GeoResearch

3777 Depot Road, Suite 418
Hayward, California 94545
Phone: (510) 785-1111
Fax: (510) 785-1192

Mr. Scott Seery
Senior Hazardous Materials Specialist
ALAMEDA COUNTY HEALTH CARE SERVICES
1131 Harbor Bay Parkway
Second Floor
Alameda, California 94502

June 29, 1995

RE: REPORT TRANSMITTAL
UNOCAL CORPORATION
500 Bancroft Avenue, San Leandro, California

Dear Mr. Seery:

GeoResearch would like to submit the enclosed letter report on behalf of the Unocal Corporation. Please refer to the report for specifics.

Please feel free to contact the office at (510) 785-1111 if you have any questions or require any further information.

Sincerely,

Susan Cole
Administration

Enclosure

cc: Tina Berry (Unocal)

GeoResearch

3777 Depot Road, Suite 418
Hayward, California 94545
Phone: (510) 785-1111
Fax: (510) 785-1192

June 29, 1995

Ms. Tina Berry
Unocal Corporation
Environmental Remediation & Technology
2000 Crow Canyon Place
San Ramon, California 94583

RE: Monitoring Well Installation, Unocal Service Station #5367, 500 Bancroft Avenue, San Leandro, California, GeoResearch Project Number: 9580600102

Dear Ms. Berry:

This letter report summarizes the results of the installation of ground-water monitoring well MW10 adjacent to Unocal Service Station No. 5367 (site) at 500 Bancroft Avenue in San Leandro, California (Figure 1). The work was conducted for Unocal Corporate Environmental Remediation & Technology (Unocal CERT) in accordance with the GeoResearch Feasibility Study Report for Ground Water submitted to the Alameda County Health Care Services Agency, Department of Environmental Health (ACHA) dated July 22, 1994. The purpose of the installation of the ground-water well was to further assess the distribution of petroleum hydrocarbons in the ground water southwest of the subject site.

BACKGROUND

The site consists of an operating Unocal Service Station composed of underground storage tanks (USTs), two dispenser islands and a service station building (Figure 2). In 1987, two USTs were removed from the site and replaced with new USTs. Petroleum hydrocarbon-impacted soil was removed from the UST excavation and transported off site for disposal.

Between 1987 and 1990, five ground-water monitoring wells were installed at the site and three ground-water monitoring wells were installed to the west and southwest of the site. Based on analytical results for the soil samples collected during the installation of the wells, total petroleum hydrocarbons as gasoline (TPH-G), benzene, toluene, ethylbenzene, and total xylenes (BTEX) were detected in the soil between approximately

25 and 30 feet below ground surface (bgs). Laboratory analysis of the ground-water samples collected from the monitoring wells indicate TPH-G has impacted the ground water in the vicinity of the USTs and dispenser islands beneath the site. Based on the ground-water data collected from these wells, the ground-water flow direction in the vicinity of the site is generally to the west, towards MW-8 (Figure 2). It appears that ground water impacted with petroleum hydrocarbons has migrated off site to the west of the UST and dispenser island. However, TPH-G and BTXE concentrations have remained relatively stable from 1991 to 1995 in monitoring well MW-8.

In a letter to Unocal, dated July 1, 1994, the ACHA requested that additional assessment be completed to the north of the UST area and to the southwest of monitoring well MW-8. On December 16, 1994, one ground-water monitoring well (designated as MW9) was drilled to the north of the site. Due to access problems of the property located west of the site (525 Bancroft Avenue-Hoopes Property), the second well (MW-10) was just recently installed.

SUBSURFACE INVESTIGATION

On April 6, ~~1994~~ 1995, one soil boring, designated as MW10, was drilled approximately 160 feet west of the site utilizing a CME-75 mobile drilling rig equipped with 8-inch outer-diameter (OD) hollow-stem augers. The drilling was conducted by Bayland Drilling (BD) of Menlo Park, California, under the supervision of GeoResearch. Soil boring MW10 was drilled to a depth of approximately 45 feet bgs. One soil sample (MW10-30) was collected at approximately 30 feet bgs (interpreted ground-water interface). The field work was conducted in accordance with the field procedures outlined in Attachment A. The boring log is presented in Attachment B.

The lithologies observed during drilling at the site generally consisted of a silty clay (CL) to the maximum depth explored of approximately 45 feet bgs. The clay was generally stiff and yellowish brown with low plasticity and minor fine to coarse sand. Ground water was detected at approximately 30 feet bgs. Volatile organic compound (VOC) vapors were not detected in the soil sample collected from MW10 using a Century 128 organic vapor analyzer (OVA). VOC vapors were not detected in any of the soil cuttings.

Immediately following drilling, soil boring MW10 was completed as a ground-water monitoring well. The well was constructed with approximately 20 feet of 2-inch-diameter

polyvinyl chloride (PVC) schedule 40 blank casing and 25 feet of 2-inch-diameter 0.020 slotted casing. The filter pack was constructed using No. 3 Monterey Sand, and the well was sealed with a portland cement/bentonite slurry. The well was screened approximately 20 to 45 feet bgs with the bottom of the well set at approximately 45 feet bgs. The installation of the well was conducted by BD under the direction of GeoResearch. The well was installed in accordance with the field procedures outlined in Attachment A. Well details are shown on boring log MW10 presented in Attachment B.

Prior to setting the well seal, the well was developed by surging the well with a surge block for approximately 10 to 15 minutes. The well was then bailed of approximately 3 well volumes. The water purged from the well was cloudy with suspended silt and clay. Turbidity of the water generally remained unchanged throughout well development. No petroleum hydrocarbon odors were noted in the purged development water. Development of the monitoring well was conducted in accordance with the field procedures presented in Appendix A.

LABORATORY ANALYSIS AND RESULTS

The soil sample collected from monitoring well MW10 was submitted to Sequoia Analytical (Sequoia), of Redwood City, California, a state-certified hazardous waste laboratory. The soil sample was analyzed for TPH-G in accordance with the California Department of Health Services (DOHS) Methods for TPH-G characterization. In addition, the soil samples were analyzed for BTEX in accordance with Environmental Protection Agency (EPA) Method 8020. TPH-G and BTEX was not detected in soil sample MW10-30 above laboratory detection limits. Laboratory reports and chain-of-custody documentation are included in Attachment C.

OFF-SITE GROUND-WATER INFORMATION

A database search of the ground-water wells within an approximate 0.5 mile radius of the site was conducted by Alameda County Public Works (ACPW). Based on the database search, ACPW identified 63 ground-water wells within 0.5 miles of the site. On November 16, 1994, GeoResearch reviewed the readily available well log information for the wells

reported to be within 0.25 miles of the site. A lists of the wells identified and well location maps are presented in Attachment D along with a summary of the information obtained during our review. A summary of the information found for the wells located closest to the site is as follows.

Well 2S/3W 23 R1

This well is at 599 Victoria Court approximately 0.12 miles northwest and hydraulically cross-gradient of the site. This well was destroyed in 1975.

Well 2S/3W 23 R2

This well is at 533 Victoria Court approximately 0.12 miles northwest and hydraulically cross-gradient of the site. The well is an irrigation well and is owned by Ivingh Elliott. The well was installed in 1977 to a depth of approximately 80 feet bgs and was screened from approximately 20 to 80 feet bgs. Depth-to-ground water was measured in the well after installation to be approximately 29 feet bgs. The current pumping status of the well is unknown. The lithologies encountered during the well installation generally consisted of silty clay and sand to approximately 55 feet bgs. Sandy gravel was found between approximately 55 to 60 feet. Silty clay and sandy clay was encountered from approximately 60 feet bgs to the maximum depth explored to 80 feet bgs.

Well 2S/3W 23 Q2

This well is at 445 Beverly Avenue approximately 0.2 miles west and hydraulically cross-gradient of the site. The well is owned by Mrs. Geo J. Helins. No additional information was available on this well.

Well 2S/3W 26 H3

This well is at 730 Woodland Avenue approximately 0.25 miles south southwest and hydraulically down-gradient of the site. The well was installed in 1977 to a depth of approximately 60 feet bgs. The well is listed as an irrigation well and is owned by Mr. Jim Rice. No additional information was available for this well.

Well 2S/3W 25 D4 through D7

These wells are at 600 Dutton Avenue approximately 0.12 miles east and hydraulically cross-gradient of the site. The wells are ground-water monitoring wells associated with an UST leak at a Chevron service station. The wells were installed in 1988 to depths of approximately 48 to 49 feet bgs and are screened from approximately 32 to 49 feet bgs. The lithologies encountered during the well installation generally consisted of clay with silt, silty sand, and silty clay to approximately 26 feet bgs. Fine sand was found from between 26 feet bgs to the maximum depth explored of approximately 49 feet bgs.

Based on the data reported by the ACPW, it does not appear that any ground-water wells are located within approximately 0.12 miles of the site. In addition, the closest ground-water wells to the site are reported to be irrigation wells owned by private individuals. Since the site is located in an urban area which is supplied by a municipal source of water, these wells are not likely to be extracting significant quantities of ground-water that would effect the natural ground-water gradient in the vicinity of the site and induce the movement of contaminates into these wells.

Based on a review of quarterly ground-water monitoring data, the down gradient limit of petroleum hydrocarbons from the site appears to be near monitoring well MW-8. The closest hydraulically down-gradient well to the site is located approximately 0.25 miles southwest of the site, beyond the extent of the ground-water plume from the site. Based on the above discussion, it is our professional opinion that contamination detected beneath the site does not presently constitute a threat to the quality of ground water in the ground-water wells reported by the ACPW within approximately 0.25 miles of the site.

STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION

Information provided in this report for GeoResearch Project Number 9480600102 is intended exclusively for Unocal CERT for evaluation of the monitoring well installation at Unocal service station #5367 in San Leandro, California. The professional services provided have been performed in accordance with practices generally accepted by other geologists, hydrologists, hydrogeologists, engineers, and environmental scientists practicing in this field. No other warranty, either expressed or implied, is made. As with all subsurface investigations, there is no guarantee that the work conducted will identify any or all sources or locations of contamination. GeoResearch is not an insurer and makes no warranty or guarantee that the services supplied will avert or prevent occurrences or the consequences therefrom which service is designed to detract or ameliorate.

This report is issued with the understanding that the Client is responsible for ensuring that the information contained in this report is brought to the attention of the appropriate building owners and/or regulatory agencies. The enclosed report has been reviewed by a Registered Geologist in the State of California whose signature and certification number appears below.

If you have any questions regarding this report or any aspect of the project, please contact Mr. Frank R. Poss at (510) 785-1111.

Sincerely,

Michael Guy
Senior Staff Geologist

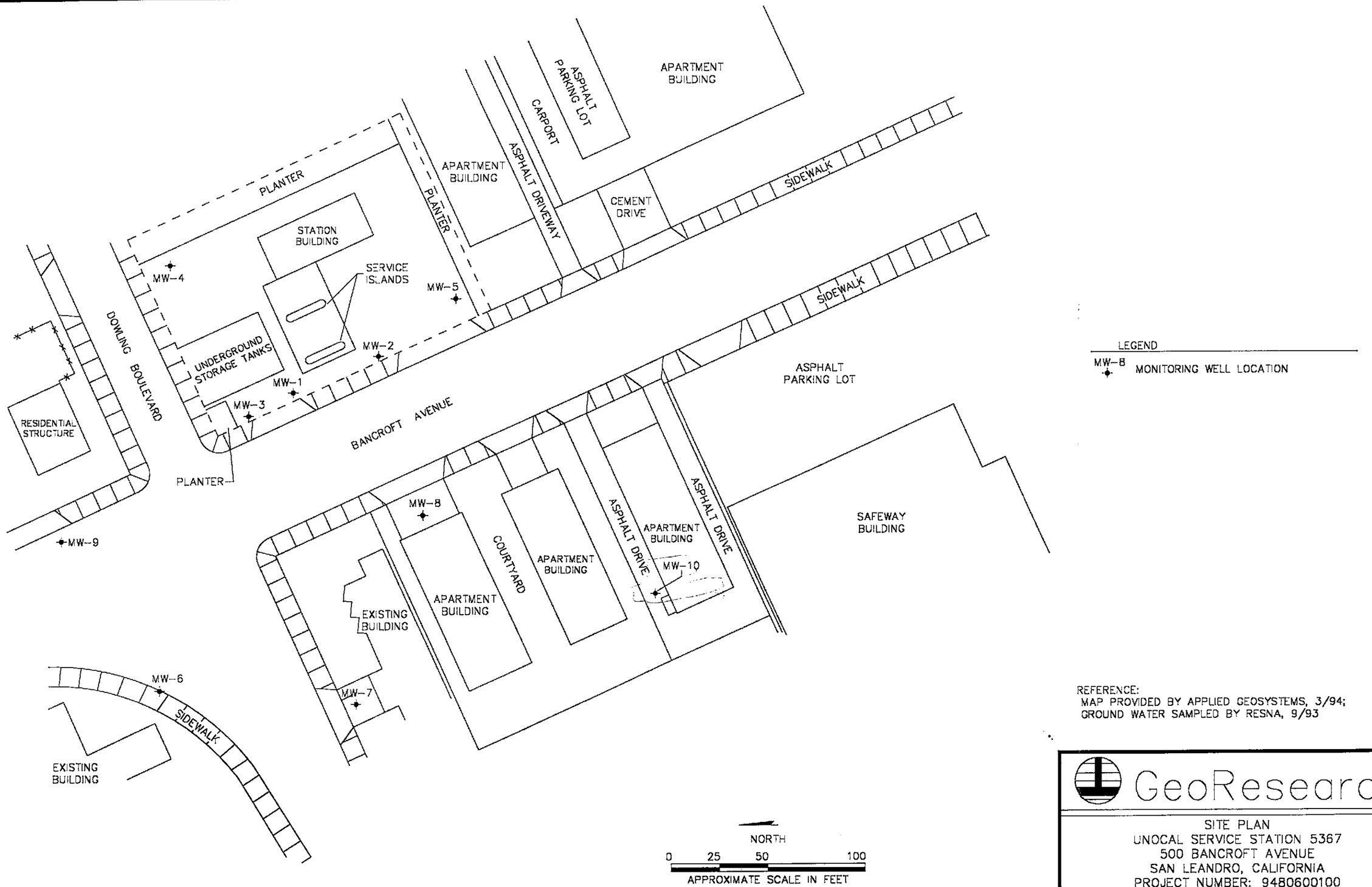
Frank R. Poss
Associate Hydrogeologist

Warren W. Gross, CEG #1528
Associate Hydrogeologist

Enclosures

c:\Report\Unocal\SanIndro\5367mw10.rpt

cc: Scott Seery/Alameda County



REFERENCE:
MAP PROVIDED BY APPLIED GEOSYSTEMS, 3/94;
GROUND WATER SAMPLED BY RESNA, 9/93

GeoResearch

SITE PLAN
UNOCAL SERVICE STATION 5367
500 BANCROFT AVENUE
SAN LEANDRO, CALIFORNIA
PROJECT NUMBER: 9480600100

DATE: 5/9/95	CKD BY:	FIGURE NO.: 2
FILE NO: C1		DRAWN BY: S.NASH

ATTACHMENT A

FIELD PROCEDURES

ATTACHMENT A
FIELD PROCEDURES

I. DRILLING OF SOIL BORINGS AND COLLECTION OF SOIL SAMPLES

The following procedures were used for the drilling and sampling of the soil borings drilled at the site:

1. Drilling was conducted by Bayland Drilling (BD) of Menlo Park, California under the supervision of GeoResearch. Drilling was performed using a CME-75 mobile drilling rig equipped with 8-inch outer-diameter (OD) hollow-stem continuous flight augers. Augers were reported to have been steam washed at BD's yard prior to use at the site and were steam washed on site between soil borings.

2. Prior to the commencement of drilling activities at the site, Underground Surface Alert (USA) was contacted to identify underground utilities in the areas that the well was located. In addition, the well location was hand-augured to an approximate depth of 5 feet below ground surface (bgs) prior to advancing the auger into the ground.

3. Boring logs for the soil borings drilled at the site were prepared under the supervision of a State-registered geologist. The soil cuttings observed during drilling were described in accordance with the Unified Soil Classification System.

4. A 2.5-inch inter diameter (ID) California Modified Split-Spoon Sampler (sampler) was used for the collection of soil samples. Prior to sampling, the sampler was lined with four precleaned 2-inch diameter stainless steel or brass tubes. Soil samples were collected by driving the sampler approximately 18-inches into the bottom of the soil boring through the center of the drilling bit using a 140 pound rig driven slide-hammer. The slide hammer was repeatedly dropped from approximately a 30-inch height and the blow counts were recorded in six inch increments.

5. The first tube in the sampler (deepest) was collected for analysis. The ends of the sample were covered with teflon sheets and capped with polyvinyl chloride (PVC) end caps. The sample was labeled and placed in a zip-lock bag in a chilled cooler pending delivery to the laboratory for analysis.

6. Soil samples were assigned identification numbers such as B1-5, where B1 indicates boring 1, and -5 indicates that the sample was collected at 5 feet bgs. The samples were labeled with the sampling designation, depth, date, client name, and project number.

7. A soil sample was collected at the interpreted soil/ground-water interface.

8. Soil samplers were washed between sampling intervals with Alconox soap followed by two deionized-water rinses.

9. Chain-of-custody procedures using chain-of-custody forms were used to document sample handling and transportation.

10. A Century 128 organic vapor analyzer (OVA) was used to monitor volatile organic compounds (VOCs) in the ambient air during drilling at the site in accordance with the site health and safety plan. VOC concentrations in the soil were measured and recorded on the borings logs for depths that soil samples were collected. VOCs in the soil were measured at the sampling depths by partially filling a brass tube with soil and capping the ends. The components of the soil were allowed to volatilize and fill the head space in the tube for approximately 30 minutes prior to inserting the OVA probe through one of the end caps and recording the measurements.

11. Soil cuttings and steam wash water generated during drilling activities at the site were contained in Department of Transportation (DOT) approved 55-gallon drums. The drums were labeled with the contents, date, well or boring number, client name, and project number.

II. WELL INSTALLATION

The following procedures were used for the installation of the monitoring well at the site:

1. The soil boring was completed as a monitoring well by installing 2-inch diameter PVC schedule 40 casing and 2-inch diameter PVC schedule 40 screen with 0.02 machined slotted and 1/4 spacing between slots. The bottom of the screen was fitted with a 2-inch PVC threaded end cap. All of the PVC sections are flush-threaded and were mechanically screwed together. The filter pack was constructed with #3 Monterey Sand and the seal was constructed with hydrated bentonite chips and portland cement.

2. The filter pack was installed by pouring the # 3 Monterey Sand slowly through the auger segments into the annulus surrounding the screen to a height approximately 1 foot above the top of the screen. The auger was incremental raised as the filter pack was being installed.

3. After the top of the filter pack was installed to approximately 1 foot above the screen, the well was surged using a surge block for approximately 15 to 20 minutes and until the level of the top of the filter pack stabilized. After surging the well, the level of the filter pack was reestablished at least 1 foot above the slots and the well seal was installed.

4. The well seal was installed by pouring approximately 2 feet of medium bentonite chips slowly through the auger segments on top of the filter pack. The bentonite was hydrated with approximately 5 gallons of potable water and allowed to set prior to installing the cement seal.

5. The remaining annular space above the bentonite seal was backfilled to approximately 2 feet bgs with portland cement. A 10-inch Emco-Wheaton well box was installed at the surface of the monitoring well to grade. The well box was set in concrete and the surface of the concrete was dyed black. The top of the well casing was capped with a locking well cap and locked with a lock.

6. Specific well construction details for the monitoring well is presented on boring log MW9 found in Attachment B.

IV. WELL DEVELOPMENT

The following procedures were used to develop the monitoring well at the site:

1. Subsequent to well installation, the water in the well was gently surged using a rubber surge block slightly smaller than the casing diameter for approximately 15 to 20 minutes.

2. Subsequent to surging the well, water was removed from the well using a 2-inch diameter PVC bailer. The well was purged of 3 to 5 well volumes (approximately 25-gallons).

3. One well volume was calculated by the following equation:

$V = 3.14 \times 7.481 \times h \left[r_1^2 + 0.3 \times \left(r^2 - r^2 \right)^2 \right]$

where:

V = one well volume
h = (d1-d2)
d1 = depth of the well in feet
d2 = depth to ground water in feet
r1 = the radius of the well in feet
r2 = the radius of the filter pack in feet

4. All equipment was either washed by hand in Alconox solution followed by two deionized-water rinses or was steam washed prior to entering the well.

5. Purged development water was contained in a DOT approved 55-gallon drum. The drum was labeled with the contents, date, well number, client name, and project number.

ATTACHMENT B

BORING LOG

GeoResearch

FIELD LOG OF BORING

BORING/WELL I.D. MW10
SHEET 1 OF 2

PROJECT NAME	PROJECT NUMBER	ELEVATION AND DATUM	REFERENCE
UNOCAL SAN LEANDRO	9480600100		

DRILLING COMPANY	DRILLER	DATE & TIME STARTED	DATE & TIME COMPLETED
BAYLAND DRILLING	KURT VOSS	4/6/95 10:30	4/6/95 12:30

DRILLING EQUIPMENT METHOD	DIRECTION OF BORING	TOTAL DEPTH OF BORING
CME-75	[x] VERTICAL [ ] SLANT _____ DEG. FROM VERT	45 FT BGS.

SIZE AND TYPE OF BIT	TOTAL NO. OF SAMPLES	BULK	SS	OTHER
8" HOLLOW-STEM AUGER	1		1	

DRILLING FLUID	WATER LEVEL	FIRST	AFTER HOURS
NONE			

SAMPLER	HYDROGEOLOGIST/DATE	CHECKED BY/DATE
TYPE CAL MOD DRIVING WT. 130 DROP 30"	MICHAEL GUY 4/6/95	WARREN GROSS

DEPTH (FEET)	WELL CONST CSG	WELL CONST FILL	OVA (PPM)	SAMPLES NO.	SAMPLES TYPE	SAMPLES BLOWS /6"	GRAPH. LOG	SOIL CLASS (USCS)	DESCRIPTION OF MATERIALS	REMARKS
0								AF	ARTIFICIAL FILL, asphalt.	
								CL	SILTY CLAY, dark yellowish brown, stiff, moist, low plasticity.	
5										
10										
15										
20										
25										

GeoResearch

FIELD LOG OF BORING

BORING/WELL I.D. MW10
SHEET 2 OF 2

PROJECT NAME	PROJECT NUMBER	HYDROGEOLOGIST	CHECKED BY/DATE
UNOCAL SAN LEANDRO	9480600100	MICHAEL GUY 4/6/95	WARREN GROSS

DEPTH (FEET)	WELL CONST CSG	WELL CONST FILL	OVA (PPM)	SAMPLES NO.	SAMPLES TYPE	SAMPLES BLOWS /6"	GRAPH. LOG	SOIL CLASS (USCS)	DESCRIPTION OF MATERIALS	REMARKS
								CL		
30										
35										
40										
45									Boring terminated 45 ft bgs.	

ATTACHMENT C

LABORATORY REPORTS AND CHAIN-OF-CUSTODY RECORDS

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Geo Research	Client Proj. ID: Unocal San Leandro	Sampled: 04/06/95
3777 Depot Road Suite 418	Sample Descript: MW 10-30	Received: 04/10/95
Hayward, CA 94545	Matrix: SOLID	Extracted: 04/13/95
	Analysis Method: 8015Mod/8020	Analyzed: 04/13/95
Attention: Frank Poss	Lab Number: 9504667-01	Reported: 04/17/95

QC Batch Number: GC041395BTEXEXA
Instrument ID: GCHP01

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	90

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Vytas Ankaitis
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Geo Research
3777 Depot Road Suite 418
Hayward, CA 94545
Attention: Frank Poss

Client Project ID: Unocal San Leandro
Matrix: Solid
Work Order #: 9504667 -01

Reported: Apr 17, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC041395BTEXEXA	GC041395BTEXEXA	GC041395BTEXEXA	GC041395BTEXEXA
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	E. Cunanan	E. Cunanan	E. Cunanan	E. Cunanan
MS/MSD #:	950440307	950440307	950440307	950440307
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/13/95	4/13/95	4/13/95	4/13/95
Analyzed Date:	4/13/95	4/13/95	4/13/95	4/13/95
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg
Result:	0.19	0.20	0.20	0.60
MS % Recovery:	95	100	100	100
Dup. Result:	0.18	0.19	0.19	0.57
MSD % Recov.:	90	95	95	95
RPD:	5.4	5.1	5.1	5.1
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	
Prepared Date:	
Analyzed Date:	
instrument I.D.#:	
Conc. Spiked:	
LCS Result:	
LCS % Recov.:	

MS/MSD LCS Control Limits	55-145	47-149	47-155	56-140

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Vytas Ankaitis
Project Manager

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

UNOCAL 76

❑ 680 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600
❑ 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600
❑ 1900 Bates Ave., Suite LM • Concord, CA 94520 • (510) 686-9600
❑ 18939 120th Ave., N.E., Suite 101 • Bothell, WA 98011 • (206) 481-9200
❑ East 11115 Montgomery, Suite B • Spokane, WA 99206 • (509) 924-9200
❑ 15055 S.W. Sequoia Pkwy, Suite 110 • Portland, OR 97222 • (503) 624-9800

Company Name: Pac GeoResearch	Project Name: Unocal San Leandro
Address: 3777 Depot Rd, Ste 418	UNOCAL Project Manager: Tina Berry
City: Hayward State: Ca Zip Code: 94541-	Release #:
Telephone: (510) 887-1111 FAX #:	Site #: 5367
Report To: Frank Poss Sampler: Michael Gary	QC Data: ❑ Level D (Standard) ❑ Level C ❑ Level B ❑ Level A

Turnaround Time: ☒ 10 Work Days ❑ 5 Work Days ❑ 3 Work Days ❑ 2 Work Days ❑ 1 Work Day ❑ 2-8 Hours

CODE: ❑ Misc. ❑ Detect. ❑ Eval. ❑ Remed. ❑ Demol. ❑ Closure

❑ Drinking Water ❑ Waste Water ❑ Other

Analyses Requested

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Laboratory Sample #	TPH-G/BTEX 9504667	Comments
1. MW 10-30	4/6/95	Soil	1	Brass		X	1
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

Relinquished By:	Date: 4/10/95	Time: 12:10	Received By:	Date: 4-10 Time: 12:10
Relinquished By:	Date: 4/10	Time: 12:35	Received By:	Date: Time:
Relinquished By:	Date:	Time:	Received By Lab:	Date: 4/10/95 Time: 1239

Were Samples Received in Good Condition? ❑ Yes ❑ No Samples on Ice? ❑ Yes ❑ No Method of Shipment _____ Page __ of __

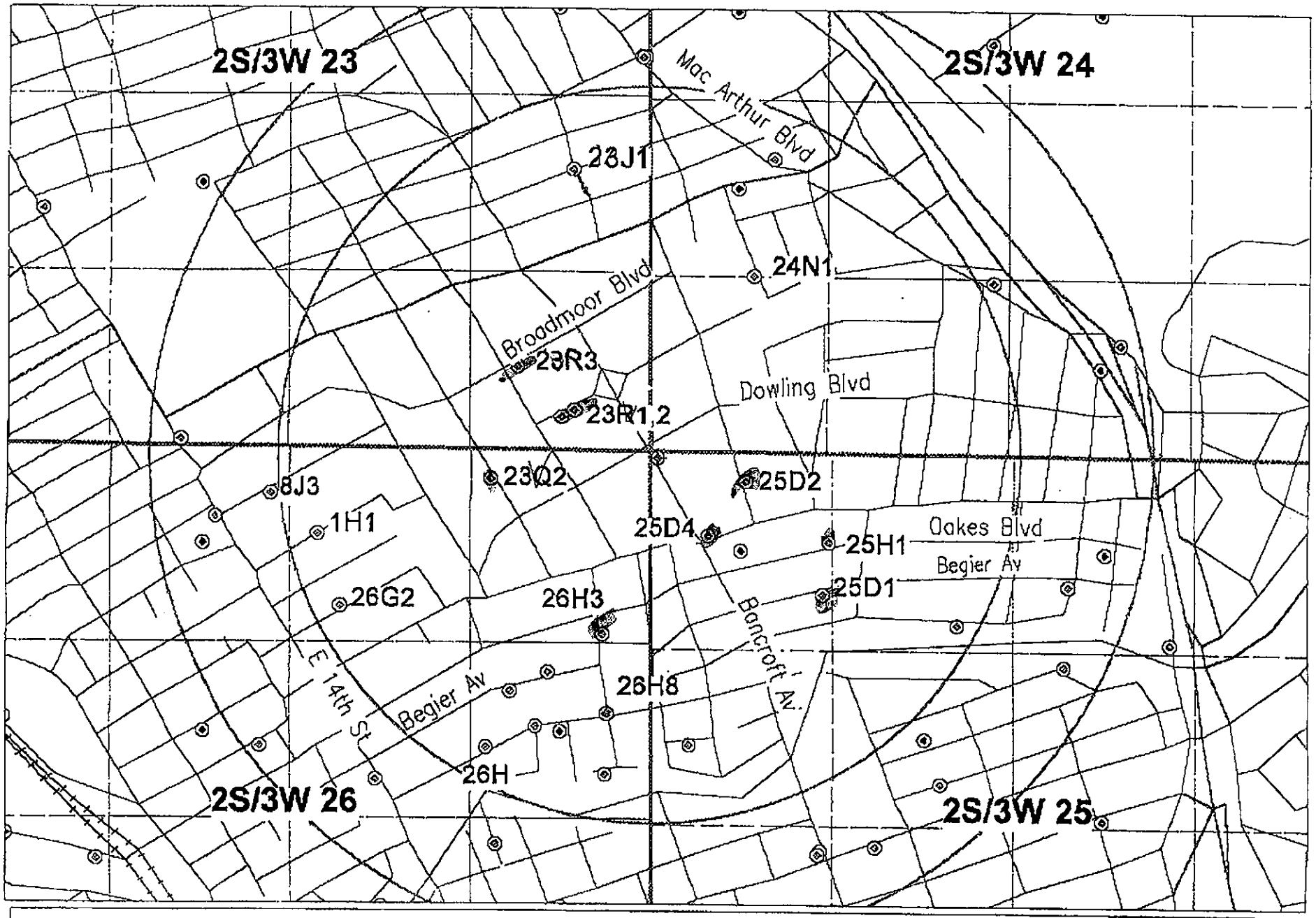
To be completed upon receipt of report:
1) Were the analyses requested on the Chain of Custody reported? ❑ Yes ❑ No If no, what analyses are still needed? _____
2) Was the report issued within the requested turnaround time? ❑ Yes ❑ No If no, what was the turnaround time? _____

Approved by: _____ Signature: _____ Company: _____ Date: _____

Pink - Client
Yellow - Laboratory
White - Laboratory

ATTACHMENT D

OFF-SITE GROUND WATER INFORMATION



.5 mile radius from 500 Bancroft Ave., SLE
10/11/1994

Alameda County
Urban Runoff
Clean Water Program
A Consortium of Local Agencies
951 Turner Court, Hayward CA 94545
(510) 670-5543 FAX (510) 670-5262

WELL #	CITY	ADDRESS	OWNER	PHONE	USE	DRILLED	DIAM	TOT.DEPTH	DTW	Alameda County Flood Control Dist. ELEV	Alameda County WA. ELEV	Member Agencies FIELD	LOG	WQ	WL	DATAORGN	MAP
2S/3W 13H 1	OAK	MacARTHUR BLVD &106 AVE	ARCO PRODUCTS CO.	0	MON	03/89	2	41	31	0	0	0	D	0	0	1	Yes
2S/3W 13H 2	OAK	MacARTHUR BLVD &106 AVE	ARCO PRODUCTS CO.	0	MON	03/89	4	28	17	0	0	0	D	0	0	1	Yes
2S/3W 13H 3	OAK	MacARTHUR BLVD &106 AVE	ARCO PRODUCTS CO.	0	MON	03/89	2	40	35	0	0	0	D	0	0	1	
2S/3W 13H 4	OAK	MacARTHUR BLVD & 106 AVE	ARCO PRODUCTS CO.	0	MON	03/89	2	53	34	0	0	0	D	0	0	1	
2S/3W 13H 5	OAK	MacARTHUR BLVD &106 AVE	ARCO PRODUCTS CO.	0	MON	04/89	4	49	33	0	0	0	D	0	0	1	
2S/3W 13J 1	OAK	VOLTAIRE & 108TH	PG&E	0	CAT	4/76	0	105	0	0	0	0	D	0	0	1	
2S/3W 13Q 2	SLE	445 BEVERLY AVE	MRS. GEO J HELINS	0	?	?	0	0	0	0	0	0	?	0	0	1	
2S/3W 13R 1	SLE	559 VICTORIA CT	F. HRIDUSKA	0	DES	?	6	60	28	0	0	0	?	0	0	1	
2S/3W 13R 2	SLE	533 VICTORIA CT	IRVING ELLIOTT	0	IRR	10/77	6	80	37	0	0	0	?	0	0	1	
2S/3W 13R 3	SLE	505 BROADMOOR BLVD	VALENTINE DELEON	6350279	IRR	06/88	3	36	29	0	0	0	?	0	0	1	
2S/3W 14R	OAK	10600 MacArthur Blvd.	ARCO	0	BOR*	8/89	8	36	24	0	0	0	D	0	0	1	
2S/3W 14R 1	SLE	106TH & FOOTHILL BLVD	EXXON OIL CO.	0	CAT	7/77	0	50	0	0	0	0	D	0	0	1	
2S/3W 14R 2	SLE	SHAN & STANLEY	PG&E	0	CAT	2/76	0	120	0	0	0	0	D	0	0	1	
2S/3W 14R 3	OAK	10501 FOOTHILLS BLVD.	SOUTHLAND CORP. (PLSNTN)	0	MON	7/87	2	25	17	0	0	0	D	0	0	1	
2S/3W 14R 5	OAK	10501 FOOTHILLS BLVD	SOUTHLAND CORP. (PLSNTN)	0	MON	8/87	2	24	17	0	0	0	D	0	0	1	
2S/3W 14R 5	OAK	10700 MACARTHUR BLVD.	HOPKINS DEVELOPMENT	0			0	0	0	0	0	0	D	0	0	1	
2S/3W 14R 6	OAK	10700 MACARTHUR BLVD.	HOPKINS DEVELOPMENT	0	MON	12/88	4	41	27	0	0	0	D	0	0	1	
2S/3W 14R 7	OAK	10700 MACARTHUR BLVD.	HOPKINS DEVELOPMENT	0	MON	12/88	4	42	22	0	0	0	D	0	0	1	
2S/3W 14R 8	OAK	10700 MACARTHUR BLVD.	HOPKINS DEVELOPMENT	0	MON	12/88	4	51	48	0	0	0	D	0	0	1	
2S/3W 14R 9	OAK	10700 MACARTHUR BLVD.	HOPKINS DEVELOPMENT	0	MON	12/88	4	32	26	0	0	0	D	0	0	1	
2S/3W 14M	OAK	10700 MACARTHUR BLVD	SHELL SERVICE STATION	0	BOR	2/87	6	20	0	0	0	0	D	0	0	1	
2S/3W 14M 1	SLE	2544 109TH AVE	MRS. KITCHER	69889B5	IRR	9/77	8	56	38	0	0	0	D	0	0	1	
2S/3W 14M 2	OAK	10700 MACARTHUR BLVD.	SHELL OIL	0	MON	2/87	3	40	14	0	0	0	D	0	0	1	
2S/3W 14M 3	OAK	10700 MACARTHUR BLVD.	SHELL OIL	0	MON	2/87	3	40	15	0	0	0	D	0	0	1	
2S/3W 14M 4	OAK	96 Macarthur Blvd.	Unocal SS #1871 MW-1	0	MON	10/92	4	25	17	81	64	0	D	0	0	1	
2S/3W 14M 5	OAK	96 Macarthur Blvd.	Unocal SS #1871 MW-2	0	MON	10/92	4	25	12	77	65	0	D	0	0	1	
2S/3W 14M 6	OAK	96 Macarthur Blvd.	Unocal SS #1871 MW-3	0	MON	10/92	4	24	15	77	62	0	D	0	0	1	
2S/3W 14N 1	SLE	177 HOLLISTER ST	JOE BRAMSH	0	IRR	3/77	5	79	40	0	0	0	D	0	0	1	
2S/3W 14Q 2	ALA	McCARTNEY & CATALINA	GALLAGHER & BURKE	0	MON	4/87	2	20	9	0	0	0	D	0	0	1	Yes
2S/3W 25B 1	SLE	1123 GLEY DR	ARTHUR LUND	0	IRR	5/77	8	72	55	0	0	25	D	0	0	1	
2S/3W 25B 2	SLE	881 Saint Mary Avenue	Ol'e Juul	0	DOM	3/91	5	60	15	0	0	10	D	0	0	1	Yes
2S/3W 25D 1	SLE	811 BEGIER AVE	BOB EVERSOLE	0	IRR	8/77	0	55	0	0	0	5	D	0	0	1	
2S/3W 25D 2	SLE	572 KENILWORTH	J. CERRUTI	0	IRR	4/83	8	96	40	0	0	0	D	0	0	1	
2S/3W 25D 3	SLE	500 BANCROFT AVENUE	UNOCAL STATION #5367	0	MON	9/87	2	35	31	0	0	0	D	0	0	1	
2S/3W 25D 4	SLE	600 DUTTON AVE	CHEVRON	0	DES	01/89	0	45	0	0	0	0	D	0	0	1	
2S/3W 25D 5	SLE	604 DUTTON AVE	CHEVRON	0	DES	10/88	0	48	0	0	0	0	D	0	0	1	
2S/3W 25D 6	SLE	604 DUTTON AVE	CHEVRON	0	MON	05/88	4	50	36	62	26	0	D	0	0	1	
2S/3W 25D 7	SLE	600 DUTTON AVE	CHEVRON	0	MON	05/88	4	50	36	63	27	0	D	0	0	1	
2S/3W 25D 8	SLE	2175 N. CA. BD. #65 (C	UNOCAL	0	MON	09/88	4	48	40	0	0	0	D	0	0	1	
2S/3W 25D 9	SLE	500 BANCROFT AVE	UNOCAL STA. #5367	0	MON	09/88	4	48	40	0	0	0	D	0	0	1	
2S/3W 25D 9	SLE	2175 N. CA. BD. #650	UNOCAL	0			0	0	0	0	0	0	D	0	0	1	
2S/3W 25D10	SLE	500 BANCROFT AVE	UNOCAL STA. #5367	0	MON	09/88	4	48	42	0	0	0	D	0	0	1	
2S/3W 25D10	SLE	2175 N. CA. BD. #650	UNOCAL	0			0	0	0	0	0	0	D	0	0	1	
2S/3W 25D11	SLE	500 Bancroft Avenue	Tim Ross, Unocal	0	MON	5/89	2	45	32	0	0	0	D	0	0	1	
2S/3W 25D12	SLE	500 Bancroft Avenue	Tim Ross, Unocal	0	MON	5/89	2	45	35	0	0	0	D	0	0	1	
2S/3W 25D8	SLE	500 BANCROFT AVE	UNOCAL STA. #5367	0			0	0	0	0	0	0	D	0	0	1	
2S/3W 25H 2	SLE	521 PALA AVE	J.A. THOMPSON	0	IRR	9/77	4	60	14	0	0	0	D	0	0	1	
2S/3W 25P 1	SLE	550 SAN LEANDRO BLVD	HARRY STEED	0	DOM	8/52	12	75	0	0	0	0	?	0	0	1	Yes
2S/3W 25N 1	SLE	866 OAKS BLVD	CHARLES DAVIS	0	DOM	4/46	0	78	36	0	0	0	D	0	0	1	
2S/3W 25N 1	SLE	MEMORIAL PARK	CITY OF SAN LEANDRO	0	IRR	8/41	0	90	0	0	0	0	D	0	0	1	Yes
2S/3W 26A 1	SLE	500 Bancroft Ave	Ron Bock, Unocal S#5367	0	MON	02/90	2	44	17	0	0	0	D	0	0	1	
2S/3W 26A 2	SLE	500 Bancroft Ave	Ron Bock, Unocal SS#5367	0	MON	06/90	2	44	18	0	0	0	D	0	0	1	
2S/3W 26C 1	SLE		L. H. MURDOCK	0	IND	'	18	99	0	0	0	0	D	0	0	1	Yes
2S/3W 26C 2	SLE	91 BROADMORE BLVD	C.R. HARDER	0	IRR	5/77	0	32	31	0	0	0	D	0	0	1	Yes
2S/3W 26C 3	SLE	93 BROADMORE BLVD	TERRY PATE	0	IRR	8/82	8	100	25	0	0	0	D	0	0	1	Yes
2S/3W 26G 2	SLE	74 EUCLID AVE	JAMES MULLINS	0	IRR	9/77	6	45	0	0	0	0	D	0	0	1	
2S/3W 26G 3	SLE	261 BERGIER AVE	DENNIS ONICK	0	IRR	'	0	0	0	0	0	0	?	0	0	1	
2S/3W 26H	SLE	236 HAAS AVENUE	DAVIDON HOMES	0	DES	07/86	0	32	0	0	0	0	D	0	0	1	
2S/3W 26H 2	SLE	261 BEGIER AV	DENNIS ONICK	0	IRR	4/77	4	54	14	0	0	0	?	0	0	1	
2S/3W 26H 3	SLE	730 WOODLAND AVE	TOM SAEDDEN	0	IRR	7/77	4	57	43	0	0	0	?	0	0	1	
2S/3W 26H 4	SLE	959 & 961 KAROL WAY	DACIS HEMRICHSEN	0	IRR	8/77	4	60	30	0	0	0	?	0	0	1	
2S/3W 26H 5	SLE	14TH & SAN LEANDRO CR.	?	0	IRR	'	0	54	0	0	0	0	?	0	0	1	

.5 mile radius from 500 Bancroft Ave., SLE (Page 2)

	WELL #	CITY	ADDRESS	OWNER	PHONE	USE	DR.DATE	DIAM	TOT.DEPTH	DTW	ST.ELEV	MA.ELEV	YIELD	LOG	WQ	WL	DATAORGN	MARGIN
	2S/3W 26H 6	SLE	340 WOODLAND PARK	STUART WORK	0	IRR	6/77	0	60	0	0	0	0	?	0	0		
	2S/3W 26H 7	SLE	HAAS AV & KAROL WAY	?	0	GEO*	5/77	0	0	0	0	0	0	0	0	0		
6*	2S/3W 26H 8	SLE	Haas & Woodland Ave	PG&E	0	OTH	12/91	0	117	0	0	0	0	0	0	0		
	2S/3W 26J 2	SLE	400 W ESTUDILLO ST	SAN LEADRO PARK & REC.	0	DES	8/75	6	61	35	0	0	0	?	0	0		
	3S/2W 1H 1	SLE	SUNNYSLOPE AVE	TIM CACY	0	DOM	5/75	8	128	76	0	0	20	0	0	0		Yes
	4S/2W 1G 2	SLE	386 BEGIER AV	N. BECKER	0	IRR	10/50	12	571	0	46	0	0	?	0	0		

25/3W Section 23 11/16/91

1/4 mile

23R1 - 559 Victoria Court. - destroyed 1975

DGW 29' D of well 60, screen 20-60'

R2 533 Victoria Court - inst. 1977 Next to house

Dep. well = 80' Screen 20-80 D GW 37'

owner F. Heiclusta
address same as well
Irrigation well

1-3	silt Clay
3-30	silt Clay
30-32	silt sand
32-55	silt clay
55-59	Fine Sandy Gravel
59-70	silt clay
70-80	Sandy Clay

R3 irrigation well, 505 Broadmoor Blvd

3", Private owner DGW 29' gravel encountered

~~bottom~~ 17, well drilled to 36 ft. completed in 1988

J1 Owner PG&E - cathodic Protection well, drilled 1976

12-34	Sandy Clay
34-39	Sand & Gravel
39-46	Sandy Clay
46-49	Sandy Gravel
49-70	Sandy clay
71-74	Sandy Clay
74-76	Sandy Gravel
76-90	Clayey Sand & loose gravel
91-105	~~Sand~~ gravel

Q2 depth 60', 445 Bevanly Ave. Private owner Geo J. Helms

GeoResearch

T2S R3W Section 25

D1 Irrigation Depth 55' Screen 45-55', 833 Bezier Ave.

- owner Bob O'Eversole
  address same as well
  - installed 1977

4-22 clay
22-30 Sand + Gravel
30-39 clay
39-47 sand
49-54 sand
54-55 - gravel

D2 Irrigation drilled 1954 Depth 95' Screen 78-86

owner J. Carruti
572 Kenilworth

1-40 clay
40-48 - Sand & Gravel
48-54 - gravel some sandy
68-76 - coarse sand
76-86 Gravel
86-95 clay

D3 1987 - Unocal station #5367 MW1

D4-7 Chevron 600 Dutton Ave. Installed 1988

MW1 - Dep. 48', 4" well Screen 38 - 48', 0.02 slot
+ #3 Sand

MW2 48' 4" Screen 32 - 47

MW3 49. 49-34'e screen, GW - 37' bgs

MW4 50' Screen 34.5 - 59.5

0-10 - Clay w/ silt
10-15 - silt sandy
15-20 clay/sand w/ clay
20-22 - silt fine sand
22-26 - clay/sand silty clay
26-30 - fine sand

30-34 Silty Clay
34-39 - Silt
37-42 CL-ML
42-48 - ML

1988 Abandoned MW1-MW4

GeoResearch

2S / 3W 25 08-12

Monitoring wells @ 500 Bancroft for UnoCal 1988
by Geo-Systems

DM

M1 Depth 78', GW 36' Screen, 32-40, 40-52 + 52-77
located 866 Oaks Blvd. owner: Charles G. Davis Drilled 1946

3-12	Sandy Clay	40-47	Sandy Gravel
12-15	Clay	47-52	Gravel + Sand
15-32	Clay	52-65	Clay + gravel
32-34	Gravel + Sand	65-76	Clay
34-40	Clay	76-78	RX

2S/3W 26 G

G City of San Leandro, @ 14th + Lorenzo Ave
our logs say: 14th + Baylor, Drilled w/ 8" solid
stem, to 30 ft. I think these are Geotec. Borings.

G2 74- Euclid Ave, Irrigation well installed 1977
James Mullins address same as well
Depth 45' Screen 35-45' GW 36
2-12 Clay
12-30 clay
30-36 Gravel
36-45 Gravel

M

GeoResearch

25/3W 26

H1 . 236 Hughs Ave 100' from St, installed 1976
wt Depth to GW 23 ft'. Screen 15-25

H1 . 337 woodland park owner Jim Rice
Depth 60'. screen 45-55 4" dia installed 1977
irrigation well.

H2 54 ft, screen 40-54 . 4" dia. GW 40, irrigation
installed 1977. ~~owner~~
261 Begier Ave. - Owner Dennis Omick address same -

H3 730 woodland Ave Depth 56.5 screen 42-55' GW 42'
irrigation well installed 1977. Owner, Tom Sheckler
address same.

1-6 silt	37-42 clay
6-21 silty clay	42-52 clay
21-23 sandy silt	52-54 silty clay
23-26 sandy gravel	54-55 sandy clay
26-28 clay	55-56 sandy gravel
28-33 clay some gravel	

H4 459 & 961 Karol Way irrigation well installed 1972
to 60' screen 30 - 60? 4" dia. GW - 40'
Owner Doris Henrichsen -

GeoResearch