

Atlantic Richfield Company

Chuck Carmel

Remediation Management Project Manager

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RECEIVED

11:23 am, Mar 21, 2011

Alameda County
Environmental Health

February 28, 2011

Re: Area Well Survey
ARCO Service Station No. 0374
6407 Telegraph Avenue
Oakland, California 94609
ACEH Case #RO0078

Dear Mr. Khatri:

I declare, that to the best of my knowledge at the present time, that the information contained in the attached document is true and correct.

Sincerely,



Chuck Carmel
Remediation Management Project Manager

Attachment: Area Well Survey



February 28, 2011

Mr. Paresh Khatri
Alameda County Health Care Agency
Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

RE: AREA WELL SURVEY
ARCO Service Station No. 0374
6407 Telegraph Avenue
Oakland, California 94609
ACEH Case No. RO0078

Dear Mr. Khatri:

On behalf of Atlantic Richfield Company, Closure Solutions, Inc. (Closure Solutions) has prepared this *Area Well Survey* (Survey) for the ARCO Service Station No. 0374, located at 6407 Telegraph Avenue in Oakland, California (Site). Closure Solutions performed the Survey to identify the presence of water wells within a 0.5-mile radius of the Site. The Site setting, information on groundwater depth, groundwater flow direction, survey methods, and survey results are presented below.

1.0 SITE SETTING

The Site is currently an active ARCO service station located on the northwest corner of Telegraph Avenue and Alcatraz Avenue in Oakland, California. The Site is located in a mixed commercial and residential area. Current Site facilities include a service station building, two dispenser islands, and three 12,000-gallon gasoline underground storage tanks. .

2.0 GROUNDWATER DEPTH AND FLOW DIRECTION

Groundwater monitoring and sampling has been conducted at the Site since 1989. Based on information contained in historical Site reports, depth to groundwater beneath the Site is approximately seven feet below ground surface. Groundwater flow direction is to the southwest.

3.0 WELL SURVEY METHODS

To obtain information on the type and location of wells within a 0.5-mile radius of the Site, Closure Solutions requested a signed authorization form from the Alameda County Department

of Environmental Health to access confidential well information. The signed authorization was then provided to the Department of Water Resources (DWR) for access to all available well completion reports for wells installed in the vicinity of the Site. The DWR furnished 205 well completion reports for wells installed in the Site vicinity. These wells were located in Sections 11, 12, 13, and 14 in Township 01S, Range 04W, Mount Diablo Meridian.

To assemble the survey information, Closure Solutions grouped the reports into the following categories:

- Reports that referenced well locations by current street addresses that could be verified using online resources (Google Earth or equivalent);
- Reports that referenced well locations by distance from a current street, intersection, or other known location such as a creek or park;
- Reports that referenced well locations by distance from a corner of a map Section;
- Reports that referenced well locations by outdated street addresses, route numbers, or street names/intersections that were changed/no longer existed;
- Reports that were illegible; and
- Reports for wells that had been destroyed.

Well locations referenced by current street addresses or by distances from a known location or street intersection were verified on a map to obtain distance from the Site. If the well location was within 0.5 mile of the Site, the well location was plotted on the map. Wells located outside the 0.5 mile radius were not plotted.

For wells that were referenced by distance from a corner of a Section, Closure Solutions accessed Montana State University's Graphical Locator website and the Earthpoint website to obtain maps of the referenced Section within the Township and Range. Once this information was obtained and verified, wells identified within 0.5 miles of the Site were plotted on the well survey map.

In cases where well completion reports contained street names or route numbers that no longer existed, either available Township, Range, and Section information was used to plot locations, or additional research was conducted to obtain information on historical street and route names. In a few cases, well locations could not be verified using the referenced locations or addresses provided, or the report was illegible. These wells were not included on the well survey map.

4.0 WELL SURVEY RESULTS

Based on Closure Solutions' review of information provided by the DWR, two wells were identified within a 0.5-mile radius of the Site, as described below:

- Two wells were installed in 1935 on the same property, did not have identified uses, and are located approximately 1,590 feet south (down-gradient) of the Site.

The approximate locations of wells identified above within a 0.5-mile radius of the Site are presented on Figure 1. Please note that for the purposes of this well survey, cathodic protection wells and wells associated with environmental cases are not included in the results.

Well information including map ID, DWR log number, location of the well, approximate distance from the Site, well type, and installation date is summarized in Table 1. Well completion reports for all available wells within a 0.5-mile radius, including those associated with environmental cases, are included as Attachment A. Well completion reports for all wells outside a 0.5-mile radius are included as Attachment B. Due to privacy concerns, the DWR well completion reports are not included in the electronic copy of this document uploaded to the State's GeoTracker database.

5.0 SURFACE WATER

The nearest surface body water appears to be an unnamed creek that appears to end approximately 3,200 feet west-northwest (cross-gradient) from the Site. A covered reservoir is approximately 4,400 feet northwest (cross-gradient) of the Site.

If you have any questions or comments regarding this report, please contact Charlotte Evans at (925) 566-8567, or by e-mail at cevans@closureolutions.com.

Sincerely,
Closure Solutions, Inc.



Charlotte Evans
Project Geologist



Ronald Chinn, P.E.
Principal Engineer



Attachments:

Figure 1	Approximate Well Locations Within a 0.5-Mile Radius of the Site
Table 1	Wells Located Within a 0.5-Mile Radius of the Site
Attachment A	Well Completion Reports for Wells Within a 0.5-Mile Radius of the Site
Attachment B	Well Completion Reports for Wells Outside a 0.5-Mile Radius of the Site

cc: Mr. Charles Carmel, Atlantic Richfield Company

Area Well Survey Map 6407 Telegraph Ave., Oakland ARCO #0374

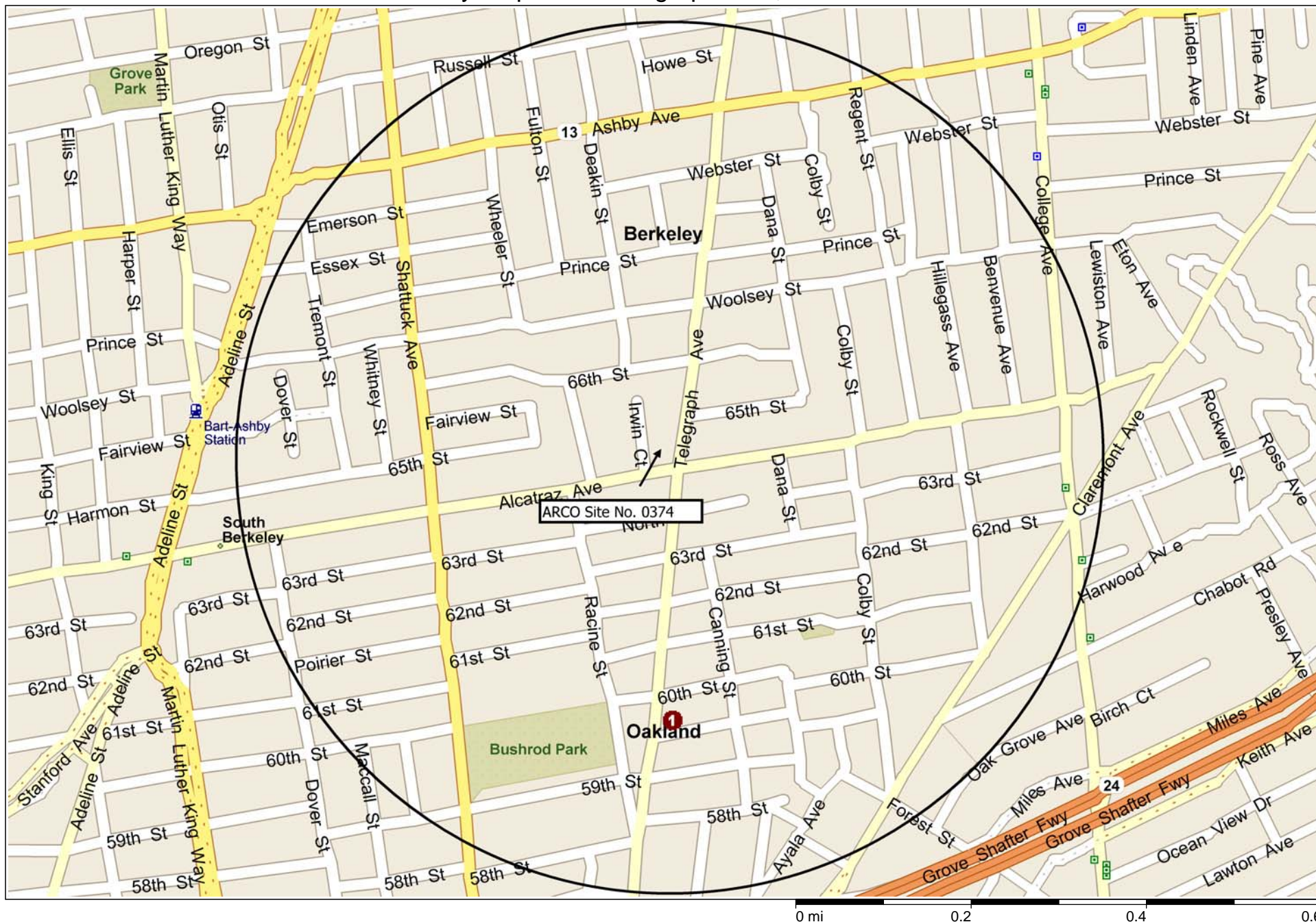


Table 1 - Wells Located Within 0.5-Mile Radius

ARCO Service Station No. 0374

6407 Telegraph Avenue

Oakland, California

Map ID No.	Log No.	Well Location	Approximate Distance from Site	Well Type	Date Installed
1	01-720	5976 Telegraph Ave.	1,590 ft. S of Site	unk	Jul-35
1	01-715	5976 Telegraph Ave.	1,590 ft. S of Site	unk	Jul-35

Abbreviations:

ft = feet

N = North

S = South

E = East

W = West

dom = domestic well

irr = irrigation well

mun = municipal well

pub = public well

unk = unknown

ATTACHMENT A

Well Completion Reports for Wells Within a 0.5-Mile Radius of the Site

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

REGION _____
COUNTY _____
NEAR _____

BASIN _____
DWR NO. 15/W-132 B & M
OTHER NO. _____

WELL LOG

Job No. 1667

01-715

LOCATION 5976 Telegraph Avenue, Oakland

OWNER B. A. Shuey Grocery ADDRESS 5976 Telegraph Avenue, Oakland

DRILLED BY J. K. Oachy ADDRESS _____

DRILLING METHOD _____ GRAVEL PACKED Yes DATE COMPLETED July 1935

SIZE OF CASING DEPTH 2 1/2" of 8" STRUCK WATER AT _____

PERFORATIONS _____ SIZE _____ No _____

WATER LEVEL BEFORE PERFORATING 9' AFTER _____

TEST DATA: DISCHARGE G. P. M. 10 DRAWDOWN FT. 10 1/2 HOURS RUN _____

OTHER DATA AVAILABLE: WATER LEVEL RECORD _____ ANALYSIS _____

SURFACE ELEV. _____ DATUM _____ SOURCE OF INFORMATION Driller's Log

DEPTH	ELEV. OF BOTTOM OF STRATUM	MATERIAL	THICKNESS	SP. YIELD %
<u>0 - 10</u>		<u>Yellow clay</u>		
<u>- 10</u>		<u>Sandy clay and gravel</u>		
<u>- 20 1/2</u>		<u>Sand and gravel</u>		
<u>- 22</u>		<u>Sand rock</u>		

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY _____ DATE _____ SHEET 1 OF _____

REGION _____
 COUNTY _____
 NEAR _____

STATE OF CALIFORNIA
 DEPARTMENT OF WATER RESOURCES

BASIN _____
 DWR NO. 18/1487-108 B & M
 OTHER NO. _____

WELL LOG

Job No. 1667
01-720

LOCATION 5976 Telegraph Avenue, Oakland

OWNER R. A. Shuay Creamery ADDRESS 5976 Telegraph Avenue, Oakland

DRILLED BY J. M. Ough ADDRESS _____

DRILLING METHOD _____ GRAVEL PACKED Yes DATE COMPLETED July 1935

SIZE OF CASING DEPTH 2 1/4" of 8" STRUCK WATER AT _____

PERFORATIONS _____ SIZE _____ No. _____

WATER LEVEL BEFORE PERFORATING 9' AFTER _____

TEST DATA: DISCHARGE G. P. M. 10 DRAWDOWN FT. 18 1/2 HOURS RUN _____

OTHER DATA AVAILABLE: WATER LEVEL RECORD _____ ANALYSIS _____

SURFACE ELEV. _____ DATUM _____ SOURCE OF INFORMATION Driller's Log

DEPTH	ELEV. OF BOTTOM OF STRATUM	MATERIAL	THICKNESS	SP. YIELD %
0 - 10		Yellow clay		
- 16		Sandy clay and gravel		
- 20 1/2		Sand and gravel		
- 22		Sand rock		

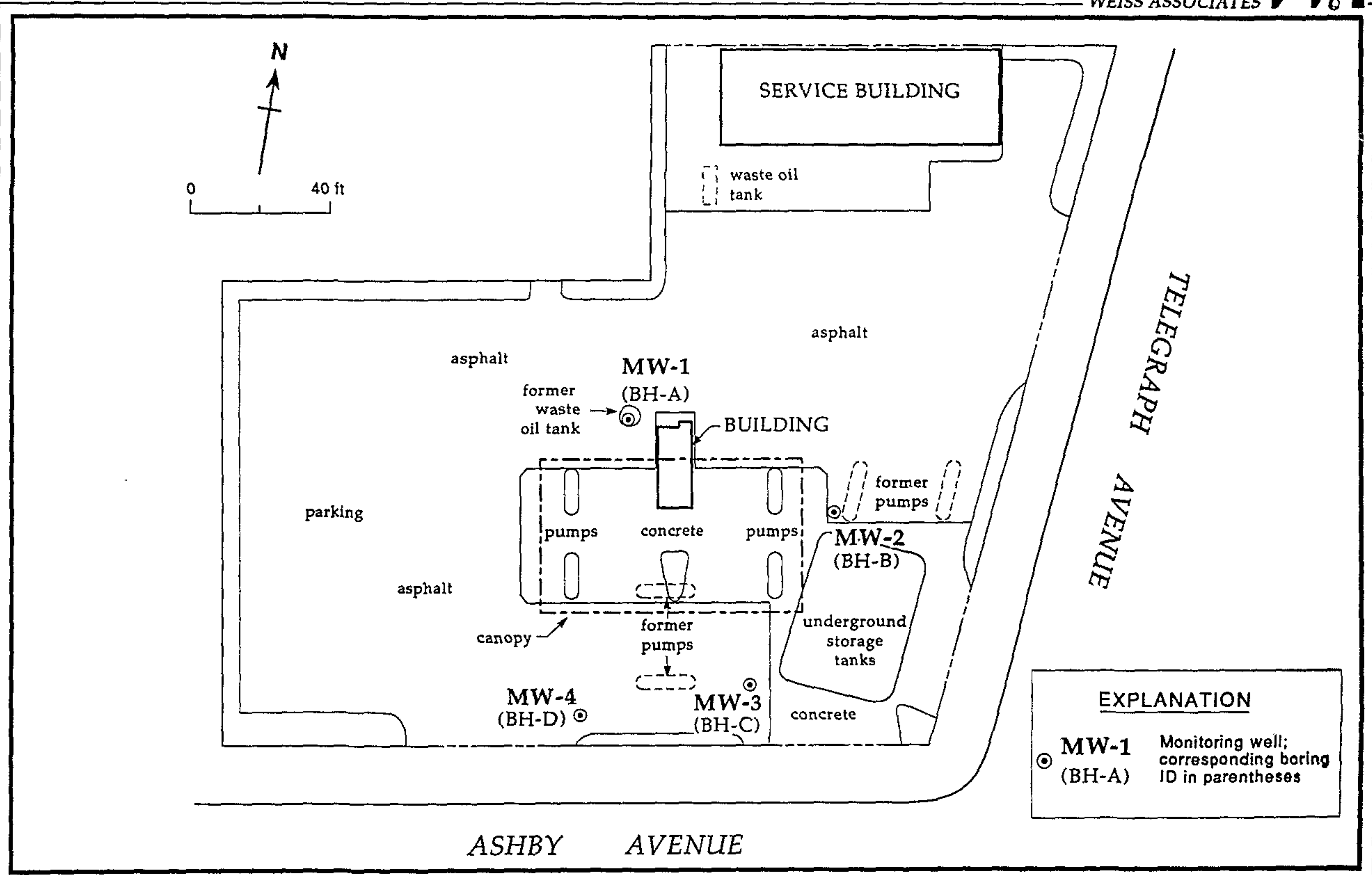
FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY _____ DATE _____ SHEET 1 OF _____

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED



EXPLANATION	
⊙	MW-1 (BH-A) Monitoring well; corresponding boring ID in parentheses

Figure 4. Monitoring Well Locations - Chevron Service Station #90972, Berkeley, California

179096 A-D
15/4W-12M1-4

Add
Inv

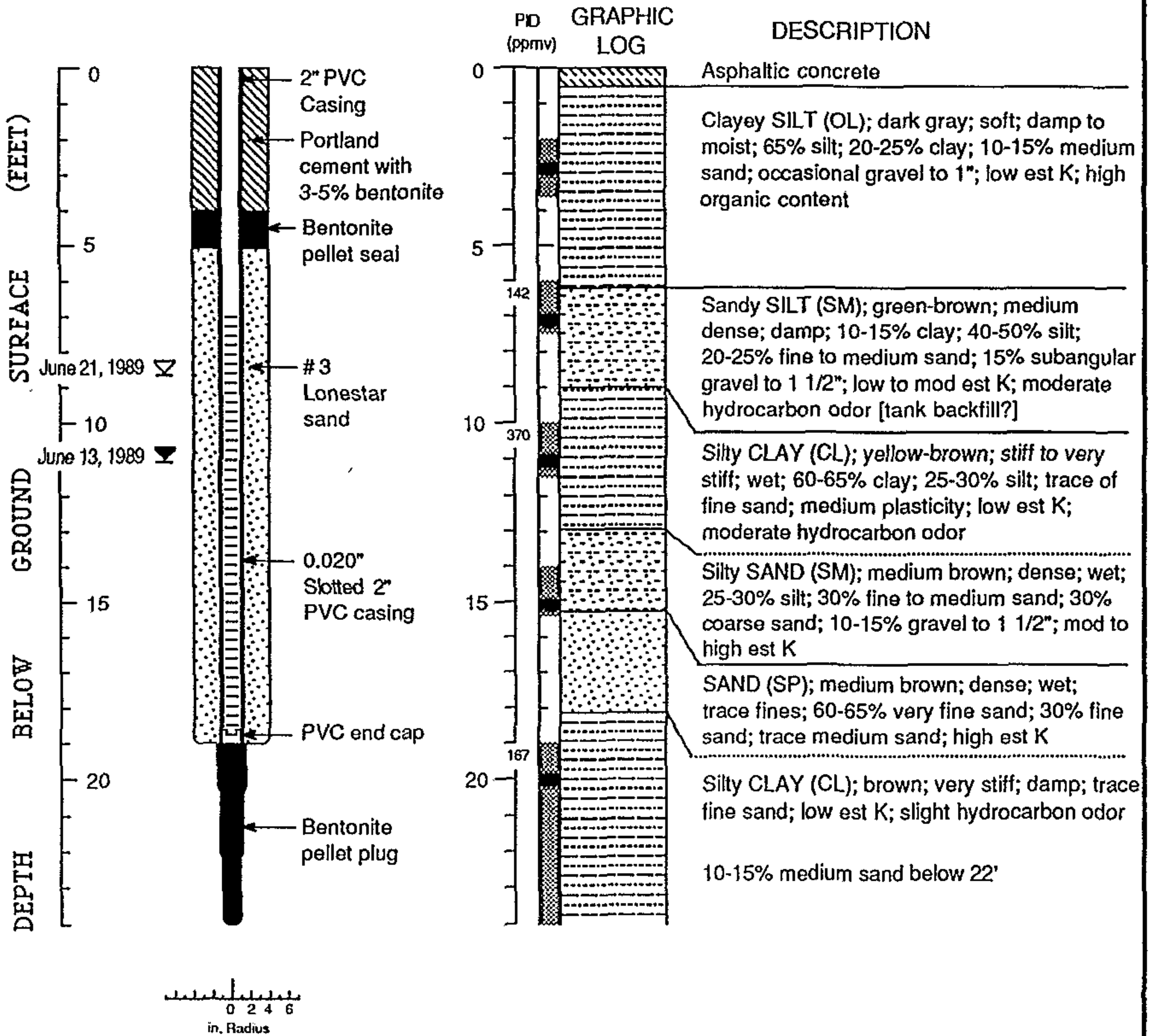
179096A

WEISS ASSOCIATES



WELL MW-1 (BH-A)

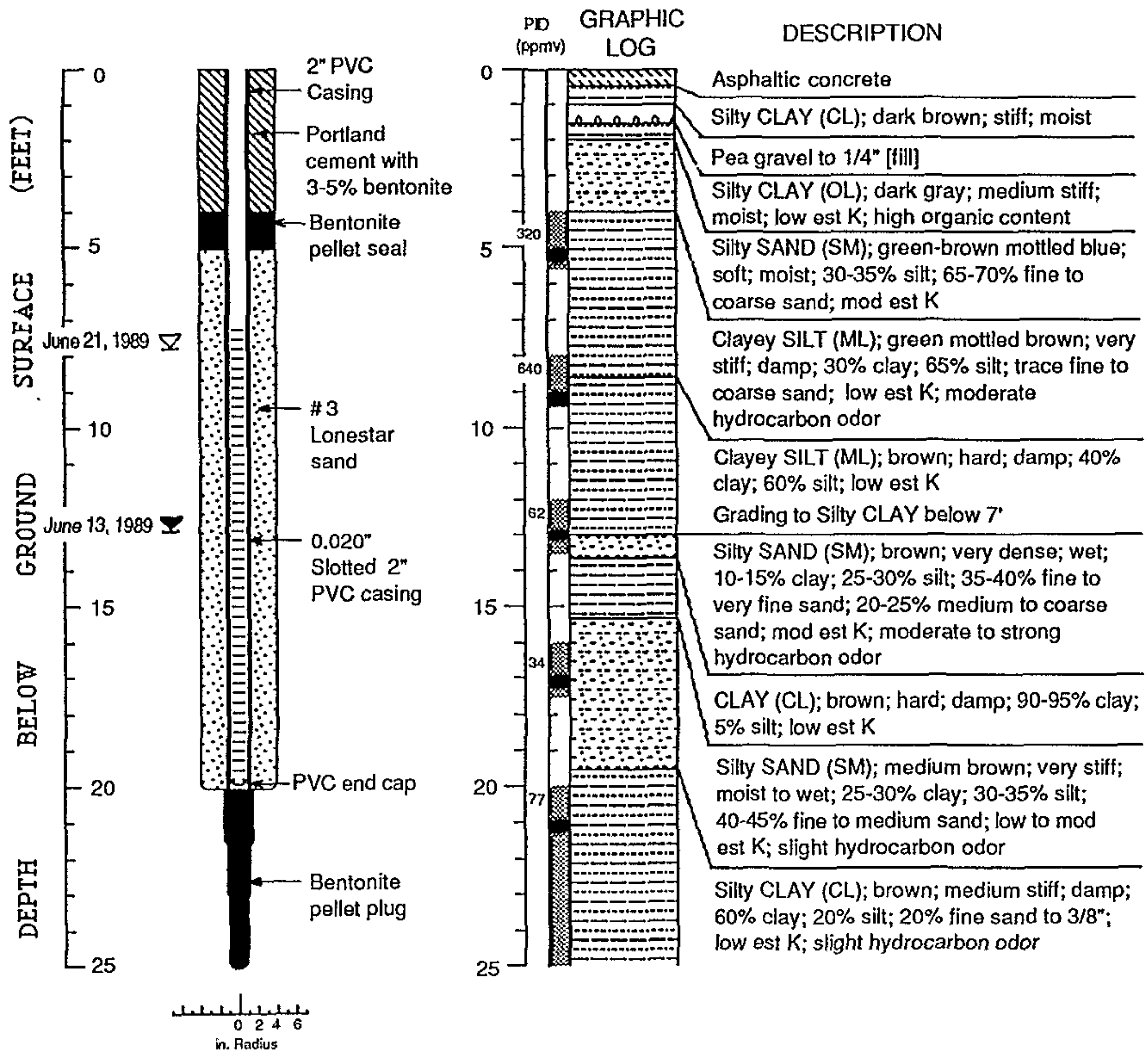
IS/4W12M1





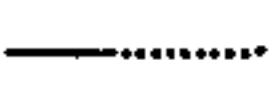
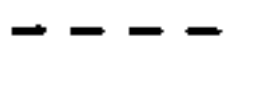



Well Construction and Boring Log - Well MW-1 (BH-A) Chevron Service Station #90972 Berkeley, California

Add
Inv

WELL MW-2 (BH-B) IS/LW 12M2



EXPLANATION

- | | | |
|---|---|---|
|  | Water level during drilling (date) | Logged by: Jim Carmody |
|  | Water level (date) | Supervisor: Richard Weiss; EG 1112 |
|  | Contact (dotted where approx.) | Drilling Company: Bay Area Exploration |
|  | Uncertain contact | Driller: Rick Carr |
|  | Location of recovered drive sample | Drilling Method: Hollow stem auger |
|  | Location of drive sample sealed for chemical analysis | Date Drilled: June 13, 1989 |
|  | Cutting sample | Well Head Completion: Locking stovepipe inside concrete vault |
| K = | Estimated hydraulic conductivity | Type of sampler: Split barrel (1.4", 2.0", 2.5" ID) |

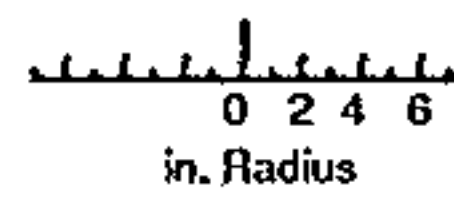
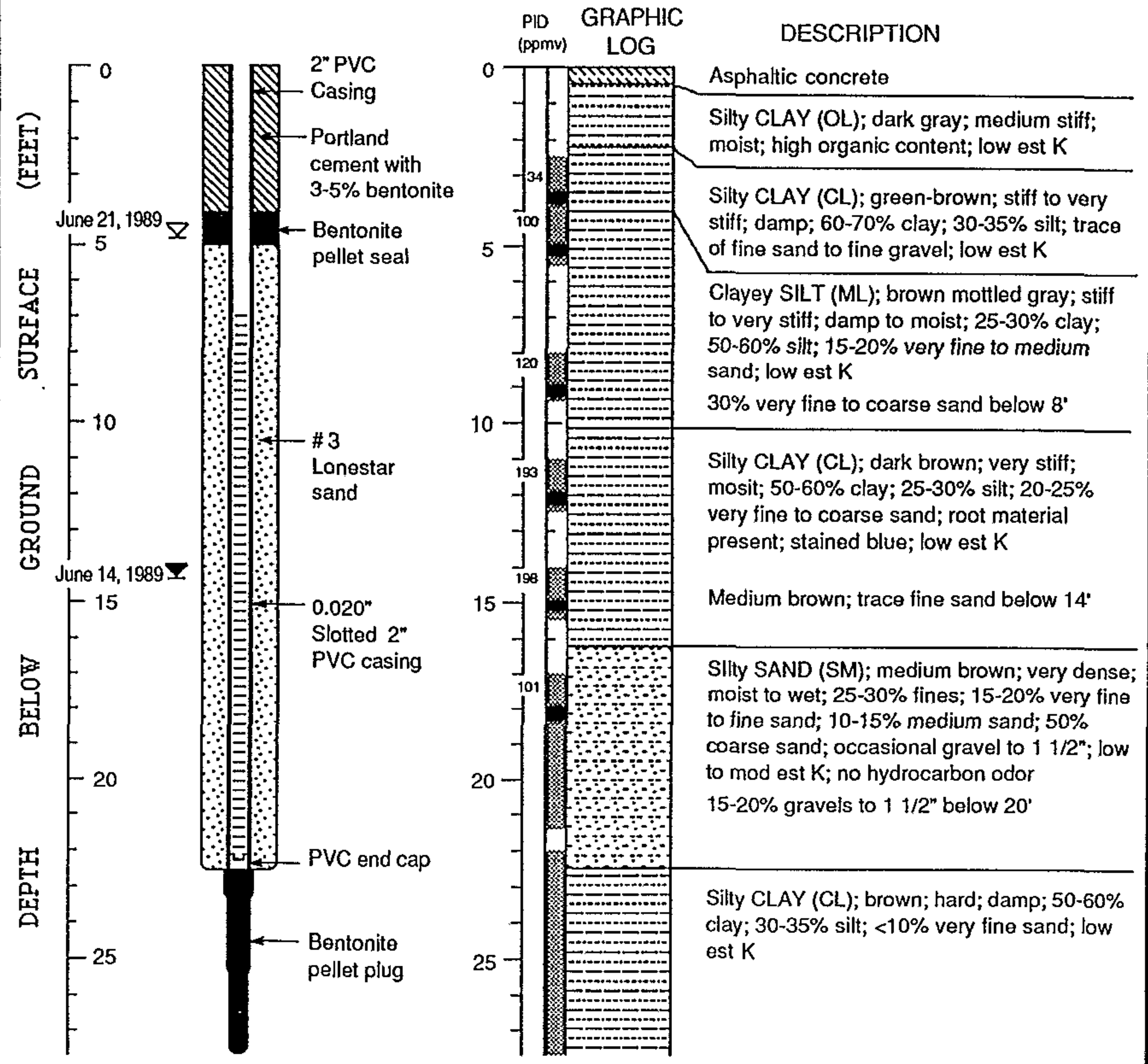
Well Construction and Boring Log - Well MW-2 (BH-B) Chevron Service Station #90972 Berkeley, California

Add ✓
Inv ✓



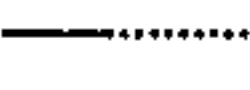
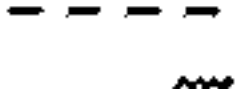



1790960

WELL MW-3 (BH-C)

15/40 12M 3



EXPLANATION

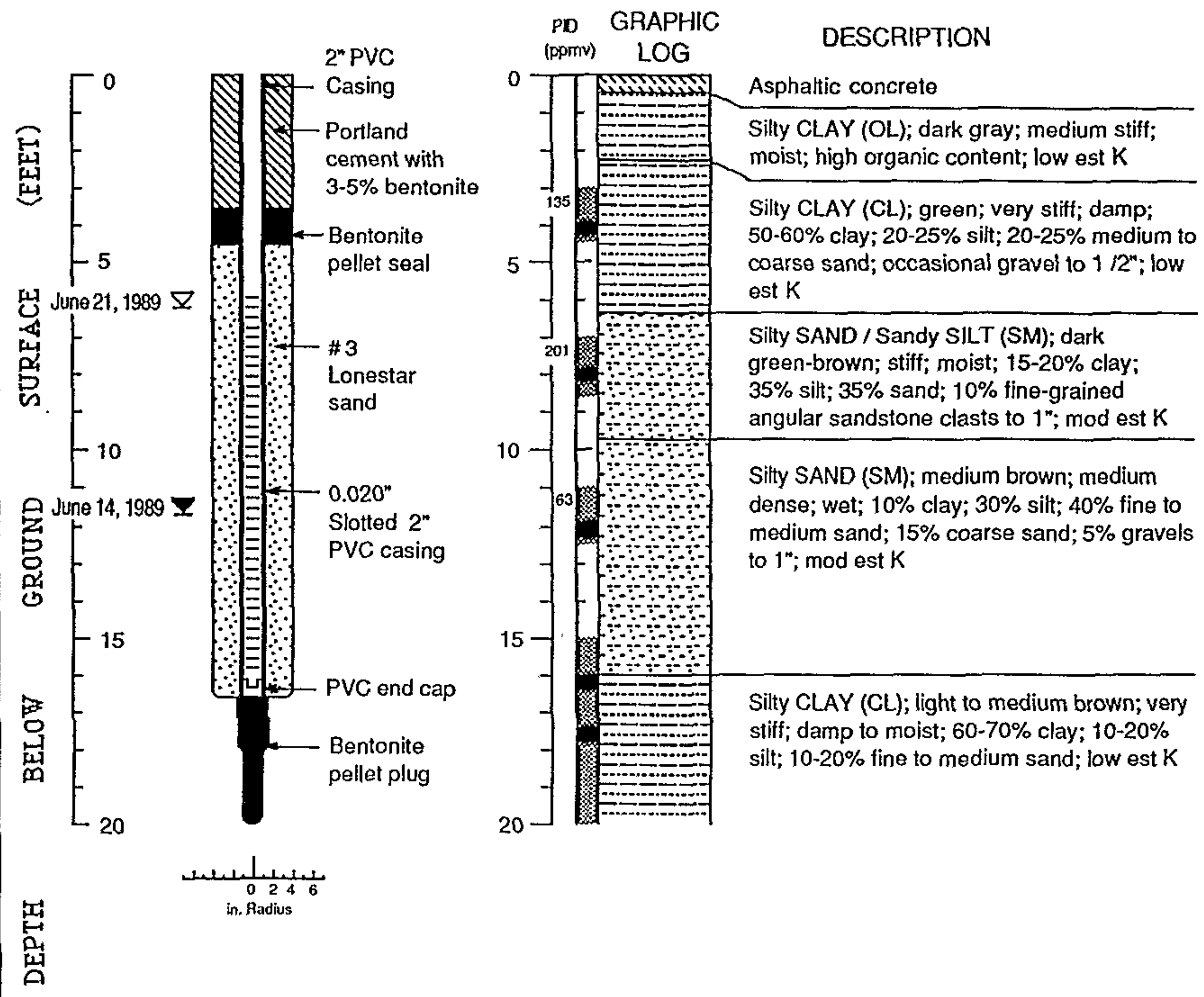
-  Water level during drilling (date)
-  Water level (date)
-  Contact (dotted where approx.)
-  Uncertain contact
-  Location of recovered drive sample
-  Location of drive sample sealed for chemical analysis
-  Cutting sample
- K = Estimated hydraulic conductivity

Logged by: Jim Carmody
 Supervisor: Richard Weiss; EG 1112
 Drilling Company: Bay Area Exploration
 Driller: Rick Carr
 Drilling Method: Hollow stem auger
 Date Drilled: June 14, 1989
 Well Head Completion: Locking stovepipe inside concrete vault
 Type of sampler: Split barrel (1.4", 2.0", 2.5" ID)

Well Construction and Boring Log - Well MW-3 (BH-C) Chevron Service Station #90972 Berkeley, California

Add
Invc

WELL MW-4 (BH-D) 1S/4W/2M4



EXPLANATION

- | | |
|---|---|
| <ul style="list-style-type: none"> Water level during drilling (date) Water level (date) Contact (dotted where approx.) Uncertain contact Location of recovered drive sample Location of drive sample sealed for chemical analysis Cutting sample K = Estimated hydraulic conductivity | <ul style="list-style-type: none"> Logged by: Jim Carmody Supervisor: Richard Weiss; EG 1112 Drilling Company: Bay Area Exploration Driller: Rick Carr Drilling Method: Hollow stem auger Date Drilled: June 14, 1989 Well Head Completion: Locking stovepipe inside concrete vault Type of sampler: Split barrel (1.4", 2.0", 2.5" ID) |
|---|---|

Well Construction and Boring Log - Well MW-4 (BH-D) Chevron Service Station #90972 Berkeley, California

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

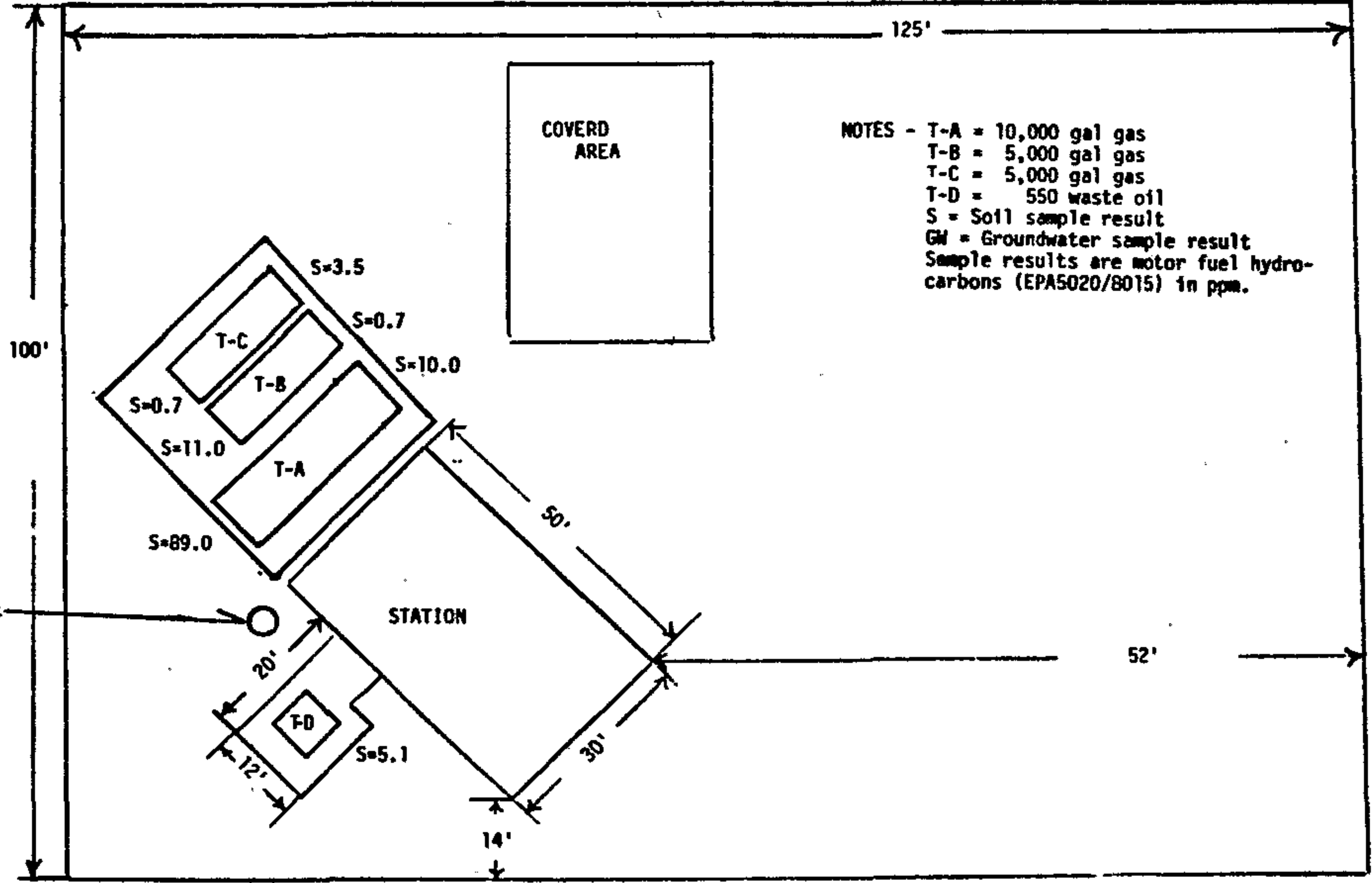
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---TELEGRAPH---

125'



NOTES - T-A = 10,000 gal gas
T-B = 5,000 gal gas
T-C = 5,000 gal gas
T-D = 550 waste oil
S = Soil sample result
GW = Groundwater sample result
Sample results are motor fuel hydrocarbons (EPA5020/8015) in ppm.



100'

approximate location of monitoring well

---ALCATRAZ---



6392 Telegraph Ave., Oakland, California

SCALE:	APPROVED BY:	DRAWN BY:
DATE:		REVISED:
AQUA SCIENCE ENG.		
Figure 1, not to scale		DRAWING NUMBER:

01-4222T
015/04/12/2011

01-422E
01504W RNI

WATER WELL DRILLERS REPORT

Owner: Givens and Zweben
6407 Fairmont Ave.
El Cerrito, CA 94530

Constructed: 7-26-88

County: Alameda Permit No: ACFC 88346

Equipment: Rotary (Geospace 1200) Gravel Pack: Yes/#3 Aquarlum Sand
From: 8 ft. to 24 ft.

Casing: 2" PVC Perforations: 0.010"
From: to 29 ft. From: 9 ft. 24 ft.

Well Seal: Yes/neat Portland cement surface to 7 ft., bentonite 7 ft.
to 8 ft. bentonite from 24 ft. to 29 ft.

Water Levels

Depth of First Water: .
Depth After Well Completion:

Sampling: Soils by Calif. Split Spoon, 5 ft. and 10 ft.

Chemical Analysis: Yes, GC/FID of two soil samples and one water sample
(results negative)

Well Use: monitoring Pump Tests: No

01-422E

PROJECT: GIVENS AND ZWEBEN, OAKLAND

Add
Inuv

LOG OF BOREHOLE (S/4W 12N)

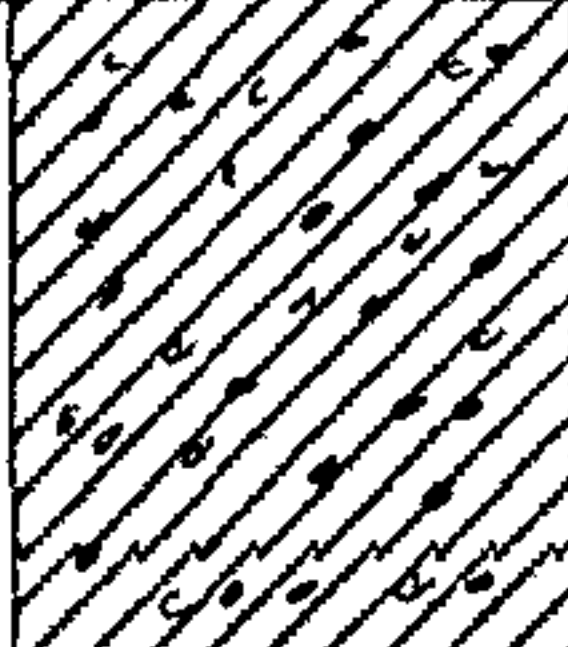


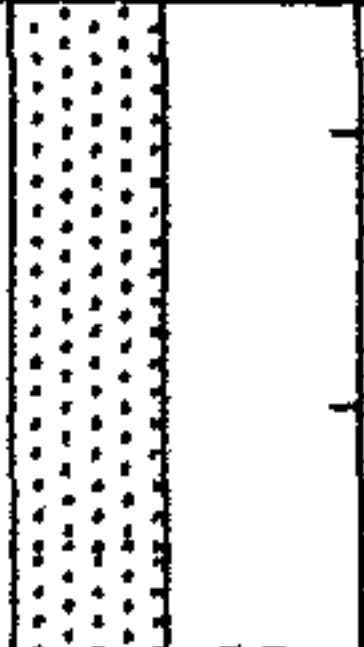
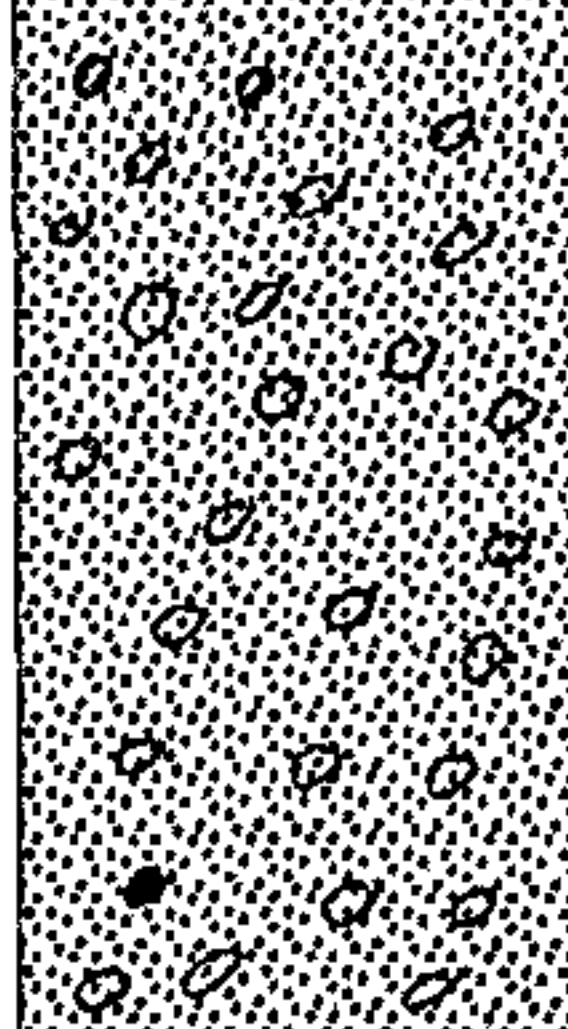

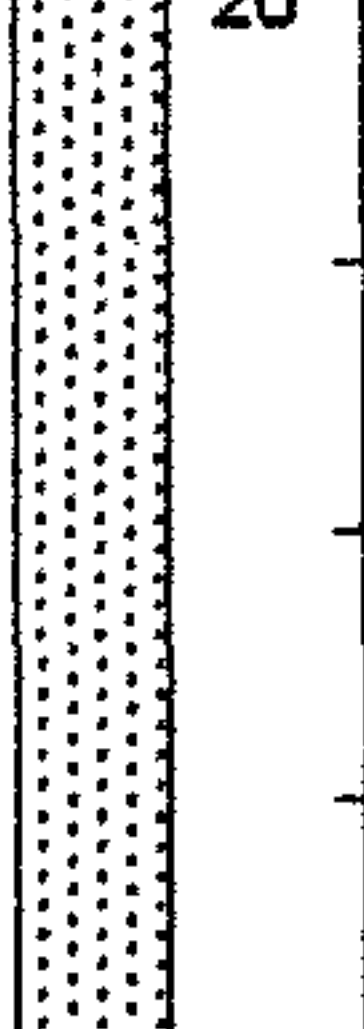
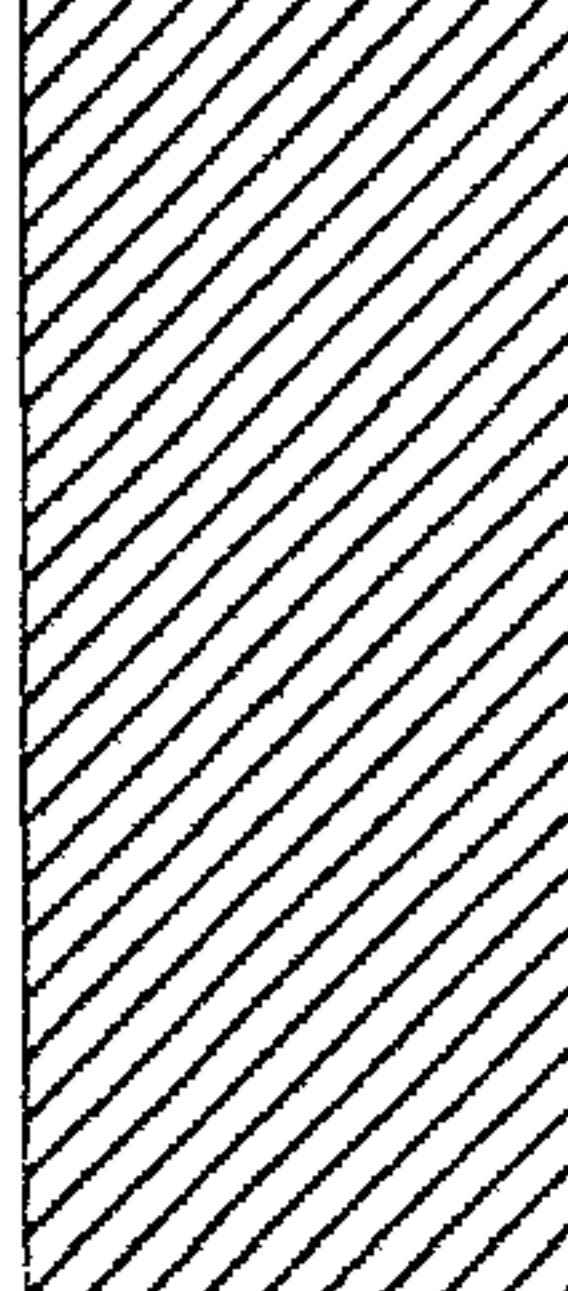

depth ft.	SOILS DESCRIPTION	BOREHOLE DETAILS	Hammer Blow Count	REMARKS
0				
1	Black Silty Clay, Slightly Moist, Medium Plasticity (CL)	Steel Cover		
2				
3				
4	Brown to Light Brown Silty Clay, Minor Quantity of Fine Gravel (CL)	Cement		
5		Solid PVC Casing	10 12 13	Soil Sample
6				
7				
8	Brown to Light Brown Silty Clay, Minor Quantity of Fine to Medium Gravel Increasing Moisture Content (CL)	Bentonite		
9				
10				
11				
12				
13	Fine to Medium Gravel Mixed With Sand, Some Silty Clay (GC)			
14				
15				
16				
17		No. 3 Monterey Sand		

Water Table

**AQUA
SCIENCE
ENGINEERS**

Date: 7-26-88

Logged By: Bruce Berman

depth ft.	SOILS DESCRIPTION	BOREHOLE DETAILS			Hammer Blow Count	REMARKS	
18 19	Fine to Medium Gravel Mixed With Sand, Some Silty Clay (GC)						
20 21 22 23	Coarse Gravel (GP)		No. 3 Monterey Sand ▼				
24 25 26 27 28	Light Brown to Yellow Silty Clay Moist, Stiff, Some Coars Sand and Gravel (CH)					Bentonite ▼	
29 30 31 32 33 34 35	B.O.H. AQUA SCIENCE ENGINEERS						

20

25

30

USA LOCATION REQUEST FORM

CA: 800-642-2444
NV: 800-227-2600

REQUEST # 110343
DATE CALLED IN: 7-21-88

ADDRESS OR DESCRIPTION WHERE YOU WILL BE DIGGING:

6392 Telegraph Ave., Oakland
abandoned gas station

CITY: Oakland

NEAREST CROSS STREET: Alcatraz

NATURE OF WORK: exploratory drilling & soil
sampling

WHO IS THE WORK BEING DONE FOR? Shell Services

STARTING DATE: 7-25-88 TIME: 8:00 am

YOUR NAME: Bruce Berman

YOUR COMPANY'S NAME: Aqua Science Engineers

AREA CODE AND TELEPHONE NUMBER WHERE YOU CAN BE REACHED?

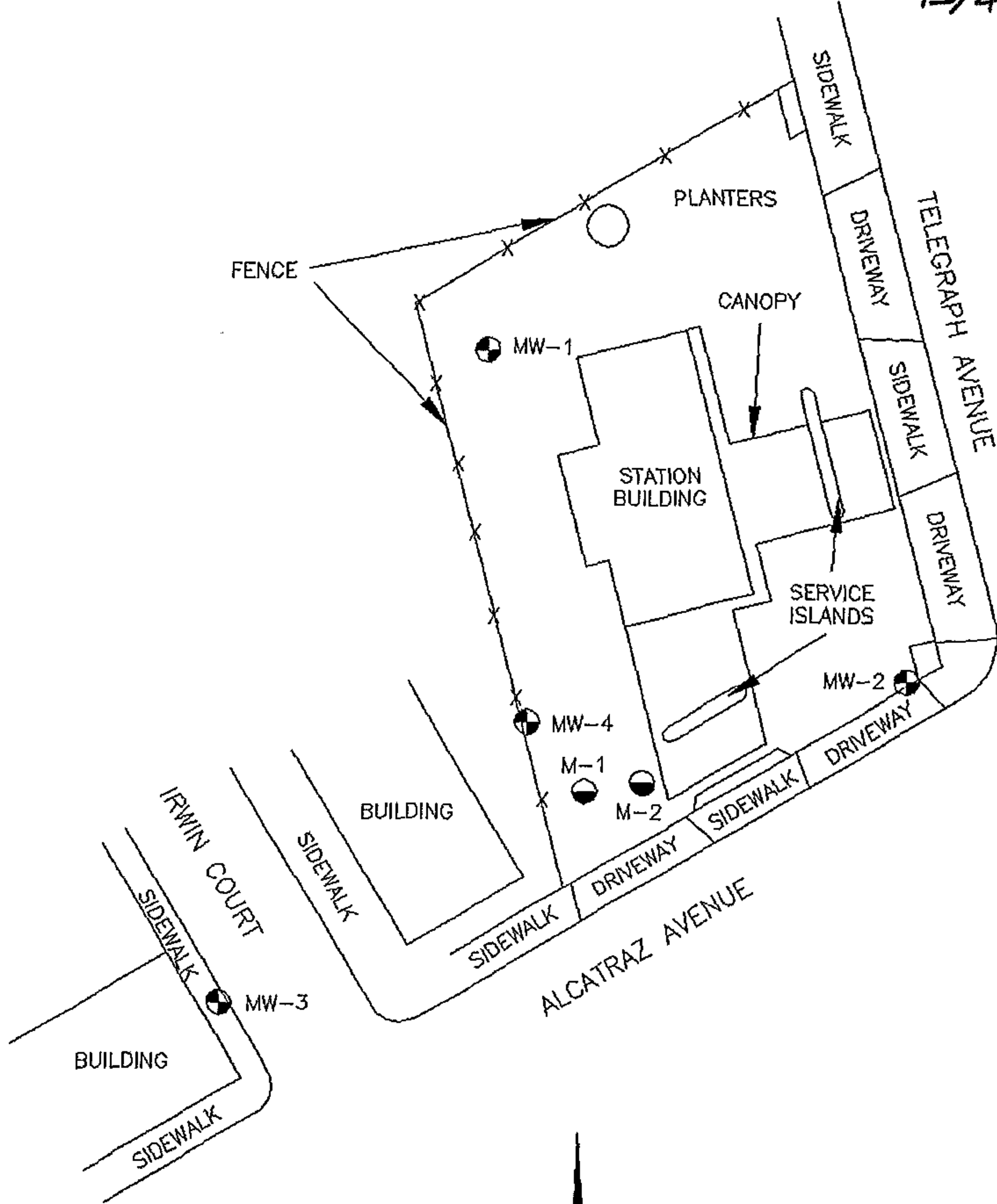
(415) 820-9391



COUNTY WHERE WORK IS BEING DONE: Alameda

WORK PERMIT, CITY OR COUNTY? None Required NUMBER:

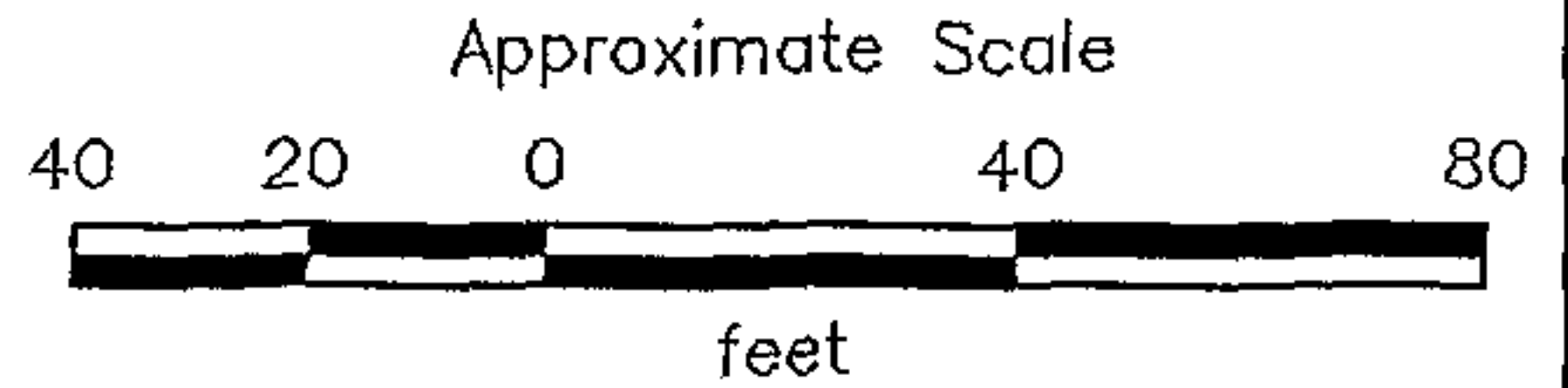
FOREMAN OF THE JOB Bruce Berman

TWO WORKING DAYS NOTICE IS REQUIRED ON ALL LOCATION REQUESTS. EACH LOCATION IS ACTIVE FOR 14 CALENDAR DAYS FROM THE DATE IT IS CALLED IN.



- MW-4  = Monitoring well installed by Applied GeoSystems (July 1989)
- M-2  = Tank pit monitoring well installed by Applied GeoSystems (1988)

Source: Surveyed by Ron Archer
Civil Engineer, Inc.



PROJECT NO. 18039-3

GENERALIZED SITE PLAN
ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California

PLATE
P - 2

01-2175

Inu Add 15/4W 12N2

Total depth of boring: 28-1/2 feet Diameter of boring: 11 inches Date drilled: 7-6-89
 Casing diameter: 4 inches Length: 27 feet Slot size: 0.020-inch
 Screen diameter: 4 inches Length: 20 feet Material type: Sch 40 PVC
 Drilling Company: Kvilhaug Drilling Company, Inc. Driller: Rod and Leroy
 Method Used: Hollow-Stem Auger Field Geologist: Becky and Keith
 Signature of Registered Professional: _____
 Registration No.: _____ State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt.	
2				CL	Silty clay, dark brown, slightly damp, medium plasticity, very stiff, rootlets, minor iron staining.	
4	S-3.5	4 12 18				
8	S-8.5	3 5 12			Sandy clay, grading to clay with gravel, some mottling, slight plasticity, stiff.	
14	S-13.5	15 18 20			Slightly green, hard.	
18	S-18.5	8 10 12			Silty clay, some sand and gravel, light brown, moist, medium plasticity, very stiff.	
20						

(Section continues downward)



PROJECT NO. 18039-3

LOG OF BORING B-1/MW-1
 ARCO Station No. 374
 6407 Telegraph Avenue
 Oakland, California

PLATE
 P - 4

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
				CL	Silty clay, some sand and gravel, light brown, moist, medium plasticity, stiff.	
-22	S-23	3			Trace gravel.	
-24		5				
-24		7				
-26						
-28	S-28	3			Total Depth = 28-1/2 feet.	
-28		5				
-28		7				
-30						
-32						
-34						
-36						
-38						
-40						
-42						
-44						
-46						
-48						
-50						



PROJECT NO. 18039-3

LOG OF BORING B-1/MW-1

ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California

PLATE

P - 5

01-217T Inw Addv 15/4w 12N3

Total depth of boring: 28-1/2 feet Diameter of boring: 11 inches Date drilled: 7-6-89
 Casing diameter: 4 inches Length: 27 feet Slot size: 0.020-inch
 Screen diameter: 4 inches Length: 20 feet Material type: Sch 40 PVC
 Drilling Company: Kvilhaug Drilling Company, Inc. Driller: Rod and Leroy
 Method Used: Hollow-Stem Auger Field Geologist: Becky and Keith

Signature of Registered Professional: _____
 Registration No.: _____ State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0				CL	Sandy clay, dark brown, damp, slight plasticity, very stiff.	
2						
4	S-3.5	6 10 12				
6						
8	S-8.5	7 20 25			Silty clay, with some gravel, light brown, damp, hard.	
10						
12						
14	S-13.5	5 7 15			Very stiff.	
16						
18	S-18.5	7 20 25			Silty clay with gravel, brown, moist, hard.	
20						

(Section continues downward)



PROJECT NO. 18039-3

LOG OF BORING B-2/MW-2
 ARCO Station No. 374
 6407 Telegraph Avenue
 Oakland, California

PLATE
 P - 6

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
				CL	Silty clay with gravel, brown, moist, hard.	
-22	S-23	.3 5 12			Silty clay, some fine gravel, dark brown, stiff.	
-24						
-26						
-28	S-28	.10 20 25			Silty clay with sand, medium brown, slightly damp, slight plasticity, hard.	
-30					Total Depth = 28-1/2 feet.	
-32						
-34						
-36						
-38						
-40						
-42						
-44						
-46						
-48						
-50						



Applied GeoSystems

PROJECT NO. 18039-3

LOG OF BORING B-2/MW-2

ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California

PLATE

P - 7

01-2170

Inu Addl SCHW 12N 4

Total depth of boring: 28-1/2 feet Diameter of boring: 11 inches Date drilled: 7-7-89

Casing diameter: 4 inches Length: 27 feet Slot size: 0.020-inch

Screen diameter: 4 inches Length: 20 feet Material type: Sch 40 PVC

Drilling Company: Kvilhaug Drilling Company, Inc. Driller: Rod and Leroy

Method Used: Hollow-Stem Auger Field Geologist: Becky and Keith

Signature of Registered Professional: _____

Registration No.: _____ State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Concrete (4 inches) over baserock (6 inches).	
2				CL	Silty clay, with sand and some gravel, medium brown, damp, slight plasticity, stiff, rootlets.	
4	S-3.5	3 10 10				
8	S-8.5	2 4 8			Damp.	
14	S-13.5	4 6 10			Some mottling, moist.	
18	S-18.5	.6 5 12			Silty clay, minor gravel, light to medium brown, damp, medium plasticity, stiff.	
20						

(Section continues downward)



PROJECT NO. 18039-3

LOG OF BORING B-3/MW-3

ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California

PLATE

P - 8

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
				CL	Silty clay, minor gravel, light to medium brown, damp, medium plasticity, stiff.	[Well Const. Diagram]
-22	S-23.5	.6 8 12			Very stiff.	
-24						
-26						
-28	S-28.5	.5 10 12			Silty clay with sand, slight plasticity, very stiff.	
					Total Depth = 28-1/2 feet.	
-30						
-32						
-34						
-36						
-38						
-40						
-42						
-44						
-46						
-48						
-50						



Applied GeoSystems

PROJECT NO. 18039-3

LOG OF BORING B-3/MW-3

ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California

PLATE

P - 9

01-217V

Inn Add 15/4W 12N5

Total depth of boring: 27-1/2 feet Diameter of boring: 11 inches Date drilled: 7-7-89

Casing diameter: 4 inches Length: 27 feet Slot size: 0.020-inch

Screen diameter: 4 inches Length: 20 feet Material type: Sch 40 PVC

Drilling Company: Kvilhaug Drilling Company, Inc. Driller: Rod and Leroy

Method Used: Hollow-Stem Auger Field Geologist: Becky and Keith

Signature of Registered Professional: _____

Registration No.: _____ State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0						
2		2		CL	Silty clay, some sand and fine-grained gravel, very dark brown, slightly damp, slight plasticity, stiff.	
3.5		3				
4		8				
6						
8		3				
8.5		4				
10		10				
12						
14	S-13.5	4		GM	Sandy gravel, some silt, medium brown, very moist, medium dense.	
14		10				
18		25				
18	S-18.5	15			Wet, dense.	
18		15				
20		20				

(Section continues downward)



PROJECT NO. 18039-3

LOG OF BORING B-4/MW-4

ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California

PLATE

P - 10

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
				GM	Sandy gravel, some silt, medium brown, very moist, medium dense.	[Well Const. Diagram]
-22		.6		CL	Silty clay, some sand and gravel, very stiff.	
-24	S-23.5	12 15				
-26		.7 20			Grades more gravelly.	
-28	S-27	20			Total Depth = 27-1/2 feet.	
-30						
-32						
-34						
-36						
-38						
-40						
-42						
-44						
-46						
-48						
-50						



PROJECT NO. 18039-3

LOG OF BORING B-4/MW-4

ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California

PLATE

P - 11

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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CONFIDENTIAL

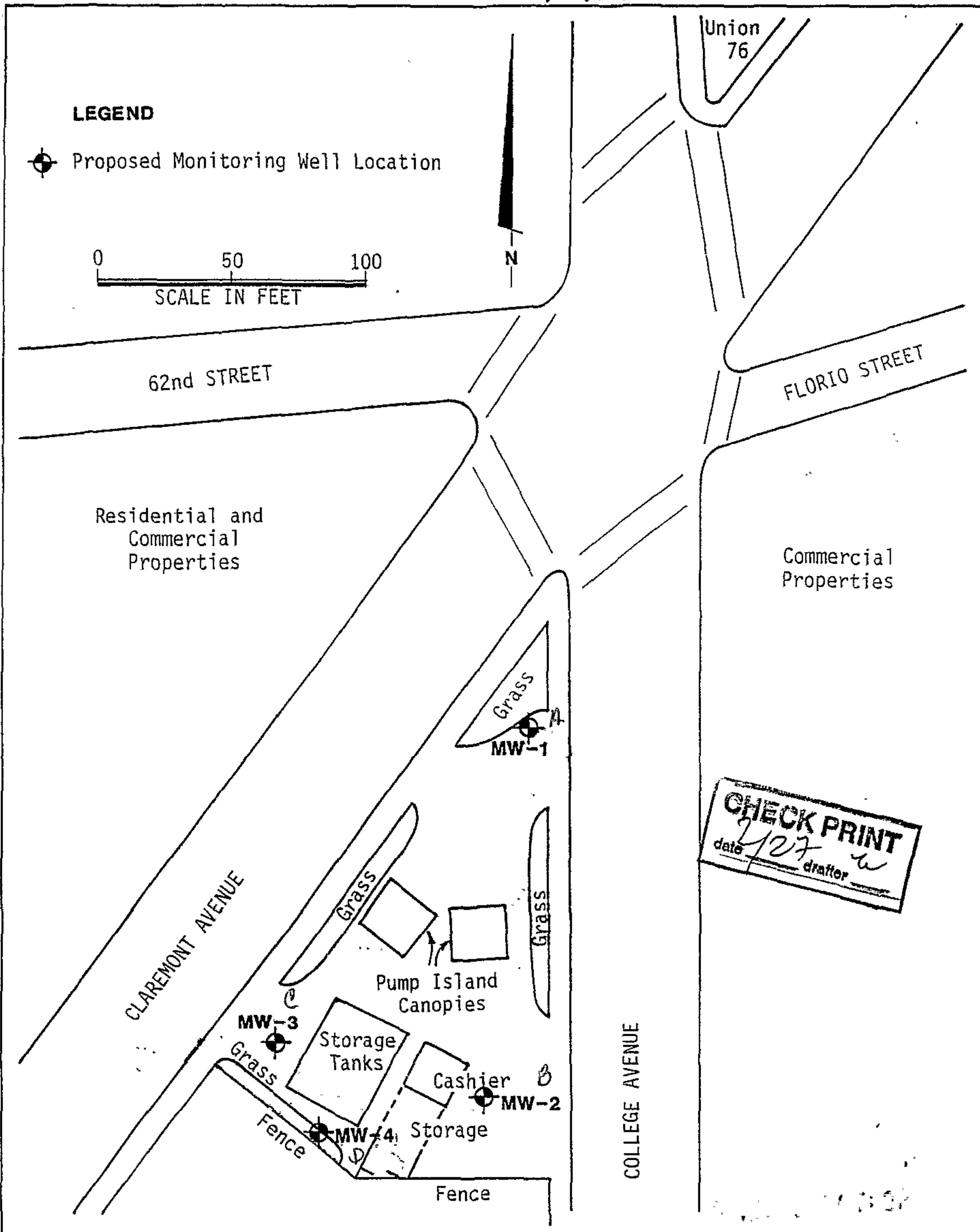
STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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CONFIDENTIAL

**STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)**

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Harding Lawson Associates
 Engineering and Environmental Services

Monitoring Well Locations
 Shell Service Station
 6039 College Avenue
 Oakland, California

PLATE

4

DRAWN KH JOB NUMBER 4022,233.03

APPROVED

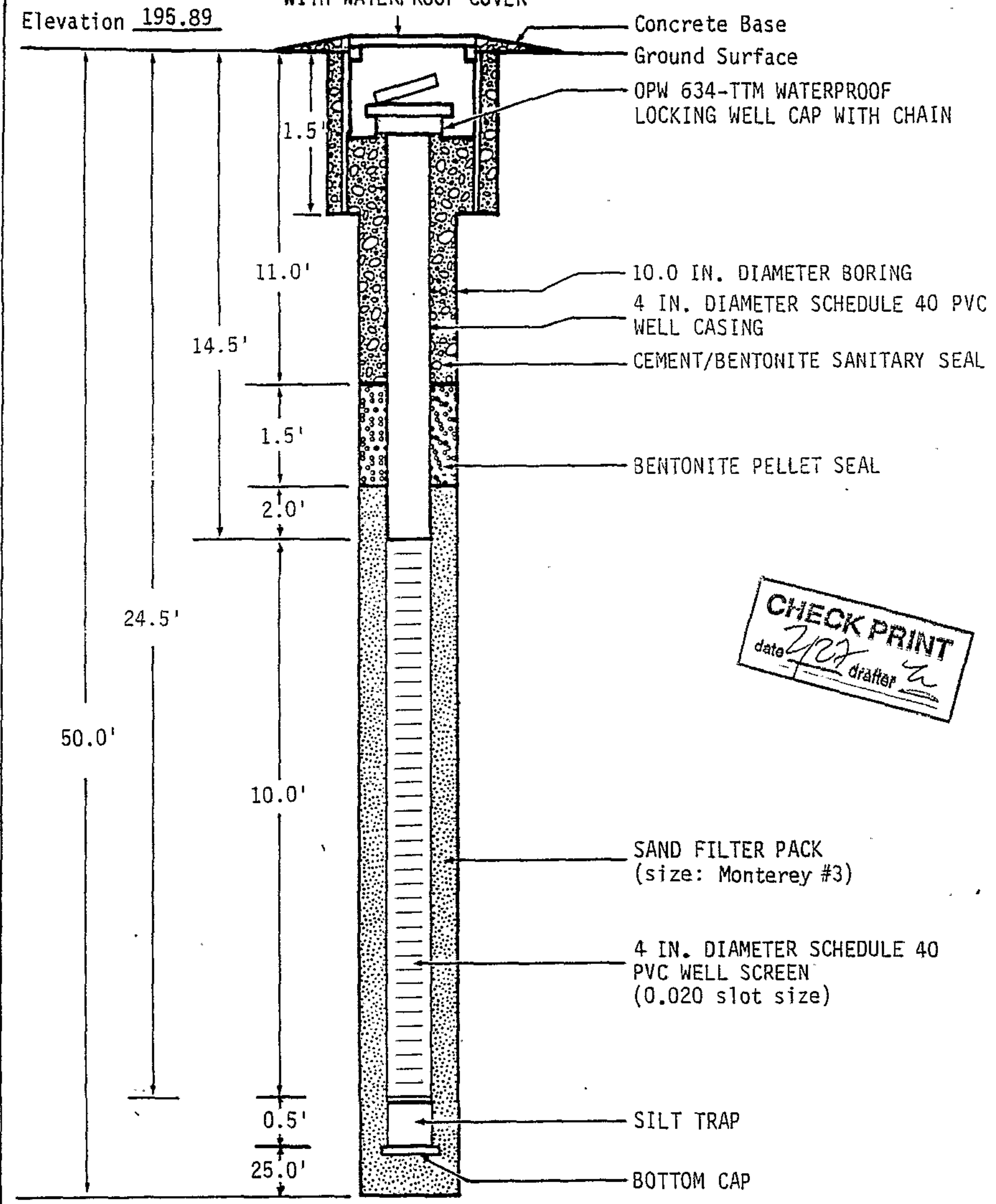
DATE 11/89

REVISED DATE

15/4w 13B1

Top of PVC Casing
Elevation 195.89

12" EMCO WHEATON A-721 MANHOLE
WITH WATERPROOF COVER



CHECK PRINT
 date 2/27
 drafter [Signature]

NOT TO SCALE



Harding Lawson Associates
 Engineers and Geoscientists

Well Completion Diagram MW-1
 Shell Service Station
 6039 College Avenue
 Oakland, California

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
YC	4022,233.03		2/90		

Blows/ foot	Photo Ionization Detector (ppm)	Well Screen Interval	Gasoline Odor	Depth (ft)	Sample	(Continuation of Log)
29	0		None	40		MOTTLED BROWN-GRAY SILT (ML), medium dense, moist
32	0		None			BROWN SILTY SAND WITH GRAVEL (SM), dense, saturated, gravel ≤.5 inch, some clay
42	0		None	45		BROWN LEAN CLAY WITH GRAVEL (CL), hard, moist, gravel ≤.5 inch
48	0					MOTTLED BROWN-ORANGE SILT (ML), medium dense, moist, some gravel decreasing towards bottom
15	0					Same, mottled gray-brown, partial cementation
31	0			50		
				55		
				60		
				65		
				70		
				75		
				80		

CHECK PRINT
date 3/14 drafter a



Harding Lawson Associates
Engineers, Geologists
& Geophysicists

Log of Boring B-1, MW-1
Shell Service Station
6039 College Avenue
Oakland, California

PLATE

DRAWN
YC

JOB NUMBER
4022,233.03

APPROVED

DATE
2/90

REVISED

DATE

Blows/ foot	Photo Ionization Detector (ppm)	Well Screen Interval	Gasoline Odor	Depth (ft)	Sample	Equipment	Elevation	Date
				0		Hollow Stem Auger		01/04/90 (0-25) 02/08/90 (25-50)
8	0		None	5				
33	0		None	10				
12	0		None	15				
15	1		None					
30	0		None					
33	0		None	20				
58	0		None					
22	0		None	25				
14	0		None					
24	0		None	30				
29	0		None					
16	0		None					
25	0		None					
29	0		None	35				
21	0		None					
26	0		None	40				

DARK BROWN SILTY SAND (SM), medium dense, dry, very fine to fine sand

BROWN SANDY LEAN CLAY (CL), very stiff, dry, very fine sand, no plasticity

BROWN LEAN CLAY WITH SAND (CL), stiff, moist, slight plasticity
Same, moderate plasticity

Same, mottled with wet gray soft clay

BROWN LEAN CLAY WITH GRAVEL (CL), very stiff, dry, slight plasticity

Bottom of boring at 25 feet
MOTTLED ORANGE-BROWN SILT (ML), medium dense, moist, with increasing sand content towards bottom of sample

BROWN SILTY SAND WITH GRAVEL (SP), medium dense, saturated, gravel \leq .25 inch, medium to coarse sand
Same, increasing sand (fine to medium)

BROWN SILT WITH GRAVEL (ML), medium dense, moist, gravel $<$.5 inch, some sand

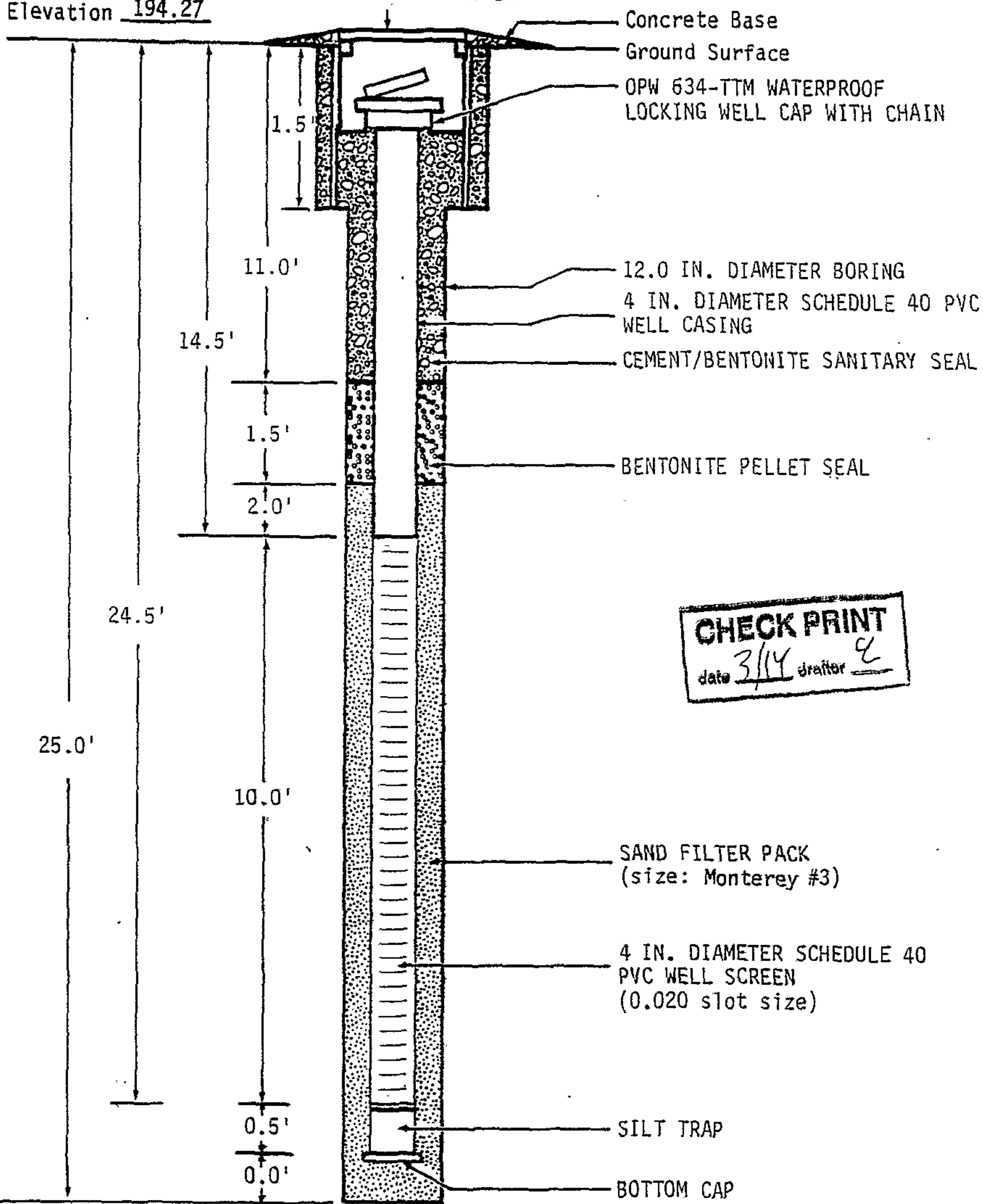
DARK BROWN LEAN CLAY (CL), very stiff, moist, with sand

MOTTLED BROWN-GRAY CLAY (CL), increased sand, some gravel $<$.15 inch

BROWN SILTY SAND WITH GRAVEL (SM), medium dense, moist, gravel $<$.25 inch, with clay

Top of PVC Casing
Elevation 194.27

12" EMCO WHEATON A-721 MANHOLE
WITH WATERPROOF COVER



CHECK PRINT
 date 3/14 drafter [Signature]

NOT TO SCALE

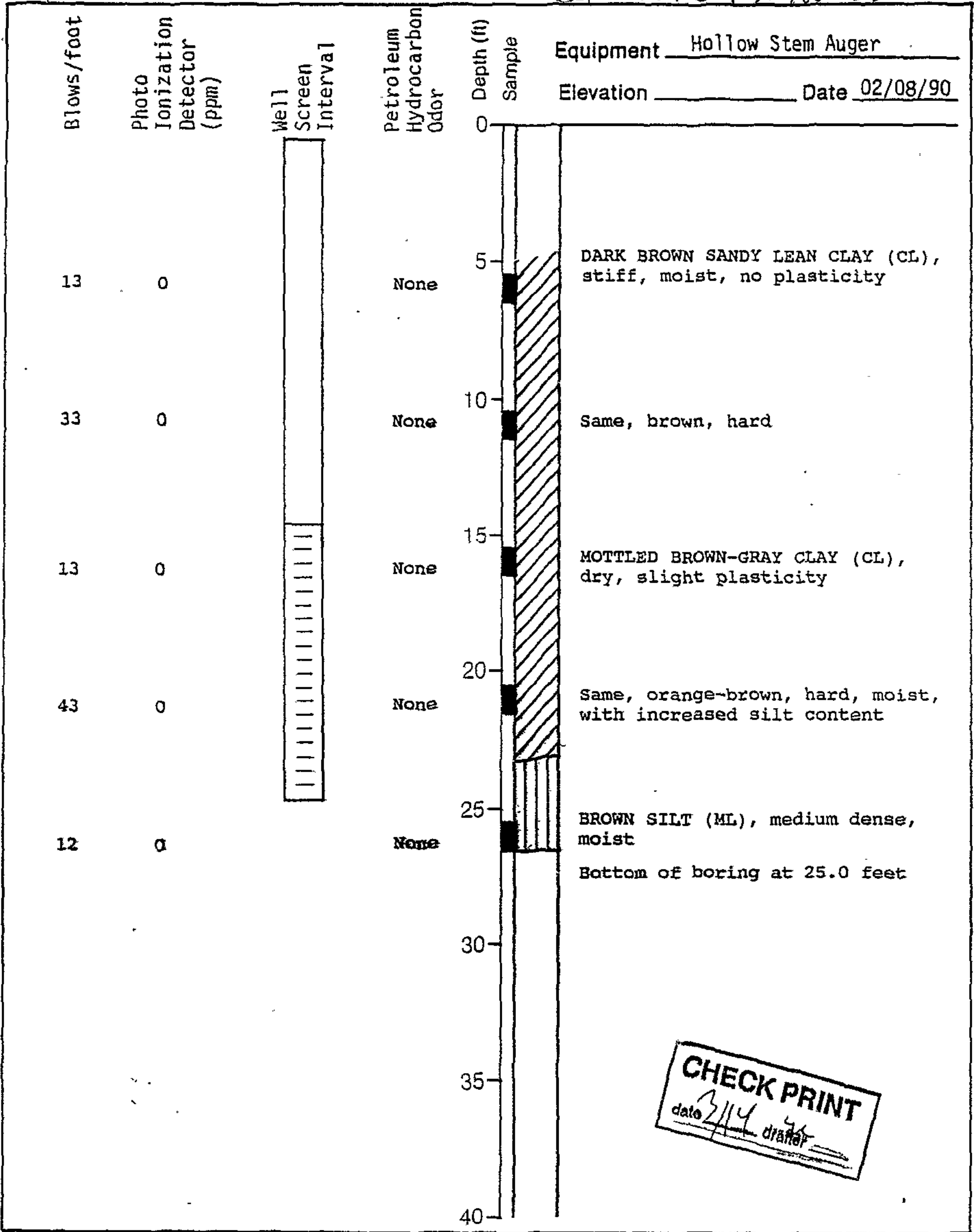


Harding Lawson Associates
 Engineers and Geoscientists

Well Completion Diagram MW-2
 Shell Service Station
 6039 College Avenue
 Oakland, California

PLATE

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
YC	4022,233.03		2/90		



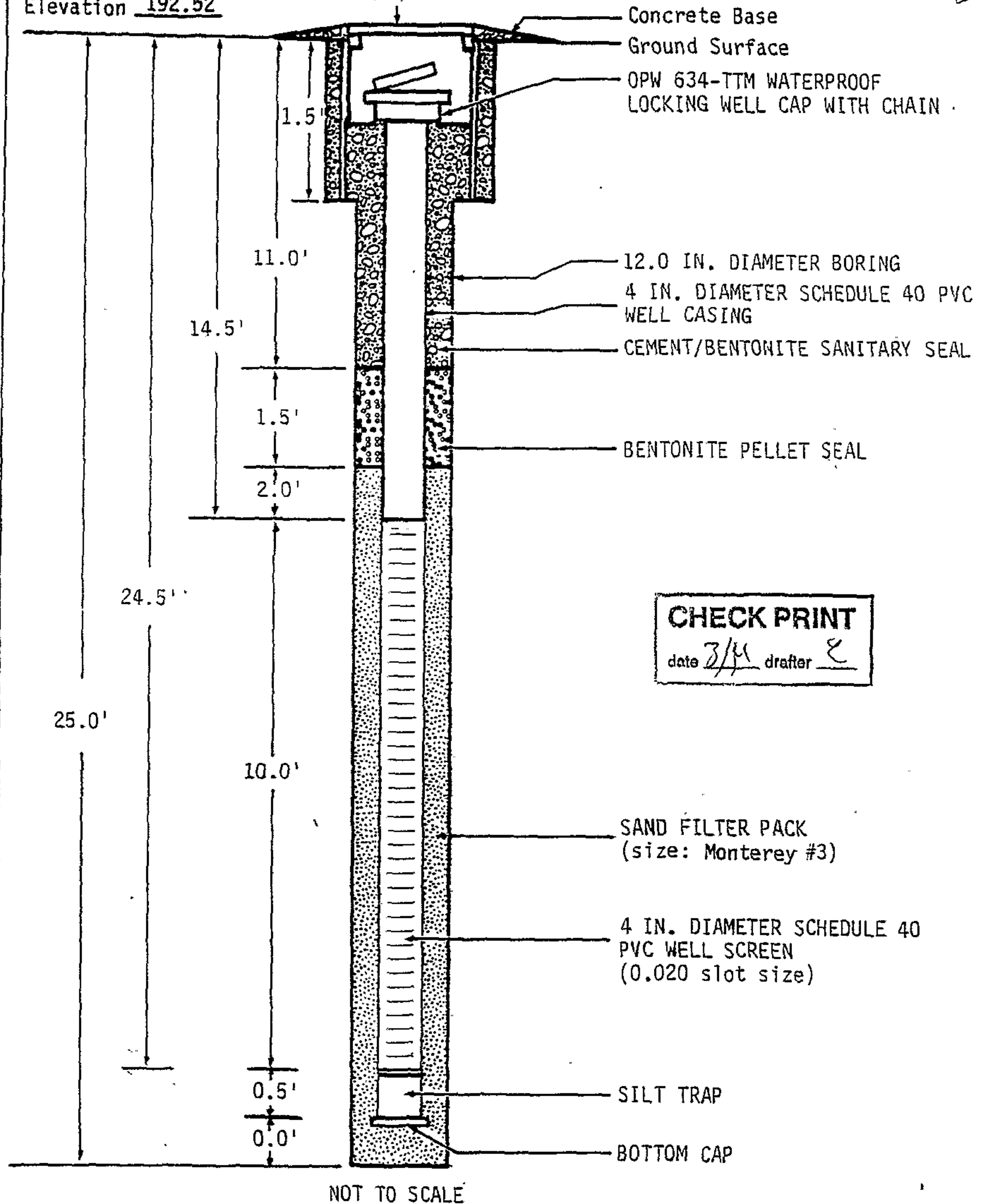
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Engineers and Geoscientists

Log of Boring MW-2
Shell Service Station
6039 College Avenue
Oakland, California

PLATE

Top of PVC Casing
Elevation 192.52

12" EMCO WHEATON A-721 MANHOLE
WITH WATERPROOF COVER



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date 3/4 drafter E

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Harding Lawson Associates
Engineers and Geoscientists

Well Completion Diagram MW-3
Shell Service Station
6039 College Avenue
Oakland, California

PLATE

DRAWN
YC

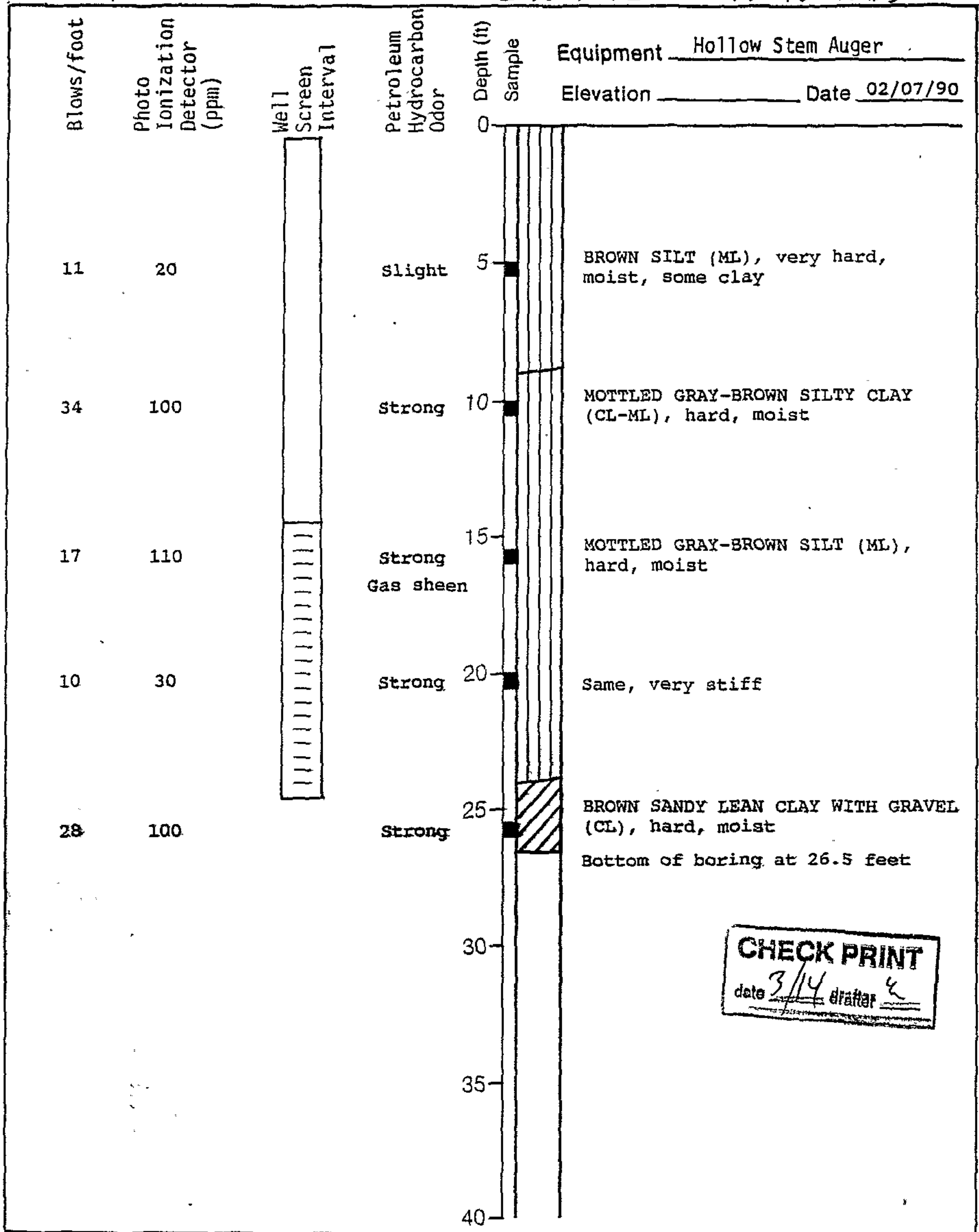
JOB NUMBER
4022,233.03

APPROVED

DATE
2/90

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DATE



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 Engineers and Geoscientists

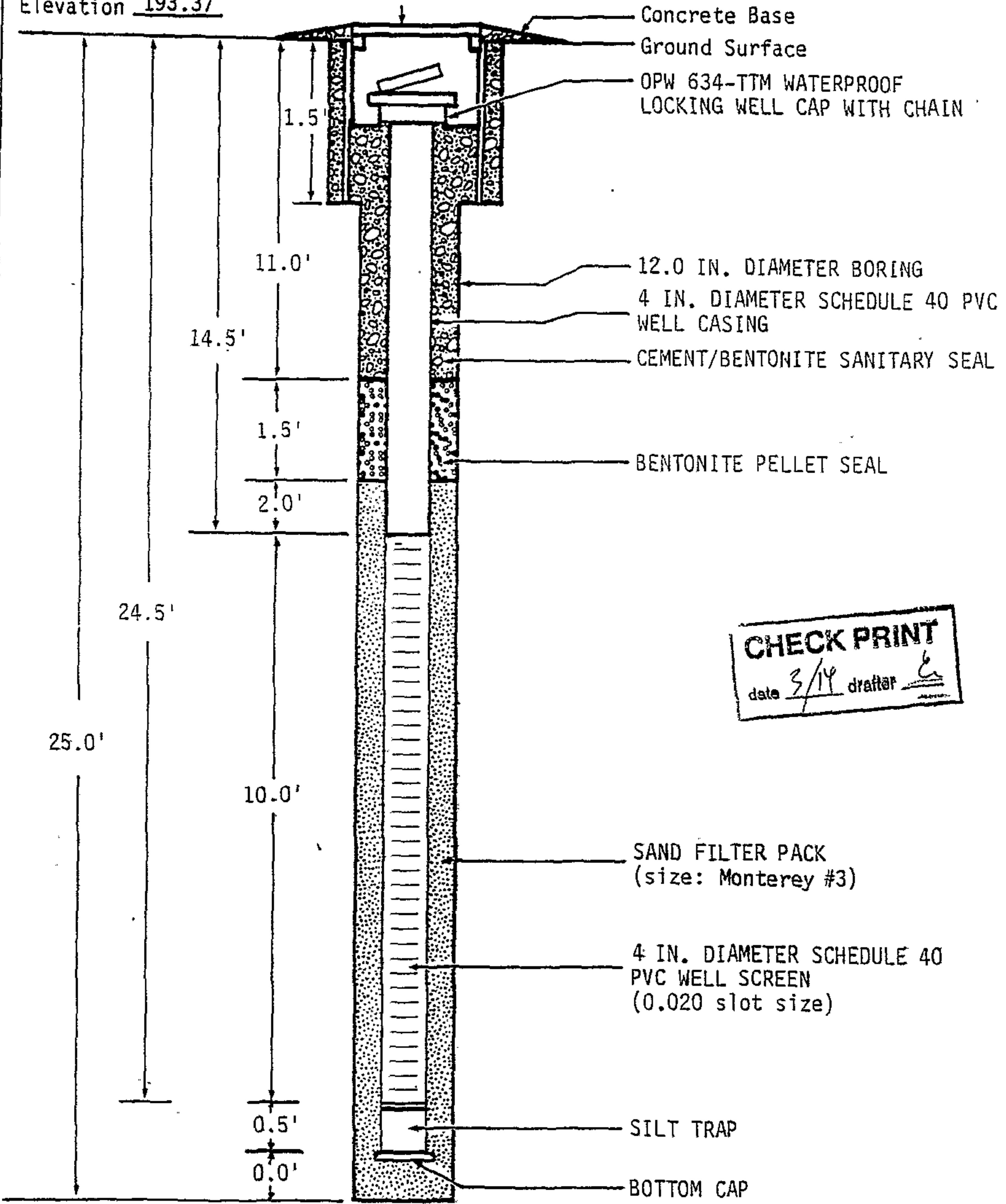
Log of Boring MW-3
 Shell Service Station
 6039 College Avenue
 Oakland, California

PLATE

Top of PVC Casing
Elevation 193.37

12" EMCO WHEATON A-721 MANHOLE
WITH WATERPROOF COVER

15/4W 13B21



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 date 3/14 drafter [Signature]

NOT TO SCALE



Harding Lawson Associates
Engineers and Geoscientists

Well Completion Diagram MW-4
Shell Service Station
6039 College Avenue
Oakland, California

PLATE

DRAWN
YC

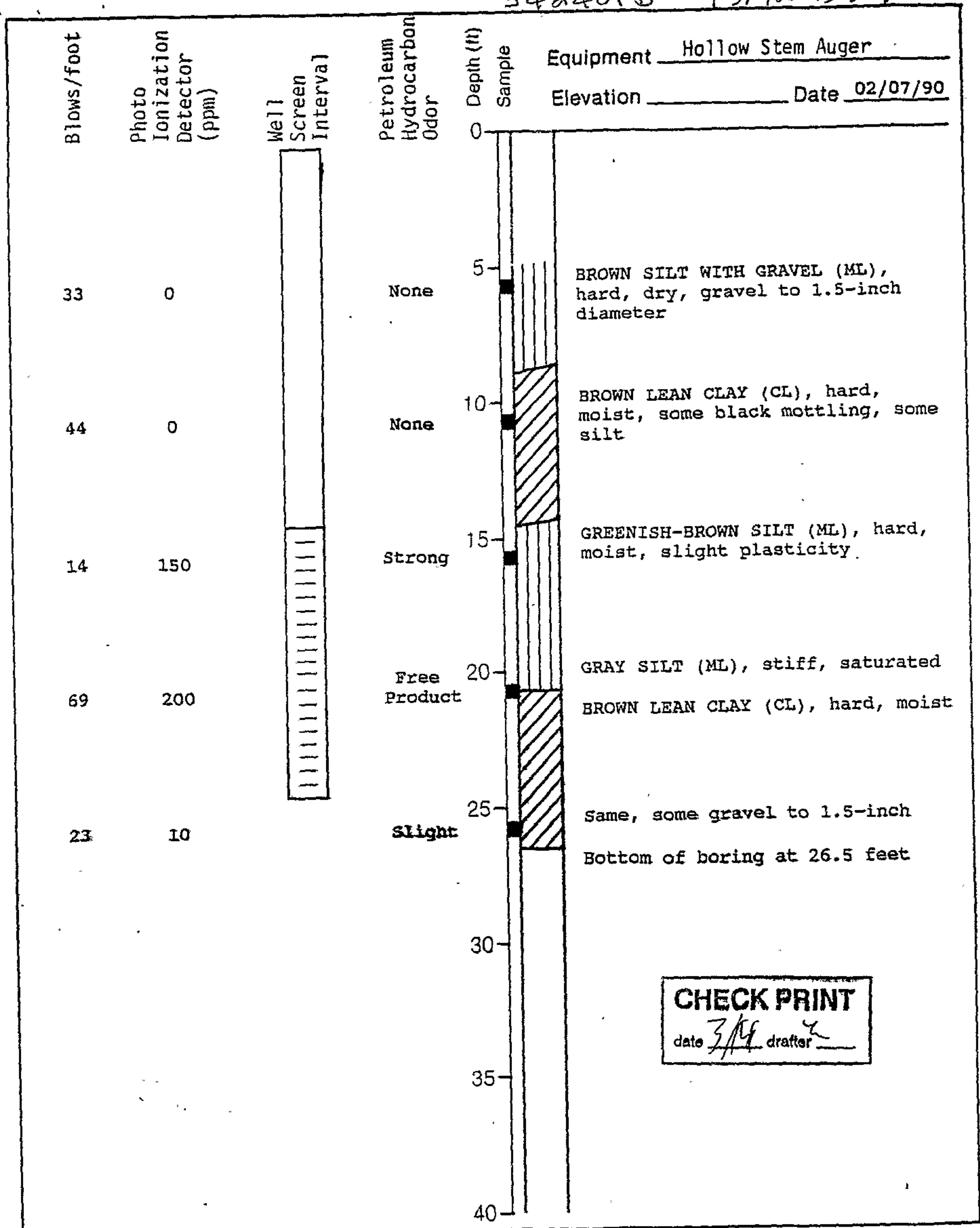
JOB NUMBER
4022,233.03

APPROVED

DATE
2/90

REVISED

DATE



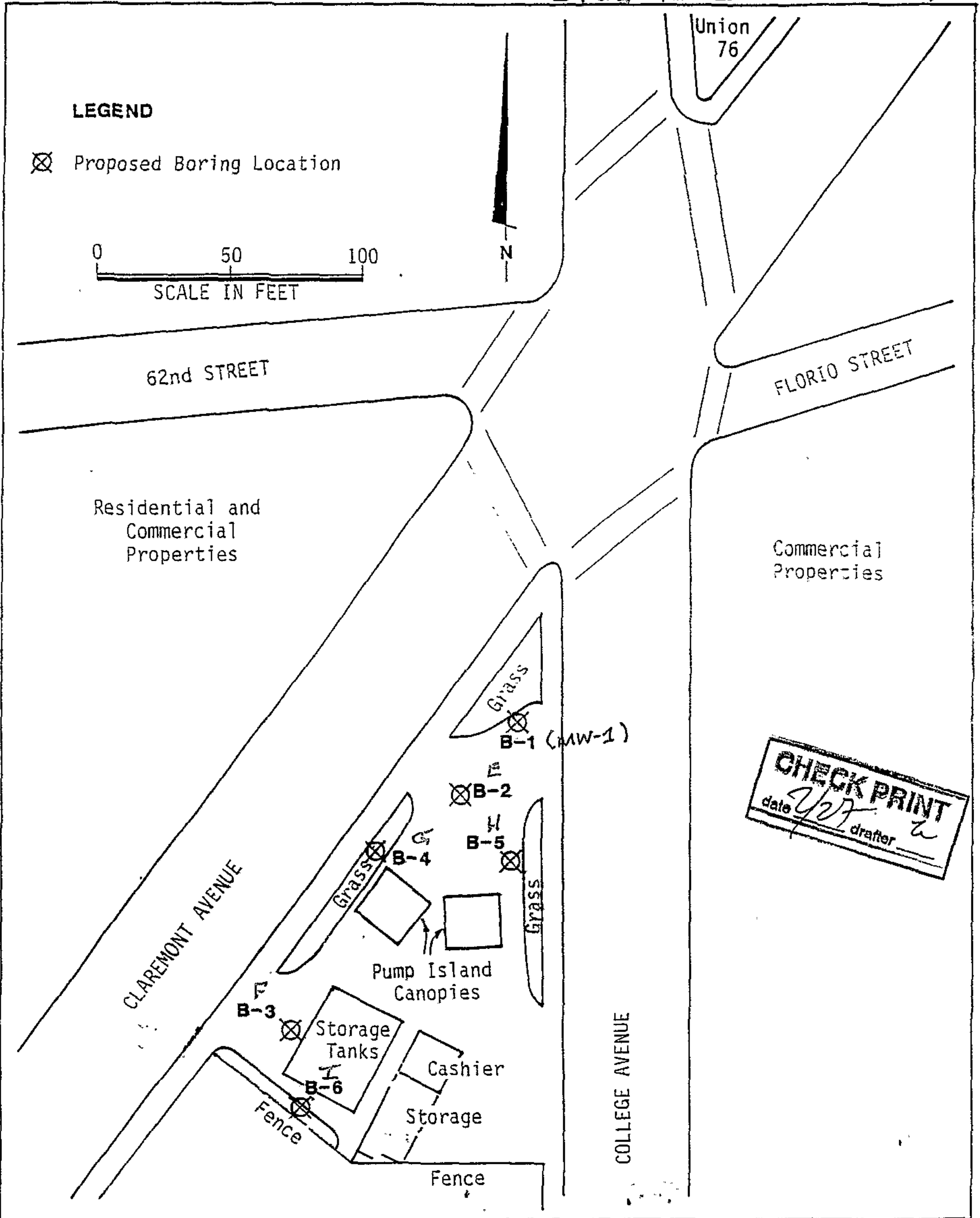
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Harding Lawson Associates
 Engineers and Geoscientists

Log of Boring MW-4
 Shell Service Station
 6039 College Avenue
 Oakland, California

PLATE



Harding Lawson Associates
 Engineering and Environmental Services

Soil Boring Locations
 Shell Service Station
 6039 College Avenue
 Oakland, California

PLATE

3

DRAWN KH	JOB NUMBER 4022,233.03	APPROVED	DATE 11/89	REVISED DATE
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Laboratory Tests	Blows/foot	Photo Ionization Detector (ppm)	Petroleum Hydrocarbon Odor	Depth (ft)	Sample	Equipment	Date
						Hollow Stem Auger	01/05/90
				0			
	21	0	None	5		No recovery, brown loose sandy material and asphalt in bottom of split barrel	
	35	3.4	slight	10		BROWN-GRAY MOTTLED SANDY LEAN CLAY (CL), medium dense, moist, fine to coarse sand	
	16	6.3	slight	15		GRAY SANDY SILT (ML), medium dense, moist, very fine sand	
	9	720	Strong			GREEN-GRAY MOTTLED SANDY SILT (ML), dense, wet, very fine sand	
Perm MA	28	134	Strong	20		BROWN-GRAY MOTTLED SILT WITH SAND (ML), dense, dry, very fine sand	
	48	4.0	slight				
		140	Strong			BROWN-GRAY SAND AND GRAVEL WITH SILT (GM), dense, moist, fine to medium gravel ~25%	
Perm MA	20	0.5	None	25		BROWN SILTY SAND WITH GRAVEL (SP), medium dense, saturated at 22.5 to 23 feet, gravel absent at 23.5 feet	
						Bottom of boring at 24 feet	
				30			
				35			
				40			

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 date 7/14 drafter [signature]



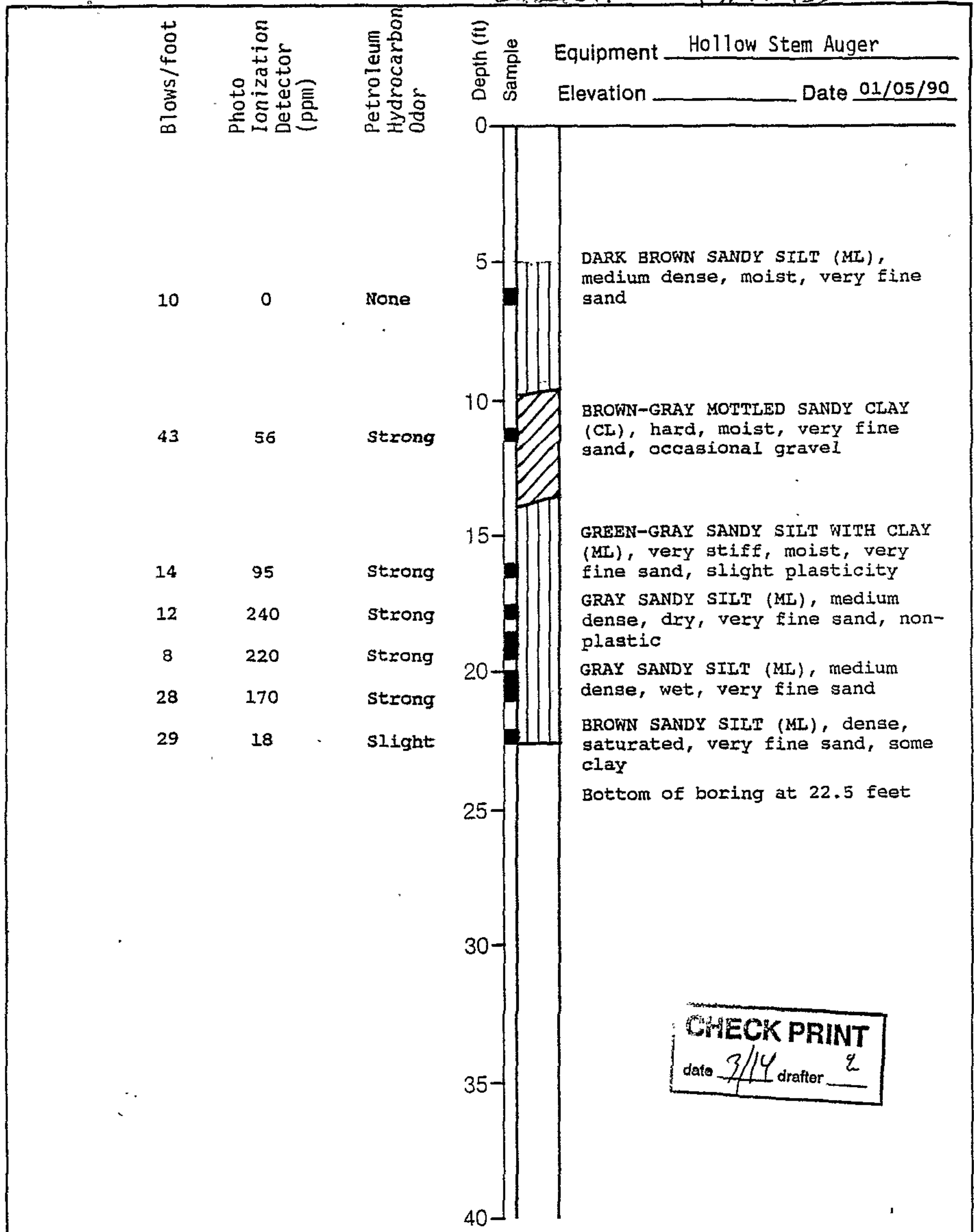
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 Engineers and Geoscientists

Log of Boring B-2
 Shell Service Station
 6039 College Avenue
 Oakland, California

PLATE

342401F

1514W13B



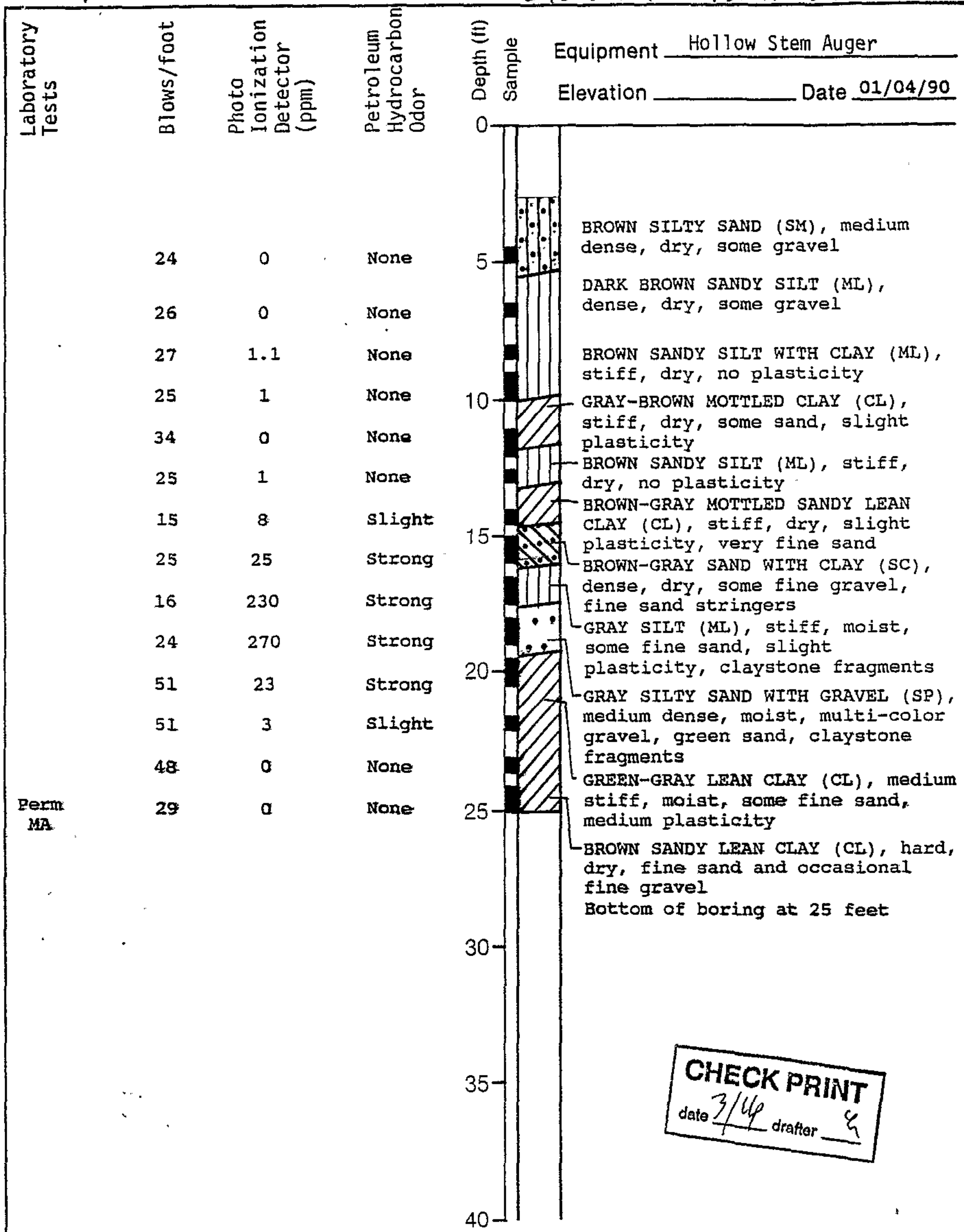
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Harding Lawson Associates
 Engineers and Geoscientists

Log of Boring B-3
 Shell Service Station
 6039 College Avenue
 Oakland, California

PLATE

DRAWN YC	JOB NUMBER 4022,233.03	APPROVED	DATE 2/90	REVISED	DATE
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 date 3/6/90 drafter g

Harding Lawson Associates
 Engineers and Geoscientists

Log of Boring B-4
 Shell Service Station
 6039 College Avenue
 Oakland, California

PLATE

Laboratory Tests	Blows/foot	Photo Ionization Detector (ppm)	Petroleum Hydrocarbon Odor	Depth (ft)	Equipment	Date
					Hollow Stem Auger	01/04/90
				0		
	20	0	None	5	DARK BROWN SILTY SAND (SM), medium dense, dry, occasional fine gravel, orange mottling	
	27	0	None	10	BROWN SANDY SILT WITH CLAY (ML), very stiff, dry, very fine sand, no plasticity	
Perm MA	12	3	None	15	BROWN-GRAY SILT WITH SAND (ML), very stiff, dry, very fine sand, no plasticity	
	28	9	Slight	20	BROWN-GRAY MOTTLED SANDY LEAN CLAY (CL), very stiff, dry, very fine sand, no plasticity	
	19	1	None	21.5	BROWN SANDY LEAN CLAY (CL), stiff, saturated from 21.5 to 21.7 feet, moist at 22 feet	
				23	Bottom of boring at 23 feet	
				25		
				30		
				35		
				40		

CHECK PRINT
 date 3/14 drafter *u*



Harding Lawson Associates
 Engineers and Geoscientists

Log of Boring B-5
 Shell Service Station
 6039 College Avenue
 Oakland, California

PLATE

DRAWN
 YC

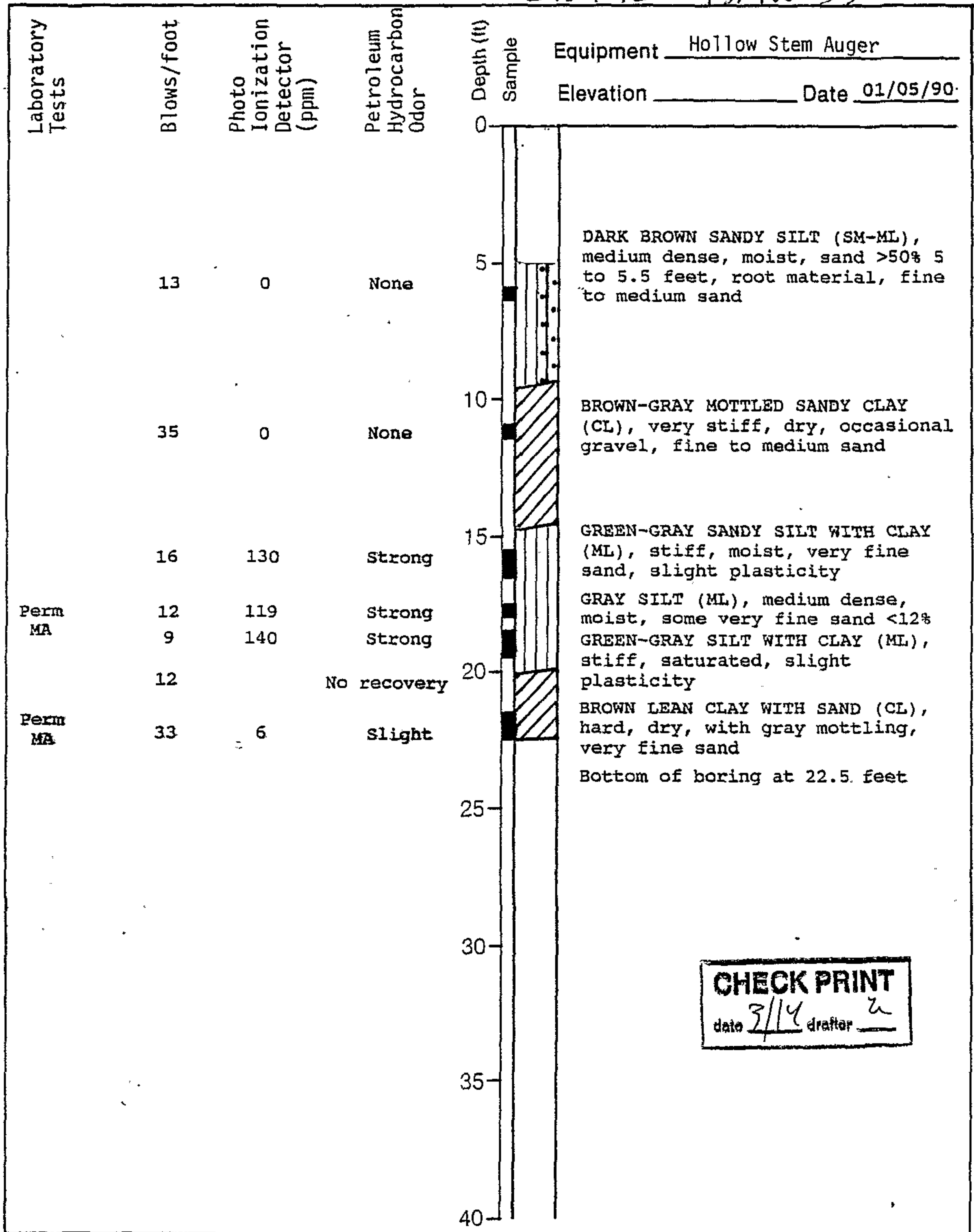
JOB NUMBER
 4022,233.03

APPROVED

DATE
 2/90

REVISED

DATE



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 date 3/14 drafter *u*

Harding Lawson Associates
 Engineers and Geoscientists

Log of Boring B-6
 Shell Service Station
 6039 College Avenue
 Oakland, California

PLATE

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

01-5053
15/42-13c 3

AQUA TERRA TECHNOLOGIES INC.

Log of Exploratory Boring

Project: Dryers Ice Cream Job No.: 9126

Location: 5929 College Avenue, Oakland, CA Date: 07/16/91

Boring No.: MW1 Driller: Gregg Drilling Page 1 of 2

Logged by: Bruce Berman Proj. Mgr. Terry Carter Reviewed by: _____

Penetration 0.5 Feet	Depth (feet)	U.S.C.S. Soil Class.	Field Description		
	0				
	1	Fill	0'-1' Redwood chip-bark and soil backfill (planter)		
	2	CL	1'-8' Silty clay; black (10YR 2/1); stiff; slightly damp. Gradational color change to very dark grayish brown (10YR 3/2), minor component of very fine sand beginning at 5'.		
	3				
	4				
	5				
	6				
	7				
	8	CL	8'-18' Sandy clay; dark yellowish brown (10YR 4/4); 10% to 20% very fine sand; stiff to very stiff; slightly damp. Gradational increase in fine sand content and moisture content; minor iron staining and micro pores beginning at ≈ 15'.		
	9				
7, 9, 14	10				10' Sample
	11				
	12				
	13				
	14				
5, 17, 12	15			15' Sample	
	16				
	17				

AQUA TERRA TECHNOLOGIES INC.

Field Drilling and Sampling Log

Job No: 9126

Page 2 of 2

Penetration (0.5 Ft)	Depth (feet)	U.S.C.S. Soil Class.	MW1 Field Description		
	18	CL	18'-30' Sandy-gravelly clay to clayey sand; 20% very fine sand, 10% medium to coarse sand, 20% fine to medium gravel (semi-round sandstone to 1/2-inch diameter); thin lenses of clean gravel (< 6-inches) diminish with depth.	18' First water	
	19	GC-CL		B.O.H. @ 30'.	20' Sample saturated, not retained.
6, 16, 22	20				
	21				
	22				
	23				
	24				
	25				
	26				
	27				
	28				
	29				
	30				
	31				
	32				
	33				
	34				
	35				
	36				
	37				
	38				
	39				

01-5055
15/46-1303

MW-1
Well Designation:

Site Location:
5929 College Avenue,
Oakland, CA.

Date Installed: 7-16-91

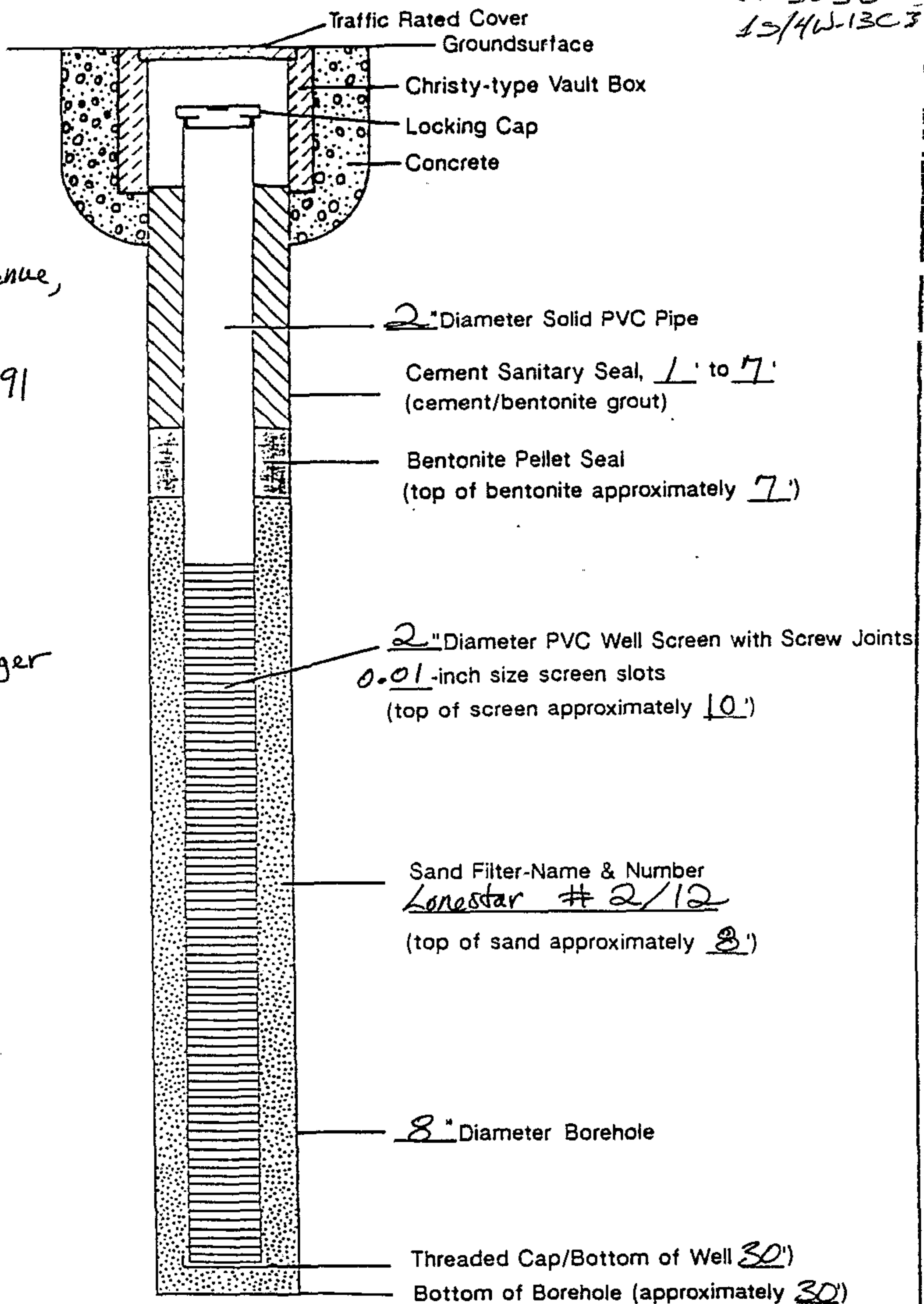
Drilling Company:
Gregg Drilling

Driller: Chris

Drilling Method:
Hollow-stem auger

Logged By: BB

Notes:



Not to Scale

**Groundwater Monitoring Well
Construction Details**

ATT Aqua Terra Technologies
Consulting Engineers
& Scientists

Dryers Ice Cream

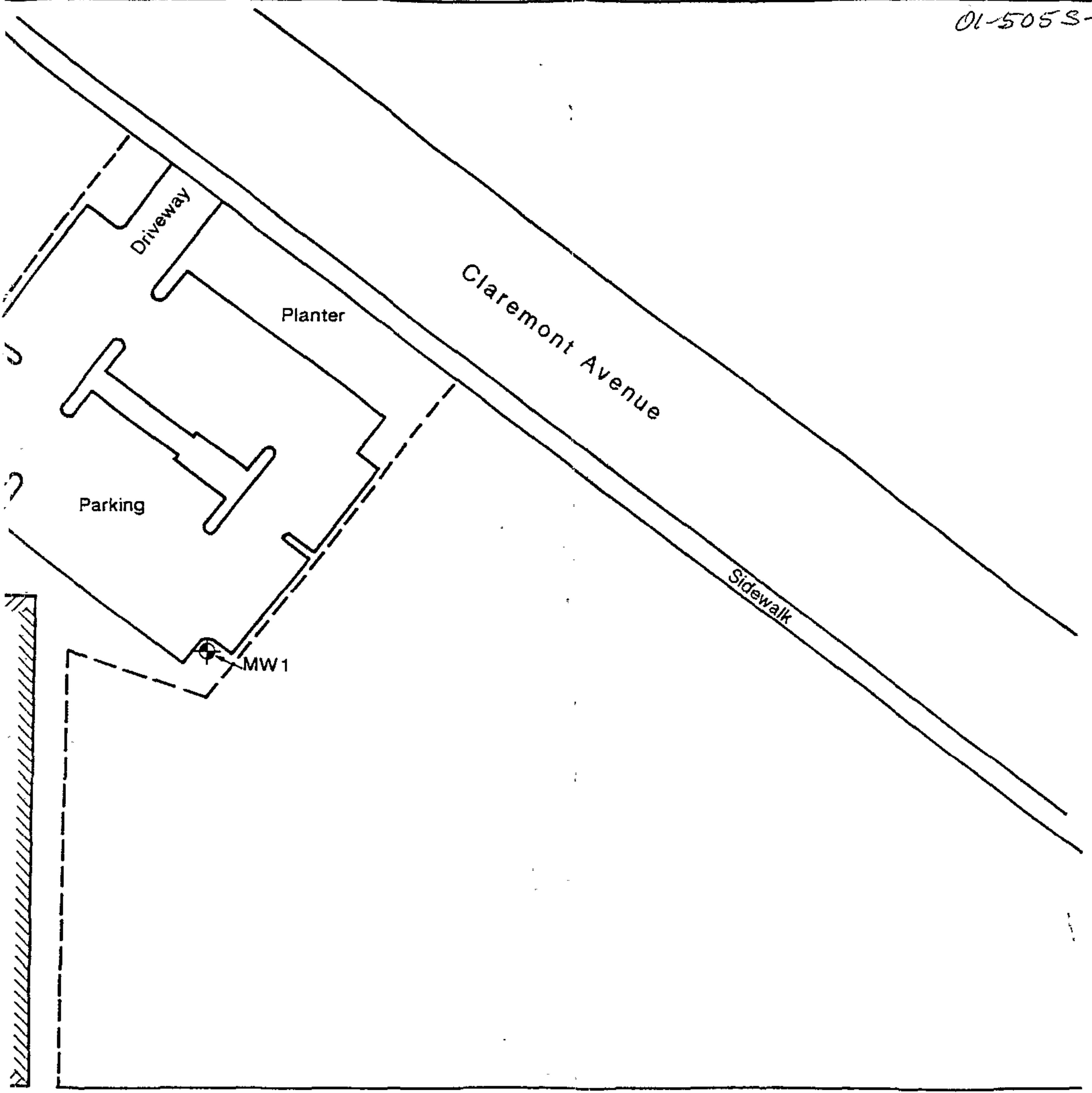
JOB NUMBER

DATE

9/26

PLATE

MW1



ge Avenue

Site Map		
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ATT Aqua Terra Technologies
 Consulting Engineers
 & Scientists

Dreyer's Grand Ice Cream, Inc.	
JOB NUMBER 9126	DATE 9/91

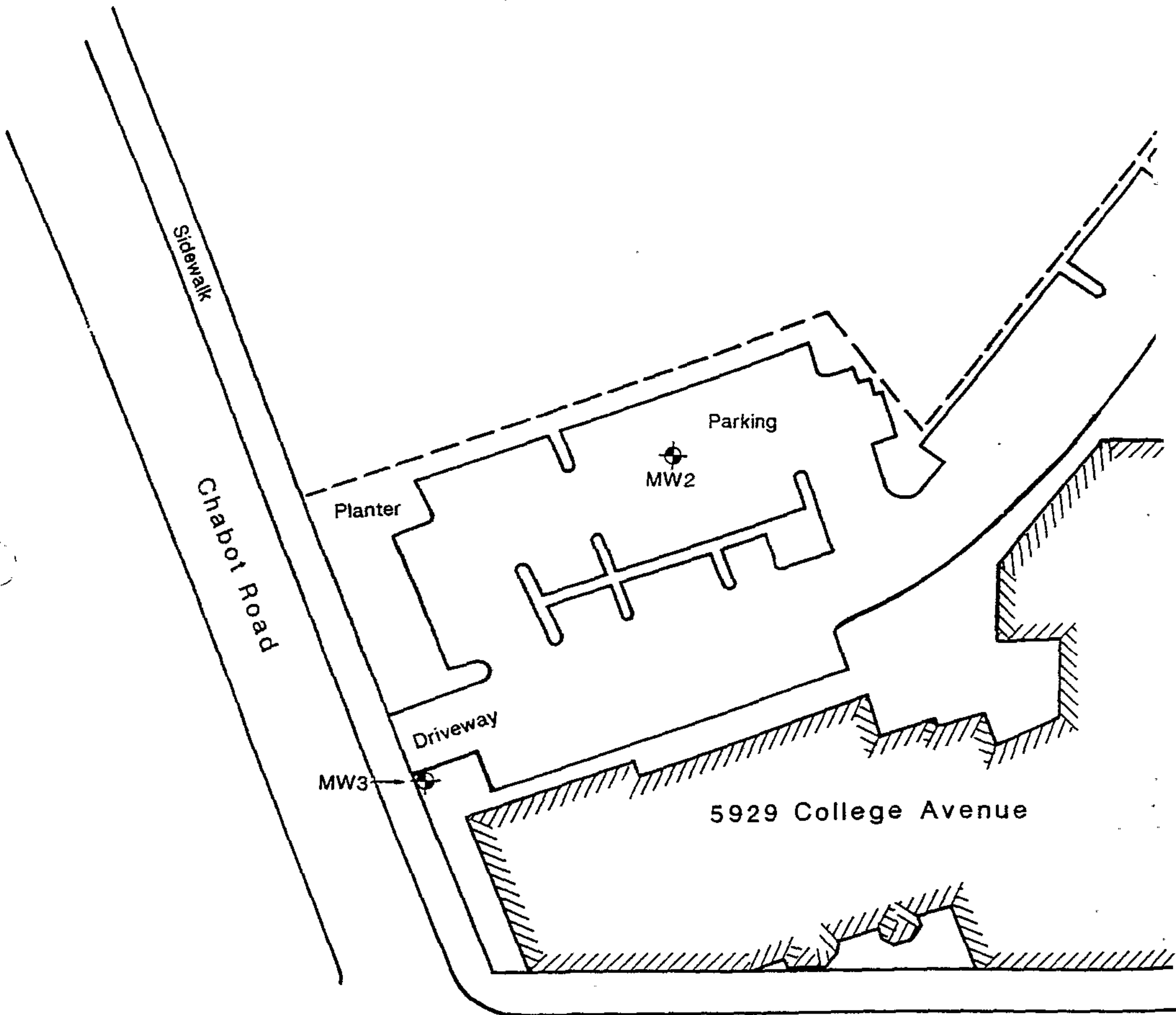
PLATE 2

LEGEND

--- Property Boundary

/// Building

⊕ Groundwater Monitoring Well



0 50 feet

SCALE

Lic# C57-485165
phone 510-934-4884

01-505T
LS/4W-1364

AQUA TERRA TECHNOLOGIES INC.

Log of Exploratory Boring

Project: Dryers Ice Cream Job No.: 9126

Location: 5929 College Avenue, Oakland, CA Date: 07/17/91

Boring No.: MW2 Driller: Gregg Drilling Page 1 of 2

Logged by: Bruce Berman Proj. Mgr. Terry Carter Reviewed by: _____

Penetration 0.5 Feet	Depth (feet)	U.S.C.S. Soil Class.	Field Description	
	0			
	1	Asphalt, baserock	0'-1.5' Asphalt and gravel base-rock	
	2	CL	1.5-10' Silty clay; very dark grayish brown (10YR 3/2); stiff; medium plasticity; slightly damp to damp. Gradational color change to dark brown (10YR 4/3).	
	3			
	4			
	5			
	6			
	7			
	8			
	9			
6, 10, 12	10			CL
	11			
	12			
	13			
	14			
4, 9, 12	15		15' First water, 15' sample slipped	
	16			
	17			

Field Drilling and Sampling Log

Job No: 9126

Page 2 of 2

Penetration 0.5 Feet	Depth (feet)	U.S.C.S. Soil Class.	MW2 Field Description				
-	18	CL		out of sampler, saturated, not recovered. Hydrocarbon odor in water dripping from sampler. Hydrocarbon odor in drill cuttings below 15'.			
-	19						
-	20						
-	21						
-	22						
-	23						
-	24						
-	25						
-	26						
-	27						
-	28					B.O.H. @ 28'.	
-	29						
-	30						
-	31						
-	32						
-	33						
-	34						
-	35						
-	36						
-	37						
-	38						
-	39						

M.W2
Well Designation:

IS/42-1304
01-505T

Site Location:
5929 College Avenue,
Oakland, CA.

Date Installed: 7-17-91

Drilling Company:
Gregg Drilling

Driller: Chris

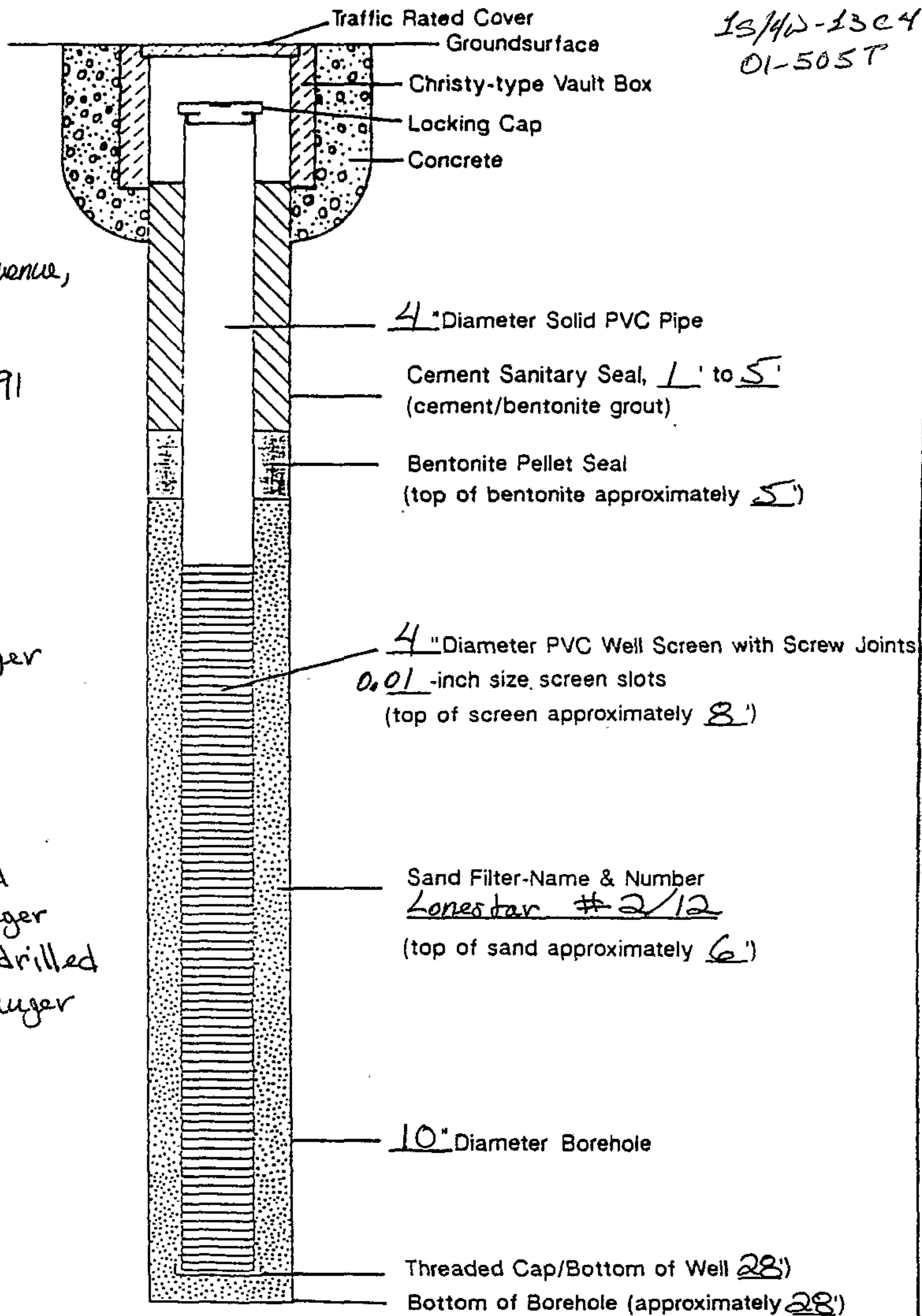
Drilling Method:
Hollow-stem auger

Logged By: BB

Notes:

Pilot hole drilled
with 6-inch auger
to 15 feet, overdrilled
with 10-inch auger

Not to Scale



Groundwater Monitoring Well
Construction Details

Dryers Ice Cream

PLATE

JOB NUMBER

DATE

MW2

9126

ATT Aqua Terra Technologies
Consulting Engineers
& Scientists

01-505U
15/4W 13C5

AQUA TERRA TECHNOLOGIES INC.

Log of Exploratory Boring

Project: Dryers Ice Cream Job No.: 9126

Location: 5929 College Avenue, Oakland, CA Date: 07/18/91

Boring No.: MW3 Driller: Gregg Drilling Page 1 of 2

Logged by: Bruce Berman Proj. Mgr. Terry Carter Reviewed by: _____

Penetration 0.5 Feet	Depth (feet)	U.S.C.S. Soil Class.	Field Description	
	0	Fill	0'-1.5- Soil fill materials (planter area)	
	1		1.5'-27' Sandy clay; black (10YR 2/1); 10% to 20% very fine sand; moist.	
	2	CL- Fill?		3' Hydro- carbon odor in drill cuttings
	3			
	4			
2, 2, 4	5		5'; lens of fine sand; dark yellow- ish brown (10YR 4/4); 3-inches thick; damp.	5' sampler driven for lithologic description only (with- out tubes), sample not retained, hydrocarbon odor
	6		Soil just above and below sand lens has minor blue-green aged hydro- carbon discoloring. Gradational increase in moisture and fine sand content with increased depth.	
	7			
	8			
	9		Major blue-green aged hydrocarbon discoloring below 10'.	
4, 4, 5	10			10' Sample, strong hydrocarbon odor
	11			
	12			
	13			
	14		14' First water, strong hydrocarbon odor in water drip-	
3, 5, 10	15		15'; wood chips in good condition, not decomposed (brought up in sampler).	
	16			

Field Drilling and Sampling Log

Job No: 9126

Page 2 of 2

Penetration 0.5 Feet	Depth (feet)	U.S.C.S. Soil Class.	MW3 Field Description	
-	17	CL	17'; Drillers observation; augers encountered stiffer material similar to drilling conditions in native material in the other two boreholes. (possibly in tank excavation backfilled with excavated soil to 17', native material below 17').	ping from end of drill rod, sheen
-	18			15' Incomplete sample recovery, saturated soil, sample not retained
-	19			
-	20			
-	21			
-	22			
-	23			
-	24			
-	25			
-	26			
-	27		B.O.H. @ 27'	Strong hydrocarbon odor, sheen on drill cuttings and auger below 15'
-	28			
-	29			
-	30			
-	31			
-	32			
-	33			
-	34			
-	35			
-	36			
-	37			
-	38			

M.W.3
Well Designation:

IS/AW-1305
045050

Site Location:
5929 College Avenue,
Oakland, CA.

Date Installed: 7-18-91

Drilling Company:
Gregg Drilling

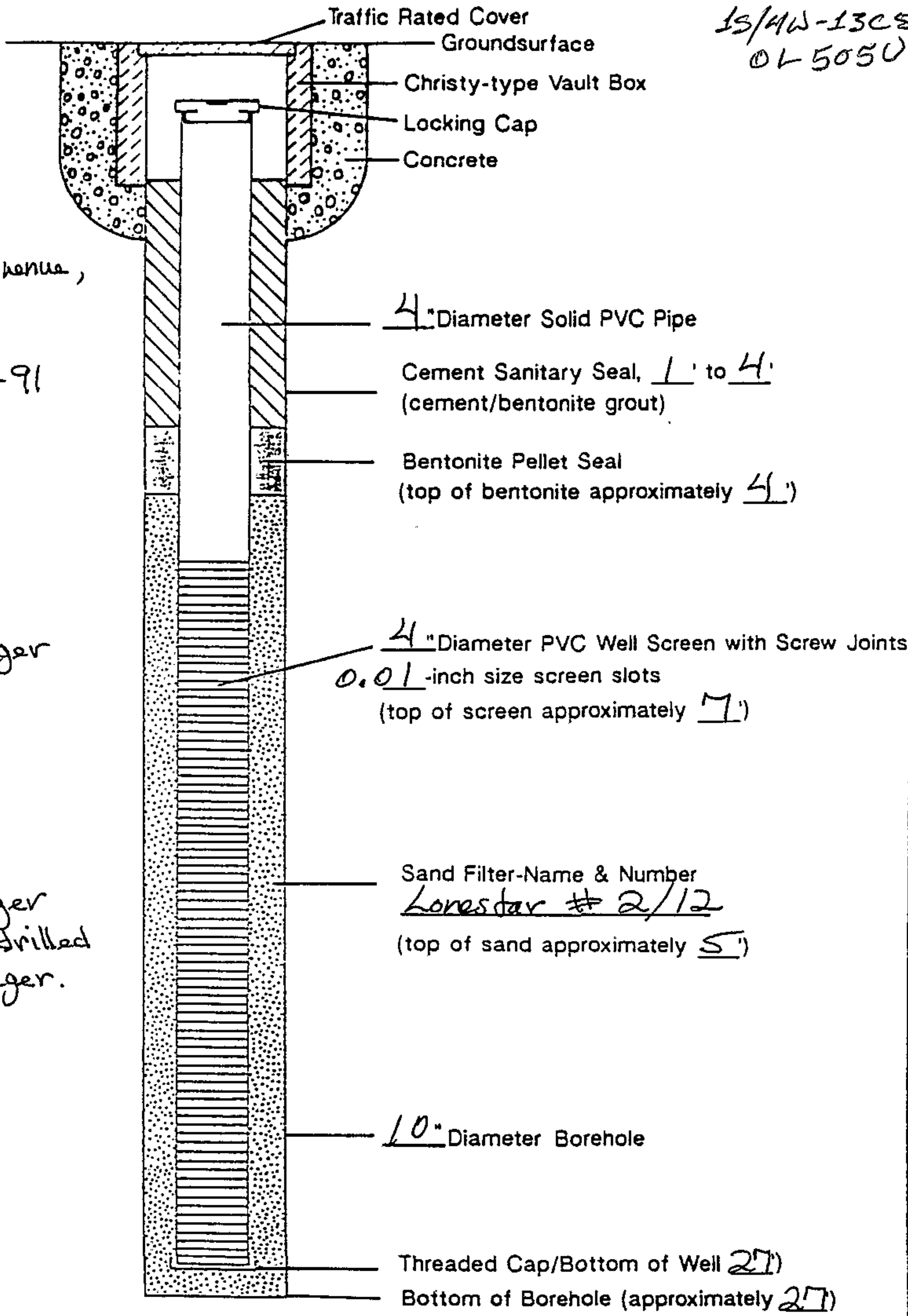
Driller: Chris

Drilling Method:
Hollow-stem auger

Logged By: BB

Notes:

Pilot hole drilled
with 6-inch auger
to 15-feet, over drilled
with 10-inch auger.



Not to Scale

Groundwater Monitoring Well
Construction Details

ATT Aqua Terra Technologies
Consulting Engineers
& Scientists

Dryers Ice Cream

JOB NUMBER

DATE

9126

PLATE

MW3

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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WELL COMPLETION REPORT
(WELL LOGS)

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WELL COMPLETION REPORT
(WELL LOGS)**

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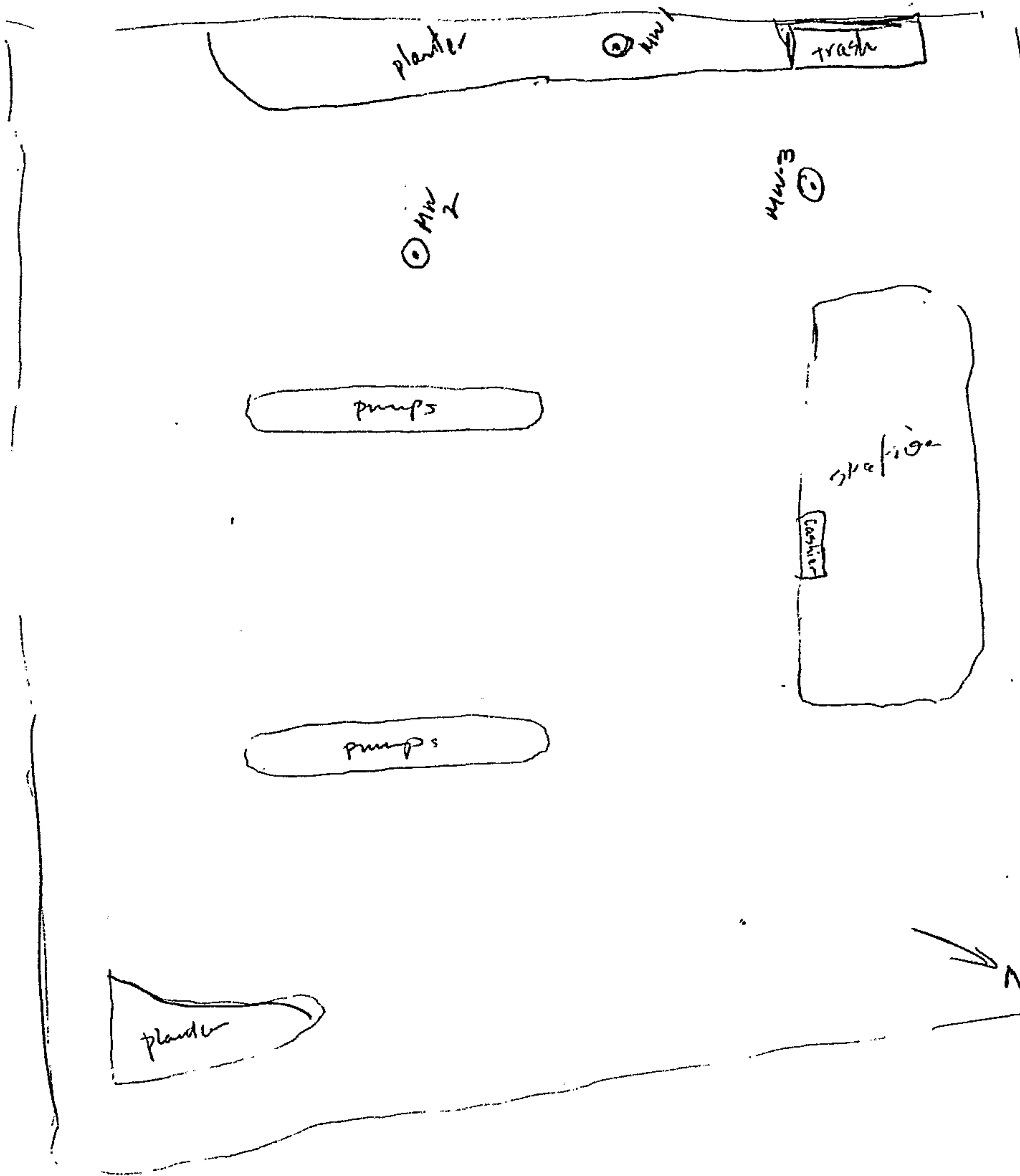
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Arco / Telegraph

telegraph



620

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WELL COMPLETION REPORT
(WELL LOGS)

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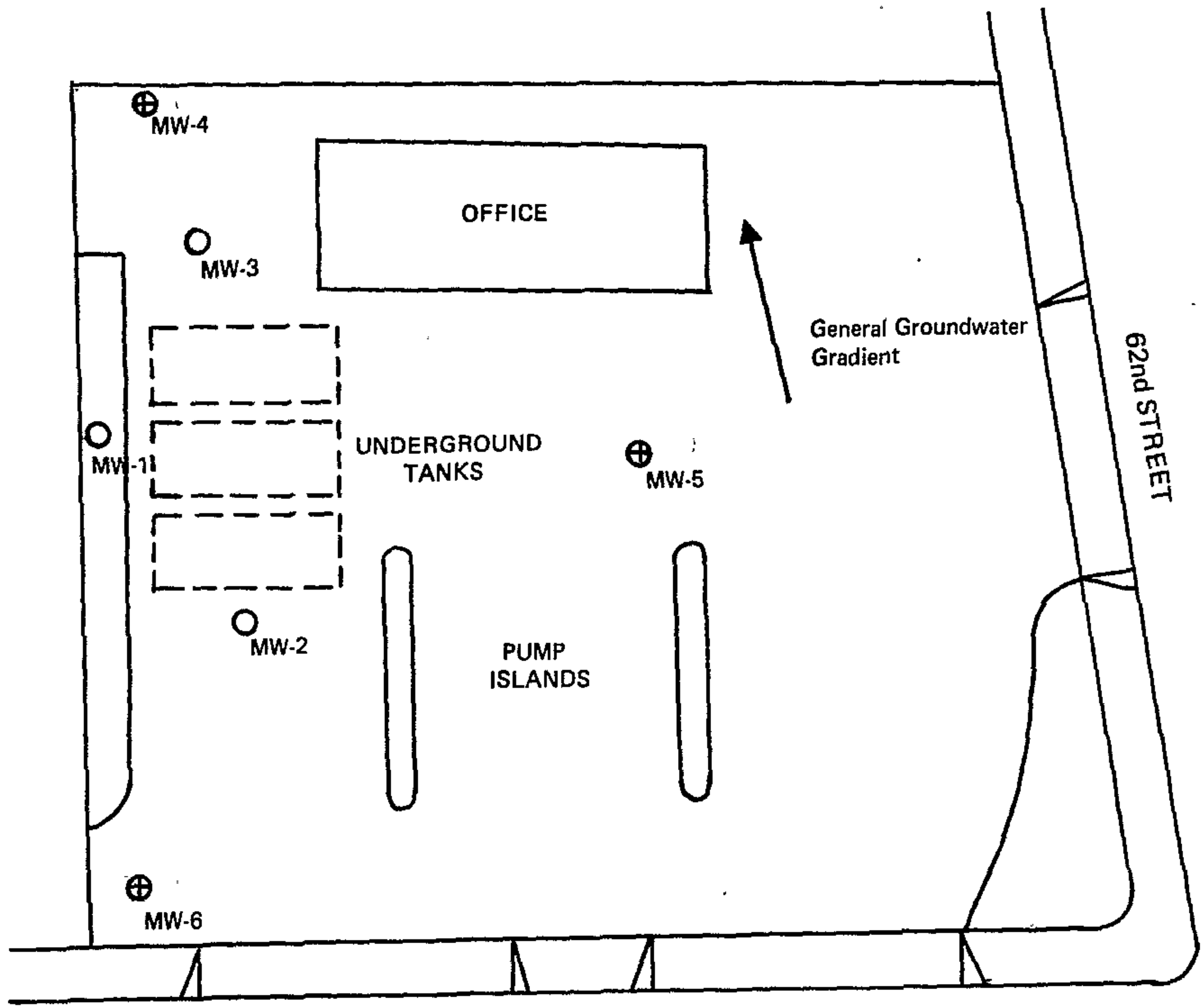
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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

INV ✓ AD ✓ ~~217~~ A, B, C 179203 Permit No. 86305 plot/copy

15/W13D5-7



TELEGRAPH AVENUE

62nd STREET

LEGEND

- MW-1 GT Monitoring Wells
- ⊕ MW-4 WCC Monitoring Wells



THRIFTY OIL
6125 TELEGRAPH AVE.
OAKLAND, CA.

Figure 1. MONITORING WELL LOCATIONS

DRILLER: KVILHAUG WELL DRILLING, CONCORD

#P6305

INV ✓
AD ✓

179203A ~~01-217A~~
1S/4W/3D5

Project No.: 90390A
Date: 11-13-86

Elevation.

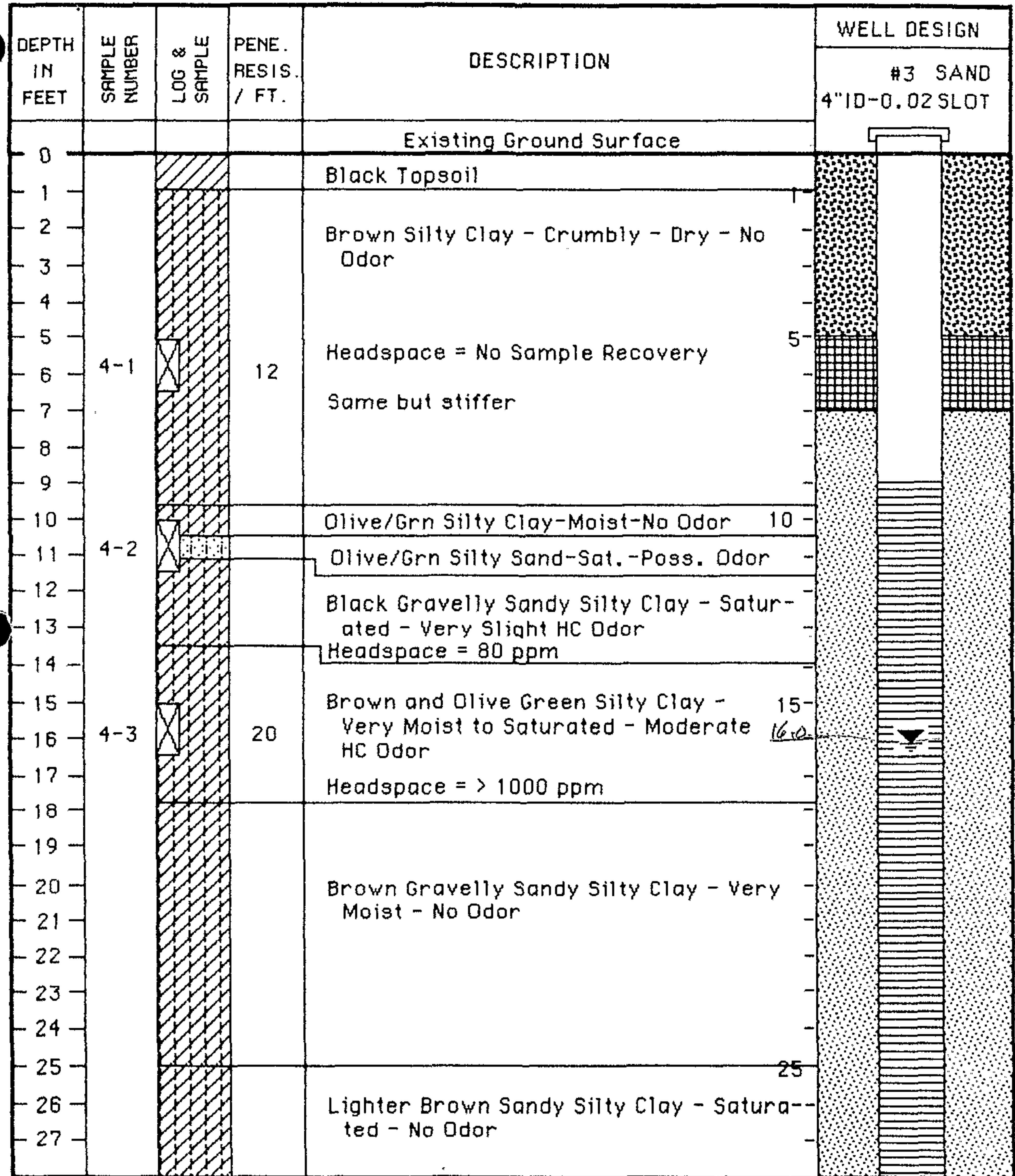


Figure 3A - Test Boring Log No. 1
- Monitoring Well No. MW-4

Woodward-Clyde Consultants

#P6305

179203A

IS/AW13D5

Project No.: 90390A

Date: 11-13-86

Elevation.

DEPTH IN FEET	SAMPLE NUMBER	LOG & SAMPLE	PENE. RESIS. / FT.	DESCRIPTION	WELL DESIGN	
					#3 SAND	4"ID-0.02 SLOT
28				28 Feet Below Existing Ground Surface		
29				Light Brown Sandy Silty Clay - Saturated - No Odor		
30				Bottom of Boring at 30 ft.	30	
31						
32						
33						
34						
35					35	
36						
37						
38						
39						
40					40	
41						
42						
43						
44						
45					45	
46						
47						
48						
49						
50					50	
51						
52						
53						
54						
55					55	

Figure 3B - Test Boring Log No. 1
 - Monitoring Well No. MW-4

Woodward-Clyde Consultants

#P6305

INV ✓
AD ✓

179203B ~~01-217A~~
IS/4W13D6

Project No.: 90390A

Date: 11-13-86

Elevation.

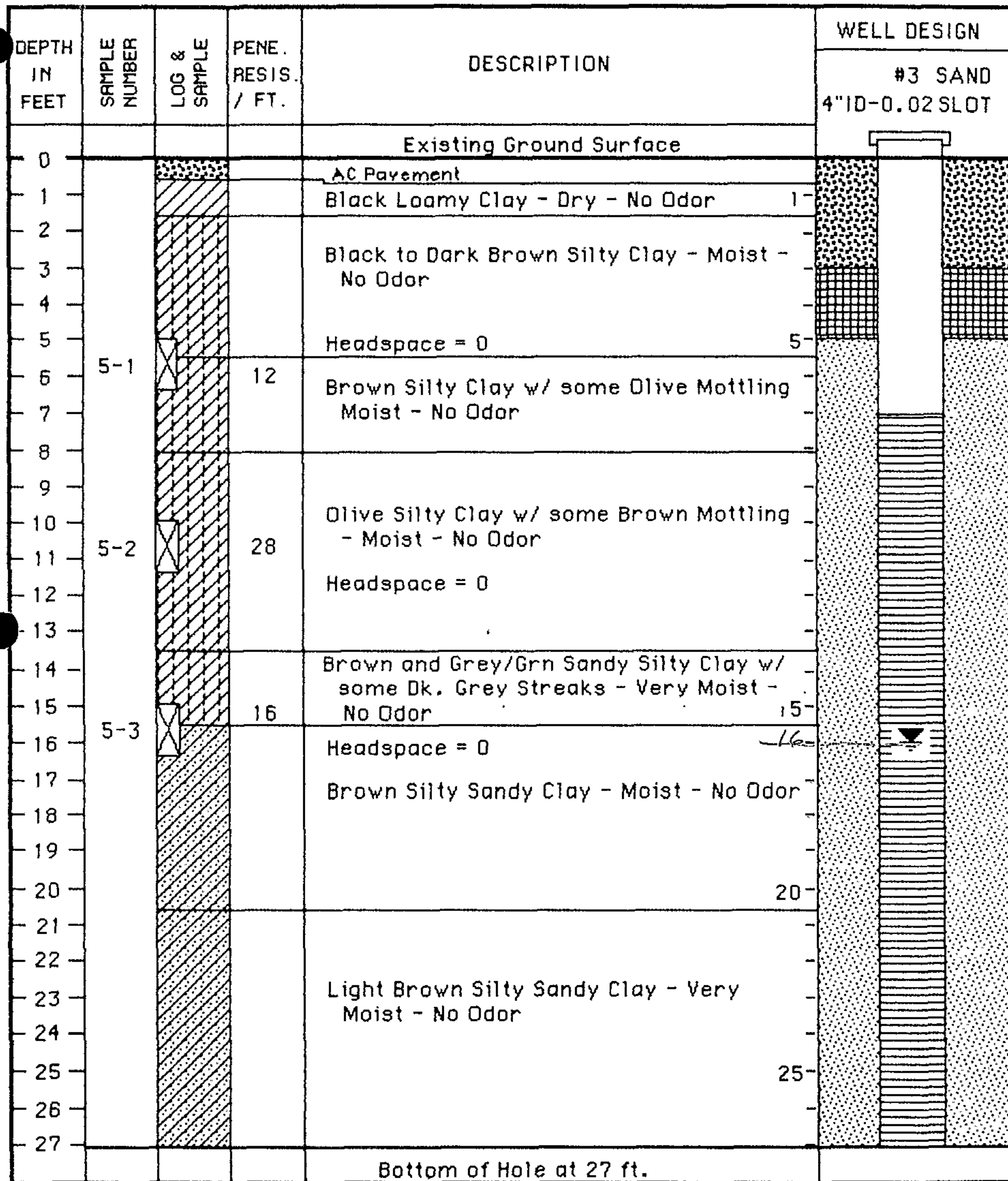


Figure 4 - Test Boring Log No. 2
- Monitoring Well No. MW-5

Woodward-Clyde Consultants

Project No.: 90390A

Date: 11-13-86

INV ✓
AD ✓

1792030 07-2170
15/4W/3D7

Elevation.

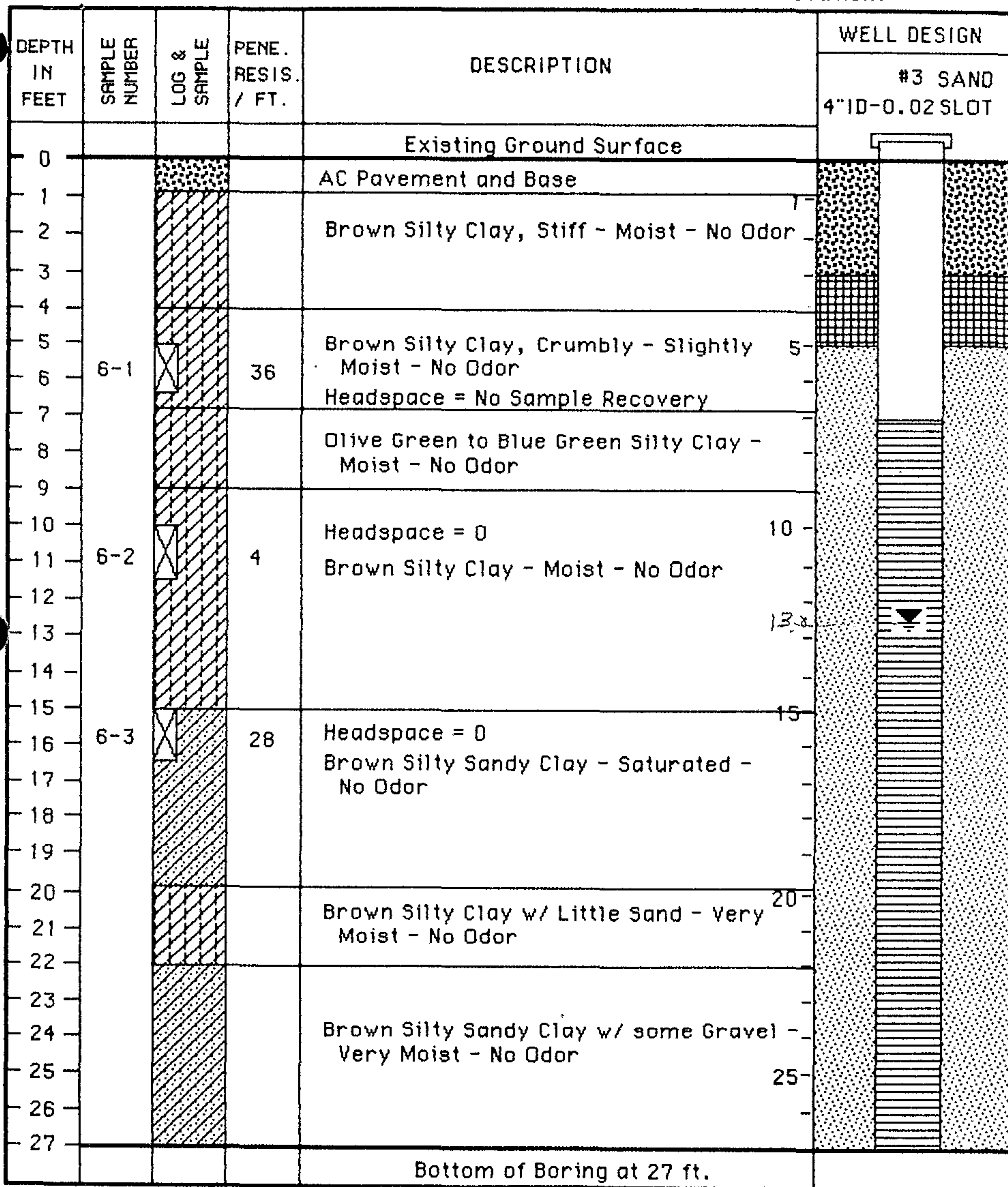


Figure 5 - Test Boring Log No. 3
- Monitoring Well No. MW-6

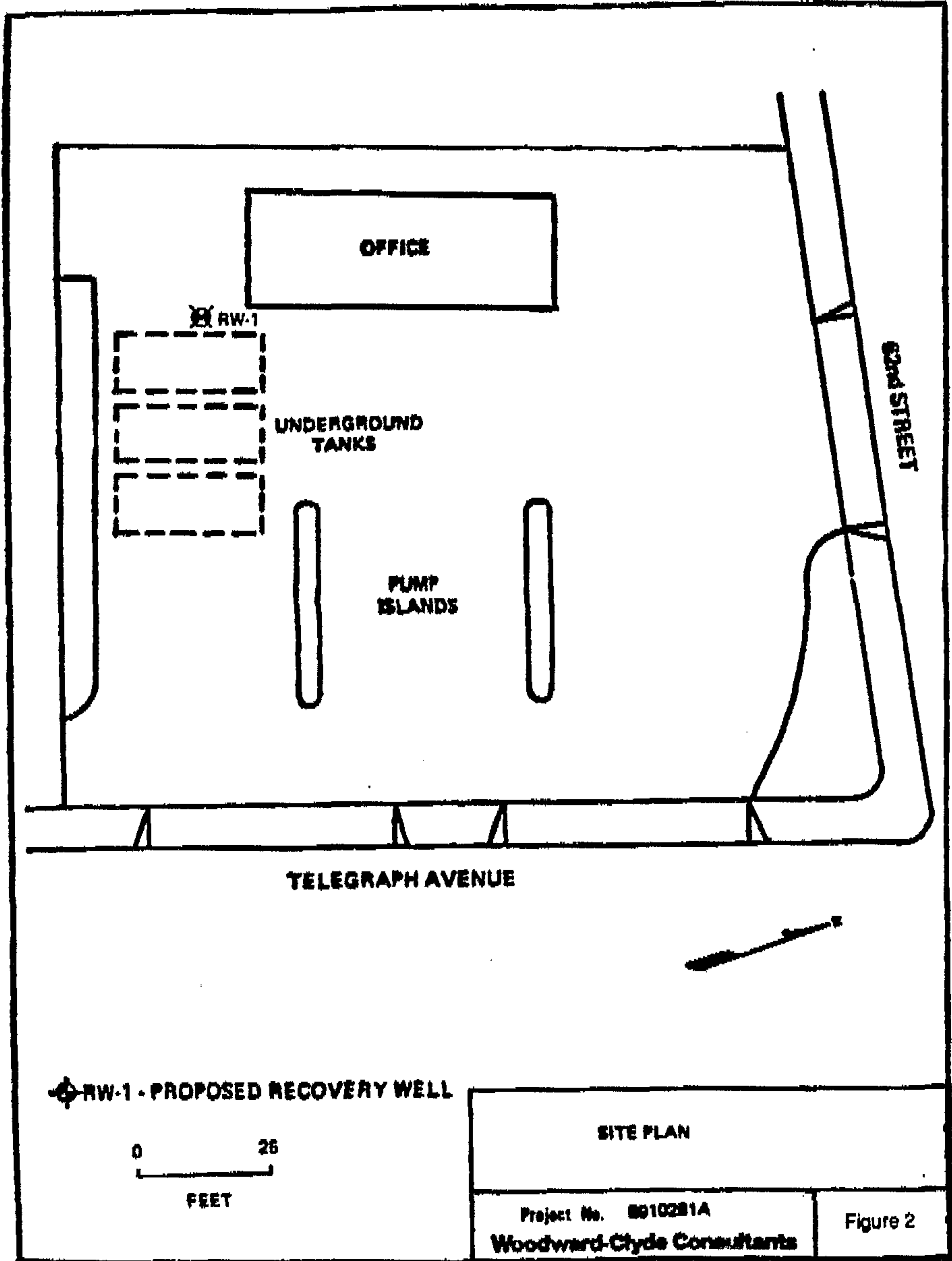
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(WELL LOGS)

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201222
IS/4W 13D8



⊕ RW-1 - PROPOSED RECOVERY WELL

0 26
FEET

SITE PLAN	
Project No. 8010281A Woodward-Clyde Consultants	Figure 2

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REMOVED

EXPLANATION	
▲	Ground water extraction well
----	Ground water discharge line

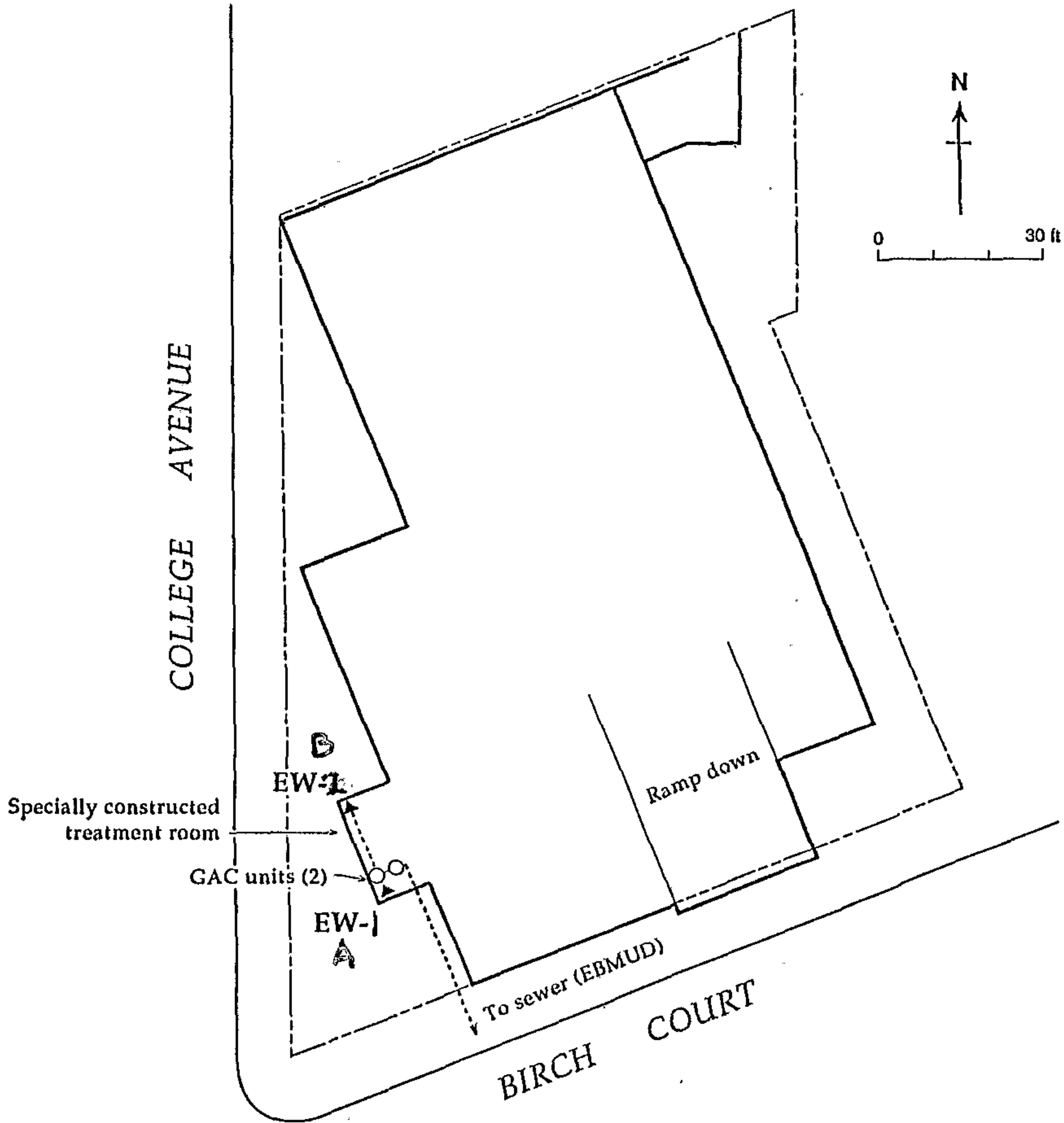
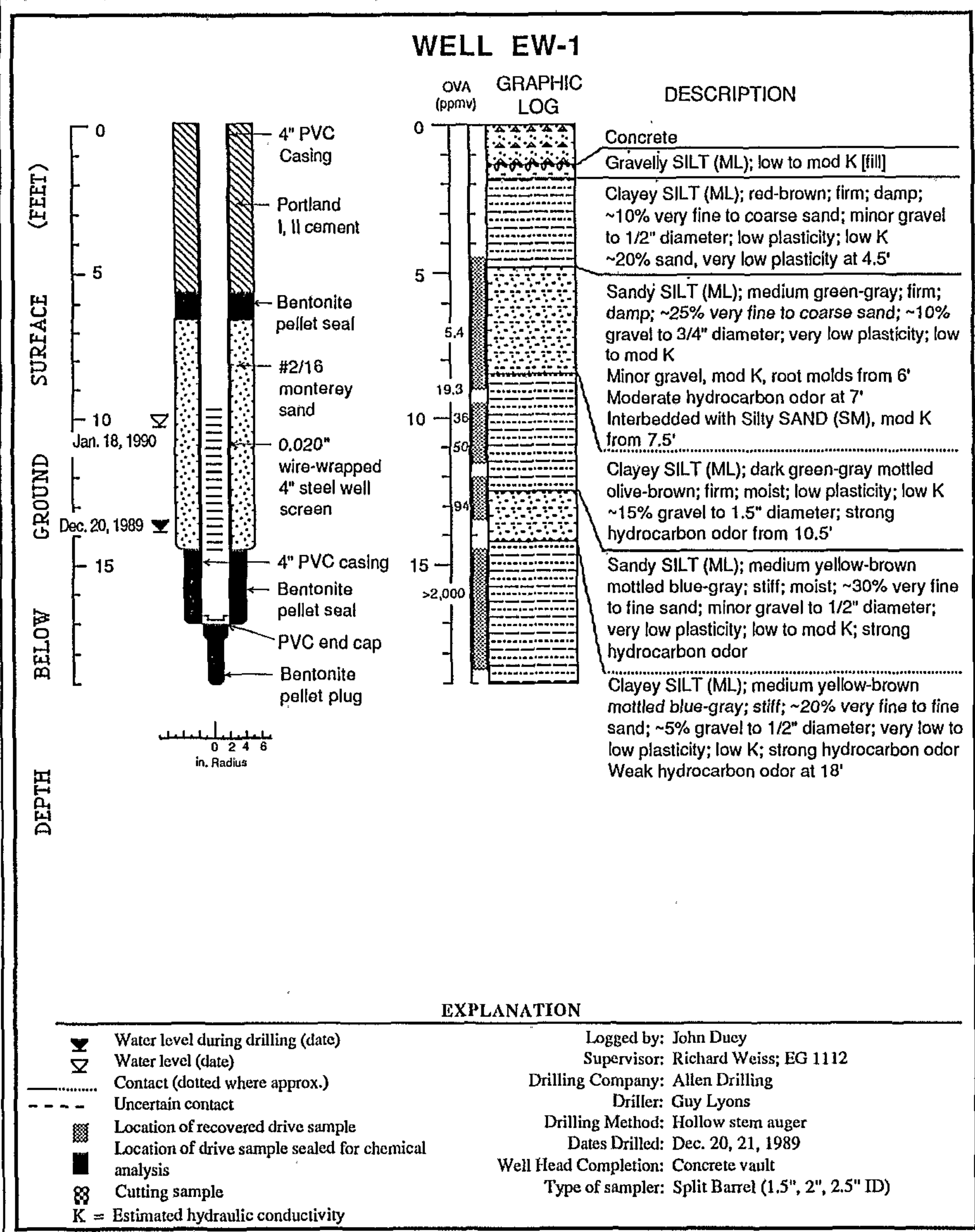


Figure 5. Proposed Ground Water Remediation System - Former Chevron Service Station #92258, 5800 College Avenue, Oakland, California



Well Construction and Boring Log - Well EW-1

Chevron Service Station #92258, Oakland, CA

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(WELL LOGS)

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EXPLANATION
▲ Ground water extraction well
---- Ground water discharge line

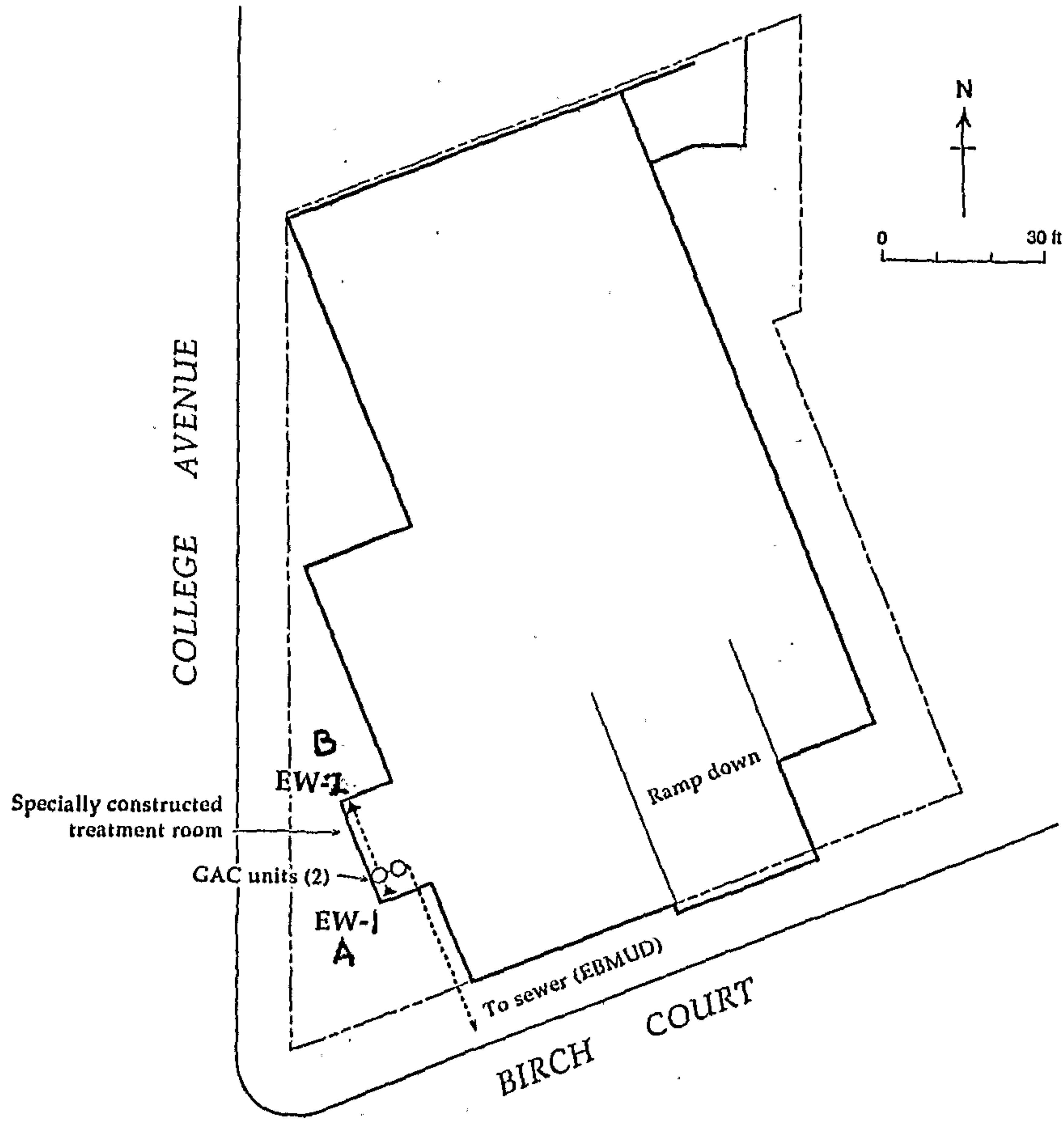


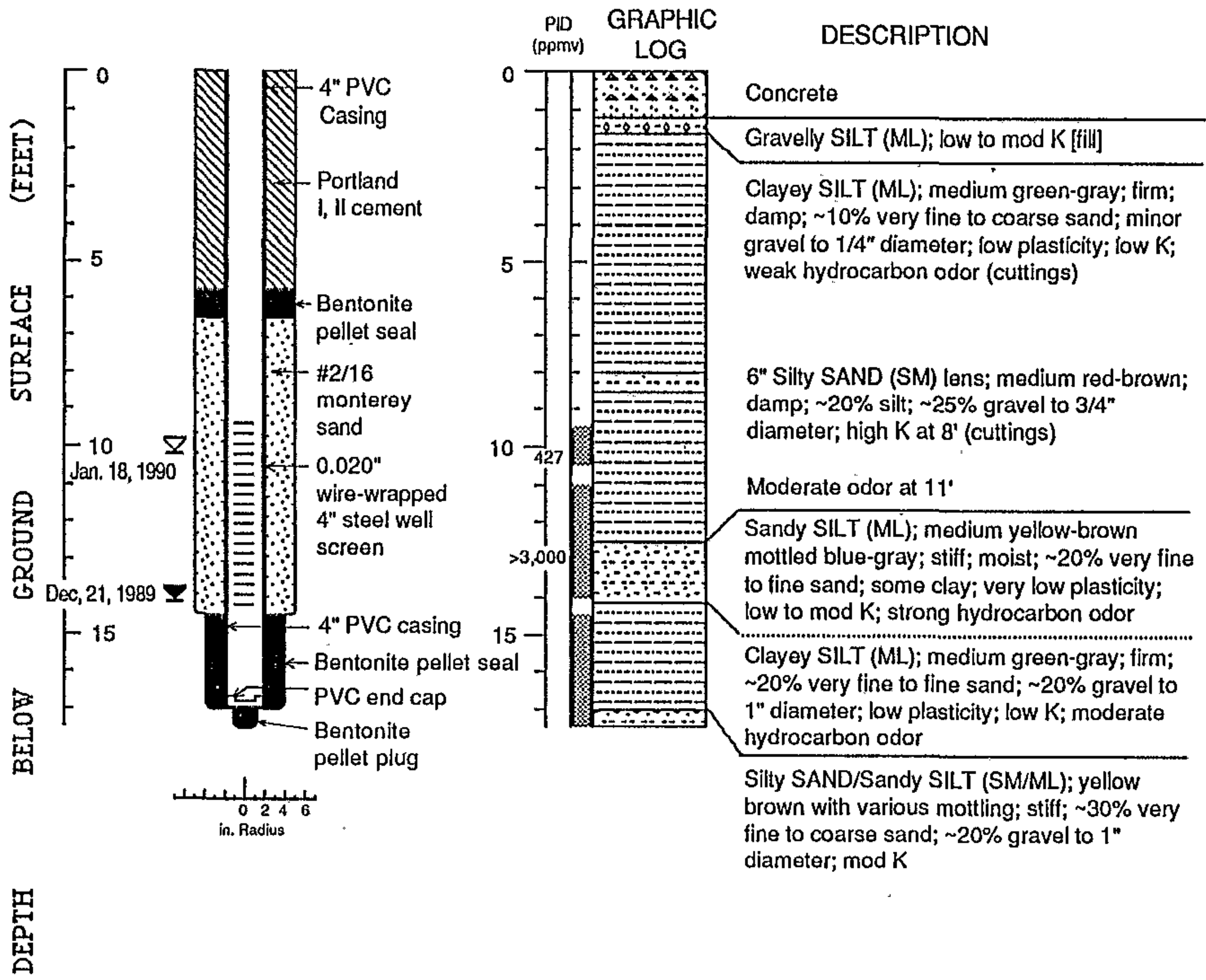
Figure 5. Proposed Ground Water Remediation System - Former Chevron Service Station #92258, 5800 College Avenue, Oakland, California

15/4W 1367

325102B WA

WEISS ASSOCIATES

WELL EW-2



EXPLANATION

- Water level during drilling (date)
- Water level (date)
- Contact (dotted where approx.)
- Uncertain contact
- Location of recovered drive sample
- Location of drive sample sealed for chemical analysis
- Cutting sample
- K = Estimated hydraulic conductivity

Logged by: John Duey
 Supervisor: Richard Weiss; EG 1112
 Drilling Company: Allen Drilling
 Driller: Guy Lyons
 Drilling Method: Hollow stem auger
 Dates Drilled: Dec. 20, 21, 1989
 Well Head Completion: Concrete vault
 Type of sampler: Split Barrel (1.5", 2.0", 2.5" ID)

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WELL COMPLETION REPORT
(WELL LOGS)

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ATTACHMENT B

Well Completion Reports for Wells Outside a 0.5-Mile Radius of the Site

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WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

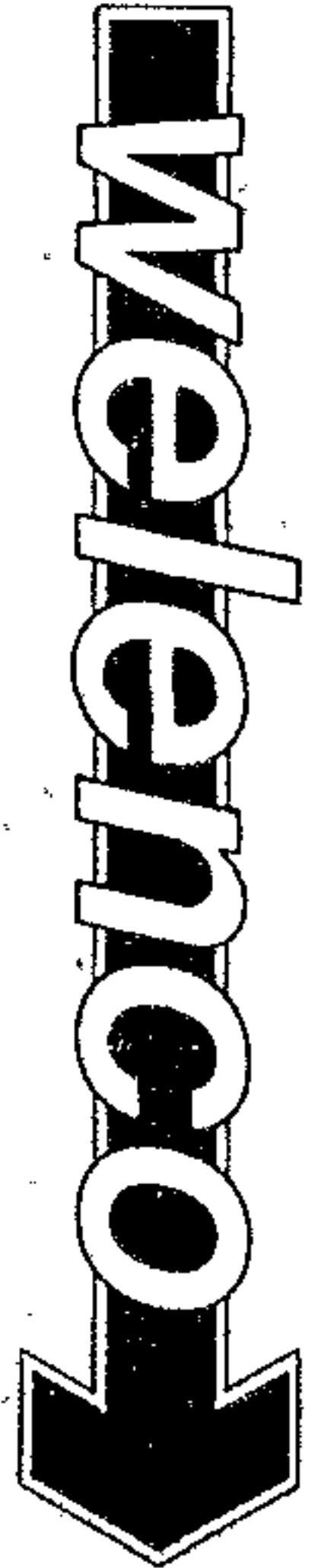
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WELL COMPLETION REPORT
(WELL LOGS)

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340582

1S/4W 12H2



ELECTRIC LOG

FILING NO

COMPANY LUNDORFF & SCALMANN

WELL CLAIRMONT RESORT & TENNIS CLUB

FIELD

STATE CALIFORNIA COUNTY ALAMEDA

LOCATION:

REAR PARKING LOT

OTHER SERVICES

SEC _____ TWP _____ RGE _____

Permanent Datum:

GL

Elev. _____

Elev.: K.B. _____

Log Measured From

GL

Fl. Above Perm. Datum

D.F. _____

Drilling Measured From

GL

GL _____

Date

12-18-90

Run No.

ONE

Depth—Driller

200'

Depth—Logger

200'

Btn. Log Inter.

199'

Top Log Inter.

5'

Casing—Driller

N/A

Casing—Logger

N/A

Bit Size

6 1/2"

Type Fluid in Hole

BENTONITE

Dens.

8.9 52

pH | Fluid Loss

ml

ml

ml

ml

Source of Sample

FLOWLINE

R_m @ Meas. Temp.

10 @ 77 °F

R_{m1} @ Meas. Temp.

10 @ 75 °F

R_{m2} @ Meas. Temp.

N/A @ _____ °F

Source: R_{m1} | R_{m2}

M | _____

R_m @ BHT

N/A @ _____ °F

Time Since Circ.

0 HA

Max. Rec. Temp.

N/A

Equip. Location

L11 | S9C

Recorded By

D. LOCKEAGE

Witnessed By

M. GORDON RBATISTA

Fold Here

This Heading and Log Conform To API RP 31

REMARKS

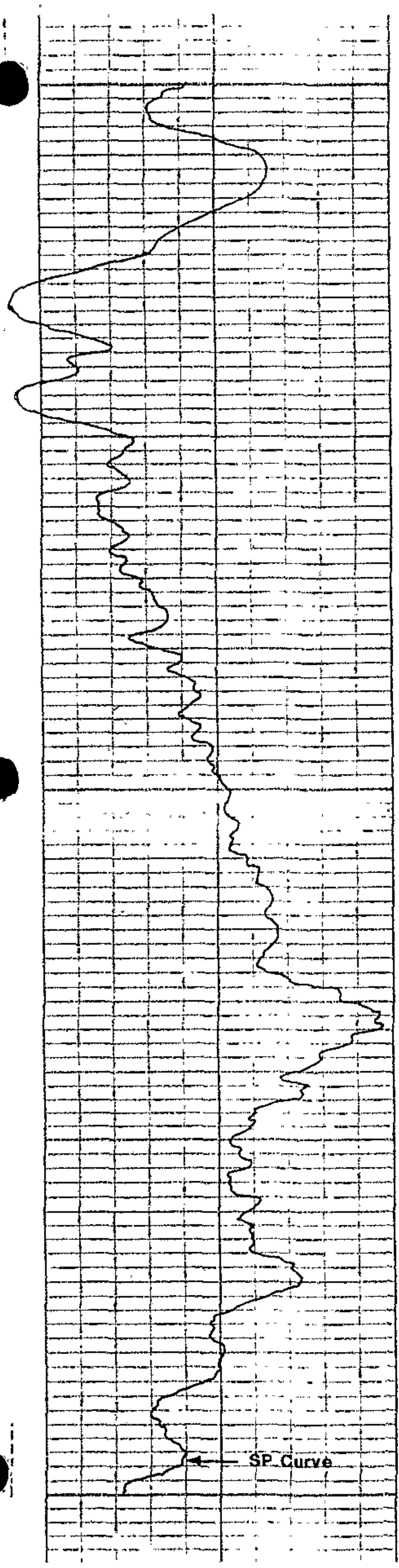
Changes in Mud Type or Additional Samples

Scale Changes

Date Sample No.	Type Log	Depth	Scale Up Hole	Scale Down Hole
Depth—Driller				
Type Fluid in Hole				
Dens. Visc.				
pH Fluid Loss				
Source of Sample				
Equipment Data				
R _m @ Meas. Temp.	Run No.	Tool Type	Pad Type	Tool Position
R _{m1} @ Meas. Temp.	<u>ONE</u>	<u>NORMAL 5</u>		<u>FREE</u>
R _{m2} @ Meas. Temp.				
Source: R _{m1} R _{m2}				
R _m @ BHT				
R _{m1} @ BHT				
R _{m2} @ BHT				

SPONTANEOUS POTENTIAL millivolts	Depths	RESISTIVITY ohms. m ² /m	RESISTIVITY ohms. m ² /m
		SHORT NORMAL 16 Inch	100
		LONG NORMAL 64 Inch	100
			RESISTANCE Detail Curve

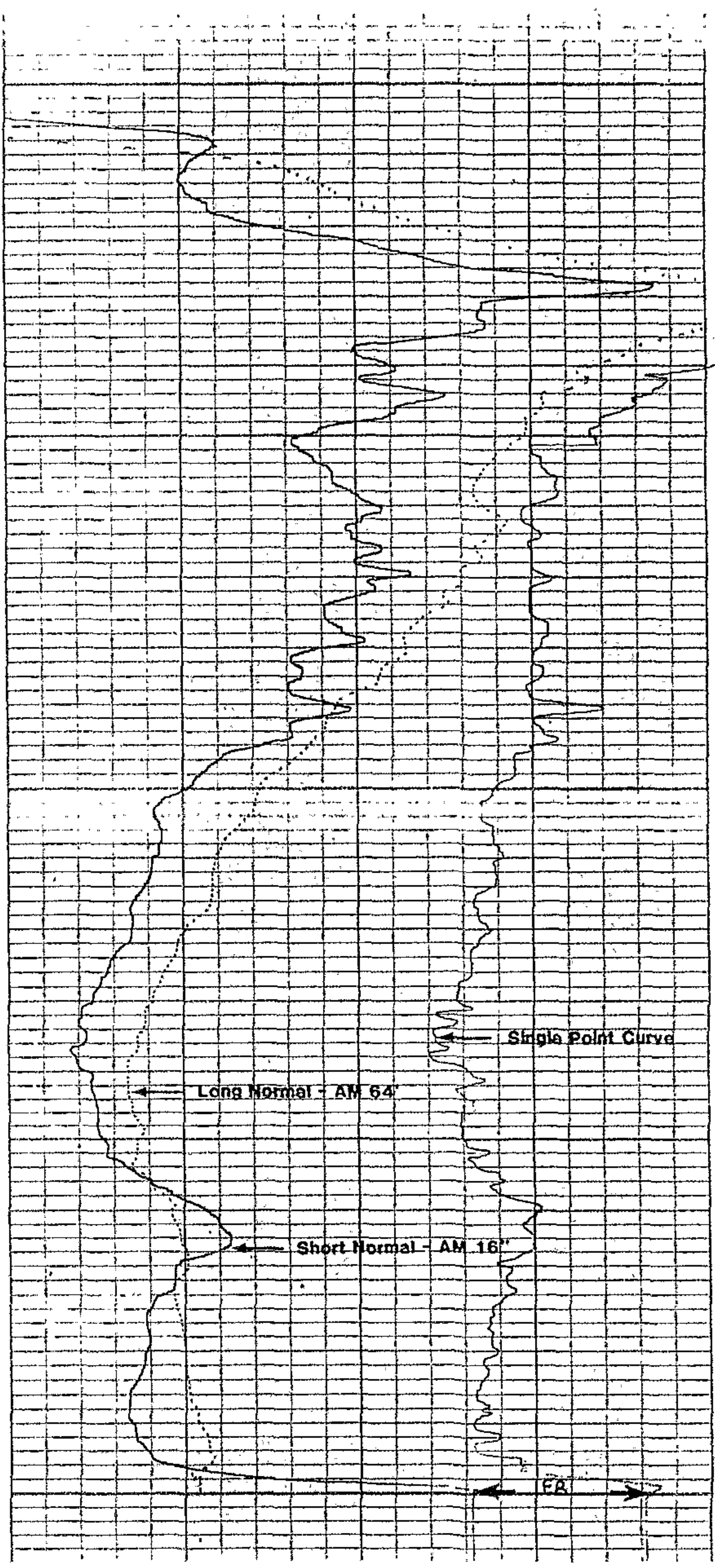
15/4W 12.62
340582



0

100

200



Long Normal - AM 64'

Short Normal - AM 16'

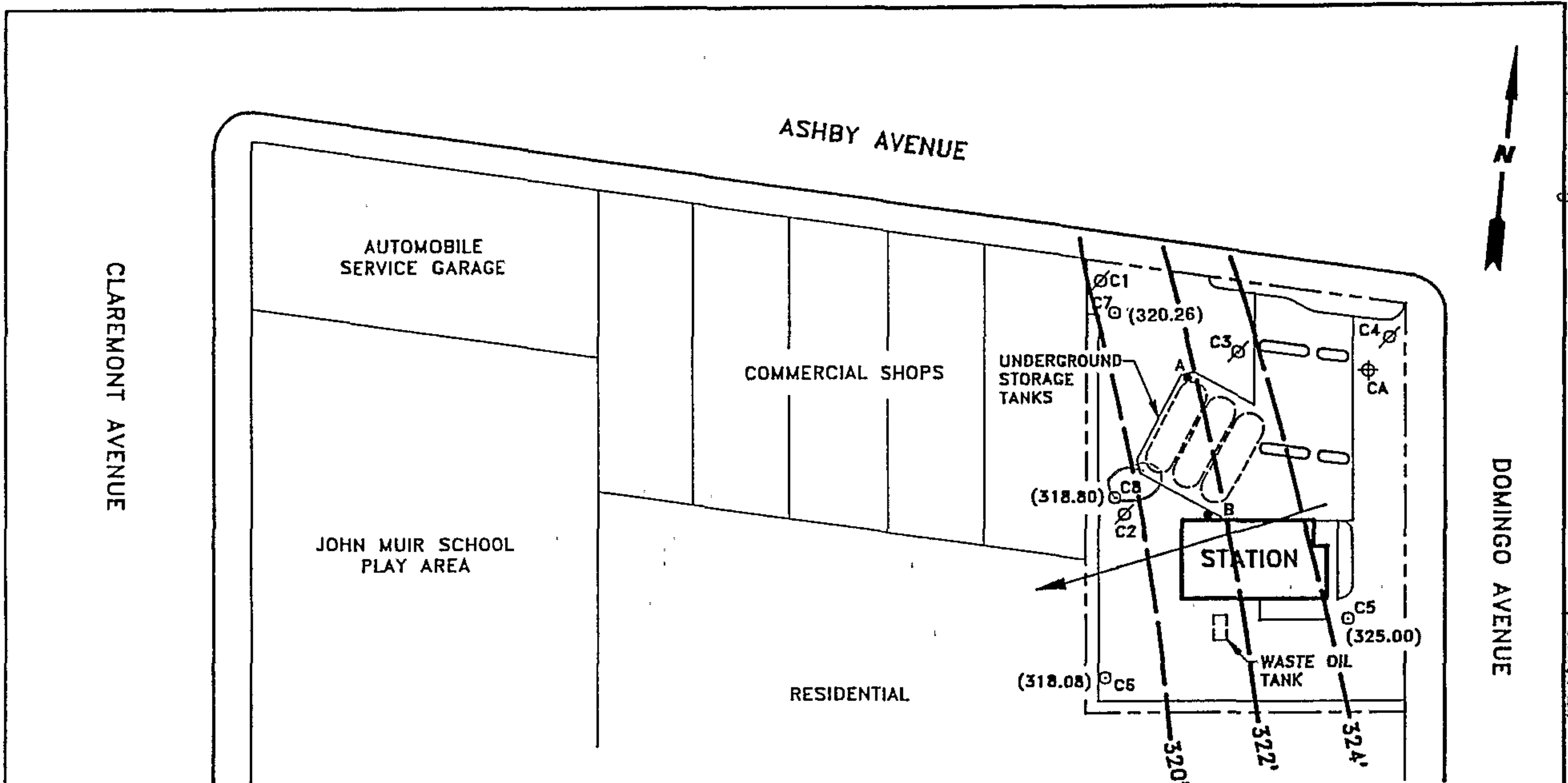
Single Point Curve

FR

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED



LEGEND

- MONITORING WELL
- TANK PIT MONITORING WELL
- ⊗ ABANDONED MONITORING WELL
- ⊕ SOIL BORING
- () POTENTIOMETRIC SURFACE ELEVATION
- - - POTENTIOMETRIC SURFACE CONTOUR
- GROUNDWATER FLOW DIRECTION

 GROUNDWATER TECHNOLOGY				4057 PORT CHICAGO HWY CONCORD, CA 94520 (510) 671-2387		POTENTIOMETRIC SURFACE MAP (12/4/92)			
CLIENT: CHEVRON U.S.A. PRODUCTS CO. SERVICE STATION No. 9-0289				LOCATION: 3048 ASHBY AVENUE BERKELEY, CALIFORNIA		REV. NO.: 0	DATE: 1/14/93		
PM <i>JAW</i>	PE/RG <i>DRK</i>	DESIGNED TW	DETAILED ML	ACAD FILE: PSMD492/SP193		PROJECT NO.: 020203082		FIGURE: 3	

PR 2/24

403112

1S/4W 12H14

p. 3 of 4

403112

1S/4W 12H4

Drilling Log



GROUNDWATER
TECHNOLOGY

Monitoring Well C8

Project CHV/3048 Ashby Ave. Owner Chevron U.S.A. Products Co.
 Location Berkeley, CA Project No. 020203082 Date drilled 11/12/92
 Surface Elev. 338.99 ft. Total Hole Depth 34.5 ft. Diameter 8.5 inches
 Top of Casing 338.55 ft. Water Level Initial 22 ft. Static 12/04/92 19.75 ft.
 Screen: Dia 4 in. Length 20 ft. Type/Size 0.020 in.
 Casing: Dia 4 in. Length 14 ft. Type SCH 40 PVC
 Filter Pack Material #3 sand Rig/Core Type Mobile B-53/Split Spoon
 Drilling Company Kvilhaug Well Drilling Method Hollow Stem Auger Permit # 92S-039
 Driller Mike Crocker Log By Chip Hurley
 Checked By David Kleesattel License No. RG# 5136 *David Kleesattel*

See Site Map
For Boring Location

COMMENTS:
 On 11-12-92 drill rig refusal was encountered at 22-feet. Drilling was continued on 11-16-92.
 The total depth of the well was set at approximately 34-feet below grade.

Depth (ft.)	Well Completion	Sample ID	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0					Asphalt	
0-2					Unconsolidated back fill material with rock fragments.	
2-5		5	7/none 9/none 9/none		GM	Green serpentinite fragments with silty clay matrix. Matrix is 55% clay and 45% silt. No hydrocarbon odor.
5-10		10	4/part 4/full 4/full		CL	Black/dark brown CLAY. About 60% clay, about 25% rock fragments about 15% silt. Moist with a hydrocarbon odor at the sampler tip.
10-15		15	5/none 8/part 15/full			Same as above. Hydrocarbon odor throughout the sample.
15-17						Sandstone encountered at 17 to 19.5 feet.
17-20		20	11/part 17/part 20/full			↓ Static groundwater level on 12/04/92 Poorly indurated sandstone 50% fine sand, about 30% silt, about 10% rock fragments, about 10% clay. Slightly moist with slight hydrocarbon odor. Drill rig refusal at 22 feet. Encountered groundwater at 22 feet. 11/16/92 10:30AM
20-22						
22-24						

P. 4 of 4

403112 Drilling Log

1S/4W 12H4



GROUNDWATER
TECHNOLOGY

Monitoring Well C8

Project CHV/3048 Ashby Ave.

Owner Chevron U.S.A. Products Co.

Location Berkeley, CA

Project No. 020203082

Date drilled 11/12/92

Depth (ft.)	Well Completion	Sample ID	Blow Count & Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%	
24		25	/none 50/none 50/none			SANDSTONE. No hydrocarbon odor.	
26		27	/none 50/none 50/part			Drill rig refusal at 27 feet.	
28							
30							SANDSTONE. About 50% clay, 30% silt, 10% sand, 10% rock fragments, moist, no hydrocarbon odor.
32						SANDSTONE. No hydrocarbon odor. Drill rig refusal at 34 feet. Set the well at 34 feet below grade.	
34		34	/none 50/none 50/none			End of boring at 34.5 feet. Installed groundwater monitoring well.	
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

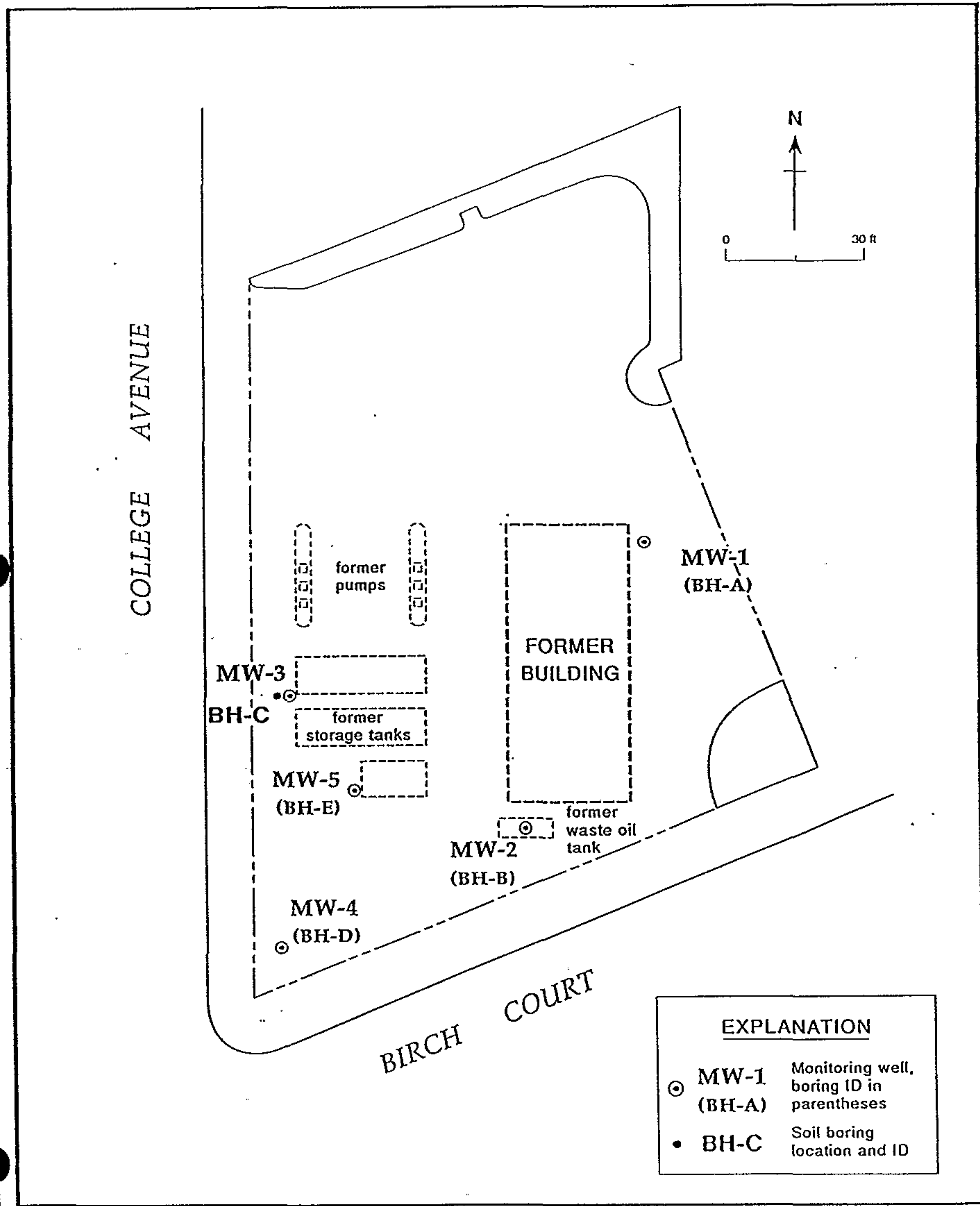


Figure 2. Monitoring Well and Soil Boring Locations - Chevron Service Station #92258, Oakland, California

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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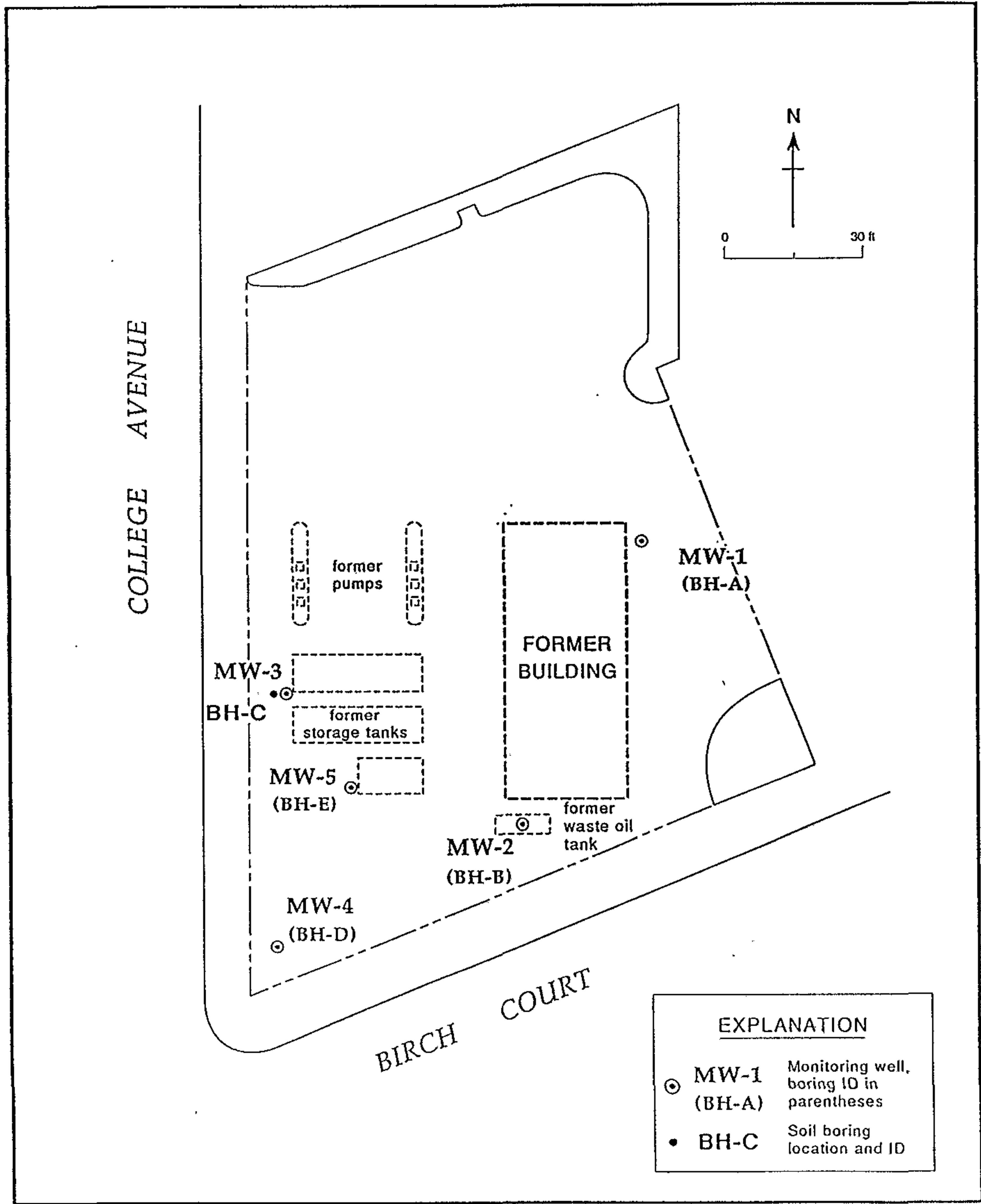


Figure 2. Monitoring Well and Soil Boring Locations - Chevron Service Station #92258, Oakland, California

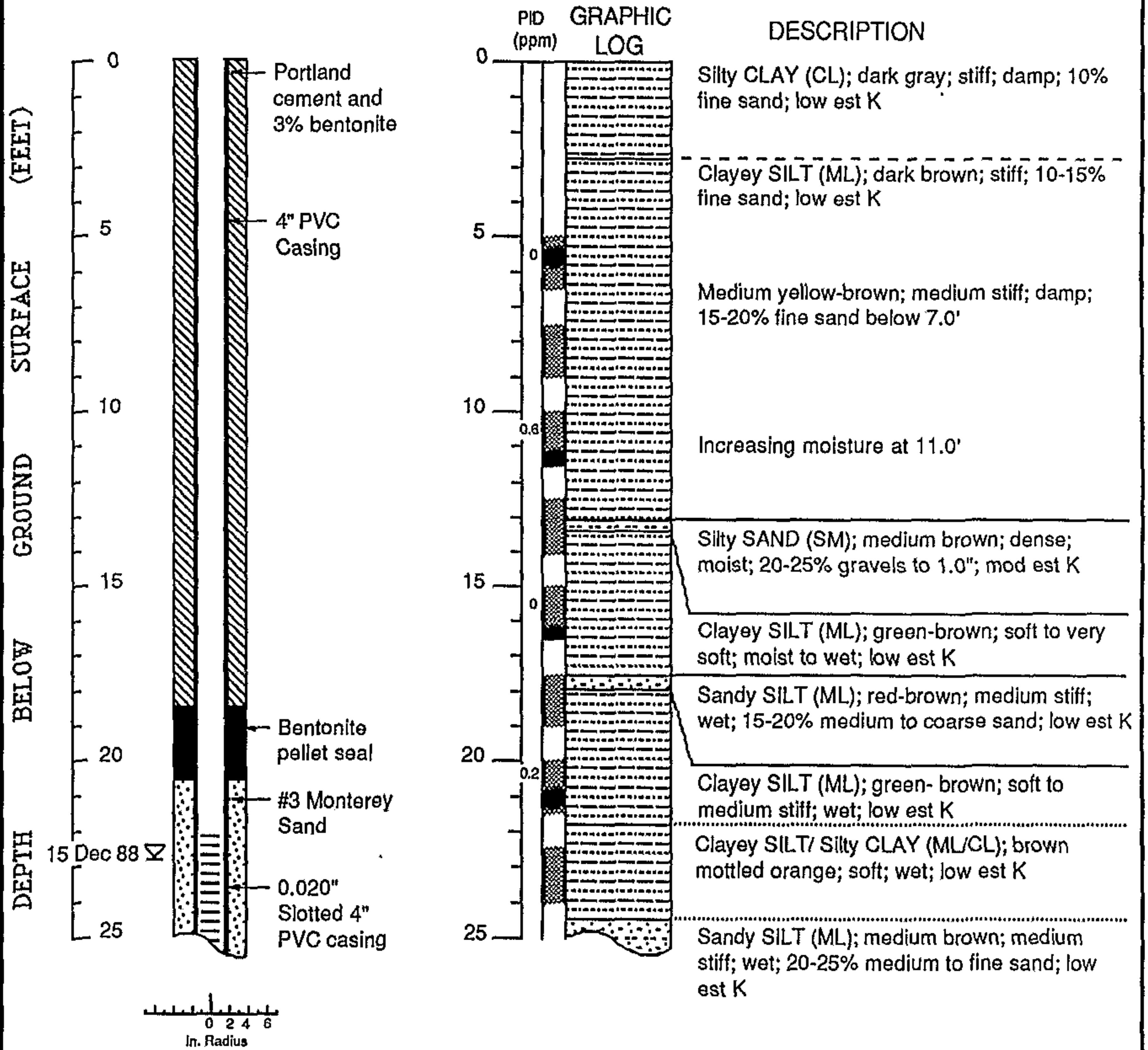
Add ✓
In ✓

136-1 1S/4W 13G-1

WEISS ASSOCIATES



WELL MW-1 (BH-A)



EXPLANATION

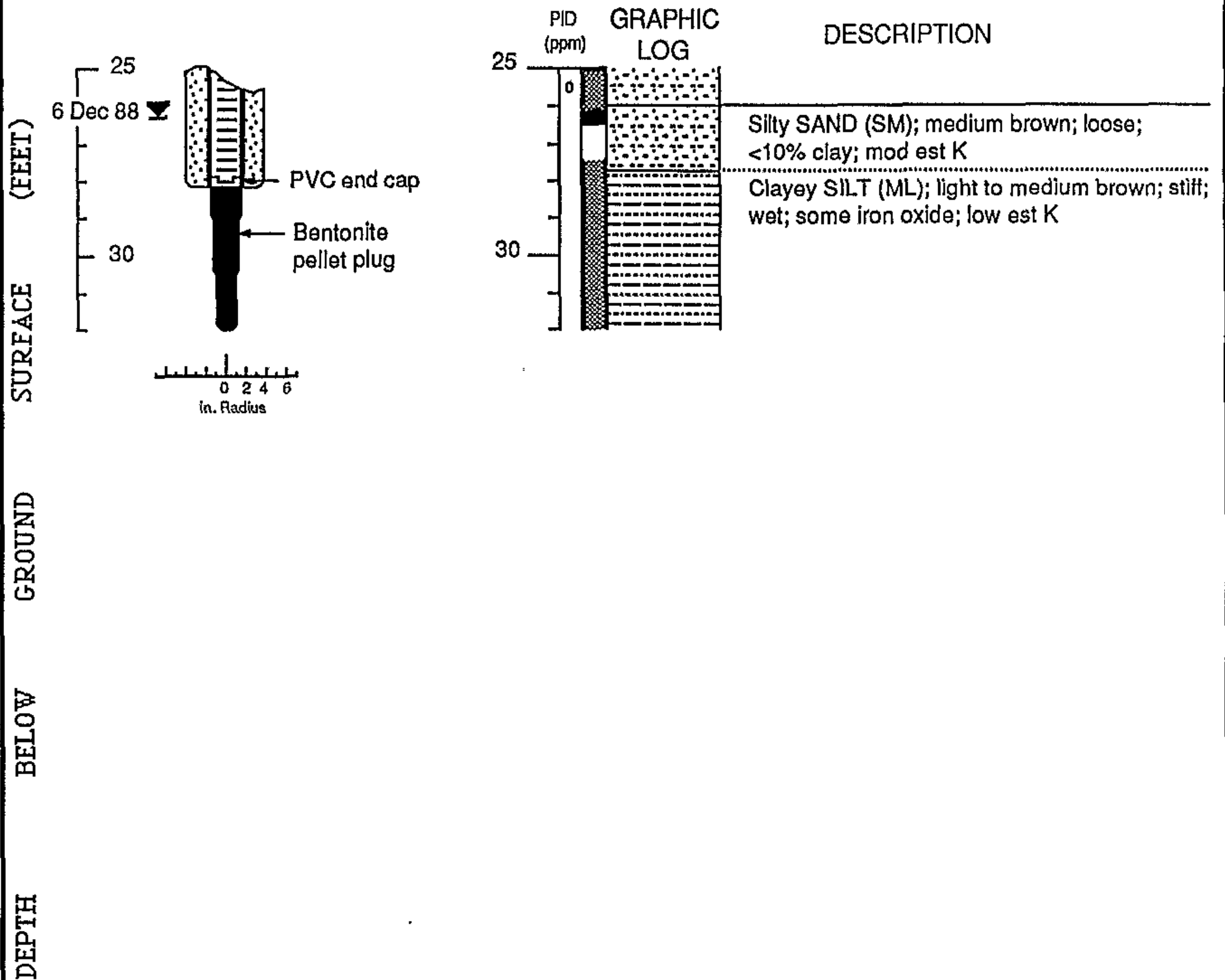
- ☒ Water level during drilling (date)
- ☒ Water level (date)
- Contact (dotted where approx.)
- - - - - Uncertain contact
- ▨ Location of recovered drive sample
- Location of drive sample sealed for chemical analysis
- ⊗ Cutting sample
- K = Estimated permeability (hydraulic conductivity)

Logged by: Jim Carmody
 Supervisor: Richard Weiss; EG 1112
 Drilling Company: Datum Exploration, Pittsburg, CA
 Driller: Jim Condrey
 Drilling Method: CME-75
 Dates Drilled: 6 December 1988
 Well Head Completion: Locking Stovepipe
 Type of sampler: Split barrel (1.4, 2.0, 2.5" ID)

Well Construction and Boring Log - Well MW-1 (BH-A)

Chevron Service Station #92258
Oakland, California

WELL MW-1 (BH-A) (cont.)

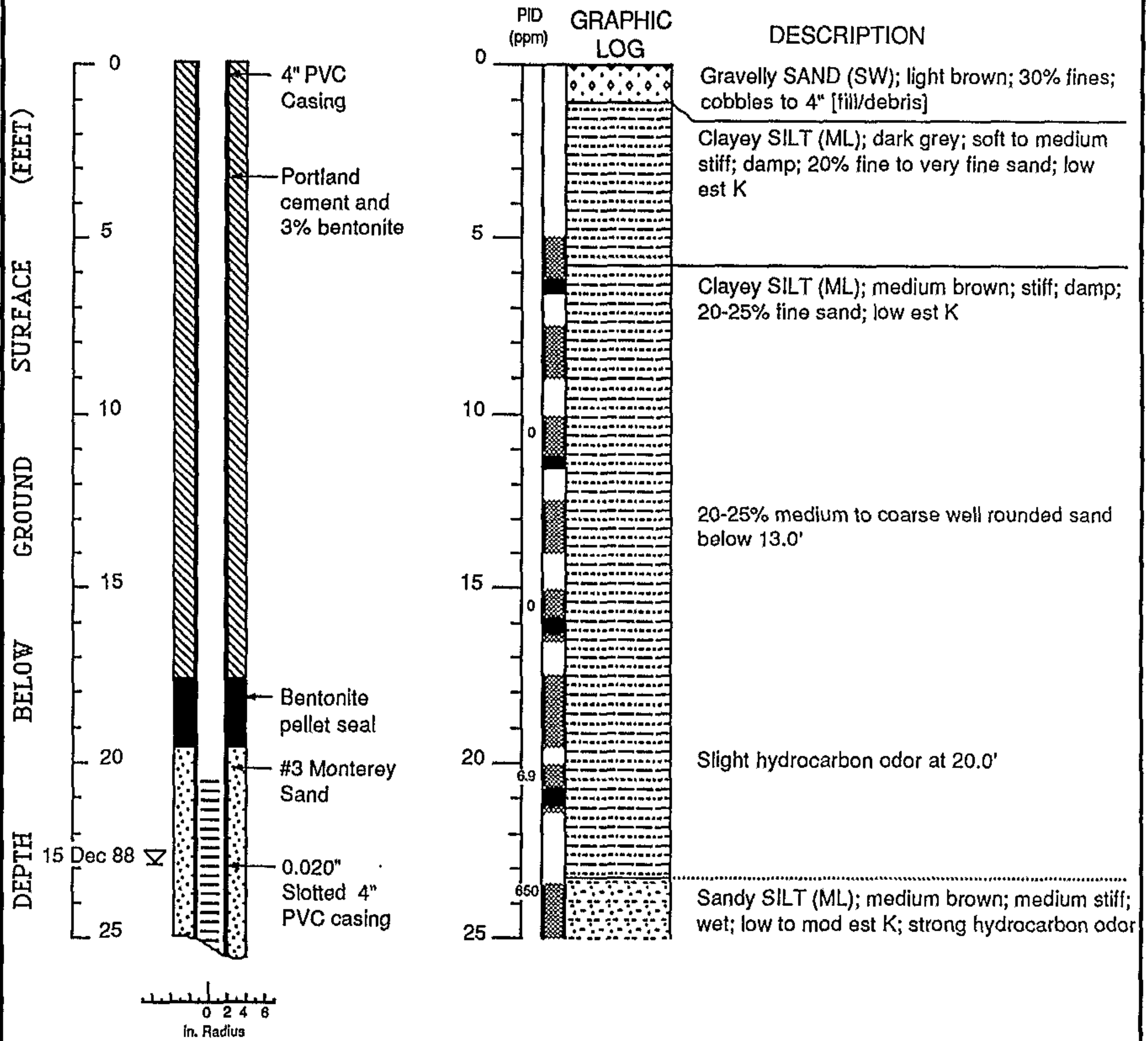


Add
In

136 2 1S/4W 13G-2



WELL MW-2 (BH-B)

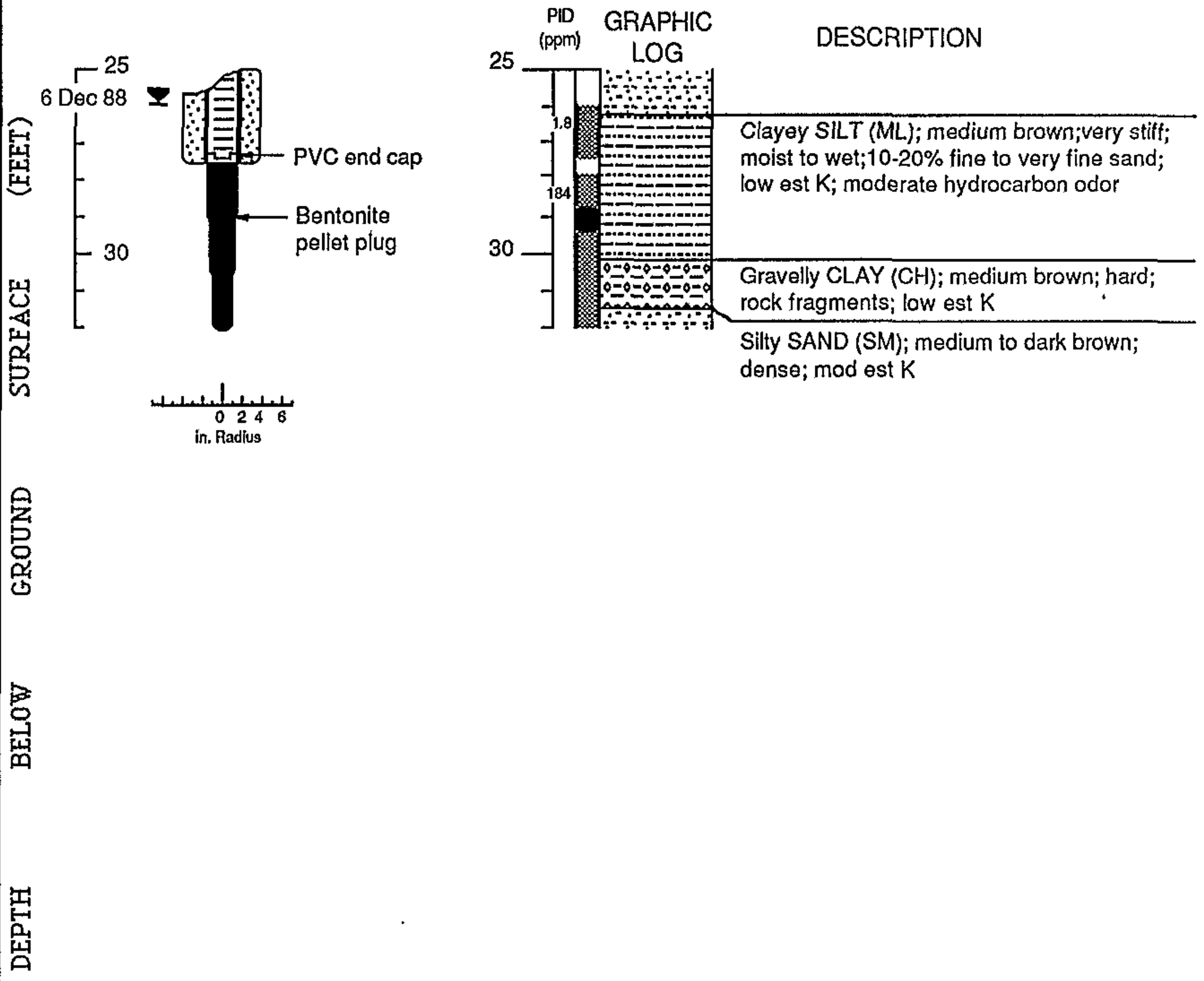


EXPLANATION

- Water level during drilling (date)
- Water level (date)
- Contact (dotted where approx.)
- Uncertain contact
- Location of recovered drive sample
- Location of drive sample sealed for chemical analysis
- Cutting sample
- K** = Estimated permeability (hydraulic conductivity)

Logged by: Jim Carmody
 Supervisor: Richard Weiss; EG 1112
 Drilling Company: Datum Exploration, Pittsburg, CA
 Driller: Jim Condrey
 Drilling Method: CME-75
 Dates Drilled: 6 December 1988
 Well Head Completion: Locking Stovepipe
 Type of sampler: Split barrel (1.4, 2.0, 2.5" ID)

WELL MW-2 (BH-B) (cont.)




Well Construction and Boring Log - Well MW-2 (BH-B)

Chevron Service Station #92258
Oakland, California

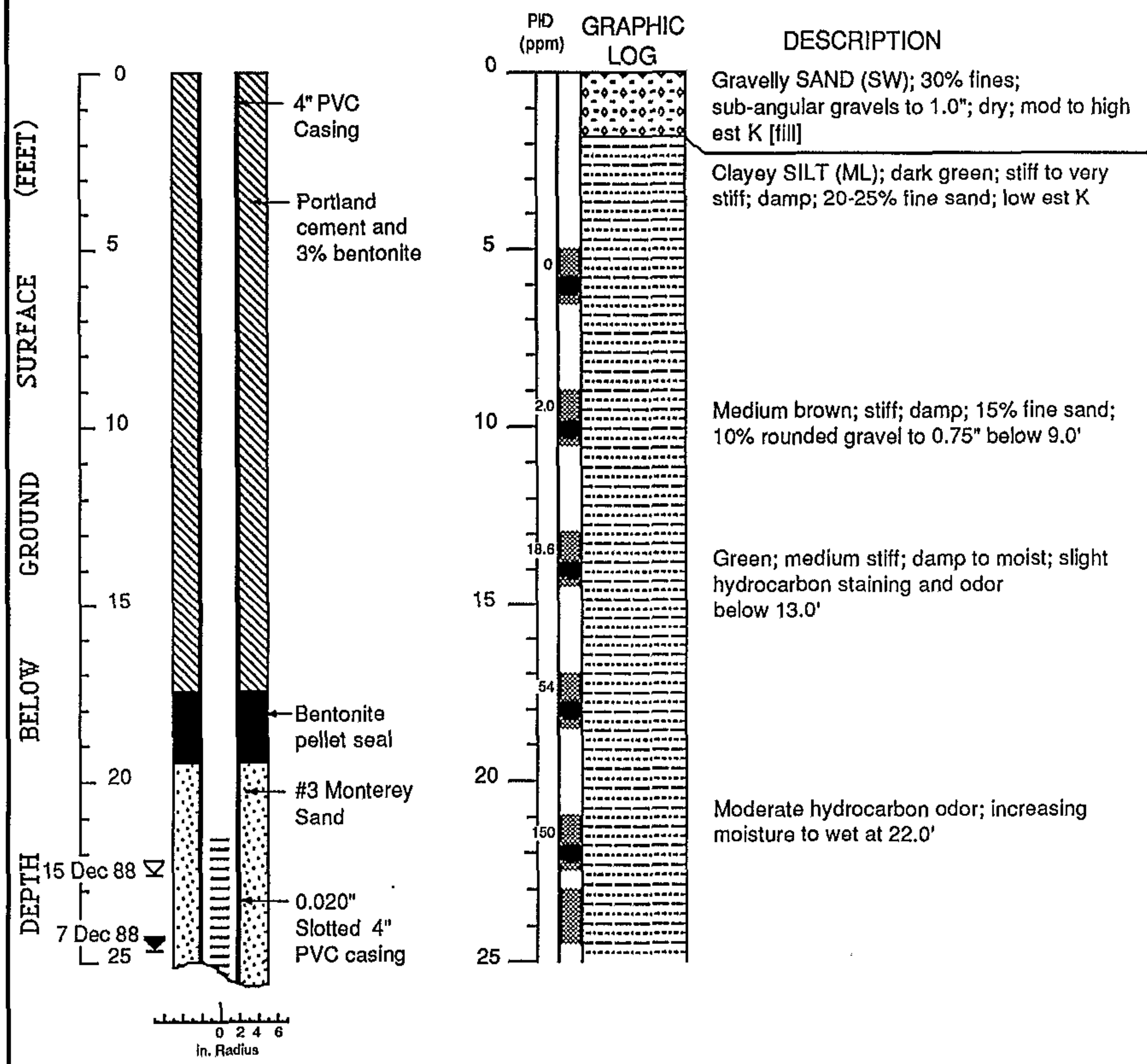
179045C

Add
In








1363 184W 1363

WEISS ASSOCIATES 

WELL MW-3 (BH-C)

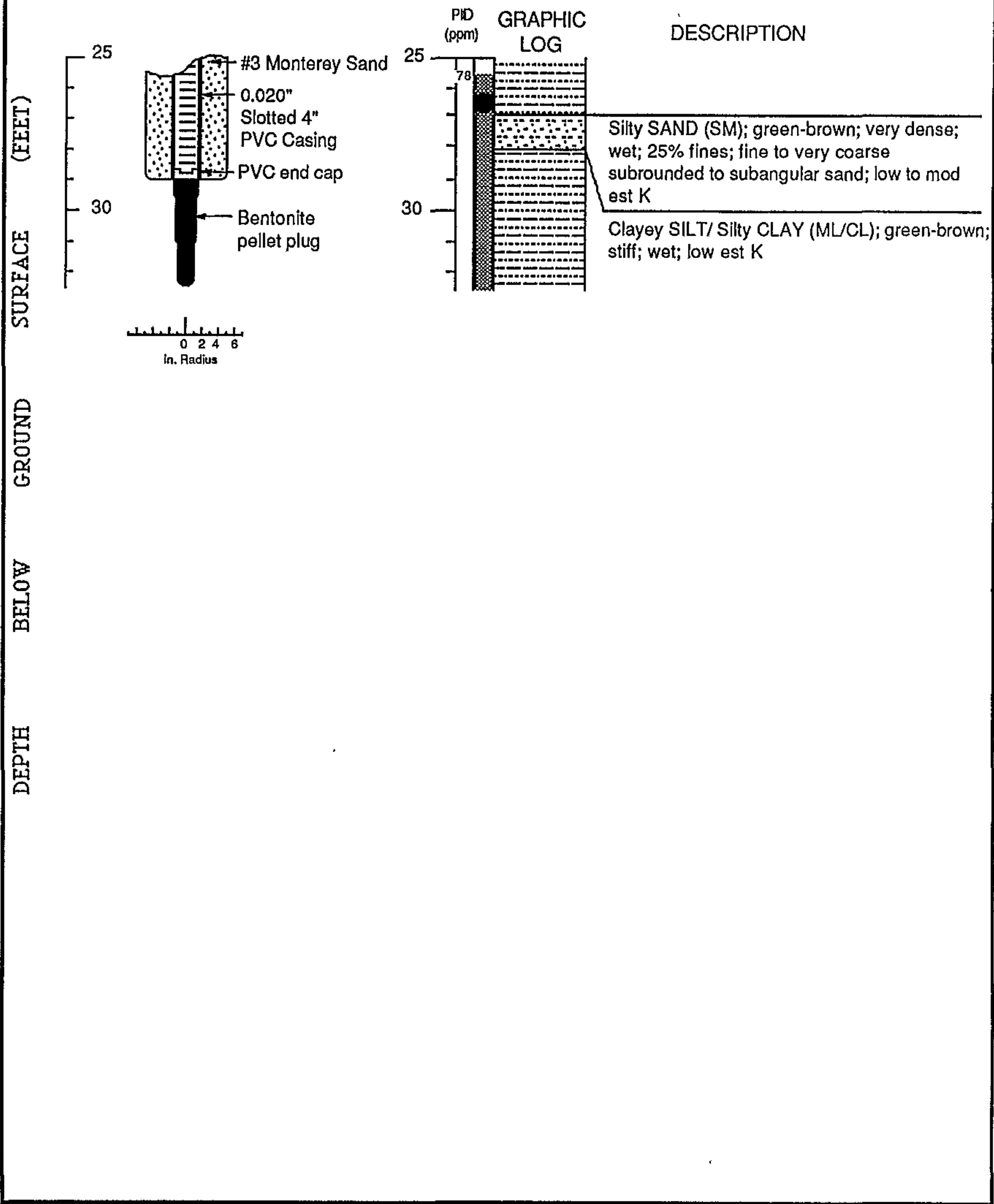


EXPLANATION

-  Water level during drilling (date)
-  Water level (date)
-  Contact (dotted where approx.)
-  Uncertain contact
-  Location of recovered drive sample
-  Location of drive sample sealed for chemical analysis
-  Cutting sample
- K** = Estimated permeability (hydraulic conductivity)

Logged by: Jim Carmody
 Supervisor: Richard Weiss; EG 1112
 Drilling Company: Datum Exploration, Pittsburg, CA
 Driller: Jim Condrey
 Drilling Method: CME-75
 Dates Drilled: 7 December 88
 Well Head Completion: Locking Stovepipe
 Type of sampler: Split barrel (1.4, 2.0, 2.5" ID)

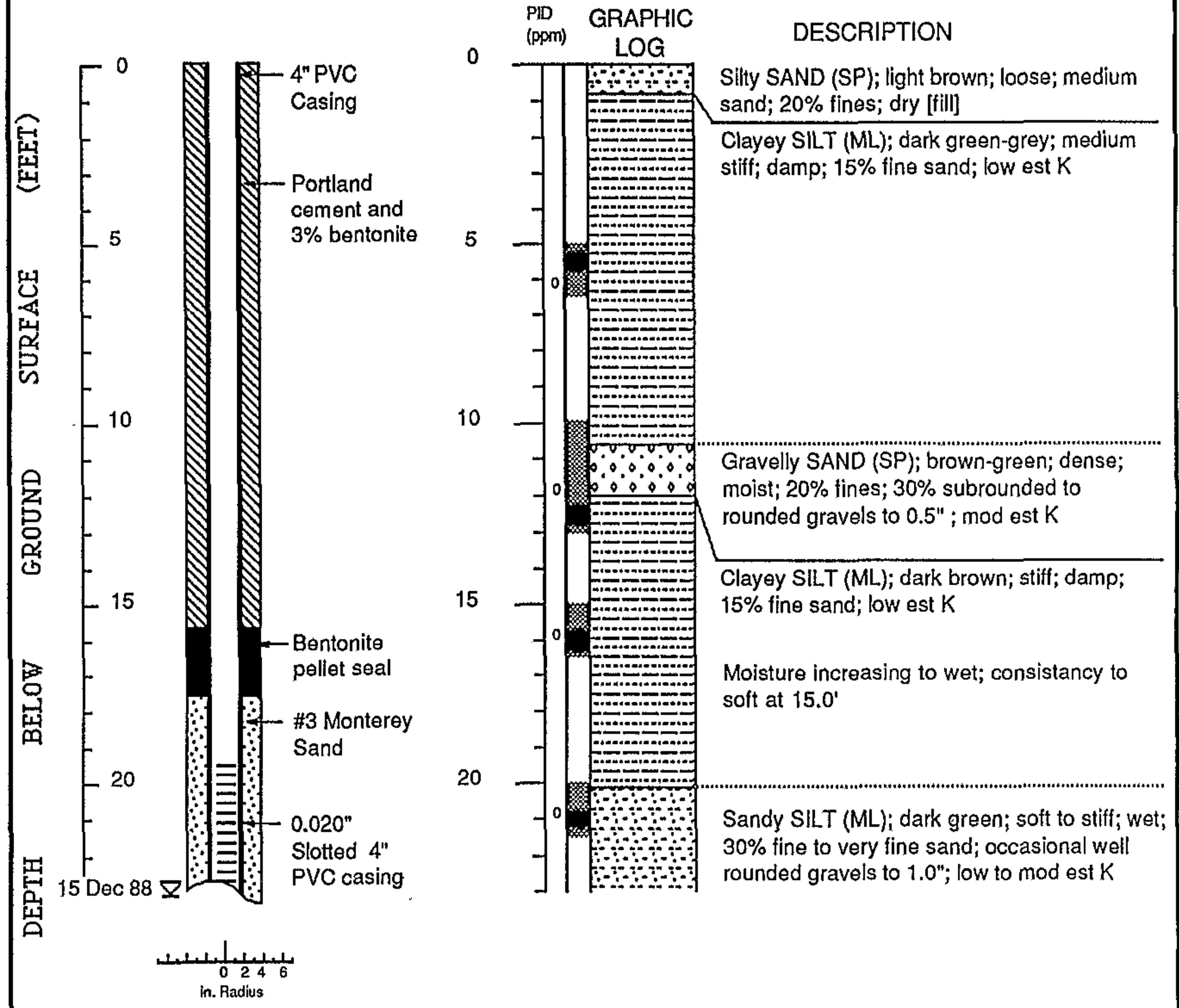
WELL MW-3 (BH-C) (cont.)



Add ✓
Inv ✓

1362 1S/4W 13G-4

WELL MW-4 (BH-D)

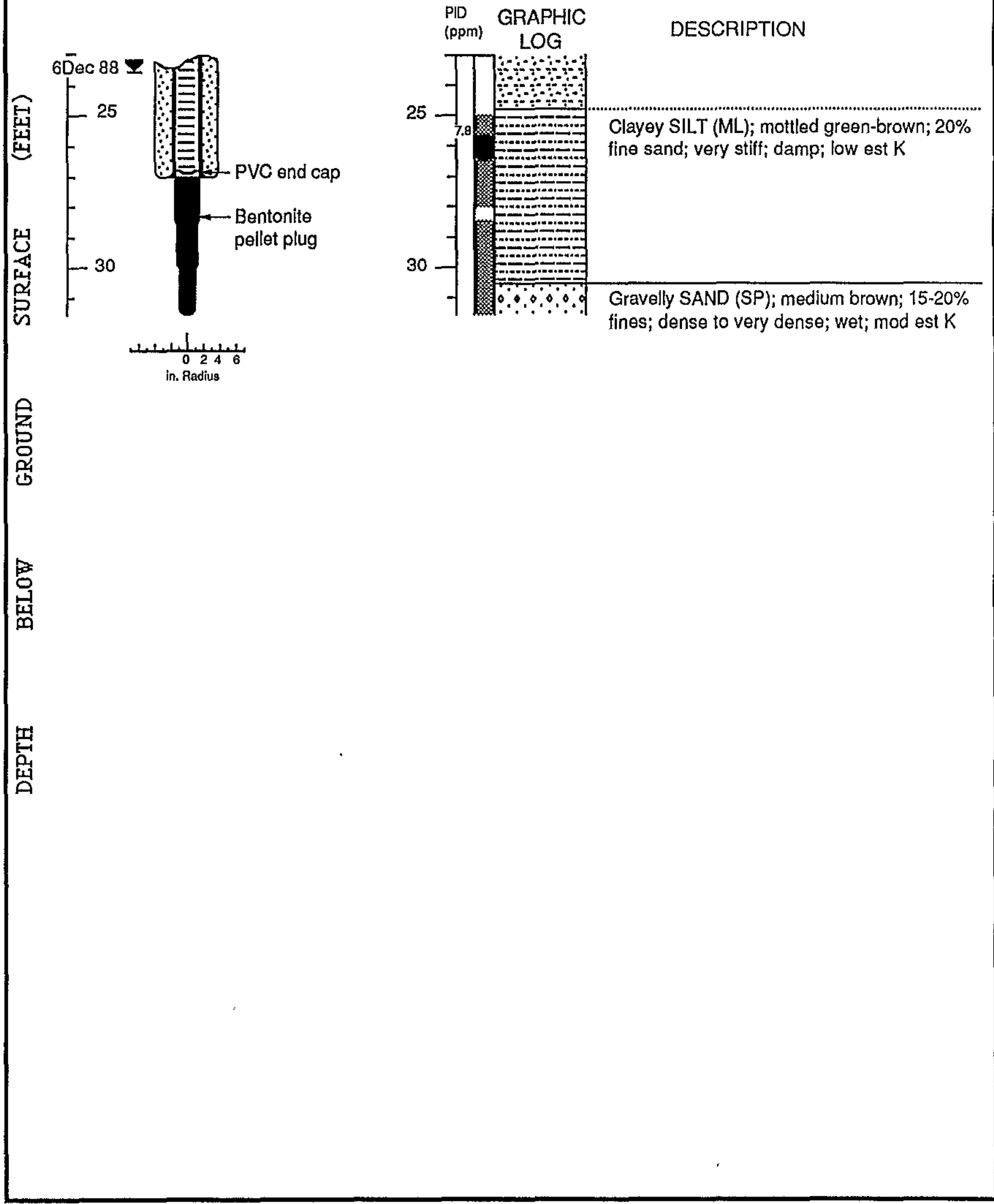


EXPLANATION

- Water level during drilling (date)
- Water level (date)
- Contact (dotted where approx.)
- Uncertain contact
- Location of recovered drive sample
- Location of drive sample sealed for chemical analysis
- Cutting sample
- K = Estimated permeability (hydraulic conductivity)

Logged by: Jim Carmody
 Supervisor: Richard Weiss; EG 1112
 Drilling Company: Datum Exploration, Pittsburg, CA
 Driller: Jim Condrey
 Drilling Method: CME-75
 Dates Drilled: 8 December 1988
 Well Head Completion: Locking Stovepipe
 Type of sampler: Split barrel (1.4, 2.0, 2.5" ID)

WELL MW-4/BH-D (cont.)

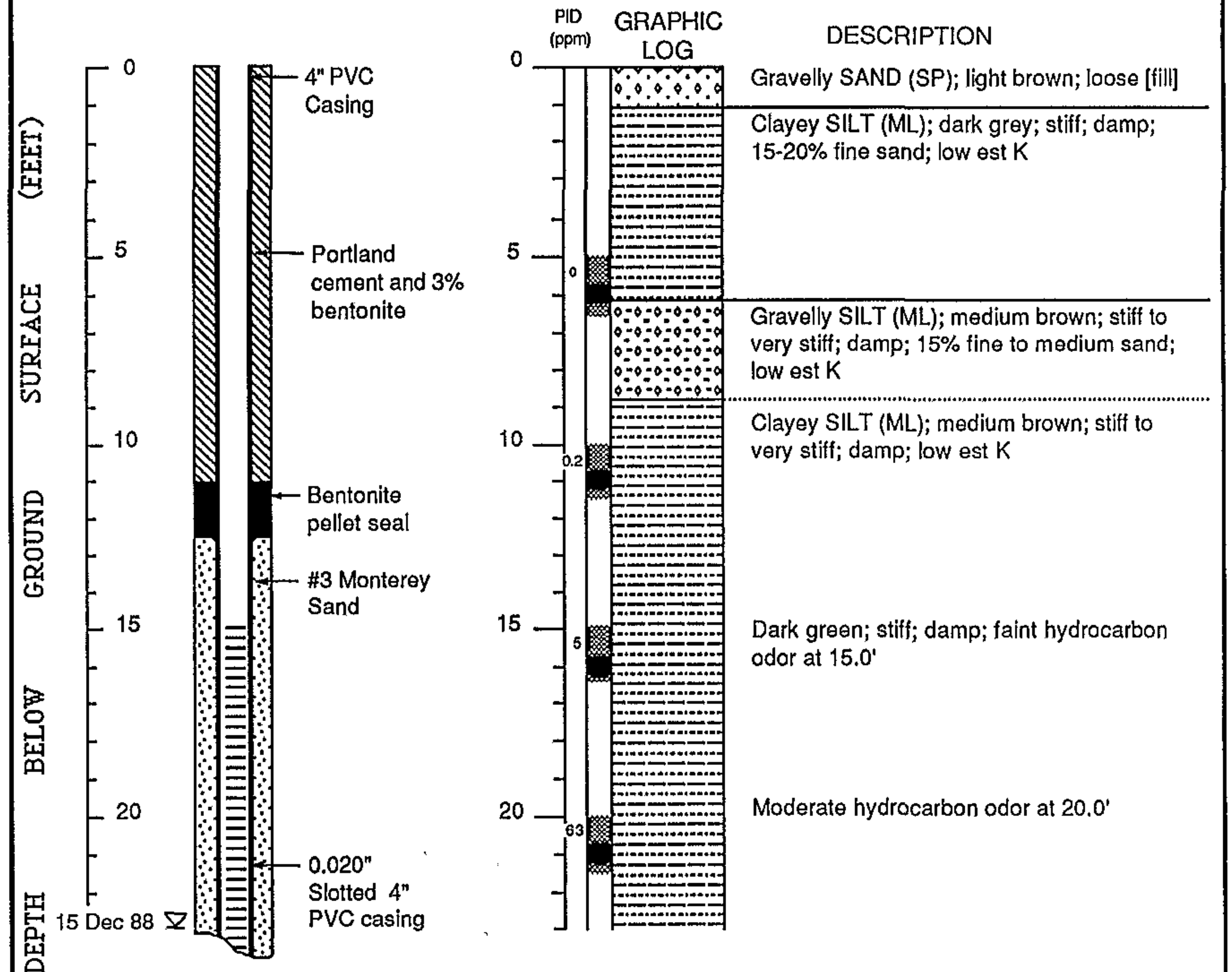


Well Construction and Boring Log - Well MW-4 (BH-D) Chevron Service Station #92258 Oakland, California



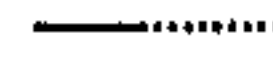
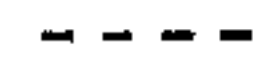



Add
In

1365 15/4W 1365

WELL MW-5 (BH-E)

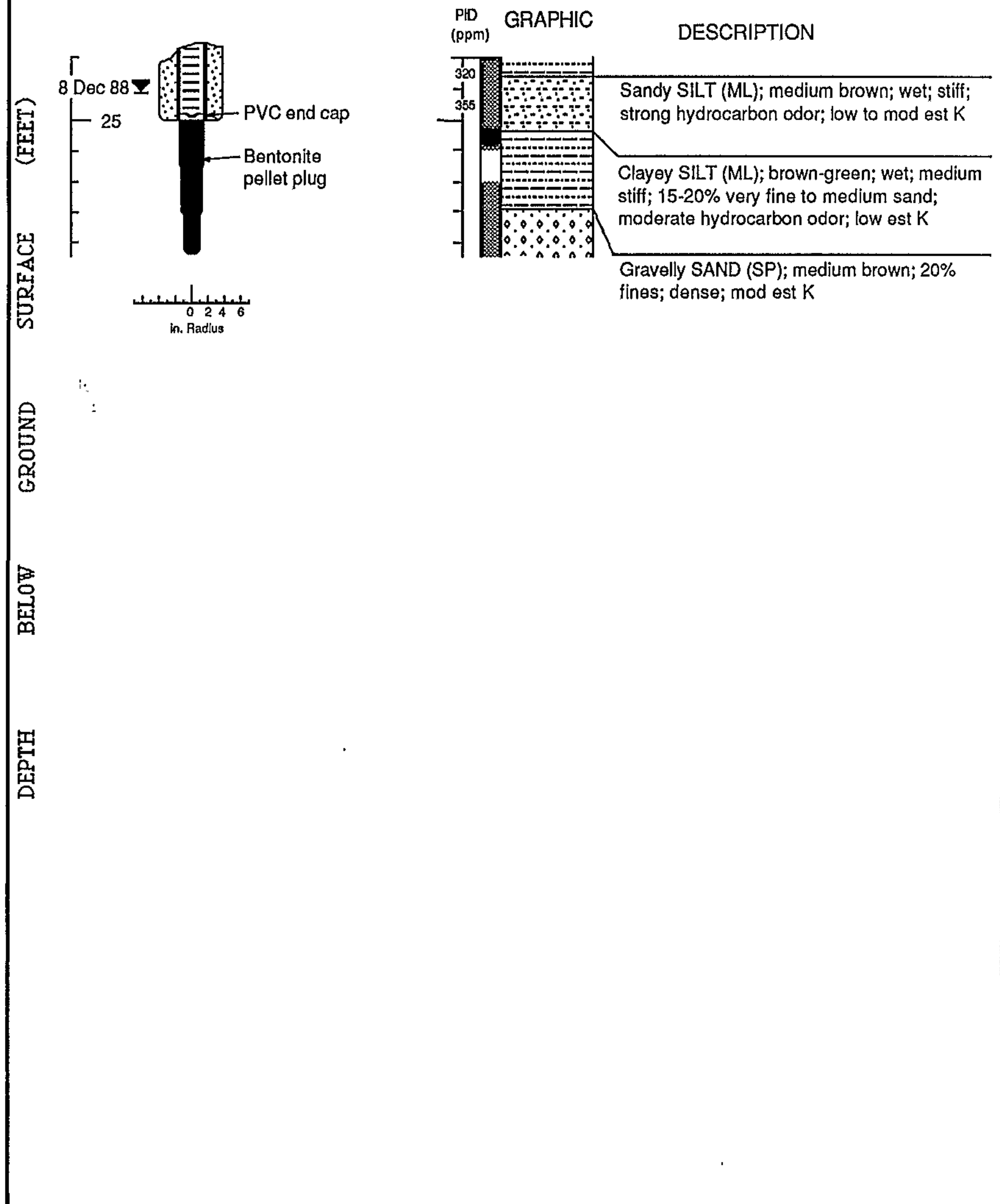


EXPLANATION

- | | | |
|---|---|--|
|  | Water level during drilling (date) | Logged by: Jim Carmody |
|  | Water level (date) | Supervisor: Richard Weiss; EG 1112 |
|  | Contact (dotted where approx.) | Drilling Company: Datum Exploration, Pittsburg, CA |
|  | Uncertain contact | Driller: Jim Condrey |
|  | Location of recovered drive sample | Drilling Method: CME-75 |
|  | Location of drive sample sealed for chemical analysis | Dates Drilled: 8 December 1988 |
|  | Cutting sample | Well Head Completion: Locking Stovepipe |
| | K = Estimated permeability (hydraulic conductivity) | Type of sampler: Split barrel (1.4, 2.0, 2.5" ID) |



WELL MW-5 (BH-E) (cont.)

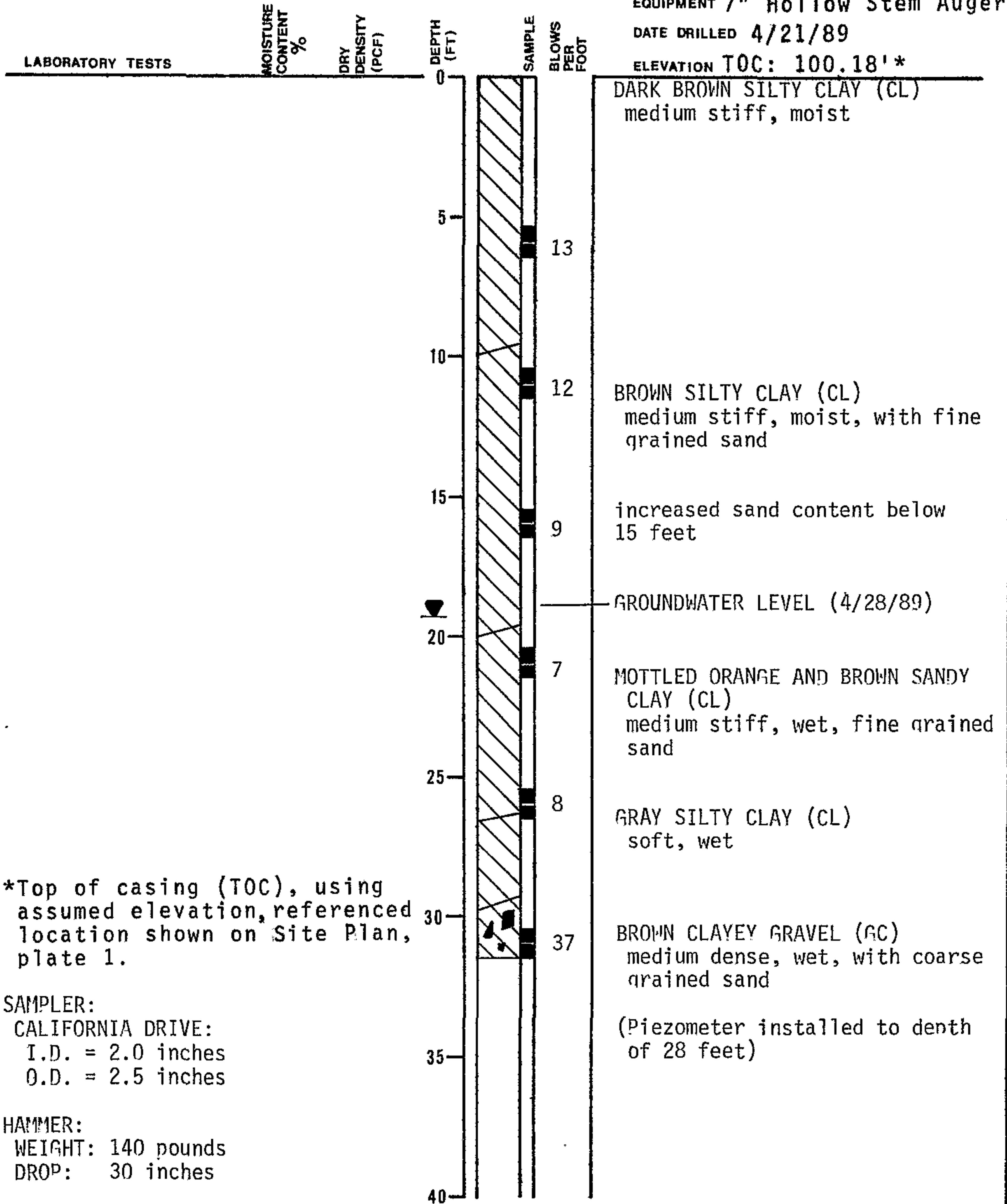


LOG OF TEST BORING 1

EQUIPMENT 7" Hollow Stem Auger

DATE DRILLED 4/21/89

ELEVATION TOC: 100.18'*



Subsurface Consultants

FIRE STATION 19 - OAKLAND, CA

JOB NUMBER
272.010

DATE
5/4/89

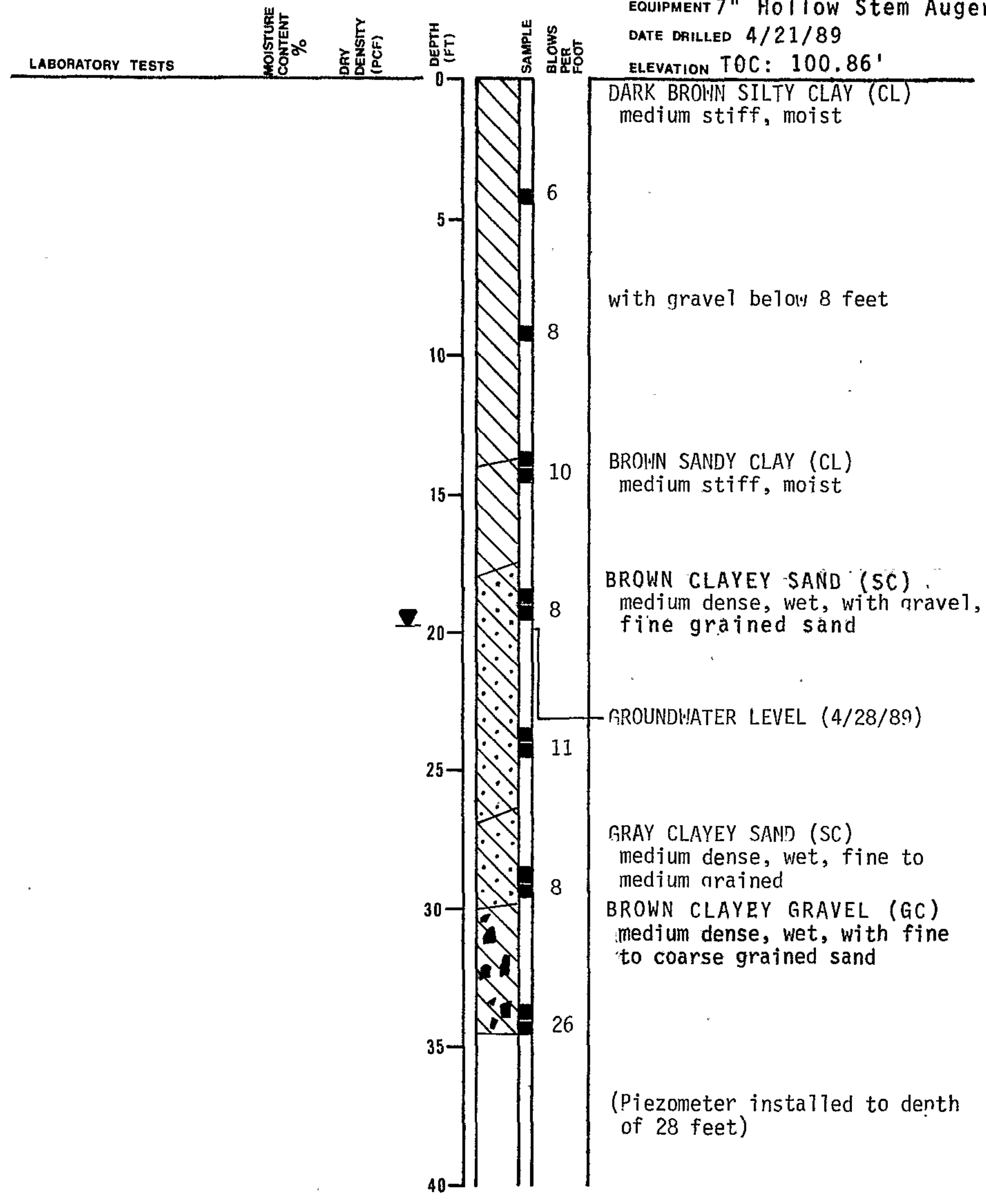
APPROVED
William L. White

PLATE

2

LOG OF TEST BORING 2

EQUIPMENT 7" Hollow Stem Auger
 DATE DRILLED 4/21/89
 ELEVATION TOC: 100.86'



Subsurface Consultants

FIRE STATION 19 - OAKLAND, CA

PLATE

JOB NUMBER
272.010

DATE
5/4/89

APPROVED
[Signature]

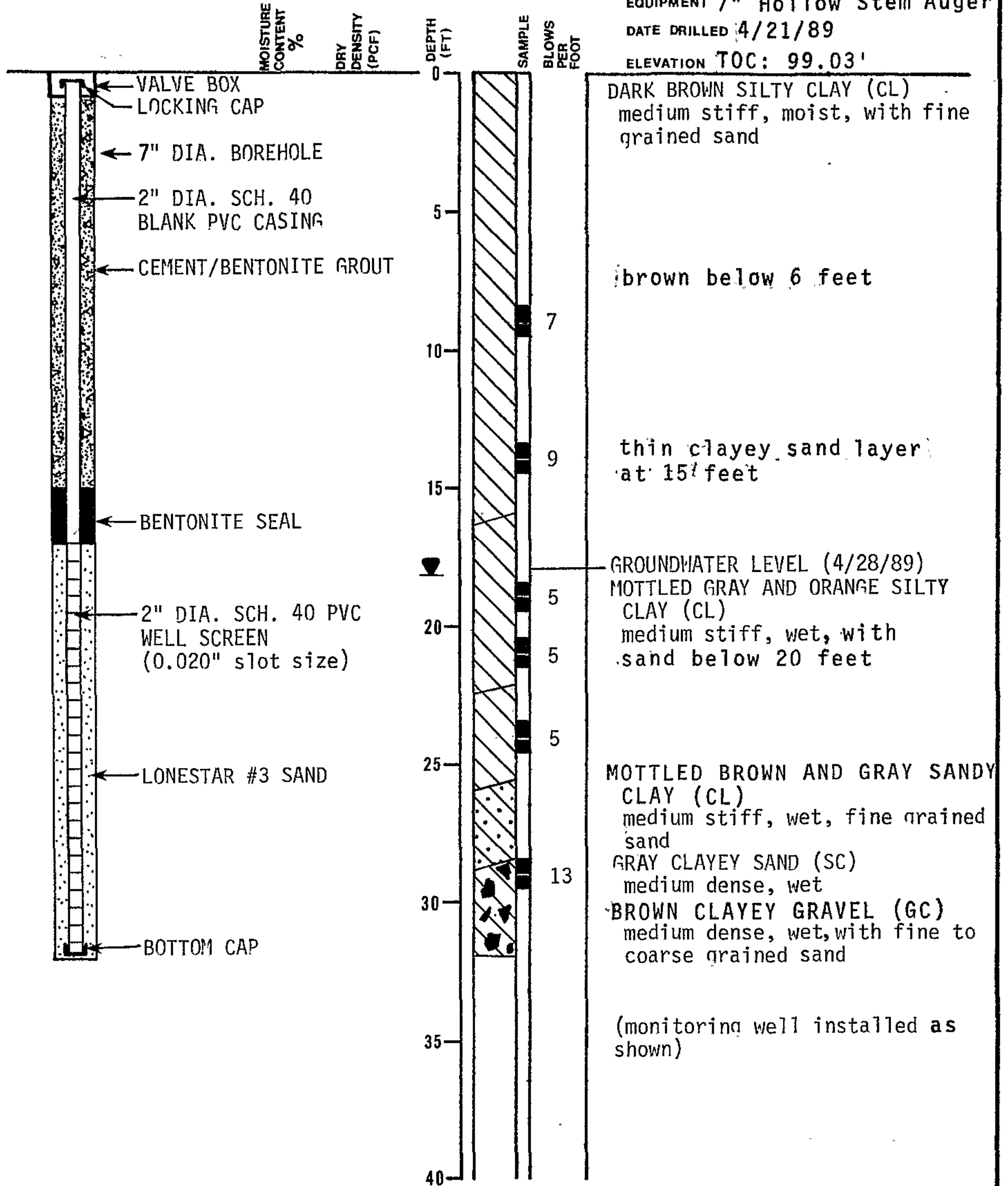
3

LOG OF TEST BORING 3

EQUIPMENT 7" Hollow Stem Auger

DATE DRILLED 4/21/89

ELEVATION TOC: 99.03'



Subsurface Consultants

FIRESTATION 19 - OAKLAND, CA

PLATE

JOB NUMBER
272.010

DATE
5/4/89

APPROVED

4

81.10'

81.05'

81.00'

80.95'

80.90'

80.85'

80.80'

2

1

3

PAVED PARKING AREA

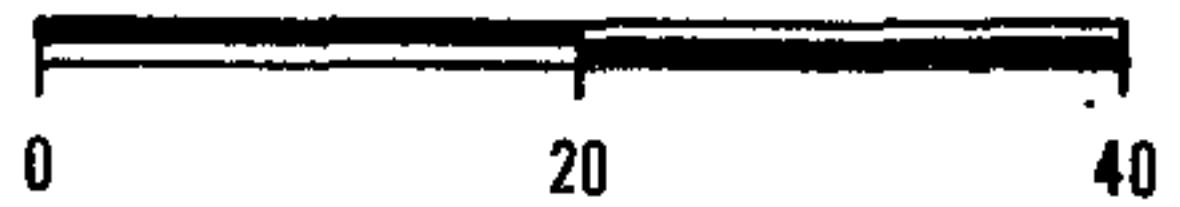
FIRE STATION

DRIVEWAY

DRIVEWAY

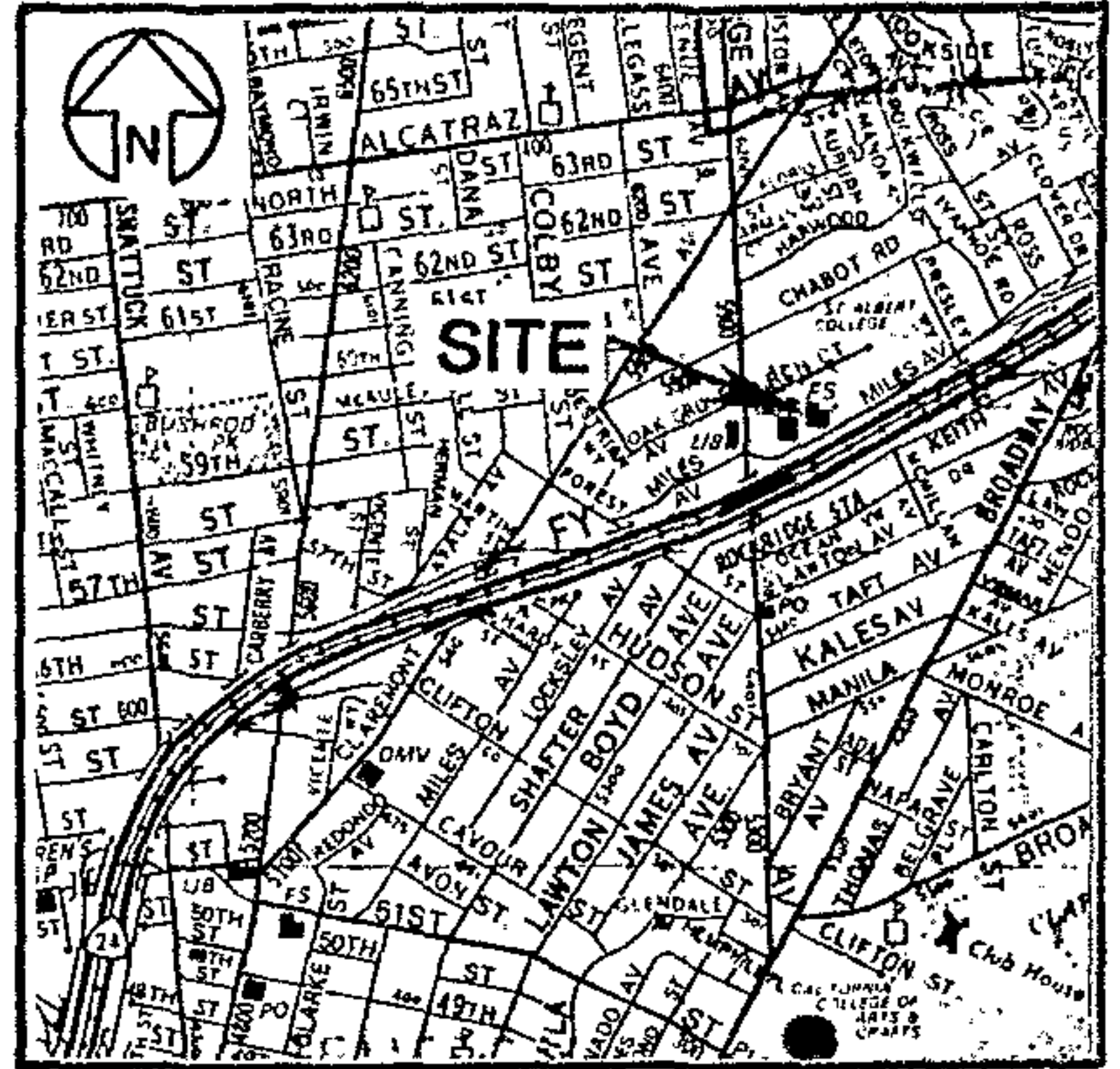


APPROXIMATE SCALE (feet)



89249

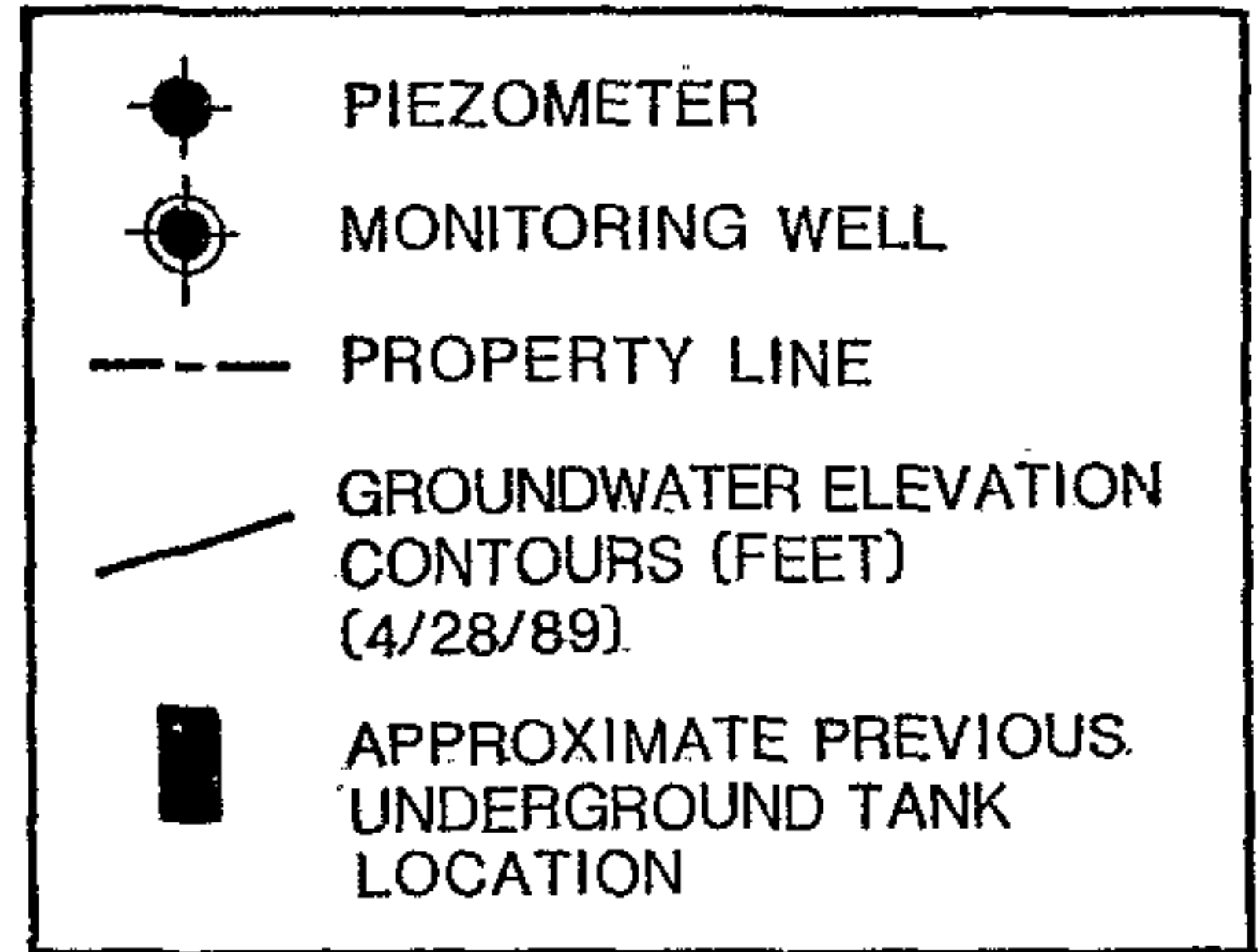
C57 Lic.# C57-522125



VICINITY MAP

← ELEVATION REFERENCE
TOP OF CURB
ASSUMED AT 100.00 FEET

MILES AVENUE



SITE SKETCH

Subsurface Consultants

FIRE STATION 19 - OAKLAND, CA

PLATE

JCB NUMBER
272.010

DATE
4/15/89

APPROVED
[Signature]

1

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WELL COMPLETION REPORT
(WELL LOGS)

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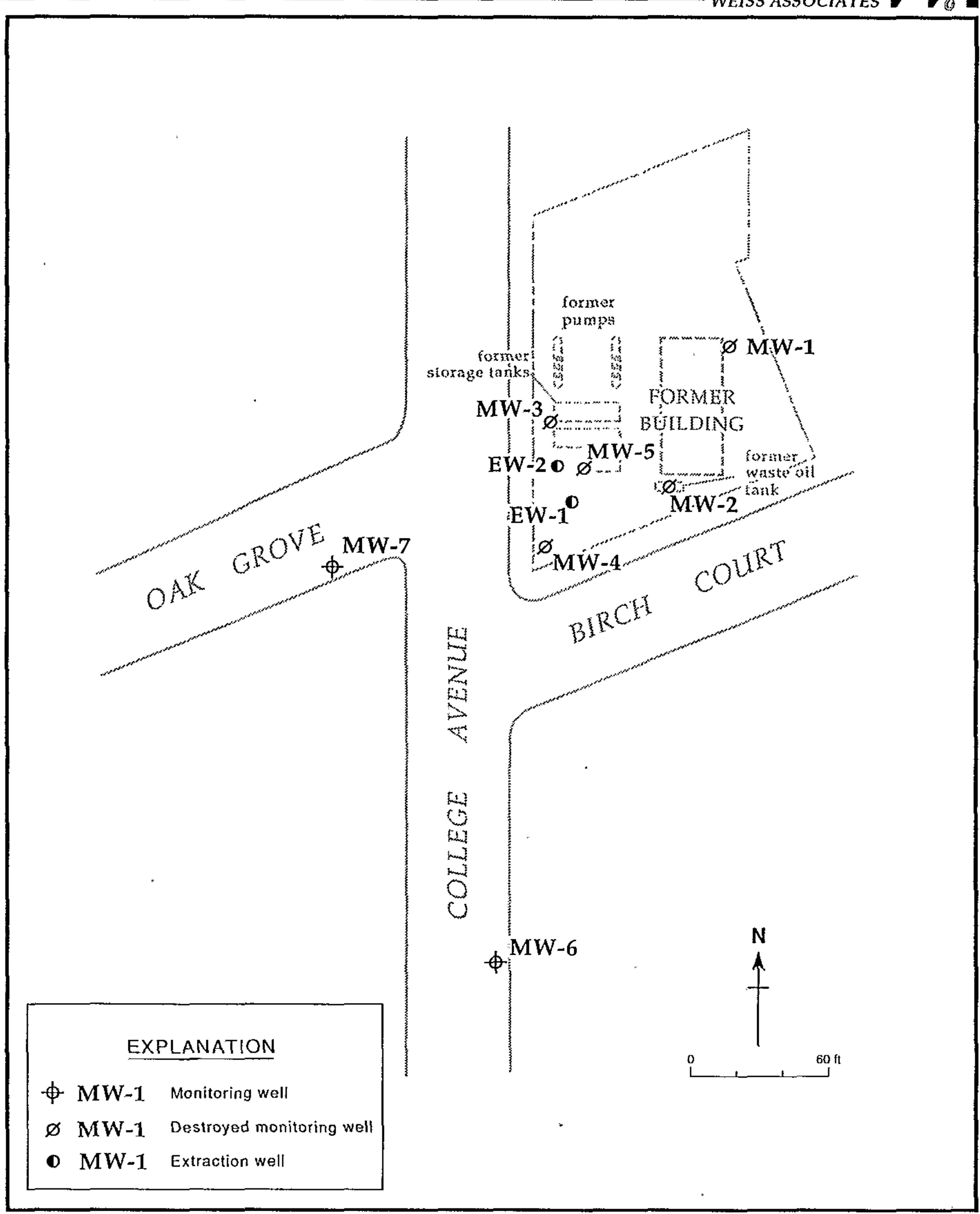
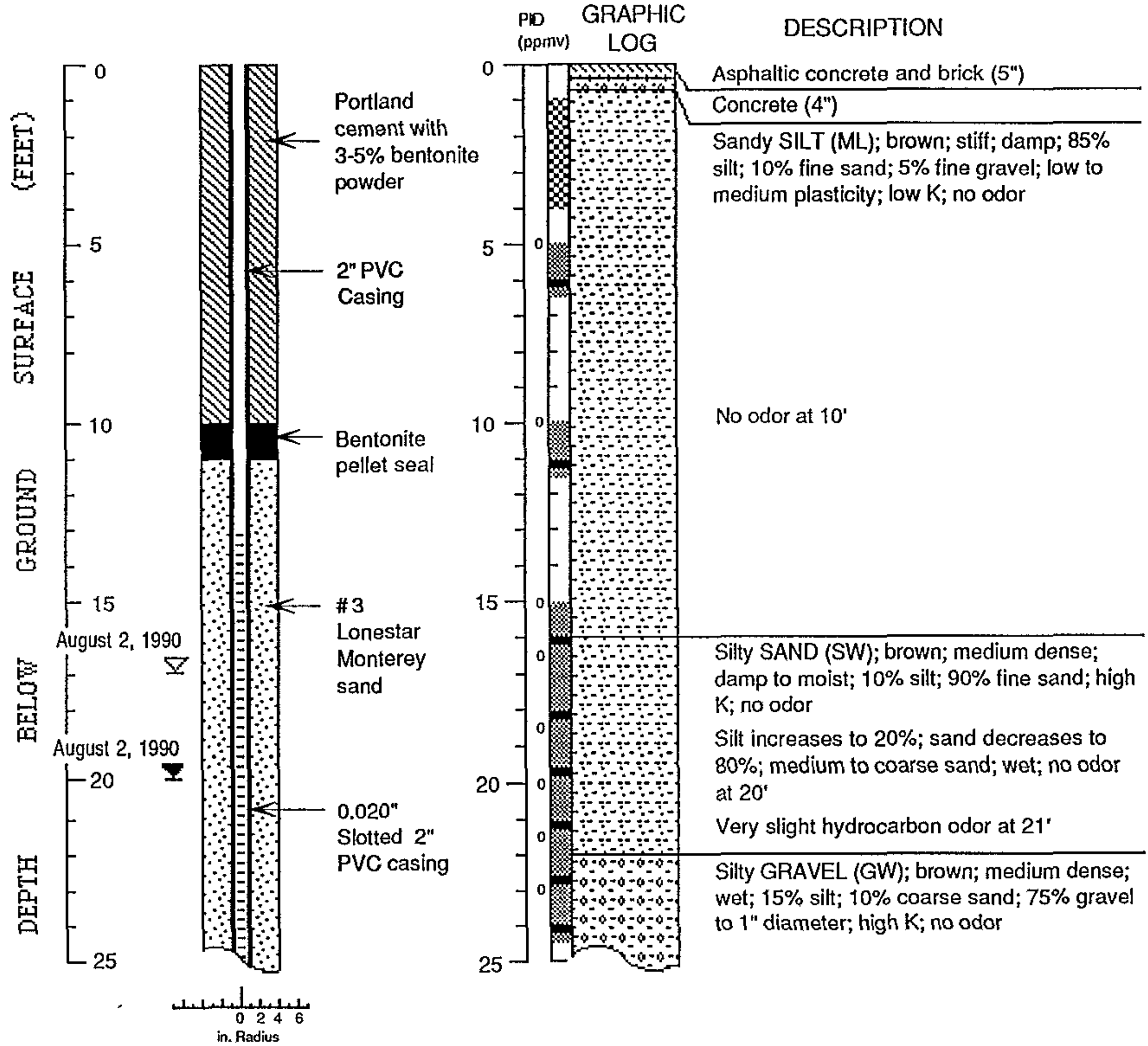










Figure 2. Monitoring and Extraction Well Locations - Chevron Service Station #92258, 5800 College Avenue, Oakland, California

WELL MW-6 (BH-F)



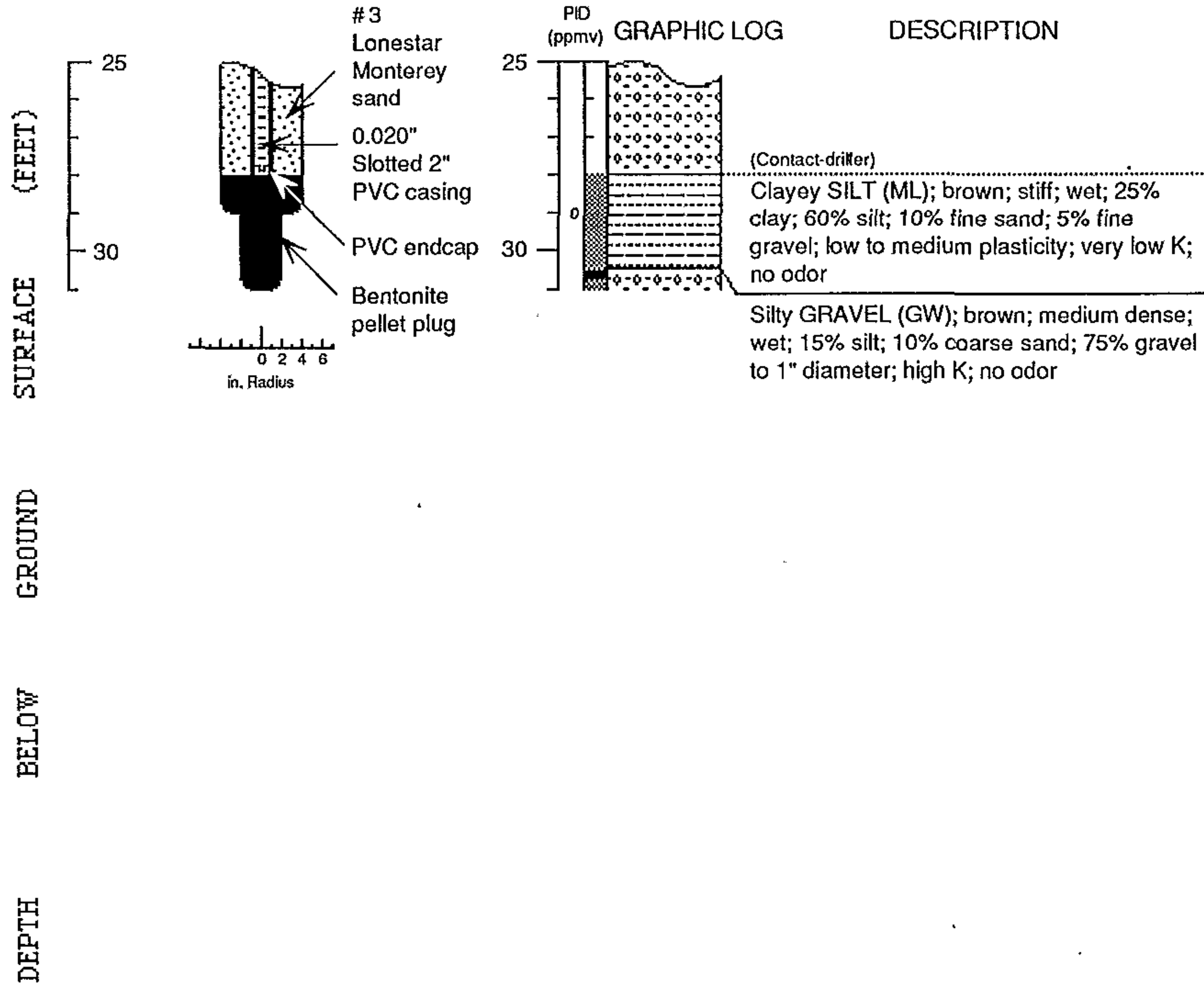
EXPLANATION

- | | |
|--|---|
| <ul style="list-style-type: none">  Water level during drilling (date)  Water level (date)  Contact (dotted where approx.)  Uncertain contact  Location of recovered drive sample  Location of drive sample sealed for chemical analysis  Cutting sample  K = Estimated hydraulic conductivity | <ul style="list-style-type: none"> Logged by: Robert Kitay Supervisor: Richard Weiss; EG 1112 Drilling Company: Soils Exploration Services, Vacaville, CA Driller: Russ Ellis Drilling Method: Hollow-stem auger Date Drilled: August 2, 1990 Well Head Completion: 4" Locking well-plug, traffic-rated vault Type of sampler: Split barrel (1.5", 2.0", 2.5" ID) Ground Surface Elevation: 179.04 feet above mean sea level |
|--|---|

Well Construction and Boring Log - Well MW-6 (BH-F) Chevron Service Station #92258
Oakland, California

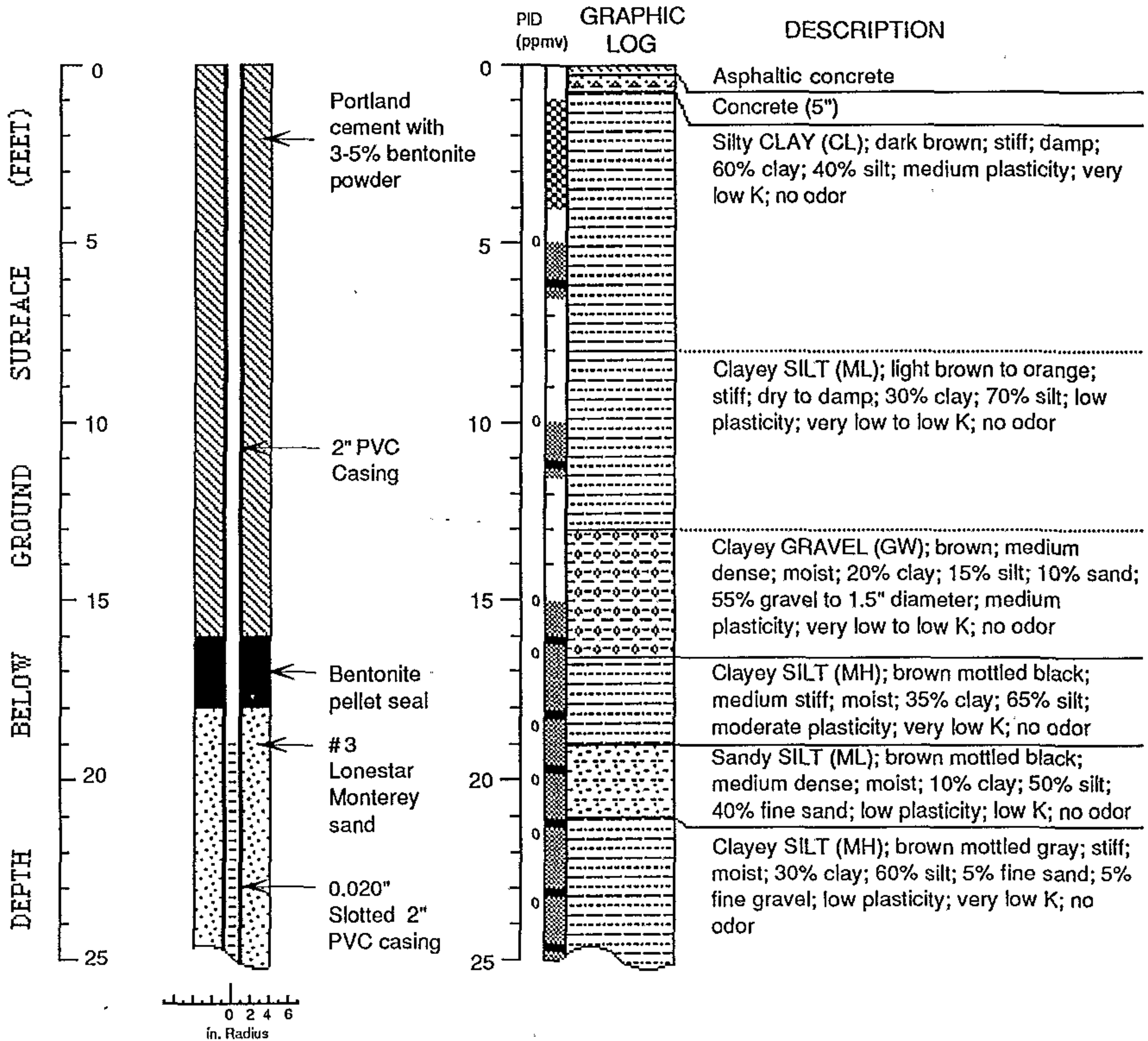


WELL MW-6 (BH-F) (cont.)





WELL MW-7 (BH-G)

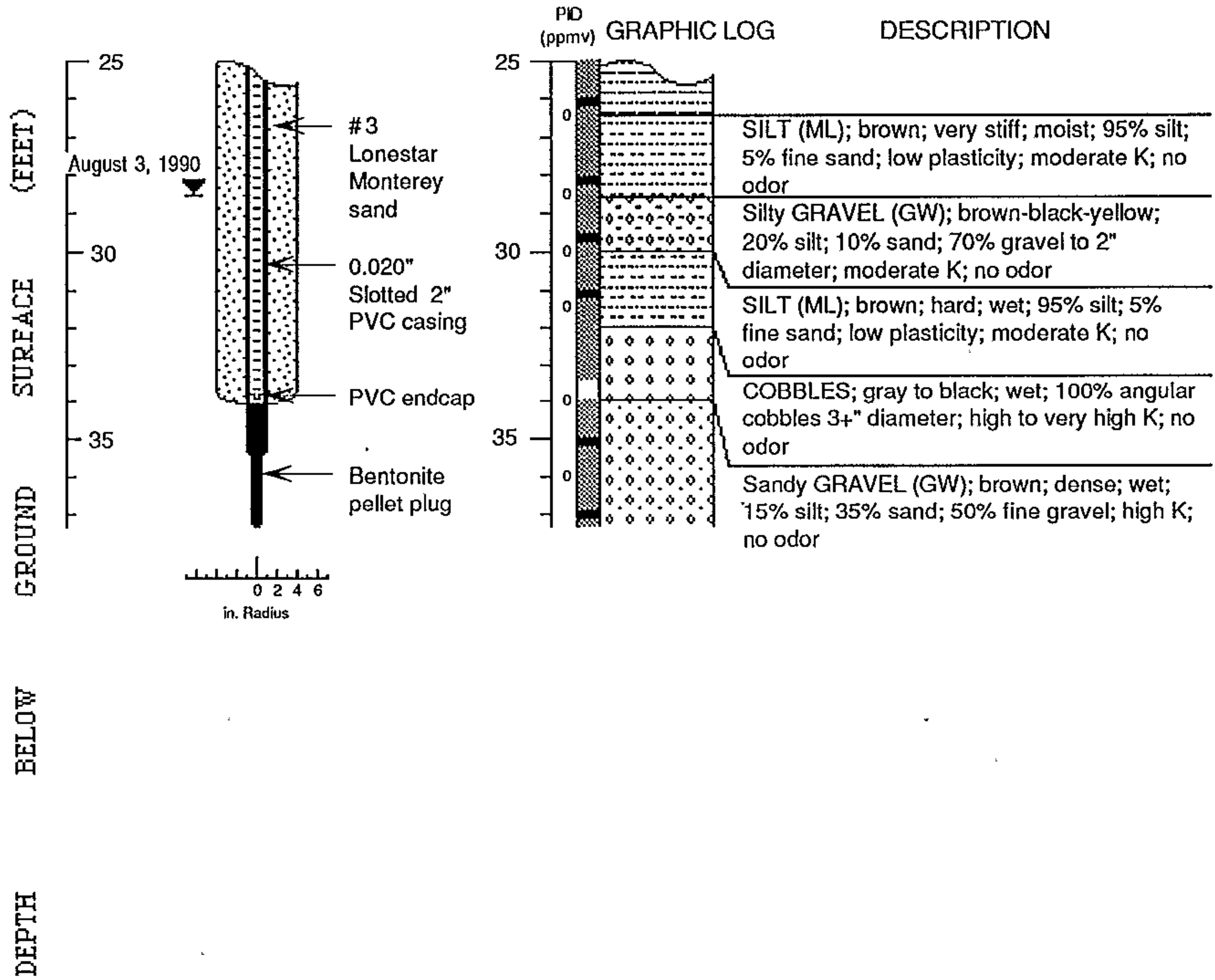


EXPLANATION

<ul style="list-style-type: none"> Water level during drilling (date) Water level (date) Contact (dotted where approx.) Uncertain contact Location of recovered drive sample Location of drive sample sealed for chemical analysis Cutting sample K = Estimated hydraulic conductivity 	<p>Logged by: Robert Kitay Supervisor: Richard Weiss; EG 1112 Drilling Company: Soils Exploration Services, Vacaville, CA Driller: Russ Ellis Drilling Method: Hollow-stem auger Date Drilled: August 3, 1990 Well Head Completion: 4" Locking well-plug, traffic-rated vault Type of sampler: Split barrel (1.5", 2.0", 2.5" ID) Ground Surface Elevation: 180.53 feet above mean sea level</p>
--	--

Well Construction and Boring Log - Well MW-7 (BH-G) Chevron Service Station #92258
Oakland, California

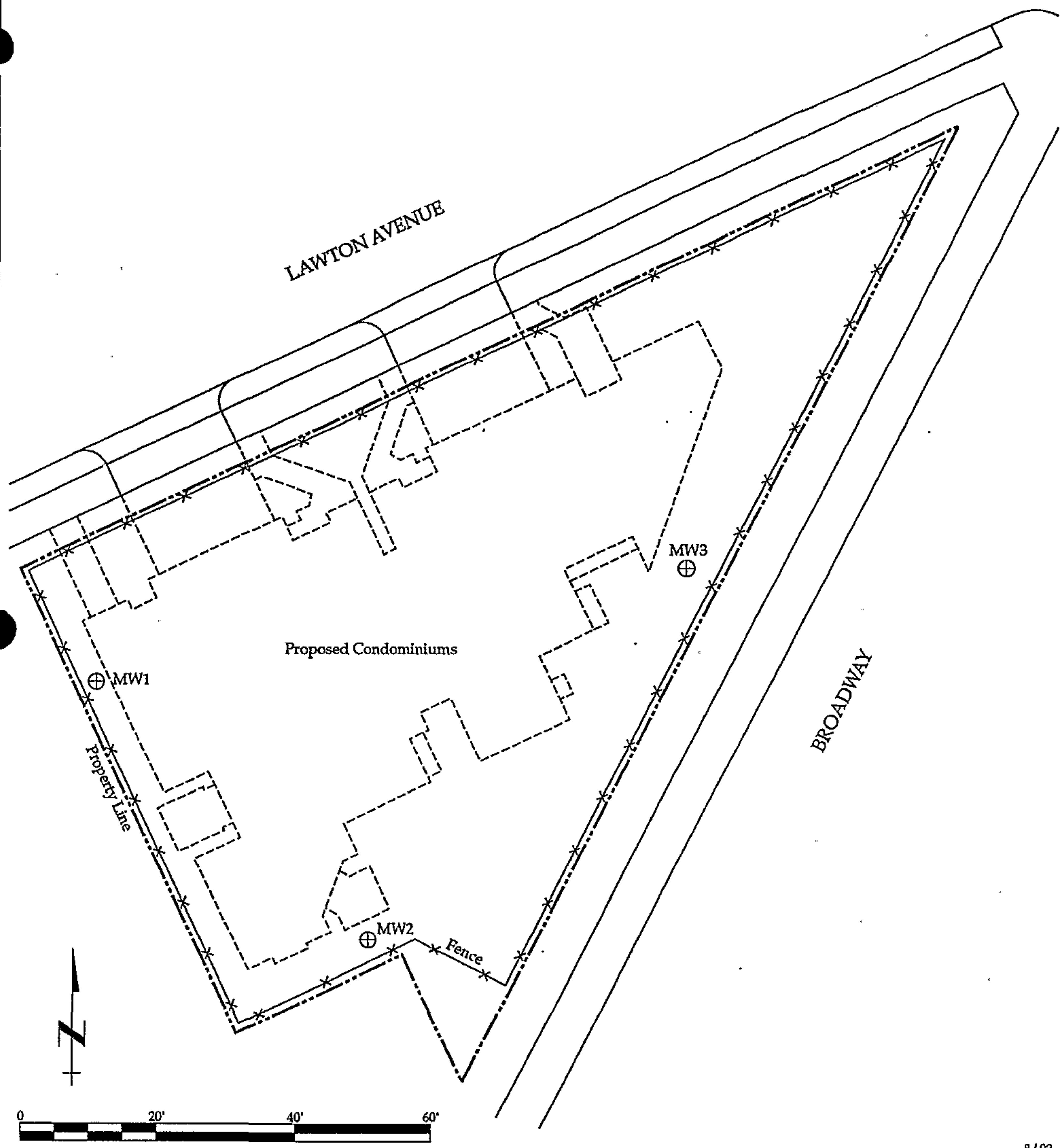
WELL MW-7 (BH-G) (cont.)



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(WELL LOGS)

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8/92

EXPLANATION

⊕ MW-3 Proposed Monitor Well location

Site Location Map

Former Chevron Service Station #9-3575
5775 Broadway
Oakland, California

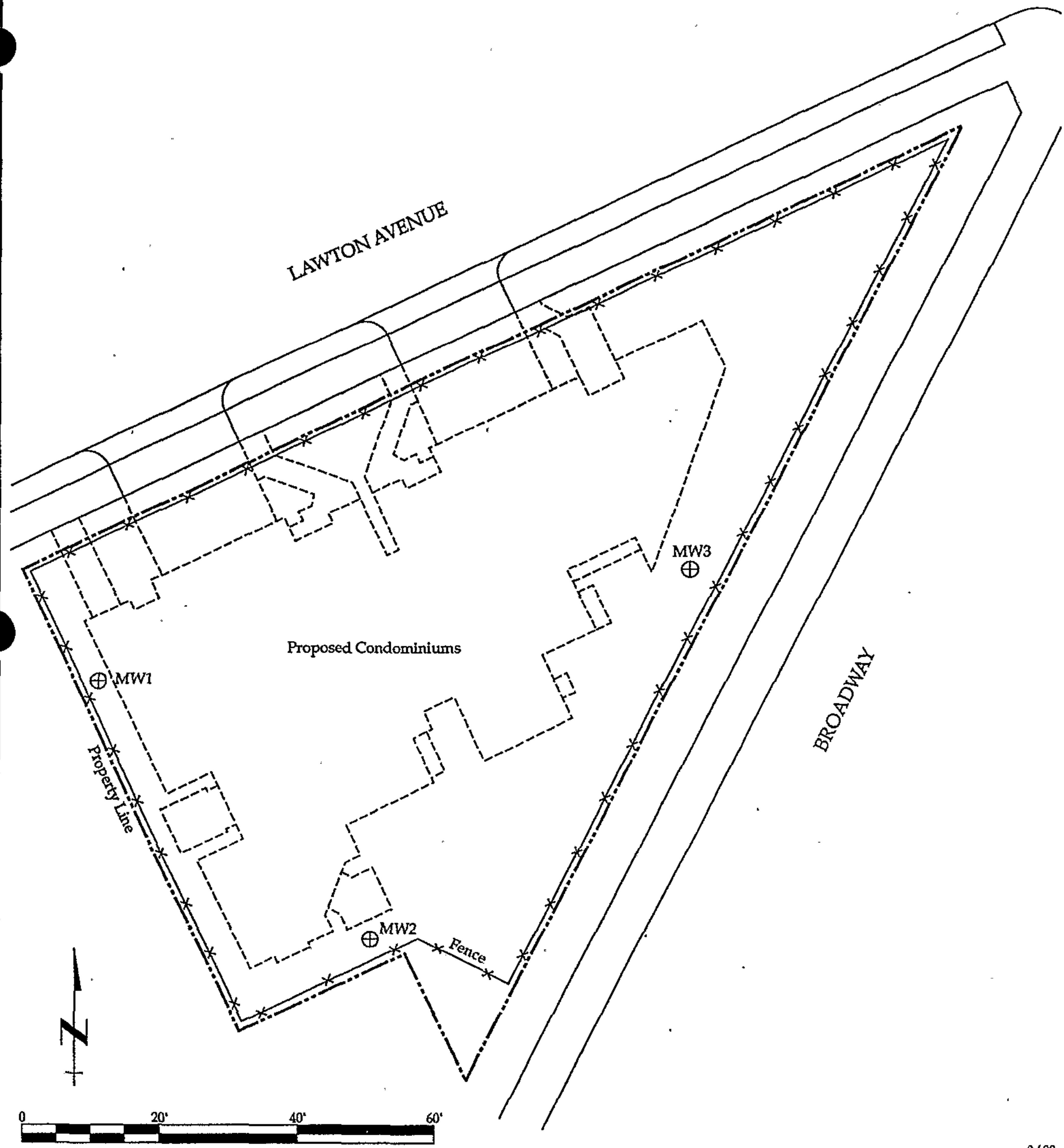
FIGURE

2

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WELL COMPLETION REPORT
(WELL LOGS)

REMOVED



8/92

EXPLANATION

⊕ MW-3 Proposed Monitor Well location

Site Location Map

Former Chevron Service Station #9-3575
5775 Broadway
Oakland, California

FIGURE

2



17046.01

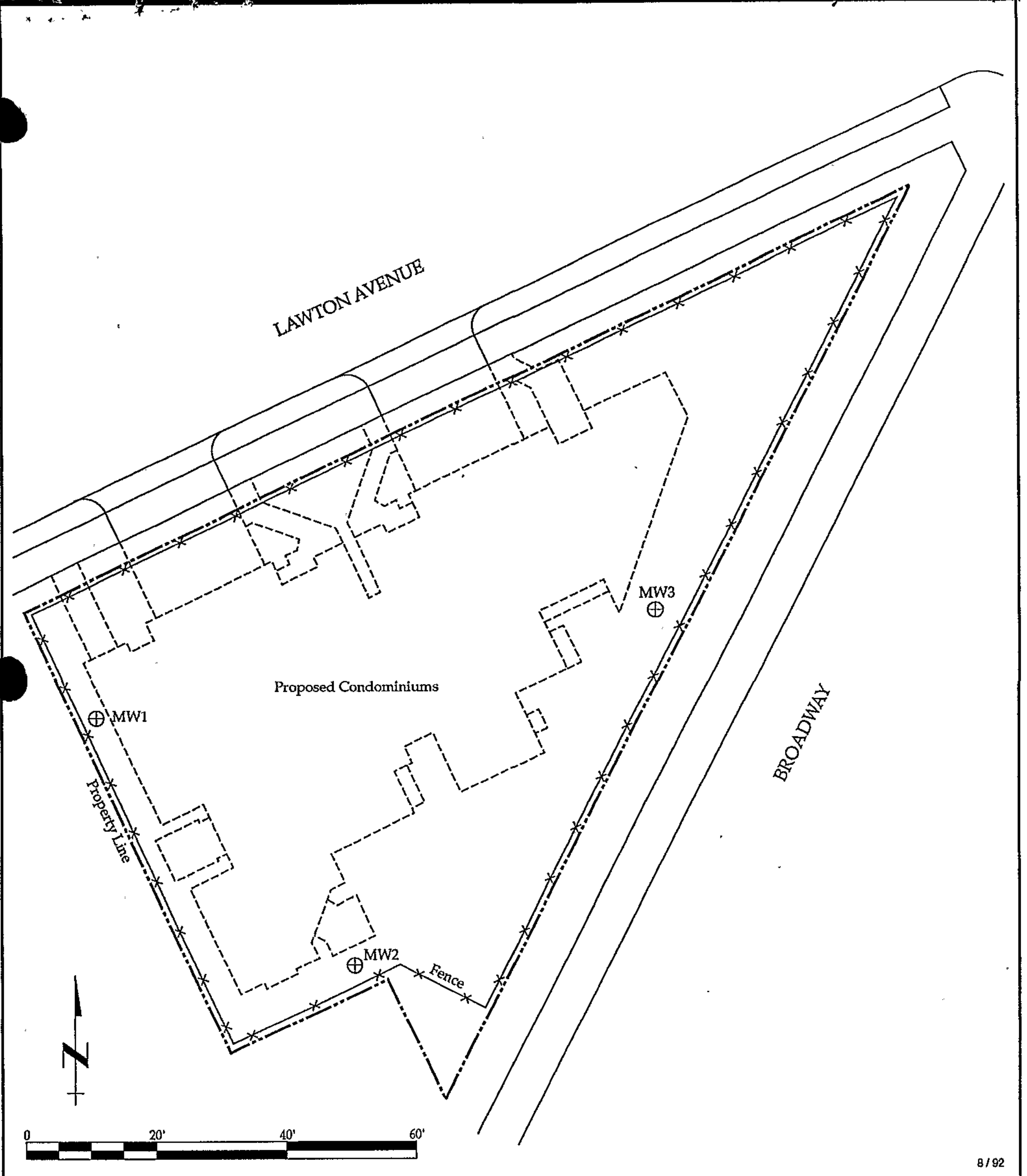
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WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

367293

~~15/4/W 1344 18/4/00 1344 5/6~~



8/92

EXPLANATION	
⊕ MW-3	Proposed Monitor Well location

Site Location Map
 Former Chevron Service Station #9-3575
 5775 Broadway
 Oakland, California

FIGURE
2
 17046.01



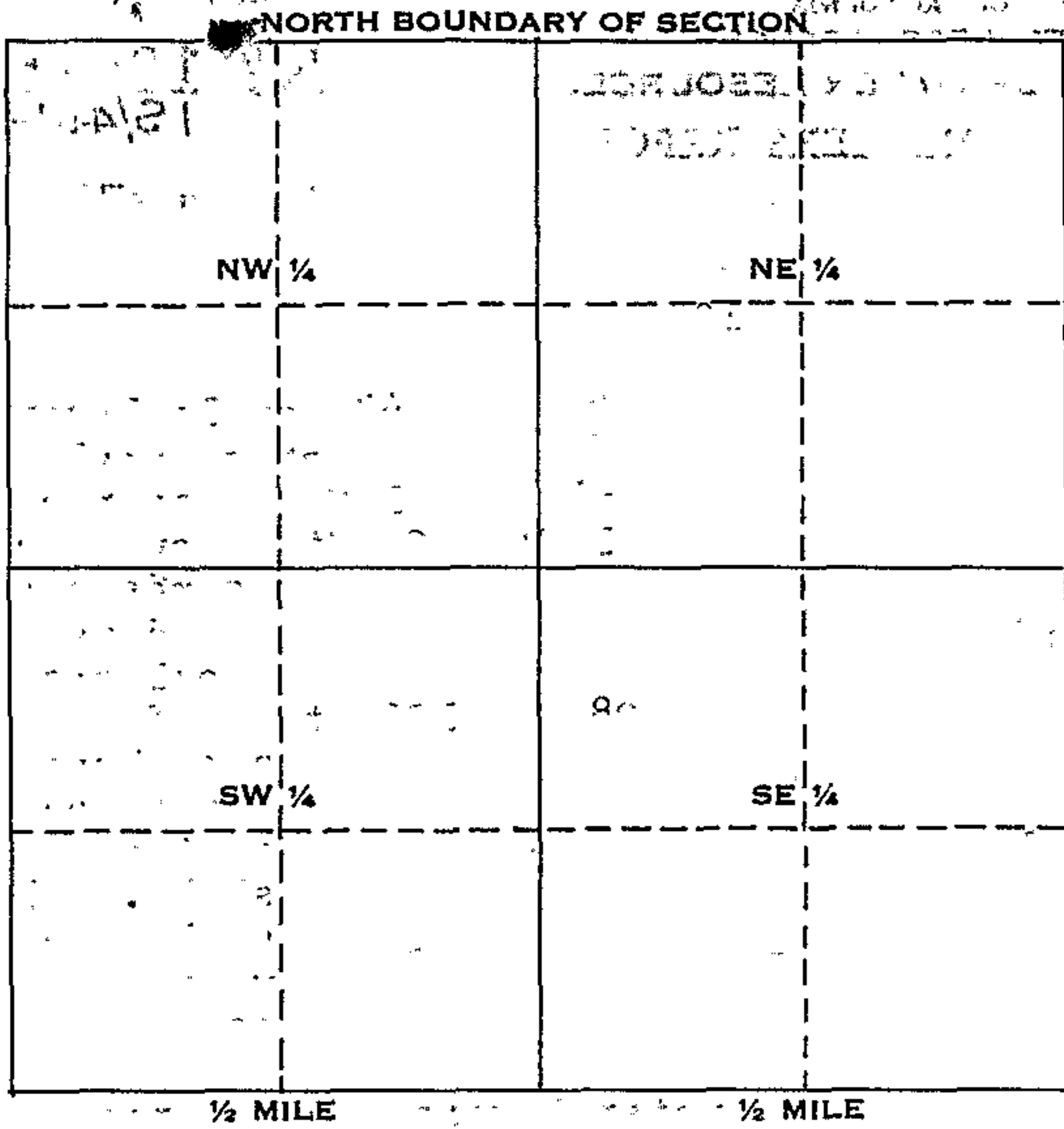
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WELL COMPLETION REPORT
(WELL LOGS)

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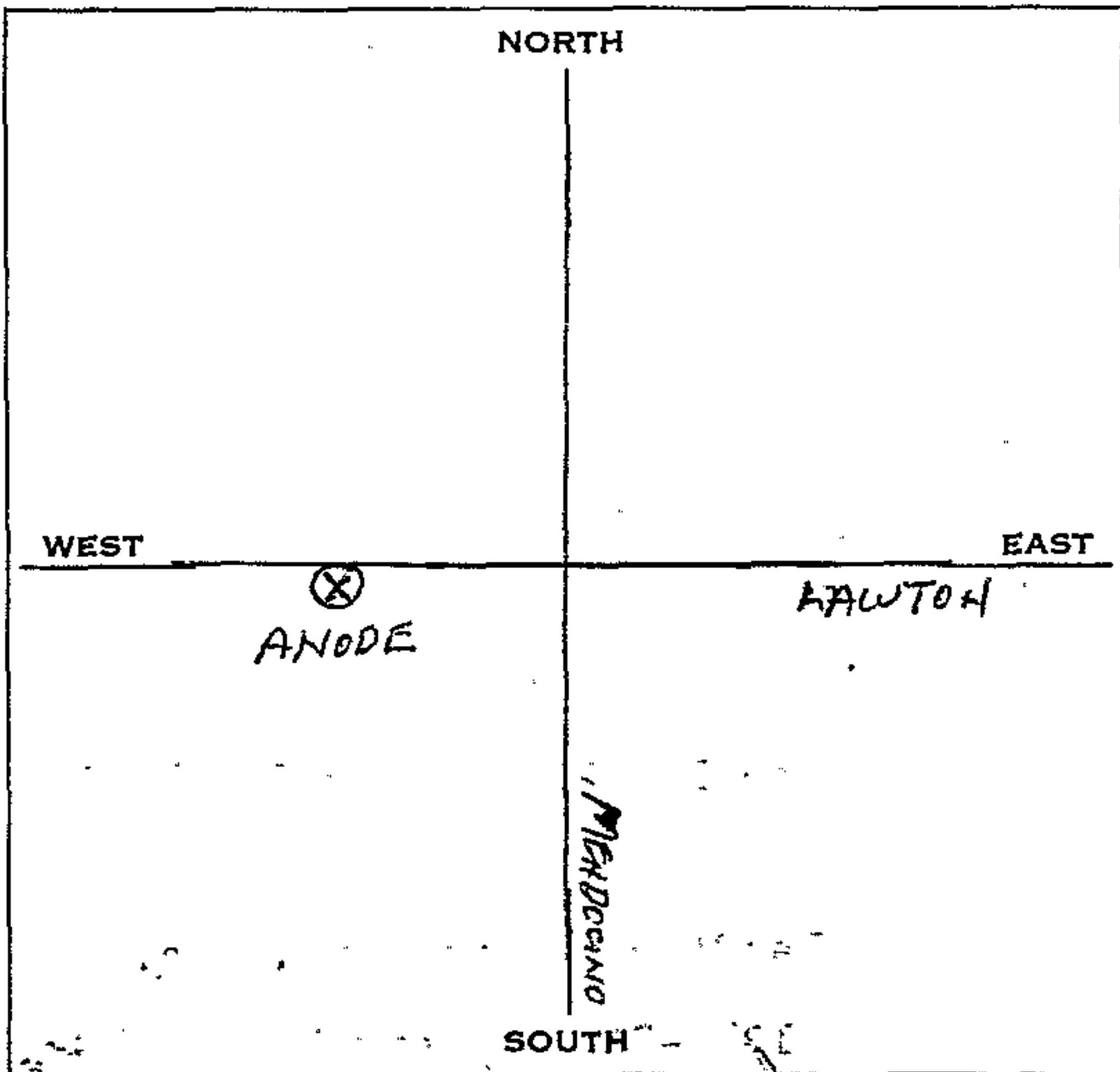
WELL LOCATION SKETCH

120152



Township _____ N/S
 Range _____ E/W
 Section No. _____

A. Location of well in sectionized areas.
 Sketch roads, railroads, streams, or other features as necessary.



B. Location of well in areas not sectionized.
 Sketch roads, railroads, streams, or other features as necessary.
 Indicate distances.

1976 JAN 3 AM 11 20

DEPT. OF WATER RESOURCES

REGION _____
 COUNTY _____
 NEAR _____

BASIN _____
 DWR No. 15/107-137 B & M
 OTHER No. _____

01-716

WELL LOG

LOCATION Foot of Oak Grove Avenue, Oakland

OWNER _____ ADDRESS _____

DRILLED BY Ough ADDRESS _____

DRILLING METHOD _____ GRAVEL PACKED _____ DATE COMPLETED _____

SIZE OF CASING DEPTH _____ STRUCK WATER AT _____

PERFORATIONS _____ SIZE _____ No. _____

WATER LEVEL BEFORE PERFORATING _____ AFTER _____

TEST DATA: DISCHARGE G. P. M. _____ DRAWDOWN FT. _____ HOURS RUN _____

OTHER DATA AVAILABLE: WATER LEVEL RECORD _____ ANALYSIS _____

SURFACE ELEV. _____ DATUM _____ SOURCE OF INFORMATION _____

FOR FIELD COPIES USE ALTERNATE LINES

DEPTH	ELEV. OF BOTTOM OF STRATUM	MATERIAL	THICKNESS	SP. YIELD %
0 - 2		Loam		
18		Yellow cement		
23		Yellow clay		
26		Yellow sand		
37		Yellow clay		
45		Yellow con gravel		
46		Yellow con clay		
55		Yellow con gravel		
58		Yellow con clay		
80		Yellow con gravel		
98		Sand and Gravel		
110		Cem gravel		
120		Clay		
122		Hard cement, basement rock/		

LOG OBTAINED BY _____ DATE _____ SHEET 1 OF _____

REGION _____
 COUNTY _____
 NEAR _____

STATE OF CALIFORNIA
 DEPARTMENT OF WATER RESOURCES

BASIN _____
 DWR No. *18/9000* B & M
 OTHER Nos. _____

01-717

WELL LOG

LOCATION: Foot of Oak Grove Avenue, Oakland

OWNER: Unch ADDRESS: _____

DRILLED BY: _____ ADDRESS: _____

DRILLING METHOD: _____ GRAVEL PACKED: _____ DATE COMPLETED: _____

SIZE OF CASING DEPTH: _____ STRUCK WATER AT: _____

PERFORATIONS: _____ SIZE: _____ No. _____

WATER LEVEL BEFORE PERFORATING: _____ AFTER: _____

TEST DATA: DISCHARGE G. P. M. _____ DRAWDOWN FT. _____ HOURS RUN _____

OTHER DATA AVAILABLE: WATER LEVEL RECORD _____ ANALYSIS _____

SURFACE ELEV. _____ DATUM _____ SOURCE OF INFORMATION _____

DEPTH	ELEV. OF BOTTOM OF STRATUM	MATERIAL	THICKNESS	SP. YIELD %
0 - 2		Loam		
15		Cement clay		
26		Yellow clay		
28		sand		
33		yellow clay		
42		gravel and sand		
46		gravel		
49		sand		
62		gravel and sand		
63		yellow clay		

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY: _____ DATE: _____ SHEET 1 OF _____

REGION _____

COUNTY _____

NEAR _____

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

BASIN _____
DWR No. 13/2011 B & M
OTHER Nos. _____

WELL LOG

Well No. 3

01-718

Foot of Oak Grove Avenue, Oakland, Drilled by J. Ough.
LOCATION _____

OWNER _____ ADDRESS _____

DRILLED BY _____ ADDRESS _____

DRILLING METHOD _____ GRAVEL PACKED _____ DATE COMPLETED _____

SIZE OF CASING DEPTH _____ STRUCK WATER AT _____

PERFORATIONS _____ SIZE _____ No. _____

WATER LEVEL BEFORE PERFORATING _____ AFTER _____

TEST DATA: DISCHARGE G. P. M. _____ DRAWDOWN FT. _____ HOURS RUN _____

OTHER DATA AVAILABLE: WATER LEVEL RECORD _____ ANALYSIS _____

SURFACE ELEV. _____ DATUM _____ SOURCE OF INFORMATION _____

DEPTH	ELEV. OF BOTTOM OF STRATUM	MATERIAL	THICKNESS	SP. YIELD %
0 - 2		Loam		
17		Cement (Clay or hardpan)		
23		Clay		
29		Ol cement		
37		Clay		
39		sandy clay		
47		fine gravel		
84		coarse gravel		
86		sandy clay		

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY _____ DATE _____ SHEET 1 OF _____

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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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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WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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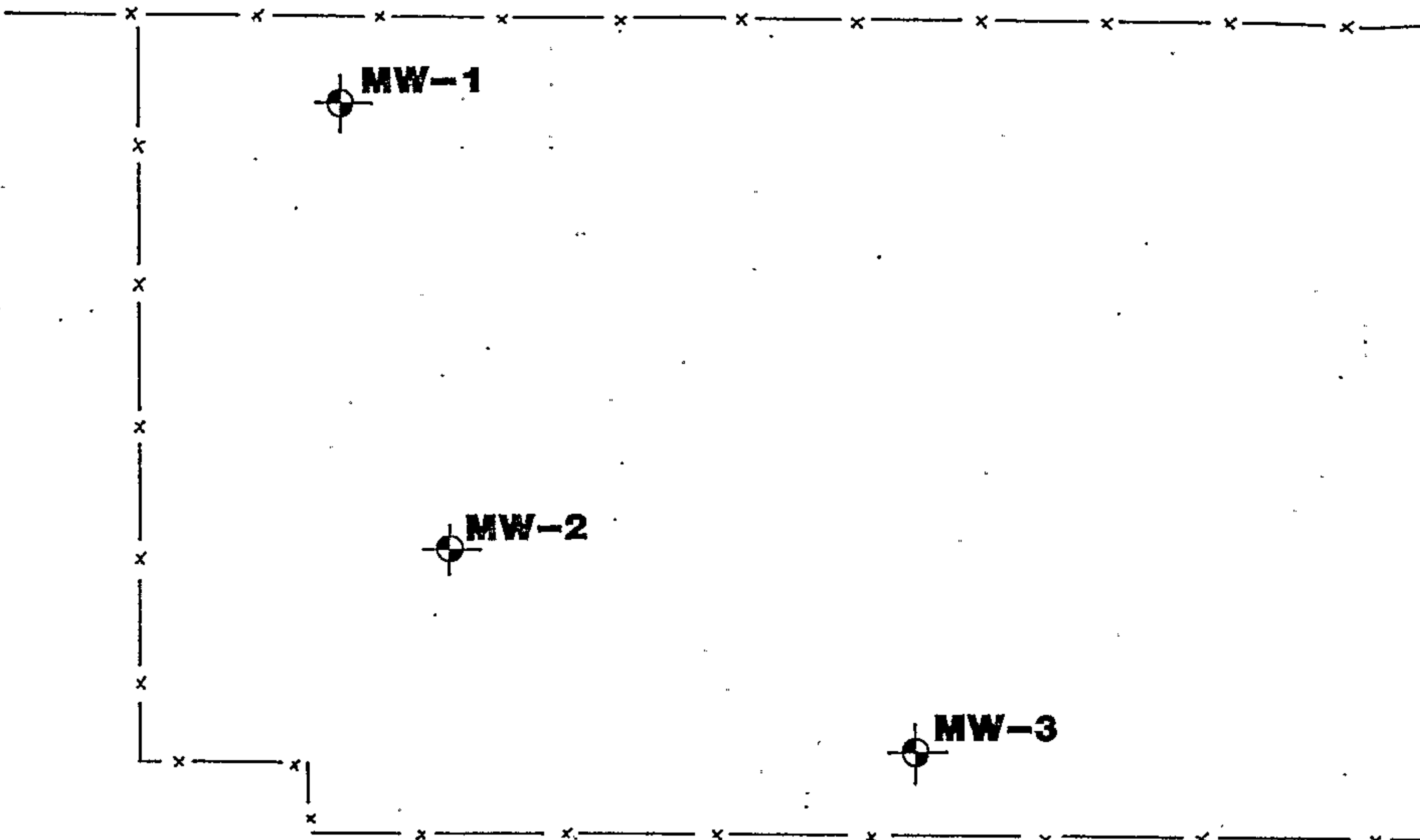
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WELL COMPLETION REPORT
(WELL LOGS)

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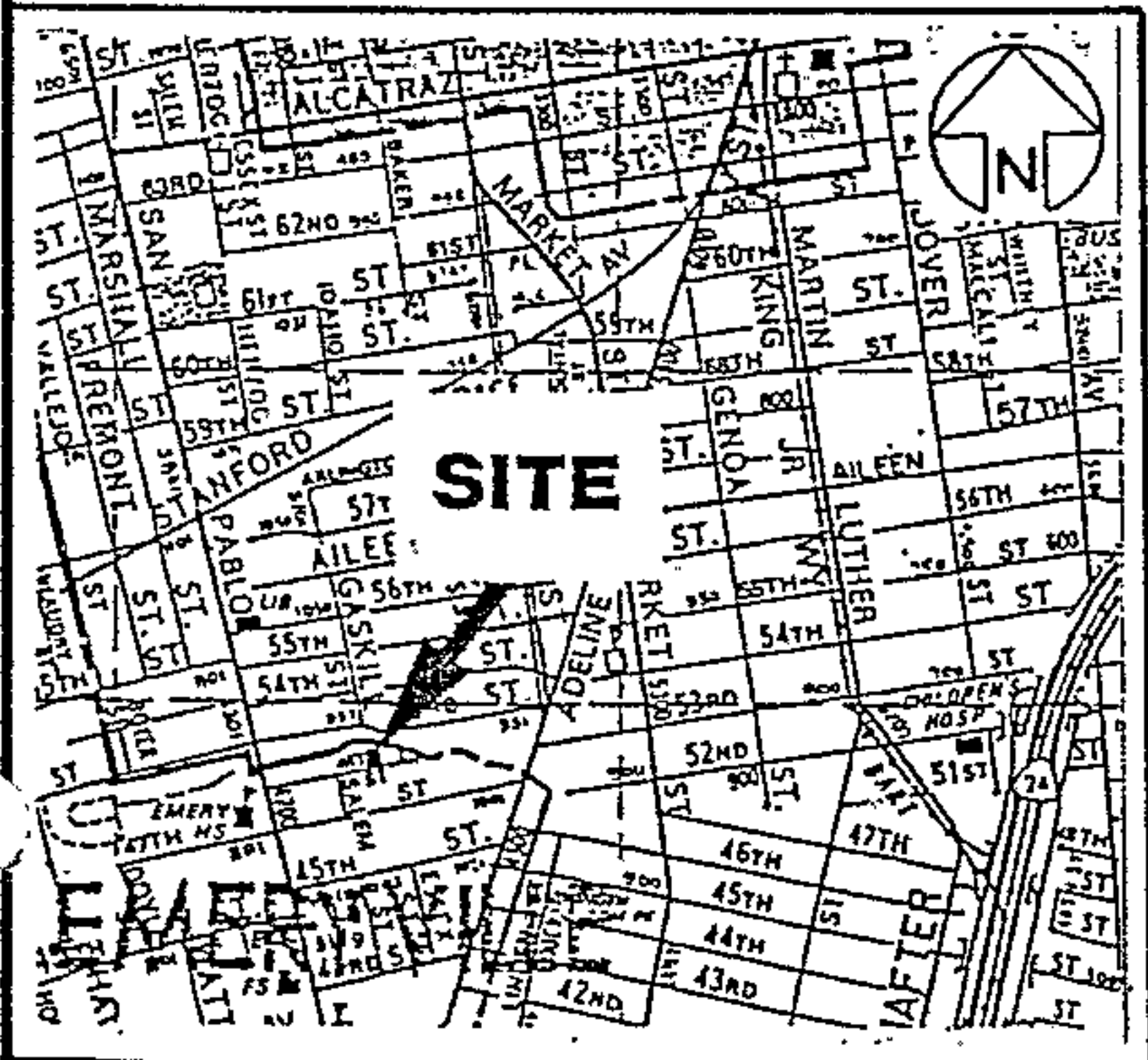
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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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VICINITY MAP



01-539K-Z

01804W.14 N01-03

X 14N01

Y 14N02

Z 14N03

ADJACENT RESIDENCE

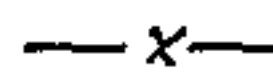
SIDEWALK

48TH STREET

ADJACENT RESIDENCE



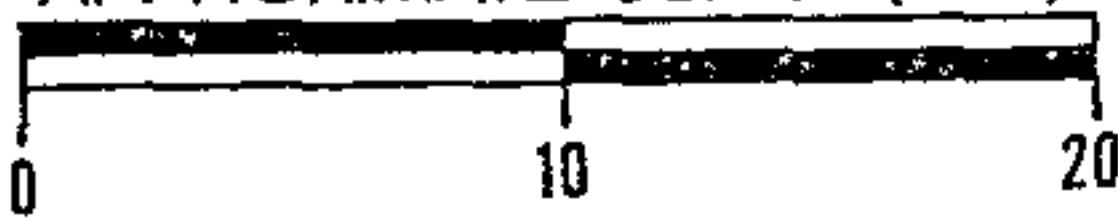
MONITORING WELL



FENCE



APPROXIMATE SCALE (feet)



SITE PLAN

Subsurface Consultants

1056 48TH STREET - EMERYVILLE, CA

PLATE

JOB NUMBER
537.006

DATE
10/28/92

APPROVED
MMW

1



ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588

VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 1056 48th Street
Emeryville, CA

PERMIT NUMBER 92529
LOCATION NUMBER 1S/4W 15R80 to 15R82

CLIENT
Name City of Emeryville
Address 2200 Powell St, 12th Floor Phone 510-433-5000
City Emeryville Zip 94608

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT
Name Marianne Watada
Subsurface Consultants, Inc.
Address 171-12th St #201 Phone 268-0461
City Oakland Zip 94607

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.

TYPE OF PROJECT

Well Construction	Geotechnical Investigation
<input checked="" type="checkbox"/> Middle Protection <input type="checkbox"/> Water Supply <input type="checkbox"/> Monitoring	<input type="checkbox"/> General <input type="checkbox"/> Contamination <input checked="" type="checkbox"/> Well Destruction

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 well 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.

PROPOSED WATER SUPPLY WELL USE

Domestic <input type="checkbox"/>	Industrial <input type="checkbox"/>	Other <u>monitoring</u>
Municipal <input type="checkbox"/>	Irrigation <input type="checkbox"/>	

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, tremie cement grout shall be used in place of compacted cuttings.

DRILLING METHOD:

Mud Rotary <input type="checkbox"/>	Air Rotary <input type="checkbox"/>	Auger <input checked="" type="checkbox"/>
Cable <input type="checkbox"/>	Other <input type="checkbox"/>	

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

DRILLER'S LICENSE NO. _____

E. WELL DESTRUCTION. See attached.

Each well will be drilled out. The casing, seal and gravel pack will be removed. The resulting holes will be backfill with neat cement using tremie methods.

WELL PROJECTS

Drill Hole Diameter	<u>8</u> in.	Maximum	
Casing Diameter	<u>2</u> in.	Depth	<u>28</u> ft.
Surface Seal Depth	<u>14</u> ft.	Number	<u>3</u>

GEOTECHNICAL PROJECTS

Number of Borings	_____	Maximum	
Hole Diameter	_____ in.	Depth	_____ ft.

ESTIMATED STARTING DATE 10/27/92
ESTIMATED COMPLETION DATE 10/27/92

Approved Wyman Hong Date 23 Oct
Wyman Hong

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 79-68.

APPLICANT'S SIGNATURE Marianne Watada Date 10/22/92

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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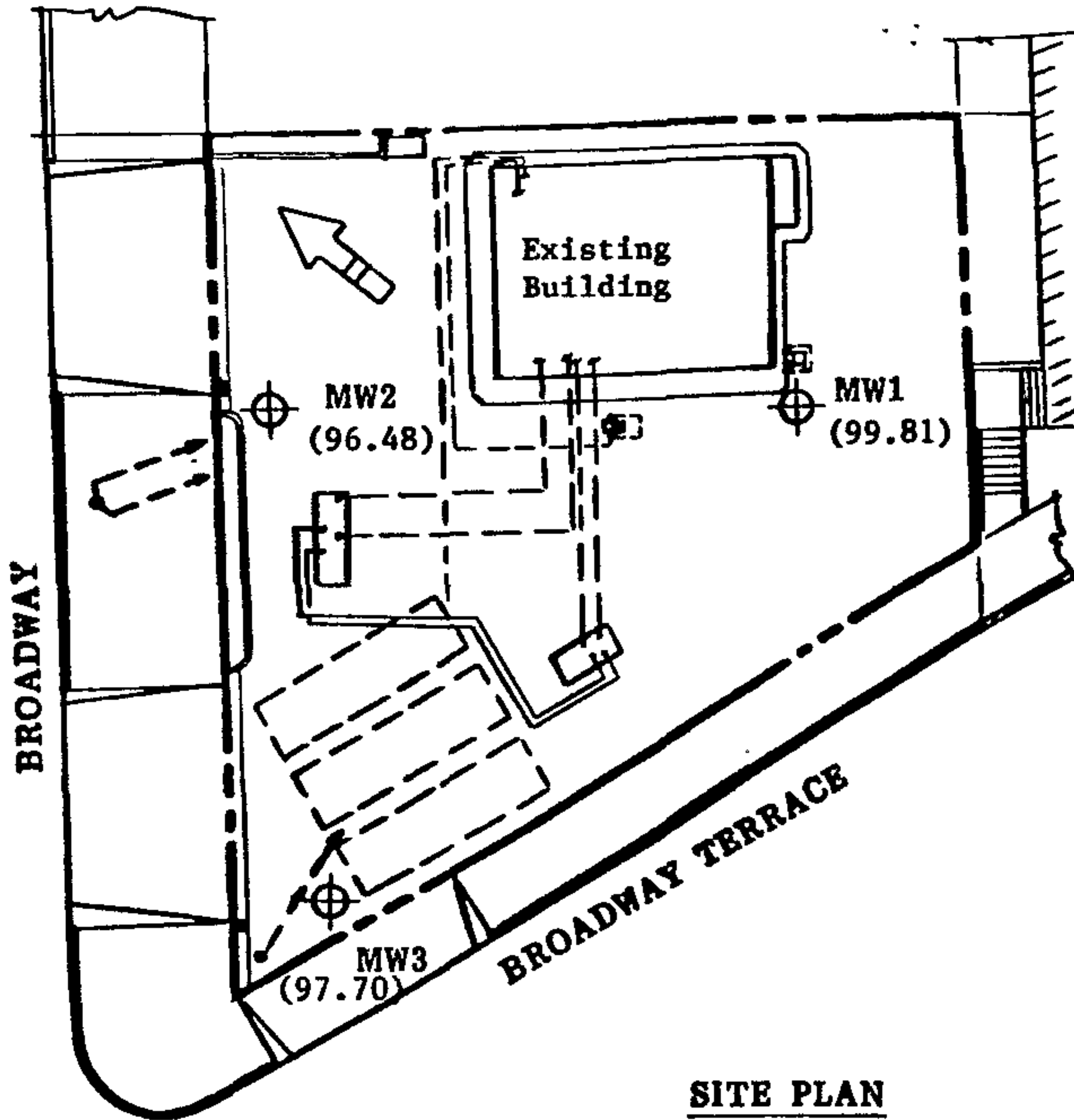
15/4W 1301-3



KAPREALIAN ENGINEERING, INC.
Consulting Engineers


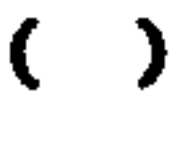
P.O. BOX 996 • BENICIA, CA 94510
(707) 746-6915 • (707) 746-6916 • FAX: (707) 746-5581

380348A-C



SITE PLAN

LEGEND

-  Monitoring Well
-  Ground Water Elevation in feet on 4/23/90.
Top of MW3 Well Cover assumed 100.00 feet as datum.

 Ground Water Flow Direction



Unocal Service Station #1028
5300 Broadway
Oakland, California

15/401301

B O R I N G L O G

380348A

Project No. KEI-P89-1111	Boring & Casing Diameter 9" 2"	Logged By D.L. <i>Don Brown</i>
Project Name Unocal Oakland-5300 Broadway	Well Head Elevation N/A	Date Drilled 4/6/90
Boring No. MW1	Drilling Method Hollow-stem Auger	Drilling Company EGI

Penetra- tion blows/6"	G. W. level	Depth (ft) Samples	Strati- graphy USCS	Description
		0		A. C. Pavement
			N/A	BEDROCK - FRANCISCAN COMPLEX Shale, locally silty, hard, weathered, fractured, dry, olive gray and olive brown, dark reddish brown in some fractures.
50-5 1/2		5		Shale Bedrock, hard, moist to dry, weathered, locally decomposed and clayey, olive brown and strong brown.
41/46/50 5 1/2"	▼			Shale, as above, moist to wet, locally sheared.
26/50-5"		10		Shale, as above, olive gray, fractured less weathered than above, hardness increasing with depth.
50-2"		15		
		20		
				TOTAL DEPTH: 15'

15/44/3Q1

380348A

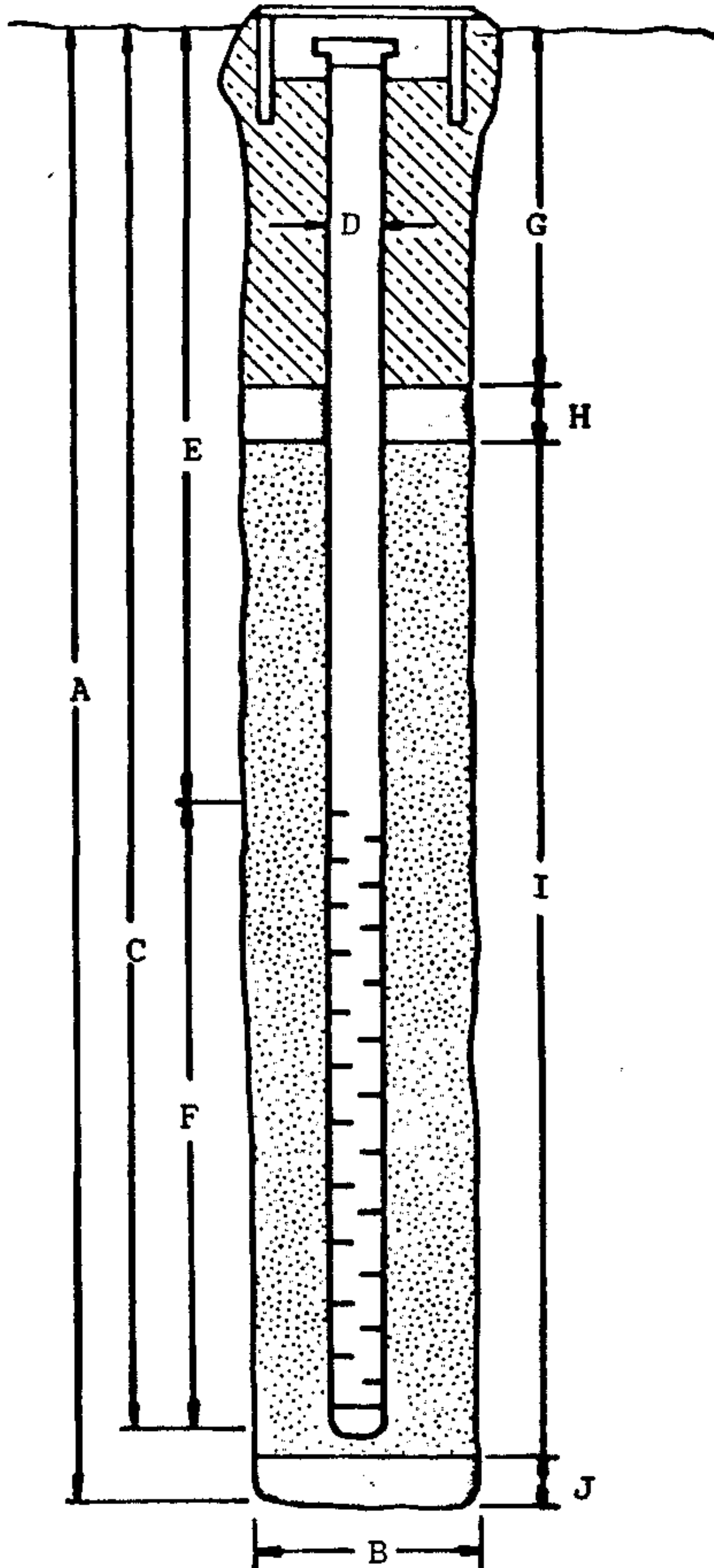
WELL COMPLETION DIAGRAM

PROJECT NAME: Unocal - Oakland - 5300 Broadway BORING/WELL NO. MW1

PROJECT NUMBER: KEI-P89-1111

WELL PERMIT NO.: 90154

Flush-mounted Well Cover



A. Total Depth: 19'

B. Boring Diameter*: 9"

Drilling Method: Hollow Stem
Auger

C. Casing Length: 19'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375"
ID = 2.067"

E. Depth to Perforations: 3'

F. Perforated Length: 16'

Perforation Type: Machined
Slot
Perforation Size: 0.020"

G. Surface Seal: 1'

Seal Material: Concrete

H. Seal: 1'

Seal Material: Bentonite

I. Gravel Pack: 17'

Pack Material: RMC Lonestar
Sand
Size: #3

J. Bottom Seal: None

Seal Material: N/A

*Boring diameter can vary from 8-1/4" to 9" depending on bit wear.

15/441392

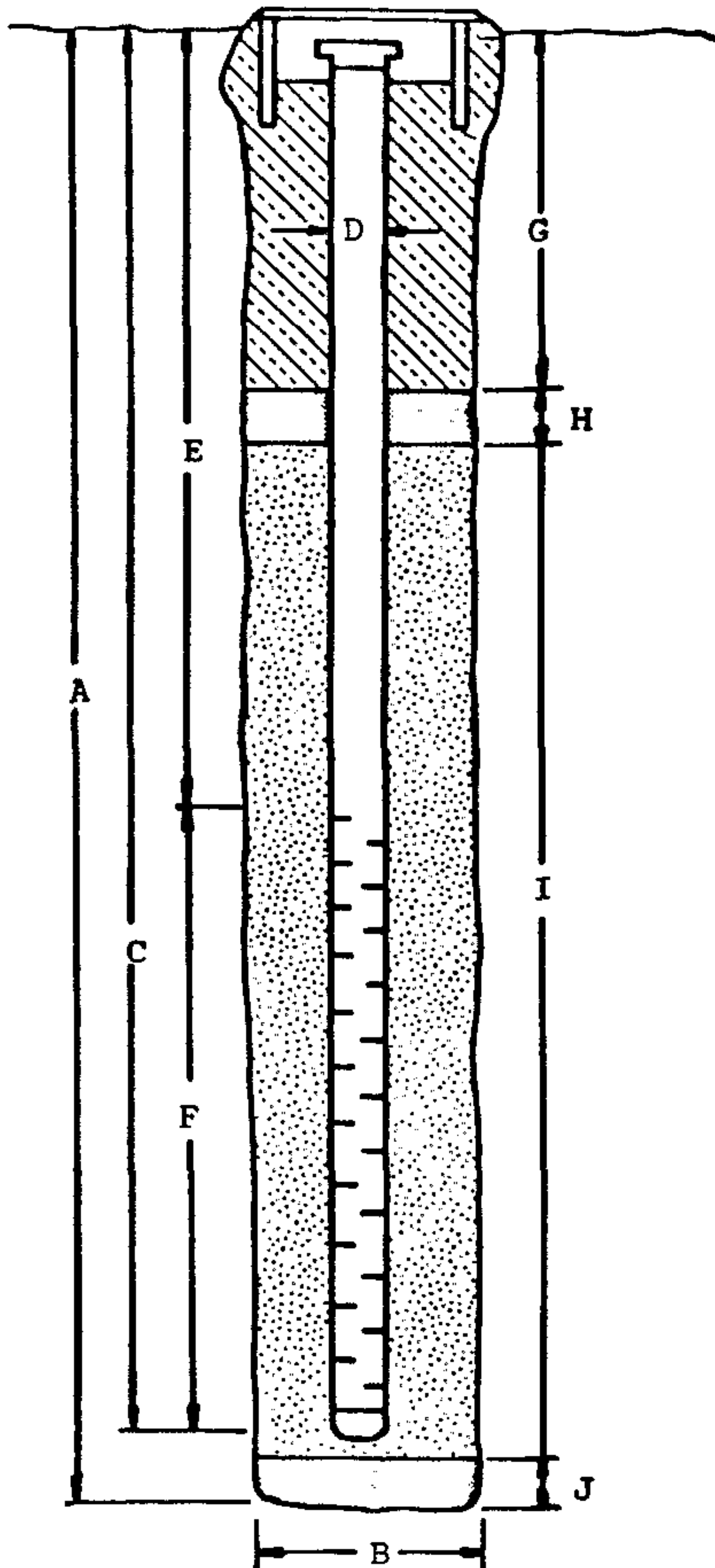
BORING LOG					380348B
Project No. KEI-P89-1111		Boring & Casing Diameter 9" 2"		Logged By D.L. <i>[Signature]</i>	
Project Name Unocal Oakland-5300 Broadway		Well Head Elevation N/A		Date Drilled 4/6/90	
Boring No. MW2		Drilling Method Hollow-stem Auger		Drilling Company EGI	
Penetration blows/6"	G. W. level	Depth (ft) Samples	Strati- graphy USCS	Description	
		0		A. C. Pavement Sand and gravel base.	
			CL/ CH	Sandy clay, 10-15% gravel, very stiff, moist, yellowish brown and red, gravel is composed of weathered shale fragments.	
26/50-5"			N/A	BEDROCK - FRANCISCAN COMPLEX Shale, hard, weathered, slightly moist to dry, fractured, locally decomposed and clayey, olive and olive brown, dark reddish brown in fractured planes.	
50-6"		5		Shale Bedrock, as above, hard, dry, fractured, olive gray, olive brown and strong brown in fractures, weathered, wet below 9.5 feet.	
50-5"		10			
50-5 3/4"		15		Shale, as above, wet, less weathered than above.	
		20		TOTAL DEPTH: 19'	

380348B

WELL COMPLETION DIAGRAM

PROJECT NAME: Unocal - Oakland - 5300 Broadway BORING/WELL NO. MW2PROJECT NUMBER: KEI-P89-1111WELL PERMIT NO.: 90154

Flush-mounted Well Cover

A. Total Depth: 19'B. Boring Diameter*: 9"Drilling Method: Hollow Stem
AugerC. Casing Length: 19'Material: Schedule 40 PVCD. Casing Diameter: OD = 2.375"
ID = 2.067"E. Depth to Perforations: 4'F. Perforated Length: 15'Perforation Type: Machined
Slot
Perforation Size: 0.020"G. Surface Seal: 1.5'Seal Material: ConcreteH. Seal: 1.5'Seal Material: BentoniteI. Gravel Pack: 16'Pack Material: RMC Lonestar
Sand
Size: #3J. Bottom Seal: NoneSeal Material: N/A


*Boring diameter can vary from 8-1/4" to 9" depending on bit wear.

15401303

BORING LOG

380348C

Project No. KEI-P89-1111	Boring & Casing Diameter 9" 2"	Logged By D.L. <i>John Brown</i>
Project Name Unocal Oakland-5300 Broadway	Well Head Elevation N/A	Date Drilled 4/6/90 & 4/9/90
Boring No. MW3	Drilling Method Hollow-stem Auger	Drilling Company EGI

Penetration blows/6"	G. W. level	Depth (ft) Samples	Strati- graphy USCS	Description
		0		Concrete Pavement
			CL/ CH	Sandy clay, 10-20% gravel, very stiff, moist, yellowish brown, gravel is shale, bedrock weathered to soil.
				BEDROCK - FRANCISCAN COMPLEX
20/24/50 -5"		5	N/A	Shale, moderately hard to hard, slightly moist to dry, weathered, locally decomposed and clayey, fractured, olive brown and strong brown, black in some fracture planes.
50-3"				
51		10		Shale to silty shale, as above, moderately decomposed and clayey between 9 and 10 feet.
		15		Shale to silty shale, as above, less weathered than above, hardness increasing with depth.
		20		TOTAL DEPTH: 20'

380348c

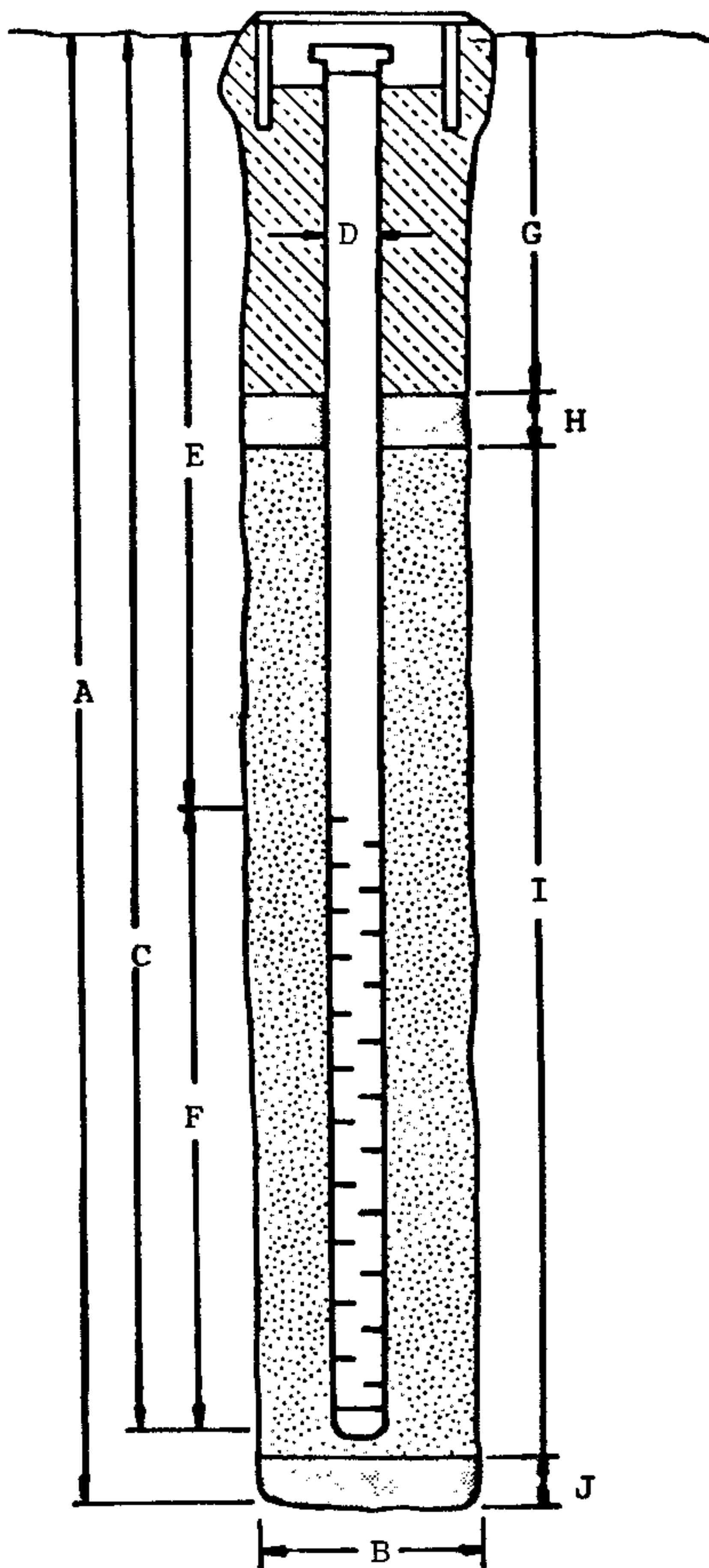
WELL COMPLETION DIAGRAM

PROJECT NAME: Unocal - Oakland - 5300 Broadway BORING/WELL NO. MW3

PROJECT NUMBER: KEI-P89-1111

WELL PERMIT NO.: 90154

Flush-mounted Well Cover



A. Total Depth: 20'

B. Boring Diameter*: 9"

Drilling Method: Hollow Stem Auger

C. Casing Length: 20'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375"
ID = 2.067"

E. Depth to Perforations: 4'

F. Perforated Length: 16'

Perforation Type: Machined Slot
Perforation Size: 0.020"

G. Surface Seal: 1.5'

Seal Material: Concrete

H. Seal: 1.5'

Seal Material: Bentonite

I. Gravel Pack: 17'

Pack Material: RMC Lonestar Sand
Size: #3

J. Bottom Seal: None

Seal Material: N/A

*Boring diameter can vary from 8-1/4" to 9" depending on bit wear.

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

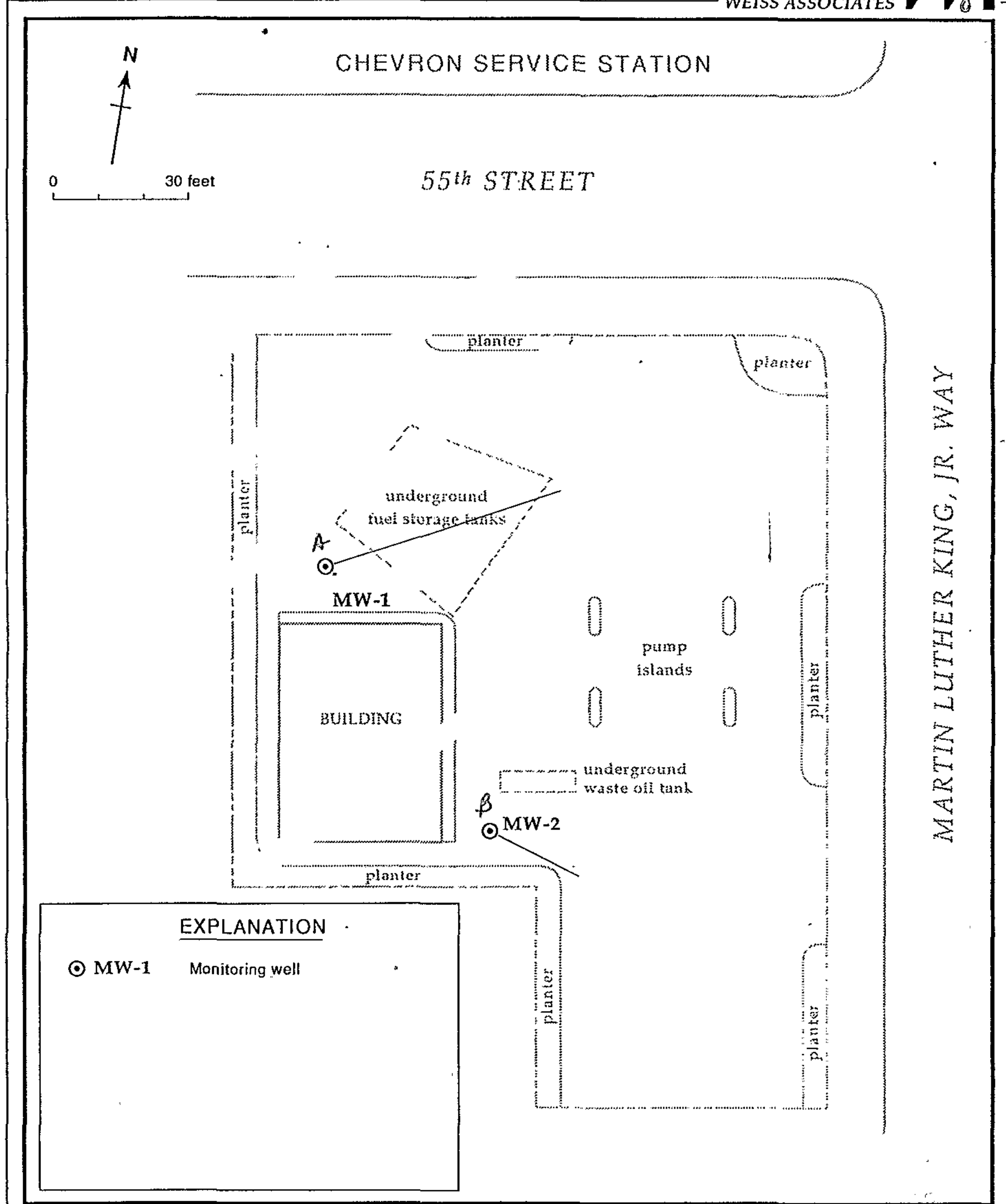
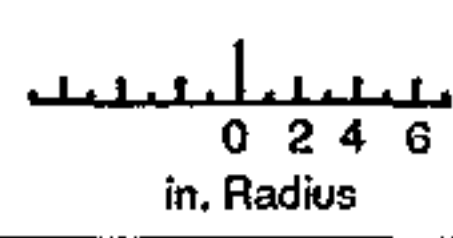
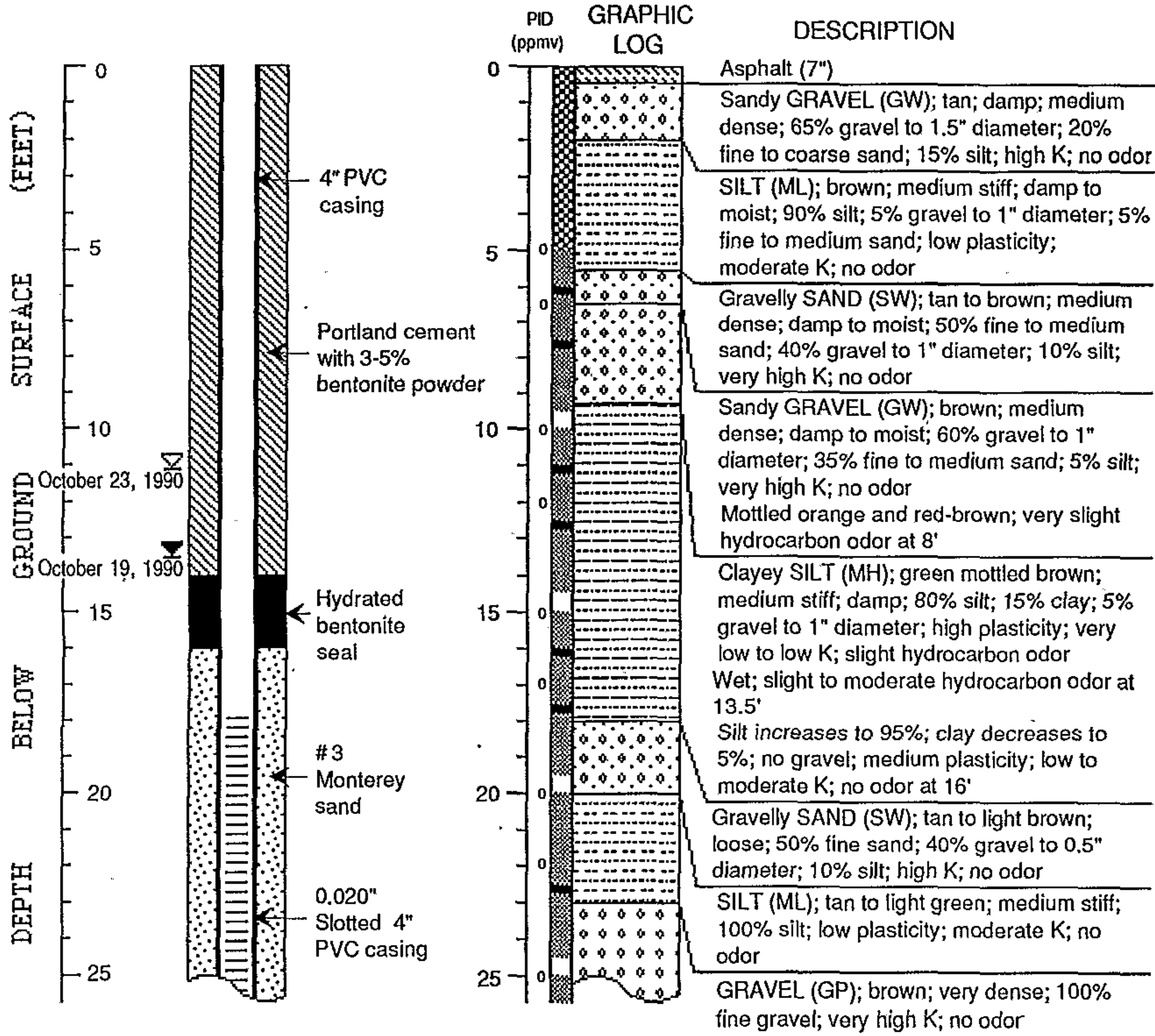


Figure 4. Ground Water Elevation Contours (November 19, 1990) and Hydrocarbon Concentrations (October 24, 1990) - BP Service Station #11127, 5425 Martin Luther King, Jr. Way, Oakland, California



WELL MW-1 (BH-A)



EXPLANATION

- ▼ Water level during drilling (date)
- ▽ Water level (date)
- Contact (dotted where approx.)
- - - - - Uncertain contact
- Gradational contact
- ▣ Location of recovered drive sample
- Location of drive sample sealed for chemical analysis
- ⊗ Cutting sample
- K = Estimated hydraulic conductivity

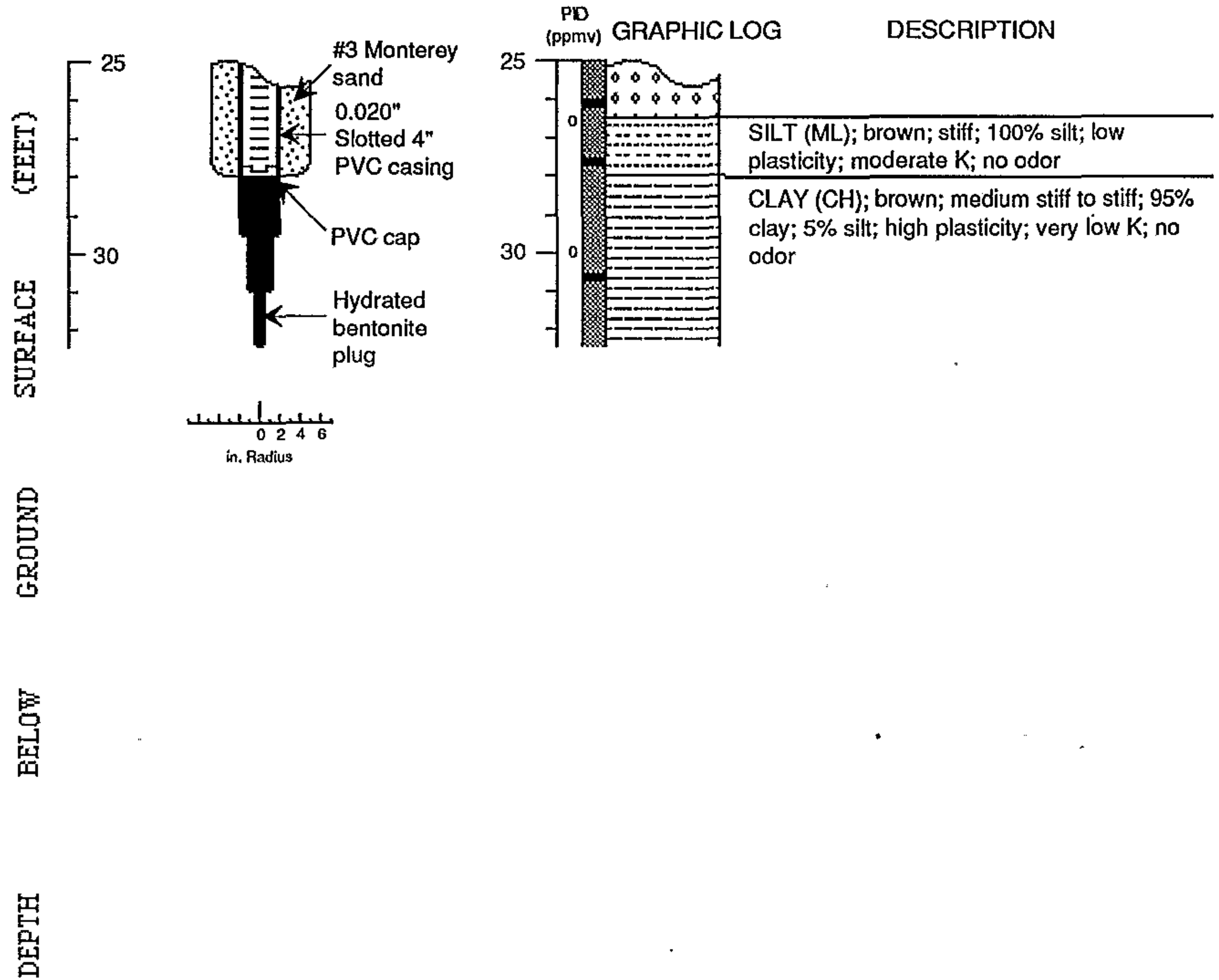
Logged by: Robert Kitay
 Supervisor: Joseph Theisen; RG 4981
 Drilling Company: Soils Exploration Services, Vacaville, CA
 License Number: C57-582696
 Driller: Rick Carr
 Drilling Method: Hollow stem auger
 Date Drilled: October 18, 1990
 Well Head Completion: 4" locking well-plug with traffic-rated vault
 Type of Sampler: Split barrel (1.5", 2", 2.5" ID)
 Ground Surface Elevation: 83.12 feet above mean sea level

15/4W 14K1

325157A
WEISS ASSOCIATES

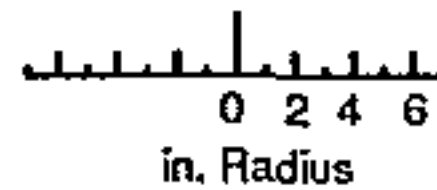
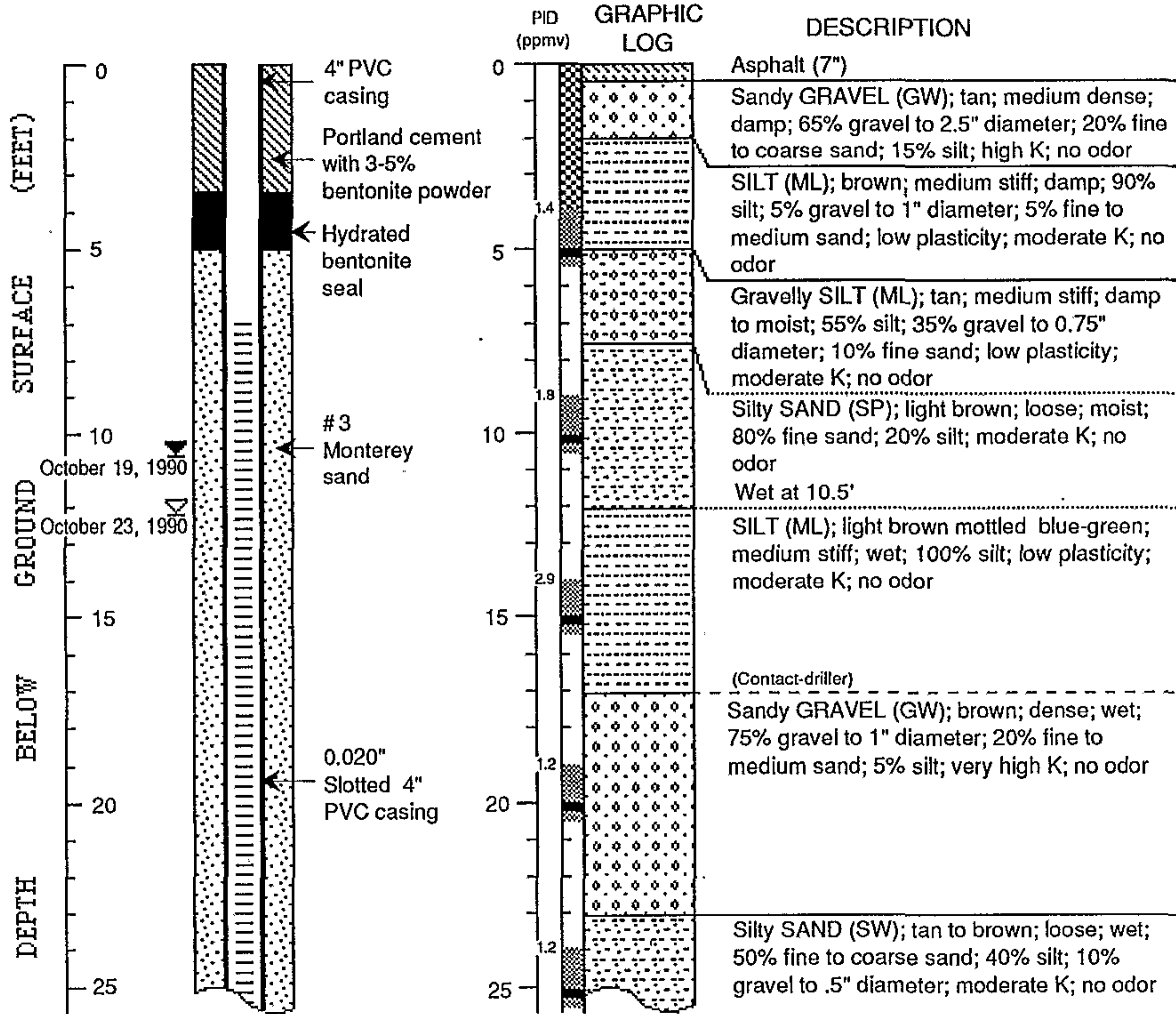


WELL MW-1 (BH-A) (cont.)





WELL MW-2 (BH-B)



EXPLANATION

- ▼ Water level during drilling (date)
- ▽ Water level (date)
- Contact (dotted where approx.)
- - - - - Uncertain contact
- Gradational contact
- ▨ Location of recovered drive sample
- Location of drive sample sealed for chemical analysis
- ▤ Cutting sample
- K = Estimated hydraulic conductivity

Logged by: Robert Kitay
 Supervisor: Joseph Theisen; RG 4981
 Drilling Company: Soils Exploration Services, Vacaville, CA
 License Number: C57-582696
 Driller: Rick Carr
 Drilling Method: Hollow stem auger
 Date Drilled: October 18, 1990
 Well Head Completion: 4" locking well-plug with traffic-rated vault
 Type of Sampler: Split barrel (1.5", 2", 2.5" ID)
 Ground Surface Elevation: 83.89 feet above mean sea level

Boring Log and Well Construction Details - Well MW-2 (BH-B)

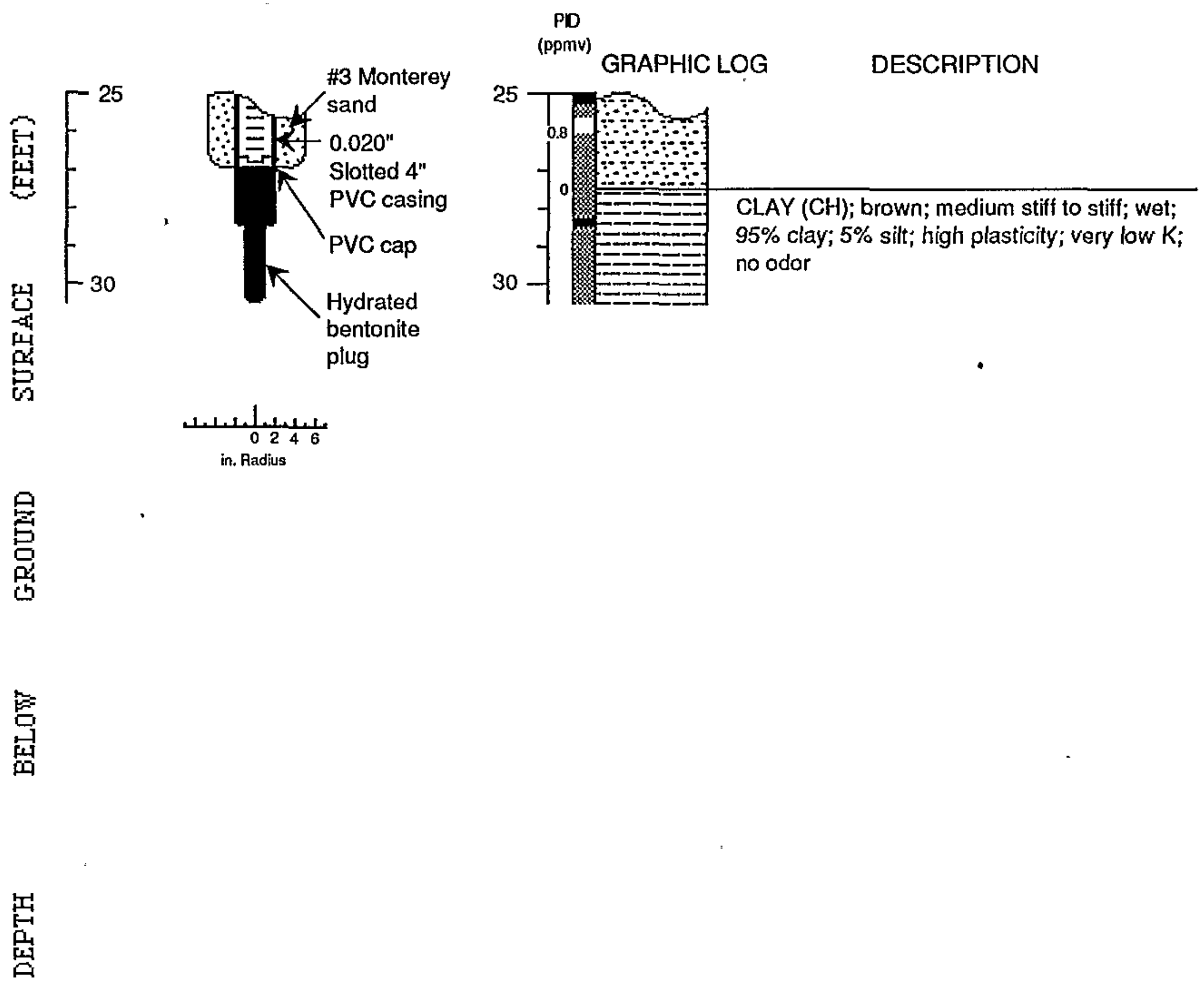
BP Service Station #11127
Oakland, California

1S/4W 14K2

3251570
WEISS ASSOCIATES



WELL MW-2 (BH-B) (cont.)



CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

**STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)**

REMOVED

CONFIDENTIAL

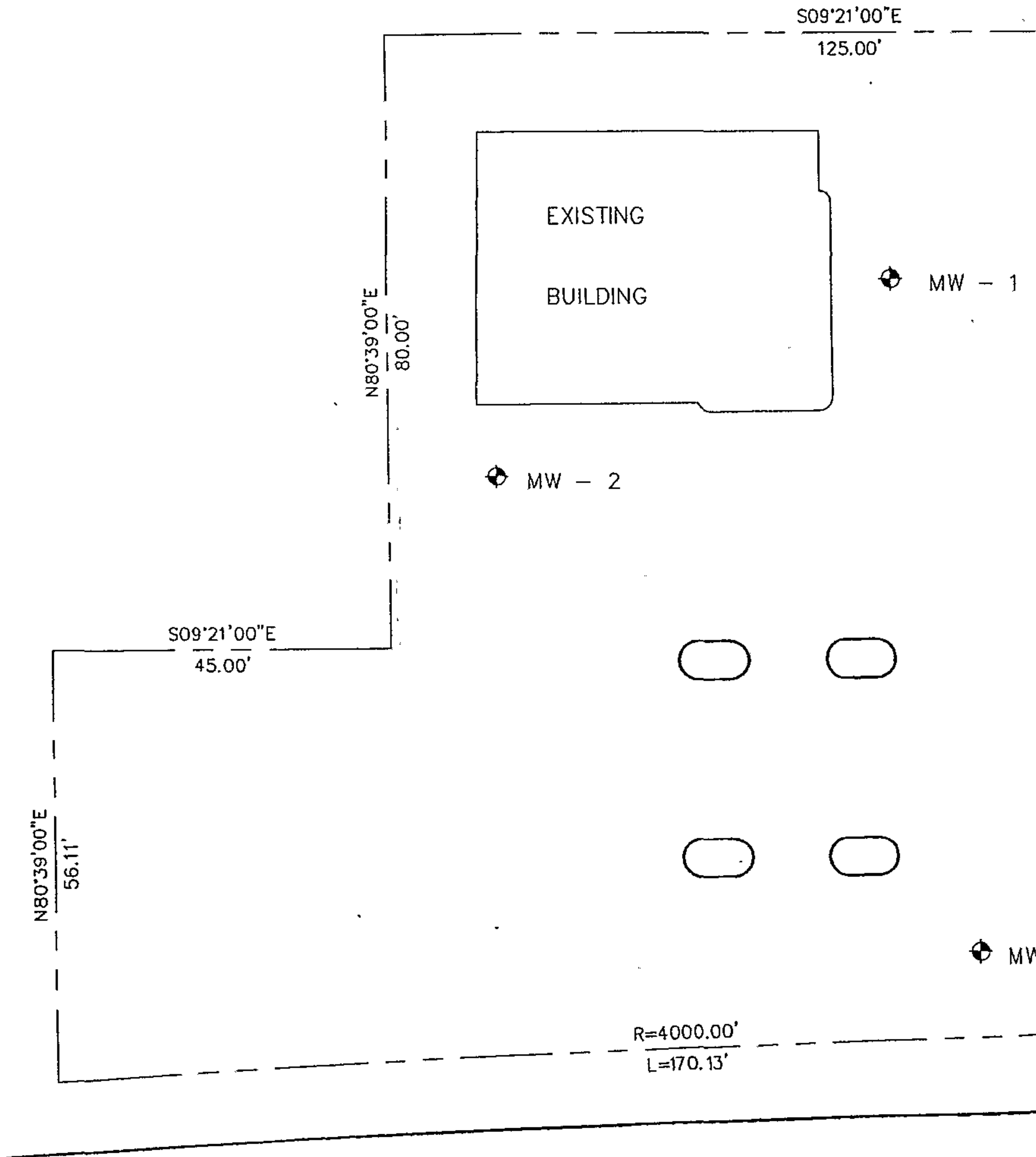
STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED



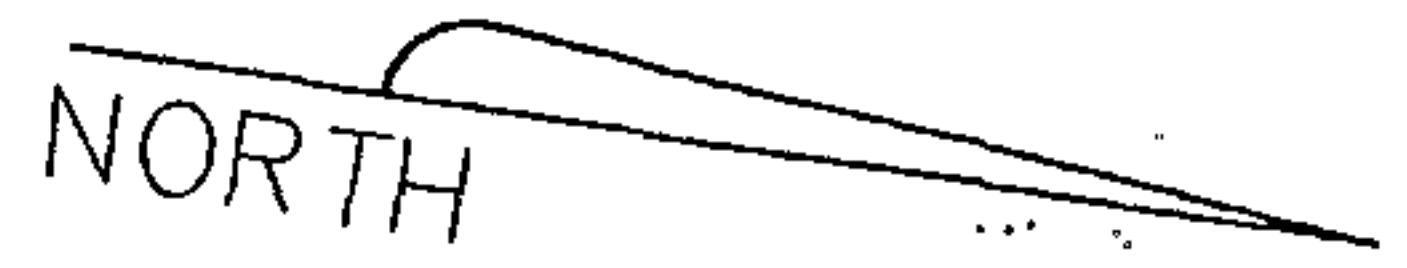
MARTIN LUTHER KING

NOTE:
 THIS IS NOT A SURVEY OF THE BOUNDARY.
 ALL REPRESENTATIONS HEREIN ARE BASED
 UPON RECORD INFORMATION.

497214A B

015 04614001
14002

CHEV 6



SCALE: 1" = 20'

MONITORING WELL ELEVATIONS

MW - 1	82.35
MW - 2	83.48
MW - 3	84.96
MW - 4	82.70
CHEV 5	81.95
CHEV 6	80.60

LEGEND

⊕ MONITORING WELL

BENCHMARK

OAKLAND BM NO. 1967
ELEV. = 84.437

BP STATION NO. 11127
OAKLAND CALIF.

MONITORING WELL LOCATIONS

NOVEMBER 13, 1992

ELLIOTT V. INGRAM
LAND SURVEYOR

1310 LA VISTA CONCORD, CA. 94521
(510) 888 - 4578



ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA

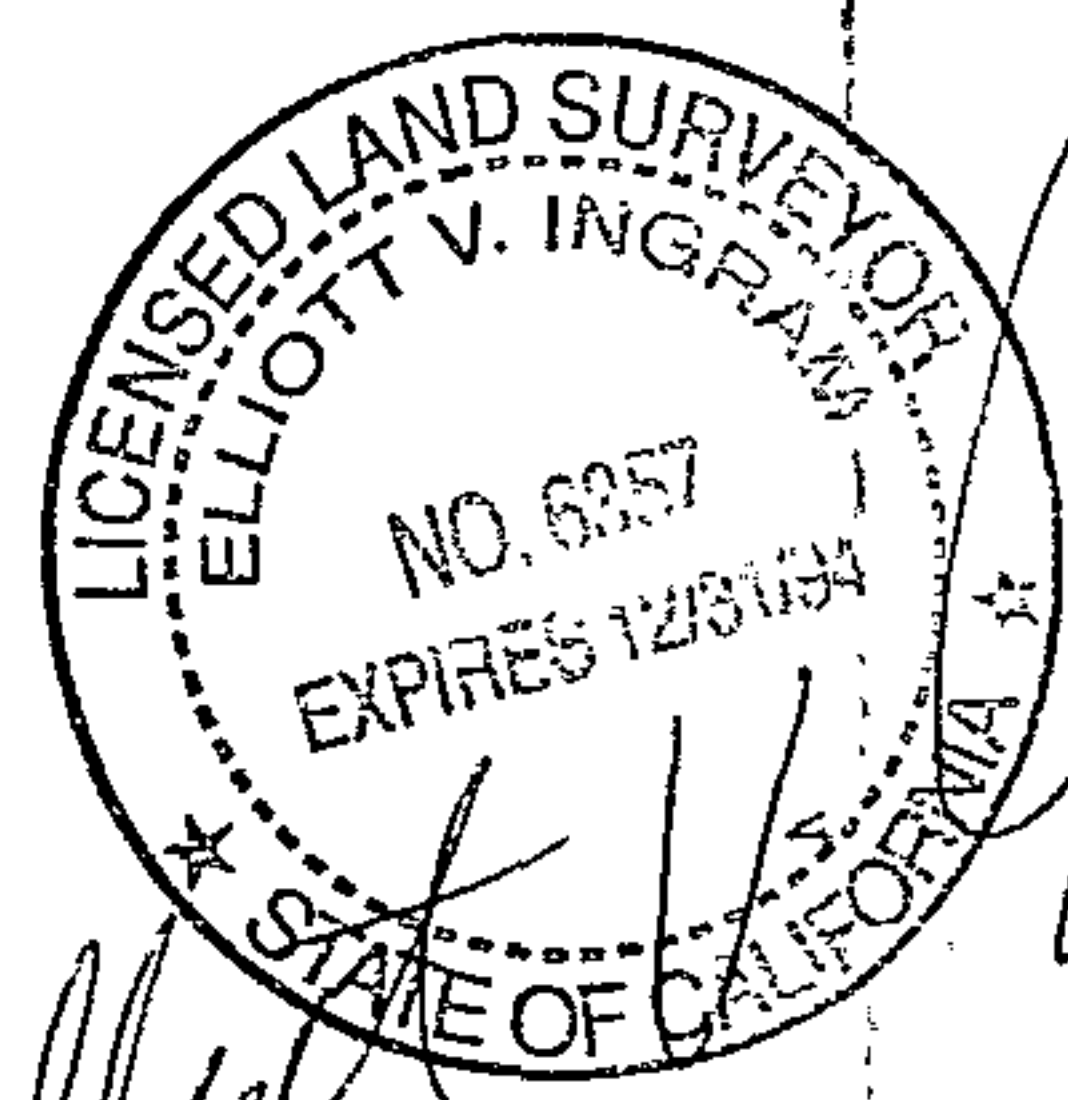
S80°39'00"W
129.84'

MW - 4

CHEV 5

W
E
R
T
S
D
D
H
D

BENCHMARK



Elliott V. Ingram

J R W A Y

- 3



ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA

LOG OF BORING B-1/MW-3

SEE SITE PLAN

ALISTO PROJECT NO: 10-022-02 DATE DRILLED: 10/28/92
 CLIENT: BP Oil Company
 LOCATION: 5425 Martin Luther King, Jr. Way, Oakland, CA
 DRILLING METHOD: Hollow-stem Auger (8")
 DRILLING COMPANY: Great Sierra Exploration CASING ELEVATION: 84.96 'MSL
 LOGGED BY: Ted Moise APPROVED BY: Al Sevilla

BLOWS/8 IN.	PTD VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
8,4,4	1.3	<p>2" Sch. 40 PVC grout Bentonite seal 0.020" slotted PVC screen #3 Lanestar Sand</p>	5	■	○	SW	3" Asphalt. gravelly SAND: brown, damp, very loose, fine- to very coarse-grained sand, angular gravel to 1".
4,4,5	1.4		10	■	○	ML	sandy SILT: dark brown, damp, soft, very fine- to fine-grained sand, minor clay, black at 3.5'.
4,5,7	1.3		15	■	○	SW	gravelly SAND: brown, damp, loose, fine- to coarse-grained sand, angular gravel to 1", minor fines.
5,3,4	1.2		20	■	○	ML	clayey SILT: gray/brown, damp, medium firm, minor very fine-grained sand. Same: gray/green, stiff.
4,7,9	1.4		25	■	○	SW	sandy SILT: gray/brown, wet, medium firm, very fine-grained sand, minor clay.
8,17,24			30	■	○	SW	gravelly SAND: brown/red, wet, medium dense, very fine- to very coarse-grained sand, gravel to 3/4", minor fines. Same: dense.
3,8,8			35	■	○	SW	(Insufficient Recovery 22-23.5').
5,8,8		40	■	○	ML	clayey SILT: gray/brown, wet, stiff, very fine-grained sand.	



ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA

LOG OF BORING B-2/MW-4

SEE SITE PLAN

ALISTO PROJECT NO: 10-022-02

DATE DRILLED: 10/28/92

CLIENT: BP Oil Company

LOCATION: 5425 Martin Luther King, Jr. Way, Oakland, CA

DRILLING METHOD: Hollow-stem Auger (8")

DRILLING COMPANY: Great Sierra Exploration CASING ELEVATION: 82.70 'MSL

LOGGED BY: Ted Moise

APPROVED BY: Al Sevilla

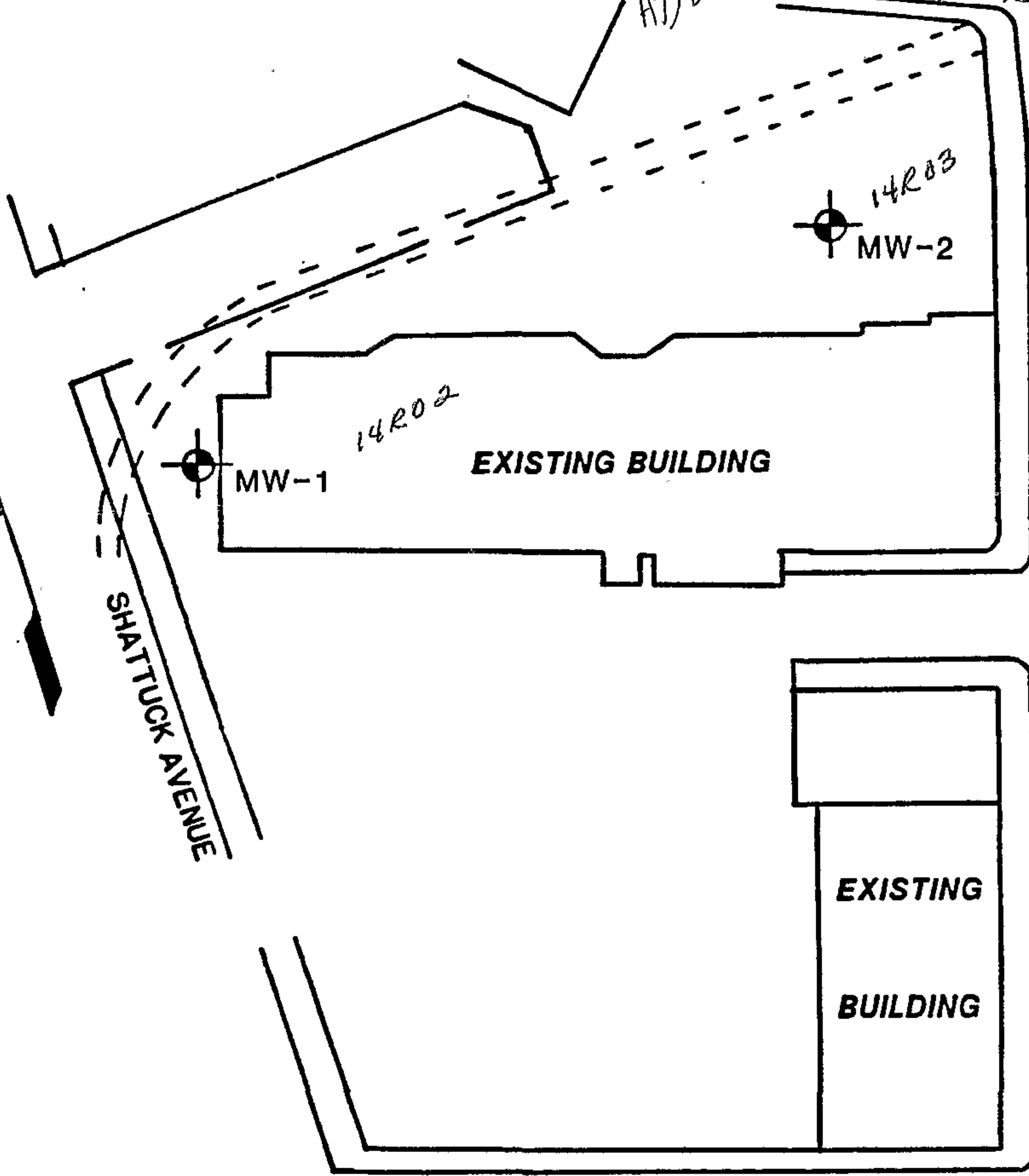
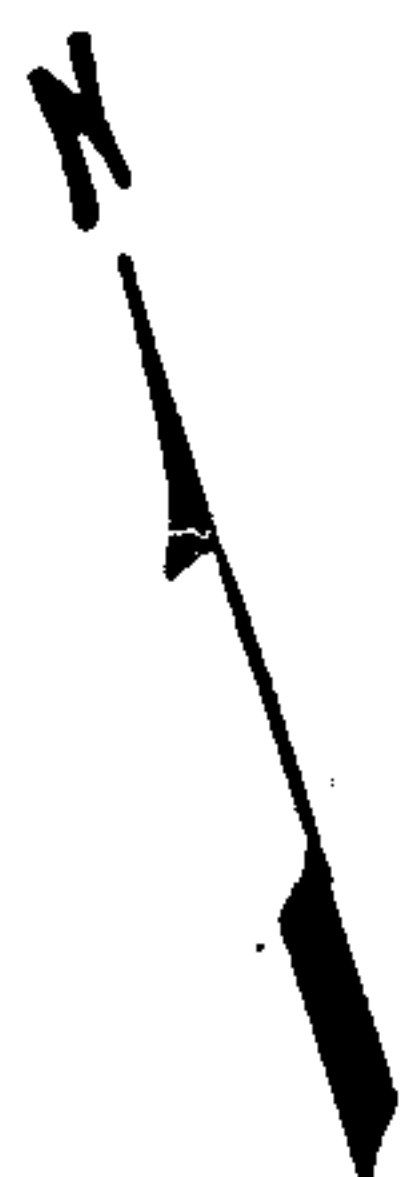
BLOWS/8 IN.	PTD VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	
		<p>2" Sch. 40 PVC grout Bentonite seal #3 Lanester Sand 0.020" slotted PVC screen</p>					3" Asphalt.	
5,5,7	1.4					SW	gravelly SAND: brown, damp, loose, fine- to coarse-grained sand, gravel to 1", minor fines.	
				5			ML	sandy SILT: dark brown, damp, medium firm, fine- to coarse-grained sand, minor angular gravel to 3/4".
							SM	silty SAND: dark brown, damp, loose, fine- to coarse-grained sand, abundant silt, minor angular gravel to 3/4".
1,2,2	1.2			10			ML	clayey SILT: gray/green, very moist, soft, minor very fine-grained sand, rootlets.
4,8,8	1.8							sandy SILT: tan, wet, stiff, very fine-grained sand, minor clay.
5,5,9				15				Same: gray/tan, minor rounded gravel to 3/4".
4,5,9							SM	silty SAND: brown/gray, wet, medium dense, very fine to fine-grained sand, abundant silt, minor clay.
3,5,8			20			ML	clayey SILT: brown/gray, wet, medium firm, abundant clay, minor very fine-grained sand, minor angular gravel to 1/2".	
3,8,8			25			SM	silty SAND: brown, wet, stiff, fine- to coarse-grained sand, abundant silt, minor angular gravel to 1/2".	
			30					

P7158

01-257 A-01

INV ✓
AD ✓

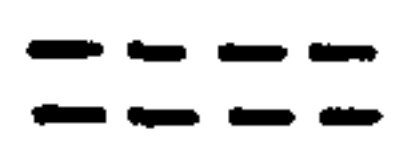
15/4W14B (2 3/4' 3/4' 3/4')
602 + R03



LEGEND



MONITORING WELL



EXISTING CULVERT EASEMENT

APPROXIMATE SCALE



0 100 FEET

DRILLER: CARVER

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING
LAND AND WATER RESOURCES



PACIFIC RIM DEVELOPMENT
CONVENIENCE CENTER 51st & TELEGRAPH
OAKLAND, CALIFORNIA

PLATE
1

PROJECT NO. 10-1689-01.

SITE PLAN

87158

15/4W 14202

Blow/ Ft	Sample No.	USCS	Description	Well Const
0			Asphalt	
2			Wood (semi-preserved)	
4			Angular gravel - possibly fill	
13	S-MW2-4	ML	GRAVELLY CLAYEY SILT - orange mottled dark brown, rounded and angular pebbles up to 1/2 inch diameter, stiff, NOSC	
17	S-MW2-9	ML	CLAYEY SANDY SILT - orange mottled grey-green, moist, medium dense, fine grained sand present, low plasticity, trace of gravel, NOSC	
17	S-MW2-14	GP	SANDY GRAVEL - orange mottled medium brown, damp to wet, 50% & gravel, rounded up to 1" diameter fine to medium sand, trace silt and clay, poorly consolidated	
14	S-MW2-19		- light brown, 70% rounded gravel, sand medium to coarse grained, NOSC	
18	S-MW2-24	ML	SANDY SILT - orange mottled, grey, fine grained sand, dense, minor clay, NOSC	
26	S-MW2-30	GP	SANDY GRAVEL - mottled brown, wet, coarse sand, poorly consolidated	
26	S-MW2-30	ML	SANDY SILT - light grey, wet, very fine sand, trace of clay, dense, NOSC	

J.H. KLEINFELDER & ASSOCIATES
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 LAND AND WATER RESOURCES



PACIFIC RIM DEVELOPMENT
 CONVENIENCE CENTER 51st & TELEGRAPH
 OAKLAND, CALIFORNIA

PLATE

PROJECT NO. 10-1689-01

BORING LOG NO. MW-2

#P7158

K/4W 14R02

Blow/ Ft.	Sample No.	USCS	Description	Well Const
32				
34		GM	SANDY CLAYEY GRAVEL - medium brown, wet, sand, coarse to medium grained	
36			Total Depth = 35.5 feet	
38			logged by K. See1 7/20/87	
40				

Depth (feet)

J.H. KLEINFELDER & ASSOCIATES
 GEOTECHNICAL CONSULTANTS • MATERIALS TESTING
 LAND AND WATER RESOURCES



PACIFIC RIM DEVELOPMENT
 CONVENIENCE CENTER 51st & TELEGRAPH
 OAKLAND, CALIFORNIA

BORING LOG NO. MW-2

PROJECT NO. 10-1689-01

PLATE

87158

15/4W 14Z 03

Depth (feet)	Blow/ Ft.	Sample No.	USCS	Description	Well Const
				A C Paving	
2	8	S-B1-3	ML	CLAYEY SANDY SILT, brown, dry to damp, with rock to 1/2-inch, soft, NO SC	
4					
6	34	S-B1-7	ML SM	CLAYEY SILTY SAND, mottled gray & brown, w 5% angular chert fragments to 1/4-inch, damp, medium dense, NO SC	
8					
10	52	S-B1-10	SC	GRAVELLY SANDY CLAY, yellow-brown; gravel to 1/4-inch, chert, sandstone, shale, angular, stiff, NO SC	
12					
14	36	S-B1-15	SC/ SM	with zones of yellow-brown SILTY SAND and gravel-free reddish-brown SANDY CLAY, NO SC	
16				Stabilized water, 17'4"	
18				1st water, 19 feet.	
20	36	S-B1-20	SM	SILTY FINE SAND, light brown, saturated, medium dense, NO SC	
22					
24	23	S-B1-25	CH	SILTY CLAY, light gray-brown, damp, moderately stiff, NO SC	
26					
28			ML/ SM	CLAYEY SILT and SILTY SAND, damp to saturated, moderately stiff and medium dense, NO SC	
30	14	S-B1-30			
				Total Depth = 31 feet, D. Laduzinsky, 4/9/87	

J.H. KLEINFELDER & ASSOCIATES
 GEOTECHNICAL CONSULTANTS • MATERIALS TESTING
 LAND AND WATER RESOURCES



PACIFIC RIM DEVELOPMENT
 CONVENIENCE CENTER 51st & TELEGRAPH
 OAKLAND, CALIFORNIA

PLATE

PROJECT NO. 10-1689-01

BORING LOG NO. B-1/MW-1

#P7088 01-258 A-E

NY
AD

IS/AN 1412 (S BORING)



J.H. KLEINFELDER & ASSOCIATES
 GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



OAKLAND SHOPPING CENTER
 OAKLAND, CALIFORNIA
 VICINITY MAP

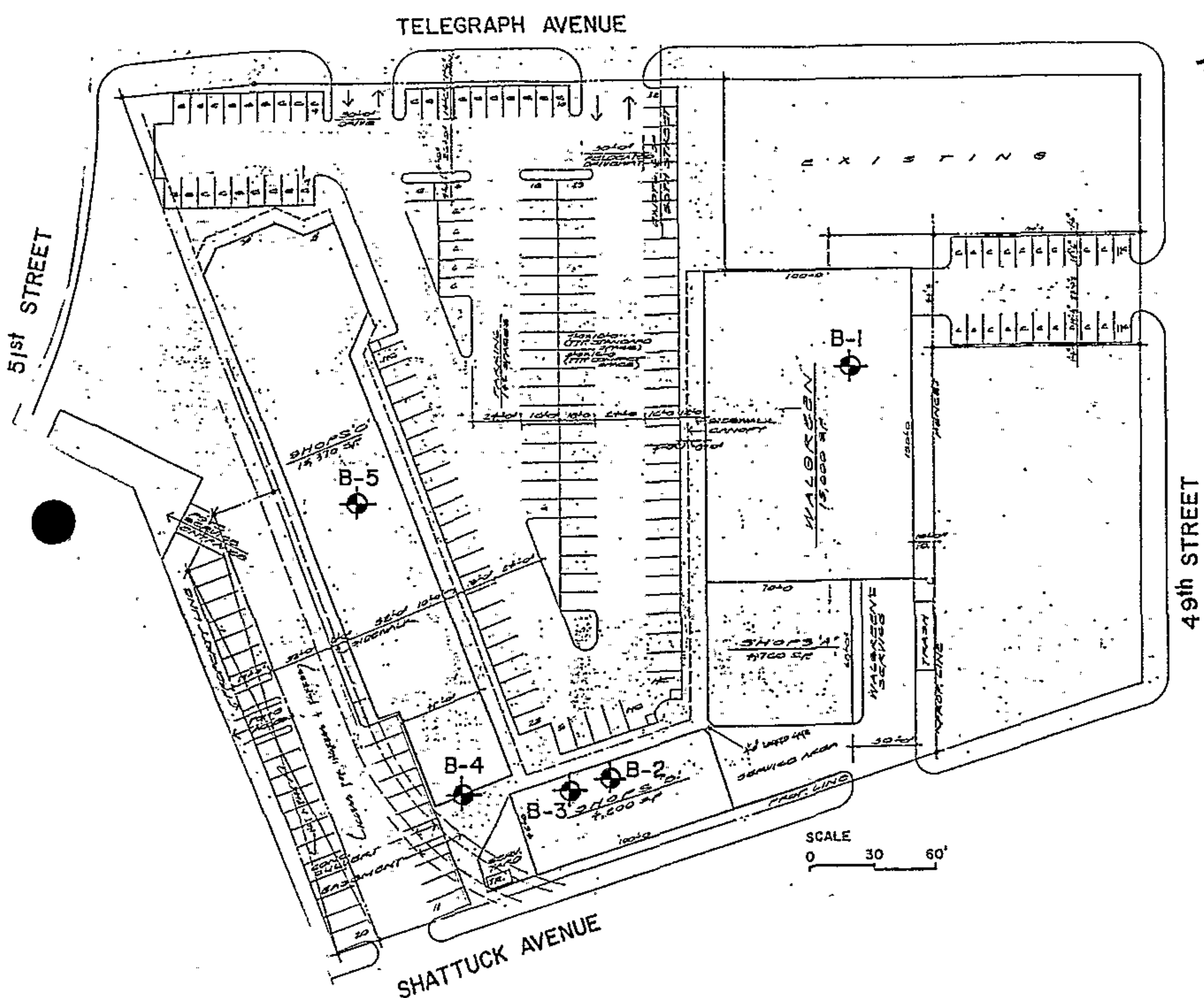
PLATE

1

PROJECT NO. 11-1729-01

01-258A-E
15/4W 14R

#87088



J.H. KLEINFELDER & ASSOCIATES GEOTECHNICAL CONSULTANTS • MATERIALS TESTING	OAKLAND SHOPPING CENTER OAKLAND, CALIFORNIA BORING LOCATION MAP	PLATE 2
PROJECT NO. 11-1729-01		

AP7088

15/4/147 01-258A

Dated Completed: 4/8/87

Sampler: 2" O.D. MODIFIED CALIFORNIA Sampler

Logged By: L.P.G.

1-3/8" O Standard Pen, Split-Spoon Sampler

Total Depth: 39.5

Hammer Wt: 140 lbs.

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content, %	Compressive Strength, tsf	Other Tests		
Surface Elevation: 110 ft. (Approx.)								
5		12	104	18		LL=31 PI=17	4.5+	2" Asphalt overlying 3 1/2" A.B. FILL: SILTY CLAY (CL) stiff, dark brown, medium plasticity, slightly moist
		18					4.5+	
10		20	115	16	2.4		3.1	SANDY CLAY (CL) - very stiff, brown, medium plasticity, very moist, some 1"Ø, subangular gravel
15		22				TV=0.9tsf	2.8	CLAYEY SILT (ML) - very stiff, brown, low to medium plasticity, moist to very moist, some gravel at 13'
20		32			3.0	TV=2.0tsf	3.7	-mottled grey and black at 19' -hard at 19' -wet, 20' to 26'
25		18						
30		22	104	23	2.6	TV=1.0tsf	1.7	-stiff below 29'
35		34	117	18	1.3			VERY SILTY SAND (SM) medium dense brown and grey, fine grained sand, slightly wet

J.H. KLEINFELDER & ASSOCIATES
 GEOTECHNICAL CONSULTANTS • MATERIALS TESTING




OAKLAND SHOPPING CENTER
 OAKLAND, CALIFORNIA
 LOG OF BORING NO. B-1

PLATE

A-2

PROJECT NO. 11-1729-01

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content, %	Compressive Strength, tsf	Other Tests	(Continued from Plate A-2)		
40		50						VERY SILTY SAND (SM) -with coarse grained sand and 1/2" gravel at 39'	
45									
50									
55									
60									
65									
70									
75									

J.H. KLEINFELDER & ASSOCIATES
 GEOTECHNICAL CONSULTANTS • MATERIALS TESTING 

PROJECT NO. 11-1729-01

OAKLAND SHOPPING CENTER
 OAKLAND, CALIFORNIA
 LOG OF BORING NO. B-1

PLATE
A-3

AS 7088

01-2580
15/4W1412 01-258C

Dated Completed: 4/8/87
Logged By: L.P.G.
Total Depth: 4.0'

Sampler: 2" O.D. MODIFIED CALIFORNIA
Sampler
1-3/8" Standard Pen.
Hammer Wt: 140 lbs.

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content, %	Compressive Strength, tsf	Other Tests		
								Surface Elevation: 108 ft. (Approx.)
		30						6" Asphalt Paving FILL: SANDY GRAVEL (GP) - medium dense, brown, 1 1/2" subangular gravel, dry to slightly moist
5								Refusal at 4.5', drilling terminated
10								
15								
20								
25								
30								
35								

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



OAKLAND SHOPPING CENTER
OAKLAND, CALIFORNIA

LOG OF BORING NO. B-2 & B-3

PLATE

A-4

PROJECT NO. 11-1729-01

#87088

13/4/1412 01-258 D

Dated Completed: 4/8/87
 Logged By: L.P.G.
 Total Depth: 37.0'

Sampler: 2" O.D. MODIFIED CALIFORNIA Sampler
1-3/8" O Standard Pen, Split-Spoon Sampler
 Hammer Wt: 140 lbs.

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content, %	Compressive Strength, tsf	Other Tests		
								Surface Elevation: 108 ft. (Approx.)
5		6	102	17			0.6	3" Asphalt overlying 4" sandy gravel
		11	107	19		TV=0.9tsf	2.6	FILL: SILTY CLAY (CL) - firm, dark brown and black, very moist, some small brick fragments
		11						-sandy, stiff and brown below 6'
10		11						
		14						-gravelly below 13'
15								
		4						SILTY GRAVELLY SAND (SM) medium saturated, slough sample due to heaving
20								
		24						SILTY SAND WITH GRAVEL (SM) medium dense, brown, coarse grained sand, gravel 3/8" O max. saturated
25								
		35						-clayey, 30' to 34'
30								
35								

J.H. KLEINFELDER & ASSOCIATES
 GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



OAKLAND SHOPPING CENTER
 OAKLAND, CALIFORNIA
 LOG OF BORING NO. B-4

PLATE

A-5

PROJECT NO. 11-1729-01

#87088

15/4/12 01-258D

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content, %	Compressive Strength, tsf	Other Tests		(Continued from Plate A-5)
		35		14.4				SILTY SAND with gravel (SM)
40								
45								
50								
55								
60								
65								
70								
75								

J.H. KLEINFELDER & ASSOCIATES
 GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



OAKLAND SHOPPING CENTER
 OAKLAND, CALIFORNIA
 LOG OF BORING NO. B-4

PLATE
 A-6

PROJECT NO. 11-1729-01

#87088

15/4/00 1472 01-258E

Dated Completed: 4/8/87
 Logged By: L.P.G.
 Total Depth: 34.5'

Sampler: 2" O.D. MODIFIED CALIFORNIA Sampler
1-3/8" O Standard Pen. Split-Spoon Sampler
 Hammer Wt: 140 lbs.

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content, %	Compressive Strength, tsf	Other Tests		
								Surface Elevation: 110 ft.
								3" Asphalt overlying 3 1/2" AB
		16	114	8				FILL: SILTY GRAVELLY SAND (SM) med. dense, moist, some large wood debris
5		12						FILL: SILTY, SANDY GRAVEL (GP) med. dense, brown, moist, coarse grained sand, 2" O gravel, max. -silty, 6' to 7'
10		14	109	11				-well graded gravel, 8' to 13' with poorly graded, coarse sand
15		30/6"						GRAVELLY SAND (SP) dense, brown, 3/4" O subangular gravel, medium sand, dry
20		21	104	23	0.8	TV=0.8tsf	1.8	CLAYEY SILT (ML) stiff, borwn, med. plasticity, very moist with some gravel, 19' to 22'
25		34	106	24	2.0			SILTY SANDY GRAVEL (GM) medium dense, brown, sand well graded, saturated
30								GRAVELLY CLAYEY SILT (ML) hard, brown, gravel 1/2" O max., moist
35		47	95	31	4.1		4.5+	

J.H. KLEINFELDER & ASSOCIATES
 GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



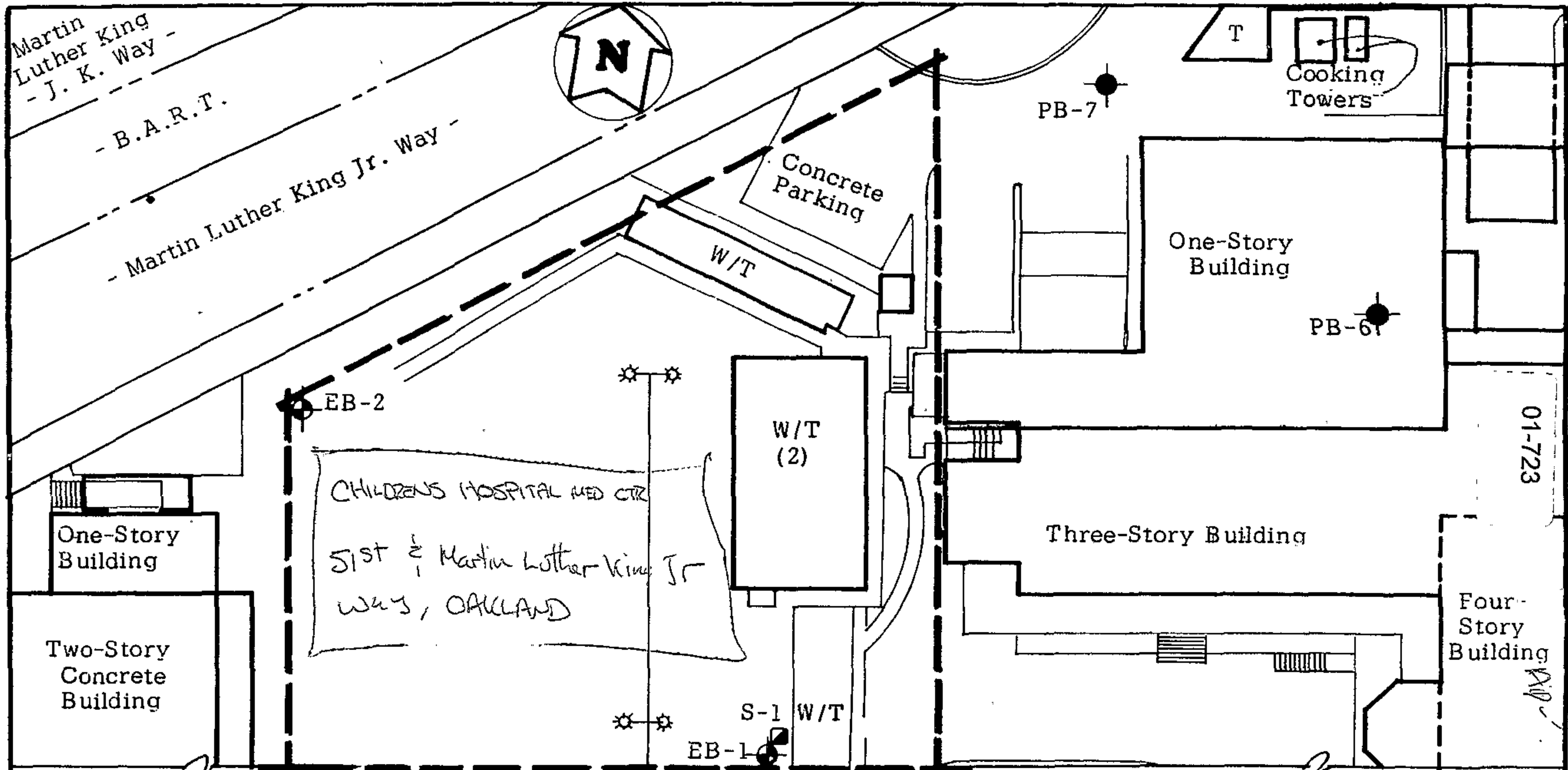
OAKLAND SHOPPING CENTER
 OAKLAND, CALIFORNIA
 LOG OF BORING NO. B-5

PLATE

A-7

PROJECT NO. 11-1729-01

87305



LEGEND

- EB-2 Approximate Location of Exploratory Boring
- S-1 Approximate Location of Bulk Sample
- PB-7 Approximate Location of Previous Boring

Base: "Topo Map" by Ratcliff Architects, undated.



PETER KALDVEER AND ASSOCIATES, INC. <i>Geotechnical Consultants</i>		SITE PLAN	
		NURSING TOWER Oakland, California	
PROJECT NO. K 339-7	DATE December 1987	Figure 1	

01-259 A/B
01-723
15/4M 1472
A. ROBERTS

15/14/87 01-259 A

DRILL RIG Hollow Stem Auger				SURFACE ELEVATION ± 97 Feet		LOGGED BY LG			
DEPTH TO GROUNDWATER 18' (See Note 3)				BORING DIAMETER 8 Inches		DATE DRILLED 12/11/87			
DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	UNCONFINED COMPRESSIVE STRENGTH (KSF)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
4" AC over 4" Baserock									
SAND, (fine-grained), clayey, with silt, traces of gravel (fine-grained) Liquid Limit = 30% Plasticity Index = 12% Passing #200 Sieve = 49%	dark grey	medium dense	SC-CL	1		30	17		
		loose		2					
				3					
SILT, sandy, (fine-grained), trace of gravel, (fine grained) Passing #200 Sieve = 54%	tan	stiff	ML	4		9	24		
				5					
CLAY, silty, some sand, (fine to coarse-grained) (gravel fine grained more sand)	grey	stiff	CL	6		42*	14	114	10.5
	mottled with tan	very stiff	CL	9					
				10					
				11					
				12					
				13					
				14					
				15					
				16					
				17					
(grading more gravel, fine-grained)	light grey			14		34*	24	101	8.6
				15					
SAND, (fine-to coarse grained) silty, trace of gravel, (fine grained), some clay Passing #200 Sieve = 51%	light grey mottled with tan	medium dense	SM	16		47*	▽		
				17					
				18					
			SM-ML	19					
				20					

PETER KALDVEER AND ASSOCIATES, INC.
Geotechnical Consultants

EXPLORATORY BORING LOG

NURSING TOWER
Oakland, California

PROJECT NO.	DATE	BORING NO.
K339-7	December 1987	1

DRILL RIG Hollow Stem Auger		SURFACE ELEVATION ± 97 Feet		LOGGED BY LG						
DEPTH TO GROUNDWATER 18' (See Note)		BORING DIAMETER 8 Inches		DATE DRILLED 12/11/87						
DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	UNCONFINED COMPRESSIVE STRENGTH (KSF)	
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE							
SAND, (fine-to coarse-grained), some clay and gravel (fine-grained)	light grey	medium	SC	21	△	47*				
GRAVEL, (fine - grained), sandy, (fine-to coarse-grained), some clay and silt	brown	medium dense	GC	22						
				23						
				24						
				25						
CLAY, silty, sandy (fine to coarse-grained). with gravel (fine grained)	grey mottled with tan	stiff	CL	25	⊗	30*	20			
GRAVEL (fine-grained), sandy, (fine-to coarse-grained), some silt and clay Notes: 1. The stratification lines represent the approximate boundaries between soil types and the transitions may be gradual. 2. For an explanation of penetration resistance values marked with an asterisk (*) see first page Appendix A. 3. Groundwater level was measured at a depth of 20 feet at time of drilling. 3½ hours later the groundwater level was measured at 18 feet. (sandy clay lense)	tan	very dense	GC	26						
				27						
				28						
				29						
				30	⊗	94*	11	16	119	12.0
				31						
				32						
				33						
				34						
				35					85	
36										
37										
38										
39										
40						72	18			

PETER KALDVEER AND ASSOCIATES, INC. <i>Geotechnical Consultants</i>	EXPLORATORY BORING LOG		
	NURSING TOWER Oakland, California		
	PROJECT NO.	DATE	BORING NO.
	K 339-7	December 1987	1

15/4W142 α-259 B

DRILL RIG Hollow Stem Auger	SURFACE ELEVATION ± 94 Feet	LOGGED BY LG
DEPTH TO GROUNDWATER 19½' (See Note 3)	BORING DIAMETER 8 Inches	DATE DRILLED 12/11/87

DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	UNCONFINED COMPRESSIVE STRENGTH (KSF)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
4" AC over 4" Baserock									
CLAY, silty, gravelly (fine-grained), some sand (fine-to coarse-grained)	dark grey	very stiff	CL	1		57*	19	114	
GRAVEL (fine-grained) sandy, (fine-to coarse-grained), with clay Passing #200 Sieve = 17%	grey	medium dense	GC	3		28*			
CLAY, silty some sand (fine-grained) traces of gravel (occasional gravel lenses)	dark grey	very stiff	CL	5		17			
(grading gravelly, fine-grained)	mottled with tan			9		58*	17		
(grading with traces of gravel fine grained)				15		47*	21		
SAND, (fine-to coarse-grained), some silt, some clay (occasional clay lense)	brown	medium dense	SC-SM	18					
				19		28*	22	101	
				20					

PETER KALDVEER AND ASSOCIATES, INC. Geotechnical Consultants	EXPLORATORY BORING LOG		
	NURSING TOWER Oakland, California		
	PROJECT NO.	DATE	BORING NO.
	K 339-7	December 1987	2

15/10/14/2 01-2598

DRILL RIG Hollow Stem Auger	SURFACE ELEVATION ± 94 Feet	LOGGED BY LG
DEPTH TO GROUNDWATER 19½' (See Note 3)	BORING DIAMETER 8 Inches	DATE DRILLED 12/11/87

DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	UNCONFINED COMPRESSIVE STRENGTH (KSF)			
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE									
SAND, (fine-to coarse grained), gravelly, (fine-grained). with silt, some clay (occasional clay lense) Passing #200 Sieve = 38%	brown	medium dense	SC- SM	21								
				22								
				23								
				24								
				25					28			
				26								
				27								
				28								
CLAY, sandy, (fine to coarse- grained), with gravel (fine- grained). silty (occasional sand or gravel lense) (grading without gravel, less sand) Liquid Limit = 30% Plasticity Index = 16% Passing #200 Sieve = 79%	light grey	firm	CL- SC	29								
				30				16*	22	104	0.5	
				31								
				32								
				33								
				34								
				35		stiff	CL					
				36					20*	27	96	0.6
				37								
				38								
SAND, (fine to coarse-grained) some clay and silt, trace of gravel (fine-grained)	brown	dense	SC	39								
				40				39*	29			

PETER KALDVEER AND ASSOCIATES, INC. <i>Geotechnical Consultants</i>	EXPLORATORY BORING LOG		
	NURSING TOWER Oakland, California		
	PROJECT NO.	DATE	BORING NO.
	K 339-7	December 1987	2

DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	UNCONFINED COMPRESSIVE STRENGTH (KSF)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
SAND, (fine-to coarse grained) some silt, trace of gravel (fine-grained) (occasional gravel lense) (grading gravelly)	brown	medium dense	SC	41	X	39*			
				42					
				43					
				44					
				45				68	
CLAY, silty, with sand (fine to coarse-grained) (trace of gravel)	light grey	hard	CL	46					
				47					
				48					
CLAY, silty, sandy (medium-grained)	rust	hard	CL	49					
				50	X	58* 6 ^h	21		
Bottom of Boring = 51 Feet				51					
Notes: 1. The stratification lines represent the approximate boundaries between soil types and the transitions may be gradual. 2. For an explanation of penetration resistance values marked with an asterisk (*) see first page, Appendix A. 3. Groundwater level was measured at a depth of 19½ feet at time of drilling.				52					
				53					
				54					
				55					
				56					
				57					
				58					
				59					
				60					

EXPLORATORY BORING LOG

Peter Kaldveer and Associates
Geotechnical Consultants

NURSING TOWER
 Oakland, California

PROJECT NO.	DATE	BORING NO.
K 339-7	December 1987	2

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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**STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)**

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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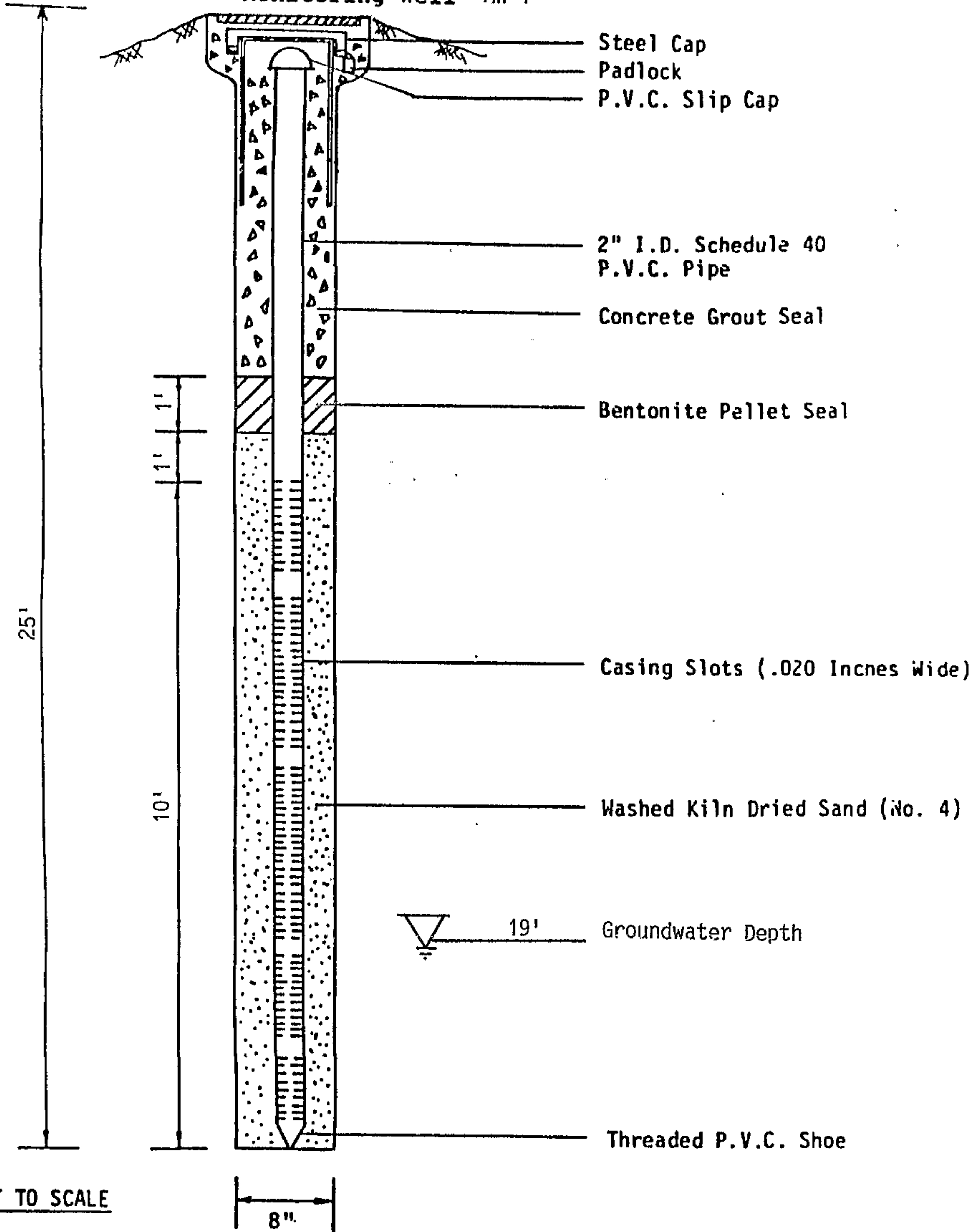
STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

377853 A

15/4W 1428

Monitoring Well MW-1



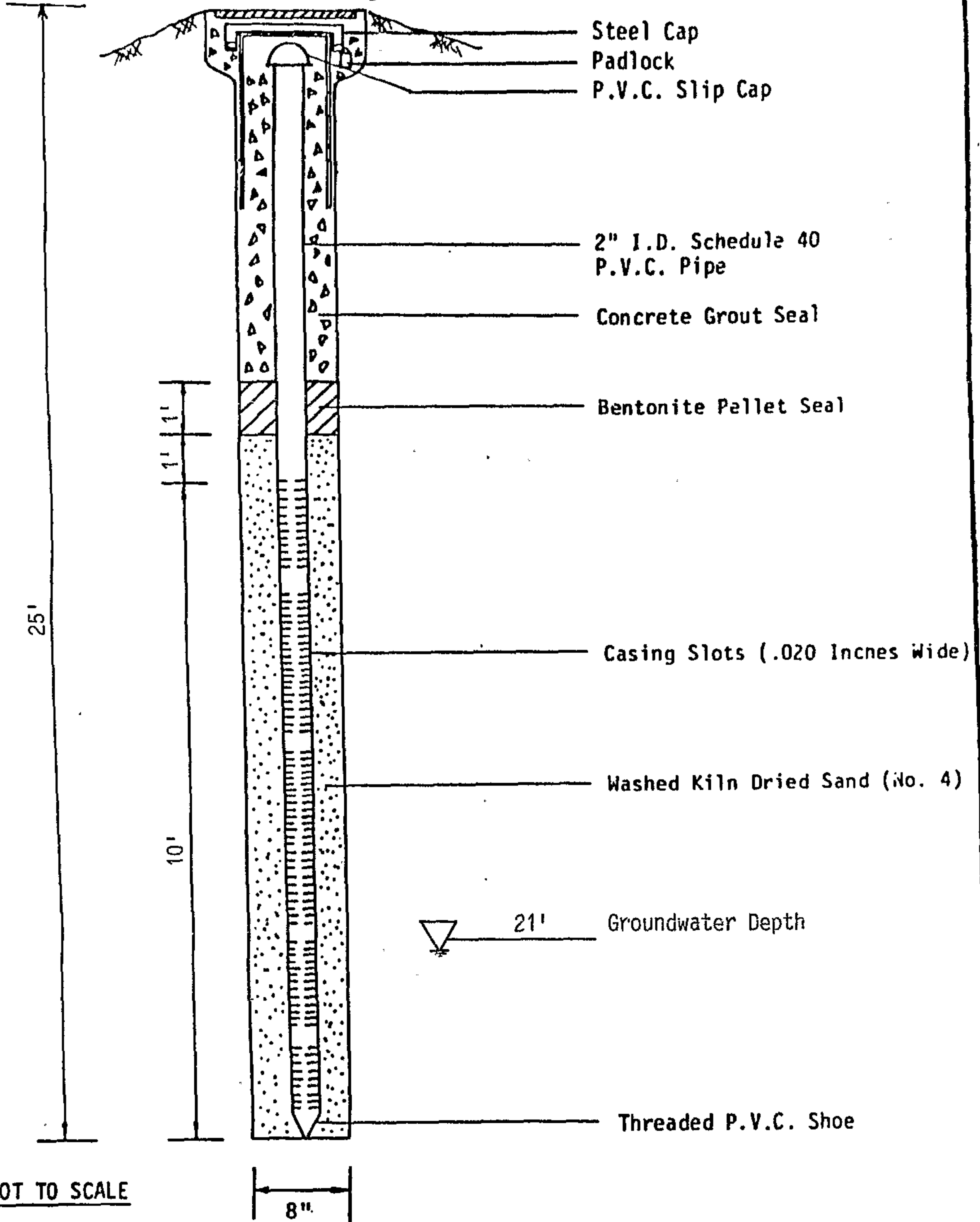
NOT TO SCALE

This monitoring well was installed under the supervision of Alex A. Kassai
 Certified Engineer # 34882

377853 B

15/4W 14R9

Monitoring Well MW-2



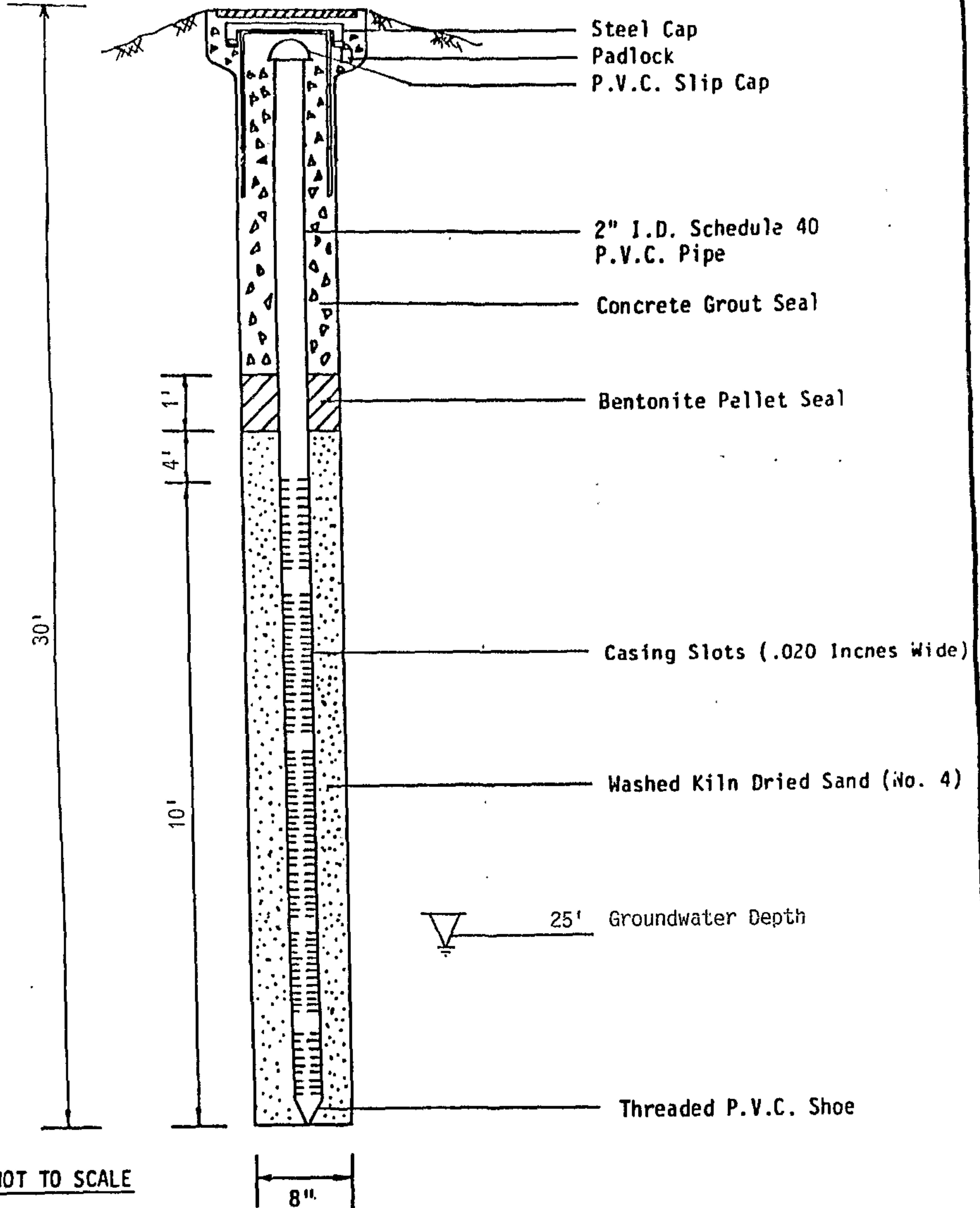
NOT TO SCALE

This monitoring well was installed under the supervision of Alex A. KASSA Certified Engineer # 34882

377853C

18/4W 14R10

Monitoring Well MW-3

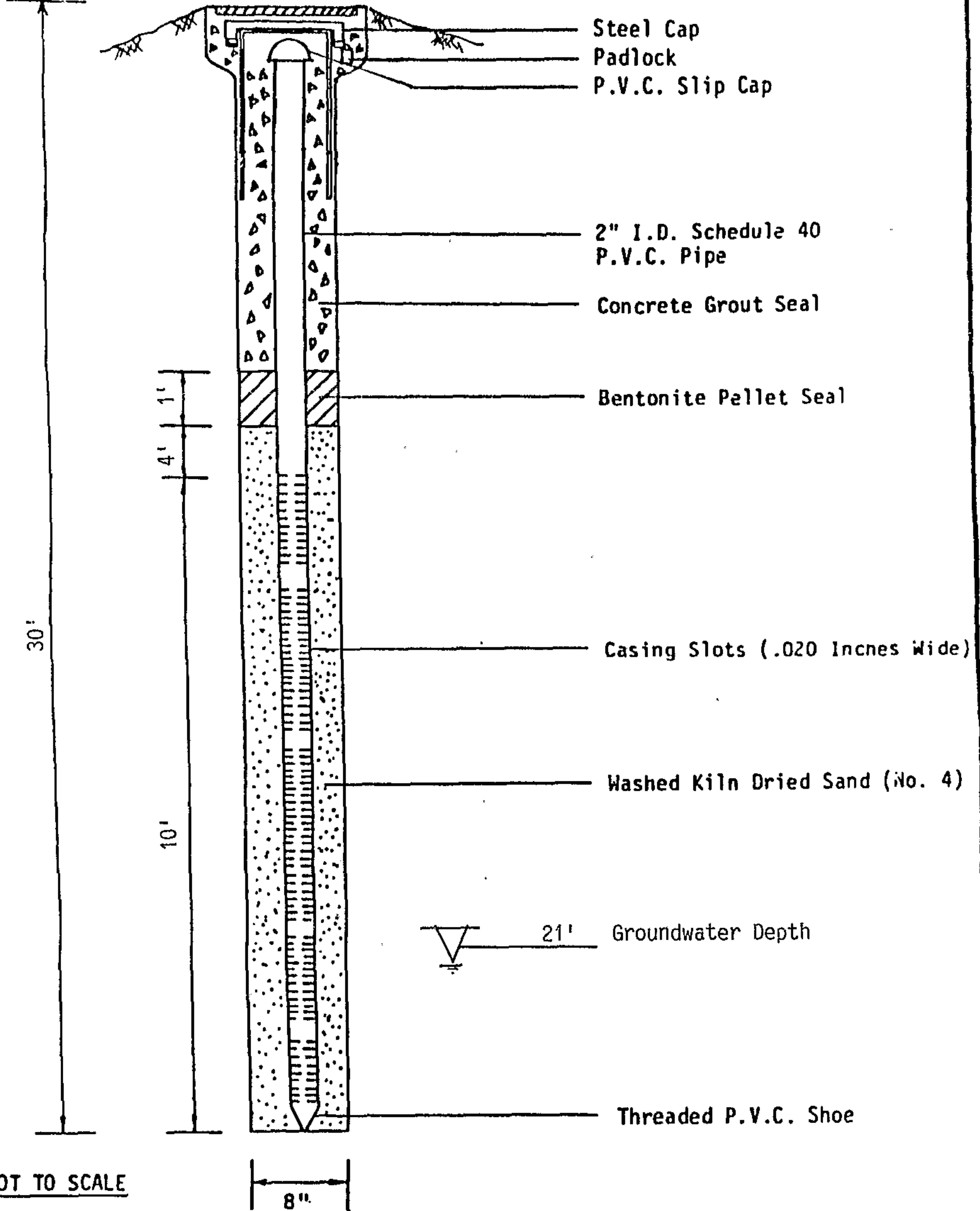


This monitoring well was installed under the supervision of S.A.E. ALEX A. KASSAI
 Certified Engineer # 34882

377853D

IS/4W 14R11

Monitoring Well MW-4



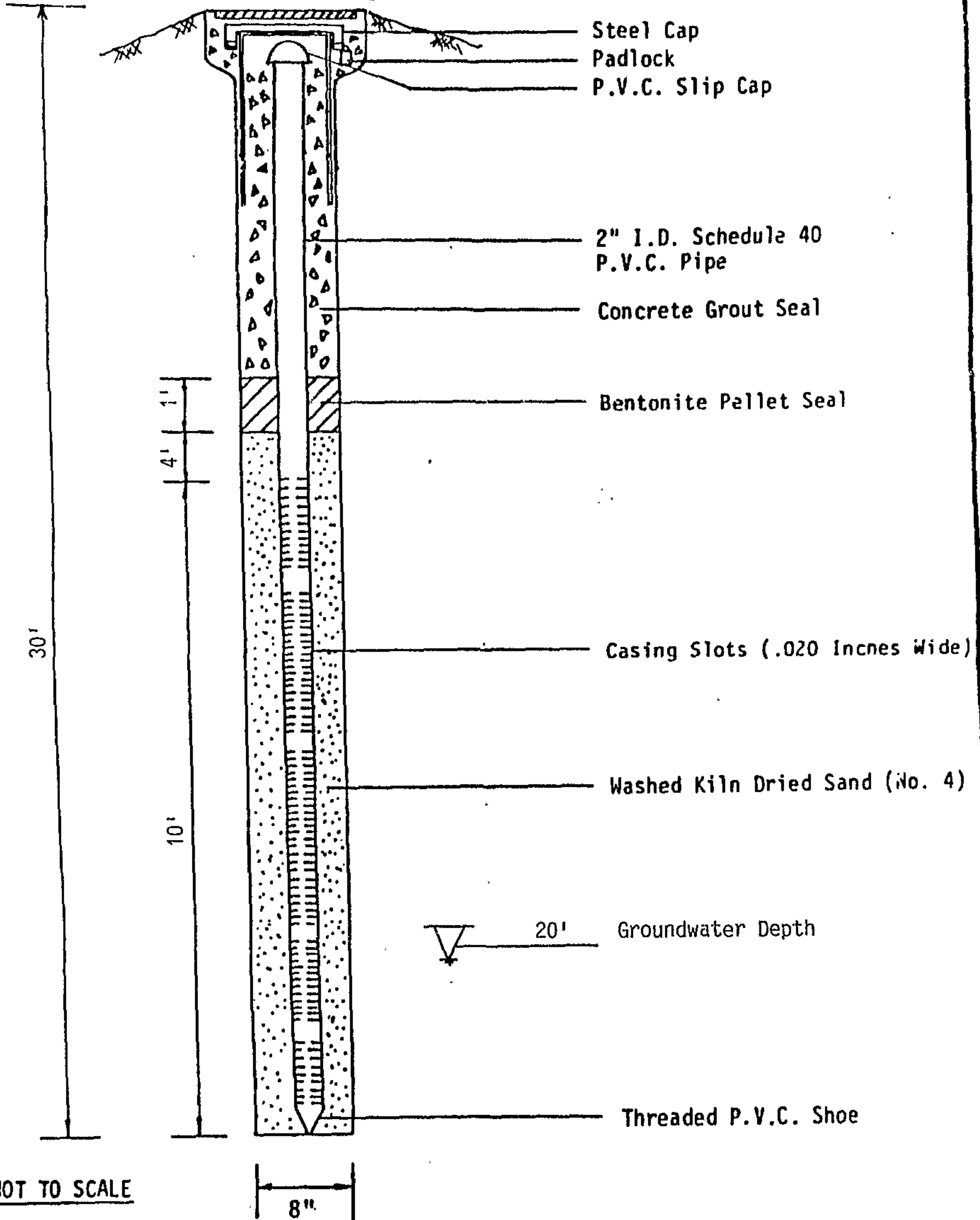
NOT TO SCALE

This monitoring well was installed under the supervision of ALEX A. KASSAI
Certified Engineer # 34882

377853E

15/4W 14R 12

Monitoring Well MW-5



NOT TO SCALE

This monitoring well was installed under the supervision of ALEX A. KASSAY Certified Engineer # 34882

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WELL COMPLETION REPORT
(WELL LOGS)

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

273

403566

01504W 14 R17

Depth of boring: 32 feet Diameter of boring: 10.25 inches Date drilled: 10/27/92
 Well depth: 26-1/2 feet Material type: Sch 40 PVC Casing diameter: 4 inches
 Screen interval: 11-1/2 to 26-1/2 feet Filter pack: #3 Sand Slot size: 0.020-inch
 Drilling Company: Exploration GeoServices Driller: Dave and Dennis
 Method Used: Hollow-Stem Auger Field Geologist: Rob Campbell

Signature of Registered Professional: _____

Registration No.: CEG 1463 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt-covered surface.	
					Asphalt (4 inches).	
2				SC	Clayey sand with silt, dark brown, damp, medium dense; brick fragments, glass: fill.	
4				CL	Silty clay, dark brown, damp, low plasticity.	
6	S-5	5 7 9	0	ML	Clayey silt, brown, damp, low plasticity, stiff.	
10	S-9.5	6 8 9	0			
12			30	GM	Product odor at 11 feet.	
14	S-14.5	10 14 12	210	SP-SM	Gravel with sand and silt, 1-2 inch fragments, olive-green, moist, medium loose; product odor.	
16			180			
18			20	GP/GM	Gravelly sand with silt, medium-grained sand and gravel, olive-green, moist, medium loose; product odor, root holes.	
20	S-20	13 15 14	0		Sandy gravel with silt and clay, brown, wet, medium dense; no product odor.	

(Section continues downward)

RESNA
Working to Restore Nature

PROJECT

61035.05

LOG OF BORING B-5/MW-4

ARCO Station 6148
5131 Shattuck Avenue
Oakland, California

PLATE

5

373

403566

01S04W V4R17

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
-22				GP/GM	Sandy gravel with silt, brown, wet, dense; root holes.	
-24	S-25	14 18 22	0			
-26						
-28				CL	Silty clay, brown, damp, low plasticity, hard.	
-30	S-30	15 19 27 9	0			
-32	S-31.5	13 15	0			
					Total depth = 32 feet.	
-34						
-36						
-38						
-40						
-42						
-44						
-46						
-48						
-50						

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PROJECT 61035.05

LOG OF BORING B-5/MW-4
ARCO Station 6148
5131 Shattuck Avenue
Oakland, California

PLATE

6

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

273

403564

01504W 14R18

Depth of boring: 28 feet Diameter of boring: 10.25 inches Date drilled: 10/28/92
 Well depth: 25 feet Material type: Sch 40 PVC Casing diameter: 4 inches
 Screen interval: 10 to 25 feet Filter pack: #3 Sand Slot size: 0.020-inch
 Drilling Company: Exploration GeoServices Driller: Dave and Dennis
 Method Used: Hollow-Stem Auger Field Geologist: Rob Campbell

Signature of Registered Professional: _____

Registration No.: CEG 1463 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt-covered surface.	
					Asphalt (4 inches).	
2				SC	Clayey sand with silt, dark brown, damp, medium dense; brick fragments, glass fragments: fill.	
4	S-4.5	11 12 13	0			
8				GM	Silty gravel with sand, brown, damp, medium dense.	
10	S-9.5	10 12 14	50		Slight product odor at 10 feet.	
12				GP	Sandy gravel, olive-green, moist, loose; product odor.	
14	S-14.5	12 18 19	36	GP-GC	Sandy gravel with clay, olive-green, moist, dense; product odor.	
16	S-16 S-16.5	8 14 16	407			
18	S-17.5 S-18 S-18.5	7 8 9	210		Water at 18.1 feet.	
19	S-19 S-19.5	12 18		SP	Gravelly sand, light brown, wet, dense; slight product odor.	
20	S-20 S-20.5	19 7	10			
	S-21	10 13	0	GP	Sandy gravel, gray, wet, medium dense; no product odor.	
				SM	Silty sand, gray with brown mottling, wet, medium dense.	

(Section continues downward)



LOG OF BORING B-6/MW-5

PLATE

ARCO Station 6148
5131 Shattuck Avenue
Oakland, California

7

PROJECT 61035.05

373

403564

01504W14R18

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.	
	S-20.5	7		SP	Gravelly sand, light brown, wet, dense; no product odor.		
	S-21	10	0	GP			
-22-	S-22	13	0	SM	Sandy gravel, gray, wet, loose. Silty sand, gray with brown mottling, wet, loose.		
	S-22.5	4	0				
		7	0				
	S-23.5	9					
-24-	S-24	13	0	GW-GC	Gravelly sand with clay, brown with black mottling, wet, dense.		
		20	0				
	S-25	12	0				
		12	0				
-25-	S-26	15	0	CL	Silty clay, brown with gray mottling, wet, hard.		
		19	0				
		14	0				
-28-	S-27.5	21	0				
		25	0				
-28-	Total depth = 28 feet.						
-30-							
-32-							
-34-							
-36-							
-38-							
-40-							
-42-							
-44-							
-46-							
-48-							
-50-							



PROJECT 61035.05

LOG OF BORING B-6/MW-5
 ARCO Station 6148
 5131 Shattuck Avenue
 Oakland, California

PLATE
 8

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

293

403565

01504W14R19

Depth of boring: 30 feet Diameter of boring: 10.25 inches Date drilled: 10/28/92
 Well depth: 27 feet Material type: Sch 40 PVC Casing diameter: 4 inches
 Screen interval: 12 to 27 feet Filter pack: #3 Sand Slot size: 0.020-inch
 Drilling Company: Exploration GeoServices Driller: Dave and Dennis
 Method Used: Hollow-Stem Auger Field Geologist: Rob Campbell

Signature of Registered Professional: _____

Registration No.: CEG 1463 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt-covered surface.	
				SC	Asphalt (4 inches).	
2				SC	Clayey sand, dark brown, damp, medium dense; no product odor, brick fragments: fill.	
4	S-4.5	4 7 7	0			
6				SC	Clayey sand with gravel, brown with greenish-gray and black mottling, damp to moist, medium dense; root holes.	
8						
10	S-10	6 8 10	0			
12					Color change to olive-green at 12 feet, moist. Color change to brown at 13-1/2 feet. Product odor.	
14				SP	Gravelly sand, brown with orange and gray mottling, moist, medium dense; product odor, root holes.	
16	S-15	10 11 10	42			
18				SM	Silty sand with gravel, gray with brown mottling, wet, medium dense; no product odor, cross-bedding lamination.	
20	S-19	9 10 12	0			

(Section continues downward)



LOG OF BORING B-7/MW-6
 ARCO Station 6148
 5131 Shattuck Avenue
 Oakland, California

PLATE

9

PROJECT 61035.05

3073

403565

015.04 W14R19

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
-22-				SM	Silty sand with gravel, gray with brown mottling, wet, medium dense; no product odor.	
-24-	S-25	13 18 22	0	GP	Sandy gravel, brown with orange mottling, wet, dense.	
-28-	S-28	18 27 42	0	CL	Sandy clay, brown, damp, low plasticity, hard; root holes.	
-30-	S-29.5	12 16 27	0			
-32-					Total depth = 30 feet.	
-34-						
-36-						
-38-						
-40-						
-42-						
-44-						
-46-						
-48-						
-50-						

RESNA
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PROJECT 61035.05

LOG OF BORING B-7/MW-6
ARCO Station 6148
5131 Shattuck Avenue
Oakland, California

PLATE

10

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

Depth of boring: 34 feet Diameter of boring: 10.25 inches Date drilled: 10/27/92
 Well depth: 27 feet Material type: Sch 40 PVC Casing diameter: 4 inches
 Screen interval: 12 to 27 feet Filter pack: #3 Sand Slot size: 0.020-inch
 Drilling Company: Exploration GeoServices Driller: Dave and Dennis
 Method Used: Hollow-Stem Auger Field Geologist: Rob Campbell

Signature of Registered Professional: _____
 Registration No.: CEG 1463 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt-covered surface.	
					Asphalt (4 inches).	
2				SC	Clayey sand with silt, dark brown, damp, medium dense; no product odor, brick fragments, glass: fill.	
4	S-4.5	5 8 13	0			
6						
8				CL	Gravelly clay with sand, brown, damp, low plasticity, very stiff; root holes.	
10	S-9.5	4 7 10	0			
12			40			
14	S-14.5	12 16 18	40	GW-GM	Sandy gravel with silt, olive-green, moist, dense; product odor, green decreases with depth in sample taken. Grades to light brown at 14.9 feet.	
16						
18				SW	Sand with gravel, light brown, wet, medium dense; no product odor.	
20	S-19.5 S-20	5 8 13	0			
				GW-GM	Sandy gravel with silt, brown, wet, dense.	

(Section continues downward)



LOG OF BORING B-8/MW-7
 ARCO Station 6148
 5131 Shattuck Avenue
 Oakland, California

PLATE
 11

PROJECT 61035.05

343

403563

015.0 4W 14R20

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
-22				SW GW-GM	Sand with gravel, light brown, wet, medium dense; no product odor. Sandy gravel with silt, brown, wet, dense.	
-24	S-25	13 15 18	0			
-28	S-28	12 11 8	0			
-30	S-30	12 11 22	0	CL	Silty clay, brown, damp, low plasticity, hard.	
-34	S-33.5	12 16 27	0			
Total depth = 34 feet.						
-36						
-38						
-40						
-42						
-44						
-46						
-48						
-50						



PROJECT 61035.05

LOG OF BORING B-8/MW-7
 ARCO Station 6148
 5131 Shattuck Avenue
 Oakland, California

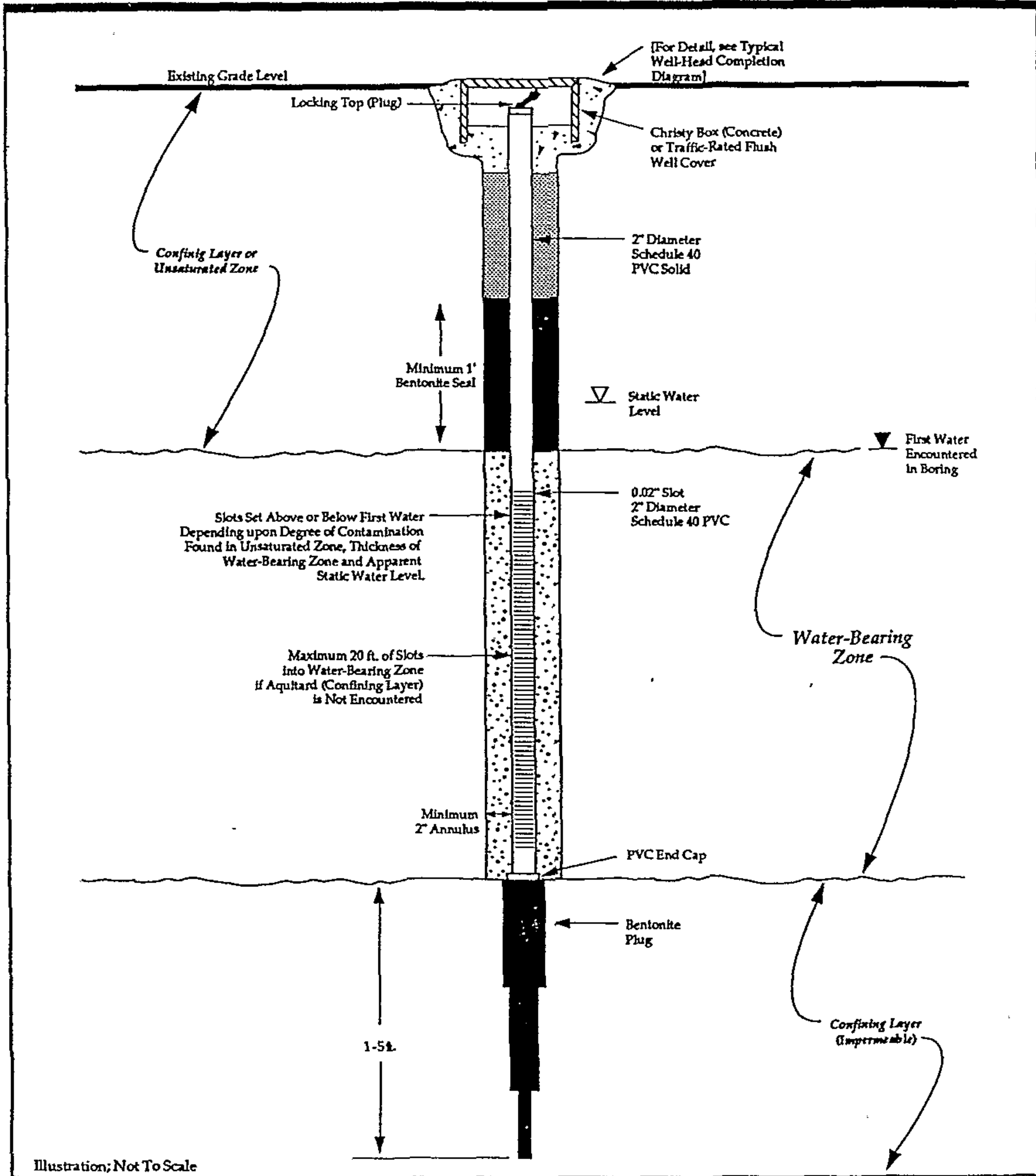
PLATE
 12

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

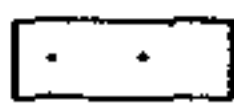
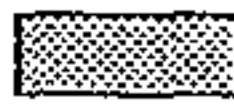
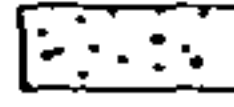
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Groundwater Monitor Well (2" casing)



Illustration; Not To Scale

LEGEND

-  Concrete
-  Grout (Cement Type I, II, Portland + 3-5% Bentonite)
-  Sand

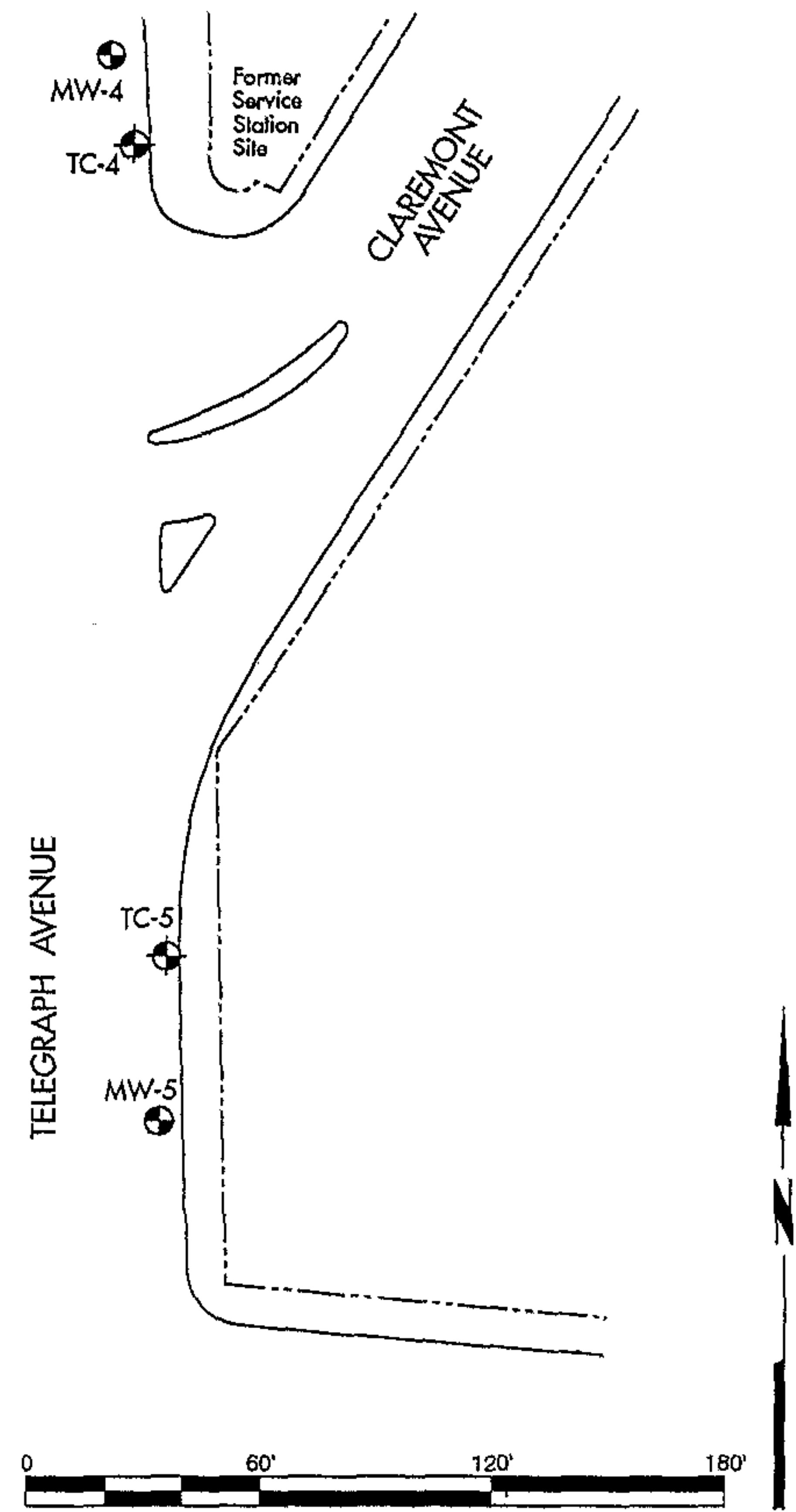
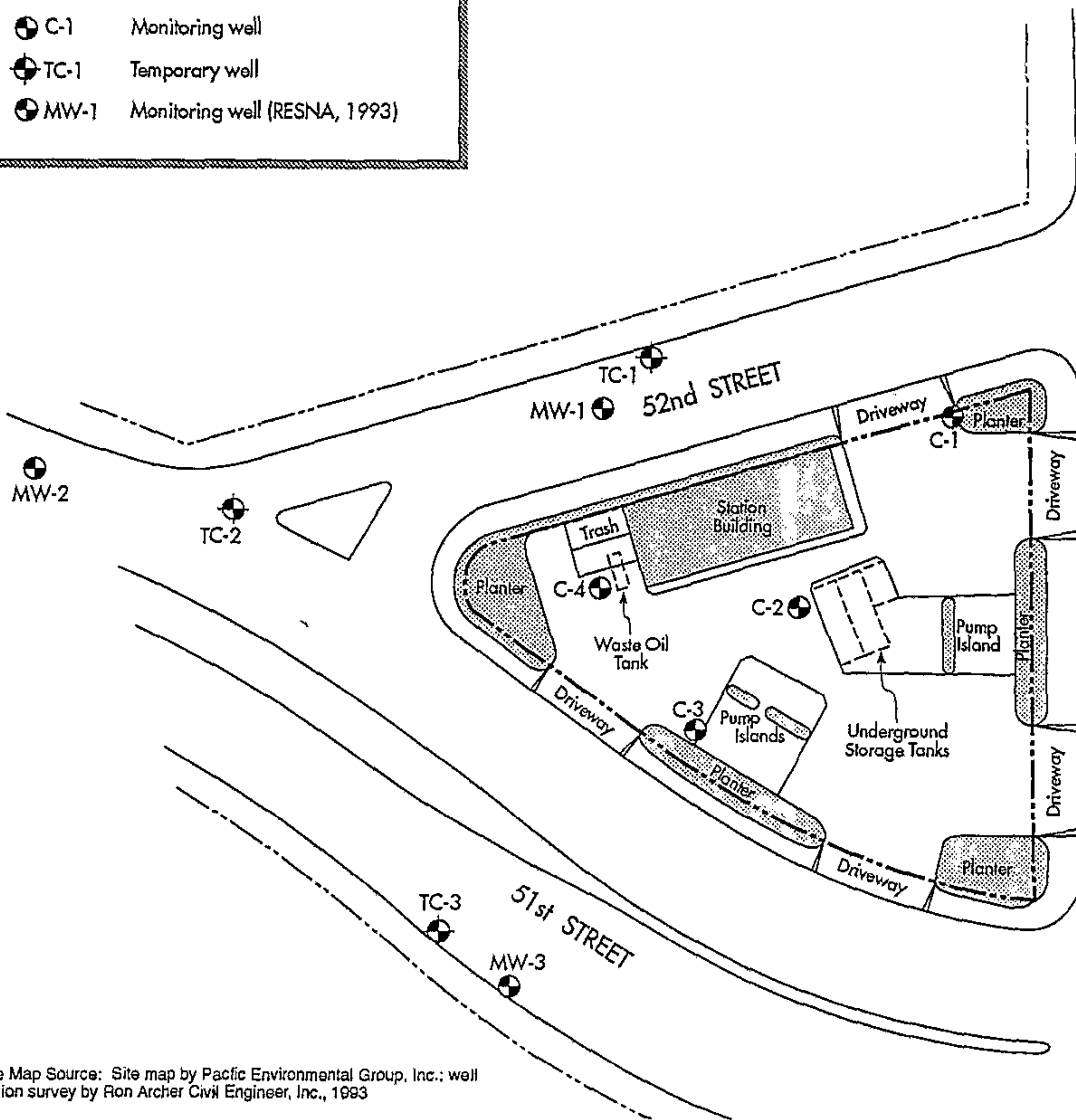
Typical Groundwater Monitor Well Construction Details (2" Casing)

FIGURE

3

EXPLANATION

- ⊕ C-1 Monitoring well
- ⊕ TC-1 Temporary well
- ⊕ MW-1 Monitoring well (RESNA, 1993)



Base Map Source: Site map by Pacific Environmental Group, Inc.; well location survey by Ron Archer Civil Engineer, Inc., 1993



PROJECT NO. 17075.01

9/93

GENERALIZED SITE PLAN
 Former Chevron Service Station No. 9-3864
 5101 Telegraph Avenue
 Oakland, California

PLATE

2

200
 471509-471513
 1814W 14R21-25

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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(WELL LOGS)

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WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED



ZONE 7 WATER AGENCY

495596A-U

15/4W14R

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588
VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 51ST/TELEGRAPH AVENUE
OAKLAND, CALIFORNIA

PERMIT NUMBER 93362
LOCATION NUMBER _____

CLIENT
Name BERKELEY FARMS
Address 4550 SAN PABLO AVE Phone _____
City EMERVILLE Zip 94608

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT
Name KAPREALIAN ENGINEERING, INC.
2401 STANWELL DRIVE, SUITE 400
Address _____ Phone (510) 602-5100
City CONCORD Zip 94520

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.

TYPE OF PROJECT

Well Construction	Geotechnical Investigation
Cathodic Protection _____	General <u>XX</u>
Water Supply _____	Contamination _____
Monitoring _____	Well Destruction _____

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.

PROPOSED WATER SUPPLY WELL USE

Domestic _____	Industrial _____	Other _____
Municipal _____	Irrigation _____	

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.

DRILLING METHOD:

Mud Rotary _____	Air Rotary _____	Auger <u>HOLLOW STEM</u>
Cable _____	Other _____	

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

DRILLER'S LICENSE NO. C57-636387

E. WELL DESTRUCTION. See attached.

WELL PROJECTS

Drill Hole Diameter _____ in.	Maximum _____
Casing Diameter _____ in.	Depth _____ ft.
Surface Seal Depth _____ ft.	Number _____

GEOTECHNICAL PROJECTS

Number of Borings <u>20</u>	Maximum _____
Hole Diameter <u>2</u> in.	Depth <u>15</u> ft.

ESTIMATED STARTING DATE 7-26-93
ESTIMATED COMPLETION DATE 7-28-93

Approved Wyman Hong Date 8 Jul 93
Wyman Hong

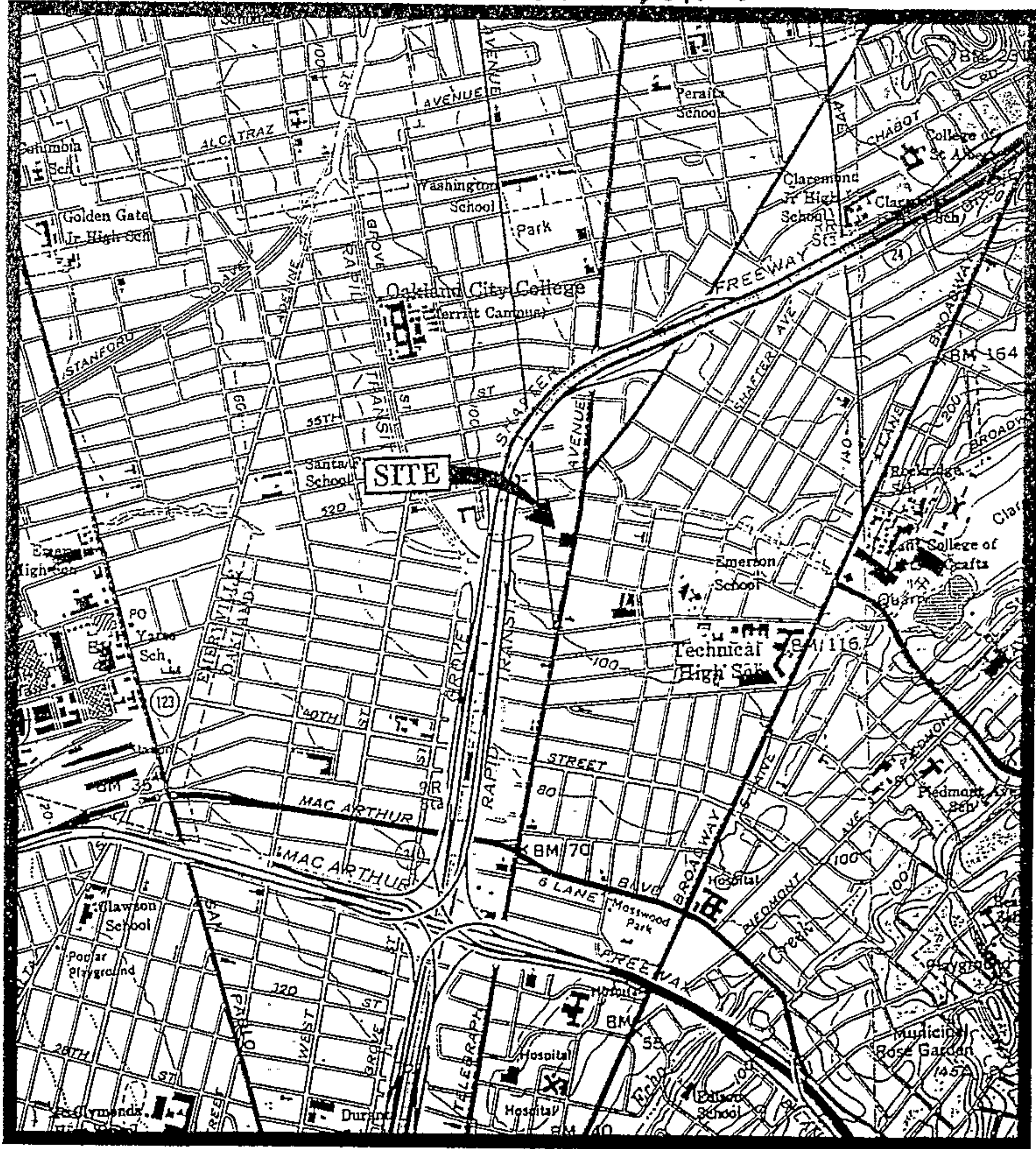
I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Corrina M. Mathews 6/22/93
CORRINA M. MATHEWS

15/4W 14R

37

495596A-U



Base modified from 7.5 minute U.S.G.S. Oakland East and West Quadrangles
(both photorevised 1980)




KAPREALIAN ENGINEERING
INCORPORATED

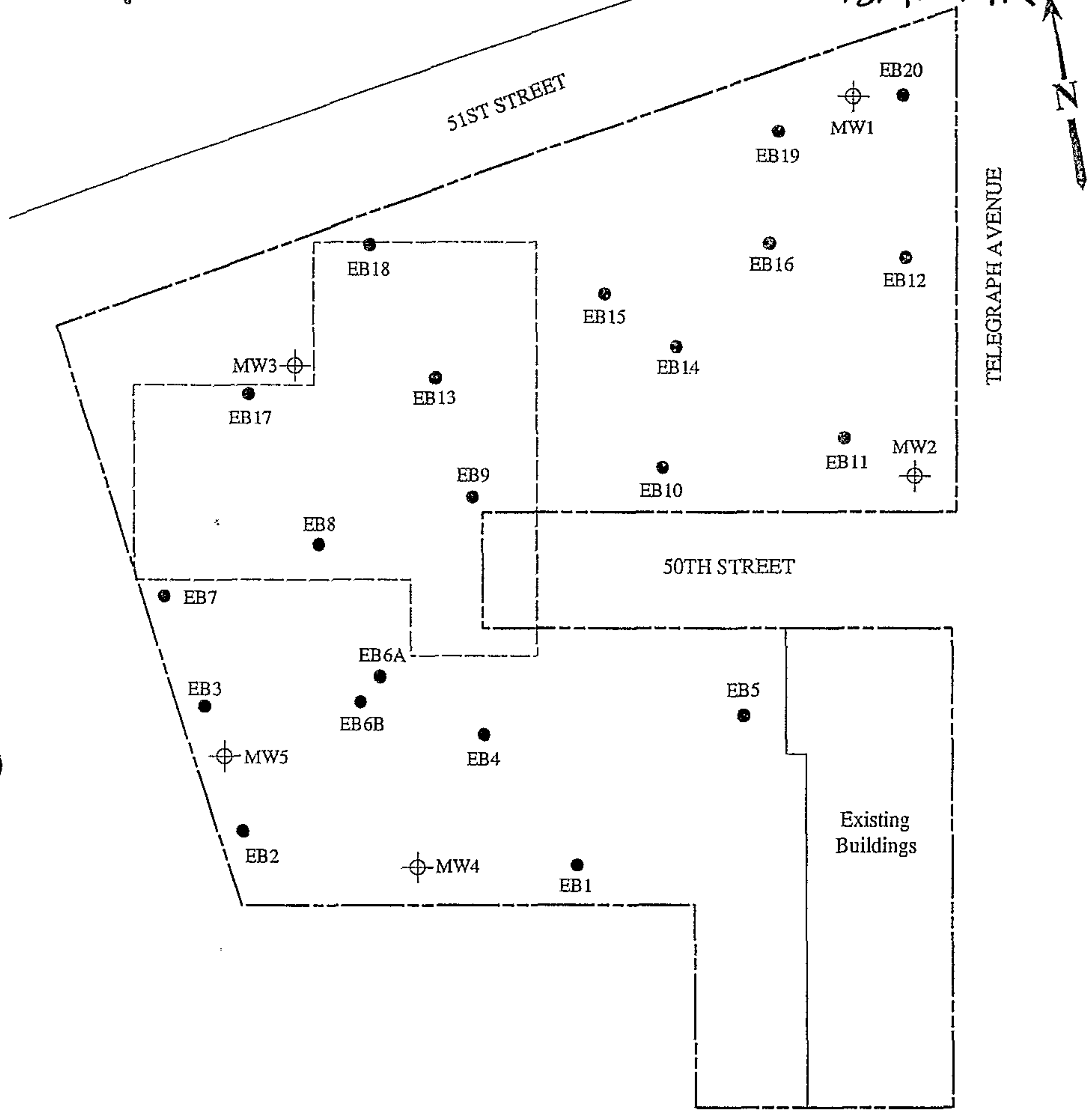
BERKELEY FARMS
51ST STREET & TELEGRAPH AVE.
OAKLAND, CALIFORNIA

LOCATION
MAP

4 of

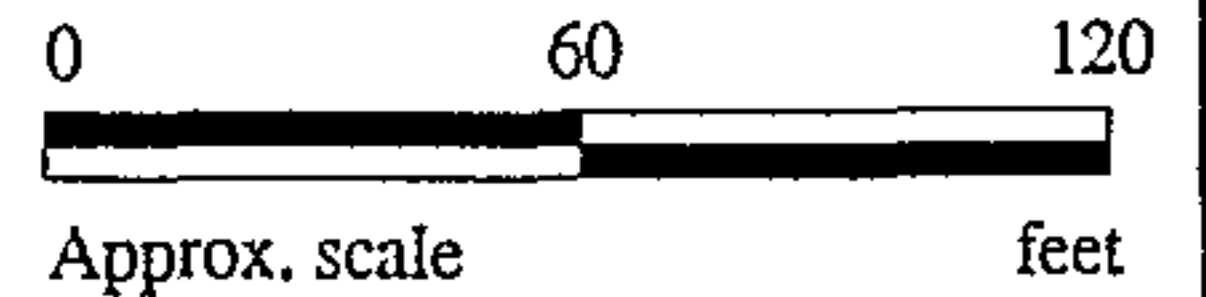
495596 A-U

1S/4W 14R



LEGEND

- Exploratory boring (by KEI)
- ⊕ Monitoring well (by others)



Base map modified from an Advanced Soil Technology Inc. site plan

EXPLORATORY BORING AND MONITORING WELL LOCATION MAP



**BERKELEY FARMS
51ST STREET & TELEGRAPH AVE.
OAKLAND, CALIFORNIA**

**FIGURE
1**



MAJOR DIVISIONS	SYMBOLS	TYPICAL SOIL DESCRIPTIONS
<u>GRAVELS</u> (More than 1/2 of coarse fraction > No. 4 sieve size)	GW	Well graded gravels or gravel - sand mixtures, little or no fines
	GP	Poorly graded gravels or gravel - sand mixtures, little or no fines
	GM	Silty gravels, gravel - sand - silt mixtures
	GC	Clayey gravels, gravel - sand - clay mixtures
<u>SANDS</u> (More than 1/2 of coarse fraction < No. 4 sieve size)	SW	Well graded sands or gravelly sands, little or no fines
	SP	Poorly graded sands or gravelly sands, little or no fines
	SM	Silty sands, sand - silt mixtures
	SC	Clayey sands, sand - clay mixtures
<u>SILTS & CLAYS</u> <u>LL < 50</u>	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL	Organic silts and organic silty clays of low plasticity
<u>SILTS & CLAYS</u> <u>LL > 50</u>	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silty clays, organic silts
HIGHLY ORGANIC SOILS	Pt	Peat and other highly organic soils

CLASSIFICATION CHART (Unified Soil Classification System)

646

495596A

1S/4W 14R

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By D.L.	JGG
	Casing Diameter	N/A		CEG 1633
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled	July 28, 1993
Boring No. EB1	Drilling Method	Solid-Stem Flight Auger	Drilling Company	Clear Heart Construction

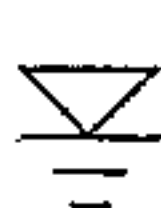
Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Silt, sand and gravel (fill).
			ML	Clayey silt, stiff, moist, very dark grayish brown.
7/13/17		5	CL	Sandy clay, trace gravel to 3/8 inch in diameter, very stiff, moist, dark yellowish brown.
12/15/22		10	GC	Clayey gravel with sand, medium dense to dense, moist, dark brown.
6/12/15		15	CL	Silty clay, estimated at 10-15% sand, locally with trace gravel, very stiff, moist, olive brown and dark yellowish brown, mottled.
		15	GC	Clayey gravel with sand, medium dense, very moist, olive brown.
TOTAL DEPTH: 15.5'				
		20		

696

995596B

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By JGG J.G. LEG 16 33
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 29, 1993
Boring No. EB2	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		
				Sand, silt, and gravel with bricks, concrete and debris (fill).
4/4/5		5	GP-GC	Poorly graded gravel with clay, estimated at 20% clay and 10% sand, angular gravel to 2.5 inches in diameter, moist, loose, brown (fill).
5/7/7		10	ML	Clayey silt, estimated at 20% clay and trace to 10% fine-grained sand, very stiff, wet to locally saturated, dark gray.
		15		Clayey silt, as above except saturated.
				TOTAL DEPTH: 15'
		20		

676

495596C

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By JGG LEO 1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 29, 1993
Boring No. EB3	Drilling Method	Soild-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Clayey gravel with sand, medium dense to dense, dry to slightly moist, light brown to brown (fill).
5/7/10		5	GP-GC	Poorly graded gravel with clay, estimated at 10-20% clay, medium dense, moist, brown, gravel to 1 inch in diameter (fill).
3/4/5		10	SP	Poorly graded sand, fine-grained, trace gravel, loose, moist, dark grayish brown.
		15	CL-SC	Sandy clay and clayey sand, very stiff/medium dense, moist, dark gray, very dark gray, and brown.
6/9/15		15	GP-GC	Poorly graded gravel with clay, estimated at 10% clay, medium dense, moist, greenish gray matrix, gravel very weathered and decomposed.
				TOTAL DEPTH: 16.5'
		20		

696

495596D

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By D.L.	JGG CEG1633
	Casing Diameter	N/A		
Project Name Berkeley Farms 51st. & Telegraph, Oakland		Well Cover Elevation N/A	Date Drilled July 28, 1993	
Boring No. EB4	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction	

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Silt, sand, and gravel, dense, dry to slightly, moist (fill).
			ML	Clayey silt, estimated at 35-45% clay, stiff, moist, very dark grayish brown to black.
7/13/19		5	GP-GC	Poorly graded gravel with clay, estimated at 15-30% clay, gravel to 1-1/2 inches in diameter, medium dense to dense, moist, very dark grayish brown.
			CL	Clay with silt, estimated at 5-10% gravel, very stiff, moist, olive brown and strong brown, mottled, with root holes.
9/12/19		10	ML	Clayey silt, estimated at 30-40% clay, trace sand, very stiff to hard, moist, olive brown and strong brown, mottled.
			CL	Sandy clay, very stiff to hard, moist, olive brown and strong brown, mottled, with iron oxide staining.
10/15/21		15		
TOTAL DEPTH: 15.5'				
		20		

676

495596E

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By D.L.	JGG CEG 1633
	Casing Diameter	N/A		
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 28, 1993	
	Boring No. EB5	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Silt, sand, and gravel, dense, dry to slightly moist (fill).
			ML	Clayey silt, estimated at 35-45% clay, stiff, moist, very dark grayish brown to black.
9/13/18		5	CL	Silty clay, trace fine-grained sand, very stiff to hard, moist, olive brown.
10/15/21		10	GC	Gravel with clay, estimated at 20-25% clay, angular to rounded gravel to 1-1/2 inches in diameter, medium dense to dense, moist, olive brown.
6/7/9		15	ML	Clayey silt, estimated at 10-15% sand, stiff to very stiff, moist, olive brown and strong brown, mottled.
				TOTAL DEPTH: 15.5'
		20		

676

495596F

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By JGC I.G. LEG 1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 29, 1993
	Boring No. EB6A	Drilling Method Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		
				Sand, silt, and gravel with concrete, bricks and debris (fill).
5/6/12-1"		5	GC	Gravel with clay and silt, estimated at up to 20% clay and silt and 10% sand, angular gravel to over 3 inches in diameter, moist, medium dense to very dense. Very slow drilling - concrete?
				TOTAL DEPTH: 5'7"
		10		
		15		
		20		

log

4955969

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By JGG J.G. CEG 1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 29, 1993
Boring No. EB6B	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		
				Sand, silt, and gravel with concrete, bricks and debris (fill).
		5	GC	Gravel with clay and silt, estimated at up to 20% clay and silt and 10% sand, angular gravel to over 3 inches in diameter, moist, medium dense to very dense.
				Poor recovery. Clayey gravel as above except loose.
		10		
7/4/3				Boulder.
		15	GC	Clayey gravel as above except saturated.
				TOTAL DEPTH: 15'
		20		

676

495596H

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By J.G. CEG 16 33
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 29, 1993
Boring No. EB7	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Sand, silt, and gravel with bricks, concrete, and debris (fill).
7/10/13		5	ML	Clayey silt, estimated at 10-15% clay and trace to 10% gravel, very stiff, slightly moist, iron-oxide staining, dark green and reddish brown, mottled.
9/12/25		10		Clayey silt as above except no gravel, moist, hard.
15/16/23		15	GP	Sandy gravel, estimated at 30% fine-grained sand and trace clay, dense, moist, grayish brown with iron-oxide staining, gravels highly weathered and decomposed.
				TOTAL DEPTH: 16'
		20		

696

495596J

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By JGG CEG 1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 27, 1993
	Boring No. EB9	Drilling Method Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Silt, sand, and gravel with brick, concrete, and debris (fill).
3/3/4		5	SP	Fine-grained sand, loose, brown (alluvium?)
4/4/6		10		Fine-grained sand as above except moist, mottled, iron-oxide staining.
7/12/11		15		Coarse-grained gravelly sand, medium dense, saturated.
				TOTAL DEPTH: 16'
		20		

676

495596K

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By J.G. CEG 1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 26, 1993
Boring No. EB10	Drilling Method	Enviro Core Percussion Soil Coring	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		
				Silt, sand, and gravel with brick, concrete, and debris (fill).
			ML	Clayey silt, estimated at 35-40% clay, stiff, moist, black.
		5	GM	[No sample recovery between 4 - 7 feet] Silty gravel with sand (fill). [No sample recovery between 7-10 feet]
		10	ML	Sandy silt, estimated at 5-10% clay, stiff, moist, olive brown.
		15	ML	Clayey silt, estimated at 5-10% gravel, stiff, moist, grayish brown and strong brown mottled.
				TOTAL DEPTH: 16'
		20		

696

495596L

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By JGG J.G. CEG 1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 28, 1993
	Boring No. EB11	Drilling Method Solid-stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		
		5		Silt, sand, and gravel, very dense, dry to moist, pocketed with black silty clay, with bricks and concrete debris (fill).
7/12/19		5	CL	Silty clay, estimated at 5-10% sand and gravel to 3/4 inch in diameter, hard, moist, very dark grayish brown, with strong iron-oxide staining.
		10	ML	Silt with clay, trace sand and gravel, very stiff, friable, moist, olive brown and grayish brown, mottled, with iron-oxide staining.
6/11/18		13.5	CL	Clay with silt, very stiff, moist, olive brown and strong brown mottled, with an estimated 10-15% sand below 13.5 feet.
7/13/20		15	CL	Silty clay, estimated 10-15% sand, very stiff to hard, moist, olive brown and strong brown, mottled.
TOTAL DEPTH: 16'				
		20		

495596M

676

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By JGG LEG 1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 30, 1993
	Boring No. EB12	Drilling Method Solid-Stem Flight Auger	Drilling Company Clear Heart Construction


Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Sand, silt, clay, and gravel with bricks, concrete, and debris (fill).
9/13/16		5	ML	Silt with clay, estimated at 15% clay, very stiff, slightly moist, greenish brown mottled with iron-oxide staining, disturbed?
9/17/19		10	GP	Silt as above, except trace to 10% clay, very moist, undisturbed.
			SM	Poorly graded gravelly sand, estimated at 40% subrounded gravel to 1/2 inch in diameter, medium dense, saturated, brown, with iron-oxide staining, sand is medium-grained.
8/8/11		15		
				TOTAL DEPTH: 16'
		20		

log

495596N

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By J.G. LE61633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 30, 1993
Boring No. EB13	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		
			GM	Silty gravel with sand, very dense, dry to moist, very dark grayish brown, pocketed with black silty clay (fill).
4/4/6		5	SM	Sand with silt and gravel, estimated at 20-30% silt, 10-15% gravel, and trace charcoal, medium dense, moist, brown (fill).
5/7/11		10	GM	Silty gravel with sand, estimated at 30% silt and 20% sand, pocketed with gray silty clay, medium dense, very moist, saturated at 11 feet, brown.
				TOTAL DEPTH: 11.5'
		15		
		20		

676

4955960

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By D.L.	JGG
	Casing Diameter	N/A		CEG1633
Project Name Berkeley Farms 51st. & Telegraph, Oakland		Well Cover Elevation N/A	Date Drilled July 28, 1993	
Boring No. EB14	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction	

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		
			ML	Silt, sand, and gravel, very dense, dry to moist, with bricks and concrete debris (fill).
4/4/5		5		Gravelly silt with sand, firm to stiff, moist, very dark grayish brown to black, disturbed (fill).
			CL	Sandy clay, estimated at 10-15% gravel, stiff to very stiff, moist, grayish brown and strong brown, mottled.
3/6/11		10		
				Silty clay, trace gravel, stiff to very stiff, moist, olive brown and strong brown, mottled.
5/9/16				
		15		TOTAL DEPTH: 13.5'
		20		

676

495596P

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By D.L.	J66
	Casing Diameter	N/A		CEG 1633
Project Name Berkeley Farms 51st. & Telegraph, Oakland		Well Cover Elevation	N/A	
		Date Drilled	July 28, 1993	
Boring No. EB15	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction	

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Silt, sand, and gravel, trace clay, dense to very dense, dry to moist, pocketed with black silty clay (fill).
5/7/9		5	GW	Well graded gravel with sand, estimated at 5-10% silt, loose to medium dense, slightly moist, very dark grayish brown (fill).
3/4/4		10	GM	(Very poor recovery.) Silty gravel with sand, pocketed with silty and clayey soils, loose, moist, variable color.
3/5/6		11.5		Silty gravel, as above except grading to wet, black below 11.5 feet, (fill).
				TOTAL DEPTH: 12.5'
		15		
		20		

696

4955961

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By J.G. JGG CFG 1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 29, 1993
	Boring No. EB8	Drilling Method Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Silt, sand, and gravel with bricks, concrete, glass, and other debris (fill).
4/5/5		5	SP	Gravelly sand, fine-grained, estimated at up to 40% gravel, glass, charcoal, and paper debris, loose, slightly moist, brown.
6/8/11		10	GC	(No recovery) (Poor recovery.) Clayey gravel with sand and debris, moist, dense, brown (fill).
12/14/20		14	SP	Gravelly sand, fine-grained, estimated at trace to 10% silt and clay, dense, very moist, orangish brown, with iron-oxide staining.
TOTAL DEPTH: 14'				

10076

495596Q

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By JGG I.G. CEG 1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 29, 1993
Boring No. EB16	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Silt, sand, and gravel, bricks, concrete, and other debris (fill).
5/7/8 (Slough in Sampler)		5	GM	Silty gravel with sand and clay, medium dense, moist, dark brown (fill). Sampler blocked by large gravel, poor recovery.
5/6/5				Sandy gravel, estimated at 30-40% sand and up to 10% silt, dense, moist, brown, gravel is angular, to 1-1/2 inches in diameter, wood fragments (fill).
9/11/12		10	CL	Gravelly clay, subrounded gravel to 1-1/2 inches in diameter, very stiff, moist, brown.
10/10/10			SP	Gravelly coarse-grained sand, medium dense, wet, brown, gravel is subrounded, to 1/2 inch in diameter.
6/6/7				TOTAL DEPTH: 12.5'
		15		
		20		

logs

4955 96 R

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By JGG CEG/633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 29, 1993
Boring No. EB17	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		
				Sand, gravel, and silt, with concrete, bricks, and debris (fill).
5/7/13		5	ML	Clayey silt with gravel, estimated at up to 20% subrounded gravel to 5/8 inch in diameter, very stiff, slightly moist, light brown.
8/10/13		10	GP	Poorly graded gravel with sand, estimated at 20-30% fine-grained sand and 5-10% silt and clay, gravel highly weathered and decomposed, medium dense, slightly moist, light brown, iron-oxide stained.
5/7/9		15	ML	Silt with sand and clay, estimated at 20% fine-grained sand and 15-20% clay, very stiff, very moist to wet, brown, mottled.
				TOTAL DEPTH: 16'
		20		

4955965

676

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By JGG D.L. CEG 1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 28, 1993
Boring No. EB18	Drilling Method	Solid-stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Silt, sand, and gravel with bricks and concrete debris (fill).
			ML	Clayey silt, estimated at 35-45% clay, stiff, moist, black.
5/7/13		5	CL	Silty clay, estimated at 10-15% sand and gravel to 3/8 inch in diameter, stiff to very stiff, moist, dark yellowish brown.
9/11/12		10	GM	Silty gravel with sand, trace clay, angular to rounded gravel to 1-3/4 inches in diameter, medium dense, moist, dark yellowish brown.
8/12/15		15		Silty gravel with sand, estimated at 15% silt and trace clay, medium dense, very moist, brown.
				TOTAL DEPTH: 15.5'
		20		

1276 495596T

BORING LOG

Project No. KEI-P93-0603	Boring Diameter 4"	Logged By JGG
	Casing Diameter N/A	D.L. CEG1633
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation N/A	Date Drilled July 28, 1993
Boring No. EB19	Drilling Method Solid-stem Flight Auger	Drilling Company Clear Heart Construction


Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		
			GM	Silt, sand, and gravel with bricks, concrete and other debris, very dense (fill).
3/3/4		5		[Very poor recovery at 4-1/2 feet, about 3 inches.] Silty gravel with sand, loose, moist, dark brown (fill).
3/4/4			ML	Sandy silt, firm to medium stiff, moist, dark brown, sand is fine-grained.
		10	GM	[Very poor recovery at 9-1/2 feet.] Silty gravel with sand.
5/5/6			SM	Silty sand, loose to medium dense, moist, dark brown.
			GW	Well graded gravel with sand, estimated at 5-10% silt, medium dense, moist, dark brown.
5/9/12		15	ML	Clayey silt, estimated at 5-10% sand, stiff to very stiff, moist, olive brown and strong brown, mottled.
				TOTAL DEPTH: 16'
		20		

4955960

6/6

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By J.G.
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 30, 1993
			JGG CEG 1633
Boring No. EB20	Drilling Method	Solid-stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Sand, silt, clay, and gravel with bricks, concrete, and debris (fill).
5/4/3		5	GP	Gravel with sand, estimated at 20-30% fine-grained sand, gravel to 3 inches in diameter, local pockets of silty clay, loose, slightly moist, brown (fill).
4/4/6		10	ML	Gravelly silt with sand, estimated at 30% gravel, 25% sand, and trace clay, stiff, moist, brown, gravel to 2 inches in diameter (fill).
13/19/14		15	GW	Gravel with silt and sand, estimated at up to 40% silt and sand and trace to 10% clay, wet to saturated, brown (fill).
				TOTAL DEPTH: 17.5'
		20		

CONFIDENTIAL

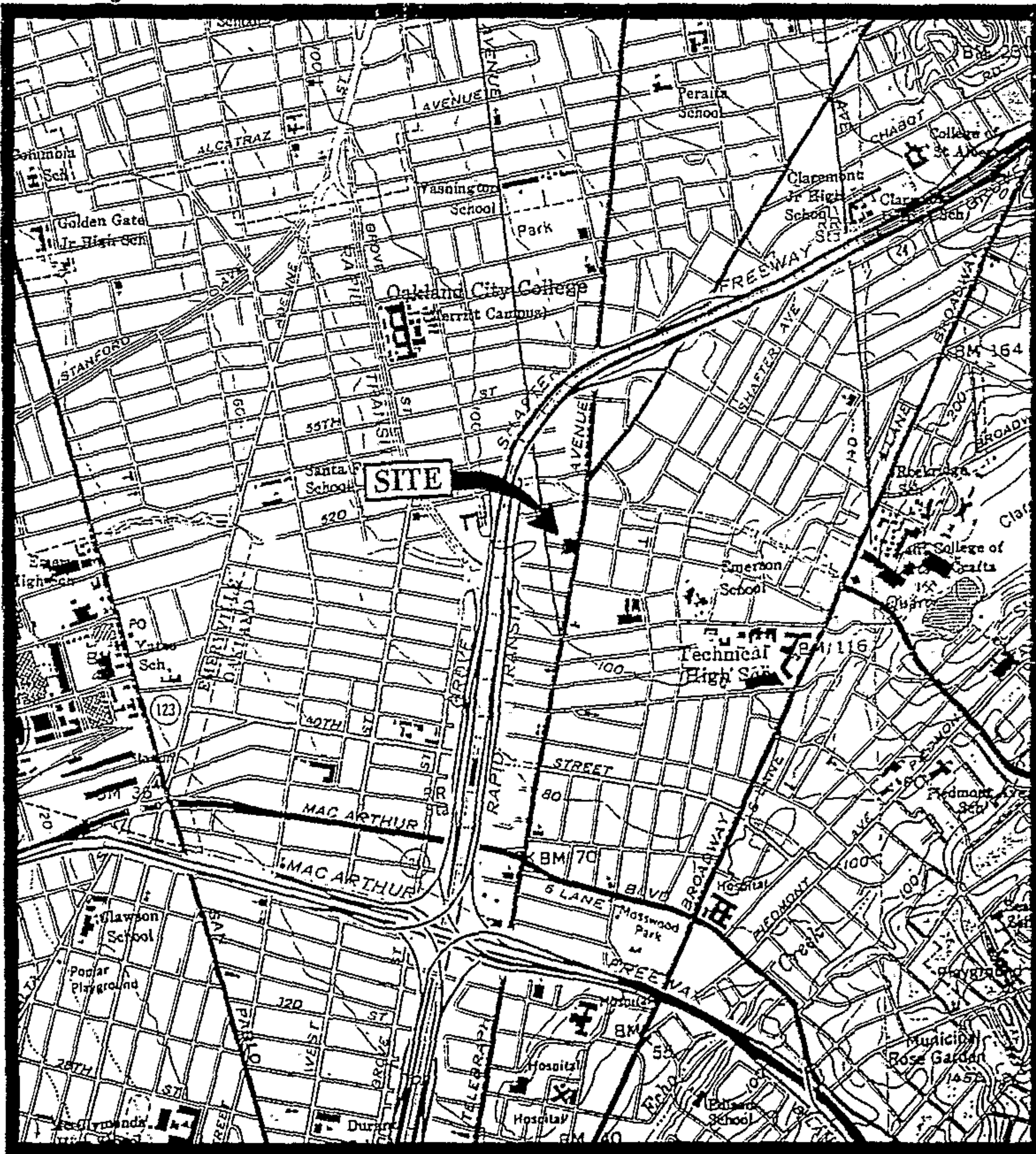
STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

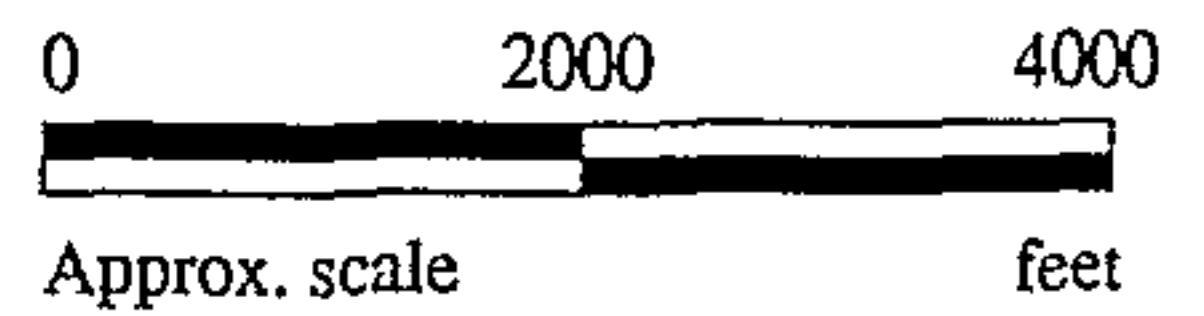
15/4W14R

295

495432A-U



Base modified from 7.5 minute U.S.G.S. Oakland East and West Quadrangles
(both photorevised 1980)

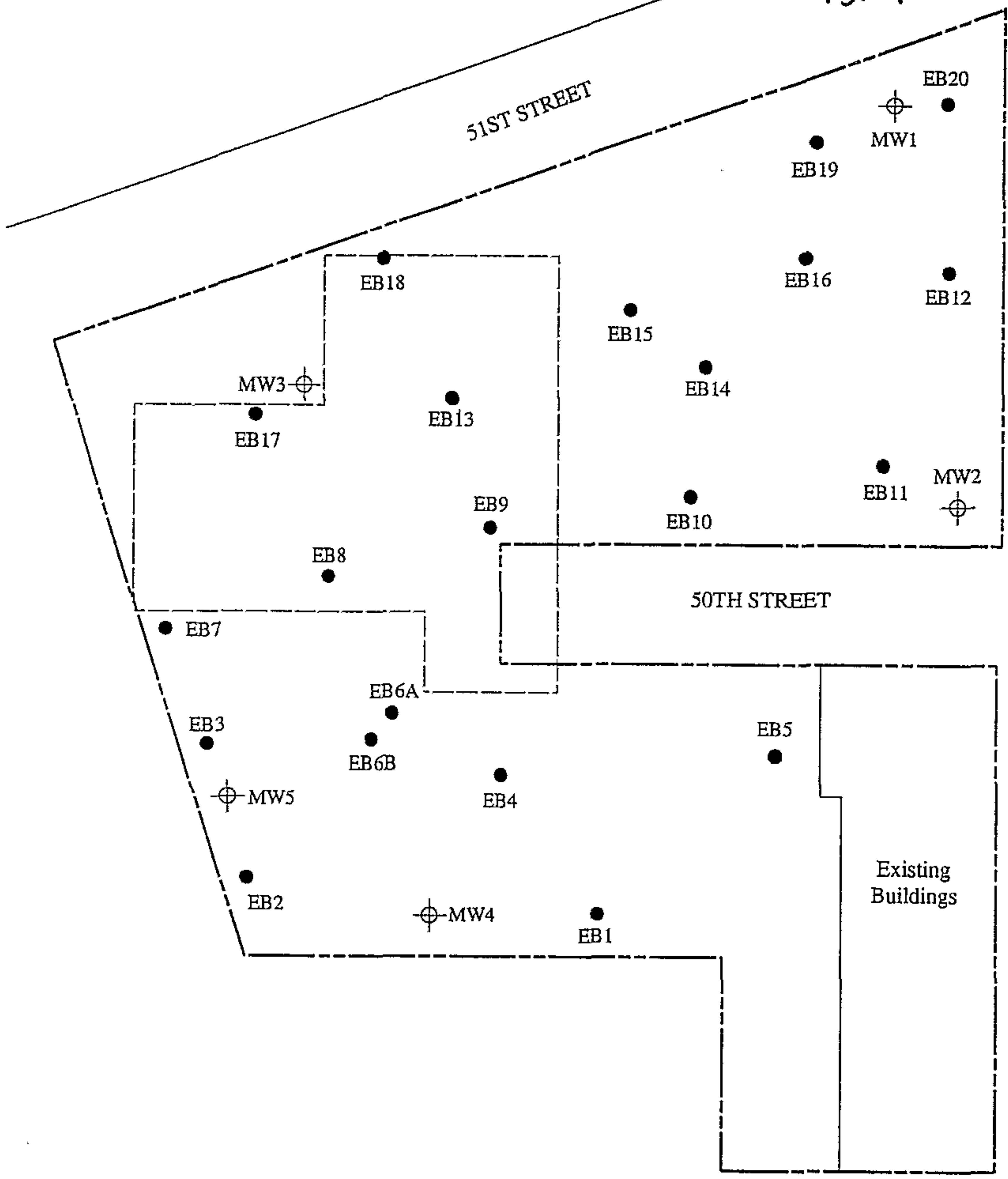


KEI
KAPREALIAN ENGINEERING
INCORPORATED

**BERKELEY FARMS
51ST STREET & TELEGRAPH AVE.
OAKLAND, CALIFORNIA**

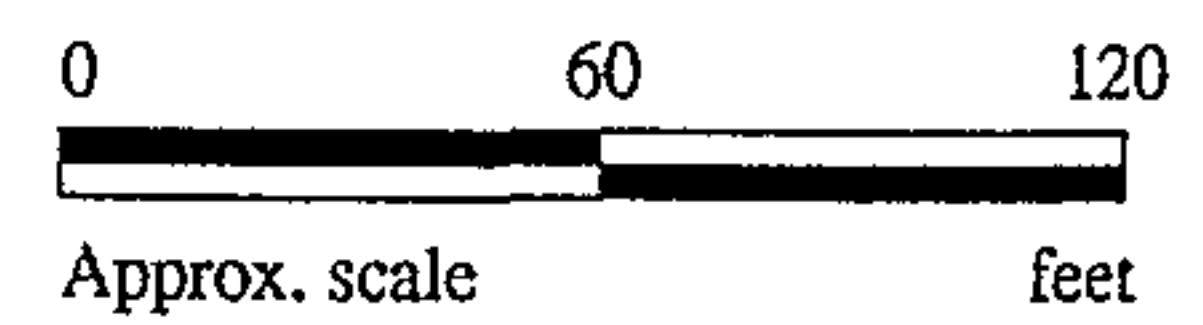
**LOCATION
MAP**

1S/4W 14R



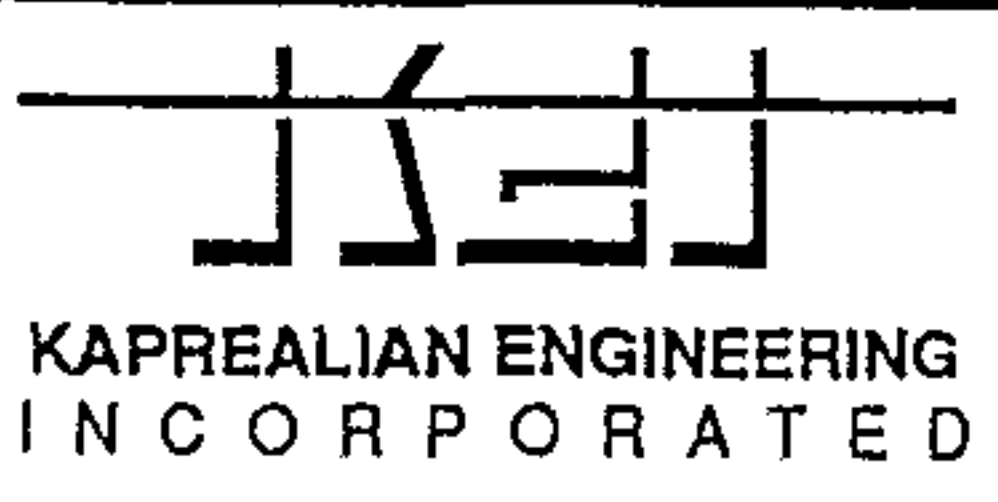
LEGEND

- Exploratory boring (by KEI)
- ⊕ Monitoring well (by others)



Base map modified from an Advanced Soil Technology Inc. site plan

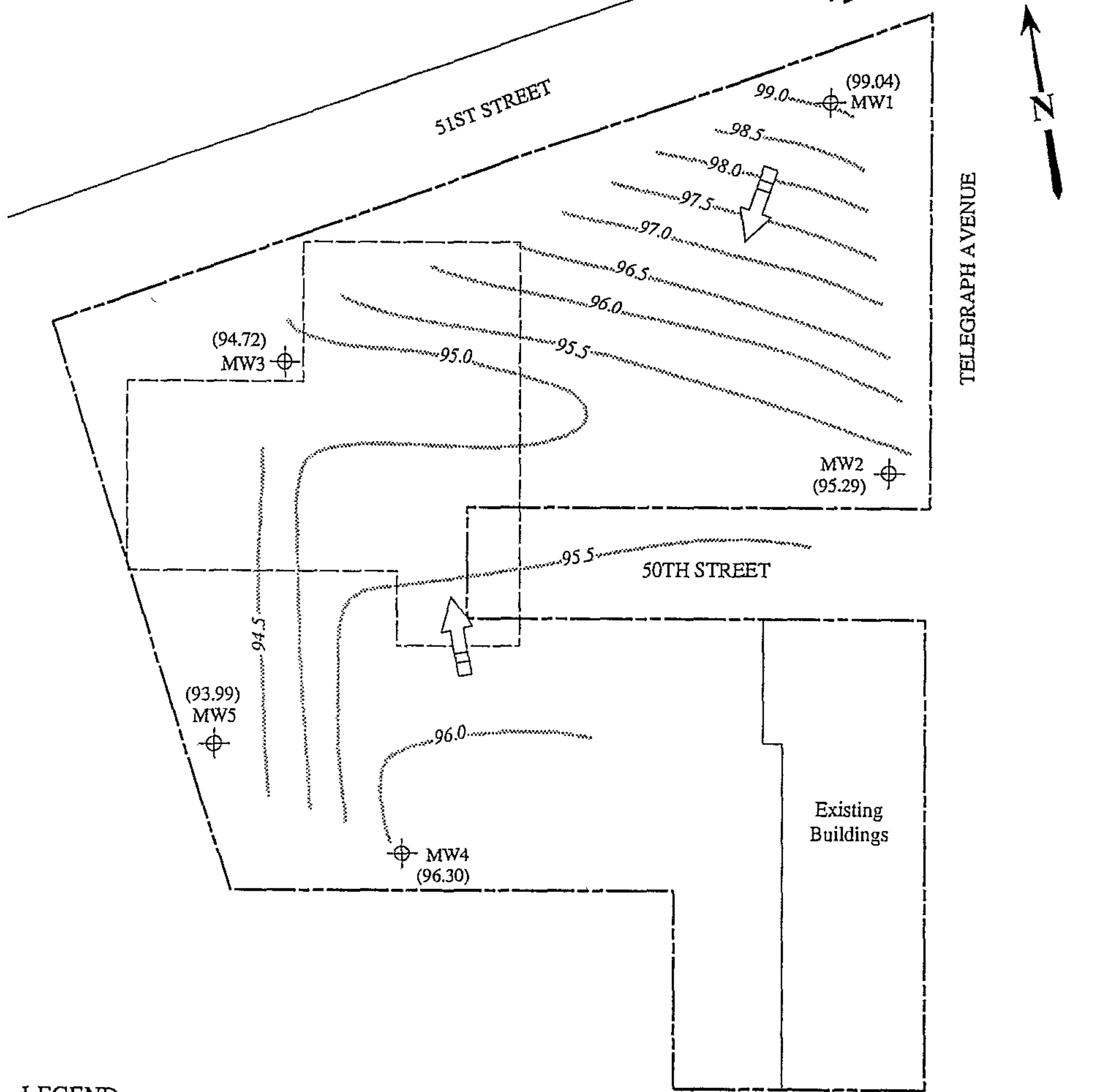
EXPLORATORY BORING AND MONITORING WELL LOCATION MAP



**BERKELEY FARMS
51ST STREET & TELEGRAPH AVE.
OAKLAND, CALIFORNIA**

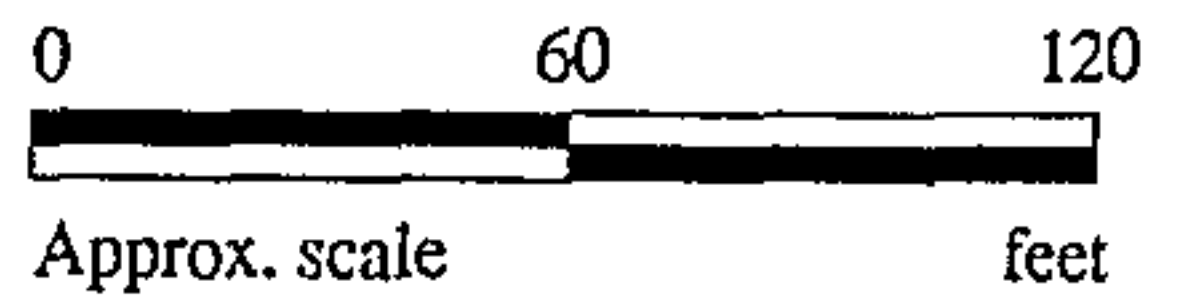
**FIGURE
1**

1S14W14R



LEGEND

- ⊕ Monitoring well
- () Ground water elevation in feet above Mean Sea Level
- ➔ Direction of ground water flow
- Contours of ground water elevation



Base map modified from an Advanced Soil Technology Inc. site plan

POTENTIOMETRIC SURFACE MAP FOR THE JUNE 29, 1993 MONITORING EVENT



**BERKELEY FARMS
51ST STREET & TELEGRAPH AVE.
OAKLAND, CALIFORNIA**

**FIGURE
2**

575

495432A

15/4W 14R

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By JGG D.L. CEG 1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 28, 1993
Boring No. EB1	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Silt, sand and gravel (fill).
			ML	Clayey silt, stiff, moist, very dark grayish brown.
7/13/17		5	CL	Sandy clay, trace gravel to 3/8 inch in diameter, very stiff, moist, dark yellowish brown.
12/15/22		10	GC	Clayey gravel with sand, medium dense to dense, moist, dark brown.
6/12/15		15	CL	Silty clay, estimated at 10-15% sand, locally with trace gravel, very stiff, moist, olive brown and dark yellowish brown, mottled.
		15	GC	Clayey gravel with sand, medium dense, very moist, olive brown.
TOTAL DEPTH: 15.5'				
		20		

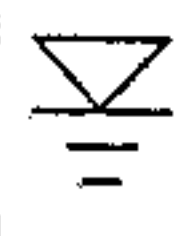
575

495432B

1S/4W 14R

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By J.G. CEG 1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 29, 1993
Boring No. EB2	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		
				Sand, silt, and gravel with bricks, concrete and debris (fill).
4/4/5		5	GP-GC	Poorly graded gravel with clay, estimated at 20% clay and 10% sand, angular gravel to 2.5 inches in diameter, moist, loose, brown (fill).
5/7/7		10	ML	Clayey silt, estimated at 20% clay and trace to 10% fine-grained sand, very stiff, wet to locally saturated, dark gray.
		15		Clayey silt, as above except saturated.
				TOTAL DEPTH: 15'
		20		

575

495432c

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By JGG I.G. CEG/633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 29, 1993
Boring No. EB3	Drilling Method	Soild-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Clayey gravel with sand, medium dense to dense, dry to slightly moist, light brown to brown (fill).
5/7/10		5	GP-GC	Poorly graded gravel with clay, estimated at 10-20% clay, medium dense, moist, brown, gravel to 1 inch in diameter (fill).
3/4/5		10	SP	Poorly graded sand, fine-grained, trace gravel, loose, moist, dark grayish brown.
		15	CL-SC	Sandy clay and clayey sand, very stiff/medium dense, moist, dark gray, very dark gray, and brown.
6/9/15		16.5	GP-GC	Poorly graded gravel with clay, estimated at 10% clay, medium dense, moist, greenish gray matrix, gravel very weathered and decomposed.
				TOTAL DEPTH: 16.5'
		20		

575

495432D

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By D.L.	JGG CEG1633
	Casing Diameter	N/A		
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 28, 1993	
Boring No. EB4	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction	

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Silt, sand, and gravel, dense, dry to slightly, moist (fill).
			ML	Clayey silt, estimated at 35-45% clay, stiff, moist, very dark grayish brown to black.
7/13/19		5	GP-GC	Poorly graded gravel with clay, estimated at 15-30% clay, gravel to 1-1/2 inches in diameter, medium dense to dense, moist, very dark grayish brown.
			CL	Clay with silt, estimated at 5-10% gravel, very stiff, moist, olive brown and strong brown, mottled, with root holes.
9/12/19		10	ML	Clayey silt, estimated at 30-40% clay, trace sand, very stiff to hard, moist, olive brown and strong brown, mottled.
			CL	Sandy clay, very stiff to hard, moist, olive brown and strong brown, mottled, with iron oxide staining.
10/15/21		15		
				TOTAL DEPTH: 15.5'
		20		

575

495432E

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By D.L.	JGG CEG 1633
	Casing Diameter	N/A		
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled	July 28, 1993
Boring No. EB5	Drilling Method	Solid-Stem Flight Auger	Drilling Company	Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Silt, sand, and gravel, dense, dry to slightly moist (fill).
			ML	Clayey silt, estimated at 35-45% clay, stiff, moist, very dark grayish brown to black.
9/13/18		5	CL	Silty clay, trace fine-grained sand, very stiff to hard, moist, olive brown.
10/15/21		10	GC	Gravel with clay, estimated at 20-25% clay, angular to rounded gravel to 1-1/2 inches in diameter, medium dense to dense, moist, olive brown.
6/7/9		15	ML	Clayey silt, estimated at 10-15% sand, stiff to very stiff, moist, olive brown and strong brown, mottled.
				TOTAL DEPTH: 15.5'
		20		

575

495482F

BORING LOG

Project No. KEI-P93-0603		Boring Diameter 4"	Logged By J.G. <i>JCG</i> <i>CEG 1633</i>	
Project Name Berkeley Farms 51st. & Telegraph, Oakland		Casing Diameter N/A	Date Drilled July 29, 1993	
Boring No. EB6A		Drilling Method Solid-Stem Flight Auger	Drilling Company Clear Heart Construction	
Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Sand, silt, and gravel with concrete, bricks and debris (fill).
5/6/12-1"		5	GC	Gravel with clay and silt, estimated at up to 20% clay and silt and 10% sand, angular gravel to over 3 inches in diameter, moist, medium dense to very dense (fill). Very slow drilling - concrete?
				TOTAL DEPTH: 5'7"
		10		
		15		
		20		

575

495432 9

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By J.G. CEG1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 29, 1993
Boring No. EB6B	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		
				Sand, silt, and gravel with concrete, bricks and debris (fill).
		5	GC	Gravel with clay and silt, estimated at up to 20% clay and silt and 10% sand, angular gravel to over 3 inches in diameter, moist, medium dense to very dense (fill).
7/4/3		10		Poor recovery. Gravel as above except loose.
		15	GC	Boulder. Gravel as above except saturated (fill?).
				TOTAL DEPTH: 15'
		20		

575

495432 H

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By J.G. CEG 16 33
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 29, 1993
	Boring No. EB7	Drilling Method Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Sand, silt, and gravel with bricks, concrete, and debris (fill).
7/10/13		5	ML	Clayey silt, estimated at 10-15% clay and trace to 10% gravel, very stiff, slightly moist, iron-oxide staining, dark green and reddish brown, mottled.
9/12/25		10		Clayey silt as above except no gravel, moist, hard.
15/16/23		15	GP	Sandy gravel, estimated at 30% fine-grained sand and trace clay, dense, moist, grayish brown with iron-oxide staining, gravels highly weathered and decomposed.
				TOTAL DEPTH: 16'
		20		

3 of 5

495482I

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By J.G. JGG CEG 1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 29, 1993
Boring No. EB8	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		
				Silt, sand, and gravel with bricks, concrete, glass, and other debris (fill).
4/5/5		5	SP	Gravelly sand, fine-grained, estimated at up to 40% gravel, glass, charcoal, and paper debris, loose, slightly moist, brown (fill).
6/8/11				(No recovery)
6/9/13		10	GC	(Poor recovery.) Clayey gravel with sand and debris, moist, dense, brown (fill).
12/14/20			SP	Gravelly sand, fine-grained, estimated at trace to 10% silt and clay, dense, very moist, orangish brown, with iron-oxide staining.
				TOTAL DEPTH: 14'
		15		
		20		

595

495432J

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By J.G. JGG CEG 1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 27, 1993
Boring No. EB9	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Silt, sand, and gravel with brick, concrete, and debris (fill).
3/3/4		5	SP	Fine-grained sand, loose, brown (alluvium?)
4/4/6		10		Fine-grained sand as above except moist, mottled, iron-oxide staining.
7/12/11		15		Coarse-grained gravelly sand, medium dense, saturated.
				TOTAL DEPTH: 16'
		20		

595

495422K

BORING LOG

Project No. KEI-P93-0603		Boring Diameter 4"	Logged By JGG J.G. CEG/633	
Project Name Berkeley Farms 51st. & Telegraph, Oakland		Casing Diameter N/A	Date Drilled July 26, 1993	
Boring No. EB10		Drilling Method Enviro Core Percussion Soil Coring	Drilling Company Clear Heart Construction	
Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Silt, sand, and gravel with brick, concrete, and debris (fill).
			ML	Clayey silt, estimated at 35-40% clay, stiff, moist, black (fill).
		5	GM	[No sample recovery between 4 - 7 feet] Silty gravel with sand (fill). [No sample recovery between 7-10 feet]
		10	ML	Sandy silt, estimated at 5-10% clay, stiff, moist, olive brown.
		15		Clayey silt, estimated at 5-10% gravel, stiff, moist, grayish brown and strong brown mottled.
				TOTAL DEPTH: 16'
		20		

575

495432 L

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By JG6 CEG/633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 28, 1993
	Boring No. EB11	Drilling Method Solid-stem Flight Auger	Drilling Company Clear Heart Construction


Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		
				Silt, sand, and gravel, very dense, dry to moist, pocketed with black silty clay, with bricks and concrete debris (fill).
7/12/19		5	CL	Silty clay, estimated at 5-10% sand and gravel to 3/4 inch in diameter, hard, moist, very dark grayish brown, with strong iron-oxide staining.
7/13/17		10	ML	Silt with clay, trace sand and gravel, very stiff, friable, moist, olive brown and grayish brown, mottled, with iron-oxide staining.
6/11/18			CL	Clay with silt, very stiff, moist, olive brown and strong brown mottled, with an estimated 10-15% sand below 13.5 feet.
7/13/20		15	CL	Silty clay, estimated 10-15% sand, very stiff to hard, moist, olive brown and strong brown, mottled.
				TOTAL DEPTH: 16'
		20		

575

495432M

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By JGG I.G. CEG 1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 30, 1993
Boring No. EB12	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction


Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Sand, silt, clay, and gravel with bricks, concrete, and debris (fill).
9/13/16		5	ML	Silt with clay, estimated at 15% clay, very stiff, slightly moist, greenish brown mottled with iron-oxide staining, disturbed?
9/17/19		10	GP	Silt as above, except trace to 10% clay, very moist, undisturbed.
				
8/8/11		15	SM	Poorly graded gravelly sand, estimated at 40% subrounded gravel to 1/2 inch in diameter, medium dense, saturated, brown, with iron-oxide staining, sand is medium-grained.
				TOTAL DEPTH: 16'
		20		

595

495432N

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By J.G. JGG LEG1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 30, 1993
Boring No. EB13	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		
			GM	Silty gravel with sand, very dense, dry to moist, very dark grayish brown, pocketed with black silty clay (fill).
4/4/6		5	SM	Sand with silt and gravel, estimated at 20-30% silt, 10-15% gravel, and trace charcoal, medium dense, moist, brown (fill).
		10	GM	Silty gravel with sand, estimated at 30% silt and 20% sand, pocketed with gray silty clay, medium dense, very moist, saturated at 11 feet, brown.
5/7/11				
				TOTAL DEPTH: 11.5'
		15		
		20		

575

495432φ

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By D.L.	JGG
	Casing Diameter	N/A		CEG1633
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 28, 1993	
	Boring No. EB14	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		
				Silt, sand, and gravel, very dense, dry to moist, with bricks and concrete debris (fill).
4/4/5		5	ML	Gravelly silt with sand, firm to stiff, moist, very dark grayish brown to black, disturbed (fill).
3/6/11		10	CL	Sandy clay, estimated at 10-15% gravel, stiff to very stiff, moist, grayish brown and strong brown, mottled.
5/9/16				Silty clay, trace gravel, stiff to very stiff, moist, olive brown and strong brown, mottled.
		15		
		20		
				TOTAL DEPTH: 13.5'

575

495432P

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By D.L.	JGC
	Casing Diameter	N/A		LEG/633
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled	July 28, 1993
Boring No. EB15	Drilling Method	Solid-Stem Flight Auger	Drilling Company	Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Silt, sand, and gravel, trace clay, dense to very dense, dry to moist, pocketed with black silty clay (fill).
5/7/9		5	GW	Well graded gravel with sand, estimated at 5-10% silt, loose to medium dense, slightly moist, very dark grayish brown (fill).
3/4/4		10	GM	(Very poor recovery.) Silty gravel with sand, pocketed with silty and clayey soils, loose, moist, variable color (fill).
3/5/6		11.5		Silty gravel, as above except grading to wet, black below 11.5 feet, (fill).
				TOTAL DEPTH: 12.5'
		15		
		20		

575

495432Q

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By JGG J.G. CEG 1633
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 29, 1993
Boring No. EB16	Drilling Method	Solid-Stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Silt, sand, and gravel, bricks, concrete, and other debris (fill).
5/7/8 (Slough in Sampler)		5	GM	Silty gravel with sand and clay, medium dense, moist, dark brown (fill).
5/6/5				Sampler blocked by large gravel, poor recovery.
9/11/12		10	CL SP	Sandy gravel, estimated at 30-40% sand and up to 10% silt, dense, moist, brown, gravel is angular, to 1-1/2 inches in diameter, wood fragments (fill).
10/10/10				Gravelly clay, subrounded gravel to 1-1/2 inches in diameter, very stiff, moist, brown.
6/6/7				Gravelly coarse-grained sand, medium dense, wet, brown, gravel is subrounded, to 1/2 inch in diameter.
				TOTAL DEPTH: 12.5'
		15		
		20		

5 of 5

495432 R

BORING LOG

Project No. KEI-P93-0603		Boring Diameter 4"		Logged By JGG CEG 1633	
		Casing Diameter N/A		J.G.	
Project Name Berkeley Farms 51st. & Telegraph, Oakland		Well Cover Elevation N/A		Date Drilled July 29, 1993	
Boring No. EB17		Drilling Method Solid-Stem Flight Auger		Drilling Company Clear Heart Construction	
Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description	
		0		Sand, gravel, and silt, with concrete, bricks, and debris (fill).	
			ML	Clayey silt with gravel, estimated at up to 20% subrounded gravel to 5/8 inch in diameter, very stiff, slightly moist, light brown.	
5/7/13		5			
			GP	Poorly graded gravel with sand, estimated at 20-30% fine-grained sand and 5-10% silt and clay, gravel highly weathered and decomposed, medium dense, slightly moist, light brown, iron-oxide stained.	
8/10/13		10			
			ML	Silt with sand and clay, estimated at 20% fine-grained sand and 15-20% clay, very stiff, very moist to wet, brown, mottled.	
5/7/19		15			
TOTAL DEPTH: 16'					
		20			

575

4954325

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By D.L.	JGG
	Casing Diameter	N/A		CEG 1633
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled	July 28, 1993
Boring No. EB18	Drilling Method	Solid-stem Flight Auger	Drilling Company	Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		
				Silt, sand, and gravel with bricks and concrete debris (fill).
			ML	Clayey silt, estimated at 35-45% clay, stiff, moist, black.
5/7/13		5	CL	Silty clay, estimated at 10-15% sand and gravel to 3/8 inch in diameter, stiff to very stiff, moist, dark yellowish brown.
9/11/12		10	GM	Silty gravel with sand, trace clay, angular to rounded gravel to 1-3/4 inches in diameter, medium dense, moist, dark yellowish brown.
8/12/15		15		Silty gravel with sand, estimated at 15% silt and trace clay, medium dense, very moist, brown.
				TOTAL DEPTH: 15.5'
		20		

575

495432T

BORING LOG


Project No. KEI-P93-0603		Boring Diameter 4"	Logged By JGG D.L. CEG1633	
Project Name Berkeley Farms 51st. & Telegraph, Oakland		Casing Diameter N/A	Date Drilled July 28, 1993	
Boring No. EB19		Drilling Method Solid-stem Flight Auger	Drilling Company Clear Heart Construction	
Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		
				Silt, sand, and gravel with bricks, concrete and other debris, very dense (fill).
3/3/4		5	GM	[Very poor recovery at 4-1/2 feet, about 3 inches.] Silty gravel with sand, loose, moist, dark brown (fill).
3/4/4			ML	Sandy silt, firm to medium stiff, moist, dark brown, sand is fine-grained.
3/3/4		10	GM	[Very poor recovery at 9-1/2 feet.] Silty gravel with sand.
5/5/6			SM	Silty sand, loose to medium dense, moist, dark brown.
			GW	Well graded gravel with sand, estimated at 5-10% silt, medium dense, moist, dark brown.
5/9/12		15	ML	Clayey silt, estimated at 5-10% sand, stiff to very stiff, moist, olive brown and strong brown, mottled.
				TOTAL DEPTH: 16'
		20		

5-75

4954300

BORING LOG

Project No. KEI-P93-0603	Boring Diameter	4"	Logged By J.G.
	Casing Diameter	N/A	
Project Name Berkeley Farms 51st. & Telegraph, Oakland	Well Cover Elevation	N/A	Date Drilled July 30, 1993 <i>JGG</i> <i>CEG 1633</i>
Boring No. EB20	Drilling Method	Solid-stem Flight Auger	Drilling Company Clear Heart Construction

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Sand, silt, clay, and gravel with bricks, concrete, and debris (fill).
5/4/3		5	GP	Gravel with sand, estimated at 20-30% fine-grained sand, gravel to 3 inches in diameter, local pockets of silty clay, loose, slightly moist, brown (fill).
4/4/6		10	ML	Gravelly silt with sand, estimated at 30% gravel, 25% sand, and trace clay, stiff, moist, brown, gravel to 2 inches in diameter (fill).
13/19/14		15	GW	Gravel with silt and sand, estimated at up to 40% silt and sand and trace to 10% clay, wet to saturated, brown (fill).
				TOTAL DEPTH: 17.5'
		20		

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(After 7.5 minute U.S.G.S Oakland West, California Quadrangel Map, photorevised 1980)

Artesian Environmental Consultants

3715 Kerner Blvd., Suite E
San Rafael, CA 94901
TEL (415) 257-4801
FAX (415) 257-4805

PROPERTY LOCATION MAP

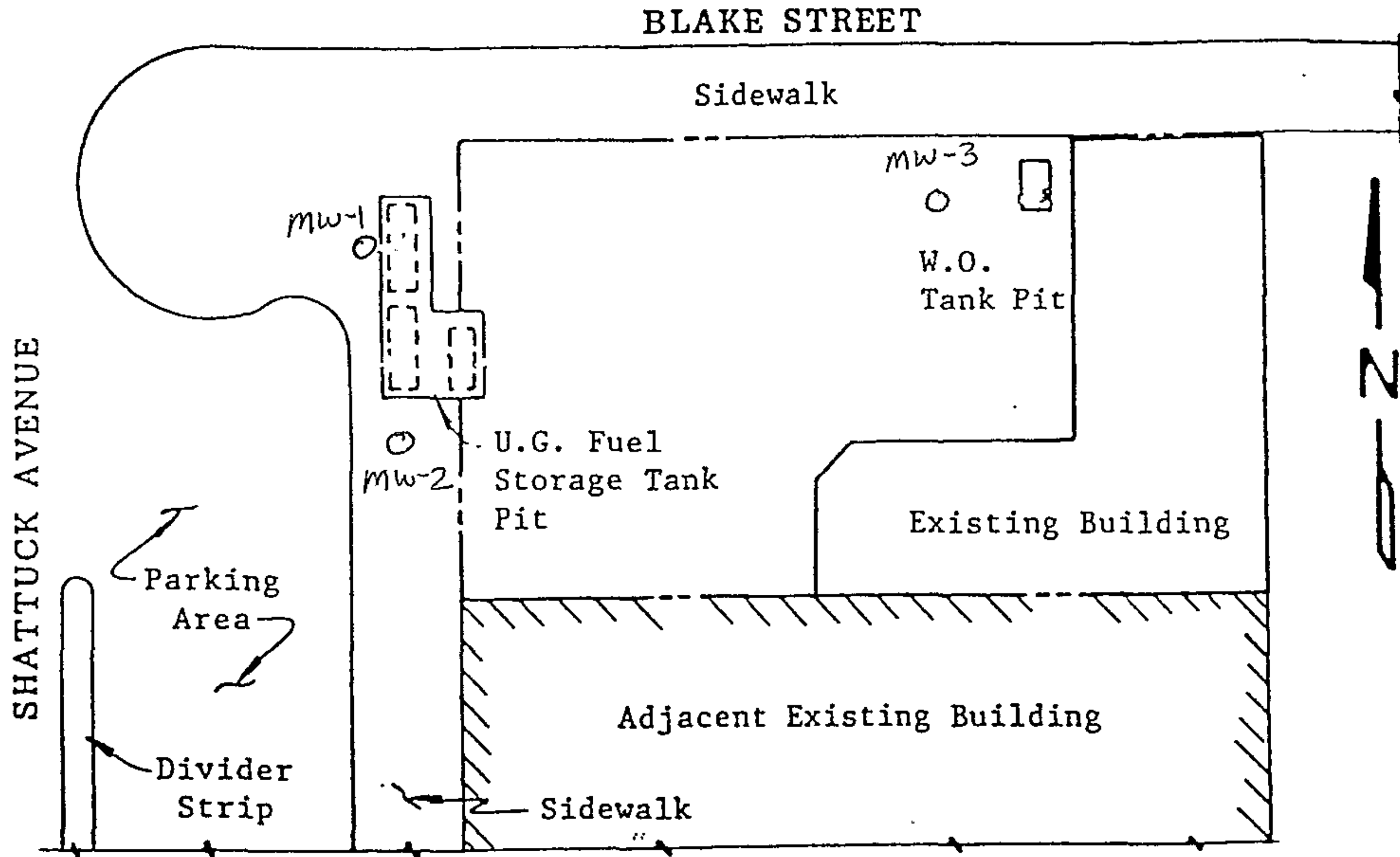
Flynn Trust
2555 Shattuck Avenue
Berkeley, California

Project No 022-007-01

9/10/92

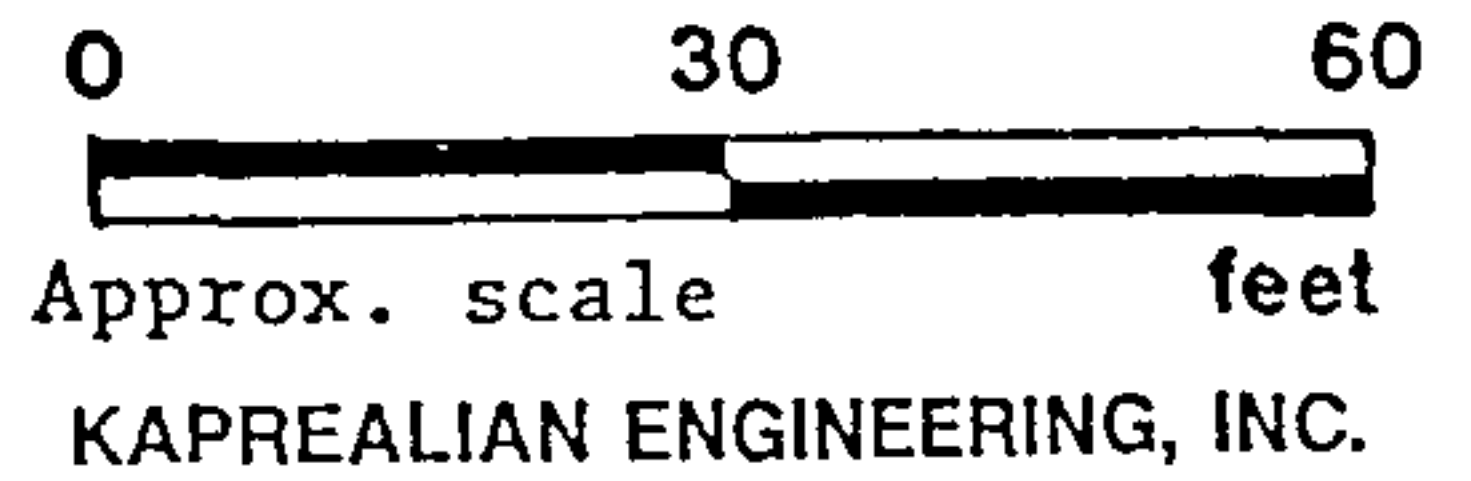
Drawn by: OPJ

Figure No. 1



SITE PLAN
Figure 1

LEGEND



Paradiso Construction
Wells Fargo Bank/Berkeley Toyota
2555 Shattuck Avenue
Berkeley, CA

434111A

15/4W 11B5

FIELD LOG OF BORING (CONTINUED)

SHEET 2 OF 2

DEPTH	TYPE	BLOWS	DRIVEN	REC'D	COND.	D.RATE	PI/D	Time	Sample	DEPTH	GRAPHIC LOG	PROJECT: 044-07	NO. 01	BORING NO. B-1	
		11	6	6						11'	Medium brown gravelly, clayey, medium sand, (SC) low plasticity - gravels fine upward till absent				
		17	6	6			0.0	17:37	B-1-11.0	12'					
										3'					
										4'					
		6	6	4						15'	1 st water				
		12	6	6						6'	Brown clayey gravelly medium sand (SW) low plasticity, very tight,				
		11	6	6				17:42		7'					
										8'					
										9'					
		4	6	6						20'	Brown silty, clay (CL) high plasticity wet, saturated fractures and rootlets				
		5	6	6						1'					
		6	6	6						2'					
										3'					
										4'					
		5	6	6						5'	Brown clayey fine sand (SC) medium plasticity occasional gravel and coarse sand mixes (3%) moist saturated fractures, tight				
		7	6	6						6'					
		12	6	6						7'					
										8'					
										9'					
										0'					

15/4W 11B 5

43411A
MONITORING WELL INSTALLATION REPORT

Date: 10/7/92
 Premise Address: 2555 SHATTUCK AVE.
 Well No.: MW-2
 Inspector: _____
 Permit No. _____
 Drilling Company: GUESS DRILLING
 Driller: EA SUOBODA
 Consultant: A. E. C.
 Geologist: MATTHEW WALRAVEN

CONSTRUCTION

Total Depth 25.0'
 Screen Length (from) 25.0 (to) 10.0
 Filter Pack (from) 25.0 (to) 8.0
 Bentonite (from) 8.0 (to) 7.0
 Grout (from) 7.0 (to) 0.0
 Drilling rig type B-53 MOBILE
 Auger O.D. 8' I.D. 5'
 Completion - Stove pipe/christie box (circle one)

SPECIAL PERMIT INFO.

Distance to sewer line _____
 Domestic well on site - (y/n) _____
 If yes, location and distance - _____

SAMPLING

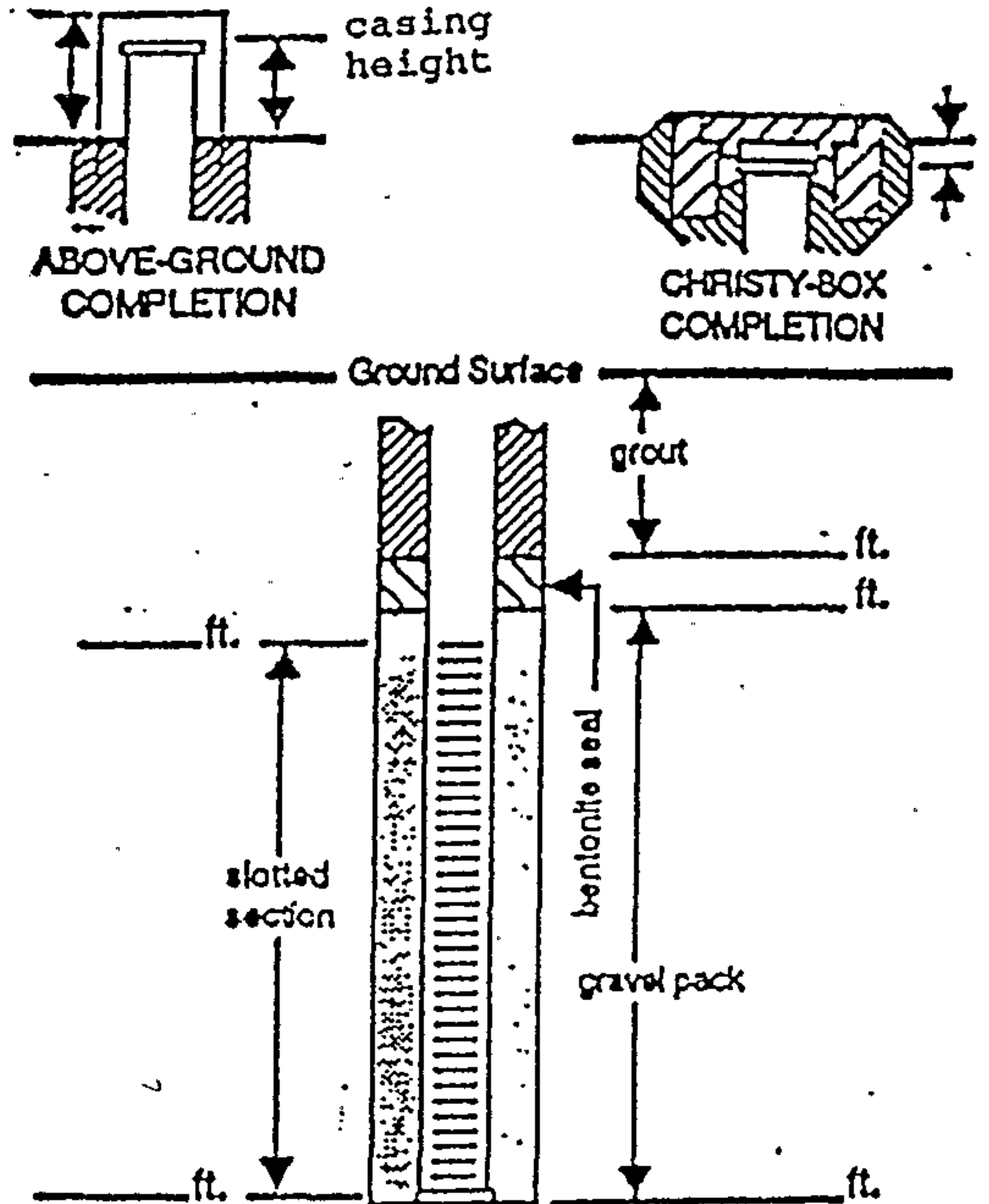
Holding Temperature 0, ON ICE
 Method CA, SPLIT SPOON
 Screening Method P.I.D.
 Tracking Sheet - (y/n) _____

SPOILS

Storage Method DOT-17 SS gal drums
 Contamination Noted - (y/n) _____
 Storage Location SIDE OF BUILDING

GROUTING

Depth to water 16.0'
 Mix Ratios 5:1
 Installation Method GRAVITY POUR
 Quantity Installed _____



MATERIALS/DEVELOPMENT

Casing type SCHEDULE 40 PVC
 Blank 10 ft. Screen 15' ft.
 Slot size .020
 Bags cement _____
 Buckets bentonite 1/2
 Bags sand/gravel 6
 Filter Pack type/size LS #3 SAND
 Surge Block: - (y/n) _____
 Discussed with geologist: - (y/n) _____
 Type of method _____

434110

15/4W/11065767

Date: 10-7-92

Premise Address: 2555 SHATTUCK AVE, BERKELEY

Well No.: MW-3

Inspector: _____

Permit No. _____

Drilling Company: GUESS DRILLING

Driller: ED SVOBODA & GREG

Consultant: ARTESIAN ENVIRONMENTAL CONSULTANTS

Geologist: MATTHEW WALRAVEN

CONSTRUCTION

Total Depth 25.0

Screen Length (from) 10 (to) 25

Filter Pack (from) 25 (to) 8'

Bentonite (from) 8 (to) 7

Grout (from) 7 (to) 0

Drilling rig type B-53 MOBILE DRILL

Auger O.D. 8' I.D. 5'

Completion - Stove pipe/christie box (circle one)

SPECIAL PERMIT INFO.

Distance to sewer line _____

Domestic well on site - (y/n) _____

If yes, location and distance - _____

SAMPLING

Holding Temperature 0° C ON ICE

Method 2" BRASS TUBES

Screening Method _____

Tracking Sheet - (y/n) P.I.D.

SPOILS

Storage Method DOT 17 DRUMS

Contamination Noted - (y/n) _____

Storage Location BEHIND BUILDING

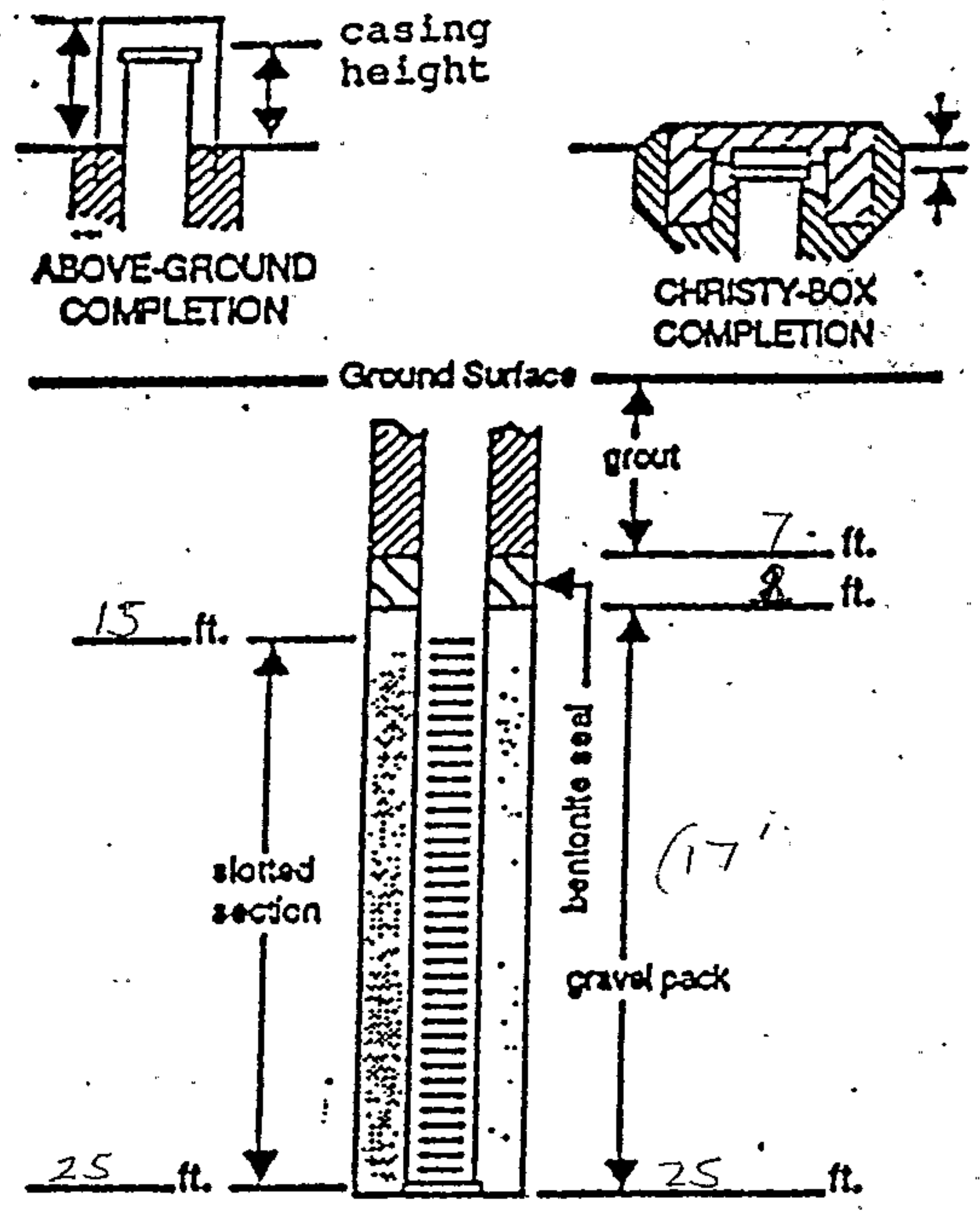
GROUTING

Depth to water _____

Mix Ratios _____

Installation Method _____

Quantity Installed _____



MATERIALS/DEVELOPMENT

Casing type SC40 PVC, THREADED

Blank 10 ft. Screen 15' ft.

Slot size .020

Bags cement _____

Buckets bentonite 1/2 BUCKET

Bags sand/gravel 15; #0096 sacks -

Filter Pack type/size 1.5# 3 P.I. S.M.

Surge Block: - (y/n) _____

Discussed with geologist: - (y/n) _____

Type of method Surge & purge prior to sampling

43411C

15/4W 11B 7

FIELD LOG OF BORING

SHEET _____ OF _____

LOCATION OF BORING:

PROJECT:		BORING NO. B-3
		TOTAL DEPTH:
JOB NO.:	LOGGED BY:	
PROJ. MGR.:	EDITED BY:	
DRILLING CONTRACTOR: GUESS		
DRILL RIG TYPE: B-53 Mobile Drill		
DRILLERS NAME: Ed Svoboda		
SAMPLING METHODS: 18" CA Split Spoon		
HAMMER WT.: 140 lb	DROP: 30"	
STARTED, TIME: 9:30	DATE: 10/7/92	
COMPLETED, TIME: 10:30	DATE: 10/7/92	

DEPTH IN FEET	DEPTH IN FEET	SAMPLE DEPTH	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	SAMPLE CONDITION	DRILLING RATE (min/ft)	P/D	Time	Sample ID
1											
2											
3											
4											
5				5	6	3					
6				8	6	6					
6				9	6	6				9:45	B-3-6
7								0.0			
8											
9											
10											

BORING DEPTH (ft.)	26.5'		
CASING DEPTH (ft.)	25.0'		
WATER DEPTH (ft.)			
TIME:			
DATE:			
BACKFILLED, TIME:		DATE:	BY:
SURFACE ELEV.:		DATUM:	
CONDITIONS:			
Asphaltic concrete - thin & weak layers			
Dark brown loamy, silty clay			
(Fill)			
Lt brown, granulely, sandy clay			
Lt brown, fine sandy silty clay (CL) medium plasticity			
moist - organic traces (black) in fractures & root lets			

43411C

15/4W 11B7

FIELD LOG OF BORING (CONTINUED)

SHEET _____ OF _____

DEPTH	TYPE	BLOWS	DRIVEN	REC'D	COND.	D.RATE	PID	Time	Sample	DEPTH	GRAPHIC LOG	PROJECT:	NO.	BORING NO.
		4	6	5						1	<p>lt brown ^{and medium} coarse sandy clay (CH) high plasticity very moist - no odor - no stain</p>			
		5	6	6			6.0	9:55	B-3-11	12				
										3	Gravel lens (from cuttings) vadose zone? saturated?			
										4	first water (uncertain)			
		4	6	5						5	<p>lt brown, gravelly, fine sand, clay (Ch) high plasticity, wet, gravel to 1cm dia., low sphericity, medium rounded lt brown, clayey, fine sand, (se) high plasticity, moist</p>			
		5	6	6				10:00	15.5	6				
		6	6	6						7				
										8				
										9				
		5								20	<p>lt brown gravelly clayey fine sand (Ch) high plasticity, saturated yellow brown clayey gravelly, medium sand (SW) saturated</p>			
		10								1				
		14						10:10		2				
										3				
										4				
										2.5	<p>lt brown clean gravelly coarse sand (SW) saturated</p>			
		8	6	6						6				
		12	6	6						6				
		16	6	0				10:20		7	Boring Terminated			
										8				
										9				
										0				

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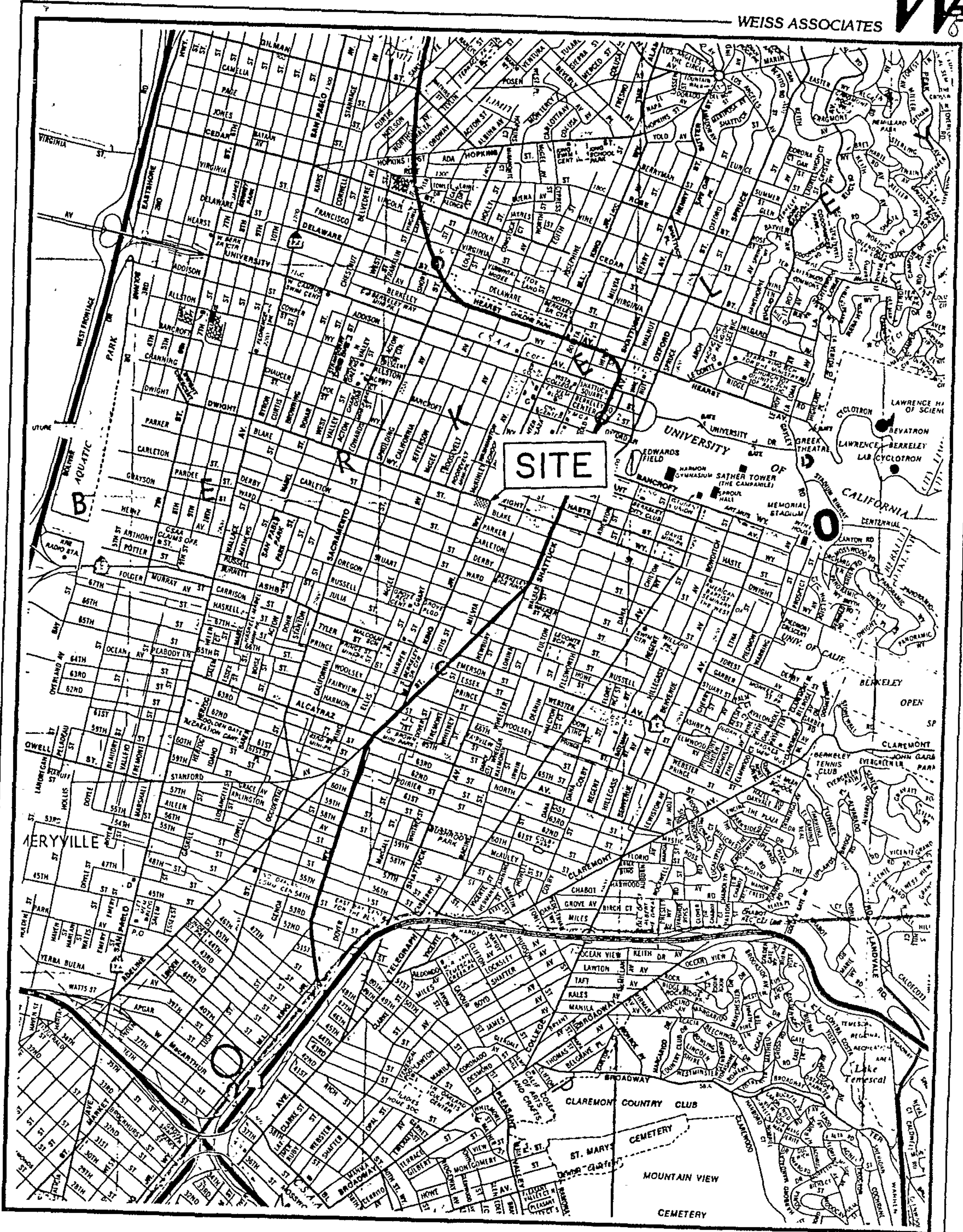


Figure 1. Site Location Map - Chevron Facility 4485, Berkeley, CA.

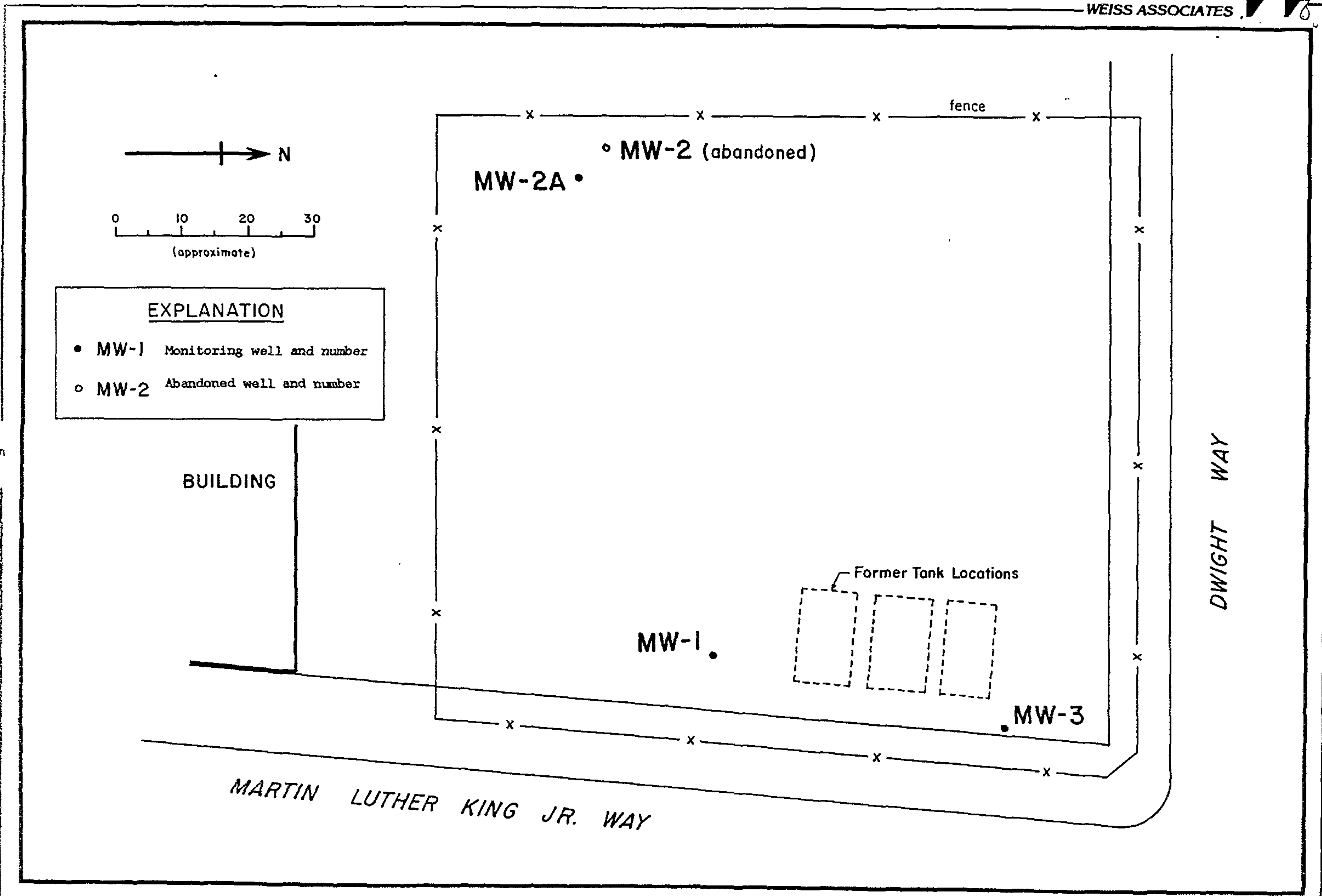
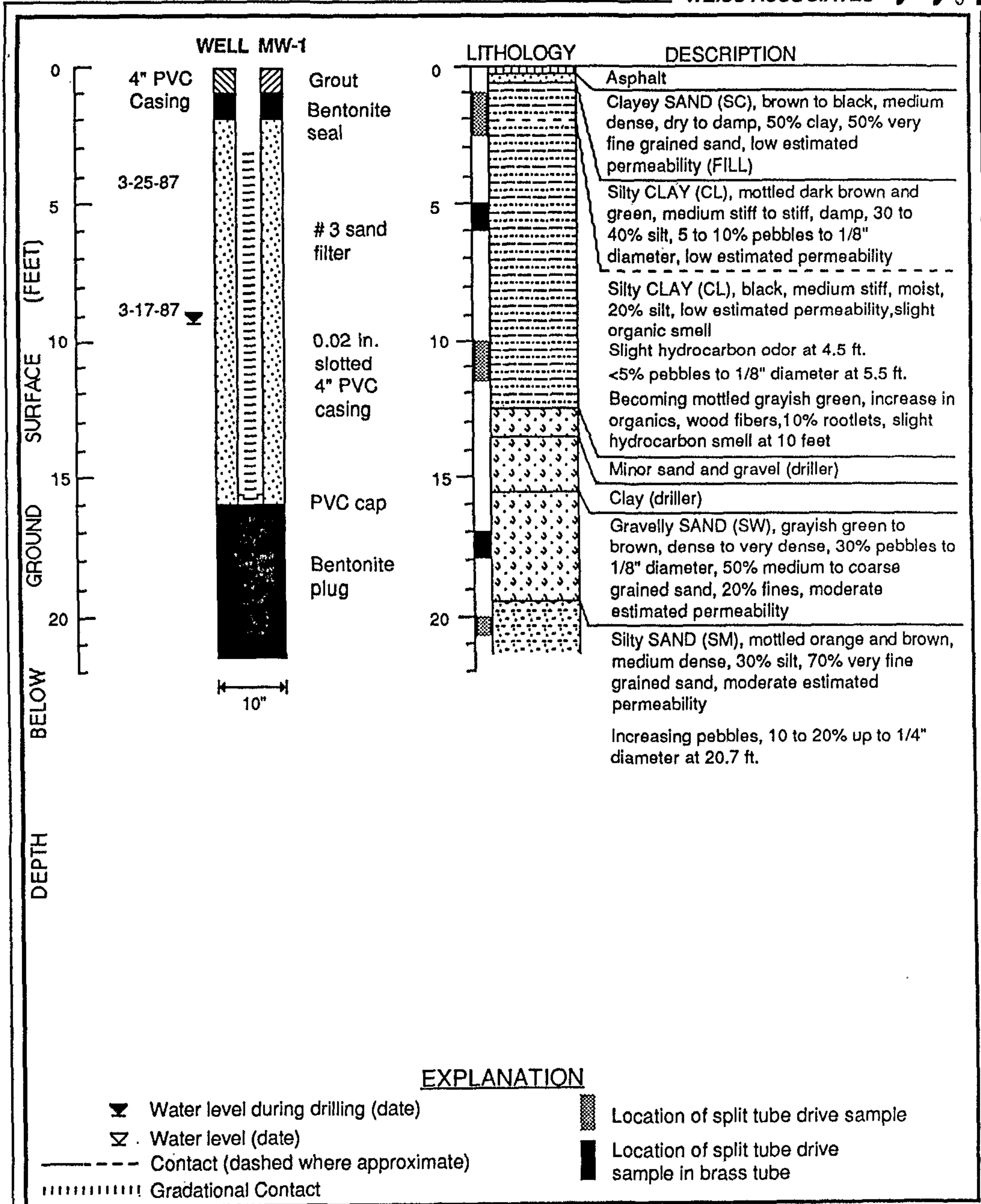


Figure 2. Monitoring Well Locations

179011



Well Construction Details and Subsurface Lithology - Well MW-1

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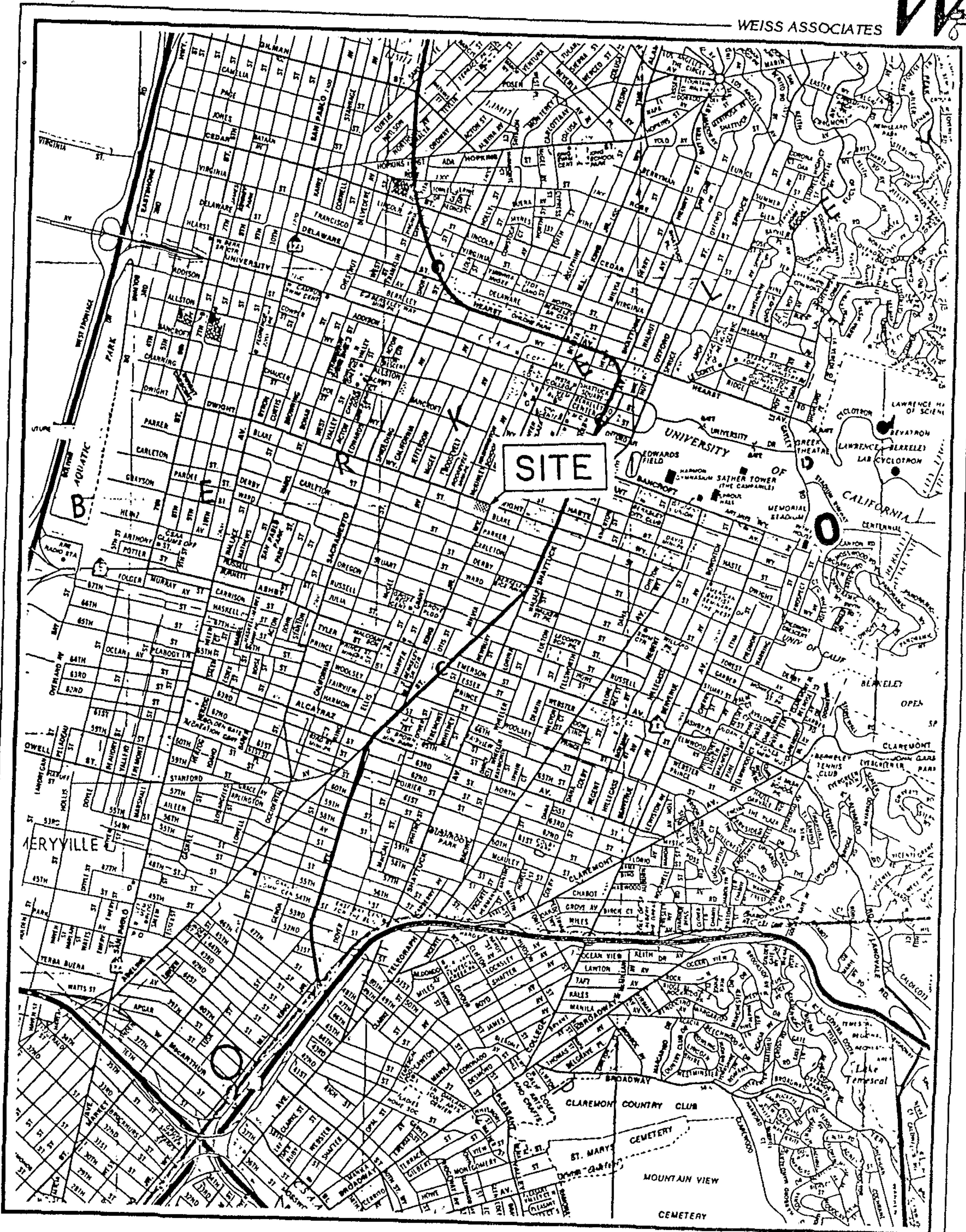


Figure 1. Site Location Map - Chevron Facility 4485, Berkeley, CA.

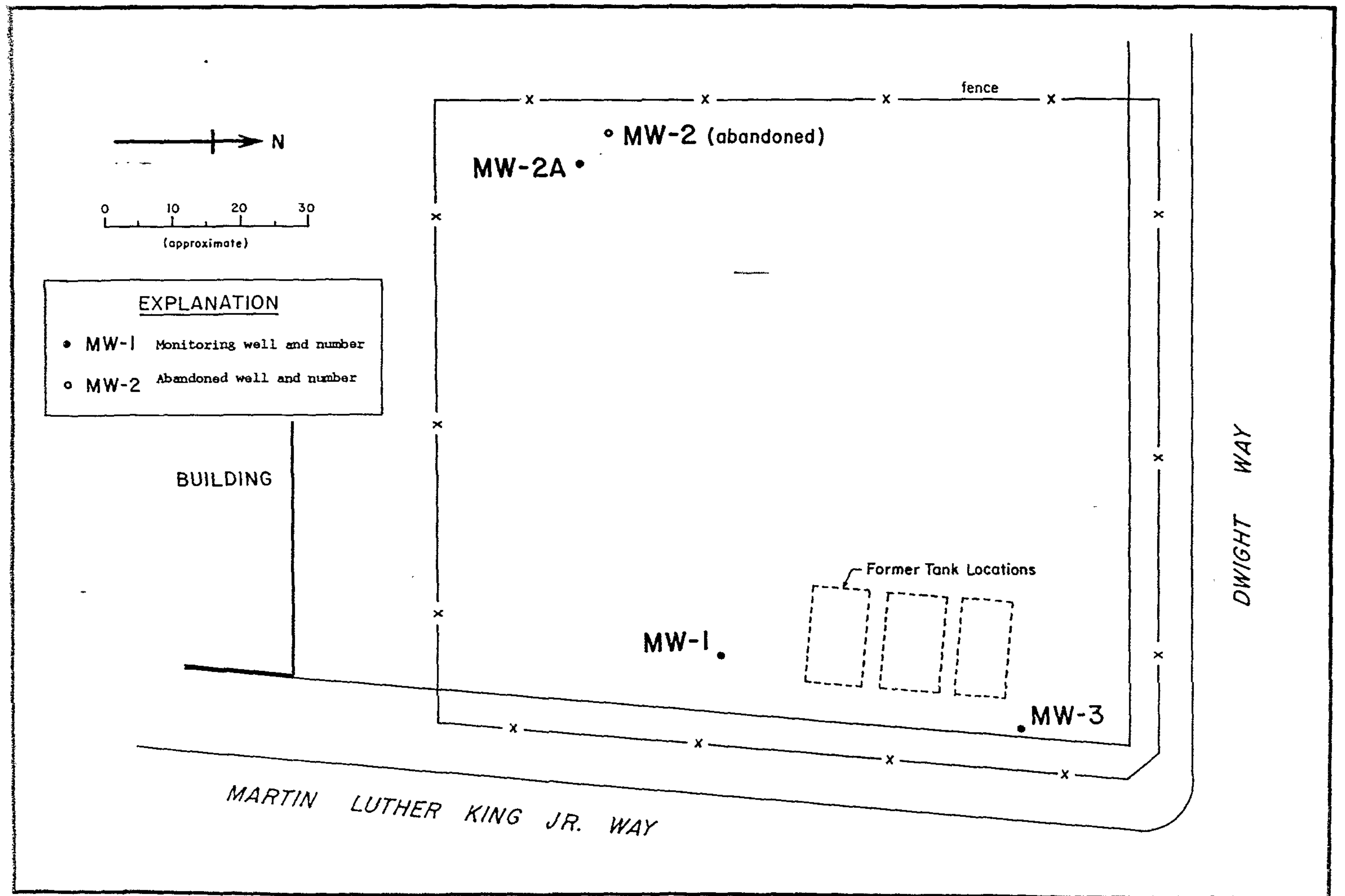
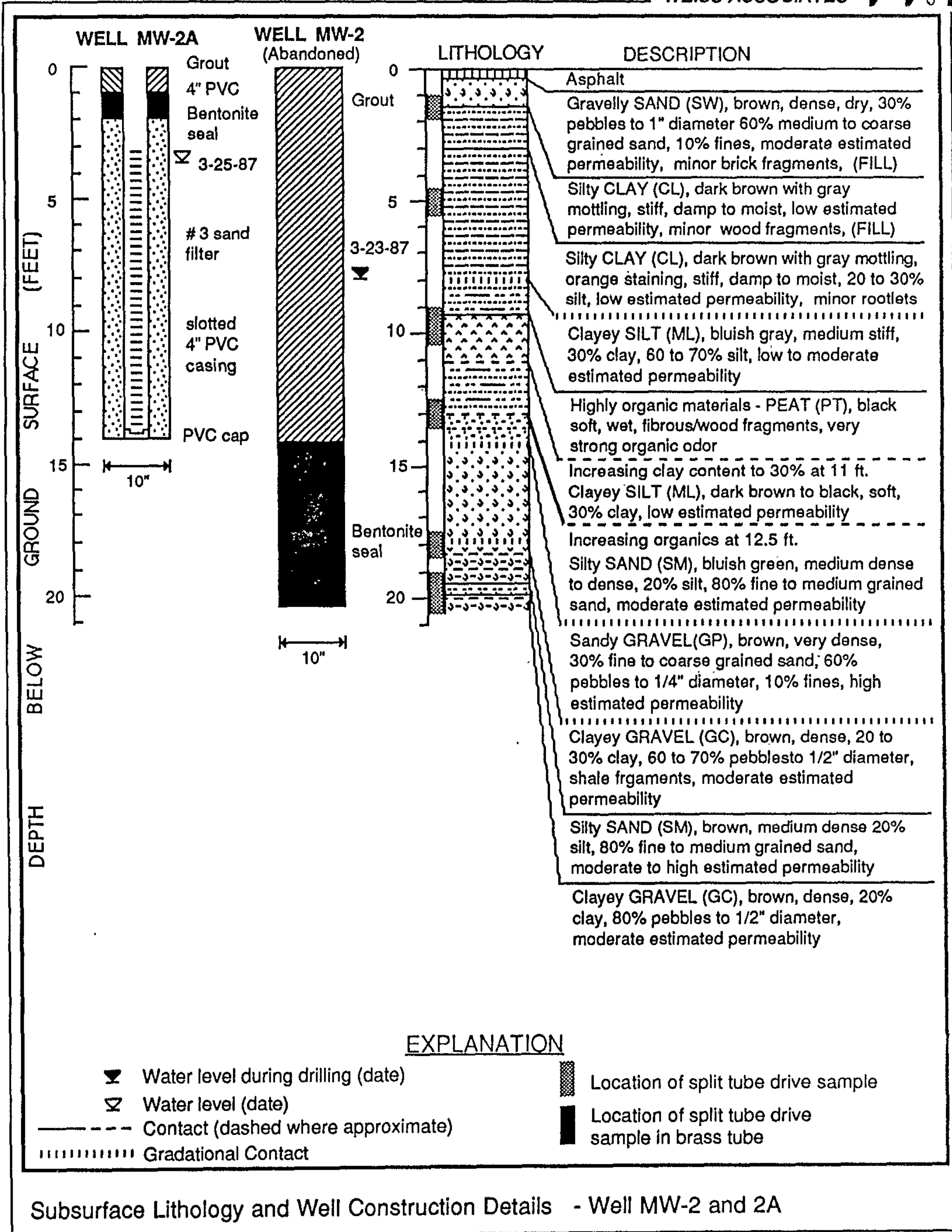


Figure 2. Monitoring Well Locations

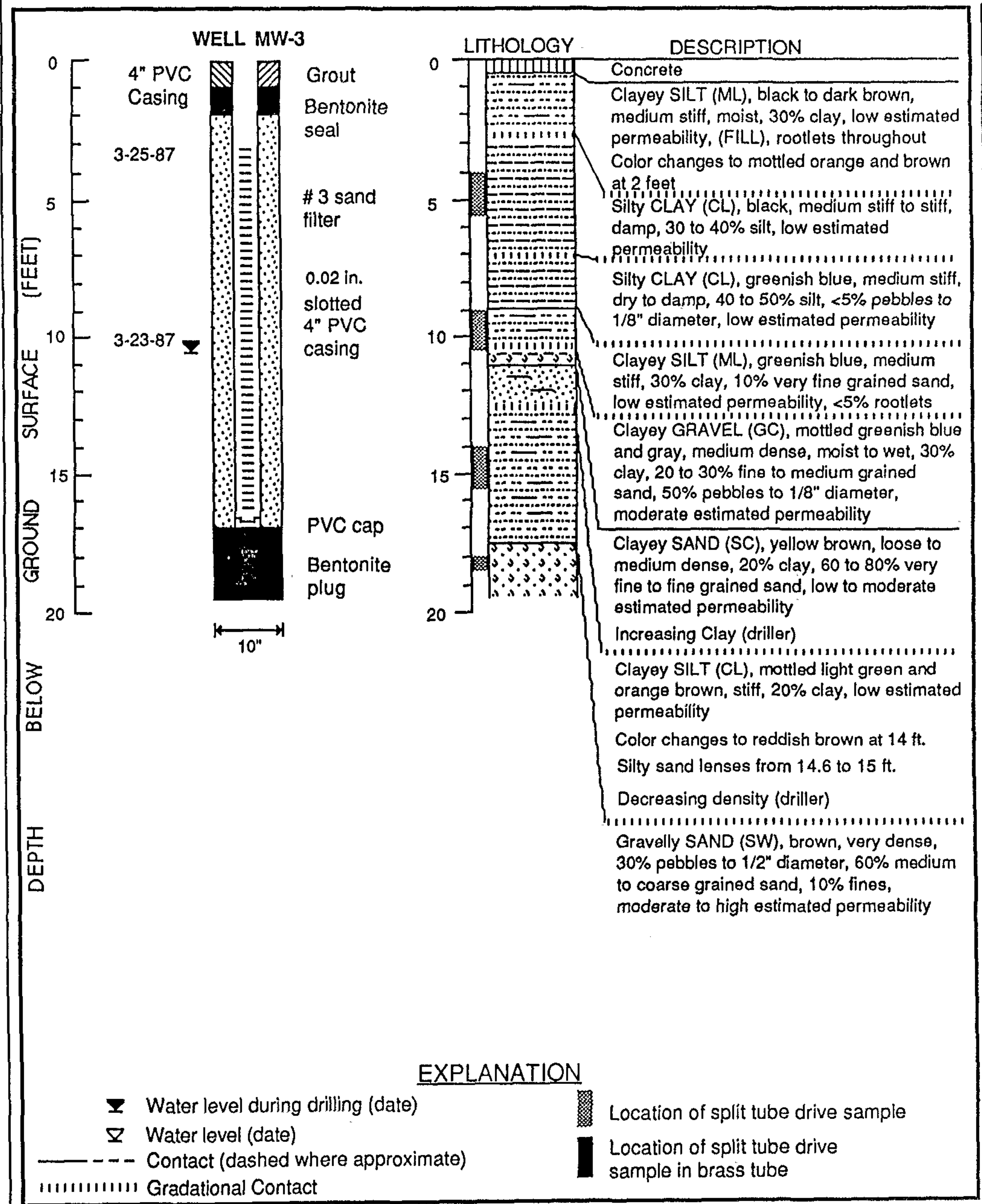
179012



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Well Construction Details and Subsurface Lithology - Well MW-3

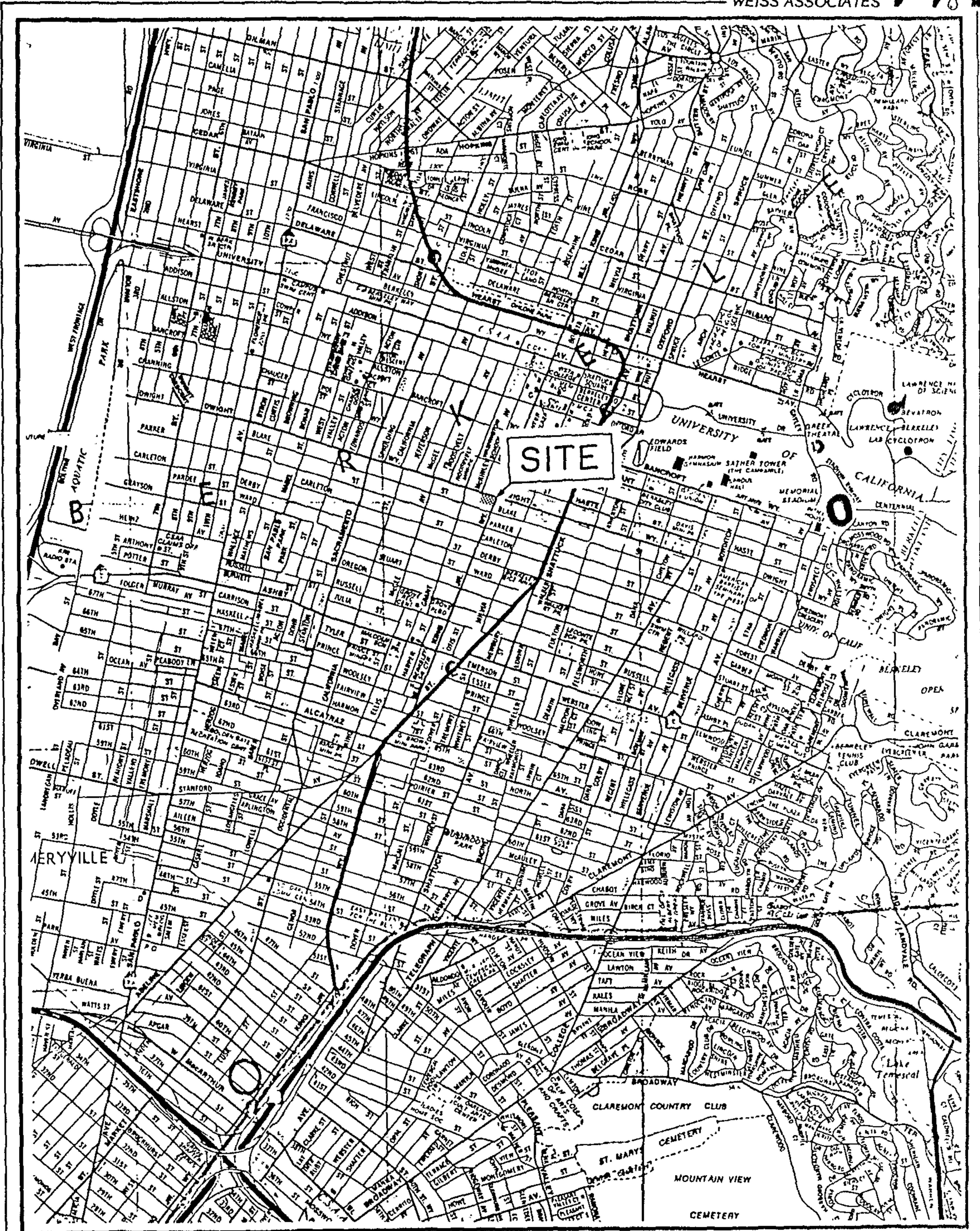


Figure 1. Site Location Map - Chevron Facility 4485, Berkeley, CA.

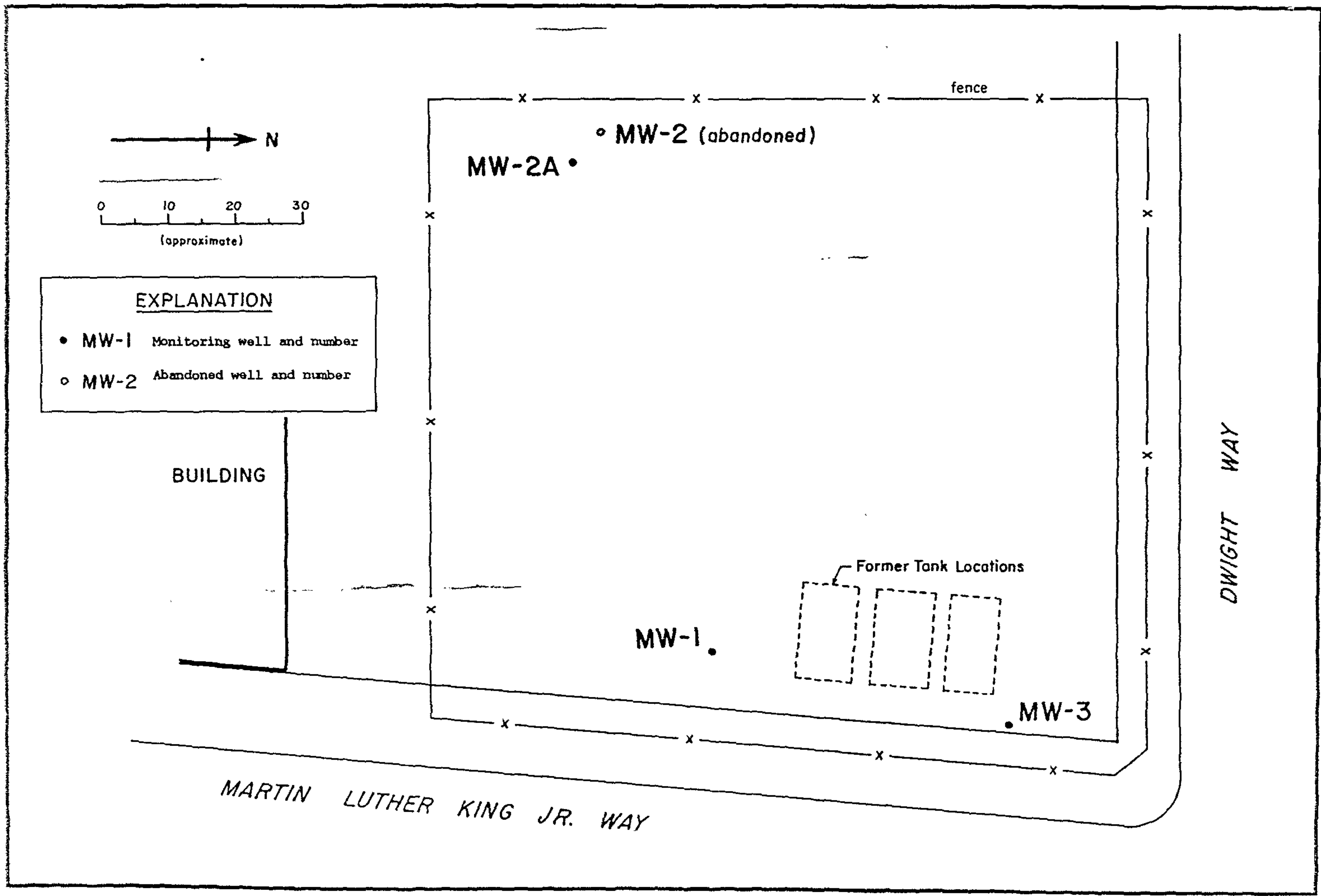


Figure 2. Monitoring Well Locations

LOG # 179013

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