Weyerhaeuser Everett FS # 11 EAST

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON

FOR SNOHOMISH COUNTY

97 2 02773 8

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY,

Appellant,

v.

WEYERHAEUSER COMPANY, a Washington Corporation,

Defendant.

No.

SUMMONS

To: The Clerk of the above-entitled Court:

A lawsuit has been started against you in the above-entitled court by the State of Washington, Department of Ecology, Plaintiff. Plaintiff's claim is stated in the written complaint, a copy of which is served upon you with this Summons.

The parties have agreed to resolve this matter by entry of a Consent Decree.

ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117

Accordingly, this Summons shall not require the filing of an answer.

Respectfully submitted this 7th day of ~~March~~ April, 1997.

CHRISTINE O. GREGOIRE
Attorney General

Thomas C Morrill

THOMAS C. MORRILL, WSBA #18388
Assistant Attorney General

Attorneys for Plaintiff
State of Washington
Department of Ecology
(360) 459-6159

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STATE OF WASHINGTON,
DEPARTMENT OF ECOLOGY,

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v.

WEYERHAEUSER COMPANY, a Washington Corporation,

Defendant.

No._____

JOINT MOTION FOR ENTRY OF CONSENT DECREE

The parties to this action, through their attorneys, hereby jointly move for entry of the Consent Decree in the above-entitled matter. The Consent Decree has been signed by the parties to this action. Moreover, the Consent Decree has been the subject of public

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. . .

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notice and comment and a public hearing. This motion is supported by a Memorandum of Points and Authorities and the attached Declarations of Thomas C. Morrill and Nadine Romero.

CHRISTINE O. GREGOIRE
Attorney General

Thomas C. Morrill

THOMAS C. MORRILL, WSBA #18388
Assistant Attorney General
Attorneys for Plaintiff
State of Washington
Department of Ecology
(360) 459-6159

DATED: 4-7-97

WEYERHAEUSER COMPANY

Joseph P. Jackowski

JOSEPH P. JACKOWSKI
WSBA # 12903
Senior Legal Counsel
Weyerhaeuser Company

DATED: 4/4/97

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THOMAS C. MORRILL, WSBA #18388
Assistant Attorney General
Attorneys for Plaintiff
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FILED

APR 11 1997

PAM L. DANIELS
SNOHOMISH COUNTY CLERK
EX-OFFICIO CLERK OF COURT

FILED

APR 09 1997

PAM L. DANIELS
SNOHOMISH COUNTY CLERK
EX-OFFICIO CLERK OF COURT

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON

FOR SNOHOMISH COUNTY

97 2 02773 8

STATE OF WASHINGTON,
DEPARTMENT OF ECOLOGY,

Plaintiff,

-vs-

WEYERHAEUSER COMPANY, a Washington Corporation,

Defendants.

No._____

DECLARATION OF
THOMAS C. MORRILL

RECEIVED
APR 14 1997
ATTORNEY GENERAL'S OFFICE
Ecology Div. - Lacey

I, Thomas C. Morrill, declare under penalty of perjury under the laws of the State of Washington that the following is true and correct.

1. I am over twenty-one years of age and am competent to testify herein. The facts set forth in this Declaration are from my personal knowledge.

2. I am an Assistant Attorney General assigned to represent the Washington State Department of Ecology and the Attorney General's Office on legal matters relating to the Site in Everett, Washington referred to as the Weyerhaeuser Everett East Site and South End Residual Wood Storage S ite.

3. On behalf of Ecology and the Attorney General's Office, I took part in the negotiations that led to the Consent Decree that is being presented to the court.

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4. The Consent Decree was the subject of public notice and public comment as required by RCW 70.105D.040(4)(a). Ecology also conducted a public hearing as required by WAC 173-340-600(9)(d).

5. Ecology received no written comments during the public comment period on the substance of this Consent Decree.

6. WAC 173-340-600(9)(e) provides:

> Revisions. If the state and the potentially liable person agree to substantial changes to the proposed Consent Decree, the department shall provide additional public notice and opportunity to comment.

7. Ecology has determined that no additional public comment under WAC 173-340-600(9)(e) is required.

8. Ecology has determined that the proposed remedial action will lead to a more expeditious cleanup of hazardous substances in compliance with cleanup standards under RCW 70.105D.030(2)(d).

I declare under penalty of perjury of the laws of the state of Washington that the foregoing is true and correct.

DATED this 27 day of ~~March,~~ April 1997.

Thomas C Morrill

THOMAS C. MORRILL, WSBA # 18388
Assistant Attorney General
For State of Washington
Department of Ecology

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FOR SNOHOMISH COUNTY

97 2 02773 8

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY,

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v.

WEYERHAEUSER COMPANY, a Washington Corporation,

Defendant.

No._____

COMPLAINT

Plaintiff, State of Washington, Department of Ecology ("Ecology"), alleges as follows:

I. JURISDICTION

1. This Court has jurisdiction over the subject matter and over the parties pursuant to Chapter 70.105D RCW, the Model Toxics Control Act (MTCA).

II. PARTIES

2. Plaintiff Ecology is an agency of the State of Washington responsible, pursuant to ch. 70.105D RCW, for overseeing remedial action at sites contaminated with hazardous substances.

3. Defendant, Weyerhaeuser Company, is a Washington corporation.

III. FACTUAL ALLEGATIONS

4. The Everett East Site is owned by Weyerhaeuser located at 515 East Marine View Dive, Everett, Washington. The Everett Site property is located northeast of downtown

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Everett and consists of about 72 acres zoned M-2 Heavy Manufacturing, by the City of Everett. The Site is more fully described in Exhibit A of a Consent Decree entered into by the parties to settle this matter.

4. The Site is relatively level, and is located approximately two miles upstream from the Snohomish River mouth at Port Gardner Bay in Possession Sound. Most of the Site is underlain by dredged sand fill.

5. Three hydrostratigraphic units were identified during site investigations: a shallow unconfined aquifer (Grade Fill and Upper Sand Units); a semi-confined unit (Upper Silt Unit), and a semi-confined aquifer (Lower Sand Unit).

6. Weyerhaeuser began operations in the Everett area in 1902. The East Site (Survey Parcel 1 and 2) consisted of the former Mill B sawmill, a planing mill, a power house, former sapstain dip tanks, and lumber storage, pipe, machine and motor storage sheds. Mill B was constructed in 1915 and was substantially dismantled by mid 1980's. Several sheds from the Mill B complex remain in use today.

7. Two media at the Site, soil and ground water, have been determined during the environmental investigations to contain contaminants exceeding MTCA Method A and Method B cleanup levels.

8. Weyerhaeuser has caused or contributed to the release of hazardous substances at the Site.

9. Weyerhaeuser is a potentially liable person at the Site pursuant to RCW 70.105D.020(15).

10. Weyerhaeuser is liable for the cleanup at the Site pursuant to RCW 70.105D.040(1).

11. Ecology and the defendants have entered into a Consent Decree requiring remedial actions at the facility. The Consent Decree has been subject to public notice and

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comment, and a public hearing, under RCW 70.105D.040(4)(a). All comments have been addressed by Ecology in a responsiveness summary.

IV. CAUSES OF ACTION

12. Plaintiff realleges paragraphs 1 through 11, above.

13. Ecology alleges that the defendants are responsible for remedial action at the facility pursuant to RCW 70.105D.040(1) and must complete the remedial action in accordance with Chapter 173-340 WAC.

V. PRAYER FOR RELIEF

WHEREAS Ecology and the Weyerhaeuser Company have voluntarily entered into a proposed Consent Decree, Ecology requests that the Court, pursuant to RCW 70.1105D.040, approve and order the entry of the proposed Consent Decree. Ecology further requests that the Court retain jurisdiction to enforce the terms of the Consent Decree.

Respectfully submitted this 7th day of ~~March~~ April, 1997.

CHRISTINE O. GREGOIRE
Attorney General

THOMAS C. MORRILL, WSBA #18388
Assistant Attorney General
Attorneys for Plaintiff
State of Washington
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IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON

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WEYERHAEUSER COMPANY, a Washington Corporation,

Defendants.

No. _____

ORDER ENTERING CONSENT DECREE

Having reviewed the Consent Decree signed by the parties to this matter, the Joint Motion for Entry of the Consent Decree, the Declarations of Nadine Romero and Thomas C. Morrill, and the file herein, it is hereby

ORDERED AND ADJUDGED that the Consent Decree in this matter is Entered and that the Court shall retain jurisdiction over the Consent Decree to enforce its terms.

DATED this _____ day of APR 10 1997, 1997.

LESTER H. STEWART
COURT COMMISSIONER

JUDGE/COMMISSIONER

. . .

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Presented by:

CHRISTINE O. GREGOIRE
Attorney General

Thomas C. Morrill

THOMAS C. MORRILL, WSBA #18388
Assistant Attorney General
Attorneys for Plaintiff
State of Washington
Department of Ecology
(360) 459-6159

DATED: 4-7-97

Approved for Entry and
Notice of Presentation Waived:

WEYERHAEUSER COMPANY

Joseph P. Jackowski

JOSEPH P. JACKOWSKI
WSBA # 12903
Senior Legal Counsel
Weyerhaeuser Company

DATED: _____

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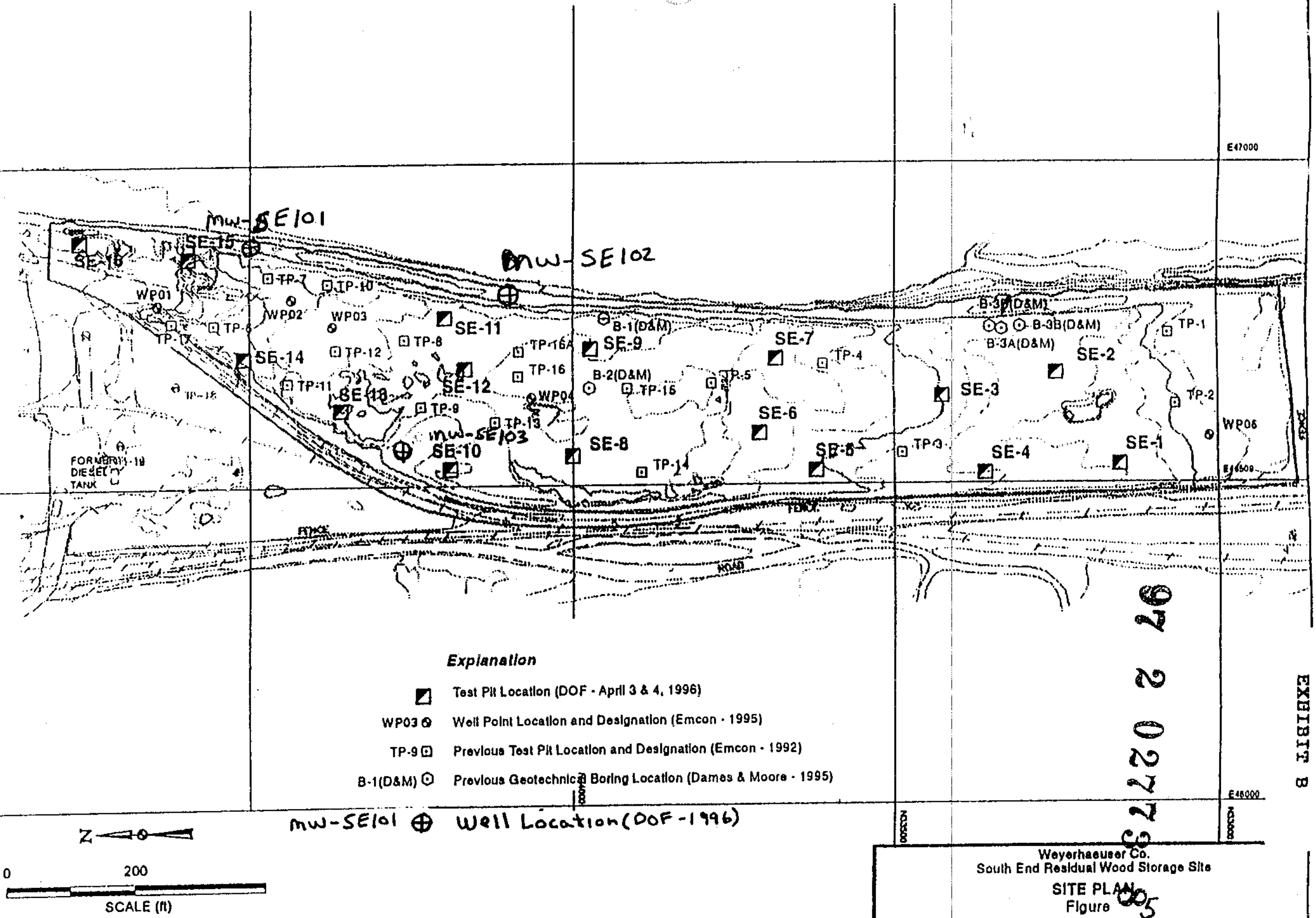
EXHIBIT B

97 2 02773



Weyerhaeuser Co.
South End Residual Wood Storage Site
SITE PLAN
Figure 5

Dalton, Olmsted & Fuglevand, Inc. WEY-011-04 4/8/96

FS 11

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APR 11 1997

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EX-OFFICIO CLERK OF COURT

FILED

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CONSENT DECREE

COPY

ORIGINAL

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Table of Contents

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I. INTRODUCTION

A. In entering into this Consent Decree (Decree), the mutual objective of the Washington State Department of Ecology (Ecology), and Weyerhaeuser Company (Defendant) is to provide for remedial action at a facility where there has been a release or threatened release of hazardous substances. Weyerhaeuser agrees to cleanup environmentally-affected media on the Weyerhaeuser Everett East Site and South End Residual Wood Storage Site.

B. The Complaint in this action is being filed simultaneously with this Decree. An answer has not been filed, and there has not been a trial on any issue of fact or law in this case. However, the parties wish to resolve the issues raised by Ecology's complaint. In addition, the parties agree that settlement of these matters without litigation is reasonable and in the public interest and that entry of this Decree is the most appropriate means of resolving these matters.

C. In signing this Decree, Weyerhaeuser agrees to its entry and agrees to be bound by its terms.

D. By entering into this Decree, the parties do not intend to discharge nonsettling parties from any liability they may have with respect to matters alleged in the complaint. The parties retain the right to seek reimbursement, in whole or in part, from any liable persons for sums expended under this Decree.

E. This Decree shall not be construed as proof of liability or responsibility for any releases of hazardous substances or cost for remedial action nor an admission of any facts; provided, however, that Weyerhaeuser shall not challenge the jurisdiction of Ecology in any proceeding to enforce this Decree.

F. The Court is fully advised of the reasons for entry of this Decree, and good cause having been shown: IT IS HEREBY ORDERED, ADJUDGED, AND DECREED AS FOLLOWS:

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II. JURISDICTION

A. This Court has jurisdiction over the subject matter and over the parties pursuant to Chapter 70.105D RCW, the Model Toxics Control Act (MTCA).

B. Authority is conferred upon the Washington State Attorney General by RCW 70.105D.040(4)(a) to agree to a settlement with any potentially liable person if, after public notice and hearing, Ecology finds the proposed settlement would lead to a more expeditious cleanup of hazardous substances. RCW 70.105D.040(4)(b) requires that such a settlement be entered as a consent decree issued by a court of competent jurisdiction.

C. Ecology has determined that a release or threatened release of hazardous substances has occurred at the Site which is the subject of this Decree.

D. Ecology has given notice to Weyerhaeuser by a letter dated June 21, 1995, as set forth in RCW 70.105D.020(8), of Ecology's determination that Weyerhaeuser is a potentially liable person for the Site and that there has been a release or threatened release of hazardous substances at the Site.

E. The actions to be taken pursuant to this Decree are necessary to protect public health and the environment.

F. Ecology has determined that this settlement is not based on any circumstances unique to Weyerhaeuser.

G. Weyerhaeuser has agreed to undertake the actions specified in this Decree and consents to the entry of this Decree under the MTCA.

III. PARTIES BOUND

This Decree shall apply to and be binding upon the signatories to this Decree (parties), their successors and assigns. The undersigned representative of each party hereby certifies that he or she is fully authorized to enter into this Decree and to execute and legally bind such party to comply with the Decree. Weyerhaeuser agrees to undertake all actions required by the terms and conditions of this Decree and not to contest state jurisdiction regarding this Decree.

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No change in ownership or corporate status shall alter the responsibility of Weyerhaeuser under this Decree. Weyerhaeuser shall provide a copy of this Decree to all agents, contractors and subcontractors retained to perform work required by this Decree and shall ensure that all work undertaken by such contractors and subcontractors will be in compliance with this Decree.

IV. DEFINITIONS

Except for as specified herein, all definitions in WAC 173-340-200 apply to the terms in this Decree.

A. Site: The Site, is referred to as Weyerhaeuser Everett East Site, and includes two MTCA Operable Units: (1) East Site (Survey Parcels 1 and 2) and (2) South End Residual Wood Storage Site (Survey Parcel 4). The Site is located at 515 East Marine View Drive, Everett, Washington. The Site is described in Exhibit A to this Decree which contains a detailed Site diagram and land descriptions for the various Survey Parcels. Survey Parcel 3 - the Former Mill E Wood Treatment Site is not part of this Consent Decree.

B. Parties: Refers to the Washington State Department of Ecology (Ecology) and Weyerhaeuser Company (Weyerhaeuser) and any other person who becomes signatory to this Decree pursuant to the amendment provision set forth in Section XV.

C. Weyerhaeuser: Refers to Weyerhaeuser Company.

D. Consent Decree or Decree: Refers to this Consent Decree and each of the Exhibits to the Decree. All Exhibits are integral and enforceable parts of this Consent Decree. The terms "Consent Decree" or "Decree" shall include all Exhibits to the Consent Decree.

E. Day: Refers to calendar days unless specified otherwise.

F. TPH: Refers to total petroleum hydrocarbons measured using WTPH-DX Method, using silica/acid gel cleanup method and extended to the heavy hydrocarbon range.

G. TPH-G: Refers to total petroleum hydrocarbons measured using WTPH-G method, using acid/silica gel cleanup method. (Gasoline-range hydrocarbons).

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H. TPH-D: Refers to total petroleum hydrocarbons measured using WTPH-DX method, using acid/silica gel cleanup method. (Diesel-range hydrocarbons).

I. TPH-O: Refers to total petroleum hydrocarbons measured using the WTPH-DX method, using acid/silica gel cleanup method, and extended to the heavier hydrocarbon mixture using a specific calibration for them. (Heavy oil-range hydrocarbons such as motor oil).

J. Sapstain: Refers to a "dilute mixture" of PCP and water or diesel.

K. Cherry Brown Spray: Refers to a sapstain sprayed on the ends of cut lumber to prevent checking, splitting, and to prevent mold and mildew growth.

L. End Seal: Refers to a sapstain painted on the ends of cut lumber to prevent checking, splitting, and to prevent mold and mildew growth.

M. Lumber Dipping: Refers to a non-pressurized sapstain prevention treatment technique whereby bundles of lumber were dipped into a tank with sapstain, air-dried over the tank, and then moved to a storage area prior to shipping.

V. STATEMENT OF FACTS

Ecology makes the following findings of fact without any express or implied admissions by Weyerhaeuser.

A. Site Description. The Everett East Site is owned by Weyerhaeuser. The Everett Site property is located at 515 East Marine View Dive, Everett, Washington. The Everett Site property is located northeast of downtown Everett and consists of about 72 acres zoned M-2 Heavy Manufacturing, by the City of Everett. The Everett Site property is divided into several portions: the East Site (Survey Parcels 1 and 2) is 63 acres, and the South End Residual Wood Storage Site (Survey Parcel 4) is 9 acres. Here-in-after, the Everett Site property referred to in this Consent Decree is the East Site (Site) and it includes both the East Site (Survey Parcels 1 and 2) and the South End Residual Wood Storage Site (Survey Parcel 4). The site is further described in Exhibit A.

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The Site is relatively flat and slightly peninsular shaped; it is bordered on the north by the State Highway 529 bridge right-of-way, on the east by the Snohomish River, on the south by the Snohomish River and undeveloped land owned by the City of Everett, and on the west by the Burlington Northern Railroad (BNRR) tracks. The Site includes Survey Parcels 1, 2, and 4 that were described by a licensed surveyor, and are approximately shown in Exhibit A. Survey Parcel 3 - the Former Mill E Wood Treatment Site, is not included in the East Site description nor is it included in this Consent Decree.

B. Site Geology. The Site is relatively level, and is located approximately two miles upstream from the Snohomish River mouth at Port Gardner Bay in Possession Sound. Most of the Site is underlain by dredged sand fill. The dredged sand fill does not appear to be present on the South End Residual Wood Storage Site. The River is channeled and consists of a main stream and several shallow sloughs separated by marshy islands. The main channel is approximately 750 feet wide and runs next to the Site. The Site is located within a low-lying flood plain of the Snohomish River (a former estatuarine tidal flat), which is bound on the west by steeply sloped ridges and hills extending 500 feet above mean sea level. In the early 1900's the Site was filled with dredged sand from the river bottom, which was placed over the natural flood plain/tidal flat sediments. The bank of the river has been stabilized along the length of Survey Parcels 1, 2, and 3 with a bulkhead of timber piling. The Site stratigraphy from surface to depth is as follows:

1. Grade Fill and Mixed Fill Unit. This Unit was encountered on Survey Parcels 1 and 2 at the surface to approximately 1 to 4 foot depth, and consists of asphalt, sandy gravel, angular pebbles, cobbles of crushed rock, wood debris, and bark. In many areas, the top few inches contain abundant organic and wood debris and vegetation. The grade fill forms a dense and permeable unit at the surface. This unit is generally continuous across Parcels 1 and 2.

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2. Upper Sand Unit (dredge fill). This Unit consists of gray-brown to black, fine to medium sand with trace coarse sand. The upper sand averaged 5 to 6 feet in thickness and ranged from 1 to 10 feet thick. The sand was typically uniform in texture and composition with thin lenses (less than 2 inches) of coarser or finer sand. Historical records indicate that the sand was dredged from the Snohomish River and deposited on the East Site estuarine tide flats. Slight horizontal bedding was seen in most samples confirming a hydraulic emplacement of dredge fill. Dredge sands were encountered below the Grade Fill and Mixed Fill Unit in most test pits and soil borings located on Survey Parcels 1 and 2. The ground water table on Parcels 1 and 2 is found in the upper sand at an average depth of 4 feet below the surface.

3. Upper Silt Unit. The upper silt was encountered in all borings penetrating the base of the upper sand or other fill at the Site. The average thickness is 8 feet and consists of stiff, low plasticity to non-plastic gray-brown to dark brown silt with abundant organic matter (wood fragments and rootlets) in the upper layers of the unit. This Unit also contains fine-sand lenses and silty sand approximately 0.1 to 0.2 feet thick.

4. Lower Sand Unit. The lower sand consists of fine to coarse sand with trace gravel and wood debris. This Unit also contains silty and clayey lenses. The Lower Sand Unit was encountered in all four deep monitoring well borings (MW-110D, MW-103D, MW-105D and MW-108D) which were advanced below the base of the Upper Silt Unit. This Unit is coarser and denser than the Upper Sand Unit.

5. Wood Chip, Sawdust, and/or Lime Product Unit. This Unit is found on Survey Parcels 1 and 4. On Survey Parcel 1, the wood chips and sawdust are located in various locations in Areas 7 and 10; these materials are located next to the Grade Fill and Mixed Fill Unit. On Survey Parcel 4, the wood chips and sawdust cover the entire surface and extends from the surface to over twenty feet in depth. On Survey Parcel

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4, the Lime Product Unit underlies an area within the northern portion of the wood chip and sawdust unit and ranges in thickness from about one to three feet.

6. Mixed Fill Material Unit. This Unit has only been encountered in Survey Parcel 4 (South End Residual Wood Storage Site). The Unit lies between the bottom of the Wood Chip, Sawdust, and/or Lime Product Unit and the Upper Silt Unit. The thickness is variable, ranging from less than one foot to about eight feet. In the southern portion of Survey Parcel 4, the Mixed Fill Material consists predominantly of wood (wood chips, timbers, and logs). In the northern portion of Survey Parcel 4, the Mixed Fill Material Unit is predominantly a sand fill containing wood along with variable amounts of inert demolition debris.

C. Site Hydrogeology. Three hydrostratigraphic units were identified during site investigations: a shallow unconfined aquifer (Grade Fill and Upper Sand Units); a semi-confined unit (Upper Silt Unit), and a semi-confined aquifer (Lower Sand Unit).

Ground water is approximately 4 feet below ground surface in most areas of Survey Parcels 1 and 2. On Survey Parcel 4 the ground water is approximately 5 to 13 feet below the ground surface (the surface elevation of the wood chips) at an approximate average elevation of 10 feet (using the MLLW survey datum). The 10 feet MLLW datum corresponds to the average high-tide level in the Snohomish River. Ground water fluctuates an average of 2.5 feet between seasonal and maximum elevations. A tidal study was completed for portions of the adjacent Survey Parcel 3 in 1992, and showed that ground water elevations in the upper sand aquifer fluctuated less than 0.3 feet in wells adjacent to the river, and ground water elevations fluctuated 4 to 6 feet in the lower sand aquifer. The Snohomish River water level fluctuates an average of 7 feet over a tidal cycle.

Hydraulic conductivities for the upper sand, silt and lower sand were estimated with slug, pump and laboratory permeability tests on undisturbed core samples. Horizontal ground water flow directions in the upper sand aquifer are towards the east to northeast and have an

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average linear velocity of 1.8 ft/day. Horizontal ground water flow in the lower sand aquifer is tidally influenced and generally moves towards the east at average linear velocity of 0.2 ft/day. Downward flow between aquifers is hydraulically impeded by the upper silt (Hydraulic Conductivity (K)= 2.2 x 10-7 cm/sec), however this unit is saturated and does transmit water to the lower sand aquifer. Vertical ground water flow velocity was estimated at 3.1 x 10-4 ft/day. The upper sand aquifer hydraulic conductivity was estimated at K = .05 cm/sec.

D. Site History. Weyerhaeuser began operations in the Everett area in 1902. The East Site (Survey Parcel 1 and 2) consisted of the former Mill B sawmill, a planing mill, a power house, former sapstain dip tanks, and lumber storage, pipe, machine and motor storage sheds. Mill B was constructed in 1915 and was substantially dismantled by mid 1980's. Several sheds from the Mill B complex remain in use today.

The Ferry Baker Lumber Company operated a saw mill on the southern portion of Survey Parcel 4. The saw mill was removed prior to Weyerhaeuser's purchase of the land in 1915. The parcel was unused until about 1953 when wood chips and other material were stored on the entire parcel to support operations on the Kraft Pulp Mill (West Site), until its closure in 1992. The materials stored on the parcel are recyclable, and currently Weyerhaeuser is recycling the materials.

E. Cleanup Areas. The Weyerhaeuser East Site (Survey Parcels 1 and 2) was divided in to eight sub areas for assessment purposes and designated as Area 3 through Area 10 (See Site Map - Exhibit B). The subarea designations have been used in the remedial investigation report titled, "Operable Unit Summary Report for Weyerhaeuser Everett East Site, Volumes 1 and 2, March 17, 1995". Only four subareas on Survey Parcel 1 and the one area on Survey Parcel 4 require cleanup. These areas are summarized below.

Survey Parcel 1, Area 7 - Former Saw Mill Area. Area 7 includes the "Mill B fire area", the former remanufacturing building, former transformer sites, and a former oiling room.

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Survey Parcel 1, Area 8 - Former Treating Shed, Dip Tank, and Oil Storage Shop Area. Area 8 included a former wood surface treating shed, two former aboveground storage tanks that stored gasoline and diesel fuel, and a former sapstain dip tank. The location of the former sapstain dip tank varies in aerial photos taken in different years.

Currently, an aboveground diesel storage tank with secondary containment is located at the south side of the former oil and paint storage shop (now Chip Office building). The present diesel tank was moved in 1994 from the West Site to its current location next to the Chip Office.

Survey Parcel 1, Area 9 - Former Power House, Pipe Shop, Machine Shop, and Motor Shop Area. Area 9 includes the "Mill B fire area", former motor storage building, former machine shop, hog fuel vault, former transformer sites, and general storage areas.

Survey Parcel 1, Area 10 - Former Cut-up Plant, Crane Sheds, and Planing Mill Area. Area 10 includes the former site of sapstain/end seal Dip Tank No. 3, and a former aboveground diesel tank associated with the manufacturing of Presto-logs. Diesel fuel was hand applied to lubricate the insides of the Presto-log extruder. Area 10 is located east of, and hydraulically down gradient from the former ASARCO smelter facility.

Survey Parcel 4, TP-16 - South End Residual Wood Storage Site. The South End was used to store residual wood chips for and spent lime from the former West Site Kraft Mill. Over the years, large volumes of wood chips were moved around the area with dump trucks and front-end loaders. TPH was observed in the TP-16 area, which was located under a chip dump truck unloading area. The TPH is located below the wood chips and is believed to have dripped from the dump trucks.

F. Site Investigation. Two media, soil and ground water were examined during the environmental investigations. Locations of ground water sample points, monitoring wells, soil borings, and soil sample pits are provided in Exhibit B (Site Map). Soil samples were taken using test pits and soil borings. Ground water was sampled from seven temporary well points

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and fourteen monitoring wells on Survey Parcels 1 and 2, and from five temporary well points and three permanent wells on Survey Parcel 4. Ten monitoring wells are located hydraulically down gradient from the Parcels 1 and 2 along the eastern site boundary and adjacent to the Snohomish River. Four ground water monitoring wells were placed hydraulically up gradient of the East Site. The ground water and soil sampling results are summarized in the Cleanup Action Plan (CAP) in Exhibit C. By review of the environmental data, Ecology believes Weyerhaeuser has met the functional requirements of the MTCA Remedial Investigation (WAC-173-340-350), and the Feasibility Study (WAC-173-340-350).

VI. WORK TO BE PERFORMED

This Decree contains a program designed to protect public health, and the environment from the known release, or threatened release, of hazardous substances or contaminants at, on, or from the Site. This program implements Ecology's Cleanup Action Plan (CAP) and with the remainder of this Consent Decree and Exhibits, implements the Model Toxics Control Act (MTCA).

Specifically, this Decree requires Weyerhaeuser to undertake the following remedial action(s):

(1) **Area 7**--Former Oiling Room Area (Subareas RA 7-1; RA 7-2). Excavate soil to a level of 2,500 mg/kg for Total Petroleum Hydrocarbon (TPH); 17 mg/kg for polychlorinated biphenyl's(PCB); and 20 mg/kg for carcinogenic polycyclic aromatic hydrocarbons(CPAH). TPH, PCB and CPAH are the contaminants of concern in soil;

(2) **Area 8**--Former Dip Tank, Wood Treating and Wood Chip Dumper Area (Subareas RA 8-1; RA 8-2; RA 8-3; RA 8-4). Excavate soil to a level of 2,500 mg/kg for TPH; 280 mg/kg for pentachlorophenol(PCP); and 20 mg/kg for CPAH's. TPH, PCP and CPAH's are the contaminants of concern in soil;

(3) **Area 9**--Former Machine Shop and Power House Areas(Subarea RA 9-1). Excavate soil to a level of 2,500 mg/kg for TPH and 17 mg/kg for PCB. TPH and PCB are the contaminants of concern in soil;

(4) **Area 10**--Former Above Ground Diesel Fuel Tank and Former Transformers (Subareas RA 10-1; RA 10-2; RA 10-3; and RA 10-4). Excavate soil to a level of 2,500 mg/kg for TPH and 17 mg/kg for PCB. TPH and PCB are the contaminants of concern in soil;

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(5) In the South End Residual Wood Storage Operable Unit (Survey Parcel 4), excavate affected soils at TP-16 location to a level of 2,500 mg/kg for TPH. TPH is the contaminant of concern in the soil. All wood product/wood waste removal shall be conducted in accordance with Snohomish Health District specifications of Exhibit H;

(6) Fill excavations with clean fill;

(7) Install one additional ground water monitoring well in area RA-8 (as determined by Ecology), and perform ground water monitoring for wells, as described in the Ecology approved Ground Water Compliance Monitoring Plan; and

(8) Record a restrictive covenant on the contaminated areas on Site that remain above the cleanup levels for TPH, PCB, PCP, and CPAH as defined in Section VI.B., and prevent withdrawal of water for domestic purposes from the uppermost aquifer (Water Table Zone) on the Site.

Ecology has determined that the remedial action set forth in this decree is necessary to protect public health and the environment.

A. Cleanup Action Plan. Ecology's CAP constitutes an integral and enforceable part of this Decree and is attached as Exhibit C.

B. Cleanup Standards. The following compounds were analyzed in soil and ground water on the Weyerhaeuser Site: TPH; PCP; CPAH; PCB and pesticides; benzene, toluene, ethylbenzene, xylene (BTEX); metals; volatile and semivolatile organics; and dioxin. Of these compounds, several were identified as contaminants of concern: TPH, PCB, CPAH's, and PCP in soils and ground water. The cleanup standards established for the Weyerhaeuser Site contaminants of concern are MTCA Method A (for TPH only), Method A and B (For Direct Contact and Restrictive Covenant Only), and Method C industrial soil standards.

MTCA Soil Cleanup Levels and Standards

Parameter	Cleanup Level	Protection Basis
PCP *	280 mg/kg (8.33 mg/kg)	MTCA Method C Industrial (Method B)

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PCB's**	17 mg/kg (1.0 mg/kg)	MTCA Method C Industrial (Method A)
CPAH's ***	20 mg/kg (1.0 mg/kg)	MTCA Method C Industrial (Method A)
TPH ****	2,500 mg/kg 200 mg/kg	MTCA Method C Industrial (MTCA Method A)

* A soil cleanup level of 280 mg/kg was derived from soil leach study to ensure protection of ground water; MTCA Method B numbers are applicable for purposes of direct contact and restrictive covenant only.

** MTCA Method A numbers are applicable for purposes of direct contact and restrictive convenant only.

*** Carcinogenic PAH's = (173-340-200) benzo(a)anthracene, benzo(b)fluranthene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene; MTCA Method A numbers are applicable for purposes of direct contact and restrictive covenant only.

**** A soil cleanup action level of 2,500 mg/kg TPH (Method C) per WAC 173- 340-745 (3) and (4) will be implemented based on soil leach studies to ensure protection of ground water. New soil sampling procedures are available from Ecology (January 16, 1997, "Interim Interpretive and Policy Statement: Cleanup of Total Petroleum Hydrocarbons (TPH), ECY97-600) which allows a property owner to analyze soils using a surrogate approach to establish new Method B direct contact numbers. In the event, the new Method B direct contact numbers are greater than 200 mg/kg for TPH then Weyerhaeuser can request that the restrictive covenant be amended to reflect the new cleanup level.

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MTCA Ground Water Cleanup Levels and Standards

Parameter	Cleanup Level	Protection Basis
TPH	10 mg/l	MTCA METHOD C
PCP	7.29 ug/l	MTCA METHOD C
PCB's	0.114 ug/l	MTCA METHOD C
CPAH's*	0.12 ug/l	MTCA METHOD C

* Carcinogenic PAH's = (173-340-200) benzo(a)anthracene, benzo(b)fluranthene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

C. Site-Specific Leaching Study Derived Cleanup Levels and Cleanup Action Levels. The cleanup action level for hydrocarbon contaminated soils (TPH) at the Site is 2,500 mg/kg for protection of ground water. This cleanup action level is based on analytical results and calculations from sequential batch adsorption and column leach tests, that were performed to ensure the protection of the Site's ground water. Confirmational ground water monitoring per Section VI. D. 10. will demonstrate that the batch and leach test results are protective of ground water. The PCP soil cleanup level is 280 mg/kg. This cleanup level is also based on soil leach test and the derived equation values, that were performed to ensure the protection of the Site's ground water. Confirmational ground water monitoring per Section VI. D. 10. will demonstrate that the batch and leach test results are protective of ground water. Site soils will be excavated to the soil cleanup or soil cleanup action levels or to the surface of the Water Table Zone.

D. Scope of Work. Weyerhaeuser, through its contractor and subcontractors as necessary, shall accomplish the following work:

1. Obtain any and all federal permits required by applicable law before work on-Site can commence.

2. Prepare Site Health and Safety Plan in accordance with OSHA and WISHA, and their implementing regulations.

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3. Prepare and submit for Ecology approval a Site Transportation Plan. Off site soil hauling by truck shall be performed during normal working hours of 7:00 AM through 7:00 PM.

4. Develop for Ecology's approval, a soil sampling plan that meets the requirements of WAC 173-340-820 (Sampling and Analysis Plan). The Sampling and Analysis Plan (SAP) shall describe the methods and analytical procedures to analyze soil samples. All TPH samples shall be analyzed using an Ecology-modified WTPH-DX method with a silica gel and acid wash cleanup.

5. Excavate soils from all areas having contaminant concentrations above the cleanup or cleanup action levels set forth in Section VI. These cleanup or cleanup action levels will be used to determine excavation limits. It is estimated that approximately 8,000 cubic yards of material will be excavated to achieve cleanup.

6. Conduct confirmational soil sampling in each of the remediated areas to verify remediation meets the cleanup or cleanup action levels set forth in Section VI B. and C. The sampling methods and analytical procedures will be described in the SAP. Continue to excavate contaminated soil until cleanup as defined in Section VI. has been attained or until the surface of ground water is reached. All soil and water sampling performed pursuant to this Decree shall be conducted by a laboratory accredited under chapter 173-50 WAC.

   Upon completion of the confirmational soil sampling program, submission of analytical data and a final report, and filing of Exhibit G, Ecology will issue a written certification that Weyerhaeuser has completed the soil removal portion of this decree.

7. Transport contaminated soil by rail, tractor-trailer or dump truck to an appropriate off-site landfill that has been approved by Ecology for the specific type of waste being disposed. Tractor-trailer or dump trucks shall use only arterial streets and state and federal roadways when transporting contaminated soil off-site. The Site Transportation Plan shall describe transportation routes to be used when moving soil off-site.

8. Fill excavations with clean backfill.

9. One additional well shall be installed in Area 8 per Ecology approval.

10. A ground water confirmation monitoring plan that meets the requirements of WAC 173-340-410 and 173-340-720 (Ground Water Monitoring Plan) has been submitted by Weyerhaeuser on February 3, 1997 and approved by Ecology on February 4, 1997 (Exhibit I). Ground Water Cleanup Standards for the Site shall be as set forth in Section VI. B. The ground water point of compliance for the Site is at the property boundary adjacent to the Snohomish River. Following placement of final fill (approximate date is Spring of 1997), ground water from wells located in Survey Parcel 1 and 4 shall be monitored as specified in the Ecology approved Ground Water Monitoring Plan, Exhibit I.

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The Ground Water Monitoring Plan shall describe sampling and analyses procedures, schedules, quality assurance and quality control, and statistical methods to determine compliance with cleanup levels. The Ground Water Monitoring Plan shall also describe well abandonment procedures and cessation of monitoring, as discussed in Section XXIII. If a third party is directed by Ecology to monitor ground water for arsenic, then with Ecology's approval, Weyerhaeuser will cease monitoring for arsenic in ground water, and the third party shall be responsible to monitor for arsenic. Should Ecology direct a third party to monitor for arsenic in ground water on Weyerhaeuser or its successor's property, Weyerhaeuser will grant to, or attempt to obtain for, the third party, access to the requisite Site wells.

11. 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 CPAH's 1.0 mg/kg and Method A for PCB's, 1.0 mg/kg. The restrictive covenant to be recorded by Weyerhaeuser is attached as Exhibit G.

12. The Snohomish County Health District will administer and enforce the wood chip recycle operation on Survey Parcel 4 (South End Residual Wood Storage Site)in accordance with Snohomish Health District Sanitary Code, Chapter 3.1; Ecology will administer and enforce the removal of the TPH from TP-16 area.

E. Schedule. The above Scope of Work will have a schedule pursuant to Exhibit D.

F. Weyerhaeuser agrees not to perform any remedial actions outside the scope of this decree unless the parties agree to amend the scope of work to cover these actions. All work conducted under this decree shall be done in accordance with ch. 173-340 WAC unless otherwise provided herein.

VII. DESIGNATED PROJECT COORDINATORS

The project coordinator for Ecology is:

Nadine L. Romero
Industrial Section
Department of Ecology
PO Box 47706
Olympia, WA 98504-7706
Phone (360) 407-6116; Fax (360) 407-6903

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The project coordinator for Weyerhaeuser is:

Stuart Triolo
Weyerhaeuser Company
101 East Marine View Drive
Everett, WA 98201
Phone (206) 339-2871; Fax (206) 339-2786

Each project coordinator shall be responsible for overseeing the implementation of this Decree. The Ecology project coordinator will be Ecology's designated representative at the Site. To the maximum extent possible, communications between Ecology and Weyerhaeuser and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Decree, shall be directed through the project coordinators. The project coordinators may designate, in writing, working level staff contacts for all or portions of the implementation of the remedial work required by this Decree. The project coordinators may agree to minor modifications to the work to be performed without formal amendments to this Decree. Minor modifications will be documented in writing by Ecology.

Any party may change its respective project coordinator. Written notification shall be given to the other party project coordinator at least ten (10) calendar days prior to the change.

VIII. PERFORMANCE

All work performed pursuant to this Decree shall be under the direction and supervision, as necessary, of a professional engineer or hydrogeologist, or equivalent, with experience and expertise in hazardous waste site investigation and cleanup. Any construction work must be under the supervision of a professional engineer. Weyerhaeuser shall notify Ecology in writing as to the identity of such engineer(s) or hydrogeologist(s), or others and of any contractors and subcontractors to be used in carrying out the terms of this Decree, in advance of their involvement at the Site.

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IX. ACCESS

Ecology or any Ecology authorized representatives shall have the authority to enter and freely move about all property at the Site at all reasonable times for the purposes of, inter alia: inspecting records, operation logs, and contracts related to the work being performed pursuant to this Decree; reviewing Weyerhaeuser's progress in carrying out the terms of this Decree; conducting such tests or collecting such samples as Ecology may deem necessary; using a camera, sound recording, or other documentary type equipment to record work done pursuant to this Decree; and verifying the data submitted to Ecology by Weyerhaeuser. All parties with access to the Site pursuant to this paragraph shall comply with approved health and safety plans.

X. SAMPLING, DATA REPORTING, AND AVAILABILITY

With respect to the implementation of this Decree, Weyerhaeuser shall make the results of all sampling, laboratory reports, and/or test results generated by it, or on its behalf available to Ecology and shall submit these results in accordance with Section XI of this Decree.

In accordance with WAC 173-340-840(5), ground water sampling data shall be submitted according to Appendix F: GROUND WATER SAMPLING DATA SUBMITTAL REQUIREMENTS, or as in the Ecology-approved Ground Water Monitoring Plan, or as modified by Ecology to simplify submittal. These submittals shall be provided to Ecology in accordance with Section XI of this Decree.

If requested by Ecology, Weyerhaeuser shall allow split or duplicate samples to be taken by Ecology and/or its authorized representatives of any samples collected by Weyerhaeuser pursuant to the implementation of this Decree. Weyerhaeuser shall notify Ecology seven (7) days in advance of any sample collection or work activity at the Site. Ecology shall, upon request, allow split or duplicate samples to be taken by Weyerhaeuser or its authorized representatives of any samples collected by Ecology pursuant to the implementation of this Decree provided it does not interfere with the Department's sampling.

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Without limitation on Ecology's rights under Section IX, Ecology shall endeavor to notify Weyerhaeuser prior to any sample collection activity.

XI. PROGRESS REPORTS

Weyerhaeuser shall submit to Ecology written monthly progress reports which describe the actions taken during the previous month to implement the requirements of this Decree. The progress shall include the following:

A. A list of on-site activities that have taken place during the period;

B. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests;

C. Description of all deviations from the schedule (Exhibit D) during the current period and any planned deviations in the upcoming period;

D. For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule;

E. All raw data related to cleanup activities received by Weyerhaeuser during the previous period and an identification of the source of the sample; and

F. A list of deliverables for the upcoming period if different from the schedule.

All progress reports shall be submitted by the tenth day of the month in which they are due after the effective date of this Decree. Unless otherwise specified, progress reports and any other documents submitted pursuant to this Decree shall be sent by mail, to Ecology's project coordinator. Progress reports shall only be required during the soil remediation portion of this Decree. No progress reports shall be required after submittal of the final remediation report.

XII. RETENTION OF RECORDS

Weyerhaeuser shall preserve, during the pendency of this Decree and for ten (10) years from the date this Decree is no longer in effect as provided in Section XXV, all records, reports, documents, and underlying data in its possession relevant to the implementation of this Decree and shall insert in contracts with project contractors and subcontractors a similar record retention requirement. Upon request of Ecology, Weyerhaeuser shall make all non-archived

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records available to Ecology and allow access for review. All archived records shall be made available to Ecology within a reasonable period of time.

XIII. TRANSFER OF INTEREST IN PROPERTY

No conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Site shall be consummated without provision for continued operation and maintenance of any containment system, treatment system, and monitoring system installed or implemented pursuant to this Decree.

Prior to transfer of any legal or equitable interest in all or any portion of the Site, and during the effective period of this Decree, Weyerhaeuser or its successor in interest shall serve a copy of this Decree upon any prospective purchaser, lessee, transferee, assignee, or other successor in interest of the Site; and, at least thirty (30) days prior to any transfer, Weyerhaeuser shall notify Ecology of said contemplated transfer.

XIV. RESOLUTION OF DISPUTES

A. In the event a dispute arises as to an approval, disapproval, proposed modification or other decision or action by Ecology's project coordinator, the parties shall utilize the dispute resolution procedure set forth below.

1. Upon receipt of the Ecology project coordinator's decision, Weyerhaeuser has fourteen (14) days within which to notify Ecology's project coordinator of its objection to the decision.

2. The parties' project coordinators shall then confer in an effort to resolve the dispute. If the project coordinators cannot resolve the dispute within fourteen (14) days, Ecology's project coordinator shall issue a written decision.

3. Weyerhaeuser may then request Ecology management review of the decision. This request shall be submitted in writing to the Toxics Cleanup Program Manager within seven (7) days of receipt of Ecology's project coordinator's decision.

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4. Ecology's Program Manager shall conduct a review of the dispute and shall issue a written decision regarding the dispute within thirty (30) days of Weyerhaeuser's request for review. The Program Manager's decision shall be Ecology's final decision on the disputed matter.

B. If Ecology's final written decision is unacceptable to Weyerhaeuser, Weyerhaeuser has the right to submit the dispute to the Court for resolution. The parties agree that one judge should retain jurisdiction over this case and shall, as necessary, resolve any dispute arising under this Decree. In the event Weyerhaeuser presents an issue to the Court for review, which is subject to RCW 70.105D.060, the Court shall review the action or decision of Ecology on the basis of whether such action or decision was arbitrary and capricious and render a decision based on such standard of review.

C. The parties agree to only utilize the dispute resolution process in good faith and agree to expedite, to the extent possible, the dispute resolution process whenever it is used. Where either party utilizes the dispute resolution process in bad faith or for purposes of delay, the other party may seek sanctions.

Implementation of these dispute resolution procedures shall not provide a basis for delay of any activities required in this Decree, unless Ecology agrees in writing to a schedule extension or the Court so orders.

XV. AMENDMENT OF CONSENT DECREE

This Decree may only be amended by a written stipulation among the parties to this Decree that is entered by the Court or by order of the Court. Such amendment shall become effective upon entry by the Court. Agreement to amend shall not be unreasonably withheld by any party to the Decree.

Amendments may cover any subject or be for any purpose agreed to by the parties to this Decree, including for the purpose of making a purchaser of the Site a new party to this Decree. Successors in Interest and Assigns may request that the Decree be amended to make

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a new owner of the Site a party to the Decree. A sample of such an amendment to the Decree is set forth in Exhibit J.

Requests for an amendment to the Decree shall be submitted to Ecology for approval. Ecology shall indicate its approval or disapproval in a timely manner after the request for amendment is received. If the amendment to the Decree is substantial, Ecology will provide public notice and opportunity for comment. Reasons for the disapproval shall be stated in writing. If Ecology does not agree to any proposed amendment, the disagreement may be addressed through the dispute resolution procedures described in Section XIV of this Decree.

XVI. EXTENSION OF SCHEDULE

A. An extension of the schedule shall be granted only when a request for an extension is submitted in a timely fashion, generally at least 30 days prior to expiration of the deadline for which the extension is requested, and good cause exists for granting the extension. All extensions shall be requested in writing. The request shall specify the reason(s) the extension is needed.

An extension shall only be granted for such period of time as Ecology determines is reasonable under the circumstances. A requested extension shall not be effective until approved by Ecology or the Court. Ecology shall act upon any written request for extension in a timely fashion. It shall not be necessary to formally amend this Decree pursuant to Section XV when a schedule extension is granted.

B. The burden shall be on the Weyerhaeuser to demonstrate to the satisfaction of Ecology that the request for such extension has been submitted in a timely fashion and that good cause exists for granting the extension. Good cause includes, but is not limited to, the following.

1. Circumstances beyond the reasonable control and despite the due diligence of Weyerhaeuser including delays caused by unrelated third parties or Ecology, such

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as (but not limited to) delays by Ecology in reviewing, approving, or modifying documents submitted by Weyerhaeuser; or

2. Acts of God, including fire, flood, blizzard, extreme temperatures, storm, or other unavoidable casualty; or

3. Endangerment as described in Section XVII.

However, neither increased costs of performance of the terms of the Decree nor changed economic circumstances shall be considered circumstances beyond the reasonable control of Weyerhaeuser.

C. Ecology may extend the schedule for a period not to exceed ninety (90) days, except where an extension is needed as a result of:

(1) Delays in the issuance of a necessary permit which was applied for in a timely manner; or

(2) Other circumstances deemed exceptional or extraordinary by Ecology; or

(3) Endangerment as described in Section XVII.

Ecology shall give Weyerhaeuser written notification in a timely fashion of any extensions granted pursuant to this Decree.

XVII. ENDANGERMENT

A. In the event Ecology determines that activities implementing or in noncompliance with this Decree, or any other circumstances or activities, are creating or have the potential to create a danger to the health of the people on the Site or in the surrounding area or to the environment, Ecology may order Weyerhaeuser to stop further implementation of this Decree for such period of time as needed to abate the danger or may petition the Court for an order as appropriate. During any stoppage of work under this section, the obligations of Weyerhaeuser with respect to the work under this Decree which is ordered to be stopped shall be suspended and the time periods for performance of that work, as well as the time period for any other work dependent upon the work which is stopped, shall be extended, pursuant to

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Section XVI of this Decree, for such period of time as Ecology determines is reasonable under the circumstances.

B. In the event Weyerhaeuser determines that activities undertaken in furtherance of this Decree or any other circumstances or activities are or may be creating an endangerment to the people on the Site, to the people in the surrounding area or to the environment, Weyerhaeuser may stop implementation of this Decree for such period of time necessary for Ecology to evaluate the situation. Weyerhaeuser shall notify Ecology's project coordinator as soon as possible, but no later than twenty-four (24) hours after such stoppage of work, and thereafter provide Ecology with documentation of the basis for the work stoppage. Ecology shall determine whether Weyerhaeuser has sufficient cause to believe that an endangerment is being, or may be, created. If Ecology disagrees with the Weyerhaeuser's determination, it may order Weyerhaeuser to resume implementation of this Decree. If Ecology concurs with Weyerhaeuser's determination Weyerhaeuser's obligations shall be suspended and the time period for performance of that work, as well as the time period for any other work dependent upon the work which was stopped, shall be extended, pursuant to Section XVI of this Decree, for such period of time as Ecology determines is reasonable under the circumstances. Any disagreements pursuant to the clause shall be resolved through the dispute resolution procedures in Section XIV.

XVIII. OTHER ACTIONS

Ecology reserves its rights to institute remedial action(s) at the Site and subsequently pursue cost recovery, and Ecology reserves its rights to issue orders and/or penalties or take any other enforcement action pursuant to available statutory authority under the following circumstances:

(1) Where Weyerhaeuser fails, after notice, to comply with any requirement of this Decree;

(2) In the event or upon the discovery of a release or threatened release not addressed by this Decree;

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(3) Upon Ecology's determination that action beyond the terms of this Decree is necessary to abate an emergency situation which threatens public health or the environment; or

(4) Upon the occurrence or discovery of a situation beyond the scope of this Decree as to which Ecology would be empowered to perform any remedial action or to issue an order and/or penalty, or to take any other enforcement action. This Decree is limited in scope to the geographic Site described in Exhibit A and to those contaminants which Ecology knows to be at the Site when this Decree is entered, except that this Consent Decree does not cover the arsenic contamination in ground water.

Ecology reserves all rights regarding the injury to, destruction of, or loss of natural resources resulting from the release or threatened release of hazardous substances from the Weyerhaeuser East Site.

Ecology reserves the right to take any enforcement action whatsoever, including a cost recovery action, against potentially liable persons not party to this Decree.

XIX. INDEMNIFICATION

Weyerhaeuser agrees to indemnify and save and hold the State of Washington, its employees, and agents harmless from any and all claims or causes of action for death or injuries to persons or for loss or damage to property arising from or on account of acts or omissions of Weyerhaeuser, its officers, employees, agents, or contractors in entering into and implementing this Decree. However, Weyerhaeuser shall not indemnify the State of Washington nor save nor hold its employees and agents harmless from any claims or causes of action arising out of the negligent acts or omissions of the State of Washington, or the employees or agents of the State, in implementing the activities pursuant to this Decree.

XX. COMPLIANCE WITH OTHER APPLICABLE LAWS

A. All actions carried out by Weyerhaeuser pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits, except as provided in paragraph B of this section.

B. Pursuant to RCW 70.105D.090(1), the substantive requirements of chapters 70.94, 70.95, 70.105, 75.20, 90.48 and 90.58 RCW and of any laws requiring or authorizing local

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government permits or approvals for the remedial action under this Order not now known will be incorporated by amendment, will become applicable at the time of the amendment, and will be binding and enforceable requirements of the Order.

Weyerhaeuser has a continuing obligation to determine whether additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order. In the event Weyerhaeuser determines that additional permits or approvals for the remedial action are required under this Order, it shall promptly notify Ecology of this determination. Ecology shall determine whether Ecology or Weyerhaeuser shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, Weyerhaeuser shall promptly consult with the appropriate state and/or local agencies and provide Ecology with written documentation from those agencies of the substantive requirements those agencies believe are applicable to the remedial action. Ecology shall make the final determination on the additional substantive requirements that must be met by Weyerhaeuser and on how Weyerhaeuser must meet those requirements. Ecology shall inform Weyerhaeuser in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Order. Weyerhaeuser shall not begin or continue the remedial action potentially subject to the additional requirements until Ecology makes its final determination.

Ecology shall ensure that notice and opportunity for comment is provided to the public and appropriate agencies prior to establishing the substantive requirements under this section.

C. Pursuant to RCW 70.105D.090 (2), in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70.105D.090 (1) would result in the loss of approval from a federal agency which is necessary for the State to administer any federal law, the exemption shall not apply and Weyerhaeuser shall comply with both the procedural and substantive requirements of the laws referenced in RCW 70.105D.090 (1), including any requirements to obtain permits.

ATTORNEY GENERAL OF WASHINGTON
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Olympia, WA 98504-0117
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XXI. REMEDIAL AND INVESTIGATIVE COSTS

Weyerhaeuser is supporting a Full Time Equivalent (FTE) Staff Position at Ecology. The FTE has been assigned to develop and administer this Decree. Ecology staff costs are covered under the FTE position contract, and any work incurred shall be charged to the FTE account. When the FTE contract expires or the costs exceed the allotted FTE amount, Weyerhaeuser agrees to pay costs incurred by Ecology pursuant to this Decree. These costs shall include work performed by Ecology or its contractors at the Site under Ch. 70.105D RCW both prior to and subsequent to the issuance of this Decree for investigations, remedial actions, and Decree preparation, negotiations, oversight and administration. Ecology costs shall include costs of direct activities; e.g., employee salary, travel costs, laboratory costs, contractor fees, and employee benefit packages; and Ecology indirect costs of direct activities. Weyerhaeuser agrees to pay the required amount within ninety (90) days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A statement of work performed will be provided. Itemized statements shall be prepared quarterly. Failure to pay Ecology's costs within ninety (90) days of receipt of the itemized statement will result in interest charges.

XXII. IMPLEMENTATION OF REMEDIAL ACTION

If Ecology determines that Weyerhaeuser has failed without good cause to implement the remedial action, Ecology may, after notice to Weyerhaeuser, perform any or all portions of the remedial action that remain incomplete. If Ecology performs all or portions of the remedial action because of the Weyerhaeuser's failure to comply with its obligations under this Decree, Weyerhaeuser shall reimburse Ecology for the costs of doing such work in accordance with Section XXI, provided that Weyerhaeuser is not obligated under this section to reimburse Ecology for costs incurred for work inconsistent with or beyond the scope of this Decree.

ATTORNEY GENERAL OF WASHINGTON
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XXIII. CONFIRMATIONAL MONITORING

As remedial action, including ground water monitoring, WAC 173-340-410 (1)(c), continues at the Site, the parties agree to review the progress of remedial action at the Site, and to review the data accumulated as results are available per Section VI D. 10. If at the end of a five year period for Survey Parcel 1 wells, monitoring data indicate that the conditions of the consent decree have been met at the points of compliance for the soil cleanup and cleanup action levels as set forth in Section VI, and ground water cleanup levels are below levels set forth in Section VI during the final eight consecutive quarters of ground water monitoring as defined in the Ground Water Monitoring Plan, then ground water monitoring can cease, monitoring wells can be abandoned, and Ecology shall issue a written certification that ground water monitoring has been completed for Parcel 1 in compliance with the terms of this Decree. If these conditions are not met, then ground water monitoring shall continue until at least eight consecutive quarters of ground water sampling data are obtained with concentrations below cleanup levels per the procedures in the approved Ground Water Monitoring Plan of January, 1997.

If at the end of one year for Survey Parcel 4 wells, monitoring data indicate that the conditions of the consent decree have been met at the points of compliance for soil cleanup levels set forth in Section VI, and ground water cleanup levels as set forth in Section VI have been met for each quarter, then ground water monitoring can cease, monitoring wells can be abandoned, and Ecology shall issue a written certification that ground water monitoring has been completed for Parcel 4 in compliance with the terms of this Decree.

XXIV. PERIODIC REVIEW

If Weyerhaeuser leaves hazardous substances on site which require a restrictive covenant, Ecology shall review the cleanup action no less than every five years after initiation of such cleanup to assure that human health and the environment are being protected pursuant to WAC 173-340-420.

ATTORNEY GENERAL OF WASHINGTON
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XXV. PUBLIC PARTICIPATION

Ecology shall maintain the responsibility for public participation at the Site. However, Weyerhaeuser shall cooperate with Ecology and, if agreed to with Ecology, shall:

A. Prepare drafts of public notices and fact sheets at important stages of the remedial action, such as the submission of work plans and technical memorandums. Ecology will finalize (including editing if necessary) and distribute such fact sheets and prepare and distribute public notices of Ecology's presentations and meetings;

B. Notify Ecology's project coordinator prior to the preparation of all press releases and fact sheets, and before major meetings with the interested public and local governments. Likewise, Ecology shall notify Weyerhaeuser prior to the issuance of all press releases and fact sheets, and before major meetings with the interested public and local governments;

C. Participate in public presentations on the progress of the remedial action at the Site. Participation may be through attendance at public meetings to assist in answering questions, or as a presenter;

D. In cooperation with Ecology, arrange and/or continue information repositories to be located at Everett Public Library, 2707 Hoyt Avenue, Everett, Washington 98201, and Ecology's Industrial Section at Ecology Headquarters Building, 300 Desmond Drive, Lacey, Washington 98504. At a minimum, copies of all public notices, fact sheets, and press releases; all quality assured ground water, surface water, soil sediment, and air monitoring data; remedial actions plans, supplemental remedial planning documents, and all other similar documents relating to performance of the remedial action required by this Decree shall be promptly placed in these repositories.

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ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (360) 438-7743

XXVI. DURATION OF DECREE

This Decree shall remain in effect and the remedial program described in the Decree shall be maintained and continued until Weyerhaeuser has received written notification from Ecology that the requirements of this Decree have been satisfactorily completed.

XXVII. COVENANT NOT TO SUE

In consideration of Weyerhaeuser's compliance with the terms and conditions of this Decree, the State of Washington covenants not to institute legal, equitable or administrative actions against Weyerhaeuser its successors and assigns, regarding matters within the scope of this Decree.

This covenant is strictly limited in its application to the Site specifically defined in Exhibit A and to contamination which Ecology knows to be located at the Site as of the entry of this Decree, except that this covenant is not applicable to the Arsenic contamination in ground water. The state retains all of its authority relative to the arsenic contamination.

Any person who obtains an interest in the Site and wishes to receive the protections set forth in this Covenant Not To Sue must become a party to this Consent Decree pursuant to the amendment procedures set forth in Section XV. By becoming a party to this Decree, a person receives certain protections but is also subject to all of the restrictions and obligations originally agreed to by Weyerhaeuser in this Decree.

The exact nature and extent of the Covenant Not To Sue that would apply to a new party and the exact obligations that would apply to a new party will be set forth in the Amendment to the Decree. For example, Ecology may agree that a new party's obligations will arise only after Weyerhaeuser has failed to satisfy its obligations. A sample of such an amendment to the Decree is set forth in Exhibit J.

Any Covenant Not To Sue shall not be effective with respect to any purchaser of the Site who fails to become a party to this Decree pursuant to Section XV.

ATTORNEY GENERAL OF WASHINGTON
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A. Reopeners: In the following circumstances, the State of Washington may exercise its full legal authority to address releases and/or threatened releases of hazardous substances at the Site notwithstanding the Covenant Not to Sue set forth above:

1. In the event Weyerhaeuser fails to comply with the terms and conditions of this Consent Decree, including all Exhibits, and Weyerhaeuser, after written notice of noncompliance, fails to come into compliance;

2. In the event new information becomes available regarding factors previously unknown to Ecology, including the nature or quantity of hazardous substances at the Site, and Ecology determines that these factors present a previously unknown threat to human health or the environment.

3. In the event that the results of ground water monitoring at the point of compliance in applicable Site ground water monitoring wells indicate that concentrations of the monitored parameters show a statistically significant increase above levels defined in Section VI. The Ground Water Monitoring Plan shall describe the statistical methods and procedures for confirmation monitoring including the length of time, and sampling rounds required to evaluate data to determine a statistically significant increase.

4. Upon Ecology's determination that action beyond the terms of this Decree is necessary to abate an emergency situation that threatens public health or welfare or the environment.

B. Applicability: The Covenant Not to Sue set forth above shall have no applicability whatsoever to:

1. Criminal liability

2. Liability for damages to natural resources.

3. Any Ecology action against potentially liable persons not a party to this decree, including cost recovery.

ATTORNEY GENERAL OF WASHINGTON
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XXVIII. CLAIMS AGAINST THE STATE

Weyerhaeuser hereby agrees that it will not seek to recover any costs accrued in implementing the remedial action required by this Decree from the State of Washington or any of its agencies; and further, that Weyerhaeuser will make no claim against the State Toxics Control Account or any Local Toxics Control Account for any costs incurred in implementing this Decree. Except as provided above, however, Weyerhaeuser expressly reserves its right to seek to recover any costs incurred in implementing this Decree from any other potentially liable person.

XXIX. EFFECTIVE DATE

This Decree is effective upon the date it is entered by the Court.

XXX. PUBLIC NOTICE AND WITHDRAWAL OF CONSENT

This Decree has been the subject of public notice and comment under RCW 70.105D.040(4)(a). As a result of this process, Ecology has found that this Decree will lead to a more expeditious cleanup of hazardous substances at the Site.

If the Court withholds or withdraws its consent to this Decree, it shall be null and void at the option of any party and the accompanying Complaint shall be dismissed without costs and without prejudice. In such an event, no party shall be bound by the requirements of this Decree.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Mary E. Burg
Mary Burg
Program Manager
Toxics Cleanup Program

Dated 28 March 1997

CHRISTINE O. GREGOIRE
Attorney General

Thomas C. Morrill
Tom Morrill
Assistant Attorney General

Dated 4-7-97

. . .

ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (360) 438-7743

WEYERHAEUSER COMPANY

Arlan L Ruf

By: ARLAN L RUF
Title Site Manager
Weyerhaeuser Company, Everett Facility

Dated 3/24/97

WEYERHAEUSER COMPANY

Joseph P. Jackowski

JOSEPH P. JACKOWSKI
Senior Legal Counsel
Weyerhaeuser Company

Dated 3/21/97

DATED this APR 10 1997 day of _____, 1997.

LESTER H. STEWART
COURT COMMISSIONER

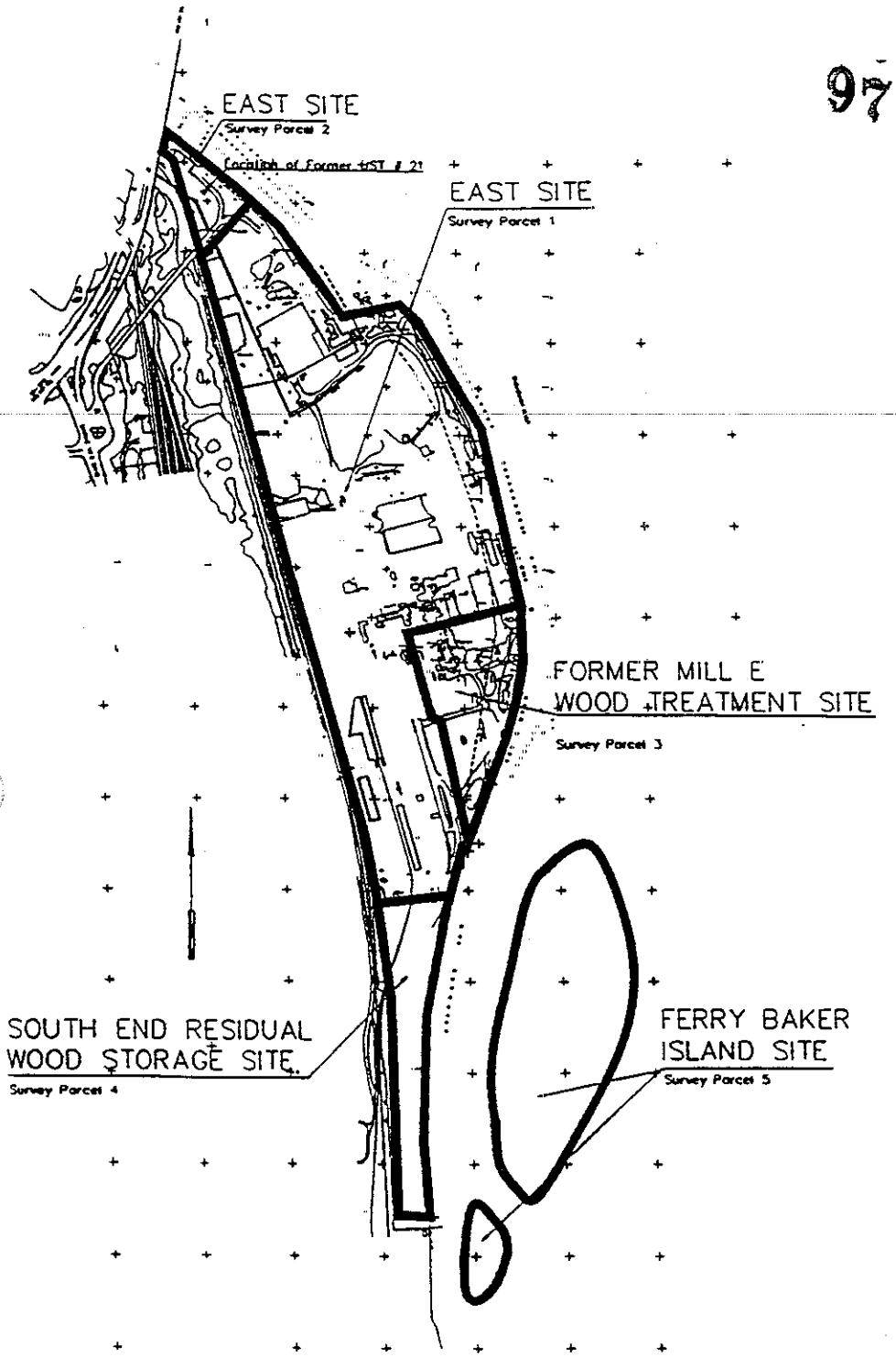
JUDGE
Snohomish County Superior Court

f:\....\Weyerhae\mared.Wp

ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (360) 438-7743

Exhibit A

97 2 02773 8



Weyerhaeuser

TITLE:

SURVEY PARCEL NUMBERS

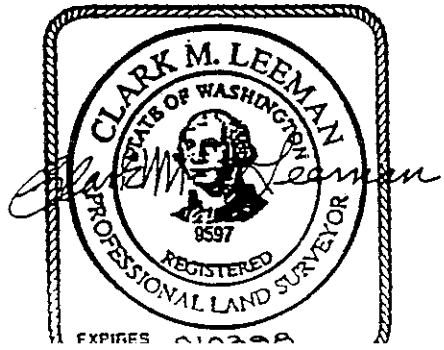
EAST SITE -- EVERETT, WA

EXHIBIT A

DWN:	DES:	PROJECT NO:
CHK'D:	APP'D:	
DATE: 4/10/96	REV:	FIGURE NO: EASTOPER.DWG

PARCEL NO. 1 LAND DESCRIPTION AT WEYERHAEUSER COMPANY EAST SITE

All that portion of Government Lot 9, and Tract 4 of Everett Tide Lands Section No. 2, as shown on the official plat thereof on file in the office of the Commissioner of Public Lands, at Olympia, Washington, in Section 9, and that portion of Government Lot 2, and Tract 5 of said Everett Tide Lands Section No. 2, in Section 16, and that portion of the Northeast Quarter of the Northeast Quarter of Section 17, and that portion of Government Lot 7 and the Southeast Quarter of the Southeast Quarter of Section 8, Township 29 North, Range 5 East of the Willamette Meridian, described as follows: Commencing at the Southeast corner of said Section 8; thence North 89° 55' 27" West, along the South line of the Southeast Quarter of said Section 8, a distance of 238.96 feet to a point on the Easterly line of the Burlington Northern Railroad Company right of way, which point is referred to hereinafter as Point "A"; thence North 16° 03' 43" West, along the Easterly line of said right of way, a distance of 2180.08 feet to the True Point of Beginning; thence South 16° 03' 43" East, along the Easterly line of said righs of way, a distance of 2180.08 feet to said Point "A"; thence continuing South 16° 03' 43" East, along the Easterly line of said right of way, a distance of 899.94 feet; thence on a curve of the Easterly line of said right of way, to the right, having a radius of 5829.65 feet, and a central angle of 4° 50' 51", an arc distance of 493.21 feet; thence North 89° 07' 33" East a distance of 489 feet, more or less, to a point on the Line of Ordinary High Tide of the left bank of the Snohomish River; thence in a Northerly direction, along the meanderings of said Line of Ordinary High Tide, to a point that bears North 38° 30' 24" East from the True Point of Beginning; thence South 38° 30' 24" West a distance of 339 feet, more or less, to the True Point of Beginning; EXCEPT therefrom the former Mill "E" and Wood Treatment Site described as follows: All that portion of Government Lot 9, and Tract 4 of Everett Tide Lands Section No. 2, as shown on the official plat thereof on file in the office of the Commissioner of Public Lands, at Olympia, Washington, in Section 9, and that portion of Government Lot 2, and Tract 5 of said Everett Tide Lands Section No. 2, in Section 16, Township 29 North, Range 5 East of the Willamette Meridian, described as follows: Commencing at the Southwest corner of said Section 9; thence North 89° 12' 51" East, along the South line of said Section 9, a distance of 420.80 feet to the True Point of Beginning; thence North 63° 56' 46" East a distance of 132.97 feet; thence North 73° 51' 29" East a distance of 290.04 feet; thence South 69° 25' 46" East a distance of 111.85 feet to a point on the timber bulkhead along the Snohomish River; thence in a Southerly direction, along said bulkhead on the following courses: South 3° 44' 08" East 143.24 feet, South 0° 17' 19" West 64.72 feet, South 3° 28' 47" West 85.16 feet, South 5° 57' 29" West 86.57 feet, South 8° 49' 41" West 63.97 feet, South 13° 24' 08" West 90.75 feet, South 16° 03' 42" West 84.09 feet, South 18° 40' 16" West 454.68 feet; thence North 35° 29'-14" West a distance of 211.21 feet; thence North 15° 34' 19" West a distance of 289.92 feet; thence North 51° 01' 20" West a distance of 100.28 feet; thence North 15° 27' 34" West a distance of 399.67 feet; thence North 63° 56' 46" East a distance of 96.81 feet to the True Point of Beginning.



151670
022796
CML-LS
042696

PARCEL NO. 2 LAND DESCRIPTION AT WEYERHAEUSER COMPANY EAST SITE

All that portion of Government Lot 7, and Tracts 3 and 4 of Everett Tide Lands Section No. 2, as shown on the official plat thereof on file in the office of the Commissioner of Public Lands, at Olympia, Washington, in Section 8, Township 29 North, Range 5 East of the Willamette Meridian, described as follows: Commencing at the Southeast corner of said Section 8; thence North 89° 55' 27" West, along the South line of the Southeast Quarter of said Section 8, a distance of 238.96 feet to a point on the Easterly line of the Burlington Northern Railroad Company right of way; thence North 16° 03' 43" West, along the Easterly line of said right of way, a distance of 2180.08 feet to the True Point of Beginning; thence continuing North 16° 03'-43" West a distance of 506.50 feet to a point on the curve of the Northerly line of said Burlington Northern Railroad Company right of way, at which point the tangent to said curve bears North 52° 53' 53" West; thence in a Northwesterly direction, along said curve, to the left, having a radius of 784.49 feet, and a central angle of 3° 21'-47", an arc distance of 46.05 feet to a point on said curve at which the tangent to said curve bears North 56° 15' 40" West, and which point is on the Easterly right of way line of State Highway No. 529; thence North 10° 02' 20" East, along the Easterly right of way line of said highway, a distance of 59 feet, more or less, to a point on the Line of Ordinary High Tide of the left bank of the Snohomish River; thence in a Southeasterly direction, along the meanderings of said Line of Ordinary High Tide, to a point that bears North 38° 30' 24" East from the True Point of Beginning; thence South 38° 30' 24" West a distance of 339 feet, more or less, to the True Point of Beginning.

151670
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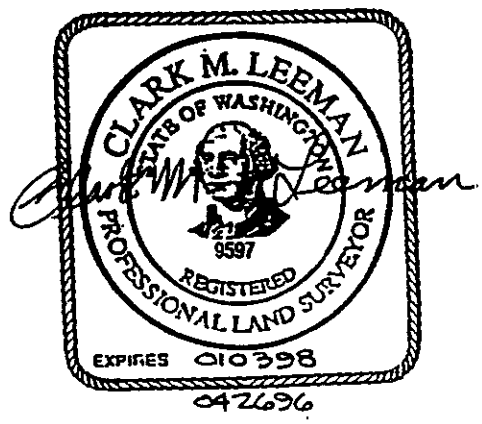
CML-LS
041896



PARCEL NO. 3 LAND DESCRIPTION AT WEYERHAEUSER COMPANY EAST SITE

All that portion of Government Lot 9, and Tract 4 of Everett Tide Lands Section No. 2, as shown on the official plat thereof on file in the office of the Commissioner of Public Lands, at Olympia, Washington, in Section 9; and that portion of Government Lot 2, and Tract 5 of said Everett Tide Lands Section No. 2, in Section 16, Township 29 North, Range 5 East of the Willamette Meridian, described as follows: Commencing at the Southwest corner of said Section 9; thence North 89° 12' 51" East, along the South line of said Section 9, a distance of 420.80 feet to the True Point of Beginning; thence North 63° 56'-46" East a distance of 132.97 feet; thence North 73° 51' 29" East a distance of 290.04 feet; thence South 69° 25' 46" East a distance of 111.85 feet to a point on the timber bulkhead along the Snohomish River; thence in a Southerly direction, along said bulkhead on the following courses: South 3° 44' 08" East 143.24 feet, South 0° 17'-19" West 64.72 feet, South 3° 28' 47" West 85.16 feet, South 5° 57'-29" West 86.57 feet, South 8° 49' 41" West 63.97 feet, South 13° 24'-08" West 90.75 feet, South 16° 03' 42" West 84.09 feet, South 18° 40'-16" West 454.68 feet; thence North 35° 29' 14" West a distance of 211.21 feet; thence North 15° 34' 19" West a distance of 289.92 feet; thence North 51° 01' 20" West a distance of 100.28 feet; thence North 15° 27' 34" West a distance of 399.67 feet; thence North 63° 56' 46" East a distance of 96.81 feet to the True Point of Beginning. Containing 8.89 acres, more or less.

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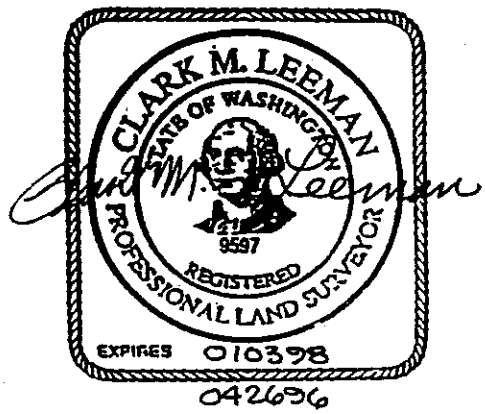

042696

PARCEL NO. 4 LAND DESCRIPTION AT WEYERHAEUSER COMPANY EAST SITE

All that portion of Government Lots 3 and 9, and Tracts 6 and 8 of Everett Tide Lands Section No. 2, as shown on the official plat thereof on file in the office of the Commissioner of Public Lands, at Olympia, Washington, in Section 16, Township 29 North, Range 5 East of the Willamette Meridian, described as follows: Commencing at the Northwest corner of said Section 16; thence North 89° 55' 27" West, along the North line of the Northeast Quarter of Section 17 in said Township, a distance of 238.96 feet to a point on the Easterly line of the Burlington Northern Railroad Company right of way; thence South 16°-03' 43" East, along the Easterly line of said right of way, a distance of 899.94 feet; thence along the curve of the Easterly line of said right of way, to the right, having a radius of 5829.65 feet, and a central angle of 4° 50' 51", an arc distance of 493.21 feet to a point at which the tangent to said curve bears South 11° 12' 53" East, which point is on the North line of said Government Lot 3, and which point is the True Point of Beginning of this description; thence continuing in a Southerly direction along said curve of the Easterly line of said right of way, to the right, having a radius of 5829.65 feet, and a central angle of 8° 28' 57", an arc distance of 863.07 feet; thence South 2° 43' 55" East, along the Easterly line of said right of way, a distance of 493.42 feet; thence South 0° 31' 18" East, along the Easterly line of said right of way, a distance of 500.04 feet; thence South 89° 48' 45" East a distance of 272 feet, more or less, to a point on the Line of Ordinary High Tide of the Left bank of the Snohomish River; thence in a Northerly direction, along the meanderings of said Line of Ordinary High Tide, to a point on the North line of said Government Lot 3, which point bears North 89° 07' 33" East from the True Point of Beginnning; thence South 89° 07' 33" West, along the North line of said Government Lot 3, a distance of 489 feet, more or less, to the True Point of Beginning.

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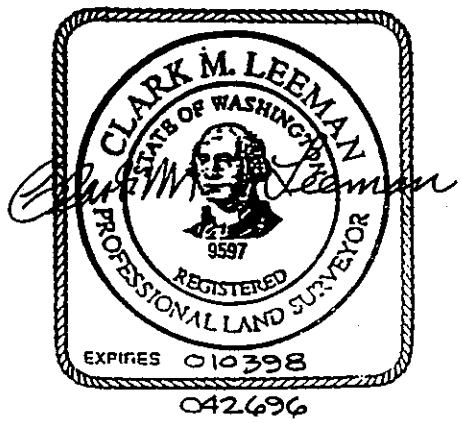

042696

PARCEL NO. 5 LAND DESCRIPTION AT WEYERHAEUSER COMPANY EAST SITE

Government Lots 14 and 15, in Section 16, Township 29 North, Range 5 East of the Willamette Meridian.

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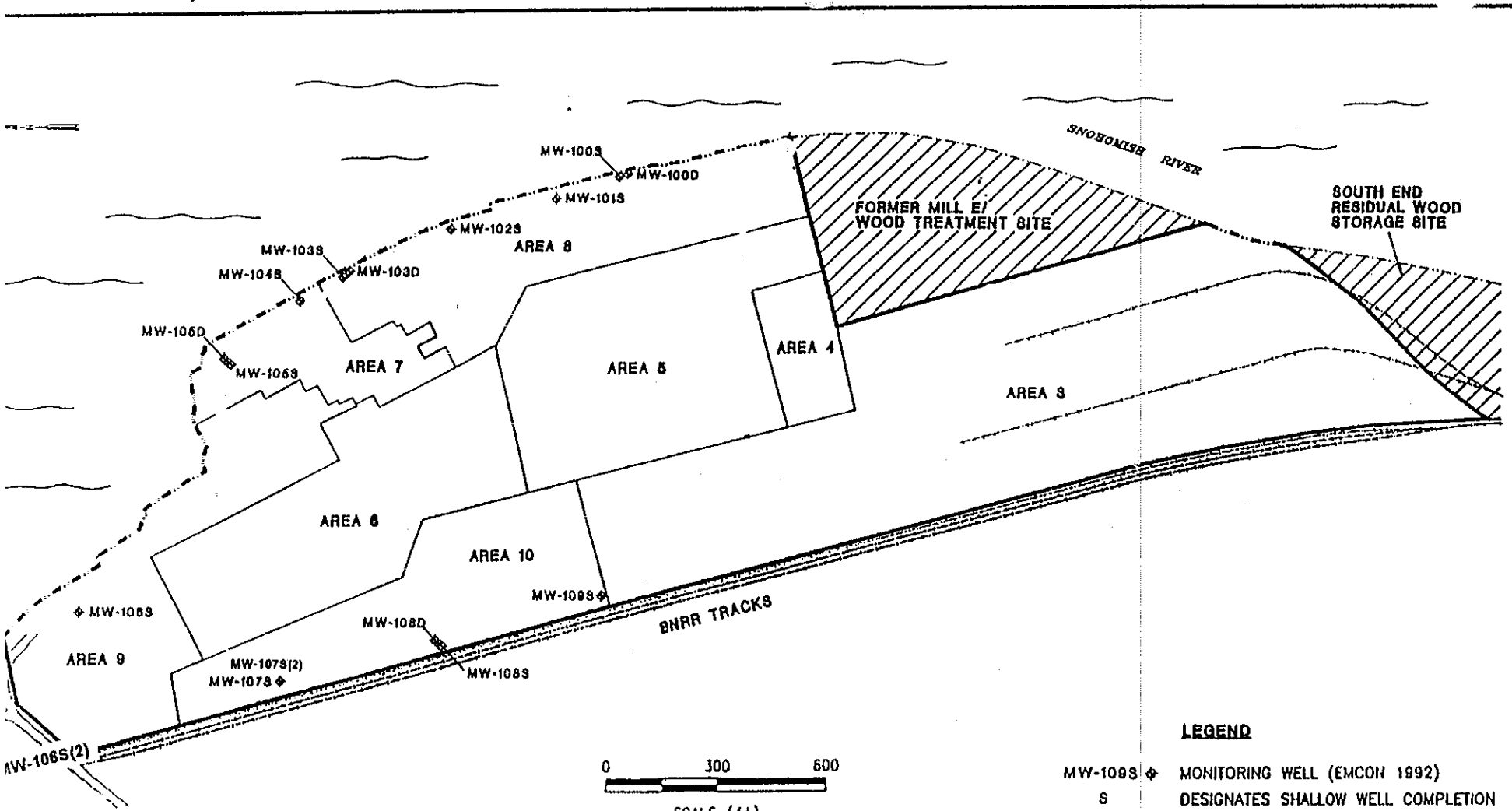


LEGEND

MW-109S ◆	MONITORING WELL (EMCON 1992)
S	DESIGNATES SHALLOW WELL COMPLETION
D	DESIGNATES DEEP WELL COMPLETION
	SHORELINE
	EAST SITE BOUNDARY AT SHORELINE
	EAST SITE BOUNDARY

Notes: Not all wells or soil sample locations are presented on this figure.

MW-107S(2) is a replacement well.

MW-106S(2) is a replacement well.

MW-104S is a replacement well

Based on Figure 1-2 (EMCON 1995a)

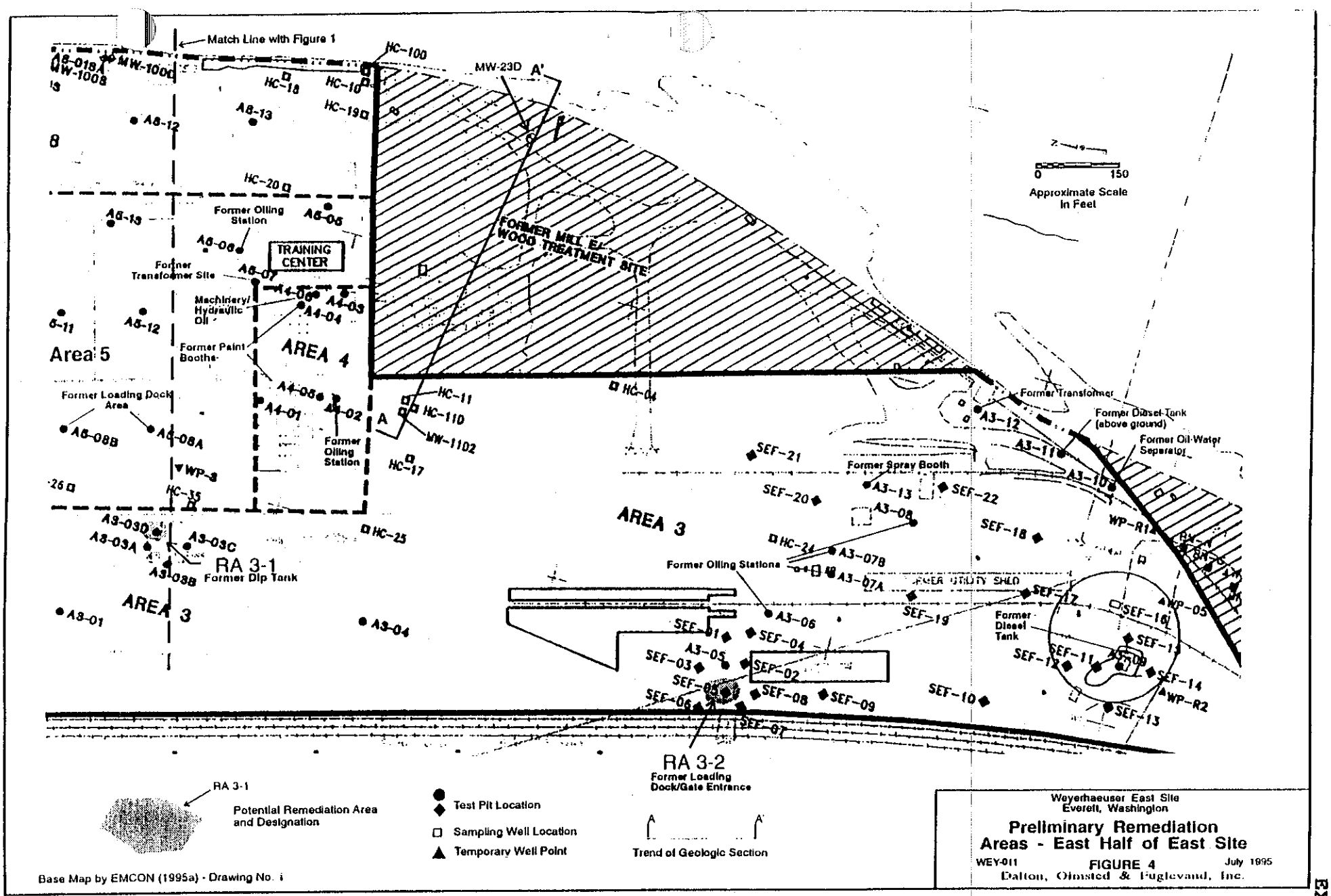
Weyerhaeuser East Site
Everett, Washington

East Site Area Designations

WEY-011 **FIGURE 2** July 1995

Dalton, Olmsted & Fuglevand, Inc.

EXHIBIT B



Weyerhaeuser East Site
Everett, Washington

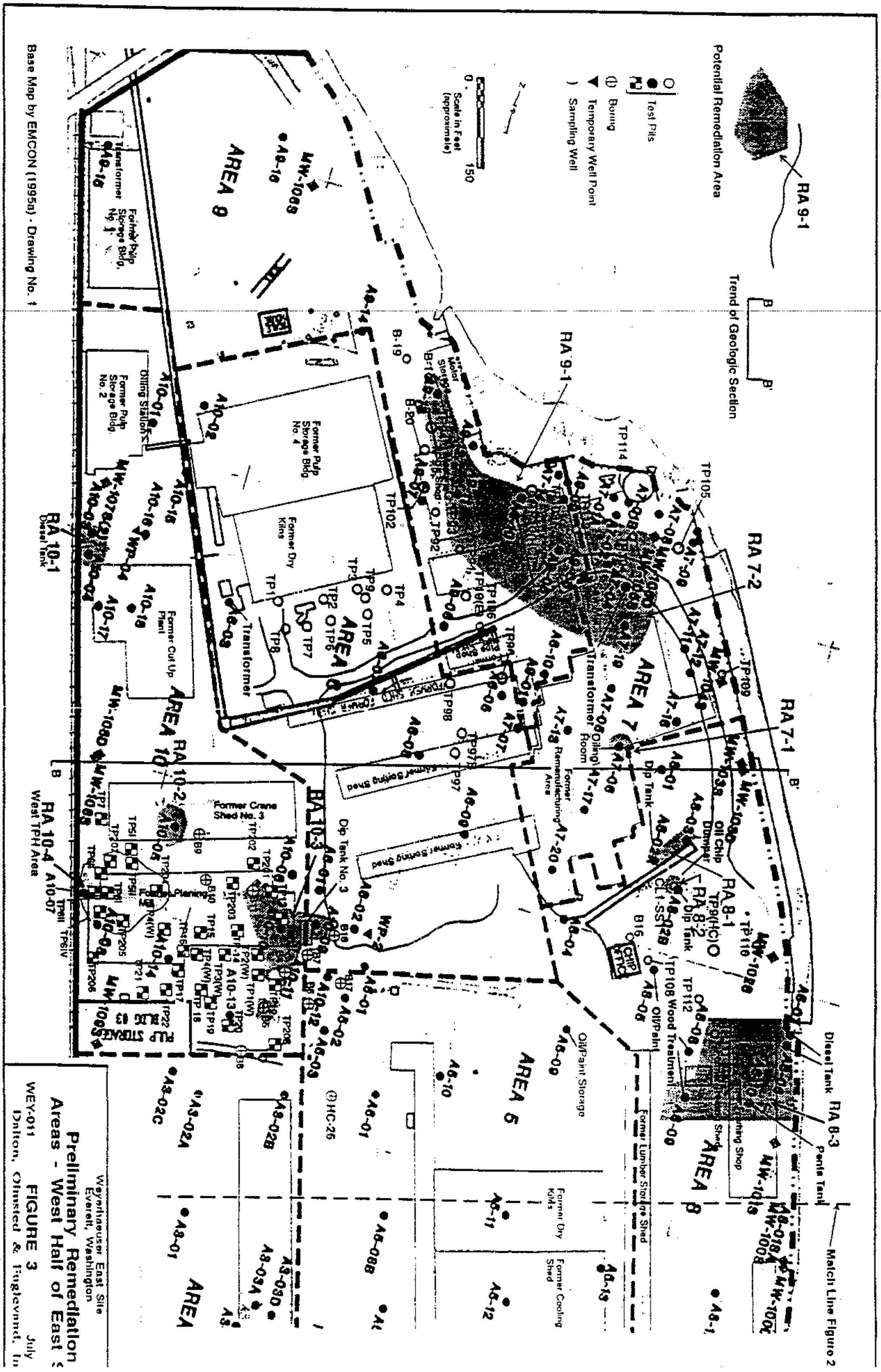
Preliminary Remediation Areas - East Half of East Site

WEY-011 FIGURE 4 July 1995

Dalton, Olmsted & Fuglevand, Inc.

EXHIBIT B

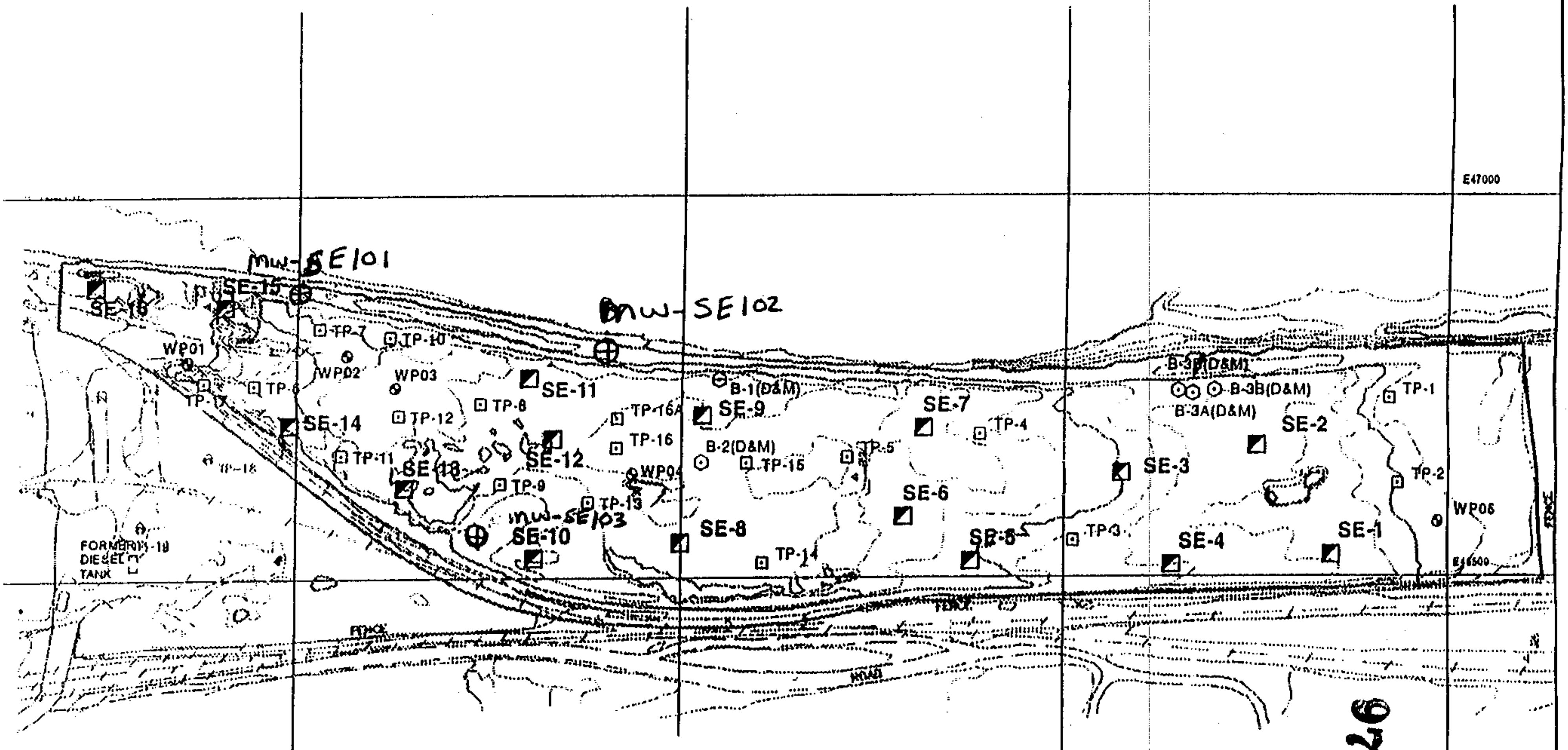
EXHIBIT B



Potential Remediation Area
Test Pits
Boring
Temporary Well Point
Sampling Well
Scale in Feet (approximate)
0
150
Trend of Geologic Section
RA 9-1
RA 7-2
RA 7-1
RA 8-1
RA 8-2
RA 8-3
RA 10-1
RA 10-2
RA 10-3
RA 10-4
AREA 7
AREA 8
AREA 9
AREA 10
AREA 6
Former Pulp Storage Bldg. No. 1
Former Pulp Storage Bldg. No. 2
Former Pulp Storage Bldg. No. 4
Former Dry Kilns
Former Cut Up Plant
Former Crane Shed No. 3
Former Planing
Former Sorting Shed
Former Remanufacturing Area
Transformer Room
Transformer
Oiling Station
Diesel Tank
Dip Tank
Dip Tank No. 3
Oil Chip Dumper
Wood Treatment
Oil/Paint
Oil/Paint Storage
Former Lumber Storage Shed
Former Cooling Shed
Penta Tank
West TPH Area
Match Line Figure 2
Base Map by EMCON (1995a) · Drawing No. 1
Weyerhaeuser East Site
Everett, Washington
Preliminary Remediation Areas - West Half of East Site
WEY-011
FIGURE 3
Dalton, Olmsted & Fuglevand, Inc.
July

EXHIBIT B

97 2 02773 05



Explanation

Test Pit Location (DOF - April 3 & 4, 1996)

WP03 Well Point Location and Designation (Emcon - 1995)

TP-9 Previous Test Pit Location and Designation (Emcon - 1992)

B-1(D&M) Previous Geotechnical Boring Location (Dames & Moore - 1995)

mw-SE101 ⊕ Well Location (DOF-1996)

N

200

SCALE (ft)

Weyerhaeuser Co.
South End Residual Wood Storage Site

SITE PLAN
Figure

Dalton, Olmsted & Fuglevand, Inc.

WEY-011-04 4/8/96

Exhibit C

97 2 02773 8

CLEAN UP ACTION PLAN

Weyerhaeuser East Site
Everett, Washington

Prepared by

Washington Department of Ecology
March 28, 1997

WASHINGTON STATE
DEPARTMENT OF
ECOLOGY

Cleanup Action Plan

Weyerhaeuser Company
Everett East Site
Everett, Washington

January 30, 1997

1.1 PURPOSE

This document is the Cleanup Action Plan (CAP) for the Weyerhaeuser Company - Everett East Site. The CAP outlines the steps and procedures for conducting an environmental cleanup of the Weyerhaeuser Everett East Site and includes data and site-specific information obtained from various site assessment reports and work plans.

The Weyerhaeuser East Site (Survey Parcels 1, 2, and 4) consists of 72 acres of industrial property which is located on the banks of the Snohomish River, three miles northeast of the City of Everett. To facilitate environmental review the Site has been sectioned into survey parcels that were described by a licensed surveyor (See Exhibit A for map). Survey Parcels 1 and 2 are about 63 acres in size and cover the main portion of the East Site land area, and Survey Parcel 4 is about 9 acres and covers the land area known as the South End Residual Wood Storage Site. Survey Parcel 3 is not included in this CAP or Consent Decree.

The East Site is contiguous with the Weyerhaeuser West Site (a 35 acre industrial site, which was remediated through a separate Consent Decree in 1994). The East Site formerly consisted of several lumber processing facilities that included saw mills, wood processing and storage areas, diesel and gasoline fuel storage tanks, and wood sapstain and end seal treatment tanks. The East Site began operation in 1902 on a former estatuarine tide flat, which was built up by dredge fill in the early 1900's. In 1915, the tide flat was filled, and the East Site saw mills were expanded; the mills continued to expand until closure and substantial dismantlement in the 1980's.

The following description is provided for background information only. Survey Parcel 3 (former Mill E and the Wood Treatment Site) is located next to the East Site property (Survey Parcels 1 and 2), and environmental information related to Parcel 3 is referenced in this CAP. In 1947, a wood treatment facility was constructed on a portion of the Survey Parcel 3, and the facility was operated by a third party until closure in 1963. During 1963, Weyerhaeuser converted and used the facility building for vehicle maintenance until its closure in 1984. The building was dismantled in 1996. In 1971 construction began on Mill E, a Weyerhaeuser-operated small log processing mill. The mill was dismantled in 1988.

The cleanup action plan for the East Site property is based on information provided from the following reports:

(1) Operable Unit Summary Report for Weyerhaeuser Everett East Site, prepared by EMCON, March 17, 1995

(2) Technical Report/Memorandum 1: Potential Remediation Areas, prepared by Dalton, Olmsted & Fuglevand, August 9, 1995.

(3) Technical Report/Memorandum 2: Remediation Alternatives and Estimated Costs, prepared by Dalton, Olmsted & Fuglevand, November 1, 1995.

(4) Results of Low Flow Ground Water Sampling, prepared by Dalton, Olmsted & Fuglevand, September 21, 1995.

(5) Result of Soil Sampling Remediation Areas RA 10-2 and RA 8-3, prepared by Dalton, Olmsted & Fuglevand, November 22, 1995.

(6) SEPA Environmental Checklist for the Weyerhaeuser Everett East Site Remediation Project, submitted on September 26, 1995.

(7) Weyerhaeuser response to Ecology questions, letter prepared by Weyerhaeuser submitted November 30, 1995.

(8) Weyerhaeuser response to Ecology questions, Survey Parcel 2 environmental data, letter prepared by Weyerhaeuser submitted February 28, 1996.

(9) Environmental Assessment of South End Residual Wood Storage Site (summary of historical data) submitted on March 8, 1996.

(10) South End Landfill Soil Sampling, prepared by Emcon Northwest, Inc., November 30, 1992.

(11) Review of East Site Property Additions to Consent Decree, prepared by Department of Ecology, submitted March 22, 1996.

(12) Historic Ground Water information for South End Residual Wood Storage Site, letter prepared by Weyerhaeuser submitted March 28, 1996.

(13) South End Residual Wood Storage Site proposed Sampling and Analysis Plan prepared by Dalton, Olmsted & Fuglevand March 29, 1996.

(14) Review of Sorption Study Lab Specification and Proposal, letter prepared by Ecology submitted February 8, 1996.

(15) Leaching Test Results East Site, memorandum prepared by Dalton, Olmsted & Fuglevand submitted April 3, 1996.

(16) Preliminary Subsurface Investigation South End Residual Wood Storage Site, prepared by Emcon May 1996 (included in Attachment C of DOF May 17, 1996 memorandum).

(17) Environmental Assessment of South End Residual Wood Storage Operable Unit Site and Ferry Baker Island Site, Memorandum prepared by Dalton, Olmsted & Fuglevand, (May 17, 1996).

(18) Review of Sorption Analytical Results by the Department of Ecology for the Weyerhaeuser Everett East Site, letter dated May 14, 1996.

(19) Weyerhaeuser letter to Ecology providing Environmental Information Requested in Ecology March 22,1996 Letter, letter dated May 17, 1996.

(20) Weyerhaeuser letter to Ecology providing Environmental Information Requested in Ecology during May 31, 1996 meeting, letter dated June 6, 1996.

(21) "Draft" Performance Sampling and Analysis Plan and Quality Assurance Procedures, Weyerhaeuser East Site by Dalton, Olmsted & Fuglevand, (July 2, 1996).

(22) "Draft" Soil and Ground Water Sampling Plan - South End Wood Storage Site and Ferry Baker Islands by Dalton, Olmsted & Fuglevand, (July 15, 1996).

(23) Results of Ground-Water Sampling and Analyses Weyerhaeuser South End Residual Wood Storage Site, Everett, WA by Dalton, Olmsted & Fuglevand, Inc., (September 17, 1996).

(24) Ground-Water Cleanup Levels Weyerhaeuser East Site, Memorandum prepared by Dalton, Olmsted & Fuglevand, Inc., (October 10, 1996).

(25) "Draft" Report on Additional Soil Sampling RA 8-3 Area, Everett East Site, Memorandum prepared by Dalton, Olmsted & Fuglevand, Inc., (October 23, 1996).

The CAP summarizes Site-specific data and information gathered from previous investigations and reports; summarizes the alternative cleanup actions examined by Weyerhaeuser in the work plan; and describes the proposed cleanup. The CAP provides an opportunity for the public to comment on the proposed cleanup.

1.2 APPLICABILITY

This CAP is applicable only to the Weyerhaeuser Everett East Site (Survey Parcels 1, 2, and 4), hereinafter know as the Site. The cleanup standards, and cleanup actions presented in this document have been developed as a result of a remediation process conducted with Department of Ecology oversight. The cleanup levels and actions are Site specific. The cleanup actions should not be considered as setting precedents for other similar sites.

Ecology is the SEPA lead agency for this action. A threshold determination has been made to issue a Determination of Non-significance (DNS) for the cleanup project. The DNS will be public noticed along with the CAP and the Consent Decree. A public hearing will be held concerning the action. Weyerhaeuser is exempt from shoreline permitting and has independently applied for a local grading permit. At this time no additional permits are required. In the event Ecology determines that additional permits are required for the remedial action, Weyerhaeuser will be notified. Then, the substantive requirements of the permits will be determined and Weyerhaeuser will submit documentation that any additional substantive requirements are fulfilled.

Potentiality Liable Persons (PLPs) cleaning up sites independently, without Ecology oversight, may not cite numerical values of cleanup levels specified in this draft document as justification for cleanup levels in other unrelated sites. PLP's that are cleaning up sites under Ecology oversight must base cleanup levels and cleanup standards on site specific regulatory considerations and not on the numerical values contained in this CAP.

1.3 DECLARATION

The selected remedy will be protective of human health and the environment. Ecology gives preference to permanent solutions to the maximum extent where practicable. For this remediation project, treatment and recycle technologies were examined. Treatment or recycle technologies were not selected for remediation of the Site because (1) the technologies do not treat all of the affected soils (a good portion of the material requires landfilling), (2) the time required to use the technologies, and (3) the cost differences between the alternatives. Removal of contaminated soil to an approved off-site landfill (source control), monitoring, and deed restrictions are the Ecology approved cleanup remedy for affected materials on the Site.

Site ground water is affected by contaminants from on-site sources. Water treatment technologies such as pump and treat were not considered practicable at this Site due to the low levels of contaminants in the aquifer, and expectation that following completion of contaminant source removal (excavation), water quality would improve. Institutional controls (such as deed restrictions and ground water monitoring) along with source control (excavation) measures are the remedial action chosen for the Site remediation.

2.0 SITE DESCRIPTION AND HISTORY

2.1 SITE LOCATION.

The Weyerhaeuser East Site is located within the city of Everett along the Snohomish River. The area directly surrounding the Site is zoned for heavy industry. Zoning on the bluffs 1/8 mile south of the Site is residential. The Site address is 515 East Marine View Drive, Everett, Washington. The East Site is divided into several Survey Parcels as shown on Exhibit A. Survey Parcel 3 (former Mill E Wood Treatment Site) is shown on the map for reference only; it is not part of this CAP. Exhibit A contains Figures related to features described in this section; Figure 2 shows Survey Parcels 1 and 2 ground water monitoring wells; Figures 3 and 4 shows Survey Parcels 1 and 2 subareas and sampling locations; and Figure 5 shows Survey Parcel 4 sampling locations.

2.2 SITE HISTORY.

The Weyerhaeuser East Site complex has been in existence since the early 1900's. The first Weyerhaeuser operations in the Everett area began in 1902. The East Site is only a portion of a larger Weyerhaeuser parcel located along the Snohomish River. On the West Site, Weyerhaeuser operated a Kraft Pulp Mill from 1953 to 1992, and Saw Mills (Mill C and D) from 1926 until 1976. The West Site was remediated in 1994 through a previous Consent Decree with the Washington Department of Ecology. Wood sort yards, Kraft Pulp Mill waste water treatment aeration lagoons, and a wood waste landfill that supported the West and East Sites operations are located across the Snohomish River on Smith Island.

Most of the East Site is located in the former Mill B saw mill complex. Former Mill B facilities included a saw mill; planing mill; power house; dip tanks (containing sapstain which is pentachlorophenol (PCP) diluted with either water or diesel), sapstain spray booths and end sealing facilities; lumber drying and storage sheds; and other support activities. Several above ground and underground tanks were used to store fuels.

Mill B was shut down in 1979. In 1982 during demolition, a fire destroyed the Mill B remanufacturing building, the powerhouse, the machine shop and other small buildings. Over the past several years, portions of the Mill B fire area (subAreas 6, 7, 8 and 9) were used for chip storage; these chips were removed, and in the spring of 1996 the native soils (dredge sand) were exposed.

The South End Residual Wood Storage Site (Survey Parcel 4) is located at the southern end of the East Site Survey Parcels 1 and 2. Survey Parcels 1, 2 and 4 are Operable Units as described in the Operable Unit Summary Report for Weyerhaeuser Everett East Site, prepared by EMCON, March 17, 1995. The Survey Parcel 4 covers about nine acres. Before 1953, the area was covered with grasses, shrubs, and small trees. Starting in 1953 to 1965, some wastes from the

Kraft Pulp Mill and the Mill B complex were placed on a limited portion of the Site. The wastes included some mill trash, construction debris, spent lime, and wood debris. In 1965, the wastes were sent to other locations for disposal; the mill trash was sent off-site to the local municipal landfill in use at the time; construction and wood debris, and lime was placed into the former demolition landfill which was located north of HWY. 529, between Marine View Drive and the West Site; that landfill was remediated in 1992 with Ecology oversight. From 1965 to 1995, the South End Residual Wood Storage Site was used to store wood residuals and chips for the Kraft Pulp Mill. Since wood chip and spent lime can be used for soil amendments, contractors are removing and reprocessing these materials.

Weyerhaeuser began site assessment and investigations of the East Site in the mid 1980's to determine soil, ground and surface water impacts from Site industrial operations. The South End Residual Wood Storage Site assessments began in the early 1990's. The site assessment activities included a review of blueprints, reports, aerial photographs, agency files and interviews with former Weyerhaeuser employees. The East Site(Survey Parcel 1 and 2) was divided into eight subareas to facilitate investigation and proposed remediation. The East Site Operable Unit Summary Report provides details to these subareas. Below are a summary of historic and current features in subareas that require remediation.

Area 7 - Former Saw Mill Area. Area 7 is the site of the former saw mill and includes the Mill B fire area, the former remanufacturing building, former transformer sites, and a former oiling room. After 1984, the area was also used for chip storage.

Area 8 - Former Treating Shed, Dip Tank, and Oil Storage Shop Area.
Area 8 lies next to the Snohomish River. The southern portion of Area 8 is next to the northern boundary of Survey Parcel 3. A former treating shed, an above-ground sapstain/end seal dip tank, an oil storage shop (now chip office), and two above-ground fuel storage tanks storing gasoline and diesel fuel were located in this area. Petroleum stained soil is visible beneath the east end of the chip unloading ramp in the north end of the area.

Area 9 - Former Power House, Pipe Shop, Machine Shop, and Motor Shop Area.
Area 9 includes the Mill B fire area, former pipe shop, motor storage building, power house, machine shop, transformer sites, general storage areas, a water tower, truck scale and house, and former office building.

Area 10 - Former Cut-up Plant, Crane Sheds, and Planing Mill Area. Area 10 includes the former site of sapstain Dip Tank No. 3, and a former aboveground diesel tank associated with the manufacturing of Presto-logs. Diesel fuel was "hand wiped" to lubricate the insides of the Presto-log extruder. Area 10 is located east of, and hydraulically down gradient from, the former ASARCO smelter facility

2.3 CURRENT STATUS

The saw mill and associated facilities have been demolished and removed. Concrete pads remain in several areas. The areas described below require remediation.

AREA 7. Most of Area 7 was covered with wood chips mixed with other wood and concrete debris. These materials have been removed down to the native dredge sand level.

AREA 8. Most of Area 8 is covered with asphalt, except near the chip office, which was covered with wood chips (the chips were removed down to the native dredge sand level). Several concrete foundations are visible. The only remaining building is the chip office. The gravel/sand ramp for the chip dumper was removed, but the dumper foundation piles remain. An above ground diesel storage tank with secondary containment is currently located at the south side of the oil and paint storage shop (chip office). This tank was moved in 1994 from the West Site to its current location next to the Chip Office.

AREA 9. The north end of the site is paved near the truck scale. Concrete and mixed demolition debris are present within the southern portion of the area.

AREA 10. The concrete foundations of the former pulp storage building no. 1 (salvage warehouse) and pulp storage building no. 2 (pres-to-log building) are present in the northern portion of the area. The central part of the area is relatively low and contains a wet and marshy area. The only remaining building in this area is pulp storage building no. 3 (former cedar siding plant) located on the south boundary. Wood chips and wood debris from demolition activities cover most of the unpaved area.

TP-16, Survey Parcel 4, SOUTH END RESIDUAL WOOD STORAGE SITE. Wood chip, sawdust, and mixed debris currently covers the majority of the South End Residual Wood Storage Site. These debris materials are, for the most part, products that can be reused. The wood chip, saw dust, and lime are used for soil amendments; concrete and wood timbers are crushed and recycled; scrap steel is recycled; and mill trash is transported to an Ecology-regulated landfill. Currently, a contractor is actively removing these materials. The removal of these materials is administered by the Snohomish County Health District.

2.4 FUTURE USE

The Site is anticipated to be transferred to a new owner in 1997. The new owner proposes to use the East Site property as a Port industrial facility and in part an industrial park that may include a cold storage facility, storage of marine equipment, and dredge sands/fill. All future land use will follow M-2 zoning ordinances. Dredge sands from the Snohomish River navigational channel are permitted to be placed on portions of the Site.

3.0 RESULTS OF ENVIRONMENTAL STUDIES

3.1 SITE CHARACTERIZATION

3.1.1 SITE DESCRIPTION.

The East Site and the South End Residual Wood Storage Site are two of the seven MTCA Operable Units on the Weyerhaeuser Everett property. The East Site (Survey Parcel 1 and 2) land area was divided into eight subAreas(3-10) to facilitate development and reporting of cleanup actions that were based on historical Site activities. Environmental assessments have been performed on Parcels 1, 2, and 4. The general compounds analyzed for in the affected areas are summarized below.

AREAS:	Analyzed for:
Area 7, Survey Parcel 1	Petroleum Hydrocarbons; PCP; PAH compounds; Dioxin; PCB and Pesticide compounds
Area 8, Survey Parcel 1	Petroleum Hydrocarbons; PCP; volatile and PAH compounds; PCB and Pesticide compounds
Area 9, Survey Parcel 1	Petroleum Hydrocarbons; PCP; PAH compounds; Dioxin; PCB and Pesticide compounds
Area 10, Survey Parcel 1	Petroleum Hydrocarbons; PCP; PAH compounds; PCB and Pesticide compounds
TP-16, Survey Parcel 4	Petroleum Hydrocarbons, BTEX, PCBs, PCP, arsenic, chromium, copper, lead, mercury, zinc, and pH

3.1.2 SITE GEOLOGY AND HYDROGEOLOGY

The Site (Parcels 1, 2, and 4) is located within the low-lying flood plain of the Snohomish River that is bound on the West by steeply sloped glaciated ridges and hills reaching to 500 feet above sea level. Elevations on the Site range in elevation between approximately 8 and 12 feet above mean lower low water (MLLW).

The Snohomish River, located on the east side of the Site (Parcels 1, 2, and 4), is tidally influenced. Tides at Everett range from 11.1 feet mean higher high water (MHHW) to 0.0 feet

MLLW. A salt wedge intrudes approximately 5 miles upstream of the Site, beyond the Interstate 5 bridge. The Site area was formerly an estuarine tide flat. In the early 1900's, the tide flat was filled using sand dredged from the river bottom. Most of the Site is underlain by dredged sand fill. The dredged sand fill does not appear to be present on the South End Residual Wood Storage Site. The bank of the Snohomish River is generally stabilized with a bulkhead of timber pilings along the length of Survey Parcels 1, 2, and 3. Since the initial filling of Survey Parcels 1, 2, and 3, other fills, structure foundations and paving have been placed over the dredge sand.

Geology and Ground Water Units: The geologic materials that underlie the Site are designated, with increasing depth, as follows.

- Grade Fill and Mixed Fill Unit (Survey Parcels 1 and 2)
- Wood Chip, Sawdust, and/ or Lime Product Unit (Survey Parcel 1 and 4)
- Mixed Fill Material Unit (Survey Parcel 4)
- Upper Sand (dredge fill) (Survey Parcels 1 and 2)
- Upper Silt Unit (tidal flat deposits) (All Survey Parcels)
- Lower Sand Unit (river deposits) (All Survey Parcels)
- Lower Silt Unit (All Survey Parcels)
- Deep Sand Unit (All Survey Parcels)

Hydrogeologically the water bearing units located on the Site can be grouped into five ground water zones:

- Water Table Zone (upper sand and grade/mixed fills)
- Upper Confining Unit (upper silt unit)
- Lower Sand Zone (lower sand unit)
- Lower Confining Unit (lower silt unit)
- Deep Sand Zone (deep sand unit)

Ground Water Levels and Flow Directions: Ground water is approximately 4 feet below ground surface in most areas of Survey Parcels 1 and 2. On Survey Parcel 4, the ground water is approximately 5 to 13 feet below the wood chip surface (at an approximate average elevation of 10 feet (using the MLLW datum). The ground water elevation approximately corresponds to the high-tide level (MHHW) measured in the Snohomish River. Horizontal ground water flow direction in the upper sand aquifer is towards the east to northeast and has an average linear velocity of 1.8 ft/day. Horizontal ground water flow in the lower sand aquifer is tidally influenced and generally moves towards the east at average linear velocity of 0.2 ft/day. Downward flow between aquifers is hydraulically impeded by the upper silt (Hydraulic Conductivity (K)= 2.2 x 10-7 cm/sec), however this unit is saturated and does transmit water to the lower sand aquifer. Vertical ground water flow velocity was estimated at 3.1 x 10-4 ft/day. The upper sand aquifer hydraulic conductivity was estimated at K = 0.05 cm/sec.

As discussed above, the Snohomish River is tidally influenced. The general tidal range is approximately 11 feet. Water level fluctuation studies have been completed on Survey Parcel 3 to assess the influence of tides on ground water levels. These studies indicate that tidal-induced water level fluctuations in the Water Table Zone are relatively small and range between 0.2 and 0.5 feet.

Tides cause greater fluctuations of Lower Sand Zone ground water levels as compared to the Water Table Zone. Water table fluctuations in the Lower Sand Zone wells range between 7 and 9 feet over individual tidal cycles.

Ground water levels beneath the East Site were taken for February and September 1994 and January 1995. The February and January measurements represent "wet season" conditions while the measurements made in September represent "dry season" conditions. The Water Table Zone wet season depth to water measurements ranged between 1.3 and 8.6 feet in February 1994 and 0.7 to 7.7 feet in January 1995. In September 1994 (dry season), the depth to water ranged between 3.1 to 9.7 feet. Water levels were approximately 1.5 to 4.7 feet lower in September 1994 as compared to January 1995. Ground water levels in test pits versus river levels were surveyed during the installation of test pits in the South End Residual Wood Storage Site. During the April 1996 test pit installation, water was encountered between 5 to 13 feet below ground surface (at an approximate average elevation of 10 feet MLLW). This elevation corresponds to the approximate high-tide level MHHW as measured in the Snohomish River.

Water Table Zone water level measurements in wells located on the west (upland) side of the East Site are generally higher in elevation as compared to wells located on the east (river) side of the Site. This data indicates that ground water flows towards the river in the water table zone which is consistent with work completed on Survey Parcel 3.

Ground water flow elevations in the Lower Sand Zone made for Survey Parcel 3 also indicate that the net flow is towards the river. However, during periods of high tides, flow is reversed along the shore line.

Detailed Description of Lithologies

1. Grade Fill and Mixed Fill Unit. This unit was encountered at the surface from approximately 1 to 4 feet and ranged from sandy gravel, asphalt, angular pebbles and cobbles of crushed rock, wood debris and bark. The top few inches contained abundant organic and wood debris and was vegetated in many areas. The grade fill forms a dense and permeable unit at the surface. The grade fill and mixed fill unit is generally continuos across Survey Parcels 1 and 2.

2. Upper Sand Unit (dredge fill). This unit consists of gray-brown to black, fine to medium sand with trace coarse sand. The upper sand averaged 5 to 6 feet in thickness and ranged from 1 to 10 feet thick. The sand was typically uniform in texture and composition with thin lenses (less than 2 inches) of coarser or finer sand. Historical records indicate that the sand was dredged from the Snohomish River and deposited on the former estuarine tide flats from Mill B to immediately north of the South End Residual Wood Storage Site. Slight horizontal

bedding was seen in most samples confirming a hydraulic emplacement of dredge fill. Dredge sands were encountered below fill units in all test pits and soil borings. The ground water table is found in the upper sand at an average depth of 4 feet below the surface.

3. Upper Silt. The upper silt was encountered in all borings penetrating the base of the upper sand or other fill material at the Site. The average thickness is 8 feet and consists of stiff, low plasticity to non-plastic gray-brown to dark brown silt with abundant organic matter (wood fragments and rootlets) in the upper layers of the unit. This unit also contains fine-sand lenses and silty sand approximately 0.1 to 0.2 feet thick.

4. Lower Sand. The lower sand consists of fine to coarse sand with trace gravel and wood debris. This unit also contains silty and clayey lenses. The lower sand was encountered in the deep monitoring well borings (MW-110D, MW-103D, MW-105D and MW-108D) and the borings on the South End Residual Wood Storage Site which were advanced below the base of the upper silt unit. This unit is coarser and denser than the upper sand unit.

5. Wood Chip, Sawdust, and/or Lime Product. This unit is found on Survey Parcels 1 and 4. On Survey Parcel 1, the wood chips and sawdust are located in Areas 7 and 10; these materials are located next to the Grade Fill and Mixed Fill Unit. On Survey Parcel 4, the wood chips and sawdust cover the entire surface and extends from one to over twenty feet in depth. On Survey Parcel 4, the lime product unit underlies an area within the northern portion of the wood chip and sawdust unit and ranges in thickness from about one to three feet.

6. Mixed Fill Material Unit. This unit has only been encountered in Survey Parcel 4. The unit lies between the bottom of the Wood Chip, Sawdust, Lime Product unit and the Upper Silt Unit. The thickness is variable, ranging from less than one foot to about eight feet. In the southern portion of Survey Parcel 4, the mixed fill material consists predominantly of wood (wood chips, timbers, and logs) and miscellaneous metallic and non-metallic materials. In the northern portion of Survey Parcel 4, the mixed fill material unit is predominantly a sand fill containing wood along with variable amounts of metallic and non-metallic materials.

3.1.3 SOIL AND GROUND WATER INVESTIGATIONS

Two media, soil and ground water, were evaluated during the environmental investigations. Locations of ground water sample points, monitoring wells, soil borings, and soil sample pits are given in Exhibit B.

- Over 550 screening and laboratory analyses of soil samples have been made for a variety of constituents including petroleum hydrocarbons, PCBs/pesticides, polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), phenols (including pentachlorophenol (PCP), dioxin, and total and dissolved metals including arsenic, cadmium, chromium, copper, lead, mercury, and zinc.

- Over 115 ground water samples have been analyzed for a variety constituents including petroleum hydrocarbons, volatile organic chemicals, semivolatile organic chemicals, PCBs/pesticides, metals, dioxin, and conventional parameters. Approximately 80 of the samples are from the Water Table Zone while the remaining samples (35) are from the Lower Sand Zone.

Ground water was sampled using 17 permanent monitoring wells and 12 temporary well points. The monitoring wells are located along the eastern and western edges of the property, and down gradient from suspect contaminated areas. Four ground water monitoring wells are located up gradient of the operable units.

Ground water monitoring well sampling on Survey Parcels 1 and 2 was conducted in January 1993; May 1993; August 1993; October 1993; February 1994; September 1994; February 1995; and August 1995. Ground water samples were tested for some or all of the following analytes: TPH-G, TPH-D, TPH-O, VOC, PAH, PCB, dioxins, and dissolved metals. Ground water sampling in temporary well points on Survey Parcel 4 was conducted in August 1995. Three permanent wells were installed during August 1996. At that time, ground water samples were tested for the following analytes: TPH-G, TPH-D, TPH-O, BTEX, PCP, PCB, and total metals.

Methods used to measure the concentrations of petroleum hydrocarbons in water and soils are:

Hydrocarbon Identification (HCID) - Washington State developed this screening method (Ecology 1992). The HCID method is a gas chromatographic (GC) qualitative screening method to determine the presence and type of petroleum products that may be present in a sample. If hydrocarbons were detected, additional analyses were generally conducted.

WTPH-G - is a Washington State GC based method to measure gasoline range hydrocarbons. The method targets lighter-end petroleum hydrocarbons within a carbon range of C7 to C12.

WTPH-D - is a Washington State GC based method to measure diesel range hydrocarbons. The method targets intermediate-weight petroleum hydrocarbons within a carbon range of C12 to C24.

WTPH-DX - is a modified version of WTPH-D that is to measure a wider range of hydrocarbons (diesel and heavy oil range). This method typically measures the concentrations of petroleum hydrocarbons within a carbon range of C12 to C32.

WTPH-418.1 - is a Washington State infrared based method which measures the concentrations of intermediate to heavier weight hydrocarbons (diesel to heavier fuel oil hydrocarbon range). This method is capable of measuring heavier-weight hydrocarbons as compared to WTPH-DX.

3.1.4 GROUND WATER DATA RANGES FOR ALL SAMPLING EVENTS

Ground water samples on the Site have been collected using two different sampling techniques: (1) traditional purging and sampling using bailers, and (2) low flow sampling using a peristaltic (vacuum) pump. The low flow sampling technique was used on selected wells to assess whether previously collected ground water sample were representative of Site water quality or were affected by sampling and drilling techniques. The conclusion of the low flow sampling program is that the method removes false positives in the analyses.

(1) TPH-G

Ground water samples from 9 well points and 25 monitoring wells were analyzed for TPH-G. TPH-G was detected at two ground water sampling locations: MW-107S at 0.33 mg/L to 1.4 mg/L, and MW-109S at 0.69 mg/L

(2) TPH-D

Ground water samples from 9 well points, 1 soil excavation, and 24 monitoring wells were analyzed for TPH-D. TPH-D was detected at thirteen ground water sample locations. Results ranged from 0.13 mg/L in well MW-105D to 20 mg/L in MW-107S(2) using traditional bailing techniques. Using low flow sampling, TPH-D ranged from 0.08U mg/L in well MW-109(S) to 0.1 mg/L in well MW-107S(2) to 0.3 mg/L in well MW-103D. TPH-D was measured at 26.3 mg/L in sample Ex-1 (obtained from an open excavation), which was measured before ground water treatment using carbon filtration, but following treatment no TPH-D was detected in ground water sample EX-1(2). In the permanent South End wells, TPH-D ranged from <0.075 to 0.22 mg/L using low flow sampling techniques.

(3) TPH-O

Ground water samples from nine well points, one soil excavation, and 20 monitoring wells were analyzed for TPH-O. TPH-O was detected in twelve ground water sampling locations. Results ranged from 0.2 mg/L in sample MW-100D to 9 mg/L in sample MW-109S using traditional bailing techniques. Using low flow technique, TPH-O was not detected above the method reporting limit of 0.21U in any of the 5 representative wells. TPH-O was measured at 5.7 mg/L in sample EX-1 (obtained from an open excavation) before ground water treatment using carbon filtration, but following treatment no TPH-O was detected in ground water sample EX-1(2). In the permanent South End wells, TPH-O ranged from <0.19 to 0.26 mg/L using low flow sampling techniques.

(4) VOC's

Ground water from 29 sampling locations was analyzed for VOC's. Methylene chloride was detected at 5.0 ug/L in sample MW-106S. Acetone was detected at nine sample locations. Results ranged from 12 ug/L in samples MW-103D and MW-106S to 35 ug/L in sample MW-108D. No, BTEX compounds were detected in any of the ground water samples analyzed. Toluene was detected at 3 ug/L in a sample from HC-24

(5) Semi-VOC's

Twenty-four ground water sampling locations were analyzed for 64 semi VOCs, including PCP. Semi VOC compounds were detected at 14 sample locations. Results ranged from 1 ug/L to 71 ug/L. Naphthalene concentrations in MW-105S ranged from 2 to 10 ug/L using the bailing technique, and to 0.04 ug/L using low flow sampling technique. Naphthalene and bis(2-Ethylexyl)phthalate were detected in sample WP-R1 at 71 ug/L and 69 ug/L, respectively. PCP was detected in samples WP-2 and WP-R1 at 1 ug/L and 8 ug/L, respectively.

(6) Phenolic Compounds

Ten ground water samples were analyzed for four phenolic compounds. Only one phenolic compound, PCP, was detected. PCP was detected in sample MW-103S at 0.05 ug/L.

(7) Pesticides and PCB's

Ground water samples from four locations were analyzed for pesticides and PCB compounds. One pesticide compound, Aldrin, was detected in sample MW-103S at 0.011 ug/L. Aroclor-1016 and Aroclor-1242 were detected in sample WP-2 at 0.78 ug/L, and 1.2 ug/L, respectively. Aroclor-1254 was detected at location MW-105S and ranged from 0.42 ug/L to 13 ug/L using the bailing sampling technique. No PCBs were detected at location MW-105S using low flow sampling techniques. No PCBs were detected in samples collected from well points located on Survey Parcel 4.

(8) Dissolved Arsenic

Ground water samples from 13 locations were analyzed for dissolved arsenic. Results ranged from 4 ug/L in sample MW-103D to 5,010 ug/L in sample MW-108D.

(9) Total Metals

Five samples were analyzed for total metals (arsenic, cadmium, chromium, copper, lead, mercury, and zinc) from well points installed into the lower sand unit on Survey Parcel 4. Cadmium and mercury were not detected. Arsenic concentrations ranged between not detected to 33 ug/L. Chromium concentrations ranged between 13 and 307 ug/L. Copper concentrations ranged between not detected to 302 ug/L. Lead concentrations ranged between 8 and 138 ug/L. Zinc concentrations ranged between 1030 and 7200 ug/L. The data indicates the analytical results were effected by the sampling techniques and are biased high. The samples submitted to

the laboratory were reported to be " slightly silty to very silty" in appearance. A subsequent sampling event using low flow techniques in three permanent lower sand unit wells on Survey Parcel 4 showed dramatically different results. In all samples, arsenic was <1 ug/L, cadmium was <0.5 ug/L, chromium was <10 ug/L, copper <10 ug/L, mercury <0.2 ug/L, lead was <1 ug/L, and zinc was <10 ug/L.

(10) Dioxin

Ground water from three shallow monitoring wells (MW-103S, MW-104S, MW-105S) and one deep monitoring well (MW-105D) were analyzed for chlorinated dibenzo-p-dioxins and chlorinated dibenzo-p-furans in January 1993. The compounds could be from two sources:(1) is from residual pentachlorophenol used as lumber surface treatment (sapstain) or (2) produced as a by-product of burning PCB transformer electrical units in the 1982 Mill B fire. The dioxin and furan isomers were evaluated using EPA procedures for estimating risk (EPA/625/3-89/016; March 1989). In each of the four ground water samples 2,3,7,8-TCDD (the only regulated isomer) was not detected at laboratory detection limit of 0.001 PPT. Therefore, no further ground water analysis for dioxin is needed on the Site.

(11) Low Flow Ground Water Sampling Event

Five ground water monitoring wells (MW-103D, MW-105S, MW-107S(2), MW-108S, and MW-109S) were sampled on August 10, 1995 with a pumping rate of 0.25 liters/minute. TPH-D and TPH-O concentrations ranged from non-detect to 0.3 mg/l.

3.1.5 SOIL SAMPLING EVENTS

Soil Samples were taken from all eight subareas at the Weyerhaeuser East Site Survey Parcels 1 and 2, and Survey Parcel 4. The following is a summary of all soil sampling information.

(1) TPH

On Survey Parcels 1 and 2 over one hundred-forty soil samples were screened for gasoline, diesel, and heavier than oil total petroleum hydrocarbons by Ecology Method WTPH-HCID. Eighty-nine soil samples exceeded the WTPH-HCID method detection limits and were rerun using the following appropriate follow-up analysis: gasoline (TPH-G), diesel (TPH-D), and oil (TPH-O). In addition, six soil stockpile samples were analyzed for TPH-D and TPH-O.

On Survey Parcel 4, an additional 37 samples were analyzed using WTPH-DX. TPH concentrations were reported for the diesel and heavier oil range.

The following five areas at the Weyerhaeuser East Site were identified as having TPH-impacted soil:

Throughout Areas 7, 8, and 9 in the former manufacturing areas of Mill B. TPH-O concentrations ranged from not detected to 83,000 mg/kg in sample A7-06. Area 8 had TPH-O concentrations as high as 47,000 mg/kg in sample A8-09.

Near former Dip Tank No. 3, including parts of Areas 5, 6, and 10. TPH concentrations ranged from 16 mg/kg in sample A10-06 to 5,900 mg/kg in sample A10-10.

Near the former 12,000-gallon aboveground diesel tank in Area 10. TPH-D concentrations ranged from 300 mg/kg in sample A10-17 to 4,300 mg/kg in sample A10-03.

Near the former local shed and aboveground diesel tank in the south end of Area 3. TPH-G concentrations ranged from 18 mg/kg in sample SEF-16 to 1,140 mg/kg in sample SEF-5. TPH-D concentrations ranged from 3 mg/kg in sample A3-08 to 768 mg/kg in SEF-16. TPH-O concentrations ranged from 11 mg/kg in sample A3-06 to 1,190 mg/kg in sample SEF-11. Approximately 460 cubic yards of impacted soil were excavated from the south end of Area 3 (i.e., SEF-16 and SEF-11) and disposed off site.

TPH concentration in the South End Residual Wood Storage Site Mixed Sand and Wood Waste Unit generally ranged between not detected to 890 mg/Kg for TPH-D, and non detect to 1100 mg/Kg for TPH-O. TPH concentrations in the lime material unit were generally lower than in the Mixed Sand and Wood Waste Unit, however one sample (TP-16) was analyzed at 15,000 mg/Kg for TPH-D and 26,000 mg/Kg for TPH-O. TPH in the organic silt layer were all less than the MTCA cleanup levels.

(2) VOC's

Over thirty soil samples were analyzed for VOC's. Three VOC compounds were detected in the soil samples. Acetone was detected in samples A8-06, A-09, and TP-2 at 0.019 mg/Kg, 0.079 mg/kg, and 0.24 mg/Kg respectively. In samples A10-03, A3-05, A8-06, and TP-2 2-Butanone was detected at 1.9 mg/kg, 1.7 mg/kg, 0.005 mg/kg, and 0.062 mg/Kg respectively. However, 2-Butanone was also detected in the method blanks associated with samples A3-05 and A10-03. Total xylenes were detected at 0.014 mg/kg in sample A8-09, and 0.011 mg/Kg in samples SEF-4 and SEF-6. No other VOC's were detected in any of the other soil samples.

(3) Semi-VOC's

Over 70 soil samples were analyzed for 64 semi-VOCs. This included PCP and PAHs. Two samples were analyzed strictly for PAHs. One or more semi VOC compounds were detected in 61 samples ranging from 0.032 mg/kg 4-methylphenol in sample A5-02 to 6,000 mg/kg phenanthrene in the product sample collected from excavation EX-2 in southern Area 3. Sixteen semi-VOC compounds were detected in sample SEF-16. This sample is located near a former

diesel tank. Nine semi-VOC compounds were identified in sample A9-08, located near the former power house and saw mill. PCP was detected in 23 samples ranging from about 0.074 mg/kg in sample A4-03 to 200 mg/kg in sample A8-09. On Survey Parcel 5, an additional 10 samples were analyzed for PAH's.

(4) Phenols

Over 70 soil samples were analyzed for four phenolic compounds, and an additional 13 samples were analyzed only for PCP. Phenolic compounds were detected in 60 samples. The following is a summary of the phenolic compound analysis:

2,3,5,6-tetrachlorophenol was not detected in any soil sample on Survey Parcels 1 and 2.

2,3,4,6-tetrachlorophenol was detected in 23 of 46 samples on Survey Parcels 1 and 2, ranging in concentration from 0.002 mg/kg in sample A4-02 to 4.8 mg/kg in sample A3-03D.

2,3,5,6- and 2,3,4,6-tetrachlorophenol (combined) were detected in 8 of 25 samples on Survey Parcel 4. The maximum concentration was 0.52 mg/Kg in sample SE-9.
2,3,4,5-tetrachlorophenol was detected in 16 of 46 samples on Survey Parcels 1 and 2, with concentrations ranging from an estimated 0.00015 mg/kg in sample A5-08B to 0.370 mg/kg in sample A3-03D. On Survey Parcel 4, this compound was detected in 4 of 25 samples at a maximum concentration of 0.060 mg/Kg.

PCP was detected in 32 of 46 samples on Survey Parcels 1 and 2, ranging in concentration from 0.002 mg/kg in sample A10-17 to 200 mg/kg in sample A8-09. In a November 1995 sampling PCP was found as high as 1400 ppm in sample TP-8-3-4 and 730 ppm in TP-8-3-3. On Survey Parcel 4, PCP was detected in 12 of 30 samples at a maximum concentration of 0.1 mg/Kg.

The results indicated the presence of phenolic compounds in soil near former Dip Tank No. 3 in southern Area 10, near a former 10,000-gallon dip tank and treating shed in Area 8, and near a former dip tank pad in Area 3.

(5) Pesticides and PCB's

On Survey Parcels 1 and 2, over 40 soil samples were analyzed for pesticide and PCB compounds, and an additional 70 samples for only PCBs. Pesticide compounds were detected in 22 samples ranging from 0.00035 mg/kg alpha-chlordane in sample A9-01 to 0.35 mg/kg alpha-chlordane in sample A9-09. On Survey Parcel 4, only PCB was detected in 10 of 38 samples at a maximum concentration of 0.068 mg/Kg.

Soil samples on Survey Parcels 1 and 2, were analyzed for seven PCB compounds, and the results indicated the following:

Aroclor-1221, -1232, and -1246 were not detected.

- Aroclor-1016 was detected in three samples, ranging from 0.047 mg/kg in sample A7-01A to 1.2 mg/kg in sample A7-19B.

- Aroclor-1242 was detected in sample A6-05 at 0.038 mg/kg.

- Aroclor-1254 was detected in 24 samples, ranging in concentration from 0.015 mg/kg in sample A7-17 to 22 mg/kg in sample A9-09.

- Aroclor-1260 was detected in 23 samples, ranging from 0.016 mg/kg in sample A10-09 to 87 mg/kg in sample A10-05.

These results indicated the presence of PCB compounds in soil near former transformers in southern Area 10 and former Mill B, in the Mill B Fire area, and adjacent to the former Power House.

(6) Arsenic

Twenty-six soil samples were analyzed for total arsenic on Survey Parcels 1 and 2. Arsenic concentrations ranged from 5.0 mg/kg in samples TP-51 and TP-52 to 25 mg/kg in sample TP-4. On Survey Parcel 4, 25 samples were analyzed for arsenic. Sample concentrations ranged between not detected and 100 mg/Kg. On Survey Parcel 5, an additional 10 samples were analyzed for arsenic.

(7) Other Metals

On Survey Parcel 4, chromium, copper, lead, and zinc were measured in Site soils. Chromium ranged between 10 to 141 mg/Kg, copper ranged between 7 to 390 mg/Kg, lead ranged between non detect to 310 mg/Kg, and zinc ranged between 3 to 942 mg/Kg.

(8) Dioxins

Sixteen soil samples were analyzed for dioxins. The 2,3,7,8 TCDD is the only regulated isomer of dioxin, and in 15 of the soil samples it was not measured above laboratory detection levels, which ranged from 0.1 parts per trillion (PPT) to 1.57 PPT. 2,3,7,8 TCDD was measured at 115 PPT in sample A9-08-1292. The MTCA Method C cleanup standard is 875 PPT. Therefore, no further analysis or remediation is needed related to dioxins.

(9) Soil Sample Results from October 3, 1995

Additional soil sampling was conducted in Area RA 10-2 and Area RA 8-3 to confirm presence of PCB and pentachlorophenol. TPH-D levels ranged from 4200 to 24,000 mg/kg and PCP ranged from 11 to 1400 mg/kg in Area RA 8-3. PCB's were not above the detection level in area RA 10-2.

3.2 REMEDIATION AREAS

The primary soil contaminants present on the Site are diesel and heavy oil range petroleum hydrocarbons, PCP's, PCB's and PAH's. TPH-D and TPH-O were found in each of the contaminated areas. The chart below describes area that will require remediation.

Remediation Areas	Contaminants of Concern
Remediation Area RA7-1	• RA 7-1 is the site of a former oiling room. Sample A7-06 had 87,000 ppm of TPH-O. • The analytical data indicate that petroleum hydrocarbons are the primary contaminants of concern. The hydrocarbons predominately consist of heavy oil range hydrocarbons.
Remediation Area RA7-2	• RA7-2 is located in the northern portion of Area 7, and is the site of the former sawmill and powerhouse and lies within a portion of the Mill B fire area. • Test pit A9-09 defines an area of PCB concentrations that exceed soil cleanup levels (29 mg/kg) and where petroleum hydrocarbons were reportedly not detected. • Test pits A9-08 and TP-113 define an area with concentrations CPAHs that exceed soil cleanup levels. PCBs were also detected in this area at concentrations below cleanup levels. • CPAHs above soil cleanup levels were measured in a sandy debris sample from test pit TP-103 (2 to 4 feet). The sampled material lies between concrete footings based on the test pit log.
Remediation Area RA 8-1	• RA 8-1 is the site of a former chip-dumper Samples were obtained and analyzed for petroleum hydrocarbons, PCBs, PCP and CPAHs. • TPH-O was 3900 mg/kg in sample A8-

	02A. The analytical data indicates that TPH-O is the chemical of concern in the RA8-1 area.
Remediation Area RA8-2	• RA 8-2 is associated with a former dip tank Samples were obtained and analyzed for petroleum hydrocarbons, PCBs, PCP and CPAHs. • PCP was found in sample A8-02B at 32 mg/kg. • TPH-O was 87,000 mg/kg in CL1-SS1. The hydrocarbons predominately consist of heavy oil range hydrocarbons.
Remediation Area RA8-3	• Area RA8-3 is apparently associated with wood treating (sap stain prevention and end seal) and fuel . • Sampled for TPH-D, TPH-O, PCP, PCB and CPAHs, VOCs. • Samples A8-07 and A8-06 are associated with an above ground storage diesel tank. • Samples A8-09 and TP-111 are associated with the former wood treatment area. TPH-O was found at 47,000 mg/kg. • Samples TP-8-3-3/4 were October 1995 samples which showed levels of TPH-O at 16,000 mg/kg and PCP at 1400 mg/kg.
Remediation Area RA 8-4	• Remediation area RA8-4 is located south of RA8-3 in the immediate vicinity of wells MW-100S and MW-100D. • Surface soil sample A8-01-SA was reportedly obtained from a small surface-stained area adjacent to railroad tracks which bisect the area. • CPAHs were 131 mg/kg at A8-01-SA and PCP was 110 mg/kg.
Remediation Area RA9-1	• Area RA9-1 lies within the area of the former machine shop. A portion of the remediation area also lies within the area of the Mill B fire. • Test pits A9-11 and TP-93 define an area

	of petroleum hydrocarbon concentrations that exceed the TPH soil cleanup level; TPH-O was 24,000 mg/kg and PCP was 0.011 mg/kg. Aroclor was detected at 22 mg/L in A9-09.
Remediation Area RA 10-1	• Site of a former above ground diesel fuel tank • TPH-D was 4,300 mg/kg.
Remediation Area RA 10-2	• Site of former transformer. • PCB was 87 mg/kg; TPH-O was 1,000 mg/kg.
Remediation Area RA 10-3	• Site of former dip tank. • TPH-O was 12,000 mg/kg; PCP was 24 mg/kg.
Remediation Area RA 10-4	• Site of former planing mill. • TPH-O was 78,000 mg/kg.
Remediation Area TP-16 - South End Residual Wood Storage Site	• Site of former dump truck unloading area. • TPH-D was 26,000 mg/kg; TPH-O was 15,000 mg/kg.

4.0 MEDIA CLEANUP LEVELS

4.1 SELECTION OF METHOD FOR ESTABLISHING CLEANUP LEVELS

The Model Toxics Control Act Cleanup Regulation provides three methods for determining cleanup levels at a contaminated site. The methods are known as Method A, Method B, and Method C. Method A applies to relatively straight forward sites that involve only a few hazardous substances. The method defines cleanup levels for 25 of the most common hazardous substances. The method also requires that the cleanup meet promulgated federal and state regulations such as the maximum contaminant levels established by the clean water act. Method B is a standard method that can be used at all sites. The cleanup levels are set using a site risk assessment which focuses on site characteristics or concentrations of individual hazardous substances established under applicable state and federal laws. Method C is similar to Method B. The main difference in the two methods is that the life time cancer risk is set at a lower number. The method can be only used when either Method A or Method B are technically impossible, the

site is defined as an industrial site, or where attainment of Method A or Method B cleanup levels has the potential for creating a significantly greater overall threat to human health and the environment. In addition, Method C also requires that the person undertaking the action comply with all applicable state and federal laws.

Besides a cleanup standard, the Weyerhaeuser Everett Site have Site-specific cleanup action levels established for TPH and PCP that were derived using Site-specific soil leaching studies. The cleanup level determines at what point the remediation is considered complete, and the amount of soil remediated at the Site.

The Weyerhaeuser East Site is considered an industrial site where MTCA Method C Industrial soil standards can be used along with MTCA Method C ground water standards. The Site is considered an Industrial Site because it is zoned for heavy industry currently and for the foreseeable future. The individual cleanup standards and levels set for each contaminant of concern are discussed below.

4.2 GROUND WATER CLEANUP STANDARDS

The ground water cleanup levels at the Weyerhaeuser East Site were set according to WAC 173-340-720, Ground Water Cleanup Standards. TPH and PCP were found above MTCA Method C standards in approved monitoring wells using older ground water sampling techniques. However, low-flow sampling (a new standard in ground water sampling methodology) conducted in August of 1995 and 1996 shows that particulates in the ground water samples caused by the sampling technique may have produced false positive readings in TPH, PAH's and PCB concentrations. Therefore, MTCA Method C standards may not have been exceeded in the ground water. Ground water sampling however, will be continued using appropriate low-flow sampling technology. A split sampling will be conducted with Ecology to ensure appropriate new sampling techniques are being performed. The ground water point of compliance for the Site is the property boundary adjacent to the Snohomish River.

MTCA Ground Water Cleanup Levels

Parameter	Cleanup Level	Protection Basis
TPH	10 mg/l	MTCA METHOD C
PCP	7.29 ug/l	MTCA METHOD C
PCB's	0.114 ug/l	MTCA METHOD C
CPAH's *	0.12 ug/l	MTCA METHOD C

* CPAH = Carcinogenic PAH's = (173-340-200) benzo(a)anthracene, benzo(b)fluranthene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

4.3 MTCA SOIL CLEANUP STANDARDS

4.3.1 SOIL CLEANUP LEVELS

The MTCA Method C cleanup standard for industrial soils (WAC 173-340-745) will be used for the following contaminants found on the Site, except for TPH which has only a MTCA Method A cleanup level. The cleanup standards established for the Weyerhaeuser Site contaminants of concern are MTCA Method A (for TPH only), Method A and B (For Direct Contact and Restrictive Covenant Only), and Method C industrial soil standards. Individual soil cleanup levels for the Site are given below.

MTCA Soil Cleanup Levels

Parameter	Cleanup Level	Protection Basis
PCP *	280 mg/kg (8.33 mg/kg)	MTCA Method C Industrial (Method B)
PCB's**	17 mg/kg (1.0 mg/kg)	MTCA Method C Industrial (Method A)
CPAH's ***	20 mg/kg (1.0 mg/kg)	MTCA Method C Industrial (Method A)
TPH ****	2,500 mg/kg 200 mg/kg	MTCA Method C Industrial (MTCA Method A)

* A soil cleanup level of 280 mg/kg was derived from soil leach study to ensure protection of ground water; MTCA Method B numbers are applicable for purposes of direct contact and restrictive covenant only.

** MTCA Method A numbers are applicable for purposes of direct contact and restrictive convenant only.

*** Carcinogenic PAH's = (173-340-200) benzo(a)anthracene, benzo(b)fluranthene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene; MTCA Method A numbers are applicable for purposes of direct contact and restrictive covenant only.

**** A soil cleanup action level of 2,500 mg/kg TPH (Method C) per WAC 173- 340-745 (3) and (4) will be implemented based on soil leach studies to ensure protection of ground water. New soil sampling procedures are available from Ecology (January 16,

1997, "Interim Interpretive and Policy Statement: Cleanup of Total Petroleum Hydrocarbons (TPH)", ECY97-600) which allows a property owner to analyze soils using a surrogate approach to establish new Method B direct contact numbers. In the event, the new Method B direct contact numbers are greater than 200 mg/kg for TPH then Weyerhaeuser can request that the restrictive covenant be amended to reflect the new cleanup level.

4.3.2 SITE-SPECIFIC LEACHING STUDY DERIVED CLEANUP AND CLEANUP ACTION LEVELS

The Site-specific cleanup action level for hydrocarbon contaminated soils (TPH) at the Site will be 2,500 mg/kg. This cleanup action level is based on analytical results and calculations from sequential batch adsorption and column leach tests, that were performed to ensure the protection of the Site's ground water. The Site-specific PCP soil cleanup level will be 280 mg/kg. This Site-specific cleanup level is based on soil leach test and the derived equation values, that were performed to ensure the protection of the Site's ground water. Confirmational ground water monitoring will demonstrate that the batch and column test results are protective of ground water. A Confirmational Ground Water Monitoring Plan (Exhibit I) was developed and describes the procedures to conduct confirmational ground water sampling.

Confirmation soil sampling for TPH compounds will be analyzed using a modified TPH-DX extended method. The modified TPH-DX analysis will use an silica gel/acid cleanup to attempt to eliminate organic interference. The soil cleanup levels will be used to determine the excavation limits. A Sampling and Analysis Plan (SAP) was developed and describes the analytical parameters and the procedures to conduct confirmational sampling.

The point of compliance for Site soils will be the excavation of soil to the soil cleanup levels or to the surface of the Water Table Zone. Soils left on Site above the specified industrial soil cleanup levels, in accordance with WAC 173-340-440 will be noted in the Restrictive Covenant (Exhibit G).

5.0 SUMMARY OF ALTERNATIVE CLEANUP ACTIONS

5.1 INTRODUCTION - GENERAL CLEANUP REMEDIES

This section of the CAP summarizes the cleanup actions considered by Weyerhaeuser in the Work Plan and subsequent submittals. The Work Plan outlines three different cleanup remedies. Based on the type of contaminant present on the Site, several different remediation options were examined. The remedies all focus on petroleum hydrocarbon remediation because approximately

95 percent of the contaminated soils found on Site are contaminated by heavy-end long chain petroleum products. The following basic cleanup technologies were examined to remediate TPH, PCP, and PCB contaminated soils. The technologies evaluated are excavation and off-site disposal, on-site and off-site thermal desorption, and on-site bioremediation. Each of the TPH remediation technologies is described below.

5.1.1 EXCAVATION AND OFF-SITE DISPOSAL (LANDFILL)

Soil contaminated with TPH , PCP and PCBs can be disposed of at Ecology approved solid waste landfills. The landfills need to meet the new landfill design standards of WAC 173-351.

Thus, identified soils exceeding cleanup levels would be excavated and disposed of off-site. The excavation and off-site disposal alternative would involve excavating contaminated soils, transporting soils by rail or truck to an approved landfill, disposing the materials in the landfill, and placing a clean sand cover in the excavated area.

The estimated costs of excavation, transportation and disposal at each of the facilities are as follows:

- Excavation and On-site Stockpiling $8/ton
- Debris Screening (if required) $5/ton
- Backfilling $7/ton
- Transportation and Disposal
  - Regional Disposal Co. Landfill $37/ton
  - Weyerhaeuser Landfill $38/ton

The estimated relative cost of the landfilling alternative is approximately $52/ton, not including screening. Using a conversion of 1.7 tons per cubic yard, the estimated relative cost is approximately ***$88/cubic yard.***

Advantages	Disadvantages
Short time frame to complete	Long term liability still exists
All contaminants allowed	Clean backfill (sand) is needed
All soil types allowed	
Low cost	
Secure facilities- Landfill recycle/reuse	

5.1.2 EXCAVATION AND OFF-SITE TREATMENT BY THERMAL DESORPTION OR ON-SITE LOW TEMPERATURE THERMAL DESORPTION WITH SOIL WASHING

Petroleum contaminated soils may be remediated by volatilizing or evaporating hydrocarbon products from the soil and then oxidizing them in the discharge air stream using a thermal desorption unit. The process unit is portable and can be set up temporarily on the Site. The treated soil will meet MTCA standards and can be used for backfill.

Advantages and disadvantages are described below.

Advantages	Disadvantages
Short time requirement	No treatment of PCB or metals
Reduction of liability	Increase cost due to soil type
Use of recycle technology	Need for air permit
	Public concerns regarding incineration

Soils exceeding cleanup levels would be excavated and treated off-site. The alternative would involve excavating contaminated soils, transporting the soils to the facility, treating the materials, and placing a clean sand cover or treated material back in the excavated area.

In December, 1996, the Department of Ecology and Weyerhaeuser were approached by a firm that has patented a new cleanup technology that uses low temperature thermal desorption with steam and soil washing techniques. This particular technique apparently cleans and removes all types of contaminants from soils to very low part per million concentrations. The company could not demonstrate that its technology would work on Site soil, therefore this cleanup technology was judged to be not practical for this remediation project.

The thermal desorption unit has restrictions on the concentrations of certain contaminants and the physical nature of the types of materials that can be treated. The restrictions are listed below for those constituents anticipated to be present in Site soil.

Off-site Thermal Desorption Facilities:

- Asphalt and cement off-site thermal desorption facilities use the treated TPH soil mix as a product, therefore, they have restrictions related to the initial soil inorganic quality (silica, iron, calcium oxide, and other metal oxides). -- Site soil does not meet the criteria.
- Permit restrictions - No PCBs or PAHs greater than 1 ppm are allowed in the soil mixture. -- Site soil does not meet these criteria.

- To maximize the burner mixture and treatment goals, no waste with greater than five percent wood or organic material is allowed in soil mixture. -- Site soil does not meet these criteria.

On-site Low Temperature Thermal Desorption with Soil Washing/ Thermal Desorption Units:

- Limited number of "qualified" contractors.
- Mobile treatment units have not been demonstrated effective for Site soil mixture.
- Process has potential to further contaminate floatable organics and wood chip in Site soil, thus the need to landfill a portion of the treated waste stream.
- Unproved treatment track record by several vendors. Many units are still experimental.

Thermal Desorption Acceptance Criteria

Constituent	Thermal Desorption
TPH (total)	<32,000 mg/kg
PCP	100 mg/kg
CPAHs	1 mg/kg
PCB	0 mg/kg

Note: Soil must consist of sand and gravel. **No greater than 5% of organic materials such as wood chip, peat, etc. can be accepted.**

The estimated costs of excavation, transportation and treatment at a thermal desorption facility are as follows:

• Excavation and On-site Stockpiling	$8/ton
• Debris Screening (if required)	$5/ton
• Backfilling	$7/ton
• Transportation	$5/ton
• Treatment	$35/ton(1)
• Transportation and Landfill disposal	$37/ton(2)

(1) Assumes a treatment volume of approximately 10,000 cubic yards
(2) Floatable organics, PCB, and CPAH soils must be landfilled

The estimated relative cost of the thermal desorption alternative is approximately $95/ton, not including screening. Using a conversion of 1.7 tons per cubic yard, the estimated relative cost is approximately ***$161/cubic yard***. Since no PCBs, CPAHs greater than 1 mg/Kg, or material containing greater than 5% wood waste can be accepted by the thermal treatment facility or that floatable organics become more contaminated with TPH, and the resultant mix must be landfilled; use of this technology may be limited.

5.1.3 BIOREMEDIATION BY LANDFARMING

TPH affected soil may be remediated by bioremediating the soil in a constructed landfarm cell. This process may also remediate PCP but is not applicable to PCB. Typically soil is placed in 18-inch lifts for treatment. Multiple lifts are often stacked because of space constraints and each lift is treated after the previous one has been cleared. During treatment, nutrient supplements may be added, soil moisture is maintained at specified levels, and the soil is aerated by tilling.

The cost for landfarming of soil assuming a soil volume of 10,000 cubic yards and a four-month treatment period during dry and warm weather (summer months). The estimated costs are summarized below:

- Excavation and On-site Handling $8/ton
- Debris Screening (if required) $5/ton
- Backfilling $8/ton
- Treatment $35/ton
- Transportation and Landfill disposal $37/ton(1)

*Assumes a treatment volume of approximately 10,000 cubic yards
*Cell construction, contractor pile maintenance and analytical costs are not included. The actual cost would be higher.
(1) PCB soils must be landfilled.

Landfarming of soils may not be considered a practical alternative for remediation of soils at the Site. The technology will not remediate PCB's and extended treatment periods may be required because of the presence of significant concentrations of heavy oil hydrocarbons. The end concentrations that can be achieved in treated soil are uncertain and treatability studies would be required to establish these endpoints and optimize treatment.

The estimated relative cost of the landfarming alternative is approximately $88/ton, not including screening. Using a conversion of 1.7 tons per cubic yard, the estimated relative cost is approximately ***$150/cubic yard.***

The advantages and disadvantages are outlined below.

Advantages	Disadvantages
TPH destroyed	Long time frames for heavy-end hydrocarbons
Treatment on site	Uncertainty of treatment efficiency for heavy-end TPH
	PCBs not treated

	Imported fill required
	Large areas required

5.2 DISCUSSION OF SOIL REMEDIATION ALTERNATIVES

Petroleum hydrocarbons (TPH) are the primary contaminant of concern in Site soil. However, other soil data indicate that PCP, CPAHs and PCBs are also present in several of the identified areas. The presence of these constituents affects the remedial alternatives that can be practicably applied at the Site.

Weyerhaeuser intends to transfer the Site to a new owner in 1997. Therefore, bioremediation was eliminated from consideration due to it's limited ability to treat long chain oil range hydrocarbons in a timely manner and the uncertainty in achieving desired cleanup levels.

The cost of contractor mobilization/ demobilization, conformatory soil sampling, ground water quality monitoring, agency interaction/reporting and other items are not included in these cost estimates.

Comparison of Remedial Costs

	Cost/ton	Cost/cubic yard(1)
• Excavation and Off-site Landfilling	$52	$88
• Excavation and Off-site Thermal Desorption/landfilling	$95	$161
• Excavation and On-site Landfarming/landfilling	$88	$150

(1) Conversion: 1.7 tons per cubic yard

5.2.1 ALTERNATIVE 1 - EXCAVATION AND LANDFILL DISPOSAL

This alternative would consist of excavating all contaminated soils exceeding MTCA cleanup levels in the affected areas and disposing the soil in an approved landfill. Approximately 8,000 cubic yards of soil will be excavated. Excavation would be performed to meet the soil cleanup levels or to the surface of the Water Table Zone. Excavated soil would be loaded into rail cars or trucks for shipment to the landfill. Excavations would be filled with imported fill. The clean fill would serve as surface cover and prevent direct contact with any remaining material that may be above MTCA cleanup levels.

Institutional controls would be required in the form of a deed restriction limiting further Site use to industrial activities, and preventing shallow ground water withdrawal for drinking purposes. The remedy would also require a confirmational ground water monitoring program to determine the effectiveness of the removal of the contaminated source material.

The estimated field cost for this alternative is between $970,000 to $1,200,000. This does not include monitoring, maintenance, analytical, confirmation sampling, consulting, and reporting costs.

5.2.2 ALTERNATIVE 2 - EXCAVATION AND (1) THERMAL DESORPTION/LANDFILL DISPOSAL OR (2) LOW TEMPERATURE THERMAL DESORPTION AND SOIL WASHING/LANDFILL DISPOSAL

This alternative explores two methods to treat excavated soils: one using Thermal Desorption and the second using Low Temperature Thermal Desorption combined with Soil Washing. Both alternatives require excavation of all soil exceeding the soil cleanup levels or to the surface of the Water Table Zone.

To use the Thermal Desorption method, only soils containing solely petroleum hydrocarbons would be treated by thermal desorption. Soils containing organics, greater than 1 mg/Kg CPAH, and PCBs would be disposed of in an approved landfill. Soil treated by thermal desorption would be transported by truck to a Thermal Desorption facility and then after treatment, the soil would be returned to the Site and used as fill. Organics, greater than 1 mg/Kg CPAH, and PCB contaminated soils would be transported by truck or rail to the landfill.

To use the Low Temperature Thermal Desorption combined with Soil Washing method, the contaminated soils would be excavated, and placed into stockpiles that would be later treated on-site with low temperature and soil washing techniques. The cleaned soil could be used for fill and would serve as a surface cover. Organic materials, and most likely soil with PCB and CPAH would require disposal in an approved landfill.

For both methods, deed restrictions on withdrawal of ground water would be required. Confirmational ground water monitoring would be required.

Field costs for this alternative range between $1,200,000 to $1,400,000. No operations and maintenance or analytical, confirmation sampling, consulting, and reporting costs have been included in the estimate. The thermal desorption alternative was eliminated because of the presence of organics, PCB's, and CPAHs that can not be treated and would have to be landfilled.

6.0 SELECTION OF CLEANUP ALTERNATIVE

6.1 INTRODUCTION

The cleanup strategy requested by Weyerhaeuser is Alternative 1 (excavation and landfilling).

Alternative 1 or Alternative 2 cleanup strategies assume that the area around the Site will be used for industrial purposes for the foreseeable future. Ecology has previously approved Alternative 1 cleanup strategy for the West Site based on similar rationale provided in the West Site CAP .

Although Weyerhaeuser initially proposed higher soil cleanup levels for TPH, Ecology felt those levels were not acceptable because the soil to ground water pathway characteristics could potentially allow TPH to contaminate ground water at concentrations above the MTCA Method A or C cleanup standards, and currently there are low levels of TPH ground water contamination

Current policy for the cleanup of petroleum contaminated soils directs the Ecology site manager to use the MTCA Method A cleanup level of 200 mg/kg unless the Site does not pose a threat of cross media contamination or a human health threat through direct exposure. At the completion of remediation the Site will not pose a human direct contact threat due to the placement of a clean soil cover but will still pose a potential environmental threat to the Water Table Zone aquifer below the surface fill, and potentially to the Snohomish River. Currently, seven monitoring wells on the Site show traces of petroleum hydrocarbons. The upper shallow aquifer (Water Table Zone) while not a source of drinking water is still a transport avenue to the Snohomish River.

Ecology recognizes there are several demonstration methods to develop Site-specific soil cleanup levels that are protective of ground water quality. Weyerhaeuser, working with Ecology oversight conducted three analytical sorption studies to develop Site-specific soil cleanup levels for TPH and PCP. Sequential batch and column leaching tests were performed on two soil samples affected by TPH, and one soil sample affected by PCP. As a result of test data, Ecology supports the justification that Site-specific soil cleanup levels of 2,500 mg/Kg for TPH and 280 mg/Kg for PCP are stringent enough to be protective to ground water quality at the Site.

Ecology has determined the point of compliance is the property boundary adjacent to the Snohomish River.

6.2 SELECTED CLEANUP ACTION

The proposed cleanup action for Site (Survey Parcels 1 and 4) consists of excavation of soils to the soil cleanup levels or to the surface of the Water Table Zone; disposal of soils in an approved landfill; covering the excavated areas with clean fill; and confirmational ground water

monitoring to confirm achievement of the remediation. Ecology specifically requires Weyerhaeuser to:

--- Excavate approximately 8, 000 yards of contaminated soils above the soil cleanup levels, as specified in Section 4. 3 or to the surface of the Water Table Zone on the Site.

--- Conduct confirmational sampling to verify that the soil cleanup levels, as specified in Section 4. 3 have been met in each affected Parcel.

--- Transport contaminated soil to an Ecology-approved landfill.

--- Fill excavations with clean fill.

--- Record a Restrictive Covenant for the affected areas on the Site that remain above the soil cleanup levels, and prevent withdrawal of ground water from the Water Table Zone for domestic purposes.

-- Install, one additional ground water monitoring well in Area 8.

--- Perform confirmational ground water monitoring as described in the Confirmational Ground Water Monitoring Plan (Exhibit I).

--- Remove recyclable wood chip from the South End Residual Wood Storage Site, as specified by Snohomish County Health District. The removal of wood chip will be administered by the County, not Ecology.

6.3 GROUND WATER MONITORING

Since contaminated soils and ground water will remain on the Site, confirmational ground water sampling for TPH, PCB, CPAH's, PCP, and arsenic will be implemented as part of the cleanup remedy. Weyerhaeuser prepared and submitted to Ecology a ground water compliance monitoring plan (Compliance Ground Water Monitoring Plan) that meets the requirements of MTCA. The Compliance Ground Water Monitoring Plan will consists of monitoring ground water for a five year period for Parcel 1 wells, and for a one year period for Parcel 4 wells at frequency's described in the Compliance Ground Water Monitoring Plan.

6.4 SCHEDULE

The proposed cleanup is scheduled to occur in spring 1997. If approved, the initial soil removal will begin in March 1997 and continue to the second quarter of 1997. Final as-built construction

diagrams, data, and project completion report will be delivered to Ecology after the completion of remedial activities in the spring of 1997. Ground water monitoring will begin in 1997 and continue as described in the Confirmational Ground Water Monitoring Plan.

Exhibit D

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Project Schedule
Weyerhaeuser East Site

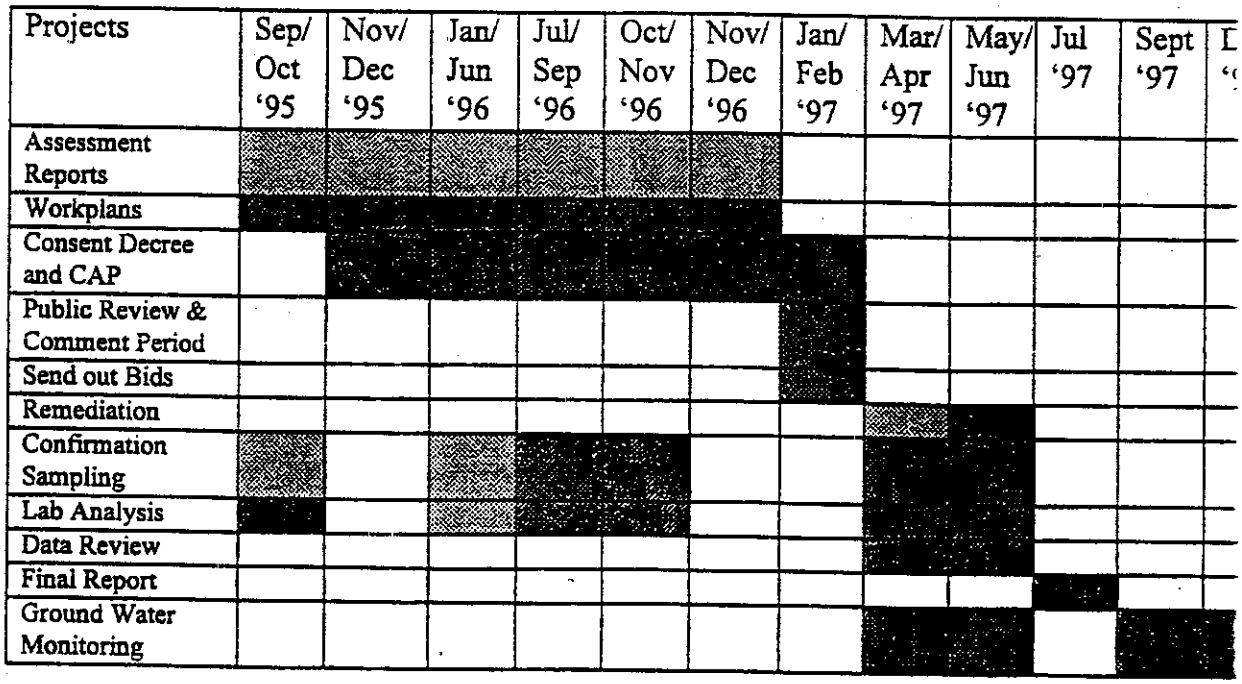

Exhibit E

Public Participation Plan

I. Public Participation Activities

The public participation plan for Weyerhaeuser Everett East Site will consist of the following activities:

A. A 30 day public comment period will be held for the draft cleanup action plan and consent decree, beginning February 8, 1997 and ending March 10, 1997.

B. A public hearing on the Consent Decree shall be held on February 26, 1997 at 7:00 p.m. at Everett Community College, Jackson Bldg, Jackson Conference Room.

C. Notification of the potentially affected vicinity, which includes: the mill site and neighborhood near the mill site. The Northwest Regional Office, Everett Asarco smelter and Weyerhaeuser mailing lists will be utilized in contacting neighborhood members.

D. Advertising on the public comment period with a legal notice in the Everett Herald on Saturday, February 8, 1997.

E. The public will be provided copies of th signed SEPA documents, consent decree and draft cleanup action plan for review. Extra copies of the fact sheet are available at the following locations:

Department of Ecology
Industrial Section
300 Desmond Drive
P.O. Box 47600
Olympia, Washington 98504-7600

Attn: Nadine Romero

Phone number: (360) 407-6116
FAX: (360) 407-6904

Everett Public Library
2702 Hoyt
Everett, Washington

Northwest Regional Office
3190 - 160th SE
Bellevue, Washington

Exhibit F

SITE DESCRIPTION AND SAMPLE DATA SUBMITTAL REQUIREMENTS
April 11, 1994 Version

1. Media

Required data must be submitted on MS-DOS[1](version 5) or compatibly formatted diskettes. The diskettes may be 5 1/4 inch (or 3 1/2 inch) either: double sided, double density; or double sided, high density.

2. Data Formats

The SITE DESCRIPTION FILE, FIELD SAMPLE FILE and the LABORATORY SAMPLE FILE are quote, comma delimited ASCII files used as the standard format for transferring sample data to and from Ecology (LOTUS WK1 files and Ashton Tate DBF files may be substituted for ASCII files). The files will include the fields in the format and order listed (C=Character, N=Numeric, D=date[Character may be substituted in non DBF or WK1 format]).

The following Appendices are attached to standardize information entered into required files (see following appendices):

A. Matrix Codes

B. Sample Source Codes

C. Collection Method Codes

D. Chemical Data Dictionary (Standardizes Spelling, STORET P-codes., etc entered into the SAMPLE ANALYSIS FILE.

E. Laboratory Qualifiers

E. State Plane Zones (N or S)
(NOTE: Copy of RCW 58.20 provided for reference)

F. County Fips Codes

3. Submittal
Computer diskettes containing the SITE DESCRIPTION FILE, FIELD SAMPLE FILE and/or the LABORATORY SAMPLE FILE, clearly labeled for Project and Originator shall be submitted in duplicate, along with a backup hard copy of the diskette contents.

---

[1] Trademark of the Microsoft Corporation

Washington State Toxics Cleanup Program Data Submittal File Formats

FIELD DEFINITIONS FOR SITE DESCRIPTION FILE

FIELD	TYPE	WIDTH	DEFINITION
REP_DATE	D	10	Reporting date (mm/dd/yyyy).
REP_NAME	C	48	Reporting entity, data submitted by.
PRJ_NAME	C	48	Project, site, or facility name.
STA_TYPE	C	12	Station type (Ground water, Surface water, Sediment, Soil, Sludge, Biological or Air).
STA_USE	C	1	Well use (USGS codes) O=observation, W=water withdrawal, X=waste disposal, D=drain, T=test hole, E=geothermal, P=oil/gas, U=unused, R=recharge, Z=destroyed.
WTR_USE	C	1	Water use (USGS codes) W=water quality/level monitoring, D=dewatering, N=industrial, S=stock supply, B=bottling, I=irrigation, Q=aquaculture, U=unused, C=commercial supply, H=domestic supply, P=public supply, J=industrial cooling, F=fire protection, Z=other.
DATA_REL	C	1	Data Reliability (USGS codes) C=field checked, L=poor location, U=unchecked.
STA_ID	C	12	Station or Well ID number.
PRI_STA	C	15	Ecology primary station code. To be obtained from Ecology TCP.
SEC_STA1	C	12	Additional station code (previous well numbers, alternate or other well designations).
SEC_STA2	C	12	Additional station code (if any).
SEC_STA3	C	12	Additional station code (if any).
STATE_FIPS	C	2	State FIPS code (WA=53).
COUNTYFIPS	C	3	County FIPS code (use state county code, Appendix F).
STATE_CHAR	C	2	State (WA).
COUNTYCHAR	C	16	County.
OWN_NAME	C	30	Sampling location owner's name.
OWN_DT	D	10	Date of ownership of well (mm/dd/yyyy).
OWN_ADD	C	60	Address of owner.
DRILLER	C	30	Name of Driller.

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EXHIBIT G
RESTRICTIVE COVENANT

The property that is the subject of this Restrictive Covenant has been the subject of remedial action under Chapter 70.105D RCW. The work done to clean up the property (hereafter the "Cleanup Action") is described in the Consent Decree entered in State of Washington Department of Ecology v. Weyerhaeuser Company, Snohomish County Superior Court No. _____, and in attachments to the Decree and in documents referenced in the Decree. This Restrictive Covenant is required by Ecology under Ecology's rule WAC 173-340-440 (1991 ed.) because the Cleanup Action on the Site resulted in residual soil concentrations of TPH above Ecology's Method A cleanup level for direct contact only, and PCP, PCB's and CPAH which exceed Ecology's Method B cleanup levels for soils established under WAC 173-340-745(2) and (3). The restrictive covenant is also required because the arsenic ground water contamination is not addressed in the remedial action.

The undersigned, Weyerhaeuser Company, is the fee owner of real property in the County of Snohomish, State of Washington (legal description attached), hereafter referred to as the " Weyerhaesuer Everett East Site" (East Site). Weyerhaeuser Company makes the following declarations as to limitations, restrictions, and uses to which the Weyerhaeuser East Site may be put, and specifies that such declarations shall constitute covenants to run with the land, as provided by law, and shall be binding on all parties and all persons claiming under them, including all current and future owners of any portion of or interest in the East Site.

Section 1. No groundwater may be taken for domestic purposes from any well at the East Site.

Section 2. No residential development may take place on the site.

Section 3. Any activity on the East Site that may interfere with the viability of the containment of the hazardous substances on the site is prohibited. Any activity on the East Site that may result in the release of a hazardous substance that was contained as part of the Cleanup or Interim Cleanup Action(s) is prohibited.

Section 4. Any development of the East Site shall ensure the containment of the hazardous substances that are exposed or ensure proper management and disposal. Ecology will receive notice of any development that may impact the contained hazardous substances at least 30 days prior to such development.

Section 5. The owner of the East Site must give written notice to the Department of Ecology, or to a successor agency, of the owner's intent to convey any interest in the East Site. No conveyance of title, easement, lease or other interest in the East Site shall be consummated by the owner without adequate and complete provision for the continued operation, maintenance and monitoring of the Cleanup Action.

Section 6. The owner of the East Site must notify and obtain approval from the Department of Ecology, or from a successor agency, prior to any use of the East Site that in inconsistent with the terms of this Restrictive Covenant.

The Department of Ecology or its successor agency may approve such a use only after public notice and comment.

Section 7. The owner shall allow authorized representatives of the Department of Ecology, or of a successor agency, the right to enter the East Site at reasonable times for the purpose of evaluation compliance with the Cleanup Action Plan and the Consent Decree, to take samples, to inspect Cleanup Actions conducted at the East Site, and to inspect records that are related to the Cleanup Action.

Section 8. The owner of the East Site and the owner's assigns and successors in interest reserve the right under WAC 173-340-740 and WAC 173-340-440 (1991 ed.) to record an instrument which provides that this Restrictive Covenant shall no longer limit the use of the East Site or be of any further force or effect. However, such an instrument may be recorded only with the consent of the Department of Ecology, or successor agency. The Department of Ecology, or a successor agency may consent to the recording of such an instrument only after public notice and comment.

Executed as of the _____day of _____, _____.

Property Owner: Weyerhaeuser
By_____
Its _____

Attachments:

Exhibit A-Legal Description of Property

STATE OF WASHINGTON)
) **ss.**
COUNTY OF SNOHOMISH)

On this _____day of _____, 1997, before me, a Notary Public in and for the State of Washington, personally appeared _____, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person who executed this instrument, on oath state that he was authorized to execute the instrument, and acknowledged it as the _____ of Weyerhaeuser to be the free and voluntary act and deed of said corporation for the uses and purposes mentioned in the instrument.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year first above written.

_____
NOTARY PUBLIC in and for the
State of Washington, residing
at _____
My appointment expires _____
Print Name _____

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON

FOR SNOHOMISH COUNTY

STATE OF WASHINGTON,
DEPARTMENT OF ECOLOGY,

Plaintiff,

-vs-

WEYERHAEUSER COMPANY, a Washington Corporation,

Defendants.

No. 97 2 02773 8

DECLARATION OF
NADINE ROMERO

I, Nadine Romero, declare under penalty of perjury under the laws of the State of Washington that the following is true and correct.

1. I am over twenty-one years of age and am competent to testify herein. The facts set forth in this Declaration are from my personal knowledge.

2. I am employed as a Senior Hydrogeologist at the Washington State Department of Ecology. I am the site manager and am knowledgeable on matters relating to the site in Everett, Washington referred to as the Weyerhaeuser Everett East Site and South End Residual Wood Storage Site.

3. On behalf of Ecology, I took part in the negotiations that led to the Consent Decree that is being presented to the Court.

4. The Consent Decree was the subject of public notice and public comment as required by RCW 70.105D.040(4)(a). Ecology also conducted a public hearing as required

ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (360) 438-7743

by WAC 173-340-600(9)(d).

5. Ecology received no written comments during the public comment period on the substance of the Consent Decree.

6. As the site manager, I supervised the public notice and comment. No changes were made in the Work Plan following public notice and comment.

7. WAC 173-340-600(9)(e) provides:

> Revisions. If the state and the potentially liable person agree to substantial changes to the proposed Consent Decree, the department shall provide additional public notice and opportunity to comment.

8. Ecology has determined that no additional public comment under WAC 173-340-600(9)(e) is required.

9. Ecology has determined that the proposed remedial action will lead to a more expeditious cleanup of hazardous substances in compliance with cleanup standards under RCW 70.105D.030(2)(d).

I declare under penalty of perjury of the laws of the state of Washington that the foregoing is true and correct.

DATED this 19 day of March, 1997.

NADINE ROMERO
State of Washington
Department of Ecology

f:\...\Weyerhae\nadine.Dec

ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (360) 438-7743

Exhibit A

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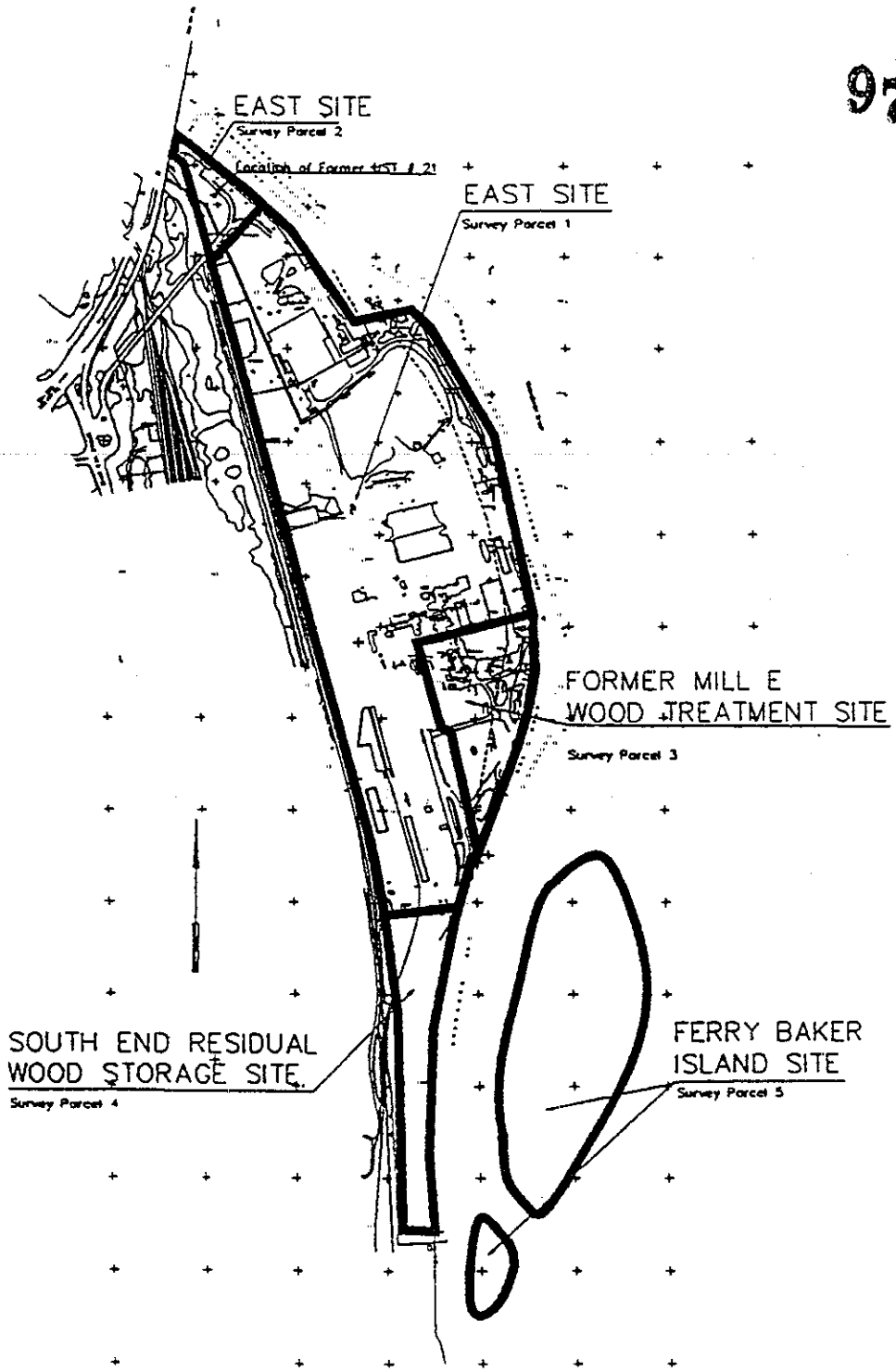

Weyerhaeuser

TITLE:

SURVEY PARCEL NUMBERS

EAST SITE -- EVERETT, WA

EXHIBIT A

DWN:	DES:	PROJECT NO:
CHK'D:	APP'D:	FIGURE NO:
DATE: 4/18/96	REV:	EASTOPER.DWG

PARCEL NO. 1 LAND DESCRIPTION AT WEYERHAEUSER COMPANY EAST SITE

All that portion of Government Lot 9, and Tract 4 of Everett Tide Lands Section No. 2, as shown on the official plat thereof on file in the office of the Commissioner of Public Lands, at Olympia, Washington, in Section 9, and that portion of Government Lot 2, and Tract 5 of said Everett Tide Lands Section No. 2, in Section 16, and that portion of the Northeast Quarter of the Northeast Quarter of Section 17, and that portion of Government Lot 7 and the Southeast Quarter of the Southeast Quarter of Section 8, Township 29 North, Range 5 East of the Willamette Meridian, described as follows: Commencing at the Southeast corner of said Section 8; thence North 89° 55' 27" West, along the South line of the Southeast Quarter of said Section 8, a distance of 238.96 feet to a point on the Easterly line of the Burlington Northern Railroad Company right of way, which point is referred to hereinafter as Point "A"; thence North 16° 03' 43" West, along the Easterly line of said right of way, a distance of 2180.08 feet to the True Point of Beginning; thence South 16° 03' 43" East, along the Easterly line of said righs of way, a distance of 2180.08 feet to said Point "A"; thence continuing South 16° 03' 43" East, along the Easterly line of said right of way, a distance of 899.94 feet; thence on a curve of the Easterly line of said right of way, to the right, having a radius of 5829.65 feet, and a central angle of 4° 50' 51", an arc distance of 493.21 feet; thence North 89° 07' 33" East a distance of 489 feet, more or less, to a point on the Line of Ordinary High Tide of the left bank of the Snohomish River; thence in a Northerly direction, along the meanderings of said Line of Ordinary High Tide, to a point that bears North 38° 30' 24" East from the True Point of Beginning; thence South 38° 30' 24" West a distance of 339 feet, more or less, to the True Point of Beginning; EXCEPT therefrom the former Mill "E" and Wood Treatment Site described as follows: All that portion of Government Lot 9, and Tract 4 of Everett Tide Lands Section No. 2, as shown on the official plat thereof on file in the office of the Commissioner of Public Lands, at Olympia, Washington, in Section 9, and that portion of Government Lot 2, and Tract 5 of said Everett Tide Lands Section No. 2, in Section 16, Township 29 North, Range 5 East of the Willamette Meridian, described as follows: Commencing at the Southwest corner of said Section 9; thence North 89° 12' 51" East, along the South line of said Section 9, a distance of 420.80 feet to the True Point of Beginning; thence North 63° 56' 46" East a distance of 132.97 feet; thence North 73° 51' 29" East a distance of 290.04 feet; thence South 69° 25' 46" East a distance of 111.85 feet to a point on the timber bulkhead along the Snohomish River; thence in a Southerly direction, along said bulkhead on the following courses: South 3° 44' 08" East 143.24 feet, South 0° 17' 19" West 64.72 feet, South 3° 28' 47" West 85.16 feet, South 5° 57' 29" West 86.57 feet, South 8° 49' 41" West 63.97 feet, South 13° 24' 08" West 90.75 feet, South 16° 03' 42" West 84.09 feet, South 18° 40' 16" West 454.68 feet; thence North 35° 29'-14" West a distance of 211.21 feet; thence North 15° 34' 19" West a distance of 289.92 feet; thence North 51° 01' 20" West a distance of 100.28 feet; thence North 15° 27' 34" West a distance of 399.67 feet; thence North 63° 56' 46" East a distance of 96.81 feet to the True Point of Beginning.

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PARCEL NO. 2 LAND DESCRIPTION AT WEYERHAEUSER COMPANY EAST SITE

All that portion of Government Lot 7, and Tracts 3 and 4 of Everett Tide Lands Section No. 2, as shown on the official plat thereof on file in the office of the Commissioner of Public Lands, at Olympia, Washington, in Section 8, Township 29 North, Range 5 East of the Willamette Meridian, described as follows: Commencing at the Southeast corner of said Section 8; thence North 89° 55' 27" West, along the South line of the Southeast Quarter of said Section 8, a distance of 238.96 feet to a point on the Easterly line of the Burlington Northern Railroad Company right of way; thence North 16° 03' 43" West, along the Easterly line of said right of way, a distance of 2180.08 feet to the True Point of Beginning; thence continuing North 16° 03'-43" West a distance of 506.50 feet to a point on the curve of the Northerly line of said Burlington Northern Railroad Company right of way, at which point the tangent to said curve bears North 52° 53' 53" West; thence in a Northwesterly direction, along said curve, to the left, having a radius of 784.49 feet, and a central angle of 3° 21'-47", an arc distance of 46.05 feet to a point on said curve at which the tangent to said curve bears North 56° 15' 40" West, and which point is on the Easterly right of way line of State Highway No. 529; thence North 10° 02' 20" East, along the Easterly right of way line of said highway, a distance of 59 feet, more or less, to a point on the Line of Ordinary High Tide of the left bank of the Snohomish River; thence in a Southeasterly direction, along the meanderings of said Line of Ordinary High Tide, to a point that bears North 38° 30' 24" East from the True Point of Beginning; thence South 38° 30' 24" West a distance of 339 feet, more or less, to the True Point of Beginning.

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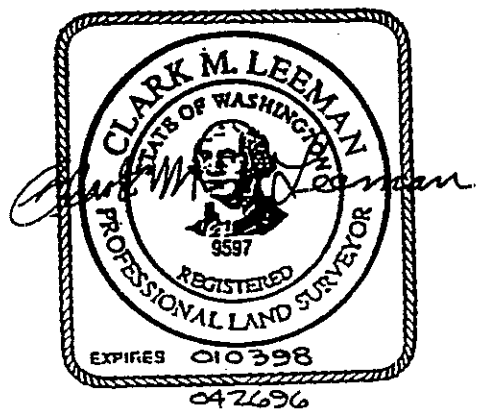

PARCEL NO. 3 LAND DESCRIPTION AT WEYERHAEUSER COMPANY EAST SITE

All that portion of Government Lot 9, and Tract 4 of Everett Tide Lands Section No. 2, as shown on the official plat thereof on file in the office of the Commissioner of Public Lands, at Olympia, Washington, in Section 9; and that portion of Government Lot 2, and Tract 5 of said Everett Tide Lands Section No. 2, in Section 16, Township 29 North, Range 5 East of the Willamette Meridian, described as follows: Commencing at the Southwest corner of said Section 9; thence North 89° 12' 51" East, along the South line of said Section 9, a distance of 420.80 feet to the True Point of Beginning; thence North 63° 56'-46" East a distance of 132.97 feet; thence North 73° 51' 29" East a distance of 290.04 feet; thence South 69° 25' 46" East a distance of 111.85 feet to a point on the timber bulkhead along the Snohomish River; thence in a Southerly direction, along said bulkhead on the following courses: South 3° 44' 08" East 143.24 feet, South 0° 17'-19" West 64.72 feet, South 3° 28' 47" West 85.16 feet, South 5° 57'-29" West 86.57 feet, South 8° 49' 41" West 63.97 feet, South 13° 24'-08" West 90.75 feet, South 16° 03' 42" West 84.09 feet, South 18° 40'-16" West 454.68 feet; thence North 35° 29' 14" West a distance of 211.21 feet; thence North 15° 34' 19" West a distance of 289.92 feet; thence North 51° 01' 20" West a distance of 100.28 feet; thence North 15° 27' 34" West a distance of 399.67 feet; thence North 63° 56' 46" East a distance of 96.81 feet to the True Point of Beginning. Containing 8.89 acres, more or less.

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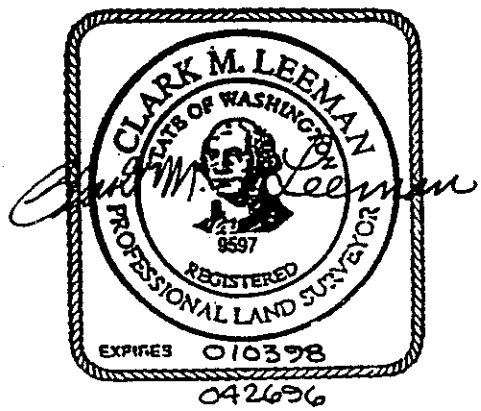

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PARCEL NO. 4 LAND DESCRIPTION AT WEYERHAEUSER COMPANY EAST SITE

All that portion of Government Lots 3 and 9, and Tracts 6 and 8 of Everett Tide Lands Section No. 2, as shown on the official plat thereof on file in the office of the Commissioner of Public Lands, at Olympia, Washington, in Section 16, Township 29 North, Range 5 East of the Willamette Meridian, described as follows: Commencing at the Northwest corner of said Section 16; thence North 89° 55' 27" West, along the North line of the Northeast Quarter of Section 17 in said Township, a distance of 238.96 feet to a point on the Easterly line of the Burlington Northern Railroad Company right of way; thence South 16°-03' 43" East, along the Easterly line of said right of way, a distance of 899.94 feet; thence along the curve of the Easterly line of said right of way, to the right, having a radius of 5829.65 feet, and a central angle of 4° 50' 51", an arc distance of 493.21 feet to a point at which the tangent to said curve bears South 11° 12' 53" East, which point is on the North line of said Government Lot 3, and which point is the True Point of Beginning of this description; thence continuing in a Southerly direction along said curve of the Easterly line of said right of way, to the right, having a radius of 5829.65 feet, and a central angle of 8° 28' 57", an arc distance of 863.07 feet; thence South 2° 43' 55" East, along the Easterly line of said right of way, a distance of 493.42 feet; thence South 0° 31' 18" East, along the Easterly line of said right of way, a distance of 500.04 feet; thence South 89° 48' 45" East a distance of 272 feet, more or less, to a point on the Line of Ordinary High Tide of the Left bank of the Snohomish River; thence in a Northerly direction, along the meanderings of said Line of Ordinary High Tide, to a point on the North line of said Government Lot 3, which point bears North 89° 07' 33" East from the True Point of Beginnning; thence South 89° 07' 33" West, along the North line of said Government Lot 3, a distance of 489 feet, more or less, to the True Point of Beginning.

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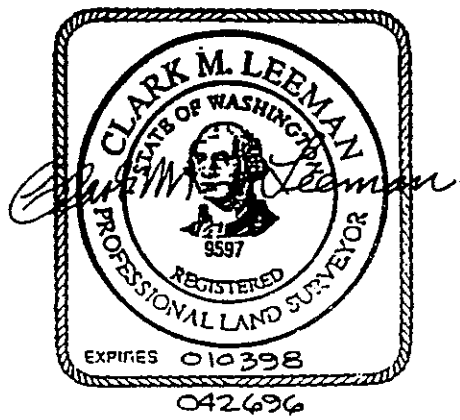


042696

PARCEL NO. 5 LAND DESCRIPTION AT WEYERHAEUSER COMPANY EAST SITE

Government Lots 14 and 15, in Section 16, Township 29 North, Range 5 East of the Willamette Meridian.

151670
042696
CML-LS

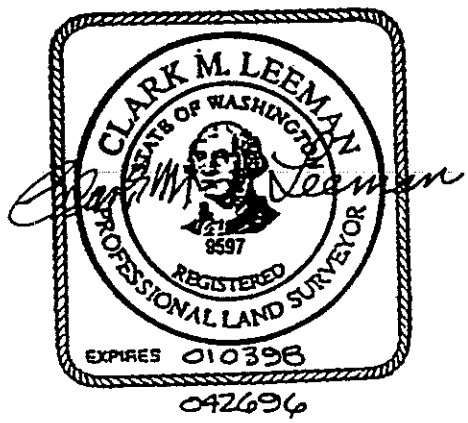
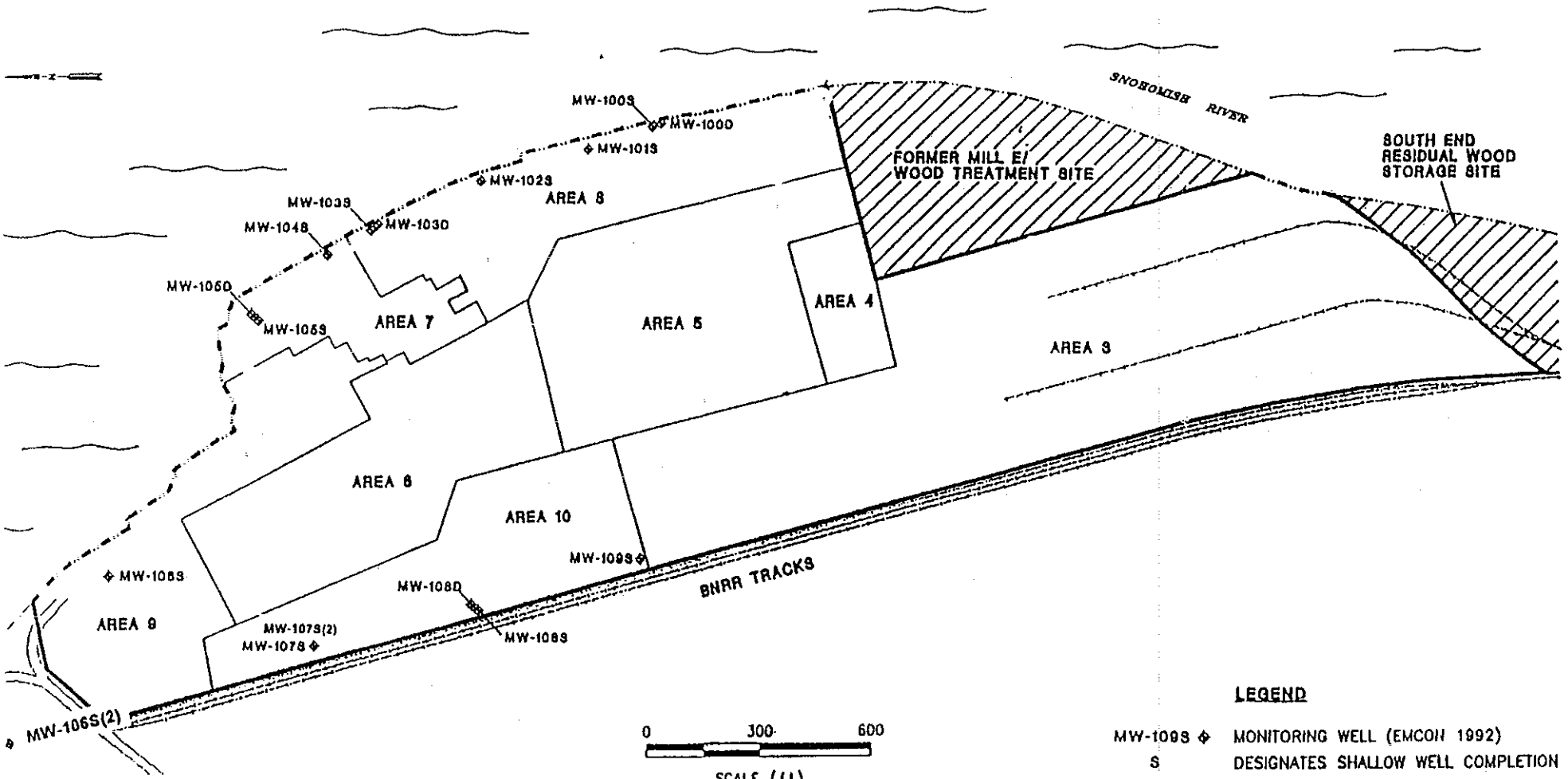


EXHIBIT A



LEGEND

MW-109S ◆	MONITORING WELL (EMCON 1992)
S	DESIGNATES SHALLOW WELL COMPLETION
D	DESIGNATES DEEP WELL COMPLETION
— · — · —	SHORELINE
— · — · —	EAST SITE BOUNDARY AT SHORELINE
———	EAST SITE BOUNDARY

Notes: Not all wells or soil sample locations are presented on this figure.

MW-107S(2) is a replacement well.

MW-106S(2) is a replacement well.

MW-104S is a replacement well

Based on Figure 1-2 (EMCON 1995a)

Weyerhaeuser East Site
Everett, Washington

East Site Area Designations

WEY-011 **FIGURE 2** July 1995

Dalton, Olmsted & Fuglevand, Inc.

EXHIBIT B

EXHIBIT B

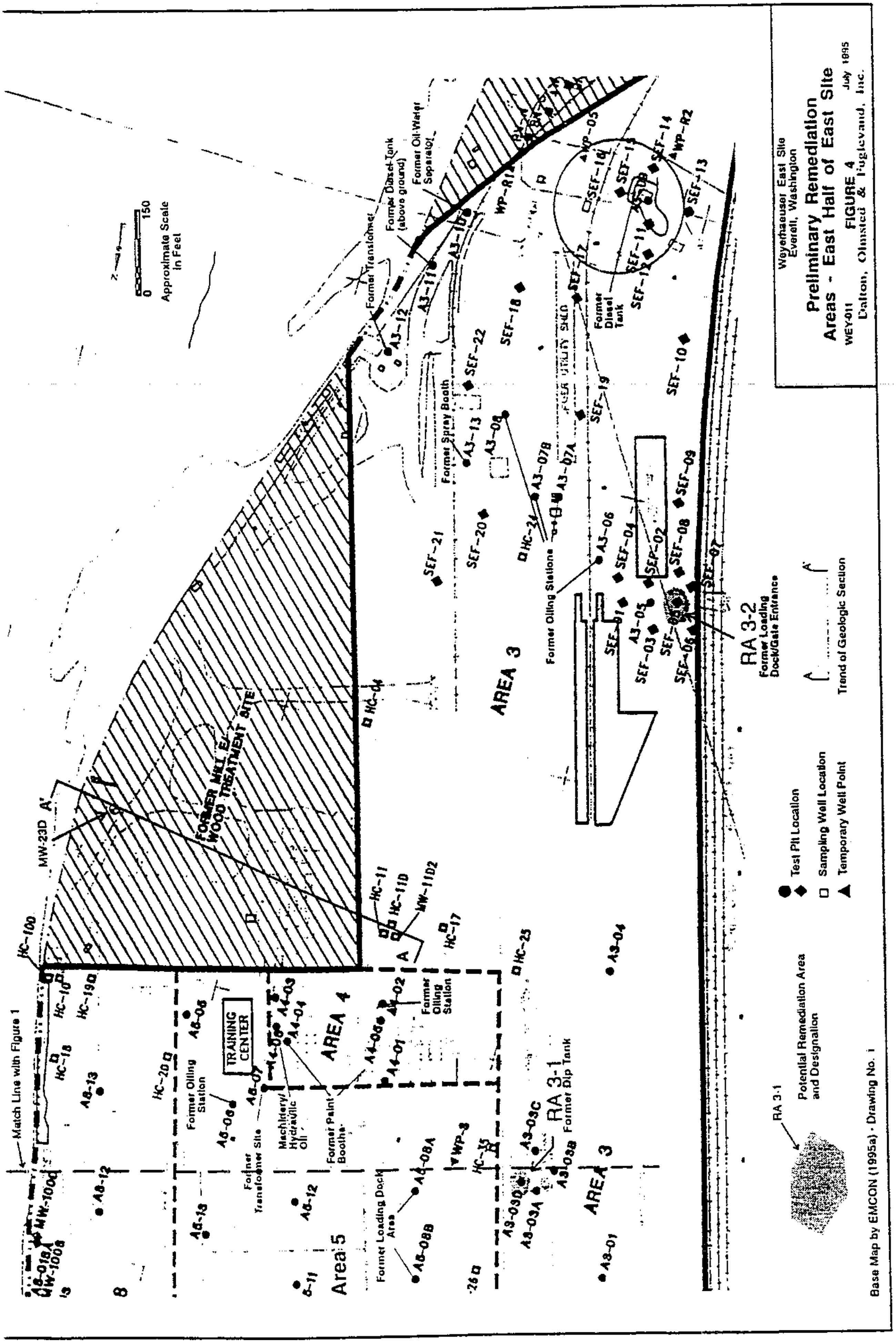
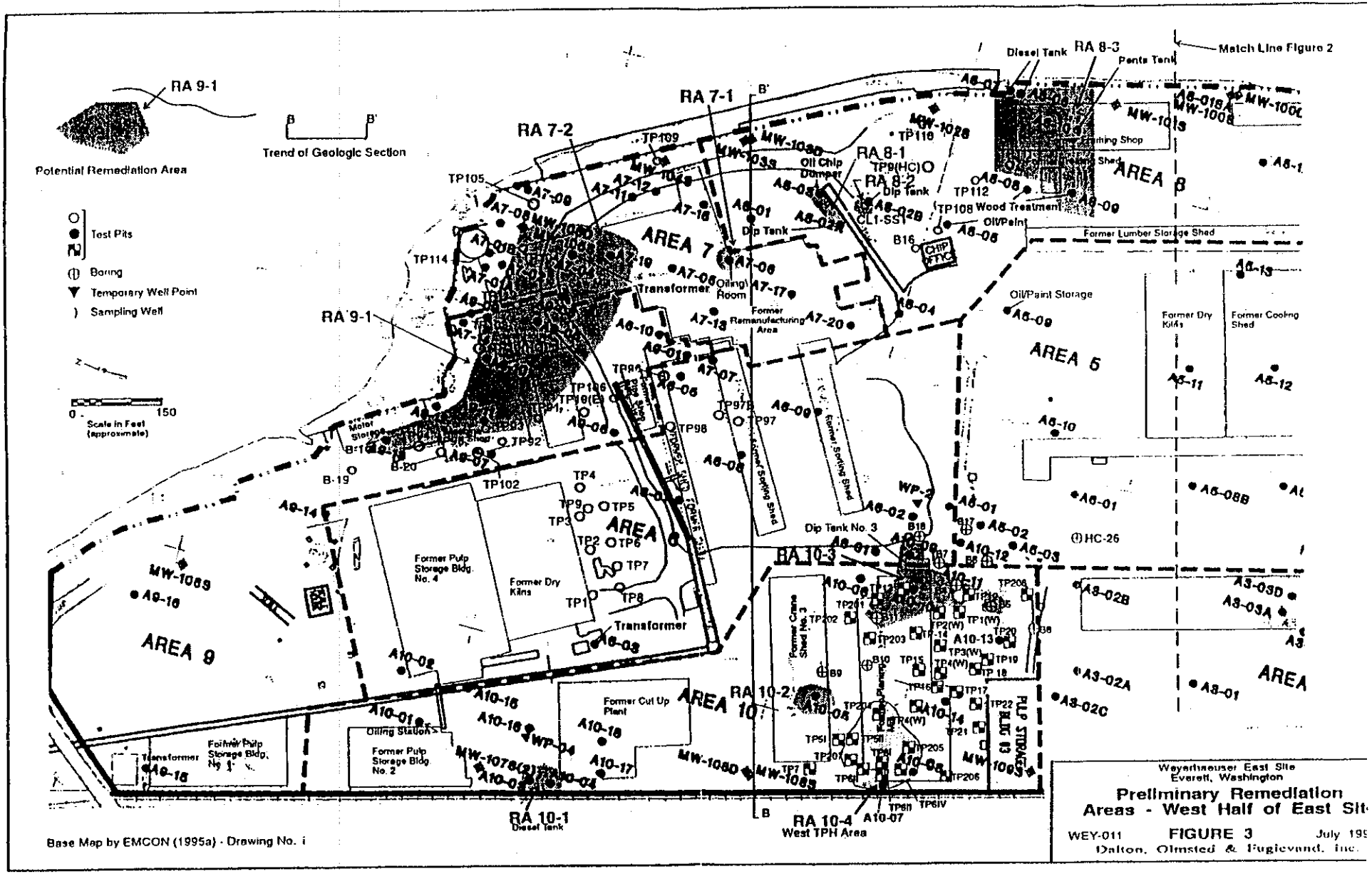

Weyerhaeuser East Site
Everett, Washington
Preliminary Remediation Areas - East Half of East Site
WEY-011
FIGURE 4
July 1995
Dalton, Olmsted & Fuglevand, Inc.
Approximate Scale in Feet
0
150
Test Pit Location
Sampling Well Location
Temporary Well Point
Trend of Geologic Section
RA 3-1
Potential Remediation Area and Designation
Base Map by EMCON (1995a) - Drawing No. 1
Match Line with Figure 1
FORMER MILL E/ WOOD TREATMENT SITE
AREA 3
AREA 4
Area 5
TRAINING CENTER
RA 3-2
Former Loading Dock/Gate Entrance
RA 3-1
Former Dip Tank
Former Oiling Stations
Former Spray Booth
Former Diesel Tank
Former Transformer
Former Oil-Water Separator
Former Diesel Tank (above ground)
Former Paint Booths
Former Transformer Site
Former Oiling Station
Machinery/Hydraulic Oil
Former Loading Dock Area

EXHIBIT B


RA 9-1
Potential Remediation Area
B B'
Trend of Geologic Section
Test Pits
Boring
Temporary Well Point
Sampling Well
Scale in Feet (approximate)
0 150
RA 7-1
RA 7-2
RA 8-1
RA 8-2
RA 8-3
RA 9-1
RA 10-1
RA 10-2
RA 10-3
RA 10-4
AREA 5
AREA 6
AREA 7
AREA 8
AREA 9
AREA 10
Match Line Figure 2
Diesel Tank
Penta Tank
Oil Chip Dumper
Dip Tank
Wood Treatment
Oil/Paint
Former Lumber Storage Shed
Oil/Paint Storage
Former Dry Kilns
Former Cooling Shed
Transformer
Oiling Room
Former Remanufacturing Area
Former Sorting Shed
Former Pulp Storage Bldg. No. 4
Former Dry Kilns
Dip Tank No. 3
Former Crane Shed No. 3
Former Cut Up Plant
Former Pulp Storage Bldg. No. 2
Former Pulp Storage Bldg. No. 1
Oiling Station
Diesel Tank
West TPH Area
PULP STORAGE BLDG #3
Base Map by EMCON (1995a) - Drawing No. 1
Weyerhaeuser East Site
Everett, Washington
Preliminary Remediation Areas - West Half of East Site
WEY-011 FIGURE 3 July 19
Dalton, Olmsted & Fuglevand, Inc.

97 2 02773 8

EXHIBIT G
RESTRICTIVE COVENANT

The property that is the subject of this Restrictive Covenant has been the subject of remedial action under Chapter 70.105D RCW. The work done to clean up the property (hereafter the "Cleanup Action") is described in the Consent Decree entered in State of Washington Department of Ecology v. Weyerhaeuser Company, Snohomish County Superior Court No. _____, and in attachments to the Decree and in documents referenced in the Decree. This Restrictive Covenant is required by Ecology under Ecology's rule WAC 173-340-440 (1991 ed.) because the Cleanup Action on the Site resulted in residual soil concentrations of TPH above Ecology's Method A cleanup level for direct contact only, and PCP, PCB's and CPAH which exceed Ecology's Method B cleanup levels for soils established under WAC 173-340-745(2) and (3). The restrictive covenant is also required because the arsenic ground water contamination is not addressed in the remedial action.

The undersigned, Weyerhaeuser Company, is the fee owner of real property in the County of Snohomish, State of Washington (legal description attached), hereafter referred to as the " Weyerhaesuer Everett East Site" (East Site). Weyerhaeuser Company makes the following declarations as to limitations, restrictions, and uses to which the Weyerhaeuser East Site may be put, and specifies that such declarations shall constitute covenants to run with the land, as provided by law, and shall be binding on all parties and all persons claiming under them, including all current and future owners of any portion of or interest in the East Site.

Section 1. No groundwater may be taken for domestic purposes from any well at the East Site.

Section 2. No residential development may take place on the site.

Section 3. Any activity on the East Site that may interfere with the viability of the containment of the hazardous substances on the site is prohibited. Any activity on the East Site that may result in the release of a hazardous substance that was contained as part of the Cleanup or Interim Cleanup Action(s) is prohibited.

Section 4. Any development of the East Site shall ensure the containment of the hazardous substances that are exposed or ensure proper management and disposal. Ecology will receive notice of any development that may impact the contained hazardous substances at least 30 days prior to such development.

Section 5. The owner of the East Site must give written notice to the Department of Ecology, or to a successor agency, of the owner's intent to convey any interest in the East Site. No conveyance of title, easement, lease or other interest in the East Site shall be consummated by the owner without adequate and complete provision for the continued operation, maintenance and monitoring of the Cleanup Action.

Section 6. The owner of the East Site must notify and obtain approval from the Department of Ecology, or from a successor agency, prior to any use of the East Site that in inconsistent with the terms of this Restrictive Covenant.

The Department of Ecology or its successor agency may approve such a use only after public notice and comment.

Section 7. The owner shall allow authorized representatives of the Department of Ecology, or of a successor agency, the right to enter the East Site at reasonable times for the purpose of evaluation compliance with the Cleanup Action Plan and the Consent Decree, to take samples, to inspect Cleanup Actions conducted at the East Site, and to inspect records that are related to the Cleanup Action.

Section 8. The owner of the East Site and the owner's assigns and successors in interest reserve the right under WAC 173-340-740 and WAC 173-340-440 (1991 ed.) to record an instrument which provides that this Restrictive Covenant shall no longer limit the use of the East Site or be of any further force or effect. However, such an instrument may be recorded only with the consent of the Department of Ecology, or successor agency. The Department of Ecology, or a successor agency may consent to the recording of such an instrument only after public notice and comment.

Executed as of the _____day of _____, _____.

Property Owner: Weyerhaeuser
By_____
Its _____

Attachments:

Exhibit A-Legal Description of Property

STATE OF WASHINGTON)
) **ss.**
COUNTY OF SNOHOMISH)

On this _____day of _____, 1997, before me, a Notary Public in and for the State of Washington, personally appeared _____, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person who executed this instrument, on oath state that he was authorized to execute the instrument, and acknowledged it as the _____ of Weyerhaeuser to be the free and voluntary act and deed of said corporation for the uses and purposes mentioned in the instrument.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year first above written.

_____
NOTARY PUBLIC in and for the
State of Washington, residing
at _____
My appointment expires _____
Print Name _____

SNOHOMISH HEALTH DISTRICT
M. Ward Hinds, M.D., M.P.H
Health Officer

Exhibit H

Environmental Health Division
3020 Rucker Avenue, Suite 102
Everett, WA 98201-3971
(206) 339-5250 (206) 339-5270
Fax: (206) 339-5254 TDD: (206) 339-5252

November 12, 1996

NADINE ROMERO, INDUSTRIAL SECTION
DEPARTMENT OF ECOLOGY
ENVIRONMENTAL HEALTH PROGRAMS
PO BOX 47820
OLYMPIA WA 98504-7820

Subject: Weyerhaeuser Southend Residual Wood Storage Site 97 2 02773 8

Dear Ms. Romero:

Thank you for our meeting of October 3, 1996, regarding the Weyerhaeuser Southend Residual Wood Storage Site. This letter is in follow-up to that meeting. To summarize and clarify our positions, I understand we are in agreement that the Snohomish Health District will take the lead regarding removal of the woodwaste with the following conditions:

- Weyerhaeuser will remove the woodwaste in accordance with the Snohomish Health District Sanitary Code, Chapter 3.1. Fifty percent of the material must be removed within three years and one hundred percent of the material must be removed within five years. The removal process began in August of 1995, and approximately 70,000 cubic yards of material have been removed to date. A statement regarding the Health District's role will be included in the Department of Ecology's Consent Decree with Weyerhaeuser.

- The Consent Decree will specifically address the TPH contamination at the Southend site, and Ecology will ensure that contaminated material be handled according to this agreement. Any incidental municipal solid waste (MSW) discovered as part of the woodwaste removal project will be either recycled or removed to a legal MSW disposal site. Any lime waste that may be found in greater than incidental amounts will be tested for pH and characterized for recycling or disposal at a permitted solid waste disposal facility following consultation with the Health District.

- It is Weyerhaeuser's responsibility to inform any prospective buyers of both the Consent Decree with Ecology as well as this agreement with the Health District regarding removal of the woodwaste. Although not anticipated, should Weyerhaeuser fail to proceed according to the above-mentioned agreements, both Weyerhaeuser and any future buyers will be held responsible to complete the woodwaste removal project in accordance with the Snohomish Health District Sanitary Code, Chapter 3.1.

- Weyerhaeuser will continue to provide the Health District with annual progress reports regarding the woodwaste removal, and will continue to work with Ecology in accordance with the Consent Decree. Both the Health District and Ecology will be informed by Weyerhaeuser of any findings at the Southend site which may require additional scrutiny

A copy of this correspondence is being forwarded to Weyerhaeuser in accordance with our discussions. Please call me at (206) 339-5250 if you have any questions or comments.

Sincerely,

Deanna L. Ritter, R.S.
Solid Waste and Toxics Section
Environmental Health Division

DLR:sei

c: Stuart Triolo, Weyerhaeuser

EXHIBIT I

97 2 02773 8

CONFIRMATIONAL GROUND-WATER MONITORING PLAN
WEYERHAEUSER EAST SITE
EVERETT, WASHINGTON

Prepared for:
Weyerhaeuser Company

Dalton, Olmsted & Fuglevand, Inc. *Environmental Consultants*

January 1997

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Appendix A - Monitoring well Logs, Weyerhaeuser East Site

CONFIRMATIONAL GROUND-WATER MONITORING PLAN
WEYERHAEUSER EAST SITE
EVERETT, WASHINGTON

INTRODUCTION

Scope and Organization

The following Confirmational Ground-Water Monitoring Plan was prepared as required in the Ecology Cleanup Action Plan (CAP) for the Weyerhaeuser East Site and South End Residual Wood Storage Site (herein collectively termed East Site). The East Site is one of several operable units comprising property owned by the Weyerhaeuser Company in Everett, Washington (Figures 1 and 2). The property covered by this plan includes Parcels 1, 2 and 4 as shown on Figure 2. Water quality monitoring will be conducted on Parcels 1 and 4 because the remediation areas are located on these parcels.

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 and lumber end-sealing facilities, lumber storage and drying sheds and other support activities (EMCON 1995a; DOF 1995a). Remedial activities on these parcels consist of excavating soil containing petroleum hydrocarbons, pentachlorophenol (PCP), carcinogenic polycyclic aromatic hydrocarbons (CPAHs), and polychlorinated biphenyls (PCBs) above cleanup levels.

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

This plan contains three major sections:

- **INTRODUCTION;**
- **PROJECT BACKGROUND; and**
- **GROUND-WATER MONITORING PLAN.**

Tables and figures which support these sections follow the end of the text.

PROJECT BACKGROUND

Required Cleanup Actions

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

- Excavating soil above cleanup levels and disposing off-site.
- 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.

Site Hydrogeology

Environmental Setting: The site is located within the low-lying flood plain of the Snohomish River that is bounded on the west and east by steeply sloped glaciated ridges and hills reaching to 500 feet above sea level. Elevations on the site range in elevation between approximately 14 and 18 feet above Mean Lower Low Water (MLLW).

The Snohomish River located on the east side of the site is tidally influenced. Mean higher high water (MHHW) at Everett is 11.1 feet above MLLW. A salt wedge intrudes approximately 5 miles upstream of the site, beyond the Interstate 5 bridge (EMCON 1995a).

The site area was formerly an estuarine tide flat. In the early 1900's, the tide flat was filled using sand dredged from the river bottom. The bank of the Snohomish River in Parcels 1, 2 and 3 is stabilized with a bulkhead of timber and steel sheet pilings along the length of the site. Since the initial filling of the site, other fills, structure foundations and paving have been placed over the dredged sand.

Geology and Ground-Water Units: The geologic materials which underlie the site are designated, with increasing depth, as follows.

- Grade Fill and Mixed Fill Unit
- Upper Sand (dredged fill)
- Upper Silt Unit (tidal flat deposits)
- Lower Sand Unit (river deposits)
- Lower Silt Unit
- Deep Sand Unit

Hydrogeologically the geologic units can be grouped into five ground-water zones:

- Water Table Zone (upper sand and grade/mixed fills)
- Upper Aquitard (upper silt unit)
- Lower Sand Zone (lower sand unit)
- Lower Aquitard (lower silt unit)
- Deep Sand Zone (deep sand unit)

Geologic sections A-A', B-B' and C-C' show the vertical relationships of the ground-water zones (Figures 4, 5, and 6). Section A-A' is located in the Mill E area and is presented as a representative section showing the hydrogeologic conditions in the vicinity of the East Site. The trends of the sections are shown on Figures 3 and 4. Table 1 presents a summary of the geologic characteristics of these units.

Ground-Water Levels and Flow Directions: As discussed above, the Snohomish River is tidally influenced. The mean tidal range is approximately 11 feet. Water level fluctuation studies have been completed on the Mill E site (Parcel 3) (Hart Crowser 1991) to assess the influence of tides on ground-water levels. These studies indicate that tidal-induced water level fluctuations in the Water Table Zone are relatively small and range between 0.2 and 0.5 feet.

Tides cause greater fluctuations of Lower Sand Zone ground-water levels as compared to the Water Table Zone. Water table fluctuations in the Lower Sand Zone monitoring wells range between 7 and 9 feet over individual tidal cycles.

Ground-water flow evaluations in the Lower Sand Zone made for Mill E and the South End Residual Wood Storage Site (DOF 1996b) also indicate that the net flow is towards the river. However, during periods of high tides, flow is reversed along the shore line.

Ground-water levels beneath the East site for February and September 1994 and January 1995 are summarized in Table 2. The February and January measurements represent "wet season" conditions while the measurements made in September represent "dry season" conditions. The Water Table Zone wet season depth to water measurements ranged between 1.3 and 8.6 feet in February 1994 and 0.7 to 7.7 feet in January 1995. In September 1994 (dry season), the depth to water ranged between

3.1 to 9.7 feet. Water levels in the Water Table Zone were approximately 1.5 to 4.7 feet lower in September 1994 as compared to January 1995.

Water Table Zone water level measurements in monitoring wells located on the south (upland) side of the East Site are generally higher in elevation as compared to monitoring wells located on the north (river) side of the site. This data indicates that ground water flows towards the river in the water table zone which is consistent with work completed on Mill E.

GROUND-WATER MONITORING PLAN

Ground-water Quality Background Information

Parcel 1: To assess the existing (pre-remediation) quality of ground water beneath Parcel 1, monitoring wells were installed and six rounds of sampling occurred at the East Site monitoring well locations shown on Figure 3 (EMCON 1995a; 1995b). Analyses were made for petroleum hydrocarbons, volatile organic compounds, semivolatile organic compounds, dioxins/furans, PCBs/pesticides, metals, and several conventional parameters (e.g. calcium, sodium). A review of the available data for monitoring wells MW-105S and MW-107S suggested that the sample results may have been impacted by the sampling procedures. Table 3 summarizes the results for selected parameters of the available data for monitoring wells MW-105S, MW-107S and other monitoring wells that will be part of the confirmation ground-water monitoring program. DOF (1995a and 1995b) provide a more complete data summary.

The results of analyses of samples from several of the monitoring wells obtained between January 1993 and February 1995 indicate the possible presence of diesel (carbon range C12 to C24) and heavy-oil range (carbon range >C24) hydrocarbons, carcinogenic polycyclic aromatic hydrocarbons (CPAHs) and polychlorinated biphenyls (PCBs). However, the variability in the analytical results for petroleum hydrocarbons (especially for MW-107S), and the solubility/migration characteristics of some of the reported constituents (i.e. PCBs, heavy-oil range hydrocarbons, and high molecular weight CPAHs) indicate that the sampling procedures may have affected the analytical results. Some of the samples sent to the laboratory were reportedly turbid. Because the reported constituents were detected in soil samples, the analytical results likely do not reflect the concentrations of dissolved constituents in ground water. PCBs and heavier oil hydrocarbons absorb onto soil particles and will be extracted from the particles during sample preparation, if present.

To test this finding, several monitoring wells (MW-103D, MW-105S, MW-107S(2), MW-108S, and MW-109S) were sampled using low flow/low turbidity sampling techniques. The results of this sampling are presented in Table 3 (DOF 1995b).

Field data collected in August 1995 is summarized in Table 4. Comparison of the low-flow ground-water quality data with the earlier data indicated that the earlier samples were likely influenced by sampling technique and do not represent the concentrations of the reported constituents that will migrate into the Snohomish River via ground-water flow. Similarly, the low flow ground-water data indicate that contaminants present in East Site soil have had less impact on ground-water quality as suggested by earlier data. As described below, low-flow sampling procedures are part of this monitoring program.

Parcel 4: In 1995 EMCON installed several temporary monitoring well points that were quickly sampled to screen for potential impacts to the lower sand zone. Heavy-oil range hydrocarbons and several metals were detected above cleanup levels specified in the Model Toxics Control Act (MTCA). However, the samples were very silty and likely were not representative of the actual conditions in ground water. Ecology requested that additional ground-water data be collected from the lower sand zone to further assess water quality conditions in this zone (DOF 1996b).

Three monitoring wells were installed at the locations shown on Figure 4 during August 1996 (DOF 1996b). The monitoring wells were sampled using low flow/low turbidity sampling procedures. Results of the analyses are summarized in Table 5. Concentrations of petroleum hydrocarbons and total metals (arsenic, cadmium, chromium, copper, mercury, lead and zinc) were well below cleanup levels presented in this plan or MTCA Method A or Method B ground-water cleanup levels.

Cleanup Levels and Cleanup Action Levels

The objective of ground-water quality monitoring at the site is to:

- Assess the performance of the remedy at the point of compliance.

Soil cleanup and cleanup action levels for the contaminants of concern identified in the CAP for Parcel 1 are summarized below. TPH is the contaminant of concern on Parcel 4. These are the highest soil concentrations that will remain on-site after soil remediation is completed, based on the available data.

Soil Cleanup Levels and Cleanup Action Levels

	Level (mg/kg)	Basis
Total Petroleum Hydrocarbons (TPH)	2,500	Protect Ground-Water Quality(1)
Pentachlorophenol (PCP)	280	Protect Ground-Water Quality(1)
Polychlorinated Biphenyls (PCBs)	17	Soil Ingestion (2)
Carcinogenic PAHs (CPAHs)	20	Soil Ingestion (2)

Notes: (1) Based on leaching tests.
(2) Based on MTCA Method C Industrial

- The soil cleanup action level for TPH is considered to be protective of ground-water quality but may not be protective of the soil contact/ingestion exposure pathway.

- The PCP soil cleanup level is considered to be protective of ground-water quality and the soil contact/ingestion exposure pathway. The MTCA Method C cleanup level for PCP in industrial soil is 1,090 mg/kg. It should be noted that the available data indicates that cleanup of TPH soils greater than 2,500 mg/kg will reduce PCP concentrations in soil to concentrations well below 280 mg/kg. Data from remediation area RA8-3 indicates that if soil containing TPH concentrations greater than 2,500 mg/kg is removed, the residual PCP concentrations will be less than 15 to 20 mg/kg, over 10 times lower than the PCP cleanup level (DOF 1996c). An additional ground water monitoring well will be installed downgradient of Area RA 8-3 to confirm ground water cleanup levels are met.

- The soil cleanup levels listed above for PCBs and CPAHs are considered protective of ground-water quality and the soil contact/ingestion exposure pathway. The low solubility/mobility characteristics of PCBs and CPAHs limit their potential to leach into ground water and migrate to the point of compliance. However, ground-water quality monitoring will be conducted for PCBs and CPAHs to confirm that the soil cleanup levels are protective of ground-water quality.

Ground-water cleanup levels for the contaminants of concern identified for Parcel 1 in the CAP are summarized below. TPH is the contaminant of concern in Parcel 4.

	Ground-Water Cleanup Levels	
	Level (mg/l)	**Basis**
Total Petroleum Hydrocarbons (TPH)	10	Ecology Guidance
Pentachlorophenol (PCP)	0.00729	MTCA Method C
Polychlorinated Biphenyls (PCBs)	0.000114	MTCA Method C
Carcinogenic PAHs (CPAHs)	0.00012	MTCA Method C

In addition to the ground-water constituents listed above, total arsenic concentrations will be monitored in Parcel 1 and 4 monitoring wells and, CPAHs, and total cadmium, copper, lead, mercury and zinc will be monitored in Parcel 4 monitoring wells. Cleanup levels are not presented for these constituents because they are being analyzed for assessment purposes only.

Point of Compliance

The ground water point of compliance is the property boundary adjacent to the Snohomish River (shown on Figure 2) consistent with the Consent Decree and CAP. However, the practical point of compliance will be at the locations of monitoring

wells situated approximately 15 to 20 feet on the landward side of the bulkhead or MHHW tide level.

Confirmation Monitoring Well Locations

Tables 6 and 7 list monitoring wells to be sampled as part of the ground water monitoring program. Figures 3 and 4 show their locations. Table 8 summarizes pertinent monitoring well construction data. Logs of the monitoring wells listed in Tables 6 and 7 are included in Appendix A. The monitoring wells are divided into several categories:

- Background or upgradient monitoring wells;
- Monitoring wells where the results of the sample analyses will be used to assess attainment of cleanup levels at the point of compliance;

Installation of New Monitoring Well

As part of the confirmation monitoring program, a new monitoring well will be installed downgradient of the RA8-3 area after remediation is completed. This monitoring well will be installed in the water table zone at the approximate location shown on Figure 3 in accordance with WAC 173-160. The final location of the monitoring well will be determined in the field based on the results of the RA8-3 remediation, in consultation with Ecology.

Ground-Water Monitoring Parameters

Field Parameters: During each sampling round, field measurements will be made for the following parameters:

- Monitoring well water levels;
- pH;
- Specific conductivity;
- Temperature;
- Dissolved oxygen; and
- Turbidity.

Laboratory Parameters and Analytical Methods. Laboratory measurements for the following parameters will be made. Sample containers, laboratory methods, cleanup levels, and analytical reporting limits are listed in Table 9.

<u>Parcel 1 - Laboratory Parameters</u>

- TPH - WTPH-D (extended);
- Pentachlorophenol

- Carcinogenic Polycyclic Aromatic Hydrocarbons (CPAHs);
- Polychlorinated Biphenyls; and
- Arsenic.

Parcel 4 - Laboratory Parameters

- TPH - WTPH-D(extended);
- Carcinogenic Polycyclic Aromatic Hydrocarbons (CPAHs);
- Total Arsenic, Cadmium, Copper, Lead, Mercury and Zinc.

Sampling Procedures: Low flow/low turbidity sampling procedures will be used to collect the samples as outlined below:

- A set of water level measurements will initially be made in the monitoring wells. Because of tidal variations, the measurements will be made in as short a time as practical. The measurements will be made using an electric water level sounder. The predicted tidal variation (Everett) will be reported with the water level data for the measurement period.

- The monitoring wells will be purged at a pumping rate of approximately 0.25 to 0.5 liters/minute to minimize turbidity using a peristaltic or submersible pump;

- During purging, field measurements will be made for pH, electrical conductivity, temperature, dissolved oxygen, and turbidity.

- When the field measurements stabilize to within 10%, samples will be placed in containers provided by the receiving laboratory. The goal of the sampling is to provide representative ground-water samples with turbidities less than 5 to 10 NTUs.

- The filled containers will be placed in chilled coolers for transport to the laboratory. Standard chain-of-custody procedures will be followed.

Field And Laboratory Quality Control (QC) Samples And Criteria

Field QC Samples. During the field sampling, samples for quality assurance/quality control purposes will be collected. These samples will include the following:

- At least one field duplicate and one rinsate blank (if a submersible pump is used) will be collected for analysis. A rinsate blank will not be

collected if a peristaltic pump is used because new tubing will be used at each monitoring well.

- One set of samples for matrix spike and matrix spike duplicates will be collected.

The duplicate sample will be collected at the same time as the other samples are collected. The rinsate sample will be collected by pumping deionized water through the decontaminated submersibe pump and collecting a sample of this water.

Laboratory Quality Assurance/Quality Control Criteria: Laboratory blanks, duplicates, matrix spike, and matrix spike duplicates will be analyzed on a frequency of 1 in 20 samples or per batch as summarized in attached Table 10. Table 10 also summarizes the organic surrogates, control limits and other criteria that will be used to assess the quality of the data.

Ground-Water Monitoring Schedule

Parcel 1: Table 6 lists the sampling schedule for individual monitoring wells located on Parcel 1 of the East Site. Sampling will be conducted on a quarterly basis (March, June, September and December) for a period of five years. Analysis of the various parameters will be completed on either a quarterly or annual basis as summarized in Table 6. If cleanup levels are achieved based on this data, sampling will end and the monitoring wells will be abandoned according to WAC 173-160. It should be noted that if there are any parameters found above detection levels for CPAH's or PCB's in any monitoring wells, then those monitoring wells will be sampled quarterly.

Parcel 4: Table 7 lists the sampling schedule for individual monitoring wells located on Parcel 4 of the East Site. Sampling will be conducted on a quarterly basis for one year after the petroleum contamination at location TP-16 is removed from the site. If cleanup levels are achieved based on this data, sampling will end and the monitoring wells will be abandoned according to WAC 173-160.

Ground-Water Quality Data Reporting and Evaluation

Ground-water quality data will be compiled and submitted to Ecology on a routine basis as the monitoring program progresses. Three types of reports will be submitted to Ecology according to the general schedule shown on Table 11. Descriptions of the monitoring reports are as follows:

- **Quarterly Monitoring Reports.** The quarterly reports will present a tabulation of the water level and water quality monitoring data and will provide a summary of the monitoring activities. The December quarterly report will be combined with the annual report (discussed below).

- **Annual Monitoring Reports**The annual monitoring reports will be submitted after the December sampling round is completed. The report will present a tabulation of the water level and water quality monitoring data, estimation of ground-water flow directions, and a written assessment/discussion of the results relative to cleanup levels.

- **Closure Reports.** After five-years for Parcel 1 and one-year for Parcel 4, a comprehensive review of the monitoring data will be made. The reviews will assess concentration trends and compliance with cleanup levels on a monitoring well-by-monitoring well basis. These assessments will be used by Weyerhaeuser and Ecology to determine the need, if any, for additional monitoring. If cleanup levels are achieved, the monitoring wells will be abandoned per terms of consent decree.

The monitoring reports will be submitted to Ecology within forty-five days of receiving data from the analytical laboratory. Data will also be submitted electronically (on computer disk) with a hard copy backup using the format outlined in Exhibit F of the Consent Decree.

Attainment Evaluation Procedures for Ground-Water Contaminants of Concern

Published guidance (Ecology 1992; 1993; 1995) provide procedures to evaluate whether contaminants of concern in ground water have attained cleanup levels. On Parcel 1 of the East Site, these contaminants include TPH, PCP, PCBs and CPAHs.

On Parcel 4 (South End Residual Wood Storage Site) wood chip and other materials are being removed. The contaminant of concern is TPH, although CPAHs and several metals are being analyzed for informational purposes. Initial sampling (DOF 1996a), completed prior to removal of the target materials, indicates that ground-water concentrations of analyzed parameters are below MTCA cleanup levels. Additional sampling is being conducted to confirm this preliminary finding.

Confirmation of Laboratory Analyses That Exceed Cleanup Levels. As each set of quarterly data is received from the laboratory, the sample concentrations will be compared to ground-water cleanup levels. If a sample result exceeds a cleanup level, available data will be reviewed to assess the cause of the exceedance. Possible causes that will be considered include high sample turbidity, laboratory error, etc. Within two weeks of receiving the laboratory data, the monitoring well in which the exceedance occurred will be resampled and an analysis will be made for the analyte that exceeded the cleanup level. If a false positive indication of contamination is found, that is the "resample" shows no confirmation of contamination above the cleanup level, and an error in sampling or laboratory procedures is suspected, then a brief summary discussing the problem will be submitted to Ecology along with both

sampling analytical data sets. The resample analytical results will be used to assess compliance with cleanup levels.

If, however, the "resample" analysis is above the cleanup level, then the exceedance will be confirmed.

Parcel 1 Evaluation Procedures

A two step approach will be used to evaluate whether ground water cleanup levels have been attained in Parcel 1 monitoring wells.

Step 1. An analysis will be completed to assess whether concentrations are changing with time. Concentration data will be plotted with time and a qualitative evaluation will be made as to whether concentrations are changing. If upward or downward trends are apparent in the data, regression analysis (EPA 1992; Ecology 1995) will be used to further assess whether the trends are actually present. Step 1 will provide data to assess whether concentration stability has been achieved.

Step 2. Ground water quality data will be compared to cleanup levels on a monitoring well by monitoring well basis at the end of the five year monitoring period as follows.

- If the last eight sample results are below cleanup levels and an upward trend is not evident in the data (based on Step 1), cleanup levels will have been achieved, additional monitoring will not be required and the monitoring wells will be abandoned, with Ecology approval.

- If one or more of the last eight sample concentrations are confirmed to be above cleanup levels, additional statistical analysis, appropriate to the data type (e.g. distribution, number of non-detects), will be performed. Guidance published by the Department of Ecology (Ecology 1992; 1993;1995) will be used. A confirmed sample analysis is one in which an analyte, upon resampling, still exceeds the cleanup level. Sampling of monitoring wells which meet cleanup levels will not be required and these monitoring wells will be abandoned. Analysis of analytes that meet cleanup levels in monitoring wells where one or more parameters exceed cleanup levels will not be required. The need for and duration of additional monitoring will be based on the results of the statistical analysis, number and magnitude of sample exceedances, and concentration trends.

Parcel 4 Evaluation Procedures

While wood chips and other materials are being removed from the site, only a limited amount of ground water quality data is currently available from recently installed monitoring wells. The ground water quality evaluation of Parcel 4 serves as both assessment and confirmational monitoring. Compliance guidance for remedial investigations is provided in Section A5.0 of Ecology (1995).

Compliance guidance for "Stage 2 monitoring" of remedial investigations will be used to evaluate attainment of cleanup levels on Parcel 4. This guidance is provided in Section A5.3 of Ecology (1995). At the end of one year, the results of five sampling rounds will be available (including the sampling completed in August 1996). The results of the sampling will be compared to cleanup levels presented in this plan (for TPH) and cleanup levels for CPAHs and metals under the MTCA. The data will be evaluated as follows:

- If the sample concentrations for analytes in the monitoring well samples are below cleanup levels, additional monitoring will not be required and the monitoring wells will be abandoned, with Ecology approval.

- If one or more of the sample concentrations are above cleanup levels, monitoring of the well and analyte that exceeded the cleanup level will continue in accordance with the procedures outlined for Parcel 1. Sampling of monitoring wells in which no exceedance of cleanup levels occurred will not be required. These monitoring wells will be maintained to allow measurement of well water levels.

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Hart Crowser, 1991, Phase 1c Site Characterization Report, Weyerhaeuser-Everett Mill E Site, Everett, Washington, March 26, 1991, J-2395-06.

Dalton, Olmsted & Fuglevand, Inc. *Environmental Consultants*

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MEMORANDUM

TO: Nadine Romero - Ecology

FROM: Matthew Dalton

DATE: February 3, 1997

SUBJECT: Tables, Figures and Appendix
East Site Ground-Water Plan

REF. NO: WEY-011-03

cc: Stuart Triolo - Weyerhaeuser Co.

Nadine:

Stuart asked me to submit the attached to you. Please let me know if you need anything else.

Matt

TABLE 1 - Summary of Ground-Water Zones

Weyerhaeuser East Site
Everett, Washington

Ground-Water Zone	Geologic Unit	Thickness (feet)	Description
Water Table Zone	Grade Fill/Mixed Fill Unit	1 to 4	Sandy gravel, asphalt, crushed rock, wood debris and bark
	Upper Sand	1 to 10	fine to medium, to fine to coarse SAND w/ trace coarse gravel
Upper Aquitard	Upper Silt Unit	4 to 12.5 (a)	Clayey SILT to silty CLAY w/ lenses of fine sand (<1"thick) and wood fragments and rootlets in upper portion
Lower Sand Zone	Lower Sand Unit	52 to 63(b)	Fine to coarse SAND w/ trace gravel and wood debris and thin silt lenses.
Lower Aquitard	Lower Silt	+2(c) 3(c)	Silty CLAY to clayey SILT w/ wood debris (MW-11D2) Sandy SILT (MW-23D2)
Deep Sand Zone	Deep Sand	+32(c)	Fine to medium SAND (MW-23D2)

(a) - Based on the logs of wells MW-100D, 103D, 105D, 108D, MW-SE-101, MW-SE-102, and MW-SE-103

(b) - Based on the logs of wells MW-11D2 and MW-24D2 located on Mill E.

(c) - Based on log of well MW-23D2 drilled to a depth of 99 feet on Mill E.

TABLE 2 - SUMMARY OF WATER LEVEL DATA

Well Number	Area	Stickup (feet)	Elev. Top PVC Casing (feet)	1-20-93			5-10-93			10-27-93		
				DTW-MP(feet)	Elev. (feet)	DTW-GR(feet)	DTW-MP(feet)	Elev. (feet)	DTW-GR(feet)	DTW-MP(feet)	Elev. (feet)	DTW-GR(feet)
Water Table Wells												
MW-100S(c)	8	2.2	11.91	7.73	4.18	5.5	7.64	4.27	5.4	9.20	2.71	7.0
MW-101S(c)	8	3.0	11.97	7.71	4.26	4.7	7.54	4.43	4.6	8.50	3.47	5.5
MW-102S	8	2.5	11.49	7.99	3.50	5.5	7.61	3.88	5.1	dry	dry	dry
MW-103S	8	3.0	14.01	11.05	2.96	8.0	10.92	3.09	7.9	dry	dry	dry
MW-104S	7	2.8	14.83	11.37	3.46	8.5	11.30	3.53	8.5	12.43	2.4	9.6
MW-105S	7	2.4	11.81	8.08	3.73	5.7	8.00	3.81	5.6	9.25	2.56	6.8
MW-106S	7	-0.1	8.66	3.25	5.41	3.4	3.05	5.61	3.2	3.75	4.91	3.9
MW-107S(a)	9	2.7	10.64	3.82	6.82	1.1	3.81	6.83	1.1	4.52	6.12	1.8
MW-107S(2)(c)	9	-0.2	7.74	na	na	na	na	na	na	na	na	na
MW-108S	10	2.8	11.15	4.63	6.52	1.9	4.67	6.48	1.9	5.14	6.01	2.4
MW-109S	10	-0.1	11.36	4.97	6.39	5.1	5.11	6.25	5.3	5.44	5.92	5.6
Lower Zone Wells												
MW-100D(c)	8	2.5	12.14	8.19	3.95	5.7	8.28	3.86	5.7	11.68	0.46	9.1
MW-103D	8	2.5	13.52	9.64	3.88	7.1	13.27	0.25	10.8	14.12	-0.6	11.6
MW-105D	8	2.5	12.19	8.44	3.75	6.0	13.93	-1.74	11.4	12.96	-0.77	10.5
MW-108D	10	2.4	10.88	6.35	4.53	4.0	7.58	3.30	5.2	9.16	1.72	6.8

(a) - MW-107S was abandoned and replaced on 10-28-94

(b) - MW-109S was measured on 2-14-95

(c) - Casing elevations changed and were resurveyed in February 1995 (see Table 7)

na - not available

DTW-MP - Depth to Water below Measuring Point (Top of PVC Casing)

DTW-GR - Depth to Water below Ground Level

TABLE 2 - SUMMARY OF WATER LEVEL DATA

Well Number	Area	Stickup (feet)	Elev. Top PVC Casing (feet)	2-16-94			9-20-94			1-31-95(b)		
				DTW-MP(feet)	Elev. (feet)	DTW-GR(feet)	DTW-MP(feet)	Elev. (feet)	DTW-GR(feet)	DTW-MP(feet)	Elev. (feet)	DTW-GR(feet)
Water Table Wells												
MW-100S(c)	8	2.2	11.91	7.90	4.01	5.7	9.12	2.79	6.9	4.43	7.48	2.2
MW-101S(c)	8	3.0	11.97	7.77	4.2	4.8	8.65	3.32	5.7	3.71	8.26	0.7
MW-102S	8	2.5	11.49	8.05	3.44	5.6	dry	dry	dry	7.36	4.13	4.9
MW-103S	8	3.0	14.01	11.26	2.75	8.3	dry	dry	dry	9.80	4.21	6.8
MW-104S	7	2.8	14.83	11.47	3.36	8.6	12.51	2.32	9.7	10.56	4.27	7.7
MW-105S	7	2.4	11.81	8.22	3.59	5.8	9.37	2.44	7.0	7.12	4.69	4.7
MW-106S	7	-0.1	8.66	3.20	5.46	3.3	3.89	4.77	4.0	2.49	6.17	2.6
MW-107S(a)	9	2.7	10.64	3.99	6.65	1.3	5.88	4.76	3.1	na	na	na
MW-107S(2)(c)	9	-0.2	7.74	na	na	na	na	na	na	0.46	7.28	0.7
MW-108S	10	2.8	11.15	4.89	6.26	2.1	6.69	4.46	3.9	4.69	6.46	1.9
MW-109S	10	-0.1	11.36	5.65	5.71	5.8	7.21	4.15	7.4	5.73	5.63	5.9
Lower Zone Wells												
MW-100D(c)	8	2.5	12.14	7.62	4.52	5.1	11.69	0.45	9.2	6.76	5.38	4.2
MW-103D	8	2.5	13.52	11.02	2.5	8.5	15.48	-1.96	13.0	11.35	2.17	8.8
MW-105D	8	2.5	12.19	11.83	0.36	9.3	10.47	1.72	8.0	10.11	2.08	7.6
MW-108D	10	2.4	10.88	8.93	1.95	6.6	9.13	1.75	6.8	7.21	3.67	4.8

(a) - MW-107S w (a) - MW-107S was abandoned and replaced on 10-28-94

(b) - MW-109S w (b) - MW-109S was measured on 2-14-95

(c) - Casing eleva (c) - Casing elevations changed and were resurveyed in February 1995 (see Table 7)

na - not available na - not available

DTW-MP - Dept DTW-MP - Depth to Water below Measuring Point (Top of PVC Casing)

DTW-GR - Dept DTW-GR - Depth to Water below Ground Level

TABLE 3 - Summary of Selected Ground-Water Quality Data

Sampling Date	Units	MW-103D 1/21/93	MW-103D 5/10/93	MW-103D 10/27/93	MW-103D 2-94	MW-103D 9-94	MW-103D 2/3/95	MW-103D 8/10/1995(2)	MW-105S 1/22/93	MW-105S 5/10/93	MW-105S 10/27/93	MW-105S 2-94	MW-105S 9-94
WTPH-D (1)													
Diesel Fuel Range	mg/l - ppm	0.5U	0.42	0.9	0.78	0.67	1.2	0.3	2	1U	0.87	1.3U	0.34
Motor Oil Range	mg/l - ppm	1	0.3	0.5U	0.45	0.35	0.74	0.21U	3	2U	1.5	2.1	0.37
PAHs (EPA 8310)													
Naphthalene	ug/l - ppb	10U	12U	13U	*	*	*	*	4	2	10	*	*
Acenaphthene	ug/l - ppb	10U	12U	12U	*	*	*	*	10U	12U	2	*	*
Fluorene	ug/l - ppb	10U	12U	12U	*	*	*	*	10U	12U	13U	*	*
Anthracene	ug/l - ppb	10U	12U	12U	*	*	*	*	10U	12U	13U	*	*
Fluoranthene	ug/l - ppb	10U	12U	13U	*	*	*	*	3	2	12	*	*
Pyrene	ug/l - ppb	10U	12U	12U	*	*	*	*	4	2	10	*	*
Benzo(a)Anthracene	ug/l - ppb	10U	12U	12U	*	*	*	*	1	12U	5	*	*
Chrysene	ug/l - ppb	10U	12U	12U	*	*	*	*	1	12U	4	*	*
Benzo(b)fluoranthene	ug/l - ppb	10U	12U	12U	*	*	*	*	2	12U	5	*	*
Benzo(k)fluoranthene	ug/l - ppb	10U	12U	13U	*	*	*	*	10U	12U	2	*	*
Benzo(a)pyrene	ug/l - ppb	10U	12U	12U	*	*	*	*	10U	12U	3	*	*
Dibenzo(a,h)anthracene	ug/l - ppb	10U	12U	13U	*	*	*	*	10U	12U	13U	*	*
Benzo(g,h,i)perylene	ug/l - ppb	10U	12U	13U	*	*	*	*	10U	12U	3	*	*
Indeno (1,2,3-cd)pyrene	ug/l - ppb	10U	12U	12U	*	*	*	*	10U	12U	3	*	*
PCBs (EPA 8081)													
PCB 1016	ug/l - ppb	*	*	*	*	*	*	*	1U	1U	1U	*	*
PCB 1221	ug/l - ppb	*	*	*	*	*	*	*	2.1U	2U	2U	*	*
PCB 1232	ug/l - ppb	*	*	*	*	*	*	*	1U	1U	1U	*	*
PCB 1242	ug/l - ppb	*	*	*	*	*	*	*	1U	1U	1U	*	*
PCB 1248	ug/l - ppb	*	*	*	*	*	*	*	1U	1U	1U	*	*
PCB 1254	ug/l - ppb	*	*	*	*	*	*	*	0.42	13	1U	*	*
PCB 1260	ug/l - ppb	*	*	*	*	*	*	*	1U	1U	1U	*	*

Notes: * - not analyzed

U - not detected at indicated detection limit

(1) - WTPH (extended) was completed using the same procedures as were used for the West Site.

The procedure incorporated a silica gel cleanup step.

(2) - Low flow/low turbidity sampling procedures were used to collect the August 1995 samples. Bailers were used to collect the earlier samples.

Source: DOF 1995b

TABLE 3 - Summary of Selected Ground-Water Quality Data

Sampling Date	MW-105S 2/3/95	MW-105S 8/10/1995(2)	MW-107S 1/21/93	MW-107S 5/11/93	MW-107S 10/28/93	MW-107S 2-94	MW-107S 9-94	MW-107S 2/3/95	MW-107S(2) 8/10/1995(2)	MW-108S 1/20/93	MW-108S 5/11/93	MW-108S 10/27/93
WTPH-D (1)												
Diesel Fuel Range	0.18	0.08U	20	1.9	1.5	8.6	1.3	2.4	0.1	0.5U	1U	0.13U
Motor Oil Range	0.39	0.21U	4	0.91	0.5U	5.7	0.64	0.74	0.21U	3	2U	0.5U
PAHs (EPA 8310)												
Naphthalene	*	0.0412	*	*	*	*	*	*	*	*	*	*
Acenaphthene	*	0.0208	*	*	*	*	*	*	*	*	*	*
Fluorene	*	0.0072	*	*	*	*	*	*	*	*	*	*
Anthracene	*	0.0026	*	*	*	*	*	*	*	*	*	*
Fluoranthene	*	0.011	*	*	*	*	*	*	*	*	*	*
Pyrene	*	0.0127	*	*	*	*	*	*	*	*	*	*
Benzo(a)Anthracene	*	0.0006U	*	*	*	*	*	*	*	*	*	*
Chrysene	*	0.0006U	*	*	*	*	*	*	*	*	*	*
Benzo(b)fluoranthene	*	0.0006	*	*	*	*	*	*	*	*	*	*
Benzo(k)fluoranthene	*	0.0004U	*	*	*	*	*	*	*	*	*	*
Benzo(a)pyrene	*	0.001	*	*	*	*	*	*	*	*	*	*
Dibenzo(a,h)anthracene	*	0.0025U	*	*	*	*	*	*	*	*	*	*
Benzo(g,h,i)perylene	*	0.001U	*	*	*	*	*	*	*	*	*	*
Indeno (1,2,3-cd)pyrene	*	0.0051U	*	*	*	*	*	*	*	*	*	*
PCBs (EPA 8081)												
PCB 1016	*	0.2U	*	*	*	*	*	*	*	*	*	*
PCB 1221	*	2.0U	*	*	*	*	*	*	*	*	*	*
PCB 1232	*	1.0U	*	*	*	*	*	*	*	*	*	*
PCB 1242	*	1.0U	*	*	*	*	*	*	*	*	*	*
PCB 1248	*	1.0U	*	*	*	*	*	*	*	*	*	*
PCB 1254	*	1.0U	*	*	*	*	*	*	*	*	*	*
PCB 1260	*	0.2U	*	*	*	*	*	*	*	*	*	*

Notes: * - not analyzed

U - not detected at indicated detection limit

(1) - WTPH (extended) was completed using the same procedures as were used for the West Site.
The procedure incorporated a silica gel cleanup step.

(2) - Low flow/low turbidity sampling procedures were used to collect the August 1995 samples. Bailers were used to collect the earlier samples.

Source: DOF 1995b

TABLE 3 - Summary of Selected Ground-Water Quality Data

Sampling Date	MW-108S 2-94	MW-108S 9-94	MW-108S 2/3/95	MW-108S 8/10/1995(2)	MW-109S 1/20/93	MW-109S 5/11/93	MW-109S 10/28/93	MW-109S 2-94	MW-109S 9-94	MW-109S 2/14/95	MW-109S 8/10/1995(2)
WTPH-D (1)											
Diesel Fuel Range	1.3U	0.13U	0.75	0.08U	0.5U	0.23	0.13U	4.2	0.21	0.67	0.08U
Motor Oil Range	2.6	0.25U	1.1	0.21U	2	0.77	0.5U	9	0.55	0.86	0.21U
PAHs (EPA 8310)											
Naphthalene	*	*	*	*	7	2	12U	*	*	*	*
Acenaphthene	*	*	*	*	10U	11U	12U	*	*	*	*
Fluorene	*	*	*	*	10U	11U	12U	*	*	*	*
Anthracene	*	*	*	*	10U	11U	12U	*	*	*	*
Fluoranthene	*	*	*	*	10U	11U	12U	*	*	*	*
Pyrene	*	*	*	*	10U	11U	12U	*	*	*	*
Benzo(a)Anthracene	*	*	*	*	10U	11U	12U	*	*	*	*
Chrysene	*	*	*	*	10U	11U	12U	*	*	*	*
Benzo(b)fluoranthene	*	*	*	*	10U	11U	12U	*	*	*	*
Benzo(k)fluoranthene	*	*	*	*	10U	11U	12U	*	*	*	*
Benzo(a)pyrene	*	*	*	*	10U	11U	12U	*	*	*	*
Dibenzo(a,h)anthracene	*	*	*	*	10U	11U	12U	*	*	*	*
Benzo(g,h,i)perylene	*	*	*	*	10U	11U	12U	*	*	*	*
Indeno (1,2,3-cd)pyrene	*	*	*	*	10U	11U	12U	*	*	*	*
PCBs (EPA 8081)											
PCB 1016	*	*	*	*	*	*	*	*	*	*	*
PCB 1221	*	*	*	*	*	*	*	*	*	*	*
PCB 1232	*	*	*	*	*	*	*	*	*	*	*
PCB 1242	*	*	*	*	*	*	*	*	*	*	*
PCB 1248	*	*	*	*	*	*	*	*	*	*	*
PCB 1254	*	*	*	*	*	*	*	*	*	*	*
PCB 1260	*	*	*	*	*	*	*	*	*	*	*

Notes: * - not analyzed

U - not detected at indicated detection limit

(1) - WTPH (extended) was completed using the same procedures as were used for the West Site.
The procedure incorporated a silica gel cleanup step.

(2) - Low flow/low turbidity sampling procedures were used to collect the August 1995 samples. Bailers were used to collect the earlier samples.

Source: DOF 1995b

TABLE 4 - Summary of Ground Water Sampling Field Data - August 1995

Weyerhaeuser East Site
Everett, Washington

Well Number	MW-103D	MW-105S	MW-107S(2)	MW-108S	MW-109S
Date Sampled	8/10/95	8/10/95	8/10/95	8/10/95	8/10/95
Water Level (feet below TOC)	11.8	8.85	1.58	5.3	6.29
Time	0752	1408	1206	1302	1026
pH	6.47	6.2	6.31	6.27	6.19
Temperature (C)	15.8	17.6	18.4	17.6	15.1
Electrical Conductivity (umhos/cm)	720	902	387	377	387
Turbidity (NTU)	1.6	4.3	4.3	2.8	3.8
Odor	none	none	none	none	none

Notes: Water levels were measured to a mark (MP) on top of the PVC casing.

Source: DOF 1995b

Table 5. Water Quality Summary - Lower Sand Unit - Monitoring Wells

Weyerhaeuser
South End Residual Wood Storage Site

	Well No.	MW-SE-101	MW-SE-102	MW-SE-103
	Well Point Screen Depth Interval (Ft.)	16.5 - 26.5	17.5-27.5	17.5-27.5
	Bottom of Upper Aquitard (Upper Silt Unit)	17	17.5	15.5
	Sampling Date	8/19/96	8/19/96	8/19/96
Analyte	Method			
TPH				
TPH as Diesel (mg/L)	WTPH-D Extended	<0.075	0.22	<0.075
TPH as Oil (mg/L)	WTPH-D Extended	<0.19	0.26	<0.19
Total Metals (ug/L)				
Arsenic	CEM RD42/200.9	<1	<1	<1
Cadmium	CEM RD42/200.9	<0.5	<0.5	<0.5
Chromium	CEM RD42/6010	<10	<10	<10
Copper	CEM RD42/6010	<10	<10	<10
Mercury	AMI-245.1	<0.2	<0.2	<0.2
Lead	CEM RD42/200.9	<1	<1	<1
Zinc	CEM RD42/6010	<10	<10	<10
Field Parameters at Time of Sampling				
Temperature (degrees C)	NA	14.2	14.6	12.0
pH	NA	6.6	6.6	6.6
Conductivity (umhos)	NA	970	3250	1530
Dissolved Oxygen (mg/l)	NA	0.4	1.4	3.2
Turbidity (NTUs)	NA	1.8	2.8	1.6

(<) = Below noted method reporting limits
NA = not applicable
Data from Weyerhaeuser Analytical and Testing Services
Source: DOF 1996

TABLE 6 - Water Quality Monitoring Schedule - Parcel 1

Weyerhaeuser East Site
Everett, Washington

Well Number	Screen Depth (feet)	Zone	Year 1					Year 2					Year 3				
			TPHs	Penta	CPAHs	PCBs	Total Arsenic	TPHs	Penta	CPAHs	PCBs	Total Arsenic	TPHs	Penta	CPAHs	PCBs	Total Arsenic
Background/Upgradient																	
MW-107S(2)	3-10	upper sand	Q	Q	Q	Q	Q	A	A	A	----	A	A	A	A	----	A
MW-108S	2-7	upper sand	Q	Q	Q	Q	Q	A	A	A	----	A	A	A	A	----	A
MW-108D	18-28	lower sand	Q	Q	Q	Q	Q	A	A	A	----	A	A	A	A	----	A
MW-109S	5-11	upper sand	Q	Q	Q	Q	Q	A	A	A	----	A	A	A	A	----	A
Site Confirmation Wells																	
MW-100S	5.5-10	upper sand	Q	Q	Q	Q	Q	Q	Q	A	----	A	Q	Q	A	----	A
MW-101S	2.5-6.5	upper sand	Q	Q	Q	Q	Q	Q	Q	A	----	A	Q	Q	A	----	A
MW-102S	3.5-6.75	upper sand	Q	Q	Q	Q	Q	Q	Q	A	A	A	Q	Q	A	A	A
MW-103S	4.5-8.75	upper sand	Q	Q	Q	Q	Q	Q	Q	A	A	A	Q	Q	A	A	A
MW-104S	5.5-10.5	upper sand	Q	Q	Q	Q	Q	Q	Q	A	A	A	Q	Q	A	A	A
MW-105S	3.5-7.5	upper sand	Q	Q	Q	Q	Q	Q	Q	A	A	A	Q	Q	A	A	A
A-RA8-3*	target 3-8	upper sand	Q	Q	Q	Q	Q	Q	Q	A	----	A	Q	Q	A	----	A
MW-100D	15.75-25	lower sand	Q	Q	Q	Q	Q	Q	Q	A	----	A	Q	Q	A	----	A
MW-103D	15-25	lower sand	Q	Q	Q	Q	Q	Q	Q	A	----	A	Q	Q	A	----	A
MW-105D	15-25	lower sand	Q	Q	Q	Q	Q	Q	Q	A	----	A	Q	Q	A	----	A

Well Number	Screen Depth (feet)	Zone	Year 4					Year 5				
			TPHs	Penta	CPAHs	PCBs	Total Arsenic	TPHs	Penta	CPAHs	PCBs	Total Arsenic
Background/Upgradient												
MW-107S(2)	3-10	upper sand	A	A	A	----	A	A	A	A	----	A
MW-108S	2-7	upper sand	A	A	A	----	A	A	A	A	----	A
MW-108D	18-28	lower sand	A	A	A	----	A	A	A	A	----	A
MW-109S	5-11	upper sand	A	A	A	----	A	A	A	A	----	A
Site Confirmation Wells												
MW-100S	5.5-10	upper sand	Q	Q	A	----	A	Q	Q	A	----	A
MW-101S	2.5-6.5	upper sand	Q	Q	A	----	A	Q	Q	A	----	A
MW-102S	3.5-6.75	upper sand	Q	Q	A	A	A	Q	Q	A	A	A
MW-103S	4.5-8.75	upper sand	Q	Q	A	A	A	Q	Q	A	A	A
MW-104S	5.5-10.5	upper sand	Q	Q	A	A	A	Q	Q	A	A	A
MW-105S	3.5-7.5	upper sand	Q	Q	A	A	A	Q	Q	A	A	A
A-RA8-3*	target 3-8	upper sand	Q	Q	A	----	A	Q	Q	A	----	A
MW-100D	15.75-25	lower sand	Q	Q	A	----	A	Q	Q	A	----	A
MW-103D	15-25	lower sand	Q	Q	A	----	A	Q	Q	A	----	A
MW-105D	15-25	lower sand	Q	Q	A	----	A	Q	Q	A	----	A

Notes: TPH - Petroleum Hydrocarbons
Penta - Pentachlorophenol
CPAHs - Carcinogenic Polycyclic Aromatic Hydrocarbons (WAC 173-340-200)
PCBs - Polychlorinated Biphenyls
Q - Quarterly sampling (March, June, September, December)
A - Annual sampling (March)
S - Upper Sand monitoring well
D - Lower Sand monitoring well
* - Proposed new well

TABLE 7 - Water Quality Monitoring Schedule - Parcel 4

Weyerhaeuser East Site
Everett, Washington

Well Number	Screen Depth (feet)	Zone	Year 1		
			TPHs	CPAHs	Total Metals
Background/Upgradient					
MW-SE-103	16.5-26.5	lower sand	Q	Q	Q
Site Confirmation Wells					
MW-SE-101	17.5-27.5	lower sand	Q	Q	Q
MW-SE-102	17.5-27.5	lower sand	Q	Q	Q

Notes: TPH - Petroleum Hydrocarbons
CPAHs - Carcinogenic Polycyclic Aromatic Hydrocarbons (WAC 173-340-200)
Total Metals - Arsenic, cadmium, copper, lead, mercury and zinc
Q - Quarterly sampling (March, June, Sept., Dec.) for one year after TP-16 area is remediated

TABLE 8 - SUMMARY OF WELL CONSTRUCTION DATA

Weyerhaeuser East Site
Everett, Washington

WELLS INSTALLED ON PARCELS 1 AND 2 (East Site)

Well Number	Area	Date Installed	Spl. Depth (feet-bgs)	Ground Elev. (feet)	Stickup (feet)	Filter Pack Interval (feet)	Screen Interval (feet)	Elev. Top PVC Casing (feet)
Water Table Wells								
MW-100S(b)	8	12-21-92	11.5	9.5	-0.3	3 - 11.5	5.5 - 10	9.21
MW-101S(b)	8	12-21-92	7.5	8.9	-0.4	2 - 7.5	2.5 - 6.5	8.47
MW-102S	8	12-22-92	7.0	9	2.5	2.5 - 7.5	3.5 - 6.75	11.49
MW-103S	8	12-22-92	9.5	11	3.0	3 - 9.5	4.5 - 8.75	14.01
MW-104S	7	12-23-92	11.5	12	2.8	4 - 11.5	5.5 - 10.5	14.83
MW-105S	7	12-23-92	7.5	9.4	2.4	2 - 7.5	3.5 - 7.5	11.81
MW-106S	7	12-28-92	6.5	8.8	-0.1	2.0 - 6.5	2.5 - 6.5	8.66
MW-107S(a)	9	12-28-92	6.0	7.9	2.7	2 - 6	2.5 - 6	10.64
MW-107S(2)(b)	9	10-28-94	10.5	7.9	-0.2	2.5 - 10.5	3 - 10	7.74
MW-108S	10	12-28-92	7.0	8.4	2.8	1.75 - 7	2 - 7	11.15
MW-109S	10	12-31-92	11.0	11.5	-0.1	3 - 11	5 - 11	11.36
Lower Zone Wells								
MW-100D(b)	8	12-21-92	24.0	9.5	-0.4	13 - 25	15.75 - 25	9.12
MW-103D	8	12-22-92	25.0	11	2.5	13 - 25	15 - 25	13.52
MW-105D	8	12-23-92	25.0	9.7	2.5	11.5 - 25	15 - 25	12.19
MW-108D	10	12-28-92	21.5	8.5	2.4	15 - 28	18 - 28	10.88

WELLS LOCATED ON PARCEL 4 (South End Residual Wood Storage Site)

Well Number	Area	Date Installed	Spl. Depth (feet-bgs)	Ground Elev. (feet)	Stickup (feet)	Filter Pack Interval (feet)	Screen Interval (feet)	Elev. Top PVC Casing (feet)
Lower Zone Wells								
MW-SE-101	(c)	8-14-96	27.0	13	2.2	16-26.5	16.5-26.5	15.18
MW-SE-102	(c)	8-14-96	27.5	15	1.9	16.5-26.5	17.5-27.5	16.85
MW-SE-103	(c)	8-15-96	27.5	13	2.2	15-27.5	17.5-27.5	15.19

(a) - MW-107S was abandoned and replaced on 10-28-94

(b) - Casing elevations changed and were resurveyed in February 1995.

(c) - South End Residual Wood Storage Site

TABEL 9 - WATER SAMPLE HANDLING REQUIREMENTS AND LABORATORY REPORTING LIMITS

Weyerhaeuser East Site
Everett, Washington

SAMPLE HANDLING REQUIREMENTS

Parameter	Method	Container Type/No.	Volume ml	Preservation	Maximum Holding Time
Petroleum Hydrocarbons	WTPH-DX	G**/2	500	Cool	7 days
Pentachlorophenol	EPA 8270	G**/2	1000	Cool	7 days
Carcinogenic PAHs	EPA 8310	G**/2	1000	Cool Store in dark	7 days until extraction 40 days after extraction
Polychlorinated Biphenyls	EPA 8081	G**/2	1000	Cool Store in dark	7 days until extraction 40 days after extraction
Metals	see below	P/1	500	HNO3:pH<2	6 months

Notes: G = Glass; P = Polyethylene
** - Amberglass bottle with teflon-lined cap
HNO3 - Nitric Acid

CLEANUP CRITERIA AND LABORATORY REPORTING LIMITS

Parameter	Method	Ground Water Cleanup Level	Reporting Limit
Petroleum Hydrocarbons(mg/l)	WTPH-DX	10	0.08*;0.2**
Pentachlorophenol (ug/l)	EPA 8270	7.29	5.0
Carcinogenic PAHs (ug/l)			
benzo(a)anthracene	EPA 8310	0.12	0.1
benzo(b)fluoranthene	EPA 8310	0.12	0.1
benzo(k)fluoranthene	EPA 8310	0.12	0.1
benzo(a)pyrene	EPA 8310	0.12	0.1
chrysene	EPA 8310	0.12	0.1
dibenzo(a,h)anthracene	EPA 8310	0.12	0.1
indeno(1,2,3-cd)pyrene	EPA 8310	0.12	0.1
Polychlorinated Biphenyls (ug/l)			
1016	EPA 8081	0.114	0.1
1221	EPA 8081	0.114	0.1
1232	EPA 8081	0.114	0.1
1242	EPA 8081	0.114	0.1
1248	EPA 8081	0.114	0.1
1254	EPA 8081	0.114	0.1
1260	EPA 8081	0.114	0.1
Metals (ug/l)			
Total Arsenic	CEM RD42/200.9	(a)	1
Total Cadmium	CEM RD42/200.9	(a)	0.5
Total Copper	CEM RD42/6010	(a)	10
Total Lead	CEM RD42/200.9	(a)	1
Total Mercury	AM1-245.1	(a)	0.2
Total Zinc	CEM RD42/6010	(a)	10

Notes: * - diesel range hydrocarbons
** - heavy-oil range hydrocarbons
(a) - Cleanup levels are not included in the Cleanup Action Plan - Analyses are being completed for information purposes.

TABLE 10 - LABORATORY QUALITY CONTROL INFORMATION

Weyerhaeuser East Site
Everett, Washington

Laboratory QC Summary for Data Review				
Method	Blanks	Duplicates	Spikes	LCSs
WTPH-DX	1 in 20	—	—	1 in 20
EPA 8270	1 in 20	—	MS/MSD 1 in 20 per	1 in 20
EPA 8310	1 in 20	—	MS/MSD 1 in 20 per	—
EPA 8081	1 in 20	—	matrix or per batch	—
Metals	1 in 20	1 in 20	MS 1 in 20 per matrix	1 in 20

Organic Analyses Surrogates			
Method	Matrix	Compound	Lower & Upper Control Limits (%)
WTPH-DX	water	O-Te-phenyl	50 - 150
EPA 8270	water	2,4,6 Tribromophenol	10 - 123
EPA 8310	water	2-Fluorobiphenyl	33-115
EPA 8081	water	tetrachloro-m-xylene	13-145

Organic Analyses, Matrix Spikes and Duplicates				
Method	Matrix	Compound	Matrix Spike Control Limits (%)	Duplicates RPD, %Max
EPA 8270	water	Pentachlorophenol	59 - 127	50
EPA 8310	water	Fluorene	38 - 126	42
		Chrysene	28 - 156	26
		Idenopyrene	32 - 134	28
EPA 8081	water	Aroclor 1260	44 - 134	50

Metals Analyses, Laboratory Control Sample and Duplicate Control Limits

Method	Matrix	Analyte	LCS Control Limits (%)	Duplicate RPD. %Max.
CEM RD42/200.9	water	Arsenic	80 - 120	20
CEM RD42/200.9	water	Cadmium	80 - 120	20
CEM RD42/6010	water	Copper	80 - 120	20
CEM RD42/200.9	water	Lead	80 - 120	20
AM1-245.1	water	Mercury	87 - 113	20
CEM RD42/6010	water	Zinc	80 - 120	20

TABLE 11 - Reporting Schedule

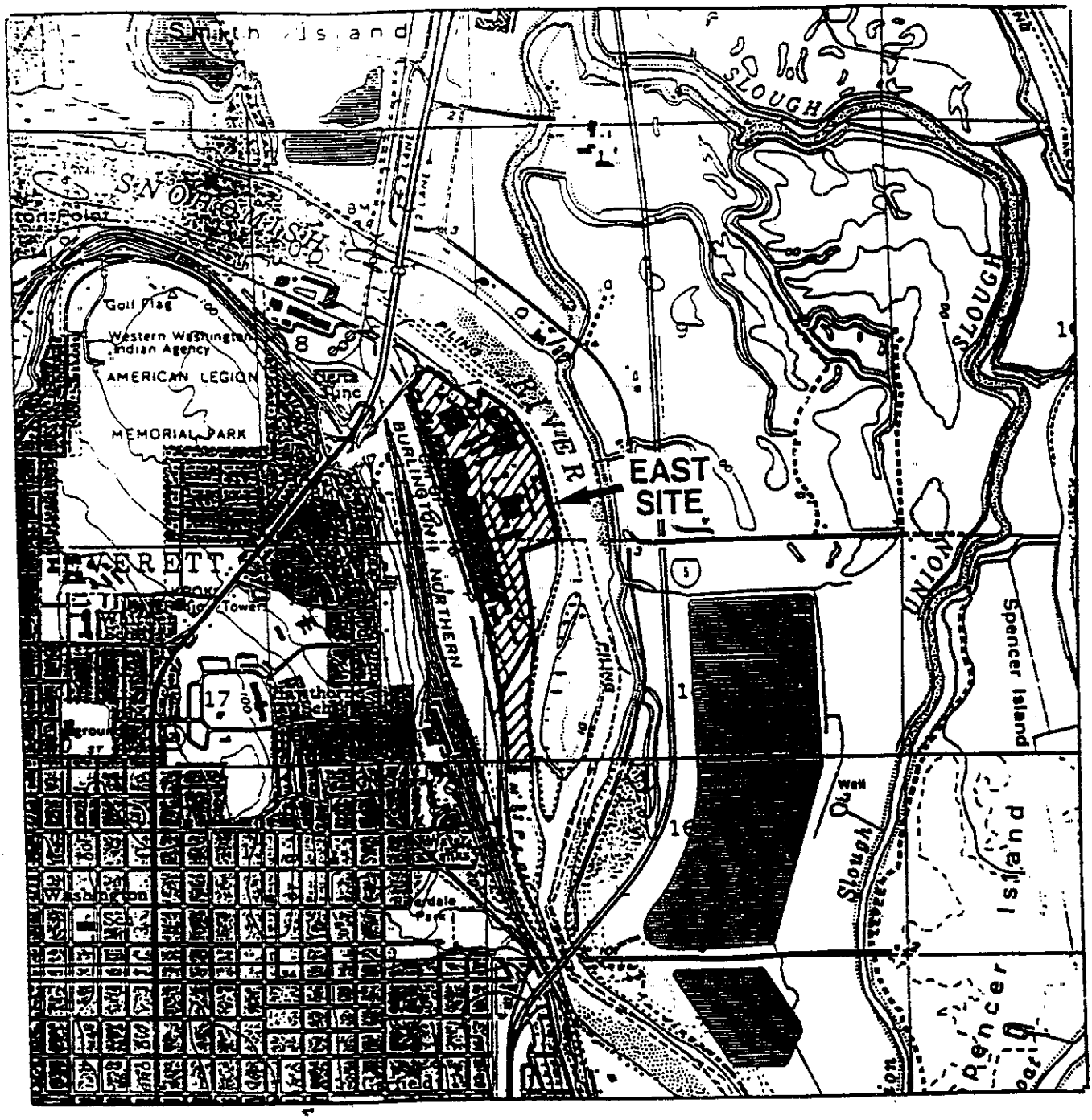
Reporting Schedule for Parcel 1

	Year 1				Year 2				Year 3			
Monitoring Period	March	June	September	December	March	June	September	December	March	June	September	December
Quarterly Reports	X	X	X	X	X	X	X	X	X	X	X	X
Annual Reports				X				X				X
Closure Report												

	Year 4				Year 5			
Monitoring Period	March	June	September	December	March	June	September	December
Quarterly Reports	X	X	X	X	X	X	X	X
Annual Reports				X				X
Closure Report								X

Reporting Schedule for Parcel 4

	Year 1			
Monitoring Period	March	June	September	December
Quarterly Reports	X	X	X	X
Annual Reports				X
Closure Report				X



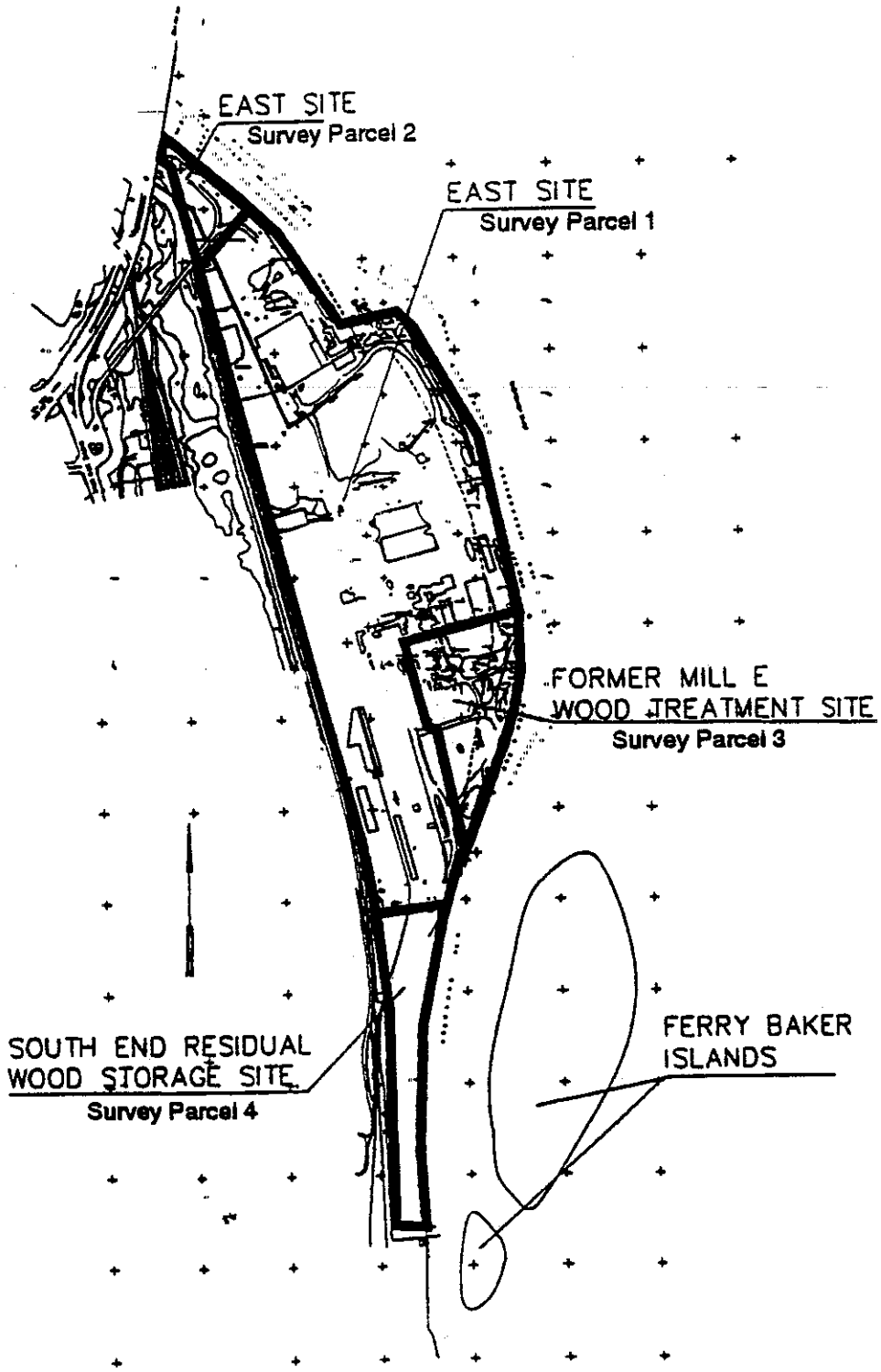
Weyerhaeuser East Site
Everett, Washington

SITE VICINITY MAP

WEY-011 **FIGURE 1** July 1995

Dalton, Olmsted & Fuglevand, Inc.

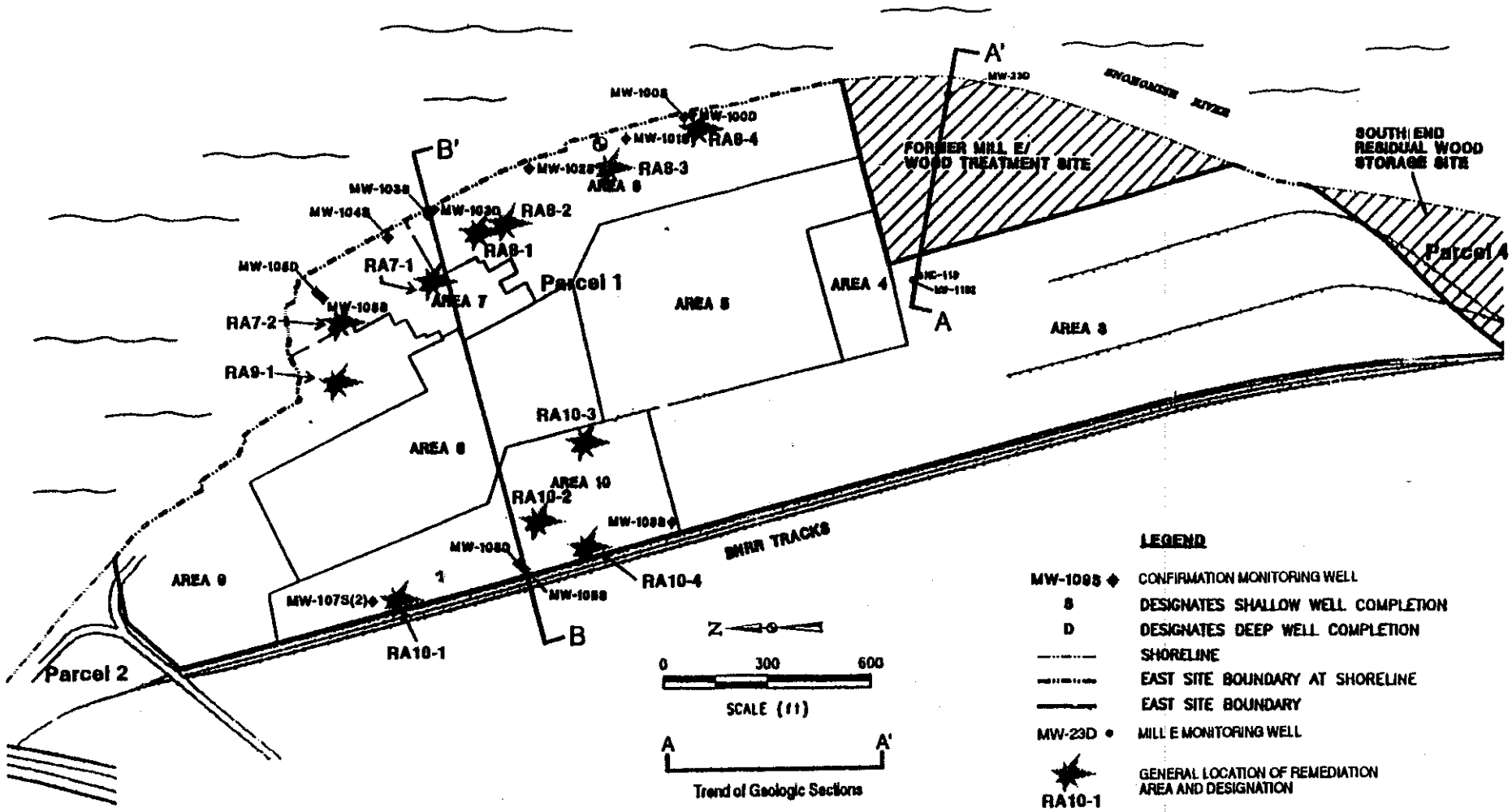
Figure based on Figure 1-1
EMCON (1995a)



Weyerhaeuser East Site
Everett, Washington

Survey Parcel Numbers

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



Weyerhaeuser East Site
Everett, Washington

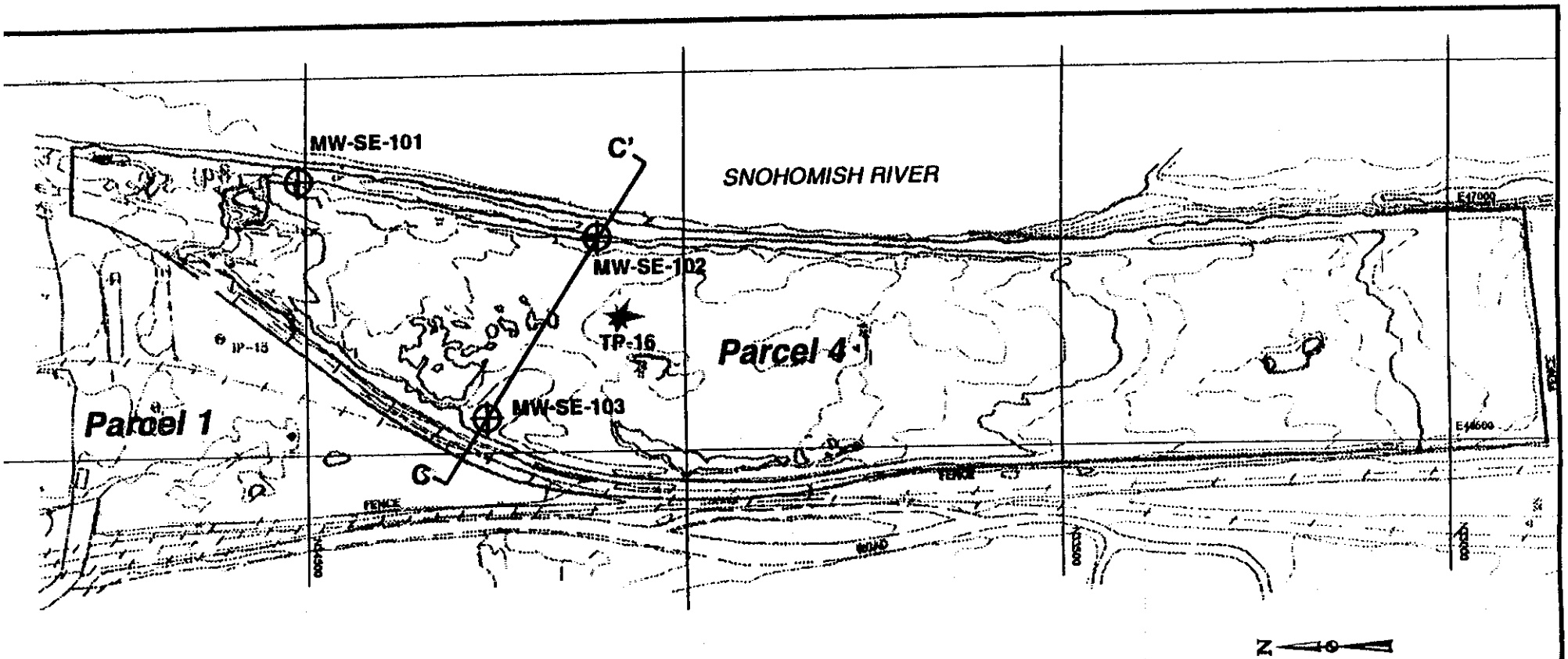
REMEDIATION AREAS AND CONFIRMATION WELL LOCATIONS PARCEL 1

WEY-011-03 **FIGURE 3** November 1996

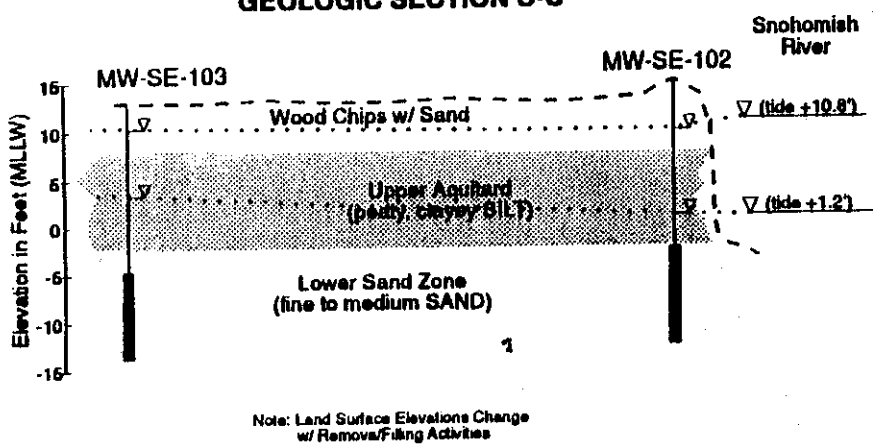
Dalton, Olmsted & Fuglevand, Inc.

Figure modified from Figure 1-2 (EMCON 1995a)

welloc2.cdr

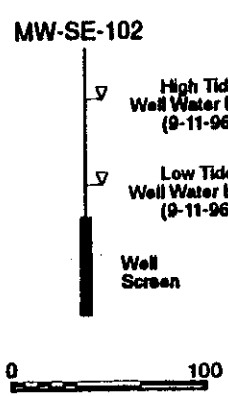


GEOLOGIC SECTION C-C'



Note: Land Surface Elevations Change w/ Removal/Filling Activities

Section Explanation



Plan Explanation

Remediation Area and Designation

Confirmation Well Location

C C'

Trend of Geologic Section C-C'

0 200 400

PLAN SCALE (ft)

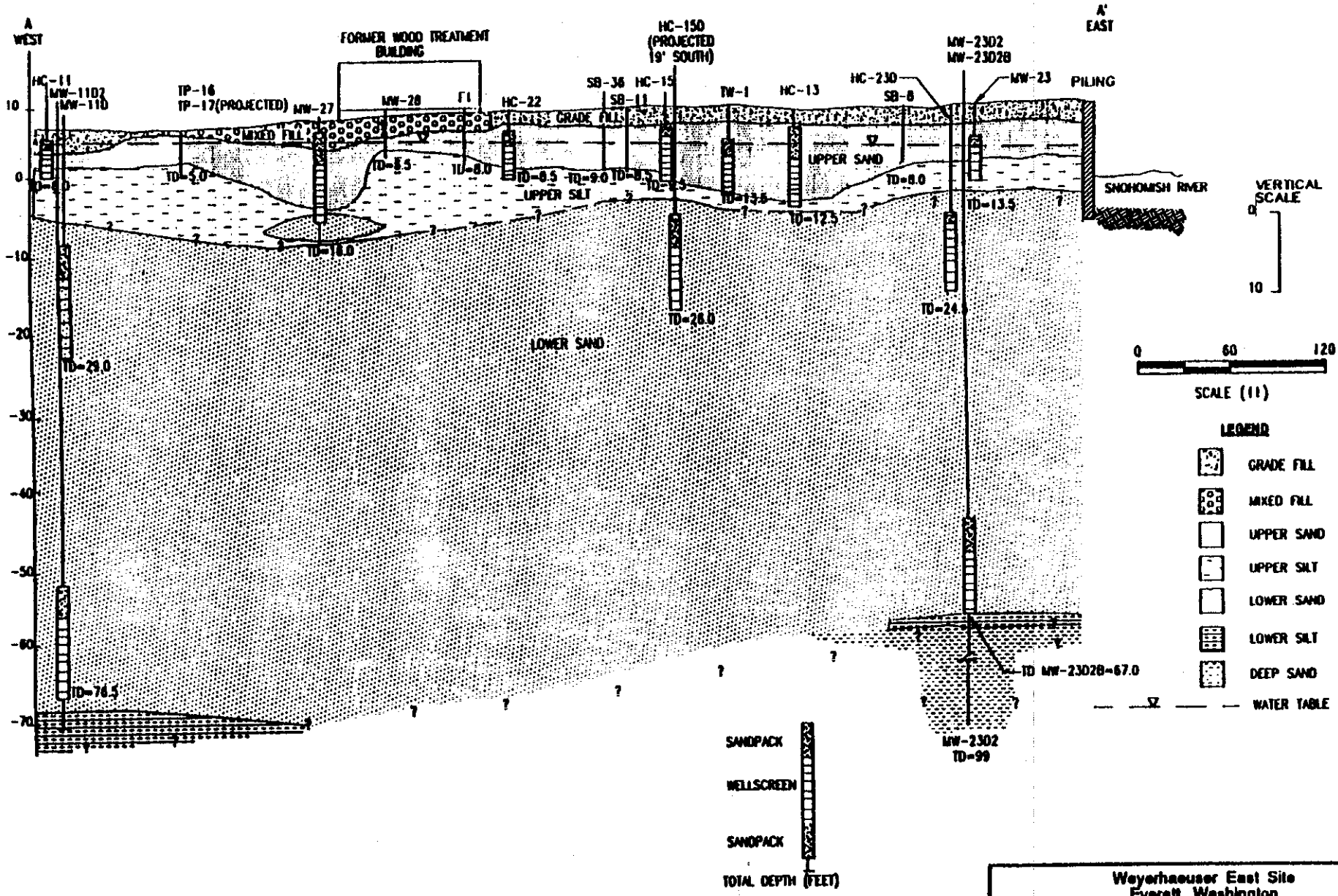
Weyerhaeuser Co.
South End Residual Wood Storage Site

Remediation Area, Confirmation Well Locations and Geologic Section C-C' - Parcel 4

WEY-011-03 **Figure 4** November 1996

Dalton, Olmsted & Fuglevand, Inc.

veloc1.cdr



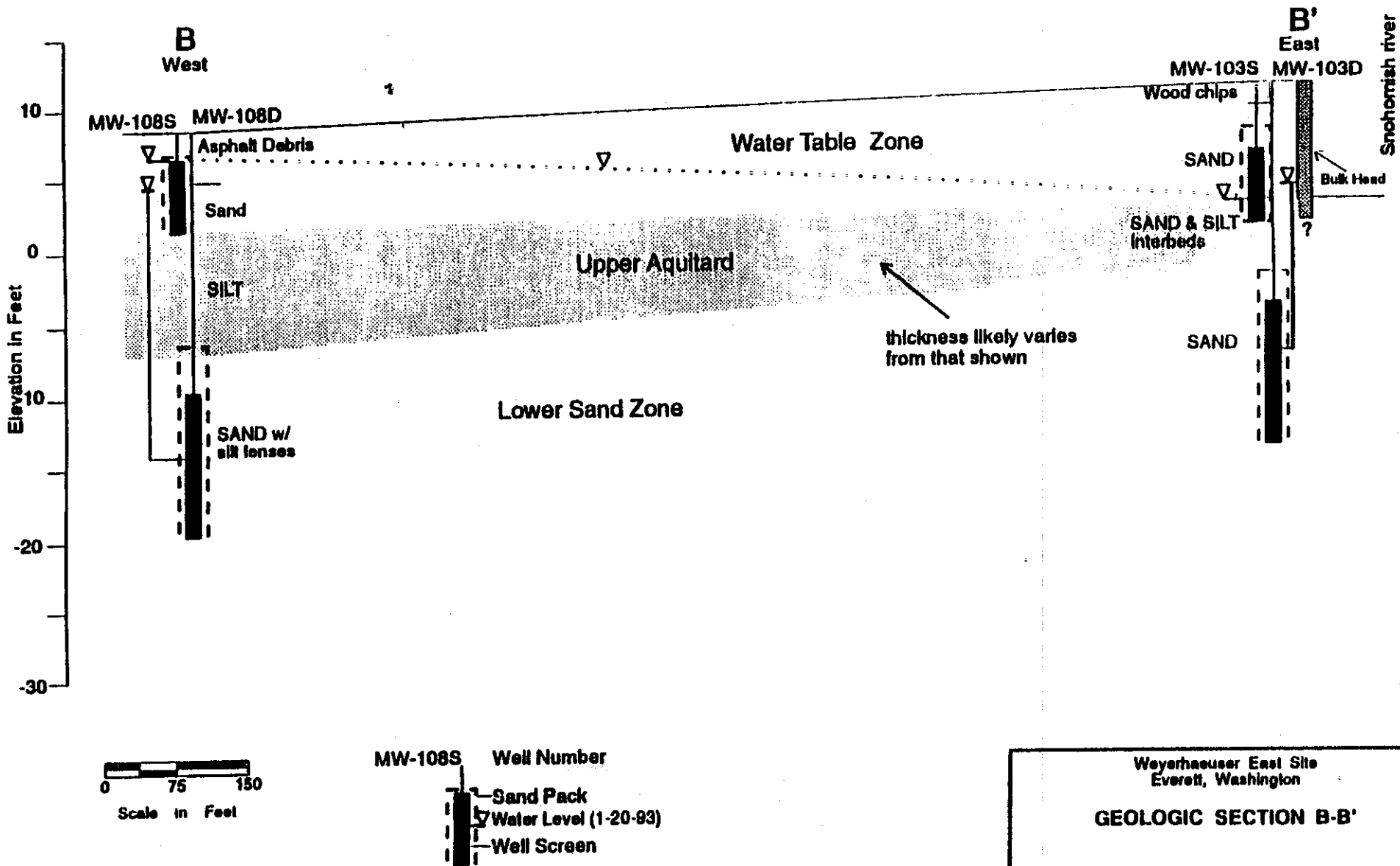
Based on Figure 2-4 (EMCON 1995a)

Weyerhaeuser East Site
Everett, Washington

Geologic Section A-A'

WEY-011 **FIGURE 5** July 1995

Dalton, Olmsted & Fuglevand, Inc.



Weyerhaeuser East Site
Everett, Washington

GEOLOGIC SECTION B-B'

WEY-011 FIGURE 6 July 1995

Dalton, Olmsted & Fuglevand, Inc.

APPENDIX A
WELL LOGS
WEYERHAEUSER EAST SITE

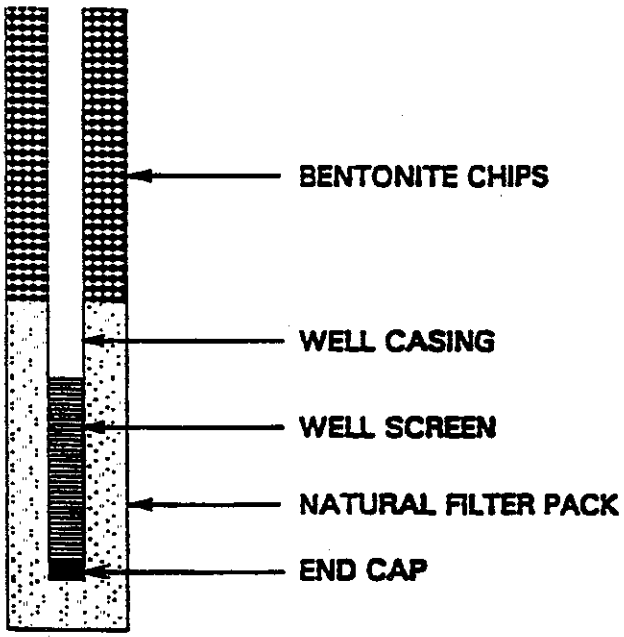
EXPLANATION OF SYMBOLS ON EXPLORATORY TEST PIT LOGS

EMCON Northwest

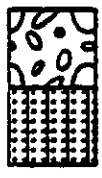
SAMPLE COLUMN

GRAB SAMPLE

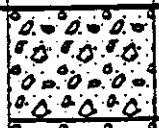
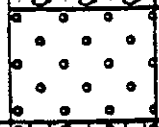
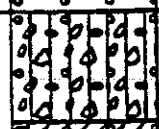
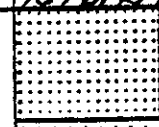
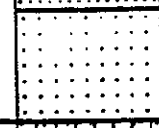
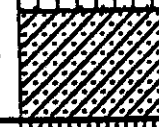
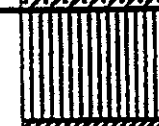
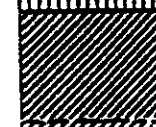
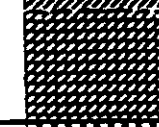
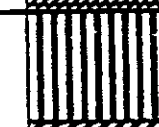
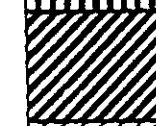
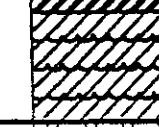
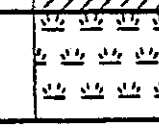
WELL DETAILS COLUMN



LITHOLOGIC COLUMN



SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS: GRAPH	SYMBOLS: LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS — MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS — LIQUID LIMIT LESS THAN 50			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS — LIQUID LIMIT GREATER THAN 50			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

LOG OF EXPLORATORY BORING

PROJECT NAME East Site Assessment
LOCATION Weyerhaeuser Everett East Site
DRILLED BY Geoboring
DRILL METHOD Hollow Stem Auger
LOGGED BY J. Swanson

BORING NO. MW-100S
PAGE 1 OF 1
GROUND ELEV. 9.70'
TOTAL DEPTH 11.50'
DATE COMPLETED 12/21/92

SAMPLING METHOD AND NUMBER	SAMPLE RECOVERY	BLOWS PER 6-INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
SS/S-1	14/18	6-8-9		5				0 to 0.8 foot: ASPHALT 0.8 to 10.0 feet: SAND (SP), gray to black, fine to coarse sand, trace fine gravel, medium dense, damp. From 1.5 to 1.7 feet: black, trace fines. @ 5.0 feet: dark brown to black cuttings, very loose, trace organic debris, wet.
SS/S-2	1/18	1-1-2	▽					@ 9.0 feet: approximately 6-inch-thick silt layer.
SS/S-3	8/18	0-0-2		10				10.0 to 11.5 feet: SILT (ML), gray brown, some organic matter, trace fine sand, very soft, medium plasticity. @ 11.3 feet: orange silt laminae, approximately 1-millimeter-thick.
				15				Total depth drilled = 10.0 feet. Total depth sampled = 11.5 feet. WELL COMPLETION DETAILS: +2.5 to 5.5 feet: 2-inch-diameter, flush threaded schedule 40 PVC blank riser pipe. 5.5 to 10.0 feet: 2-inch-diameter, flush threaded schedule 40 PVC well screen with 0.010-inch machined slots and a 2-inch-diameter threaded end cap. 0 to 0.5 foot: Concrete. 0.5 to 3.0 feet: Bentonite chips hydrated with potable water. 3.0 to 11.5 feet: 10 - 20 Colorado silica sand.
				20				

REMARKS

Drilled with a Mobile B-61 8-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke; well secured with an above ground security casing. SS = split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME East Site Assessment
LOCATION Weyerhaeuser Everett East Site
DRILLED BY Geoboring
DRILL METHOD Hollow Stem Auger
LOGGED BY J. Swanson

BORING NO. MW-100D
PAGE 1 OF 2
GROUND ELEV. 9.60'
TOTAL DEPTH 25.00'
DATE COMPLETED 12/21/92

SAMPLING METHOD AND NUMBER	SAMPLE RECOVERY	BLOWS PER 6-INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
								0 to 0.5 foot: ASPHALT DEBRIS
								0.5 to 7.5 feet: SAND (SW), brown, fine to coarse, sand, some fine to medium gravel, trace fines, medium dense, moist to damp, no noticeable odors.
SS/S-1		8-10-13						@ 3.0 feet: 1-inch-thick lens of coarse sand and fine gravel.
				5				
								7.5 to 7.8 feet: SILT (ML), brown.
SS/S-2		1-2-3						7.8 to 12.5 feet: CLAY (CL), gray to gray brown, trace organic mottles, sandy silt lenses less than 0.5-inch-thick, firm, plastic. From 8.0 to 8.3 feet: abundant wood debris.
				10				
SS/S-3	13/18	1-3-6						12.5 to 13.2 feet: SAND (SP), gray to gray brown, medium grained sand, trace fines, loose, trace woody debris, trace organic matter.
								13.2 to 17.5 feet: SANDY SILT WITH FINE SAND (ML), gray to gray brown, fine sand lenses less than 1-inch-thick, not plastic.
				15				
SS/S-4	17/18	3-5-11	▽					17.5 to 22.5 feet: SAND (SP), gray, fine to coarse, medium dense, wet.
								@ 17.9 feet: silt layer 1-inch-thick, brown, plastic, wet, gray brown, organic matter in sand, trace roots.
				20				

REMARKS

Drilled with a Mobile B-61 8-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke; well secured with an above ground security casing. SS = split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME East Site Assessment
LOCATION Weyerhaeuser Everett East Site
DRILLED BY Geoboring
DRILL METHOD Hollow Stem Auger
LOGGED BY J. Swanson

BORING NO. MW-100D
PAGE 2 OF 2
GROUND ELEV. 9.60'
TOTAL DEPTH 25.00'
DATE COMPLETED 12/21/92

SAMPLING METHOD AND NUMBER	SAMPLE RECOVERY	BLOWS PER 6-INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
								17.5 to 22.5 feet: SAND (SP), continued. @ 18.5 feet: sand coarsens to medium-coarse grained, trace gravel.
SS/S-5	17/18	5-15-16						22.5 to 25.0 feet: SAND (SW), gray, fine to medium sand, some fine gravel, trace fines, dense, wet, some wood debris at 23.5 feet, uniform appearance.
				25				Total depth drilled = 25.0 feet. Total depth sampled = 24.0 feet.
				30				WELL COMPLETION DETAILS: +3.0 to 15.75 feet: 2-inch-diameter, flush threaded schedule 40 PVC blank riser pipe. 15.75 to 25.0 feet: 2-inch-diameter, flush threaded schedule 40 PVC well screen with 0.010-inch machined slots and a 2-inch-diameter threaded end cap.
				35				0 to 1.0 foot: Concrete. 1.0 to 2.0 feet: 10 - 20 Colorado silica sand. 2.0 to 13.0 feet: Bentonite chips hydrated with potable water. 13.0 to 25.0 feet: 10 - 20 Colorado silica sand.
				40				

REMARKS

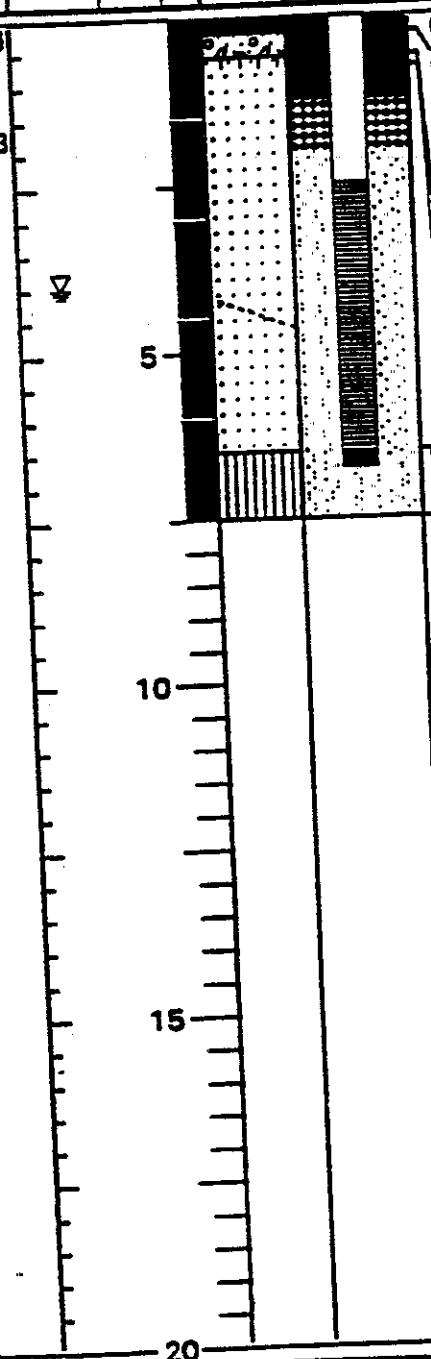
Drilled with a Mobile B-61 6-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke; well secured with an above ground security casing. SS = split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME East Site Assessment
LOCATION Weyerhaeuser Everett East Site
DRILLED BY Geoboring
DRILL METHOD Hollow Stem Auger
LOGGED BY J. Swanson

BORING NO. MW-101S
PAGE 1 OF 1
GROUND ELEV. 9.00'
TOTAL DEPTH 7.50'
DATE COMPLETED 12/21/92

SAMPLING METHOD AND NUMBER	SAMPLE RECOVERY	BLOWS PER 6-INCHES
SS/S-1	12/15	29-29-26
SS/S-2	12/18	10-16-13
SS/S-3	12/18	4-7-8
SS/S-4	9/18	3-3-4
SS/S-5	18/18	0-1-2



LITHOLOGIC DESCRIPTION

0 to 0.25 foot: ASPHALT

0.25 to 0.6 foot: GRAVEL (GW), gray to reddish-brown, fine to medium gravel, some sand. (FILL)
From 0.5 to 0.6 foot: ash, black, friable, trace gravel.

0.6 to 0.75 foot: SILTY SAND (SM), reddish-brown, fine to medium sand, trace coarse sand, damp.

0.75 to 6.5 feet: SAND (SP), gray-brown, fine to coarse, trace gravel, trace fines, damp.
From 1.5 to 6.0 feet: trace orange mottling, medium dense.
From 4.0 to 6.0 feet: becomes moist.
From 6.0 to 6.5 feet: becomes loose.

6.5 to 7.5 feet: SILT (ML), olive-brown, plastic, abundant wood chips and rootlets.

Total depth drilled = 7.5 feet.
Total depth sampled = 7.5 feet.

WELL COMPLETION DETAILS:
+2.5 to 2.5 feet: 2-inch-diameter, flush-threaded, schedule 40 PVC blank riser pipe.
2.5 to 6.5 feet: 2-inch-diameter, flush-threaded, schedule 40 PVC well screen with 0.010-inch machined slots and a 2-inch-diameter threaded end cap.

0 to 1.0 foot: Concrete
1.0 to 2.0 feet: Bentonite chips hydrated with potable water.
2.0 to 6.5 feet: 10 x 20 Colorado Silica Sand.

REMARKS

Drilled with a Mobile B-61 8-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke; well secured with an above ground security casing. SS = split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME East Site Assessment
LOCATION Weyerhaeuser Everett East Site
DRILLED BY Geoboring
DRILL METHOD Hollow Stem Auger
LOGGED BY J. Swanson

BORING NO. MW-102S
PAGE 1 OF 1
GROUND ELEV. 9.00'
TOTAL DEPTH 7.50'
DATE COMPLETED 12/22/92

SAMPLING METHOD AND NUMBER	SAMPLE RECOVERY	BLOWS PER 6-INCHES
SS/S-1	13/8	5-9-10
SS/S-2	12/18	5-10-7
SS/S-3	13/18	3-2-2
SS/S-4	11/18	1

GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOLOGIC COLUMN | WELL DETAILS

LITHOLOGIC DESCRIPTION

0 to 1.5 feet: WOOD CHIPS

1.5 to 6.0 feet: SAND (SP), brown to gray-brown, medium grained to fine grained, trace fines, trace fine gravel, medium dense, damp.

@ 4.5 feet: coarse sand increases and becomes very loose.
@ 5.0 feet: sand turns gray with iron staining apparent.

6.0 to 6.25 feet: SAND AND SILT (SM), very loose.

6.25 to 6.5 feet: SILT (ML), dark gray with abundant carbonized wood debris.

6.5 to 7.0 feet: SILT (ML), medium to olive gray, plastic.

Total depth drilled = 7.0 feet.
Total depth sampled = 7.0 feet.

WELL COMPLETION DETAILS:
+3.0 to 3.5 feet: 2-inch-diameter, flush threaded schedule 40 PVC blank riser pipe.
3.5 to 6.75 feet: 2-inch-diameter, flush threaded schedule 40 PVC well screen with 0.010-inch machined slots and a 2-inch-diameter slip end cap.

0 to 1.0 foot: Concrete.
1.0 to 2.5 feet: Bentonite chips hydrated with potable water.
2.5 to 7.5 feet: 10 - 20 Colorado silica sand.

5
10
15
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REMARKS

Drilled with a Mobile B-61 6-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke; well secured with an above ground security casing. SS = split spoon sampler.

EMCON Northwest, Inc.

0141-037.27,WEYEV,L4S/sc:4,10/12/94,,,WEYEV

LOG OF EXPLORATORY BORING

PROJECT NAME East Site Assessment
LOCATION Weyerhaeuser Everett East Site
DRILLED BY Geoboring
DRILL METHOD Hollow Stem Auger
LOGGED BY J. Swanson

Elev Top PVC - 14.01
Stickup - 3'

BORING NO. MW-103S
PAGE 1 OF 1
GROUND ELEV. 11.00'
TOTAL DEPTH 9.50'
DATE COMPLETED 12/22/92

SAMPLING METHOD AND NUMBER	SAMPLE RECOVERY	BLOWS PER 6-INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
								0 to 1.5 feet: WOOD CHIPS
								1.5 to 8.5 feet: SAND (SP), gray-brown, fine to coarse, medium dense, damp to moist.
SS/S-1	10/18	5-9-9		5				
SS/S-2	9/18	6-6-7						
SS/S-3	15/18	3-1-1	▼					From 8.0 to 8.5 feet: becomes wet.
								8.5 to 9.5 feet: SILT (ML), gray-brown to gray, soft, medium plastic, few wood chips.
				10				Total depth drilled = 9.5 feet. Total depth sampled = 9.5 feet.
				15				WELL COMPLETION DETAILS: +3.1 to 4.5 feet: 2-inch-diameter, flush threaded schedule 40 PVC blank riser pipe. 4.5 to 8.75 feet: 2-inch-diameter, flush threaded schedule 40 PVC well screen with 0.010-inch machined slots and a 2-inch-diameter slip end cap secured with stainless steel screws. 0 to 3.0 feet: Bentonite chips hydrated with potable water. 3.0 to 9.5 feet: 10 - 20 Colorado silica sand.
				20				

REMARKS

Drilled with a Mobile B-61 6-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke; well secured with an above ground security casing. SS = split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME East Site Assessment
LOCATION Weyerhaeuser Everett East Site
DRILLED BY Geoboring
DRILL METHOD Hollow Stem Auger
LOGGED BY J. Swanson

Elev. Top PVC = 13.52
Stickup. - 2.5'

BORING NO. MW-103D
PAGE 1 OF 2
GROUND ELEV. 11.00'
TOTAL DEPTH 25.00'
DATE COMPLETED 12/22/92

SAMPLING METHOD AND NUMBER	SAMPLE RECOVERY	BLOWS PER 6-INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
								0 to 1.5 feet: WOOD CHIPS
SS/S-1	8/18	4-6-18						1.5 to 6.5 feet: SAND (SP), black, medium to fine grained, trace gravel, medium dense, moist, wood chips present.
SS/S-2	7/18	4-5-7		5				6.5 to 8.0 feet: SAND (SP), gray, fine to coarse grained, medium dense, damp.
			▽					8.0 to 11.5 feet: SAND AND SILT INTERBEDS (SP-SM?)
SS/S-3	18/18	4-7-11		10				11.5 to 12.0 feet: SAND (SP), gray, medium to fine, medium dense, wet, trace iron-stained grains.
								12.0 to 12.3 feet: SILT (ML), gray, plastic, some wood chips.
				15				12.3 to 25.0 feet: SAND (SP), gray, fine to coarse, dense, wet with trace wood.
								@ 12.3 feet: trace coarse sand.
								From 12.5 to 13.0 feet: saturated.
SS/S-4		5-11-25						
				20				

REMARKS

Drilled with a Mobile B-61 6-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke; well secured with an above ground security casing. SS = split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME East Site Assessment
LOCATION Weyerhaeuser Everett East Site
DRILLED BY Geoboring
DRILL METHOD Hollow Stem Auger
LOGGED BY J. Swanson

BORING NO. MW-103D
PAGE 2 OF 2
GROUND ELEV. 11.00'
TOTAL DEPTH 25.00'
DATE COMPLETED 12/22/92

SAMPLING METHOD AND NUMBER	SAMPLE RECOVERY	BLOWS PER 6-INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
SS/S-5	5/18	8-14-14		25				12.3 to 25.0 feet: SAND (SP), gray, fine to coarse, dense, wet with trace wood.
				30				Total depth drilled = 25.0 feet. Total depth sampled = 25.0 feet. WELL COMPLETION DETAILS: +2.7 to 15.0 feet: 2-inch-diameter, flush threaded schedule 40 PVC blank riser pipe. 15.0 to 25.0 feet: 2-inch-diameter, flush threaded schedule 40 PVC well screen with 0.010-inch machined slots and a 2-inch-diameter threaded end cap. 0 to 1.0 feet: Concrete. 1.0 to 13.0 feet: Bentonite chips hydrated with potable water. 13.0 to 25.0 feet: 10 - 20 Colorado silica sand.
				35				
				40				

REMARKS

Drilled with a Mobile B-61 6-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke; well secured with an above ground security casing. SS = split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME East Site Assessment
LOCATION Weyerhaeuser Everett East Site
DRILLED BY Geoboring
DRILL METHOD Hollow Stem Auger
LOGGED BY J. Swanson

BORING NO. MW-104S
PAGE 1 OF 2
GROUND ELEV. 12.00'
TOTAL DEPTH 11.50'
DATE COMPLETED 12/23/92

SAMPLING METHOD AND NUMBER	SAMPLE RECOVERY	BLOWS PER 6-INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
								0 to 2.5 feet: WOOD CHIPS
SS/MW-104A-1292	10/18	7-20-25						2.5 to 10.5 feet: SAND (SP), black to olive green gray, fine to medium grained, some fines, dense, damp, abundant wood chips. From 2.7 to 3.2 feet: sandy gravel (GW), fine to medium, some fine to coarse sand, trace fines, damp, some wood chips. From 3.2 to 7.0 feet: medium grained, green-gray, trace fine gravel, trace fines, damp.
SS/S-2	9/18	5-8-11		5				From 7.0 to 8.4 feet: brown gray, fine to coarse sand, trace fines, moist.
SS/S-3	10/18	5-7-7						From 8.4 to 9.0 feet: green-gray, medium grained, trace fine grained, trace coarse grained, trace iron-stained grains, damp.
SS/S-4	10/18	2-2-2		10				From 9.0 to 10.0 feet: gray, medium to fine grained, iron-stained, trace fines (zone of continuous saturation), wet. From 10.0 to 10.5 feet: gray, fine to coarse, trace fine gravel, wet.
								10.5 to 11.5 feet: SILT (ML), gray-brown, plastic, abundant wood chips, trace fine sand.
								Total depth drilled = 11.5 feet. Total depth sampled = 11.5 feet.
				15				
				20				

See Page 2 for Well Completion Details.

REMARKS

Drilled with a Mobile B-61 8-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke; well secured with an above ground security casing. SS = split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	East Site Assessment	BORING NO.	MW-104S
LOCATION	Weyerhaeuser Everett East Site	PAGE	2 OF 2
DRILLED BY	Geoboring	GROUND ELEV.	12.00'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	11.50'
LOGGED BY	J. Swanson	DATE COMPLETED	12/23/92

SAMPLING METHOD AND NUMBER	SAMPLE RECOVERY	BLOWS PER 6-INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
				25				**WELL COMPLETION DETAILS:** +3.0 to 5.5 feet: 2-inch-diameter, flush threaded schedule 40 PVC blank riser pipe. 5.5 to 10.5 feet: 2-inch-diameter, flush threaded schedule 40 PVC well screen with 0.010-inch machined slots and a 2-inch-diameter threaded end cap. 0 to 0.7 foot: Concrete. 0.7 to 4.0 feet: Bentonite chips hydrated with potable water. 4.0 to 10.5 feet: 10 - 20 Colorado silica sand.
				30				
				35				
				40				

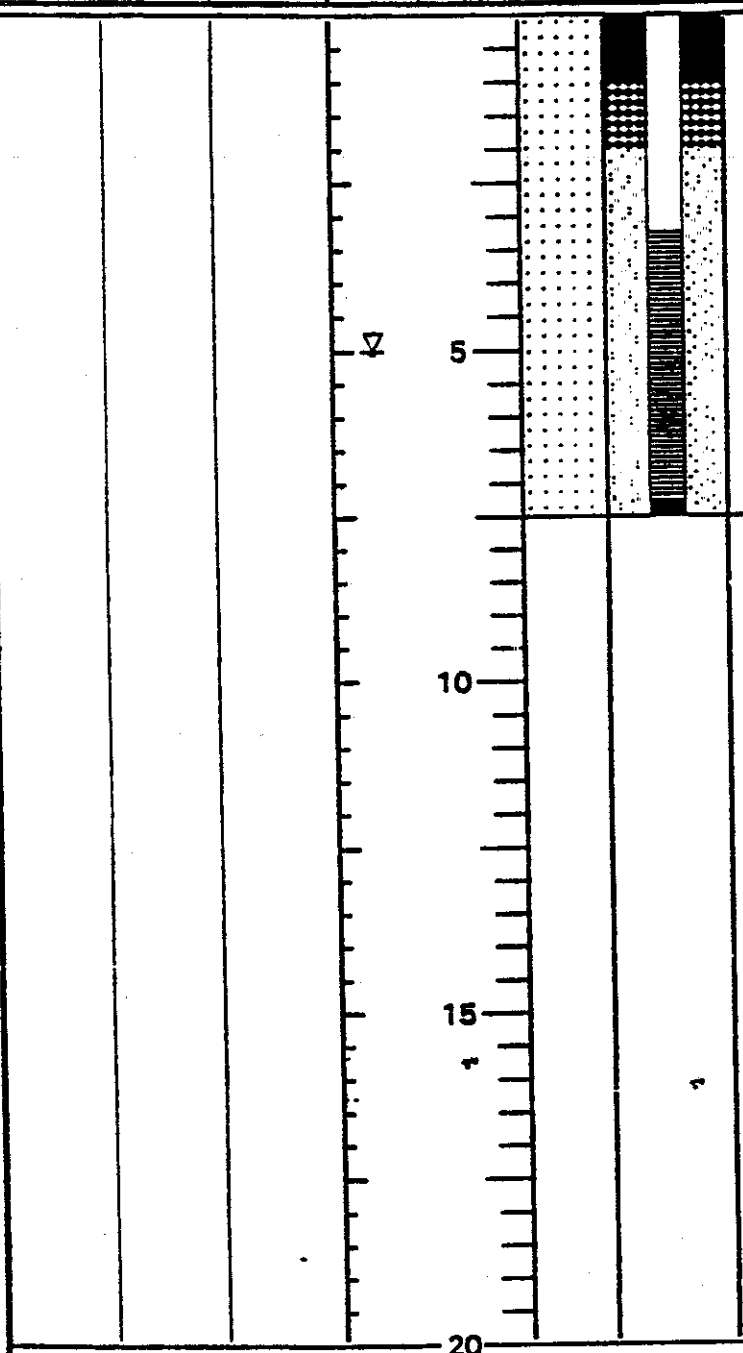
REMARKS

Drilled with a Mobile B-61 8-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke; well secured with an above ground security casing. SS = split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	East Site Assessment	BORING NO.	MW-105S
LOCATION	Weyerhaeuser Everett East Site	PAGE	1 OF 1
DRILLED BY	Geoboring	GROUND ELEV.	9.40'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	7.50'
LOGGED BY	J. Swanson	DATE COMPLETED	12/23/92

SAMPLING METHOD AND NUMBER	SAMPLE RECOVERY	BLOWS PER 6-INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION



0 to 7.5 feet: SAND (SP), brown-gray, fine to medium, damp, abundant pipes, plastic, wood, and brick debris.

Total depth drilled = 7.5 feet.
Total depth sampled = 7.5 feet.

WELL COMPLETION DETAILS:

+2.4 to 3.5 feet: 2-inch-diameter, flush threaded schedule 40 PVC blank riser pipe.

3.5 to 7.5 feet: 2-inch-diameter, flush threaded schedule 40 PVC well screen with 0.010-inch machined slots and a 2-inch-diameter slip end cap secured with stainless steel screws.

0 to 1.0 foot: Concrete.

1.0 to 2.0 feet: Bentonite chips hydrated with potable water.

2.0 to 7.5 feet: 10 - 20 Colorado silica sand.

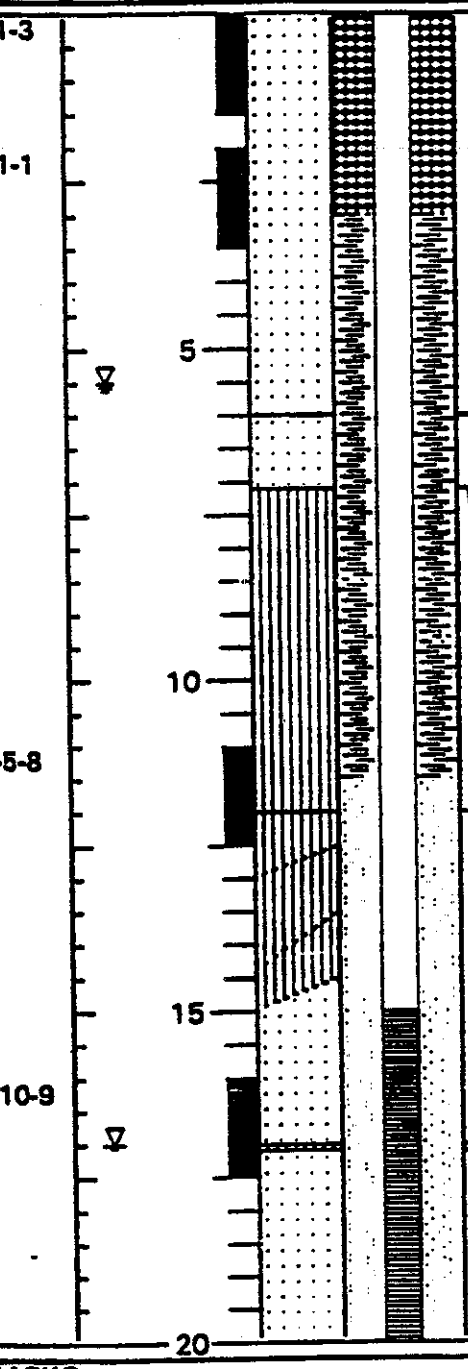
REMARKS

Drilled with a Mobile B-61 6-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke; well secured with an above ground security casing. SS = split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	East Site Assessment	BORING NO.	MW-105D
LOCATION	Weyerhaeuser Everett East Site	PAGE	1 OF 2
DRILLED BY	Geoboring	GROUND ELEV.	9.70'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	25.00'
LOGGED BY	J. Swanson	DATE COMPLETED	12/23/92

SAMPLING METHOD AND NUMBER	SAMPLE RECOVERY	BLOWS PER 6-INCHES	LITHOLOGIC DESCRIPTION
SS/MW-105D-1292	10/18	1-1-3	0 to 6.0 feet: SAND (SP), brown-gray, fine to medium grained, trace fines, abundant wood chips/roots, trace coarse sand, trace coarse gravel, moist.
SS/S-2	18/18	2-1-1	
			6.0 to 7.1 feet: SAND (SP), green-gray, fine to medium, trace fine gravel, trace fines, soft, damp, abundant wood chips.
			From 6.5 to 6.6 feet: SILT, brown-gray, high plasticity, abundant wood chips.
			7.1 to 12.0 feet: SILT (ML), brown-gray, high plasticity, stiff, damp, abundant wood chips.
SS/S-3	18/18	5-5-8	@ 11.0 feet: silt becomes gray.
			12.0 to 17.0 feet: SAND (SP), gray, medium grained to coarse sand, trace fines, medium dense, damp.
			@ 12.0 feet: wood chip with creosote-like odor (old piling?)
			From 12.0 to 12.2 feet: iron-stained.
SS/S-4	18/18	8-10-9	From 16.8 to 16.9 feet: coarse grained sand lens.
			17.0 to 17.1 feet: SILT (ML), gray, abundant wood debris, high plasticity.
			17.1 to 25.0 feet: SAND (SP), gray, fine to coarse, trace fines, dense, wet.



REMARKS

Drilled with a Mobile B-61 8-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke; well secured with an above ground security casing. SS = split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	East Site Assessment	BORING NO.	MW-105D
LOCATION	Weyerhaeuser Everett East Site	PAGE	2 OF 2
DRILLED BY	Geoboring	GROUND ELEV.	9.70'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	25.00'
LOGGED BY	J. Swanson	DATE COMPLETED	12/23/92

SAMPLING METHOD AND NUMBER	SAMPLE RECOVERY	BLOWS PER 6-INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
SS/S-5	12/18	7-17-25		25				17.1 to 25.0 feet: SAND (SP), continued. @ 21.0 feet: increasing fine, decreasing medium sand. From 22.0 to 22.1 feet: SILT, gray, abundant wood debris, high plasticity.
								Total depth drilled = 25.0 feet. Total depth sampled = 25.0 feet. WELL COMPLETION DETAILS: +3.25 to 15.0 feet: 2-inch-diameter, flush threaded schedule 40 PVC blank riser pipe. 15.0 to 25.0 feet: 2-inch-diameter, flush threaded schedule 40 PVC well screen with 0.010-inch machined slots and a 2-inch-diameter threaded end cap. 0 to 1.0 foot: Cement. 1.0 to 3.0 feet: Bentonite chips hydrated with potable water. 3.0 to 11.5 feet: Bentonite cement grout. 11.5 to 25.0 feet: 10 - 20 Colorado silica sand.
				30				
				35				
				40				

REMARKS

Drilled with a Mobile B-61 8-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke; well secured with an above ground security casing. SS = split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	East Site Assessment	BORING NO.	MW-107S
LOCATION	Weyerhaeuser Everett East Site	PAGE	1 OF 1
DRILLED BY	Geoboring	GROUND ELEV.	7.90'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	6.00'
LOGGED BY	J. Swanson	DATE COMPLETED	12/28/92

SAMPLING METHOD AND NUMBER	SAMPLE RECOVERY	BLOWS PER 6-INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
SS/S-1	14/18	11-8						0 to 0.5 foot: SILT, GRAVEL, AND SAND (GM-SW)
								0.5 to 0.6 feet: WOOD WASTE.
								0.6 to 3.0 feet: SAND (SP), light gray, fine to medium, some gravel, some fines, medium dense, damp, petroleum-like odor.
SS/S-2	12/18	4-10-7						3.0 to 4.2 feet: SAND (SP), light gray, fine grained, trace medium grained, some gravel, some fines, some wood debris, damp.
SS/S-3	18/18	5-3-6						@ 3.7 feet: wet.
								4.2 to 5.9 feet: SAND (SP), black, fine to coarse sand, medium dense, wet, visible product, some wood debris.
								From 4.5 to 5.9 feet: SAND (SP), fine to coarse, hydrocarbon-like odor.
								5.9 to 6.0 feet: SILT (ML), brown gray at 5.9 to 5.95 feet, gray at 5.95 to 6.0 feet, high plasticity, some organic material.
				10				Total depth drilled = 6.0 feet.
								Total depth sampled = 6.0 feet.
				15				WELL COMPLETION DETAILS:
								+3.0 to 2.5 feet: 2-inch-diameter, flush threaded schedule 40 PVC blank riser pipe.
								2.5 to 6.0 feet: 2-inch-diameter, flush threaded schedule 40 PVC well screen with 0.010-inch machined slots and a 2-inch-diameter slip end cap secured with stainless steel screws.
								0 to 1.0 feet: Concrete.
								1.0 to 2.0 feet: Bentonite chips hydrated with potable water.
								2.0 to 6.0 feet: 10 - 20 Colorado silica sand.
				20				

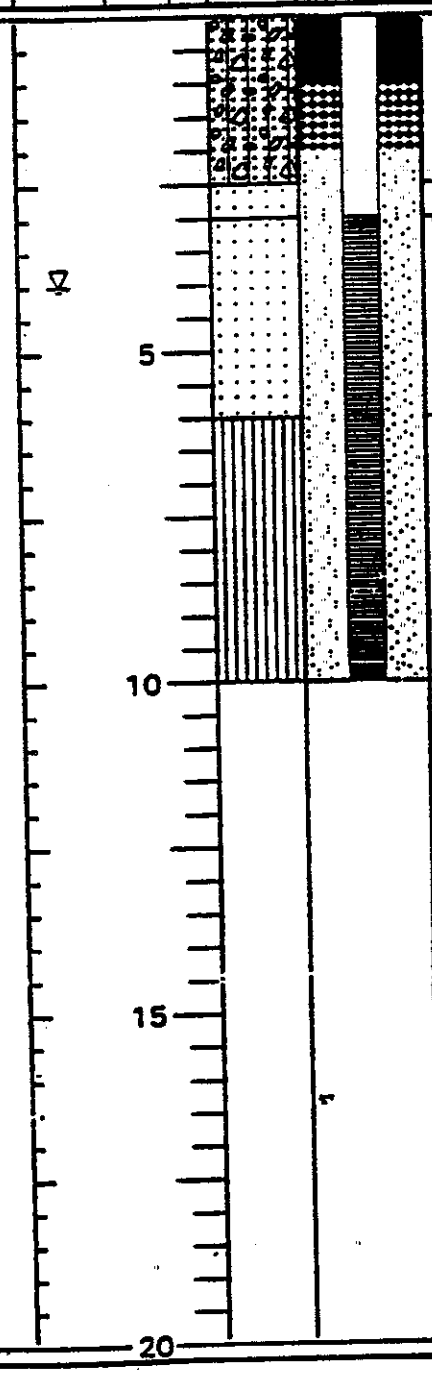
REMARKS

Drilled with a Mobile B-61 8-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke ; well secured with an above ground security casing. SS = split spoon sampler.

EMCON

LOG OF EXPLORATORY BORING

PROJECT NAME	East Site Assessment	BORING NO.	MW-107S(2)
LOCATION	Weyerhaeuser Everett East Site	PAGE	1 OF 1
DRILLED BY	Cascade Drilling, Inc.	GROUND ELEV.	7.90'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	10.50'
LOGGED BY	John Guenther	DATE COMPLETED	10/28/94



LITHOLOGIC DESCRIPTION

0 to 0.5 foot: SILT, GRAVEL, AND SAND (GM-SW)

0.5 to 3.0 feet: SAND (SP), light gray, fine to medium, some gravel, some fines, medium dense, damp, petroleum-like odor.

3.0 to 6.0 feet: SAND (SP), light gray, fine grained, trace medium grained, some gravel, some fines, some wood debris, damp.

@ 4.0 feet: wet.

6.0 to 10.5 feet: SILT (ML), brown gray at 5.9 to 5.95 feet, gray at 5.95 to 6.0 feet, high plasticity, some organic material.

WELL COMPLETION DETAILS:

0 to 3.0 feet: 2-inch-diameter, flush threaded schedule 40 PVC blank riser pipe.

3.0 to 10.0 feet: 2-inch-diameter, flush threaded schedule 40 PVC well screen with 0.010-inch machined slots and a 2-inch-diameter slip end cap secured with stainless steel screws.

0 to 1.5 feet: Concrete.

1.5 to 2.5 feet: Bentonite chips hydrated with potable water.

2.5 to 10.5 feet: 10 - 20 Colorado silica sand.

REMARKS

Due to structural damage to the aboveground protective casing, former monitoring well MW-107S was pulled out of the ground and the boring was sealed with hydrated bentonite chips. Replacement monitoring well MW-107S(2) was installed on 10/28/94 as described above. MW-107S(2) was drilled with a Mobile B-61 8-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke and secured with a flush mount traffic rated security casing.

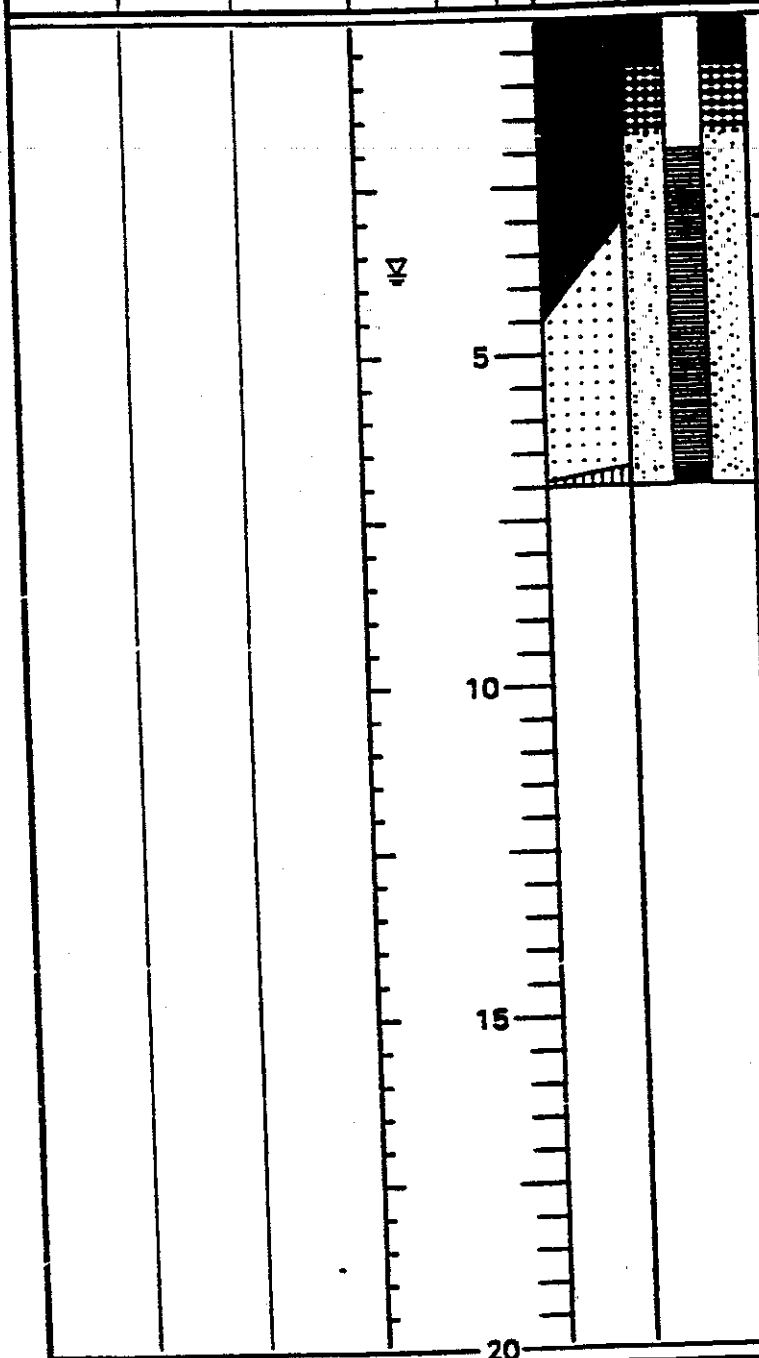
LOG OF EXPLORATORY BORING

PROJECT NAME East Site Assessment
LOCATION Weyerhaeuser Everett East Site
DRILLED BY Geoboring
DRILL METHOD Hollow Stem Auger
LOGGED BY J. Swanson

Elev. Top PVC - 11.15'
stickup - 2.75'

BORING NO. MW-108S
PAGE 1 OF 1
GROUND ELEV. 8.40'
TOTAL DEPTH 7.00'
DATE COMPLETED 12/28/92

SAMPLING METHOD AND NUMBER	SAMPLE RECOVERY	BLOWS PER 6-INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION



0 to 3.0 feet: ASPHALT

3.0 to 7.0 feet: SAND (SP), dark gray, fine to coarse sand, trace fines, wet, trace wood chips.

@ 7.0 feet: SILT (ML), brown, high plasticity, rootlets common.

Total depth drilled = 7.0 feet.
Total depth sampled = 7.0 feet.

WELL COMPLETION DETAILS:
+3.0 to 2.0 feet: 2-inch-diameter, flush threaded schedule 40 PVC blank riser pipe.
2.0 to 7.0 feet: 2-inch-diameter, flush threaded schedule 40 PVC well screen with 0.010-inch machined slots and a 2-inch-diameter threaded end cap.

0 to 1.0 foot: Concrete.
1.0 to 1.75 feet: Bentonite chips hydrated with potable water.
1.75 to 7.0 feet: 10 - 20 Colorado silica sand.

REMARKS

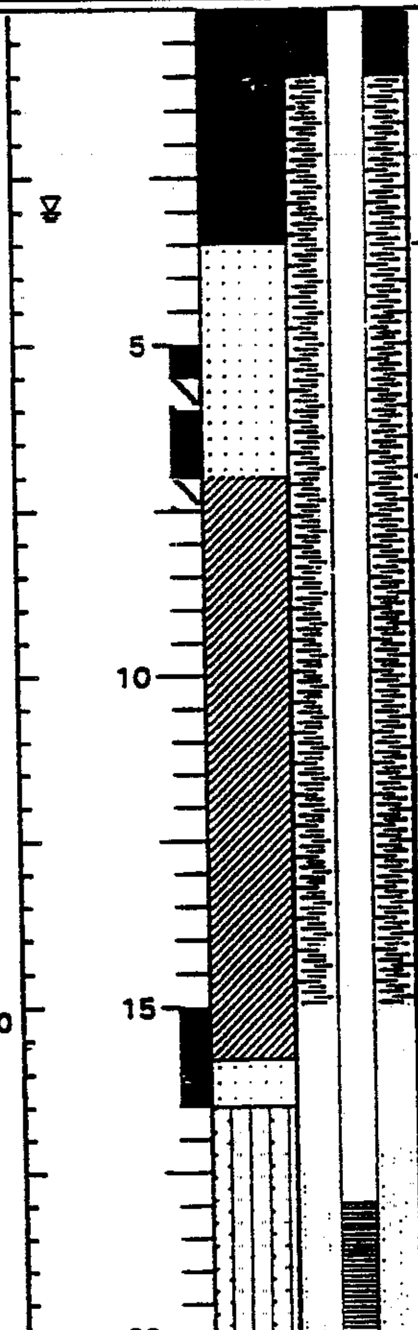
Drilled with a Mobile B-61 6-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke; well secured with an above ground security casing. SS = split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	East Site Assessment	BORING NO.	MW-108 D
LOCATION	Weyerhaeuser Everett East Site	PAGE	1 OF 2
DRILLED BY	Geoboring	GROUND ELEV.	8.50'
DRILL METHOD	6-inch I.D. Hollow	TOTAL DEPTH	28.00'
LOGGED BY	J. Swanson	DATE COMPLETED	12/28/92

Elev. Top PVC - 10.88
stickup - 2.4

SAMPLING METHOD AND NUMBER	PID (in ppm)	BLOWS PER 6 INCHES	DEPTH IN FEET	LITHOLOGIC DESCRIPTION
			0	0 to 3.5 foot: ASPHALT DEBRIS
				3.5 to 7.0 feet: SAND (SP), dark gray, fine to coarse sand, trace fines, very loose, wet, trace wood chips present, no noticeable odors.
SS/S-1		3-2-1	5	
SS/S-2		0-1-1		
				7.0 to 15.8 feet: SILT (CL), brown, high plasticity, very soft, damp, no noticeable odors.
			10	
SS/S-3		6-10-10	15	
				15.8 to 16.5 feet: SAND (SP), gray, fine to coarse sand, trace fines, dense, wet, no noticeable odors.
				16.5 to 28.0 feet: SAND WITH SILT LENSES (SP-SM) gray, sand fine to medium grained, 10 percent fines, very stiff, wet, no noticeable odors.
			20	



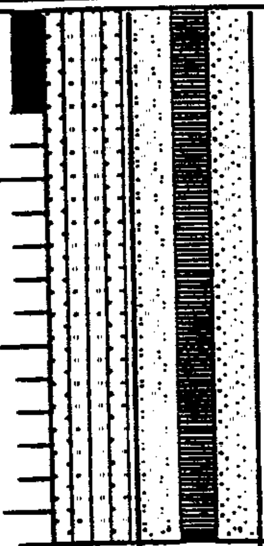
REMARKS

Drilled with a mobile B-61 6-inch I.D. hollow stem auger, 300 pound hammer with a 30-inch stroke, well secured with an above-ground security casing. SS = split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	East Site Assessment	BORING NO.	MW-108 D
LOCATION	Weyerhaeuser Everett East Site	PAGE	2 OF 2
DRILLED BY	Geoboring	GROUND ELEV.	8.50'
DRILL METHOD	6-Inch I.D. Hollow	TOTAL DEPTH	28.00'
LOGGED BY	J. Swanson	DATE COMPLETED	12/28/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
SS/S-4		7-12-15						16.5 to 28.0 feet: SAND WITH SILT LENSES (SP-SM) @ 21.0 feet: sand becoming finer grained, wet.
				25				
								Total depth drilled = 28.0 feet. Total depth sampled = 21.5 feet.
				30				
				35				
				40				



WELL COMPLETION DETAILS:

+3 to 18.0 feet: 2-inch-diameter, flush-threaded, schedule 40 PVC blank riser pipe.

18.0 to 28.0 feet: 2-inch-diameter, flush-threaded, schedule 40 PVC well screen with 0.010-inch machined slots and a 2-inch-diameter threaded end cap.

0 to 1.0 foot: Concrete.

1.0 to 15.0 feet: Bentonite grout.

15.0 to 28.0 feet: 10 - 20 Colorado Silica Sand.

REMARKS

Drilled with a mobile B-61 6-inch I.D. hollow stem auger, 300 pound hammer with a 30-inch stroke, well secured with an above-ground security casing. SS = split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	East Site Assessment	BORING NO.	MW-109S
LOCATION	Weyerhaeuser Everett East Site	PAGE	1 OF 2
DRILLED BY	Geoboring	GROUND ELEV.	11.50'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	11.00'
LOGGED BY	J. Swanson	DATE COMPLETED	12/31/92

SAMPLING METHOD AND NUMBER	SAMPLE RECOVERY	BLOWS PER 6-INCHES	DEPTH IN FEET	LITHOLOGIC DESCRIPTION
				0 to 0.5 foot: CEMENT, slab floor.
				0.5 to 5.0 feet: GRAVEL AND SAND (GW). (FOUNDATION FILL)
SS/S-1	13/18	20-30-20	5	5.0 to 6.2 feet: SAND, GRAVEL, AND SILT (SW-GM), coarse grained sand with some gravel and silt, very dense, damp. (FILL)
SS/S-2	14/18	6-12-14		From 5.0 to 5.3 feet: brown.
				From 5.3 to 6.2 feet: gray.
SS/S-3	14/18	4-8-12		6.2 to 10.8 feet: SAND (SP), dark gray, fine to medium grained, some silt, trace wood chips, moist.
SS/S-4	18/18	2-4-12	10	From 6.5 to 7.0 feet: sand is green to yellow, dense, wet.
				From 7.0 to 7.5 feet: trace coarse gravel.
				From 7.5 to 8.0 feet: sand is green-gray and wet.
				From 9.5 to 10.0 feet: sand is gray-brown, medium to coarse, trace fine sand, medium dense, wet.
				From 10.0 to 10.8 feet: dark gray, trace wood chips/rootlets at 10.8 feet, wet.
				10.8 to 11.0 feet: SILT (ML), brown, high plasticity, some organic material.
			15	Total depth drilled = 11.0 feet.
				Total depth sampled = 11.0 feet.
			20	See Page 2 for Well Completion Details.

REMARKS

Drilled with a Mobile B-61 6-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke; well secured with an above ground security casing. SS = split spoon sampler. Well secured with a flush-mount security casing.

LOG OF EXPLORATORY BORING

PROJECT NAME	East Site Assessment	BORING NO.	MW-109S
LOCATION	Weyerhaeuser Everett East Site	PAGE	2 OF 2
DRILLED BY	Geoboring	GROUND ELEV.	11.50'
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	11.00'
LOGGED BY	J. Swanson	DATE COMPLETED	12/31/92

SAMPLING METHOD AND NUMBER	SAMPLE RECOVERY	BLOWS PER 6-INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
				25				**WELL COMPLETION DETAILS:** 0 to 5.0 feet: 2-inch-diameter, flush threaded schedule 40 PVC blank riser pipe. 5.0 to 11.0 feet: 2-inch-diameter, flush threaded schedule 40 PVC well screen with 0.010-inch machined slots and a 2-inch-diameter threaded end cap. 0 to 1.0 foot: Concrete. 1.0 to 3.0 feet: Bentonite chips hydrated with potable water. 3.0 to 11.0 feet: 10 - 20 Colorado silica sand.
				30				
				35				
				40				

REMARKS

Drilled with a Mobile B-61 6-inch I.D. hollow stem auger, 300-pound hammer with a 30-inch stroke; well secured with an above ground security casing. SS = split spoon sampler. Well secured with a flush-mount security casing.

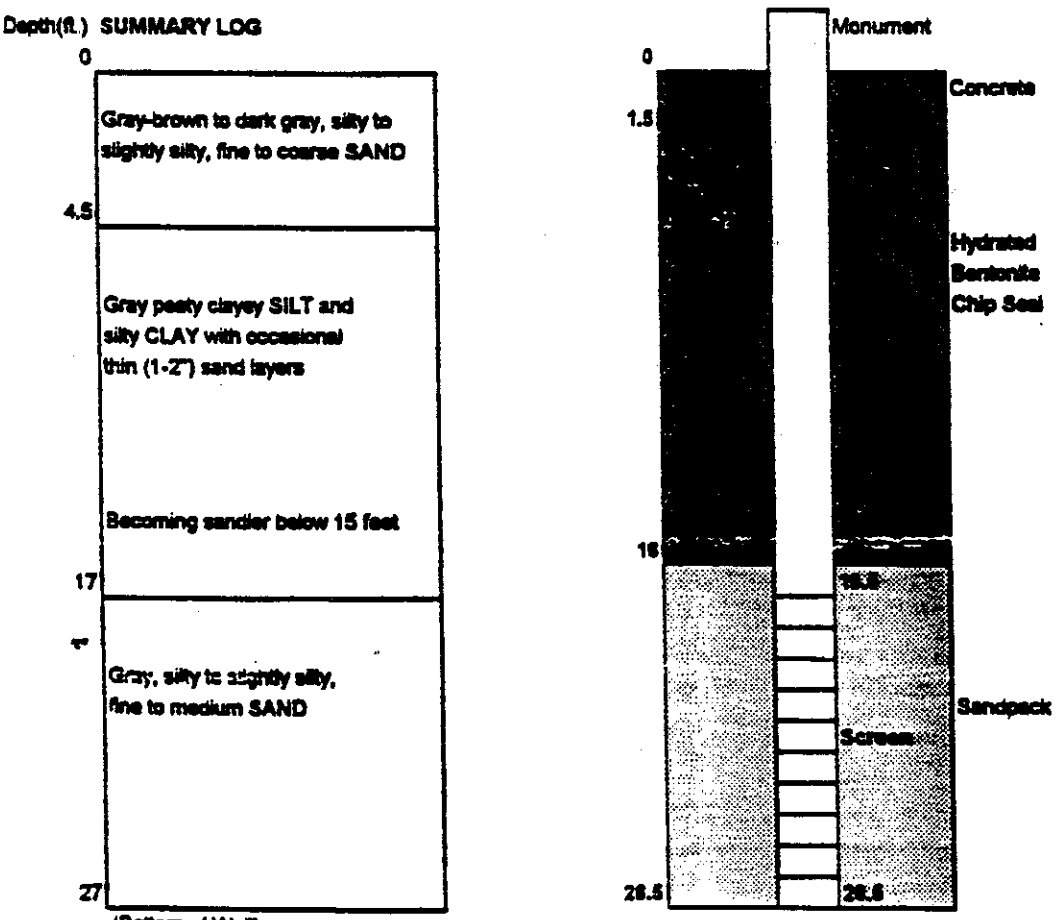
Dalton, Olmsted & Fuglevand, Inc.
Environmental Consultants

MONITORING WELL NO. MW-SE-101 - DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION

Field Rep: T. Olmsted	Location: N368 771 E1 310 413	
Drilling Co.: Holt Testing	Elevation (Ft. MLLW): Surf: 13	Top PVC Pipe 15.18
Driller: Mike Sharp	Date Completed: 8/14/96	
Drill Type: Lars L10T	Weather: clear & warm	
Size/Type Casing: 4" I.D. Hollow-Stem Auger		

Spl.No.	Type	Drill Action	Spl Depth (Ft.) From - To	Blows/ 6 inches	Spl length inches	Time	Sample Description
1	Drive	smooth	2.5 - 4	2-3-4	8	0924	Gray-brown, slightly silty, fine SAND Bot 2" Dark gray, fine to coarse SAND
2	Drive	smooth	5-6.5	1-2-1	18	0928	Gray, peaty clayey SILT
3	Drive	smooth	7.5-9	1-1-1	18	0940	Gray, peaty silty CLAY
4	Drive	smooth	10-11.5	1-1-1	18	0946	Gray, peaty clayey SILT with 1" fine sand layers - wet
5	Drive	smooth	12.5-14	1-2-2	18	0956	Gray, peaty clayey SILT with 1" fine sand layers - wet
6	Drive	smooth	15-16.5	2-1-1	18	1003	Gray, clayey SILT with less peat and 1" fine sand layers - wet
7	Drive	smooth	17.5-19	10-14-22	18	1012	Gray, silty to slightly silty fine SAND - wet
8	Drive	smooth	20-21.5	14-17-30	18	1025	Gray, slightly silty, fine to medium SAND -wet
9	Drive	smooth	22.5-24	14-24-35	18	1040	Gray, slightly silty, fine to medium SAND - wet
10	Drive	smooth	25.5-27	14-20-25	18	1105	Gray, slightly silty, fine to medium SAND - wet

MONITORING WELL DIAGRAM



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 INFORMATION (FT.)

Riser Length: 16.5		Seal:	Bentonite/Concrete
Sandpack:	10-20 Sand		(top/bot) 0/16
	(top/bot) 16/26.5	Monument:	Steel - Above ground
Screen:	PVC/0.010"		
	length 10		
	(top/bot) 16.5/26.5		

Dalton, Olmsted & Fuglevand, Inc.

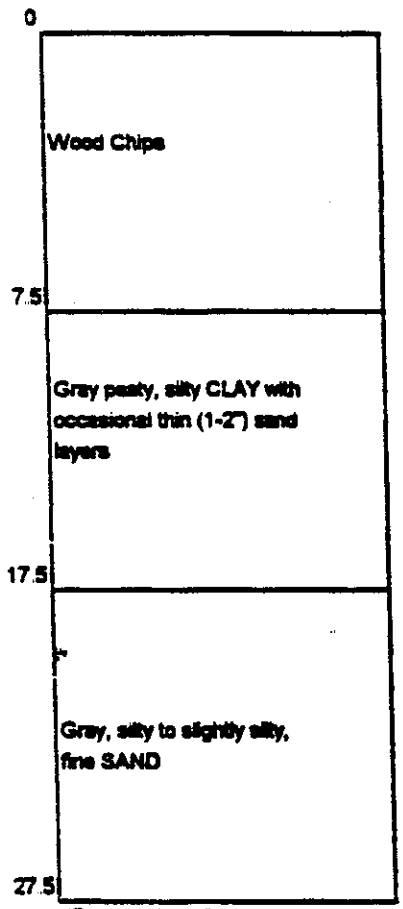
Environmental Consultants

MONITORING WELL NO. MW-SE-102 - DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION

Field Rep: T. Olmsted
Location: N368 367 E1 310 340
Drilling Co.: Holt Testing
Elevation (Ft. MLLW): Surf 15
Top PVC Pipe: 16.85
Driller: Mike Sharp
Date Completed: 8/14/96
Drill Type: Lars L10T
Weather: clear & warm
Size/Type Casing: 4" I.D. Hollow-Stem Auger

Spl.No.	Type	Drill Action	Spl Depth (Ft.) From - To	Blows/ 6 inches	Spl length inches	Time	Sample Description
1	Drive	smooth	2.5 - 4	1-1-1	6	1325	Wood Chips
2	Drive	smooth	5-6.5	1-2-2	6	1335	Wood Chips-wet
3	Drive	smooth	10-11.5	1-0-1	6	1340	Gray, pasty silty CLAY - wet
4	Drive	smooth	15-16.5	1-1-1	18	1350	Gray, pasty silty CLAY with 1" fine sand layers-wet
5	Drive	smooth	20-21.5	7-12-13	18	1400	Gray, slightly silty, fine SAND - wet
6	Drive	smooth	25-26.5	6-11-15	18	1415	Gray, slightly silty, fine SAND - wet

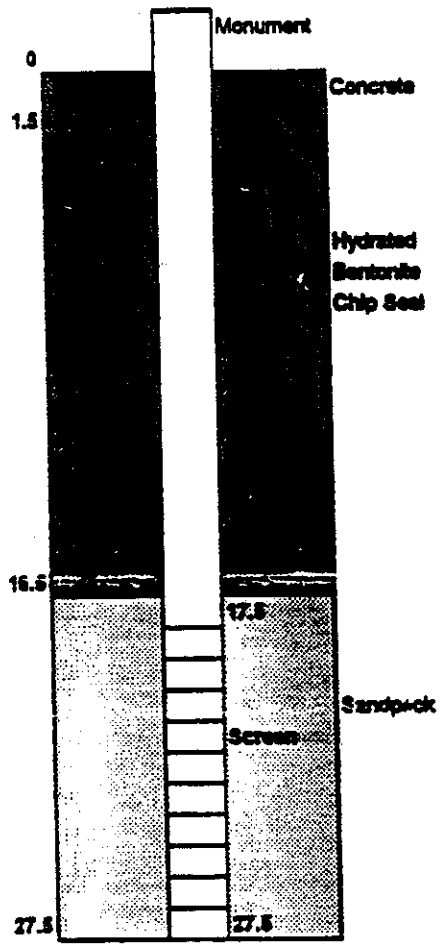
Depth(ft.) SUMMARY LOG



(Bottom of Well)

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

MONITORING WELL DIAGRAM



MONITORING WELL INFORMATION (FT.)

Riser Length: 17.5		Seal:	Bentonite/Concrete
Sandpack: 10-20 Sand			(top/bot) 0/16.5
	(top/bot) 16.5/26	Monument:	Steel - Above ground
Screen:	PVC/0.010"		
	length 10		
	(top/bot) 17.5/27.5		

Dalton, Olmsted & Fuglevand, Inc.
Environmental Consultants

MONITORING WELL NO. MW-SE-103 - DESCRIPTION OF SAMPLES, TESTS, AND INSTALLATION

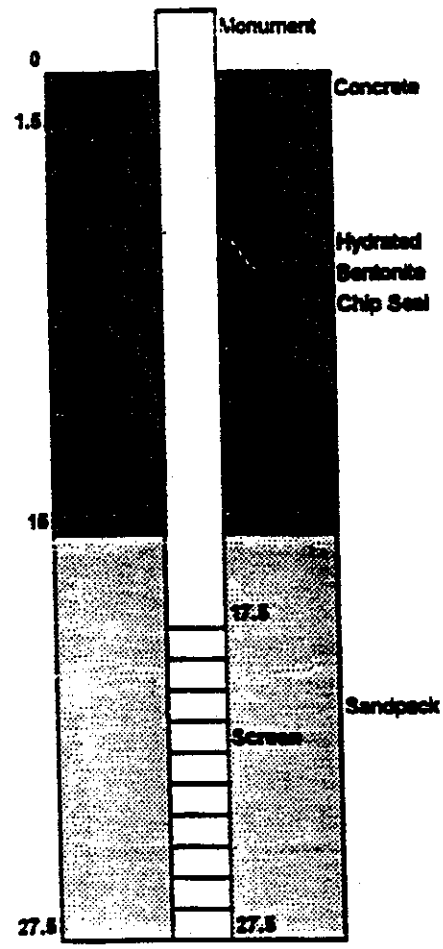
Field Rep: T. Olmsted
Drilling Co.: Holt Testing
Driller: Mike Sharp
Drill Type: Lars L10T
Size/Type Casing: 4" I.D. Hollow-Stem Auger

Location: N368 528 E1 310 077
Elevation (Ft. MLLW): Surf 13
Date Completed: 8/15/96
Weather: clear & warm

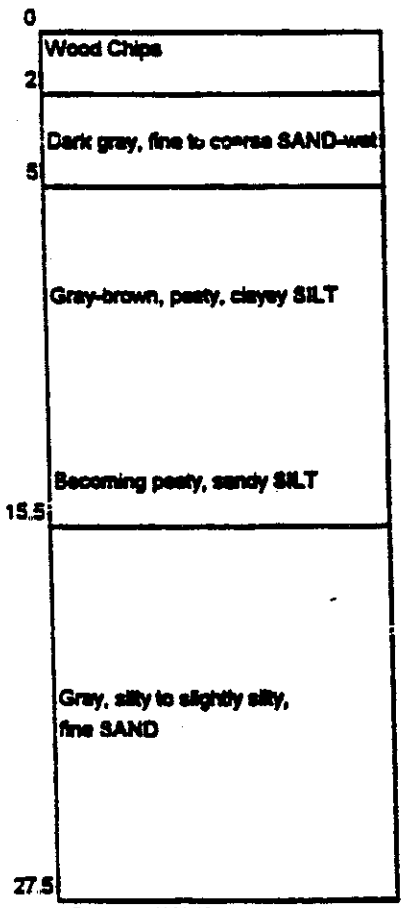
Top PVC Pipe: 15.19

Spl.No.	Type	Drill Action	Spl Depth (Ft.) From - To	Blows/ 6 inches	Spl length inches	Time	Sample Description
1	Drive	smooth	5-6.5	1-2-1	18	0855	Top 2" Gray, fine to medium SAND - wet Bot.16" Brown, peaty, clayey SILT
2	Drive	smooth	10-11.5	1-0-1	18	0905	Gray-brown, peaty, clayey SILT
3	Drive	smooth	15-16.5	10-12-14	18	0910	Top 6" Gray-brown, fine sandy peaty SILT Bot 12" Gray, silty, fine SAND with peaty silt layers
4	Drive	smooth	20-21.5	19-21-23	18	0935	Gray, slightly silty, fine to medium SAND - wet
5	Drive	smooth	25-26.5	14-20-21	18	0945	Gray, slightly silty, fine to medium SAND - wet

MONITORING WELL DIAGRAM



Depth(ft.) SUMMARY LOG



(Bottom of Well)

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 INFORMATION (FT.)

Riser Length: 17.5	Seal: Bentonite/Concrete (top/bot) 0/15
Sandpack: 10-20 Sand (top/bot) 15/27.5	Monument: Steel - Above ground
Screen: PVC/0.010" length 10 (top/bot) 17.5/27.5	

SAMPLE POTENTIAL AMENDMENT

EXHIBIT J

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON FOR SNOHOMISH COUNTY

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY,

Appellant,

v.

WEYERHAEUSER COMPANY, a Washington Corporation,

Defendant.

No._____

AMENDMENT TO CONSENT DECREE TO ADD NEW PARTY

Pursuant to Sections XV and XXVI of the attached Consent Decree ("Decree"), the undersigned parties hereby request that this Court amend the Decree to add _____ _____ as a new party to the Decree. As required by Section XXVI of the Decree, _____ agrees to be bound by all of the restrictions and obligations originally agreed to by Weyerhaeuser in the Decree, including but not limited to the specific obligations set forth in Sections VI through XII and Sections XIX and XXIV. Although _____ has accepted liability and agreed to be bound by all Weyerhaeuser's restrictions and obligations, Ecology agrees that Weyerhaeuser will remain responsible for the implementation of the remedial action set forth in this Decree and that _____'s obligations will not arise until Weyerhaeuser has failed to meet its obligations under the Decree.

ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (360) 438-7743

The undersigned respectfully request that this Court amend the attached decree as set forth above.

DATED this _____ day of _____, 19___.

_____ FOR WEYERHAEUSER COMPANY

_____ FOR DEPARTMENT OF ECOLOGY

_____

FOR_____

ORDER

The above amendment shall be effective upon entry by the court.

So order this _____ day of _____, 19___.

_____
Judge
Snohomish County Superior Court

f:\....\Weyerhar\consent.Amd

ATTORNEY GENERAL OF WASHINGTON
Ecology Division
PO Box 40117
Olympia, WA 98504-0117
FAX (360) 438-7743

Weyerhaeuser

101 East Marine View Drive
Everett, Washington 98201
Tel (206) 339 2800
Fax (206) 339 2786

June 18, 1997

Nadine L. Romero
Department of Ecology
PO Box 47706
Olympia, WA 98504-7600

Subject: Recorded Restrictive Covenant for Weyerhaeuser Everett East Site

Dear Nadine:

Attached is a copy of Exhibit G, the Restrictive Covenant, that was recorded today under Snohomish County Auditor Number: 9706180506. Also enclosed is the recording payment receipt from the County.

As we understand, the final closure report describing the remediation on the East Site has met the terms of the Consent Decree, and been accepted by Ecology. Would you please prepare the certification letter that Weyerhaeuser has completed the soil removal portion, as required in the Consent Decree Section VI. D. 6.

Thank you for your assistance. If you have any questions, please contact me at 425-339-2871.

Sincerely,

Stuart Triolo

Stuart Triolo
Environmental Engineer
061897.DOC
Enclosures: Recorded Restrictive Covenant and receipt

cc: Mark Schneider -- Perkins Coie -- via email - w/out enclosure
John Gross -- CH1K29 -- via email - w/out enclosure
Joe Jackowski -- CH2J28 -- enclosure
Kevin Godbout -- CH1L28 -- via email - w/out enclosure
Harold Ruppert -- via email -- w/out enclosure
Arlan Ruf -- via email -- w/out enclosure
Jane Patarcity -- Beazer East -- enclosure
Thomas Aldrich -- Asarco -- enclosure
File -- CLEANEO1

9706180506

RETURN TO:

WEYERHAEUSER COMPANY
BOX C
TACOMA, WA 98477

Type Of Document: RESTRICTIVE COVENANT

Reference Number(s) Of Document(s) Assigned Or Released: NONE

Grantor(s): WEYERHAEUSER COMPANY

Grantee(S): PUBLIC

Abbreviated Legal Description: PORTIONS OF SECTIONS 8, 9, 16, 17, T 29 N, R 5 E
Additional legal description on pages - Parcel's 1, 2, and 4, and Exhibit A.

Assessor's Property Tax Parcel Of Account Number(s): 4397-000-006-0007; 4397-000-008-0203; 5848-000-003-0002; 5848-000-004-0001; 082905-4-017-0007; 082905-4-019-0005; 162905-2-001-0009; 162905-2-002-0008; 162905-3-001-0007; 162905-3-003-0005; 172905-1-001-0000; 092905-3-007-0000; 162905-2-004-0006

9706180506

EXHIBIT G
RESTRICTIVE COVENANT

The property that is the subject of this Restrictive Covenant has been the subject of remedial action under Chapter 70.105D RCW. The work done to clean up the property (hereafter the "Cleanup Action") is described in the Consent Decree entered in State of Washington Department of Ecology v. Weyerhaeuser Company, Snohomish County Superior Court No. 97-2-02773-8, and in attachments to the Decree and in documents referenced in the Decree. This Restrictive Covenant is required by Ecology under Ecology's rule WAC 173-340-440 (1991 ed.) because the Cleanup Action on the Site resulted in residual soil concentrations of TPH above Ecology's Method A cleanup level for direct contact only, and PCP, PCB's and CPAH which exceed Ecology's Method B cleanup levels for soils established under WAC 173-340-745(2) and (3). The restrictive covenant is also required because the arsenic ground water contamination is not addressed in the remedial action.

The undersigned, Weyerhaeuser Company, is the fee owner of real property in the County of Snohomish, State of Washington (legal description attached), hereafter referred to as the " Weyerhaesuer Everett East Site" (East Site). Weyerhaeuser Company makes the following declarations as to limitations, restrictions, and uses to which the Weyerhaeuser East Site may be put, and specifies that such declarations shall constitute covenants to run with the land, as provided by law, and shall be binding on all parties and all persons claiming under them, including all current and future owners of any portion of or interest in the East Site.

Section 1. No groundwater may be taken for domestic purposes from any well at the East Site.

Section 2. No residential development may take place on the site.

Section 3. Any activity on the East Site that may interfere with the viability of the containment of the hazardous substances on the site is prohibited. Any activity on the East Site that may result in the release of a hazardous substance that was contained as part of the Cleanup or Interim Cleanup Action(s) is prohibited.

Section 4. Any development of the East Site shall ensure the containment of the hazardous substances that are exposed or ensure proper management and disposal. Ecology will receive notice of any development that may impact the contained hazardous substances at least 30 days prior to such development.

Section 5. The owner of the East Site must give written notice to the Department of Ecology, or to a successor agency, of the owner's intent to convey any interest in the East Site. No conveyance of title, easement, lease or other interest in the East Site shall be consummated by the owner without adequate and complete provision for the continued operation, maintenance and monitoring of the Cleanup Action.

Section 6. The owner of the East Site must notify and obtain approval from the Department of Ecology, or from a successor agency, prior to any use of the East Site that in inconsistent with the terms of this Restrictive Covenant.

The Department of Ecology or its successor agency may approve such a use only after public notice and comment.

Section 7. The owner shall allow authorized representatives of the Department of Ecology, or of a successor agency, the right to enter the East Site at reasonable times for the purpose of evaluation compliance with the Cleanup Action Plan and the Consent Decree, to take samples, to inspect Cleanup Actions conducted at the East Site, and to inspect records that are related to the Cleanup Action.

Section 8. The owner of the East Site and the owner's assigns and successors in interest reserve the right under WAC 173-340-740 and WAC 173-340-440 (1991 ed.) to record an instrument which provides that this Restrictive Covenant shall no longer limit the use of the East Site or be of any further force or effect. However, such an instrument may be recorded only with the consent of the Department of Ecology, or successor agency. The Department of Ecology, or a successor agency may consent to the recording of such an instrument only after public notice and comment.

Executed as of the 17th day of June, 1997.

Property Owner: Weyerhaeuser
By Larry W. Lowe
Its Director - Finance & Admin.

Attachments:

Exhibit A-Legal Description of Property

STATE OF WASHINGTON)
) ss.
COUNTY OF SNOHOMISH)

On this 10th day of June, 1997, before me, a Notary Public in and for the State of Washington, personally appeared LARRY W. LOWE personally known to me (or proved to me on the basis of satisfactory evidence) to be the person who executed this instrument, on oath state that he was authorized to execute the instrument, and acknowledged it as the Director Fin & Adm of Weyerhaeuser to be the free and voluntary act and deed of said corporation for the uses and purposes mentioned in the instrument.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year first above written.

SUSAN PISTORESI NOTARY PUBLIC STATE OF WASHINGTON COMMISSION EXPIRES JUNE 12, 1998

Susan Pistoresi
NOTARY PUBLIC in and for the
State of Washington, residing
at Redmond, WA
My appointment expires 6-12-98
Print Name Susan Pistoresi

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Exhibit A

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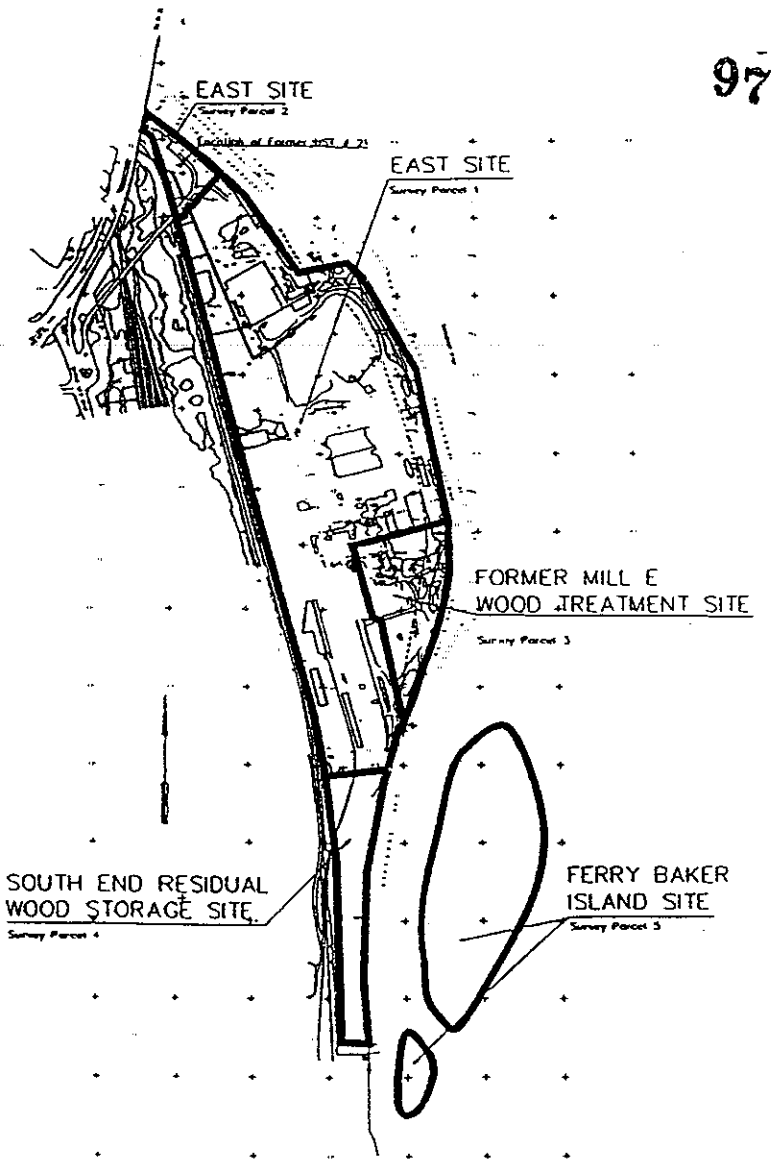

Weyerhaeuser

TITLE:
SURVEY PARCEL NUMBERS
EAST SITE -- EVERETT, WA
EXHIBIT A

DWN:	DES:	PROJECT NO:
CHK'D:	APP'D:	FIGURE NO:
DATE: 4/18/96	REV:	EASTOPER.DWG

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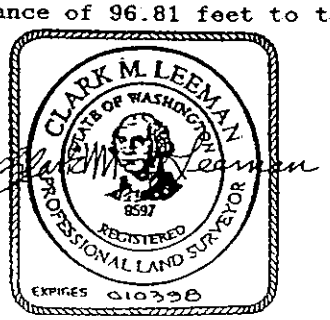
PARCEL NO. 1 LAND DESCRIPTION AT WEYERHAEUSER COMPANY EAST SITE

All that portion of Government Lot 9, and Tract 4 of Everett Tide Lands Section No. 2, as shown on the official plat thereof on file in the office of the Commissioner of Public Lands, at Olympia, Washington, in Section 9, and that portion of Government Lot 2, and Tract 5 of said Everett Tide Lands Section No. 2, in Section 16, and that portion of the Northeast Quarter of the Northeast Quarter of Section 17, and that portion of Government Lot 7 and the Southeast Quarter of the Southeast Quarter of Section 8, Township 29 North, Range 5 East of the Willamette Meridian, described as follows: Commencing at the Southeast corner of said Section 8; thence North 89° 55' 27" West, along the South line of the Southeast Quarter of said Section 8, a distance of 238.96 feet to a point on the Easterly line of the Burlington Northern Railroad Company right of way, which point is referred to hereinafter as Point "A"; thence North 16° 03' 43" West, along the Easterly line of said right of way, a distance of 2180.08 feet to the True Point of Beginning; thence South 16° 03' 43" East, along the Easterly line of said righs of way, a distance of 2180.08 feet to said Point "A"; thence continuing South 16° 03' 43" East, along the Easterly line of said right of way, a distance of 899.94 feet; thence on a curve of the Easterly line of said right of way, to the right, having a radius of 5829.65 feet, and a central angle of 4° 50' 51", an arc distance of 493.21 feet; thence North 89° 07' 33" East a distance of 489 feet, more or less, to a point on the Line of Ordinary High Tide of the left bank of the Snohomish River; thence in a Northerly direction, along the meanderings of said Line of Ordinary High Tide, to a point that bears North 38° 30' 24" East from the True Point of Beginning; thence South 38° 30' 24" West a distance of 339 feet, more or less, to the True Point of Beginning; EXCEPT therefrom the former Mill "E" and Wood Treatment Site described as follows: All that portion of Government Lot 9, and Tract 4 of Everett Tide Lands Section No. 2, as shown on the official plat thereof on file in the office of the Commissioner of Public Lands, at Olympia, Washington, in Section 9, and that portion of Government Lot 2, and Tract 5 of said Everett Tide Lands Section No. 2, in Section 16, Township 29 North, Range 5 East of the Willamette Meridian, described as follows: Commencing at the Southwest corner of said Section 9; thence North 89° 12' 51" East, along the South line of said Section 9, a distance of 420.80 feet to the True Point of Beginning; thence North 63° 56' 46" East a distance of 132.97 feet; thence North 73° 51' 29" East a distance of 290.04 feet; thence South 69° 25' 46" East a distance of 111.85 feet to a point on the timber bulkhead along the Snohomish River; thence in a Southerly direction, along said bulkhead on the following courses: South 3° 44' 08" East 143.24 feet, South 0° 17' 19" West 64.72 feet, South 3° 28' 47" West 85.16 feet, South 5° 57' 29" West 86.57 feet, South 8° 49' 41" West 63.97 feet, South 13° 24' 08" West 90.75 feet, South 16° 03' 42" West 84.09 feet, South 18° 40' 16" West 454.68 feet; thence North 35° 29'-14" West a distance of 211.21 feet; thence North 15° 34' 19" West a distance of 289.92 feet; thence North 51° 01' 20" West a distance of 100.28 feet; thence North 15° 27' 34" West a distance of 399.67 feet; thence North 63° 56' 46" East a distance of 96.81 feet to the True Point of Beginning.



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PARCEL NO. 2 LAND DESCRIPTION AT WEYERHAEUSER COMPANY EAST SITE

All that portion of Government Lot 7, and Tracts 3 and 4 of Everett Tide Lands Section No. 2, as shown on the official plat thereof on file in the office of the Commissioner of Public Lands, at Olympia, Washington, in Section 8, Township 29 North, Range 5 East of the Willamette Meridian, described as follows: Commencing at the Southeast corner of said Section 8; thence North 89° 55' 27" West, along the South line of the Southeast Quarter of said Section 8, a distance of 238.96 feet to a point on the Easterly line of the Burlington Northern Railroad Company right of way; thence North 16° 03' 43" West, along the Easterly line of said right of way, a distance of 2180.08 feet to the True Point of Beginning; thence continuing North 16° 03'-43" West a distance of 506.50 feet to a point on the curve of the Northerly line of said Burlington Northern Railroad Company right of way, at which point the tangent to said curve bears North 52° 53' 53" West; thence in a Northwesterly direction, along said curve, to the left, having a radius of 784.49 feet, and a central angle of 3° 21'-47", an arc distance of 46.05 feet to a point on said curve at which the tangent to said curve bears North 56° 15' 40" West, and which point is on the Easterly right of way line of State Highway No. 529; thence North 10° 02' 20" East, along the Easterly right of way line of said highway, a distance of 59 feet, more or less, to a point on the Line of Ordinary High Tide of the left bank of the Snohomish River; thence in a Southeasterly direction, along the meanderings of said Line of Ordinary High Tide, to a point that bears North 38° 30' 24" East from the True Point of Beginning; thence South 38° 30' 24" West a distance of 339 feet, more or less, to the True Point of Beginning.

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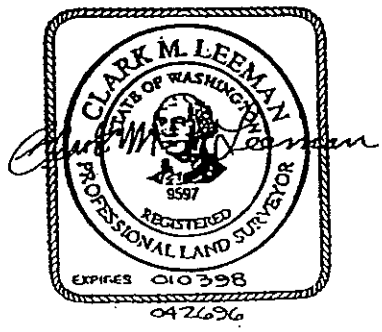

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PARCEL NO. 4 LAND DESCRIPTION AT WEYERHAEUSER COMPANY EAST SITE

All that portion of Government Lots 3 and 9, and Tracts 6 and 8 of Everett Tide Lands Section No. 2, as shown on the official plat thereof on file in the office of the Commissioner of Public Lands, at Olympia, Washington, in Section 16, Township 29 North, Range 5 East of the Willamette Meridian, described as follows: Commencing at the Northwest corner of said Section 16; thence North 89° 55' 27" West, along the North line of the Northeast Quarter of Section 17 in said Township, a distance of 238.96 feet to a point on the Easterly line of the Burlington Northern Railroad Company right of way; thence South 16°-03' 43" East, along the Easterly line of said right of way, a distance of 899.94 feet; thence along the curve of the Easterly line of said right of way, to the right, having a radius of 5829.65 feet, and a central angle of 4° 50' 51", an arc distance of 493.21 feet to a point at which the tangent to said curve bears South 11° 12' 53" East, which point is on the North line of said Government Lot 3, and which point is the True Point of Beginning of this description; thence continuing in a Southerly direction along said curve of the Easterly line of said right of way, to the right, having a radius of 5829.65 feet, and a central angle of 8° 28' 57", an arc distance of 863.07 feet; thence South 2° 43' 55" East, along the Easterly line of said right of way, a distance of 493.42 feet; thence South 0° 31' 18" East, along the Easterly line of said right of way, a distance of 500.04 feet; thence South 89° 48' 45" East a distance of 272 feet, more or less, to a point on the Line of Ordinary High Tide of the Left bank of the Snohomish River; thence in a Northerly direction, along the meanderings of said Line of Ordinary High Tide, to a point on the North line of said Government Lot 3, which point bears North 89° 07' 33" East from the True Point of Beginnning; thence South 89° 07' 33" West, along the North line of said Government Lot 3, a distance of 489 feet, more or less, to the True Point of Beginning.

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Christine O. Gregoire
ATTORNEY GENERAL OF WASHINGTON
Ecology Division
629 Woodland Square Loop SE 4th Floor • Lacey WA 98503
Mailing Address: PO Box 40117 • Olympia WA 98504-0117

April 8, 1997

VIA FEDERAL EXPRESS

Pam L. Daniels, Clerk
Snohomish County Superior Court
3000 Rockefeller Avenue
Everett, Washington 98402

Re: State of Washington Department of Ecology v. Weyerhaeuser Company (Everett East Site), Consent Decree

Dear Ms. Daniels:

Enclosed for filing in the above-referenced matter are the original Summons and Complaint with Declarations of Thomas C. Morrill and Nadine Romero, Consent Decree with Exhibits, Joint Motion for Entry of Consent Decree and Order Entering Consent Decree. The parties have stipulated to the filing of the enclosed Consent Decree as a means of settling this new action. Under the terms of the Consent Decree, this court will retain jurisdiction to resolve any matters that arise during the implementation of the Consent Decree.

Also enclosed are two sets of copies. Please conform and return any of the copies you do not need in the self-addressed, postage paid envelope. Finally, an A-19 voucher for payment is also enclosed.

Thank you for your assistance. If you have any questions, please do not hesitate to call me.

Very truly yours,

LA DONA R. JIPSON
Legal Secretary for
THOMAS C. MORRILL
Assistant Attorney General
(360) 459-6152

TCM:lrj
f:\...\Weyerhae\clerk Ltr

Enclosures
cc: Joseph P. Jackowski (w/o enc.)
Nadine Romero (w/o enc.)