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ENVIRONMENTAL
CONSULTANTS

January 28, 1993

Mr. Steve Chrissanthos
Alameda Cellars
1702 Lincoln Avenue
Alameda, CA 94501

RE: Field Investigation
and Results of Groundwater Sampling at
2425 Encinal, Alameda, California
Permit No. 92659

Dear Mr. Chrissanthos:

Thank you for providing ACC with the opportunity to present this report. The enclosed report describes the materials and procedures used during a field investigation performed at 2425 Encinal, Alameda, California.

ACC's investigative approach was to drill five borings and convert three of them into groundwater monitoring wells. This work was performed to evaluate the lateral and vertical extent of soil contamination and to determine hydrocarbon concentrations in groundwater.

Soil samples collected during drilling were submitted to Geochem Environmental Laboratories for petroleum hydrocarbon analyses, in accordance with the "Tri Regional Guidelines for Underground Storage Tank Sites".

The results of the chemical analysis of the soil samples indicated elevated levels of Total Petroleum Hydrocarbons (TPH) as gasoline and Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) from all five of the borings.

Analysis of the groundwater samples from monitoring wells MW-1, MW-2 and MW-3 indicated elevated concentrations of hydrocarbons.

If you have any comments regarding this report, please call me.

Sincerely,

Misty C. Kaltreider
Geologist

cc: Mr. Richard Hiett - Regional Water Quality Control Board
Ms. Juliet Shin - Alameda County Health Care Services - Division of Hazardous Materials
Mr. Wyman Hong - Alameda County Flood Control and Water Conservation District, Zone 7

1000 Atlantic Avenue, Suite 110 • Alameda, CA 94501 • (510) 522-8188 • FAX: (510) 865-5731

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ENVIRONMENTAL
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SOIL AND GROUNDWATER INVESTIGATION

2425 ENCINAL
ALAMEDA, CALIFORNIA

January 1993

Prepared for:
Mr. Steve Chrissanthos
Alameda Cellars
1702 Lincoln Avenue
Alameda, CA 94501

Prepared by:

Prepared by:

Misty Kaltreider,
Project Geologist

Reviewed by:

Elizabeth Herbert, R.G.
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4819
STATE OF CALIFORNIA

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1.0 INTRODUCTION

This report presents the procedures and findings of a soil and groundwater investigation conducted by ACC Environmental Consultants, Inc., ("ACC") on behalf of Mr. Steve Chrissanthos and Alameda Cellars, site owner at 2425 Encinal, Alameda, California. The project objective, as described in the Work Plan prepared on December 9, 1992, was to drill five soil borings to evaluate the extent of soil contamination. Three of the borings were converted into 2-inch diameter groundwater monitoring wells to determine if groundwater has been impacted from the previous underground storage of gasoline.

During the field investigation, four borings were drilled to evaluate the lateral extent of contamination near the previous tank excavation. A fifth boring was drilled beneath the former dispensing island. During drilling, groundwater was encountered approximately between 9 and 14 feet below present grade. Two of the three monitoring wells were completed to approximately 15 feet below present grade. The third well was completed to approximately 18 feet below grade. Groundwater samples from the wells were analyzed to determine what impact any release may have had on the groundwater.

2.0 BACKGROUND

The site is presently occupied by Alameda Cellars, a commercial liquor store. The property is owned by Mr. Steve Chrissanthos. On March of 1990, two 10,000-gallon gasoline tanks were removed from the above referenced site. Analysis of the soil samples collected from beneath the two gasoline tanks indicated up to 710 parts per million (ppm) of Total Petroleum Hydrocarbons (TPH) as gasoline. Soil samples collected from beneath the diesel tank indicated less than detectable levels of TPH as diesel.

Per request of Alameda County Health Care Services - Hazardous Materials Division, this preliminary Site Assessment was conducted to further evaluate the soil contamination from the gasoline release on-site.

ACC was retained by Mr. Chrissanthos, to perform the work requested by the Alameda County Health Care Services.

3.0 FIELD PROCEDURES

Borings B-1 through B-5 were drilled on December 23, 1992 using a B-53 mobile drill rig equipped with 6 to 8-inch outside diameter hollow-stem augers. Concurrent with drilling, subsurface soil samples were obtained with a Modified California Sampler equipped with three six-inch long brass liners. The sampler and brass liners were pre-cleaned prior to use and between sample drives by washing them with a trisodium phosphate (TSP) and potable water solution, a potable water rinse, and distilled water rinse. Soil samples were collected every five feet, at any noted changes in lithology, and at the approximate soil/groundwater interface. Subsurface

soil samples were obtained by drilling to the approximate sampling location and then driving the sampler eighteen inches into undisturbed material.

Upon removal from the sampler, each end of the brass liner was covered with Teflon tape and plastic caps, labeled, and stored in an ice-filled cooler to be transported under chain of custody to Geochem Environmental Laboratories, a Cal-EPA certified laboratory.

A minimum of two soil samples were selected from each boring and submitted to Geochem Environmental Laboratories of San Jose, California for analysis according to the "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites", dated August 10, 1990. Samples from the borings were submitted for analysis for Total Petroleum Hydrocarbons (TPH) as gasoline by EPA test method 5030 and benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA test method 8020. Copies of the analytical results and chain of custody forms are provided in Exhibit A.

The soil cuttings and samples were logged by an ACC geologist during drilling operations. Lithologic logs of the borings are shown in Figures 5 through 10, respectively. The soil cuttings are described in accordance with the Unified Soil Classification System, as shown in Figure 11. Soil cuttings were stored on-site in DOT approved drums.

3.1 Monitoring Well Construction and Development

Monitoring wells MW-1, MW-2 and MW-3 were installed within borings B-1, B-3 and B-4, respectively, upon completion of drilling. Well construction details are presented in Figures 12 through 14. Monitoring Wells MW-1 and MW-2 were installed with well casings consisting of 2-inch I.D. Schedule 40 PVC with 10 feet of 0.020-inch factory slotted screen below 8 feet of solid casing. Monitoring well MW-3 was installed with well casing consisting of 2-inch I.D. Schedule 40 PVC with 10 feet of 0.020-inch factory slotted screen below 5 feet of solid casing.

The wells were installed with Lonestar #2/12 sand used as annular fill to at least one foot above the top of the screen. One foot of 1/4-inch pelletized bentonite was placed between the annular sand and neat cement seal. "Christy" boxes were cemented over the tops of the PVC casings and set slightly above grade to drain surface waters away from the well head. Locking expansion plugs with locks were placed on each well.

The wells were developed on December 31, 1992 and January 5, 1993, using a double-ended rubber O-ring stopper followed by pumping, using a precleaned downhole pump. The wells were developed until pH and conductivity of development water had stabilized and was substantially free of fine material. Approximately 10 well casing volumes of water were removed from each well.

During development, Monitoring Well MW-2 was damaged. A hole developed in the PVC casing which resulted in sand pack filling the casing. Due to the

questionable integrity of the well, Monitoring Well MW-2 was abandoned and Monitoring Well MW-2a was drilled and installed in a different location.

On January 6, 1993, Monitoring Well MW-2 was abandoned by overdrilling the well using eight-inch hollow stem augers to a depth of 18 feet. The well casing and well construction materials were removed and the hole was backfilled with neat cement. The cement consisted of one sack of Portland cement to five gallons of clean water. The mixture was then placed in the hole by means of a tremie pipe lowered to within three feet of the bottom of the well and was delivered in one continuous operation until the well was filled.

Monitoring Well MW-2a was drilled and installed on January 6, 1993. Grab soil samples were collected from the cuttings during drilling. Two samples were collected (at 7 and 15 feet below ground surface) in pre-cleaned brass sample tubes. The ends of the tubes were covered with Teflon tape and plastic caps. The tubes were labeled, and stored in an ice-filled cooler to be transported under chain of custody to Geochem Environmental Laboratories, a Cal-EPA certified laboratory.

The soil cuttings and samples were logged by an ACC geologist during drilling operations. Lithologic logs of the boring MW-2a is shown in Figure 10. The soil cuttings are described in accordance with the Unified Soil Classification System, as shown in Figure 11. Soil cuttings were stored on-site in DOT approved drums.

Monitoring Well MW-2a was installed in the boring upon completion of drilling. Well construction details are presented on Figure 15. Monitoring well MW-2a was installed with well casing consisting of 2-inch I.D. Schedule 40 PVC with 10 feet of 0.020-inch factory slotted screen below 5 feet of solid casing.

The well was installed with Lonestar #2/12 sand used as annular fill to at least one foot above the top of the screen. One foot of 1/4-inch pelletized bentonite was placed between the annular sand and neat cement seal. A "Christy" box was cemented over the top of the PVC casing and set slightly above grade to drain surface waters away from the well head. A locking expansion plug with lock was placed on the well.

Monitoring Well MW-2a was developed using a double-ended rubber O-ring stopper followed by pumping, using a precleaned downhole pump. The well was developed until pH and conductivity of development water had stabilized and was substantially free of fine material. Approximately 10 well casing volumes of water were removed.

3.2 Groundwater Sampling

Groundwater samples were taken on January 9, 1993 from monitoring wells MW-1, MW-2a, and MW-3. Prior to groundwater sampling the depth to the surface of the water table was measured from the top of the PVC casing using a Solinst Water Level Meter. Information regarding well elevations and

groundwater level measurements is summarized below in Table 1.

TABLE 1
Groundwater Depth Information

Date Sampled	Depth to Groundwater (ft.)	Groundwater Elevation (ft.)
Well No. MW-1	Elevation of Top of Casing-27.78 MSL	
01/09/93	6.75	21.03
Well No. MW-2a	Elevation of Top of Casing-28.17 MSL	
01/09/93	7.06	21.11
Well No. MW-3	Elevation of Top of Casing-27.89 MSL	
01/09/93	6.68	21.21

Notes:
All measurements in feet
MSL = Mean Sea Level

After water-level measurements were taken, each on-site well was purged by hand using a designated disposable Teflon bailer for each well. Groundwater pH, temperature and electrical conductivity were monitored during well purging. Each well was considered to be purged when these parameters stabilized. Four well volumes were removed to purge each well. See Exhibit B for worksheets of groundwater conditions monitored during purging.

After the groundwater level had recovered to a minimum of approximately 80 percent of its static level, water samples were obtained using the designated disposable Teflon bailer. Two 40 ml VOA vials, without headspace, were filled from the water collected from each monitoring well.

The samples were preserved on ice and submitted to Geochem Environmental Laboratories under chain of custody protocol (see Exhibit A for laboratory results and chain of custody).

4.0 FINDINGS

4.1 Subsurface Conditions

During drilling and sampling activities, the site was observed to be covered with a baserock/asphalt cap. Below the cap, the subsurface soils consisted of brown fine grained sand to an explored depth of 18 feet. The sand is part of the Merritt Sand.

A report by the Alameda County Flood Control and Water Conservation District Geohydrology and Groundwater - Quality Overview, East Bay Plain Area, Alameda County, California, 205 (J) Report, June 1988, describes the Merritt Sand as consisting of loose well-sorted, fine to medium grained sand and silt, with lenses of sandy clay and clay. The sand was a wind and water deposited beach and near-shore deposit and is exposed only in the

Alameda and Oakland areas.

Groundwater was encountered between 9 and 14 feet below ground surface (bgs) during drilling. Borings B-1 and B-3 were drilled to approximately 18 feet bgs. Borings B-2, B-4 and MW-2a were drilled to approximately 15 feet bgs. Boring B-5 was drilled to approximately 6 feet bgs until auger refusal.

Monitoring wells MW-1, MW-2, MW-2a, and MW-3 were completed at the drilled depths within borings B-1, B-3, MW-2a, and B-4, respectively.

During drilling and sampling field evidence of volatile organics (i.e. discoloration and odor) were detected from each boring. Table 2 below describes the intervals in each boring of which volatile organics were detected.

TABLE 2
Field Evidence of Volatile Organics

Boring No.	Odor	Discoloration	Depth Observed
B-1 (MW-1)	moderate	yes	8 to 9 feet bgs
B-2	slight to strong	yes	5 to 13 feet bgs
B-3 (MW-2)	slight to strong	yes	2 to 14 feet bgs
B-4 (MW-3)	strong	yes	3 to 13 feet bgs
B-5	slight	yes	4 to 6 feet bgs
MW-2a	strong	yes	2 to 14 feet bgs

4.2 Analytical Results - Soil

Analysis of soil collected from the borings B-1 through B-4 and MW-2a indicated elevated levels of Total Petroleum Hydrocarbons (TPH) as gasoline with BTEX. Analysis of soil from boring B-5 indicated levels of TPH as gasoline with BTEX that were below detectable levels. Laboratory results are presented in Exhibit A, Figure 2 and are summarized below.

TABLE 3
Analytical Results - Soil

Boring	Sample Number	Depth (feet)	TPH-gasoline (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)
B-1	B1-10.5	10.5	314	4.3	3.8	6.8	11.6
(MW-1)	B1-16	16	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
B-2	B2-10	10	1,365	18.9	37.0	28.4	56.0
	B2-14	14	26	0.6	0.5	1.2	2.3
B-3	B3-5.5	5.5	121	0.8	0.7	4.6	10.2
(MW-2)	B3-10.5	10.5	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
B-4	B4-5.5	5.5	10	0.4	0.4	0.5	0.8
(MW-3)	B4-15.5	15.5	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

TABLE 3 cont.
Analytical Results - Soil

Boring	Sample Number	Depth (feet)	TPH-gasoline (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)
B-5	B5-5	5	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
MW-2a	MW-2A-7	7	24.6	0.8	0.6	0.6	1.1
	MW-2A-15	15	7.9	0.5	0.4	0.2	0.5

Notes: 1. mg/Kg = parts per million (ppm)
2. Samples B2-10, B3-10.5, and B4-5.5 were analyzed for total lead and contained concentrations of 22, <1 and 5 ppm, respectively.

4.3 Analytical Results - Groundwater

After well installation and development, one groundwater sample each from Monitoring Wells MW-1, MW-2a and MW-3 was collected and submitted to Geochem Environmental Laboratories for analysis for TPH as gasoline by EPA test method 5030 and BTEX by EPA test method 602. Analysis results from the groundwater samples are illustrated below and are shown in Figure 3. Copies of the analytical results are provided in Exhibit A.

TABLE 4
Analytical Results - Groundwater

Monitoring Well Number	TPH-gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)
MW-1	5,360	1,560.0	1,026.6	641.0	2,706.2
MW-2a	5,680	801.6	598.6	840.2	~~2,196.1~~ 2,606.2
MW-3	<50	<0.5	<0.5	<0.5	<0.5

Notes:
ug/L = parts per billion (ppb)

4.4 Groundwater Gradient

Prior to calculating the groundwater gradient, elevations for the on-site monitoring wells were surveyed by Ron Archer Civil Engineer, Inc. to an accuracy of one-hundredth of a foot. The well elevation was surveyed at the top of the PVC well casing. The elevations of the monitoring wells were established relative to a nearby benchmark located in the curb on the northwest corner of the intersection of Park and Encinal Avenues in Alameda, California. A site map and benchmark description from the surveying engineer is provided in Exhibit C.

The groundwater gradient was calculated using the on-site monitoring wells. The location of the wells is shown on Figure 1 - Site Plan. Groundwater elevations were taken from the wells on January 9, 1993. The gradient was

evaluated by triangulation using the elevation of the potentiometric surface measured with respect to Mean Sea Level datum. As shown in Figure 4, the groundwater gradient was approximately 0.005 foot per foot with the general direction of flow being west-southwest.

5.0 CONCLUSION

The data and observations discussed herein indicate that groundwater has been impacted due to an unauthorized hydrocarbon release. The analytical parameters used for sampling performed in December 1992 and January 1993 were in accordance with the "Tri-Regional Water Quality Control Boards Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites", dated August 10, 1990, for gasoline tanks.

The maximum soil concentration of Total Petroleum Hydrocarbons (TPH) as gasoline was 1,365 ppm and was in the sample collected at 10 feet below present grade in boring B-2. Benzene concentration was 18.9 ppm in the same sample. A maximum of approximately 12 feet of soil staining was observed in borings B-3 and MW-2a from 2 to 14 feet below ground surface.

The lateral extent of hydrocarbon impacted soil does not appear to extend east into boring B-5. However, boring B-5 could not be sampled below 5 feet due to auger refusal. Impacted soil was not detected below approximately 10 feet in boring B-1, indicating a possible vertical extent to hydrocarbon movement.

Groundwater samples indicated a maximum TPH-gasoline concentration of 5,680 ppb (MW-2a) and a maximum benzene concentration of 1,560 ppb (MW-1).

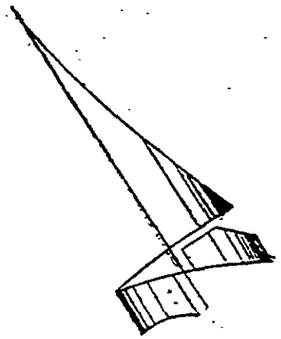
6.0 RECOMMENDATIONS

Pursuant to the Tri-Regional Board guidelines, groundwater sampling and monitoring of the on-site wells should continue on a quarterly basis.

Additional investigation of subsurface soil and groundwater will be required by regulatory agencies to evaluate the lateral extent of hydrocarbon impact. Due to the relatively high transmisivity of the underlying soil the potential exists for migration of hydrocarbons off-site. ACC recommends that a workplan be prepared to address regulatory concerns.

MONITOR WELL DATA TABLE

WELL DESIGNATION	ELEV	DESCRIPTION
MW1	27.78	TOP OF PVC CASING
	28.86	TOP OF BOX
MW2	28.17	TOP OF PVC CASING
	28.76	TOP OF BOX
MW3	27.89	TOP OF PVC CASING
	28.84	TOP OF BOX
BH	28.25	GROUND



VICINITY MAP
N.T.S

EXISTING FENCE

EXISTING WALL

PARK AVENUE

	5.5'	10.5'
TPHg	121.0	<0.05
Benzene	0.8	<0.0005
Toluene	0.7	<0.0005
Ethylbenzene	4.6	<0.0005
Xylenes	10.2	<0.0005

	5.5'	15.5'
TPHg	10.0	<0.05
Benzene	0.4	<0.0005
Toluene	0.4	<0.0005
Ethylbenzene	0.5	<0.0005
Xylenes	0.8	<0.0005

	7'	15'
TPHg	24.6	7.9
Benzene	0.8	0.5
Toluene	0.6	0.4
Ethylbenzene	0.6	0.2
Xylenes	1.1	0.5

	10'	14'
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Toluene	3.8	<0.0005
Ethylbenzene	6.8	<0.0005
Xylenes	11.6	<0.0005

	5'
TPHg	<0.05
Benzene	<0.0005
Toluene	<0.0005
Ethylbenzene	<0.0005
Xylenes	<0.0005

TPHg 5,680 / 801.6
B 595.6
T 840.2
E 2,196.1
X

Water (ppb)
TPHg 5,360 / 1,560
B 1,526.6
T 691
E 2,706.2
X

MW3
(Abandoned)
MW2
MW-2a
MW1
B-5
B-2
Former Tank Excavation
CONCRETE SURFACE
ASPHALT SURFACE
PLANTER
EX. WALL

1" = 20'
Graphic Scale in feet
0 10 20 40 60

ENCINAL AVENUE

KEY

TPH - Total Petroleum Hydrocarbons
g - gasoline
All results in mg/kg

JANUARY 4, 1993

JOB NO. 1986

PLAT SHOWING EXISTING MONITOR WELLS AT THE ALAMEDA CELLARS LIQUOR STORE, LOCATED AT 2425 ENCINAL AVENUE AT PARK AVENUE CITY OF ALAMEDA, ALAMEDA COUNTY, CALIFORNIA

FOR: ACC ENVIRONMENTAL CONSULTANTS. INC.
PROJECT NO. 6039-3

BENCHMARK:
A FOUND BRASS PLUG SET IN TOP OF CURB AT MID RETURN AT THE NORTHWESTERLY CORNER OF INTERSECTION OF PARK AVENUE AND ENCINAL AVENUE. ELEVATION TAKEN AS 27.63 M.S.L.

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Figure 2

Sample Analysis - Soil

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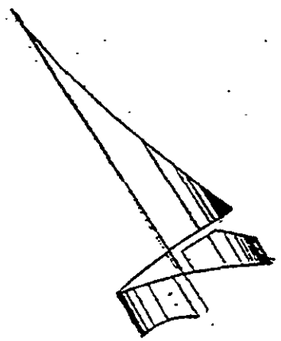

VICINITY MAP
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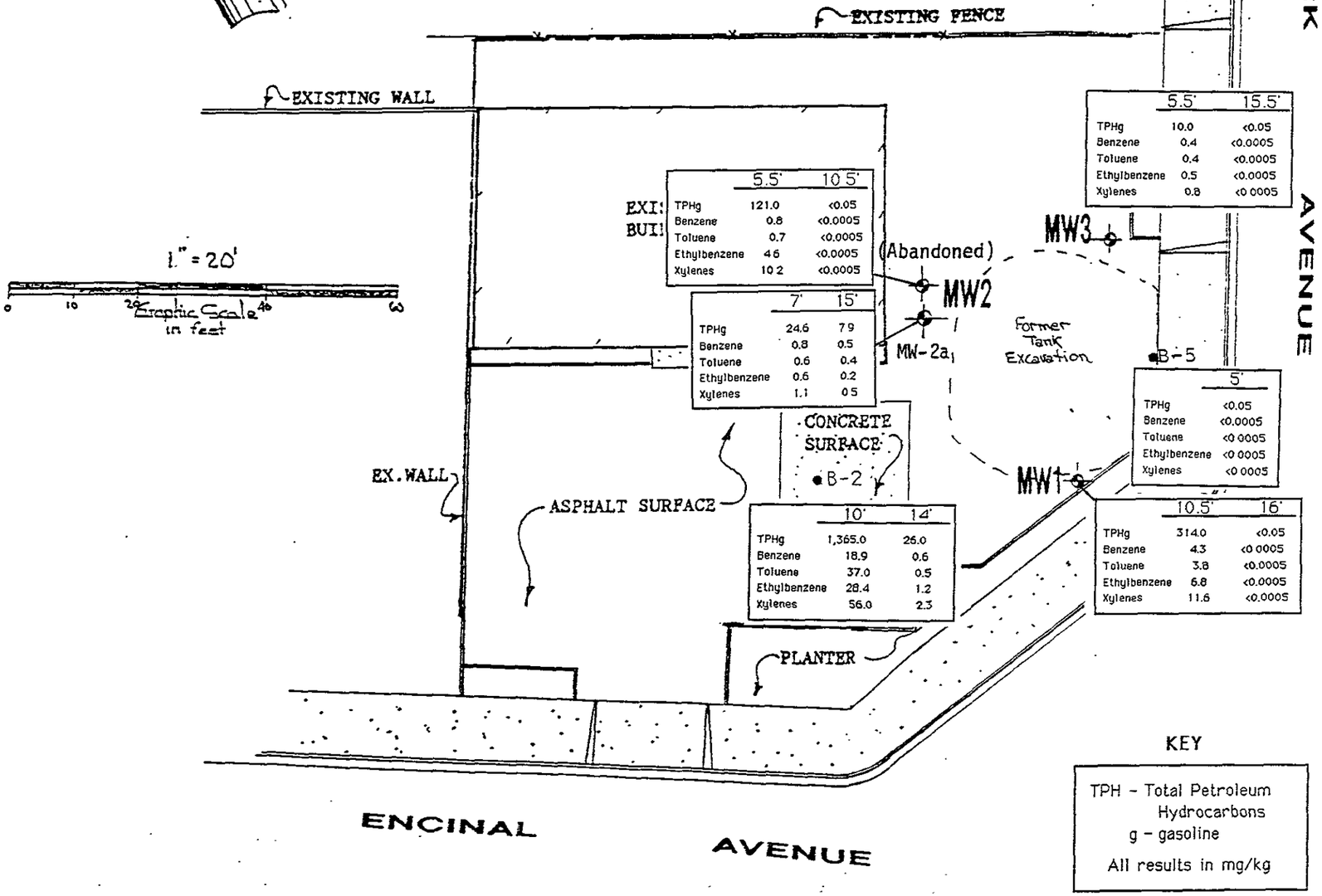

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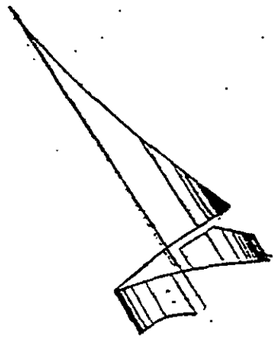

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MW3
(Abandoned)
MW2
MW-2a
Former Tank Excavation
B-5
MW1
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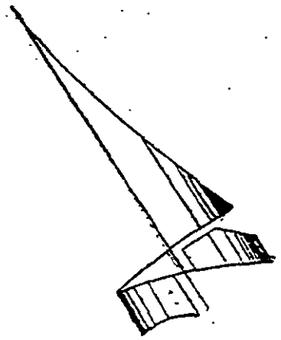

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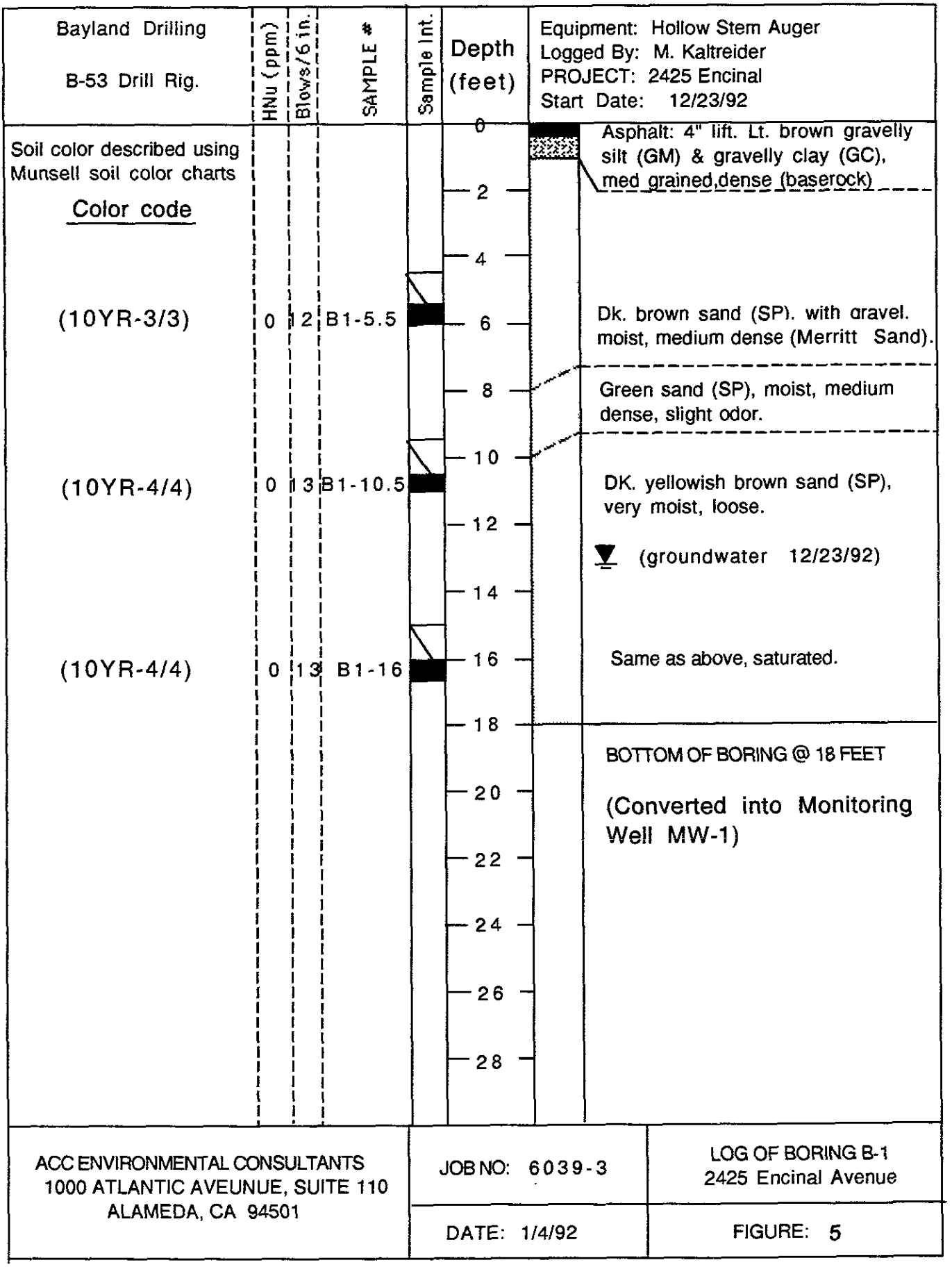
PROJECT NO. 6039-3

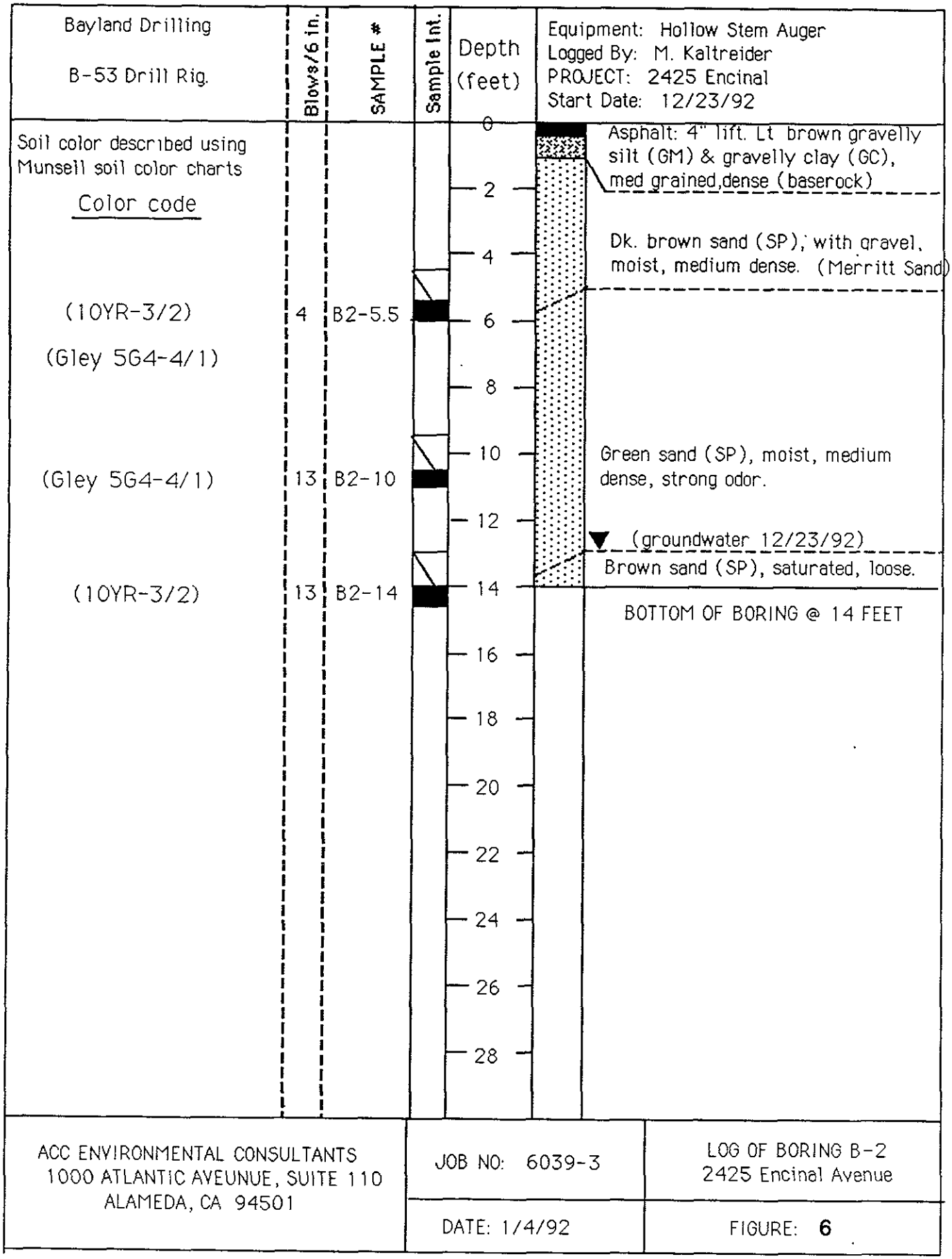
BENCHMARK:
A FOUND BRASS PLUG SET IN TOP OF CURB AT MID RETURN AT THE NORTHWESTERLY CORNER OF INTERSECTION OF PARK AVENUE AND ENCINAL AVENUE. ELEVATION TAKEN AS 27.63 M.S.L.

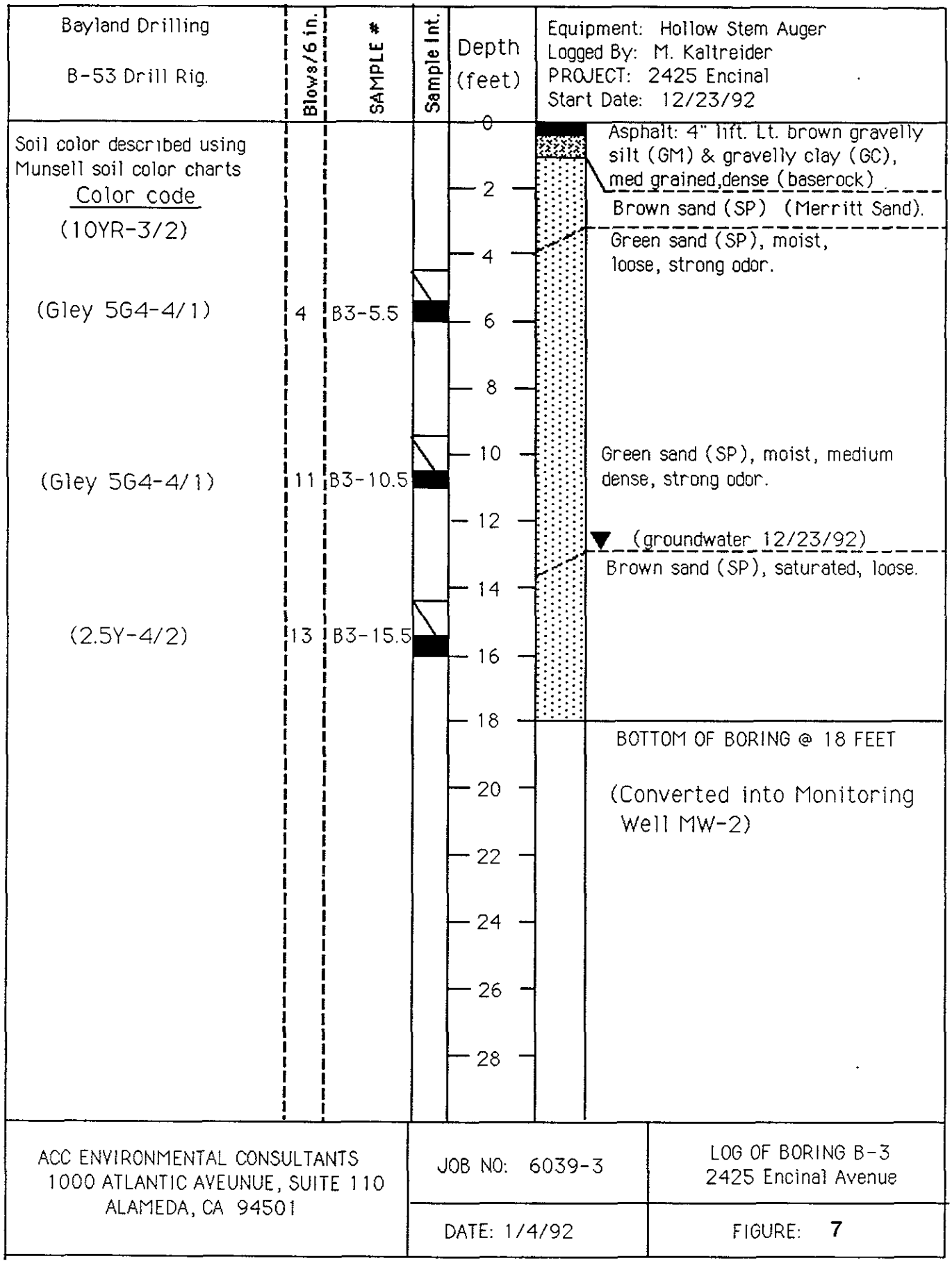
A·C·C ENVIRONMENTAL CONSULTANTS

Figure 2

Sample Analysis - Soil


Bayland Drilling
B-53 Drill Rig.
HNu (ppm)
Blows/6 in.
SAMPLE #
Sample Int.
Depth (feet)
Equipment: Hollow Stem Auger
Logged By: M. Kaltreider
PROJECT: 2425 Encinal
Start Date: 12/23/92
Soil color described using Munsell soil color charts
Color code
(10YR-3/3)
0 12 B1-5.5
(10YR-4/4)
0 13 B1-10.5
(10YR-4/4)
0 13 B1-16
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
Asphalt: 4" lift. Lt. brown gravelly silt (GM) & gravelly clay (GC), med grained,dense (baserock)
Dk. brown sand (SP). with gravel. moist, medium dense (Merritt Sand).
Green sand (SP), moist, medium dense, slight odor.
DK. yellowish brown sand (SP), very moist, loose.
(groundwater 12/23/92)
Same as above, saturated.
BOTTOM OF BORING @ 18 FEET
(Converted into Monitoring Well MW-1)
ACC ENVIRONMENTAL CONSULTANTS
1000 ATLANTIC AVEUNUE, SUITE 110
ALAMEDA, CA 94501
JOB NO: 6039-3
DATE: 1/4/92
LOG OF BORING B-1
2425 Encinal Avenue
FIGURE: 5


Bayland Drilling
B-53 Drill Rig.
Blows/6 in.
SAMPLE #
Sample Int.
Depth (feet)
Equipment: Hollow Stem Auger
Logged By: M. Kaltreider
PROJECT: 2425 Encinal
Start Date: 12/23/92
Soil color described using Munsell soil color charts
Color code
(10YR-3/2)
(Gley 5G4-4/1)
(Gley 5G4-4/1)
(10YR-3/2)
4 B2-5.5
13 B2-10
13 B2-14
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
Asphalt: 4" lift. Lt brown gravelly silt (GM) & gravelly clay (GC), med grained,dense (baserock)
Dk. brown sand (SP), with gravel, moist, medium dense. (Merritt Sand).
Green sand (SP), moist, medium dense, strong odor.
(groundwater 12/23/92)
Brown sand (SP), saturated, loose.
BOTTOM OF BORING @ 14 FEET
ACC ENVIRONMENTAL CONSULTANTS
1000 ATLANTIC AVEUNUE, SUITE 110
ALAMEDA, CA 94501
JOB NO: 6039-3
DATE: 1/4/92
LOG OF BORING B-2
2425 Encinal Avenue
FIGURE: 6


Bayland Drilling
B-53 Drill Rig.
Blows/6 in.
SAMPLE #
Sample Int.
Depth (feet)
Equipment: Hollow Stem Auger
Logged By: M. Kaltreider
PROJECT: 2425 Encinal
Start Date: 12/23/92
Soil color described using Munsell soil color charts
Color code
(10YR-3/2)
(Gley 5G4-4/1)
4
B3-5.5
(Gley 5G4-4/1)
11
B3-10.5
(2.5Y-4/2)
13
B3-15.5
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
Asphalt: 4" lift. Lt. brown gravelly silt (GM) & gravelly clay (GC), med grained,dense (baserock)
Brown sand (SP) (Merritt Sand).
Green sand (SP), moist, loose, strong odor.
Green sand (SP), moist, medium dense, strong odor.
(groundwater 12/23/92)
Brown sand (SP), saturated, loose.
BOTTOM OF BORING @ 18 FEET
(Converted into Monitoring Well MW-2)
ACC ENVIRONMENTAL CONSULTANTS
1000 ATLANTIC AVEUNUE, SUITE 110
ALAMEDA, CA 94501
JOB NO: 6039-3
DATE: 1/4/92
LOG OF BORING B-3
2425 Encinal Avenue
FIGURE: 7

Bayland Drilling

B-53 Drill Rig.

Equipment: Hollow Stem Auger
Logged By: M. Kaltreider
PROJECT: 2425 Encinal
Start Date: 12/23/92

Soil color described using Munsell soil color charts

Color code

(10YR-3/2)

(Gley 5G4-4/1)

(Gley 5G4-4/1)

(2.5Y-5/4)

Blows/6 in.	SAMPLE #	Sample Int.
2	B4-5.5	
4	B4-10.5	
13	B4-15.5	

Depth (feet): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28

Asphalt: 4" lift. Lt. brown gravelly silt (GM) & gravelly clay (GC), med grained, dense (baserock)

Brown sand (SP) (Merritt Sand).

Green sand (SP), moist, loose, strong odor.

▼ (groundwater 12/23/92)

Green sand (SP), saturated, loose, strong odor.

Brown sand (SP), saturated, loose.

BOTTOM OF BORING @ 15 FEET

(Converted into Monitoring Well MW-3)

ACC ENVIRONMENTAL CONSULTANTS
1000 ATLANTIC AVEUNUE, SUITE 110
ALAMEDA, CA 94501

JOB NO: 6039-3

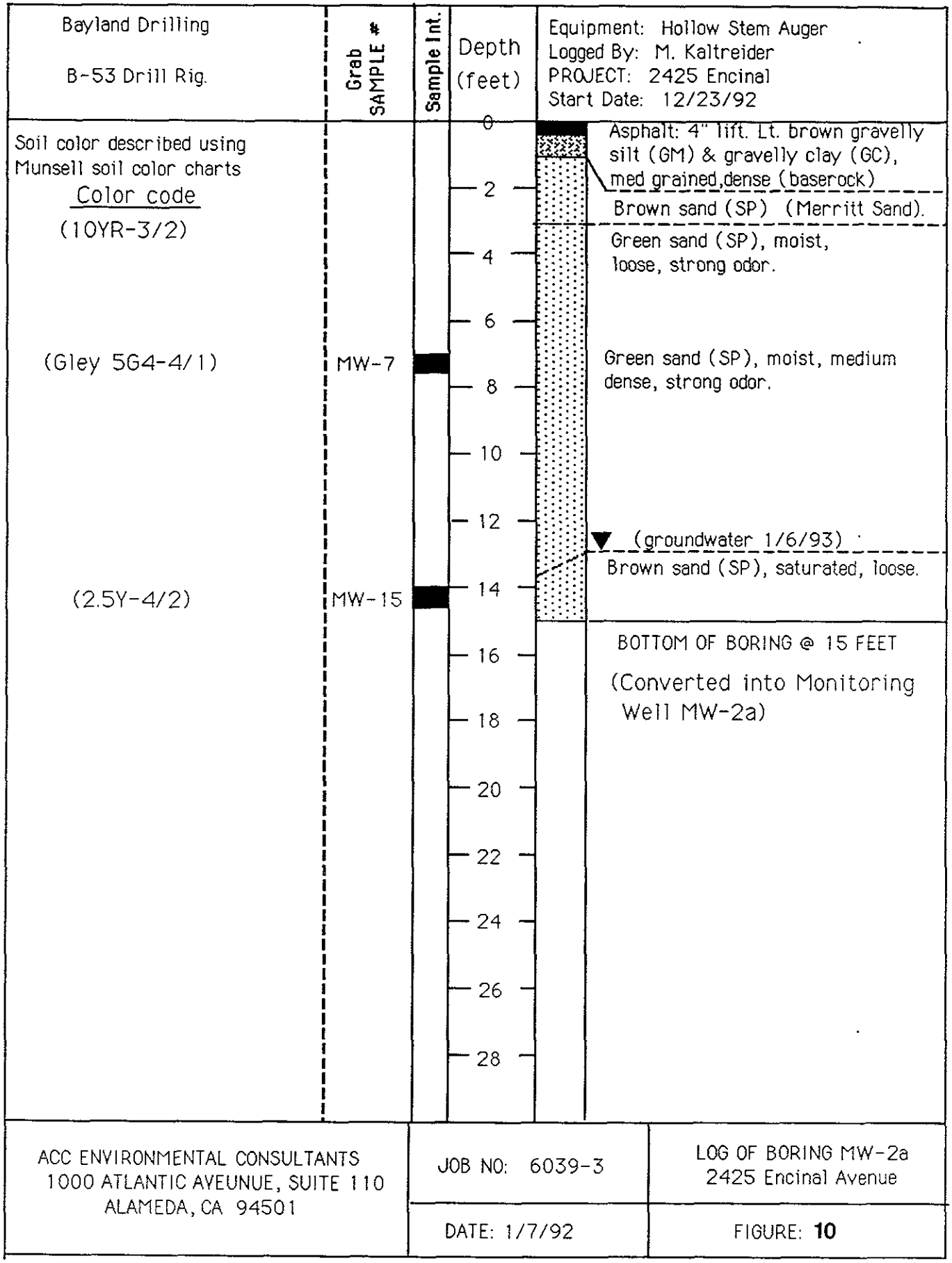
DATE: 1/4/92

LOG OF BORING B-4
2425 Encinal Avenue

FIGURE: 8

Bayland Drilling B-53 Drill Rig.	Blows/6 in.	SAMPLE #	Sample Int.	Depth (feet)	Equipment: Hollow Stem Auger Logged By: M. Kaltreider PROJECT: 2425 Encinal Start Date: 12/23/92
Soil color described using Munsell soil color charts Color code (10YR-3/2) (Gley 5G4-5/1)	8	B5-5		0 2 4 6 8 10 12 14 16 18 20 22 24 26 28	Asphalt: 4" lift. Lt. brown gravelly silt (GM) & gravelly clay (GC), med grained, dense (baserock) Brown sand (SP) (Merritt Sand). Green sand (SP), moist, loose, strong odor. BOTTOM OF BORING @ 6 FEET (Refusal at 6 feet)

ACC ENVIRONMENTAL CONSULTANTS 1000 ATLANTIC AVEUNUE, SUITE 110 ALAMEDA, CA 94501	JOB NO: 6039-3	BORING B-5 2425 ENCINAL AVE.
	DATE: 1/4/92	FIGURE: **9**

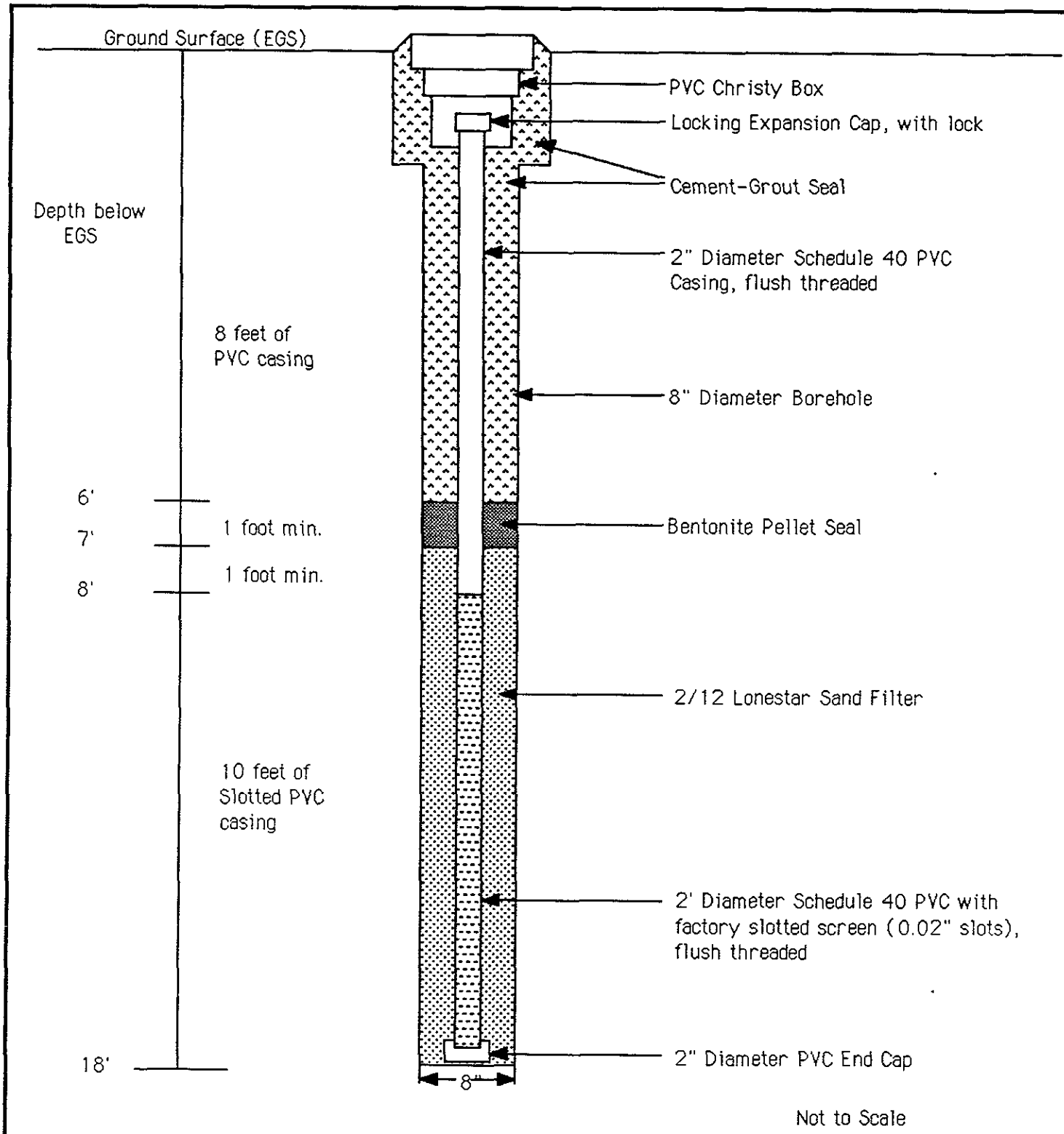

Bayland Drilling
B-53 Drill Rig.
Grab SAMPLE #
Sample Int.
Depth (feet)
Equipment: Hollow Stem Auger
Logged By: M. Kaltreider
PROJECT: 2425 Encinal
Start Date: 12/23/92
Soil color described using Munsell soil color charts
Color code
(10YR-3/2)
(Gley 5G4-4/1)
MW-7
(2.5Y-4/2)
MW-15
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
Asphalt: 4" lift. Lt. brown gravelly silt (GM) & gravelly clay (GC), med grained,dense (baserock)
Brown sand (SP) (Merritt Sand).
Green sand (SP), moist, loose, strong odor.
Green sand (SP), moist, medium dense, strong odor.
(groundwater 1/6/93)
Brown sand (SP), saturated, loose.
BOTTOM OF BORING @ 15 FEET
(Converted into Monitoring Well MW-2a)
ACC ENVIRONMENTAL CONSULTANTS
1000 ATLANTIC AVEUNUE, SUITE 110
ALAMEDA, CA 94501
JOB NO: 6039-3
DATE: 1/7/92
LOG OF BORING MW-2a
2425 Encinal Avenue
FIGURE: 10

	MAJOR DIVISIONS				TYPICAL NAMES
COARSE GRAINED SOILS more than half > #200 sieve	GRAVELS more than half coarse fraction is larger than No. 4 sieve	CLEAN GRAVELS WITH LITTLE OR NO FINES	G W		well graded gravels, gravel-sand mixtures
			G P		poorly graded gravels, gravel-sand mixtures
		GRAVELS WITH OVER 12% FINES	G M		silty gravels, poorly graded gravel-sand silt mixtures
			G C		clayey gravels, poorly graded gravel-sand clay mixtures
	SANDS more than half coarse fraction is smaller than No. 4 sieve	CLEAN SANDS WITH LITTLE OR NO FINES	S W		well graded sands, gravelly sands
			S P		poorly graded sands, gravelly sands
		SANDS WITH OVER 12% FINES	S M		silty sands, poorly graded sand-silt mixtures
			S C		clayey sands, poorly graded sand-clay mixtures
FINE GRAINED SOILS more than half < #200 sieve	SILTS AND CLAYS liquid limit less than 50		M L		inorg. silts and v.fine sands, rock flour silty or clayey sands, or clayey silts w/sl. plasticity
			C L		inorg. clays of low-med plasticity, gravelly clays, sandy clays, silty clays, lean clays
			O L		organic clays and organic silty clays of low plasticity
	SILTY AND CLAYS liquid limit greater than 50		MH		inorganic silty, micaceous or diatomacious fine sandy or silty soils, elastic silts
			C H		inorganic clays of high plasticity, fat clays
			O H		organic clays of medium to high plasticity organic silts
	HIGHLY ORGANIC SOILS		Pt		peat and other highly organic soils

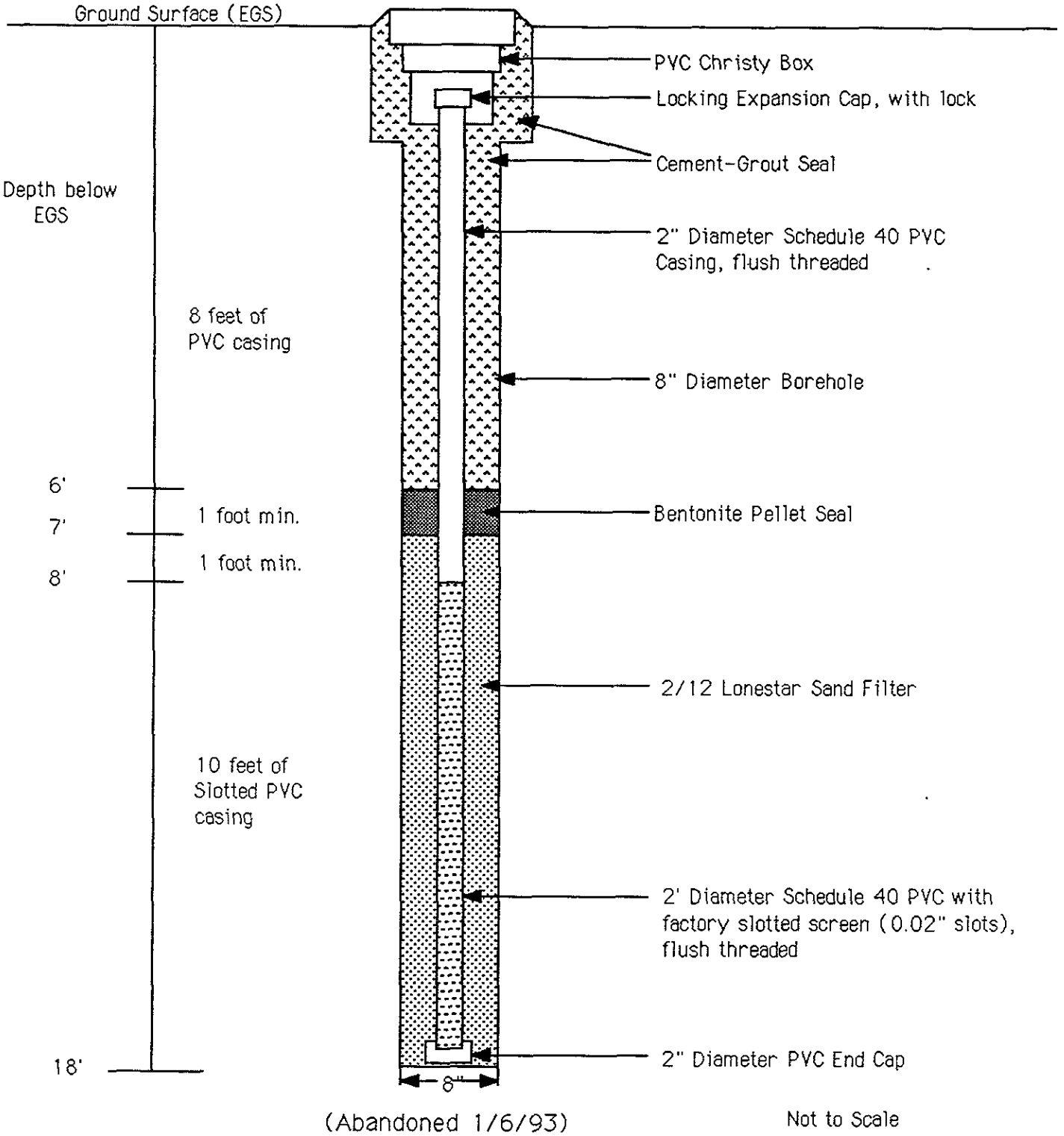
UNIFIED SOIL CLASSIFICATION SYSTEM

ACC ENVIRONMENTAL CONSULTANTS 1000 ATLANTIC AVENUE, SUITE 110 ALAMEDA, CA 94501	Soil Classification System

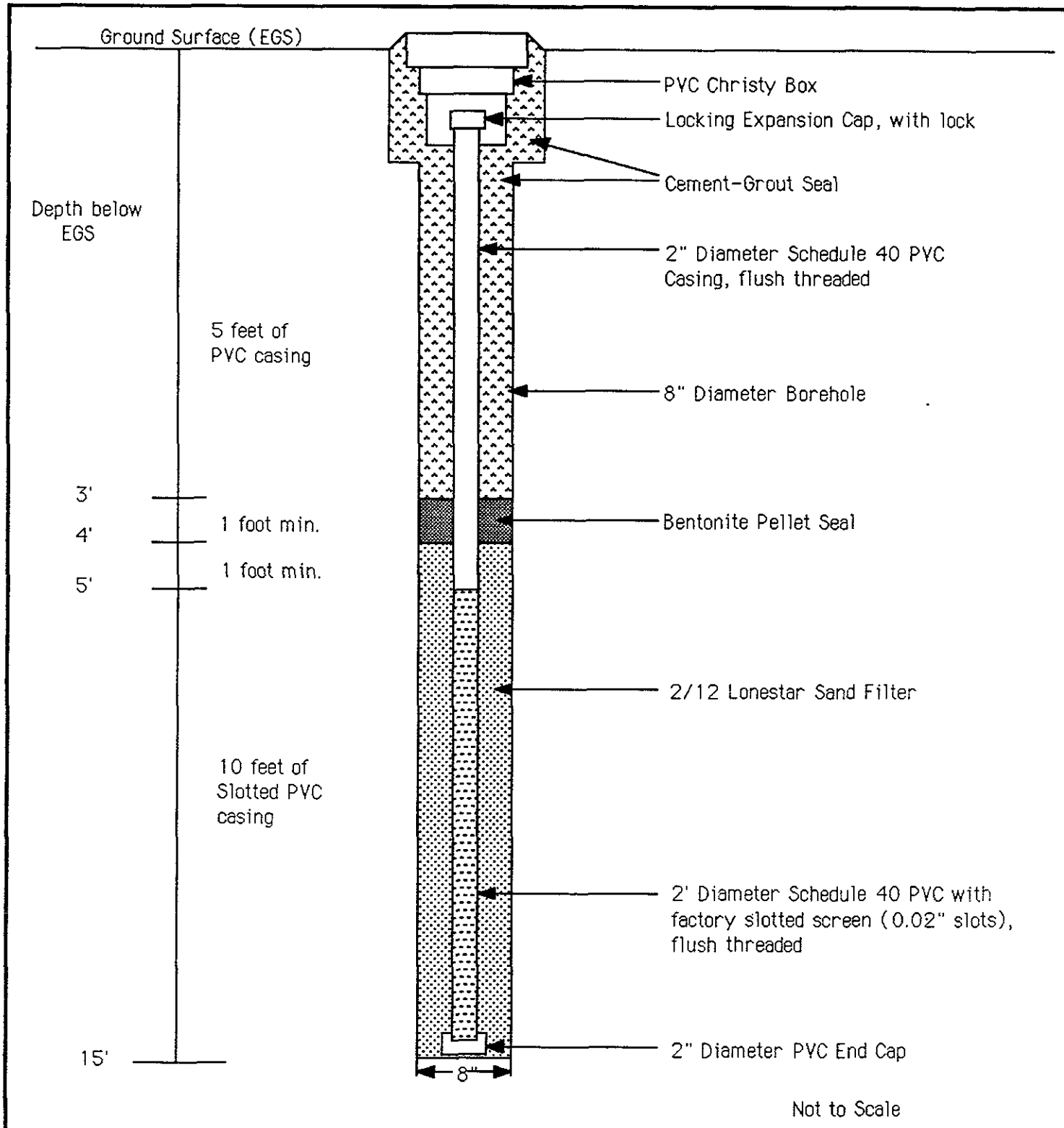
Project No. 6064-2	Date: 1/9/93	DRN: MCK	Figure No. 11



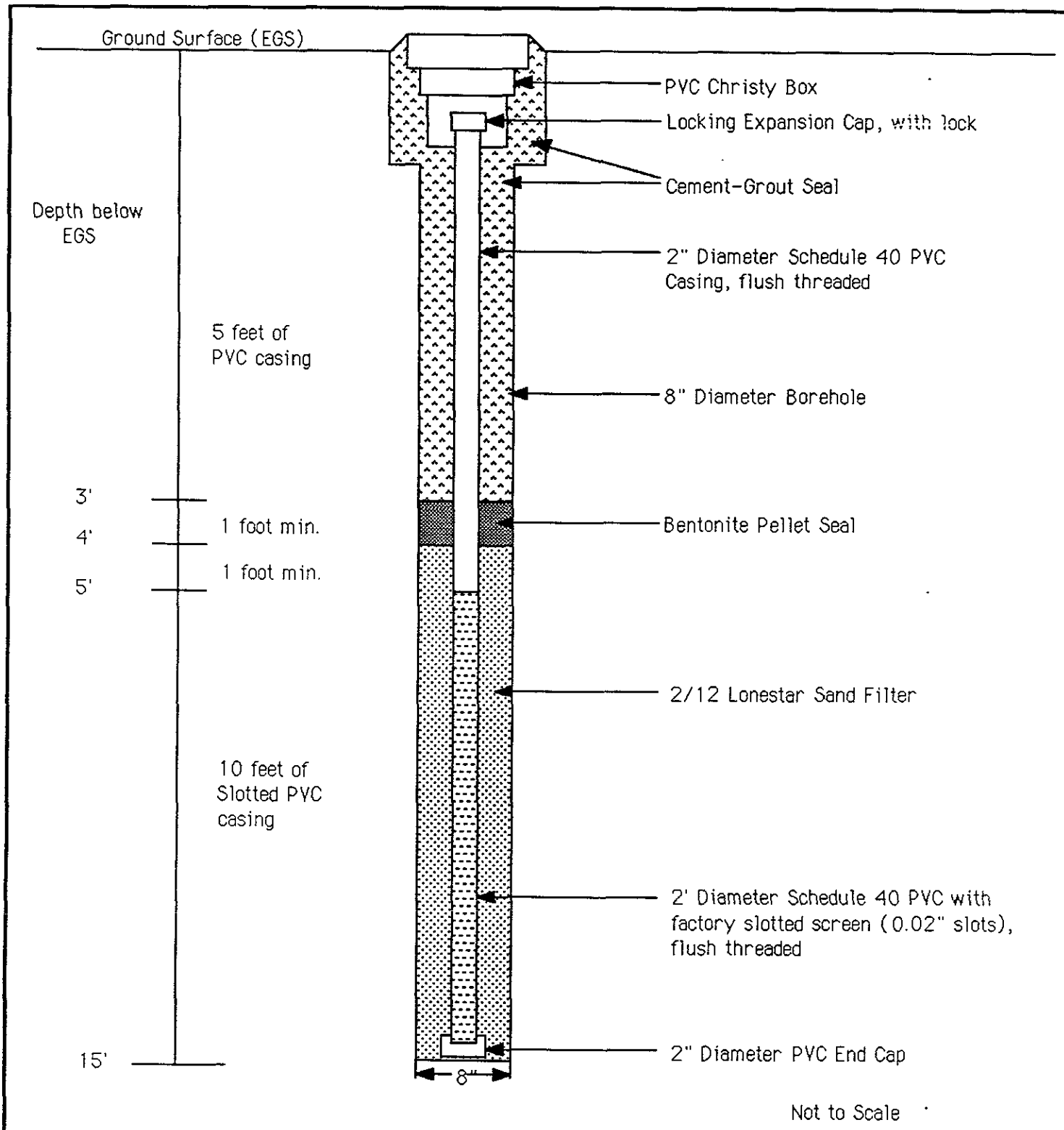
ACC Environmental Consultants 1000 Atlantic Avenue, Suite 110 Alameda, CA 94501	Job No.: 6039-3	Schematic of Monitoring Well No.: MW-1
	Date: 1/7/93	Figure No.: **12**



ACC Environmental Consultants 1000 Atlantic Avenue, Suite 110 Alameda, CA 94501	Job No.: 6039-3	Schematic of Monitoring Well No.: MW-2
	Date: 1/7/93	Figure No.: **13**



ACC Environmental Consultants 1000 Atlantic Avenue, Suite 110 Alameda, CA 94501	Job No.: 6039-3	Schematic of Monitoring Well No.: MW-3
	Date: 1/7/93	Figure No.: **14**



ACC Environmental Consultants 1000 Atlantic Avenue, Suite 110 Alameda, CA 94501	Job No.: 6039-3	Schematic of Monitoring Well No.: MW-2a
	Date: 1/7/93	Figure No.: **15**

EXHIBIT A

Geochem ENVIRONMENTAL LABORATORIES

Mobile & In-House Laboratories Certified by State of California
Phone: (408) 955-9988 / FAX: (408) 955-9538

ANALYTICAL REPORT

****

Client: ACC Environmental
1000 Atlantic Ave.
Alameda, CA 94501
Attn: Misty Kaltreider

Date Sampled: 12/23/92
Date Received: 12/28/92
Date Analyzed: 12/28/92
Batch:SD-057 Matrix: Soil
Conc. Unit ug/kg(ppb)

Project: 2425 Encinal

****

"**ND**" means "not detected" at indicated detection limit.
B:benzene, **T**:toluene, **E**:ethylbenzene & **X**:total xylenes.
Samples received chilled with a chain of custody record.

SAMPLE I.D.	8015M/TPH Gasoline	8020 B / T / E / X
DETECTION LIMIT	50 ppb	0.5 ppb
B1-10.5'	314410	4327.0 / 3758.1 / 6752.5 / 11568.1
B1-16'	ND	ND / ND / ND / ND
B2-10'	1365230	18890.6 / 37005.3/ 28431.3/ 56020.1
B2-14'	26170	568.8 / 507.2 / 1180.3 / 2301.1
B3-5.5'	120880	782.7 / 681.3 / 4577.2 / 10194.9
B3-10.5'	ND	ND / ND / ND / ND
B4-5.5'	10070	386.8 / 370.4 / 469.4 / 761.8
B4-15.5'	ND	ND / ND / ND / ND
B5-5'	ND	ND / ND / ND / ND

Reviewed and approved by George Tsai Dec. 28, 1992
George Tsai, Laboratory Director

Geochem ENVIRONMENTAL LABORATORIES

Mobile & In-House Laboratories Certified by State of California
Phone: (408) 955-9988 / FAX: (408) 955-9538

ANALYTICAL REPORT

****

Client: ACC Environmental
1000 Atlantic Ave.
Alameda, CA 94501
Attn: Misty Kaltreider

Date Sampled: 12/23/92
Date Received: 12/28/92
Date Analyzed: 12/28/92
Batch:SD-057 Matrix: Soil
Conc. Unit mg/kg(ppm)

Project: 2425 Encinal

****

"**ND**" means "not detected" at indicated detection limit.
B:benzene, **T**:toluene, **E**:ethylbenzene & **X**:total xylenes.
Samples received chilled with a chain of custody record.

SAMPLE I.D.	Total Lead
DETECTION LIMIT	1 ppm
B1-10.5'	
B1-16'	
B2-10'	22
B2-14'	
B3-5.5'	
B3-10.5'	ND
B4-5.5'	5
B4-15.5'	
B5-5'	

Reviewed and approved by George Tsai Dec. 28, 1992
George Tsai, Laboratory Director

GEOCHEM Environmental Laboratories
780 Montague Expressway, Suite 404
San Jose, CA 95131
(408) 955-9988 • FAX (408) 955-9538

CHAIN OF CUSTODY RECORD

Date 12-28-92 Page 1 of 2

TESTS REQUIRED

CLIENT	PROJECT NAME
ACC Environmental	2425 Encinal
ADDRESS	PROJECT MANAGER
1000 Atlantic Ave Suite 110	M. Kaltreider
Alameda, CA 95116	PHONE NUMBER
	(510) 522-8188

SAMPLE I.D.	LOCATION DESCRIPTION	DATE	TIME	MATRIX: AIR	MATRIX: WATER	MATRIX: SOIL	NO. OF CTNR	418.1/TRPH	8010 (601)	8015 E/TPH-diesel	8015 M/TPH-gasoline	8020 (602) BTEX	7420/Total Lead	Organic Lead			Archive
B1-5.5		12/23/92				X	1										HOLD
B1-10.5										X	X						
B1-16										X	X						
B2-6.5																	Hold.
B2-10										X	X		X				
B2-14										X	X						
B3-5.5										X	X						
B3-10.5										X	X		X				
B3-15.5																	Hold
B4-5.5										X	X		X				

Sampled/Relinquished by: Misty Kaltreider	Received by: Amelia Garza	Date 12-28-92	Time 9:36
Relinquished by:	Received by:	Date	Time
Relinquished by:	Received by:	Date	Time

Turnaround time: 24 hr. 48 hr. Normal (3-5 days)

Special Instructions:

GEOCHEM Environmental Laboratories
780 Montague Expressway, Suite 404
San Jose, CA 95131
(408) 955-9988 • FAX (408) 955-9538

CHAIN OF CUSTODY RECORD

Date 12-28-92 Page 2 of 2

TESTS REQUIRED

CLIENT	PROJECT NAME
ACC Environmental	2425 Encinal
ADDRESS 1000 Atlantic Avenue, Alameda, CA. 95116	PROJECT MANAGER M. Kaltreider
	PHONE NUMBER (510) 522-8188

SAMPLE I.D.	LOCATION DESCRIPTION	DATE	TIME	MATRIX AIR	MATRIX WATER	MATRIX SOIL	NO. OF CTNR	418.1/TRPH	8010 (601)	8015 E/TPH-diesel	8015 M/TPH-gasoline	8020 (602) BTEX	7420/Total Lead	Organic Lead			Archive
B4-10.5		12/23/92				X	1										
B4-15.5											X	X					Hold
B5-5											X	X					

Sampled/Relinquished by: Misty Kaltreider	Received by: Amelia Garza	Date 12-28-92	Time 9:36
Relinquished by:	Received by:	Date	Time
Relinquished by:	Received by:	Date	Time

Turnaround time:
24 hr. 48 hr. Normal (3-5 days)

Special Instructions:

Geochem ENVIRONMENTAL LABORATORIES

Mobile & In-House Laboratories Certified by State of California
Phone: (408) 955-9988 / FAX: (408) 955-9538

ANALYTICAL REPORT

****

Client: ACC Environmental
1000 Atlantic Ave.
Alameda, CA 94501
Attn: Misty Kaltreider

Date Sampled: 01/06/93
Date Received: 01/07/93
Date Analyzed: 01/07/93
Batch:SD-066 Matrix: Soil
Conc. Unit ug/kg(ppb)

Project: 2425 Encinal

****

"**ND**" means "not detected" at indicated detection limit.
B:benzene, **T**:toluene, **E**:ethylbenzene & **X**:total xylenes.
Samples received chilled with a chain of custody record.

SAMPLE I.D.	8015M/TPH Gasoline	8020 B / T / E / X
DETECTION LIMIT	50 ppb	0.5 ppb
MW-2A-7'	24590	768.2 / 584.9 / 566.8 / 1063.0
MW-2A-15'	7890	473.1 / 371.4 / 256.2 / 495.2

Reviewed and approved by George Tsai JAN. 07, 1993
George Tsai, Laboratory Director

GEOCHEM Environmental Laboratories
780 Montague Expressway, Suite 404
San Jose, CA 95131
(408) 955-9988 • FAX (408) 955-9538

CHAIN OF CUSTODY RECORD

Date 1/6/93 Page 1 of 1

CLIENT	PROJECT NAME
ACC Environmental	2425 Encinal
ADDRESS	**PROJECT MANAGER**
1000 Atlantic Avenue, Suite 110, Alameda, CA 94501	M. Kaltreider
	PHONE NUMBER
	(510) 522-8198

TESTS REQUIRED

SAMPLE I.D.	LOCATION DESCRIPTION	DATE	TIME	MATRIX: AIR	MATRIX: WATER	MATRIX: SOIL	NO. OF CTNR	418.1/TRPH	8010 (601)	8015 E/TPH-diesel	8015 M/TPH-gasoline	8020 (602) BTEX	7420/Total Lead	Organic Lead			Archive
MW-2a - 7'	grab sample	1/6/93				X	1		*		X	X					
MW-2a - 15'	"					X	1				X	X					

Sampled/Relinquished by: Misty Kaltreider	Received by:	Date 01/07/93 Time 9:00 am
Relinquished by:	Received by:	Date Time
Relinquished by:	Received by:	Date Time

Turnaround time: 24 hr. 48 hr. Normal (3-5 days)

Special Instructions:

Geochem ENVIRONMENTAL LABORATORIES

Mobile & In-House Laboratories Certified by State of California
Phone: (408) 955-9988 / FAX: (408) 955-9538

ANALYTICAL REPORT

****

Client: ACC Environmental
1000 Atlantic Ave.
Alameda, CA 94501
Attn: Misty Kaltreider

Date Sampled: 01/09/93
Date Received: 01/11/93
Date Analyzed: 01/13/93
Batch:SD-068 Matrix: Water
Conc. Unit ug/kg(ppb)

Project: 2425 Encinal

****

"**ND**" means "not detected" at indicated detection limit.
B:benzene, **T**:toluene, **E**:ethylbenzene & **X**:total xylenes.
Samples received chilled with a chain of custody record.

SAMPLE I.D.	8015M/TPH Gasoline	602 B / T / E / X
DETECTION LIMIT	50 ppb	0.5 ppb
MW-1	5360	1560.0/ 1026.6 / 641.0 / 2606.2
MW-2	5680	801.6/ 598.6 / 840.2 / 2196.1
MW-3	ND	ND / ND / ND / ND

Reviewed and approved by George Tsai JAN. 13,1993
George Tsai, Laboratory Director

ACC ENVIRONMENTAL CONSULTANTS, INC.

1000 ATLANTIC AVENUE, SUITE 110
ALAMEDA, CA 94501
(415) 522-8188
FAX (415) 865-5731

CHAIN OF CUSTODY RECORD

PROJ. NO: 6039-3

PROJECT NAME: 2425 Encinal

SAMPLERS: (Signature) Carl Soane

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TPH gas w/ BTEX	REMARKS
MW-1	1/9/93	2:10PM		X	Groundwater	2	X	Standard turnaround
MW-2	1/9/93	2:45PM		X	"	2	X	
MW-3	1/9/93	3:10PM		X	"	2	X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Carl Soane		3:25	Arcelia Garcia				
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

EXHIBIT B

Well Sampling [✓] Well Development [ ] check one

Well Number: MW - 1

Job Number: 6039 - 3

Job Name: 2425 Encina

2:10 PM

Date: 1/9/93

Sampler: Carl Soave

Depth to Water (measured from TOC): 6.75'

Inside Diameter of Casing: 2"

Depth of Boring: 15'

Method of well development/purging: Bailing

Amount of Water Bailed/Pumped from well: 5.2 gallons

Depth to Water after well development: —

Depth to water prior to sampling: 7.10'

Bailed water stored on-site ? How ? Drum

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? New rope

Water Appearance:

	yes	no
froth		✓
irridesence		✓
oil		✓
smell	✓ gas	
product		✓
other, describe		✓

Gallons Removed	pH	EC	Temp
5			
10			
15			
20			
25			
30			
35			
40			
45			
50			

Samples Obtained:

TPH (gasoline)	✓
TPH (diesel)	
TPH (motor oil)	
BTXE	✓
EPA 624	
EPA 625	
EPA 608	
PCBs only	
Metals	
Other, specify	
Field Blank	

Well Sampling [✓] Well Development [ ] check one

Well Number: MW-2

Job Number: 6039-3

Job Name: 2425 Encinal

Date: 1/9/93

Sampler: Carl Soane

2:45 PM

Depth to Water (measured from TOC): 7.06'

Inside Diameter of Casing: 2"

Depth of Boring: 15'

Method of well development/purging: Bailing

Amount of Water Bailed/Pumped from well: ~~~ 5.2 gallons

Depth to Water after well development: —

Depth to water prior to sampling: 8.00'

Bailed water stored on-site ? How ? Drum

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? New rope

Water Appearance:

	yes	no
froth		✓
irridesence		✓
oil		✓
smell	✓	gas
product		✓
other, describe		✓

Gallons Removed	pH	EC	Temp
5			
10			
15			
20			
25			
30			
35			
40			
45			
50			

Samples Obtained:

TPH (gasoline)	✓
TPH (diesel)	✓
TPH (motor oil)	✓
BTXE	✓
EPA 624	
EPA 625	
EPA 608	
PCBs only	
Metals	
Other, specify	
Field Blank	

Well Sampling [✓] Well Development [ ] check one

Well Number: MW-3

Job Number: 6039-3

Job Name: 2425 Encinal Ave.

Date: 1/9/93

Sampler: Carl Soane

3:10 PM

Depth to Water (measured from TOC): 6.68'

Inside Diameter of Casing: 2"

Depth of Boring: 15'

Method of well development/purging: Bailing

Amount of Water Bailed/Pumped from well: 5.2 gallons

Depth to Water after well development: —

Depth to water prior to sampling: 7.60'

Bailed water stored on-site ? How ? Drum

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? New rope

Water Appearance:

	yes	no
froth		✓
irridesence		✓
oil		✓
smell	✓	✓ gas
product		✓
other, describe		✓

Gallons Removed	pH	EC	Temp
5			
10			
15			
20			
25			
30			
35			
40			
45			
50			

Samples Obtained:

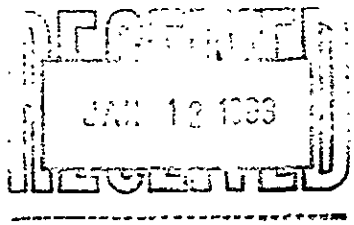
TPH (gasoline)	✓
TPH (diesel)	
TPH (motor oil)	
BTXE	✓
EPA 624	
EPA 625	
EPA 608	
PCBs only	
Metals	
Other, specify	
Field Blank	

EXHIBIT C

RON ARCHER
CIVIL ENGINEER, INC.

CONSULTING • PLANNING • DESIGN • SURVEYING

4133 Mohr Ave., Suite E • Pleasanton, CA 94566
(510) 462-9372



JANUARY 8, 1993 JOB NO. 1986

ELEVATIONS OF EXISTING MONITOR WELLS AT THE ALAMEDA CELLARS LIQUOR STORE, LOCATED AT 2425 ENCINAL AVENUE AT PARK AVENUE CITY OF ALAMEDA, ALAMEDA COUNTY, CALIFORNIA

FOR: ACC ENVIRONMENTAL CONSULTANTS. INC.
PROJECT NO. 6039-3

BENCHMARK:
A FOUND BRASS PLUG SET IN TOP OF CURB AT MID RETURN AT THE NORTHWESTERLY CORNER OF INTERSECTION OF PARK AVENUE AND ENCINAL AVENUE. ELEVATION TAKEN AS 27.63 M.S.L.

MONITOR WELL DATA TABLE

WELL DESIGNATION	ELEV	DESCRIPTION
MW1	27.78	TOP OF PVC CASING
	28.06	TOP OF BOX
MW2	28.17	TOP OF PVC CASING
	28.76	TOP OF BOX
MW3	27.89	TOP OF PVC CASING
	28.04	TOP OF BOX
BH	28.25	GROUND

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED