WEST ASSOCIATES
ENVIRONMENTAL ENGINEERS, INC.

May 9, 1994

Alameda County Health Care Services Agency
Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621
Attn: Ms. Juliet Shin
Hazardous Materials Specialist

SUBJECT: SUPPLEMENT TO SITE INVESTIGATION WORKPLAN, WEYERHAEUSER ALAMEDA FACILITY, 1801 HIBBARD STR.; STID 1202

Dear Ms. Shin,

West & Associates Environmental Engineers, Inc. has completed site investigation activities proposed in our workplan of November 1993 for the Weyerhaeuser Paper Company site in Alameda (STID 1202). Based on the results of our investigations, it appears soil and groundwater contamination extends under the main plant building, south of the former gasoline tank cluster. In this supplement to our November 1993 workplan, we present a summary of our recent site findings and a proposal for additional site investigation work to completely define the full extent of soil and groundwater contamination.

Summary of Findings

A total of nine soil borings were completed in and around the former gasoline tank cluster area. Sixteen soil samples collected from the borings were submitted for laboratory analysis. Additionally, one soil sample was collected from the pit sidewall of the diesel tank excavation west of the oil storage building. Figure 1 illustrates the locations of all soil sample locations.

Soil samples were submitted to Coast to Coast Analytical Laboratories for total petroleum hydrocarbon and benzene, toluene, xylene & ethyl benzene analysis. Seven of the sixteen soil samples submitted had registered significant total volatile contamination based on field testing with a photoionization detector. However, no significant gasoline contamination was reported by Coast to Coast Analytical in any of the sixteen soil samples submitted.

Eventually it was determined that routine in-lab handling of the coarse sandy material comprising site soils resulted in the loss of volatiles observed in the analytical results. Consequently, the seven suspect soil samples were re-analyzed utilizing a head space "fuel fingerprint in air" technique which minimized sample handling and resultant volatile loss. Significant gasoline contamination was detected in six of the suspect soil samples utilizing the head space technique.

LEDGEND

▲ SOIL BORING LOCATION

⊕ MONITORING WELL

MAIN PLANT BUILDING

BOILER ROOM

MACHINE SHOP

REST ROOM

OFFICES

HOT WAX TANK

B-1

MW-9

B-4

B-MW 8

MW-3

MANHOLE

4" SS

PIPE TRENCH

B-5

MW-5

FIRST OVEREXCAVATION

2nd OVEREXCAVATION

3rd OVEREXCAVATION

GAS TANK

GAS TANK

GAS TANK

MW-1

CANOPY

OIL STORAGE BUILDING

PIT WALL

DIESEL TANK EXCAVATION

PROPANE ENCLOSURE

B-2

PLATE

MW-6

MW-2

B-3

MW-11

MW-4

PIPING TRENCH

8" SEWER

BUENA VISTA ST. →

B-MW10

A.G. TANK

SAND CRIB

MANHOLE

WASTE OIL TANK

FORMER DISPENSER

GATE

MW-10

PRIVATE DRIVE

N

WEYERHAEUSER - ALAMEDA		
SCALE: 1"= 10'	APPROVED BY:	DRAWN BY BWW
DATE: FEB. 94		REVISED
SITE LAYOUT		
1801 HIBBARD ST.		DRAWING NUMBER FIGURE 1

11 X 17 PRINTED ON NO. 1000H CLEARPRINT ●

Soil samples from borings B-MW10, B-4 and from monitoring well MW-9 were found to contain elevated levels of gasoline contamination. Soil samples from borings B-5 and B-MW8 were found to be moderately contaminated. Soil samples from borings B-1, B-2, B-3 and monitoring wells MW-10 and MW-11 were clean.

Three borings were converted to groundwater monitoring wells. All wells were developed and well tops surveyed. In February 1994 the three new wells and seven existing monitoring wells were all sampled.

The extent of soil and groundwater contamination was defined on the east, west and north sides of the former gasoline tank cluster. On the south side, however, borings and a monitoring well sited as close as practical to the plant building did not completely define the limits of either soil or groundwater contamination.

Soil and groundwater samples were analyzed for volatile organics, semi-volatile organics and metals. Based on analytical results, gasoline is the principal contaminant of interest. Significant solvent contamination was not detected.

Soil conditions were found to be fairly uniform throughout the area explored. Soil is predominantly coarse, well graded sand with stringers of clay. The occurance of clay increases slightly to the north of the property. There appears to be no significant soil characteristic which would present a barrier to vertical or horizontal contaminant migration.

Contaminant migration from the former gasoline tank cluster did not occur in a symmetrical pattern. Contamination appears to have migrated predominantly to the north and south. Due to the obstructing presence of the oil storage building, no soil samples have been collected immediately west of the former gasoline tank cluster. The presence of gasoline contamination in a soil sample collected from the pit wall of the diesel tank excavation demonstrates that soil contamination has migrated completely under the oil storage building.

Based on our observations made while completing soil borings and in the diesel tank excavation, groundwater at the site appears to be slightly confined. For example, the boring for well MW-11 was advanced to 12 feet below ground surface (BGS) before free water appeared in the hole. The groundwater level eventually stabilized at about 6 feet BGS.

Similarly, existing monitoring well MW-6, adjacent to the underground tank excavation, had standing water at 7 feet BGS. Yet the tank pit was excavated to 12 feet BGS with little immediate evidence of infiltration.

No soil strata which would act as an aquitard was encountered during sub-surface exploration of the site. Since 10 feet BGS at the study area is about mean sea level, observed groundwater elevation anomalies may be due to tidal forces.

If tidal forces, then soil encountered 12' bgs should have been saturated

The casing tops of all seven groundwater monitoring wells were surveyed relative to a fixed datum point. On February 3, 1994 depth to ground water measurements (DTGW) were made in all site wells. Analysis of DTGW data indicates a groundwater flow direction almost due west. Figure 2 presents projected groundwater elevation contours under the site.

Additional Site Investigation

Additional sub-surface investigation is required to determine the extent of soil and groundwater contamination presumed to extend under the main plant building south of the former gasoline tank cluster. Specifically, a series of slant borings angled to penetrate under the building foundation are proposed. Additionally, if necessary, a series of vertical borings through the building floor are proposed.

It is proposed to complete all borings utilizing hand auger equipment. The shallow depth to contamination and soil types at this site are both conducive to a hand auger investigation. Soil samples will be collected with a hammer driven sample core fitted with new, brass, inserts. Sample handling procedures will be identical to those described in our workplan of November 1993.

Slant Borings

It is proposed to complete a series of slant borings starting from outside the main plant building north wall, advanced under the north wall and foundation, to terminate under the building. A search through the Weyerhaeuser archives produced blueprints illustrating the main plant building exterior wall and footing dimensions. According to the plans, the north building wall extends about 3 feet below the present pavement surface. At the wall base is a 8 inch by 8 inch concrete footing. Total foundation depth is therefore about 4 feet below grade.

Based on the site geometry as presented in the original blueprints, it should be possible to retrieve soil samples from a point 4 feet in (horizontal) from the north wall. That would represent a distance of 7.5 feet further south from any existing soil sample location.

It is expected that the slant borings will terminate at a point approximately 9 feet below ground surface. It is proposed to collect soil samples at 5 feet BGS (under the foundation) and at the hole bottom.

It is proposed to begin slant boring number 1 (SB-1) next to existing monitoring well MW-9. A second slant boring (SB-2) will be sited adjacent to the location of boring B-4. Placement of any additional slant borings would be dependent on soil conditions encountered in SB-1 and SB-2.

LEDGEND

▲ SOIL BORING LOCATION

⊕ MONITORING WELL

MAIN PLANT BUILDING

BOILER ROOM

MACHINE SHOP

REST ROOM

OFFICES

HOT WAX TANK

▲ B-1

▲ B-2

▲ B-3

▲ B-4

▲ B-5

▲ B-10

MW-9 94.21'

MW-11 94.05'

94.11' MW-1

MW-2 93.98'

B-MW 8 ▲

MW-3 94.04'

MW-4 91.84

MW-5 91.87'

MW-6 91.37'

MW-10 93.02'

MANHOLE

MANHOLE

8" SEWER

4" SS

94'

93'

92'

PROPANE ENCLOSURE

FORMER GASOLINE TANK CLUSTER EXCAVATION

CANOPY

OIL STORAGE BUILDING

DIESEL TANK EXCAVATION

PIPE TRENCH

PLATE

PIPING TRENCH

BUENA VISTA ST. →

A.G. TANK

SAND CRIB

WASTE OIL TANK

FORMER DISPENSER

GATE

PRIVATE DRIVE

N

WEYERHAEUSER - ALAMEDA

SCALE: 1"= 10'	APPROVED BY:	DRAWN BY BWW
DATE: FEB. 94		REVISED

GROUNDWATER CONTOURS - FEB. 1994

1801 HIBBARD ST.

DRAWING NUMBER FIGURE 2

11 X 17 PRINTED ON NO. 1000H CLEARPRINT ●

Vertical Borings

If soil samples collected in slant borings from outside the structure are inadequate to define the extent of soil contamination, it will be necessary to complete vertical borings from inside the building. Access through the plant floor would be accomplished by cutting 8 inch diameter concrete cores. The locations of any interior borings will be dependent on field analysis of soil samples collected from the slant borings.

Groundwater

The expected termination depth for the proposed slant borings, 9 feet BGS, is at the top of the capillary fringe. It is proposed to collect a groundwater sample from each slant boring by driving a slotted drive point through the hole bottom, allowing groundwater to infiltrate into the drive point and withdrawing a sample with a peristaltic pump. The technique is similar to that employed by a hydropunch. Collected groundwater will be field screened using a PID and submitted to a testing laboratory for analysis.

A similar procedure will be used to collect groundwater samples from any vertical borings completed. In addition, it is proposed to construct a permanent groundwater sample point at the southern boundary of the groundwater plume. Specifically, a one inch diameter PVC pipe will be bedded into a vertical hand auger hole. The lower end of the PVC pipe will be fitted with a 1 foot screened section set just below the capillary fringe. Bentonite pellets will be placed as a seal from above the capillary fringe to the surface. A christy box will be set in the floor to protect the well head. ~~a Temporary well?~~

The proposed sampling point will provide representative groundwater samples for chemical analysis but is unsuited for collection of accurate hydrologic data.

Abandonment

It is proposed to abandon all borings with bentonite chip hole plug. Clean water will be added to rapidly and effectively provide for bentonite hydration.

Reporting

Each boring completed will be logged by a California registered civil engineer. The horizontal position of each boring will be surveyed to an accuracy of 0.1 foot. ~~For borings from slant borings? Why?~~

Schedule

A written schedule of field work activities will be submitted to the Alameda County Division of Hazardous Materials within 5 days of workplan

approval. Field work will be completed within 21 days of workplan approval. Within 30 days of receipt of final analytical results, a written report of findings will be submitted. The report of findings will encompass both the original and supplemental field investigations and will follow the format presented in Section 6.0, Report of Findings, from our November 1993 Workplan.

Quarterly monitoring of all 10 site groundwater wells is scheduled in May 1994. Results of the quarterly groundwater monitoring will be included in the site investigation report of findings.

We look forward to receiving any comments you have regarding our proposed supplemental investigation. For any additional information please contact me at (707) 451-1360.

Yours truly,

Brian W. West

Brian W. West PE
Principal
West & Associates Environmental Engineers, Inc.

BWW/es

cc: Jennifer Strachan, Weyerhaeuser Office of the Environment
John Hipner, Weyerhaeuser Alameda

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