

Weyerhaeuser
Paper Company

1801 Hibbard Street
P.O. Drawer X
Alameda, California 94501
Tel (510) 523 6121



August 31, 1992

STID 1202

Alameda County Environmental Health Department
80 Swan Way, Rm. 200
Oakland, CA 94621

Dear Sir/Madam:

Per your request, please find a copy of 1/20/92 report for underground tank removal.

If you need any additional information, please let me know.

Sincerely,

WEYERHAEUSER PAPER COMPANY

Steven A. Mindt
Production Manager

SAM:jnq

Attachment

92 SEP 4 11:14 AM '92

File No. 10-91-483-MW

PRELIMINARY SUBSURFACE INVESTIGATION AT
FORMER UNDERGROUND GASOLINE TANK AREA
LOCATED AT 1801 HIBBARD STREET
ALAMEDA, CALIFORNIA
JANUARY 20, 1992

PREPARED FOR:
WEYERHAUSER PAPER COMPANY
1801 HIBBARD STREET
P. O. BOX DRAWER X
ALAMEDA, CALIFORNIA 94501

BY:
SOIL TECH ENGINEERING, INC.
298 BROKAW ROAD
SANTA CLARA, CALIFORNIA 95050

SOIL TECH ENGINEERING, INC.

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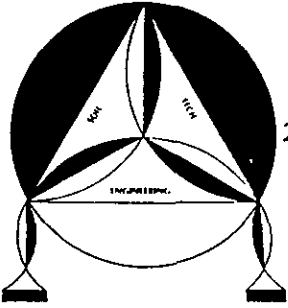
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Control and Water Conservation District -- Zone 7

Water Well Drillers Report



SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266

January 20, 1992

File No. 10-91-483-MW

Weyerhaeuser Paper Company
1801 Hibbard Street
P.O. Box Drawer X
Alameda, California 94501

ATTENTION: MR. STEVE MINDT

SUBJECT: PRELIMINARY SUBSURFACE INVESTIGATION AT
FORMER UNDERGROUND GASOLINE TANK AREA
Located at 1801 Hibbard Street, in
Alameda, California

Dear Mr. Mindt:

Enclosed is the results of the preliminary subsurface investigation dated January 20, 1992, as prepared by Soil Tech Engineering, Inc. (STE).

~~The preliminary site investigation conducted near the former~~
gasoline tank area showed that the groundwater has been impacted. Per Alameda County Environmental Health Department (ACEHD) and California Regional Water Quality Control Board (CRWQCB) fuel leak guidelines, you will be required to conduct an additional investigation.

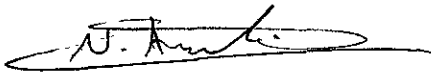
File No. 10-91-483-MW

A work plan for additional investigation as required by ACEHD, and CRWQCB will be prepared upon your authorization for agencies approval.

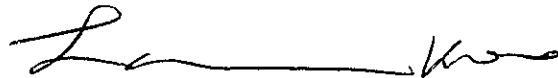
If you have any questions or required additional information, please feel free to contact our office at your convenience.

Sincerely,

SOIL TECH ENGINEERING, INC.



NOORODDIN AMELI
PROJECT ENGINEER



LAWRENCE KOO, P. E.
C. E. #34928



FRANK HAMEDI-FARD
GENERAL MANAGER

PRELIMINARY SUBSURFACE INVESTIGATION
AT FORMER UNDERGROUND GASOLINE TANK AREA
LOCATED AT 1801 HIBBARD STREET
ALAMEDA, CALIFORNIA
JANUARY 20, 1992

INTRODUCTION:

This report presents the preliminary subsurface investigation completed by Soil Tech Engineering, Inc. (STE), at Weyerhaeuser Paper Company's former underground gasoline tank area located in Alameda, California (Figure 1). This investigation was conducted to comply with the Alameda County Environmental Health Department (ACEHD) and California Regional Water Quality Control Board, San Francisco Bay Region (CRWQCB-SFBR) requirements for underground fuel tank.

A proposal for investigation was submitted by STE on October 29, 1991, to meet the requirements set forth by the ACEHD and RWQCB. The specific soil sampling intervals, groundwater sampling procedures, and chemical analyses were in accordance with the state and local requirements.

This report contains the chemical and geological information generated from three monitoring wells installed near the former underground fuel storage tanks. Figure 2 shows the location of the former fuel tank areas and the three on-site monitoring wells.

OBJECTIVE:

The objective of this investigation was to satisfy the requirements for underground tank set forth in the ACEHD's and RWQCB's fuel leak site guidelines dated August 10, 1990. The tasks were to complete a subsurface soil investigation around the tank area to evaluate the lateral and vertical extent of shallow soil contamination and groundwater. These tasks were intended to determine whether potential fuel releases occurred at the former underground gasoline tank area by collecting soil and groundwater samples and having chemical analyses performed by a California Department of Health Services (DOHS) certified laboratory.

PURPOSE AND SCOPE:

The purpose of this investigation was to define the local physical setting and to characterize the nature and extent of potential soil contamination and groundwater near the underground gasoline tanks area.

The work included drilling three exploratory borings (which was converted into monitoring wells), soil sampling, purging and sampling of the monitoring wells, and chemical analyses of soil and groundwater samples.

Soil borings were drilled at three locations around the former underground tank area to a maximum depth of 20 feet. Soil samples were collected at depths of 3 and 7 feet for visual classification

and chemical analysis. The borings were converted into monitoring wells. Groundwater was sequentially purged and sampled from the newly installed monitoring wells for chemical analyses.

BACKGROUND:

On February 7, 1991, four underground tanks (one 10,000 gallon diesel and three 1,000 gallon gasoline) were removed from the property by Minter and Fahy Construction (MFC). The tanks were located near the warehouse building and shed (Figure 2). Following the tank removal, MFC collected soil samples. Initial soil analytical results showed high levels of Total Petroleum Hydrocarbons as gasoline (TPHg) ranging from 220 to 3,000 milligrams per kilogram (mg/Kg). Low to moderate levels of Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) were also detected.

A water sample, taken by MFC from the diesel tank excavation on February 28, 1991, showed TPH as diesel (TPHd) at 3.6 mg/l.

Due to presence of elevated TPH as gasoline at the former gasoline tanks area, additional excavation was conducted by MFC on February 27 and 28, 1991. Soil sampling of the sidewalls showed TPHg ranging from 43 to 2,600 mg/Kg. BTEX levels ranged from 0.006 to 25 mg/Kg. In addition, moderate levels of Total Oil and Grease (TOG) and some metals were also detected. The water sample that was also taken from the excavation at this time showed moderate levels of TPHg (22 mg/l) and TPHd (0.19 mg/l).

Due to presence of elevated hydrocarbons detected in the sidewall soil samples taken on February 28, 1991. Additional three feet of soil were removed from the excavation on April 13, 1991, and more soil and water samples were taken. Soil analytical results showed low levels of all constituents analyzed. Water samples taken from the excavation continued to show elevated levels of TPHg and Benzene.

FIELD ACTIVITIES:

Soil Tech Engineering, Inc., conducted the field work on December 3 and 4, 1991, for installation of three monitoring wells in the vicinity of the former underground tank area. The approximate location of the wells and the former tanks area are shown in Figure 2.

The well installation, soil sampling and water sampling were conducted in accordance with the STE's Standard Operation Procedures (SOP) included in the Appendix "B" of this report. STE's SOP contains well construction procedures in accordance with state and local requirements.

During drilling operations, mild petroleum odors were detected in wells STMW-2 and STMW-3 at 3 and 7 feet depths. Soil samples were collected at 3 and 7 feet depths in each borings. Each undisturbed soil sample was labeled with an identification number,

sealed in an individual brass tube liner, and stored in a chilled ice chest until delivery to the analytical lab. The completed boring logs and well construction detail are presented in Appendix "C".

Groundwater sampling of monitoring wells occurred on December 23, 1991. The water sampling procedure included well casing survey, water level measurements, purging at least six well casing volumes with a decontaminated Teflon bailer and collecting water quality data (temperature, conductivity, pH, turbidity, and percent salinity), and sampling with a Teflon bailer when the well had recovered to at least 80 percent of its initial groundwater level. Each water sample was slowly poured from the Teflon bailer into 40-ml vial provided by the analytical laboratory. The sample containers were labeled and stored in chilled ice chests until delivery to the analytical laboratory. The purged groundwater was stored on-site for proper disposal.

A standard STE chain-of-custody form was maintained between the sampling personnel and the laboratory during the soil and groundwater sampling. The forms document the custody and delivery of the samples delivered to the laboratory. The chain-of-custody forms are found in Appendix "D" with the complete chemical analysis data.

The monitoring wells were sampled and surveyed on December 23, 1991.

During the field operations, equipment decontamination was maintained. All drilling equipment decontamination was performed prior to drilling using an Alconox-distilled water wash and a deionized-water rinse. In addition all soil and groundwater sampling, equipments (core barrel, brass liners, Teflon bailers) were carefully decontaminated prior its use.

Prior to the commencement of the field operations, a site-specific Health and Safety Plan (HSP) was developed by the STE staff. The details of HSP was included in the work plan, dated October 15, 1991.

DATA SUMMARY:

The data presented in this section of the report are comprised of geologic information generated from field operations, and chemical data obtained from analyses of soil and groundwater samples. The complete data as received from the analytical laboratory are presented in Appendix "D". Chemical analyses were completed by ChromaLab, Inc., located in San Ramon, California.

PHYSICAL SETTING:

The subject site is located south of Highway 880 and approximately 1 mile northeast of San Francisco Bay on relatively flat ground that is currently occupied by buildings and paved parking areas.

The subsurface geology shown in the boring logs (Appendix "C") is relatively non-uniform and can be characterized by three distinct soil units from the surface downward; man-placed fill; alluvial floodplain deposits of clay and silt; generally cohesive clayey sand, sandy clay alluvial deposits.

GROUNDWATER ELEVATION AND FLOW DIRECTION:

The depth to water in the three completed monitoring wells ranged from 6.60 to 7.38 feet below the ground surface. The lateral groundwater gradient direction at this site is relatively flat and is toward south to southwesterly direction as of December 23, 1991, measurement.

CHEMICAL DATA:

The following chemical data were derived from chemical analyses performed by ChromaLab, Inc., and include groundwater and soil results. Analyses include three groundwater samples and 6 soil samples. Table 1 summarizes well observations and groundwater elevations. Table 2 summarizes all soil and water analytical results.

Soil Analytical Results:

No Total Petroleum Hydrocarbons as diesel (TPHd) were below the detection limit of laboratory in the six samples. TPHg were detected in three (STMW-2-7, STMW-3-3 and STMW-3-7) of six samples

at depths of 3 and 7 feet. The TPHg concentrations ranged from 74 milligrams per kilogram (mg/Kg) to a maximum of 550 mg/Kg. Benzene, Toluene, Ethylbenzene and Xylenes were also detected at low levels in the same three soil samples. Total Oil and Grease (TOG) was detected in only one sample (STMW-3-3) at 3 feet depth, and the concentration was 1,000 mg/Kg.

Water Analytical Results:

Well STMW-1 showed no TPH or BTEX. Wells STMW-2 and STMW-3 did show low to moderate levels of TPHg, TPHd and BTEX. TPHg levels ranged from 2.3 to 14 milligrams per liter (mg/L); TPHd 0.08 to 1.7 mg/L; Benzene 0.72 to 3 mg/L; Toluene 0.066 to 0.54 mg/L; Ethyl-benzene 0.0015 to 0.37 mg/L and Xylenes 0.24 to 1.2 mg/L, respectively.

CONCLUSION:

The following summarizes our findings:

- Soil beneath the site consist of sandy clay.
- Petroleum odors were detected during drilling in wells STMW-2 and STMW-3, at 3 and 7 feet below grade.
- Elevated levels of TPH as gasoline were detected in the soil sample STMW-2 at 7 feet depth and STMW-3 at 3 and 7 feet depth.

- Elevated level of TOG detected at 3 feet depth in well STMW-3.
- No visual floating product was detected during water sampling.
- The groundwater encountered at approximately 6.6 to 7.4 feet below ground surface.
- The groundwater flow direction as of December 23, 1991, was southwesterly directions.

- Groundwater has been impacted with dissolved hydrocarbons. Two of the three wells (STMW-2 and STMW-3) detected moderate levels of Total Petroleum Hydrocarbons as gasoline ranging from 2.3 to 14 mg/L; Benzene 0.72 to 3.0 mg/L and TPH as diesel ranged 0.08 to 1.7 mg/L, respectively.

Since the shallow groundwater has been impacted with fuel hydrocarbons, additional investigation is required per ACEHD and CRWQCB fuel leak guidelines.

RECOMMENDATION:

- Submit this report to ACEHD and CRWQCB.

- Determine the lateral and vertical extent of hydrocarbons by installing three additional wells and three exploratory borings in the vicinity of the former gasoline tank area.

- Initiate a quarterly monitoring and sampling of the existing on-site wells and proposed wells.

LIMITATIONS AND UNIFORMITY OF CONDITIONS:

The monitoring well installation services or soil and water sampling for pollution on this project was a direct request by Soil Tech Engineering, Inc.'s client. These installations were performed to meet the existing requirements for near-surface groundwater monitoring.

This service does not make Soil Tech Engineering, Inc., liable for future maintenance, repairs, damages, injury to a third party or any other elements causing future problems.

The locations of these monitoring wells are approximate and should not be used for any reference point, surveying, or any other uses except studying groundwater.

Any recommendations that were made in this report are based upon the assumption that the soil conditions do not deviate from those disclosed in the borings.

This report is issued with the understanding that it is the responsibility of the owner or his representative to ensure that the information and recommendations contained herein are called to the attention of the Local Environmental Agency.

File No. 10-91-483-MW

The findings of this report are based on the results of an independent laboratory and are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man, on this property or adjacent properties.

TABLE 1
MONITORING WELL OBSERVATION
AND GROUNDWATER ELEVATIONS

Date	Well Number	Casing Elevation feet	Water Level feet	Groundwater Elevation feet	Floating Product	Odor
12/23/91	STMW-1	99.96	6.77	93.19	No	No
12/23/91	STMW-2	99.65	6.60	93.05	No	No
12/23/91	STMW-3	100.35	7.38	92.97	No	No

TABLE 2
SOIL AND GROUNDWATER ANALYTICAL RESULTS

I. Soil analytical Results in Milligrams Per Kilogram (mg/Kg)

Date	Sample #	Depth feet	TPHd	TPHg	B	T	E	X	TOG
12/3/91	STMW-1-3	3	ND	ND	ND	ND	ND	ND	ND
12/3/91	STMW-1-7	7	ND	ND	ND	ND	ND	ND	ND
12/3/91	STMW-2-3	3	ND	ND	ND	ND	ND	ND	ND
12/3/91	STMW-2-7	7	ND	370	0.56	1.0	1.5	6.7	ND
12/4/91	STMW-3-3	3	ND	74	0.16	0.006	0.24	0.79	1,000
12/4/91	STMW-3-7	7	ND	550	0.44	1.0	1.3	8.5	ND

II. Water Analytical Results in Milligrams Per Liter (mg/L)

Date	Well No.	TPHd	TPHg	B	T	E	X
12/23/91	STMW-1	ND	ND	ND	ND	ND	ND
12/23/91	STMW-2	0.08	2.3	0.72	0.066	0.0015	0.24
12/23/91	STMW-3	1.7*	14	3.0	0.54	0.37	1.2

TPHd = Total Petroleum Hydrocarbons as diesel

TPHg = Total Petroleum Hydrocarbons as gasoline

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

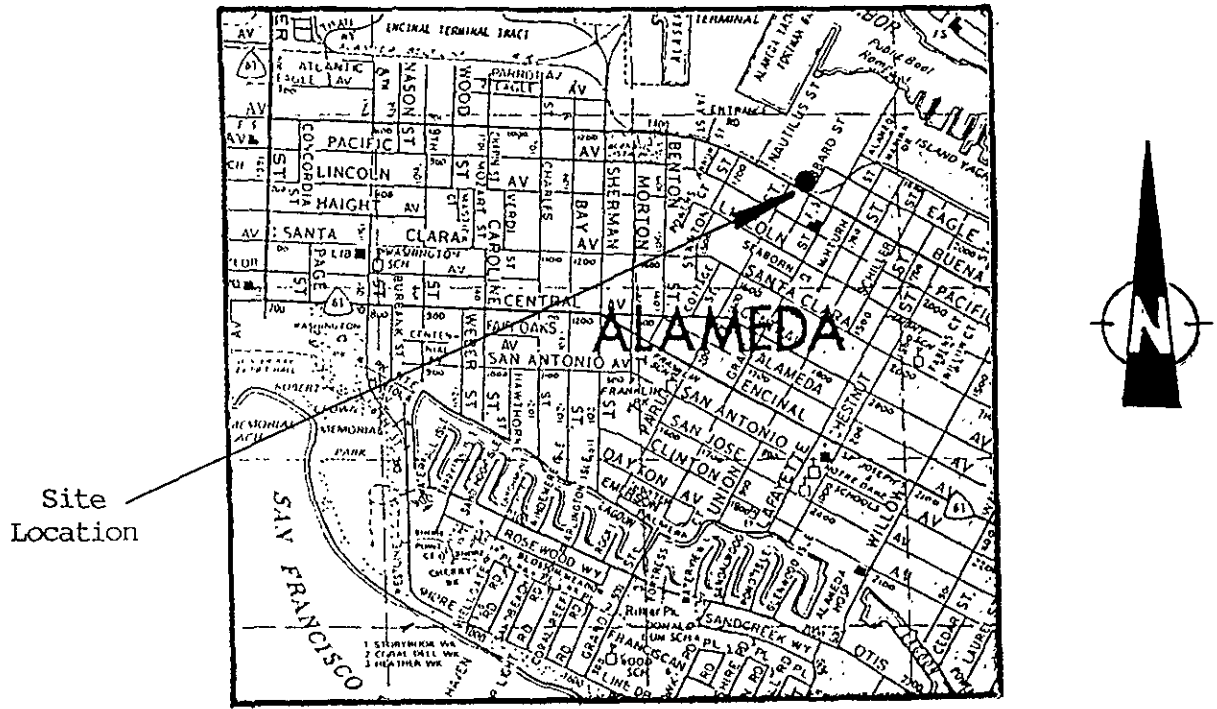
ND = Not Detected (Below Detection Limit)

* = Laboratory detected unknown hydrocarbon in Kerosene Range

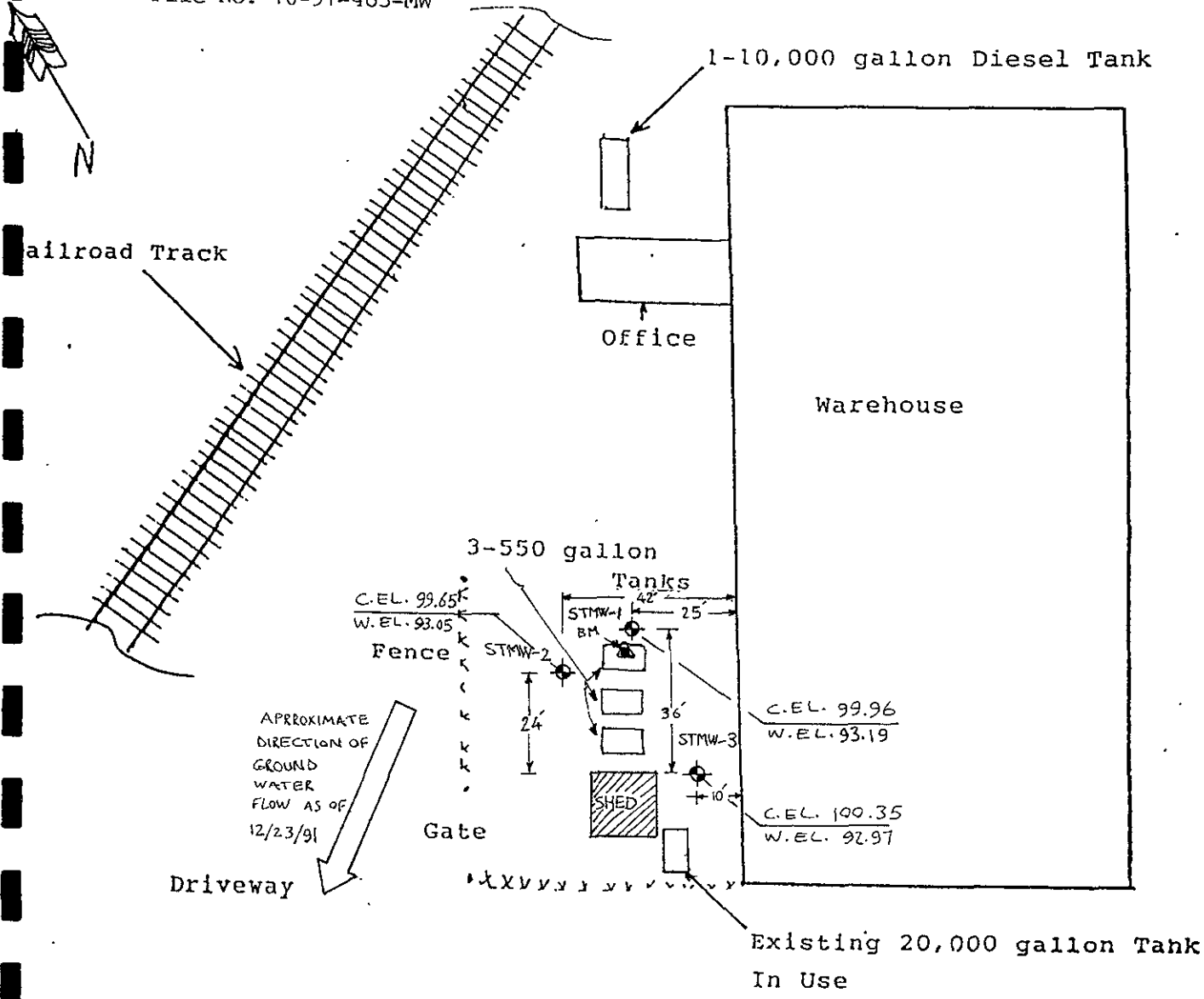
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A P P E N D I X "A"

SOIL TECH ENGINEERING, INC.



Thomas Brothers Map 1982 Edition
Alameda - Contra Costa Counties



C.E.L. CASING ELEVATION
 BM BENCH MARK
 W.E.L. WATER ELEVATION
 MONITORING WELL

Buena Vista Ave.

Plot Plan: NOT TO SCALE

Weyerhaeuser Paper Co.
 1801 Hibbard Street
 Alameda, CA 94501

Tank Removal:
 3-550 Gallon Tanks
 1-10,000 Gallon Tank

Figure 2

File No. 10-91-483-MW

A P P E N D I X "B"

SOIL TECH ENGINEERING, INC.

DRILLING AND SOIL SAMPLING PROCEDURE

A truck-mounted drill rig, using a continuous, solid-flight, hollow stem auger will be used in drilling the soil borings to the desired depths.

Prior to drilling, all drilling equipment (auger, pin, drilling head) will be thoroughly steam-cleaned to minimize the possibility of cross-contamination and/or vertical migration of possible contaminants.

In addition, prior to obtaining each individual soil sample, all sampling tools, including the split-spoon sampler and brass liners will be thoroughly washed in a Trisodium Phosphate (TSP) solution followed by a rinse in distilled water.

During the drilling operation, relatively undisturbed soil samples will be taken from the required depth by forcing a 2-inch I.D. split-spoon sampler insert with a brass liner into the ground at various depths by means of a 140-lb. hammer falling 30-inches or by hydraulic forces.

The samplers will contain relatively undisturbed soil. In general, the first section of soil from the sampler (shoe) will be used in the field for lithologic inspection and evidence of contamination. The selected brass liner will be immediately trimmed, the ends of the brass liner will be covered tightly with

aluminum foil and plastic caps, sealed with tape, labelled, placed in a plastic bag and stored in a cold ice chest in order to minimize the escape of any volatiles present in the samples. Soil samples for analysis will then be sent to a state-certified hazardous waste laboratory accompanied by a chain-of-custody record.

Soil samples collected at each sampling interval will be inspected for possible contamination (odor or peculiar colors). Soil vapor concentrations will be measured in the field by using a Photoionization Detector (PID), PhotoVac Tip Air Analyzer. The soil sample will be sealed in a Zip-Loc plastic bag and placed in the sun to enhance volatilization of the hydrocarbons from the sample. The purpose of this field analysis is to qualitatively determine the presence or absence of hydrocarbons and to establish which soil samples will be analyzed at the laboratory. The data will be recorded on the drilling log at the depth corresponding to the sampling point.

Other soil samples may be collected to document the stratigraphy and estimate relative permeability of the subsurface materials.

Soil tailings that are obtained during drilling will be stored at the site, pending the analytical test results to determine proper disposal.

MONITORING WELL INSTALLATION

The boreholes for the monitoring wells were hand augered with a diameter of at least two inches larger than the casing outside diameter (O.D.).

The monitoring wells were cased with threaded, factory-perforated and blank, schedule 40 P.V.C. The perforated interval consisted of slotted casing, generally 0.010 to 0.040 inch wide by 1.5 inch long slot size, with 42 slots per foot (slots which match formation grain size as determined by field grain-size distribution analysis). A P.V.C. cap was fastened to the bottom of the casing (no solvents, adhesive, or cements were used), the well casing was thoroughly washed and steam-cleaned.

After setting the casing inside the borehole, kiln-dried sand or gravel-filter material was poured into the annular space to fill from the bottom of the boring to two feet above the perforated interval. A one to two feet thick bentonite plug was placed above this filter material to prevent grout from infiltrating down into the filter material. Approximately one to two gallons of distilled water were added to hydrate the bentonite pellets. Then the well was sealed from the top of the bentonite seal to the surface with concrete or neat cement containing about 5% bentonite (see Well Construction Detail).

To protect the well from vandalism and surface water contamination, Christy boxes with a special type of Allen screw were installed around the well head, (for wells in parking lots, driveways and building areas). Steel stove pipes with padlocks were usually set over well-heads in landscaped areas.

In general, groundwater monitoring wells extend to the base of the upper aquifer, as defined by the consistent (less than 5 feet thick) clay layer below the upper aquifer, or at least 10 to 15 feet below the top of the upper aquifer, whichever is shallower. The wells do not extend through the laterally extensive clay layer below the upper aquifer. The wells are terminated one to two feet into such a clay layer.

WELL DEVELOPMENT

For all newly installed groundwater monitoring wells, the well casing, filter pack and adjacent formations were cleared of disturbed sediment and water.

Well development techniques included pumping, bailing, surging, swabbing, jetting, flushing or air lifting by using a stainless steel or Teflon bailer, a submersible stainless steel pump, or air lift pump. The well development continued until the discharged water appeared to be relatively free of all turbidity.

All water and sediment generated by well development were collected in 55-gallon steel drums (Department of Transportation approved), closed-head (17-H) for temporarily storage, and were then disposed of properly, depending on analytical results.

To assure that cross-contamination did not occur between wells, all well development tools were steam-cleaned or thoroughly washed in a Trisodium Phosphate (TSP) solution followed by a rinse in distilled water before each well development.

GROUNDWATER SAMPLING

Prior to collection of groundwater samples, all of the sampling equipment (i.e. bailer, cables, bladder pump, discharge lines and etc...) was cleaned by pumping TSP water solution followed by distilled water.

Prior to purging, the well "Water Sampling Field Survey Forms" were filled out (depth to water and total depth of water column were measured and recorded). The well was then bailed or pumped to remove four to ten well volumes or until the discharged water temperature, conductivity and pH stabilized. "Stabilized" is defined as three consecutive readings within 15% of one another.

The groundwater sample was collected when the water level in the well recovered to 80% of its static level.

Forty milliliter (ml.), glass volatile organic analysis (VOA) vials with Teflon septa were used as sample containers. The groundwater sample was decanted into each VOA vial in such a manner that there was a meniscus at the top. The cap was quickly placed over the top of the vial and securely tightened. The VOA vial was then inverted and tapped to see if air bubbles were present. If none were present, the sample was labeled and refrigerated for delivery under chain-of-custody to the laboratory. The label information would include a sample identification number, job identification number, date, time, type of analysis requested, and the sampler's name.

File No. 10-91-483-MW

A P P E N D I X "C"

SOIL TECH ENGINEERING, INC.

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STMW-1
Date Drilled: 12/3/91	Approx. Elevation	Boring Diameter 8-inch
Drilling Method Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/6"	Unified Soil Classification:	DESCRIPTION
1					4-inch asphalt, 4-inch light brown baserock. Dark brown-black silty fine sandy clay, damp.
2					
3	STMW-1-3			CL	Medium brown-olive sandy clay, damp.
4					
5					Medium brown-olive sandy clay, damp.
6					
7	STMW-1-7			CL	Color changes to light brown-olive fine sandy clay, damp.
8					Light brown sandy clay, damp.
9					
10					▽ First groundwater encountered at 10 feet.
11					
12					
13					Light brown fine sandy clay, wet.
14					
15					
16					

Remarks

File No. 10-91-483-MW

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STMW-1
Date Drilled. 12/3/91		Boring Diameter 8-inch

Drilling Method Mobile drill rig B-40L	Sampling Method
---	-----------------

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
17					Light brown fine sandy clay, wet.
18					
19					
20					Boring terminated at 20 feet.
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					

Remarks

Logged By: Noori Ameli

Exploratory Boring Log

Boring No. STMW-2

Date Drilled: 12/3/91

Approx. Elevation

Boring Diameter 8-inch

Drilling Method

Mobile drill rig B-40L

Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/6"	Unified Soil Classification	DESCRIPTION
1					3-inch asphalt, 4-inch light brown baserock.
2					Dark brown-black silty fine sandy clay, damp, light petroleum odor.
3	STMW-2-3			CL	Dark brown sandy clay, damp.
4					
5					Color changes to lighter brown-olive sandy clay.
6					
7	STMW-2-7			CL	Medium brown-olive sandy clay, damp.
8					
9					
10					∇ First groundwater encountered at 10 feet. Light brown fine sandy clay, moist.
11					
12					
13					Light brown fine sandy clay, wet.
14					
15					Light petroleum odor.
16					

Remarks

File No. 10-91-483-MW

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STMW-2
Date Drilled: 12/3/91	Approx. Elevation	Boring Diameter 8-inch

Drilling Method Mobile drill rig B-40L	Sampling Method
---	-----------------

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
17					Light petroleum odor.
18					
19					
20					Boring terminated at 20 feet.
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					

Remarks

File No. 10-91-483-MW

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STMW-3
Date Drilled: 12/4/91		Approx. Elevation

Drilling Method: Mobile drill rig B-40L	Sampling Method
---	-----------------

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/6"	Unified Soil Classification	DESCRIPTION
1					6-inch concrete, 4-inch medium brown baserock.
2					Light petroleum odor. Dark brown-black silty fine sandy clay, damp, light petroleum odor.
3	STMW-3-3			CL	Medium grey-olive sandy silty clay, light petroleum odor, damp.
4					
5					
6					
7	STMW-3-7			CL	Medium grey-olive sandy silty clay, light petroleum odor.
8					
9					
10					∇ First groundwater encountered at 10 feet. Color changes to light brown sandy silty clay, moist, light petroleum odor.
11					
12					
13					
14					Light brown fine sandy clay, wet.
15					
16					

Remarks

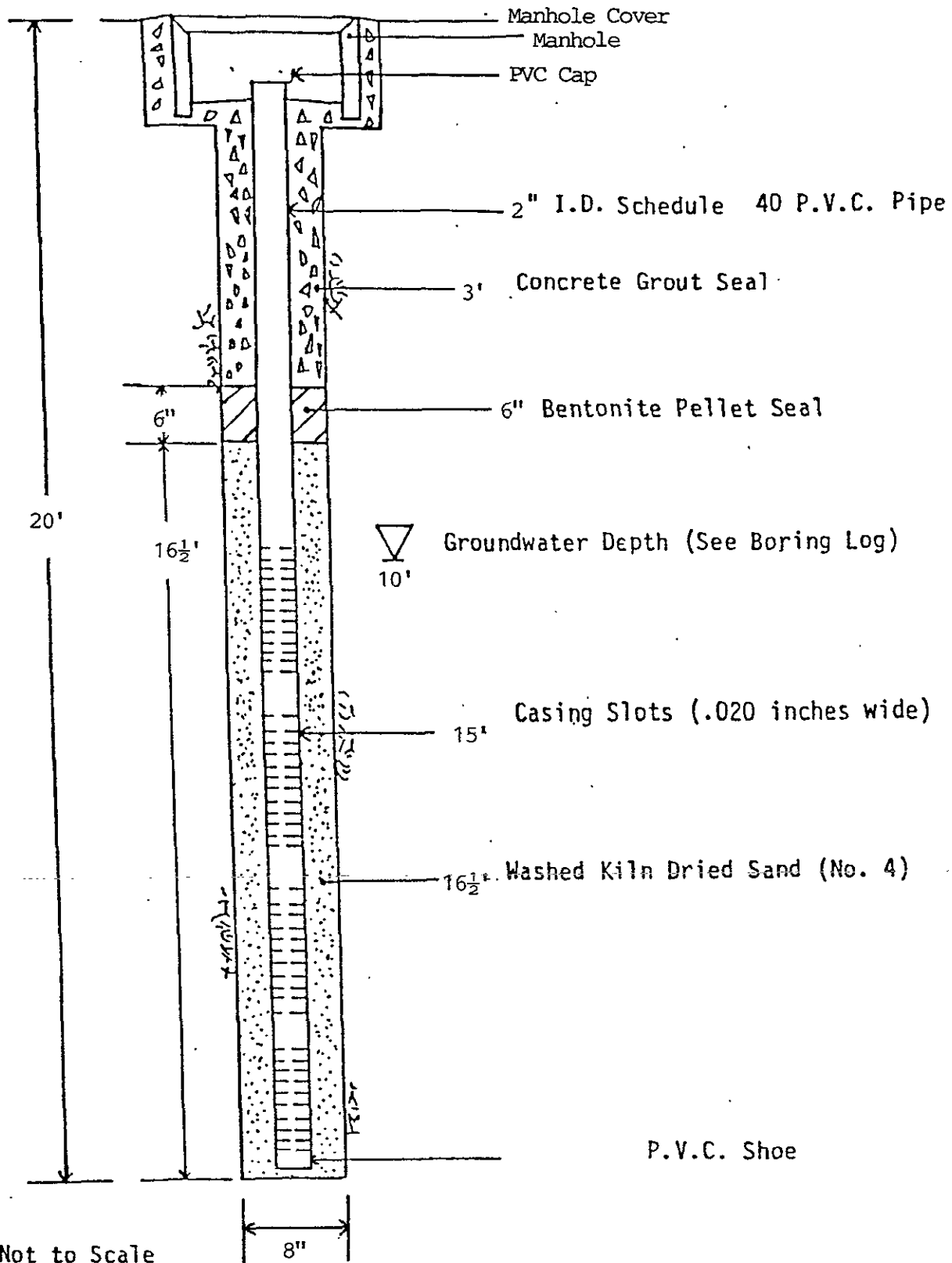
File No. 10-91-483-MW

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STMW-3
Date Drilled. 12/4/91	Approx. Elevation	Boring Diameter 8-inch

Drilling Method Mobile drill rig B-40L	Sampling Method
---	-----------------

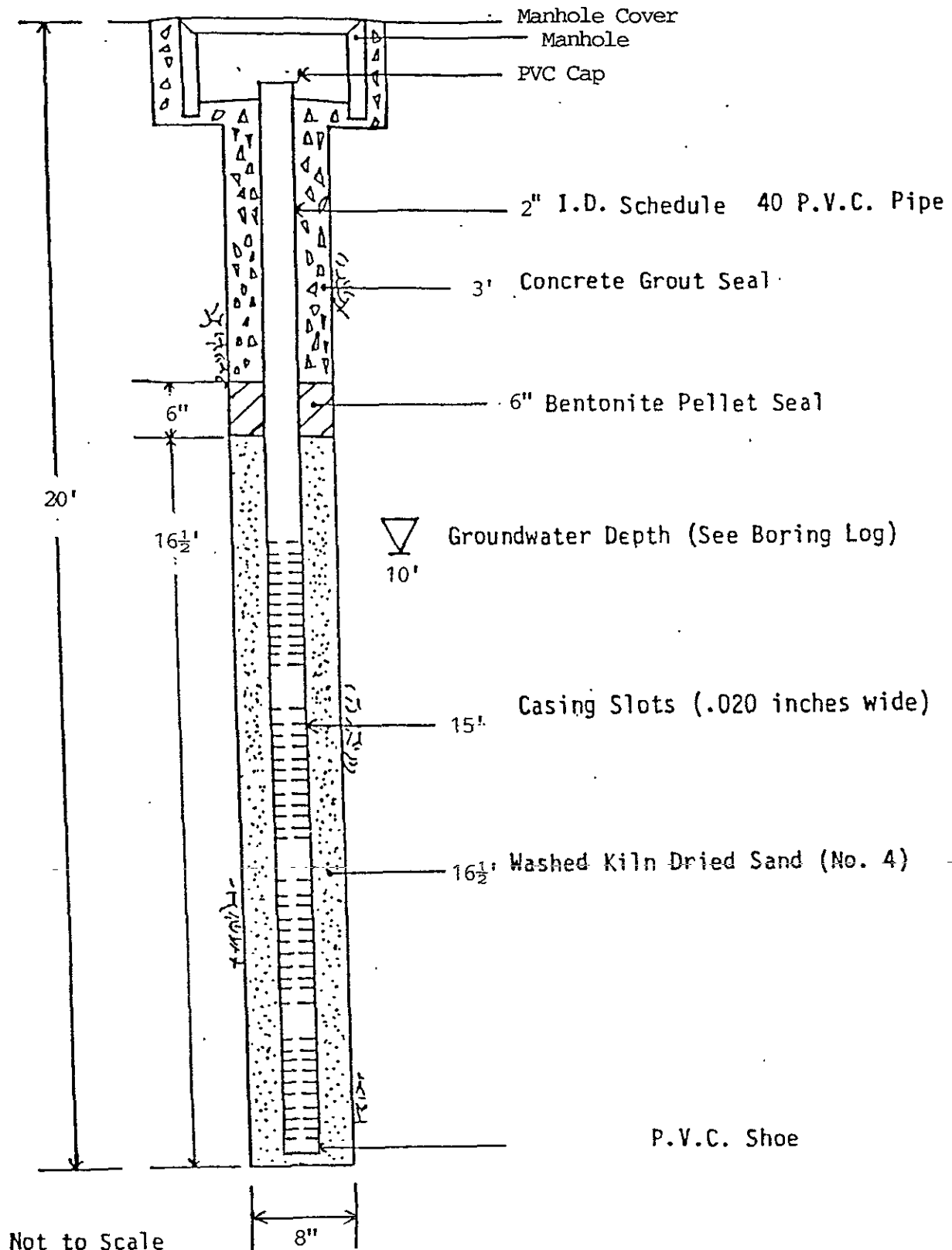
Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
17					Light brown fine sandy clay, wet.
18					
19					
20					Boring terminated at 20 feet.
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					

Remarks



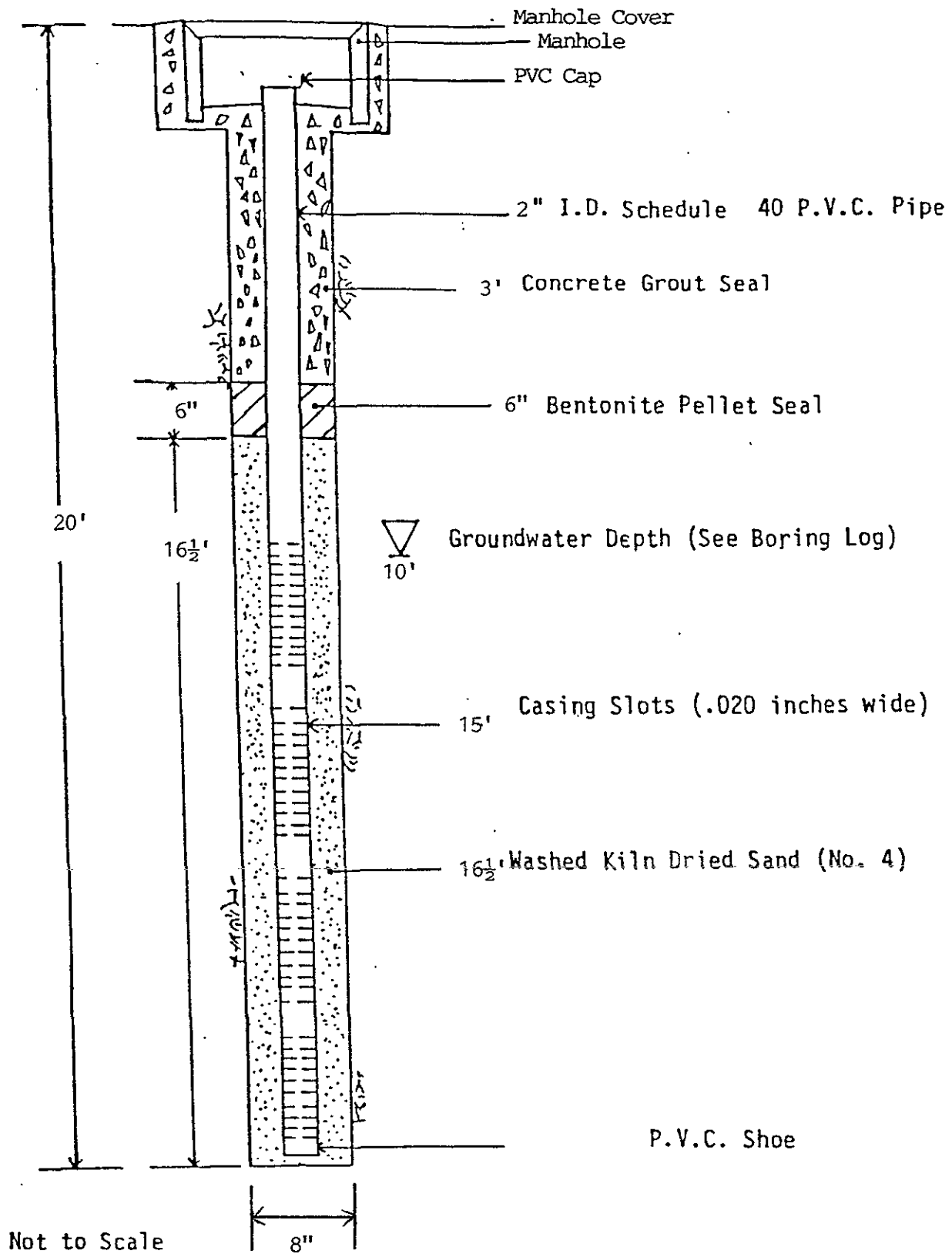
STMW-1

Piezometer Schematic



STMW-2

Piezometer Schematic



STMW-3

Piezometer Schematic

File No. 10-91-483-MW

A P P E N D I X "D"

SOIL TECH ENGINEERING, INC.

CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

December 13, 1991

ChromaLab File No.: 1291036

SOIL TECH ENGINEERING

Attn:

RE: Six soil samples for Gasoline/BTEX, Diesel and Oil & Grease analyses

Project Name: 1801 HIBBARD ST. ALAMEDA

Project Number: 10-91-483-MW

Date Sampled: Dec. 3-4, 1991

Date Submitted: Dec. 5, 1991

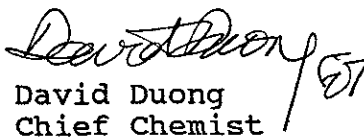
Date Extracted: Dec. 11, 1991


Date Analyzed: Dec. 12, 1991

RESULTS:

Sample I.D.	Gasoline (mg/kg)	Diesel (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl Benzene (µg/kg)	Total Xylenes (µg/kg)	Oil & Grease (mg/kg)
1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
4	370	N.D.	560	1000	1500	6700	N.D.
5	74	N.D.	160	6.3	240	790	1000
6	550	N.D.	440	1000	1300	8500	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE REC.	97.0%	88.6%	98.0%	97.0%	94.7%	93.6%	----
DUP SPIKE REC	97.7%	87.5%	95.1%	102.5%	94.2%	93.3%	----
DET. LIMIT	1.0	1.0	5.0	5.0	5.0	5.0	10
METHOD OF ANALYSIS	5030/ 8015	3550/ 8015	8020	8020	8020	8020	5520 D&F

ChromaLab, Inc.


David Duong
Chief Chemist


Eric Tam
Laboratory Director

PROJ. NO.		NAME				CON-TAINER	ANALYSES REQUESTED						REMARKS	
10-91-483-AW		1801 Hibbard St. Alameda					TPHG/BTE&X	TPHD	TO&G					
SAMPLERS: (Signature) N. Am...														
NO.	DATE	TIME	SOIL	WATER	LOCATION									
1	12/3/91	11 ⁰⁰	✓		STMW-1-3	1	✓	✓	✓					
2	12/3/91	11 ³⁰	✓		STMW-1-7	1	✓	✓	✓					
3	12/3/91	13 ⁰⁰	✓		STMW-2-3	1	✓	✓	✓					
4	12/3/91	13 ³⁰	✓		STMW-2-7	1	✓	✓	✓					
5	12/4/91	12 ³⁰	✓		STMW-3-3	1	✓	✓	✓					
6	12/4/91	13 ⁰⁰	✓		STMW-3-7	1	✓	✓	✓					
Relinquished by: (Signature)		Date / Time		Received by: (Signature)			Relinquished by: (Signature)		Date / Time		Receive by: (Signature)			
N. Am...		12/5/91 15 ⁴⁰												
Relinquished by: (Signature)		Date / Time		Received by: (Signature)			Relinquished by: (Signature)		Date / Time		Received by: (Signature)			
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)			Date / Time		Remarks					
				[Signature]			12/5/91 1540							



SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers

PROJ. NO. 10-91-483-AW NAME 1801 Hibbard St. Alameda

CHROMALAB FILE # 1291036
ORDER # 4416

SAMPLERS: (Signature) *[Signature]*

ANALYSES REQUESTED @
TPHG/BTEX
TPHD
TO&G

CON-TAINER

NO.	DATE	TIME	SOIL	WATER	LOCATION	CON-TAINER	TPHG/BTEX	TPHD	TO&G
1	12/3/91	11 ⁰⁰	✓		STMW-1-3	1	✓	✓	✓
2	12/3/91	11 ³⁰	✓		STMW-1-7	1	✓	✓	✓
3	12/3/91	13 ⁰⁰	✓		STMW-2-3	1	✓	✓	✓
4	12/3/91	13 ³⁰	✓		STMW-2-7	1	✓	✓	✓
5	12/4/91	12 ³⁰	✓		STMW-3-3	1	✓	✓	✓
6	12/4/91	13 ⁰⁰	✓		STMW-3-7	1	✓	✓	✓

Relinquished by: (Signature) <i>[Signature]</i>	Date / Time 12/5/91 15 ⁴⁰	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) <i>[Signature]</i>	Date / Time 12/5/91 1540	Remarks STD TAT	



SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers

298 BROOKAW ROAD SANTA CLARA, CA 95050 (408) 496-0265 OR (408) 496-0266

CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

January 2, 1992

ChromaLab File No.: 1291213

SOIL TECH ENGINEERING

Attn: Noori Ameli

RE: Three water samples for Gasoline/BTEX, and Diesel analysis

Project Name: 1801 HIBBARD ST. ALAMEDA

Project Number: 10-91-483-MW

Date Sampled: Dec. 23, 1991

Date Submitted: Dec. 24, 1991

Date Extracted: Dec. 31, 1991

Date Analyzed: Dec. 31, 1991


RESULTS:


Sample I.D.	Gasoline (µg/L)	Diesel (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)
STMW-1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
STMW-2	2300	80	720	66	1.5	240
STMW-3	14000	1700*	3000	540	370	1200

BLANK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE REC.	95%	92%	95%	92%	93%	93%
DUP SPIKE REC	97%	93%	104%	106%	106%	108%
DET. LIMIT	50	50	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	5030/ 8015	3510/ 8015	602	602	602	602

* Unknown Hydrocarbon in Kerosene range.

ChromaLab, Inc.


Charles Woolley
Analytical Chemist


Eric Tam
Laboratory Director

File No. 10-91-483-MW

A P P E N D I X "E"

SOIL TECH ENGINEERING, INC.



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 (510) 484-2600

11 December 1991

Alpha Geo Services
298 Brokaw Road
Santa Clara, CA 95050

Gentlemen:

Enclosed is Drilling permit 91670 for a monitoring well construction project at 1801 Hibbard Street in Alameda for Weyerhaeuser Paper Company.

Please note that permit condition A-2 requires that a well construction report be submitted after completion of the work. The report should include drilling and completion logs, location sketch, and permit number.

If you have any questions, please contact Wyman Hong or me at 484-2600.

Very truly yours,

Craig A. Mayfield
Water Resources Engineer

WH:mm
Enc.



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94566 (415) 484-2600

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 1801 Hibbard Street Alameda, California

PERMIT NUMBER 91670 LOCATION NUMBER

CLIENT Name Weyerhaeuser Paper Company Address P.O. Box Drawer X Phone 415-523-6121 City Alameda, CA Zip 94501

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT Name Alpha Geo Services Address 298 Brokaw Road Phone 408-988-1032 City Santa Clara, CA Zip 95050

TYPE OF PROJECT Well Construction Geotechnical Investigation Cathodic Protection General Water Supply Contamination Monitoring X Well Destruction

PROPOSED WATER SUPPLY WELL USE Domestic Industrial Other Municipal Irrigation

DRILLING METHOD: Mud Rotary Air Rotary Auger X Cable Other

DRILLER'S LICENSE NO. C57 507520

WELL PROJECTS Drill Hole Diameter 8 in. Maximum Casing Diameter 2 in. Depth 20 ft. Surface Seal Depth 4 ft. Number 3

GEOTECHNICAL PROJECTS Number of Borings 3 Maximum Hole Diameter 8 in. Depth

ESTIMATED STARTING DATE 12/4/91 ESTIMATED COMPLETION DATE 12/5/91

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Frank Hamilton Date 11/20/91

- (A) GENERAL 1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date. 2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects. 3. Permit is void if project not begun within 90 days of approval date. (B) WATER WELLS, INCLUDING PIEZOMETERS 1. Minimum surface seal thickness is two inches of cement grout placed by tremie. 2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet. C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings. D. CATHODIC. Fill hole above anode zone with concrete placed by tremie. E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 3 Dec 90

DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in

No. 374219

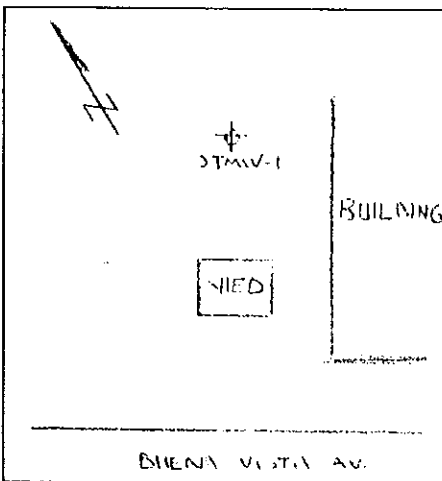
TRIPPLICATE
Owner's Copy

Notice of Intent No. _____
Local Permit No. or Date 91670

State Well No. _____
Other Well No. _____

(1) OWNER: Name Meyerhauser Paper Company
Address P.O. Box Drawer X
City Alameda, CA ZIP 94501
(2) LOCATION OF WELL (See instructions):
County Alameda Owner's Well Number STMW-1
Well address if different from above 1801 Hibbard Street
Township Alameda Range _____ Section _____
Distance from cities, roads, railroads, fences, etc. _____

(12) WELL LOG: Total depth 20 ft. Completed depth 20 ft.
from ft 0 to 20 ft. Formation (Describe by color, character, size or material)
- 4" asphalt, 4" light brown
- baserock.
0 - 3 Dark brown-black silty fine
- sandy clay, damp.
3 - 5 1/2 Medium brown-olive sandy clay,
- damp, coarse.
5 1/2 - 7 Medium brown-olive sandy clay,
- damp.
7 - 8 Color changes to light brown-
- olive fine sandy clay, damp.
8 - 13 1/2 Light brown sandy clay, damp.
13 1/2 - 20 Light brown fine sandy clay,
- wet.
- Boring terminated at 20 feet.



(3) TYPE OF WORK:
New Well Deepening
Reconstruction
Reconditioning
Horizontal Well
Destruction (Describe destruction materials and procedures in Item 12)
(4) PROPOSED USE:
Domestic
Irrigation
Industrial
Test Well
Municipal
Other (Describe) Monitoring

(5) EQUIPMENT:
Rotary Reverse
Cable Air
Other Bucket

(6) GRAVEL PACK:
Yes No Size #4
Diameter of bore 8 inch
Racked from -20 to -3 1/2 ft.

(7) CASING INSTALLED:
Steel Plastic Concrete

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
-20	0	2	SCHD40	-20	-5	.020

(9) WELL SEAL:
Was surface sanitary seal provided? Yes No If yes, to depth 3 ft.
Were strata sealed against pollution? Yes No Interval 3 ft.
Method of sealing Bentonite Pellet Seal

(10) WATER LEVELS:
Depth of first water, if known 10 ft.
Standing level after well completion _____ ft.

(11) WELL TESTS:
Was well test made? Yes No If yes, by whom? Soil Tech
Type of test Pump Bailer Air lift
Depth to water at start of test _____ ft. At end of test _____ ft.
Discharge _____ gal/min after _____ hours Water temperature _____
Chemical analysis made? Yes No If yes, by whom? Chromalab
Was electric log made Yes No If yes, attach copy to this report

Work started 12/3/ 1991 Completed 12/3/ 1991
WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed [Signature] (Well Driller)
NAME Alpha Geo Services
(Person, firm, or corporation) (Typed or printed)
Address 298 Brokaw Road
City Santa Clara, CA ZIP 95050
License No. 507520 Date of this report 1/20/92

TRIPPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

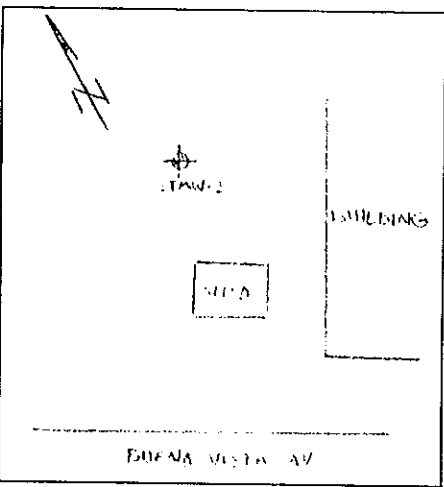
Do not fill in
No. 374220

Notice of Intent No. _____
Local Permit No. or Date 91670

State Well No. _____
Other Well No. _____

(1) OWNER: Name Weyerhaeuser Paper Company
Address P.O. Box Drawer X
City Alameda, CA ZIP 94501

(2) LOCATION OF WELL (See instructions):
County Alameda Owner's Well Number STMW-2
Well address if different from above 1801 Hibbard Street
Township Alameda Range _____ Section _____
Distance from cities, roads, railroads, fences, etc. _____



(3) TYPE OF WORK:
New Well Deepening
Reconstruction
Reconditioning
Horizontal Well
Destruction (Describe destruction materials and procedures in Item 12)
(4) PROPOSED USE:
Domestic
Irrigation
Industrial
Test Well
Municipal
Other Monitoring
(Describe)

(12) WELL LOG: Total depth 20 ft. Completed depth 20 ft.
from ft. 0 to 20ft. Formation (Describe by color, character, size or material)
- 3" asphalt, 4" light brown baserock.
0 - 3 Dark brown-black silty fine sandy clay, damp, light petroleum odor.
- Dark brown sandy clay, damp.
3 - 5 1/2 Color changes to lighter brown-olive sandy clay.
5 1/2 - 7 Medium brown-olive sandy clay, damp.
- Light brown fine sandy clay, moist.
7 - 10 Light brown fine sandy clay, wet.
10 - 13 1/2 Light petroleum odor.
13 1/2 - 15 Boring terminated at 20 feet.
15 - 20 _____

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary Reverse
Cable Air
Other Bucket

(6) GRAVEL PACK:
Yes No Size #4
Diameter of bore 8-inch
Racked from -20 to -3 1/2 ft.

(7) CASING INSTALLED:
Steel Plastic Concrete

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
-20	0	2	SCHD40	-20	-5	.020

(9) WELL SEAL:
Was surface sanitary seal provided? Yes No If yes, to depth 3 ft.
Were strata sealed against pollution? Yes No Interval 1/2 ft.
Method of sealing Bentonite Pellet Seal

(10) WATER LEVELS:
Depth of first water, if known 10 ft.
Standing level after well completion _____ ft.

(11) WELL TESTS:
Was well test made? Yes No If yes, by whom? Soil Tech
Type of test Pump Bailer Air lift
Depth to water at start of test _____ ft. At end of test _____ ft.
Discharge _____ gal/min after _____ hours Water temperature _____
Chemical analysis made? Yes No If yes, by whom? ChromaLab
Was electric log made Yes No If yes, attach copy to this report

Work started 12/3/ 1991 Completed 12/3/ 1991

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed [Signature] (Well Driller)
NAME Alpha Geo Services
(Person, firm, or corporation) (Typed or printed)
Address 298 Brokaw Road
City Santa Clara, CA ZIP 95050
License No. 507520 Date of this report 1/20/92

TRIPLICATE
Owner's Copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in

No. 374221

Notice of Intent No. _____

State Well No. _____

Local Permit No. or Date 91670

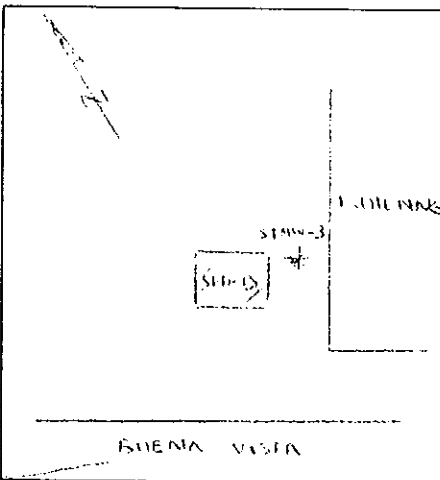
Other Well No. _____

(1) OWNER: Name Keyerhauser Paper Company
Address P.O. Box Drawer X
City Alameda, CA ZIP 94501

(12) WELL LOG: Total depth 20 ft. Completed depth 20 ft.
from ft. 0 to 20 ft. Formation (Describe by color, character, size or material)

(2) LOCATION OF WELL (See instructions):
County Alameda Owner's Well Number STM-3
Well address if different from above 1801 Hibbard Street
Township Alameda Range _____ Section _____
Distance from cities, roads, railroads, fences, etc. _____

6" concrete, 4" medium brown baserock.
0 - 3 Dark brown-black silty fine sandy clay, damp, light petroleum odor.
3 - 7 Medium gray-olive sandy silty clay, light petroleum odor, damp.
7 - 10 Medium gray-olive sandy silty clay, light petroleum odor.
10 - 14 1/2 Color changes to light brown sandy silty clay, moist, light petroleum odor.
14 1/2 - 20 Light brown fine sandy clay, wet.
Boring terminated at 20 feet.



(3) TYPE OF WORK:
New Well Deepening
Reconstruction
Reconditioning
Horizontal Well
Destruction (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic
Irrigation
Industrial
Test Well
Municipal
Other Monitoring
(Describe)

WELL LOCATION SKETCH

(5) EQUIPMENT:
Rotary Reverse
Cable Air
Other Bucket

(6) GRAVEL PACK:
Yes No Size #4
Diameter of bore 8 inch
Packed from -20 to -3 1/2 ft.

(7) CASING INSTALLED:
Steel Plastic Concrete

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
-20	0	2	SCH40	-20	-5	.020

(9) WELL SEAL:
Was surface sanitary seal provided? Yes No If yes, to depth 3 ft.
Were strata sealed against pollution? Yes No Interval 1/2 ft.
Method of sealing Bentonite Pellet Seal

(10) WATER LEVELS:
Depth of first water, if known 10 ft.
Standing level after well completion _____ ft.

(11) WELL TESTS:
Was well test made? Yes No If yes, by whom? Soil Tech
Type of test Pump Bailer Air lift
Depth to water at start of test _____ ft. At end of test _____ ft.
Discharge _____ gal/min after _____ hours Water temperature _____
Chemical analysis made? Yes No If yes, by whom? ChromaLab
Was electric log made Yes No If yes, attach copy to this report

Work started 12/4/ 1991 Completed 12/4/ 1991

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed [Signature] (Well Driller)

NAME Alpha Geo Services
(Person, firm, or corporation) (Typed or printed)

Address 298 Brokaw Road

City Santa Clara, CA ZIP 95050

License No. 507520 Date of this report 1/20/92