7020 Koll Center Parkway, Suite 134, Pleasanton, CA 94566-3107 (925) 426-5395 FAX (925) 426-5391

R0353

Compliance & Closure, Inc.

April 23, 2001

4091 Received 4/26/01

Alameda County
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Attention: Mr. Amir Gholami

RE: Sensitive Receptorand Preferencial Pathway Review
Quik Stop No. 88, 20757 Lake Chabot Road, Castro Valley, California
(CCI Project No. 12139-3)

Dear Mr. Gholami:

At the request of Quik Stop Markets, Inc., Compliance & Closure, Inc. here by the Sensitive Receptor and Preferential Pathway Review at Quik Stop Market No. 88, located at 20757 Lake Chabot Road in the City of Castro Valley, Alameda County, California. If you have any comments or questions regarding the report, please contact our office at (925) 426-5395.

Sincerely,
Compliance & Closure, Inc.

Gary R. Mulkey, R.G. 5842

cc: Mr. Mike Karvelot, Quik Stop Markets, Inc.

7020 Koll Center Parkway, Suite 134, Pleasanton, CA 94566-3107 (925) 426-5395 FAX (925) 426-5391

Compliance & Closure, Inc.

April 12, 2001

APR 25 2001

Alameda County
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Attention: Mr. Amir Gholami

RE: Sensitive Receptor and Preferential Pathway Review
Quik Stop No. 88, 20757 Lake Chabot Road, Castro Valley, California
(CCI Project No. 12139-3)

Dear Mr. Gholami:

In response to Alameda County Health Care Services (County) letter dated December 20, 2000, Compliance & Closure, Inc. (CCI) hereby submits this Sensitive Receptor and Preferential Pathway Review of the area around Quik Stop Market No. 88, located at 20757 Lake Chabot Road in the City of Castro Valley, Alameda County, California (Figure 1).

Background

The subject site is occupied by Quik Stop Market No. 88, which engages in the retail sale of gasoline and convenience foods and products. In December 1998, two old, gasoline underground storage tanks (USTs) were replaced by two new 12,000-gallon, double-walled, fiberglass USTs, located approximately 10 feet southeast of the former tank location (Figure 2).

After the USTs were removed, the excavation was inspected. The bottoms of the USTs had been at a depth of approximately 12 feet and water was observed at the bottom of the eastern half of the excavation. Some of the soil had a grayish discoloration and a sheen was observed on the surface of the water. While the sidewalls and bottom of most of the excavation appeared to be a silty clay, fractured bedrock was encountered at the bottom of the eastern part of the excavation (nearest Lake Chabot Road).

Under the direction of Alameda County, an excavator was used to obtain samples from the bottom of the western part of the excavation. Soil was excavated to a depth of approximately

one to two feet below the bottom of the excavation. Two soil samples were collected in native soil, approximately 2 feet below the bottoms of the tanks. The two soil samples (T-1-1, T-2-1) were reported to contain very low concentrations of TPHg, ethylbenzene, total xylenes and methyl-t-butyl ether (MTBE) and were reported to be free of detectable benzene and toluene. The laboratory also reported one of the two water samples (GW-1) collected from the northeast side of the excavation to contain detectable concentrations of TPHg at 16,000 parts per billion (ppb), benzene at 4.6 ppb, toluene at 12 ppb, ethylbenzene at 250 ppb and total xylenes at 1,400 ppb. Water sample GW-1 was also reported to have MTBE at 20,000 ppb. Water sample GW-2 was reported to contain TPHg at 400 ppb, ethylbenzene at 0.54 ppb, total xylenes at 4.5 ppb and MTBE at 6,700 ppb.

In February 2000, CCI conducted a Reconnaissance Soil Investigation at the subject site. The purpose of the investigation was to determine the extent of soil and apparent groundwater contamination discovered at the site during Quik Stop's tank replacement program of December 1998. However, during the course of the investigation, it was discovered that non-water bearing bedrock (shale) was located approximately 14 feet below the ground surface. After consultation with Alameda County, it was decided to drill to refusal (approximately 25 feet) and collect sufficient soil samples to profile the extent of any contamination.

CCI drilled a total of three soil borings to depths of 25 feet in the vicinity of the fuel tank complex at Quik Stop Market No. 88. Soil samples collected during the investigation were found to be composed of a hard sandy, clay and shale bed rock. Groundwater was not encountered within the depths explored. Based on the geologic conditions encountered at the site, it appears that the water found and sampled at the bottom of the fuel tank excavation in December 1998 was not groundwater. It appears this was surface water which infiltrated the fuel tank complex and was prevented from further migration due to the underlying bedrock.

As previously stated, CCI submitted a total of 15 soil samples collected from various depths for analysis of petroleum hydrocarbons. The laboratory reported 4 of the 15 soil samples to have very low detectable concentrations (less than 1 mg/kg) of toluene, ethylbenzene or total xylenes compounds. Only one of the [illegible] was reported to contain detectable TPHg at 3.4 mg/kg.

Based on the laboratory data collected during the investigation, it appeared the soil contamination discovered during the fuel tank replacement program in December 1998 was limited to the tank excavation area, and that it appeared to pose no threat to the surrounding region. Further, a shallow groundwater table is not present at the site. It was CCI's opinion that no further investigation was warranted. However, in order to grant site closure, the County requested a sensitive receptor and preferential pathway survey be conducted to determine if contaminants could have migrated from the site by other means.

Area Land Use and Potential Sensitive Receptors

The Quik Stop Market site is located in an urban area of commercial and retail use, with some residences located uphill (approximately 350 feet to the north) from the site. The site is bound by Lake Chabot Road on the East, Castro Valley Boulevard to the south and Congress Way along the west side of the property (Figure 2). A liquor store is located adjacent to the south of the site. Commercial businesses, retail stores and restaurants are located along the north and southwest sides of the site. Eden Hospital is located approximately one-quarter mile north and up hill from the site.

Regional Hydrogeology

The site is underlain by moderate to well consolidated Tertiary sedimentary rocks (Schlocker, 1971). These rocks contain shale beds such as those encountered at the Quik Stop site. Webster (1972) has mapped this area to contain poorly permeable rocks which have very limited groundwater storage capacity, with well yields of less than 0.1 to 10 gallons per minute. Alameda County also conducted a review of the local geology and found the rocks to have low permeability with the sandstone and conglomerate units yielding small quantities of water. CCI's February 2000 exploratory borings revealed similar subsurface stratigraphy and groundwater was not observed within the claystone/shale bedrock below the sandy clay colluvial cover at the subject site. Test results on wells drilled in the area revealed the shale/claystone to yield very little water. On the basis of site topography and nearby compliance monitoring wells, it appears shallow groundwater, if present, flows to the south.

A stream flowing in a concrete lined culvert maintained by the Alameda County Flood Control and Water Conservation District flows to the south, just west of the site. This concrete lined stream course is fenced and the culvert lining inhibits surface water recharge into the ground.

2000 Foot Radius Well Survey

CCI conducted a 2000-foot radius well survey to ascertain whether any active water production wells were located in the area. The search consisted of a review of records at the Alameda County Flood Control and Water Conservation District, State of California Department of Water Resources and East Bay Municipal Utilities District, which supplies drinking water to the area.

The survey revealed 9 wells used as test wells, domestic wells or irrigation wells to be located near or within the 2000-foot radius search area (Table 1). Most of these wells are up-gradient or cross-gradient to the Quik Stop site. There are no active pumping wells reported within 2000 feet down-gradient of the subject site. However, it appears there are some wells outside the

search area. One domestic well was reported but this well was reported to be 1,800 feet northeast of the site and would not be affected by a plume migrating from the site. It should be noted that several (49) compliance monitoring wells are located within the search area. Some of these well locations are shown in Figure 3., however, these compliance wells are not listed in Table 1. Copies of the well logs from the 2000-Foot Radius Well Survey are attached in Appendix A.

Water yield in wells at depths of 60 feet or greater were generally low. Well logs (both conventional and compliance groundwater monitoring) show very little, if any water occurrence in bedrock. Almost all the compliance monitoring wells were terminated at depths of 20 to 30 feet.

Tier I Risk Based Corrective Action Overview

The Tier I process involves comparison of site constituents to generic Risk Based Screening Levels (RBSLs) to determine whether further evaluation is required. The current ASTM Tier I look up tables were used with the data collected from the field. Since groundwater was not encountered during the Reconnaissance Soil Investigation, conducted a the site in March 1999 (It should be noted the groundwater sampled during the fuel tank removal in December 1998, appeared to be from surface run-off) only soil data is used in this analysis. On the basis of the look up tables, the observed Benzene soil concentrations do not reach the threshold levels for indoor air (soil vapor intrusion from soil to buildings), the most likely pathway to on-site commercial receptors. These concentrations are below the levels for a cancer risk.

Discussion

Site boring data showed a sandy clay colluvium underlain by claystone/shale rock which became more indurated with depth. The water observed during the tank removal in December 1998, appeared to seep from the sandy clay to claystone/shale contact. At that time, a small pit had to be dug in order to collect a sample of the seeping water. CCI's exploratory borings revealed similar subsurface stratigraphy and lack of groundwater at depths of 25 feet. Groundwater was not observed to occur on-site in the bedrock which is significant, given the possibility of continuous seepage recharge from the nearby concrete lined creek. On the basis of this data, groundwater appears to accumulate only in extremely limited quantities at the sandy clay and claystone/shale contact. Groundwater does not occur in the claystone/shale bedrock.

Very low concentrations of toluene and total xylenes were reported in 4 of the 15 soil samples collected from the site in February 2000. The RBSLTier I look up tables were used with the data collected from the field. On the basis of the look up tables, the observed Benzene soil concentrations are below the levels for a cancer risk. A copy of the data tables from the Tank Closure and Reconnaissance Soil Investigation Reports are attached in Appendix B.

Methyl tertiary butyl either (MTBE) was observed in two grab water samples collected at the time of the fuel tank removal in December 1998. However, the groundwater and contaminated soil were excavated and removed from the site before the new fuel tanks were installed. Furthermore, MTBE was not observed in deep soil samples collected from the three soil borings in February 2000. In CCI's opinion, the MTBE observed in the tank excavation did not migrate either laterally into the colluvium or vertically into the underlying claystone/shale bedrock.

Conclusion and Recommendations

A 2000-foot well survey and reconnaissance sensitive receptor search was performed for the site area. The search revealed numerous monitoring wells used for regulatory compliance monitoring in the general area. There were no active pumping wells reported immediately down-gradient of the site within 2000 feet. One domestic well was reported, but this well was reported to be 1,800 feet northeast of the site and would not be affected by a plume migrating from the site.

Exploratory borings advanced by CCI around the tank pit area showed the groundwater was not present. Soil samples analyzed from these borings showed that extremely low concentrations of TPHg, toluene, ethylbenzene and total xylenes were detected. Benzene and MTBE were not detected in any sample. In CCI's opinion, these data indicate very little contaminant vertical penetration of contamination and no indication of the presence or movement in the assumed down-gradient direction from the site. It is CCI's opinion that no further investigation is warranted at this time and requests Alameda County Environmental Health Department to review this site for case closure.

LIMITATIONS

The discussions and recommendations presented in this report are based on the following:

1. Soil and groundwater samples collected at the site;

2. Observations by field personnel;

3. Results of laboratory analyses performed by a state-certified laboratory;

4. Our understanding of the regulations of the State of California, Alameda County, and the City of Castro Valley.

It is possible that variations in the soil or groundwater conditions could exist beyond the points explored in this investigation. Also, changes in the groundwater conditions could occur at some time in the future because of variations in rainfall, temperature, regional water usage,

or other factors.

The services performed by CCI, have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the Alameda County area. Please note that contamination of soil and groundwater must be reported to the appropriate agencies in a timely manner. No other warranty, express or implied, is made.

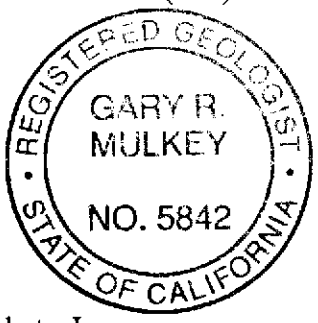
CCI includes in this report chemical analytical data from a state-certified laboratory. The analytical results are performed according to the procedures suggested by the U.S. EPA and the state of California. CCI is not responsible for laboratory errors in procedure or result reporting.

If you have any questions, please call our office at (925) 426-5395.

Sincerely,
Compliance & Closure, Inc.

Gary R. Mulkey

Gary R. Mulkey, R.G. 5842



cc: Mr Mike Karvelot, Quik Stop Markets, Inc.

References:

American Society for Testing and Materials, Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites E 1739-95, look up Table X2.1.

Compliance and Closure, Inc., report dated March 31, 1999 to Quik Stop Markets entitled, "Tank Closure Report Underground Storage Tank Removal, Quik Stop No. 88 20757 Lake Chabot Road, Castro Valley, California (CCI Project No. 12139-1)," 6 pages with attachments.

Compliance and Closure, Inc., report dated February 28, 2000 to Quik Stop Markets entitled, "Reconnaissance Soil Investigation Report, Quik Stop No. 88 20757 Lake Chabot Road, Castro Valley, California (CCI Project No. 12139-2)," 6 pages with attachments.

Geologic Framework of the East Bay Plain Groundwater Basin Alameda County California: Alameda County Flood Control and Water Conservation District, August, 1993.

Geohydrology and Groundwater-Quality Overview of the East Bay Plain Area, Alameda County, CA: 205(J) Report Appendix-East Bay Plain Inventory.

Quik Stop No. 88
CCI Project No. 12139-3

6-Apr-01

Table 1

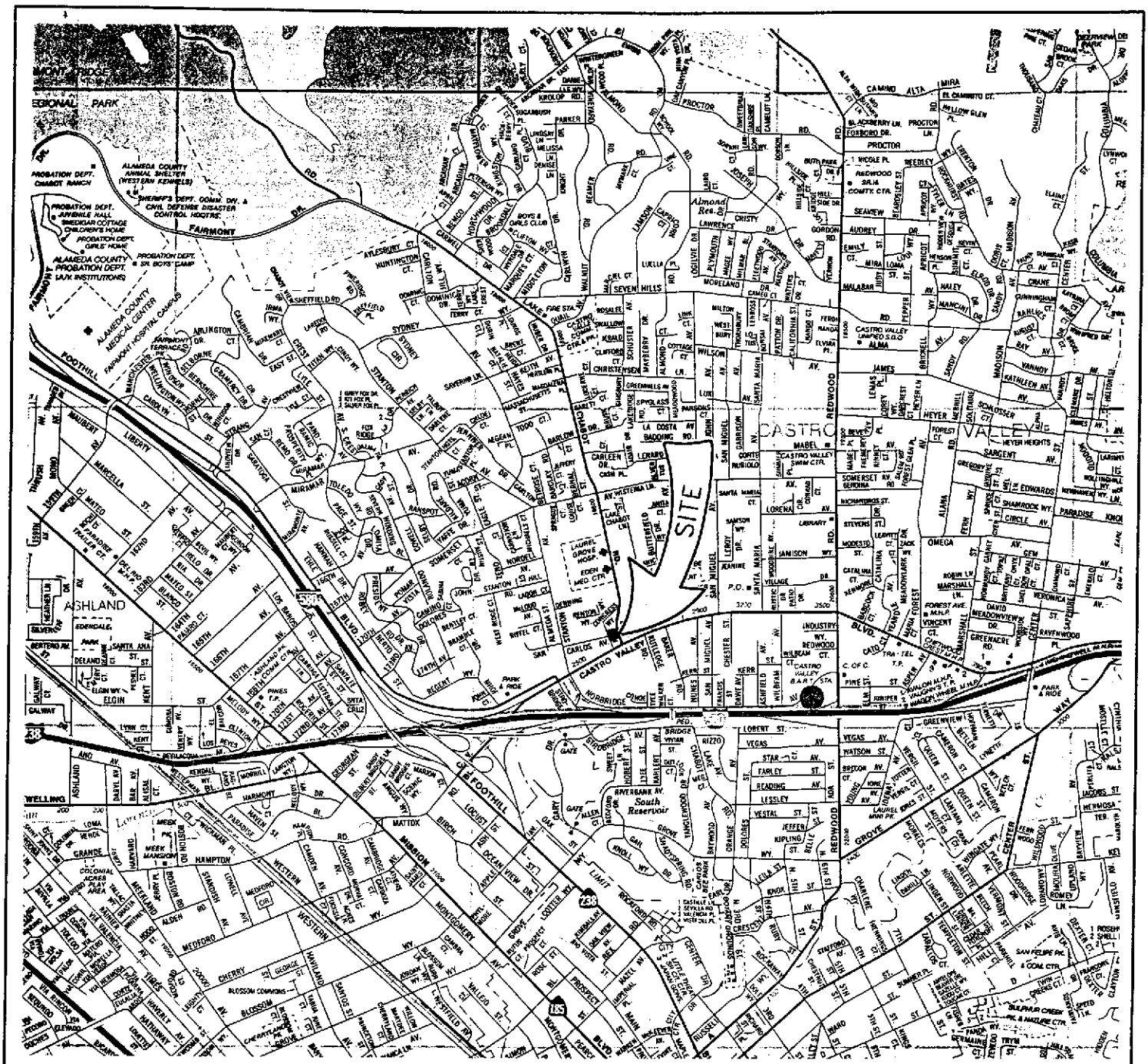
2000-Foot Radius Well Search Results

Quik Stop Market No. 88, 20757 Lake Chabot Road, Castro Valley, CA

State Well No. or Well Address	Date Drilled	Total Depth (ft)	Casing and Perforations	Depth to Water (If Known)	Wells use or Status (If Known)
18878 Redwood Rd. Castro Valley, CA	10/1/54	73	None, test hole	Unknown test bailed 40 gpm	Test
8045 Alisal Castro Valley, CA	1956	60	60 ft. perf from 30-60 ft	12	Irregation
3S/2W-4K1 Eden Hospital	9/1/53	150	150 ft. perf. from 110-110-132-140 ft.	102	Test Well
3S/2W-4J1 20036 Anita Ave.	2/1/53	51	51 ft. perf. from 31 -51 ft.	Not State	Domestic
3S/2W-4G1 Reese	Unknown	76	70 ft.; perf; 20-30; 44-70 ft.	Unknown	Unknown
2962 Somerset Ave.	6/1/88	77	77 ft. pert. 66-77 ft.	Unknown	Abandon ?
3S/2W-9B1 326 Cherry Way	6/1/79	83	71 ft.; perf. 30 - 70 ft.	25	Irrigation
2691 Castro Valley Blvd.	8/1/88	205	not constructed	no yield	Test assumed abandoned
3S/2W-4H2 3223 Lenard Dr.	8/1/88	220	220 ft.; perf; 30-220 ft.	36	Domestic

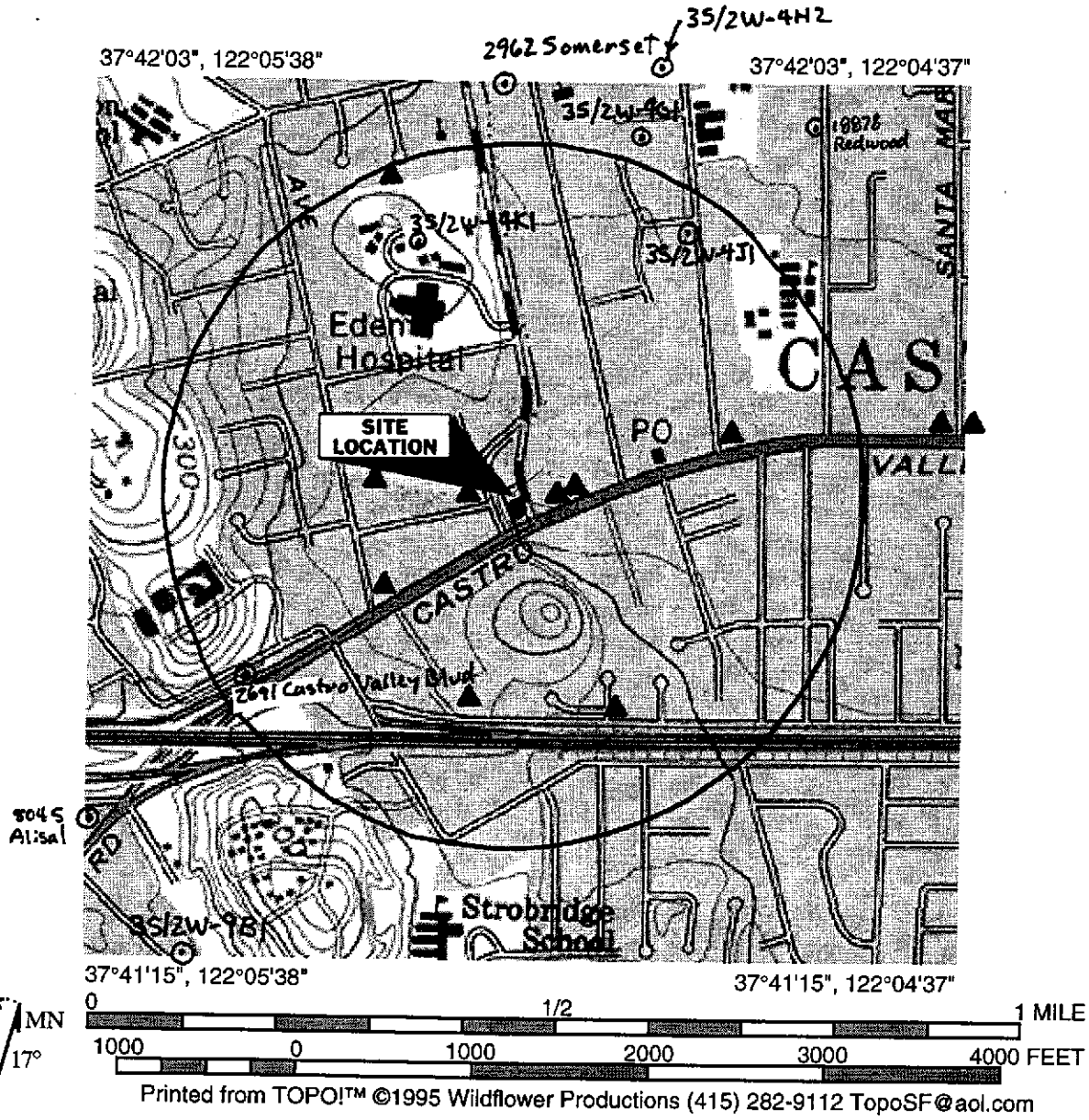
Note: Compliance groundwater monitoring wells are not listed in this table

Compliance & Closure, Inc.



QUIK-88V

reviewed by: RG	LOCATION MAP	Compliance & Closure, Inc.
approved by: RG	Quik Stop No. 88	
drawn by: EC	20757 Lake Chabot Road	
job no.: Quik Stop No. 88	Castro Valley, California	date: 03/11/99 / drawing no.: Figure 1



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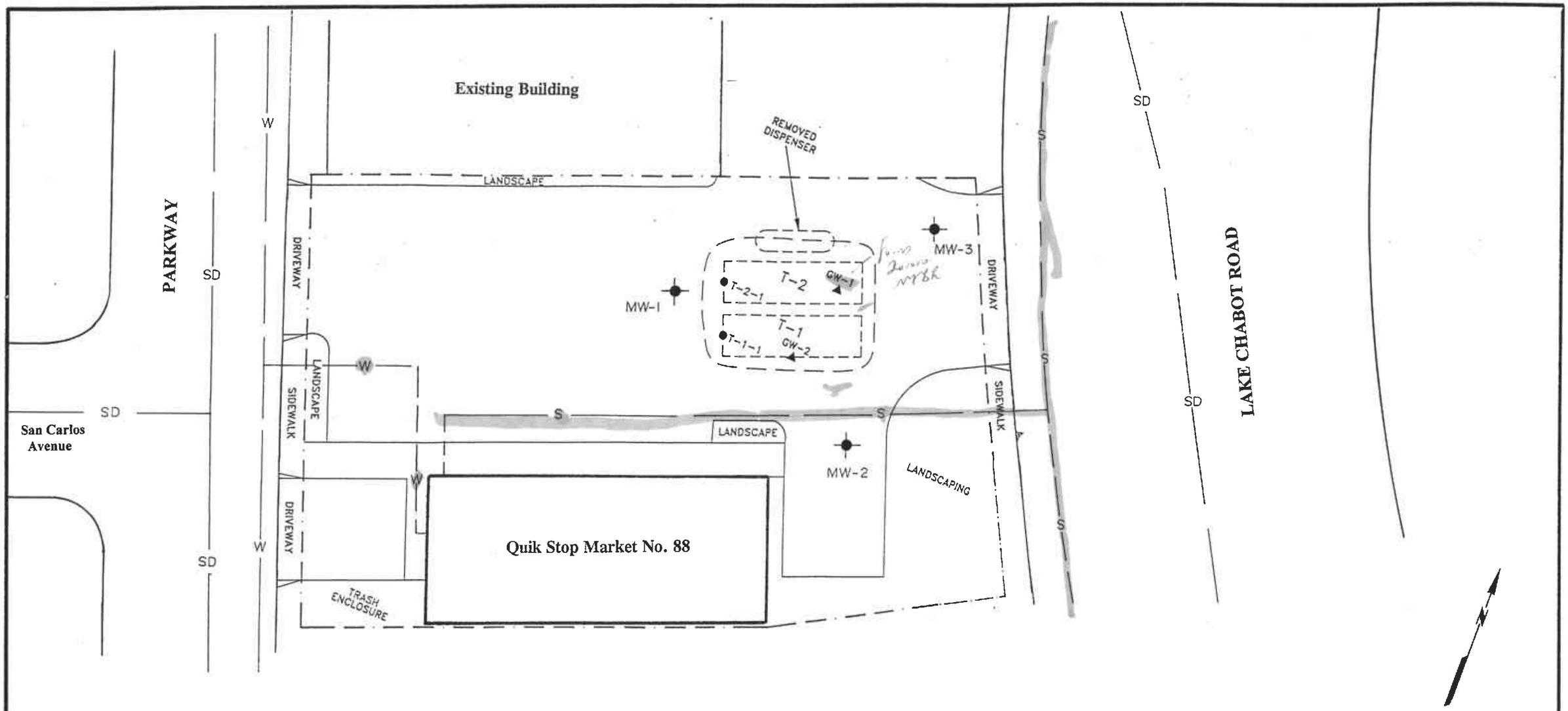
▲ Compliance monitoring well sites

⊙ Reported water well or test well location

Reviewed By:	**2000-FOOT RADIUS WELL SURVEY MAP** **Quik Stop Market No. 88** **20757 Lake Chabot Road** **Castro Valley, California**	**Compliance & Closure, Inc.**
Approved By:		Job No.: 12139-3 / Drawn By: GM Date: 4/6/01 / Fig. No.: FIG. 3



LEGEND

- soil boring drilled 2/15/00
- soil sample collected 12/98
- water sample collected 12/98
- W water line
- S sewer line
- SD storm drain

REVIEWED BY:

APPROVED BY:

SITE MAP

Quik Stop No. 88
20575 Lake Chabot Road
Castro Valley, California

Compliance & Closure, Inc.

JOB #: 12139-3	DRAWN BY: GM
DATE: 4/9/01	DRAWING #: FIG. 2

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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 LOGS)

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Report No. _____

Owner _____

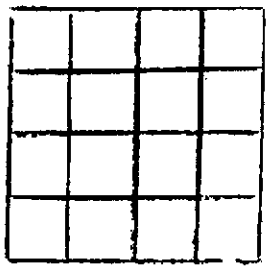
Pump No. _____

Meter No. _____

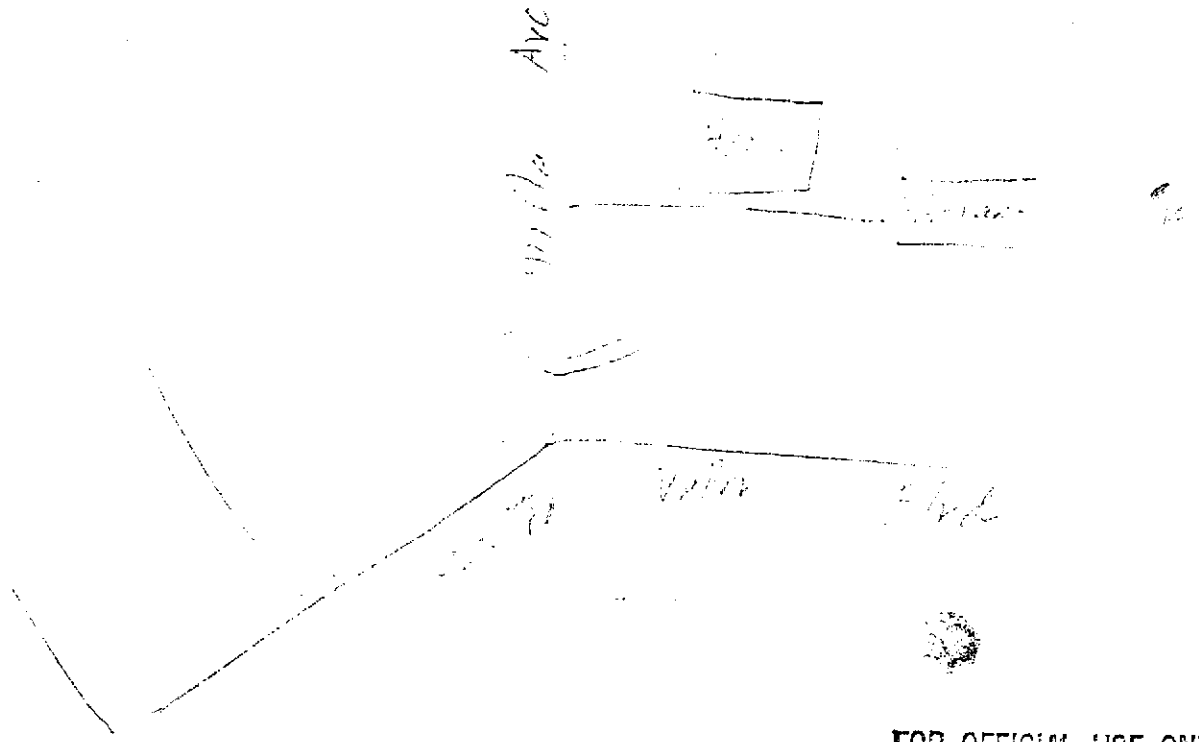
Region _____; County _____

Township _____, Range _____, Section _____, _____ B&M.

_____ ft. north, _____ ft. west from southeast corner of Section.



SKETCH



FOR OFFICIAL USE ONLY

DESCRIPTION OR REMARKS

Garage

Checked by _____ Date _____

REGION _____ DEPARTMENT OF WATER RESOURCES BASIN _____

COUNTY _____ DEPARTMENT OF PUBLIC WORKS DWR No. 3S/2W-4G1 _____ B & M

NEAR _____ STATE OF CALIFORNIA OTHER Nos. _____

WELL LOG

LOCATION _____

OWNER Reese ADDRESS William St, Castro Valley

DRILLED BY K. De Lucchi ADDRESS _____

DRILLING METHOD cable GRAVEL PACKED _____ DATE COMPLETED _____

SIZE OF CASING DEPTH _____ STRUCK WATER AT _____

PERFORATIONS 20-30, 44-70' 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	THICK-NESS	SP. YIELD %	
0 - 2		soil			
~~2 - 14~~		~~yellow clay~~			
14 - 19		sandy yellow clay			
19 - 32		sand and gravel			
32 - 46		yellow clay			
46 - 49		sandy brown clay			
49 - 52		clay and gravel			
52 - 59		sandy brown clay			
59 - 64		gravelly yellow clay			
64 - 70		hard brown day			
70 - 76		brown clay			

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY _____ DATE _____ SHEET 1 OF _____

FORM 263. 65981 11-57 10M △ SPO

Jan. 5, 1988

Emmett O. Baker
Water Permit #88296

Water Resources Management
General Manager
J. Killingstad, Chief:

Dear Sir:

I am in no way a professional well driller. You seem to want more information than I am able to give. I will give you a summary of my experiences at trying to find water on the church property at 2962 Somerset Ave. in Castro Valley. I trust this will be enough, maybe you could send me some blank logs to be filled out should I try again to dig another post hole of sufficient depth to hopefully find water.

In June 1988 the church decided we should dig a water well. Since my brother owns a well drill which wasn't being used, I was given permission to dig the well. With almost no experience I began asking for help as to how to go about it. Everybody gave plenty of ideas. I went to Maderia and brought the well drill here. I repaired the drill as necessary to make it operable. I purchased casing-pump-tank and everything that I thought I needed, then started to drill my first post hole. I drilled a 10" hole 80 feet deep, placed my 6" casing and pea gravel into the hole. I left apprx. 20 feet above pea gravel for well seal. I rented an air compressor and used air pressure to blow mud and water from well to clean out before placing pump in hole. I placed the pump into hole and was able to pump apprx. 100 gallons of water after 24 hours. After one hour I could pump apprx. 6 gallons.

I was told that the amount of water would increase by continual pumping so I started to seal the the top off and found sand had caved in on top of the pea gravel to a height 10 feet from the top of the ground. After trying several different ways to remove the sand to allow for the seal and not being able to, and with the possibility of finding more water at a different location, I decided to drill a new well doing everything right this time. We had the Water Witch to come back and show us where to drill a second time and how deep. We removed the casing from the first hole and filled it in. We damaged some of the casing and purchased another 10 feet.for the depth of the second hole. We drilled the second hole 89 feet deep.to accomadate the casing lenght and more than needed according to the Water Witch. We found about the same type and same depth of different material as we drilled each hole (4 of them) We found rock at about 15-18 feet.
We found hard blue clay at about 20-22 feet.
We found rock or gravel from 35-42 feet.
We found hard blue clay from about 42-45 feet.
We found easy drilling from about 45-65 feet.
We found more rock or gravel from about 65-to 75 feet.
We found sand from 75-84 feet.
We found gravel from 84-bottom at 89 feet.

Upon reaching 89 feet, we placed the casing into hole, poured pea gravel up to 20feet from top of ground, and sealed the top 20 feet off with cement. We rented a more powerful air compressor and blew out the well. We placed the pump into the well and were able to pump apprx. the same amount of water as the first hole. I asked the Water Witch to come back to discuss the options available.
We decided to go inside the 6" casing with a 6" drill, and drill 20 feet more. Drilling went easy and fast. At 109' I placed the pump into the well and found no more water than at 89 feet.

I placed the drill back into the hole and drilled another 18 feet, at the point of adding another section of drill shaft the bottom of the hole caved in on the drill bit up to the bottom of the casing. Not being able to reverse the drill which might have helped get it out, I used jacks, and was able to moveit some, but not to free it. I rented a tow truck which the operator said would left 60 tons. The drill moved apprx. 5 feet before the2" drill shaft Pulled apart at 50 feet.from the top of the ground. The shaft is still there and the amount of water is still about 100 gallons after 24 hours. With such a slow recovery it seened foolish to bother with it. We still have a pump in it with the jet at about 87 feet.

We decided to have another Water Witch check to see if he could agree with another spot the first one had suggested might be another place we could find water. He did not agree at all, but found another spot about 100 feet fromthe last one. so we were off again.

We started our third post hole. Since money was now becoming a problem, our Pastor wanted to know if we could place the pump into the hole to see if we had water before buying the casing and gravel etc. We dicussed the hazard involved but decided to try anyway. We were able to get the pump out. The sand caved in to a level of 10 feet from the top of the ground. There was more than sand in the cave in. We put the drill back into the hole to flush the sand out after buying a casing and gravel. The drill kept hitting something, maybe a rock which kept falling lower into the hole as we removed the sand. At about 60' the threads stripped on the drill shaft about 5 feet above the bit. We pumped the water out to try and get a hold onto the shaft. As soon as the water was removed the sand caved in, covering the bit and filling the hole to a level 10 feet from the top of the ground. (At least we didn't have much trouble filling in the rest of the hole.)

Now we have casing and gravel and cement so we drill another hole about 30 feet from the third one at the next suggested spot. Drilling went very well(experience helps). The suggested depth was 72 feet, the lenght of our casing. We finished the well off and place the pump into the well. The amount of water was(is) apprx. ½ the amount of the first two wells. Our Pastor want to pump from both wells in order to salvage something from all the work and expense. I tryed to convince him that it was not worth the time and effort since there was not enough water to make it worthwhile. I suggested that it would be better to drill another well if we could find a better place to drill. The Pastor finally agreed. We are now waiting on the Water Witch to come from Sacramento with another type of tool to show us where to drill next. I am hoping he does not find a place he is satisfied with. However, I would like to keep the permit open in case he does.

(These notes are from the last well to date and may be of interest to you.) R

First 5 feet is filled with rocks and concrete
Next 15 feet is easy drilling
Hard blue clay at 20 feet for one foot
Next 5 feet easy drilling
From 26-37 feet very soft (sand)?
Three feet of gravel, 37-40 feet
One half foot hard blue clay at 40 feet
Next 15 feet easy drilling with gravel at 46 and again at 54 feet.
Hard blue clay at 55-56 feet.
Some gravel at 63 feet then
Hard clay at 63 and ½ feet for ½ foot.
Gravel and then hard clay again at 65 feet.
Slow drilling to 74 feet then,
Gravel and soft sand for 3 feet.
Stopped drilling well #4 at 77 feet.

Sincerely Yours,
Emmett O. Baker
Foothill Baptist Church 537-0414
Emmett O. Baker

Custodian

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(WELL LOGS)

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(WELL LOGS)

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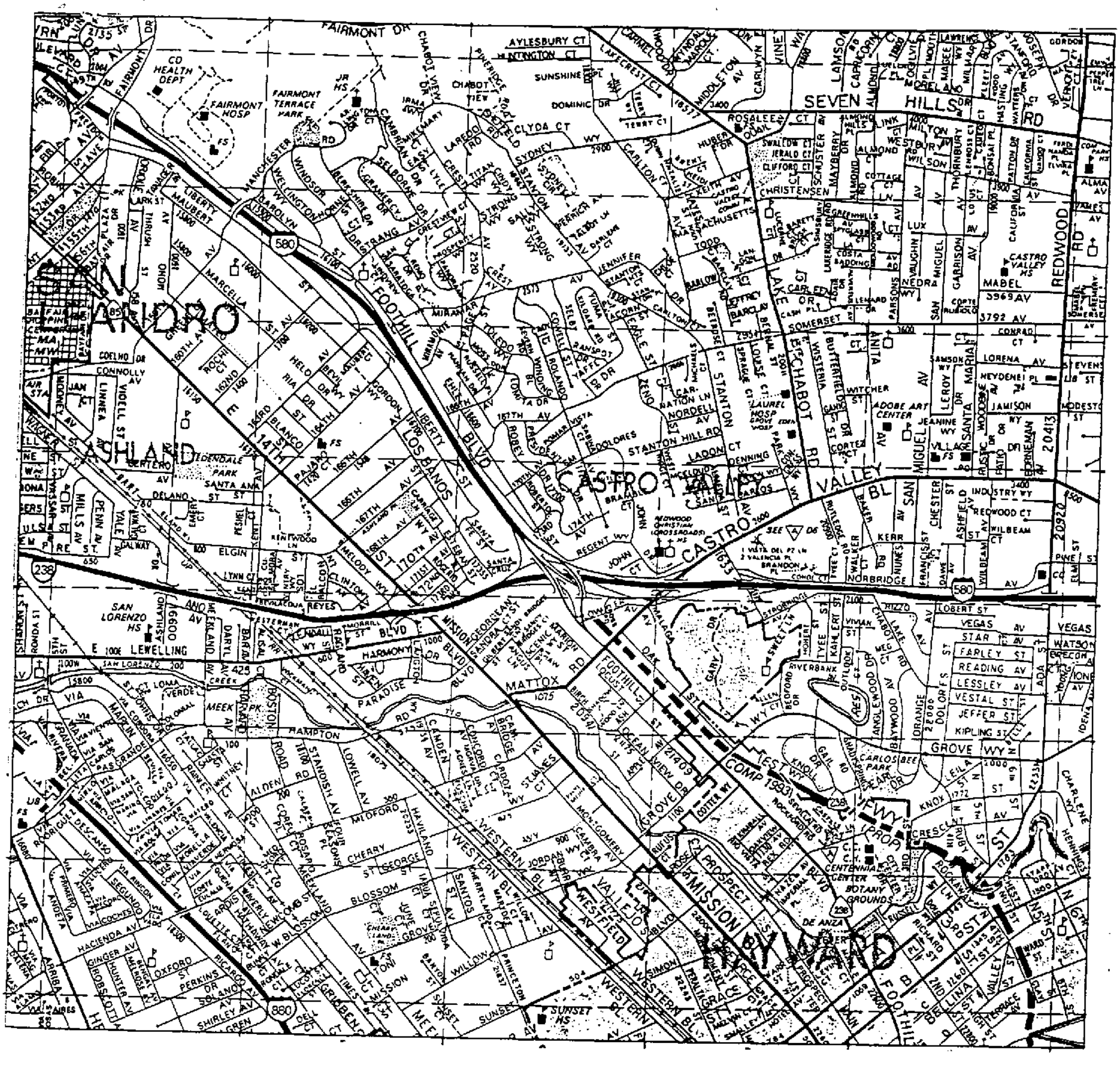
SAN LEANDRO
ASHLAND
CASTRO VALLEY
HAYWARD
SAN LORENZO HS
CASTRO VALLEY HS
SUNSET HS
FAIRMONT HOSP
CO HEALTH DEPT
FAIRMONT TERRACE PARK
LAUREL HOSP
ADOBE ART CENTER
CENTENNIAL CENTER
BOTANY GROUNDS
REDWOOD CHRISTIAN (CROSSROADS) HS
SEVEN HILLS RD
CASTRO VALLEY BL
FOOTHILL BLVD
MISSION BLVD
E 14TH ST
LEWELLING
FAIRMONT DR
LAKE CHABOT RD
REDWOOD RD
MATTOX RD
HAMPTON
WESTERN BL
FWY PROP
COMP 1993
580
238
880

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(WELL LOGS)

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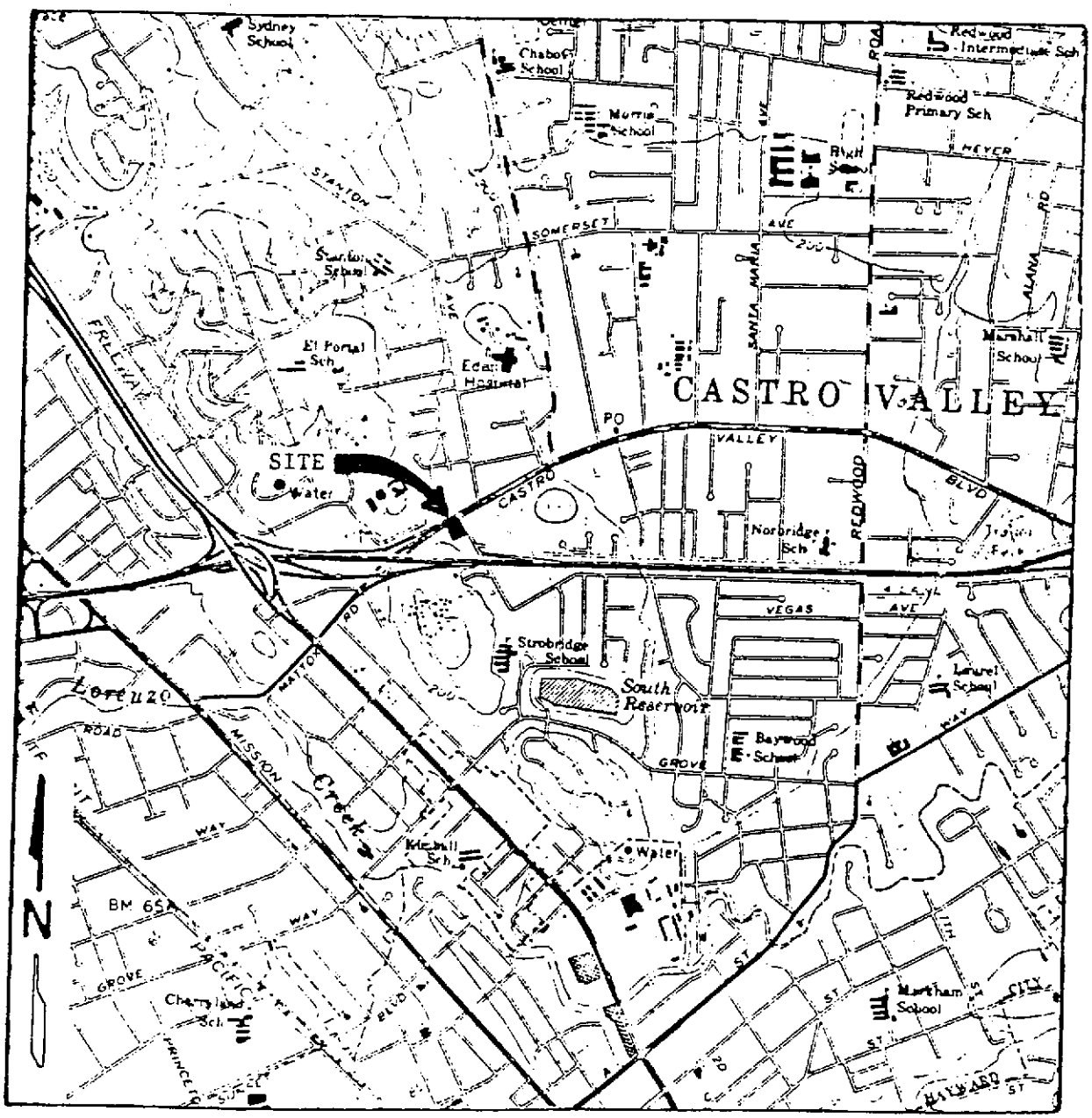
KAPREALIAN ENGINEERING, INC.
Consulting Engineers
P.O. BOX 996 • BENICIA, CA 94510
(707) 746-6915 • (707) 746-6916 • FAX: (707) 746-5581

3083551-C



LOCATION MAP

Unocal Service Station #3072
2445 Castro Valley Blvd.
Castro Valley, California

KAPREALIAN ENGINEERING, INC.
Consulting Engineers
P.O. BOX 996 • BENICIA, CA 94510
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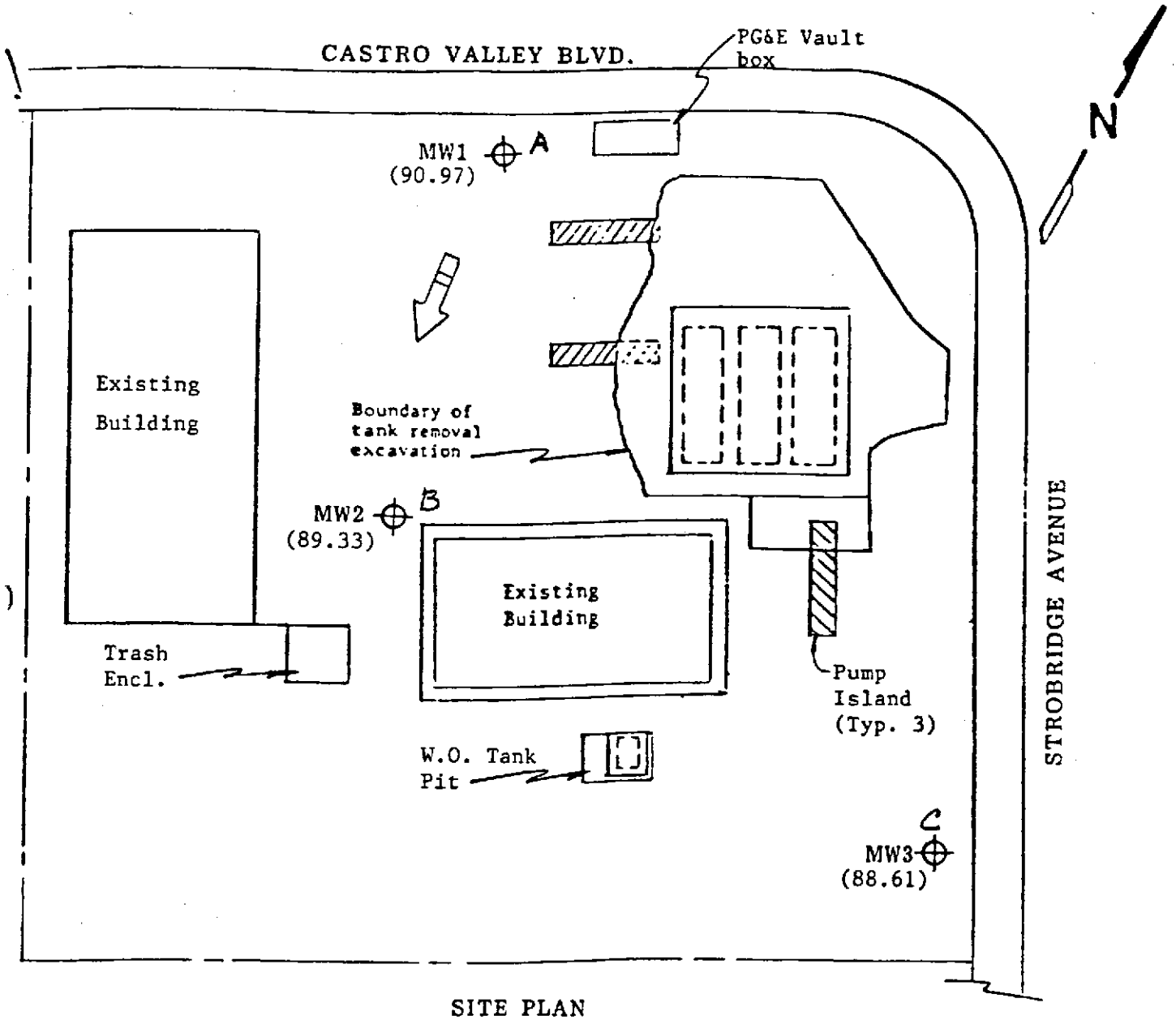
308355A-C



SITE PLAN
Figure 1

LEGEND

⊕ Monitoring Well

( ) Ground water elevation in feet on 1/24/90. Top of MW1 well cover assumed 100.00 feet as datum.

⇨ Direction of ground water flow

30 0 30
Approx. Scale feet

Unocal Service Station #3072
2445 Castro Valley Blvd.
Castro Valley, California

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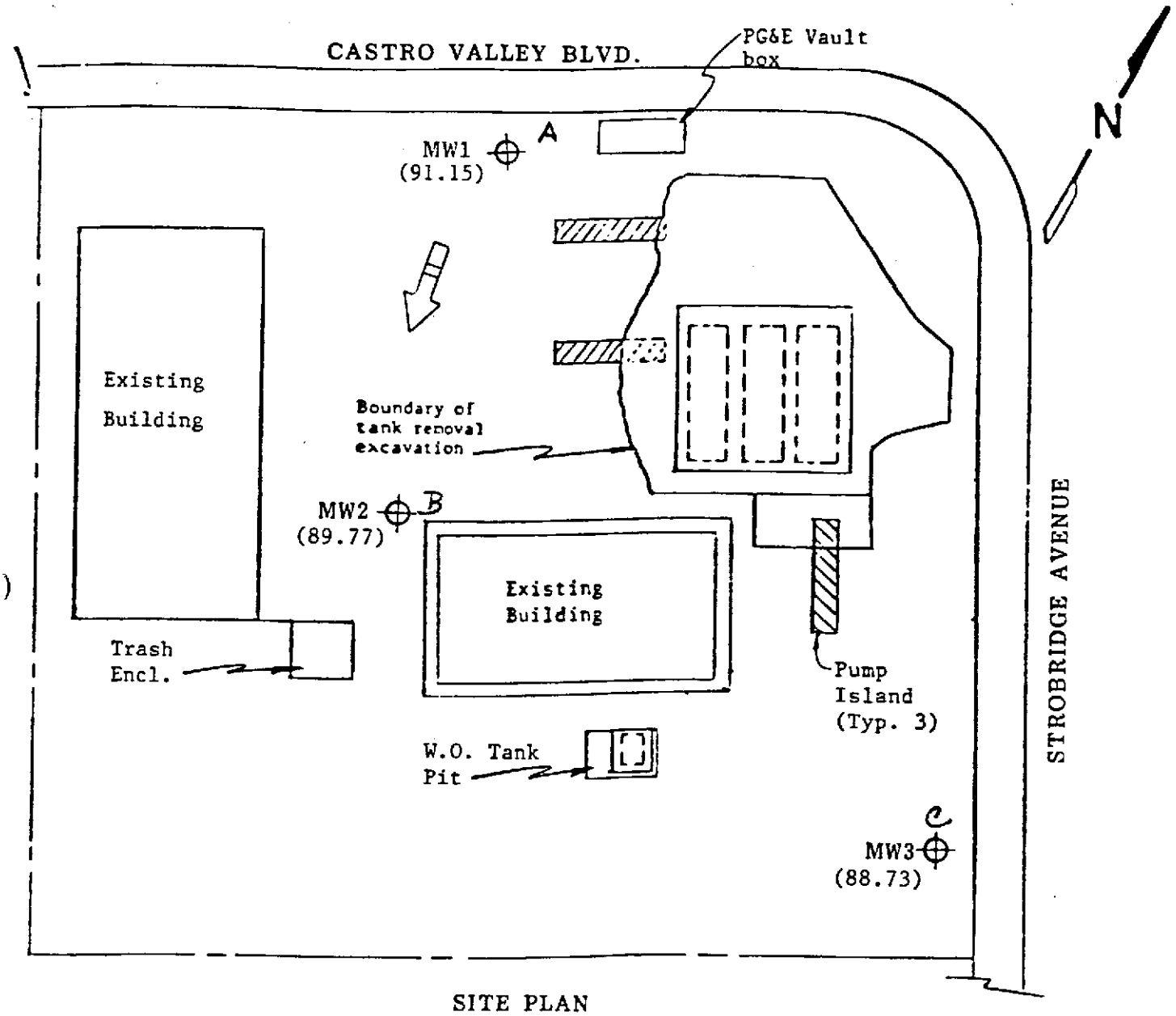
308355A-C



SITE PLAN
Figure 2

LEGEND

⊕ Monitoring Well

( ) Ground water elevation in feet on 3/22/90. Top of MW1 well cover assumed 100.00 feet as datum.

⇨ Direction of ground water flow

30 0 30
Approx. Scale feet

Unocal Service Station #3072
2445 Castro Valley Blvd.
Castro Valley, California

3S/2W 9B1

BORING LOG 3083554

Project No. KEI-P89-1106	Boring & Casing Diameter 9" 2"	Logged By D.L.
Project Name Unocal Castro Valley	Well Head Elevation N/A	Date Drilled 1/18/90
Boring No. MW1	Drilling Method Hollow-stem Auger	Drilling Company EGI

Penetration blows/6"	G. W. level	Depth (ft) Samples	Stratigraphy USCS	Description
		0		A.C. Pavement Clay, sand, and gravel: fill
			CH	Clay, high plasticity, stiff, moist, black.
5/7/14		5		Color change at 5 feet to dark gray 10-15% sand.
16/33/43			N/A	Shale bedrock, weathered, locally hard, fractured, slightly moist, olive brown, clayey inside fractures.
22/46/ 50-5"		10		needs page 2
	▼			Shale bedrock at 13 feet, as above, wet.
		15		
		20		Color change at 20 feet to very dark gray.

308355A

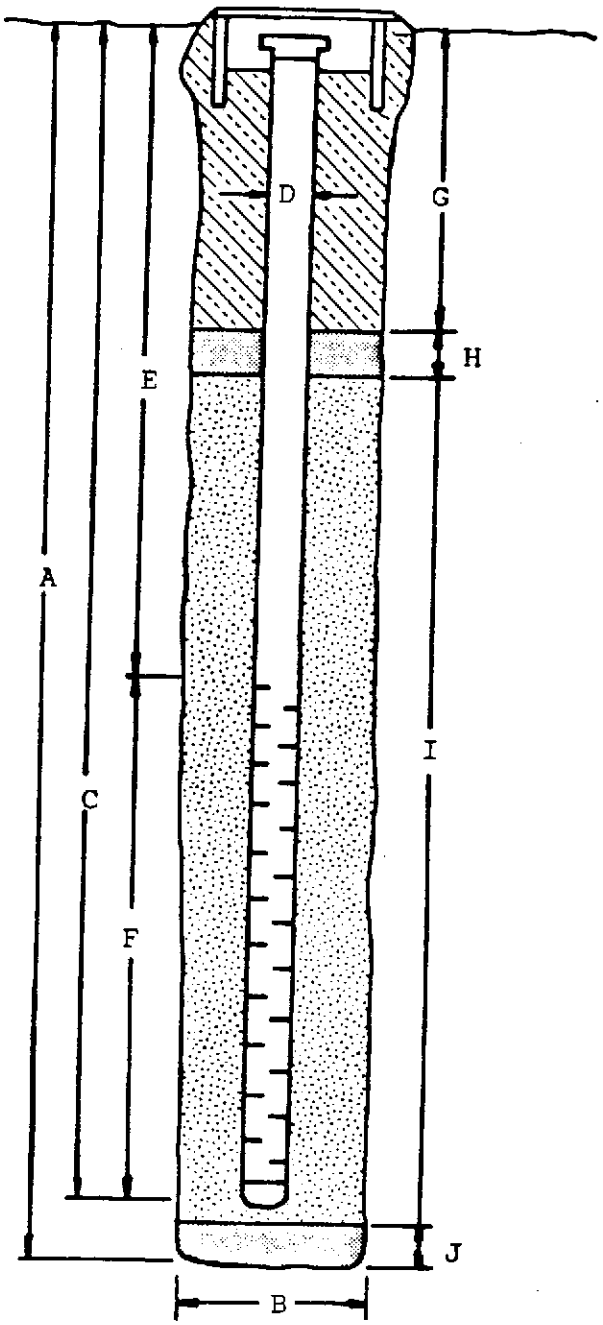
WELL COMPLETION DIAGRAM

PROJECT NAME: Unocal - Castro Valley BORING/WELL NO. MW1

PROJECT NUMBER: KEI-P89-1106

WELL PERMIT NO.:

Flush-mounted Well Cover



A. Total Depth: 25.5'

B. Boring Diameter*: 9"

Drilling Method: Hollow Stem Auger

C. Casing Length: 25.5'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375"

ID = 2.067"

E. Depth to Perforations: 8'

F. Perforated Length: 17.5'

Perforation Type: Machined Slot

Perforation Size: 0.020"

G. Surface Seal: 4'

Seal Material: Concrete

H. Seal: 2'

Seal Material: Bentonite

I. Gravel Pack: 19.5'

Pack Material: RMC Lonestar Sand

Size: #3

J. Bottom Seal: None

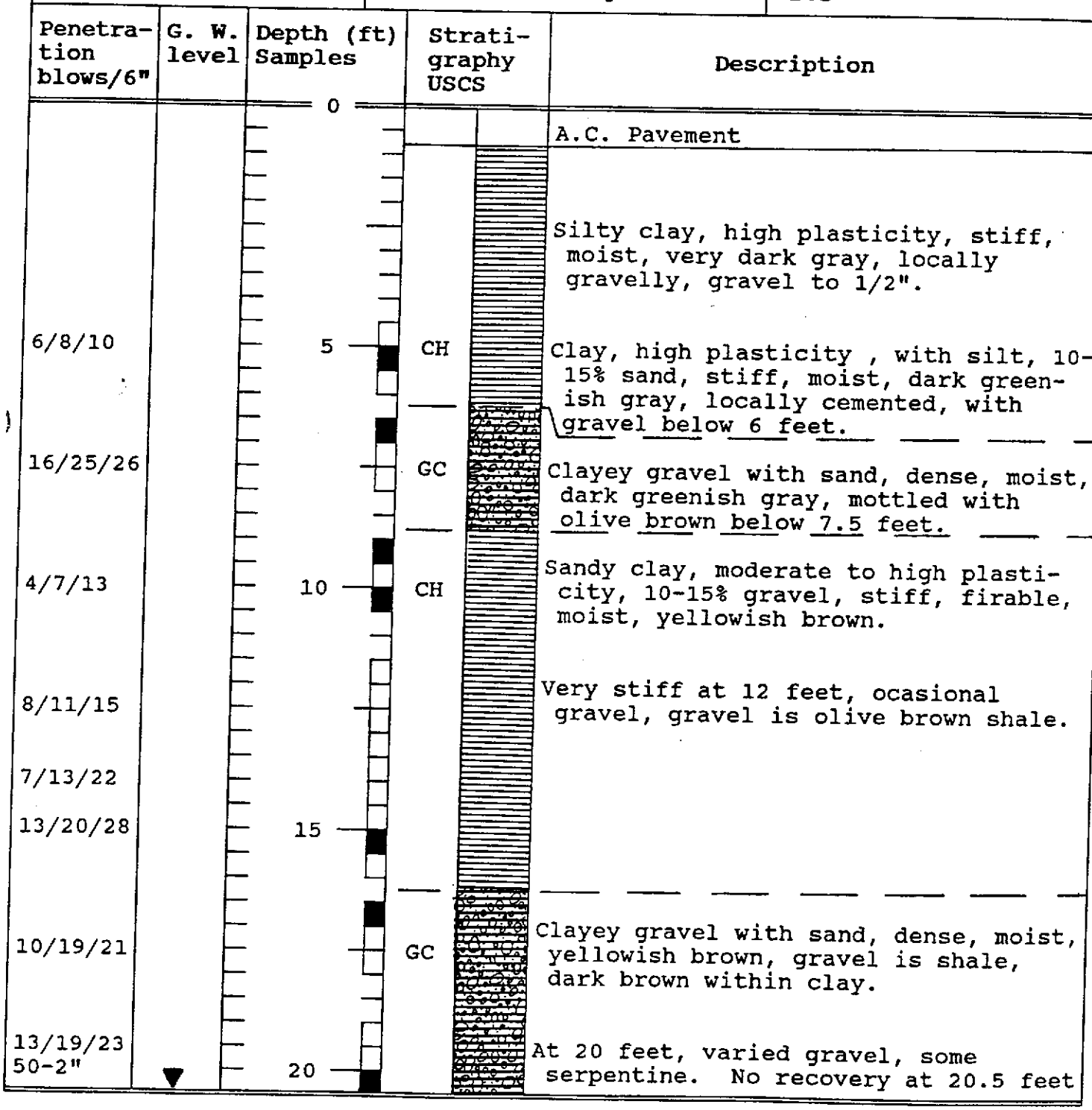
Seal Material: N/A

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

BORING LOG

308355 B

Project No. KEI-P89-1106	Boring & Casing Diameter 9" 2"	Logged By D.L.
Project Name Unocal Castro Valley	Well Head Elevation N/A	Date Drilled 1/18/90
Boring No. MW2	Drilling Method Hollow-stem Auger	Drilling Company EGI



3S/2W 9B2

BORING LOG

308355B

Project No. KEI-P89-1106	Boring & Casing Diameter 9" 2"	Logged By D.L.
Project Name Unocal Castro Valley	Well Head Elevation N/A	Date Drilled 1/18/90
Boring No. MW2	Drilling Method Hollow-stem Auger	Drilling Company EGI

Penetration blows/6"	G. W. level	Depth (ft) Samples	Stratigraphy USCS	Description
36/48/ 50-5"			SW-SC	Clayey sand with gravel, 15% clay, gravel as above, hard, wet, olive brown.
			N/A	Shale bedrock, very hard, fractured, dark yellowish brown to dark brown.
22/50-5"		25		Shale bedrock, well weathered to clay, locally hard, very dark gray.
50-3"		30		No recovery, shale bedrock, as above, near refusal.
		35		
		40		TOTAL DEPTH: 30'

3083558

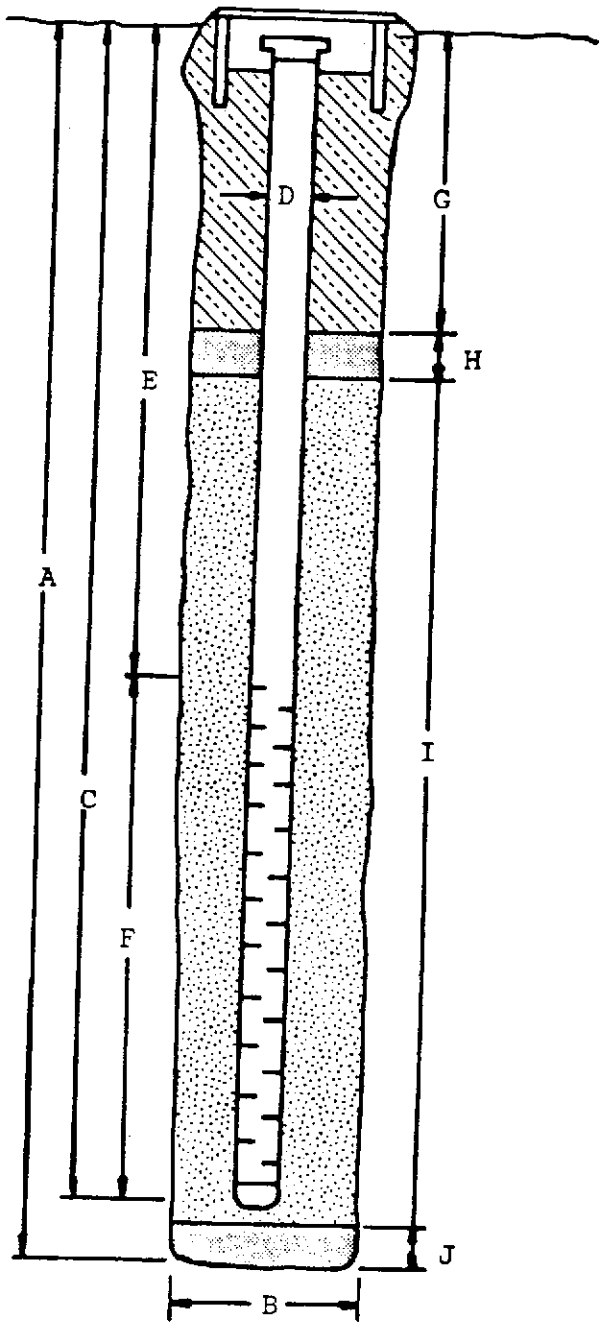
WELL COMPLETION DIAGRAM

PROJECT NAME: Unocal - Castro Valley BORING/WELL NO. MW2

PROJECT NUMBER: KEI-P89-1106

WELL PERMIT NO.:

Flush-mounted Well Cover



A. Total Depth: 30'

B. Boring Diameter*: 9"

Drilling Method: Hollow Stem Auger

C. Casing Length: 25'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375"

ID = 2.067"

E. Depth to Perforations: 5'

F. Perforated Length: 20'

Perforation Type: Machined Slot

Perforation Size: 0.020"

G. Surface Seal: 2'

Seal Material: Concrete

H. Seal: 2'

Seal Material: Bentonite

I. Gravel Pack: 26'

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.

3S/2W 9B3

BORING LOG

308355C

Project No. KEI-P89-1106	**Boring & Casing Diameter** 9" 2"	**Logged By** D.L.
Project Name Unocal Castro Valley	**Well Head Elevation** N/A	**Date Drilled** 1/19/90
Boring No. MW3	**Drilling Method** Hollow-stem Auger	**Drilling Company** EGI

Penetration blows/6"	G. W. level	Depth (ft) Samples	Stratigraphy USCS	Description
		0		A.C. Pavement Sand and gravel: fill
				Silty clay, high plasticity, stiff, moist, very dark grayish brown, 5-10% sand.
10/17/22		5	CH	Gravelly clay, high plasticity, 5-10% silt, very stiff, moist, light olive brown.
20/21/24			GC	Clayey gravel with sand, very dense, moist to wet, olive brown, gravel is almost entirely shale.
23/28/33	▼	10		
18/30/23		15		Clayey gravel with sand, as above, ocasionally grading to gravelly clay, very stiff, moist, olive brown.
		20		

BORING LOG

308355C

Project No. KEI-P89-1106	Boring & Casing Diameter 9" 2"	Logged By D.L.
Project Name Unocal Castro Valley	Well Head Elevation N/A	Date Drilled 1/19/90
Boring No. MW3	Drilling Method Hollow-stem Auger	Drilling Company EGI

Penetration blows/6"	G. W. level	Depth (ft) Samples	Stratigraphy USCS	Description
				Clayey gravel with sand, as above, ocasionally grading to gravelly clay, as above.
		25		
		30		
		35		
		40		TOTAL DEPTH: 22'

308355C

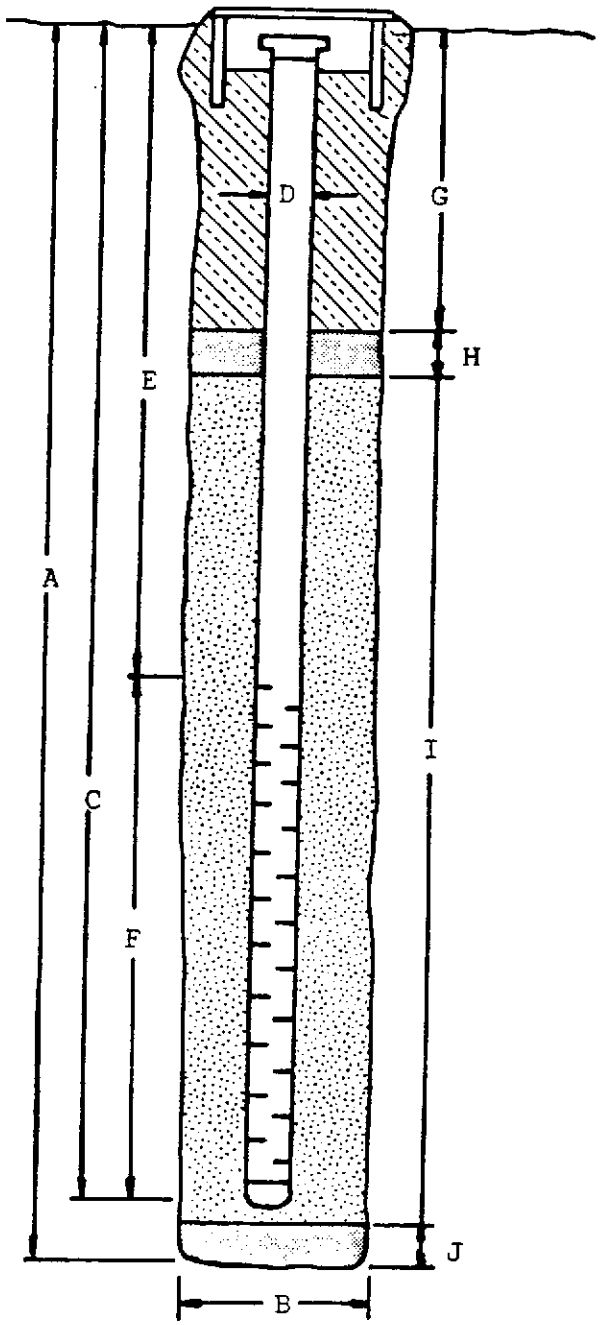
WELL COMPLETION DIAGRAM

PROJECT NAME: Unocal - Castro Valley BORING/WELL NO. MW3

PROJECT NUMBER: KEI-P89-1106

WELL PERMIT NO.:

Flush-mounted Well Cover



A. Total Depth: 22'

B. Boring Diameter*: 9"

Drilling Method: Hollow Stem Auger

C. Casing Length: 22'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375"

ID = 2.067"

E. Depth to Perforations: 5'

F. Perforated Length: 17'

Perforation Type: Machined Slot

Perforation Size: 0.020"

G. Surface Seal: 2'

Seal Material: Concrete

H. Seal: 18'

Seal Material: Bentonite

I. Gravel Pack:

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.

CONFIDENTIAL

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

REMOVED

35/2W 9B4-5

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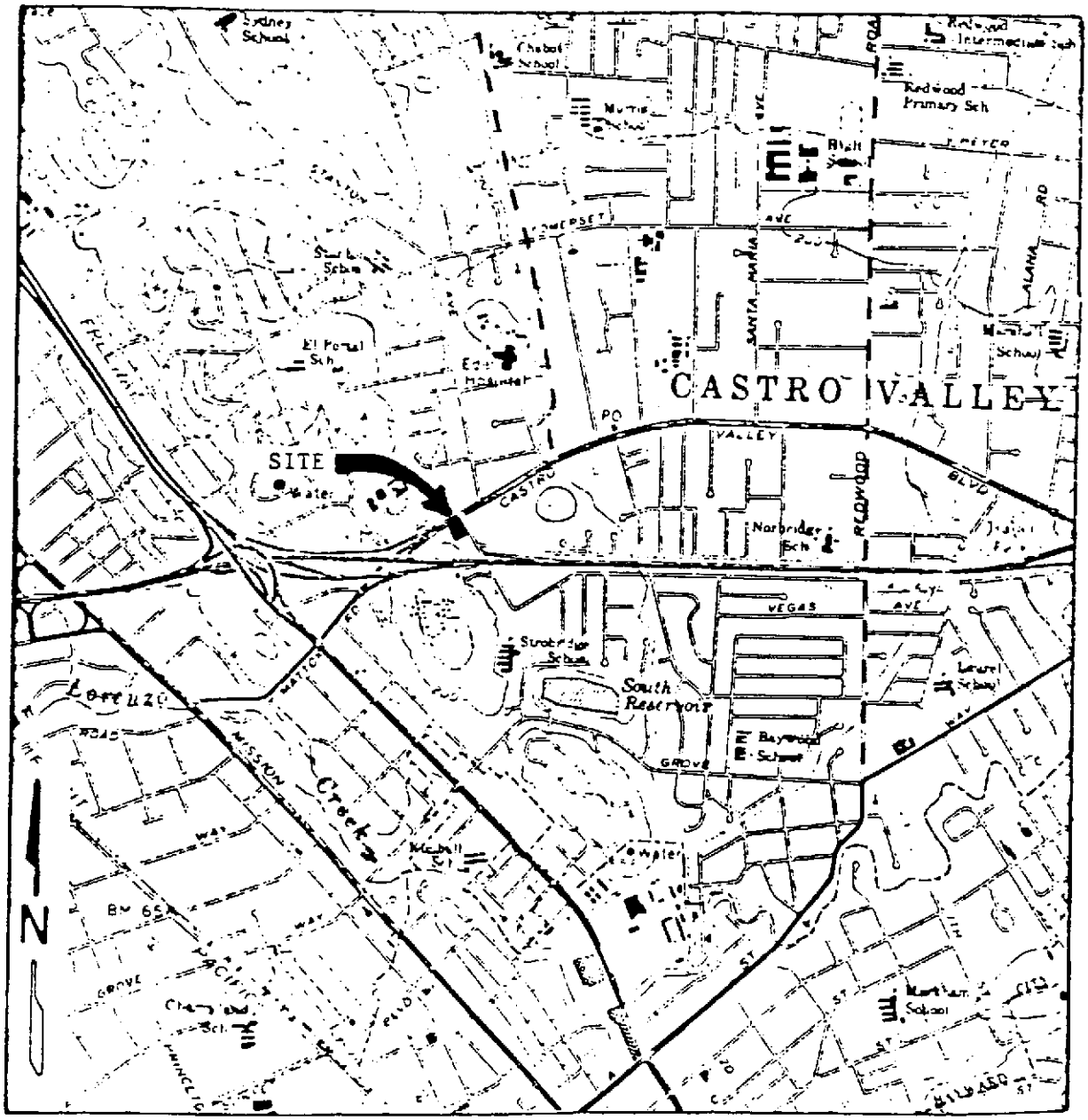

LOCATION MAP

Unocal S/S #3072
2445 Castro Valley Blvd.
Castro Valley, CA

35/2W 9B4-5

KAPREALIAN ENGINEERING, INC.
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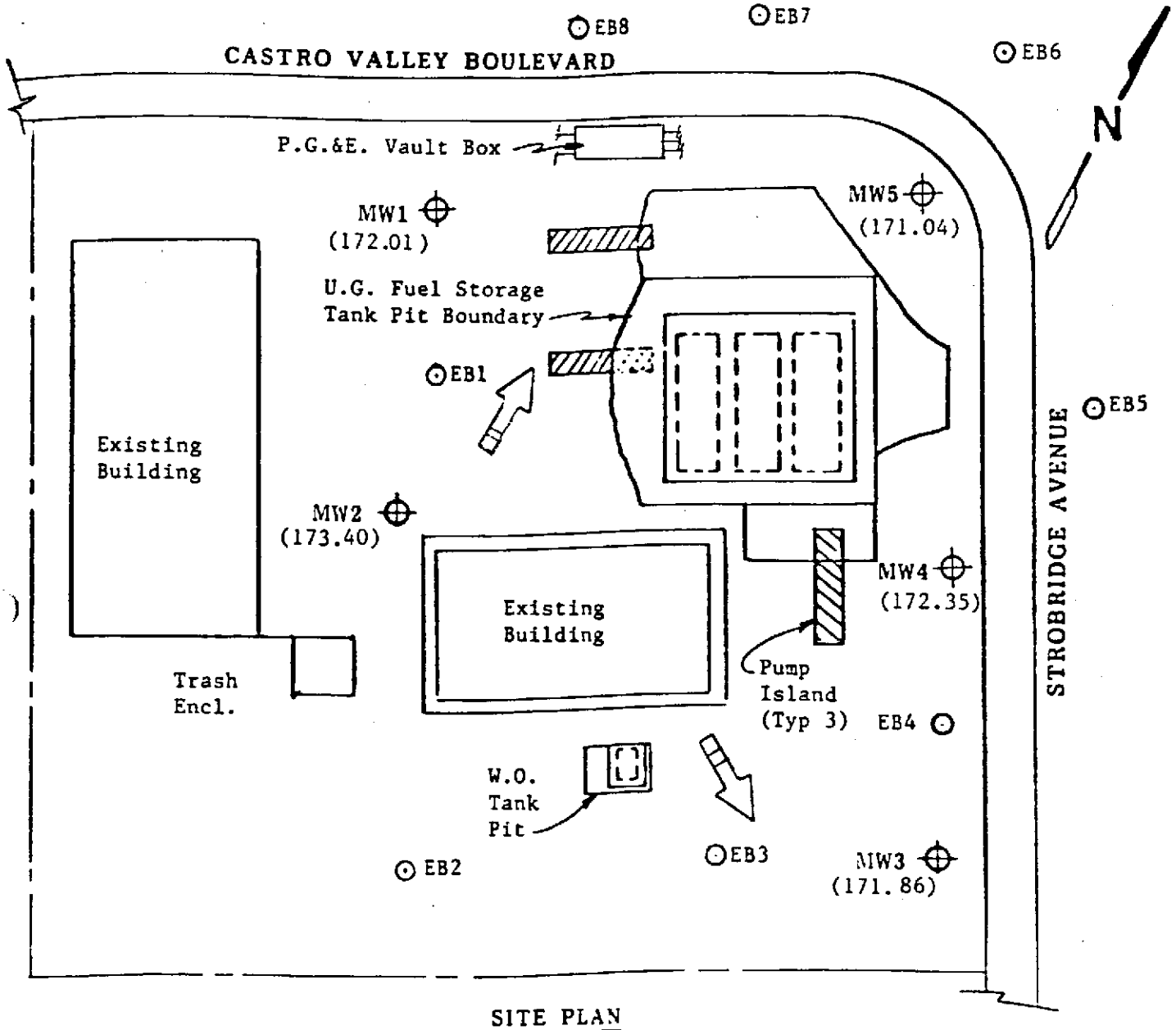
(707) 746-6915 • (707) 746-6916 • FAX: (707) 746-5581



SITE PLAN

Figure 1

LEGEND

- Monitoring Well (Existing)
- Exploratory Boring
- Ground Water Flow Direction
- ( ) Ground Water Elevation in feet (above MSL) on 8/20/90

30 0 30
Approx. Scale feet

Unocal S/S #3072
2445 Castro Valley Blvd.
Castro Valley, CA

364638A 3S/2W 9B4

BORING LOG

Project No. KEI-P89-1106	Boring & Casing Diameter 9" 2"	Logged By W.W. DRB
Project Name Unocal-Castro Valley	Well Head Elevation N/A	Date Drilled 8/13/90
Boring No. MW4	Drilling Method Hollow-stem Auger	Drilling Company EGI

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Asphalt concrete over clayey sand and gravel base
			CH	Clay, trace to 5% coarse-grained sand trace of gravel to 1/2 inch dia. moist, hard, dark gray, 5% orangish brown banding
6/11/24		5	CL/CH	Clay, trace to 5% sand, trace to 10% caliche, light dive gray to greenish gray, moist, hard
				Bedrock
50	▼	10	N/A	Shale, moderately hard, fractured, very weathered, decomposed and clayey, wet below 10', olive brown
		15		Shale, moist, clayey, moderately hard, medium gray to olive gray
22/50-5"		20		

364638 A 3S/2W 9B4

BORING LOG

Project No. KEI-P89-1106	Boring & Casing Diameter 9" 2"	Logged By W.W. DBB
Project Name Unocal-Castro Valley	Well Head Elevation N/A	Date Drilled 8/13/90
Boring No. MW4	Drilling Method Hollow-stem Auger	Drilling Company EGI

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati-graphy USCS	Description
17/28/37		25 30 35 40	N/A	Clayey shale bedrock as above, moderately hard, moist, gray

TOTAL DEPTH DRILLED: 22'
TOTAL DEPTH SAMPLED: 23.5'

3S/2W 9B4

364638A

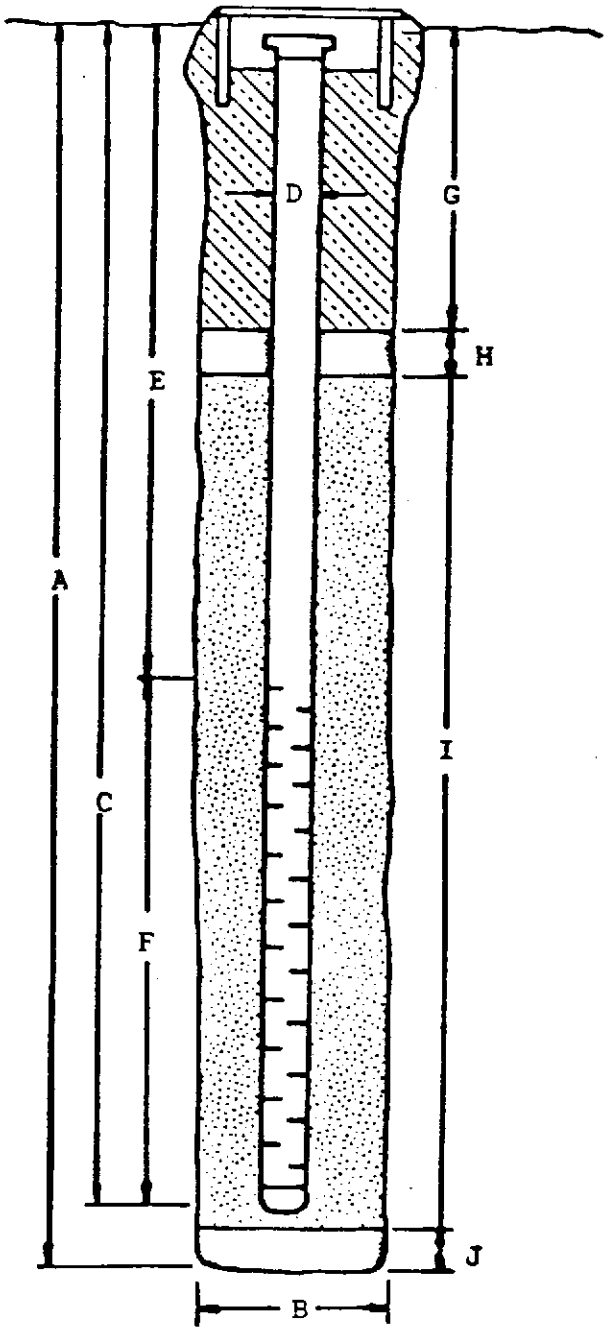
WELL COMPLETION DIAGRAM

PROJECT NAME: Unocal Castro Valley BORING/WELL NO. MW4

PROJECT NUMBER: KEI-P89-1106

WELL PERMIT NO.:

Flush-mounted Well Cover



A. Total Depth: 23.5'

B. Boring Diameter*: 9"

Drilling Method: Hollow Stem Auger

C. Casing Length: 21'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375"

ID = 2.067"

E. Depth to Perforations: 6'

F. Perforated Length: 15'

Perforation Type: Machined Slot

Perforation Size: 0.020"

G. Surface Seal: 4'

Seal Material: Concrete

H. Seal: 18'

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.

364638B 3S/2W 9B5

BORING LOG

Project No. KEI-P89-1106	Boring & Casing Diameter 9" 2"	Logged By W.W. DRB
Project Name Unocal Castro Valley	Well Head Elevation N/A	Date Drilled 8/13/90
Boring No. MW5	Drilling Method Hollow-stem Auger	Drilling Company EGI

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati-graphy USCS	Description
		0		A.C. Pavement over clayey sand and and gravel base
			CL/CH	Clay with gravel, gravel angular to 1 1/8 dia., trace sand and caliche, moist, firm, greenish gray. Clay, trace sand, moist, firm, very dark gray.
7/14/15		5		Clay, trace fine sand, moist, very stiff, light olive gray to greenish gray trace to 10% caliche with nodules to 1/2 dia.
				Bedrock
50				Clayey shale, trace caliche(?), moist, olive gray, orangish brown, trace greenish gray (clay) highly weathered, decomposed
16/24/30		10	N/A	
36/40/45				Clayey shale, trace organic matter, moist, olive gray to olive brown with trace of orange-brown, moderately hard, less weathered than above
35/50		15		
				Clayey shale, slightly weathered and decomposed, saturated, moderately hard, olive gray
40/50-5"		20		

3646388 3S/2W 4B5

BORING LOG

Project No. KEI-P89-1106	Boring & Casing Diameter 9" 2"	Logged By W.W. DBB
Project Name Unocal Castro Valley	Well Head Elevation N/A	Date Drilled 8/13/90
Boring No. MW5	Drilling Method Hollow-stem Auger	Drilling Company EGI

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati-graphy USCS	Description
15/28/32		25 30 35 40	N/A	Shale, as above, very moist less weathered than above, clay in fract-fractures, moderately hard, gray.
				TOTAL DEPTH: 24'

35/2W 9B5

364638B

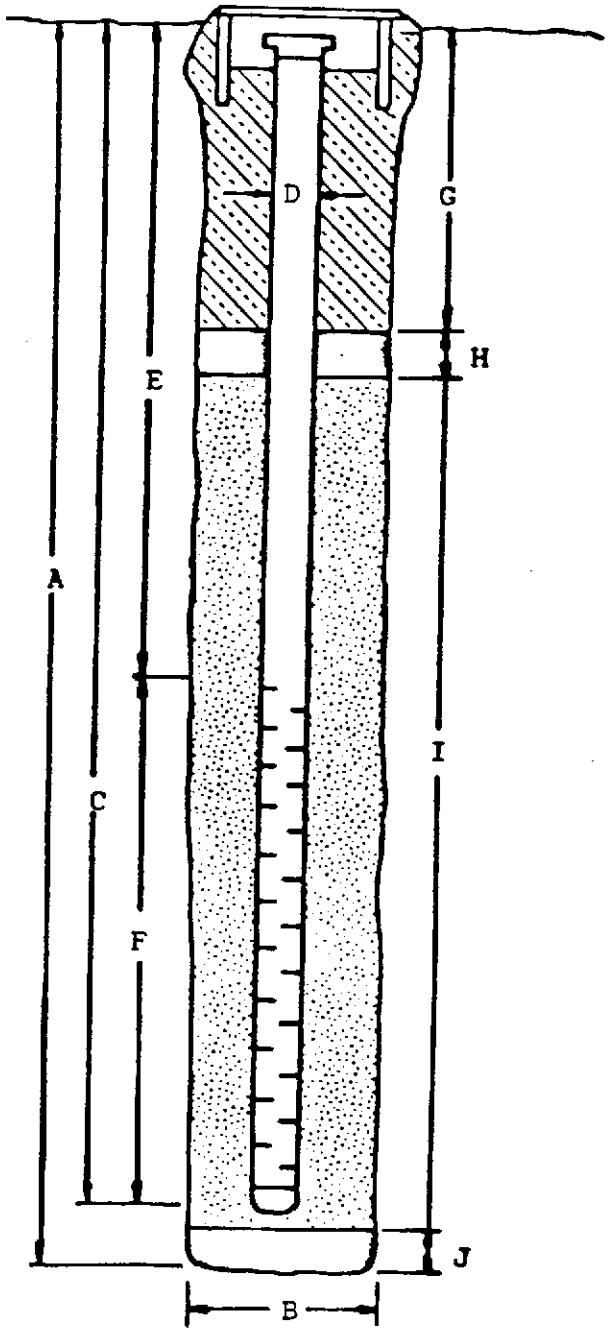
WELL COMPLETION DIAGRAM

PROJECT NAME: Unocal-Castro Valley 2445 C.V. Blvd. BORING/WELL NO. MW5

PROJECT NUMBER: KEI-P89-1106

WELL PERMIT NO.:

Flush-mounted Well Cover



A. Total Depth: 24'

B. Boring Diameter*: 9"

Drilling Method: Hollow Stem Auger

C. Casing Length: 23.5'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375"

ID = 2.067"

E. Depth to Perforations: 8.5'

F. Perforated Length: 15'

Perforation Type: Machined Slot

Perforation Size: 0.020"

G. Surface Seal: 6.5'

Seal Material: Concrete

H. Seal: 1'

Seal Material: Bentonite

I. Gravel Pack: 16.5'

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.

A PORTION OF THE U.S.G.S. HAYWARD 7.5' QUADRANGLE

LOCATION MAP

THRIFTY OIL STATION NO. 054
CASTRO VALLEY, CALIFORNIA
Prepared for
THRIFTY OIL COMPANY
DOWNEY, CALIFORNIA

0 2000 4000
SCALE IN FEET

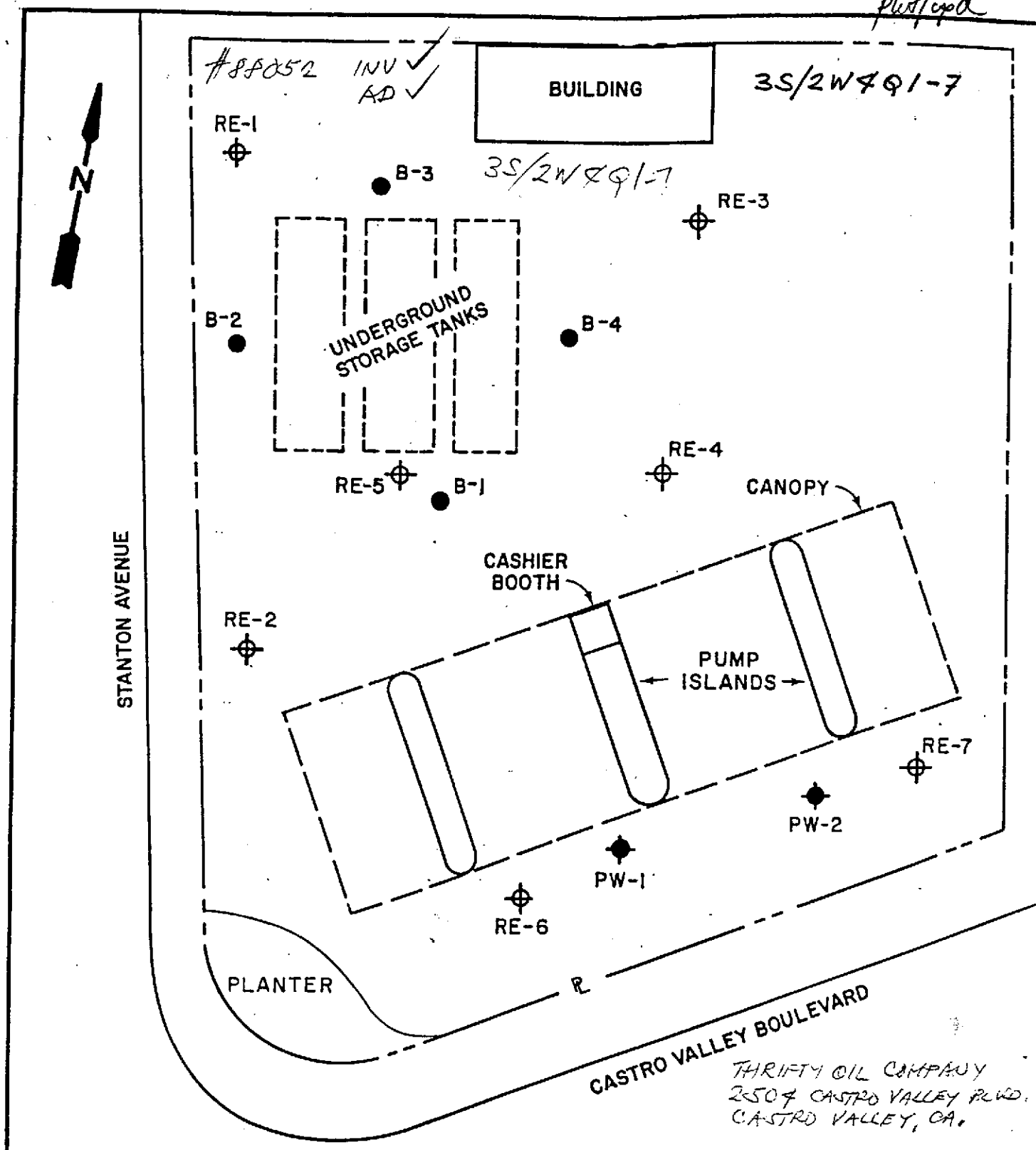
N

OWNER: THRIFTY OIL COMPANY
ADDRESS: 2504 CASTRO VALLEY BLVD.
CASTRO VALLEY

RE & A
Santa Barbara California

Figure I

DRILLER: BEYLIK DRILLING CO.



EXPLANATION:

B-4 ● Exploratory Boring

RE-7 ⊕ Monitoring Well

PW-1 ● Pre-existing Well

0 20' 40'

SCALE

SITE PLAN
THRIFTY OIL STATION NO. 054
CASTRO VALLEY, CALIFORNIA
Prepared for
THRIFTY OIL COMPANY
DOWNEY, CALIFORNIA

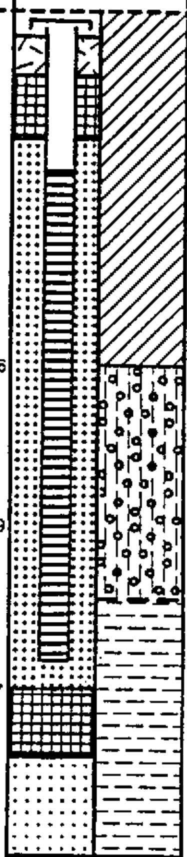
FEB 1988

RE&A Santa Barbara California

Figure

\# 88052   3S/2W 7Q1   INV. ✓   MD ✓

THRIFTY OIL COMPANY   MONITORING WELL LOG   DATE:2-15-88
054 Castro Valley   CA   2504 Castro Valley   Logged By:DD
Drilling Contractor:BEYLIK DRILLING COMPANY   Rig Type:HOLLOW STEM AUGER
Time Started:1:11   Boring/Well #:RE-1   Elevation:
Sampling Method:DRIVE   Casing Size:4"   Screen Type:PVC   Filter Pack:#3 SAND



DEPTH (FEET)	SAMP INT	PID ppm	BPF*	WELL DETAILS	USCS	SOIL DESCRIPTION AND NOTES
5	X	140	7, 8, 12			GRAY CLAY WITH GRAVEL, MOIST, STRONG HYDROCARBON ODOR.
10	X	2	13, 14, 16		CL	MOTTLED BROWN AND GRAY CLAY WITH GRAVEL AT BASE, WET, SLIGHT HYDROCARBON ODOR.
15	X	<1	21, 37, 39			LIGHT BROWN SLIGHTLY GRAVELLY (SHALE) CLAY, MOIST - NOT WET, NO HYDROCARBON ODOR.
20	X	<1	16, 21, 27			BLACK WEATHERED SHALE, DRY, NO HYDROCARBON ODOR.
25	X	<1	37, 65			BLACK CLAY WITH SHALE, MOIST, NO HYDROCARBON ODOR.
						TD AT 26 FEET. 2-15-88
30						GROUNDWATER AT 10 FEET
35						
40						
45						
50						

David L. Henry, R.G. 4342

#880052

35/2W7Q2

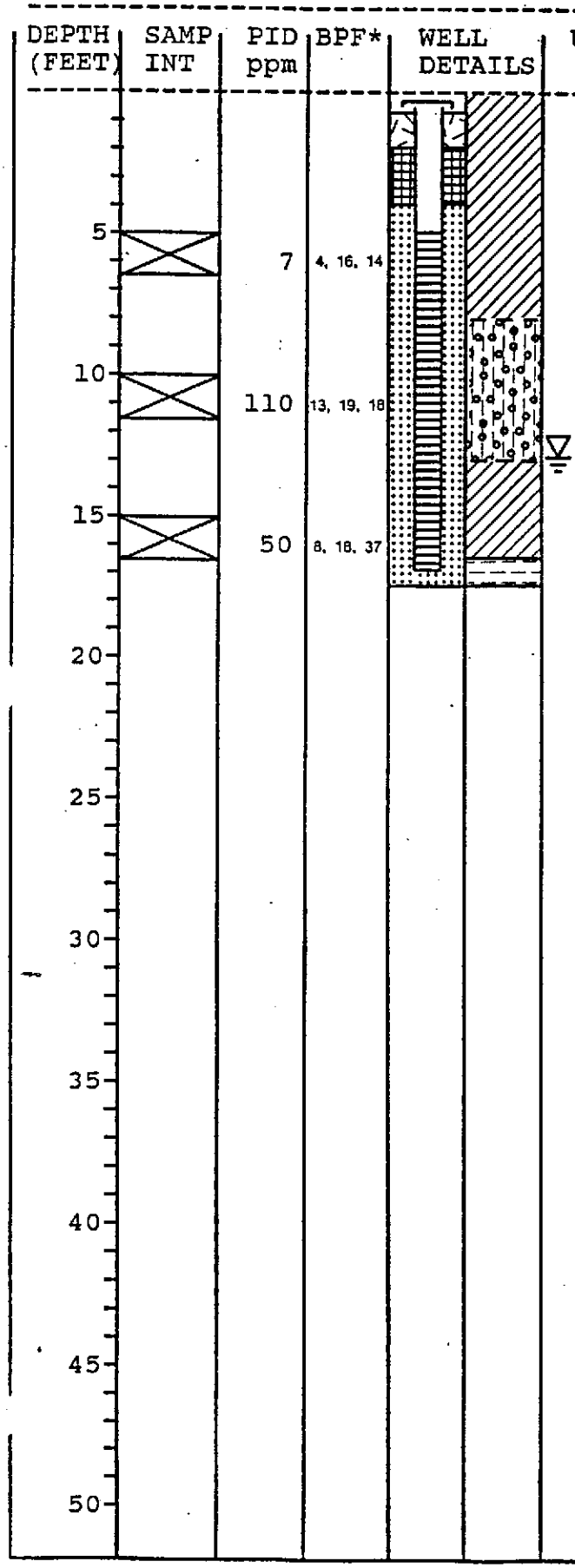
THRIFTY OIL COMPANY MONITORING WELL LOG DATE:2-16-88

054 Castro Valley CA 2504 Castro Valley Logged By:DD

Drilling Contractor:BEYLIK DRILLING COMPANY Rig Type:HOLLOW STEM AUGER

Time Started:9:30 Boring/Well #:RE-2 Elevation:

Sampling Method:DRIVE Casing Size:4" Screen Type:PVC Filter Pack:#3 SAND



GRAY-GREEN CLAY WITH SOME GRAVEL, VERY MOIST, SLIGHT HYDROCARBON ODOR.

GREEN GRAVELLY (QUARTZITE) CLAY, VERY MOIST, STRONG HYDROCARBON ODOR.

PERCHED GROUNDWATER.

GREEN CLAY, MOIST, WITH EVAPORITE CRYSTALS, VERY SLIGHT HYDROCARBON ODOR REFUSAL AT 17 FEET ON GRAVELLY CLAYEY SHALE WITH PLAGIOCLASE VEINS.

T.D. AT 17 FEET.

GROUNDWATER AT APPROXIMATELY 13 FEET. 2-16-88

Diane K Lenz RG 4342

RE&A

#RP052

35/2W4Q3

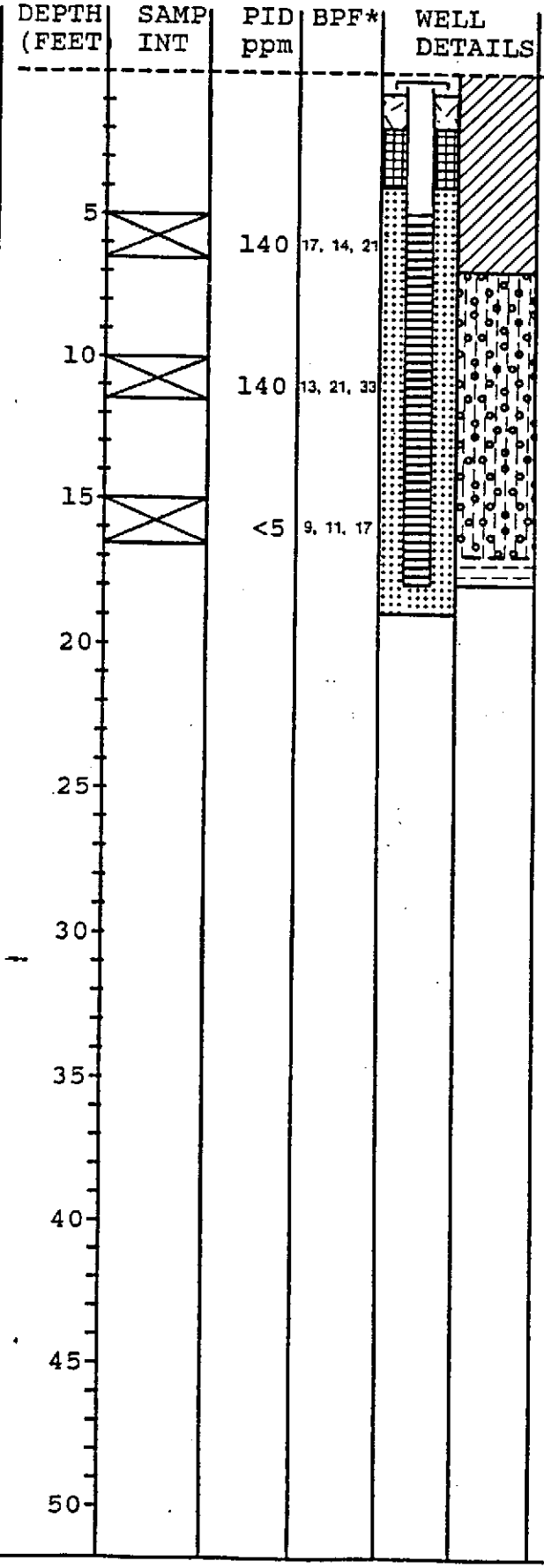
THRIFTY OIL COMPANY MONITORING WELL LOG DATE:2-14-88 INV. ✓

054 Castro Valley CA 2504 Castro Valley Logged By:DD AP. ✓

Drilling Contractor:BEYLIK DRILLING COMPANY Rig Type:HOLLOW STEM AUGER

Time Started:12:30 Boring/Well #:RE-3 Elevation:

Sampling Method:DRIVE Casing Size:4" Screen Type:PVC Filter Pack:#3 SAND



ASPHALT
DARK GRAY-BLACK CLAY WITH WOOD, FILL MATERIAL.

BLACK ORGANIC CLAY, VERY MOIST, STRONG HYDROCARBON ODOR.

GREEN-BROWN GRAVELLY CLAY, WEATHERED QUARTZITE GRAVEL WITH SAND AND CLAY, CLUMPS, MOIST, STRONG HYDROCARBON ODOR

DARK OLIVE-BROWN GRAVELLY CLAY, GRAVEL IS SHALE, WITH SAND, ROOTS, MOIST, NO HYDROCARBON ODOR.
REFUSAL ON SHALE BEDROCK.

T.D. AT 19 FEET.

NO GROUNDWATER 2-14-88.

NOTE: AFTER WAITING OVERNIGHT, THE BORING (NOT SET AS A WELL YET) HAD WATER AT APPROXIMATELY 7 FEET. THE BORING WAS THEN REAMED, AND A 4 INCH WATER WELL WAS BUILT 2-15-88.

Diane K Klug R.G. 4342

#880052

3S/2W 4Q 7

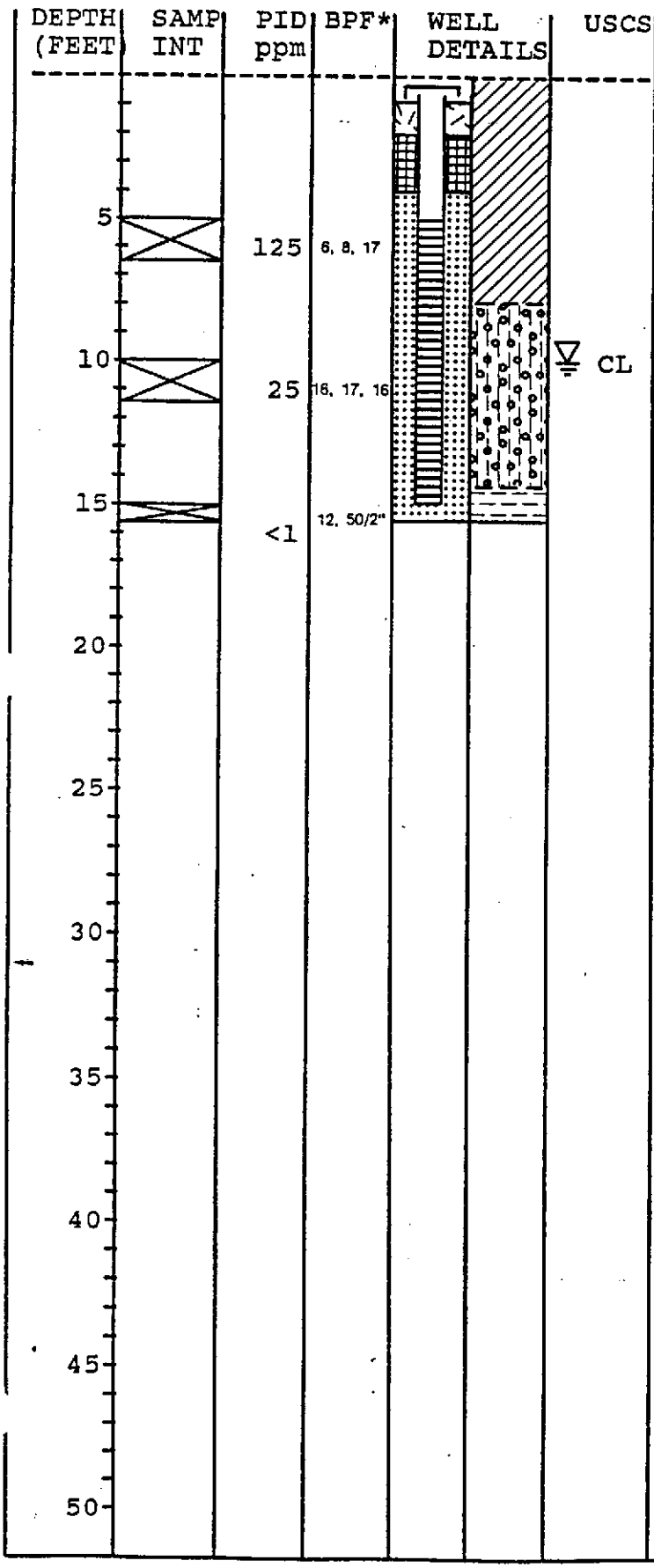
THRIFTY OIL COMPANY MONITORING WELL LOG DATE:2-14-88

054 Castro Valley CA 2504 Castro Valley Logged By:DD

Drilling Contractor:BEYLIK DRILLING COMPANY Rig Type:HOLLOW STEM AUGER

Time Started:2:00 Boring/Well #:RE-4 Elevation:

Sampling Method:DRIVE Casing Size:4" Screen Type:PVC Filter Pack:#3 SAND



GREEN GRAVELLY CLAY OVER BLACK CLAY, VERY MOIST, STRONG HYDROCARBON ODOR.

GREEN GRAVELLY CLAY, WET, MODERATE HYDROCARBON ODOR.

REFUSAL ON WEATHERED SHALE. SAMPLE IS GRAVELLY (SHALE) CLAY, WET, OVER DRY SHALE BEDROCK.

T.D. AT 15.5 FEET.

GROUNDWATER AT 10 FEET
2-16-88

Diane K Henry R.G. 4342

RE & A

#880252

3S/2W XQ5

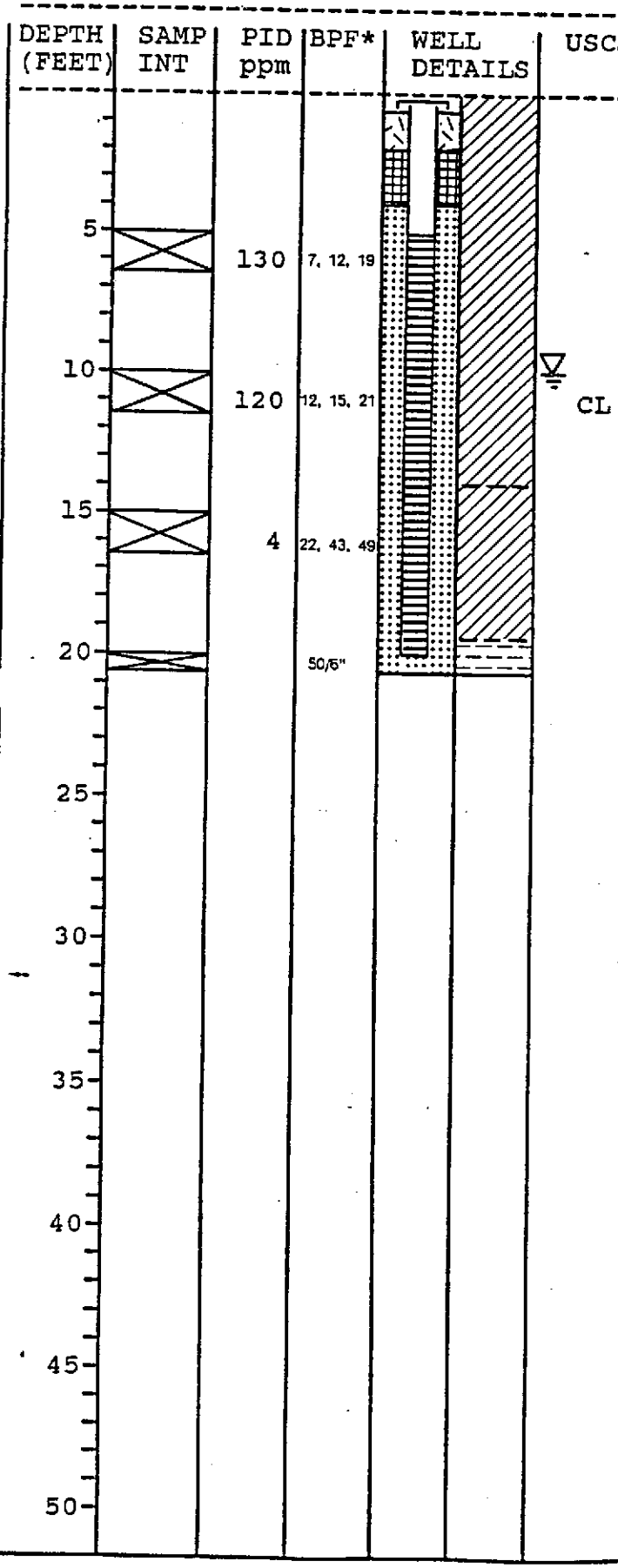
THRIFTY OIL COMPANY MONITORING WELL LOG DATE: 2-17-88

054 Castro Valley CA 2504 Castro Valley Logged By: DD

Drilling Contractor: BEYLIK DRILLING COMPANY Rig Type: HOLLOW STEM AUGER

Time Started: 7:40 Boring/Well #: RE-5 Elevation:

Sampling Method: DRIVE Casing Size: 4" Screen Type: PVC Filter Pack: #3 SAND



GREEN AND GRAY CLAY WITH GRAVEL (SANDSTONE) AT TOP, VERY MOIST, MODERATE HYDROCARBON ODOR.

GREEN-BROWN CLAY WITH SOME GRAVELS AND WHITE EVAPORITE DEPOSITS, VERY MOIST, STRONG HYDROCARBON ODOR.

GREEN-BROWN WEATHERED SHALE, NO HYDROCARBON ODOR, WET.

GREEN-BROWN SHALE, REFUSAL.

T.D. AT 20.5 FEET.

GROUNDWATER AT 10 FEET
2-17-88

Deane K. Henry R.G. 4342

RE&A

#880252

3S/2W-4Q6

INV. ✓

KO. ✓

THRIFTY OIL COMPANY MONITORING WELL LOG DATE:2-17-88

054 Castro Valley CA 2504 Castro Valley Logged By:DD

Drilling Contractor:BEYLIK DRILLING COMPANY Rig Type:HOLLOW STEM AUGER

Time Started:1:10 Boring/Well #:RE-6 Elevation:

Sampling Method:DRIVE Casing Size:4" Screen Type:PVC Filter Pack:#3 SAND

DEPTH (FEET)	SAMP INT	PID ppm	BPF*	WELL DETAILS	USCS	SOIL DESCRIPTION AND NOTES
5		20	21, 22, 27		CL *	GRAY CLAY WITH WHITE EVAPORITE DEPOSITS, VERY MOIST, NO HYDROCARBON ODOR.
10		50	9, 17, 36			MOTTLED GRAY AND GREEN-BROWN GRAVELLY CLAY WITH EVAPORITE DEPOSITS, MORE GRAVEL AT BASE, VERY MOIST, NO HYDROCARBON ODOR.
15		5	50/3"			SHALE - REFUSAL.
						T.D. AT 15 FEET.
						NO GROUNDWATER FOUND DURING DRILLING 2-17-88.
						*AFTER BUILDING THE WELL AND WAITING SEVERAL HOURS, GROUNDWATER FILLED THE WELL TO 8 FEET.
20						
25						
30						
35						
40						
45						
50						

Diane K Henry R.G. 4342

RF&A

#880052

3S/2W4Q7

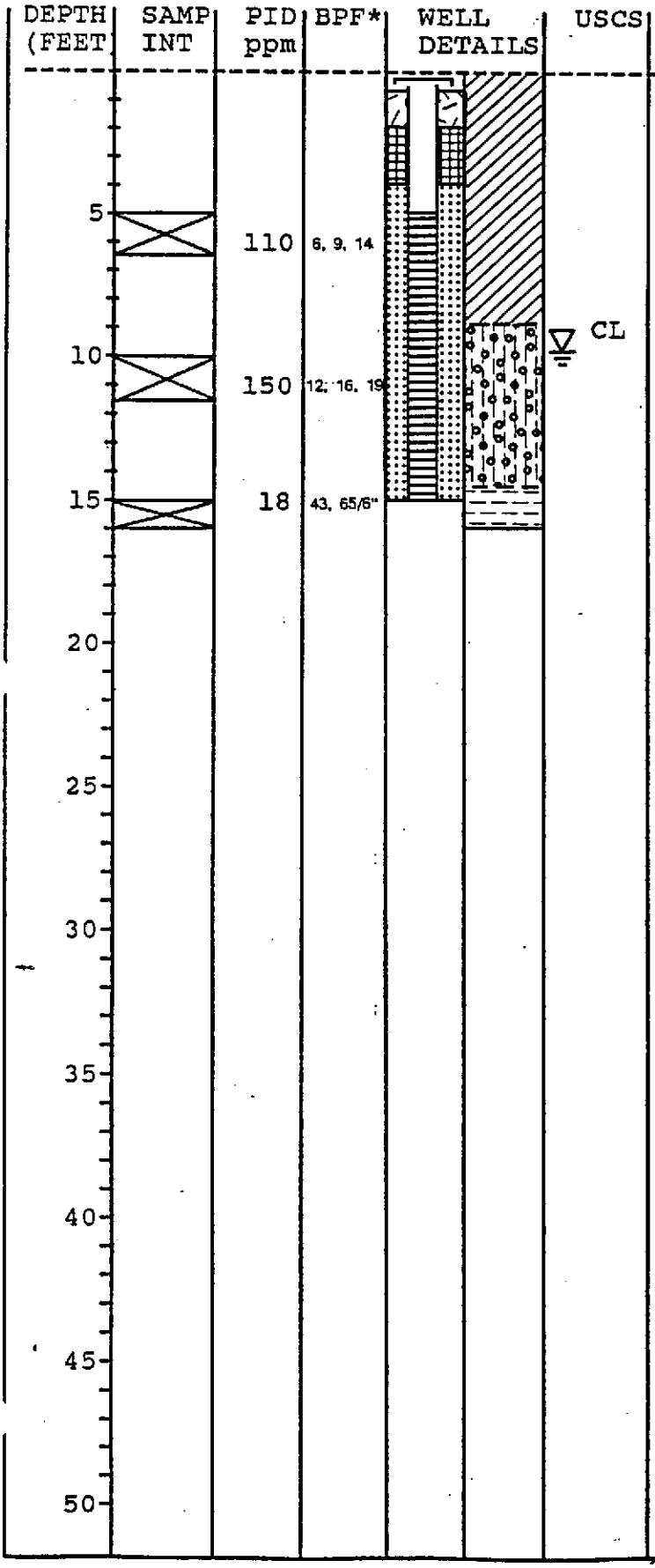
THRIFTY OIL COMPANY MONITORING WELL LOG DATE:2-17-88

054 Castro Valley CA 2504 Castro Valley Logged By:DD

Drilling Contractor:BEYLIK DRILLING COMPANY Rig Type:HOLLOW STEM AUGER

Time Started:10:00 Boring/Well #:RE-7 Elevation:

Sampling Method:DRIVE Casing Size:4" Screen Type:PVC Filter Pack:#3 SAND



BLACK CLAY OVER GREEN CLAY WITH EVAPORITE DEPOSITS, VERY MOIST, STRONG HYDROCARBON ODOR.

GREEN GRAVELLY (SHALE) AND CLAY, WET, STRONG HYDROCARBON ODOR.

SHALE - REFUSAL.

T.D. AT 15 FEET.

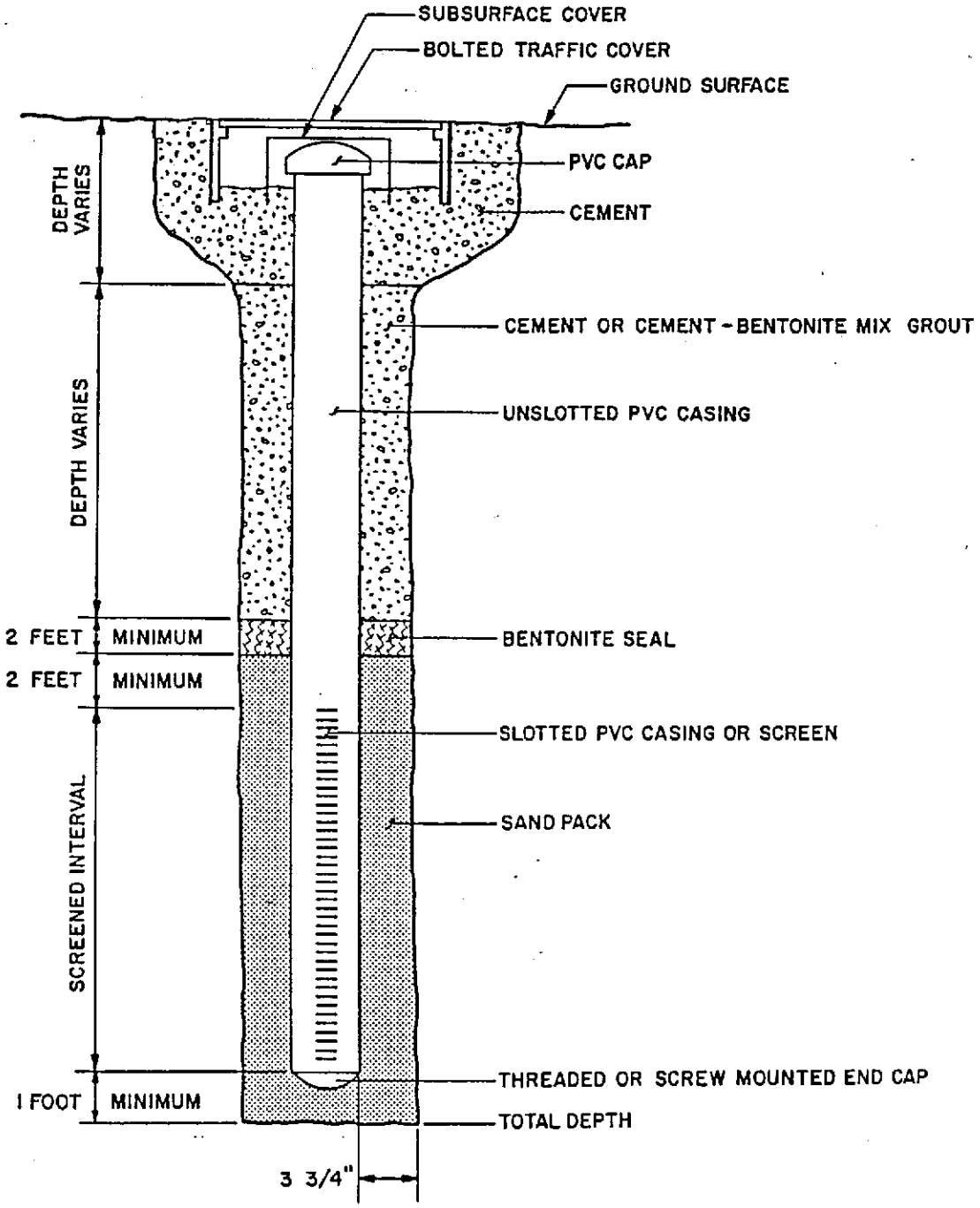
GROUNDWATER AT 10 FEET
2-17-88

Diane K Henry R.G. 4342

RE&A

#88052

3S/2W 4Q1-7



NO SCALE
TYPICAL ONLY

TYPICAL MONITORING WELL CONSTRUCTION

RE&A
Santa Barbara
California

LEGEND SHEET FOR BORING LOGS 25/2W 7Q1-7

#88052

BORING LOG SYMBOLS


Modified California Sampler (blow-count)


No Sample Recovered


First Water Encountered


Measured Water Level

MONITORING WELL SYMBOLS


Concrete Seal


Bentonite Seal


Sand Pack

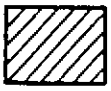

Native Backfill


Slotted Section of Casing


Blank Section of Casing


Measured Water Level

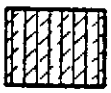
LITHOLOGIES


CLAY

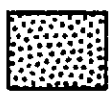

Silty CLAY

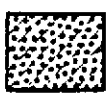

Sandy CLAY

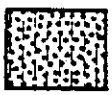

SILT

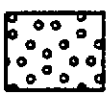

Clayey SILT


Sandy SILT


SAND


Clayey SAND


Silty SAND


Gravels & Gravel-Sand Mixtures


All Silty or Clayey Gravels


Bedroc


Fill


Asphalt/ Concrete

RE &
Santa Barbc
Californ

Quik Stop No. 88
CCI Project No. 12139-2

28-Feb-00

TABLE 1

SOIL SAMPLE ANALYSIS

Quik Stop No. 88 - 20757 Lake Chabot Road, Castro Valley, CA

Sample Number	Sample Depth (feet)	Date Sampled	TPHG (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl Benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (ug/kg)
MW-1-5	5	2/15/00	<1.0	<0.005	<0.005	<0.005	<0.005	<5
MW-1-10	10	2/15/00	<1.0	<0.005	**0.019**	**0.013**	**0.028**	<10[1]
MW-1-15	15	2/15/00	**3.4**	<0.005	<0.005	<0.005	**0.021**	<5
MW-1-20	20	2/15/00	<1.0	<0.005	<0.005	<0.005	<0.005	<5
MW-1-25	25	2/15/00	<1.0	<0.005	**0.007**	<0.005	<0.005	<5
MW-2-5	5	2/15/00	<1.0	<0.005	<0.005	<0.005	<0.005	<5
MW-2-10	10	2/15/00	<1.0	<0.005	<0.005	<0.005	<0.005	<5
MW-2-15	15	2/15/00	<1.0	<0.005	<0.005	<0.005	<0.005	<5
MW-2-20	20	2/15/00	<1.0	<0.005	<0.005	<0.005	<0.005	<5
MW-2-25	25	2/15/00	<1.0	<0.005	**0.009**	<0.005	<0.005	<5
MW-3-5	5	2/15/00	<1.0	<0.005	<0.005	<0.005	<0.005	<5
MW-3-10	10	2/15/00	<1.0	<0.005	<0.005	<0.005	<0.005	<5
MW-3-15	15	2/15/00	<1.0	<0.005	<0.005	<0.005	<0.005	<5
MW-3-20	20	2/15/00	<1.0	<0.005	<0.005	<0.005	<0.005	<5
MW-3-25	25	2/15/00	<1.0	<0.005	<0.005	<0.005	<0.005	<5

TPHg	Total Petroleum Hydrocarbons as Gasoline
mg/kg	Miligrams per kilogram
ug/kg	Micrograms per kilogram
<	Below laboratory Detection Limit
N.R.	Note Requested
MTBE	Methyl-t-Butyl Ether
1	Sample diluted due to high concentrations of non-target hydrocarbons

Compliance & Closure, Inc.

TABLE 1
UST EXCAVATION SOIL - ANALYTICAL RESULTS
Quik Stop Market, No. 88
Castro Valley, California

Sample Number	Sample Date	Sample Depth (feet)	TPH-g (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	MTBE (ppm)
T-1-1	12/22/98	~13-14	1.20	<0.005	<0.005	0.0070	0.073	0.81
T-2-1	12/22/98	~13-14	1.40	<0.005	<0.005	0.012	0.022	0.70

TPH-g	Total petroleum hydrocarbons as gasoline
MTBE	Methyl tert-butyl ether
ppm	Parts per million (mg/kg)
<	Less than the listed method detection limit

TABLE 2
UST EXCAVATION WATER - ANALYTICAL RESULTS
Quik Stop Market No. 88
Castro Valley, California

Sample Number	Sample Date	Sample Depth (feet)	TPH-g (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)
GW-1	12/22/98	~20-21	16,000	4.6	12	250	1,400	20,000
GW-2	12/29/98	~12-13	400	<0.50	<0.50	0.54	4.5	6,700

TPH-g	Total petroleum hydrocarbons as gasoline
MTBE	Methyl tert-butyl ether
ppb	Parts per billion (ug/l)
<	Less than the listed method detection limit