

0.2

Is site ready for closure? YES
if so, need to approved w/ to decommission wells
see if #4 the was issued YES



3164 Gold Camp Drive
Suite 200
Rancho Cordova, California 95670-6021
916/638-2085
FAX: 916/638-8385

September 26, 2001

Mr. James Yoo
Alameda County Public Works Agency
399 Elmhurst Street
Hayward, California 94544

SEP 28 2001

Subject: *Work Plan for Well Abandonment*
Former Chevron Station #20-6516
2428 Central Avenue
Alameda, California
DG26516B.3C01

Mr. Yoo:

At the request of Chevron Products Corporation (Chevron), Delta Environmental Consultants, Inc. network associate Gettler-Ryan Inc. (GR) has prepared this Work Plan to abandon six groundwater monitoring wells at the above referenced site (Figure 1). Monitoring wells MW-1 through MW-6 will be abandoned by pressure grouting. Well locations are shown on the attached site plan (Figure 2).

SCOPE OF WORK

GR proposes the following tasks:

Task 1. Pre-Field Activities

GR will prepare a site health and safety plan. Well abandonment permits will be obtained from Alameda County Public Works Agency and an encroachment permit will be obtained from the City of Alameda. Underground Service Alert (USA) will be notified 48 hours prior to initiating well abandonment activities.

Task 2. Field Activities

Six 2-inch diameter groundwater monitoring wells will be abandoned by pressure grouting. Drilling and grouting operations will be performed by Woodward Drilling (C57 710079). GR Field Methods and Procedures are attached. Copies of boring logs and well construction details are attached. Each well will be backfilled with neat cement using a tremie pipe and pump. Approximately 10 pounds per square inch of pressure will be applied to the top of the well casing to insure that the well screen and void spaces of the sand pack are filled. Following pressure grouting, the upper 3 feet of the casing will be drilled out and the well box will be removed. Well boxes will be disposed of as non-hazardous construction debris. The borings will then be backfilled with drill cuttings to 1 foot below ground surface, then completed to ground surface with concrete.

Task 3. Reporting

Upon completion of field activities, a letter report will be prepared that summarizes the well abandonment activities. This report will be submitted to Chevron for their use and distribution.

Mr. Thomas Bauhs
September 26, 2001
Page 2

PROJECT STAFF

Mr. David W. Herzog, a Registered Geologist in the State of California (R.G. No. 7211), will provide technical oversight and review of the work. Mr. Greg A. Gurs, Senior Project Manager, will supervise implementation of field and office operations. GR employs a staff of geologists, engineers, and technicians who will assist with the project.

SCHEDULE

Well abandonment has been scheduled for October 10, 2001.

If you have any questions, please call our Sacramento office at (916) 631-1300.

DELTA ENVIRONMENTAL CONSULTANTS, INC.
Network Associate **GETTLER-RYAN INC.**



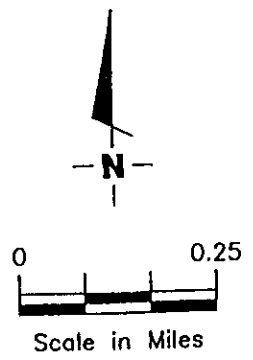
David W. Herzog
Senior Geologist
R.G. 7211



Attachments: Figure 1. Vicinity Map
Figure 2. Site Plan
Boring Logs and Well Construction Details
GR Field Methods and Procedures

Enclosures: Drilling Permit Application (6)

Cc: (without enclosure)
Mr. Thomas Bauhs, Chevron Products Company, P.O. Box 6004, San Ramon, CA 94583
Mr. Steve Stahl, Stahl Woodridge Construction, 2428 Central Avenue, Alameda, CA 94501
Ms. Eva Chu, Alameda Count Health Care Services Agency, 1131 Harbor Bay Parkway, Suite 250,
Alameda, CA 94502
Mr. Jim Brownell, Delta Environmental Consultants, Inc.



Source: Street Atlas USA, Delorme (1995).

FIGURE 1



Gettler - Ryan Inc.

6747 Sierra Ct., Suite J (510) 551-7555
 Dublin, CA 94568

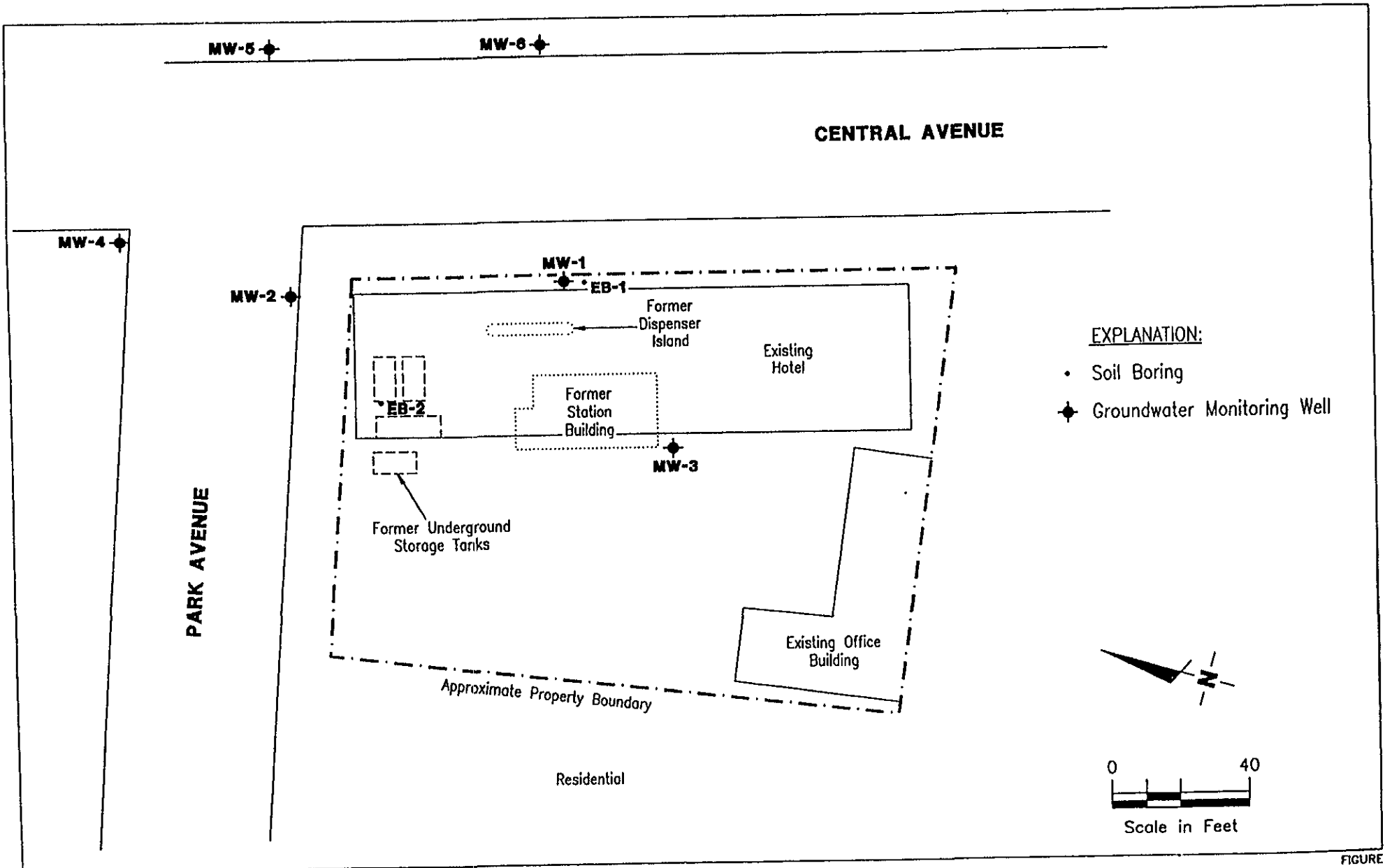
VICINITY MAP
 Former Chevron Service Station No. 9-0100
 2428 Central Avenue
 Alameda, California

JOB NUMBER
 5178

REVIEWED BY

DATE
 6/96

REVISED DATE



FIGURE



Gettler - Ryan Inc.

6747 Sierra Ct., Suite J (510) 551-7555
 Dublin, CA 94568

SITE PLAN
 Former Chevron Service Station No. 9-0100
 2428 Central Avenue
 Alameda, California

2

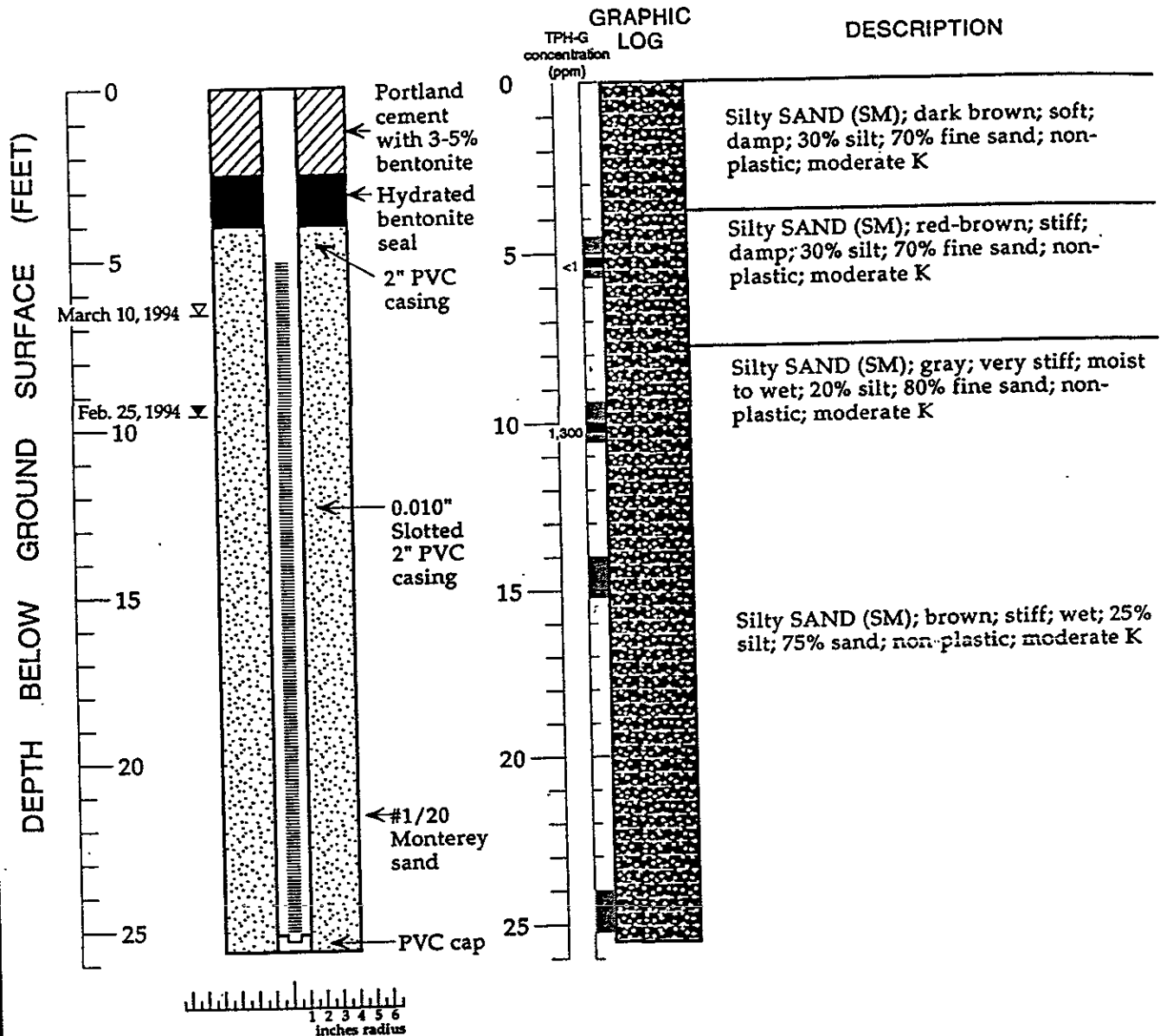
JOB NUMBER
 345178

REVIEWED BY

DATE
 06/96

REVISED DATE

WELL MW-1

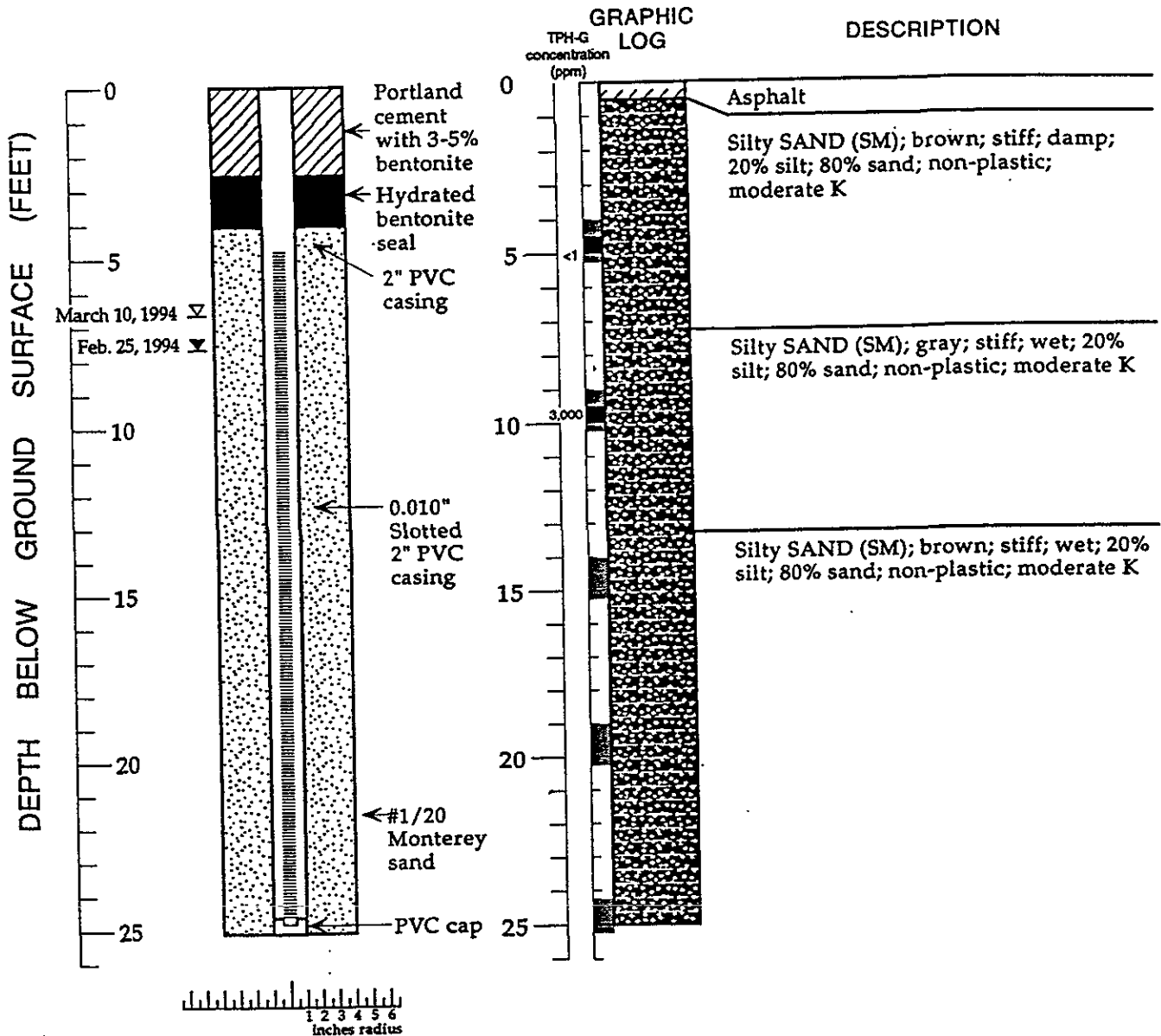


EXPLANATION

- | | |
|---|---|
| <ul style="list-style-type: none"> ∇ Water level during drilling (date) ∇ Water level (date) ----- Contact (dotted where approximate) -?-?-? Uncertain contact //// Gradational contact ■ Location of recovered drive sample ■ Location of drive sample sealed for chemical analysis ■ Cutting sample K = Estimated hydraulic conductivity | <p>Logged By: Joyce Adams
 Supervisor: James W. Carmody; CEG 1576
 Drilling Company: Soils Exploration Services, Vacaville, CA
 License Number: #C57-582696
 Driller: Tim Dunne
 Drilling Method: Hollow-stem auger
 Date Drilled: February 24, 1994
 Well Head Completion: 2" locking well-plug, traffic-rated vault
 Type of Sampler: Split barrel (2" ID)
 Ground Surface Elevation: 29.54 feet above mean sea level
 TPH-G: Total petroleum hydrocarbon as gasoline in soil by modified EPA Method 8015</p> |
|---|---|

Boring Log and Well Construction Details - Well MW-1 - Former Chevron Service Station #9-0100, 2428 Central Street, Alameda, California

WELL MW-2



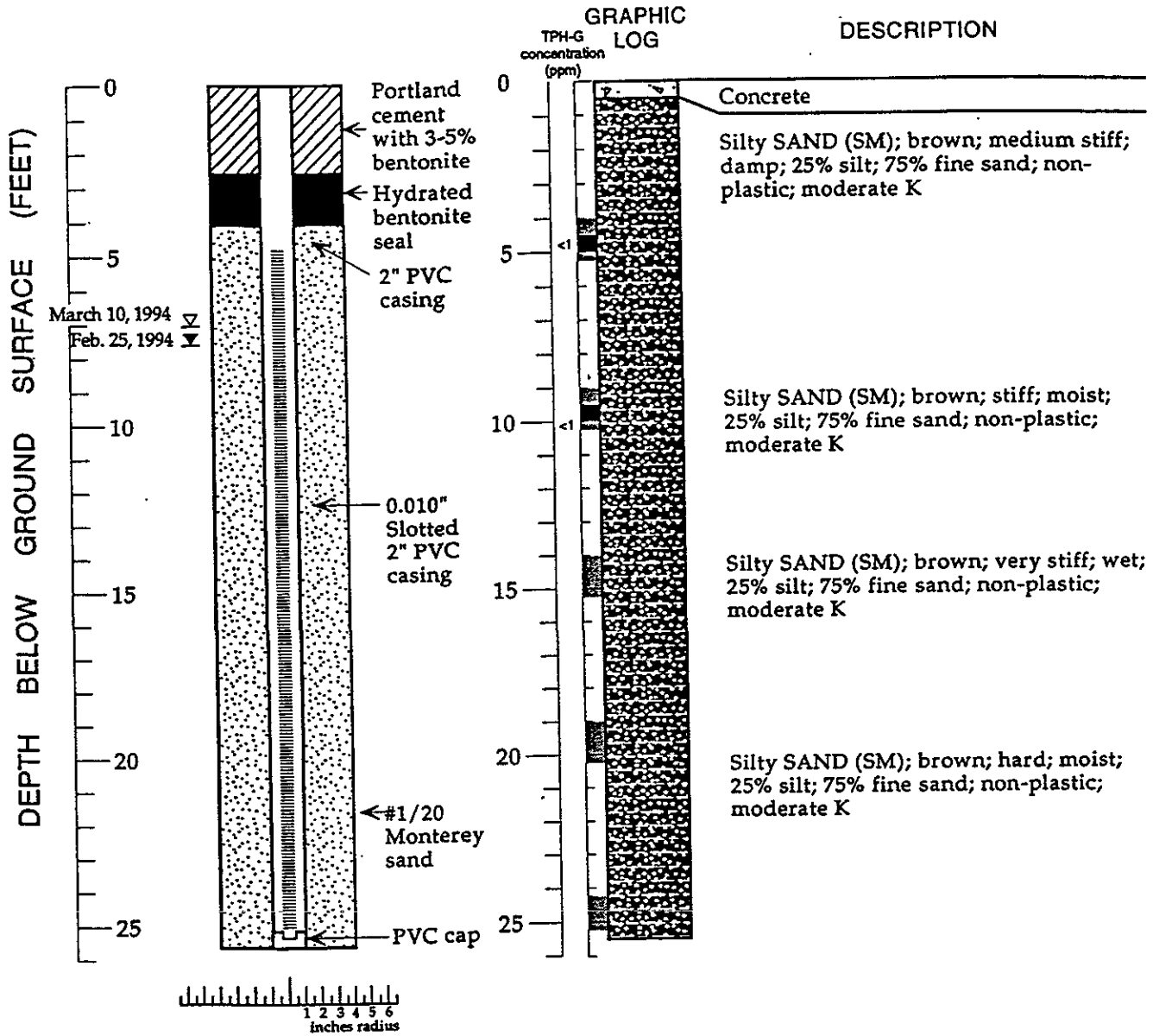
EXPLANATION

- ▼ Water level during drilling (date)
- ▽ Water level (date)
- Contact (dotted where approximate)
- ?-?-? 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: Joyce Adams
 Supervisor: James W. Carmody; CEG 1576
 Drilling Company: Soils Exploration Services, Vacaville, CA
 License Number: C57-582696
 Driller: Tim Dunne
 Drilling Method: Hollow-stem auger
 Date Drilled: February 25, 1994
 Well Head Completion: 2" locking well-plug, traffic-rated vault
 Type of Sampler: Split barrel (2" ID)
 Ground Surface Elevation: 29.44 feet above mean sea level
 TPH-G: Total petroleum hydrocarbon as gasoline in soil by modified EPA Method 8015

Boring Log and Well Construction Details - Well MW-2 - Former Chevron Service Station #9-0100, 2428 Central Street, Alameda, California

WELL MW-3



EXPLANATION

- ∇ Water level during drilling (date)
- ∇ Water level (date)
- Contact (dotted where approximate)
- ?-?-? 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: Joyce Adams
 Supervisor: James W. Carmody; CEG 1576
 Drilling Company: Soils Exploration Services, Vacaville, CA
 License Number: #C57-582696
 Driller: Tim Dunne
 Drilling Method: Hollow-stem auger
 Date Drilled: February 25, 1994
 Well Head Completion: 2" locking well-plug, traffic-rated vault
 Type of Sampler: Split barrel (2" ID)
 Ground Surface Elevation: 30.36 feet above mean sea level
 TPH-G: Total petroleum hydrocarbon as gasoline in soil by modified EPA Method 8015

Gettler-Ryan, Inc.

Log of Boring MW-4

PROJECT: Former Chevron SS# 9-0100

LOCATION: 2428 Central Avenue, Alameda, CA

G-R PROJECT NO.: 5178.02

SURFACE ELEVATION: 29.31 feet MSL

DATE STARTED: 08/26/96

WL (ft. bgs): 8.0 DATE: 08/26/96 TIME: 10:10

DATE FINISHED: 08/26/96

WL (ft. bgs): 8.0 DATE: 08/26/96 TIME: 12:00

DRILLING METHOD: 8 in. Hollow Stem Auger

TOTAL DEPTH: 21.5 Feet

DRILLING COMPANY: Bay Area Exploration, Inc.

GEOLOGIST: B. Sieminski

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
0							PAVEMENT - concrete over baserock.	
4.2	42	16	MW4-4			SP	SAND (SP) - yellowish brown (10YR 5/6), damp, medium dense; 100% fine sand.	
5.5			MW4-6				Becomes moist; with up to 5% silt.	
8.5	3.5	26	MW4-7.5				∇∇ Becomes saturated.	
10		26						
15.1	1.1	34	MW4-16				Becomes dense; color change to light olive brown (2.5Y 5/6); flowing sand.	
20	0	38	MW4-21					
25							(* = converted to equivalent standard penetration blows/ft.)	
30								
35								

Gettler-Ryan, Inc.

Log of Boring MW-5

PROJECT: Former Chevron SS# 9-0100

LOCATION: 2428 Central Avenue, Alameda, CA

G-R PROJECT NO.: 5178.02

SURFACE ELEVATION: 28.88 feet MSL

DATE STARTED: 08/26/96

WL (ft. bgs): 7.5 DATE: 08/26/96 TIME: 15:10

DATE FINISHED: 08/26/96

WL (ft. bgs): 7.5 DATE: 08/26/96 TIME: 16:30

DRILLING METHOD: 8 in. Hollow Stem Auger

TOTAL DEPTH: 21.5 Feet

DRILLING COMPANY: Bay Area Exploration, Inc.

GEOLOGIST: B. Sieminski

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
0							PAVEMENT - concrete over baserock.	<p>The well diagram shows a vertical well casing with a cap at the top. The casing is labeled '2" blank pvc Sch. 40'. At the bottom of the casing, there is a '2" machine slotted pvc (0.01 inch) with filter sock'. The well is filled with soil, and the diagram shows a 'cement/bentonite' seal at the top and 'native' soil at the bottom. The soil is labeled '#2/12 sand'.</p>
5	25	13	MW5-5.5 MW5-6			SP	SAND (SP) - yellowish brown (10YR 5/6), damp, medium dense; 95% fine sand, 5% silt.	
	III	25	MW5-7				Becomes moist.	
							∇∇ Becomes saturated.	
10	8.3	26	MW5-11					
15	9.7	26	MW5-16				Color change to light olive brown (2.5Y 5/4); 100% fine to medium sand; flowing sand.	
20	0	36	MW5-21				Becomes dense.	
25							(* = converted to equivalent standard penetration blows/ft.)	
30								
35								

Gettler-Ryan, Inc.

Log of Boring MW-6

PROJECT: <i>Former Chevron SS# 9-0100</i>	LOCATION: <i>2428 Central Avenue, Alameda, CA</i>
G-R PROJECT NO.: <i>5178.02</i>	SURFACE ELEVATION: <i>29.24 feet MSL</i>
DATE STARTED: <i>08/26/96</i>	WL (ft. bgs): <i>7.9</i> DATE: <i>08/26/96</i> TIME: <i>12:30</i>
DATE FINISHED: <i>08/26/96</i>	WL (ft. bgs): <i>7.9</i> DATE: <i>08/26/96</i> TIME: <i>14:55</i>
DRILLING METHOD: <i>8 in. Hollow Stem Auger</i>	TOTAL DEPTH: <i>21.5 Feet</i>
DRILLING COMPANY: <i>Bay Area Exploration, Inc.</i>	GEOLOGIST: <i>B. Sieminski</i>

DEPTH feet	PTD (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
0							PAVEMENT - concrete over baserock.	
5	45	10	MW6-5.5			SP	SAND (SP) - yellowish brown (10YR 5/6), damp, medium dense; 95% fine sand, 5% silt.	
			MW6-6				Becomes moist.	
	48	20	MW6-7				↓↓ Becomes saturated.	
10	35	36	MW6-11				Becomes dense.	
15	25	38	MW6-16				Color changes to light olive brown (2.5Y 5/4); 100% fine to medium sand; flowing sand.	
20	0	34	MW6-21					
25							(* = converted to equivalent standard penetration blows/ft.)	
30								
35								

GETTLER-RYAN INC.

FIELD METHODS AND PROCEDURES

Site Safety Plan

Field work performed by Gettler-Ryan Inc. (GR) is conducted in accordance with GR's Health and Safety Plan and the Site Safety Plan. GR personnel and subcontractors who perform work at the site are briefed on the contents of these plans prior to initiating site work. The GR geologist or engineer at the site when the work is performed acts as the Site Safety Officer. GR utilizes a photoionization detector (PID) to monitor ambient conditions as part of the Health and Safety Plan.

Well Abandonment

Prior to well abandonment, the total depth of the well and the depth-to-water in the well casing are measured and recorded. Groundwater monitoring wells are abandoned by filling the well casing with neat cement using a tremie pipe and pump. The tremie is removed and the cement in the well casing is pressurized to approximately 10 pounds per square inch (psi) for approximately 2 minutes. The well box is removed and the upper 3 feet of well casing is drilled out. The boring is then backfilled with neat cement or native material, depending on local regulations.

Well Destruction

Prior to well destruction, the total depth of the well and the depth-to-water in the well casing are measured and recorded. Groundwater monitoring wells are destroyed by drilling the well boring out to remove the casing, sandpack, and seal material. The boring is advanced at least one foot past the installed depth of the well to insure that all the casing and seal material are removed. Upon completion of drilling, the boring is backfilled to ground surface with neat cement placed using a tremie pipe and pump.

Storing and Sampling of Drill Cuttings

Drill cuttings are stockpiled on and covered with plastic sheeting or stored in drums depending on site conditions and regulatory requirements. Stockpile samples are collected and analyzed for disposal classification on the basis of one composite sample per 100 cubic yards of soil. Stockpile samples are composed of four discrete soil samples, each collected from an arbitrary location on the stockpile. The four discrete samples are then composited in the laboratory prior to analysis.

Each discrete stockpile sample is collected by removing the upper 3 to 6 inches of soil, and then driving the stainless steel or brass sample tube into the stockpiled material with a hand, mallet, or drive sampler. The sample tubes are then covered on both ends with teflon sheeting or aluminum foil, capped, labeled, and placed in a cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Stockpiled soils are covered with plastic sheeting after completion of sampling.