ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

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

August 14,2001
SLIC 3633/ CO0000369

Mr. Bob Cochran
Chevron Products Co.
P.O. Box 6004
San Ramon, CA 94583

Re: No Further Action for Diesel Fuel Release at Chevron Facility #20-6142, 333 23rd St., Oakland CA 94606

Dear Mr. Cochran:

Our office has received and reviewed the technical reports pertaining to the investigation of an accidental discharge of diesel fuel into a monitoring well at the above referenced site. As you are aware, in 1985 an accidental discharge of approximately 6000 gallons of diesel fuel occurred in well B at the above referenced site. Remediation has consisted of the following:

- Removal of approximately 3300 gallons using a vacuum truck
- Removal of 200 gallons via an oil skimmer
- Removal of approximately 250 gallons using a recovery pump in well R-1
- Removal of impacted groundwater via a groundwater extraction system

After the extraction system was turned off, oxygen releasing compound was added to MW-1, MW-9, MW-10, MW-7, MW-8 and MW-11. Long term groundwater monitoring from a total of fourteen (14) wells has demonstrated that the petroleum plume is has been adequately characterized and does not appear to be a threat to the nearby surface water. Our office has conferred with the San Francisco Regional Water Quality Control Board.

Based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions, no further action related to the subsurface contamination from the accidental discharge of diesel fuel is required by Alameda County Department of Environmental Protection.

If you have any further questions concerning this matter, please contact Barney Chan at (510) 567-6765.

Sincerely,

Mee Ling Tung, Director
Environmental Protection

c: Roger Brewer, SF-RWQCB
S. Carter, Gettler-Ryan, 6747 Sierra Ct., Suite J, Dublin, CA 94568

NFA333 23rd St SLIC

Site Summary for Chevron/Lonestar Facility, 333 23rd Ave., Oakland CA 94606

This site once operated as Rhodes and Jamieson but is currently a RMC Lonestar concrete facility. The site is located in Oakland at the base of the Park Street Bridge, where 23rd Ave. crosses intersects the Park St. bridge in Alameda. The edge of the property borders the Oakland-Alameda estuary, the most sensitive receptor. **See Figure 1 for the site location.**

RMC Lonestar had earlier removed an underground tank and was monitoring the former tank pit with wells A and B, (boring logs not available). In August 1985 an accidental discharge of diesel #2 fuel into monitoring well B occurred. Since a Chevron driver discharged the diesel fuel into the monitoring well, Chevron was held responsible for the release. Actual reports regarding the discharge of diesel fuel are not available, however, a past report by Western Geologic Resources (1989) was referred to as a source of this information. The discharge of approximately 6000 gallons of diesel fuel into well B, was located approximately 160' up-gradient of the estuary. **See Figure 2.**

IT Corporation was contracted and using a vacuum truck recovered approximately 3300 gallons of product. An additional 200 gallons was reportedly removed using an oil skimming system. A groundwater extraction system was then installed and began operation in October 1986. The system utilized two 1-inch diaphragm pumps placed in recovery well R-1. Groundwater was passed through an oil water separator and two carbon adsorption vessels prior to discharge to the sanitary sewer. The system recovered approximately 250 gallons of free product before being shut down in March 1987. A second recovery well, R-2, was installed in April 1988 and a diaphragm pump also placed in the well, however, the effectiveness of this well was never documented. In 1993, 365 gallons of product was removed from a storage tank from the site and transported to the Chevron refinery. It is assumed this was additional diesel removed from the recovery wells. Therefore, a conservative estimate of the amount of product removed is 3,865 gallons; 3,300 by vacuum truck, 200 gallons by oil skimmers and 365 gallons from the storage tank. The groundwater extraction system was shut down in September 1994 due to limited effectiveness. During the system's operation, approximately 185,000 gallons of water was discharged with an average influent concentration of 4 mg/l. This amounts to less than 1 gallon of diesel product removed.

From 9/5/85 to 11/14/85 monitoring wells MW-1 through MW-10 were installed to characterize the site. Wells MW11- MW-13 were installed on 8/19/97 and MW-14 was installed on 6/20/97. **See the attached boring logs and Figure 3 for the well locations.** The wells were generally screened from 5' or 8' to the depth of the well, typically 20'. The soil type varied from fine grained silt to sand and gravel. Depth to groundwater has varied from 7-10' bgs. It is likely that the perimeter wells are tidally influenced and may be hydraulically connected to the estuary waters.

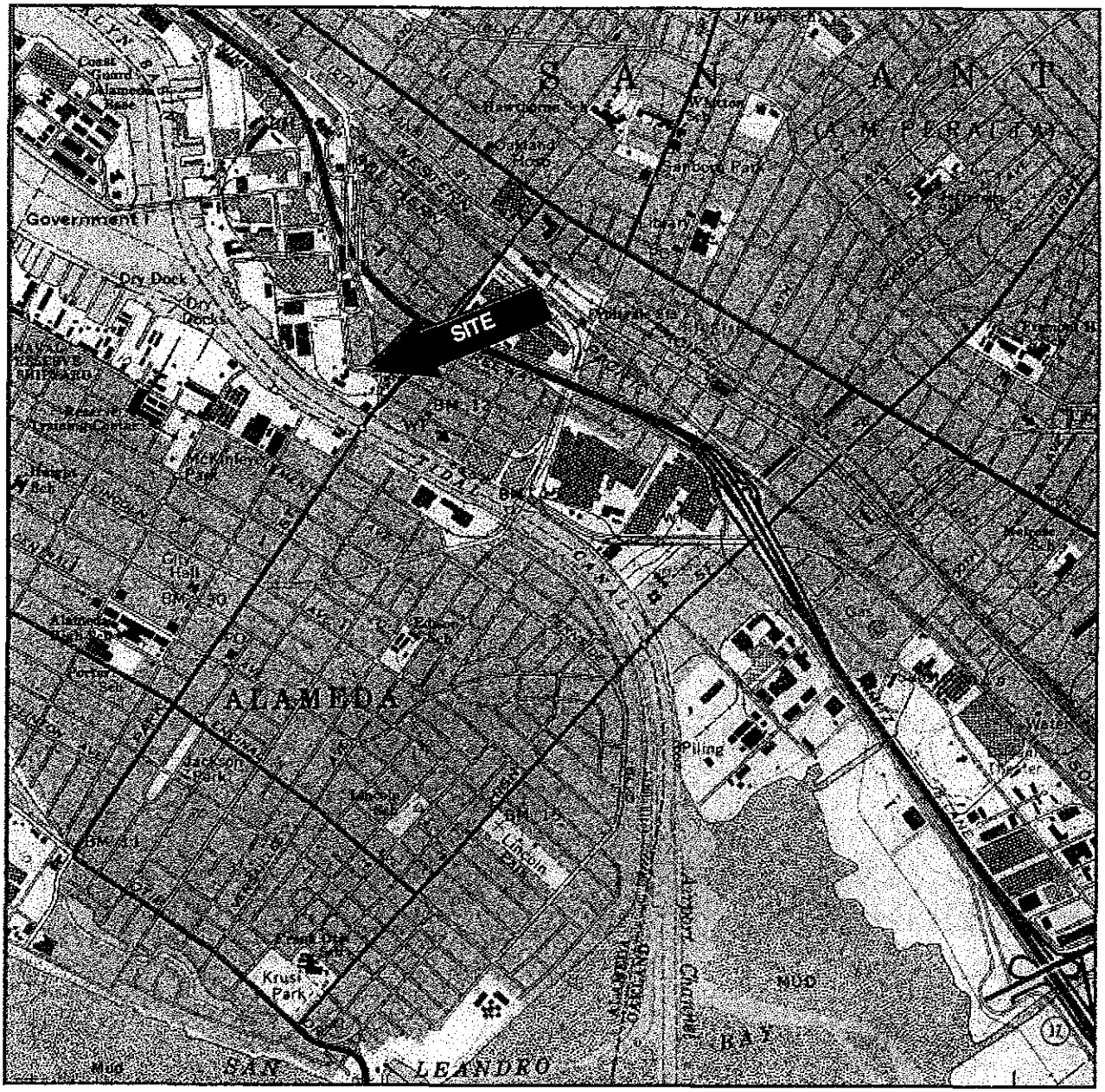
Passive skimmers were installed in MW-1 and R-2 in 1995. After the extraction system was turned off, oxygen releasing compound (ORC) was added to wells MW-1, MW-9 and MW-10 on March 24, 1996. Later ORC was also added to wells 7, 8 and 11.

A total of fourteen (14) wells in addition to the backfill wells (A and B) and the two recovery wells (R-1 and R-2) have been installed at the site. A number of the wells were either abandoned, unable to be located or discontinued monitoring over time. Groundwater monitoring has continued from 1990 to 2001 in most of the wells and indicates that the diesel release is well defined to an area within 70' around the tank backfill wells A and B. The extraction wells R-1 and R-2, may have drawn the plume westerly during the time groundwater extraction occurred. More likely, as suggested by Groundwater Technology, a sand and gravel layer exists going westward from wells R2 to R1. **See Figure 4 and Cross Section A-A'.**

The gradient has been fairly consistent in a southwesterly direction. Down-gradient wells, MW-11, MW-4 and MW-14 have been consistently less than the RBSL for diesel used at the San Francisco Airport, 670 ppb. It appears that a combination of natural attenuation and contaminant absorption has stabilized the release. **See the attached cumulative monitoring results.**

Our office recommends site closure based upon:

- Adequate source removal has occurred. Minimally, 3865 gallons of the 6000 gallons of diesel fuel released at the site was removed shortly after the accidental subsurface discharge. A groundwater extraction system removed more of the dissolved diesel after the other removals and indicated little to no more free product.
- The site has been adequately characterized. A large network of monitoring wells has defined the limits of the dissolved plume to an area near the discharge point, well B.
- The plume does not appear to be migrating. Down-gradient wells have not reported diesel concentrations near the RBSL for TPHd used at the SFIA, 670 ppb.
- No water wells are located near the site. Surface water does not appear impacted from monitoring wells up-gradient of the estuary. The lone utility that could be affected by the release in a sanitary sewer running west-east through the site. However, elevated TPHd has appeared in wells on both sides of the sewer, therefore, it does not likely act as a preferential pathway.
- No risk to human health or the environment is expected. As mentioned, the estuary does not appear impacted from the release.
- ORC socks were added to wells within the plume and have likely enhanced natural bio-remediation.



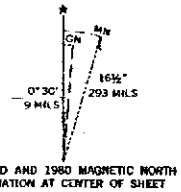
SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET



UTM GRID AND 1980 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

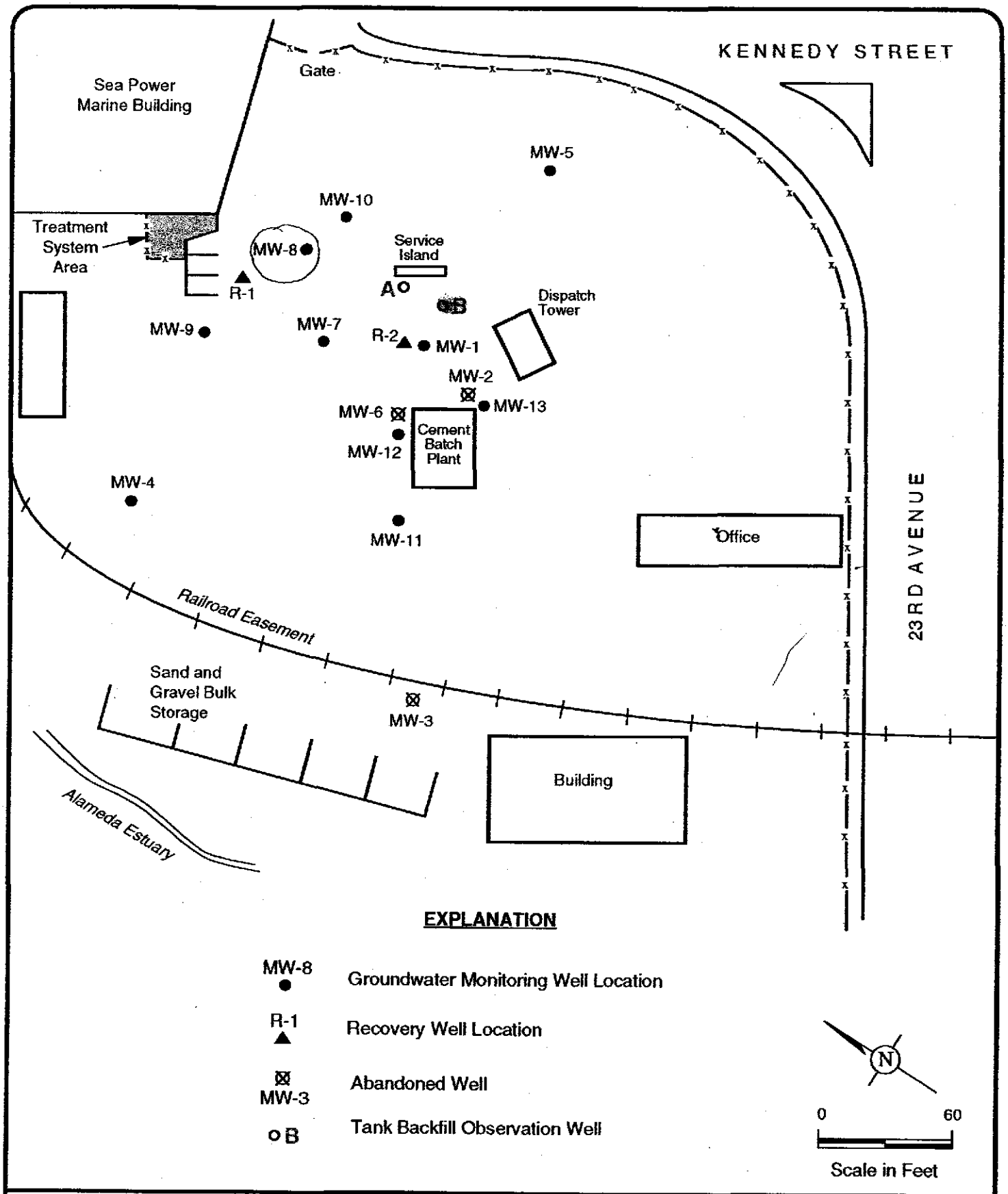
Reference: U.S.G.S. 7.5-minute Quadrangle Oakland East California, 1959 photorevised 1980.

GERAGHTY & MILLER, INC.
Environmental Services
A **Heidemij** Company

Project No. RC0174.000

SITE LOCATION MAP
Lonestar Facility
333–23rd Avenue
Oakland, California

FIGURE
1



EXPLANATION

MW-8 ●	Groundwater Monitoring Well Location
R-1 ▲	Recovery Well Location
⊠ MW-3	Abandoned Well
o B	Tank Backfill Observation Well

N

0 60

Scale in Feet

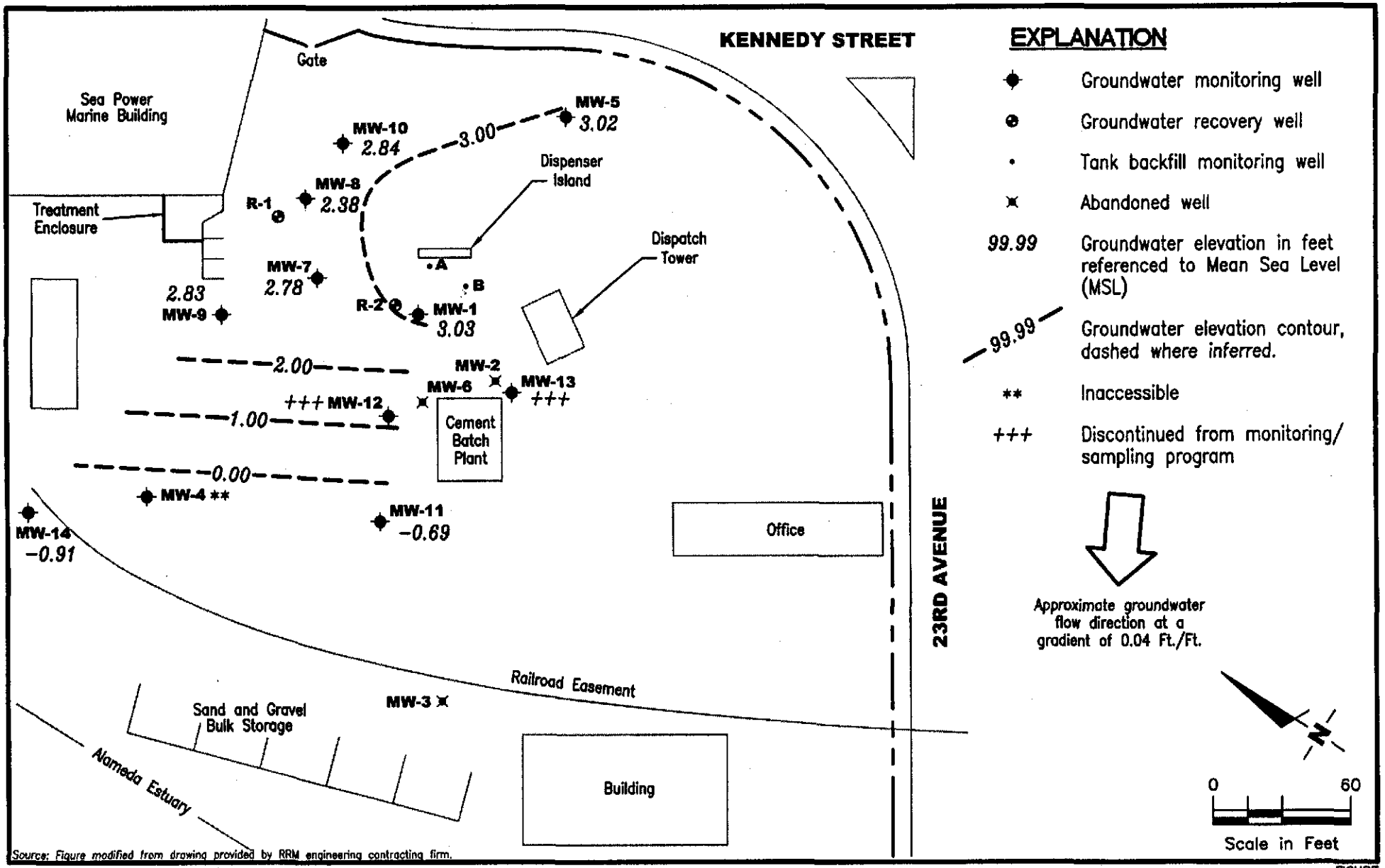
GERAGHTY & MILLER, INC.
Environmental Services
A **Heidemij** Company

Project No. RC0174.000

SITE PLAN
Lonestar Facility
333 – 23rd Avenue
Oakland, California

FIGURE
2

REVISION
7/30/96



Source: Figure modified from drawing provided by RRM engineering contracting firm.

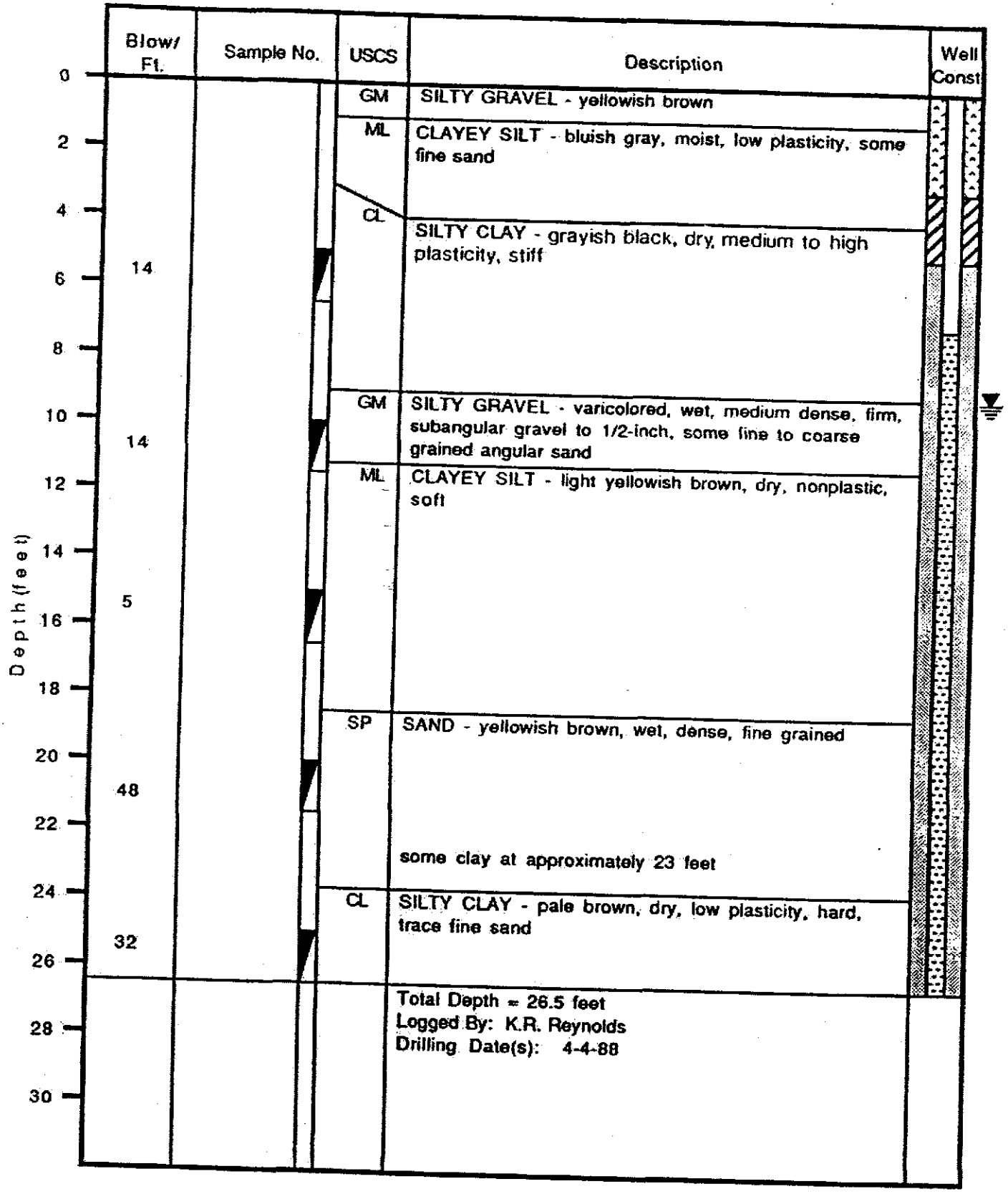
Gettler - Ryan Inc.
6747 Sierra Ct., Suite J
Dublin, CA 94568
(925) 551-7555

POTENTIOMETRIC MAP
Chevron/RMC Lonestar Facility CPS #20-6142
333 23rd Avenue
Oakland, California

FIGURE
3

PROJECT NUMBER	REVIEWED BY	DATE	REVISED DATE
346338		March 7, 2000	

FILE NAME: P:\ENVRO\CHEVRON\20-6142\A00-20-6142.DWG | Layout Tab: Pot1



KLEINFELDER

BORING LOG – RECOVERY WELL R2

CHEVRON /LONESTAR

PROJECT NO. 10-1829-01

PLATE 3

GROUNDWATER TECHNOLOGY

Division of Oil Recovery Systems, Inc.

Drilling Log

Well Number 2

Project Rhodes-Jamieson Owner Chevron

Location 333 23rd Ave. Oakland Project Number 20-3235

Date Drilled 9/5/85 Total Depth of Hole 24 ft. Diameter 7.5 in.

Surface Elevation 18/48 f Water Level, Initial 11 ft. 24-hrs. 8.11 ft.

Screen: Dia. 4 in. Length 15 ft. Slot Size .020 in.

Casing: Dia. 4 in. Length 5 ft. Type PVC

Drilling Company All Terraine Drilling Method H.S. Auger

Driller Wes Rigsby Log by Cori Condon

Sketch Map

Notes Drilled 24 ft. sand pack to 4 ft. bentonite to 3 ft. cement seal and steel manhole to surface

Depth (Feet)	Well Construction	Notes Blowcounts	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0					Gray sand and gravel, loose, dry, no odor
1					
2					Brown sand and gravel, loose, dry, no odor
3		3-6-9	4		Dark gray clay, stiff, moist, no odor
4					
5					
6					
7					
8		8-12-15	5		Orange-brown cse. sand and gravel, moderate comp., moist, no odor.
9					
10					
11					
12					
13		4-6-9	6		Light brown sandy clay, stiff, wet, no odor
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					Drilled 24 ft.

GROUNDWATER TECHNOLOGY

Division of Oil Recovery Systems, Inc.

Drilling Log

Well Number 3

Project Rhodes-Jamieson Owner Chevron

Location 333 23rd Ave. Oakland Project Number 20-3235

Date Drilled 9/5/85 Total Depth of Hole 24 ft. Diameter 7.5 in.

Surface Elevation 19.29 ft Water Level, Initial 11 ft. 24-hrs. 7.40 ft.

Screen: Dia. 4 in. Length 15 ft. Slot Size .020 in.

Casing: Dia. 4 in. Length 5 ft. Type PVC

Drilling Company All Terraine Drilling Method H.S. Auger

Driller Wes Rigsby Log by Cori Condon

Sketch Map

Notes Drilled 24 ft. sand pack to 4 ft. bentonite to 2.5 ft. cement and steel manhole to surface

Depth (Feet)	Well Construction	Notes Blowcounts	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0					Gray fine sand, loose, dry, no odor.
1					
2					Brown cse sand, wood frags, and occassional cobble, moderate comp., dry, no odor
3		5-9-12	7		Dark organic rich sandy clay, damp, no odor
4					
5					
6					
7					
8		7-5-8	8		Brown sandy clay with occassional gravel, moderate comp., moist, no odor
9					
10					
11					Gray clayey sand, dense, wet, no odor
12					
13		5-8-13	9		Sticky brown sandy clay, wet, no odor
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					Drilled 24 ft.

GROUNDWATER TECHNOLOGY

Division of Oil Recovery Systems, Inc.

Drilling Log

Well Number 4

Project Rhodes-Jamieson Owner Chevron

Location 333 23rd Ave. Oakland Project Number 20-3235

Date Drilled 17.57 ft. Total Depth of Hole 24 ft. Diameter 7.5 in.

Surface Elevation _____ Water Level, Initial 11 ft. 24-hrs. 7.29 ft.

Screen: Dia. 4 in. Length 15 ft. Slot Size .020 in.

Casing: Dia. 4 in. Length 5 ft. Type PVC

Drilling Company All Terrain Drilling Method H.S. Auger

Driller Wes Rigsby Log by Cori Condon

Sketch Map

Notes Drilled 24 ft. sand pack to 4 ft. bentonite to 2 ft. cement and steel manhole to surface

Depth (Feet)	Well Construction	Notes Blowcounts	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0					Gray sand and gravel, loose, dry, no odor
4					Gray-brown cse. sand and angular gravels, moderate comp., moist, no odor
7					Black organic rich sandy clay, wood frags., stiff, moist, no odor
8		10-11-12	10		Brown sandy clay with multi-colored angular gravels ≈80%, wet, no odor
13					Brown sandy clay, moderate comp., wet, no odor
24					Drilled 24 ft.

GROUNDWATER TECHNOLOGY

Division of Oil Recovery Systems, Inc.

Drilling Log

Well Number 5

Project Rhodes-Jamieson Owner Chevron

Location 333 23rd Ave. Oakland Project Number 20-3235

Date Drilled 9/5/85 Total Depth of Hole 24 ft. Diameter 7.5 in.

Surface Elevation 19.14 ft Water Level, Initial 11 ft. 24-hrs. 8.02 ft.

Screen: Dia. 4 in. Length 15 ft. Slot Size .020 in.

Casing: Dia. 4 in. Length 5 ft. Type PVC

Drilling Company All Terraine Drilling Method H.S. Auger

Driller Wes Rigsby Log by Cori Condon

Sketch Map

Notes Drilled 24 ft. sand pack to 4 ft. bentonite to 2 ft. cement and steel manhole at surface

Depth (Feet)	Well Construction	Notes Blowcounts	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0					Cement
1					Orange-brown angular gravels with sandy clay matrix. moderate comp., damp, no odor
2					
3					Black organic rich sandy clay, stiff, damp, no odor
4					
5					
6					
7					
8		5-9-10	11		Gray black clayey sand, moderate comp., moist, no odor
9					
10					
11					Brown sandy clay, occassional subangular gravels, moderate comp., wet, no odor
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					Drilled 24 ft.

GROUNDWATER TECHNOLOGY

Division of Oil Recovery Systems, Inc.

Drilling Log

Well Number 6

Project Chevron/Rhodes-Jamieson Owner Chevron U.S.A., Inc.

Location 333 23rd Ave. Oakland Project Number 20-3235

Date Drilled 9/19/85 Total Depth of Hole 24 ft. Diameter 7.5 in.

Surface Elevation 19.04 ft Water Level, Initial 8.5ft. 24-hrs. 8.88 ft.

Screen: Dia. 3 in. Length 15 ft. Slot Size .020 in.

Casing: Dia. 3 in. Length 5 ft. Type PVC

Drilling Company Sierra Pacific Drilling Method H.S. Auger

Driller Lynn Pera Log by Cori Condon

Sketch Map

Notes Drilled 24ft., sand pack to 3.5f
bentonite and cement to surface, finis
with locking cap placed inside christ
box

Depth (Feet)	Well Construction	Notes Blowcounts	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0					Cement
1					Dark sand and gravel, well comp., wet, no odor
2					
3					
4					Black organic rich clay, mod. comp., moist, sulfur odor
5					Blue gray sandy clay, occassional angular gravel, well comp., moist, no odor
6					
7					
8					Brown sand and gravel, clay matrix, moderately comp., wet, no odor
9					
10					Light brown sandy clay, stiff, wet, no odor
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					Brown cse to med. sand, loose, wet, no odor
21					
22					
23					
24					Gray med.-cse sand, mod. comp., wet, no odor.

GROUNDWATER TECHNOLOGY

Division of Oil Recovery Systems, Inc.

Drilling Log

Well Number 7

Project Rhodes Jamieson Owner Chevron U.S.A., Inc.

Location 333 23rd Ave.Oakland Project Number 20-3264

Date Drilled 10/26/85 Total Depth of Hole 24 ft. Diameter 7.5 in.

Surface Elevation 18.15 ft Water Level, Initial 11.5 ft. 24-hrs. 8.26 ft.

Screen: Dia. 4 in. Length 15 ft. Slot Size .020 in.

Casing: Dia. 4 in. Length 5 ft. Type PVC

Drilling Company Sierra Pacific Drilling Method h.s. auger

Driller Lynn Pera Log by Cori Condon

Sketch Map

Notes Sand Pack to 3.5 ft., Bentonite&Cement to Surface.

Depth (Feet)	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0					Cement and base rock.
1-4					Gray sand and gravel, organic rich, moist, moderate compaction, no odor.
5-7					Green-gray sandy clay, moist, stiff, diesel odor.
8-10		5-8-16	1		Brown mottled clayey sand and gravel, moist, moderate compaction, diesel odor.
11-18					Brown fine sandy clay with occasional gravel, wet, moderate compaction, no odor.
19-24					Gray-brown medium coarse sand, wet, moderate compaction, no odor.

GROUNDWATER TECHNOLOGY

Division of Oil Recovery Systems, Inc.

Drilling Log

Well Number 9

Project Rhodes Jamieson Owner Chevron U.S.A., Inc.

Location 333-23rd. Ave., Oakland Project Number 20-3264

Date Drilled 10/26/85 Total Depth of Hole 24 ft. Diameter 7.5 in.

Surface Elevation 18.14 ft Water Level, Initial 9 ft. 24-hrs. 7.92 ft.

Screen: Dia. 4 in. Length 15 ft. Slot Size .020 in.

Casing: Dia. 4 in. Length 5 ft. Type PVC

Drilling Company Sierra Pacific Drilling Method h.s. auger

Driller Lynn Pera Log by Cori Condon

Sketch Map

Notes Sand pack to 3 ft. Bentonite & Cement to Surface.

Depth (Feet)	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0					Cement and base rock.
1					
2					Black sandy clay, organic rich, moist, no diesel odor, moderate compaction.
3					
4					
5					
6					
7					
8					
9		7-11-13	3		Brown sand transition with cse. sand and gravel, wet, no diesel odor, moderate compaction.
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					Brown cse. medium sand and gravel, more clay, wet, no diesel odor, moderate compaction.
20					
21					
22					Intermitten clay layer, wet, no diesel odor, moderate compaction.
23					
24					Brown medium cse. sand, wet, no diesel odor, moderate compaction.

GROUNDWATER TECHNOLOGY

Division of Oil Recovery Systems, Inc.

Drilling Log

Well Number 10

Project RHODES/JAMIESON Owner CHEVRON

Location 333-23rd. Ave. Oakland Project Number 20-3264

Date Drilled 11/14/85 Total Depth of Hole 24 ft Diameter 7.5 in.

Surface Elevation 18.93 ft Water Level, Initial 10 ft. 24-hrs. 8.30 ft.

Screen: Dia. 4 in. Length 15 ft. Slot Size .020 in.

Casing: Dia. 4 in. Length 3.5 ft. Type PVC

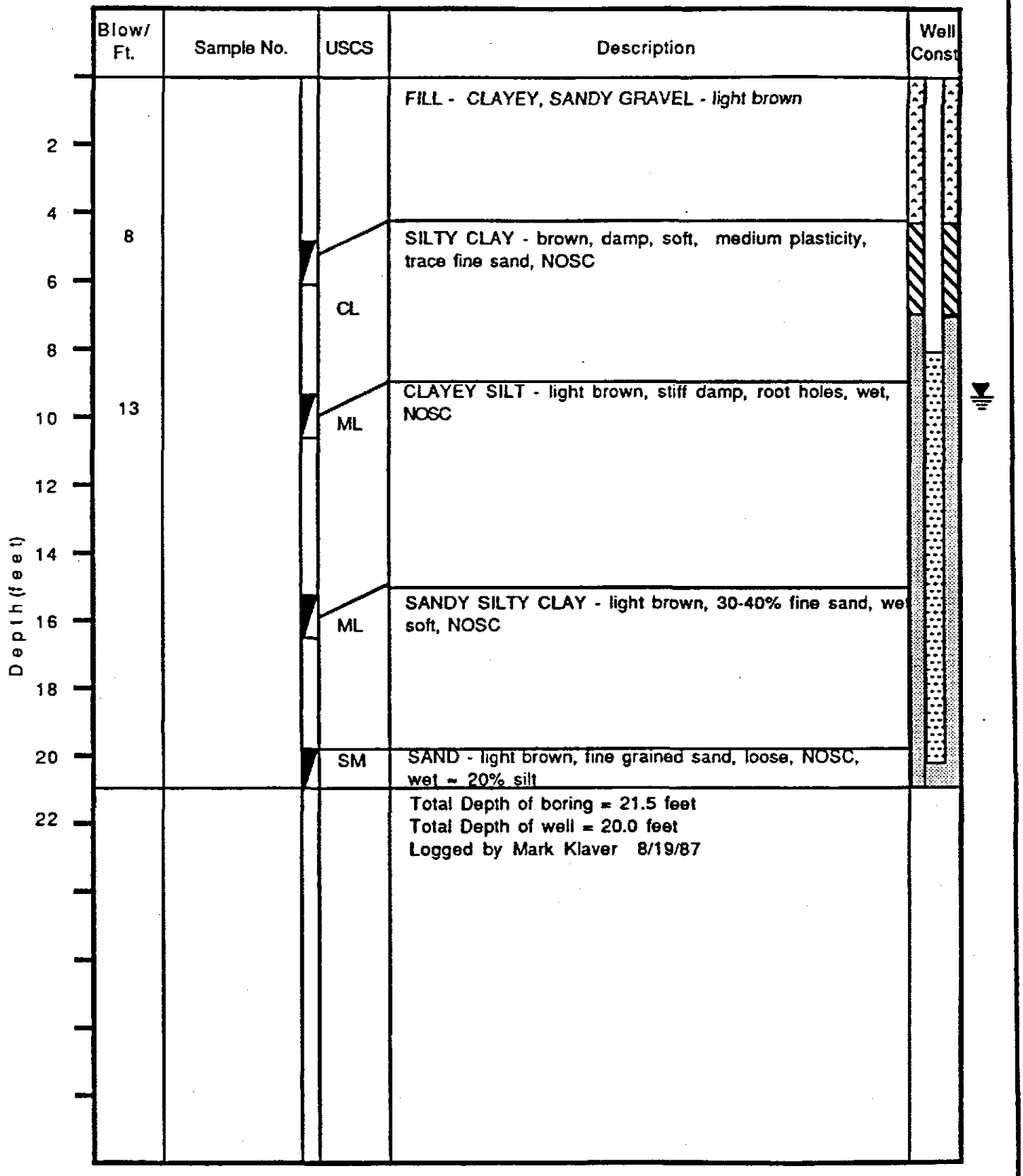
Drilling Company Sierra Pacific Drilling Method h.s. Auger

Driller D. Earley Log by Cori Condon

Sketch Map

Notes Sand pack to 2.5ft
Bentonite & cement to surface.

Depth (Feet)	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0					
1					Cement
2					Black/green sandy clay, organic rich, moist, no odor.
3					
4					
5					
6					
7					
8					
9					
10					Brown sandy clay occassional gravel, moist, no odor.
11					
12					Brown sandy clay, more gravels, moist, no odor.
13					
14					
15					Orange/brown sand and gravel, wet.
16					
17					
18					
19					
20					Gray clayey sand, wet, no odor.
21					
22					
23					
24					Gray clean sand, wet, no odor.



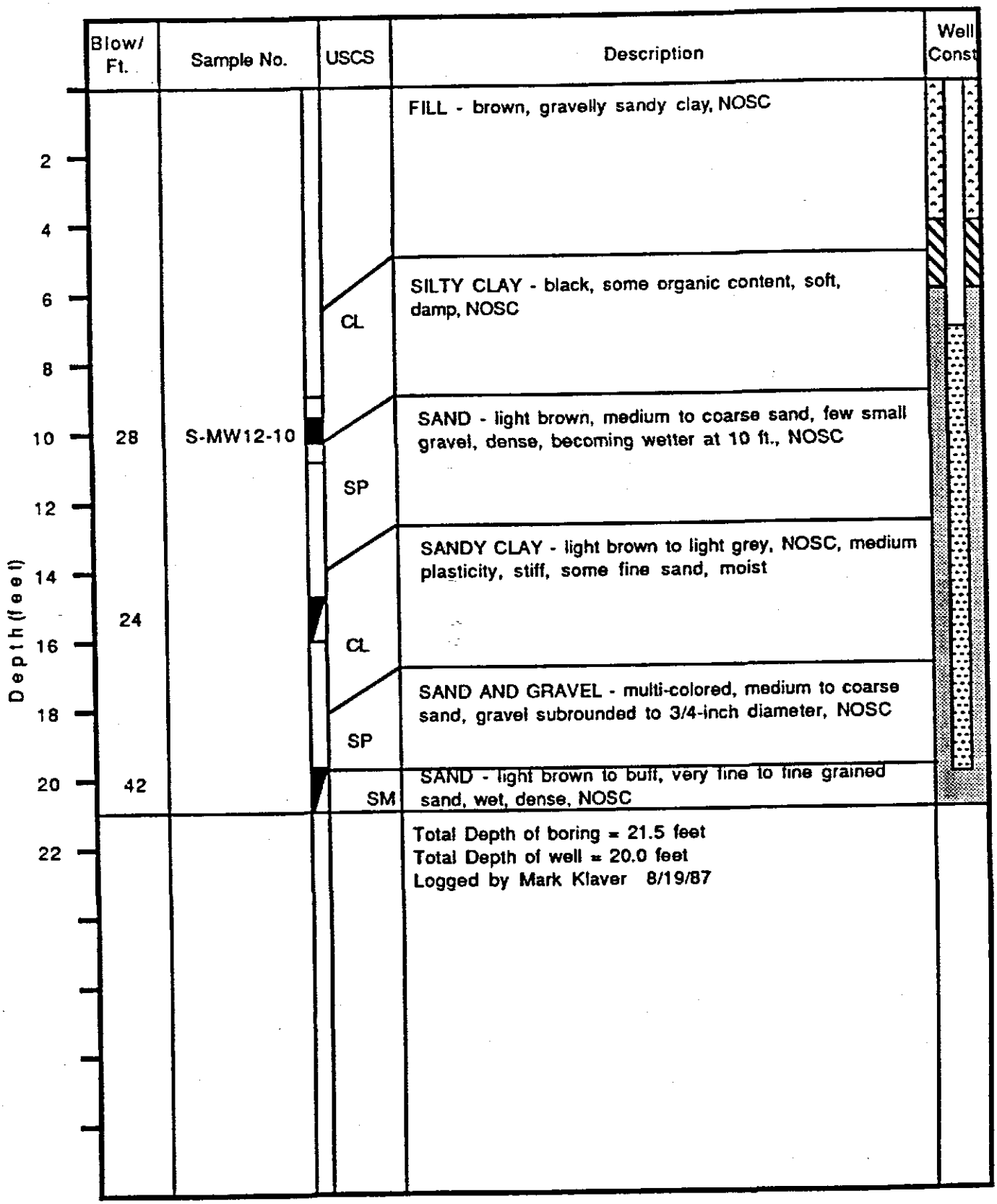
KLEINFELDER

PROJECT NO. 10-1709-02

CHEVRON/LONESTAR
333 23rd AVENUE OAKLAND, CALIFORNIA

BORING LOG NO. MW-11

PLATE
4



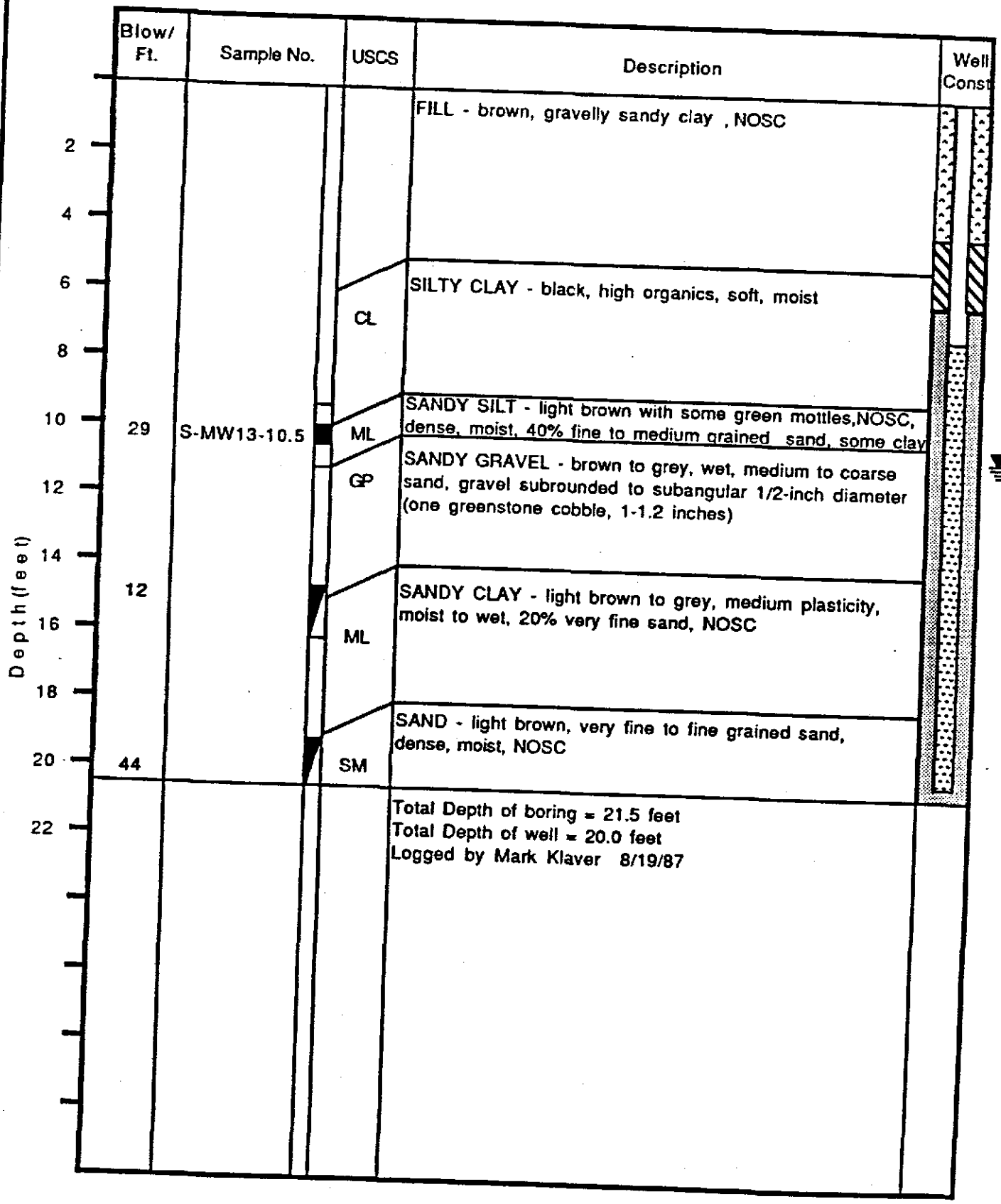
KLEINFELDER

PROJECT NO. 10-1709-02

CHEVRON/LONESTAR
333 23rd AVENUE OAKLAND, CALIFORNIA

BORING LOG NO. MW-12

PLATE
6



KLEINFELDER

PROJECT NO. 10-1709-02

CHEVRON/LONESTAR
333 23rd AVENUE OAKLAND, CALIFORNIA

BORING LOG NO. MW-13

PLATE 5

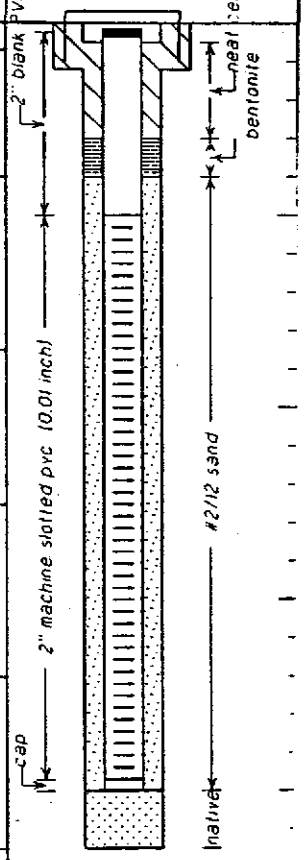
Gettler-Ryan, Inc.

Log of Boring MW-14

PROJECT: *Chevron/RMC Lonestar Facility CPS #206142*	LOCATION: *333 23rd Avenue, Oakland, CA*
G-R PROJECT NO.: *6338.01*	SURFACE ELEVATION: *5.56 feet MSL*
DATE STARTED: *06/20/97*	WL (ft. bgs): *8.0* DATE: *06/20/97* TIME: *15:00*
DATE FINISHED: *06/20/97*	WL (ft. bgs): *8.0* DATE: *06/20/97* TIME: *16:20*
DRILLING METHOD: *8 in. Hollow Stem Auger*	TOTAL DEPTH: *21.5 Feet*
DRILLING COMPANY: *Bay Area Exploration, Inc.*	GEOLOGIST: *Barbara Sieminski*

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
						GC	PAVEMENT - concrete.
	28		MW14-3				CLAYEY GRAVEL WITH SAND (GC) - very dark gray (5Y 3/1), moist, dense; 40% fine to coarse gravel, 30% clay, 30% fine to coarse sand.
5						CH	CLAY (CH) - black (5Y 2.5/1), moist, stiff, high plasticity; 100% clay ; Bay Mud.
	41	11	MW14-6				Color changes to gray (2.5Y 3/0), up to 5% fine to coarse sand at 8 feet.
							▽
10						CL	CLAY (CL) - pale brown (10YR 6/3), saturated, medium stiff, medium plasticity; 100% clay.
	43	8	MW14-11				
						CL	SANDY CLAY (CL) - light yellowish brown (2.5Y 6/4), saturated, medium stiff, low plasticity; 60% clay, 40% fine to coarse sand.
15	35	9	MW14-16				
						SP	SAND (SP) - light yellowish brown (2.5Y 6/4), saturated, dense; 100% fine to medium sand.
20	57	32	MW14-21				
							(* = converted to equivalent standard penetration blows/ft.)
25							
30							
35							

WELL DIAGRAM



JOB NUMBER: *6338.01*

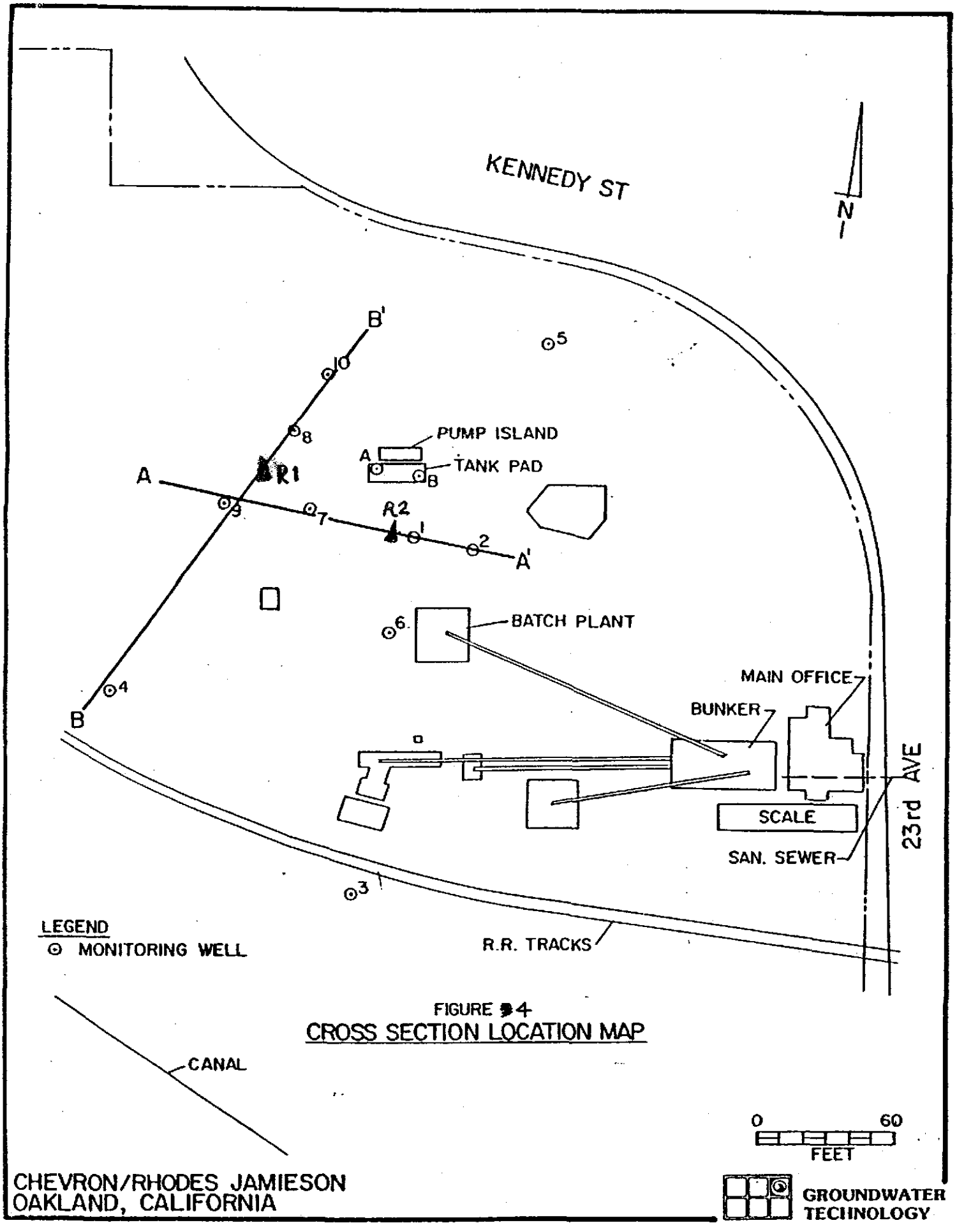
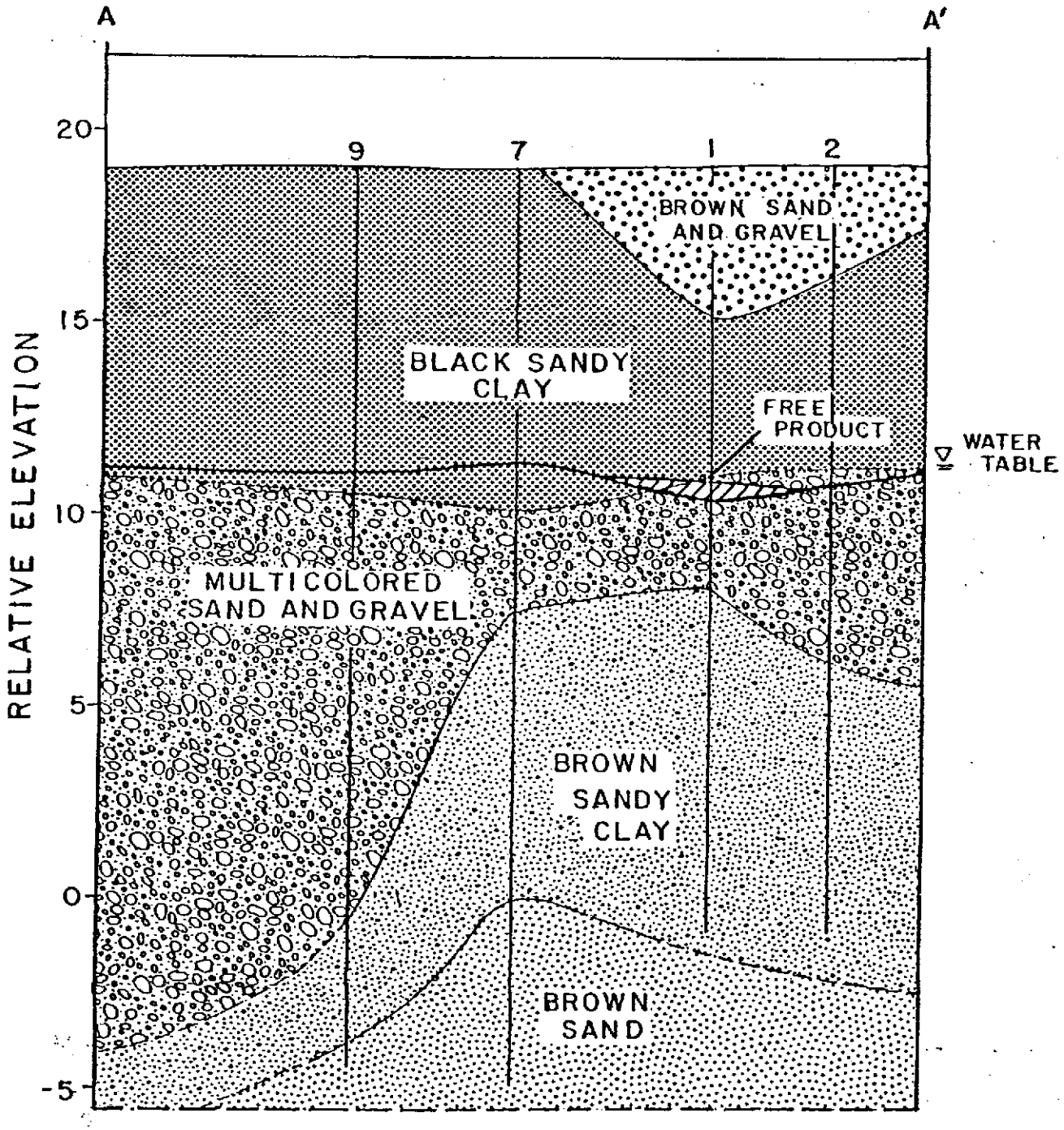


FIGURE 4
CROSS SECTION LOCATION MAP

CHEVRON/RHODES JAMIESON
OAKLAND, CALIFORNIA

GROUNDWATER TECHNOLOGY



FIGURE

CROSS SECTION A-A'

CHEVRON/RHODES JAMIESON
OAKLAND, CALIFORNIA

GROUNDWATER TECHNOLOGY

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE (8020/8260)	TPH-Diesel
MW-1											
12/21/1990	4.70	-3.41	9.77	Free Product (2.07')	--	--	--	--	--	--	--
12/18/1993	4.70	-3.73	8.45	Free Product (0.03')	--	--	--	--	--	--	--
3/29/1994	4.70	-3.94	9.00	Free Product (0.45')	--	--	--	--	--	--	--
6/9/1994	4.70	--	--	--	--	--	--	--	--	--	--
10/4/1994	4.70	-3.98	8.71	Free Product (0.04')	--	--	--	--	--	--	--
12/20/1994	4.70	-3.14	8.38	Free Product (0.67')	--	--	--	--	--	--	--
3/28/1995	4.70	-2.69	7.79	Free Product (0.5')	--	--	--	--	--	--	--
6/30/1995	4.70	--	--	--	--	--	--	--	--	--	--
9/24/1995	4.70	-2.69	7.79	Free Product (0.5')	--	--	--	--	--	--	--
12/29/1995	4.70		--	Inaccessible	--	--	--	--	--	--	--
3/24/1996	4.70	-2.97	7.68	Free Product (0.01')/ORCs installed	1400*	<0.5	<0.5	<0.5	<0.5	--	59,000
6/16/1996	4.70	-3.16	7.86	--	<500	<5.0	<5.0	<5.0	<5.0	--	99,000
12/8/1996	4.70	-3.68	8.38	--	280*	<0.5	<0.5	<0.5	<0.5	<5.0	6700
12/8/1996	4.70	-3.68	8.38	Silica gel cleanup	--	--	--	--	--	--	5100
6/30/1997	10.16	1.51	8.65	--	200*	<0.5	<0.5	<0.5	<0.5	<2.5	950**
6/30/1997	10.16	1.51	8.65	1st Silica gel/2nd Silica gel cleanup	--	--	--	--	--	--	600**/600**
10/16/1997	10.16	3.80	6.36	ORCs reinstalled	--	--	--	--	--	--	--
12/28/1997	10.16	2.66	7.50	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	4700**
6/21/1998	10.16	2.28	7.88	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	1300**
12/30/1998	10.16	1.63	8.53	Silica gel cleanup	<50	<0.5	0.51	<0.5	<0.5	<2.5	230*
6/24/1999	10.16	0.14	10.02	++	11,400*	<50	<50	<50	<50	<2500	4,950,000**
12/22/1999	10.16	1.61	8.55	++	5130	<10	<10	<10	<10	<50	7490**
3/7/2000	10.16	3.03	7.13	++, silica gel cleanup	772***	<0.500	<0.500	<0.500	<0.500	<2.50/1.16	74,000**
7/11/2000	10.16	1.99	8.17	++, silica gel cleanup	93*	<0.50	<0.50	<0.50	<0.50	<2.5/<2.0	190*
3/25/2001	10.16	2.74	7.42	++, silica gel cleanup	217*	<0.500	<0.500	<0.500	<0.500	<5.00/<2.00	4630*
			Range 7-8.5'								
MW-2											
6/15/1989	--	--	--	--	<200	<0.5	<0.5	<0.5	<0.5	--	--
12/1/1992	--	--	--	Abandoned	--	--	--	--	--	--	--

* Chromatogram pattern indicates an unidentified hydrocarbon.
** Chromatogram pattern indicates weathered diesel.
*** Hydrocarbon pattern present in the requested fuel quantitation range but does not resemble the requested fuel. More closely resembles a heavier fuel.
++ See Table of Additional Analyses.

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE (8020/8260)	TPH-Diesel
MW-5											
5/28/1987	--	--	--	--	--	<0.5	<0.5	<0.5	<2.0	--	<5.0
6/15/1989	--	--	--	--	<100	<0.2	<2.0	<2.0	<2.0	--	--
12/21/1990	5.43	-3.68	9.11	--	<50	<0.5	<0.5	<0.5	<0.5	--	<50
6/16/1993	5.43	-3.69	9.12	--	<50	<0.5	<0.5	<0.5	<0.5	--	<50
12/18/1993	5.43	-3.29	8.72	--	<50	<0.5	<0.5	<0.5	<0.5	--	690
3/29/1994	5.43	-3.57	9.00	--	--	--	--	--	--	--	--
6/9/1994	5.43	-3.93	9.36	--	<50	<0.5	<0.5	<0.5	<0.5	--	<50
10/4/1994	5.43	--	--	--	--	--	--	--	--	--	--
12/20/1994	5.43	-2.67	8.10	--	<50	<0.5	<0.5	<0.5	<0.5	--	<50
3/28/1995	5.43	-2.78	8.21	--	--	--	--	--	--	--	--
6/30/1995	5.43	-3.35	8.78	--	<50	<0.5	<0.5	<0.5	<0.5	--	900
9/24/1995	5.43	-2.97	8.40	--	--	--	--	--	--	--	--
12/29/1995	5.43	-2.96	8.39	--	<50	<0.5	<0.5	<0.5	<0.5	--	<50
3/24/1996	5.43	--	--	--	--	--	--	--	--	--	--
6/16/1996	5.43	-3.15	8.58	--	<50	<0.5	<0.5	<0.5	<50	--	--
12/8/1996	11.11	--	--	No longer sampled	--	--	--	--	--	--	--
12/28/1997	11.11	2.74	8.37	--	--	--	--	--	--	--	--
6/21/1998	11.11	2.48	8.63	--	--	--	--	--	--	--	--
12/30/1998	11.11	--	--	Inaccessible	--	--	--	--	--	--	--
6/24/1999	11.11	--	--	Inaccessible	--	--	--	--	--	--	--
12/22/1999	11.11	1.99	9.12	++	<50	<0.5	<0.5	<0.5	<0.5	49.8	<50
3/7/2000	11.11	3.02	8.09	++, silica gel cleanup	<50.0	<0.500	<0.500	<0.500	<0.500	35.2/43.8	<50.0
7/11/2000	11.11	2.02	9.09	++, silica gel cleanup	<50	<0.50	<0.50	<0.50	<0.50	24/22	7,200
3/25/2001	11.11	2.55	8.56	++, silica gel cleanup	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00/2.77	<50.0

++ See Table of Additional Analyses.

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE (8020/8260)	TPH-Diesel
MW-8											
12/21/1990	4.93	-3.59	8.53	Free Product (0.02')	--	--	--	--	--	--	--
12/18/1993	4.93	--	--	--	--	--	--	--	--	--	--
3/29/1994	4.93	-3.46	8.38	--	--	--	--	--	--	--	--
6/9/1994	4.93	--	--	--	--	--	--	--	--	--	--
12/20/1994	4.93	-2.66	7.58	--	<2500	120	100	<25	100	--	50,000
3/28/1995	4.93	-2.16	7.08	--	--	--	--	--	--	--	--
6/30/1995	4.93	-3.17	8.09	--	<50	<0.5	<0.5	<0.5	<0.5	--	14,000
9/24/1995	4.93	-3.53	8.45	--	--	--	--	--	--	--	--
12/29/1995	4.93	-2.55	7.47	--	520	<2.0	<2.0	<2.0	<2.0	--	25,000
3/24/1996	4.93	--	--	--	--	--	--	--	--	--	--
6/16/1996	4.93	-3.07	7.99	--	59*	<0.5	<0.5	<0.5	<0.5	--	9400
12/8/1996	4.93	-2.74	7.67	--	580*	<0.5	<0.5	<0.5	<0.5	<5.0	16,000
12/8/1996	4.93	-2.74	7.67	Silica gel cleanup	--	--	--	--	--	--	9300
6/30/1997	10.09	-1.56	11.65	--	1700*	<5.0	<5.0	<5.0	<5.0	<25	5300**
6/30/1997	10.09	-1.56	11.65	1st Silica gel/2nd Silica gel cleanup	--	--	--	--	--	--	3100**/3000**
10/16/1997	10.09	2.29	7.80	ORCs installed	--	--	--	--	--	--	--
12/28/1997	10.09	2.56	7.53	No Purge Sample	<50	<0.5	<0.5	<0.5	<0.5	<2.5	2700*
6/21/1998	10.09	2.03	8.06	--	57*	<0.5	0.52	<0.5	0.55	<2.5	3500**
12/30/1998	10.09	0.97	9.12	Silica gel cleanup	<50	<0.5	<0.5	<0.5	<0.5	<2.5	900**
6/24/1999	10.09	1.06	9.03	++	2150*	<5.0	<5.0	<5.0	<5.0	<25	35,200**
12/22/1999	10.09	1.04	9.05	++	3490	<2.0	<2.0	<2.0	<2.0	<10	2590**
3/7/2000	10.09	2.38	7.71	++, silica gel cleanup	682***	<0.500	<0.500	<0.500	<0.500	<2.50<0.500	41,800**
7/11/2000	10.09	1.86	8.23	++, silica gel cleanup	490*	<0.50	<0.50	<0.50	<0.50	<2.5/<2.0	4000
3/25/2001	10.09	2.37	7.72	++, silica gel cleanup	53.7*	<0.500	<0.500	<0.500	<0.500	<5.00/<2.00	1080*

* Chromatogram pattern indicates an unidentified hydrocarbon.
** Chromatogram pattern indicates weathered diesel.
*** Hydrocarbon pattern present in the requested fuel quantitation range but does not resemble the requested fuel. More closely resembles a heavier fuel.
++ See Table of Additional Analyses.

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE (8020/8260)	TPH-Diesel
MW-10											
6/15/1989	--	--	--	--	<100	<0.2	<2.0	<2.0	<2.0	--	--
12/21/1990	5.24	-3.68	8.92	--	<50	<0.5	<0.5	<0.5	<0.5	--	80
6/16/1993	5.24	-3.73	8.97	--	<50	<0.5	<0.5	<0.5	<0.5	--	<50
12/18/1993	5.24	-2.63	7.87	--	51*	<0.5	<0.5	<0.5	<0.5	--	12,000
3/29/1994	5.24	-3.96	9.20	--	--	--	--	--	--	--	--
6/9/1994	5.24	-4.07	9.31	--	<50	<0.5	<0.5	<0.5	<0.5	--	<50
10/4/1994	5.24	--	--	--	--	--	--	--	--	--	--
12/20/1994	5.24	-3.06	8.30	--	<50	<0.5	<0.5	<0.5	<0.5	--	<50
3/28/1995	5.24	-3.02	8.26	--	--	--	--	--	--	--	--
6/30/1995	5.24	-3.71	8.95	--	<50	<0.5	<0.5	<0.5	<0.5	--	<50
9/24/1995	5.24	-3.63	8.87	--	--	--	--	--	--	--	--
12/29/1995	5.24	-2.79	8.03	--	<50	<0.5	<0.5	<0.5	<0.5	--	1800*
3/24/1996	5.24	--	--	ORCs installed	--	--	--	--	--	--	--
6/16/1996	5.24	-3.53	8.77	--	<50	<0.5	<0.5	<0.5	<0.5	--	300
12/8/1996	10.91	--	--	No longer sampled	--	--	--	--	--	--	--
10/16/1997	10.91	2.31	8.60	ORCs reinstalled	--	--	--	--	--	--	--
12/28/1997	10.91	2.59	8.32	--	--	--	--	--	--	--	--
6/21/1998	10.91	2.18	8.73	--	--	--	--	--	--	--	--
12/30/1998	10.91	2.93	7.98	Silica gel cleanup	<50	<0.5	<0.5	<0.5	<0.5	<2.5	<50
6/24/1999	10.91	1.55	9.36	++	<50	<0.5	<0.5	<0.5	<0.5	<2.5	163*
12/22/1999	10.91	1.47	9.44	++	<50	<0.5	<0.5	<0.5	<0.5	<2.5	250*
3/7/2000	10.91	2.84	8.07	++, silica gel cleanup	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50/<0.500	<50.0
7/11/2000	10.91	1.89	9.02	++, silica gel cleanup	<50	<0.50	<0.50	<0.50	<0.50	<2.5/<2.0	110*
3/25/2001	10.91	2.27	8.64	++, silica gel cleanup	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00/<2.00	168*

* Chromatogram pattern indicates an unidentified hydrocarbon.
++ See Table of Additional Analyses.

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE	TPH-Diesel
MW-12											
8/21/1987	--	--	--	--	--	<0.5	<0.5	<0.5	<2.0	--	<0.1
12/18/1993	--	--	--	--	--	--	--	--	--	--	--
3/29/1994	--	--	--	--	--	--	--	--	--	--	--
6/9/1994	--	--	--	Inaccessible	--	--	--	--	--	--	--
NO LONGER MONITORED OR SAMPLED											
MW-13											
8/21/1987	--	--	--	--	--	<0.5	<0.5	<0.5	<2.0	--	<0.1
6/15/1989	--	--	--	--	<100	<0.2	<2.0	<2.0	<2.0	--	--
3/19/1993	4.73	-2.89	7.62	--	<50	<0.5	<0.5	<0.5	<1.5	--	<50
6/16/1993	4.73	-3.83	8.56	--	<50	<0.5	<0.5	<0.5	<1.5	--	<50
12/18/1993	4.73	-3.38	8.11	--	<50	<0.5	<0.5	<0.5	<0.5	--	<50
3/29/1994	4.73	-3.92	8.65	--	<50	<0.5	<0.5	<0.5	<0.5	--	<50
6/9/1994	4.73	-3.87	8.60	--	<50	<0.5	<0.5	<0.5	<0.5	--	<50
10/4/1994	4.73	-3.58	8.31	--	<50	<0.5	<0.5	<0.5	<0.5	--	<50
12/20/1994	4.73	-3.19	7.92	--	<50	<0.5	<0.5	<0.5	<0.5	--	<50
3/28/1995	4.73	-3.05	7.78	--	<50	<0.5	<0.5	<0.5	<0.5	--	<50
6/30/1995	4.73	--	--	--	--	--	--	--	--	--	--
9/24/1995	4.73	-3.61	8.34	--	<50	<0.5	<0.5	<0.5	<0.5	--	180
12/29/1995	4.73		--	Unable to locate	--	--	--	--	--	--	--
3/24/1996	4.73	-3.01	7.74	**	<50	<0.5	<0.5	<0.5	<0.5	--	<50
3/24/1996	4.73	-3.34	8.07	--	<50	<0.5	<0.5	<0.5	<0.5	--	57*
NO LONGER MONITORED OR SAMPLED											

* Chromatogram pattern indicates an unidentified hydrocarbon.
** Total Dissolved Solids by EPA 160.1 detected at 1600 ppb.

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet.

Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE (8020/8260)	TPH-Diesel
TRIP BLANK											
3/19/1993	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
6/16/1993	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
12/18/1993	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
3/29/1994	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
6/9/1994	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/20/1994	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
3/28/1995	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
6/30/1995	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
9/24/1995	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/29/1995	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
3/24/1996	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
6/16/1996	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/8/1996	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
6/30/1997	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
12/28/1997	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
6/21/1998	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
12/30/1998	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
3/7/2000	--	--	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--
7/11/2000	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
3/25/2001	--	--	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	--