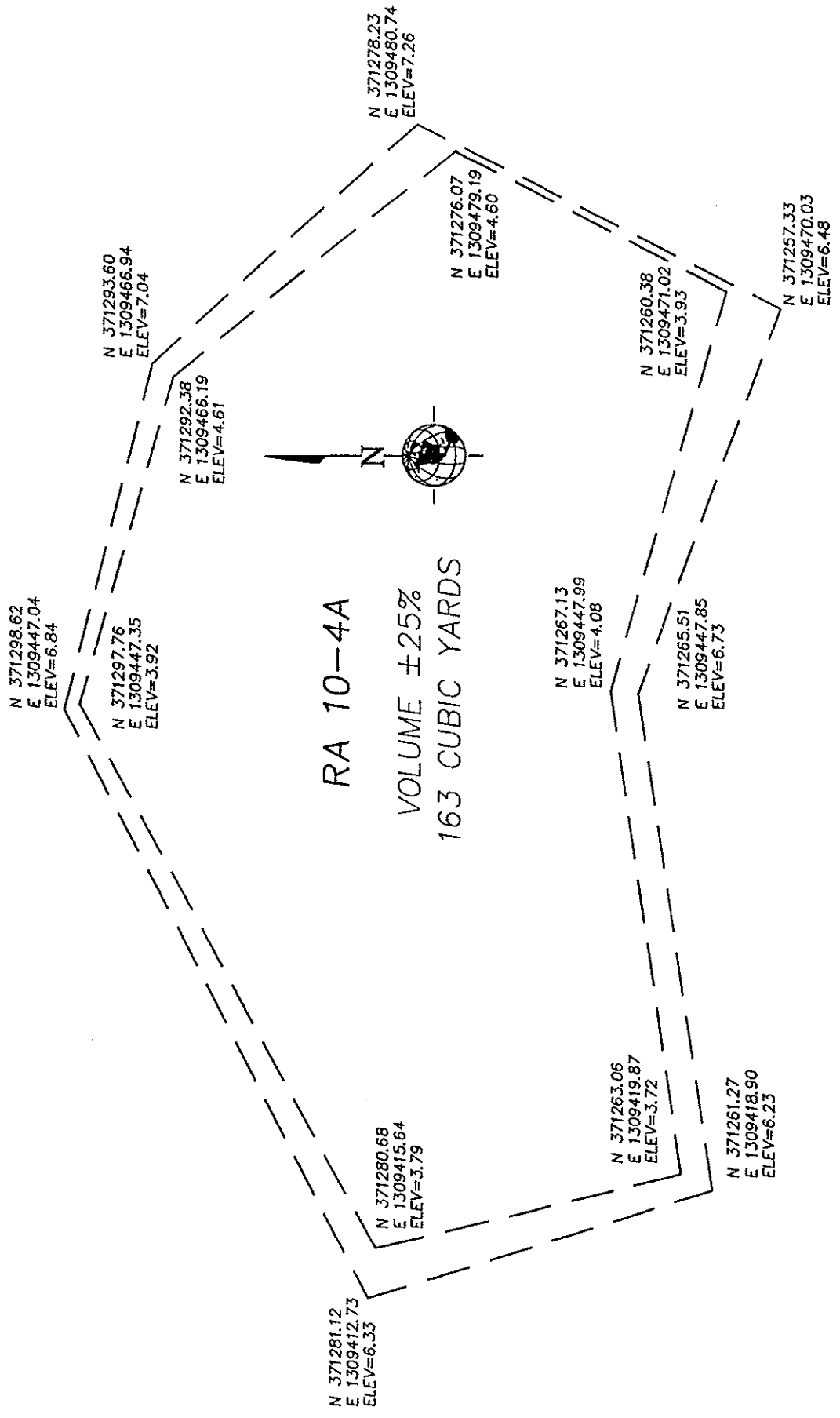
N 371299.66  
E 1309722.72  
ELEV=7.72



RA 10-3C

N 371270.40  
E 1309757.75  
ELEV=7.09

N 371210.11  
E 1309773.80  
ELEV=7.22



N 371231.34  
E 1309461.92  
ELEV=6.20

N 371237.68  
E 1309502.54  
ELEV=6.89



RA 10-4B

AREA 2,475.49 SQ. FT.

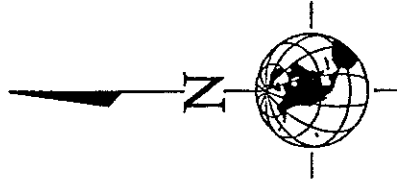
DIRT PILE

TRENCH APPROX 3' WIDE

N 371177.04  
E 1309514.60  
ELEV=6.62

N 371170.57  
E 1309476.48  
ELEV=6.36





N 371333.78  
E 1309549.83  
ELEV=6.35

N 371331.94  
E 1309549.37  
ELEV=3.28

N 371306.23  
E 1309552.97  
ELEV=4.05

N 371303.55  
E 1309556.14  
ELEV=6.83

RA 10-4C

VOLUME ±25%

78 CUBIC YARDS

N 371323.04  
E 1309520.75  
ELEV=3.87

N 371300.47  
E 1309527.44  
ELEV=3.44

N 371298.82  
E 1309523.14  
ELEV=7.02

N 371325.32  
E 1309519.60  
ELEV=7.02

RA 10-4D  
VOLUME  $\pm 25\%$   
20 CUBIC YARDS

N 371241.07  
E 1309593.93  
ELEV=7.82

N 371241.43  
E 1309605.34  
ELEV=8.54

N 371237.13  
E 1309592.87  
ELEV=3.83

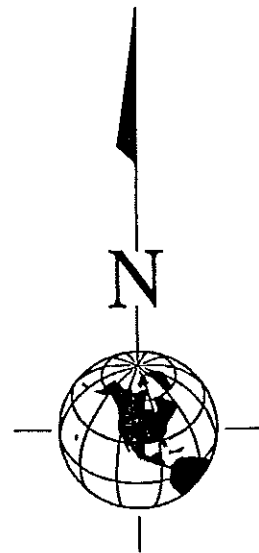
N 371238.11  
E 1309601.20  
ELEV=4.35

N 371223.32  
E 1309588.46  
ELEV=4.36

N 371223.12  
E 1309587.61  
ELEV=6.79

N 371222.65  
E 1309599.42  
ELEV=3.24

N 371220.43  
E 1309602.11  
ELEV=7.25



1613	369860.503	1310564.155	SB3
1612	369969.071	1310503.834	SB4
1599	370454.948	1310419.655	SB5
1670	370503.428	1310553.937	SB6
1636	370258.829	1310693.318	SB8
1637	370160.002	1310733.313	SB9
1510	371449.089	1308432.089	SMIC
1512	371449.089	1308432.089	SMIC
1566	367181.331	1310317.162	SPM-1
1576	369652.743	1309776.598	SPM-13
1571	370555.258	1309523.37	SPM-14
1575	371304.234	1309323.899	SPM-15
1574	371467.793	1308489.5	SPM-16
1573	367167.115	1309949.764	SPM-2
1567	371141.958	1309866.468	SPM-20
1577	372419.871	1309618.842	SPM-21
1565	368039.181	1310191.991	SPM-3
1570	368874.461	1310415.395	SPM-4
1564	369944.275	1310726.744	SPM-5
1569	370228.642	1310228.315	SPM-6
1568	371498.204	1310536.689	SPM-7
1508	372980.955	1309056.701	SPM-8
1545	372980.955	1309056.707	SPM-8
1572	372301.688	1309056.6	SPM-9
1680	367338.194	1310262.766	TP1
1694	368642.569	1310362.971	TP10
1692	368701.676	1310214.213	TP11
1689	368382.963	1310146.251	TP13
1686	368156.708	1310064.76	TP14
1685	368176.202	1310194.887	TP15
1597	370319.44	1310278.503	TP16
1688	368344.54	1310254.874	TP16A
1596	370202.45	1310317.977	TP17
1698	368873.948	1310213.576	TP18
1699	368962.103	1310128.165	TP19
1681	367329.933	1310151.78	TP2
1682	367751.499	1310085.895	TP3
1683	367871.858	1310226.429	TP4
1684	368045.018	1310201.097	TP5
1696	368812.795	1310307.191	TP6
1695	368729.671	1310377.949	TP7
1690	368520.999	1310276.079	TP8
1691	368498.135	1310172.629	TP9

**WELL LOCATIONS  
MAY 9, 1997  
W&H PACIFIC**

**Note:**

The ground shot was taken on the southeast side of the well.

The stand pipe and casing shots are even with the lock (on the outside of the casing) and are marked in black.

RA- POINT  
MW 8-3

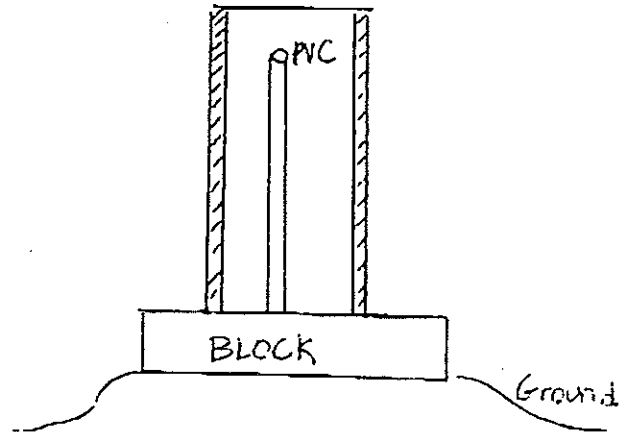
M60 NORTHING    EASTING  
371227.95    1310608.67

TOP OF P.V.C. PIPE  
11.28

TOP OF CASE  
11.88

TOP BLOCK  
9.64

GROUND  
9.04



**APPENDIX D**

**GOLDER ASSOCIATES DAILY FIELD REPORTS  
WEYERHAEUSER EAST SITE REMEDIATION  
EVERETT, WASHINGTON**

**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

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REPORT NUMBER 1

TUESDAY, APRIL 15, 1997

TO: File

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**WEATHER**

Cloudy, Light Wind, Low 50s (deg. F.)

**PRESENT AT SITE**

Golder Associates  
Yates Custom Backhoe  
Rubatino  
Dalton, Olmsted & Fuglevand, Inc.  
Weyerhaeuser

**CONSTRUCTION ACTIVITIES**

Excavation of contaminated materials was started in the Power Plant (RA 7-2) area. Approximately 320 cubic yards of material (eight containers) was hauled out from this area. Two stockpiles were left at the end of the day. Both stockpiles were located within the excavation and were covered with visqueen overnight. A concrete slab underlies most of the area and material was removed down to the slab. Approximately 70 cubic yards (2 containers) from another Weyerhaeuser site was also loaded and hauled out.

Backfill sand was stockpiled at excavation areas with the 10 cubic yard dump truck.

**FIELD SCREENING ACTIVITIES**

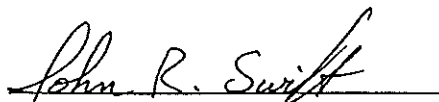
Approximately 28 TLC field samples were collected to determine the approximate southern perimeter and depth in areas of no concrete slab.

**MEETINGS AND DISCUSSIONS**

Precon meeting. Discuss area of work, safety, and communication.

**PROBLEMS AND RESOLUTION**

None today.

  
\_\_\_\_\_  
John R. Swift, P.E.  
Project Engineer

**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

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REPORT NUMBER 2

WEDNESDAY, APRIL 16, 1997

TO: File

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**WEATHER**

Partly Cloudy, Light Intermittent Rain, Light Wind, Low 50s (deg. F.)

**PRESENT AT SITE**

Golder Associates  
Yates Custom Backhoe  
Rubatino  
Dalton, Olmsted & Fuglevand, Inc. (DOF)  
Weyerhaeuser

**CONSTRUCTION ACTIVITIES**

Excavation of contaminated materials was continued in the Power Plant (RA 7-2) area. Approximately 440 cubic yards of material (11 containers) was hauled out from this area using two trucks. A concrete slab underlies most of the area and material was removed down to the slab. Approximately 70 cubic yards (2 containers) from another Weyerhaeuser site was also loaded and hauled out.

Backfill sand was stockpiled at excavation areas with the 10 cubic yard dump truck.

**FIELD SCREENING ACTIVITIES**

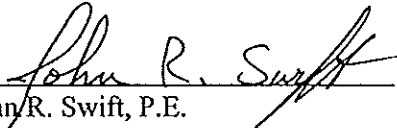
A total of 40 TLC field samples have been collected to determine the approximate perimeter and depth in areas of no concrete slab.

**MEETINGS AND DISCUSSIONS**

Discuss area of work with DOF and Weyerhaeuser.

**PROBLEMS AND RESOLUTION**

Laboratory samples from April 15th indicated elevated levels of PCBs in the RA 7-2 area. Tyvek coveralls will be worn by all personnel when within excavations.

  
John R. Swift, P.E.  
Project Engineer

**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

---

REPORT NUMBER 3

THURSDAY, APRIL 17, 1997

TO: File

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**WEATHER**

Partly Cloudy, Light Intermittent Rain, Light Wind, Mid 50s (deg. F.)

**PRESENT AT SITE**Golder Associates  
RubatinoYates Custom Backhoe  
Dalton, Olmsted & Fuglevand, Inc. (DOF)

Weyerhaeuser

**CONSTRUCTION ACTIVITIES**

Excavation of contaminated materials was continued in the Power Plant (RA 7-2) area. Approximately 300 cubic yards of material with potentially elevated levels of PCBs was stockpiled adjacent to the fire supply head tank. This stockpile was covered with visqueen.

Excavation was started in the RA 10-1 area. Approximately 280 cubic yards of material (seven containers) was hauled out from this area using one truck.

Four test pits were excavated in the RA 8-1 area. Field screening by FOB indicated that contaminated material was encountered in test pit T2.

Backfill sand was stockpiled at excavation areas with the 10 cubic yard dump truck.

**FIELD SCREENING ACTIVITIES**

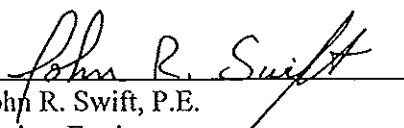
A total of 66 TLC field samples have been collected to determine the approximate perimeter and depth in the areas above.

**MEETINGS AND DISCUSSIONS**

Discuss area of work with DOF and Weyerhaeuser.

**PROBLEMS AND RESOLUTION**

Laboratory samples from April 16th indicated elevated levels of PCBs in the RA 7-2 area exceeding normal disposal limits. Approximately 300 cubic yards of suspect material has been stockpiled within the area pending testing.

  
\_\_\_\_\_  
John R. Swift, P.E.  
Project Engineer



**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

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REPORT NUMBER 4

FRIDAY, APRIL 18, 1997

TO: File

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**WEATHER**Cloudy, Light Intermittent Rain, Light Wind, Mid 50s (deg. F.)<sup>6</sup>**PRESENT AT SITE**

Golder Associates	Yates Custom Backhoe
Rubatino	Dalton, Olmsted & Fuglevand, Inc. (DOF)
Weyerhaeuser	

**CONSTRUCTION ACTIVITIES**

Excavaion continued in the RA 10-1 area. Approximately 525 cubic yards of material (15 containers) was hauled out from this area using one truck.

Excavation continued in test pit T2 in the RA 8-2 area. Field screening by FOB indicated that contaminated material was encountered and approximately 18 cubic yards of material was hauled to the RA 10-1 area and loaded out.

No activity in RA 7-2 area today.

Backfill sand was stockpiled at excavation areas with the 10 cubic yard dump truck.

**FIELD SCREENING ACTIVITIES**

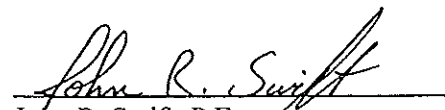
A total of 83 TLC field samples have been collected to determined the approximate perimeter and depth in the areas above.

**MEETINGS AND DISCUSSIONS**

- Discuss area of work with DOF and Weyerhaeuser.
- Schedule single dump with pup to haul out PCB area RA 10-2.

**PROBLEMS AND RESOLUTION**

None today.

  
\_\_\_\_\_  
John R. Swift, P.E.  
Project Engineer

**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

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REPORT NUMBER 5

MONDAY, APRIL 21, 1997

TO: File

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**WEATHER**

Partly Cloudy, Light Wind, 56 (deg. F.)

**PRESENT AT SITE**

Golder Associates	Yates Custom Backhoe
Rubatino	Dalton, Olmsted & Fuglevand, Inc. (DOF)
Weyerhaeuser	

**CONSTRUCTION ACTIVITIES**

Excavated and loaded out approximately nine cubic yards in the RA 10-2 area with one dump truck. Approximately nine additional yards of high PCB material in the RA 7-2 area was loaded out in the dump pup and sent to CWMI in Arlington, Oregon.

Excavaion continued in the RA 10-1 area. Approximately 35 cubic yards of material (one container) was hauled out from this area using one truck.

Stockpiled material in RA 7-2 area was loaded out. Approximately 400 cubic yards was loaded out.

Backfill sand was stockpiled at excavation areas with the 10 cubic yard dump truck.

**FIELD SCREENING ACTIVITIES**

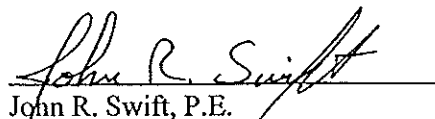
A total of 111 TLC field samples have been collected to determined the approximate perimeter and depth in the areas above.

**MEETINGS AND DISCUSSIONS**

- Discuss area of work with DOF and Weyerhaeuser.

**PROBLEMS AND RESOLUTION**

Laboratory testing indicated that the material stockpiled in the RA 7-2 area could be disposed of as originally planed.

  
John R. Swift, P.E.  
Project Engineer

**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

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REPORT NUMBER 6

TUESDAY, APRIL 22, 1997

TO: File

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**WEATHER**

Cloudy, Light Wind, 60 (deg. F.)

**PRESENT AT SITE**

Golder Associates	Yates Custom Backhoe
Rubatino	Dalton, Olmsted & Fuglevand, Inc. (DOF)
Weyerhaeuser	

**CONSTRUCTION ACTIVITIES**

Excavation continued in the RA 10-1 area. Approximately 350 cubic yards of material (10 containers) was hauled out from this area using one truck.

Backfill sand was stockpiled at excavation areas with the 10 cubic yard dump truck.

**FIELD SCREENING ACTIVITIES**

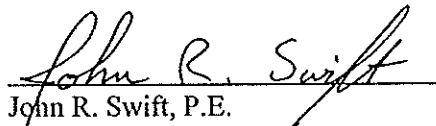
An approximate total of 125 TLC field samples have been collected to determine the approximate perimeter and depth in the area above.

**MEETINGS AND DISCUSSIONS**

- Discuss area of work with DOF and Weyerhaeuser.

**PROBLEMS AND RESOLUTION**

None today.

  
John R. Swift, P.E.  
Project Engineer

**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

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REPORT NUMBER 7

WEDNESDAY, APRIL 23, 1997

TO: File

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**WEATHER**

Cloudy, Intermittent Light Rain, Light Wind, 58 (deg. F.)

**PRESENT AT SITE**

Golder Associates	Yates Custom Backhoe
Rubantino	Dalton, Olmsted & Fuglevand, Inc. (DOF)
Weyerhaeuser	

**CONSTRUCTION ACTIVITIES**

Excavation continued in the RA 10-1 area. Approximately 35 cubic yards of material (one container) was hauled out from this area using one truck.

Excavation was stated in the RA 10-4 area. Approximately 385 cubic yards of material (11 containers) were hauled out from this area using one truck.

Removal of the asphalt in the RA8-3 area was started. Removed asphalt was stockpiled at the east edge of the wood recycling area.

Approximately half of the barrels containing contaminated soils in warehouse 3 were removed and hauled out. The soil was emptied from the barrels, the barrels were crushed, and the soil and barrels were hauled out with the RA10-4 material.

Backfill sand was stockpiled at excavation areas with the 10 cubic yard dump truck.

**FIELD SCREENING ACTIVITIES**

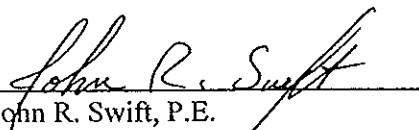
An approximate total of 157 TLC field samples have been collected to determine the approximate perimeter and depth in the area above.

**MEETINGS AND DISCUSSIONS**

- Discuss area of work with DOF and Weyerhaeuser.

**PROBLEMS AND RESOLUTION**

None today.

  
\_\_\_\_\_  
John R. Swift, P.E.  
Project Engineer

**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

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REPORT NUMBER 8

THURSDAY, APRIL 24, 1997

TO: File

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**WEATHER**

Cloudy, Intermittent Light Rain, Light Wind, 61 (deg. F.)

**PRESENT AT SITE**

Golder Associates	Yates Custom Backhoe
Rubatio	Dalton, Olmsted & Fuglevand, Inc. (DOF)
Weyerhaeuser	

**CONSTRUCTION ACTIVITIES**

Excavation was continued in the RA 10-4 area. Excavation was started in the RA10-3 area. Approximately 425 cubic yards of material (13 containers) were hauled out from these areas using one truck.

Removal of the asphalt in the RA8-3 area was completed. Removed asphalt was stockpiled at the east edge of the wood recycling area. The limits of the area were determined with a series of testpits using the backhoe.

The remainder of the barrels containing contaminated soils in warehouse 3 were removed and hauled out. The soil was emptied from the barrels, the barrels were crushed, and the soil and barrels were hauled out with the RA10-4 material.

Backfill sand was stockpiled at excavation areas with the 10 cubic yard dump truck.

**FIELD SCREENING ACTIVITIES**

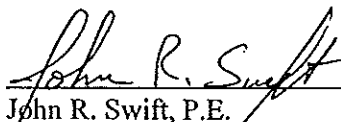
An approximate total of 225 TLC field samples have been collected to determine the approximate perimeter and depth in the area above.

**MEETINGS AND DISCUSSIONS**

- Discuss area of work with Weyerhaeuser including fire line location in RA 10-3 area.

**PROBLEMS AND RESOLUTION**

None today

  
\_\_\_\_\_  
John R. Swift, P.E.  
Project Engineer

**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

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REPORT NUMBER 9

FRIDAY, APRIL 25, 1997

TO: File

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**WEATHER**

Cloudy, Light Wind, 63 (deg. F.)

**PRESENT AT SITE**

Golder Associates	Yates Custom Backhoe
Rubertino	Dalton, Olmsted & Fuglevand, Inc. (DOF)

**CONSTRUCTION ACTIVITIES**

Excavation was continued in the RA 10-3 and 4 areas. Approximately 300 cubic yards of material (nine containers) were hauled out from these areas using one truck.

Excavation of the RA8-3 area was started. Approximately 180 cubic yards of material (five containers) were hauled out from this area using one truck.

Approximately 45 cubic yards of material was hauled from the RA8-1 was excavated with the backhoe and hauled to the RA8-3 area with the 10 cubic yard dump truck. This material (approximately one load) was hauled out with the RA8-3 material.

Backfill sand was stockpiled at excavation areas with the 10 cubic yard dump truck.

**FIELD SCREENING ACTIVITIES**

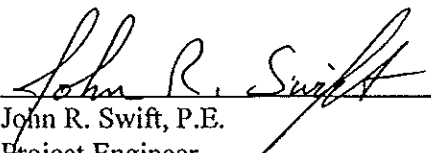
An approximate total of 210 TLC field samples have been collected to determined the approximate perimeter and depth in the area above.

**MEETINGS AND DISCUSSIONS**

- Discuss area of work with DOF and Weyerhaeuser.

**PROBLEMS AND RESOLUTION**

None today.

  
John R. Swift, P.E.  
Project Engineer

**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

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REPORT NUMBER 10

MONDAY, APRIL 28, 1997

TO: File

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**WEATHER**

Cloudy, Rain, Light Wind, 53 (deg. F.)

**PRESENT AT SITE**

Golder Associates

Yates Custom Backhoe

Weyerhaeuser

Rubatino

Dalton, Olmsted &amp; Fuglevand, Inc. (DOF)

**CONSTRUCTION ACTIVITIES**

Excavation was continued in the RA 10-3 area. Approximately 105 cubic yards of material (three containers) were hauled out from these areas using one truck.

Excavation of the RA 8-3 area was also continued. Approximately 336 cubic yards of material (14 containers) were hauled out from this area using one truck. Approximately 38 cubic yards of material was excavated at RA 8-1 area with the backhoe and hauled to the RA 8-3 area with the 10 cubic yard dump truck. This material (approximately four load) was hauled out with the RA 8-3 material. Absorbant pads were placed in the RA 8-3 area to absorb free product on the exposed ground water.

Backfill sand was stockpiled at the RA 8-3 excavation area with the 10 cubic yard dump truck.

**FIELD SCREENING ACTIVITIES**

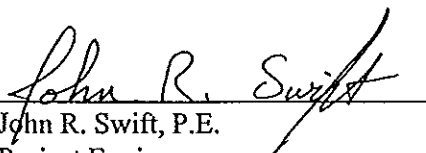
An approximate total of 231 TLC field samples have been collected to determine the approximate perimeter and depth in the area above.

**MEETINGS AND DISCUSSIONS**

- Discuss area of work with DOF and Weyerhaeuser.
- It was decided to excavate the RA 8-3 area down to the clay (approximately one foot below the water table. A 10-foot bench around the perimeter at the water table will be maintained.

**PROBLEMS AND RESOLUTION**

None today.

  
John R. Swift, P.E.  
Project Engineer

**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

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REPORT NUMBER 11

TUESDAY, APRIL 29, 1997

TO: File

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**WEATHER**

Cloudy, Light Intermittent Rain, Light Wind, 55 (deg. F.)

**PRESENT AT SITE**

Golder Associates	Yates Custom Backhoe	Weyerhaeuser
Rubatino	Dalton, Olmsted & Fuglevand, Inc. (DOF)	Washington DOE

**CONSTRUCTION ACTIVITIES**

Excavation of the RA 8-3 area was continued. Approximately 500 cubic yards of material (20 containers) were hauled out from this area using one truck. Absorbent pads were placed in the RA 8-3 area to absorb free product on the exposed ground water. All drain tile encountered in the RA 8-3 area was removed and the drain was plugged at the perimeter with concrete.

Approximately 120 cubic yards of material was excavated at RA 8-1 area with the backhoe and hauled to the RA 8-3 area with the 10 cubic yard dump truck. This material (approximately 12 loads) was hauled out with the RA 8-3 material.

Approximately 70 cubic yards of material was excavated at RA 8-2 area with the backhoe and hauled to the RA 8-3 area with the 10 cubic yard dump truck. This material (approximately 7 loads) was hauled out with the RA 8-3 material.

**FIELD SCREENING ACTIVITIES**

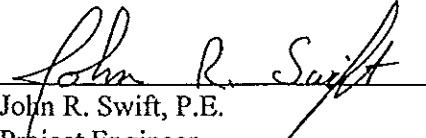
A total of 249 TLC field samples have been collected to determine the approximate perimeter and depth in all the remediation areas. Field sample screening activities are now complete.

**MEETINGS AND DISCUSSIONS**

- Discuss area of work with DOF and Weyerhaeuser.
- It was decided to excavate the RA 8-3 area down to approximately one foot below the water table if the underlying silt/clay is reached or not. A 10-foot bench around the perimeter at the water table will be maintained.

**PROBLEMS AND RESOLUTION**

None today.

  
John R. Swift, P.E.  
Project Engineer



**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

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REPORT NUMBER 12

WEDNESDAY, APRIL 30, 1997

TO: File

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**WEATHER**

Cloudy, High Wind, 52 (deg. F.)

**PRESENT AT SITE**Golder Associates  
RubatinoYates Custom Backhoe  
Dalton, Olmsted & Fuglevand, Inc. (DOF)Weyerhaeuser  
W H Pacific (surveyor)**CONSTRUCTION ACTIVITIES**

Excavation of the RA 8-3 area was continued. Approximately 350 cubic yards of material (14 containers) were hauled out from this area using one truck.

Approximately 125 cubic yards of material was excavated at RA 7-2 area with the backhoe and stockpiled in the area. This material was tarped at the end of the day.

**FIELD SCREENING ACTIVITIES**

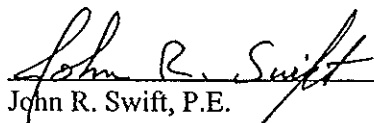
Complete.

**MEETINGS AND DISCUSSIONS**

- Discuss area of work with DOF and Weyerhaeuser.

**PROBLEMS AND RESOLUTION**

Heavy traffic and only one loader operating slowed the container truck cycle time and decreased the total amount of material hauled out.

  
\_\_\_\_\_  
John R. Swift, P.E.  
Project Engineer

**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

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REPORT NUMBER 13

THURSDAY, MAY 1, 1997

TO: File

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**WEATHER**

Cloudy, Rain, Moderate Wind, 52 (deg. F.)

**PRESENT AT SITE**Golder Associates  
RubatinoYates Custom Backhoe  
Dalton, Olmsted & Fuglevand, Inc. (DOF)

Weyerhaeuser

**CONSTRUCTION ACTIVITIES**

Excavation of the RA 8-3 area was continued. Approximately 400 cubic yards of material (16 containers) were hauled out from this area using one truck.

Approximately 125 cubic yards of material was excavated at RA 7-2 area with the backhoe and stockpiled in the area. This material was tarped at the end of the day.

**FIELD SCREENING ACTIVITIES**

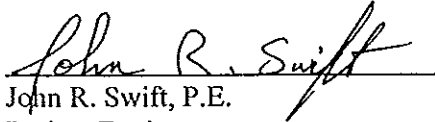
Complete.

**MEETINGS AND DISCUSSIONS**

- Discuss area of work with DOF and Weyerhaeuser.

**PROBLEMS AND RESOLUTION**

Backhoe broke down for one-half hour.

  
\_\_\_\_\_  
John R. Swift, P.E.  
Project Engineer

**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

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REPORT NUMBER 14

FRIDAY, MAY 2, 1997

TO: File

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**WEATHER**

Clear, Light Wind, 65 (deg. F.)

**PRESENT AT SITE**

Golder Associates  
Rubatino

Yates Custom Backhoe  
Dalton, Olmsted & Fuglevand, Inc. (DOF)

Weyerhaeuser

**CONSTRUCTION ACTIVITIES**

Excavation of the RA 8-3 area was continued. Approximately 475 cubic yards of material (19 containers) were hauled out from this area using one truck.

Approximately 20 cubic yards of material was excavated at RA 8-2 area with the backhoe and was hauled to the RA 8-3 area with a 10 yard dump truck.

**FIELD SCREENING ACTIVITIES**

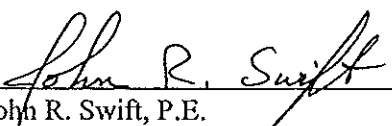
Complete.

**MEETINGS AND DISCUSSIONS**

- Discuss area of work with DOF and Weyerhaeuser.

**PROBLEMS AND RESOLUTION**

None today.

  
\_\_\_\_\_  
John R. Swift, P.E.  
Project Engineer

**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

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REPORT NUMBER 15

MONDAY, MAY 5, 1997

TO: File

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**WEATHER**

Cloudy, Light Wind, 58 (deg. F.)

**PRESENT AT SITE**

Golder Associates      Yates Custom Backhoe      Weyerhaeuser      Rubatino

**CONSTRUCTION ACTIVITIES**

Excavation of the RA 8-3 area was continued. Approximately 300 cubic yards of material (12 containers) were hauled out from this area using one truck.

Excavation of the RA 8-1 and RA 8-2 areas have been completed.

The RA 10-4 area was backfilled. Backfilling of the RA 10-1 was started.

The following equipment was used in the days activities:

Loader (1)	12 yd Dump Truck (3)	Dozer (1)	Pickup (1)
Excavator (1)	10 yd Dump Truck (1)	Backhoe (1)	

**FIELD SCREENING ACTIVITIES**

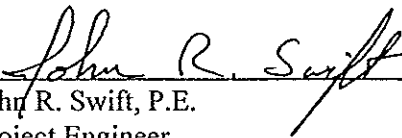
Complete.

**MEETINGS AND DISCUSSIONS**

- Discuss area of work with Weyerhaeuser.

**PROBLEMS AND RESOLUTION**

None today.

  
John R. Swift, P.E.  
Project Engineer

**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

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REPORT NUMBER 16

WEDNESDAY, MAY 7, 1997

TO: File

**WEATHER**

Clear, Light Wind, 65 (deg. F.)

**PRESENT AT SITE**

Golder Associates	Yates Custom Backhoe	Weyerhaeuser
Rubertino	DOF	

**CONSTRUCTION ACTIVITIES**

Concrete rubble was hauled to the RA 8-3 area with dump trucks and placement with the excavator and backhoe within the water zone was completed. Sand for backfill was also placed and compacted in the area.

Excavation and backfilling of the RA 7-2 was continued. Approximately 280 cubic yards of material (eight containers) was hauled out with one truck.

The following equipment was used in the days activities:

Loader (1)	12 yd Dump Truck (2)	Dozer (1)	Pickup (1)
Excavator (1)	10 yd Dump Truck (1)	Backhoe (1)	Roller (1)

The following equipment was demobilized at the end of the day:

Loader (1)	12 yd Dump Truck (2)	Backhoe (1)	Roller (1)
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**FIELD SCREENING ACTIVITIES**

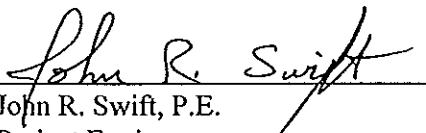
Complete.

**MEETINGS AND DISCUSSIONS**

- Discuss area of work with DOF and Weyerhaeuser.

**PROBLEMS AND RESOLUTION**

None today.

  
 John R. Swift, P.E.  
 Project Engineer

**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

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REPORT NUMBER 17

THURSDAY, MAY 8, 1997

TO: File

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**WEATHER**

Clear, Light Wind, 75 (deg. F.)

**PRESENT AT SITE**

Golder Associates	Yates Custom Backhoe	Weyerhaeuser	Rubatino
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**CONSTRUCTION ACTIVITIES**

Excavation and backfilling of the RA 7-2 area was continued. Approximately 385 cubic yards of material (11 containers) was hauled from the area with one truck.

The edge of the asphalt around the RA 8-3 area was cleaned with a firehose.

The following equipment was used in the days activities:

Pickup (1)	Excavator (1)	10 yd Dump Truck (1)	Backhoe (1)
------------	---------------	----------------------	-------------

**FIELD SCREENING ACTIVITIES**

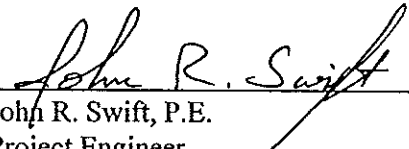
Complete.

**MEETINGS AND DISCUSSIONS**

- Discuss area of work with Weyerhaeuser.

**PROBLEMS AND RESOLUTION**

None today.

  
John R. Swift, P.E.  
Project Engineer

**DAILY CONSTRUCTION ACTIVITY REPORT  
WEYERHAEUSER COMPANY  
EVERETT EAST SITE REMEDIATION**

---

REPORT NUMBER 18

FRIDAY, MAY 9, 1997

TO: File

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**WEATHER**

Clear, Light to Moderate Wind, 77 (deg. F.)

**PRESENT AT SITE**

Golder Associates, Yates Custom Backhoe, Weyerhaeuser, Rubatino, DOF, Totem Paving.

**CONSTRUCTION ACTIVITIES**

Excavation and backfilling of the RA 7-2 area was completed. Approximately 266 cubic yards of material (seven containers) was hauled from the area with one truck. All excavation and backfilling activities have been completed.

Approximately 260 tons of base rock was placed and compacted in the RA 8-3 area.

The following equipment was used in the days activities:

Pickup (1)	Excavator (1)	10 yd Dump Truck (1)	Backhoe (1)
Compactor (1)	Grader (1)	12 yd Dump Truck (2)	Service Truck (1)

The excavator, backhoe, and 10 yd dump truck were demobilized at the end of the day. All other equipment with the exception of the pickup were used by Totem Paving and are covered under the rock placement charge.

**FIELD SCREENING ACTIVITIES**

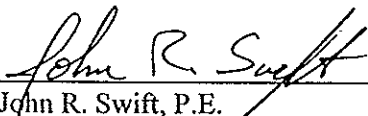
Complete.

**MEETINGS AND DISCUSSIONS**

- Discuss area of work with Weyerhaeuser and DOF.

**PROBLEMS AND RESOLUTION**

None today.

  
\_\_\_\_\_  
John R. Swift, P.E.  
Project Engineer





**APPENDIX E**

**DIRECT CONTACT SOIL EXCEEDANCES  
WEYERHAEUSER EAST SITE REMEDIATION  
EVERETT, WASHINGTON**

**APPENDIX E  
SUMMARY OF DIRECT CONTACT  
CLEANUP LEVEL EXCEEDANCES  
WEYERHAEUSER EAST SITE**

Section VI.D.11 of Consent Decree 97-2-02773-8 between the State of Washington Department of Ecology and the Weyerhaeuser Company, requires that "*areas [of the East Site] that contain contaminant levels above Method A levels for TPH, 200 mg/kg (or new Method B Direct Contact based numbers per Ecology Approval); Method B for PCP, 8.33 mg/kg; Method A for CPAHs 1.0 mg/kg and Method A for PCBs, 1 mg/kg*" be identified in a restrictive covenant (attached as Exhibit G to the Consent Decree). This memorandum summarizes the locations that exceed these cleanup levels based on soil quality data presented in the following reports:

- Potential Remediation Areas, Weyerhaeuser East Site, Everett, Washington, Memorandum to Nadine Romero, Department of Ecology prepared by Dalton, Olmsted & Fuglevand, Inc., Draft: August 9, 1995.
- Remediation Alternatives and Estimated Costs, Weyerhaeuser East Site, Everett, Washington, Memorandum to Nadine Romero, Department of Ecology prepared by Dalton, Olmsted & Fuglevand, Inc., Draft: November 1, 1995.
- Remediation Completion Report, Weyerhaeuser East Site, Everett, Washington, prepared by Dalton, Olmsted & Fuglevand, Inc., June 1997.

Locations that exceed the indicated cleanup levels are summarized in Table E-1 and are shown on Figure E-1. Sample locations are based on maps and figures included with reports prepared by EMCON (1995) and Hart Crowser (1990a, b, c)

TABLE E-1 - Summary of Exceedances of Direct Contact Cleanup Levels

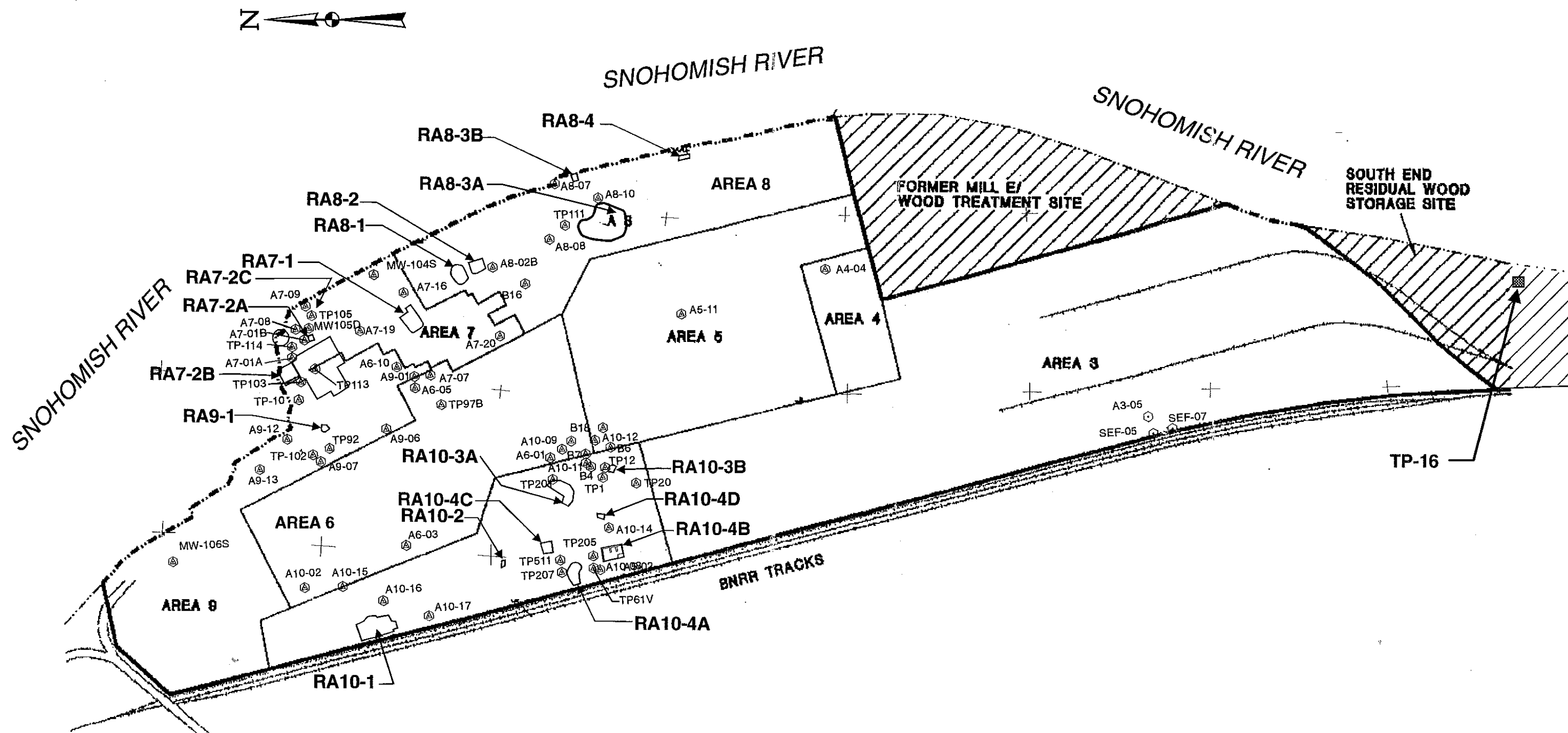
Weyerhaeuser East Site  
Everett, Washington

Location	Petroleum Hydrocarbons (mg/kg)				CPAH mg/kg	PCB mg/kg	Pentachlorophenol mg/kg
	TPH-G	TPH-D	TPH-HO	Total TPH			
Cleanup Level				200	1	1	8.33
<b>Area 3</b>							
A3-05	---	340	<3	340	---	---	---
SEF-5	1140	56	150	1346	---	---	---
SEF-7	---	165	450	615	---	---	---
<b>Area 4</b>							
A4-04	---	31	250	281	---	---	---
<b>Area 5</b>							
A5-02	---	130	1400	1530	---	---	---
A5-04*	---	26	260	286	---	---	---
A5-11	---	120	370	490	---	---	---
B6	---	---	290	290	---	---	---
<b>Area 6</b>							
A6-01	---	69	410	479	---	---	---
A6-03	---	39/790	170/770	209/1560	---	---	---
A6-05	---	55	340	395	---	---	---
TP97B	---	nd	230	230	---	---	---
B7	---	---	250	250	---	---	24
B18	---	---	290	290	---	---	---
A7-07	---	---	---	---	1.1	---	---
A10-02	---	350	<20	350	---	---	---
A10-09	---	310	1300	1610	---	---	---
<b>Area 7</b>							
MW-104S	---	151	239	390	---	---	---
MW-105D	---	33	250	283	---	2.3	---
A7-01A	---	<19	230	230	---	---	---
A7-01B	---	---	---	---	---	4.3	---
A7-08	---	431	620	1051	---	---	---
A7-09	---	<19	600	600	---	---	---
A7-16	---	<19	1400	1400	---	---	---
A7-19	---	363	1174	1537	1.1	11/1.3	---
A7-20	---	160	890	1050	---	---	---
TP-105	---	---	290	290	2.2	---	---
TP-114	---	---	310	310	---	3.2	---
<b>Area 8</b>							
A8-02B	---	---	---	---	---	---	32.4
A8-07	---	43	510	553	---	---	---
A8-08	---	16	200	216	---	---	---
A8-10	---	<20	2300	2320	---	---	---
B16	---	---	290	290	---	---	---
TP111	---	---	1700	1700	---	---	---
<b>Area 9</b>							
A6-10	---	110	730	840	---	---	---
A9-01	---	77	270	347	---	---	---
A9-06	---	23	240	263	---	---	---
A9-07	---	39	260	299	---	---	---
A9-12	---	52	410	462	---	---	---

**TABLE E-1 - Summary of Exceedances of Direct Contact Cleanup Levels**

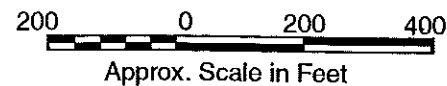
Location	Petroleum Hydrocarbons (mg/kg)				CPAH mg/kg	PCB mg/kg	Pentachlorophenol mg/kg
	TPH-G	TPH-D	TPH-HO	Total TPH			
Cleanup Level				200	1	1	8.33
A9-13	---	58	550	608	---	---	---
TP-102	---	---	1000	1000	4	---	---
TP-103	---	---	---	---	---	2.5-9.4	---
TP-113	---	---	---	---	---	3	---
TP-92	---	nd	320	320	---	---	---
TP-10	---	---	---	---	---	5.2	---
MW-106S	---	58	390	448	---	---	---
<b>Area 10</b>							
A10-08	---	140	1100	1240	---	---	---
A10-11	---	58	220	278	---	---	---
A10-12	---	21	250	271	---	---	---
A10-14	---	33	240	273	---	---	---
A10-15	---	220	830	1050	---	---	---
A10-16	---	149	302	451	---	---	---
A10-17	---	300	310	610	---	---	---
B4	---	---	---	---	---	---	12
TP-201	---	---	230	230	---	---	---
TP-205	---	---	1800	1800	---	---	---
TP-207	---	---	1700	1700	---	---	---
TP-12	---	---	230	230	---	---	---
TP-20	---	---	490	490	---	---	---
TP-1	---	---	---	---	3.5-5.9	---	12-18
TP-5II	---	---	2000/920	2000/920	---	---	---
TP-6IV	---	---	500	500	---	---	---

- Notes: TPH-G - Gasoline range hydrocarbons  
 TPH-D - Diesel range hydrocarbons  
 TPH-HO - Heavy-oil (motor oil) range hydrocarbons  
 CPAHs - Carcinogenic polycyclic aromatic hydrocarbons  
 PCBs - Polychlorinated biphenyls  
 nd - not detected  
 ---- - not analyzed or below cleanup level  
 < - Less than indicated value  
 \* - Location A5-04 is not shown on the maps provided by EMCON



**EXPLANATION**

- RA10-1** Remediation Area and Number
- ⊗ MW-106S Soil Sample Location Where Cleanup level Exceeded



Weyerhaeuser East Site  
 Everett, Washington  
**EAST SITE  
 LOCATION OF CLEANUP LEVEL  
 EXCEEDANCES**