

JUL 29 1994

ACTON •
MICKELSON •
van DAM, INC.

HAYWARD FIRE DEPARTMENT

Consulting Scientists, Engineers, and Geologists

July 19, 1994

Mr. Terrence A. Fox
Ultramar Inc.
525 West Third Street
Hanford, California 93232

19029.02/7

Subject: Additional Soil and Ground Water Investigation--Beacon Station #546
29705 Mission Boulevard, Hayward, California

Dear Mr. Fox:

Acton • Mickelson • van Dam, Inc. (AMV), has been authorized to continue an investigation of soil and ground water conditions at Beacon Station #546 located at 29705 Mission Boulevard, Hayward, Alameda County, California (Figure 1). This letter summarizes the results of soil boring, ground water monitoring, monitoring well installation, and soil and ground water sampling performed on property southwest of the site on June 13, 1994.

Scope of Work

The work included advancing one 8-inch-diameter soil boring to a depth of approximately 20 feet below grade and completing the boring as a 2-inch-diameter monitoring well (designated as MW-10). The location of monitoring well MW-10 (and other site features) is illustrated on Figure 2. Methods used to drill and sample the soil boring are described in Enclosure A.

Selected soil samples were submitted for laboratory analysis of benzene, toluene, ethylbenzene, xylenes (BTEX), and total petroleum hydrocarbons as gasoline (TPHg). Analytical procedures conformed to U.S. Environmental Protection Agency (EPA) and California Environmental Protection Agency, Department of Toxic Substances Control (Cal-EPA) approved methods.

Soil Boring

Soil samples collected from the boring for monitoring well MW-10 consisted of clay and sandy clay. The lithology of soil samples collected from the soil boring for monitoring well MW-10 is described in detail by depth as follows: from ground surface to approximately 7 feet below grade, the soil encountered consisted of clay; sandy clay is present from 7 to 20 feet below

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grade, the total depth of the boring. A gradational contact exists between the soil types. A soil boring log containing descriptions of soil conditions encountered in this boring are included in Enclosure B.

Soil Sample Analytical Results

A portion of each soil sample collected from the soil boring was sealed in a plastic bag and allowed to reach ambient air temperature. The headspace of the bag was then screened in the field with a photoionization detector (PID).

One soil sample from the boring for monitoring well MW-10 collected from above the water table was submitted for analysis of concentrations of BTEX and TPHg. Analytical results of soil samples submitted by AMV are summarized in Table 1. Copies of certified analytical reports for the soil samples submitted to the laboratory during this phase of work are contained in Enclosure C.

The soil sample collected from 4 feet below grade in the boring for monitoring well MW-10 did not contain concentrations of BTEX or TPHg above the method detection limits.

Monitoring Well Installation

Ground water monitoring well MW-10 was constructed of 2-inch-diameter, Schedule 40 PVC casing. Fifteen feet of 0.020-inch slot screened casing was installed from 5 to 20 feet below grade. Blank casing extends from 5 feet below grade to the surface. A monitoring well construction detail is contained in Enclosure D. The monitoring well was developed, purged, and sampled in accordance with methods outlined in Enclosure A. A ground water sample from monitoring well MW-10 was submitted for laboratory analysis of BTEX and TPHg by Cal-EPA and EPA-approved methods.

Ground Water Level Measurements

Depth to ground water was measured in existing monitoring wells (MW-1 through MW-6 and MW-8 through MW-10) on June 13, 1994 (Table 2). Monitoring well MW-7 was inaccessible on this date, and depth to ground water was not measured in this well. Ground water was present at depths ranging from 6.61 (MW-10) to 15.68 (MW-6) feet below the top of respective well casing risers. Field observations are contained in Enclosure E. Liquid-phase petroleum hydrocarbons were not observed in any monitoring well on this date. Water level measurements indicate an inferred direction of ground water flow toward the west-southwest as illustrated on

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Figure 3. On June 13, 1994, the ground water gradient was calculated at approximately 0.007 foot per foot (ft/ft). Historical depth to ground water measurements are provided in Enclosure F for comparison.

Ground Water Analytical Results

After the newly installed monitoring well was developed and purged on June 13, 1994, a ground water sample was collected from monitoring well MW-10 for laboratory analysis. Analytical results of sampling conducted on June 13, 1994, are summarized in Table 3. Ground water sample analytical results from previous quarters are included in Enclosure F for comparison. Copies of certified analytical reports are contained in Enclosure G.

The most recent ground water quality data available for each existing ground water monitoring well were compiled to infer the distribution of dissolved benzene in ground water beneath the site (Figure 4). Data from monitoring wells MW-1 through MW-9 are from March 10, 1994, and data from monitoring well MW-10 was collected on June 13, 1994. Each well at the site will be sampled on the same day during the next quarterly sampling event to verify the inferred distribution of dissolved benzene in ground water.

Analytical results from the ground water sample collected from monitoring well MW-10 on June 13, 1994, indicated benzene and TPHg concentrations of 210 and 22,000 micrograms per liter ($\mu\text{g/l}$), respectively.

Summary of Analytical Results

A soil sample collected at 4 feet below grade from the boring for monitoring well MW-10 did not contain a concentration of TPHg greater than 1.0 milligram per kilogram (mg/kg).

Petroleum hydrocarbon constituents were detected in the ground water sample collected from the newly constructed monitoring well (MW-10). Benzene was detected in the ground water sample collected from monitoring well MW-10 at 210 $\mu\text{g/l}$.

The inferred direction of ground water flow on June 13, 1994, was approximately to the west-southwest with an inferred hydraulic gradient of 0.007 ft/ft.

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Remarks

This report represents our professional opinions, which are based in part on information supplied by the client. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practice at this time and location. Other than this, no warranty is implied or intended.

It is recommended that a copy of this report be forwarded to the following agencies:

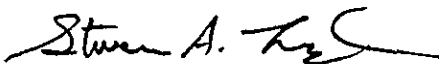
Mr. Vijay B. Patel
California Regional Water Quality Control Board,
San Francisco Bay Region
1800 Harrison Street, Suite 700
Oakland, California 94612

Mr. Hugh Murphy
Hazardous Material Inspector
Hayward Fire Department
22300 Foothill Boulevard
Hayward, California 94541

If you have any questions regarding this project, please contact either of the undersigned immediately.

Sincerely,

ACTON • MICKELSON • van DAM, INC.



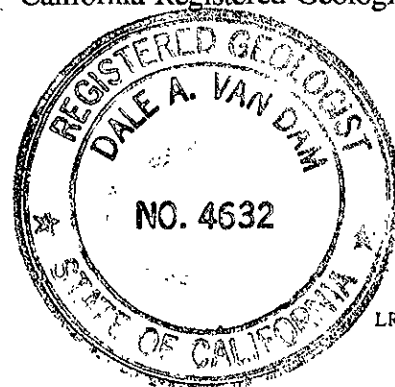
Steven A. Liaty
Staff Geologist

SAL:DAVD:maj
Enclosures

ACTON •
MICKELSON •
van DAM, INC.



Dale A. van Dam, R.G.
California Registered Geologist #4632



LRPT027.MAF

TABLE 1

SOIL SAMPLE ANALYTICAL RESULTS
 Beacon Station #546
 29705 Mission Boulevard, Hayward, California
 (concentrations in milligrams per kilogram)

Boring No.	Sample No.	Date Sampled	Depth (feet below grade)	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPHg
MW-10	MW10-1	06-13-94	4	<0.0050	<0.0050	<0.0050	<0.0050	<1.0

TABLE 2

WATER ELEVATION DATA
 Beacon Station #546
 29705 Mission Boulevard, Hayward, California

Monitoring Well	Date	Top of Riser (feet)	Depth of Water (feet)	Ground Water Elevation (feet)	Physical Observation
MW-1	06-13-94	37.46	22.15	15.31	No Product
MW-2	06-13-94	35.95	20.87	15.08	No Product
MW-3	06-13-94	40.28	24.63	15.65	No Product
MW-4	06-13-94	34.94	20.06	14.88	No Product
MW-5	06-13-94	36.37	21.25	15.12	No Product
MW-6	06-13-94	37.43	21.75	15.68	No Product
MW-7	06-13-94	--	NM*	--	--
MW-8	06-13-94	28.48	14.44	14.04	No Product
MW-9	06-13-94	21.99	9.57	12.42	No Product
MW-10	06-13-94	17.41	6.61	10.80	No Product

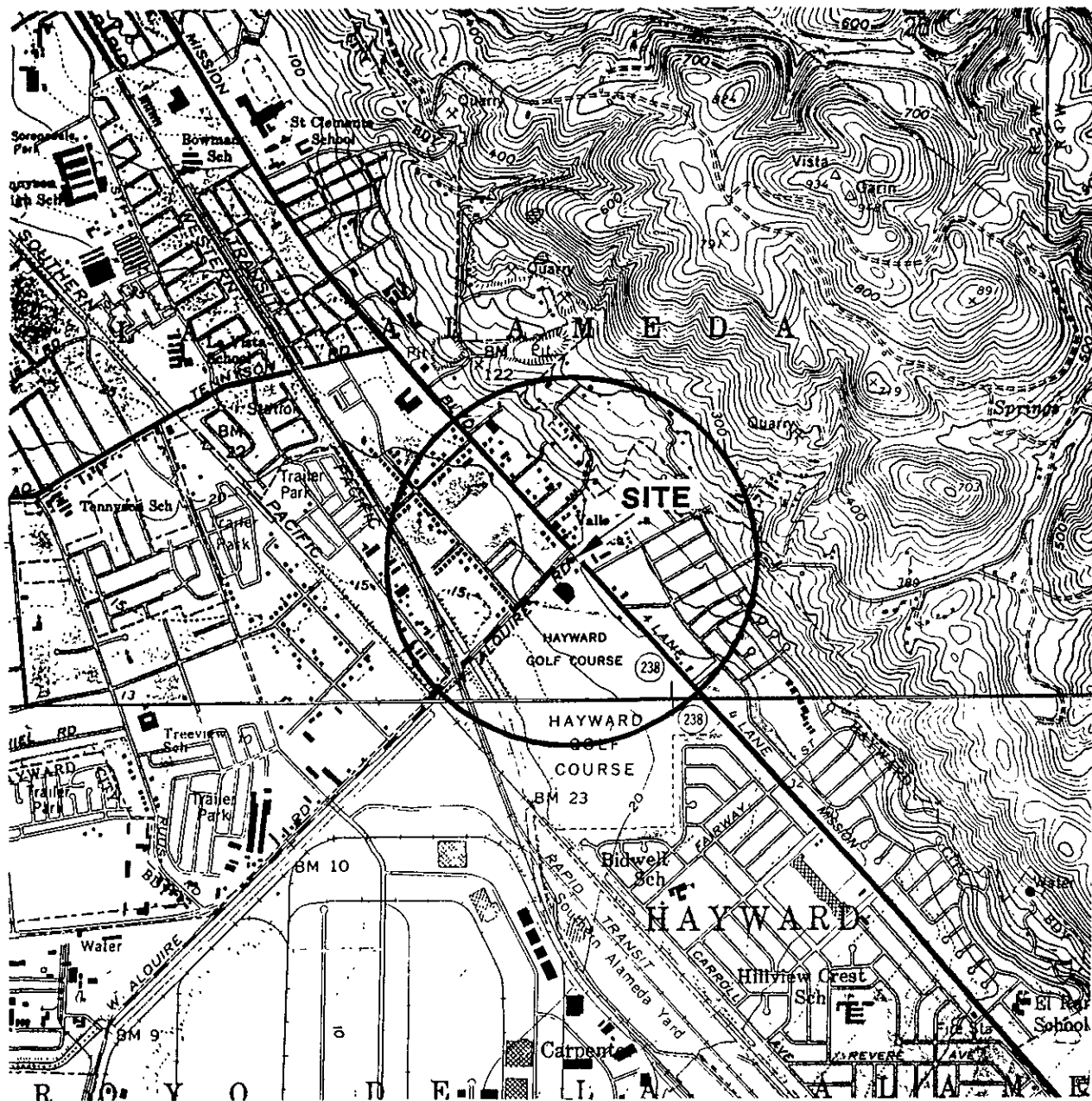
*NM = Not measured on this date.

TABLE 3

GROUND WATER SAMPLE ANALYTICAL RESULTS
Beacon Station #546
29705 Mission Boulevard, Hayward, California
Concentrations in micrograms per liter ($\mu\text{g/l}$)

Monitoring Well	Date Sampled	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPHg*
MW-10	06-13-94	210	330	1,200	5,400	22,000

*TPHg = Total petroleum hydrocarbons as gasoline.



General Notes

Base Map from U.S.G.S.
7.5 Minute Topographics
Hayward, California
And Newark, California
Photorevised 1980



0 2,000
Approximate Scale
(in feet)



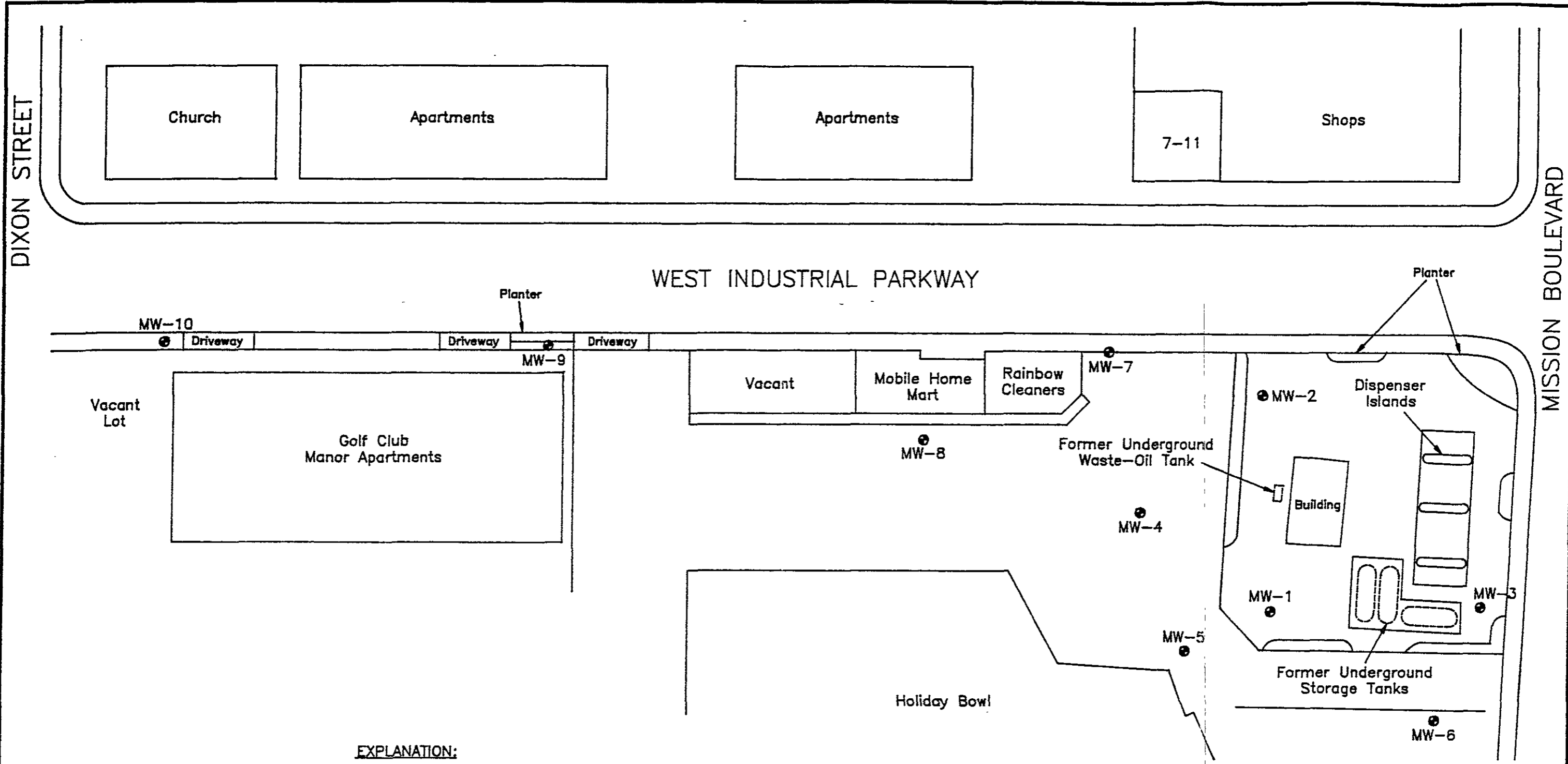
QUADRANGLE LOCATION

FIGURE 1

SITE LOCATION MAP
BEACON STATION #546
29705 MISSION BOULEVARD
HAYWARD, CALIFORNIA

Project No.	Drawn
19029 01	CCB
File No.	Prepared
FIG1	TAD
Revision	Reviewed

Acton • Mickelson • van Dam, Inc
Consulting Scientists, Engineers, and Geologists
4511 Golden Foothill Parkway, #1
El Dorado Hills, California 95762
(916) 939-7550



EXPLANATION:

MW-9 ● Monitoring Well Location
And Designation

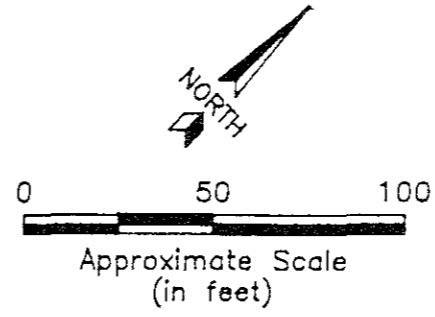
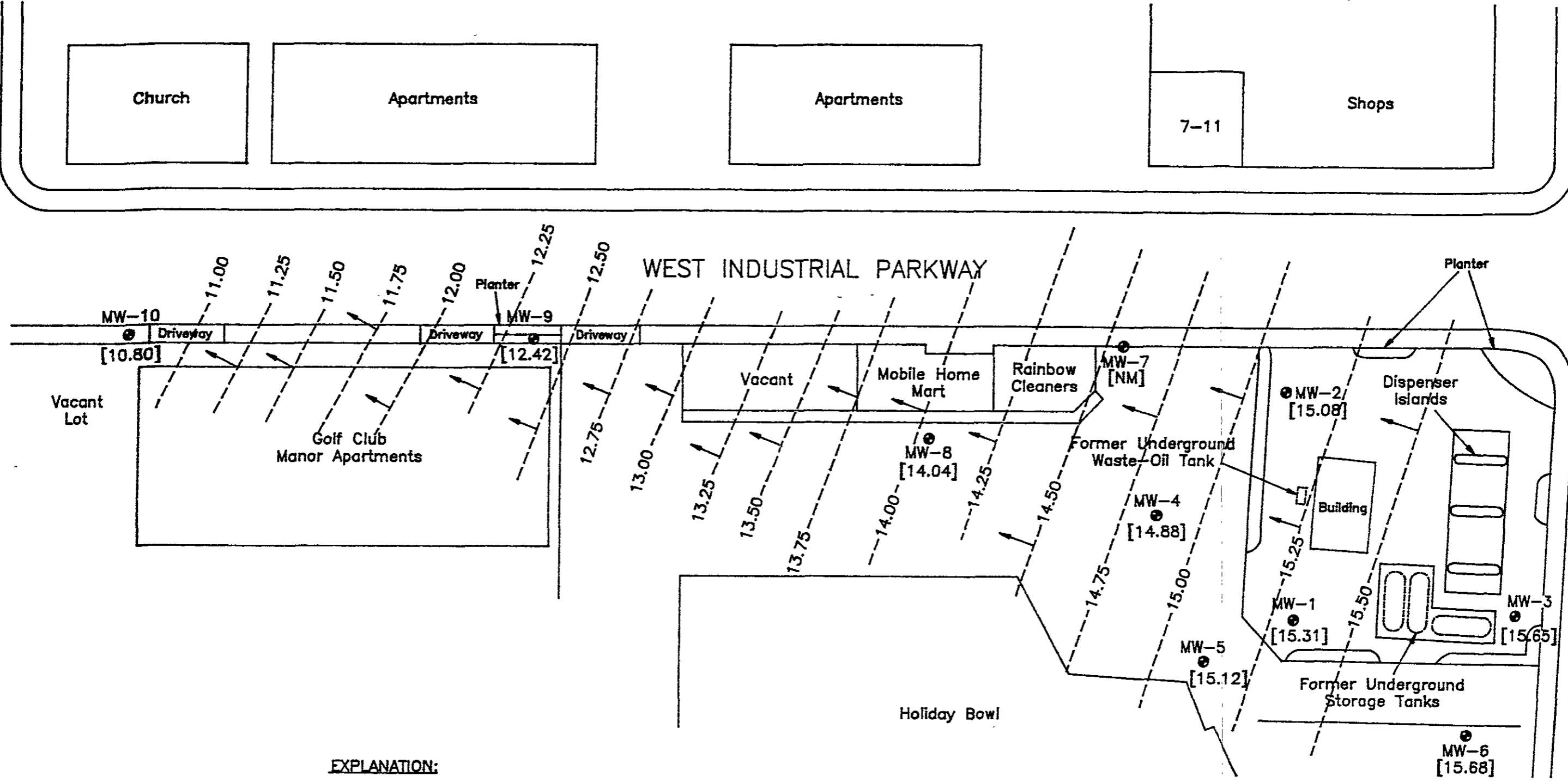


FIGURE 2 SITE MAP BEACON STATION #548 29705 MISSION BOULEVARD HAYWARD, CALIFORNIA		
Project No. 19029.01	Drawn MWB	Acton • Mickelson • van Dam, Inc. Consulting Scientists, Engineers, and Geologists 4511 Golden Foothill Parkway, #1 El Dorado Hills, California 95762 (916) 939-7550
File No. FIG2	Prepared SAL	
Revision	Reviewed	

DIXON STREET

MISSION BOULEVARD



EXPLANATION:

MW-9 ● Monitoring Well Location And Designation

[10.80] Ground Water Elevation In Feet

Ground Water Table Elevation Contour With Inferred Direction Of Flow

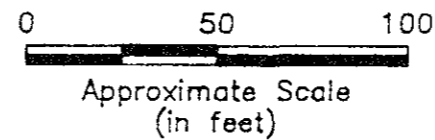
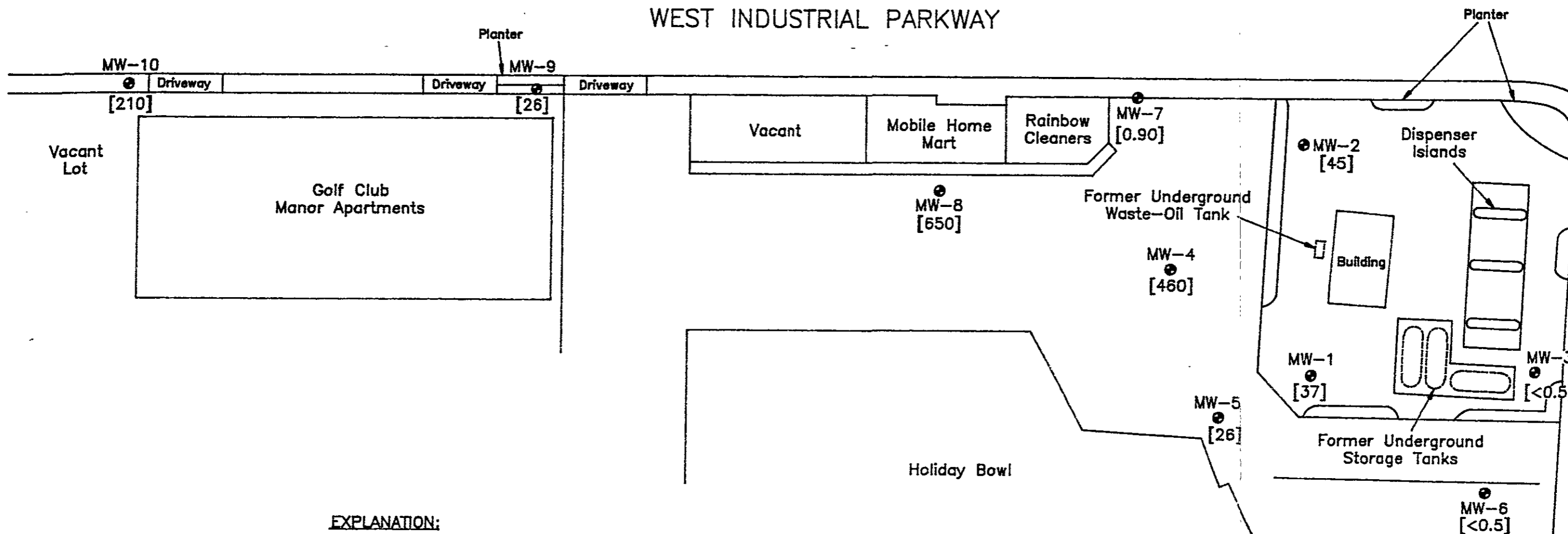


FIGURE 3 GROUND WATER TABLE CONTOUR MAP (06/13/94) BEACON STATION #546 29705 MISSION BOULEVARD HAYWARD, CALIFORNIA		
Project No. 19029.01	Drawn MWB	Acton • Mickelson • van Dam, Inc. Consulting Scientists, Engineers, and Geologists 4511 Golden Foothill Parkway, #1 El Dorado Hills, California 95762 (916) 939-7550
File No. FIG3	Prepared SAL	
Revision	Reviewed	

DIXON STREET

MISSION BOULEVARD

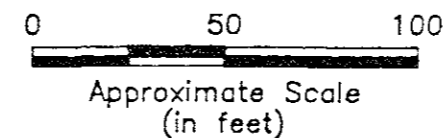
WEST INDUSTRIAL PARKWAY



EXPLANATION:

MW-9 ● Monitoring Well Location And Designation

[210] Benzene Concentration In Micrograms Per Liter



Note: Analytical Results From Monitoring Wells MW-1 Through MW-9 From March 10, 1994
Analytical Results From Monitoring Well MW-10 On June 13, 1994

FIGURE 4 INFERRED DISTRIBUTION OF BENZENE IN THE GROUND WATER BEACON STATION #546 29705 MISSION BOULEVARD HAYWARD, CALIFORNIA		
Project No. 19029.01	Drawn MWB	Acton • Mickelson • van Dam, Inc. Consulting Scientists, Engineers, and Geologists 4511 Golden Foothill Parkway, #1 El Dorado Hills, California 95762 (916) 939-7550
File No. FIG4	Prepared SAL	
Revision	Reviewed	

ENCLOSURE A
SAMPLING TECHNIQUES

ENCLOSURE A

SAMPLING TECHNIQUES

Proper sampling techniques were followed to assure that samples represented actual field conditions and that samples were labeled, preserved, and transported properly to retain sample integrity. This exhibit describes procedures which were followed by Acton • Mickelson • van Dam, Inc. (AMV), during collection of samples of subsurface soil and ground water. Sampling guidance documents from the American Society of Testing and Materials (ASTM), U.S. Environmental Protection Agency (EPA), and California Department of Health Services (DHS) were followed for all sampling procedures. Actual sampling procedures employed were based on field conditions and may differ from those described here.

1.0 EXPLORATION BORING/SOIL SAMPLING PROCEDURES

Soil borings and soil sampling were performed under the direction of an AMV geologist. The soil borings were advanced using a truck-mounted, hollow-stem auger drill rig and a hand auger.

Soil samples were collected at 5-foot vertical intervals. Soil sampling was done in accordance with ASTM 1586-84. Using this procedure, three 2-inch-diameter, 6-inch-length, brass tubes were placed in a California-type split-barrel California-type sampler. The sampler was driven into the soil by a 140-pound weight falling 30 inches. After an initial set of 6 inches, the number of blows required to drive the sampler an additional 12 inches, known as penetration resistance or the "N" value, was recorded on the respective boring log. The "N" value is used as an empirical measure of the relative density of cohesionless soils and the consistency of cohesive soils.

Upon recovery of the split-barrel sampler, the brass tubes containing the soil were removed. One of the three brass tubes was sealed at the ends with Teflon tape and plastic end caps. The sample was labeled with an identification number, time, date, location, and requested laboratory analysis. The sample was then placed in a plastic bag and stored at approximately 4° Celsius (C) in an ice chest for transport to the laboratory. Sample custody procedures outlined in Section 4.0 of this exhibit were followed.

Soil in one of the brass tubes was extracted upon recovery, placed in a plastic bag, and sealed for later screening for organic vapors using a photoionization detector (PID). The remaining portion of the soil sample was examined and a complete log of soil conditions was recorded on a soil boring log (Enclosure A) using the Unified Soil Classification System (Enclosure B). The soil was examined for grain size, color, and moisture content.

The split-barrel sampler was cleaned to prevent cross-contamination for each sampling interval using procedures described in Section 2.0 of this appendix.

The soil generated from the soil borings was stored in 55-gallon drums and labeled with the corresponding boring number, date, and address of the facility.

2.0 DECONTAMINATION AND DISPOSAL PROCEDURES

2.1 Equipment Decontamination

All equipment that came in contact with potentially contaminated soil, air, or water was decontaminated before each use. Decontamination consisted of steam-cleaning, a high-pressure, hot-water rinse, or trisodium phosphate (TSP) wash and freshwater rinse, as appropriate.

Drilling and sampling equipment was decontaminated as follows:

1. Drill rig augers, drill rods, and drill bits were steam-cleaned prior to use and between borings. Visible soil, grease, and other impurities were removed.
2. Soil sampling equipment was steam-cleaned prior to use and between each boring. Prior to individual sample collection, sampling devices were also cleaned in a TSP solution and rinsed twice in clean water. Any visible soil residue was removed.
3. Stainless steel or brass soil sampling tubes were washed in a trisodium phosphate (TSP) solution and rinsed with clean water.

3.0 FIELD MEASUREMENTS

Field data were collected during various sampling and monitoring activities; this section describes routine procedures followed by personnel performing field measurements. The methods presented below were intended to ensure that field measurements were consistent and reproducible when performed by various individuals.

3.1 Buried Utility Locations

Prior to commencement of work on site, AMV contacted appropriate utility companies to have underground utility lines located. AMV researched the location of all underground utilities using past site construction and surveying plans and by conducting a ground reconnaissance of the area. All work associated with the borings was preceded by hand augering to a minimum depth of 5 feet below grade to avoid contact with underground utilities.

3.2 Lithologic Logging

A log of soil conditions encountered during the drilling and sample collection (Enclosure A) was maintained using the Unified Soil Classification System (Enclosure B) by an AMV geologist. All boring logs were reviewed by a California registered geologist.

The collected soil samples were examined and the following information recorded: boring location, sample interval and depth, blow counts, color, soil type, moisture content (qualitative), and depth at which ground water (if present) is first encountered. Also recorded on the soil boring logs was the field screening results derived from the use of a portable PID.

3.3 Disposal Procedures

Soils and fluids that were produced and/or used during the installation and sampling of borings, and that were known or suspected to contain potentially hazardous materials, were contained during the above operations. These substances were retained on site until chemical testing had been completed to determine the proper means of disposal. Handling and disposal of substances known or suspected to be potentially hazardous materials complied with the applicable regulations of DHS, the California Department of Water Resources, and any other applicable regulations. Soils and fluids produced and/or used during the above-described operations that appeared to be potentially hazardous materials were disposed of appropriately.

Residual substances generated during cleaning procedures that are known or suspected to pose a threat to human health or the environment were placed in appropriate containers until chemical testing had been completed to determine the proper means for their disposal.

4.0 SAMPLE CUSTODY

This section describes standard operating procedures for sample custody and custody documentation. Sample custody procedures were followed through sample collection, transfer, analysis, and ultimate disposal. The purpose of these procedures is to assure that (1) the integrity of samples was maintained during their collection, transportation, and storage prior to analysis and (2) post-analysis sample material was properly disposed of. Sample custody is divided into field procedures and laboratory procedures, as described below.

4.1 Field Custody Procedures

Sample quantities, types, and locations were determined before the actual fieldwork commenced. As few people as possible handled samples. The field sampler was personally responsible for the care and custody of the collected samples until they were properly transferred.

4.1.1 Field Documentation

Each sample was labeled and sealed properly immediately after collection. Sample identification documents were carefully prepared so that identification and chain-of-custody records could be maintained and sample disposition could be controlled. Forms were filled out with waterproof ink. The following sample identification documents were utilized.

- Sample labels
- Field notebook
- Chain-of-custody forms

4.1.2 Sample Labels

Sample labels provide identification of samples. Preprinted sample labels were provided. Where necessary, the label was protected from water and solvents with clean label-protection tape. Each label contained the following information:

- Name of collector
- Date and time of collection
- Place of collection
- AMV project number
- Sample number
- Preservative (if any)

4.1.3 Field Notebook

Information pertinent to a field survey, measurements, and/or sampling was recorded in a bound notebook. Entries in the notebook included the following:

- Name and title of author, date and time of entry, and physical/environmental conditions during field activity.
- Location of sampling or measurement activity.
- Name(s) and title(s) of field crew.
- Type of sampled or measured media (e.g., soil, ground water, air, etc.)
- Sample collection or measurement method(s).
- Number and volume of sample(s) taken.
- Description of sampling point(s).
- Description of measuring reference points.
- Date and time of collection or measurement.
- Sample identification number(s).
- Sample preservative (if any).
- Sample distribution (e.g., laboratory).
- Field observations/comments.
- Field measurements data (pH, etc.).

4.1.4 Chain-of-Custody Record

A chain-of-custody record was filled out for and accompanied every sample and every shipment of samples to the analytical laboratory in order to establish the documentation necessary to trace sample possession from the time of collection. The record contained the following information:

- Sample or station number or sample I.D.
- Signature of collector, sampler, or recorder.
- Date and time of collection.
- Place of collection.
- Sample type.
- Signatures of persons involved in the chain of possession.
- Inclusive dates of possession.

The laboratory portion of the form was completed by laboratory personnel and contained the following information:

- Name of person receiving the sample.
- Laboratory sample number.
- Date and time of sample receipt.
- Analyses requested.
- Sample condition and temperature.

4.1.5 Sample Transfer and Shipment

Samples were always accompanied by a chain-of-custody record. When transferring samples, the individuals relinquishing and receiving the samples signed, dated, and noted the time on the chain-of-custody record. Samples were packaged properly for shipment and dispatched to the appropriate laboratory for analysis. The chain-of-custody record accompanied each shipment. The method of shipment, courier name(s), and other pertinent information was entered in the chain-of-custody record.

4.2 Laboratory Custody Procedures

A designated sample custodian accepted custody of the shipped samples and verified that the information on the sample label matched that on the chain-of-custody record. Information regarding method of delivery and sample conditions was also checked on the chain-of-custody record. The custodian then entered the appropriate data into the laboratory sample tracking system. The laboratory custodian either used the sample number on the sample label or assigned a unique laboratory number to each sample. The custodian then transferred the sample(s) to the proper analyst(s) or stored the sample(s) in the appropriate secure area.

Laboratory personnel are responsible for the care and custody of samples from the time they were received until the sample was exhausted. Once at the laboratory, the samples were handled in accordance with U.S. Environmental Protection Agency SW-846, Test Methods for

Evaluating Solid Waste Physical/Chemical Methods, Third Edition, for the intended analyses. All data sheets, chromatographs, and laboratory records were filed as part of the permanent documentation.

4.3 Corrections to Documentation

Original data recorded in field notebooks, chain-of-custody records, and other forms were written in ink. These documents should not be altered, destroyed, or discarded, even if they were illegible or contain inaccuracies that require a replacement document.

If an error was made or found on a document, the individual making the corrections did so by crossing a single line through the error, entering the correct information, and initialing and dating the change. Any subsequent error(s) discovered on a document was corrected. All corrections were initialed and dated.

4.4 Sample Storage and Disposal

Samples and extracts were retained by the analytical laboratory for 60 days after a written report was issued by the laboratory. Unless notified by the program manager, excess or unused samples were disposed of by the laboratory in an appropriate manner consistent with applicable government regulations.

ENCLOSURE B

SOIL BORING LOG -- MW-10

Acton • Mickelson • van Dam, Inc.

Consulting Scientists, Engineers, and Geologists

Log of Soil Boring: MW-10	OVM/OVA: hNU PID with 10.2 eV probe									
Project Number: 19029.02	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Drilling</td> <td style="width: 33%;">Time</td> <td style="width: 33%;">Date</td> </tr> <tr> <td>Start</td> <td>0750</td> <td>6/13/94</td> </tr> <tr> <td>Finish</td> <td>0850</td> <td>6/13/94</td> </tr> </table>	Drilling	Time	Date	Start	0750	6/13/94	Finish	0850	6/13/94
Drilling	Time	Date								
Start	0750	6/13/94								
Finish	0850	6/13/94								
Location: BEACON STATION #546 29705 MISSION BOULEVARD HAYWARD, CALIFORNIA	Water Depth (Date): 6.61 Feet (6/13/94) Casing Elevation: 17.41 Feet Completion Depth: 20 Feet Logged By: S. LIATY Checked By: <i>DJR</i>									
Drilling Company: WEST HAZMAT DRILLING Drilled By: GEORGE DeJESUS Drilling Method: 8-INCH O.D. HSA; CME-75 LOW ACCESS Sampling Method: CALIFORNIA-MODIFIED SPLIT-SPOON SAMPLER FITTED WITH 2" X 6" S.S. SAMPLE SLEEVES										

DEPTH (feet)	SAMPLE INTERVAL	DESCRIPTION	GRAPHIC LOG	USCS CLASS	WELL CONSTRUCTION	BLOWS/6 IN.	INCHES DRIVEN	INCHES RECOVERD	COMMENTS	SAMPLE NO.
5	5-11	CLAY, Dark olive gray, damp	CL	CL	5-11	18	18			MW10-1
10	11-14	SANDY CLAY, Moderate gray brown, moist, trace silt, fine-grained sand	SC	SC	11-14	18	18		Slight hydrocarbon odor at 8 feet	MW10-2
15	14-16	Becomes moderate yellowish brown, saturated at 12 feet			14-16	18	18			MW10-3
20	Total Depth = 20 feet									

ENCLOSURE C

SOIL SAMPLE ANALYTICAL REPORT



Sample Log 9619

9619-1

Sample: MW10-1

From : Project # 19029.02 (Beacon 546)

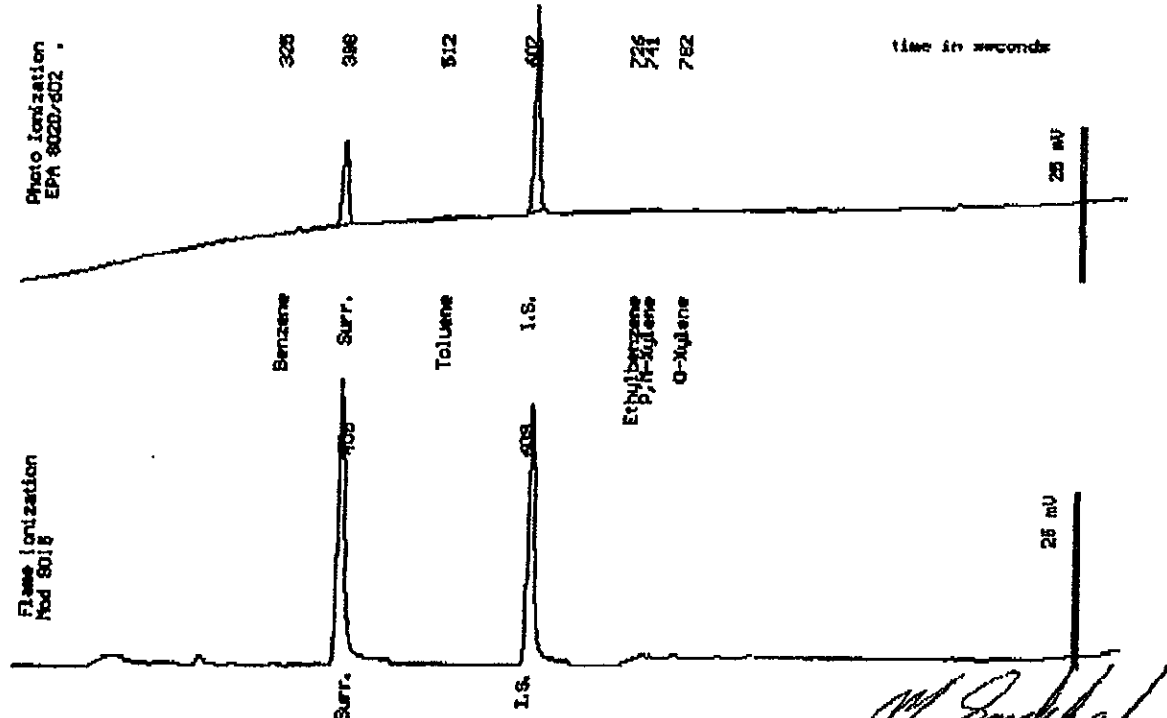
Sampled : 06/13/94

Dilution : 1:1

QC Batch : 6113E

Matrix : Soil

Parameter	(MRL) $\mu\text{g}/\text{kg}$	Measured Value $\mu\text{g}/\text{kg}$
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(1.0)	<1.0
Surrogate Recovery		87 %



Data Analyzed: 06-15-94
Column : 0.53mm ID X 30m DB5 (J&H Scientific)

M. Sarkhosh
Mitra Sarkhosh
Senior Chemist



Sample Log 9619

9619-2

Sample: NW10-1,2,3

From : Project # 19029.02 (Beacon 546)

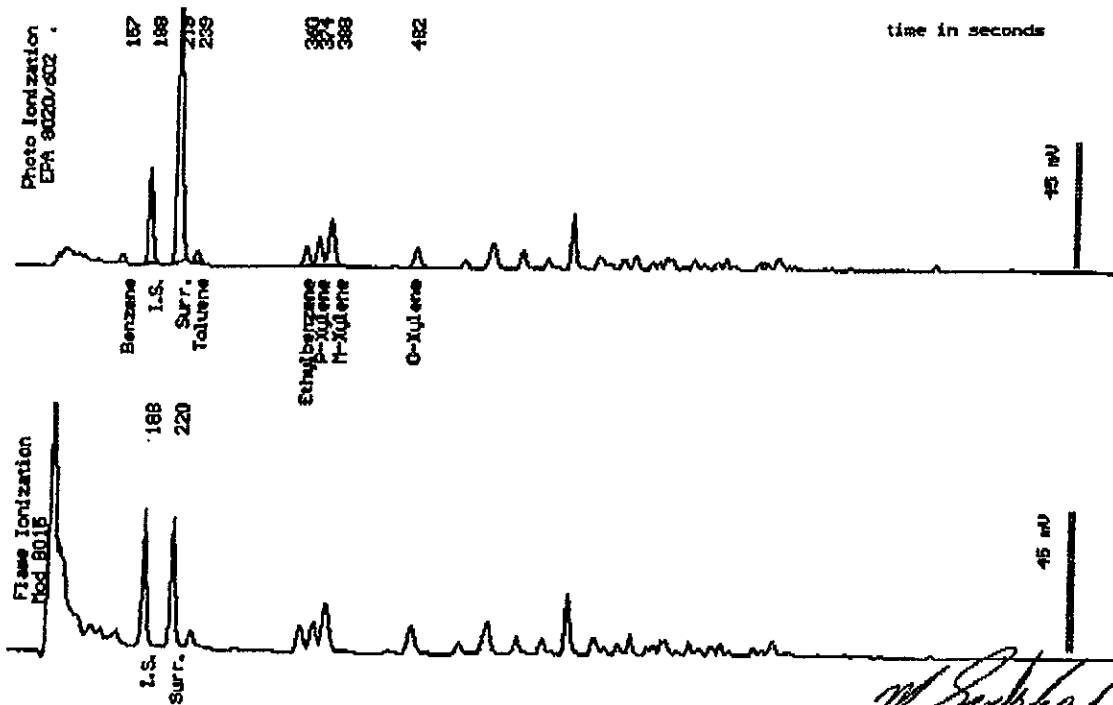
Sampled : 06/13/94

Dilution : 1:1

QC Batch : 4090C

Matrix : Soil

Parameter	(MRL) $\mu\text{g}/\text{kg}$	Measured Value $\mu\text{g}/\text{kg}$
Benzene	(.0050)	.016
Toluene	(.0050)	.030
Ethylbenzene	(.0050)	.064
Total Xylenes	(.0050)	.30
TPH as Gasoline	(1.0)	3.2
Surrogate Recovery		103 %



Date Analyzed: 06-18-94
Column : 0.53mm ID X 30m DBWAX (J&H Scientific)

Mitra Sarkhosh
Senior Chemist

ENCLOSURE D

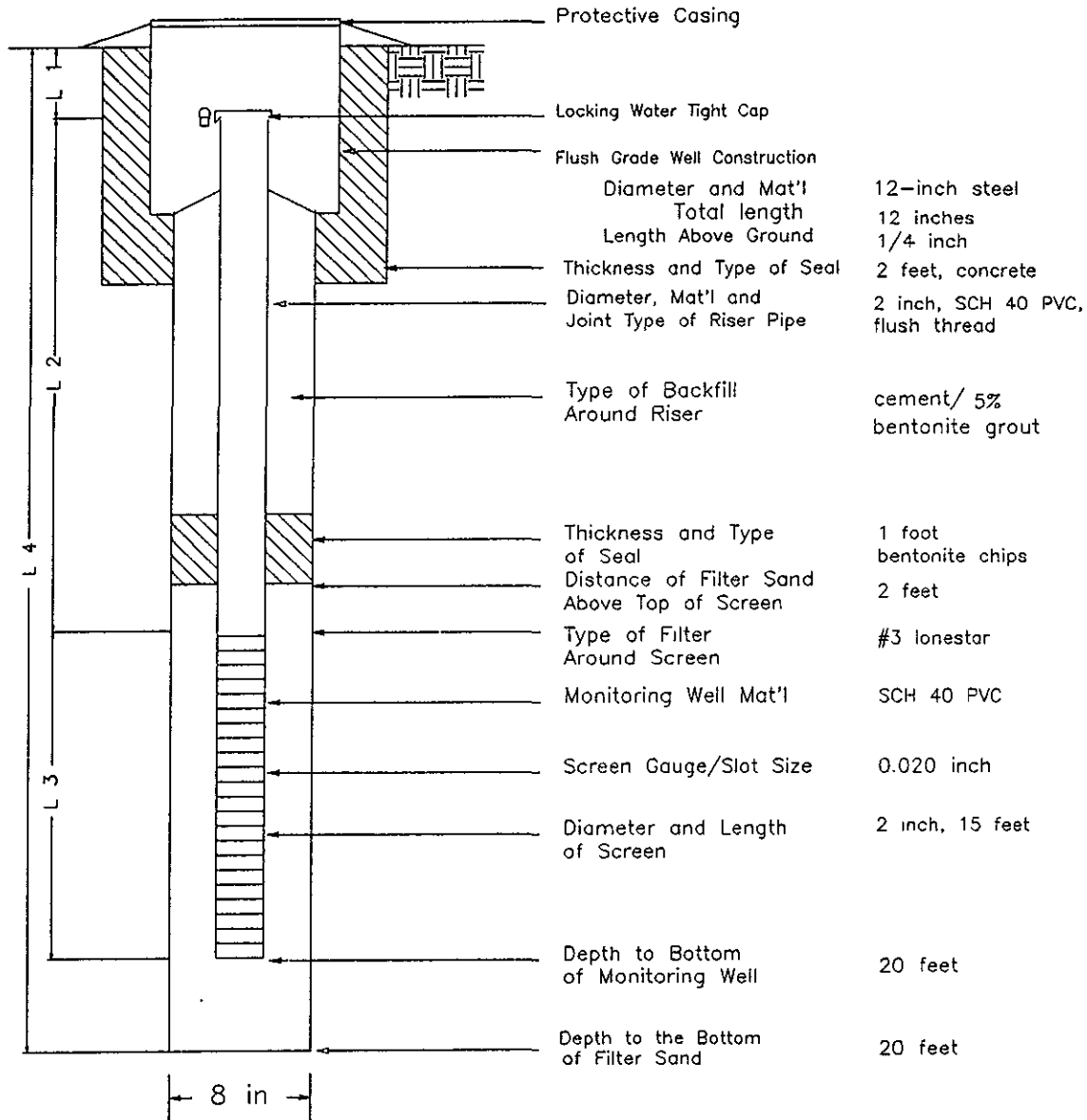
MONITORING WELL CONSTRUCTION DETAIL

MONITORING WELL CONSTRUCTION DETAILS

PROJECT NO: 19029.01

MONITORING WELL NO.: MW-10

LOCATION: Beacon Station #546
29705 Mission Boulevard
Hayward, California



- L1 = 0.25 feet
- L2 = 4.75 feet
- L3 = 15.00 feet
- L4 = 20.00 feet

ACTON • MICKELSON • VAN DAM, INC.
4511 Golden Foothill Parkway, #1
El Dorado Hills, CA 95762

ENCLOSURE E

FIELD NOTES

DAILY FIELD REPORT

ACTON • MICKELSON • van DAM, INC.

Project No. 19029.02

Date: 6-13-94

Project Name: Beacon #546

Project Location: Hayward, CA

Weather: Clear, warm

Field Crew: SAL / West Hazmat

Today's Work Activities:

0430 Arrive at site and load truck.

0455 Leave office for Hayward

0715 Arrive at site and setup on location

0715 - 1135 Drill, install, sample, survey MW-10

1150 Leave site for Hollister

Signature Steve King

Date 6-13-94

ACTON • MICKELSON • van DAM, INC.

GROUND WATER LEVEL DATA

Project Name Beacon #546

Project Number 19029.02

Date 6-13-94 Field Crew SAL

Measuring Device Interface Probe
and Number

Well No.	Time	Depth to Product (feet)	Depth to Ground Water (feet)	Product Thickness (feet)	Reference Elevation (feet)	Ground Water Elevation (feet)	Physical Observations/Comments
MW-9	0725		9.57		21.99	12.42	
MW-8	0910		14.44		28.48	14.04	
MW-7	0920		--				Inaccessible -- could not remove lid.
MW-4	0934		20.26		34.94	14.88	
MW-5	0940		21.25		36.37	15.12	
MW-2	0947		20.87		35.95	15.08	
MW-1	0955		22.15		37.46	15.31	
MW-3	1002		24.63		40.28	15.65	
MW-10	1020		6.61		17.41	10.80	
MW-6	0926		21.75		37.43	15.68	

Signature Steve King

ACTON • MICKELSON • van DAM, INC.

SURVEY FIELD NOTES

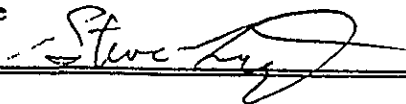
Project Name Beacon 546	Project No. 19029.02	Date 6-13-94
	Bench Mark MW-9	Bench Mark Description
Surveyor S+L	Rod Man George De Jesus	Monitoring Well Reser

Station	(+) B.S.	H.I.	(-) F.S.	Elevation	Stadia Readings	Distance	Horizontal Angle	Remarks
MW-9				100.00*				
	1.64	101.64						
MW-10			6.07	95.57				
MW-9				100.00*				
	1.79	101.79						
MW-10			6.22	95.57	*			
MW-9				21.99				
	1.64	23.63						
MW-10			6.22	17.41				

SITE SKETCH

* MW-9 Given arbitrary elevation of 100.00 feet.

Signature



ENCLOSURE F

**HISTORICAL GROUND WATER ELEVATION DATA
AND HISTORICAL GROUND WATER ANALYTICAL RESULTS**

TABLE 1
WATER LEVEL DATA
BEACON STATION #546
29705 MISSION BOULEVARD, HAYWARD, CALIFORNIA
(Measurements in feet)

Monitoring Well	Date	Reference Elevation (top of casing) ¹	Depth to Groundwater ¹	Groundwater Elevation ²	Well Depth	Comments
MW-1	04/15/92	37.46	22.10	15.36	---	Heavy sheen
	07/07/92		23.40	14.06	---	
	09/23/92		24.61	12.85	---	
	11/12/92		24.87	12.59	---	
	02/03/93		21.23	16.23	38.08	
	05/10/93		19.59	17.87	37.95	
	08/18/93		20.22	17.24	37.95	
	11/18/93		22.72	14.74	37.93	
	03/10/94		21.73	15.73	37.95	
MW-2	04/15/93	35.95	20.88	15.07	---	
	07/07/92		21.95	14.00	---	
	09/23/92		23.15	12.80	---	
	11/12/92		23.43	12.52	---	
	02/03/93		19.93	16.02	38.90	
	05/10/93		18.57	17.38	38.98	
	08/18/93		19.96	15.99	39.00	
	11/18/93		21.38	14.57	39.00	
	03/10/94		20.47	15.48	39.07	
MW-3	04/15/92	40.28	24.59	15.69	---	
	07/07/92		25.90	14.38	---	
	09/23/92		27.09	13.19	---	
	11/12/92		27.43	12.85	33.94	
	02/03/93		23.67	16.61	37.86	
	05/10/93		21.90	18.38	37.82	
	08/18/93		23.56	16.72	37.80	
	11/18/93		24.98	15.30	37.81	
	03/10/94		24.21	16.07	37.86	
MW-4	04/15/92	34.94	---	---	---	
	**					
	11/18/93		20.60	14.34	39.02	
03/10/94	19.63	15.31	39.11			
MW-5	04/15/92	36.37	---	---	---	
	**					
	11/18/93		21.80	14.57	34.52	
03/10/94	20.82	15.55	34.71			
MW-6	04/15/92	37.43	---	---	---	
	**					
	11/18/93		22.35	15.08	39.17	
03/10/94	21.33	16.10	39.22			
MW-7	04/15/92	30.50	16.00	14.50	---	
	07/07/92		17.10	13.40	---	
	09/23/92		18.21	12.29	---	
	11/12/92		18.37	12.13	33.94	
	02/03/93		15.20	15.30	34.02	
	05/10/93		14.01	16.49	34.05	
	08/18/93		15.51	14.99	34.01	
	11/18/93		16.58	13.92	34.01	
	03/10/94		15.68	14.82	33.94	

NOTES: 1 = Measurement and reference elevation taken from notch/mark on top north side of well casing.
2 = Elevation referenced to mean sea level.
-- = Not measured/not observed.
** = No measurements collected since prior to April 1992.
Well Depth = Measurement from top of casing to bottom of well.

TABLE 1
WATER LEVEL DATA
BEACON STATION #546
29705 MISSION BOULEVARD, HAYWARD, CALIFORNIA
(Measurements in feet)

Monitoring Well	Date	Reference Elevation (top of casing) ¹	Depth to Groundwater ¹	Groundwater Elevation ²	Well Depth	Comments
MW-8	04/15/92	28.48	14.30	14.18	--	
	07/07/92		15.60	12.88	--	
	09/23/92		16.66	11.82	--	
	11/12/92		16.86	11.62	39.20	
	02/03/93		13.49	14.99	39.19	
	05/10/93		12.51	15.97	39.21	
	08/18/93		13.97	14.51	39.25	
	11/18/93		15.00	13.48	39.25	
	03/10/94		13.98	14.50	39.27	
MW-9	02/03/93	21.99	8.95	13.04	23.52	
	05/10/93		8.18	13.81	23.52	
	08/18/93		9.50	18.98	23.17	
	11/18/93		9.85	18.63	23.16	
	03/10/94		9.14	19.34	23.21	

- NOTES:
- 1 = Measurement and reference elevation taken from notch/mark on top north side of well casing.
 - 2 = Elevation referenced to mean sea level.
 - = Not measured/not observed.
 - = No measurements collected since prior to April 1992.
 - Well Depth = Measurement from top of casing to bottom of well.

TABLE 2
ANALYTICAL RESULTS: GROUNDWATER
BEACON STATION #546
29705 MISSION BOULEVARD, HAYWARD, CALIFORNIA
(All results in parts-per-billion)

Monitoring Well	Date Collected	Total Petroleum Hydrocarbons	Aromatic Volatile Organics			
		Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
MW-1	04/15/92	8,900	710	11	150	440
	07/07/92	<50	<0.5	<0.5	<0.5	<0.5
	09/23/92	<50	<0.5	<0.5	<0.5	<0.5
	11/12/92	—	—	—	—	—
	02/03/93	950	72	<0.5	0.6	6.6
	05/10/93	1,000	210	2.9	42	67
	08/18/93	1,600	220	<5.0	110	150
	11/18/93	51	<0.5	<0.5	<0.5	<0.5
	03/10/94	310	37	<0.5	22	26
MW-2	04/15/92	1,200	21	4.8	56	26
	07/07/92	<50	<0.5	<0.5	<0.5	<0.5
	09/23/92	<50	<0.5	<0.5	<0.5	<0.5
	11/12/92	<50	<0.5	<0.5	1.7	0.9
	02/03/93	310	2.9	0.8	15	6.0
	05/10/93	190	17	<0.5	23	5.2
	08/18/93	820	53	<1.3	71	16
	11/18/93	89	3.0	<0.5	9.3	0.73
	03/10/94	2,000	45	<2.5	390	28
MW-3	04/15/92	69	2.8	<0.5	<0.5	<0.5
	07/07/92	<50	<0.5	<0.5	<0.5	<0.5
	09/23/92	<50	<0.5	<0.5	<0.5	<0.5
	11/12/92	<50	<0.5	<0.5	<0.5	<0.5
	02/03/93	<50	1.0	1.3	0.6	2.7
	05/10/93	53	1.6	<0.5	2.0	<1.5
	08/18/93	<50	1.0	<0.5	1.5	<0.5
	11/18/93	<50	<0.5	<0.5	<0.5	<0.5
	03/10/94	<50	<0.5	<0.5	<0.5	<0.5
MW-4	04/15/92	NS	NS	NS	NS	NS
	**					
	11/18/93	1,500	110	6.4	88	240
	03/10/94	4,000	460	5.1	370	450
MW-5	04/15/92	NS	NS	NS	NS	NS
	**					
	11/18/93	2,800	23	<0.5	72	6.1
	03/10/94	2,900	26	<0.5	<0.5	98
MW-6	04/15/92	NS	NS	NS	NS	NS
	**					
	11/18/93	<50	<0.5	<0.5	<0.5	1.5
	03/10/94	<50	<0.5	<0.5	<0.5	<0.5

NOTES: < * Below indicated detection limit.
NS * Not sampled.
** * No samples collected since prior to April 1992.

TABLE 2
ANALYTICAL RESULTS: GROUNDWATER
BEACON STATION #546
29705 MISSION BOULEVARD, HAYWARD, CALIFORNIA
(All results in parts-per-billion)

Monitoring Well	Date Collected	Total Petroleum Hydrocarbons	Aromatic Volatile Organics			
		Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes
MW-7	04/15/92	1,600	21	1.2	2.0	1.2
	07/07/92	320	<0.5	<0.5	<0.5	<0.5
	09/23/92	90	<0.5	<0.5	<0.5	<0.5
	11/12/92	<50	<0.5	<0.5	<0.5	<0.5
	02/03/93	<50	<0.5	<0.5	<0.5	<0.5
	05/10/93	1,800	190	3.2	45	<1.5
	08/18/93	1,600	53	<2.5	<2.5	37
	11/18/93	730	<0.5	<0.5	<0.5	7.4
	03/10/94	1,000	0.90	<0.5	<0.5	2.8
	MW-8	04/15/92	40,000	1,900	34	1,200
07/07/92		19,000	560	14	32	630
09/23/92		4,200	370	<5.0	<5.0	150
11/12/92		5,100	75	<2.5	<2.5	110
02/03/93		29,000	800	1.1	660	720
05/10/93		8,900	540	9.9	770	550
08/18/93		10,000	790	<25	1,100	720
11/18/93		8,700	420	<5.0	690	290
03/10/94		9,500	650	<2.5	930	320
MW-9		02/03/92	28,000	64	9.6	70
	05/10/93	5,000	180	12	88	110
	08/18/93	4,900	290	<2.5	210	180
	11/18/93	8,800	340	6.0	240	200
	03/10/94	4,100	26	<1.3	23	16

NOTES: < = Below indicated detection limit.
 NS = Not sampled.
 ** = No samples collected since prior to April 1992.

ENCLOSURE G

GROUND WATER SAMPLE ANALYTICAL REPORTS



Sample Log 9619

9619-3

Sample: MW-10

From : Project # 19029.02 (Beacon 546)

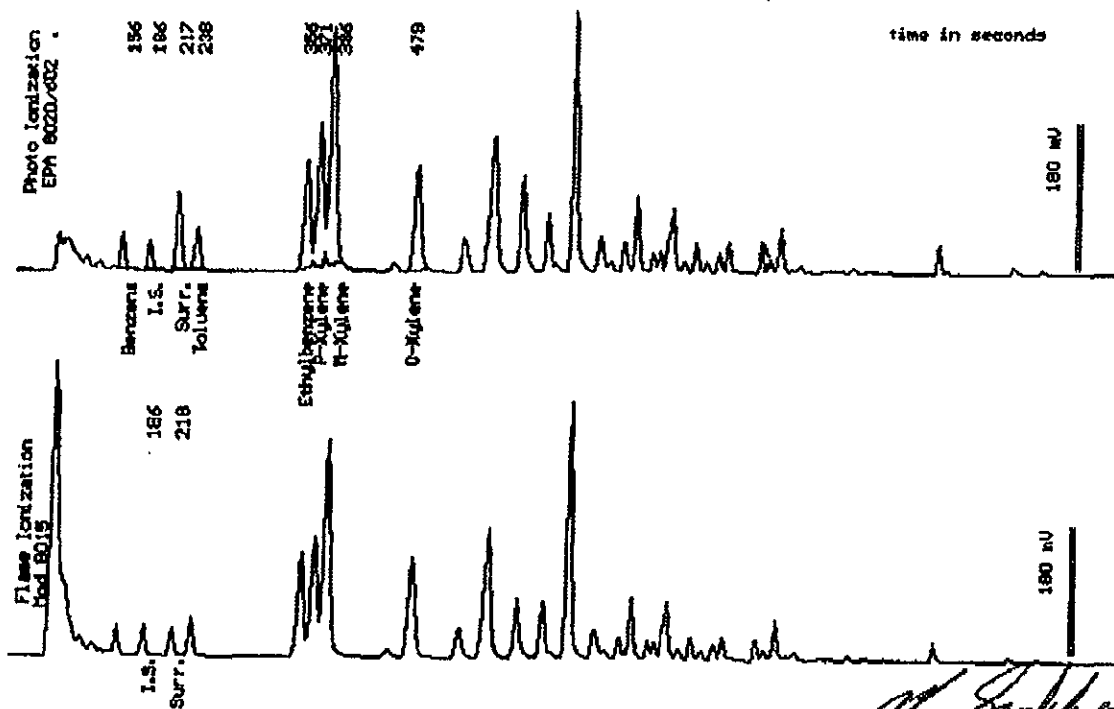
Sampled : 06/13/94

Dilution : 1:10

QC Batch : 4090B

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	(5.0)	210
Toluene	(5.0)	330
Ethylbenzene	(5.0)	1200
Total Xylenes	(5.0)	5400
TPH as Gasoline	(500)	22000
Surrogate Recovery		98 %



Date Analyzed: 06-14-94
Column : 0.53mm ID X 30m DBMEX (J&W Scientific)

[Signature]
Mitra Sarkhosh
Senior Chemist



Ultramar Inc.
CHAIN OF CUSTODY REPORT

BEACON

Beacon Station No. 546	Sampler (Print Name) STEVE LIAM			ANALYSES				Date 6-14-94	Form No. of						
Project No. 19029.02	Sampler (Signature) <i>Steve Liam</i>			BTEX	TPH (gasoline)	TPH (diesel)	No. of Containers	2 week TAT							
Project Location Hayward	Affiliation AMU Geo							Hold all soil samples to further notice							
Sample No./Identification	Date	Time	Lab No.					REMARKS							
MW10-1	6-13-94			XX											
MW10-2	↓			↓											
MW10-3	↓			↓											
MW-10	6-13-94			XX			3								
Relinquished by: (Signature/Affiliation) <i>Steve Liam</i>			Date 6-14-94	Time 1530	Received by: (Signature/Affiliation) <i>[Signature]</i>			Date 6/14/94	Time 1530						
Relinquished by: (Signature/Affiliation) <i>[Signature]</i>			Date 6/14/94	Time 1620	Received by: (Signature/Affiliation) <i>[Signature]</i>			Date	Time						
Relinquished by: (Signature/Affiliation)			Date	Time	Received by: (Signature/Affiliation) <i>[Signature]</i> WEST			Date 6/14/94	Time 1624						
Report To: Joe Mello AMU				Bill to: ULTRAMAR INC. 625 West Third Street Hanford, CA 93230 Attention: Terry Fox				<table border="1"> <tr><td align="center" colspan="2">RECEIVED</td></tr> <tr><td align="center" colspan="2">6/14/94</td></tr> <tr><td align="center" colspan="2">TERRY FOX</td></tr> </table>		RECEIVED		6/14/94		TERRY FOX	
RECEIVED															
6/14/94															
TERRY FOX															

WHITE: Return to Client with Report

YELLOW: Laboratory Copy

PINK: Originator Copy

Acton • Mickelson • van Dam, Inc.

Consulting Scientists, Engineers, and Geologists

Log of Soil Boring: MW-10

OVM/OVA: hNU PID with 10.2 eV probe

Project Number: 19029.02

Drilling	Time	Date
Start	0750	6/13/94
Finish	0850	6/13/94

Location: BEACON STATION #546
29705 MISSION BOULEVARD
HAYWARD, CALIFORNIA

Water Depth (Date): 6.61 Feet (6/13/94)

Drilling Company: WEST HAZMAT DRILLING
Drilled By: GEORGE DeJESUS
Drilling Method: 8-INCH O.D. HSA; CME-75 LOW ACCESS
Sampling Method: CALIFORNIA-MODIFIED SPLIT-SPOON SAMPLER
FITTED WITH 2" X 6" S.S. SAMPLE SLEEVES

Casing Elevation: 17.41 Feet
Completion Depth: 20 Feet
Logged By: S. LIATY
Checked By: *DJR*

DEPTH (feet)	SAMPLE INTERVAL	DESCRIPTION	GRAPHIC LOG	USCS CLASS	WELL CONSTRUCTION	BLOWS/6 IN.	INCHES DRIVEN	INCHES RECOVERD	COMMENTS	SAMPLE NO.
5		CLAY, Dark olive gray, damp		CL		5 11 15	18	18		MW10-1
10		SANDY CLAY, Moderate gray brown, moist, trace silt, fine-grained sand		SC		5 9 14	18	18	Slight hydrocarbon odor at 8 feet	MW10-2
15		Becomes moderate yellowish brown, saturated at 12 feet				6 12 16	18	18		MW10-3
20		Total Depth = 20 feet								