

ALAMEDA COUNTY  
HEALTH CARE SERVICES



AGENCY  
DAVID J. KEARS, Agency Director

October 24, 1996

STID 1126

REMEDIAL ACTION COMPLETION CERTIFICATION

Jeanne R. Price  
213 Del Mesa Carmel  
Carmel, CA 93921

ENVIRONMENTAL HEALTH SERVICES  
ENVIRONMENTAL PROTECTION (LOP)  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577  
(510) 567-6700  
FAX (510) 337-9335

Re: Tuneup Masters #314, 5525 Bancroft Avenue, Oakland, CA

Dear Ms. Price,

This letter confirms the completion of site investigation and remedial action for the one 1,000-gallon waste oil underground storage tank formerly located at the above described location. Enclosed is the Case Closure Summary for the referenced site for your records.

Based upon the available information, including the current land use, and with the provision that the information provided to this agency was accurate and representative of site conditions, no further action related to the underground storage tank release is required.

This notice is issued pursuant to a regulation contained in Title 23, California Code of Regulations, Division 3, Chapter 16, Section 2721(e). If a change in land use, structural configuration, or site activities are proposed such that more conservative exposure scenarios should be evaluated, the owner must promptly notify this agency.

Please telephone Juliet Shin at (510) 567-6700 if you have any questions regarding this matter.

Sincerely,

Mee Ling Tung  
Director of Environmental Health Services

enclosure

c: Acting Chief, Hazardous Materials Division - files  
Juliet Shin, ACDEH  
Kevin Graves, RWQCB  
Lori Casias, SWRCB

ENVIRONMENTAL PROTECTION  
01-1987  
OCT 24 AM 8:12

CASE CLOSURE SUMMARY  
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION Date: September 5, 1996

Agency name: Alameda County-HazMat Address: 1131 Harbor Bay Pkwy.  
City/State/Zip: Alameda, CA 94502 Phone: (510) 567-6700  
Responsible staff person: Juliet Shin Title: Senior HMS

II. CASE INFORMATION

Site facility name: Tuneup Masters #314  
Site facility address: 5525 Bancroft Ave., Oakland, CA  
RB LUSTIS Case No: N/A Local Case No./LOP Case No.: 1126  
URF filing date: 12/28/90 SWEEPS No: N/A

<u>Responsible Parties:</u>	<u>Addresses:</u>	<u>Phone Numbers:</u>
1. Jeanne R. Price	213 Del Mesa Carmel Carmel, CA 93921	(408) 624-1792
2. David Val Taylor	2118 F. St. Bakersfield, CA 93301	(206) 661-2011
3. Tune Up Masters Contact: George Mayer	P.O. Box 6068 Camarillo, CA 93011	(805) 375-1100

<u>Tank No:</u>	<u>Size in gal.:</u>	<u>Contents:</u>	<u>Closed in-place or removed?:</u>	<u>Date:</u>
1	1,000 gallons	waste oil	removed	8/9/90

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: Unknown Site characterization complete? YES

Date approved by oversight agency: 9/6/96

Monitoring Wells installed? YES Number: One

Proper screened interval? YES (40- to 55-feet bgs)

Highest GW depth below ground surface: 43.40 feet Lowest depth: 45.99 feet  
Flow direction: Presumed flow direction is southerly

## Leaking Underground Fuel Storage Tank Program

Most sensitive current use: Commercial

Are drinking water wells affected? NO Aquifer name: Unknown

Is surface water affected? NO Nearest affected SW name: None

Off-site beneficial use impacts (addresses/locations): None

Report(s) on file? YES Where is report(s) filed? Alameda County  
1131 Harbor Bay Pkwy.  
Alameda, CA 94502

### Treatment and Disposal of Affected Material:

<u>Material</u>	<u>Amount</u> (include units)	<u>Action (Treatment</u> <u>or Disposal w/destination)</u>	<u>Date</u>
Tank	1-1,000-gallon	Unknown	8/9/90
Soil	51 tons	Gibson Environmental Bakersfield, CA	8/24 & 27/93

### III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued)

#### Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm)		Water (ppb)	
	Before <sup>1</sup>	After <sup>3</sup>	Before	After
TPH (Gas)	320	6	280	230
TPH (Diesel)	860 <sup>2</sup>	180	NA	
TRPH*	130		NA	
Motor Oil	4300 <sup>2</sup>	1,500 <sup>4</sup>	NA	
Benzene	0.09 <sup>2</sup>	0.012	4.5	3.4
Toluene	10	0.16	1.4	1.4
Total Xylenes	8.8	0.074	1.1	0.6
Ethylbenzene	1.8	ND	0.6	0.76
Semi-Volatiles	ND		ND	
Chromium	NA		210	20
Lead	NA		60	40
Nickel	NA		450	20
Zinc	NA		290	50
Cadmium	NA		ND	ND
HVOCs	**		ND	

1-sample collected during tank removal from sidewall of tank pit at 1-foot bgs

2-Sample collected on March 1, 1993 from the overexcavation of the waste oil UST (Sample S-4 at 6- to 8-foot bgs).

3-Confirmatory sample S-6 collected at 6- to 8-foot bgs during the March 1, 1993 excavation which was left in place.

4-Confirmatory sample S-1 collected at 6- to 8-foot bgs during the March 24, 1993 sampling

\*-Total Recoverable Petroleum Hydrocarbons analysis which identifies both lighter and heavier hydrocarbon chains (EPA Method 418.1).

\*\* - 0.37ppm methylene chloride and 0.02ppm TCE identified from tank pit

Leaking Underground Fuel Storage Tank Program

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? **Undetermined**

Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? **Undetermined**

Does corrective action protect public health for current land use? **YES**

Site management requirements: **NA**

Should corrective action be reviewed if land use changes? **Yes**. If excavation takes place in this area, a Health & Safety plan should be prepared to protect construction workers.

Monitoring wells Decommissioned: **NO** Will be decommissioned upon case closure certification.

List enforcement actions taken: **YES**. Notice of Violations (NOVs) issued on 04/18/90; 05/08/90; 01/14/94; and 03/07/94

List enforcement actions rescinded:

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: Juliet Shin Title: Senior HMS  
Signature: *Juliet Shin* Date: 10/10/96

Reviewed by  
Name: Eva Chu Title: Hazardous Materials Specialist  
Signature: *Eva Chu* Date: 9/16/96

Name: Thomas Peacock Title: Supervising HMS  
Signature: *Thomas Peacock* Date: 10-8-96

VI. RWQCB NOTIFICATION

Date Submitted to RB: RB Response: *Approved*  
RWQCB Staff Name: Kevin Graves Title: San. Engineering Asso. Date:

VII. ADDITIONAL COMMENTS, DATA, ETC. *K Graves 10-18-96*

The site is located in the southern section of the City of Oakland, one mile east of San Leandro Bay. It is a triangular piece of property that is bounded by Bancroft Avenue to the north, Harvey Avenue to the south, and an apartment complex to the southeast. The Assessors Parcel Number (APN) for the property is 38-3224-29-3. The site lies at an elevation of 60 feet above

## Leaking Underground Fuel Storage Tank Program

sea level in a transition zone between the bay tidal flats and the Oakland Hills.

The site is currently occupied by an automotive repair facility, called Tune Up Masters, which began operations on site on September 24, 1979. Chevron U.S.A. Products Company operated a gasoline service station on the site up until 1979 when Chevron paid for the removal of the fuel underground storage tanks (USTs) (refer to attached Figures 1 and 2).

On August 9, 1990, one 1,000-gallon waste oil UST was removed from the above site. According to our files, Tune Up Masters operated this UST up until the tank removal. Two soil samples were collected from beneath each end of the UST at approximately 7-feet below ground surface (bgs); one soil sample was collected from the west sidewall at 1-foot bgs; and one soil sample was collected from the excavated stockpiled soil. These soil samples were analyzed for Total Petroleum Hydrocarbons as diesel (TPHd), Total Petroleum Hydrocarbons as gasoline (TPHg), Total Oil & Grease (O&G), halogenated volatiles (Method 8010), and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Soil samples collected from within the tank pit identified up to 420 parts per million (ppm) TPHd, 320ppm TPHg, 7,200ppm O&G, 0.06ppm benzene, 10ppm toluene, 15ppm total xylenes, 1.8ppm ethylbenzene, 0.37ppm methylene chloride and 0.02ppm trichloroethene (TCE). The stockpiled soil sample identified 130ppm TPHd, 220ppm TPHg, 14,000ppm O&G, 0.25ppm benzene, 0.61ppm toluene, 8.8ppm total xylenes, 1.5ppm ethylbenzene, 0.32ppm methylene chloride, 0.02ppm TCE, 0.30ppm 1,2-dichlorobenzene, 0.02ppm 1,3-dichlorobenzene, and 0.07ppm 1,4-dichlorobenzene (refer to attached Figure 3 and Table 1 for sample locations and results). Subsequent to the soil sampling, it appears that the stockpiled soil was placed back into the tank pit.

On December 10, 1992, contractors drilled two borings, B-1 and B-2, at the site. Boring B-1 was drilled next to Chevron's former dispenser area and upgradient of the former 1,000-gallon waste oil UST (refer to attached Figures 4 and 5; Table 2, and Boring Logs). Groundwater was not encountered to a depth of 40-feet bgs in B-1, but the contractor decided to go ahead and convert this boring into a "dry monitoring well", so that water sample could be collected if and when the water table rises. One soil sample was collected from B-1 at 25-feet bgs. Boring B-2 was located approximately 5-feet from the former 1,000-gallon waste oil UST in the assumed downgradient direction (southerly). B-2 was drilled to a depth of 20-feet bgs. Three soil samples were collected from B-2 at 10-, 15-, and 20-feet bgs. This boring was not converted into a monitoring well. All soil samples collected from both borings were analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg), and benzene, toluene, ethylbenzene, and xylenes (BTEX). Additionally, the soil samples from Boring B-2 were analyzed for Total Recoverable Petroleum Hydrocarbons (TRPH). Analysis of these samples identified 0.02 parts per million (ppm) toluene in

## Leaking Underground Fuel Storage Tank Program

Boring B-1. Levels of TRPH were identified in all three samples collected from Boring B-2, ranging from 107ppm to 130ppm. Soil types noted in the two borings were primarily clay with some clayey sand (refer to attached boring logs).

On March 1, 1993, excavation of the previously backfilled contaminated soil in the former waste oil tank pit began. Soil was excavated down to approximately 8-feet bgs. Much of the excavated soil was stained and had a strong odor (Note: Some of the observed contamination may have been the result of the observed ponding of oily water on top of this unpaved location on August 21, 1992). A contaminated lense of soil, at roughly 5- to 7-feet bgs, was noted along all of the tank pit sidewalls. Six soil samples, S-1 through S-6, were collected from the bottom and sidewalls of the excavation (refer to attached Figures 6 & 7 for sample locations). These samples were analyzed for TPHg, TPH as diesel, TPH as motor oil (TPHmo), and BTEX. Analysis results identified up to 860ppm TPHd, 4,300ppm TPHmo, 30ppm TPHg, and low levels of BTEX (refer to attached Table 3 for sample results). Consequently, additional excavation was conducted on March 24, 1993. The excavation was focused on the northeast and southwest sides of the pit, where the greatest contaminant concentrations were identified from the March 1, 1993 sampling event. Two confirmatory soil samples, S-1 and S-2, were collected from this overexcavation. Analysis results identified up to 1,500 ppm TPHmo, 130ppm TPHd, and low levels of TPHg, toluene, and total xylenes (refer to attached Figure 8 and Table 3). The excavated soil was hauled to Gibson Environmental in Bakersfield, California.

On September 7, 1995, one monitoring well, MW-1, was installed within 5-feet south of the tank pit. Three soil samples were collected from this boring at 10-, 20-, and 45-feet bgs. These samples were analyzed for TPHg, BTEX, Oil & Grease, Semi-Volatiles (using Method 8270), halogenated volatiles (Method 8240), and heavy metals. No contaminants were identified above detection limits except for low levels of metals below threshold action limits that appeared to be geogenic. Groundwater was first encountered at 45-feet bgs and stabilized at roughly 42-feet bgs. The well was screened from 40- to 55-feet bgs (refer to attached Figure 9, Table 4, and boring log and well construction data).

Well MW-1 was sampled for four consecutive quarters between 9/19/95 and 07/02/96 and the samples were analyzed for TPHg, BTEX, and heavy metals for the first two quarters, and then heavy metals were excluded from analysis in the latter two quarters of sampling (refer to attached Table 5). Low levels of TPHg and BTEX, which do not appear to pose a threat to current site use, have been identified throughout the four quarters of monitoring. Levels of chromium at 210ppb and lead at 60ppb, which exceeded the drinking water standards for Cr and Pb at 50ppb, were identified in the first quarterly monitoring event. However, in the second quarterly monitoring event, groundwater samples were filtered through a 0.45 micron filter to

## Leaking Underground Fuel Storage Tank Program

identify the dissolved-phase metal concentrations, as opposed to the total metal concentrations. Levels of Cr and Pb in the second quarter monitoring event were below the drinking water standards of 50ppb.

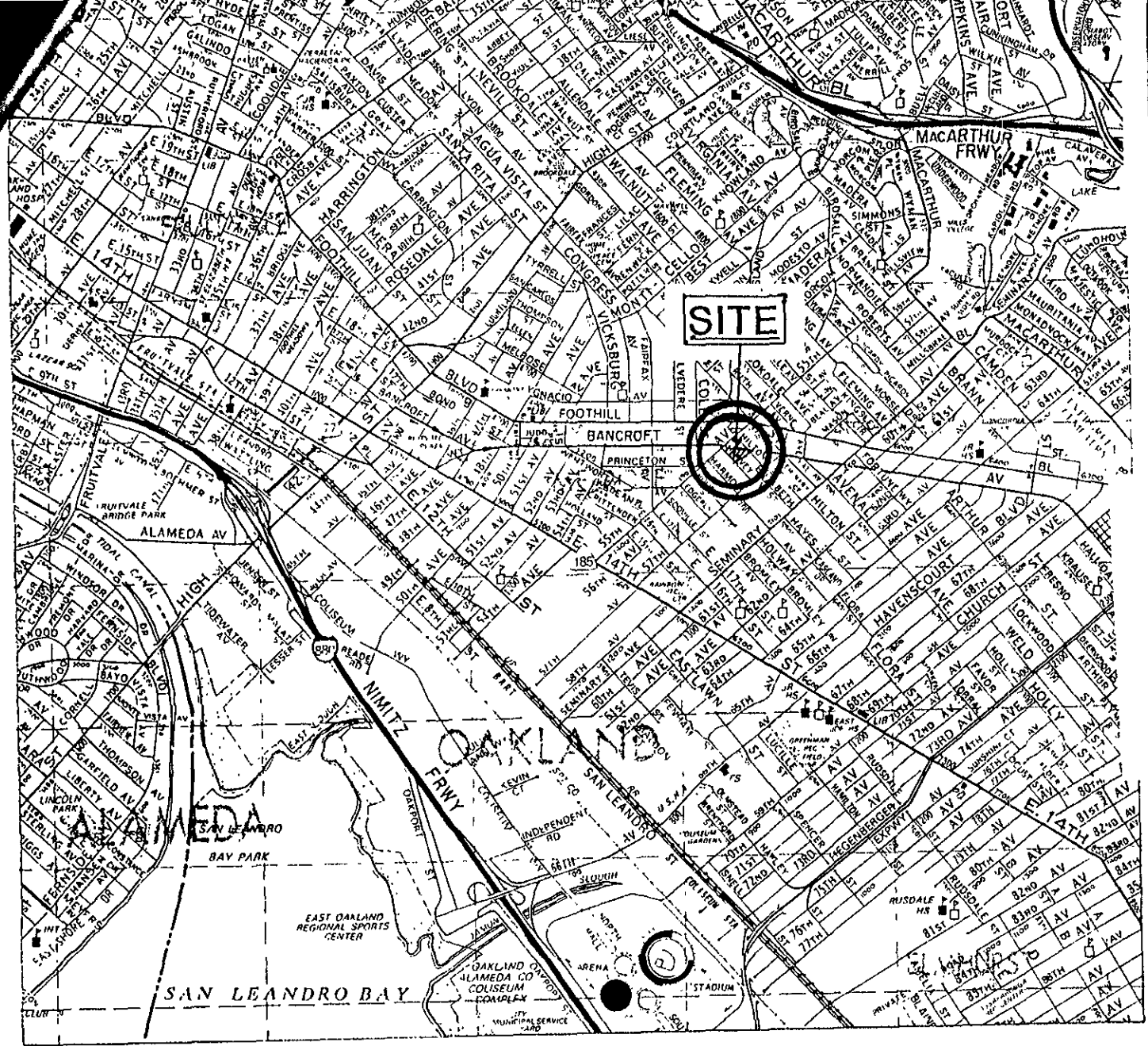
In summary, this site is recommended for case closure for the following reasons:

- o Low levels of benzene, which are protective of human health, have been identified in the groundwater samples collected within the last four quarterly monitoring events. These concentrations are well below all the  $10^{-5}$  risk threshold values given in the American Society for Testing and Materials' Risk-Based Corrective Action (ASTM RBCA) Tier 1 guidelines for a commercial site
- o Groundwater in the immediate vicinity is apparently not used for drinking purposes. Additionally, levels of benzene in groundwater at the site have been below ASTM RBCA's  $10^{-5}$  risk for groundwater ingestion in residential areas.
- o Polynuclear Aromatic Hydrocarbons (PNAs), which are considered the driving constituents in heavier hydrocarbons, were not identified in the groundwater.
- o Based on the levels of TPH identified in the tank pit excavation, it appears that the soil contamination is limited in extent. Additionally, the soil types identified at the site, clay and clayey sand, will most likely assist in reducing significant migration of the observed heavy hydrocarbon contamination in the future.

CHECKED BY

DATE

BY



SCALE: 1" = 2200'

### VICINITY MAP

SOIL SAMPLING AND CHEMICAL TESTING  
 UNDERGROUND STORAGE TANK REMOVAL  
 TUNE-UP MASTERS  
 5525 BANCROFT AVENUE  
 OAKLAND, CALIFORNIA

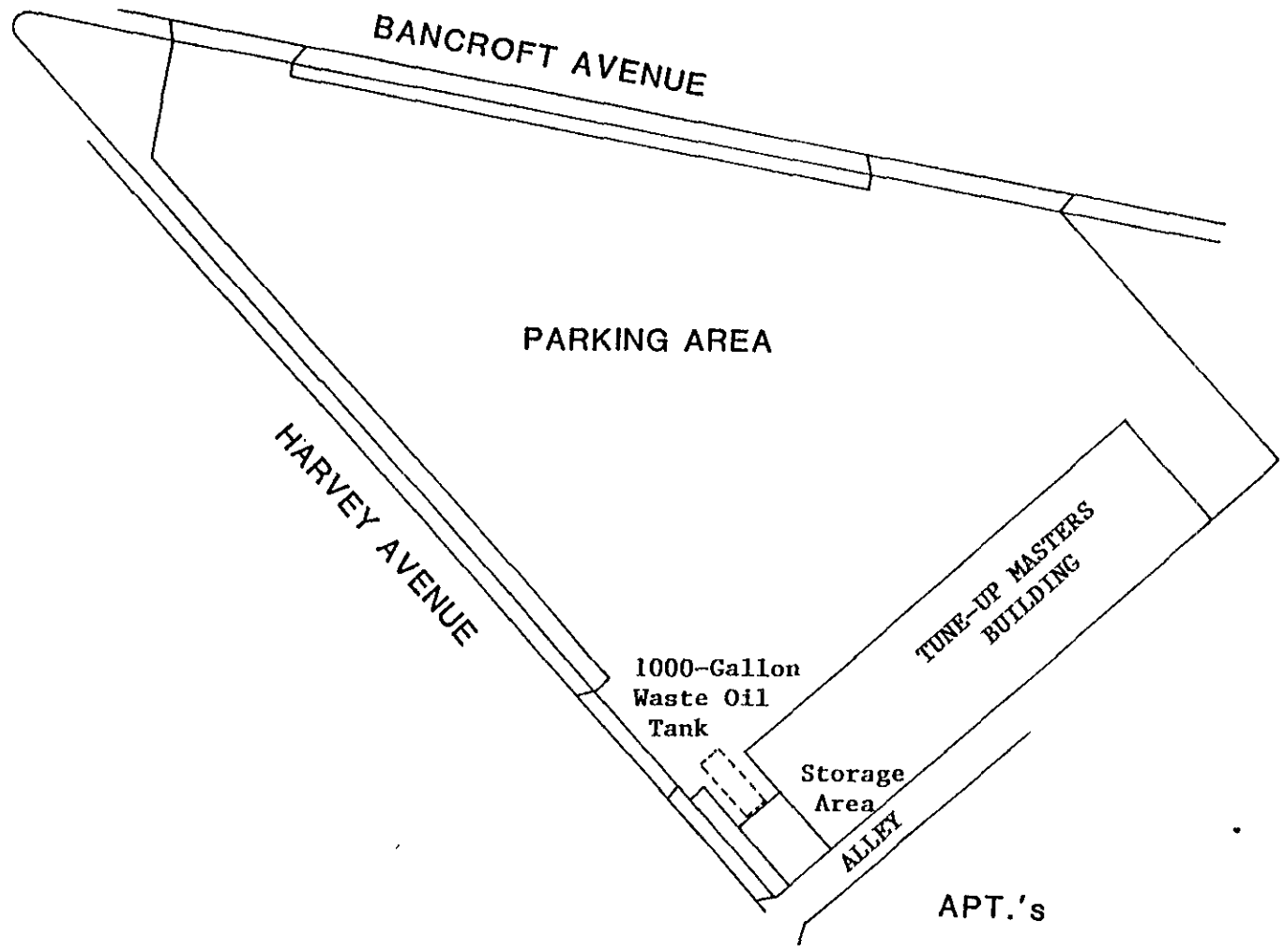
Job No. P90160  
 August 1990  
 FIGURE: 1

**BSK**  
 & Associates





Scale: 1" = 30'



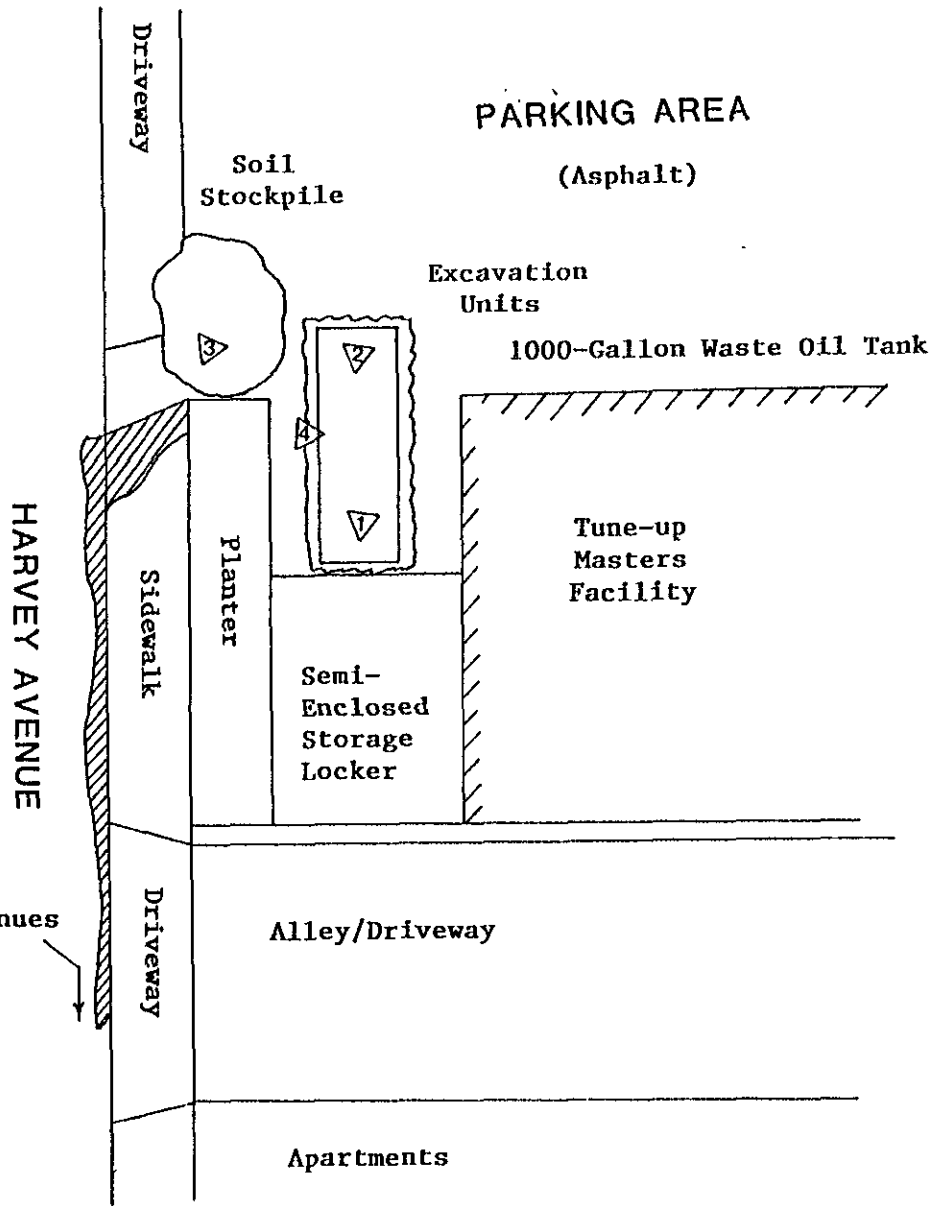
### SITE PLAN

SOIL SAMPLING AND CHEMICAL TESTING  
 UNDERGROUND STORAGE TANK REMOVAL  
 TUNE-UP MASTERS  
 5525 BANCROFT AVENUE  
 OAKLAND, CALIFORNIA



Job No. P90160  
 August 1990  
 FIGURE: 2



Scale: 1"=10'



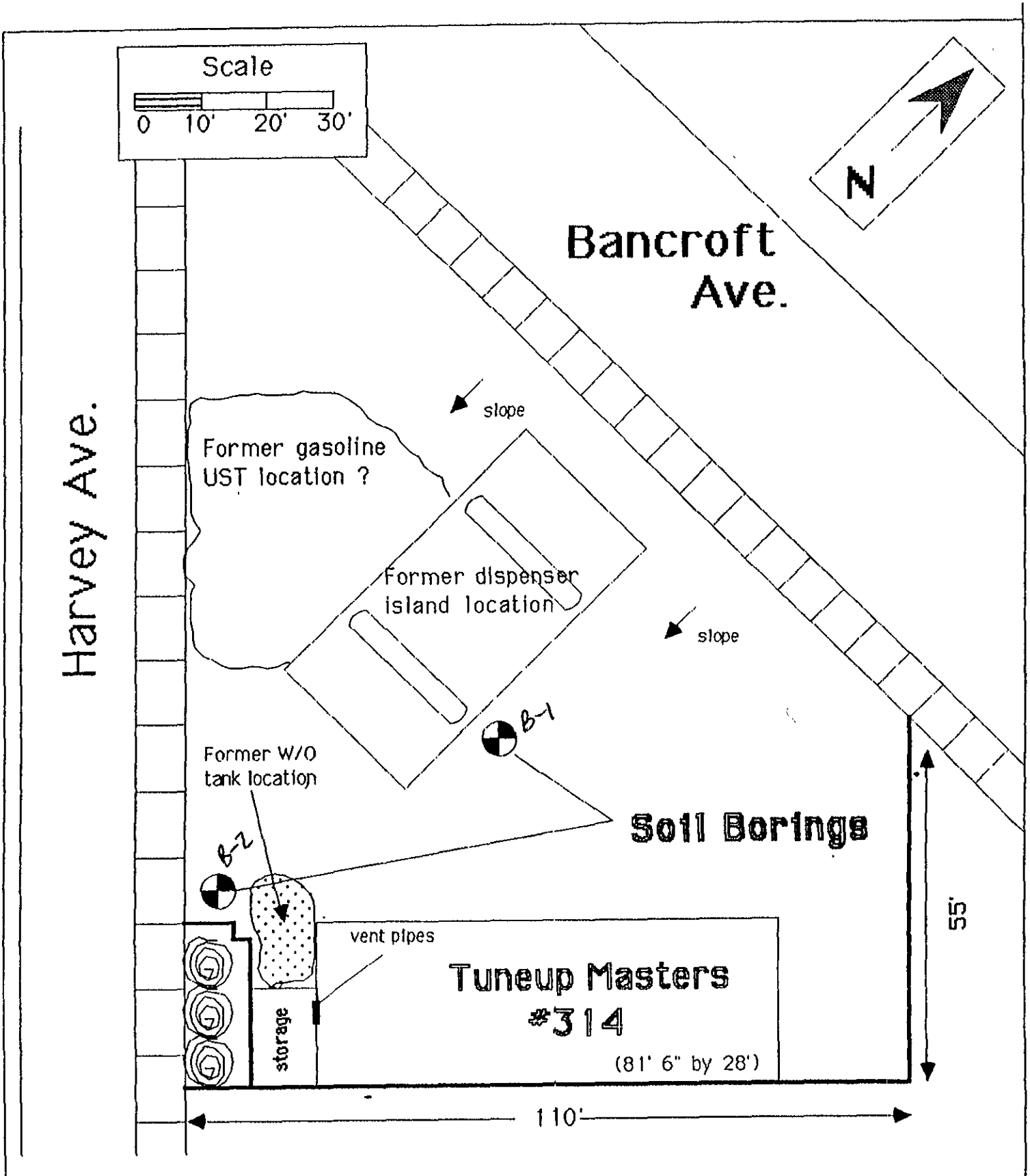
**LEGEND:**

-  - Denotes Soil Sample Location and Sample Number
-  - Denotes Oil-Stained Surface

**SOIL SAMPLING LOCATIONS**

CHECKED BY

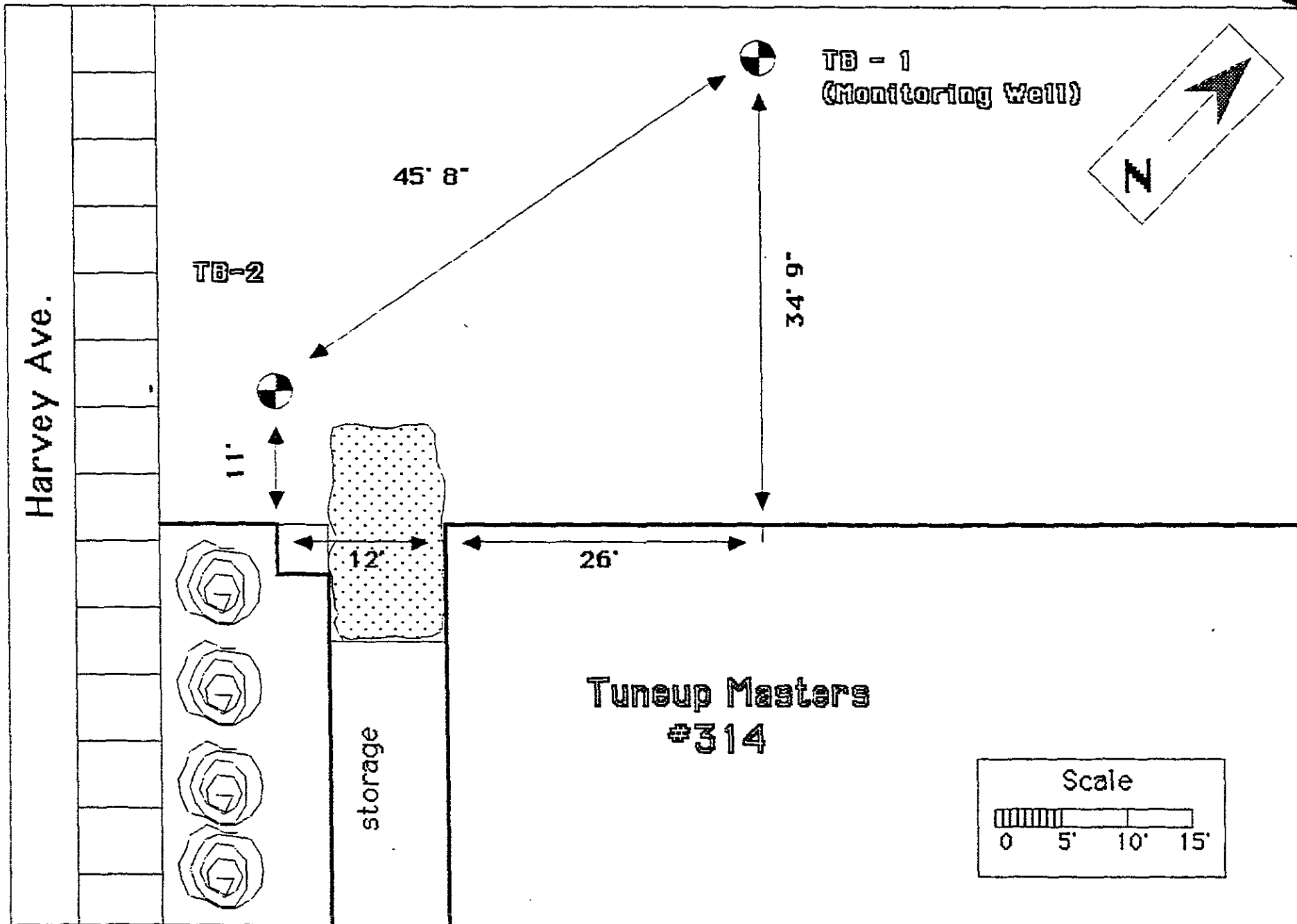
DATE



Tuneup Masters #314  
5525 Bancroft Ave.  
Oakland, Ca

**AAT Environmental**

**Figure 2**  
Site layout



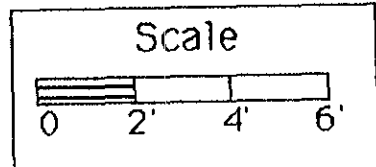
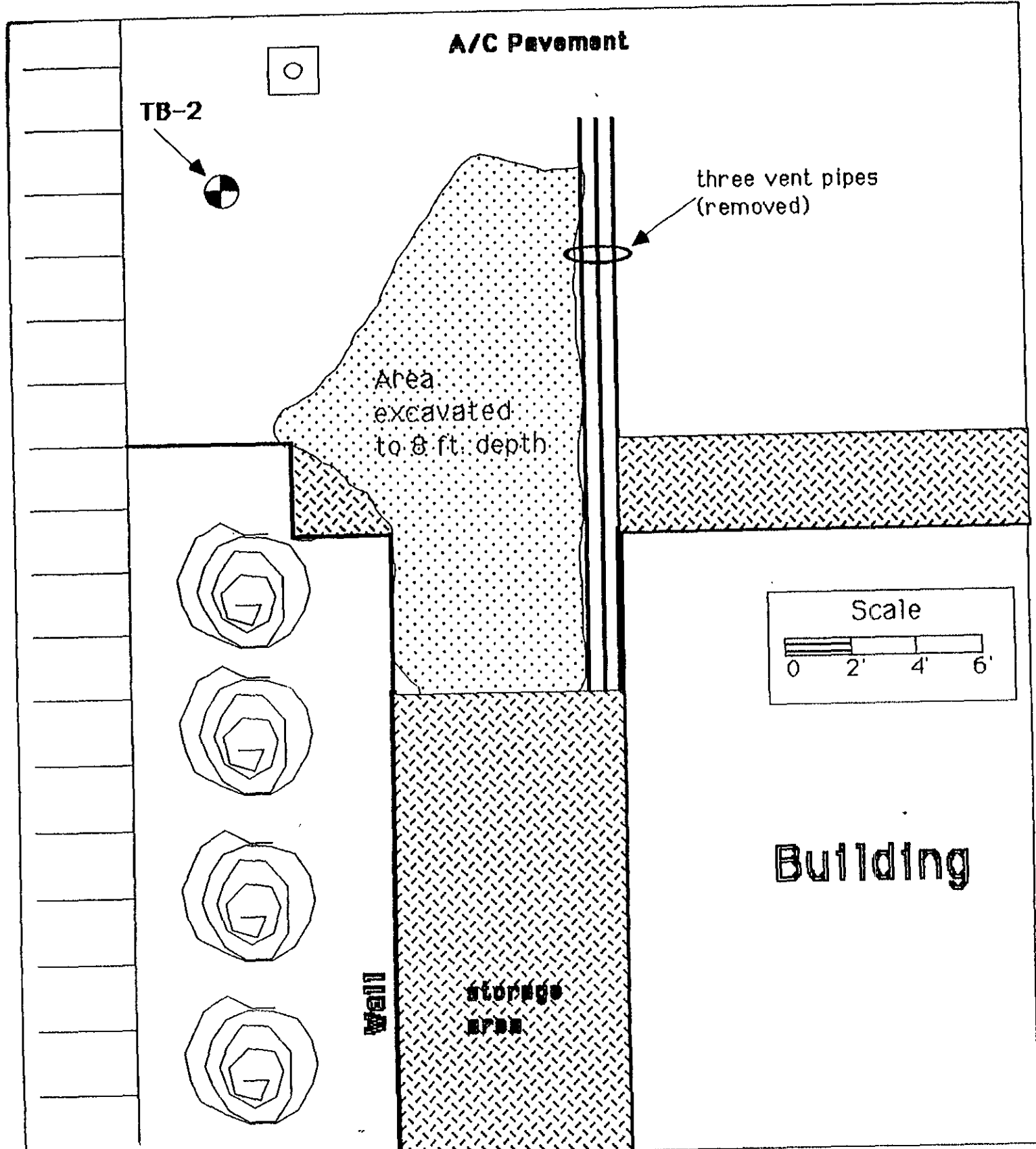
Tuneup Masters #314  
5525 Bancroft Ave.  
Oakland, Ca

AAT Environmental

Figure 3

Site layout - Detail

Fig. 5

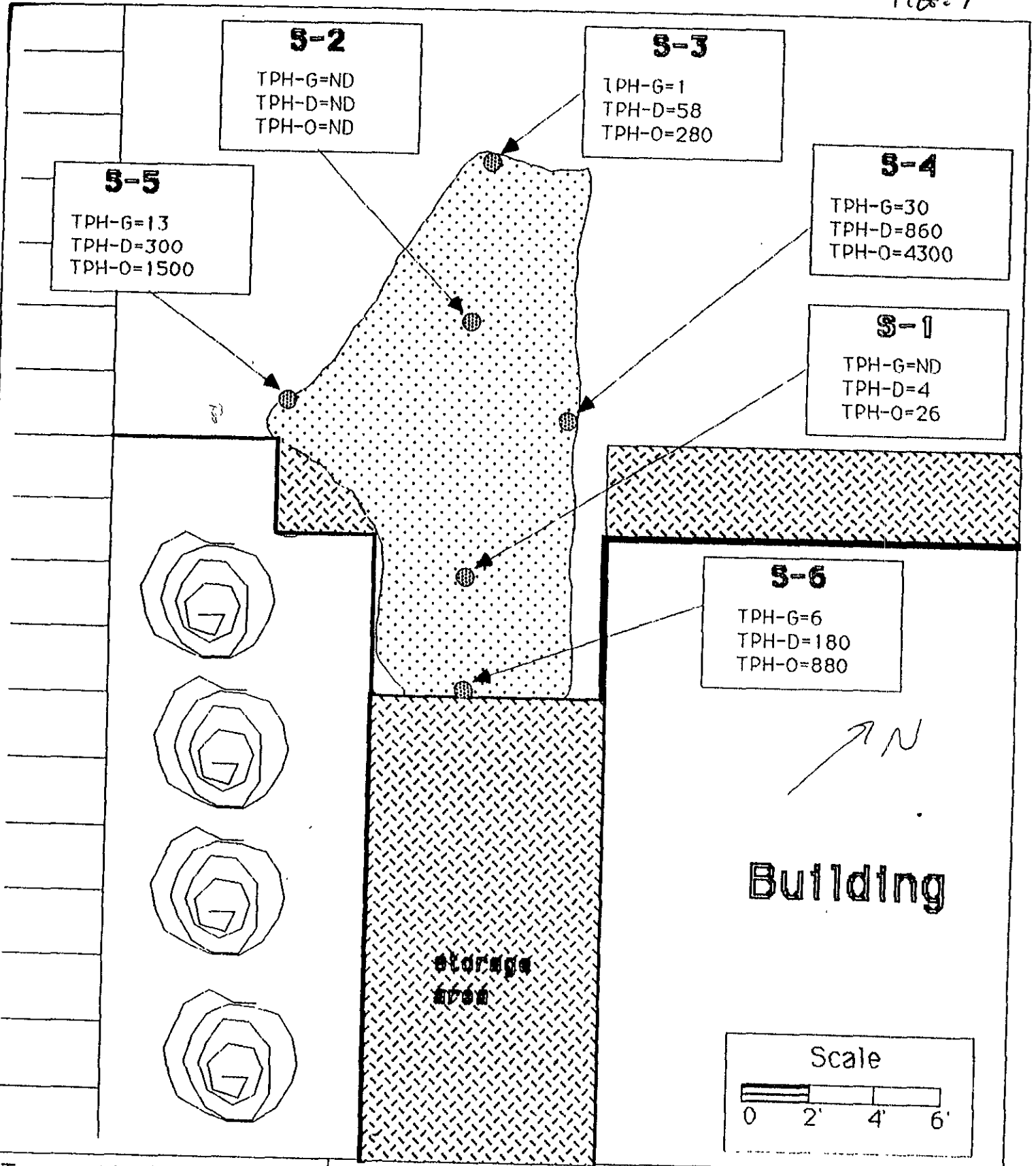


Building

Tuneup Masters #314  
5525 Bancroft Ave.  
Oakland, Ca

AAT Environmental

Figure 2  
March 1, 1993



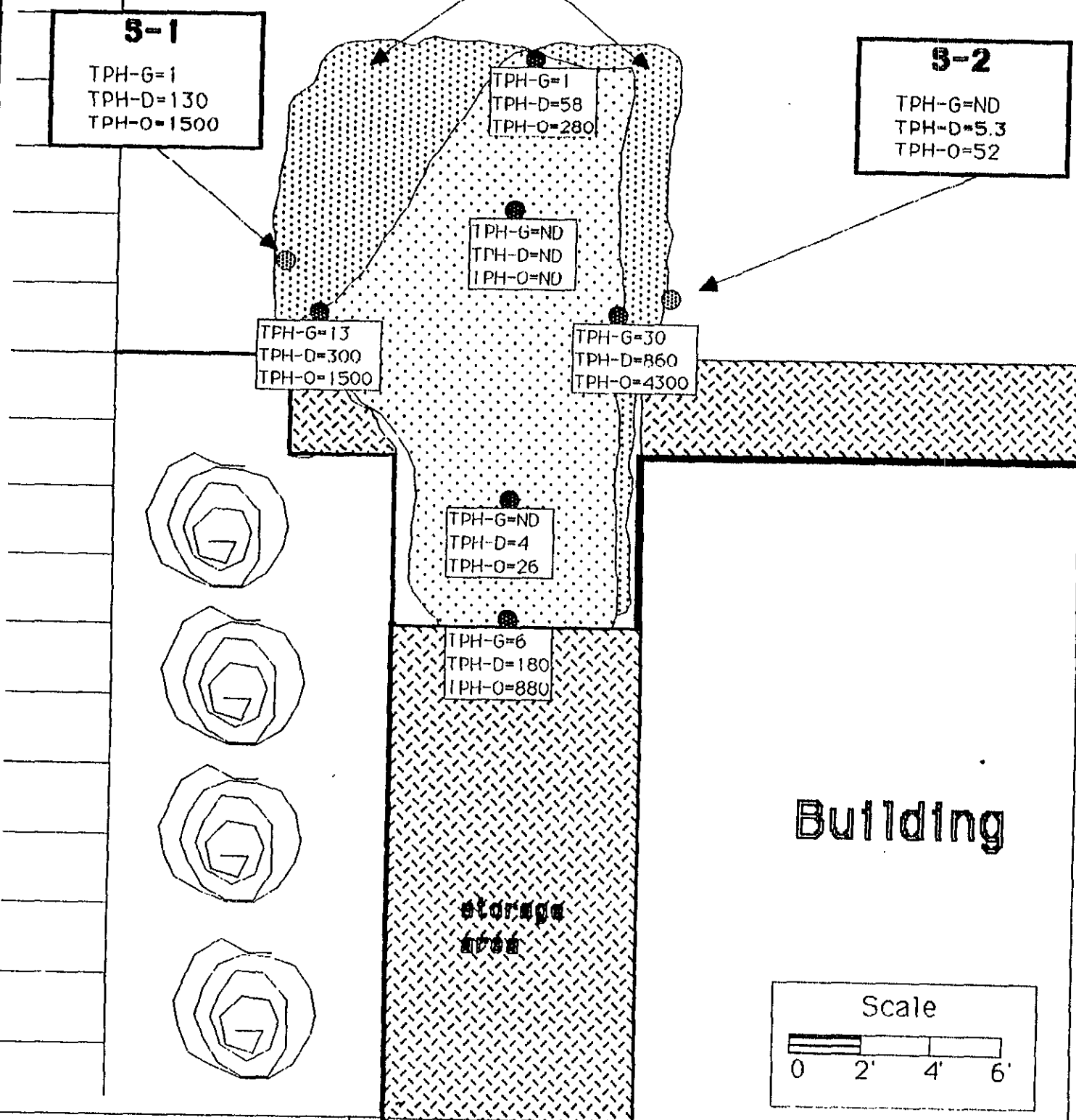
Tuneup Masters #314  
 5525 Bancroft Ave.  
 Oakland, Ca

**AAT Environmental**

**Figure 3**

March 1, 1993

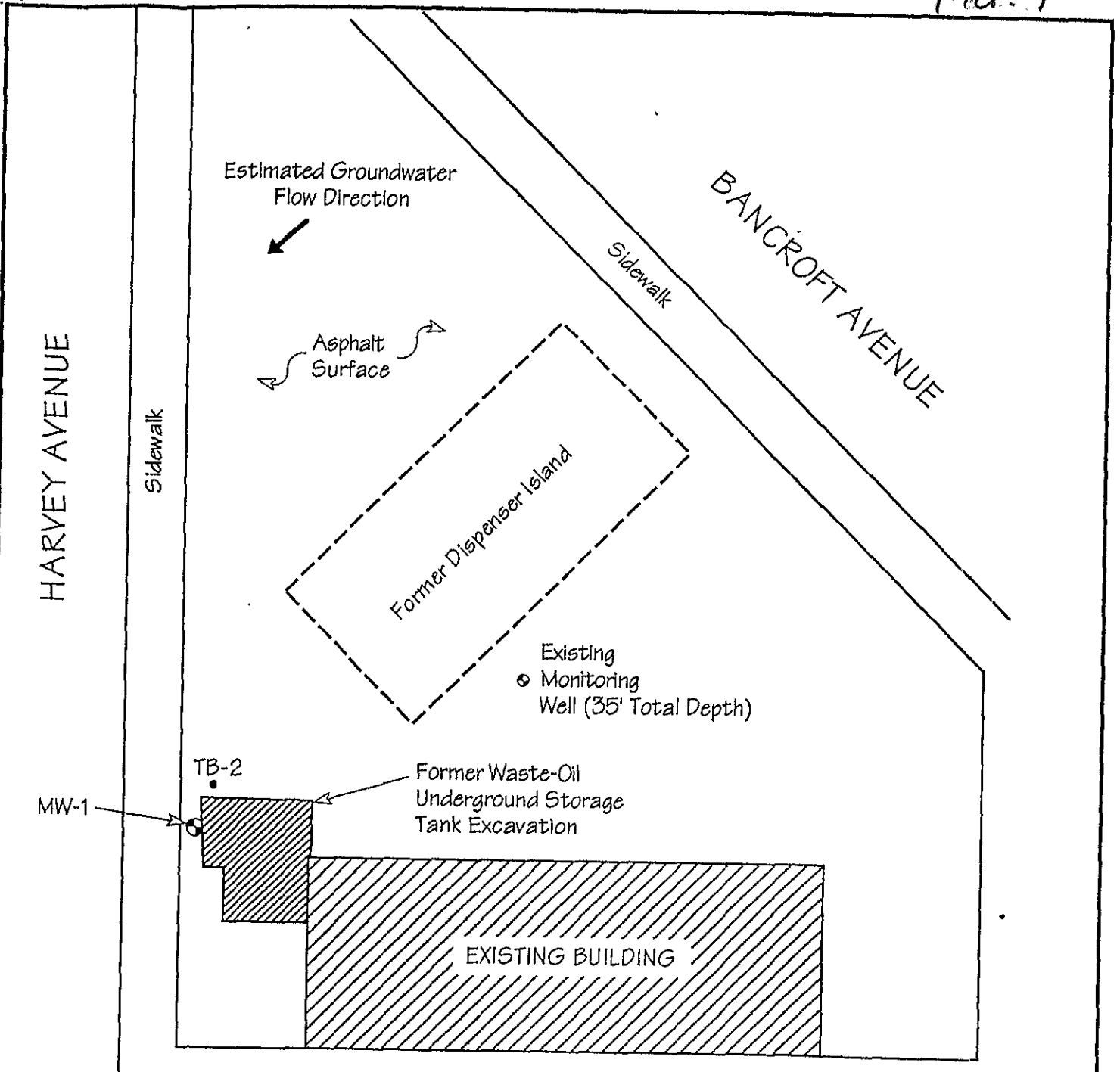
**Additional soil excavated on 24 March**



Tuneup Masters #314  
5525 Bancroft Ave.  
Oakland, Ca

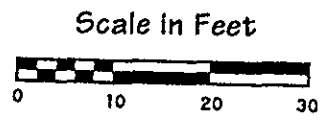


**Figure 4**  
Confirmation Samples  
March 24, 1993



**Legend**

- MW-1 - Groundwater Monitoring Well
- TB-2 - Boring Location
- Former UST Excavation



Title: <b>Site Plan</b> <b>5525 Bancroft Avenue</b> <b>Oakland, California</b>	
Figure Number: <b>2</b>	Scale: <b>1" = 20'</b>
Drawn By: <b>JVC</b>	Date: <b>7/25/96</b>
Project Number: <b>6289-1.0</b>	
ACC Environmental Consultants 7977 Capwell Drive, Suite 100 Oakland, California 94621 (510) 638-8400 Fax: (510) 638-8404	



60 or more, with a gradient generally following the hillside. An irrigation well completed in 1977 1,400 feet southeast found groundwater at 61 feet; while wells drilled 3,000 feet east found groundwater at depths of 13 to 18 feet in 1990.

Site History

The property is presently occupied by a "Tuneup Masters" automotive repair facility which began operation on the site on September 24, 1979. Chevron Oil Company operated a gasoline service station on the property prior to 1979. It appears that Chevron's gasoline storage tanks were removed prior to their departure. No gasoline has been dispensed at the site since Tuneup Masters moved in.

A 1,000 gallon waste oil tank located near the southwest corner of the property was removed in August of 1990 at the direction of Tuneup Masters. Four soil samples were collected in conjunction with the tank removal by BSK & Associates of Pleasanton, Ca. The soil samples were analyzed for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX), Total Petroleum Hydrocarbons - Gasoline (TPH-G), Total Petroleum Hydrocarbons - Diesel (TPH-D), for total Oil and Grease, and for Purgeable Halocarbons. The test results are shown in Table 1 below.

**Table 1**

UST Removal Soil Samples

Sample	S-1	S-2	S-3	S-4
Location	S. end, 7 ft.	N. end, 7 ft.	stockpile	sidewall, 1 ft.
B	0.05	0.06	0.25	ND
T	0.04	0.07	0.61	10
E	ND	0.28	1.5	1.8
X	1.1	3.2	8.8	15
TPH-G	96	120	220	320
TPH-D	160	210	130	420
O & G	7200	4700	14000	5200
Halocarbon	*	*	*	*

**Table 2**

## Soil Sample Results

Sample	Benzene	Toluene	Ethylben.	Xylenes	TPH-G	TRPH
1-25	ND	0.02	ND	ND	ND	-
2-10	ND	ND	ND	ND	ND	107
2-15	ND	ND	ND	ND	ND	130
2-20	ND	ND	ND	ND	ND	123

The above results indicate there have not been any significant releases of gasoline in the vicinity of the two soil borings. The finding of Toluene at a concentration of 0.02 ppm (which is the laboratory established detection limit) was probably caused by the plastic tape used to seal the sample containers. The previous finding of up to 320 ppm TPH-Gasoline during the waste oil tank removal was apparently isolated to the soil immediately adjacent the UST, since no gasoline constituents were detected in boring #2.

The detection of Total Recoverable Petroleum Hydrocarbons (TRPH) at levels of 100 to 150 ppm appears anomalous. TRPH (or Oil and Grease) was previously detected in soil from the UST excavation at levels of up to 14,000 ppm within the stockpile, and 7,200 ppm at 7 feet below grade. Sample 2-10 was recovered from a location approximately 3 feet vertically and 5 feet laterally from the 7,200 ppm sample. A reduction of three orders of magnitude over this distance is not unreasonable, however this doesn't explain the 100 ppm levels at 15 and 20 feet below grade.

The most likely explanation for the elevated TRPH is interference with the analysis caused by natural constituents in the soil. EPA Method 418.1 uses Freon 113 to extract organic components from a soil or water matrix, and then uses infrared atomic absorption to quantify the hydrocarbon concentration. The Freon will also extract naturally occurring organic material derived from the breakdown of plant and animal matter. A cleanup step using Silica Gel is included to separate the natural substances from hydrocarbon contaminants, but this step is seldom 100 percent effective, particularly in a highly organic matrix.

Sample Collection and Testing

Soil samples were collected from areas at the bottom and sidewalls. See the accompanying scale diagrams for locations and depths below grade for all samples.

The samples were collected from a backhoe bucket or with a drive sampler in 2 inch by 3 inch brass cylinders using standard procedures. The cylinders were covered on each end with aluminum foil and plastic end caps and then sealed and labeled with the sample number, time collected, and chemical constituents to be analyzed for. The cylinders were placed in a pre-cooled ice chest containing blue ice and transported to a laboratory in accordance with EPA protocol.

Chemical analysis was conducted at a California Department of Health Services (DHS) certified hazardous waste laboratory. All samples were tested for Benzene, Toluene, Ethylbenzene, Total Xylenes, Total Petroleum Hydrocarbons - Gasoline, Total Petroleum Hydrocarbons - Diesel, and Total Petroleum Hydrocarbons - Motor Oil. Table 1 shows a summary of the chemical analysis results. For more detailed information on sample locations and chemical analysis, please refer to the attached site plan and the certified analytical report.

Samples - March 1, 1993 and March 24, 1993 (ppm)

Sample	Date	B	T	E	X	Gas	Diesel	Oil
S-1	1 Mar	ND	ND	ND	0.005	ND	4	26
S-2	"	ND	0.017	ND	ND	ND	ND	ND
S-3	"	ND	0.03	ND	0.007	1	58	280
S-4	"	0.093	0.20	0.026	1.3	30	860	4300
S-5	"	0.041	0.18	0.058	0.69	13	300	1500
S-6	"	0.012	0.16	ND	0.074	6	180	880
S-1	24 Mar	ND	ND	ND	0.019	1	130	1500
S-2	"	ND	0.006	ND	ND	ND	5.3	52

with few gravel to approximately 14.5 feet below ground surface (bgs). This material was observed to be very moist to wet. Because the area of investigation is uncapped, this interval may be acquiring surface water and can likely be a perched zone during wet times of the year, however no free water was encountered during this investigation, at this level. Below 14.5 feet bgs the soil encountered was yellowish brown sandy clay with slight layering of sandier material which was gradually increasing in sand content to a depth of 34 feet bgs. Below 34 feet bgs the material encountered was brown medium grain gravelly sand which increased in sand content to 39.5 feet bgs. Brown fine grain sand with few gravel was observed from 39.5 to the bottom of the boring of 55 feet bgs. Free flowing groundwater was encountered at 48 feet within this interval and rose to 45 feet bgs indicating that the aquifer is under semi-confined conditions.

An HNu photoionization detector (PID) was used during drilling and sampling procedures to detect field evidence of volatile hydrocarbon vapor in the soil. No elevated field indications of petroleum hydrocarbons (i.e. odor and discoloration) were detected in the soil collected from the boring.

Three soil samples were collected from the boring for analysis. The depths the samples were collected were based requirements of Alameda County Health Care Services Agency for subsurface evaluation. The samples chosen for analysis were collected at depths of 10, 20 and 45 feet bgs. Upon collection, the samples ends were immediately sealed with Teflon tape and plastic end caps. The samples were then labeled with a unique number and stored in a pre-chilled insulated container for transport to Chromalab, Inc. for analysis. The samples were each analyzed for TPHg with BTEX by EPA test method 8015/8020, TPHd by EPA test method 8015-modified, total oil and grease by EPA test method 5520 B&F, five LUFT metals including Cadmium, Chromium, Lead, Nickel and Zinc by EPA test method 6010 and semivolatile organics by EPA test method 8270. Analytical results and chain of custody forms are provided in Appendix C and summarized in Table 1.

Table 1 - Sample Results, Soil

Sample No.	Depth	TPHg/ BTEX	TEPH/ Oil and Grease	8270, PNA, PCB	Cadmium	Chromium	Lead	Nickel	Zinc
B1-10	10	ND	ND	ND	ND	16	4.1	36	30
B1-20	20	ND	ND	ND	ND	17	7.3	51	26
B1-45	45	ND	ND	ND	ND	15	4.2	29	26

- Notes: All Results in parts per million (ppm)
- TPHg = Total Petroleum Hydrocarbons as gasoline
  - BTEX = benzene, toluene, ethylbenzene, xylenes
  - TEPH = Total Extractable Petroleum Hydrocarbons
  - 8270 = semivolatile hydrocarbon
  - PNA = Polynuclear Aromatic Hydrocarbons
  - PCB = Polychlorinated Biphenyls
  - ND = below laboratory detection limits

The well was sampled using a disposable polyethylene bailer attached to new string. From the monitoring well, approved, laboratory-supplied sample vials were filled to overflowing and sealed to ensure air was not trapped in the vial. Once filled, vials were inverted and tapped to test for air bubbles. Sample containers were labeled with self-adhesive, preprinted tags. All vials were stored in a pre-chilled, insulated container pending delivery to a state-certified laboratory for analysis.

Water purged during the development and sampling of the monitoring well was temporarily stored on site in Department of Transportation approved 55-gallon drums pending laboratory analysis and proper disposal.

#### 4.0 RESULTS OF GROUNDWATER SAMPLING

The groundwater sample collected from the well was submitted to Chromalab, Inc., following chain of custody protocol. The groundwater sample was analyzed for TPHg and BTEX by EPA Methods 5030/8015/8020 Modified. A copy of the chain of custody record and laboratory analysis report is attached as Appendix 2. Dissolved gasoline constituents were detected in the well at a concentration of 230 parts per billion (ppb). A summary of groundwater sample results is presented in Table 1.

TABLE 1 - GROUNDWATER SAMPLE ANALYTICAL RESULTS FOR WELL MW-1

Sample Date	Water Level	TPHg µg/L	B µg/L	T µg/L	E µg/L	X µg/L	Cd mg/L	Cr mg/L	Pb mg/L	Ni mg/L	Zn mg/L
9/19/95	44.89	200	0.8	0.7	<0.5	1.1	<0.005	0.21	0.06	0.45	0.29
12/21/95	45.99	230	<0.5	0.7	<0.5	<0.5	<0.005	0.02	0.04	0.02	0.05
03/21/96	43.99	280	4.5	<0.5	<0.5	0.75	---	---	---	---	---
07/02/96	43.40	230	3.4	1.4	0.6	0.76	---	---	---	---	---

Notes: B = benzene; T = toluene; E = ethylbenzene; X = total xylenes;  
Cd = Cadmium; Cr = Chromium; Pb = lead; Ni = Nickel; Zn = Zinc  
µg/L = micrograms per liter (equivalent to ppb);  
mg/L = milligrams per liter (equivalent to ppm);  
\*Water levels reported in feet bgs measured from the top of well casing.

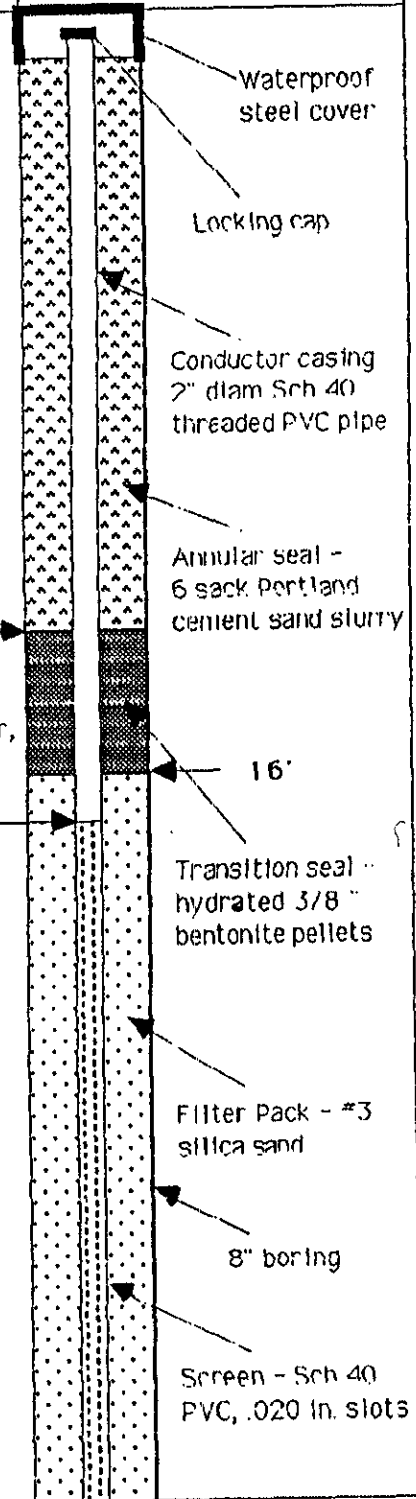
#### 5.0 DISCUSSION

This report documents the fourth consecutive quarterly groundwater monitoring conducted for well MW-1 at 5525 Bancroft Avenue, Oakland, California. Groundwater sample results indicate minor detectable concentrations of gasoline constituents.

# BORING LOGS

*Handwritten initials*

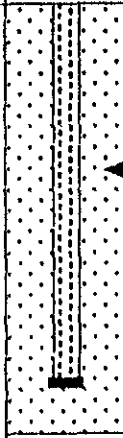
DEPTH (feet)	SAMPLE #	U.S.C.	BLOWS	PID	Test Boring 1.	
					Soil Description	date started Dec 10, 1992
						date completed Dec 11, 1992
						logged by D. Charter
					Asphalt paving/gravel baserock	
5					Heavy, plastic, light brown clay, no odor	
					sandy clay	
10	1-10	CH	55	2.0	Brown sandy clay, black organic streaks, blocky fracture, plastic	
					very little sand	
15	1-15	CH	42	0.3	Brown sandy clay, few quartz clasts to 3mm, angular, no rounding, poorly sorted	
20	1-20	CH	38	0.0	Brown sandy clay, v poorly sorted, predominantly quartz, 10% lithic, 10% feldspar, subangular to subrounded	
25	1-25	SC	73	0.2	Brown, gravelly, clayey sand, clasts to 35mm, sub-rounded, metamorphic	
30	1-30	CH	43	16.5	Brown silty clay, little sand, no gravel, organic	



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5525 Bancroft Ave.  
Oakland, Ca

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**Figure 4**  
Soil Log


DEPTH (feet)	SAMPLE #	U.S.C.	BLOWS	PID	Test Boring 1	
					Soil Description	
					date started	Dec 10, 1992
						date completed Dec 11, 1992
						logged by D. Charter
30		CH	43		Silty clay, brown, little or no sand	 <p>NOTES</p> <p>#3 sand filter pack</p> <p>37' depth</p>
35		GC/ SC	78		Coarse, organic, gravelly, clayey sand, very heterogeneous clasts, some broken, rounded pebbles, some rocks weathered to clay in place after deposition	
40		GC	80		gravelly, clayey sand clasts to 3.5 cm, subrounded, metamorphic	
<p>Boring terminated at 40 Ft below Grade. Groundwater not encountered during drilling.</p>						

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**Figure 5**

Soil Log

DEPTH (feet)	SAMPLE #	U.S.C.	BLOWS	PID	Test Boring 2		
					Soil Description	date started Dec 10, 1992	
						date completed Dec 10, 1992	
					logged by D. Charter		
							NOTES
5	2-05	CL/ CH	38	1.7	Asphalt paving/gravel base	No odor or obvious contamination  	
					light tan sandy clay, easy drilling, no gravel, angular to subangular grains		
					begin more reddish, sandy @ 9 ft		
10	2-10	SC	60	0.0	Brown, clayey sand, unsorted, very heterogeneous, coarse, < 50% quartz, angular to sub rounded clasts, some weathered after deposition		
15	2-15	CH	34	0.0	Brown, heavy, sandy clay, blocky fracture, organic		
20	2-20	CH	38	0.0	Organic, sandy, silty clay		
					Boring terminated at 20 ft.		

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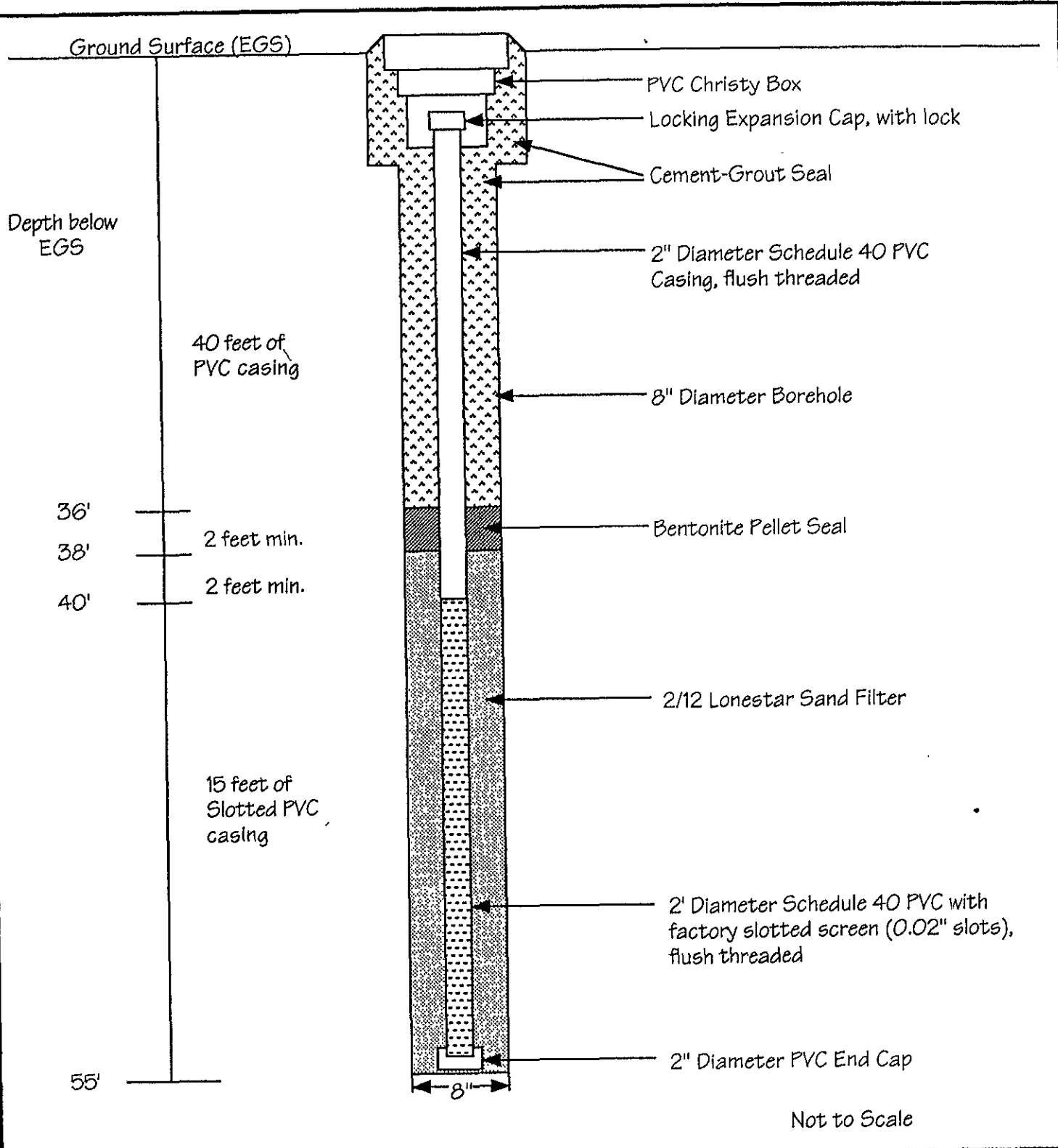
**AAT Environmental**

**Figure 6**

Soil Log



# WELL CONSTRUCTION INFO



Not to Scale

ACC Environmental Consultants 7977 Capwell Drive, Suite 100 Oakland, CA 94621	Job No.: 6289-1.0	Schematic of Monitoring Well No.: MW-1
	Date: 10/04/95	Tuneup Masters 5522 Bancroft Avenue Oakland, CA

# BORING LOG

Gregg Drilling and Testing B61 Drill Rig	Blows/6"	HNu (ppm)	SAMPLE #	SAMPLE	Depth (feet)	Equipment: 8" Hollow Stem Auger Logged By: M. Kaltreider PROJECT: Alcal, Santa Rosa Start Date: 8/25/95
Soil color described using Munsel soil color charts <u>Color code</u> (10YR-5/6)  (10YR-4/4)  (2.5Y-6/3)					0	Brown clayey sand (SC) to sandy clay (CL) soft to slightly stiff, plastic, very moist (possible tank backfill).
		12	0	B1-10	10	Yellowish brown sandy gravel (GW), with 10% fines and 20% med sand, angular gravel, very dense, v. moist to wet.
		7	0	B1-50	15	Yellowish brown sandy clay (CL) with mottling of black material, (<1% gravel), 20% v. fine sand, plastic, stiff, moist.
		15	1-2	B1-20	20	
		11	0	B1-25	25	Slight layering of siltier and sandier material. Sand content increases with depth to 25-30% sand.
		17	0	B1-30	30	
		30	0	B1-35	35	Brown gravelly sand (SW), med. to fine grain with 10% fines, dense, v. moist to wet
		14	0	B1-40	40	Brown clayey sand (SC) w/5% gravel, 15% fines, dense, very moist.
		22	0	B1-45	45	Brown sand (SP), med. to fine grain, 5-10% fines, dense, v. moist.
		50	0		50	Brown sand (SP) with few gravel, med. sand, dense, wet to saturated.
		0			55	BOTTOM OF BORING @ 55 FEET Converted into monitoring well MW-1
					60	
					65	
					70	

ACC Environmental Consultants, Inc. 7977 Capwell Drive, Suite 100 Oakland, CA 94621 (501) 638-8400 Fax: (510) 638-8404	JOB NO.: 6289-1.0	<b>Boring of MW-1</b>
	DATE: 9/7/95	Tuneup Masters 5522 Bancroft Avenue Oakland, California