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EXHIBIT C

MEMORANDUM

TO: Nadine Romero
FROM: Stuart Triolo - Weyerhaeuser Company
Matthew Dalton/Terry Olmsted - Dalton, Olmsted & Fuglevand, Inc.
DATE: May 17, 1996
SUBJECT: Environmental Assessment of South End Residual Wood Storage Operable Unit Site and Ferry Baker Island Site - Survey Parcels 4 and 5
Weyerhaeuser East Site, Everett, Washington
REF. NO: WEY-011-04

This technical memorandum summarizes and presents pertinent environmental quality data and information for the South End Residual Wood Storage Operable Unit Site (Survey Parcel 4, Figure 1) and the two Ferry Baker Islands (Survey Parcel 5, Figure 1). This work was accomplished in accordance with a Dalton, Olmsted & Fuglevand, Inc. (DOF) proposal to Weyerhaeuser dated March 7, 1996, meetings with Ecology, and a Sampling and Analysis Plan, dated April 2, 1996, reviewed and agreed to by Ecology.

The residual wood storage site is bordered on the east by the Snohomish River and is approximately 10.5 acres in area. The two Ferry Baker Islands are located in the Snohomish River, just east of the residual wood storage site. The larger Ferry Baker Island is approximately 23 acres, while the smaller island is approximately 2 acres in area.

PROJECT BACKGROUND AND HISTORY

LAND USE HISTORY AND OWNERSHIP OF THE SOUTH END RESIDUAL WOOD STORAGE SITE AND FERRY BAKER ISLANDS

The following background and historical information is based on available aerial photographs, maps, reports, and Sanborn maps, along with information from Weyerhaeuser staff who are familiar with past site operations.

The following information sources were reviewed:

- Topographic survey maps showing the East Site, Mill E Wood Treatment Site, the South End Residual Wood Storage Site, and the Ferry Baker Islands
- Aerial photographs of the properties from 1937, 1947, 1951, 1953, 1954, 1955, 1957, 1959, 1967, 1971, 1972, 1973, 1977, 1991, and 1994 Selected air photographs (stereo pairs) are presented in Attachment D.

- Previous Site Historical Review "Phase 1 Preliminary Site Assessment, Weyerhaeuser Everett Mill B" (Hart Crowser, April 18, 1990)
- Sanborn Fire Maps - Everett - 1914
- Snohomish County Treasurer's Deed No. 4083(947935-Little Ferry Baker Island and 947936 - Big Ferry Baker Island), March 1950
- Snohomish County First Class Title Deed (South End Residual Wood Storage Site), April 1914 and September 1915

Ferry Baker Islands

The following history is based upon review of aerial photographs (listed above), review of drawing and plans, and interviews with staff of Weyerhaeuser and American Construction, Inc., a dredging contractor that has performed dredging in the area, generally on an annual basis from the early 1950s to about 1984.

- ***1914:*** The 1914 Sanborn Map shows the "Ferry Baker Lumber Company" facilities on the mainland (located on a portion of, and immediately south, of the South End Residual Wood Storage Site). The map shows that the mill was constructed in part over the water of the Snohomish River on a series of platforms. Also shown is a conveyor connecting the saw mill to a wood burner ("iron refuse burner") located on the smaller Ferry Baker Island. No development on the larger Ferry Baker Island is shown.

- ***1937:*** The 1937 aerial photograph shows both Ferry Baker Islands. The larger island appears to be undeveloped and vegetated with native plants. A series of pilings exist along the outer edge of the island where log booms have been moored. The smaller Ferry Baker Island is separated from the larger island by a meander channel. The photograph shows what appears to be a wood burner on the smaller island but no other development. The conveyor that connected the island with the mainland is no longer present.

- ***1947:*** The 1947 aerial photograph shows the larger island and two-thirds of the smaller island. There is no development apparent on either island, with the exception of what appears to be the foundation or other remnant of the previously mentioned wood burner. Log booms are shown moored on both sides of the larger island.

- ***1950:*** Weyerhaeuser acquired Ferry Baker Islands from Snohomish County on March 20, 1950 (Snohomish County Treasurer's Deed No. 4083).

- ***1951:*** Weyerhaeuser Timber Company map titled: Ferry-Baker Tract, dated May 17, 1951, shows an "old burner" on little Ferry Baker Island. Except for the "old burner", the two Ferry Baker Islands appear undeveloped.

- ***1954 to 1967:*** The 1954, 1955, 1959, and 1967 aerial photographs show no development on either of the two islands, except for the mooring piling along the outer edge of the larger island.

- ***1971:*** The 1971 aerial photograph shows the northwestern portion of the larger island cleared and graded, and showing dozer blade marks. There remains no visible development on the smaller island.

- ***1972-1973:*** The 1972 and 1973 aerial photographs show dredged sand fill on the northern-most portion of the previously mentioned cleared and graded area, with a drainage pattern toward the southern portion of the cleared and graded area. The smaller island remains undeveloped.

- ***1977:*** The 1977 aerial photographs show dozer tracks on the previously described dredged sand fill area, and show additional filling in the southern portion of the previously cleared area. The smaller island remains undeveloped.

- ***1991:*** The 1991 aerial photograph shows the area of the previous dredged sand filling now vegetated. The photograph shows the southern portion of the previously cleared area with additional filling and grading.

- ***1996:*** In April, 1996, a reconnaissance visit to the Ferry Baker Islands was made by Terry Olmsted, Sr. Consulting Geologist of Dalton, Olmsted & Fuglevand in company with Nadine Romero of Ecology. The area of the previous filling was traversed. The visit corroborated what is shown on the 1991 aerial photograph. Sandy soils were noted on the northern portion of the filled area, while silty soils containing bark fragments that have been graded were noted on the southern portion. Native vegetation was observed reestablishing itself on the fill areas. The vegetation on the northern portion of the fill appeared to be older than that on the southern portion of the fill.

- ***Dredging History:***

  * From about 1950 to 1970, American Construction dredged the river bottom annually to an average elevation of minus 10 feet (MLLW) at the Mill B log slide, the Mill B log ponds, along the East Site barge grids, and southern end of the East site from Ferry Baker Island to the log slide. It can be assumed that these areas were also dredged from the time Mill B first operated in 1915 to the 1950s. Prior to 1970, the dredged bottom materials from both the Snohomish

River navigational channel and the Weyerhaeuser properties were deposited in Port Gardner Bay.

* In 1971, the Army Corps of Engineers started permitting of dredging activities.

* From 1971 to about 1984, American Construction dredged bottom materials annually only from Weyerhaeuser properties and placed them on the larger Ferry Baker Island; no bottom materials from the dredging of the Snohomish River navigational channel were ever placed on Ferry Baker Island. According Weyerhaeuser and American Construction staff, the primary materials dredged from the River bottom consisted of about 90 percent sand and silt that washed down the River. The other ten percent consisted of bark and sink logs from the Mill process, wood debris (including trees, bushes, grasses, twigs, and lumber) and gravel that was washed down the River.

Dredge from Weyco ?

* Mill B was closed in 1980, and it is believed the Mill B log slide and pond areas were last dredged around 1979.

WHAT ARE THESE?

* Weyerhaeuser records indicate that in 1981, American Construction dredged about 17,600 cubic yards of silty sand to facilitate installation of a new Mill E log haul. A clam shell dredge excavated the silty sand from an area approximately 125 feet by 225 feet in size to an average depth of minus 10-feet (MLLW). A portion of the dredged area (30-feet by 40-feet in size) was excavated to minus 16-feet (MLLW). The dredged material was loaded onto a barge and off-loaded onto the larger Ferry Baker Island using a clam shell crane. The sand was graded within a diked area using a dozer.

— WHAT/WHERE?

* Mill E closed in 1984, and since then no dredging is believed to have been completed in that area.. Weyerhaeuser has not performed dredging along the East Site properties since 1984.

* Weyerhaeuser records indicate that in 1984, American Construction dredged about 4,000 cubic yards of sand from the Weyerhaeuser-owned Smith Island Log Dump. A clam shell dredge was used to load a barge which transported the dredged sand to the larger Ferry Baker Island where a dozer pushed and graded the sand.

The Smith Island Log Dump is located down-stream and on the opposite side (outside bend) of the Snohomish River from the East Site. The Smith Island operation only sorts logs by size, then ships the sorted logs by truck or by boom floats. According to the Smith Island Manager, the log dump requires dredging about every two years; the primary reason being this area the natural deposition of sand and silt that flows down the Snohomish River.

Dredged materials from the Smith Island Log Dump were last deposited on Ferry Baker Island in 1996. This year (1996) the bottom materials will be placed into a permitted area on the East Site.

So late? Smith Island Log Dump.

South End Residual Wood Storage Site

The following history is based upon review of aerial photographs (listed above), review of drawings and plans, and interviews with Weyerhaeuser staff familiar with historic operational practices.

- ***1914:*** The 1914 Sanborn Map shows a lumber mill, the "Ferry Baker Lumber Company," in large part located immediately south of the South End Residual Wood Storage site. A portion of the facility was also situated on the southern portion of the South End Residual Wood Storage Site. Lumber sheds and storage along with a water tank and two rectangular buildings or facilities (one appears to be a fire-control building, the other appears to be a building or possibly an above-ground rectangular heating oil tank - the identification of which is essentially illegible but possibly spells out "oil #9") were shown on the South End Residual Wood Storage Site. The Ferry Baker Lumber Company facilities (on the property to the immediate south) consisted of drying kilns, saw mill, planing mill, resaw shed, a machine shop, a steam turbine facility (the concrete structure appears to still exist on the property), and associated facilities. Much of the Ferry Baker Lumber Company facility was on "platforms" and extended over channels of the Snohomish River to the smaller Ferry Baker Island. As previously described, a conveyor was located between the saw mill and a wood waste burner (on the smaller Ferry Baker Island).

  The tracks of the Northern Pacific Railroad (NPRR) ran through the site. These tracks were approximately 200 feet east of and approximately parallel to the Great Northern (GNRR) main-line tracks (now the Burlington Northern tracks).

  Between April 1914 and September 1915, Weyerhaeuser purchased property partly including the South End Residual Wood Storage Site.

- ***1937 to 1947***: A 1937 aerial photo shows grasses, bushes and small trees on site. No standing water is visible. One large structure (or structures) is visible on the property south of the Site. The structure is likely a remnant of the Ferry Baker Lumber Company facilities. The NPRR tracks were removed during the 1930's. The 1947 photograph shows only the concrete building (that currently exists) on the property to the south. The trace of the old NPRR tracks can been seen traversing the property.

- ***1951:*** Weyerhaeuser Timber Company map titled: Ferry-Baker Tract, dated May 17, 1951, shows an "Old Conc. Power House" that is located off the property, south

of South End Residual Wood Storage Site. The map also shows the South End Residual Wood Storage Site area as undeveloped except for a note related to "Old N. P. R.R. Main Line" that, up until sometime after 1914, traversed through the site. The map also indicates the area of the South End Residual Wood Storage Site as being "swamp and hummocks".

- ***1953 to 1965***: The South End Residual Wood Storage Site was used for disposal of miscellaneous construction debris, lime, and wood waste, and trash from the Kraft Pulp Mill from about 1953 to 1965. During this time, an estimated 40,000 cubic yards of fill were placed.

  * 1953: Aerial photograph shows some apparent disposal at northwest end of site. The Kraft Mill began operation in September 1953, so the material shown on the photograph is likely construction debris from the Kraft Mill or from the Mill B complex.

  * 1954: The 1954 aerial photograph shows some filling on the north end of the site.

  * 1955: The 1955 aerial photograph shows waste piles at north end of the site, along with some debris. Based on staff interviews, Kraft Pulp Mill waste was going to this location. The wastes included trash along with miscellaneous construction debris, lime, and wood waste.

  * 1965: Based on discussion with employees, the Weyerhaeuser Demolition Landfill at the junction of SR 529 and Marine View Drive (now the PUD Delta Junction Switch Station) began operation and after 1965 the South End Residual Wood Storage Site was used for the storage of wood chips. Mill trash that formerly went to the residual wood storage site was hauled off site.

- ***1967:*** The 1967 aerial photograph shows the northern portion of the site (approximately forty percent) covered with fill materials.

- ***1971 to 1994***: The 1971 to 1994 aerial photographs show the residual wood storage site being used for chip and sawdust storage along with some concrete debris and construction debris stockpiles along northwestern edge of the site. The 1991 aerial photograph shows what appear to by cylindrical objects in the northern portion of the site. These objects, based on conversations with Weyerhaeuser personnel and later confirmed by observation, are concrete-filled barrels that were used as pile footings for the wooden trestle. These footings have been removed from the residual wood storage site and placed in a central stockpile on the east site. They are scheduled to be crushed and recycled.

- Weyerhaeuser staff estimate that, of the materials placed and currently remaining on the South End Residual Wood Storage Site, approximately 95 to 99 percent would be recyclable as a part of topsoil manufacturing. Of the remaining materials, a significant portion is iron or steel such as cable, banding, miscellaneous sheet metal and concrete debris.

PREVIOUS SOUTH END RESIDUAL WOOD STORAGE SITE STUDIES.

In 1992, EMCON Northwest, Inc., excavated and sampled twenty test pits (eighteen of which were located within the site boundaries). Results of their work are presented in their report dated November 30, 1992 (included as Attachment B). In August of 1995, five borings were drilled and ground water was sampled using temporary well points. Each boring was abandoned following water sampling. Results of their borings and water sampling are documented in their report dated April, 1996 (included as Attachment C). Additionally in 1995, Dames and Moore drilled and sampled five borings for geotechnical purposes as documented in their report dated March 7, 1995. Locations of the previous test pits, borings, and well points are shown on Figure 2.

TEST PIT EXCAVATIONS AND SOIL SAMPLING - SOUTH END RESIDUAL WOOD STORAGE SITE

On April 3 and 4, 1996, sixteen test pits were excavated and sampled by Dalton, Olmsted & Fuglevand, Inc. (DOF) to further define the extent of previously identified lime and "mixed waste;" and to obtain samples of fill and the underlying natural soils for laboratory analysis. Test pits were excavated at the locations shown on Figure 2, using a track excavator. The overlying fill materials were removed and excavation proceeded approximately one to two feet into the underlying natural soil (i.e. into the Upper Silt Unit). A geologic log of each test pit was prepared and samples were taken by Terry Olmsted, Senior Consulting Geologist of by Dalton, Olmsted & Fuglevand. The locations of the test pits were surveyed by H&W Pacific, Registered Professional Land Surveyors. The State Plane Coordinates and Elevations of each test pit are tabulated on Table 1. The logs of the test pits are presented in Table 2.

Samples were obtained from discrete portions of the soil and/or fill that had not come into contact with the bucket of the excavator. One or more samples were obtained from each test pit for laboratory analysis, depending upon observed conditions. Samples for laboratory analysis were placed into laboratory-supplied containers and placed into a chilled cooler with ice, for transport to the laboratory.

HYDROGEOLOGIC SETTING

The South End Residual Wood Storage Site is located within the low-lying flood plain of the Snohomish River. The Ferry Baker Islands are within the present channel of the Snohomish River. The Snohomish River and associated flood plain is bounded on the west and east by steeply sloped glaciated ridges and hills reaching to 500 feet above sea level. Ground-surface elevations on the residual wood storage site range in elevation between approximately 12 and 23 feet (MLLW Datum). Ground-surface elevations on the Ferry Baker Islands range from about 12 to 24 feet (MLLW) on the larger island and about 12 to 19 feet (MLLW) on the smaller island.

The Snohomish River is tidally influenced. Tides at Everett range from 11.1 feet to 0.0 feet (MLLW). A salt water wedge intrudes approximately 5-miles upstream of the site beyond the Interstate 5 bridge (EMCON 1995).

The overall East Site and South End Residual Wood Storage Site areas were formerly an estuarine tide flat. In the early 1900s, the tide flat in the East Site was filled using sand dredged from the river bottom. Based on the test pits excavated on the South End Residual Wood Storage Site, little if any, dredged sand fill was placed on the tide flat (alluvial) deposits within this area.

GEOLOGY AND GROUND-WATER UNITS

The geologic layers that underlie the South End Residual Wood Storage Site are similar to those previously described for the East Site (DOF, 1995a). The materials that underlie the site are designated, with increasing depth, as follows:

- **Fill Units** (sawdust and wood chips - mixed fill)
- **Upper Silt Unit** (tidal flat deposits)
- **Lower Sand Unit** (river deposits)

Figure 3 shows the estimated distribution of fill units on the site. Figure 4 shows two geologic profiles typical of the northern and southern portions of the site. The profile locations are shown on Figure 3.

Hydrogeologically, the geologic units can be grouped into the following zones:

- **Water Table Zone** (fill units)
  Although there are no ground-water monitor wells on the South End Residual Wood Storage Site, based on previous work for the East Site (DOF, 1995a), shallow ground water likely flows towards the river. At the time of test pit excavations, April, 1996, water was encountered at an approximate average elevation of 10 feet

(MLLW). This elevation corresponds to the approximate high-tide level (Mean Higher High Water).

- **Upper Aquitard** (upper silt unit)
- **Lower Sand Zone** (lower sand unit)
  Five temporary well points (WP01 to WP05, Figure 2) were installed in borings drilled into the Lower Sand Zone in August 1995 to obtain one-time water samples for laboratory analysis. The well points were withdrawn and the borings abandoned following water sampling.

Description of Lithologies: The following descriptions are based on 36 test pits, five borings with temporary well-points, and five geotechnical borings that have been accomplished on the South End Residual Wood Storage Site since mid-1992. Twenty of the test pits were excavated, logged, and sampled in 1992 (EMCON, 1992, Attachment B to this report). Sixteen of the pits were excavated, logged, and sampled by DOF in April 1996.

Fill Units: Based on the results of the 36 test pits excavated on the site, the fill units on the South End Wood Storage Site consist of the following materials, in order of increasing depth:

- Sawdust and Wood Chips - Covers most of the site. Thickness is variable, ranging from 1 to over 20 feet.

- Mixed Fill Material - Covers most of the site. Thickness variable, ranging from less than 1 foot to about 8 feet. Rests on top of Upper Silt Unit
  * Southern Portion: Predominantly wood waste containing variable amounts of metallic and non-metallic debris (e.g. logs, timbers, steel cable, banding, rubber belting, bottles, plastic cups, and other miscellaneous debris).
  * Northern Portion: Sand fill containing wood materials, an area of "lime waste," and metallic and non-metallic debris. The estimated extent of the lime waste, based on test pits that encountered that material, is shown on Figure 3. The range of thickness of this material encountered in the test pit was from 1 foot to 3 feet.

Upper Silt Unit: This unit consists of clayey silt to silty clay and contains considerable organic fragments and some peaty zones. The top of the Upper Silt Unit across the South End Residual Wood Storage Site appears to be a relatively flat surface, with an approximate average elevation of 7 feet (MLLW). Based on borings drilled on the Site, the thickness of the Upper Silt Unit ranges from about 4 to over 12 feet thick.

Lower Sand Unit: The lower sand ranges from fine to coarse and contains variable amounts of silt and some clayey silt layers.

SOIL QUALITY DATA - SOUTH END RESIDUAL WOOD STORAGE SITE

As discussed above, in 1992 EMCON collected soil samples from test pits. During the current work, a total of 25 soil samples were obtained from the test pits and analyzed for the following constituents:

WHAT ABOUT April 96 sampling?

- Metals: Arsenic, chromium, copper, lead, and zinc
- Petroleum hydrocarbons using method WTPH-D (extended)
- Polychlorinated Biphenols (PCBs)
- Pentachlorophenol (PCP) and related compounds

Analysis of soil samples was accomplished by the Weyerhaeuser Analytical Testing Services (WATS) laboratory. Laboratory data sheets are presented in Attachment A. The results of these analyses, including sample collection depths and general sample descriptions, are summarized in Table 3 and grouped by unit/material type. Table 3 also presents a summary of laboratory data collected during the previous soil sampling event (EMCON 1992). Soil results are presented in mg/kg - ppm units.

FILL UNIT

Sawdust and Wood Chips: This portion of the fill unit is essentially pure wood product, with only minor foreign materials (e.g. steel cable chokers) observed. No samples of this material were obtained or analyzed. This material is scheduled for removal and recycling.

Mixed Fill: The estimated distribution of the mixed fill materials underlying the sawdust and wood chip layer is shown on Figure 3. As shown on the figure, the mixed fill within the southern portion of the residual wood storage site appears to consist essentially of wood waste (logs, timbers, wood fragments) and containing variable quantities of metallic and non-metallic debris (e.g. logs, timbers, steel cable, banding, rubber belting, bottles, plastic cups, and other miscellaneous debris). The mixed fill in the northern portion of the wood site appears to be predominantly a sand fill containing variable quantities of waste wood, metallic and non-metallic debris, and further incorporates an area of a product known as "lime waste." All of the mixed fill and incorporated "lime waste" is scheduled for removal and recycling.

- *Mixed Sand Fill*: As shown on Table 3, analysis of the 15 soil samples from the mixed sand fill indicated Total Petroleum Hydrocarbons (TPH) as oil ranged from between <20 mg/kg to 890 mg/kg, and TPH as diesel ranged from 16 to 1,100 mg/kg. PCP and related compound analyses of eight samples within the Mixed Sand Fill indicated levels either below method reporting limits or at low levels (less than 0.12 mg/kg). PCB analysis of 15 soil samples indicated PCB levels below method reporting limits or at low levels (less than 0.064 mg/kg). For metals, arsenic was detected at levels generally ranging from <0.7 mg/kg to 26.9 mg/kg with one sample (SE-14 at 9.5 feet) at 100 mg/kg. Chromium was detected at levels from 8

to 390 mg/kg. Copper was detected at levels from 8 to 390 mg/kg. Lead concentrations ranged from <10 to 310 mg/kg. Zinc concentrations ranged from 3 to 942 mg/kg.

- *Lime Waste:* WTPH-DX analysis of the 7 samples from the "lime waste" layer indicated TPH as oil ranged from <15 to 250 mg/kg, with the exception of one sample from TP-16 that indicated 15,000 mg/kg as oil. TPH as diesel values ranged from 50 mg/kg to 480 mg/kg with the exception of one sample for TP-16 that indicated 26,000 mg/kg as diesel. Analysis of PCP and related compounds indicated levels below method reporting limits or low levels (less than 0.128 mg/kg). PCB analysis of 7 soil samples indicated PCB levels below method reporting limits or at low levels (0.035 mg/kg). For metals, arsenic was detected at levels ranging from 0.9 to 13.9 mg/kg. Chromium was detected at levels from 8 to 23 mg/kg. Copper was detected at levels from 3 to 9 mg/kg. Lead concentrations ranged from <10 to 10 mg/kg. Zinc concentrations ranged from 3 to 16 mg/kg. The pH of the lime waste ranged from 8.3 to 12.6.

UPPER SILT UNIT

Fifteen soil samples were obtained from the organic clayey silt and two were obtained from sand encountered one to two feet beneath the fill units on the wood site. WTPH-DX analysis of the 17 samples indicated TPH as oil ranged from <2 to 54 mg/kg. TPH as diesel values ranged from below method reporting limits (<80 mg/kg to <190 mg/kg) with one detection (SE-2 - 13') at 54 mg/kg. Analysis of the samples for PCP and related compounds indicated levels below method reporting limits or at very low levels (less than 0.017 mg/kg). PCB analysis of the 17 soil samples indicated PCB levels below method reporting limits or at low levels (0.036 mg/kg). For metals, arsenic was detected at levels ranging from <0.7 to 29.7 mg/kg. Chromium was detected at levels from 10 to 87 mg/kg. Copper was detected at levels from 7 to 64 mg/kg. Lead concentrations ranged from <10 to 30 mg/kg. Zinc concentrations ranged from 12 to 89 mg/kg.

GROUND-WATER QUALITY DATA - SOUTH END RESIDUAL WOOD STORAGE SITE

EMCON (1996 - see Attachment C) installed and sampled five temporary well points in borings drilled at the locations shown on Figure 2. These temporary well points were placed below the upper aquitard (Upper Silt Unit). Table 4 presents the screen depth for each well point and the results of the analyses. The samples sent to the laboratory were obtained by bailing and ranged from slightly silty to very silty in appearance.

- **TPH-G and BTEX** - No gasoline range hydrocarbons or benzene, toluene, ethylbenzene, or xylene were detected in any of the five samples above method

reporting limits. Trace amounts of benzene (0.3 ug/l), toluene (0.7 ug/l), and xylenes (0.7 ug/l) were detected above the method detection limits but below the method reporting limits in the sample WP03.

- **TPH-D** - Diesel range hydrocarbons were detected two of the five samples, WP01 and WP04, at concentrations of 0.32 mg/l and 0.26 mg/l, respectively.

- **TPH-O** - Heavy oil range hydrocarbons were detected in one of the five samples, WP01, at a concentration of 1.27 mg/l. This sample may be biased high because of the silty nature of the sample sent to the laboratory. This finding is based on the typical low solubility and mobility of heavy oil hydrocarbons that is supported by the comparative ground-water work completed on permanent wells located on the East Site (DOF 1995b).

- **PCBs** - No PCBs were detected in any of the five samples analyzed.

- **Halogenated Volatile Organic Compounds** (common solvents) - Halogenated volatile organic compounds were not detected in any of the samples except for WP03. Chloroform was detected at a concentration of 0.7 ug/l in the WP03 sample. The reported concentration is well below MTCA cleanup levels.

- **Pentachlorophenol** - Pentachlorophenol was not detected in any of the five samples analyzed.

- **Total Metals** - Cadmium and mercury were not detected in any of the five samples analyzed. Arsenic, chromium, copper, lead and zinc were detected at the concentrations shown on Table 4. The sample results are not considered representative of the actual concentrations in ground water because of the silty nature of the samples sent to the laboratory.

MANAGEMENT OF SOUTH END RESIDUAL WOOD STORAGE SITE

Based on conversations with Weyerhaeuser staff, the South End Residual Wood Storage Site is being managed with oversight of the Snohomish County Health Department. A topsoil recycling company is currently removing chips, sawdust, and lime debris, and transporting these materials to their processing yard. There the materials are being screened and/or added as a soil amendment to other soil or wood chip products. Any steel or iron encountered in the excavated materials is being separated and placed in a recycle bin, and at a later date, will be hauled to a recycler. Timbers will be crushed. Concrete debris will be crushed and used on-site. If any unsuitable material is encountered, appropriate disposal will be arranged. After the contractor removes the materials from the surface to the Upper Silt Unit (upper aquitard), crushed (recycled) concrete and sand will be placed, as necessary, on top of the Upper Silt Unit to make a stable working surface. After removal of the materials above the Upper Silt Unit,

this area has been designated to potentially receive dredge sand from the navigation channel of the Snohomish River.

CONCLUSIONS

On the basis of laboratory data from 39 samples from 36 test pits and five temporary well points on the South End Residual Wood Storage Site, no additional remediation, over and above what is being required by Snohomish County, is necessary. Observations of site conditions during test pit excavations showed wood chips overlying areas with lime, mixed wood and metal debris, concrete, and limited quantities of trash. The laboratory data results of samples collected in these areas in materials underlying the wood chips, show relatively low concentrations of constituents, with one exception (TP-16). As discussed above, these overlying materials are being removed down to native silt, and clean crushed concrete and sand are being placed, as necessary, on top of the silt. The TPH-affected soil from the area around TP-16 will be removed and transported to an approved landfill.

Some metals (predominately arsenic) were measured about one to two feet into natural alluvial/tide-flat soils lying below site fills (at an average depth of 13 feet below the surface). The average arsenic concentration in the natural materials is approximately 19 mg/kg, below the MTCA cleanup levels.

During previous work, several temporary well points were installed at the South End Residual Wood Storage Site and were quickly sampled to screen for potential impacts to the Lower Sand Aquifer. As discussed above, no TPH-G, TPH-D, BTEX, PCP, PCBs, halogenated volatile organic compounds, cadmium, copper, mercury and zinc were measured above MTCA ground-water cleanup levels. TPH-O was measured in one well point, and several metals were detected above MTCA cleanup levels. However, as stated above and by the analytical laboratory, the samples were very silty and we believe the sampling technique (bailing) allowed the entrainment of soil particles in the samples analyzed by the laboratory. Based on these observations, the results should be considered as "screening level" samples and likely are not representative of the actual conditions in ground water.

REFERENCES

Dalton, Olmsted & Fuglevand, Inc., 1995a, Draft Technical Memorandum, Potential Remediation Areas, Weyerhaeuser East Site, August 9, 1995,.

Dalton, Olmsted & Fuglevand, Inc., 1995b, Results of Low Flow Ground-Water Sampling, Weyerhaeuser East Site, Everett, Washington, prepared for Weyerhaeuser, September 21, 1995.

Dames and Moore , 1995, Report of Geotechnical Investigation - Phase 1, Site Development Study, South End Residual Wood Storage Site,, Everett, Washington, March 7, 1995

EMCON, 1992, Southend Landfill Soil Sampling, Everett Facility, November 30, 1992

EMCON, 1995, Operable Unit Summary Report for Weyerhaeuser Everett East Site (Volume 1 of 2) prepared for Weyerhaeuser Company, March 1995.

EMCON, 1996, Preliminary Subsurface Investigation - Weyerhaeuser South End Residual Wood Storage Site, May 1996

Hart Crowser, 1990, Phase 1 Preliminary Site Assessment, Weyerhaeuser Everett Mill B, April 18, 1990

CLOSING

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. This report is solely for the use and information of Weyerhaeuser Company unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this memorandum.

Table 1 . Test Pit Location/Elevation Survey Data (All distances in Feet)

Weyerhaeuser Co.
South End Residual Wood Storage Site

Test Pit Number	Northing	Easting	Elevation Ground Surface (NGVD 29)	Elevation Ground Surface (MLLW)
TP-SE-1	367448	1310091	9.8	15.7
TP-SE-2	367574	1310214	11.1	17.0
TP-SE-3	367784	1310191	13.7	19.7
TP-SE-4	367707	1310089	11.7	17.7
TP-SE-5	367980	1310095	15.6	21.5
TP-SE-6	368091	1310135	16.8	22.7
TP-SE-7	368068	1310254	15.5	21.4
TP-SE-8	368344	1310128	11.4	17.4
TP-SE-9	368321	1310267	15.3	21.2
TP-SE-10	368510	1310108	14.5	20.4
TP-SE-11	368508	1310327	15.4	21.3
TP-SE-12	368463	1310255	15.2	21.1
TP-SE-13	368614	1310221	13.4	19.4
TP-SE-14	368773	1310289	12.8	18.7
TP-SE-15	368869	1310403	9.0	14.9
TP-SE-16	369029	1310428	7.0	12.9

Locations surveyed by W&H Pacific, Professional Land Surveyors April 12, 1996
Horizontal Datum: NAD 83/91 (US Survey Feet)
Vertical Datum: NGVD 29 (US Survey Feet)
To convert from NGVD 29 to Mean Lower Low Water (Tidal) Datum add 5.93 Ft.
Method: Real Time Kinematic GPS. Trimble 4000SSE Receivers

Table 2. Description of Samples and Tests - Test Pits

Weyerhaeuser Co. - Everett
South End Residual Wood Storage Site

Field Rep:	T. Olmsted				Locations: See Plan	
Contractor:	CEcon				Date :See Individual Log below	
Excavator Operator:	Tom Southwick					
Excavator Type:	John Deere 490E					
Test Pit/ Sample No.	Type	Spl Depth (Ft.)	Date Time	Odor	Lab Tests	Description/Log of Test Pit
TP-SE-1 (9')	SS Spoon	9	4/3/96 10:25	None observed	WTPH-DX, Metals, PCBs, PCP	*Log of SE-1* *0-4' Red-brown woodchips and sawdust* *4-8' Dark gray, sandy, woodchips and timbers (Water @ 6')* *8-10' Gray, stiff, clayey SILT with peaty zones* *Bottom @ 10'*
TP-SE-2 (13')	SS Spoon	13	4/3/96 11:00	None observed	WTPH-DX, Metals, PCBs, PCP	*Log of SE-2* *0-6' Red-brown, woodchips and sawdust (Water at 6')* *6-12' Dark gray, wood chunks, timbers, and logs with minor sand and with bottles, rubber belting, cloth debris* *12-14' Gray, stiff, clayey SILT with organic fragments and roots* *Bottom at 14'*
TP-SE-3 (15')	SS Spoon	15	4/3/96 11:50	None observed	WTPH-DX, Metals, PCBs, PCP	*Log of SE-3* *0-6' Red-brown, woodchips and sawdust* *6-12' Dark gray, wood fragments with timbers, some logs, and string (Water at 8')* *12-14' Woodchips with sand* *14-16' Gray, stiff, clayey SILT with roots* *Bottom @ 16'*
TP-SE-4 (12')	SS Spoon	12	4/3/96 13:15	None observed	WTPH-DX, Metals, PCBs, PCP	*Log of SE-4* *0-5' Red-brown, woodchips and sawdust (thins to 3' on west side of pit* *5-11' Dark gray, mostly logs and timbers with small amount of rubber belting and other debris (Water at 7')* *11-13' Gray, stiff, clayey SILT with organic fragments and roots* *Bottom @ 13*
TP-SE-5 (15')	SS Spoon	15	4/3/96 14:00	None observed	WTPH-DX, Metals, PCBs, PCP	*Log of SE-5* *0-11' Red-brown, woodchips and sawdust - one steel cable /choker noted at 3-5' (Water at 11')* *11-14' Dark gray, wood fragments, boards, timbers, plastic cups, and steel cables* *14-16' Gray, stiff, clayey SILT with organic fragments and roots* *Bottom @ 16'*

Table 2. Description of Samples and Tests - Test Pits

Weyerhaeuser Co. - Everett
South End Residual Wood Storage Site

Field Rep:	T. Olmsted				Locations: See Plan	
Contractor:	CEcon				Date :See Individual Log below	
Excavator Operator:	Tom Southwick					
Excavator Type:	John Deere 490E					
Test Pit/ Sample No.	Type	Spl Depth (Ft.)	Date Time	Odor	Lab Tests	Description/Log of Test Pit
TP-SE-6						*Log of SE-6*
(15-19')	SS Spoon	15-19	4/3/96 14:30	None observed	WTPH-DX, Metals, PCBs, PCP	*0-11' Red-brown, woodchips and sawdust - one steel cable /choker noted at 3-5' (Water at 12.5')*
(20')	SS Spoon	20	4/3/95 15:00	None observed	WTPH-DX, Metals, PCBs, PCP	*11-19' Dark gray, mixed fine to coarse SAND, wood fragments, cables, and crushed steel bucket*
						19-21' Gray, stiff, clayey SILT with 1/2" peat layer and roots
						Bottom @ 21'
TP-SE-7						*Log of SE-7*
(15')	SS Spoon	15	4/3/96 16:00	None observed	WTPH-DX, Metals, PCBs, PCP	*0-10.5' Red-brown, woodchips and sawdust (Water at 10.5')*
						10.5-14' Dark gray wood waste, with some plastic cups and steel banding
						14-14.5' Fine to coarse sand zone
						14.5-16' Gray, stiff, clayey SILT with sand pockets and organic fragments
						Bottom @ 16
TP-SE-8						*Log of SE-8*
(6.5') (lime waste)	SS Spoon	6.5	4/4/96 08:15	None observed	WTPH-DX, Metals, PCBs, PCP, pH	*0-4' Red-brown to brown, woodchips and sawdust (thickens to 5.5' on west end of pit) (Water seeped into pit from 6.5')*
(13')	SS Spoon	13	4/4/96 08:40	None observed	WTPH-DX, Metals, PCBs, PCP	*4-12' Dark gray, silty, fine to coarse SAND with wood, cables, black fibrous material and one crushed steel bucket. (Putrid odor) A 2-foot thick by 6-foot long wedge of yellow/tan silt (lime waste) extended from 5.5 to 7.5' on east end of pit and tapered to zero thickness about mid-pit*
						12-14' Gray, stiff, clayey SILT with organic fragments and roots
						Bottom @ 14'
TP-SE-9						*Log of SE-9*
(10' and duplicate 1) (lime waste)	SS Spoon	10	4/4/96 09:20	None observed	WTPH-DX, Metals, PCBs, PCP, pH	*0-9' Red-brown to brown to yellow-brown, woodchips and sawdust*
(12.5')	SS Spoon	12.5	4/4/96 09:30	None observed	WTPH-DX, Metals, PCBs, PCP	*9-11' Light yellow granular material (lime waste) (Seepage at 10.5')*
						11-11.5' Dark gray SAND
						11.5-13.5' Gray, silty, fine to coarse SAND with gravel and roots
						13.5-15' Gray, stiff, clayey SILT with organic fragments
						Bottom @ 15

Table 2. Description of Samples and Tests - Test Pits

Weyerhaeuser Co. - Everett
South End Residual Wood Storage Site

Field Rep:	T. Olmsted				Locations: See Plan	
Contractor:	CEcon				Date :See Individual Log below	
Excavator Operator:	Tom Southwick					
Excavator Type:	John Deere 490E					
Test Pit/ Sample No.	Type	Spl Depth (Ft.)	Date Time	Odor	Lab Tests	Description/Log of Test Pit
TP-SE-10						*Log of SE-10*
(11.5')	SS Spoon	11.5	4/4/96 10:15	Some odor	WTPH-DX, Metals, PCBs, PCP	*0-10.5' Red-brown woodchips and sawdust (Seepage at 10.5')*
(15' and duplicate 2)	SS Spoon	12.5	4/4/96 10:30	None observed	WTPH-DX, Metals, PCBs, PCP	*10.5-11' Black asphaltic fibrous material*
						11-14' Gray to dark gray to black, silty, fine to coarse SAND with wood and some timbers - Some odor noted
						14 -16' Gray, stiff, clayey SILT with peat fragments
						Bottom @ 16
TP-SE-11						*Log of SE-11*
(12')	SS Spoon	12	4/4/96 11:00	None observed	WTPH-DX, Metals, PCBs, PCP	*0-10' Red-brown woodchips and sawdust (Seepage at 10')*
(14')	SS Spoon	14	4/4/96 11:15	None observed	WTPH-DX, Metals, PCBs, PCP	*10-13' Gray, silty, fine to medium SAND with roots and twigs, becoming dark gray to black, fine to coarse SAND with wood fragments, wire, and steel strapping*
						13-15' Gray, stiff, peaty, clayey SILT
						Bottom at 15'
TP-SE-12						*Log of SE-12*
(11.5') (lime waste)	SS Spoon	11.5	4/4/96 12:15	None observed	WTPH-DX, Metals, PCBs, PCP, pH	*0-10' Red-brown, woodchips and sawdust with one creosoted 4x12 at 5' depth (Seepage at 10')*
(14')	SS Spoon	14	4/4/96 12:30	None observed	WTPH-DX, Metals, PCBs, PCP	*10-11' Gray, sitly, fine to coarse SAND*
						11-12' Light gray/tan, granular (silt size) material (lime waste)
(16')	SS Spoon	16	4/4/96 12:45	None observed	WTPH-DX, Metals, PCBs, PCP	*12-15' Black, silty, fine to coarse SAND with wood fragments (logs at 15')*
						15-17' Gray, stiff, clayey SILT wih organic fragments
						Bottom at 17'
TP-SE-13						*Log of SE-13*
(13.5')	SS Spoon	13.5	4/4/96 14:00	None observed	WTPH-DX, Metals, PCBs, PCP	*0-8' Brown woodchips and sawdust (Seepage at 8')*
						8-9' Yellow-gray, granular material (lime waste)
						9-12.5' Black, fine to coarse SAND with wood, steel cable, and some brick
						12.5-14' Gray, stiff, clayey SILT with organic fragments
						Bottom at 14'
TP-SE-14						*Log of SE-14*
(9.5')	SS Spoon	9.5	4/4/96 14:30	None observed	WTPH-DX, Metals, PCBs, PCP, pH	*0-6' Red-brown, woodchips and sawdust*
(14')	SS Spoon	14	4/4/96 14:40	None observed	WTPH-DX, Metals, PCBs, PCP	*6-7.5' Cemented, gray to yellow, fine to coarse gravelly SAND*
						7.5-10' Dark gray to black, fine to coarse SAND with gravel, wood and brick fragments (Trace of seepage at 8' but stopped during excavation)
						10-12' Gray, peaty, clayey SILT
						Bottom at 17'

Table 2. Description of Samples and Tests - Test Pits

Weyerhaeuser Co. - Everett
South End Residual Wood Storage Site

Field Rep:	T. Olmsted				Locations: See Plan	
Contractor:	CEcon				Date :See Individual Log below	
Excavator Operator:	Tom Southwick					
Excavator Type:	John Deere 490E					
Test Pit/ Sample No.	Type	Spl Depth (Ft.)	Date Time	Odor	Lab Tests	Description/Log of Test Pit
TP-SE-15						*Log of SE-15*
(9')	SS Spoon	9	4/4/96 14:50	None observed	WTPH-DX, Metals, PCBs, PCP	*0-3' Red-brown, woodchips and sawdust with top 1' brown, silty, fine to coarse SAND with gravel and roots* *3-8' Dark gray to black wood fragments, metal (iron/steel) pieces with a fine to coarse sand matrix - mostly wood (Seepage at 6.5' but stopped during excavation)* *8-9.5' Gray, stiff, clayey SILT with organic fragments* *Bottom @ 9.5'*
TP-SE-16						*Log of SE-16*
(3')	SS Spoon	3	4/4/96 15:20	None observed	WTPH-DX, Metals, PCBs, PCP	*0-1' Light brown to brown GRAVEL* *1-5' Dark gray to light gray, silty, fine to coarse SAND with abundant timbers (Seepage at 5')*
(6')	SS Spoon	6	4/4/96 15:30	None observed	WTPH-DX, Metals, PCBs, PCP	*5-7' Gray, stiff, clayey SILT with organic fragments and roots* *Bottom at 7'*

Table 3. Summary of Test Pit Analyses - 8/31/92-9/1/92 and 4/3/96-4/4/96

Weyerhauser
South End Residual Wood Storage Site

Test Pit Number	Sample Number	Depth (ft.)	Material	TPH as Oil mg/kg	TPH as Diesel mg/kg	PCBs mg/kg	Pentachloro-phenol mg/kg	2,3,4,6&2,3,5,6-Tetrachlorophenol mg/kg	2,3,6-Tri chlorophenol mg/kg	2,3,4,5-Tetra-chlorophenol mg/kg
TP-6(*)	S-1	10	Mixed sand/wood waste	890	400	ND	0.078	na	na	na
TP-8(*)	S-1	12	Mixed sand/wood waste	11	16	ND	ND	na	na	na
TP-11(*)	S-1	14	Sand fill with wood/metal debris	480	240	ND	0.0114P	na	na	na
TP-12(*)	S-1	10.5	Mixed sand, wood & lime waste	370	190	ND	0.0374JP	na	na	na
TP-14(*)	S-1	13	Mixed sand/wood waste	840	520	0.064P	0.057P	na	na	na
TP-16A(*)	S-1	15	Mixed sand/wood waste	140	81	ND	ND	na	na	na
TP-19 (*)	S-1	2.5	Soil (organic fill with debris)	62	32	ND	0.0064JP	na	na	na
SE-6	15-19'	15-19	Mixed sand fill	310	1100	0.052(1260)**	0.12	0.031	.0088P	0.0071P
SE-10	11.5'	11.5	Mixed sand fill	84	280	0.021(1260)**	0.066	0.017	0.0094P	0.0056P
SE-11	12'	12	Mixed sand fill	41	250	.0078JP(1016)* 0.017(1260)**	0.0057U	0.011JP	0.0077P	0.0055U
SE-12	14'	14	Mixed sand fill	90	200	ND	0.0053U	0.010U	0.010P	0.0051U
SE-14	9.5'	9.5	Mixed sand fill	160	380	ND	0.015	0.0099P	0.011P	0.0051U
SE-16	3'	3	Mixed sand fill	22	<89	ND	0.0037U	0.0070U	0.0071	0.0036U
TP-15(*)	S-1	16	Interface between wood/metalic waste and alluvium (clayey silt)	430	170	0.022P	ND	na	na	na
TP-7(*)	S-1	10	Lime waste	180	50	0.019	ND	na	na	na
TP-10(*)	S-1	9.5	Lime waste	-	-	0.0040JP	0.0118JP	na	na	na
TP-13(*)	S-1	11	Lime waste	170	160	0.035P	0.128	na	na	na
TP-16(*)	S-1	11.5	Lime waste	15,000	26,000	ND	ND	na	na	na
SE-9	10'	10	Lime Waste	250	480	ND	0.052	0.52	0.0074P	0.06
SE-8	6.5'	6.5	Lime Waste	<20	<130	ND	0.11	0.020P	0.0074P	0.0020JP
SE-12	11.5'	11.5	Lime Waste	<15	<93	0.027(1260)**	0.0049U	0.0094U	0.0065P	0.0047U
SE-1	9'	9	Organic Silt	<25	<160	0.032J(1016)** 0.036P(1260)**	0.0062U	0.012U	0.012	0.0060U
SE-2	13'	13	Organic Silt	54	140	ND	0.0068U	0.013U	0.011	0.0065U
SE-3	15'	15	Organic Silt	<19	<120	ND	0.0045U	0.0086U	0.0067P	0.0043U
SE-4	12'	12	Organic Silt	<20	<130	ND	0.0059U	0.011U	0.0093P	0.0057U
SE-5	15'	15	Organic Silt	<18	<110	ND	0.0053U	0.013P	0.011P	0.0051U
SE-6	20'	20	Organic Silt	<26	<160	ND	0.0066U	0.013U	0.011	0.0063U
SE-7	15'	15	Organic Silt	<21	<130	ND	0.0054U	0.010U	0.0052U	0.0052U
SE-8	13'	13	Organic Silt	<22	<140	ND	0.0050U	.0097U	0.0070P	0.0048U
SE-10	15'	15	Organic Silt	<30	<190	ND	0.0077U	0.015U	0.017	0.0074U
SE-11	14'	14	Organic Silt	<19	<120	ND	0.0045U	0.0087U	0.0061P	0.0044U
SE-12	16'	16	Organic Silt	<18	<110	ND	0.0044U	0.0085U	0.0061P	0.0043U
SE-13	13.5'	13.5	Organic Silt	<20	<130	ND	0.0050U	0.0095U	0.0069P	0.0048U
SE-14	11'	11	Organic Silt	16	<95	ND	0.0050U	0.0096U	0.0096	0.0048U
SE-15	9'	9	Organic Silt	<23	<140	ND	0.0059U	0.011U	0.012	0.0057U
SE-16	6'	6	Organic Silt	<23	<150	ND	0.0058U	0.011U	0.0072P	0.0056U
SE-9	12.5'	12.5	Sand with roots	<13	<81	ND	0.0036U	0.0069U	0.0035U	0.0035U
TP-17(*)	S-1	3.5	Alluvium (sand)	<2	ND	ND	ND	na	na	na

(*) Data from Emcon Report Dated Nov. 30, 1992

- Indicates analysis not performed on this sample

ND indicates analyte not detected above method reporting limit

J indicates an estimated value

NR = not reported

na = not analyzed

P indicates greater than 25% difference for detected concentrations between two GC columns, the lower of the two values is reported

()** number in parenthesis indicates Arochlor Number - Other Arochlors (1016, 1221, 1232, 1242,1248, 1254, and 1260) below method reporting limits if not listed

Table 3. Summary of Test Pit Analyses - 8/31/92-9/1/92 and 4/3/96-4/4/96

Test Pit Number	Sample Number	Depth (ft.)	Material	Metals					pH
				Arsenic mg/kg	Chromium mg/kg	Copper mg/kg	Lead mg/kg	Zinc mg/kg	
TP-6(*)	S-1	10	Mixed sand/wood waste	na	na	na	na	na	na
TP-8(*)	S-1	12	Mixed sand/wood waste	na	na	na	na	na	na
TP-11(*)	S-1	14	Sand fill with wood/metal debris	na	na	na	na	na	na
TP-12(*)	S-1	10.5	Mixed sand, wood & lime waste	na	na	na	na	na	na
TP-14(*)	S-1	13	Mixed sand/wood waste	na	na	na	na	na	na
TP-16A(*)	S-1	15	Mixed sand/wood waste	na	na	na	na	na	na
TP-19 (*)	S-1	2.5	Soil (organic fill with debris)	na	na	na	na	na	na
SE-6	15-19'	15-19	Mixed sand fill	26.9	82	112	230	942	na
SE-10	11.5'	11.5	Mixed sand fill	4.6	27	20	10	48	na
SE-11	12'	12	Mixed sand fill	<0.7	23	64	70	620	na
SE-12	14'	14	Mixed sand fill	5.1	22	16	10	42	na
SE-14	9.5'	9.5	Mixed sand fill	100	141	390	310	915	na
SE-16	3'	3	Mixed sand fill	5.9	28	20	<10	47	na
TP-15(*)	S-1	16	Interface between wood/metalic waste and alluvium (clayey silt)	na	na	na	na	na	na
TP-7(*)	S-1	10	Lime waste	na	na	na	na	na	na
TP-10(*)	S-1	9.5	Lime waste	na	na	na	na	na	na
TP-13(*)	S-1	11	Lime waste	na	na	na	na	na	na
TP-16(*)	S-1	11.5	Lime waste	na	na	na	na	na	na
SE-9	10'	10	Lime Waste	0.9	9	3	10	3	12.6
SE-8	6.5'	6.5	Lime Waste	2.9	8	8	<10	3	12.6
SE-12	11.5'	11.5	Lime Waste	13.5	23	9	10	16	8.3
SE-1	9'	9	Organic Silt	23	78	47	<10	90	na
SE-2	13'	13	Organic Silt	22.2	84	59	<10	82	na
SE-3	15'	15	Organic Silt	16	66	57	<10	74	na
SE-4	12'	12	Organic Silt	25.6	87	46	<10	89	na
SE-5	15'	15	Organic Silt	17.8	68	45	<10	72	na
SE-6	20'	20	Organic Silt	29.7	66	51	30	76	na
SE-7	15'	15	Organic Silt	14.6	10	7	<10	12	na
SE-8	13'	13	Organic Silt	14.3	75	53	<10	85	na
SE-10	15'	15	Organic Silt	27	69	64	<10	58	na
SE-11	14'	14	Organic Silt	<0.7	72	42	<10	79	na
SE-12	16'	16	Organic Silt	28.7	59	52	10	68	na
SE-13	13.5'	13.5	Organic Silt	18.6	70	64	<10	72	na
SE-14	11'	11	Organic Silt	18.5	67	60	<10	85	na
SE-15	9'	9	Organic Silt	21.2	75	55	<10	88	na
SE-16	6'	6	Organic Silt	22.1	72	50	<10	77	na
SE-9	12.5'	12.5	Sand with roots	5.3	41	24	<10	40	na
TP-17(*)	S-1	3.5	Alluvium (sand)	na	na	na	na	na	na

(*) Data from Emcon Report Dated Nov. 30, 1992

- Indicates analysis not performed on this sample

ND indicates analyte not detected above method reporting limit

J indicates an estimated value

NR = not reported

na = not analyzed

Table 4. Water Quality Summary - Lower Sand Unit - Well Points WP01, 02, 03, 04, 05

Weyerhaeuser
South End Residual Wood Storage Site

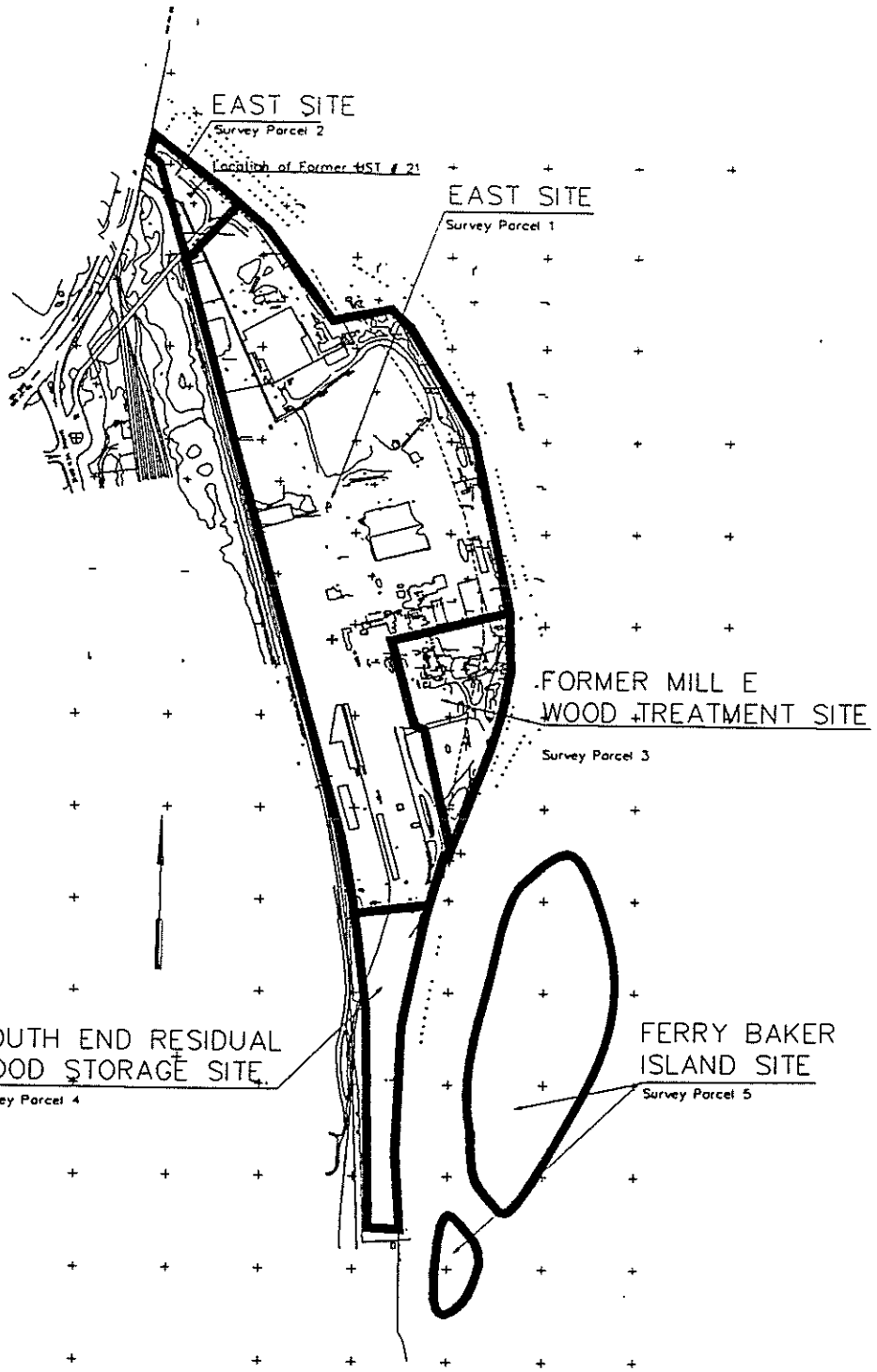
Well No.		WP01	WP02	WP03	WP04	WP05
Spl No.		WP01-20	WP02-25	WP03-26	WP04-25	WP05-35
Well Point Screen Depth Interval (Ft.)		20-23	22-25	23-26	25-28	32-35
Bottom of Auger at Time of Water Sampling (Ft.)		20	25 (See Note 2)	25 (See Note 2)	35 (See Note 2)	35 (See Note 2)
Date		8/1/95	8/1/95	8/2/95	8/2/95	8/2/95
Analyte	Method					
TPH						
TPH as Oil (mg/L) (See Note 1)	WTPH-DX	1.27 (b)	<0.75	<0.75	<0.75	<0.75
TPH as Diesel (mg/L)	WTPH-DX	0.32 (a)	<0.25	<0.25	0.26(a)	<0.25
TPH as Gasoline (mg/L)	WTPH-G	<0.050	<0.050	<0.050	<0.050	<0.050
BETX (ug/L)	8020					
Benzene		<0.5	<0.5	0.3t	<0.5	<0.5
Toluene		<1.0	<1.0	0.7t	<1.0	<1.0
Ethylbenzene		<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes		<1.0	<1.0	0.7t	<1.0	<1.0
PCBs (ug/L)	8080					
Aroclor 1016		<0.2	<0.2	<0.2	<0.2	<0.2
Aroclor 1221		<0.2	<0.2	<0.2	<0.2	<0.2
Aroclor 1232		<0.2	<0.2	<0.2	<0.2	<0.2
Aroclor 1242		<0.2	<0.2	<0.2	<0.2	<0.2
Aroclor 1248		<0.2	<0.2	<0.2	<0.2	<0.2
Aroclor 1254		<0.2	<0.2	<0.2	<0.2	<0.2
Aroclor 1260		<0.2	<0.2	<0.2	<0.2	<0.2
Halogenated Volatile Organic Compounds (ug/L)	8010A	ND	ND	Chloroform 0.7 others ND	ND	ND
Pentachlorophenol (ug/L)	8150A	<5	<5	<5	<5	<5
Total Metals (ug/L) (See Note 1)						
Arsenic	7060	20	33	9	<5	8
Cadmium	6010A	<3	<3	<3	<3	<3
Chromium	6010A	174	307	89	13	130
Copper	6010A	121	302	47	<10	53
Lead	7421	51	138	25	8	60
Mercury	7470	<0.5	<0.5	<0.5	<0.5	<0.5
Zinc	6010A	4360	7200	3140	1030	6260

NOTES: (1) Analytical results may have been affected by soil particulates incorported in water during sampling of temporary well point. Field staff noted water samples ranged from slightly silty to very silty. Laboratory staff noted samples were very silty in appearance.

(2) All or portion of well point screened interval in sand heave within auger during water sampling.

ND = Below method reporting limits
(a/b) = Quantified as diesel/oil, but the chromatogram did not match the typical diesel/oil fingerprint
t = trace amount detected between method reporting limit (MRL) and method detection limit (MDL)
Data from Emcon/Columbia Analytical Services - August 1995

~mg



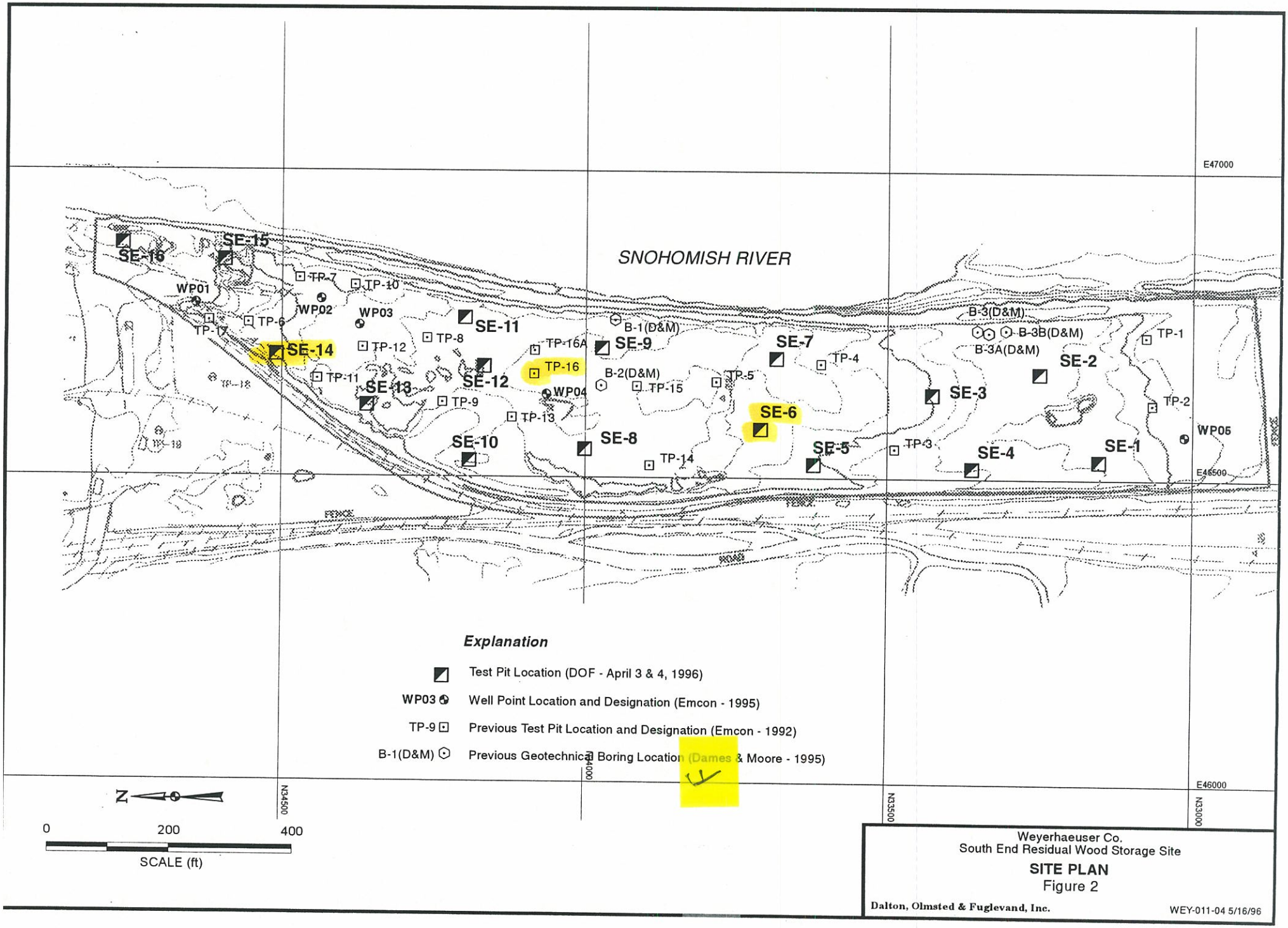
Weyerhaeuser

TITLE:

SURVEY PARCEL NUMBERS

EAST SITE -- EVERETT, WA

DWN:	DES.:	PROJECT NO.:
CHKD:	APPD:	FIGURE NO: 1
DATE: 4/18/96	REV.:	EASTOPER.DWG



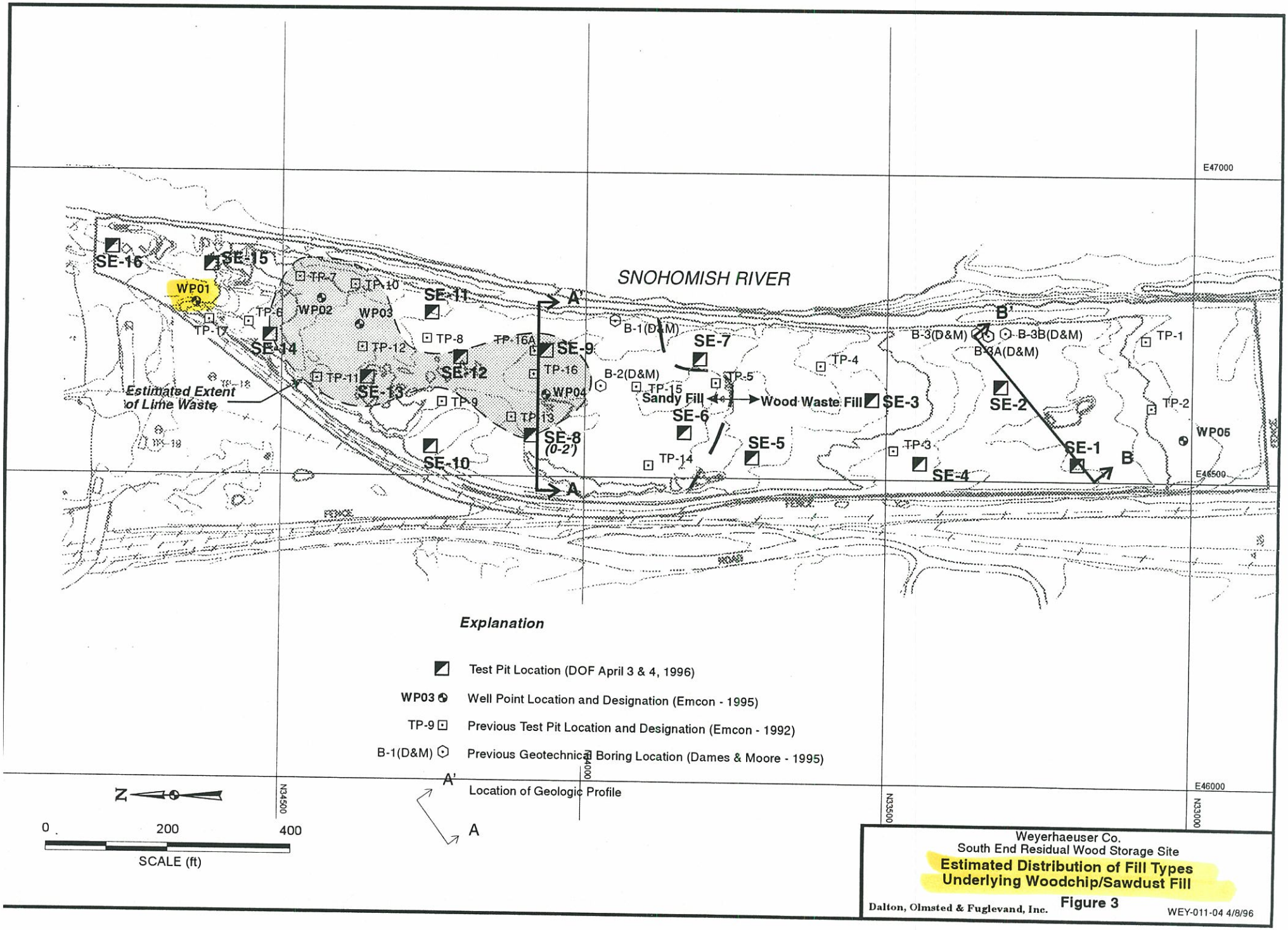
Weyerhaeuser Co.
South End Residual Wood Storage Site

SITE PLAN

Figure 2

Dalton, Olmsted & Fuglevand, Inc.

WEY-011-04 5/16/96



Weyerhaeuser Co.
South End Residual Wood Storage Site

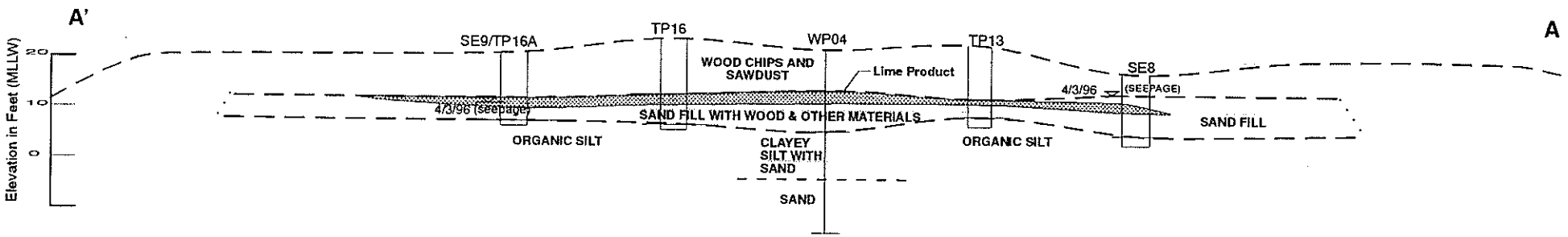
Estimated Distribution of Fill Types Underlying Woodchip/Sawdust Fill

Dalton, Olmsted & Fuglevand, Inc.

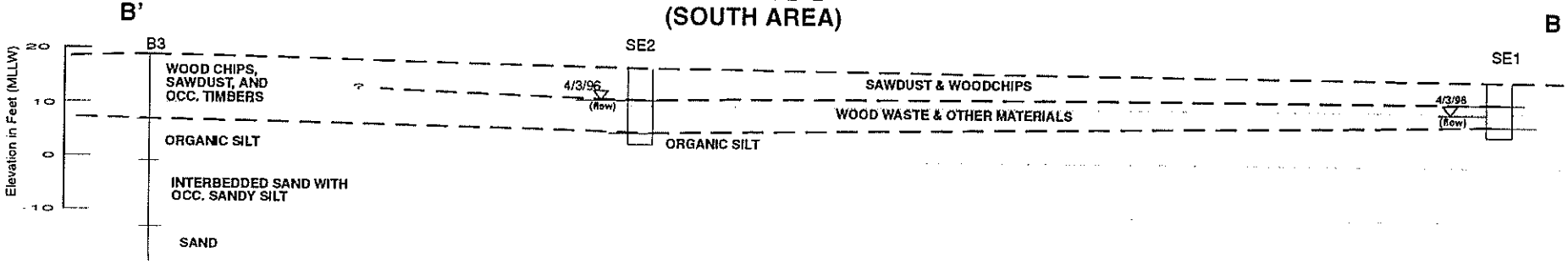
Figure 3

WEY-011-04 4/8/96

PROILE A-A'
(NORTH AREA)



PROFILE B-B'
(SOUTH AREA)



Approximate Horizontal
& Vertical Scale: 1" = 30

Note: These profiles are based on interpolation of data from test pits and borings. Variations between conditions shown and actual conditions should be anticipated.

Weyerhaeuser Company
South End Residual Wood Storage Site

GEOLOGIC PROFILES

WEY-011-04 **FIGURE 4** April 1996
Dalton, Olmsted & Fuglevand, Inc.

ATTACHMENT A

WEYERHAEUSER LABORATORY SHEETS
TEST PIT SAMPLES 4/3/96 AND 4/4/96

Weyerhaeuser

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

May 1, 1996

Mr. Matt Dalton
Dalton, Olmsted & Fuglevand
11711 Northcreek Parkway So.
Suite 101
Bothell, WA 98011

Dear Matt:

Attached is a copy of our final report for the samples you requested we analyze for Everett South End Wood Storage Soil. These are from our service request number 00629. This data was faxed to you over the last few weeks as interim reports. Invoicing for this work will be directly to Weyerhaeuser. If you have any questions concerning this report, please feel free to contact me at (206) 924-6242.

Thank you for using our laboratory for this analysis and we look forward to working with you on future projects.

Sincerely,

Dennis Catalano, Project Manager
Weyerhaeuser Analytical and Testing Services

Attachments

CC: Stuart Triolo Everett 34

eyerhaeuser Analytical & Tes Services

Date 4/ 10

Page 1 of 2

Sample Analysis Request/Chain of Custody Form

Facility Everett Sort 34

Sampler's Project No. South End Wood Storage

Weyerhaeuser Account No. 120 2974270

Project Manager (print) Stuart Triolo 339-2871

Sampled by: ☒ Consultant Dalton, Olmsted & Fuglevand ☐ Facility ☐ E&AS/WTC ☐ E&AS/NB

Address 11711 Northcreek Pkwy S Suite 101 Bothell WA 98011

Phone No. 486-7905 FAX 486-7657

Sampler Name (print) T. Olmsted

Recorded By (signed) T. Olmsted

Sample Description (ID, Date, Time are Required)

Method	Field Sample ID (15 characters max.)	Date (m/d/y)	Time (hh:mm)	Depth (ft / m)	Matrix: Water	Soil/Sed	Oil	Preservative: HCl	H_2SO_4	HNO_3	$Na_2S_2O_3$		Filtered	Number of Containers
G	TP-SE-1 (9')	4/3/96	10:25	9		X								1
	TP-SE-2 (13')	4/3/96	11:00	13		X								1
	TP-SE-3 (15')	4/3/96	11:50	15		X								1
	TP-SE-4 (12')	4/3/96	13:15	12		X								1
	TP-SE-5 (15')	4/3/96	14:00	15		X								1
	TP-SE-6 (15-19')	4/3/96	14:30	15-19		X								1
	TP-SE-6 (20')	4/3/96	15:00	20		X								1
	TP-SE-7 (15')	4/3/96	16:00	15		X								1
	TP-SE-8 (6.5')	4/4/96	0815	6.5		X								1
	TP-SE-8 (13')	4/4/96	0840	13		X								1
↓	TP-SE-9 (10')	4/4/96	0920	10		X								1

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

Analyses Requested (circle or write in parameters)

pH Cond TDS TSS Color Tannins | Volatile Organics / BTEX | Semi-volatile Organics | TPH: 418.1 / TPH-D / TPH-DX | Ca Mg Na K Fe Mn | Metals (list below) As, Cr, Cu, Pb, Zn | NH_3 HCO_3 CO_3 Cl F NO_3 SO_4 | AOX | TCLP: Metals VOA SVOA Pest Herb PCBs | Dioxin: Total / 2,3,7,8-TCDD / 2,3,7,8-TCDF | CN | BOD P-ortho | TKN P-total TOC COD | PCBs | PCP | | Notes

			X		X								X	X	X	TPH-DX w/acid silica gel cleanup as 4/5/96 1530
			X		X								X	X	X	
			X		X								X	X	X	
			X		X								X	X	X	
			X		X								X	X	X	
			X		X								X	X	X	
			X		X								X	X	X	
			X		X								X	X	X	
			X		X								X	X	X	
			X		X								X	X	X	
			X		X								X	X	X	

note no 418.1 on any samples per Stuart Triolo as 4/5/96 1530

Remarks/Detection Limit Requirements

Metals: As, Cr, Cu, Pb, Zn

note no 418.1 on any samples per stuart Triolo as 4/5/96 1530

☒ Samples on Ice or Blue Ice

Lab Turn-Around Time

☐ 24 Hr ☒ 48 Hr ☐ 7 Day ☐ 2-3 wk Date Due:

Reporting and QA/QC Requirements

RESULTS TO: M. Dalton See address above

CC: Stuart Triolo / Sort 34

☐ CLP Package ☐ NPDES Permit ☐ Other: ☐ Electronic Report

Laboratory

☒ WATS/WTC ☐ WATS/NB ☐ Other:

Lab SR#: 00000

Case ID:

SDG ID: 13

Sample Chain of Custody and Shipping Method Record

	Date	Time		
Relinquished By Sampler (signature):	4/4/96	16:45	Received By (signature):	Shipping Method: hand delivered
Relinquished By (signature):	Date	Time	Received By (signature):	Airbill No.
Relinquished By (signature):	Date 4/5/96	Time 0730	Received For Laboratory By (signature): Dana L. Schafer	
			Samples Received Intact:	Cooler Temp: 4° °C

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

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

Form 15302 (2/96) Process Services TP-1 Tacoma

ytical and Tes. , Services

32901 Weyerhaeu ly South
Federal Way, Wa. n 98003
Analytical Chemistry Laboratories
Tacoma, Washington 98477
Tel (206) 924 6148
Tel (206) 924 6242
Fax (206) 924 6654

Chain of Custody/Laboratory Analysis Request

Weyerhaeuser

Southwood Wood Storage

Date 4/4/96 Page 2 of 3

ct Everett Sort 34 # 120 2974270

Report To See Sheet 1

ess

hone #

olers Name T. Olmsted Phone # 486-7905

olers Signature

Sample I.D.	Date/Time	Matrix*	Comp	Grab	Number of Containers	Organic Analysis: Base/Neu/Acid/Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	BTEX	Herbicide 8150	Fuel Finger Printing MOD 8015/8020	Pesticides/PCBs 608/8080	Dioxin – Total, OR 2, 3, 7, 8, TCDD, TCDF	Total Petroleum Hydrocarbons – 418.1 & WTPH-D x (w/ silica gel cleaning)	Total Organic Halides (TOX) 415/9060 1530 see note	Total Organic Carbon (TOC) 415/9060	Metals (total or dissolved) List Below	Cyanide	Inorganic Analysis: Ph, Cond, Cl, So4, P-ortho, F, Br, NO3, NO2, (circle)	NH3-N, COD, Total-P, TKN (circle)	TCLP – Metals As, Ba, Cd, Cr, Pb, Hg, Se, Ag	TCLP – VOA, BNA (CIRCLE)	TCLP – PCB, PEST, HERB (circle)	Other: Drinking Water	(PCP)
Duplicate #1	4/4/96 —	S		X	1						X		X			X							X
TP-SE-9 (12.5')	4/4/96 0930	S		✓	1						X		X			X							X
TP-SE-10 (11.5')	4/4/96 1015	S		✓	1						X		X			X							X
TP-SE-10 (15')	4/4/96 1030	S		✓	1						X		X			X							X
Duplicate #2	4/4/96 —	S		✓	1						X		X			X							X
TP-SE-11 (12')	4/4/96 1100	S		✓	1						X		X			X							X
TP-SE-11 (14')	4/4/96 1115	S		✓	1						X		X			X							X
TP-SE-12 (11.5')	4/4/96 1215	S		✓	1						X		X			X							X
TP-SE-12 (14')	4/4/96 1230	S		✓	1						X		X			X							X
TP-SE-12 (16')	4/4/96 1245	S		✓	1						X		X			X							X

Sample Transfer Record

QUISHED BY (PRINT) T. Olmsted	RECEIVED BY (PRINT)	
ATURE	SIGNATURE	
Dames, Olmsted & Fu	FIRM Weyco	
E/TIME 4/4/96 1644	DATE/TIME	
NQUISHED BY (PRINT)	RECEIVED BY (PRINT) DIANA L. SCHAFER	
IATURE	SIGNATURE Diana L. Schafer	
	FIRM Weyco SMO	
E/TIME	DATE/TIME 4/5/96 0730	

Invoice Information

P.O. NUMBER

RESULTS TO

Project Information

MILL/SITE CONTRACT

PHONE

Sample Receipt

SHIPPED VIA

SEALS INTACT TEMP

CONDITION

SR Number

Special Instruction/Comments Metals as As, Cr, Cu, Pb, Zn

note: NO 418.1 on any samples per Stuart Triolo ds 4/5/96

*Matrix: W – Water S – Soil SL – Sludge O – Oil X – Other, Specify Type 1530

Preservation: ☒ 4°C ☐ Freeze ☐ Ambient ☐ Other

ytical and Test ervices

Chain of Custody/Laboratory Analysis Request

Weyerhaeuser
Federal Way, Wash ... 003
Analytical Chemis... ratories
Tacoma, Washingt... 477
Tel (206) 924 6148
Tel (206) 924 6242
Fax (206) 924 6654

Weyerhaeuser

SouThend Wood Storage

Date 4/4/96 Page 3 of 3

ect ~~Everett~~ Sort 34 # 120297427 0

Report To See Sheet 1

ess

phone #

plers Name T. Olmsted Phone # 486-7901

plers Signature [signature]

Handwritten note at the Total Petroleum Hydrocarbons column (circled): "see note 1530 4/5/96 #WTPH-DX w/acid silica gel clean"

Sample I.D.	Date/Time	Matrix*	Comp	Grab	Number of Containers	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	BTEX	Herbicide 8150	Fuel Finger Printing MOD 8015/8020	Pesticides/PCBs 608/8080	Dioxin – Total, OR 2,3,7,8, TCDD, TCDF	Total Petroleum Hydrocarbons – 418.1	Total Organic Halides (TOX) 415/9060	Total Organic Carbon (TOC) 415/9060	Metals (total or disolved) List Below	Cyanide	Ph, Cond, Cl, So4, P-ortho, F, Br, NO3, NO2 (circle)	NH3-N, COD, Total-P, TKN (circle)	TCLP – Metals As, Ba, Cd, Cr, Pb, Hg, Se, Ag	TCLP – VOA, BNA (CIRCLE)	TCLP – PCB, PEST, HERB (circle)	Drinking Water	PCP
P-SE-13 (13.5')	4/4/96 1400	S		✓	1						X		X			X								X
TP-SE-14 (9.5')	4/4/96 1430	S		✓	1						X		X			X								X
TP-SE-14 (11')	4/4/96 1440	S		✓	1						X		X			X								X
P-SE-15 (9')	4/4/96 1450	S		✓	1						X		X			X								X
TP-SE-16 (3')	4/4/96 1520	S		✓	1						X		X			X								X
P-SE-16 (6')	4/4/96 1530	S		✓	1						X		X			X								X

Sample Transfer Record

Relinquished by	Received by
RELINQUISHED BY (PRINT) D Olmsted	RECEIVED BY (PRINT)
SIGNATURE [signature]	SIGNATURE
FIRM Dalton Olmsted Fuglevand	FIRM
DATE/TIME 4/4/96 1645	DATE/TIME
RELINQUISHED BY (PRINT)	RECEIVED BY (PRINT) DIANA L. SCHAFER
SIGNATURE	SIGNATURE [signature]
FIRM	FIRM Weyco SMO
DATE/TIME	DATE/TIME 4/5/96 0730

Invoice Information

P.O. NUMBER

RESULTS TO See Sheet 1

Project Information

MILL/SITE CONTRACT Stuart Triolo

PHONE 337-2871

Sample Receipt

SHIPPED VIA

SEALS INTACT TEMP

CONDITION

SR Number

Special Instruction/Comments

Metals: As, Cr, Cu, Pb, Zn

note: no 418.1 on any samples per Stuart Triolo ds 4/5/96 1530

*Matrix: W – Water S – Soil SL – Sludge O – Oil X – Other, Specify Type

Preservation: ☒ 4°C ☐ Freeze ☐ Ambient ☐ Other

000003

WEYERHAEUSER COMPANY
ANALYTICAL LABORATORIES
ATOMIC SPECTROSCOPY
Tacoma, WA

Everett South End Wood Storage Soil Samples #120-2974270
SR 00629
Total Metals Analysis

Lab Code	Sample Designation	As	Cr	Cu	Pb	Zn
		(mg/kg, O.D. Basis)				
63783	Duplicate #1 04/04/96 Soil	< 0.7	8	2	10	3
63783D	Duplicate	< 0.7	9	3	10	3
63784	Duplicate #2 04/04/96 Soil	23.1	71	52	< 10	57
63785	TP-SE-1 (9') 04/03/96 1025 Soil	23.0	78	47	< 10	90
63786	TP-SE-2 (13') 04/03/96 1100 Soil	22.2	84	59	< 10	82
63787	TP-SE-3 (15') 04/03/96 1150 Soil	16.0	66	57	< 10	74
63788	TP-SE-4 (12') 04/03/96 1315 Soil	25.6	87	46	< 10	89
63789	TP-SE-5 (15') 04/03/96 1400 Soil	17.8	68	45	< 10	72
63790	TP-SE-6 (15-19') 04/03/96 1430 Soil	26.9	82	112	230	942
63791	TP-SE-6 (20') 04/03/96 1500 Soil	29.7	66	51	30	76
63792	TP-SE-7 (15') 04/03/96 1600 Soil	14.6	10	7	< 10	12
63793	TP-SE-8 (6.5') 04/04/96 0815 Soil	2.9	8	8	< 10	3
63794	TP-SE-8 (13') 04/04/96 0840 Soil	14.3	75	53	< 10	85
63795	TP-SE-9 (10') 04/04/96 0920 Soil	0.9	9	3	10	3
	Quantitation Limit:	0.7	1	2	10	1
	Method Number:	AM1-3050/200.9	AM1-3050/6010	AM1-3050/6010	AM1-3050/6010	AM1-3050/6010

00000 1

Approved Dan Deprez

Report Date 04/11/96

WEYERHAEUSER COMPANY
ANALYTICAL LABORATORIES
ATOMIC SPECTROSCOPY
Tacoma, WA

Everett South End Wood Storage Soil Samples #120-2974270
SR 00629
Total Metals Analysis

Lab Code	Sample Designation	As	Cr	Cu	Pb	Zn
		(mg/kg, O.D. Basis)				
63796	TP-SE-9 (12.5') 04/04/96 0930 Soil	5.3	41	24	< 10	40
63797	TP-SE-10 (11.5') 04/04/96 1015 Soil	4.6	27	20	10	48
63798	TP-SE-10 (15') 04/04/96 1030 Soil	27.0	69	64	< 10	58
63799	TP-SE-11 (12') 04/04/96 1100 Soil	< 0.7	23	64	70	620
63800	TP-SE-11 (14') 04/04/96 1115 Soil	< 0.7	72	42	< 10	79
63801	TP-SE-12 (11.5') 04/04/96 1215 Soil	13.5	23	9	10	16
63802	TP-SE-12 (14') 04/04/96 1230 Soil	5.1	22	16	10	42
63803	TP-SE-12 (16') 04/04/96 1245 Soil	28.7	59	52	10	68
63803D	Duplicate	29.3	63	53	< 10	70
63804	TP-SE-13 (13.5') 04/04/96 1400 Soil	18.6	70	64	< 10	72
63805	TP-SE-14 (9.5') 04/04/96 1430 Soil	100.0	141	390	310	915
63806	TP-SE-14 (11') 04/04/96 1440 Soil	18.5	67	60	< 10	85
63807	TP-SE-15 (9') 04/04/96 1450 Soil	21.2	75	55	< 10	88
63808	TP-SE-16 (3') 04/04/96 1520 Soil	5.9	28	20	< 10	47
63809	TP-SE-16 (6') 04/04/96 1530 Soil	22.1	72	50	< 10	77
	Quantitation Limit:	0.7	1	2	10	1
	Method Number:	AM1-3050/200.9	AM1-3050/6010	AM1-3050/6010	AM1-3050/6010	AM1-3050/6010

Approved Dan Deprez

000065

Report Date 04/11/96

WEYERHAEUSER COMPANY
ANALYTICAL LABORATORIES
ATOMIC SPECTROSCOPY
Tacoma, WA

Everett South End Wood Storage Soil Samples #120-2974270
SR 00629
pH Analysis
Method Number: SW-9045C

Lab Code	Sample Designation	pH
63793	TP-SE-8 (6.5') 04/04/96 0815 Soil	12.6
63795	TP-SE-9 (10') 04/04/96 0920 Soil	12.6
63801	TP-SE-12 (11.5') 04/04/96 1215 Soil	8.3

Note: Soil pH measured in H_2O at 24.2°C.

Approved Dan Deprez

000006

Report Date 04/11/96

Weyerhaeuser

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

SDG NARRATIVE

Organic Analysis

WEYERHAEUSER (WEYER)
ANALYTICAL AND TESTING SERVICES

Case Number 00629
SDG Number 63783

PROJECT: EVERETT SOUTH END WOOD STORAGE SOIL SAMPLES #120-2974270

The samples from this SDG were received on 4/5/96. The SDG was composed of Soil samples for the analyses by EPA 8151M for chlorophenols, EPA 8080 for PCBs and WTPH-D for petroleum hydrocarbons.

SAMPLE ID	LAB ID	MATRIX	ANALYSIS
DUPLICATE #1	63783	SOIL	8080; 8151M; WTPH-D
DUPLICATE #2	63784	SOIL	8080; 8151M; WTPH-D
DUPLICATE #2MS	63784MS	SOIL	8080
DUPLICATE #2MSD	63784MSD	SOIL	8080
TP-SE-1 (9')	63785	SOIL	8080; 8151M; WTPH-D
TP-SE-2 (13')	63786	SOIL	8080; 8151M; WTPH-D
TP-SE-3 (15')	63787	SOIL	8080; 8151M; WTPH-D
TP-SE-4 (12')	63788	SOIL	8080; 8151M; WTPH-D
TP-SE-5 (15')	63789	SOIL	8080; 8151M; WTPH-D
TP-SE-6 (15-19')	63790	SOIL	8080; 8151M; WTPH-D
TP-SE-6 (20')	63791	SOIL	8080; 8151M; WTPH-D
TP-SE-6 (20')DUP	63791DUP	SOIL	WTPH-D
TP-SE-6 (20')RE	63791RE	SOIL	8080
TP-SE-7 (15')	63792	SOIL	8080; 8151M; WTPH-D
TP-SE-7 (15')RE	63792RE	SOIL	8151M
TP-SE-8 (6.5')	63793	SOIL	8080; 8151M; WTPH-D
TP-SE-8 (13')	63794	SOIL	8080; 8151M; WTPH-D
TP-SE-9 (10')	63795	SOIL	8080; 8151M; WTPH-D
TP-SE-9 (12.5')	63796	SOIL	8080; 8151M; WTPH-D
TP-SE-10(11.5')	63797	SOIL	8080; 8151M; WTPH-D
TP-SE-10(11.5')MS	63797MS	SOIL	8080; 8151M
TP-SE-10(11.5')MSD	63797MSD	SOIL	8080; 8151M
TP-SE-10(15')	63798	SOIL	8080; 8151M; WTPH-D
TP-SE-11(12')	63799	SOIL	8080; 8151M; WTPH-D

TP-SE-11(14')	63800	SOIL	8080; 8151M; WTPH-D
TP-SE-12(11.5')	63801	SOIL	8080; 8151M; WTPH-D
TP-SE-12(11.5')RE	63801RE	SOIL	8151M
TP-SE-12(14')	63802	SOIL	8080; 8151M; WTPH-D
TP-SE-12(14')MS	63802MS	SOIL	8151M
TP-SE-12(14')MSD	63802MSD	SOIL	8151M
TP-SE-12(16')	63803	SOIL	8080; 8151M; WTPH-D
TP-SE-13(13.5')	63804	SOIL	8080; 8151M; WTPH-D
TP-SE-14(9.5')	63805	SOIL	8080; 8151M; WTPH-D
TP-SE-14(11')	63806	SOIL	8080; 8151M; WTPH-D
TP-SE-15(9')	63807	SOIL	8080; 8151M; WTPH-D
TP-SE-16(3')	63808	SOIL	8080; 8151M; WTPH-D
TP-SE-16(6')	63809	SOIL	8080; 8151M; WTPH-D
LCS1	LCS1	Fortified Blank	8080; WTPH-D
LCS2	LCS2	Fortified Blank	8080; WTPH-D
HLCS1	HLCS1	Fortified Blank	8151M
HLCS2	HLCS2	Fortified Blank	8151M
HLCS3	HLCS3	Fortified Blank	8151M

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

1. WTPH-D

   a) No comments.

2. EPA 8080 - PCBs

   a) All samples were re-extracted and re-analyzed because of interferences that were believed to have originated with the sample matrix. The interferences caused difficulty in quantitating individual PCB congeners, which resulted in elevated reporting limits for PCBs. The sample interference was not present for the re-analyzed samples and normal reporting limits were achieved. The source of the interference in the initial analysis was not confirmed, but appeared to be from a laboratory reagent.

   b) Sample TP-SE-6 (20') was re-extracted and re-analyzed because surrogates were not recovered. The re-extraction was performed 5 days after the 14 day sample holding time had expired. The results for both analyses have been reported.

   c) The recovery of the surrogate TCX is slightly below advisory QC limits on one column for sample TP-SE-6 (15-19'). The recovery of the surrogate DCB is slightly below advisory QC limits on one column for sample LCS1 and on both columns for sample TP-SE-6(20') RE.

   d) The recovery of Aroclor 1242 is below advisory QC limits for the laboratory fortified blank LCS1_S0418. The recovery of Aroclor 1242 is within QC limits for the second fortified blank analyzed with the samples and for the two Matrix Spike/Matrix Spike Duplicate pairs analyzed with the samples.

   e) An interfering peak prevented reporting of the surrogate TCX on the DB-608 column for the method blank PBLK1.

3. EPA 8151M - Chlorophenols

   a) The surrogate recoveries for samples TP-SE-7 (15') and TP-SE-12 (11.5') were below QC limits on both columns for both surrogates. The samples were re-extracted and re-analyzed results are included for both the initial extraction and the re-extraction. The recoveries of surrogates were low for the method blank associated with the sample re-extraction, however since the recoveries were within QC limits for the samples, no further re-analyses were performed.

   b) For the following samples the recovery of the surrogate DCAA was outside of advisory QC limits on either one or both columns: HBLK2, HLCS2, TP-SE-10 (11.5'), TP-SE-10 (11.5')MS, TP-SE-10 (11.5')MSD, TP-SE-5 (15') and TP-SE-16 (6'). Except for

samples TP-SE-10 (11.5')MS and TP-SE-10 (11.5')MSD, the second surrogate 2,4,6-tribromophenol was within QC limits.

c) The recoveries of pentachlorophenol and 2,3,4,5-tetrachlorophenol were below advisory QC limits for the laboratory fortified blank HLCS2SO41096 (HLCS2). The recovery of pentachlorophenol was 48% and 49% respectively on the two analytical columns. The lower advisory QC limit is 50%.

d) The recovery of pentachlorophenol, 2,3,4,6/2,3,5,6-tetrachlorophenol and 2,4,6-trichlorophenol are above QC limits for the matrix spike duplicate TP-SE-10(11.5')MSD. The matrix spike duplicate, the associate sample and matrix spike all have a large interfering unresolved peak present in the chromatogram, this peak is largest in the matrix spike duplicate and interference from this peak appears to have contributed to the high recovery.

e) The recoveries of 2,4,6-trichlorophenol and 2,3,4,5-tetrachlorophenol are below advisory QC limits for the MS/MSD pair TP-SE-12(14')MS/MSD. The recovery of pentachlorophenol is within QC limits.

f) Results for 2,4,6-trichlorophenol and the tetrachlorophenol isomers are "P" qualified for several samples because the analytical results are greater than 25% different on the two analytical columns used for sample analysis.

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

Richard C Bogar

Richard Bogar
Chromatography Team Leader

4/30/96
Date

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

Sincerely,

Richard Bogar

Richard Bogar
Weyerhaeuser Analytical & Testing Services

Flag Qualifiers For Organic Analysis Reports

U Indicates that the compound was analyzed for but not detected above the reporting limit. The sample reporting limit corrected for dilution and percent moisture is reported.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds or when the data indicates the presence of a compound but the result is less than the sample quantitation limit but greater than zero.

N Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search.

P This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for the detected concentrations between the two GC columns. The lower of the two results is reported.

C This flag is used for pesticide results that have been confirmed by GC/MS

B This flag is used when the analyte is detected in the associated blank as well as the sample.

E This flag is used for compounds whose concentrations exceed the calibration range of the instrument.

D This flag identifies all compounds identified in an analysis at a secondary dilution. This flag alerts the data user that any discrepancies between the concentrations reported in the two runs may be due to dilution errors.

A This flag is used for tentatively identified compounds that suspected to be aldol-condensation products.

X This flag is assigned by the computer when the program has been manually adjusted by the operator. It has no significance to the number itself.

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUPLICATE 1

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63783

Sample wt/vol: 32.0 (g/mL) g Lab File ID: R0408C09

% Moisture: 35 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/17/96

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	48	U
11104-28-2	Aroclor-1221	96	U
1114-16-5	Aroclor-1232	48	U
53469-21-9	Aroclor-1242	48	U
12672-29-6	Aroclor-1248	48	U
11097-69-1	Aroclor-1254	48	U
11096-82-5	Aroclor-1260	9.6	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUPLICATE 2

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63784

Sample wt/vol: 31.7 (g/mL) g Lab File ID: R0408C10

% Moisture: 55 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/17/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/19/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	71	U
11104-28-2	Aroclor-1221	140	U
1114-16-5	Aroclor-1232	71	U
53469-21-9	Aroclor-1242	71	U
12672-29-6	Aroclor-1248	71	U
11097-69-1	Aroclor-1254	71	U
11096-82-5	Aroclor-1260	14	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-1 (9')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63785

Sample wt/vol: 31.7 (g/mL) g Lab File ID: R0408C61

% Moisture: 51 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/17/96

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/21/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	32	J
11104-28-2	Aroclor-1221	130	U
1114-16-5	Aroclor-1232	64	U
53469-21-9	Aroclor-1242	64	U
12672-29-6	Aroclor-1248	64	U
11097-69-1	Aroclor-1254	64	U
11096-82-5	Aroclor-1260	36	P

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-2 (13')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63786

Sample wt/vol: 30.2 (g/mL) g Lab File ID: R0408C15

% Moisture: 51 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/17/96

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	67	U
11104-28-2	Aroclor-1221	130	U
1114-16-5	Aroclor-1232	67	U
53469-21-9	Aroclor-1242	67	U
12672-29-6	Aroclor-1248	67	U
11097-69-1	Aroclor-1254	67	U
11096-82-5	Aroclor-1260	13	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-3 (15')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63787

Sample wt/vol: 33.4 (g/mL) g Lab File ID: R0408C16

% Moisture: 33 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/17/96

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	44	U
11104-28-2	Aroclor-1221	89	U
1114-16-5	Aroclor-1232	44	U
53469-21-9	Aroclor-1242	44	U
12672-29-6	Aroclor-1248	44	U
11097-69-1	Aroclor-1254	44	U
11096-82-5	Aroclor-1260	8.9	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-4 (12')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63788

Sample wt/vol: 31.8 (g/mL) g Lab File ID: R0408C17

% Moisture: 43 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/17/96

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	55	U
11104-28-2	Aroclor-1221	110	U
1114-16-5	Aroclor-1232	55	U
53469-21-9	Aroclor-1242	55	U
12672-29-6	Aroclor-1248	55	U
11097-69-1	Aroclor-1254	55	U
11096-82-5	Aroclor-1260	11	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-5 (15')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63789

Sample wt/vol: 33.8 (g/mL) g Lab File ID: R0408C47

% Moisture: 37 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/17/96

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/20/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	47	U
11104-28-2	Aroclor-1221	94	U
1114-16-5	Aroclor-1232	47	U
53469-21-9	Aroclor-1242	47	U
12672-29-6	Aroclor-1248	47	U
11097-69-1	Aroclor-1254	47	U
11096-82-5	Aroclor-1260	9.4	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-6
(15-19')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63790

Sample wt/vol: 30.9 (g/mL) g Lab File ID: R0408C36

% Moisture: 40 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/17/96

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/20/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	54	U
11104-28-2	Aroclor-1221	110	U
1114-16-5	Aroclor-1232	54	U
53469-21-9	Aroclor-1242	54	U
12672-29-6	Aroclor-1248	54	U
11097-69-1	Aroclor-1254	54	U
11096-82-5	Aroclor-1260	52	

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-6 (20')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63791

Sample wt/vol: 29.8 (g/mL) g Lab File ID: R0408C62

% Moisture: 51 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/17/96

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/21/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	68	U
11104-28-2	Aroclor-1221	140	U
1114-16-5	Aroclor-1232	68	U
53469-21-9	Aroclor-1242	68	U
12672-29-6	Aroclor-1248	68	U
11097-69-1	Aroclor-1254	68	U
11096-82-5	Aroclor-1260	14	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-6 (20')RE

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63791RE

Sample wt/vol: 31.8 (g/mL) g Lab File ID: R0408C62

% Moisture: 51 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:04/22/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/22/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	64	U
11104-28-2	Aroclor-1221	130	U
1114-16-5	Aroclor-1232	64	U
53469-21-9	Aroclor-1242	64	U
12672-29-6	Aroclor-1248	64	U
11097-69-1	Aroclor-1254	64	U
11096-82-5	Aroclor-1260	13	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-7 (15')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63792

Sample wt/vol: 30.7 (g/mL) g Lab File ID: R0408C63

% Moisture: 40 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/17/96

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/21/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	55	U
11104-28-2	Aroclor-1221	110	U
1114-16-5	Aroclor-1232	55	U
53469-21-9	Aroclor-1242	55	U
12672-29-6	Aroclor-1248	55	U
11097-69-1	Aroclor-1254	55	U
11096-82-5	Aroclor-1260	11	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-8 (6.5')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63793

Sample wt/vol: 31.1 (g/mL) g Lab File ID: R0408C21

% Moisture: 38 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/17/96

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	52	U
11104-28-2	Aroclor-1221	100	U
1114-16-5	Aroclor-1232	52	U
53469-21-9	Aroclor-1242	52	U
12672-29-6	Aroclor-1248	52	U
11097-69-1	Aroclor-1254	52	U
11096-82-5	Aroclor-1260	10	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-8 (13')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63794

Sample wt/vol: 30.6 (g/mL) g Lab File ID: R0408C22

% Moisture: 40 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/17/96

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/19/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	55	U
11104-28-2	Aroclor-1221	110	U
1114-16-5	Aroclor-1232	55	U
53469-21-9	Aroclor-1242	55	U
12672-29-6	Aroclor-1248	55	U
11097-69-1	Aroclor-1254	55	U
11096-82-5	Aroclor-1260	11	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-9 (10')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63795

Sample wt/vol: 30.6 (g/mL) g Lab File ID: R0408C23

% Moisture: 34 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:04/18/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/20/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	49	U
11104-28-2	Aroclor-1221	99	U
1114-16-5	Aroclor-1232	49	U
53469-21-9	Aroclor-1242	49	U
12672-29-6	Aroclor-1248	49	U
11097-69-1	Aroclor-1254	49	U
11096-82-5	Aroclor-1260	9.9	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-9 (12.5')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63796

Sample wt/vol: 31.2 (g/mL) g Lab File ID: R0408C55

% Moisture: 19 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/18/96

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/20/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	79	U
1114-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	7.9	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-10(11.5')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63797

Sample wt/vol: 30.5 (g/mL) g Lab File ID: R0408C64

% Moisture: 32 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/18/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/21/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	48	U
11104-28-2	Aroclor-1221	96	U
1114-16-5	Aroclor-1232	48	U
53469-21-9	Aroclor-1242	48	U
12672-29-6	Aroclor-1248	48	U
11097-69-1	Aroclor-1254	48	U
11096-82-5	Aroclor-1260	21	

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-10(15')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63798

Sample wt/vol: 30.5 (g/mL) g Lab File ID: R0408C49

% Moisture: 56 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/18/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/20/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	74	U
11104-28-2	Aroclor-1221	150	U
1114-16-5	Aroclor-1232	74	U
53469-21-9	Aroclor-1242	74	U
12672-29-6	Aroclor-1248	74	U
11097-69-1	Aroclor-1254	74	U
11096-82-5	Aroclor-1260	15	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-11(12')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63799

Sample wt/vol: 32.5 (g/mL) g Lab File ID: R0408C39

% Moisture: 42 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/18/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/20/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	7.8	JP
11104-28-2	Aroclor-1221	110	U
1114-16-5	Aroclor-1232	53	U
53469-21-9	Aroclor-1242	53	U
12672-29-6	Aroclor-1248	53	U
11097-69-1	Aroclor-1254	53	U
11096-82-5	Aroclor-1260	17	

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-11(14')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63800

Sample wt/vol: 35.2 (g/mL) g Lab File ID: R0408C50

% Moisture: 35 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:04/17/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/20/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	44	U
11104-28-2	Aroclor-1221	88	U
1114-16-5	Aroclor-1232	44	U
53469-21-9	Aroclor-1242	44	U
12672-29-6	Aroclor-1248	44	U
11097-69-1	Aroclor-1254	44	U
11096-82-5	Aroclor-1260	8.8	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-12(11.5')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63801

Sample wt/vol: 30.1 (g/mL) g Lab File ID: R0408C29

% Moisture: 30 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/18/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/20/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	47	U
11104-28-2	Aroclor-1221	94	U
1114-16-5	Aroclor-1232	47	U
53469-21-9	Aroclor-1242	47	U
12672-29-6	Aroclor-1248	47	U
11097-69-1	Aroclor-1254	47	U
11096-82-5	Aroclor-1260	27	

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-12(14')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63802

Sample wt/vol: 23.4 (g/mL) g Lab File ID: R0408C56

% Moisture: 36 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/18/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/20/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	67	U
11104-28-2	Aroclor-1221	130	U
1114-16-5	Aroclor-1232	67	U
53469-21-9	Aroclor-1242	67	U
12672-29-6	Aroclor-1248	67	U
11097-69-1	Aroclor-1254	67	U
11096-82-5	Aroclor-1260	13	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-12(16')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63803

Sample wt/vol: 31.7 (g/mL) g Lab File ID: R0408C52

% Moisture: 31 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:04/18/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/20/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	46	U
11104-28-2	Aroclor-1221	92	U
1114-16-5	Aroclor-1232	46	U
53469-21-9	Aroclor-1242	46	U
12672-29-6	Aroclor-1248	46	U
11097-69-1	Aroclor-1254	46	U
11096-82-5	Aroclor-1260	9.2	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-13(13.5')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63804

Sample wt/vol: 30.8 (g/mL) g Lab File ID: R0408C40

% Moisture: 40 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/18/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/20/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	54	U
11104-28-2	Aroclor-1221	110	U
1114-16-5	Aroclor-1232	54	U
53469-21-9	Aroclor-1242	54	U
12672-29-6	Aroclor-1248	54	U
11097-69-1	Aroclor-1254	54	U
11096-82-5	Aroclor-1260	11	U

000034

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-14(9.5')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63805

Sample wt/vol: 30.9 (g/mL) g Lab File ID: R0408C41

% Moisture: 43 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/18/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/20/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	57	U
11104-28-2	Aroclor-1221	110	U
1114-16-5	Aroclor-1232	57	U
53469-21-9	Aroclor-1242	57	U
12672-29-6	Aroclor-1248	57	U
11097-69-1	Aroclor-1254	57	U
11096-82-5	Aroclor-1260	11	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-14(11')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63806

Sample wt/vol: 31.7 (g/mL) g Lab File ID: R0408C42

% Moisture: 31 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:04/18/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/20/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	46	U
11104-28-2	Aroclor-1221	92	U
1114-16-5	Aroclor-1232	46	U
53469-21-9	Aroclor-1242	46	U
12672-29-6	Aroclor-1248	46	U
11097-69-1	Aroclor-1254	46	U
11096-82-5	Aroclor-1260	9.2	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-15(9')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63807

Sample wt/vol: 30.1 (g/mL) g Lab File ID: R0408C43

% Moisture: 41 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/18/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/20/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	56	U
11104-28-2	Aroclor-1221	110	U
1114-16-5	Aroclor-1232	56	U
53469-21-9	Aroclor-1242	56	U
12672-29-6	Aroclor-1248	56	U
11097-69-1	Aroclor-1254	56	U
11096-82-5	Aroclor-1260	11	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-16(3')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63808

Sample wt/vol: 30.0 (g/mL) g Lab File ID: R0408C32

% Moisture: 10 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/18/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/20/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	74	U
1114-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	7.4	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-16(6')

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63809

Sample wt/vol: 33.4 (g/mL) g Lab File ID: R0408C44

% Moisture: 44 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/18/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/20/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	53	U
11104-28-2	Aroclor-1221	110	U
1114-16-5	Aroclor-1232	53	U
53469-21-9	Aroclor-1242	53	U
12672-29-6	Aroclor-1248	53	U
11097-69-1	Aroclor-1254	53	U
11096-82-5	Aroclor-1260	11	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK1

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: PBLK1_S0417

Sample wt/vol: 30.0 (g/mL) g Lab File ID: R0408C03

% Moisture: 0 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:04/17/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/19/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
1114-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	6.7	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK2

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: PBLK1_S0418

Sample wt/vol: 30.0 (g/mL) g Lab File ID: R0408C07

% Moisture: 0 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/18/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/19/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
1114-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	6.7	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK3

Lab Name: WEYERHAEUSER Contract: Everett

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: PBLK1_S0422

Sample wt/vol: 30.0 (g/mL) g Lab File ID: R0408C70

% Moisture: 0 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:04/22/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/22/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
1114-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	6.7	U

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: WEYERHAEUSER Contract: EVERETT

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

GC Column(1): DB-608 ID: 0.53 (mm) GC Column(2): DB-1701 ID: 0.53 (mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLK1	0I	74	66	70			0
02	PBLK2	76	70	66	70			0
03	PBLK3	72	68	60	66			0
04	LCS1	66	62	58*	63			1
05	LCS2	92	86	70	73			0
06	DUPLICATE 1	91	80	122	106			0
07	DUPLICATE 2	76	70	66	74			0
08	DUPLICATE 2MS	84	78	91	87			0
09	DUPLICATE 2MSD	76	72	72	73			0
10	TP-SE-1 (9')	84	75	92	92			0
11	TP-SE-2 (13')	76	68	86	78			0
12	TP-SE-3 (15')	85	65	120	91			0
13	TP-SE-4 (12')	80	72	77	74			0
14	TP-SE-5 (15')	69	66	93	79			0
15	TP-SE-6 (15-19')	69	59*	110	89			1
16	TP-SE-6 (20')	0*	0*	0*	0*			4
17	TP-SE-6 (20')RE	66	60	56*	58*			2
18	TP-SE-7 (15')	78	84	65	82			0
19	TP-SE-8 (6.5')	76	68	79	76			0
20	TP-SE-8 (13')	93	85	89	90			0
21	TP-SE-9 (10')	95	78	99	86			0
22	TP-SE-9 (12.5')	80	74	86	86			0
23	TP-SE-10(11.5')	86	73	83	74			0
24	TP-SE-10(11.5)MS	111	97	99	99			0
25	TP-SE-10(11.5)MSD	86	74	86	74			0
26	TP-SE-10(15')	90	86	88	86			0
27	TP-SE-11(12')	89	73	98	87			0
28	TP-SE-11(14')	76	70	70	70			0
29	TP-SE-12(11.5')	88	80	88	88			0
30	TP-SE-12(14')	90	78	94	85			0

ADVISORY QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (60-150)
S2 (DCB) = Decachlorobiphenyl (60-150)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out
I Interference in chromatogram

000043

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: WEYERHAEUSER Contract: EVERETT

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

GC Column(1): DB-608 ID: 0.53 (mm) GC Column(2): DB-1701 ID: 0.53 (mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	TP-SE-12(16')	93	84	95	88			0
02	TP-SE-13(13.5')	92	83	88	80			0
03	TP-SE-14(9.5')	81	76	78	73			0
04	TP-SE-14(11')	88	73	105	93			0
05	TP-SE-15(9')	74	67	83	77			0
06	TP-SE-16(3')	83	77	72	79			0
07	TP-SE-16(6')	80	75	79	71			0
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (60-150)
S2 (DCB) = Decachlorobiphenyl (60-150)

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

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: WEYERHAEUSER Contract: EVERETT

Lab Code: WEYER Case No.: 00629 Method.: 8080 SDG No.: 63783

Matrix Spike - EPA Sample No.: DUPLICATE 2

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aroclor-1242	144	0	100	69	60-120
Aroclor-1260	144	0	120	83	60-120

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1242	131	80	61	12	30	60-120
Aroclor-1260	131	100	76	8.7	30	60-120

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

* Values outside of QC limits

COMMENTS: _____

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: WEYERHAEUSER Contract: EVERETT

Lab Code: WEYER Case No.: 00629 Method.: 8080 SDG No.: 63783

Matrix Spike - EPA Sample No.: TP-SE-10(11.5')

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aroclor-1242	94.3	0	74	78	60-120
Aroclor-1260	94.3	21	110	94	60-120

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1242	97.4	59	60	21	30	60-120
Aroclor-1260	97.4	91	72	27	30	60-120

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

* Values outside of QC limits

COMMENTS:

3LC

SOIL AROCLOR LAB CONTROL SAMPLE RECOVERY

Lab Name: WEYERHAEUSER Contract:

Lab Code: WEYER Case No.: 00629 Method.: 8080 SDG No.: 63783

Lab Sample ID: LCS1_S0418

LCS Aliguot: 2000 (ul) Date Extracted: 04/17/96

Concentrated Extract Volume:10000 (ul) Date Analyzed: 04/19/96

Injection Volume: 1.00 (ul) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N Sulfur Cleanup: (Y/N) N

Instrument ID (1): HARPO GC Column(1): DB1701# ID: 0.53(mm)

COMPOUND	SPIKE ADDED (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Aroclor-1242	66.6	29	45*	60-120
Aroclor-1260	66.6	41	62	60-120

Instrument ID (2): HARPO- GC Column(2): DB608 ID: 0.53(mm)

COMPOUND	SPIKE ADDED (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Aroclor-1242	66.6	30	45*	60-120
Aroclor-1260	66.6	41	62	60-120

Column to be used to flag recovery values with an asterisk.
* Values outside of QC limits.
LCS Recovery: 1 outside limits out of 2 total.

COMMENTS:

3LC

SOIL AROCLOR LAB CONTROL SAMPLE RECOVERY

Lab Name: WEYERHAEUSER Contract:

Lab Code: WEYER Case No.: 00629 Method.: 8080 SDG No.: 63783

Lab Sample ID: LCS1_S0418

LCS Aliguot: 2000 (ul) Date Extracted: 04/18/96

Concentrated Extract Volume:10000 (ul) Date Analyzed: 04/19/96

Injection Volume: 1.00 (ul) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N Sulfur Cleanup: (Y/N) N

Instrument ID (1): HARPO GC Column(1): DB1701# ID: 0.53(mm)

COMPOUND	SPIKE ADDED (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Aroclor-1242	66.6	45	68	60-120
Aroclor-1260	66.6	54	81	60-120

Instrument ID (2): HARPO- GC Column(2): DB608 ID: 0.53(mm)

COMPOUND	SPIKE ADDED (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Aroclor-1242	66.6	46	69	60-120
Aroclor-1260	66.6	54	81	60-120

Column to be used to flag recovery values with an asterisk.
* Values outside of QC limits.
LCS Recovery: 0 outside limits out of 2 total.

COMMENTS:

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLK1

Lab Name: WEYERHAEUSER Contract: EVERETT

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Lab Sample ID: PBLK1_S0417 Lab File ID: R0408C03

Matrix (soil/water) SOIL Extraction: (SepF/Cont/Sonc) SONC

Sulfur Cleanup (Y/N) N Date Extracted: 04/17/96

Date Analyzed (1): 04/19/96 Date Analyzed (2): 04/19/96

Time Analyzed (1): 1206 Time Analyzed (2): 1206

Instrument ID (1): HPDOS1_1 Instrument ID (2): HPDOS1_1

GC Column (1): DB-1701 ID: 0.53 (mm) GC Column (2): DB-608 ID: 0.53 (mm)

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

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	LCS1	LCS1_S0417	04/19/96	04/19/96
02	DUPLICATE 1	63783	04/19/96	04/19/96
03	DUPLICATE 2	63784	04/19/96	04/19/96
04	DUPLICATE 2MS	63784MS	04/19/96	04/19/96
05	DUPLICATE 2MSD	63784MSD	04/19/96	04/19/96
06	TP-SE-1 (9')	63785	04/21/96	04/21/96
07	TP-SE-2 (13')	63786	04/19/96	04/19/96
08	TP-SE-3 (15')	63787	04/19/96	04/19/96
09	TP-SE-4 (12')	63788	04/19/96	04/19/96
10	TP-SE-5 (15')	63789	04/20/96	04/20/96
11	TP-SE-6 (15-19')	63790	04/20/96	04/20/96
12	TP-SE-6 (20')	63791	04/21/96	04/21/96
13	TP-SE-7 (15')	63792	04/21/96	04/21/96
14	TP-SE-8 (6.5')	63793	04/19/96	04/19/96
15	TP-SE-11(14')	63800	04/20/96	04/20/96
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: _____

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLK2

Lab Name: WEYERHAEUSER Contract: EVERETT

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Lab Sample ID: PBLK1_S0418 Lab File ID: R0408C07

Matrix (soil/water) SOIL Extraction:(SepF/Cont/Sonc) SONC

Sulfur Cleanup (Y/N) N Date Extracted: 04/18/96

Date Analyzed (1): 04/19/96 Date Analyzed (2): 04/19/96

Time Analyzed (1): 1432 Time Analyzed (2): 1432

Instrument ID (1): HPDOS1_1 Instrument ID (2): HPDOS1_1

GC Column (1): DB-1701 ID: 0.53(mm) GC Column (2): DB-608 ID: 0.53(mm)

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

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	LCS2	LCS1_S0418	04/19/96	04/19/96
02	TP-SE-8 (13')	63794	04/19/96	04/19/96
03	TP-SE-9 (10')	63795	04/20/96	04/20/96
04	TP-SE-9 (12.5')	63796	04/20/96	04/20/96
05	TP-SE-10(11.5')	63797	04/21/96	04/21/96
06	TP-SE-10(11.5)MS	63797MS	04/20/96	04/20/96
07	TP-SE-10(11.5)MSD	63797MSD	04/20/96	04/20/96
08	TP-SE-10(15')	63798	04/20/96	04/20/96
09	TP-SE-11(12')	63799	04/20/96	04/20/96
10	TP-SE-12(11.5')	63801	04/20/96	04/20/96
11	TP-SE-12(14')	63802	04/20/96	04/20/96
12	TP-SE-12(16')	63803	04/20/96	04/20/96
13	TP-SE-13(13.5')	63804	04/20/96	04/20/96
14	TP-SE-14(9.5')	63805	04/20/96	04/20/96
15	TP-SE-14(11')	63806	04/20/96	04/20/96
16	TP-SE-15(9')	63807	04/20/96	04/20/96
17	TP-SE-16(3')	63808	04/20/96	04/20/96
18	TP-SE-16(6')	63809	04/20/96	04/20/96
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: _____

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLK3

Lab Name: WEYERHAEUSER Contract: EVERETT

Lab Code: WEYER Case No.: 00629 Method: 8080 SDG No.: 63783

Lab Sample ID: PBLK1_S0422 Lab File ID: R0408C70

Matrix (soil/water) SOIL Extraction:(SepF/Cont/Sonc) SONC

Sulfur Cleanup (Y/N) N Date Extracted: 04/22/96

Date Analyzed (1): 04/22/96 Date Analyzed (2): 04/22/96

Time Analyzed (1): 1430 Time Analyzed (2): 1430

Instrument ID (1): HPDOS1_1 Instrument ID (2): HPDOS1_1

GC Column (1): DB-1701 ID: 0.53(mm) GC Column (2): DB-608 ID: 0.53(mm)

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

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	TP-SE-6 (20')RE	63791	04/22/96	04/22/96
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
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21				
22				
23				
24				
25				
26				

COMMENTS: _____

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUPLICATE no2

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63784

Sample wt/vol: 35.3 (g/mL) g Lab File ID: F0409066

% Moisture: 55 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/12/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	6.6	U
	2,3,4,6 and 2,3,5,6-Tetra	13	U
88-06-2	2,4,6-Trichlorophenol	8.7	P
	2,3,4,5-Tetrachlorophenol	6.4	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-1 (9')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63785

Sample wt/vol: 33.7 (g/mL) g Lab File ID: F0409067

% Moisture: 51 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000 (uL) Date Analyzed: 04/12/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	6.2	U
	2,3,4,6 and 2,3,5,6-Tetra	12	U
88-06-2	2,4,6-Trichlorophenol	12	
	2,3,4,5-Tetrachlorophenol	6.0	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-2 (13')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63786

Sample wt/vol: 31.1 (g/mL) g Lab File ID: F0409068

% Moisture: 51 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000 (uL) Date Analyzed: 04/12/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	6.8	U
	2,3,4,6 and 2,3,5,6-Tetra	13	U
88-06-2	2,4,6-Trichlorophenol	11	
	2,3,4,5-Tetrachlorophenol	6.5	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-3 (15')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63787

Sample wt/vol: 34.5 (g/mL) g Lab File ID: F0409069

% Moisture: 33 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/12/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	4.5	U
	2,3,4,6 and 2,3,5,6-Tetra	8.6	U
88-06-2	2,4,6-Trichlorophenol	6.7	P
	2,3,4,5-Tetrachlorophenol	4.3	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-4 (12')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63788

Sample wt/vol: 31.0 (g/mL) g Lab File ID: F0409B25

% Moisture: 43 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/13/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	5.9	U
	2,3,4,6 and 2,3,5,6-Tetra	11	U
88-06-2	2,4,6-Trichlorophenol	9.3	P
	2,3,4,5-Tetrachlorophenol	5.7	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-5 (15')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63789

Sample wt/vol: 30.8 (g/mL) g Lab File ID: F0409B26

% Moisture: 37 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000 (uL) Date Analyzed: 04/13/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	5.3	U
	2,3,4,6 and 2,3,5,6-Tetra	13	P
88-06-2	2,4,6-Trichlorophenol	11	P
	2,3,4,5-Tetrachlorophenol	5.1	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-6
(15-19')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63790

Sample wt/vol: 31.7 (g/mL) g Lab File ID: F0409B03

% Moisture: 40 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000 (uL) Date Analyzed: 04/12/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	120	
	2,3,4,6 and 2,3,5,6-Tetra	31	
88-06-2	2,4,6-Trichlorophenol	8.8	P
	2,3,4,5-Tetrachlorophenol	7.1	P

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-6 (20')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63791

Sample wt/vol: 32.1 (g/mL) g Lab File ID: F0409B04

% Moisture: 51 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000 (uL) Date Analyzed: 04/12/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	6.6	U
	2,3,4,6 and 2,3,5,6-Tetra	13	U
88-06-2	2,4,6-Trichlorophenol	11	
	2,3,4,5-Tetrachlorophenol	6.3	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-7 (15')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63792

Sample wt/vol: 32.2 (g/mL) g Lab File ID: F0409B05

% Moisture: 40 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000 (uL) Date Analyzed: 04/12/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	5.4	U
	2,3,4,6 and 2,3,5,6-Tetra	10	U
88-06-2	2,4,6-Trichlorophenol	5.2	U
	2,3,4,5-Tetrachlorophenol	5.2	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-7 (15')RE

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63792

Sample wt/vol: 32.2 (g/mL) g Lab File ID: F0414015

% Moisture: 40 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/15/96

Concentrated Extract Volume: 4000 (uL) Date Analyzed: 04/16/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	5.0	U
	2,3,4,6 and 2,3,5,6-Tetra	10	U
88-06-2	2,4,6-Trichlorophenol	5.0	U
	2,3,4,5-Tetrachlorophenol	5.2	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-8 (6.5')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63793

Sample wt/vol: 30.7 (g/mL) g Lab File ID: F0409B27

% Moisture: 38 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/13/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	110	
	2,3,4,6 and 2,3,5,6-Tetra	20	P
88-06-2	2,4,6-Trichlorophenol	7.4	P
	2,3,4,5-Tetrachlorophenol	2.0	JP

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-8 (13')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63794

Sample wt/vol: 34.8 (g/mL) g Lab File ID: F0409B06

% Moisture: 40 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/12/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	5.0	U
	2,3,4,6 and 2,3,5,6-Tetra	9.7	U
88-06-2	2,4,6-Trichlorophenol	7.0	P
	2,3,4,5-Tetrachlorophenol	4.8	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-9 (10')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63795

Sample wt/vol: 30.8 (g/mL) g Lab File ID: F0409B10

% Moisture: 34 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000 (uL) Date Analyzed: 04/13/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	52	
	2,3,4,6 and 2,3,5,6-Tetra	520	
88-06-2	2,4,6-Trichlorophenol	7.4	P
	2,3,4,5-Tetrachlorophenol	60	

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-9 (12.5')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63796

Sample wt/vol: 35.3 (g/mL) g Lab File ID: F0409B11

% Moisture: 19 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000 (uL) Date Analyzed: 04/13/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	3.6	U
	2,3,4,6 and 2,3,5,6-Tetra	6.9	U
88-06-2	2,4,6-Trichlorophenol	3.5	U
	2,3,4,5-Tetrachlorophenol	3.5	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-10(11.5')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63797

Sample wt/vol: 33.1 (g/mL) g Lab File ID: F0409B12

% Moisture: 32 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/13/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	66	
	2,3,4,6 and 2,3,5,6-Tetra	17	
88-06-2	2,4,6-Trichlorophenol	9.4	P
	2,3,4,5-Tetrachlorophenol	5.6	P

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-10(15')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63798

Sample wt/vol: 30.5 (g/mL) g Lab File ID: F0409B15

% Moisture: 56 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/13/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	7.7	U
	2,3,4,6 and 2,3,5,6-Tetra	15	U
88-06-2	2,4,6-Trichlorophenol	17	
	2,3,4,5-Tetrachlorophenol	7.4	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-11(12')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63799

Sample wt/vol: 31.6 (g/mL) g Lab File ID: F0409B16

% Moisture: 42 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/13/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	5.7	U
	2,3,4,6 and 2,3,5,6-Tetra	11	JP
88-06-2	2,4,6-Trichlorophenol	7.7	P
	2,3,4,5-Tetrachlorophenol	5.5	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-11(14')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63800

Sample wt/vol: 35.4 (g/mL) g Lab File ID: F0409B17

% Moisture: 35 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/13/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	4.5	U
	2,3,4,6 and 2,3,5,6-Tetra	8.7	U
88-06-2	2,4,6-Trichlorophenol	6.1	P
	2,3,4,5-Tetrachlorophenol	4.4	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-12(11.5')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63801

Sample wt/vol: 30.3 (g/mL) g Lab File ID: F0409B18

% Moisture: 30 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/13/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	4.9	U
	2,3,4,6 and 2,3,5,6-Tetra	9.4	U
88-06-2	2,4,6-Trichlorophenol	6.5	P
	2,3,4,5-Tetrachlorophenol	4.7	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-12(11.5')RE

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63801

Sample wt/vol: 30.3 (g/mL) g Lab File ID: F0414018

% Moisture: 30 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/15/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/16/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	4.4	
	2,3,4,6 and 2,3,5,6-Tetra	9.4	U
88-06-2	2,4,6-Trichlorophenol	4.7	U
	2,3,4,5-Tetrachlorophenol	4.7	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-12(14')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63802

Sample wt/vol: 30.7 (g/mL) g Lab File ID: F0409B19

% Moisture: 36 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/13/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	5.3	U
	2,3,4,6 and 2,3,5,6-Tetra	10	U
88-06-2	2,4,6-Trichlorophenol	10	P
	2,3,4,5-Tetrachlorophenol	5.1	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-12(16')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63803

Sample wt/vol: 34.1 (g/mL) g Lab File ID: F0409B28

% Moisture: 31 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/13/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	4.4	U
	2,3,4,6 and 2,3,5,6-Tetra	8.5	U
88-06-2	2,4,6-Trichlorophenol	6.1	P
	2,3,4,5-Tetrachlorophenol	4.3	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-13(13.5')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63804

Sample wt/vol: 34.9 (g/mL) g Lab File ID: F0409B29

% Moisture: 40 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/13/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	5.0	U
	2,3,4,6 and 2,3,5,6-Tetra	9.5	U
88-06-2	2,4,6-Trichlorophenol	6.9	P
	2,3,4,5-Tetrachlorophenol	4.8	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-14(9.5')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63805

Sample wt/vol: 34.4 (g/mL) g Lab File ID: F0409B30

% Moisture: 43 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/13/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	15	
----------	2,3,4,6 and 2,3,5,6-Tetra	9.9	P
88-06-2	2,4,6-Trichlorophenol	11	P
----------	2,3,4,5-Tetrachlorophenol	5.1	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-14(11')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63806

Sample wt/vol: 30.5 (g/mL) g Lab File ID: F0409B31

% Moisture: 31 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/13/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	5.0	U
	2,3,4,6 and 2,3,5,6-Tetra	9.6	U
88-06-2	2,4,6-Trichlorophenol	9.6	
	2,3,4,5-Tetrachlorophenol	4.8	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-15(9')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63807

Sample wt/vol: 30.0 (g/mL) g Lab File ID: F0409B32

% Moisture: 41 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/13/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	5.9	U
	2,3,4,6 and 2,3,5,6-Tetra	11	U
88-06-2	2,4,6-Trichlorophenol	12	
	2,3,4,5-Tetrachlorophenol	5.7	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-16(3')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63808

Sample wt/vol: 31.1 (g/mL) g Lab File ID: F0409B36

% Moisture: 10 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/13/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	3.7	U
	2,3,4,6 and 2,3,5,6-Tetra	7.0	U
88-06-2	2,4,6-Trichlorophenol	7.1	
	2,3,4,5-Tetrachlorophenol	3.6	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TP-SE-16(6')

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: 63809

Sample wt/vol: 31.7 (g/mL) g Lab File ID: F0409B37

% Moisture: 44 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/13/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	5.8	U
	2,3,4,6 and 2,3,5,6-Tetra	11	U
88-06-2	2,4,6-Trichlorophenol	7.2	P
	2,3,4,5-Tetrachlorophenol	5.6	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HBLK1

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: HBLKS041096

Sample wt/vol: 30.0 (g/mL) g Lab File ID: F0409061

% Moisture: 0 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000 (uL) Date Analyzed: 04/11/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	3.5	U
	2,3,4,6 and 2,3,5,6-Tetra	6.7	U
88-06-2	2,4,6-Trichlorophenol	3.3	U
	2,3,4,5-Tetrachlorophenol	3.3	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HBLK2

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: HBLK2S041096

Sample wt/vol: 30.0 (g/mL) g Lab File ID: F0409B01

% Moisture: 0 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/10/96

Concentrated Extract Volume: 4000 (uL) Date Analyzed: 04/12/96

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	3.5	U
	2,3,4,6 and 2,3,5,6-Tetra	6.7	U
88-06-2	2,4,6-Trichlorophenol	3.3	U
	2,3,4,5-Tetrachlorophenol	3.3	U

1D

HERB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HBLK3

Lab Name: Weyerhaeuser Analytical Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Matrix: (soil/water) SOIL Lab Sample ID: HBLKS041596

Sample wt/vol: 30.0 (g/mL) g Lab File ID: F0414019

% Moisture: 0 decanted: (Y/N) N Date Received: 04/05/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:04/15/96

Concentrated Extract Volume: 4000(uL) Date Analyzed: 04/16/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
87-86-5	Pentachlorophenol	3.5	U
	2,3,4,6 and 2,3,5,6-Tetra	6.7	U
88-06-2	2,4,6-Trichlorophenol	5.9	P
	2,3,4,5-Tetrachlorophenol	3.3	U

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: WEYERHAEUSER ANALYTICAL Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

GC Column(1): DB1701 ID: 0.53 (mm) GC Column(2): DB608 ID: 0.53 (mm)

	EPA SAMPLE NO.	S1 1 %REC #	S1 2 %REC #	TBP 1 %REC #	TBP 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	HBLK1	51	57	94	87			0
02	DUPLICATE NO1	81	79	89	83			0
03	DUPLICATE NO2	68	72	67	63			0
04	TP-SE-1 (9')	50	57	105	100			0
05	TP-SE-2 (13')	12*	13*	70	65			0
06	TP-SE-3 (15')	70	77	104	97			0
07	HLCS1	77	77	97	91			0
08	HBLK2	48*	53	57	55			0
09	HLCS2	42*	46*	52	50			0
10	TP-SE-6 (15-19')	66	77	88	85			0
11	TP-SE-6 (20')	58	62	75	70			0
12	TP-SE-7 (15')	11*	12*	10*	10*			0
13	TP-SE-8 (13')	89	97	97	93			0
14	TP-SE-9 (10')	73	71	81	76			0
15	TP-SE-9 (12.5')	85	99	94	90			0
16	TP-SE-10(11.5')	131	168*	74	98			0
17	TP-SE-10(11.5')MS	121	169*	36*	103			0
18	TP-SE-10(11.5')MSD	143	199*	160*	161*			0
19	TP-SE-10(15')	79	85	99	88			0
20	TP-SE-11(12')	77	100	63	63			0
21	TP-SE-11(14')	59	70	65	62			0
22	TP-SE-12(11.5')	36*	41*	31*	31*			0
23	TP-SE-12(14')	92	115	73	87			0
24	TP-SE-12(14')MS	99	116	65	71			0
25	TP-SE-12(14')MSD	83	109	59	68			0
26	TP-SE-4 (12')	73	77	101	92			0
27	TP-SE-5 (15')	11*	70	105	114			0
28	TP-SE-8 (6.5')	67	72	110	104			0
29	TP-SE-12(16')	86	92	123	114			0
30	TP-SE-13(13.5')	96	103	111	104			0

	ADVISORY QC LIMITS
S1 = DCAA	(50-150)
S2 (TBP) = 2,4,6-Tribromophenol	(50-150)

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

2F

SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: WEYERHAEUSER ANALYTICAL Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

GC Column(1): DB1701 ID: 0.53 (mm) GC Column(2): DB608 ID: 0.53 (mm)

	EPA SAMPLE NO.	S1 1 %REC #	S1 2 %REC #	TBP 1 %REC #	TBP 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	TP-SE-14(9.5')	66	76	71	70			0
02	TP-SE-14(11')	80	84	106	98			0
03	TP-SE-15(9')	120	132	146	138			0
04	TP-SE-16(3')	69	76	90	83			0
05	TP-SE-16(6')	36*	39*	88	82			0
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

		ADVISORY QC LIMITS
S1	= DCAA	(50-150)
S2 (TBP)	= 2,4,6-Tribromophenol	(50-150)

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

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: WEYERHAEUSER ANALYTICAL Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

GC Column(1): DB1701 ID: 0.53 (mm) GC Column(2): DB608 ID: 0.53 (mm)

	EPA SAMPLE NO.	S1 1 %REC #	S1 2 %REC #	TBP 1 %REC #	TBP 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	TP-SE-7 (15')RE	96	109	104	107			0
02	HLCS3	48*	55	56	59			0
03	TP-SE-12(11.5')RE	55	62	66	67			0
04	HBLK3	5*	4*	6*	4*			0
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

		ADVISORY QC LIMITS
S1	= DCAA	(50-150)
S2 (TBP)	= 2,4,6-Tribromophenol	(50-150)

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

3LC

WATER HERBICIDE LAB CONTROL SAMPLE RECOVERY

Lab Name: WEYERHAEUSER Contract:

Lab Code: WEYER Case No.: 00629 Method : 8151 M. SDG No.: 63783

Lab Sample ID: HLCSS041096

LCS Aliguot: (ul) Date Extracted: 04/10/96

Concentrated Extract Volume:1000 (ul) Date Analyzed: 04/12/96

Injection Volume: 1.00 (ul) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N Sulfur Cleanup: (Y/N) N

Instrument ID (1): ZEPPO GC Column(1): DB1701 ID: 0.53(mm)

COMPOUND	SPIKE ADDED (ug/kg)	MS CONCENTRATION (ug/kg)	MS % REC #	QC LIMITS REC.
Pentachlorophenol	65.5	65.3	100	50-150
2,3,4,6 and 2,3,5,6-Tetra.	133	124	93	50-150
2,3,4,5-Tetrachlorophenol	68.9	54.0	78	50-150
2,4,6-Trichlorophenol	65.5	65.3	100	50-150

GC Column: DB608 ID: 0.53(mm) Init. Calib. Date(s):

COMPOUND	SPIKE ADDED (ug/kg)	MS CONCENTRATION (ug/kg)	MS % REC #	QC LIMITS REC.
Pentachlorophenol	65.5	60.2	92	50-150
2,3,4,6 and 2,3,5,6-Tetra.	133	124	93	50-150
2,3,4,5-Tetrachlorophenol	68.9	53.1	77	50-150
2,4,6-Trichlorophenol	65.5	63.4	97	50-150

Column to be used to flag recovery values with an asterisk.
* Values outside of QC limits.
LCS Recovery: 0 outside limits out of 6 total.

COMMENTS:

3LC

WATER HERBICIDE LAB CONTROL SAMPLE RECOVERY

Lab Name: WEYERHAEUSER Contract:

Lab Code: WEYER Case No.: 00629 Method : 8151 M. SDG No.: 63783

Lab Sample ID: HLCS2S041096

LCS Aliguot: (ul) Date Extracted: 04/10/96

Concentrated Extract Volume:1000 (ul) Date Analyzed: 04/12/96

Injection Volume: 1.00 (ul) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N Sulfur Cleanup: (Y/N) N

Instrument ID (1): ZEPPO GC Column(1): DB1701 ID: 0.53(mm)

COMPOUND	SPIKE ADDED (ug/kg)	MS CONCENTRATION (ug/kg)	MS % REC #	QC LIMITS REC.
Pentachlorophenol	32.7	15.8	48*	50-150
2,3,4,6 and 2,3,5,6-Tetra.	66.4	37.1	56	50-150
2,3,4,5-Tetrachlorophenol	34.5	15.2	44*	50-150
2,4,6-Trichlorophenol	32.9	18.4	56	50-150

GC Column: DB608 ID: 0.53(mm) Init. Calib. Date(s):

COMPOUND	SPIKE ADDED (ug/kg)	MS CONCENTRATION (ug/kg)	MS % REC #	QC LIMITS REC.
Pentachlorophenol	32.7	16.2	49*	50-150
2,3,4,6 and 2,3,5,6-Tetra.	66.4	34.4	52	50-150
2,3,4,5-Tetrachlorophenol	34.5	14.1	41*	50-150
2,4,6-Trichlorophenol	32.9	18.1	55	50-150

Column to be used to flag recovery values with an asterisk.
* Values outside of QC limits.
LCS Recovery: 4 outside limits out of 8 total.

COMMENTS:

3LC

WATER HERBICIDE LAB CONTROL SAMPLE RECOVERY

Lab Name: WEYERHAEUSER Contract:

Lab Code: WEYER Case No.: 00629 Method : 8151 M. SDG No.: 63783

Lab Sample ID: HLCSS041596

LCS Aliguot: (ul) Date Extracted: 04/15/96

Concentrated Extract Volume:1000 (ul) Date Analyzed: 04/16/96

Injection Volume: 1.00 (ul) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N Sulfur Cleanup: (Y/N) N

Instrument ID (1): ZEPPO GC Column(1): DB1701 ID: 0.53(mm)

COMPOUND	SPIKE ADDED (ug/kg)	MS CONCENTRATION (ug/kg)	MS % REC #	QC LIMITS REC.
Pentachlorophenol	19.6	11.7	58	50-150
2,3,4,6 and 2,3,5,6-Tetra.	39.8	28.0	73	50-150
2,3,4,5-Tetrachlorophenol	20.7	15.8	77	50-150
2,4,6-Trichlorophenol	19.7	16.6	87	50-150

GC Column: DB608 ID: 0.53(mm) Init. Calib. Date(s):

COMPOUND	SPIKE ADDED (ug/kg)	MS CONCENTRATION (ug/kg)	MS % REC #	QC LIMITS REC.
Pentachlorophenol	19.6	11.7	60	50-150
2,3,4,6 and 2,3,5,6-Tetra.	39.8	28.0	70	50-150
2,3,4,5-Tetrachlorophenol	20.7	15.8	76	50-150
2,4,6-Trichlorophenol	19.7	16.6	85	50-150

Column to be used to flag recovery values with an asterisk.
* Values outside of QC limits.
LCS Recovery: 0 outside limits out of 6 total.

COMMENTS:

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: WEYERHAEUSER ANALYTICAL Contract:

Lab Code: WEYER Case No.: 00629 SAS No.: *8151 M. SDG No.: 63783

Matrix Spike - EPA Sample No.: TP-SE-10(11.5')

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Pentachlorophenol	93.2	66.3	158	98	50-150
2,3,4,6 and 2,3,5,6-Tetra.	189	17.2	232	114	50-150
2,4,6-Trichlorophenol	93.5	9.42	89.1	85	50-150
2,3,4,5-Tetrachlorophenol	98.1	5.61	74.4	70	50-150

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Pentachlorophenol	89.8	233	186*	62*	40	50-150
2,3,4,6 and 2,3,5,6-Tetra.	182	295	153*	29	40	50-150
2,4,6-Trichlorophenol	90.1	184	194*	78*	40	50-150
2,3,4,5-Tetrachlorophenol	94.5	139	141	67*	40	50-150

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

* Values outside of QC limits

RPD: 3 out of 4 outside limits
Spike Recovery: 3 out of 8 outside limits

COMMENTS: _____

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: WEYERHAEUSER ANALYTICAL Contract:

Lab Code: WEYER Case No.: 00629 SAS No.: *8151 M. SDG No.: 63783

Matrix Spike - EPA Sample No.: TP-SE-12(14')

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Pentachlorophenol	45.9	0.000	37.6	82	50-150
2,3,4,6 and 2,3,5,6-Tetra.	93.1	0.000	90.5	97	50-150
2,4,6-Trichlorophenol	46.1	10.3	30.6	44*	50-150
2,3,4,5-Tetrachlorophenol	48.3	0.000	19.1	40*	50-150

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Pentachlorophenol	46.7	40.5	87	6	40	50-150
2,3,4,6 and 2,3,5,6-Tetra.	94.8	84.8	89	9	40	50-150
2,4,6-Trichlorophenol	46.9	28.7	39*	12	40	50-150
2,3,4,5-Tetrachlorophenol	49.2	15.6	32*	22	40	50-150

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

* Values outside of QC limits

RPD: 0 out of 4 outside limits
Spike Recovery: 4 out of 8 outside limits

COMMENTS: _____

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

HBLK3

Lab Name: WEYERHAEUSER ANALYTICAL Contract:

Lab Code: WEYER Case No.: 00629 Method: 8151 M. SDG No.: 63783

Lab Sample ID: HBLKS041596 Lab File ID: _____

Matrix (soil/water) SOIL Extraction: (SepF/Cont/Sonc) SONC

Sulfur Cleanup (Y/N) N Date Extracted: 04/15/96

Date Analyzed (1): 04/16/96 Date Analyzed (2): 04/16/96

Time Analyzed (1): 1551 Time Analyzed (2): 1551

Instrument ID (1): HPDOS1_2 Instrument ID (2): HPDOS1_2

GC Column (1): DB1701 ID: 0.53 (mm) GC Column (2): DB608 ID: 0.53 (mm)

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

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	TP-SE-7 (15')RE	63792	04/16/96	04/16/96
02	HLCS3	HLCSS041596	04/16/96	04/16/96
03	TP-SE-12(11.5')RE	63801	04/16/96	04/16/96
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: _____

WTPH-D Extended
acid/silica cleanup

Service Request: 00629
Analyst: C. Thomson

Sample ID Client ID	Blank 1 04/08/96	LCS 1 04/08/96	Blank 2 04/09/96	LCS 2 04/09/96	63783 Duplicate #1
Analytes	mg/Kg	% Rec.	mg/Kg	% Rec.	mg/Kg
Diesel Fuel Range	U	111%	U	120%	45
Motor Oil Range	U		U		230
Surrogate Recovery	97%	107%	107%	115%	107%
Date Sampled					04/03/96
Date Extracted	04/08/96	04/08/96	04/09/96	04/09/96	04/08/96
Date Analyzed	04/12/96	04/12/96	04/12/96	04/12/96	04/12/96
Holding Time Days					5
Reporting Limit					
Diesel Range	1.3		1.3		19
Motor Oil Range	8.3		8.3		120

Approved by Clay Thomson Date 4/13/96

WTPH-D Extended
acid/silica cleanup

Service Request: 00629
Analyst: C. Thomson

Sample ID Client ID	63784 Duplicate #2	63785 TP-SE-1 (9')	63786 TP-SE-2 (13')	63787 TP-SE-3 (15')
Analytes	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	U	U	54	U
Motor Oil Range	U	U	140	U
Surrogate Recovery	112%	105%	102%	103%
Date Sampled	04/03/96	04/03/96	04/03/96	04/03/96
Date Extracted	04/08/96	04/08/96	04/08/96	04/08/96
Date Analyzed	04/11/96	04/11/96	04/11/96	04/11/96
Holding Time Days	5	5	5	5
Reporting Limit				
Diesel Range	28	25	20	19
Motor Oil Range	170	160	120	120

WTPH-D Extended
acid/silica cleanup

Service Request: 00629
Analyst: C. Thomson

Sample ID Client ID	63788 TP-SE-4 (12')	63789 TP-SE-5 (15')	63790 TP-SE-6 (15-19')	63791 TP-SE-6 (20')
Analytes	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	U	U	310	U
Motor Oil Range	U	U	1100	U
Surrogate Recovery	105%	106%	110%	106%
Date Sampled	04/03/96	04/03/96	04/03/96	04/03/96
Date Extracted	04/08/96	04/08/96	04/08/96	04/08/96
Date Analyzed	04/11/96	04/11/96	04/11/96	04/12/96
Holding Time Days	5	5	5	5
Reporting Limit				
Diesel Range	20	18	19	26
Motor Oil Range	130	110	120	160

WTPH-D Extended
acid/silica cleanup

Service Request: 00629
Analyst: C. Thomson

Sample ID Client ID	63792 TP-SE-7 (15')	63793 TP-SE-8 (6.5')	63794 TP-SE-8 (13')	63795 TP-SE-9 (10')
Analytes	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	U	U	U	250
Motor Oil Range	U	U	U	480
Surrogate Recovery	109%	115%	111%	113%
Date Sampled	04/03/96	04/04/96	04/04/96	04/04/96
Date Extracted	04/08/96	04/08/96	04/08/96	04/08/96
Date Analyzed	04/12/96	04/12/96	04/12/96	04/12/96
Holding Time Days	5	4	4	4
Reporting Limit				
Diesel Range	21	20	22	18
Motor Oil Range	130	130	140	110

WTPH-D Extended
acid/silica cleanup

Service Request: 00629
Analyst: C. Thomson

Sample ID Client ID	63796 TP-SE-9 (12.5')	63797 TP-SE-10 (11.5')	63798 TP-SE-10 (15')	63799 TP-SE-11 (12')
Analytes	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	U	84	U	41
Motor Oil Range	U	280	U	250
Surrogate Recovery	113%	113%	110%	117%
Date Sampled	04/04/96	04/04/96	04/04/96	04/04/96
Date Extracted	04/08/96	04/08/96	04/09/96	04/09/96
Date Analyzed	04/12/96	04/12/96	04/12/96	04/12/96
Holding Time Days	4	4	5	5
Reporting Limit				
Diesel Range	13	18	30	22
Motor Oil Range	81	110	190	140

WTPH-D Extended
acid/silica cleanup

Service Request: 00629
Analyst: C. Thomson

Sample ID Client ID	63800 TP-SE-11 (14')	63801 TP-SE-12 (11.5')	63802 TP-SE-12 (14')	63803 TP-SE-12 (16')
Analytes	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	U	U	90	U
Motor Oil Range	U	U	200	U
Surrogate Recovery	110%	114%	117%	115%
Date Sampled	04/04/96	04/04/96	04/04/96	04/04/96
Date Extracted	04/09/96	04/09/96	04/09/96	04/09/96
Date Analyzed	04/12/96	04/12/96	04/11/96	04/11/96
Holding Time Days	5	5	5	5
Reporting Limit				
Diesel Range	19	15	20	18
Motor Oil Range	120	93	130	110

WTPH-D Extended
acid/silica cleanup

Service Request: 00629
Analyst: C. Thomson

Sample ID Client ID	63804 TP-SE-13 (13.5')	63805 TP-SE-14 (9.5')	63806 TP-SE-14 (11')	63807 TP-SE-15 (9')
Analytes	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	U	160	16	U
Motor Oil Range	U	380	U	U
Surrogate Recovery	109%	105%	109%	106%
Date Sampled	04/04/96	04/04/96	04/04/96	04/04/96
Date Extracted	04/09/96	04/09/96	04/09/96	04/09/96
Date Analyzed	04/11/96	04/11/96	04/11/96	04/11/96
Holding Time Days	5	5	5	5
Reporting Limit				
Diesel Range	20	21	15	23
Motor Oil Range	130	130	95	140

WTPH-D Extended
acid/silica cleanup

Service Request: 00629
Analyst: C. Thomson

Sample ID Client ID	63808 TP-SE-16 (3')	63809 TP-SE-16 (6')	63791DUP TP-SE-6 (20')-DUP
Analytes	mg/Kg	mg/Kg	mg/Kg
Diesel Fuel Range	22	U	U
Motor Oil Range	U	U	U
Surrogate Recovery	120%	112%	121%
Date Sampled	04/04/96	04/04/96	04/03/96
Date Extracted	04/09/96	04/09/96	04/08/96
Date Analyzed	04/11/96	04/12/96	04/12/96
Holding Time Days	5	5	5
Reporting Limit			
Diesel Range	14	23	26
Motor Oil Range	89	150	160

WTPH-D Extended
acid/silica cleanup

Service Request: 00629
Analyst: C. Thomson

Sample ID	63802DUP	63808DUP
Client ID	TP-SE-12 (14')-DUP	TP-SE-16 (3')-DUP
Analytes	mg/Kg	mg/Kg
Diesel Fuel Range	89	U
Motor Oil Range	200	U
Surrogate Recovery	115%	111%
Date Sampled	04/04/96	04/04/96
Date Extracted	04/09/96	04/09/96
Date Analyzed	04/11/96	04/12/96
Holding Time Days	5	5
Reporting Limit		
Diesel Range	20	13
Motor Oil Range	130	83

ATTACHMENT B

EMCON 1992 SOIL SAMPLING REPORT

EMCON Northwest, Inc.
18912 North Creek Parkway • Suite 100 • Bothell, Washington 98011-8016 • (206) 485-5000 • Fax (206) 486-9766

November 30, 1992
Project 0141-037.26

CLEANE Ø3

Mr. Harold Ruppert
Weyerhaeuser Paper Company
101 East Marine View Drive
Everett, Washington 98201

Re: Southend Landfill Soil Sampling
Everett Facility

Dear Harold:

EMCON Northwest, Inc., is pleased to present this letter report detailing the findings of exploratory work performed at the Everett Facility's Southend Landfill. The tasks were performed during August and September 1992 in general accordance with our proposed scopes of work dated July 28 and August 20, 1992.

SOUTHEND LANDFILL EXPLORATORY TEST PITS

To better define the type of fill present in the southend landfill EMCON personnel directed excavation of twenty exploratory test pits across the area (Figure 1). Excavation services were provided by A.L. Sleister & Sons Construction, Inc., of Mukilteo, Washington.

Each test pit was excavated to a maximum depth of approximately 20 feet below ground surface. An EMCON geologist prepared a detailed exploratory test pit log during excavation which included information regarding grain size, color, relative moisture content, and type of waste encountered. Copies of the logs are included.

In general, each test pit encountered woodwaste from ground surface to approximately 6 to 12 feet below ground surface. The woodwaste was underlain by either a mixed fill material (old refuse from Mill B?), fine to medium dredge fill or native sand and silt. Test pit locations were surveyed

pc: J. Gross
Mark Schneider - Perkins Coie
J. Jackowski - CH 2J28
H. Ruppert

by Clark M. Leeman Land Surveying of Everett, Washington. A generalized cross-section of the southend landfill is presented in Figure 2.

Soil samples were collected from the sand unit in each test pit and submitted to Weyerhaeuser's Federal Way analytical laboratory for quantitative chemical analysis. Samples of the woodwaste were not collected. The samples were analyzed for semivolatile fuel hydrocarbons (TPH as diesel or oil) by Washington State Department of Ecology Method WTPH-D, pentachlorophenol by EPA Method 8270, and polychlorinated biphenyls (PCBs) by EPA Method 8080. Analytical data is summarized in Table 1.

SOUTHEND LANDFILL SOIL STOCKPILES

EMCON personnel collected soil samples from twenty one of forty two soil stockpiles present at the north end of the Southend Landfill. The samples were composited into groups of three for quantitative chemical analysis. Each three-part composite sample was analyzed for semivolatile fuel hydrocarbons, PCBs, and pentachlorophenol by Ecology method WTPH-D and EPA Method 8080 and 8270 respectively. A summary of the analytical data is presented in Table 1.

If you have any questions regarding the data presented in this report please call me.

Sincerely,

EMCON Northwest, Inc.

John North
Project Manager

Steven R. Sagstad, R.G.
Director of Geology Services

Enclosure

cc/enc: Larry Fulcher, Weyerhaeuser
John Guenther, EMCON

WEY/RUPP-Ln19/sna:2

Table 1

Summary of Southend Landfill
Test Pit and Soil Stockpile Analytical Data

Sample Name	Collection Date	TPH as Oil (mg/kg)	TPH as Diesel (mg/kg)	PCBs (µg/kg)	Pentachlorophenol (µg/kg)
Southend Landfill Test Pits					
TP92-6-S-1	8/31/92	890	400	ND	78
TP92-7-S-1	8/31/92	180	50	19	ND
TP92-8-S-1	8/31/92	11	16	ND	ND
TP92-10-S-1	9/1/92	--	--	4.0 JP	11.8 JP
TP92-11-S-1	9/1/92	480	240	ND	11.4 P
TP92-12-S-1	9/1/92	370	190	ND	37.4 JP
TP92-13-S-1	9/1/92	170	160	35 P	128
TP92-14-S-1	9/1/92	840	520	64 P	57 P
TP92-15-S-1	9/1/92	430	170	22 P	ND
TP92-16-S-1	9/1/92	15,000	26,000	ND	ND
TP92-16A-S-1	9/1/92	140	81	ND	ND
TP92-17-S-1	9/1/92	<2	ND	ND	ND
TP92-18-S-1	9/1/92	180	110	ND	ND
TP92-19-S-1	9/1/92	62	32	ND	6.4 JP
Southend Landfill Soil Stockpiles					
SP-1,3,5	9/14/92	1,300	1,500	--	--
SP-7,9,11	9/14/92	1,000	600	--	--
SP-13,15,17	9/14/92	950	520	--	--
SP-19,21,23	9/14/92	1,200	750	--	--
SP-25,27,29	9/14/92	1,300	150	--	--
SP-31,33,25	9/14/92	1,600	1,200	--	--
SP-37,39,41	9/14/92	1,300	450	--	--

Notes:

-- Indicates analysis not performed on this sample.
ND Indicates analyte not detected at or above the Method Reporting Limit

J Indicates an estimated value
P Indicates greater than 25% difference for detected concentrations between two GC columns, the lower of the two values is reported

WEY/RUPP-Ln19/sna:2

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92- 1
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	8.63'
METHOD	Trackhoe	TOTAL DEPTH	9.00'
LOGGED BY	Nick Garson	DATE COMPLETED	08/31/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
			5			**0 to 6.0 feet: MIXED WOOD DEBRIS/WOOD WASTE (WOOD)**, reddish brown to brown, contains bark, timbers, large branches/log fragments, damp. (FILL)
						@ 6.0 feet: water seeped rapidly.
						6.0 to 8.0 feet: SAND (SP), gray, fine to medium, with few fine to coarse gravel, trace silt, wet. (FILL)
						@ 8.0 feet: water gushing.
			10			**8.0 to 9.0 feet: CLAYEY SILT (ML/CL)**, brownish gray to gray, low to medium plasticity, wet. (ALLUVIUM)
						Bottom of Test Pit = 9.0 feet.
			15			
			20			
			25			
			30			

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92- 2
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	9.32'
METHOD	Trackhoe	TOTAL DEPTH	20.00'
LOGGED BY	Nick Garson	DATE COMPLETED	08/31/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
			5			**0 to 4.0 feet: MIXED WOOD DEBRIS/WOOD WASTE (WOOD)**, reddish brown to brown, contains bark and few timbers, damp. (FILL)
			10			**4.0 to 5.0 feet: SANDY SILT (ML)**, dark brown to black with fine to medium gravel and slag?, peat-like, damp. (FILL)
			15			**5.0 to 9.5 feet: SAND (SP)**, gray, fine to medium, trace silt, moist. (FILL)
			20			@ 9.5 feet: water seeping slowly, sand unit partially caving with water seepage.
			25			**9.5 to 20.0 feet: CLAYEY SILT (ML/CL)**, organic-rich, brownish gray to gray, low to medium plasticity, peat-like with depth, wet at 9.5 to 10.0 feet, moist below 10.0 feet. (ALLUVIUM)
			30			Bottom of Test Pit = 20.0 feet.

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92-3
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	12.99'
METHOD	Trackhoe	TOTAL DEPTH	20.00'
LOGGED BY	Nick Garson	DATE COMPLETED	08/31/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
			5			**0 to 9.5 feet: MIXED WOOD DEBRIS/WOOD WASTE (WOOD)**, reddish brown to brown, contains bark and small timbers, damp. (FILL)
			10			@ 9.5 feet: water seeped rapidly. **9.5 to 19.0 feet: CLAYEY SILT (ML/CL)**, brownish gray to gray, low to medium plasticity, 9.5 to 10.0 feet wet, moist below 10.0 feet, grades into a sandy silt with depth. (ALLUVIUM)
			15			
			20			**19.0 to 20.0 feet: SANDY SILT (ML)**, brownish gray, fine to medium, moist. (ALLUVIUM) Bottom of Test Pit = 20.0 feet.
			25			
			30			

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92- 4
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	16.34'
METHOD	Trackhoe	TOTAL DEPTH	20.00'
LOGGED BY	Nick Garson	DATE COMPLETED	08/31/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
			5			**0 to 12.0 feet: MIXED WOOD DEBRIS/WOOD WASTE (WOOD)**, reddish brown to brown, contains bark and small timbers. (FILL)
			10			@ 12.0 feet: water seeping rapidly.
			15			**12.0 to 19.0 feet: CLAYEY SILT (ML/CL)**, brownish gray to gray, low to medium plasticity, 12.0 to 12.5 feet wet, moist below, grades into a sandy silt with depth. (ALLUVIUM)
			20			**19.0 to 20.0 feet: SANDY SILT (ML)**, brownish gray, fine to medium, moist. (ALLUVIUM)
			25			Bottom of Test Pit = 20.0 feet.
			30			

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92- 5
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	18.59'
METHOD	Trackhoe	TOTAL DEPTH	20.00'
LOGGED BY	Nick Garson	DATE COMPLETED	08/31/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
			5, 10, 15, 20, 25, 30			**0 to 12.0 feet: MIXED WOOD DEBRIS/WOOD WASTE (WOOD)**, reddish brown to brown, contains bark and small timbers, damp. (FILL)
						@ 12.0 feet: water seeping rapidly.
						12.0 to 18.0 feet: SAND (SP), very dense, gray to black, medium to coarse, micaceous, porous, poorly to moderately well lithified, 12.0 to 12.5 feet wet, moist below 12.5 feet, frequency of cables and metallic objects increases with depth. (FILL)
						@ 18.0 feet: cables found.
						Bottom of Test Pit = 18.0 feet.

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92- 6
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	13.80'
METHOD	Trackhoe	TOTAL DEPTH	20.00'
LOGGED BY	Nick Garson	DATE COMPLETED	08/31/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
TP92-6-S-1			5, 10, 15, 20, 25, 30			**0 to 9.0 feet: MIXED WOOD DEBRIS/WOOD WASTE (WOOD)**, reddish brown to brown, contains bark and a few small timbers, damp. (FILL) **9.0 to 11.0 feet: MIXED SAND/WOOD WASTE (OL/OH)**, dark brown to black, medium to coarse, organic rich, moist. (FILL) @ 11.0 feet: water seeping rapidly. **11.0 to 19.0 feet: CLAYEY SILT (ML/CL)**, brownish gray to gray, low to medium plasticity, 11.0 to 11.5 feet wet, moist below 11.5 feet, grades into a sandy silt. (ALLUVIUM) **19.0 to 20.0 feet: SANDY SILT (ML)**, brownish gray, fine to medium, wet. (ALLUVIUM) Bottom of Test Pit = 20.0 feet.

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92- 7
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	14.48'
METHOD	Trackhoe	TOTAL DEPTH	20.00'
LOGGED BY	Nick Garson	DATE COMPLETED	08/31/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
TP92-7-S-1			5, 10, 15, 20, 25, 30			**0 to 8.5 feet: MIXED WOOD DEBRIS/WOOD WASTE (WOOD)**, reddish brown to brown, contains bark, small timbers and large logs, damp. (FILL) @ 7.5 feet: crushed 55-gallon drum (contents unknown). **8.5 to 9.5 feet: GRAVEL (OL/OH)**, gray to black. (FILL) **9.5 to 11.5 feet: LIME WASTE (LW)**, white to gray, soft to firm. (FILL) **11.5 to 18.0 feet: CLAYEY SILT (ML/CL)**, brownish gray to gray, low to medium plasticity, 13.0 to 13.5 feet wet, moist below 13.5 feet, grades into a sandy silt. (ALLUVIUM) @ 13.0 feet: water seeping rapidly. @ 17.0 feet: remains of a 5-gallon container. **18.0 to 20.0 feet: SANDY SILT (ML)**, brownish gray, fine to medium, moist. (ALLUVIUM) Bottom of Test Pit = 20.0 feet.

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92- 8
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	17.12'
METHOD	Trackhoe	TOTAL DEPTH	20.00'
LOGGED BY	Nick Garson	DATE COMPLETED	08/31/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
TP92-8-S-1			5, 10, 15, 20, 25, 30			**0 to 11.0 feet: MIXED WOOD DEBRIS/WOOD WASTE (WOOD)**, reddish brown to brown, contains bark, small timbers and a few large logs, damp. (FILL) @ 11.0 feet: water seeping rapidly. **11.0 to 12.5 feet: MIXED SAND/WOOD WASTE (OL/OH)**, dark brown to black, medium to coarse, organic rich, 11.0 to 11.5 feet wet, moist below 11.5 feet. (FILL) **12.5 to 20.0 feet: CLAYEY SILT (ML/CL)**, brownish gray to gray, low to medium plasticity, moist. (ALLUVIUM) Bottom of Test Pit = 20.0 feet.

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92- 9
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	15.28'
METHOD	Trackhoe	TOTAL DEPTH	20.00'
LOGGED BY	Nick Garson	DATE COMPLETED	08/31/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
			5			**0 to 11.0 feet: MIXED WOOD DEBRIS/WOOD WASTE (WOOD)**, reddish brown to brown, contains bark and small timbers, damp. (FILL)
			10			@ 11.0 feet: water seeping slow to moderately.
			15			**11.0 to 18.0 feet: MIXED SAND/WOOD WASTE (OL/OH)**, dark brown to black, medium to coarse, organic rich, 11.0 to 11.5 feet wet, moist below 11.5 feet. (FILL)
			20			**18.0 to 20.0 feet: CLAYEY SILT (ML/CL)**, brownish gray to gray, low to medium plasticity, moist. (ALLUVIUM)
			25			Bottom of Test Pit = 20.0 feet.
			30			

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92-10
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	14.74'
METHOD	Trackhoe	TOTAL DEPTH	18.00'
LOGGED BY	Nick Garson	DATE COMPLETED	09/01/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
TP92-9-S-1			5, 10, 15, 20, 25, 30			**0 to 8.0 feet: MIXED WOOD DEBRIS/WOOD WASTE (WOOD)**, reddish brown to brown, bark, various metallic objects, a large plastic container, damp. (FILL) **8.0 to 11.0 feet: LIME WASTE (LW)**, white to gray, soft to firm. (FILL) **11.0 to 15.0 feet: MIXED SAND, WOOD WASTE AND DEBRIS (WOOD)**, dark brown to black, medium to coarse, organic rich, wet @ 12.0 to 12.5 feet, moist below 12.5 feet, includes wire, metal, and some scattered lime. (FILL) @ 12.0 feet: water seeping rapidly. **15.0 to 18.0 feet: CLAYEY SILT (ML/CL)**, brownish gray to gray, low to medium plasticity, scattered roots and organic material, moist. (ALLUVIUM) Bottom of Test Pit = 18.0 feet.

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92-11
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	16.25'
METHOD	Trackhoe	TOTAL DEPTH	16.00'
LOGGED BY	Nick Garson	DATE COMPLETED	09/01/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
TP92-11-S-1			0 to 30			**0 to 10.0 feet: MIXED WOOD DEBRIS/WOOD WASTE (WOOD)**, reddish brown to brown, layered, contains bark, timbers, scattered piping and wire, damp. (FILL) **10.0 to 10.5 feet: LIME WASTE (LW)**, whitish brown, moist, soft to firm. (FILL) **10.5 to 15.0 feet: SAND (SP)**, dark gray, fine to medium with few fine to coarse gravel, occasional timbers, wood waste, nails and metal debris, wet at 10.5 to 11.0 feet, moist below. (FILL) @ 11.0 feet: water seeping slowly. **15.0 to 16.0 feet: CLAYEY SILT (ML/CL)**, brownish gray to gray, low to medium plasticity, wet. (ALLUVIUM) Bottom of Test Pit = 16.0 feet.

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92-12
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	16.03'
METHOD	Trackhoe	TOTAL DEPTH	16.00'
LOGGED BY	Nick Garson	DATE COMPLETED	09/01/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
			5			**0 to 9.0 feet: MIXED WOOD DEBRIS/WOOD WASTE (WOOD)**, reddish brown to brown, contains bark and a few small timbers, damp. (FILL)
						@ 9.0 feet: water seeping slowly.
TP92-12-S-1			10			**9.0 to 15.0 feet: MIXED SAND, WOOD WASTE AND LIME WASTE (OL/OH)**, whitish brown (lime) to dark gray (fill), fine to medium with scattered gravel, organic rich, contains occasional timbers, wood waste, wires, and metal debris, 9.0 to 9.5 feet wet, moist below 9.5 feet. (FILL)
						@ 11.0 feet: 55-gallon drum lid.
			15			**15.0 to 16.0 feet: CLAYEY SILT (ML/CL)**, brownish gray to gray, low to medium plasticity, 9.0 to 9.5 feet wet, moist below 9.5 feet. (ALLUVIUM)
						Bottom of Test Pit = 16.0 feet.
			20			
			25			
			30			

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92-13
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	17.01'
METHOD	Trackhoe	TOTAL DEPTH	16.00'
LOGGED BY	Nick Garson	DATE COMPLETED	09/01/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
TP92-13-S-1			5, 10, 15, 20, 25, 30			**0 to 10.5 feet: MIXED WOOD DEBRIS/WOOD WASTE** (WOOD), reddish brown to brown, contains bark and a few small timbers, damp. (FILL) **10.5 to 11.5 feet: LIME WASTE (FILL)**, thin, interlayered lime waste layers, gray to white, soft to firm. @ 11.0 feet: water seeping rapidly. **11.5 to 14.0 feet: MIXED SAND, WOOD WASTE, AND LIME WASTE (OL/OH)**, dark brown to black, fine to coarse with scattered gravel, contains rags and timber, 11.0 to 11.5 feet wet, moist below 11.5 feet. (FILL) **14.0 to 16.0 feet: CLAYEY SILT (ML/CL)**, brownish gray to gray, low to medium plasticity, contains minor wood waste, moist. (ALLUVIUM) Bottom of Test Pit = 16.0 feet.

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92-14
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	17.61'
METHOD	Trackhoe	TOTAL DEPTH	15.00'
LOGGED BY	Nick Garson	DATE COMPLETED	09/01/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
			5			**0 to 13.0 feet: MIXED WOOD WASTE/WOOD DEBRIS (WOOD)**, reddish brown to brown, contains bark and small timbers, damp. (FILL)
			10			
TP92-14-S-1			15			**13.0 to 15.0 feet: MIXED SAND/WOOD WASTE (OL/OH)**, dark brown to black, fine to medium with scattered gravel and cobbles, contains piping and metallic cables, wet. (FILL) @ 14.0 feet: water seeping rapidly. Bottom of Test Pit = 15.0 feet.
			20			
			25			
			30			

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92-15
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	19.13'
METHOD	Trackhoe	TOTAL DEPTH	18.00'
LOGGED BY	Nick Garson	DATE COMPLETED	09/01/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
			5			**0 to 12.0 feet: MIXED WOOD DEBRIS/WOOD WASTE (WOOD)**, reddish brown to brown, contains bark and small timbers, damp. (FILL)
			10			
			15			**12.0 to 16.0 feet: MIXED SAND/WOOD WASTE (OL/OH)**, dark gray, fine to coarse with scattered gravel and cobbles, organic rich, 13.0 to 13.5 feet wet, moist below 13.5 feet, contains white kiln bricks, timbers, wires and metallic debris. (FILL)
TP92-15-S-1						@ 13.0 feet: water seeping rapidly.
			20			**16.0 to 18.0 feet: CLAYEY SILT (ML/CL)**, brownish gray to gray, low to medium plasticity, contains wood waste, moist. (ALLUVIUM)
			25			Bottom of Test Pit = 18.0 feet.
			30			

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92-16
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	18.12'
METHOD	Trackhoe	TOTAL DEPTH	18.00'
LOGGED BY	Nick Garson	DATE COMPLETED	09/01/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
			5			**0 to 11.0 feet: MIXED WOOD DEBRIS/WOOD WASTE (WOOD)**, reddish brown to brown, layered, contains bark and small timbers, damp. (FILL)
			10			
TP92-16-S-1						**11.0 to 13.0 feet: LIME WASTE (FILL)**, gray to white, soft to firm.
						@ 11.0 feet: water seeping slowly.
			15			**13.0 to 17.0 feet: MIXED SAND, WOOD DEBRIS AND LIME WASTE (OL/OH)**, dark gray, fine to coarse with abundant gravel, 11.0 to 11.5 feet wet, moist below 11.5 feet, contains wood debris, logs, pipes, and metallic objects increasing with depth.
						17.0 to 18.0 feet: CLAYEY SILT (ML/CL), brownish gray to gray, low to medium plasticity, moist. (ALLUVIUM)
			20			Bottom of Test Pit = 18.0 feet.
			25			
			30			

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92-16A
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	18.06'
METHOD	Trackhoe	TOTAL DEPTH	18.00'
LOGGED BY	Nick Garson	DATE COMPLETED	09/01/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
			5			**0 to 10.5 feet: MIXED WOOD DEBRIS/WOOD WASTE (WOOD)**, reddish brown to brown, contains bark and a few timbers. (FILL)
			10			**10.5 to 11.5 feet: LIME WASTE (LW).** (FILL) @ 11.0 to 11.5 feet: water seeping slowly.
TP92-16A-S-1			15			**11.5 to 17.0 feet: MIXED SAND/WOOD WASTE (OL/OH)**, dark gray, fine to coarse with abundant gravel, and cobbles, contains wood debris and metallic objects, 11.5 to 12.0 feet wet, moist below 12.0 feet, grades into CLAYEY SILT. (FILL)
			20			**17.0 to 18.0 feet: CLAYEY SILT (ML/CL)**, brownish gray to gray, low to medium plasticity, moist. (ALLUVIUM)
			25			Bottom of Test Pit = 18.0 feet.
			30			

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92-17
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	9.79'
METHOD	Trackhoe	TOTAL DEPTH	8.00'
LOGGED BY	Nick Garson	DATE COMPLETED	09/01/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
TP92-S-1			5, 10, 15, 20, 25, 30			**0 to 2.0 feet: SOIL (OL/OH)**, dark brown, organic rich, contains roots, pebbles, cobbles, damp. Relatively scarce timbers and wood debris. **2.0 to 6.0 feet: SAND (SP/SM)**, light brown to dark brown, fine to coarse with gravel and pebbles, moist, very little wood debris. (ALLUVIUM) @ 6.0 feet: water seeping rapidly. **6.0 to 8.0 feet: CLAYEY SILT (ML/CL)**, brownish gray to gray, low to medium plasticity, 6.0 to 6.5 feet wet, moist below 6.5 feet. (ALLUVIUM) Bottom of Test Pit = 8.0 feet.

REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92-18
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	6.51'
METHOD	Trackhoe	TOTAL DEPTH	12.00'
LOGGED BY	Nick Garson	DATE COMPLETED	09/01/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
			5			**0 to 3.0 feet: SOIL (OL/OH), dark** brown, organic rich, contains roots, pebbles, cobbles, damp. @ 3.0 feet: very slight water seepage. **3.0 to 4.0 feet: SAND (SP/SM), light** brown to dark brown, fine to coarse with gravel and pebbles, little to no wood debris, moist. (ALLUVIUM) **4.0 to 12.0 feet: CLAYEY SILT (ML/CL),** brownish gray to gray, low to medium plasticity, moist (wet @ 3.0, 5.0, and 11.0 feet). (ALLUVIUM) @ 5.0 feet: water seeping slowly @ 11.0 feet: water seeping very rapidly. Bottom of Test Pit = 12.0 feet.
			10			
			15			
			20			
			25			
			30			

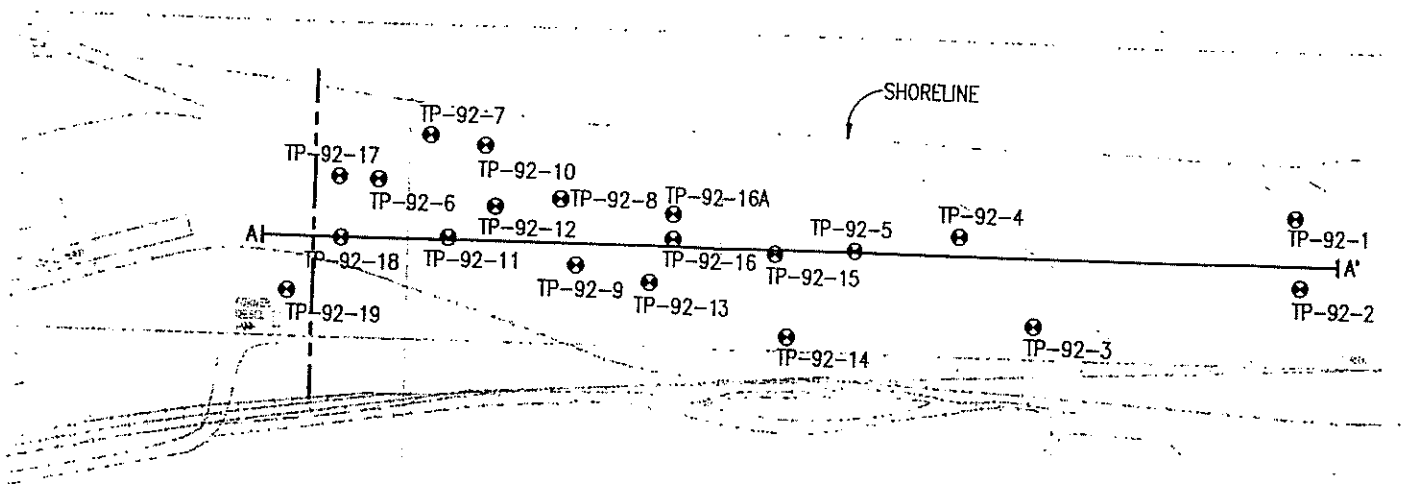
REMARKS

EXPLORATORY TEST PIT LOG

PROJECT NAME	Weyerhaeuser - Everett Phase II	TEST PIT NO.	TP92-19
LOCATION	Southend Landfill	PAGE	1 OF 1
DUG BY	A.L. Sleister	REFERENCE ELEV.	6.37'
METHOD	Trackhoe	TOTAL DEPTH	6.00'
LOGGED BY	Nick Garson	DATE COMPLETED	09/01/92

SAMPLING METHOD AND NUMBER	PID (in ppm)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
TP92-19-S-1			5, 10, 15, 20, 25, 30			**0 to 2.5 feet: SOIL (OL/OH)**, dark brown, organic rich, contains roots, pebbles, cobbles, kiln bricks, and timbers. **2.5 to 3.5 feet: SAND (SP/SM)**, light brown to dark brown, fine to coarse with gravel and pebbles, moist, little to no wood debris. (ALLUVIUM) @ 3.5 feet: water seeping rapidly. **3.5 to 6.0 feet: CLAYEY SILT (ML/CL)**, brownish gray to gray, low to medium plasticity, 3.5 to 4.0 feet wet, moist below 4.0 feet. (ALLUVIUM) Bottom of Test Pit = 6.0 feet.

REMARKS



700 x 300 = 210,000 ft²
= 4.82 acres

N

LEGEND:

EMCON Test Pits (8-92)

A—A' Cross Section

0 200 400

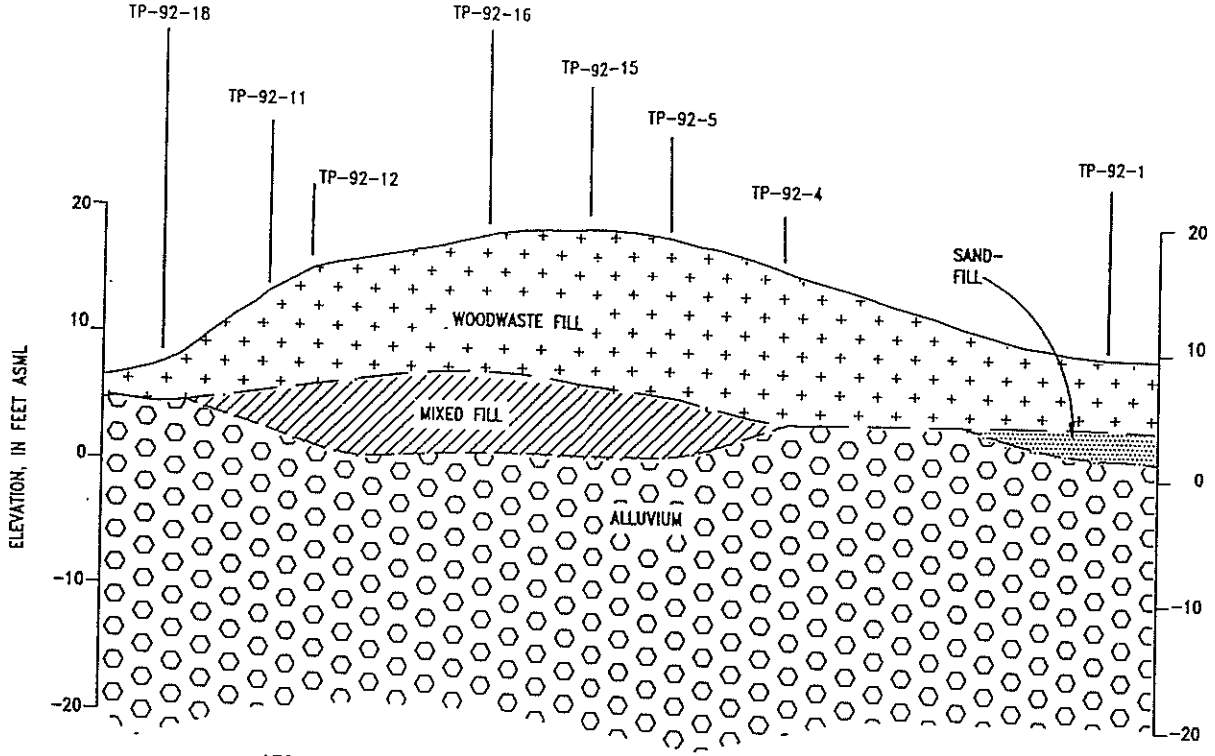
SCALE (ft)

EMCON Northwest, Inc.

DATE 11/92
DWN. KJM
REV.
APPR.
PROJECT NO. 0141-037.26

Figure 1
WEYERHAEUSER PAPER COMPANY
EVERETT SITE ASSESSMENT
SOUTHEND LANDFILL TEST PIT LOCATIONS

1= 200 11-24-92 D:\0141\037\26C01



LEGEND:

TP-92-11 Test pit number

Woodwaste and wood debris, with some timbers and trace metallic objects

Woodwaste, lime waste, and sand, with scattered metal debris, cable, cans, and other assorted refuse

Clayey silt, with layers of sand, fine to medium, trace organic debris

0 200 400

SCALE (ft)

NOTE: See Figure 1, for location of cross-section

Site Datum = National Geodetic Vertical Datum

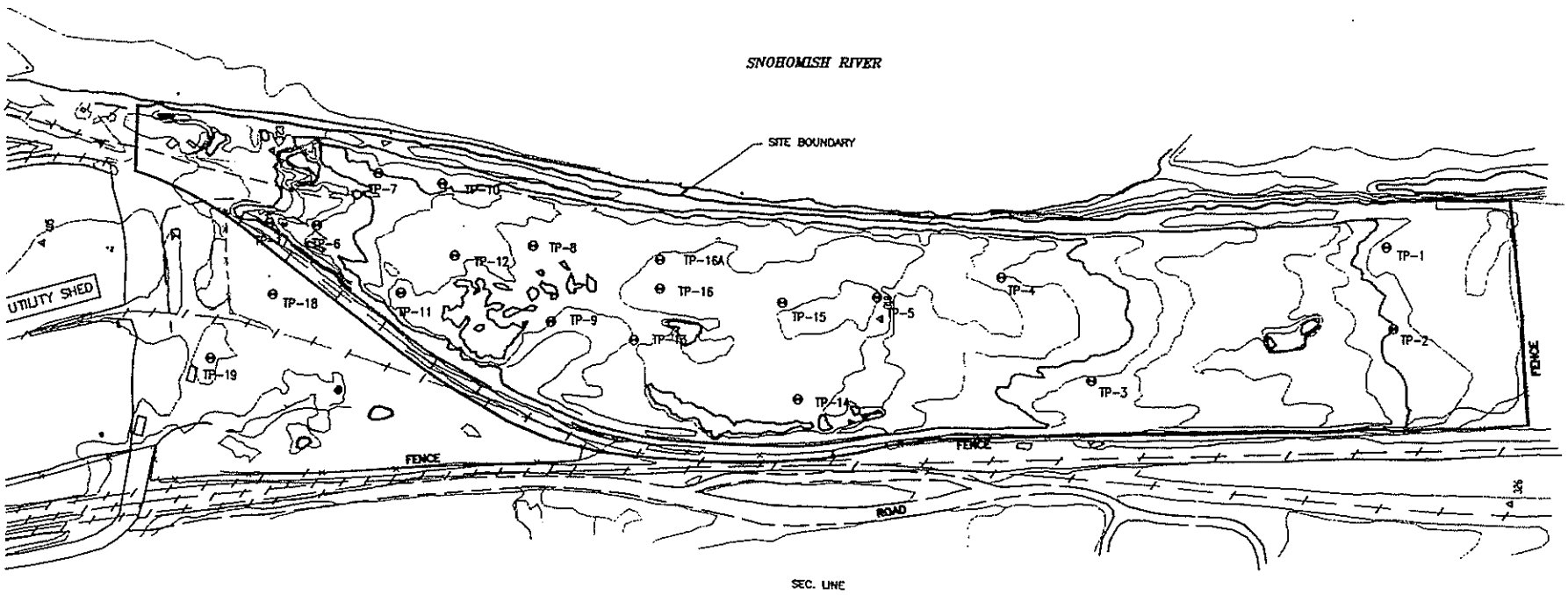
EMCON Northwest, Inc.

DATE 11-92
DWN. MLP
REV.
APPR.
PROJECT NO. 0141-037.26

Figure
WEYERHAEUSER PAPER COMPANY
EVERETT SITE ASSESSMENT

SOUTHEND LANDFILL CROSS-SECTION

1= 1 11-24-92 D:\0141\037\26C07



LEGEND:

TP-1 ⊖ TEST PIT LOCATION (EMCON 1992)

Note: This is a new figure which combines topographic features and test pit location To relate TP locations with Data Points insert 92 between TP and —

0 150 300

SCALE (ft)

EMCON Northwest, Inc.

DATE	8/94
DWN.	EJB
REV.	
APPR.	
PROJECT NO.	0141-037.84

Figure 1
WEYERHAEUSER COMPANY
EVERETT, WASHINGTON
SOUTH END RESIDUAL WOOD STORAGE SITE

Example:

1=150 09-01-94 G:\DWG\0141\037\64BLC10

ATTACHMENT C

EMCON 1996 PRELIMINARY SUBSURFACE INVESTIGATION REPORT

PRELIMINARY SUBSURFACE INVESTIGATION

SOUTH END RESIDUAL WOOD STORAGE SITE

EVERETT, WASHINGTON

Prepared for

Weyerhaeuser Company

May 13, 1996

Prepared by

EMCON
18912 North Creek Parkway, Suite 100
Bothell, Washington 98011-8016

Project 40141-037.097

Preliminary Subsurface Investigation
South End Residual Wood Storage Site
Everett, Washington

The material and data in this report were prepared under the supervision and direction of the undersigned.

EMCON

James Bailey, R.G.
Co-Director, Geology Division

CONTENTS

1 INTRODUCTION

EMCON is pleased to submit this report summarizing the results of a preliminary subsurface investigation performed at Weyerhaeuser's South End Residual Wood Storage Site in Everett, Washington (Figure 1). The purpose of the preliminary subsurface investigation was to screen for potential impacts to groundwater to support litigation efforts. Activities completed in this scope of work included drilling five soil borings, installing temporary groundwater wells in the borings, sampling groundwater in each well, and preparing this data report.

2 FIELD ACTIVITIES

2.1 Soil Borings

EMCON conducted field investigations on August 1 and 2, 1995. Five soil borings (WP01 through WP05) were advanced at the site (Figure 2). The boring locations were selected based on data collected during a review of historical site information and previous test pit sampling.

Ramlo Well Drilling, Inc. of Eatonville, Washington, drilled the borings by using a Mobile® B61 drill rig. All borings were completed by using hollow-stem auger techniques. The drill rig was equipped with 4-inch (in.) inside diameter (i.d.), 10-in. outside diameter (o.d.) augers. The borings were advanced to depths between 20 and 35 feet (ft) below the ground surface (bgs).

Soil samples were collected at 5-ft intervals from approximately 5 ft bgs to the total depth drilled. Samples were recovered by using a 2-in. o.d. split spoon sampler driven using a 140-pound hammer. The hammer drop was approximately 30 in. per stroke. Recovered samples were logged according to the Unified Soil Classification System. Samples were placed in sealed plastic bags. The samples were screened for the potential presence of volatile vapors by using an OVM Datalogger Model 580B photoionization detector (PID). The bagged soil samples were subsequently archived in EMCON's Bothell office. Boring logs, including PID measurements, are provided in Attachment A.

Native soils encountered in the borings were overlain by a 1.5 to 10.5 ft thick layer of reddish-brown wood chip fill. The base of the wood chip layer generally consisted of dark brown to black sand with abundant wood chips. The native soils generally consisted of gray clay, silt, and fine sand mixtures ranging from 9.5 to 12.5 ft thick, underlain by dark gray, medium sand and silty sand to the maximum explored depth. Groundwater was

encountered in each of the borings. Depth to water at the time of drilling ranged from 15 to 21 ft bgs.

2.2 Well Installation and Sampling

Following drilling, temporary wells were installed in borings WP01 through WP05. Each temporary well was constructed by connecting a 3-ft-long, 2-in.-diameter, stainless steel Nagaoka® well point with 0.010-in. slot-size screen to lengths of galvanized steel riser pipe. The assemblage was inserted into the boring so that the well point was below the water table. After the augers were advanced to the maximum depth in each boring, EMCON attempted to install the assemblage into undisturbed soil below the end of the lead auger. However, heaving sand inside the auger prevented the well points from being inserted fully into undisturbed material. Instead, the temporary well points were installed partially or completely into the heaving material.

In borings WP01, WP02, WP03, and WP05, native material heaved 3 to 4 ft up into the casing of the lead auger. The temporary well point in WP01 was installed through the heaving sand, into undisturbed soil below the lead auger and deepest driven sample location. In borings WP02, WP03, and WP05, the temporary well points were installed completely into the heaving sand. In boring WP04, approximately 10 to 12 ft of native material heaved into the auger casing. The augers were pulled out of boring WP04 and cleaned with potable water from the driller's water truck, and the boring was re-drilled in the same location. Again, native sand heaved approximately 10 ft up into the auger casing. The temporary well point in WP04 was pushed completely into the heaving material to collect a groundwater sample.

Before sampling, each well was developed to remove fine-grained material from the water. At least 25 gallons of water were bailed from each temporary well using a disposable, bottom filling Teflon™ bailer.

Groundwater samples were collected from each well immediately after development. The samples were collected by using a bottom-filling disposable Teflon™ bailer. Water samples collected from borings WP01, WP02, WP03 and WP05 appeared slightly silty. The water sample from WP04 was very silty. Direct measurements of turbidity were not collected. The samples were transferred into laboratory-prepared containers, tightly sealed, and placed immediately into an iced cooler. Samples were transported to the laboratory using standard chain-of-custody procedures.

After each sample was collected, the well assemblage was removed from the boring. The borings were abandoned by injecting a Wyoben® bentonite slurry into the borehole using a tremie pipe. The slurry was capped to 1 to 2 ft bgs by using medium Holeplug bentonite chips.

3 LABORATORY ANALYSIS

Five groundwater samples were submitted to Columbia Analytical Services, Inc. (CAS), of Bothell, Washington, for analyses. The samples were analyzed for the following:

- Total petroleum hydrocarbons (TPH) as gasoline by using the Washington State Department of Ecology (Ecology) Method WTPH-G
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by using United States Environmental Protection Agency (USEPA) Methods 5030/8020
- TPH as diesel (TPH-D) and as oil (TPH-O) by using Ecology Method WTPH-D Extended
- Halogenated volatile organic compounds (HVOCs) by using EPA Method 8010
- Polychlorinated biphenyls (PCBs) by using EPA Method 8080
- Pentachlorophenol (PCP) by using EPA Method 8150A
- Total metals by using EPA Methods 6010A/7060/7421/7470

Laboratory results for soil are summarized in Table 1. Copies of laboratory reports and chain-of-custody forms are included as Attachment B.

LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Data presented in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

Table 1

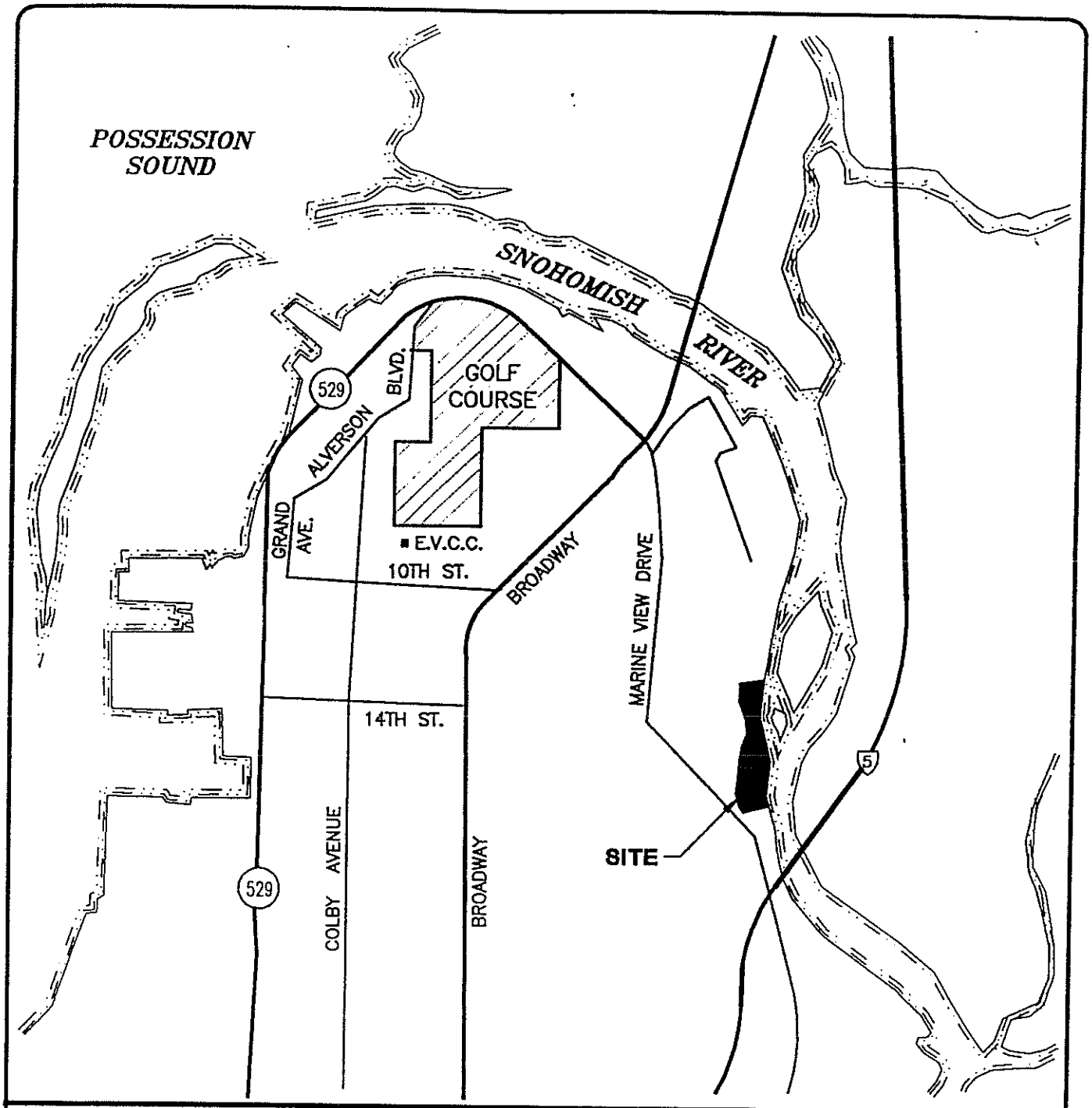
Laboratory Results for Groundwater
Weyerhaeuser, Subsurface Investigation
South End Residual Wood Storage Site, Everett, Washington

Well	Sample Name	Sample Date	Total Petroleum Hydrocarbons[a]			BTEX Compounds[b]			
			TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Xylene
WP01	50801 SEW WP01-20	08/01/95	ND	320	1,270	ND	ND	ND	ND
WP02	50801 SEW WP02-25	08/01/95	ND	ND	ND	ND	ND	ND	ND
WP03	50802 SEW WP03-26	08/02/95	ND	ND	ND	0.3(T)	0.7(T)	ND	0.7(T)
WP04	50802 SEW WP04-25	08/02/95	ND	260	ND	ND	ND	ND	ND
WP05	50802 SEW WP05-35	08/02/95	ND	ND	ND	ND	ND	ND	ND

Well	Sample Name	Sample Date	PCBs[c]	PCP[d]	HVOCs[e]	Total Metals[f]						
						Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Zinc
WP01	50801 SEW WP01-20	08/01/95	ND	ND	ND	20	ND	174	121	51	ND	4,360
WP02	50801 SEW WP02-25	08/01/95	ND	ND	ND	33	ND	307	302	138	ND	7,200
WP03	50802 SEW WP03-26	08/02/95	ND	ND	0.7[g]	9	ND	89	47	25	ND	3,140
WP04	50802 SEW WP04-25	08/02/95	ND	ND	ND	ND	ND	13	ND	8	ND	1,030
WP05	50802 SEW WP05-35	08/02/95	ND	ND	ND	8	ND	130	53	60	ND	6,260

NOTE: Results in part per billion (ppb)
ND = not detected at or above the method reporting limit.
(T) = trace amount detected. Concentration detected was below the method reporting limit.

[a] Total petroleum hydrocarbons (TPH) by using Ecology Method WTPH-G for gasoline (TPH-G) and WTPH-D extended for diesel (TPH-D) and oil (TPH-O).
[b] Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by using USEPA Methods 5030/8020.
[c] Polychlorinated biphenyls (PCBs) by using USEPA Method 8080.
[d] Pentachlorophenol (PCP) by using EPA Method 8150A modified.
[e] Halogenated volatile organic compounds (HVOCs) by using EPA Method 8010.
[f] Total metals by using EPA Methods 6010A/7060/7421/7470.
[g] Chloroform.

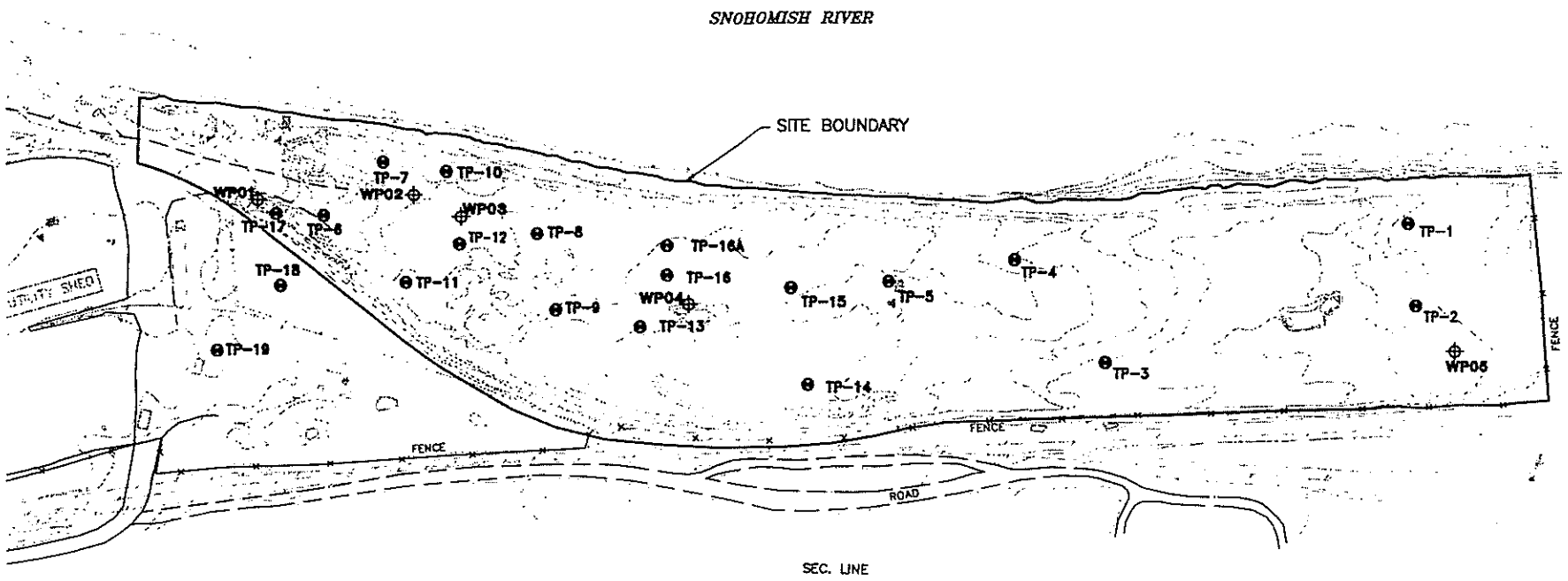


EMCON

DATE 5-96
DWN. MLP
REV.
APPR.
PROJECT NO.
40141-037.097

Figure 1
WEYERHAEUSER COMPANY
SOUTHEND RESIDUAL WOOD STORAGE SITE
VICINITY MAP

1=1 5-03-96 G:\DWG\0141\037\97BLC02



LEGEND:

TP-1 ⊕ Test Pit Location (EMCON 1992)

WP01 ⊕ Temporary Well Point Location

0 150 300

SCALE (ft)

EMCON

DATE	8-95
DWN.	MLP
REV.	
APPR.	
PROJECT NO.	40141-037.097

Figure 2
WEYERHAEUSER COMPANY
SOUTH END RESIDUAL WOOD STORAGE SITE
SITE PLAN SHOWING BORING LOCATIONS

1=150 5-13-96 G:\DWG\0141\037\097\97BLC01

LOG OF EXPLORATORY BORING

PROJECT NAME	Weyerhaeuser Everett	BORING NO.	WP 01
LOCATION	South End Landfill	PAGE	1 OF 2
DRILLED BY	Ramlo Drilling	GROUND ELEV.	
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	21.50'
LOGGED BY	H. Corner	DATE COMPLETED	08/01/95

SAMPLING METHOD	PID (in ppm)	BLOWS PER 6 INCHES	LITHOLOGIC DESCRIPTION
			0 to 1.5 feet: WOOD CHIPS, brown, trace fine to coarse gravel, moist. (FILL)
	>2000	5-2-3	**1.5 to 5.5 feet: SAND (SP),** dark gray, with few fines, few gravel, and trace wood chips, moist. Transition from overlying wood chips to underlying alluvial sediments. (ALLUVIUM)
	1218	1-1-1	**5.5 to 13.0 feet: SILT (MH),** light gray, medium plasticity, few to little organic materials, trace fine gravels, moist. (ALLUVIUM)
	>2000	1-1-2	**13.0 to 18.0 feet: SILTY CLAYEY SAND (SM-SC),** light gray, clay slightly plastic, trace organic material, moist to wet. (ALLUVIUM)
			18.0 to 21.5 feet: SAND (SP), gray, medium, trace coarse, wet. (ALLUVIUM)

GROUND WATER LEVELS: ▽ ATD

DEPTH IN FEET: 5, 10, 15, 20

SAMPLES

ABANDONMENT DETAILS

LITHOLOGIC COLUMN

REMARKS

Open triangle = water level observed in boring during drilling.
ATD = at time of drilling.

EMCON

LOG OF EXPLORATORY BORING

PROJECT NAME	Weyerhaeuser Everett	BORING NO.	WP 01
LOCATION	South End Landfill	PAGE	2 OF 2
DRILLED BY	Ramlo Drilling	GROUND ELEV.	
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	21.50'
LOGGED BY	H. Corner	DATE COMPLETED	08/01/95

SAMPLING METHOD	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	ABANDONMENT DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
	>2000	1-3-10						**18.0 to 21.5 feet: SAND (SP),** continued.

Total depth drilled = 20.0 feet.
Total depth sampled = 21.5 feet.

BORING ABANDONMENT DETAILS:

0 to 1.0 foot: Slough.
1.0 to 2.5 feet: Bentonite chips.
2.5 to 17.0 feet: Bentonite slurry.
17.0 to 21.5 feet: Native material (heave).

NOTES:

Approximately 3 feet of native material heaved into inside of auger after drilling to maximum explored depth.

Temporary well point screen was set from 20.0 to 23.0 feet, into heaving sands and undisturbed soil.

Temporary well point was removed after sampling.

25
30
35
40

REMARKS
Open triangle = water level observed in boring during drilling.
ATD = at time of drilling.

EMCON

LOG OF EXPLORATORY BORING

PROJECT NAME	Weyerhaeuser Everett	BORING NO.	WP 02
LOCATION	South End Landfill	PAGE	1 OF 2
DRILLED BY	Ramlo Drilling	GROUND ELEV.	
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	26.50'
LOGGED BY	H. Corner	DATE COMPLETED	08/01/95

SAMPLING METHOD	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	ABANDONMENT DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
	>2000	4-4-6		5				**0 to 8.5 feet: WOOD CHIPS,** reddish-brown, moist. (FILL)
	>2000	6-15-11		10				**8.5 to 11.5 feet: SAND (SP),** dark gray to black, medium to coarse, some peat, trace to few fine gravel, damp to slightly wet. Transition from overlying wood chips to underlying alluvial sediments. (ALLUVIUM)
	--	3-3-2		15				**11.5 to 21.0 feet: INTERBEDDED CLAYEY SILT AND SAND (MH/SC),** medium to dark gray, fine sand, medium plasticity silt and clay, few fine gravel, trace organic material, moist to wet. (ALLUVIUM) @ 13.0 to 15.0 feet: perched water.
				20				

REMARKS

Open triangle = water level observed in boring during drilling.
ATD = at time of drilling.

EMCON

LOG OF EXPLORATORY BORING

PROJECT NAME	**Weyerhaeuser Everett**	BORING NO.	**WP 02**
LOCATION	**South End Landfill**	PAGE	**2 OF 2**
DRILLED BY	**Ramlo Drilling**	GROUND ELEV.	
DRILL METHOD	**Hollow Stem Auger**	TOTAL DEPTH	**26.50'**
LOGGED BY	**H. Corner**	DATE COMPLETED	**08/01/95**

SAMPLING METHOD	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	ABANDONMENT DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
	>2000	2-3-8	▽ ATD					**11.5 to 21.0 feet: INTERBEDDED CLAYEY SILT AND SAND (MH/SC)**, continued.
								21.0 to 26.5 feet: SAND (SP), gray, medium, trace to few coarse, trace fine, wet. (ALLUVIUM)
	135	NM		25				
				30				Total depth drilled = 25.0 feet. Total depth sampled = 26.5 feet. **BORING ABANDONMENT DETAILS:** 0 to 0.5 foot: Slough. 0.5 to 2.0 feet: Bentonite chips. 2.0 to 22.0 feet: Bentonite slurry. 22.0 to 26.5 feet: Native material (heave). NOTES: Approximately 3 feet of native material heaved into inside of auger after drilling to maximum explored depth. Temporary well point screen was set from 22.0 to 25.0 feet, into heaving sands. Temporary well point was removed after sampling.
				35				
				40				

REMARKS

Open triangle = water level observed in boring during drilling.
ATD = at time of drilling.

EMCON

LOG OF EXPLORATORY BORING

PROJECT NAME	Weyerhaeuser Everett	BORING NO.	WP 03
LOCATION	South End Landfill	PAGE	1 OF 2
DRILLED BY	Ramlo Drilling	GROUND ELEV.	
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	26.50'
LOGGED BY	H. Corner	DATE COMPLETED	08/02/95

SAMPLING METHOD	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	ABANDONMENT DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
								0 to 10.5 feet: WOOD CHIPS, red-brown, slightly moist. Below 8.0 feet, red-brown to dark gray, trace to few fine to coarse gravel, trace fines, trace fine to medium sand, moist. (FILL)
	16	7-10-7		5				
	>2000	7-14-20		10				**10.5 to 23.0 feet: INTERBEDDED CLAYEY SAND AND CLAY (SC/CH)**, gray, fine sand, medium to high plasticity clay, damp. (ALLUVIUM)
	--	1-3-3		15				
			▽	20				

REMARKS

Open triangle = water level observed in boring during drilling.
ATD = at time of drilling.

EMCON

LOG OF EXPLORATORY BORING

PROJECT NAME	Weyerhaeuser Everett	BORING NO.	WP 03
LOCATION	South End Landfill	PAGE	2 OF 2
DRILLED BY	Ramlo Drilling	GROUND ELEV.	
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	26.50'
LOGGED BY	H. Corner	DATE COMPLETED	08/02/95

SAMPLING METHOD	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	ABANDONMENT DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
	1300	1-2-3	ATD					**10.5 to 23.0 feet: INTERBEDDED CLAYEY SAND AND CLAY (SC/CH),** continued.
	400	3-3-14		25				**23.0 to 26.5 feet: SAND WITH SILT (SP-SM),** gray, medium, few fine, few coarse, low plasticity silt, wet. (ALLUVIUM)
				30				Total depth drilled = 25.0 feet. Total depth sampled = 26.5 feet. **BORING ABANDONMENT DETAILS:** 0 to 1.0 foot: Slough. 1.0 to 2.5 feet: Bentonite chips. 2.5 to 21.0 feet: Bentonite slurry. 21.0 to 26.5 feet: Native material (heave). NOTES: Approximately 4 feet of native material heaved into inside of auger after drilling to maximum explored depth. Temporary well point screen was set from 23.0 to 26.0 feet, into heaving sands. Temporary well point was removed after sampling.
				35				
				40				

REMARKS

Open triangle = water level observed in boring during drilling.
ATD = at time of drilling.

EMCON

LOG OF EXPLORATORY BORING

PROJECT NAME	Weyerhaeuser Everett	BORING NO.	WP 04
LOCATION	South End Landfill	PAGE	1 OF 3
DRILLED BY	Ramlo Drilling	GROUND ELEV.	
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	36.50'
LOGGED BY	H. Corner	DATE COMPLETED	08/02/95

SAMPLING METHOD	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	ABANDONMENT DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
								0 to 8.0 feet: WOOD CHIPS, brown-red, slightly moist. (FILL)
	>2000	6-6-8		5				
								8.0 to 16.0 feet: SAND (SP), brown-gray to black, fine to medium, few fines, few coarse sand, trace fine gravel, trace wood chips. (FILL)
	>2000	8-7-17		10				@ 11.5 feet: possible lime particles interlayered with sand.
	>2000	3-11-3	▽ ATD	15				**16.0 to 25.5 feet: INTERBEDDED CLAYEY SILT AND SAND (MH/SC)**, gray, medium to high plasticity silt and clay, fine sand, little organic material, moist to wet, trace medium to coarse sand below 23.0 feet. (ALLUVIUM)
				20				

REMARKS

Open triangle = water level observed in boring during drilling.
ATD = at time of drilling.

EMCON

LOG OF EXPLORATORY BORING

PROJECT NAME	Weyerhaeuser Everett	BORING NO.	WP 04
LOCATION	South End Landfill	PAGE	2 OF 3
DRILLED BY	Ramlo Drilling	GROUND ELEV.	
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	36.50'
LOGGED BY	H. Corner	DATE COMPLETED	08/02/95

SAMPLING METHOD	PID (in ppm)	BLOWS PER 6 INCHES	LITHOLOGIC DESCRIPTION
	>2000	1-2-3	**16.0 to 25.5 feet: INTERBEDDED CLAYEY SILT AND SAND (MH/SC)**, continued.
	>2000	3-9-12	@ 25.0 to 36.0 feet: heaving sands.
	–	5-9-20	**25.5 to 36.5 feet: SAND (SP)**, gray, medium, trace fine to coarse, sand, wet. (ALLUVIUM)
	--	10-7-10	Total depth drilled = 35.0 feet. Total depth sampled = 36.5 feet.
			See Page 3 for Boring Abandonment Details.

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

25 30 35 40

REMARKS

Open triangle = water level observed in boring during drilling.
ATD = at time of drilling.

EMCON

LOG OF EXPLORATORY BORING

PROJECT NAME	Weyerhaeuser Everett	BORING NO.	WP 04
LOCATION	South End Landfill	PAGE	3 OF 3
DRILLED BY	Ramlo Drilling	GROUND ELEV.	
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	36.50'
LOGGED BY	H. Corner	DATE COMPLETED	08/02/95

SAMPLING METHOD	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	ABANDONMENT DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION

45

50

55

60

BORING ABANDONMENT DETAILS:

0 to 1.5 foot: Slough.
1.5 to 2.5 feet: Bentonite chips.
2.5 to 25.0 feet: Bentonite slurry.
25.0 to 36.5 feet: Native material (heave).

NOTES:

Approximately 10 feet of native material heaved into inside of auger after drilling to maximum explored depth.

Temporary well point screen was set from 25.0 to 28.0 feet, into heaving sands.

Temporary well point was removed after sampling.

REMARKS

Open triangle = water level observed in boring during drilling.
ATD = at time of drilling.

EMCON

LOG OF EXPLORATORY BORING

PROJECT NAME	Weyerhaeuser Everett	BORING NO.	WP 05
LOCATION	South End Landfill	PAGE	1 OF 3
DRILLED BY	Ramlo Drilling	GROUND ELEV.	
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	36.50'
LOGGED BY	H. Corner	DATE COMPLETED	08/02/95

SAMPLING METHOD	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	ABANDONMENT DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
								0 to 8.5 feet: WOOD CHIPS, red-brown, moist, few to little silty sand below 3.5 feet. (FILL)
	--	3-3-4		5				
	>2000	1-1-1		10				**8.5 to 19.0 feet: SILT (MH)**, gray, high plasticity, low toughness, some organic material, moist to 18.0 feet, wet below 18.0 feet. (ALLUVIUM)
	2000	1/6"-1/2"		15				
			▽ ATD					**19.0 to 36.5 feet: INTERBEDDED CLAYEY SILT AND SAND (MH/SC)**, see Page 2 for description.
				20				

REMARKS

Open triangle = water level observed in boring during drilling.
ATD = at time of drilling.

EMCON

LOG OF EXPLORATORY BORING

PROJECT NAME Weyerhaeuser Everett
LOCATION South End Landfill
DRILLED BY Ramlo Drilling
DRILL METHOD Hollow Stem Auger
LOGGED BY H. Corner

BORING NO. WP 05
PAGE 2 OF 3
GROUND ELEV.
TOTAL DEPTH 36.50'
DATE COMPLETED 08/02/95

SAMPLING METHOD	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	ABANDONMENT DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
	--	3-10-9						**19.0 to 36.5 feet: INTERBEDDED CLAYEY SILT AND SAND (MH/SC)**, continued: gray, medium to high plasticity silt and clay, fine to medium sand, trace to little fine gravel, trace to little organic material, moist to 20.5 feet, wet below 20.5 feet. (ALLUVIUM)
	--	2-6-7		25				
	--	4-9-8		30				
	--	2-2-11		35				
				40				Total depth drilled = 35.0 feet. Total depth sampled = 36.5 feet. See Page 3 for Boring Abandonment Details.

REMARKS
Open triangle = water level observed in boring during drilling.
ATD = at time of drilling.

EMCON

LOG OF EXPLORATORY BORING

PROJECT NAME	Weyerhaeuser Everett	BORING NO.	WP 05
LOCATION	South End Landfill	PAGE	3 OF 3
DRILLED BY	Ramlo Drilling	GROUND ELEV.	
DRILL METHOD	Hollow Stem Auger	TOTAL DEPTH	36.50'
LOGGED BY	H. Corner	DATE COMPLETED	08/02/95

SAMPLING METHOD	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	ABANDONMENT DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
				45				**BORING ABANDONMENT DETAILS:** 0 to 1.0 foot: Slough. 1.0 to 2.5 feet: Bentonite chips. 2.5 to 32.0 feet: Bentonite slurry. 32.0 to 36.5 feet: Native material (heave). <u>NOTES:</u> Approximately 3 feet of native material heaved into inside of auger after drilling to maximum explored depth. Temporary well point screen was set from 32.0 to 35.0 feet, into heaving sand and silt. Temporary well point was removed after sampling.
				50				
				55				
				60				

REMARKS

Open triangle = water level observed in boring during drilling.
ATD = at time of drilling.

EMCON

Columbia Analytical Services inc.

August 21, 1995

Service Request No.: B950593

Holly Corner
EMCON Northwest
18912 N Creek Parkway
Suite 210
Bothell, WA 98011

Re: **Weyerhaeuser Evt. - South End Landfill/Project #40141-037.097**

Dear Holly:

Attached are the results of the sample(s) submitted to our laboratory on August 3, 1995. Preliminary results were transmitted via facsimile on August 7, 1995. For your reference, these analyses have been assigned our service request number B950593.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and CAS is not responsible for use of less than the complete report. Results only apply to samples analyzed.

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Colin B. Elliott
Laboratory Manager

CBE/bdr

18912 North Creek Parkway, Suite 118 • Bothell, WA 98011 • 206/486-6983 • Fax 206/486-7695

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON	**Service Request:**	B950593
Project:	Weyerhaeuser Evt. - South End Landfill	**Date Collected:**	8/1,2/95
Sample Matrix:	Water	**Date Received:**	8/3/95
		Date Extracted:	NA
		Date Analyzed:	8/3,4/95

BTEX and Total Petroleum Hydrocarbons as Gasoline
EPA Methods 5030A/8020 and Washington DOE Method WTPH-G
Units: µg/L (ppb)

Analyte:	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH as Gasoline
Method Reporting Limit:	0.5	1	1	1	50
Sample Name / **Lab Code**					
50801SEWWP01-20 / B950593-01	ND	ND	ND	ND	ND
50801SEWWP02-25 / B950593-02	ND	ND	ND	ND	ND
50802SEWWP03-26 / B950593-03	0.3 t	0.7 t	ND	0.7 t	ND
50802SEWWP04-25 / B950593-04	ND	ND	ND	ND	ND
50802SEWWP05-35 / B950593-05	ND	ND	ND	ND	ND
Method Blank / B950593-MB	ND	ND	ND	ND	ND

t Trace amount detected between the MRL and MDL. Results should be treated as estimated values.

ND None Detected

Approved By: Ch. Elliott Date: 8/21/95

SA/102194
0593PHC.CE1 - BTXw 8/21/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON	**Service Request:**	B950593
Project:	Weyerhaeuser Evt. - South End Landfill	**Date Collected:**	8/1,2/95
Sample Matrix:	Water	**Date Received:**	8/3/95
		Date Extracted:	8/4/95
		Date Analyzed:	8/4,5/95

Total Petroleum Hydrocarbon as Diesel and Oil
Washington DOE Method WTPH-D
Units: µg/L (ppb)

Analyte:	Diesel	Oil*
Method Reporting Limit:	250	750

Sample Name	Lab Code		
50801SEWWP01-20	B950593-01	320 (a)	1270 (b)
50801SEWWP02-25	B950593-02	ND	ND
50802SEWWP03-26	B950593-03	ND	ND
50802SEWWP04-25	B950593-04	260 (a)	ND
50802SEWWP05-35	B950593-05	ND	ND
Method Blank	B950593-MB	ND	ND

* Quantified using 30 weight motor oil as a standard.

a/b Quantified as diesel/oil. The sample contained components that eluted in the diesel/oil range, but the chromatogram did not match the typical diesel/oil fingerprint.

Approved By: _____ Date: 8/21/95

2A/102094
0593PHC.DC1 - TPHw 8/18/95

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Weyerhaeuser Evt. - South End Landfill	**Service Request:**	B950593
Project:	Water	**Date Collected:**	8/1,2/95
Sample Matrix:	Water	**Date Received:**	8/3/95
		Date Extracted:	NA
		Date Analyzed:	8/3,4/95

Surrogate Recovery Summary
BTEX and Total Petroleum Hydrocarbons as Gasoline
EPA Methods 5030A/8020 and Washington DOE Method WTPH-G

Sample Name	Lab Code	Percent Recovery 4-BFB (PID - BTEX)	Percent Recovery 4-BFB (FID - GAS)
50801SEWWP01-20	B950593-01	(a)121	111
50301SEWWP02-25	B950593-02	(a)117	107
50802SEWWP03-26	B950593-03	(a)124	115
50802SEWWP04-25	B950593-04	109	102
50802SEWWP05-35	B950593-05	(a)117	109
Method Blank	B950593-MB	(a)117	111
CAS Acceptance Limits:		86-116	86-116

(a) Outside of acceptance limits. Since no target analytes were detected above the MRL, it is the opinion of CAS that the quality of the sample data has not been significantly affected by the elevated recovery.

Approved By: Chris Elliott Date: 8/21/95

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: Weyerhaeuser Evt. - South End Landfill
Sample Matrix: Water

Service Request: B950593
Date Collected: 8/1,2/95
Date Received: 8/3/95
Date Extracted: 8/4/95
Date Analyzed: 8/4,5/95

Surrogate Recovery Summary
Total Petroleum Hydrocarbons as Diesel and Oil
Washington DOE Method WTPH-D

Sample Name	Lab Code	Percent Recovery p-Terphenyl
50801SEWWP01-20	B950593-01	111
50801SEWWP02-25	B950593-02	108
50802SEWWP03-26	B950593-03	112
50802SEWWP04-25	B950593-04	112
50802SEWWP05-35	B950593-05	112
Method Blank	B950593-MB	108

CAS Acceptance Limits: 59-124

Approved By: Colin Ellerby Date: 8/21/95

SUR1/111594
0593PHC.DC1 - TPHwSUR 8/18/95

Weyerhaeuser - Evt.

DATE 8-3-95 PAGE 1 OF 1

PROJECT NAME Weyer.Co. South End Landfill #

PROJECT

COMPANY/ADDRESS EMCON - Bothell

PHONE 485-5000

SAMPLERS SIGNATURE Holly Corner

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	ANALYSIS REQUEST: PETROLEUM HCS — TPH - HCID State:	TPH - G X State: WA	BTEX X	TPH - D X State: WA	OIL	TPH - 418.1 State:	TPH - Other	ORGANIC — Halogenated or Aromatic Volatiles 601/8010 X 602/8020	Volatile Organics GC/MS 624-8240	Base/Neu/Acid Organics GC/MS 625/8270	Pesticides/PCBS 8080 PCB ONLY X	PAH 8310	8100 GC	HPCL	TCLP Metals	Semi VOA	VOA	Pest/Herb	Metals Total X DISS List Below	Cyanide	ORGANIC METALS/INORGANICS — pH, Cond Cl, SO_4, PO_4 F, Br NO_2 NO_3 (Circle)	NH_3 - N, COD, Total-P TKN, TOC TOX (Circle)	PCBs	REMARKS
SØ8Ø1SEWWPØ1-20	8-1-95	1310		water	9		X	X	X				X		X					X							X	☆
SØ8Ø1SEWWPØ2-25	8-1-95	1800		water	9		X	X	X				X		X					X							X	
SØ8Ø2SEWWPØ3-26	8-2-95	0945		water	9		X	X	X				X		X					X							X	
SØ8Ø2SEWWPØ4-25	8-2-95	1540		water	9		X	X	X				X		X					X							X	
SØ8Ø2SEWWPØ5-35	8-2-95	1945		water	9		X	X	X				X		X					X							X	

RELINQUISHED BY:
Signature: Holly Corner
Printed Name: Holly Corner
Firm: EMCON
Date/Time: 8-3-95 0820

RECEIVED BY:
Signature: Chi Ellis
Printed Name: Chi Ellis
Firm: CAS
Date/Time: 8/3/95 8:20

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
___ 24 hr X 48 hr. ___ 5 day
___ Standard (10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX preliminary Results
Requested Report Date ___

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes DUP.MAS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

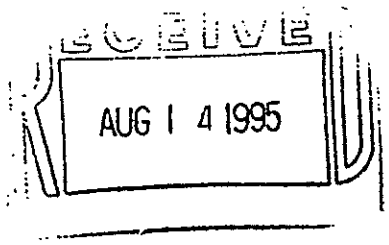
INVOICE INFORMATION:
P.O.# ___
Bill To ___

SAMPLE RECEIPT:
Shipping VIA: ___
Shipping to: ___
Condition: ___
Lab No: ___

SPECIAL INSTRUCTIONS/COMMENTS:
☆ Please use starred VOAs first.

Columbia Analytical Services inc.

August 10, 1995



Service Request No.: K9504833

Jim Bailey
EMCON
18912 North Creek Parkway, Suite 210
Bothell, WA 98011

Re: **Weyer. Co. South End Landfill/Project #40141-037.097/B95-0593**

Dear Jim:

Enclosed are the results of the rush sample(s) submitted to our laboratory on August 3, 1995. Preliminary results were transmitted via facsimile on August 7, 1995. For your reference, these analyses have been assigned our service request number K9504833.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 246.

Respectfully submitted,

Columbia Analytical Services, Inc.

Abbie Spielman
Client Services Manager

AS/td

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
J	Estimated concentration. The value is less than the method reporting limit, but greater than the method detection limit.
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: Weyer. Co. South End Landfill /#40141-037.097
Sample Matrix: Water

Service Request: K9504833
Date Collected: 8/1/95
Date Received: 8/3/95
Date Extracted: 8/4/95

Total Metals
Units: µg/L (ppb)

		Sample Name:	50801SEWWP01 20	50801SEWWP02 25	50802SEWWP03 26
		Lab Code:	K9504833-001	K9504833-002	K9504833-003
		Date Analyzed:	8/6/95	8/6/95	8/6/95
Analyte	**EPA Method**	**MRL**			
Arsenic	7060	5	20	33	9
Cadmium	6010A	3	ND	ND	ND
Chromium	6010A	5	174	307	89
Copper	6010A	10	121	302	47
Lead	7421	2	51	138	25
Mercury	7470	0.5	ND	ND	ND
Zinc	6010A	10	4360	7200	3140

Approved By: _____ Date: 8/7/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON	**Service Request:**	K9504833
Project:	Weyer. Co. South End Landfill /#40141-037.097	**Date Collected:**	8/1/95
Sample Matrix:	Water	**Date Received:**	8/3/95
		Date Extracted:	8/4/95

Total Metals
Units: µg/L (ppb)

			50802SEWWP04	50802SEWWP05	
		Sample Name:	25	35	Method Blank
		Lab Code:	K9504833-004	K9504833-005	K9504833-MB
		Date Analyzed:	8/6/95	8/6/95	8/6/95
Analyte	**EPA Method**	**MRL**			
Arsenic	7060	5	ND	8	ND
Cadmium	6010A	3	ND	ND	ND
Chromium	6010A	5	13	130	ND
Copper	6010A	10	ND	53	ND
Lead	7421	2	8	60	ND
Mercury	7470	0.5	ND	ND	ND
Zinc	6010A	10	1030	6260	ND

Approved By: _____ Date: 8/7/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Northwest, Inc.	**Service Request:**	K9504833
Project:	Weyer. Co. South End Landfill/#40141-037.097	**Date Collected:**	8/1/95
Sample Matrix:	Water	**Date Received:**	8/3/95
		Date Extracted:	8/4/95

Polychlorinated Biphenyls (PCBs)
EPA Methods 3510/8080
Units: µg/L (ppb)

		50801SEWWP01-20	50801SEWWP02-25	50802SEWWP03-26
	Sample Name:			
	Lab Code:	K9504833-001	K9504833-002	K9504833-003
	Date Analyzed:	8/6/95	8/6/95	8/6/95
Analyte	**MRL**			
Aroclor 1016	0.2	ND	ND	ND
Aroclor 1221	0.2	ND	ND	ND
Aroclor 1232	0.2	ND	ND	ND
Aroclor 1242	0.2	ND	ND	ND
Aroclor 1248	0.2	ND	ND	ND
Aroclor 1254	0.2	ND	ND	ND
Aroclor 1260	0.2	ND	ND	ND

Approved By: C. Johnson Date: 8/7/95

3522/120594
0-8533SVG CJ1 - 3522 8/7/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Northwest, Inc.
Project: Weyer. Co. South End Landfill/#40141-037.097
Sample Matrix: Water

Service Request: K9504833
Date Collected: 8/1/95
Date Received: 8/3/95
Date Extracted: 8/4/95

Polychlorinated Biphenyls (PCBs)
EPA Methods 3510/8080
Units: µg/L (ppb)

	Sample Name:	**50802SEWWP04-25**	**50802SEWWP05-35**	**Method Blank**
	Lab Code:	K9504833-004	K9504833-005	K950804-MB
	Date Analyzed:	8/7/95	8/6/95	8/6/95
Analyte	**MRL**			
Aroclor 1016	0.2	ND	ND	ND
Aroclor 1221	0.2	ND	ND	ND
Aroclor 1232	0.2	ND	ND	ND
Aroclor 1242	0.2	ND	ND	ND
Aroclor 1248	0.2	ND	ND	ND
Aroclor 1254	0.2	ND	ND	ND
Aroclor 1260	0.2	ND	ND	ND

Approved By: C. Johnson Date: 8/7/95

3S22/120594
04533SVG CJ1 - 3S22 (2) 8/7/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: WEYER. Co. South End Landfill/ #40141-037.097
Sample Matrix: Water

Service Request: K9504833
Date Collected: 8/1/95
Date Received: 8/3/95
Date Extracted: NA

Halogenated Volatile Organic Compounds
EPA Methods 5030A/8010A
Units: µg/L (ppb)

		50801SEWWP01	50801SEWWP02	50802SEWWP03
	Sample Name:	20	25	26
	Lab Code:	K9504833-001	K9504833-002	K9504833-003
	Date Analyzed:	8/6/95	8/6/95	8/6/95
Analyte	**MRL**			
Dichlorodifluoromethane (CFC 12)	1	ND	ND	ND
Chloromethane	1	ND	ND	ND
Vinyl Chloride	0.5	ND	ND	ND
Bromomethane	0.5	ND	ND	ND
Chloroethane	0.5	ND	ND	ND
Trichlorofluoromethane (CFC 11)	0.5	ND	ND	ND
1,1-Dichloroethene	0.5	ND	ND	ND
Trichlorotrifluoroethane (CFC 113)	0.5	ND	ND	ND
Methylene Chloride	5	ND	ND	ND
trans-1,2-Dichloroethene	0.5	ND	ND	ND
cis-1,2-Dichloroethene	0.5	ND	ND	ND
1,1-Dichloroethane	0.5	ND	ND	ND
Chloroform	0.5	ND	ND	0.7
1,1,1-Trichloroethane (TCA)	0.5	ND	ND	ND
Carbon Tetrachloride	0.5	ND	ND	ND
1,2-Dichloroethane	0.5	ND	ND	ND
Trichloroethene (TCE)	0.5	ND	ND	ND
1,2-Dichloropropane	0.5	ND	ND	ND
Bromodichloromethane	0.5	ND	ND	ND
2-Chloroethyl Vinyl Ether	5	ND	ND	ND
trans-1,3-Dichloropropene	0.5	ND	ND	ND
cis-1,3-Dichloropropene	0.5	ND	ND	ND
1,1,2-Trichloroethane	0.5	ND	ND	ND
Tetrachloroethene (PCE)	0.5	ND	ND	ND
Dibromochloromethane	0.5	ND	ND	ND
Chlorobenzene	0.5	ND	ND	ND
Bromoform	0.5	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.5	ND	ND	ND
1,3-Dichlorobenzene	1	ND	ND	ND
1,4-Dichlorobenzene	1	ND	ND	ND
1,2-Dichlorobenzene	1	ND	ND	ND

Approved By: _____ Date: 8/10/95

3553.102094

00407

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON	**Service Request:**	K9504833
Project:	WEYER. Co. South End Landfill/ #40141-037.097	**Date Collected:**	8/1/95
Sample Matrix:	Water	**Date Received:**	8/3/95
		Date Extracted:	NA

Halogenated Volatile Organic Compounds
EPA Methods 5030A/8010A
Units: µg/L (ppb)

		50802SEWWP04	50802SEWWP05	
	Sample Name:	25	35	Method Blank
	Lab Code:	K9504833-004	K9504833-005	K9504833-MB
	Date Analyzed:	8/6/95	8/6/95	8/5/95
Analyte	**MRL**			
Dichlorodifluoromethane (CFC 12)	1	ND	ND	ND
Chloromethane	1	ND	ND	ND
Vinyl Chloride	0.5	ND	ND	ND
Bromomethane	0.5	ND	ND	ND
Chloroethane	0.5	ND	ND	ND
Trichlorofluoromethane (CFC 11)	0.5	ND	ND	ND
1,1-Dichloroethene	0.5	ND	ND	ND
Trichlorotrifluoroethane (CFC 113)	0.5	ND	ND	ND
Methylene Chloride	5	ND	ND	ND
trans-1,2-Dichloroethene	0.5	ND	ND	ND
cis-1,2-Dichloroethene	0.5	ND	ND	ND
1,1-Dichloroethane	0.5	ND	ND	ND
Chloroform	0.5	ND	ND	ND
1,1,1-Trichloroethane (TCA)	0.5	ND	ND	ND
Carbon Tetrachloride	0.5	ND	ND	ND
1,2-Dichloroethane	0.5	ND	ND	ND
Trichloroethene (TCE)	0.5	ND	ND	ND
1,2-Dichloropropane	0.5	ND	ND	ND
Bromodichloromethane	0.5	ND	ND	ND
2-Chloroethyl Vinyl Ether	5	ND	ND	ND
trans-1,3-Dichloropropene	0.5	ND	ND	ND
cis-1,3-Dichloropropene	0.5	ND	ND	ND
1,1,2-Trichloroethane	0.5	ND	ND	ND
Tetrachloroethene (PCE)	0.5	ND	ND	ND
Dibromochloromethane	0.5	ND	ND	ND
Chlorobenzene	0.5	ND	ND	ND
Bromoform	0.5	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.5	ND	ND	ND
1,3-Dichlorobenzene	1	ND	ND	ND
1,4-Dichlorobenzene	1	ND	ND	ND
1,2-Dichlorobenzene	1	ND	ND	ND

Approved By: _____ Date: 8/10/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: Weyer. Co. South End Landfill/#40141-037.097
Sample Matrix: Water

Service Request: K9504833
Date Collected: 8/1/95
Date Received: 8/3/95
Date Extracted: 8/4/95
Date Analyzed: 8/5/95

Pentachlorophenol
EPA Methods 3510/8150A Modified
Units:µg/L (ppb)

Sample Name	Lab Code	MRL	Result
50801SEWWP01-20	K9504833-001	5	ND
50801SEWWP02-25	K9504833-002	5	ND
50802SEWWP03-26	K9504833-003	5	ND
50802SEWWP04-25	K9504833-004	5	ND
50802SEWWP05-35	K9504833-005	5	ND
Method Blank	K950804-MB	5	ND

Approved By: [signature] Date: 8/10/95

1AMRL/120594
04833SVG CL1 - wpenta 8/10/95

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: WEYER. Co. South End Landfill/ #40141-037.097
Sample Matrix: Water

Service Request: K9504833
Date Collected: 8/1/95
Date Received: 8/3/95
Date Extracted: NA
Date Analyzed: 8/5,6/95

Surrogate Recovery Summary
Halogenated Volatile Organic Compounds
EPA Methods 5030A/8010A

Sample Name	Lab Code	Percent Recovery Bromochloromethane
50801SEWWP01-20	K9504833-001	112
50801SEWWP02-25	K9504833-002	116
50802SEWWP03-26	K9504833-003	106
50802SEWWP04-25	K9504833-004	120
50802SEWWP05-35	K9504833-005	113
Method Blank	K9504833-006	120

CAS Acceptance Limits: 38-131

Approved By: Amie Applelino Date: 8/10/95

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON Northwest, Inc.	**Service Request:**	K9504833
Project:	Weyer. Co. South End Landfill/#40141-037.097	**Date Collected:**	8/1/95
Sample Matrix:	Water	**Date Received:**	8/3/95
		Date Extracted:	8/4/95
		Date Analyzed:	8/6,7/95

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)
EPA Methods 3510/8080

Sample Name	Lab Code	Percent Recovery Decachlorobiphenyl
50801SEWWP01-20	K9504833-001	79
50801SEWWP02-25	K9504833-002	76
50802SEWWP03-26	K9504833-003	77
50802SEWWP04-25	K9504833-004	76
50802SEWWP05-35	K9504833-005	76
Method Blank	K950804-MB	76

CAS Acceptance Limits: 50-131

Approved By: C. Johnson Date: 8/7/95

SUR1 102194
24833SVG CJ1 - SUR1 8/7/95

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: Weyer. Co. South End Landfill/#40141-037.097
Sample Matrix: Water

Service Request: K9504833
Date Collected: 8/1/95
Date Received: 8/3/95
Date Extracted: 8/4/95
Date Analyzed: 8/5/95

Surrogate Recovery Summary
Chlorinated Phenols
EPA Methods 3510/8150A Modified

Sample Name	Lab Code	Percent Recovery 4-Bromo-2,6-dichlorophenol
50801SEWWP01-20	K9504833-001	57
50801SEWWP02-25	K9504833-002	55
50802SEWWP03-26	K9504833-003	59
50802SEWWP04-25	K9504833-004	64
50802SEWWP05-35	K9504833-005	50
Method Blank	K950804-MB	70

CAS Acceptance Limits: 42-122

Approved By: Allie Apulman Date: 8/10/95

SUR1/111594
04S335VG CL1 - w8150sur 8/10/95

APPENDIX B

CHAIN OF CUSTODY INFORMATION

CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

Weyerhaeuser - Evt.

DATE 8-3-95 PAGE 1 OF 1

PROJECT NAME Weyer.Co. South End Landfill # 40141-037.07

PROJECT

COMPANY/ADDRESS EMCON - Bothell

PHONE 485-5000

SAMPLERS SIGNATURE Holly Corner

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	ANALYSIS REQUEST: PETROLEUM HCS / ORGANIC / ORGANIC METALS/INORGANICS	REMARKS
DP8P1SEWWP01-20	8-1-95	1310	K4833-1	water	9	TPH-HCID State: / TPH-G X State: WA / BTEX X / TPH-D X State: WA / Oil X / TPH-418.1 State: / TPH-Other / Halogenated or Aromatic Volatiles 601/8010 X 602/8020 / Volatile Organics GC/MS 624-8240 / Base/Neu/Acid Organics GC/MS 625/8270 / Pesticides/PCBS 8080 PCB ONLY X / PAH 8310 / 8100 GC / HPCL / TCLP Metals / Semi VOA / VOA / Pest/Herb / Metals Total X DISS / List Below / Cyanide / pH, Cond Cl, SO_4, PO_4 F, Br / NO_2 NO_3 (Circle) / NH_3-N, COD, Total-P TKN, TOC / TOX (Circle) / PCPs	☆
SP8P1SEWWP02-25	8-1-95	1800	2	water	9		
SP8P2SEWWP03-26	8-2-95	0945	3	water	9		
SP8P2SEWWP04-25	8-2-95	1540	4	water	9		
SP8P2SEWWP05-35	8-2-95	1945	5	water	9		

RELINQUISHED BY:
Signature: Holly Corner
Printed Name: Holly Corner
Firm: EMCON
Date/Time: 8-3-95 0820

RECEIVED BY:
Signature: Colin Elliott
Printed Name: CAE
Firm: 8/3/95
Date/Time: 8:20

RELINQUISHED BY:
Signature: Colin Elliott
Printed Name: Colin Elliott
Firm: CAE
Date/Time: 8/3/95 9:30

RECEIVED BY:
Signature: Lori K. Hawn
Printed Name: Lori K. Hawn
Firm: CAS-K
Date/Time: 080395 1430

TURNAROUND REQUIREMENTS
- ___ 24 hr X 48 hr. ___ 5 day
- ___ Standard (10-15 working days)
- ___ Provide Verbal Preliminary Results
- ___ Provide FAX preliminary Results
- Requested Report Date ___

REPORT REQUIREMENTS
- X I. Routine Report
- ___ II. Report (includes DUP.MAS. MSD, as required, may be charged as samples)
- ___ III. Data Validation Report (includes All Raw Data)
- ___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O.# ___
Bill To ___

SAMPLE RECEIPT:
Shipping VIA: ___
Shipping to: ___
Condition: ___
Lab No: K95-4833

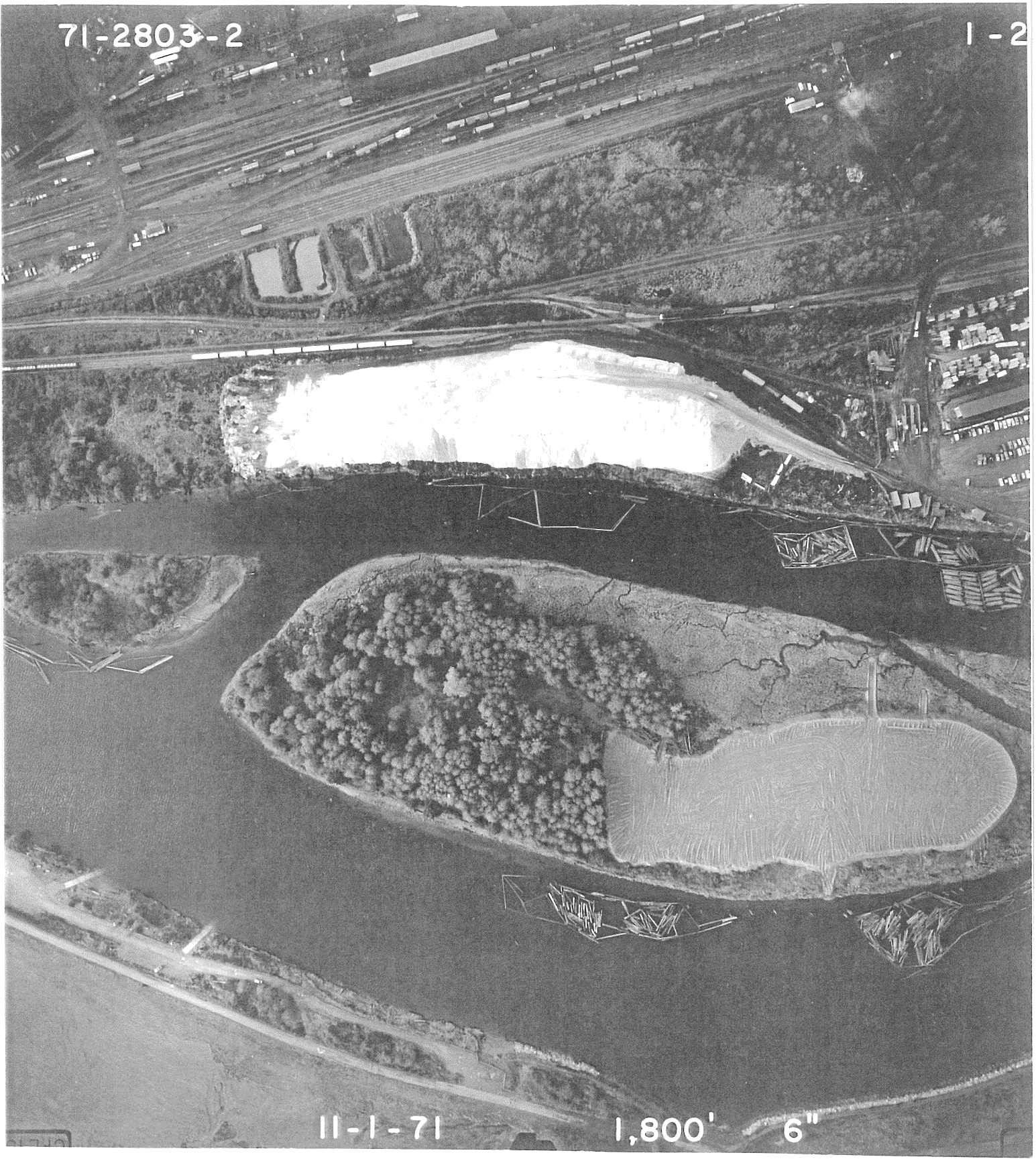
SPECIAL INSTRUCTIONS/COMMENTS:

☆ Please use starred VOAs first.

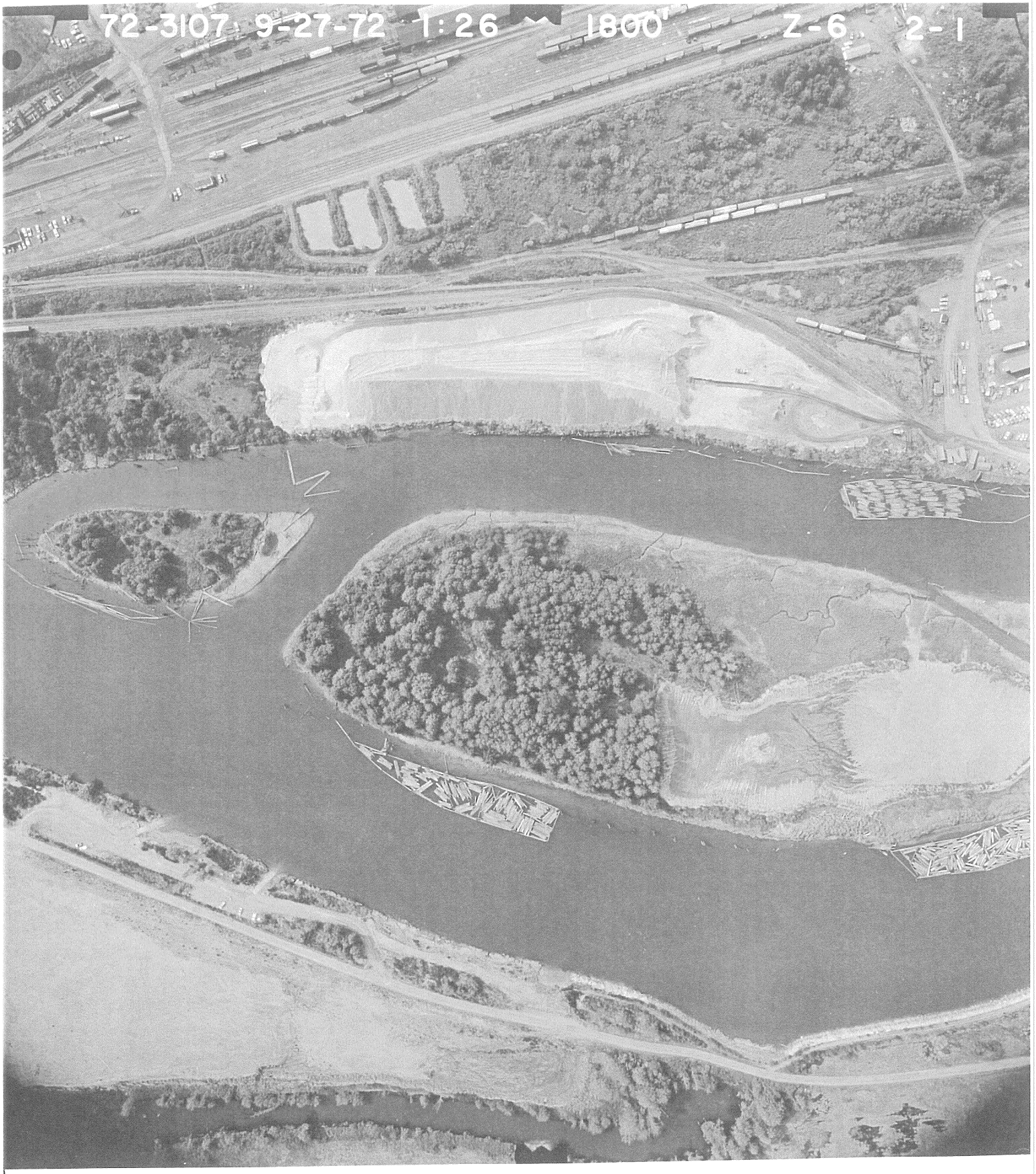
Pb, As Cd, Cr Hg, Zn, Cu

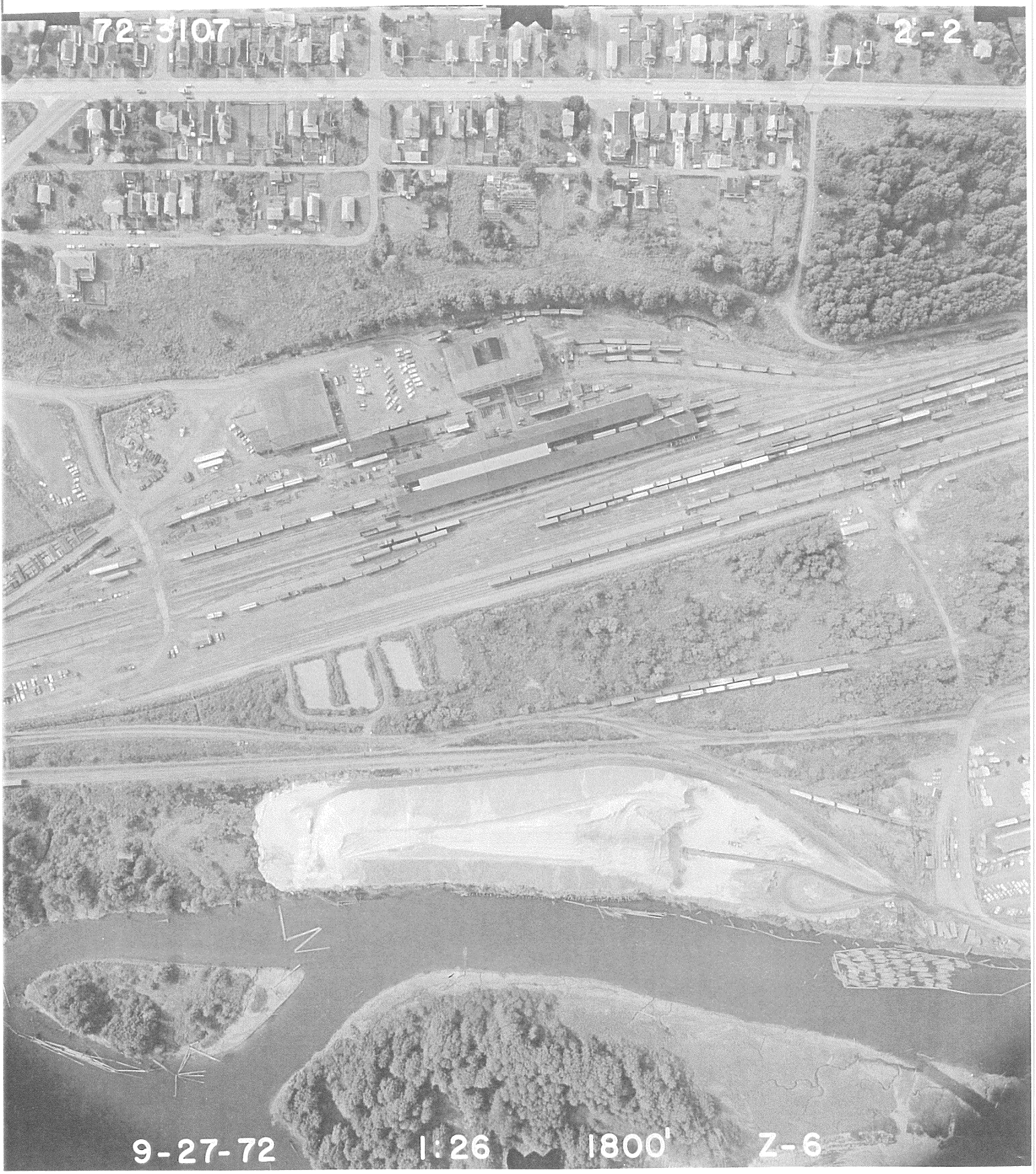

73-3212-2
1-2
1-29-73
14:30
1800'
W-6


72-2913-2
3-3-72
1800
Z-6


71-2803-2
1-2
11-1-71
1,800'
6"


72-2913-2
1-2
3-3-72
1800'
7-6"


72-3107 9-27-72 1:26 1800' Z-6 2-1


72-3107
2-2
9-27-72
1:26
1800'
Z-6


5-1-77
MILL B


71-2803-2 11-1-71 1,800' 6" 1-1

2-13-74

2-13-77
W 2


73-3212-2 1-29-73 14:30 1800 W-6 1-1


2 - 73-3212 4-30-73 2:48 1800 4 6 2-1