

Ultramar

Ultramar Inc.
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August 28, 1991

Mr. Scott Seery
Department of Environmental Health
Alameda County
80 Gwen Way, Room 200
Oakland, California 94021

91 AUG 29 10 00 AM '91

**SUBJECT: FORMER BEACON SERVICE STATION SITE NO. 574, 22315 REDWOOD ROAD,
CASTRO VALLEY, CALIFORNIA**

Dear Mr. Seery:

Enclosed for your review is a copy of the soil and ground-water investigation report for the above referenced site. As indicated in the report, hydrocarbon constituents were detected in soil and ground-water samples collected during the investigation.

Based on the analytical and field data obtained from the investigation, it is evident that an off-site source has or is contributing to the presence of hydrocarbons beneath the referenced site. As the direction of ground-water flow is toward the southwest, and monitoring well MW-3 is located up-gradient of the former on-site underground storage tank location, it is concluded that the presence of hydrocarbons beneath the site is at least in part due to an up-gradient, off-site source. This source is most likely the former Chevron site located on the northeast corner of Redwood Road and Grove Way.

Evaluation of available information related to the off-site source is necessary to determine the extent of contribution of the hydrocarbon presence beneath the referenced site. Therefore we request copies of available reports related to the former Chevron site be sent to Ultramar Inc. for review.



A Member of the Ultramar Group of Companies

BEACON
#1 Quality and Service

Mr. Scott Seery
August 28, 1991
page ii

Please contact us if you have any questions regarding this information.

Sincerely,

ULTRAMAR INC.



Randall K. Stephenson
Environmental Specialist II



Terrence A. Fox, R.G.
Senior Project Manager

cc: Richard Hiett, CWRQCB - San Francisco Bay Region

Neither Hal Hansen nor
Dale van Dam are presently
with DELTA.

-Todd Galati is new proj.
mngr, and is a chemical
engineer.

-Martin Burck is RG
on project



3330 Data Drive
Suite 100
Sacramento, CA 95670
916/638-2085
FAX: 916/638-8385

July 15, 1991

Mr. Randall K. Stephenson
Ultramar Inc.
525 West Third Street
Hanford, California 93230

Subject: Soil and Ground Water Investigation
Former Beacon Station No. 574
22315 Redwood Road, Castro Valley, California
Delta Project No. 40-90-818

91 AUG 31 11:03

Dear Mr. Stephenson:

Delta Environmental Consultants, Inc. (Delta), has been authorized by Ultramar Inc., to conduct an investigation of soil and ground water conditions at a former Beacon service station located at 22315 Redwood Road, Castro Valley, Alameda County, California (Figure 1). This letter summarizes the results of soil boring, ground water monitoring well installation, and soil and ground water sampling performed at the site on March 26 and April 1, 1991.

Scope of Work

The work included advancing three 10-inch-diameter soil borings to a depth of approximately 30 feet below grade and completing each boring as a 4-inch-diameter monitoring well (MW-1, MW-2, and MW-3). Monitoring well locations are illustrated in Figure 2. The methods used to drill and sample the soil borings are described in Enclosure A. Soil boring logs containing detailed descriptions of soil characteristics are included in Enclosure B. A No. 3 Lonestar sand was used as a gravel pack in each well, and all monitoring wells were constructed using a 0.01-inch slotted screen. A sieve analysis performed on soil samples collected from one of the soil borings indicates that the installed screen and gravel pack is sufficient to prevent the soil surrounding the gravel pack from entering the monitoring well. Empirical evidence collected as the monitoring wells were developed supports this conclusion as ground water was found to be relatively free of fine sediments at the end of the development process. A copy of the sieve analysis is included in Enclosure B.

Selected soil samples were submitted for laboratory analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX), total petroleum hydrocarbons (TPH) as gasoline, and TPH as diesel. Analytical procedures conformed to U.S. Environmental Protection Agency (EPA) and California Department of Health Services (DHS) approved methods.

Ground water monitoring wells MW-1, MW-2, and MW-3 were constructed of 4-inch-diameter, Schedule 40 PVC casing. Details of monitoring well construction are contained in Enclosure C. The monitoring wells were developed, purged, and sampled in accordance with methods outlined in Enclosure A, Sections 3, 4, and 5. A ground water sample from each well was submitted for laboratory analysis of

BTEX, TPH as gasoline, and TPH as diesel using EPA and DHS approved methods.

Soil Borings

Soil borings for monitoring wells MW-1, MW-2, and MW-3 were advanced to a depth of approximately 30 feet below grade. Soil samples collected from the borings for monitoring wells MW-1 and MW-2 as the borings were advanced consisted predominantly of gravelly sand to an approximate depth of 6.5 feet below grade, underlain by sandy clay or clayey sand to approximately 22 feet, and sand and silty sand to the termination of the boring at approximately 30 feet below grade. Soil samples collected from monitoring well MW-3 as the boring was advanced consisted predominantly of sand to an approximate depth of 7 feet, underlain by clay, sandy clay, or clayey sand to the termination of drilling at approximately 30 feet below grade. Soil boring logs containing detailed descriptions of soil conditions are included in Enclosure B.

Soil Sample Analytical Results

A portion of each soil sample collected from the soil borings was sealed in a plastic bag and brought to ambient air temperature. The headspace of the bag was then screened with a photoionization detector (PID). The highest PID reading for each sample was recorded on the right-hand side of the boring logs (Enclosure B).

Soil samples were selected for chemical analysis on the basis of PID screening results and the location of the soil sample in relation to the most likely source of petroleum constituents. Seven soil samples were submitted for analysis of concentrations of BTEX, TPH as gasoline, and TPH as diesel. Analytical results of soil samples submitted by Delta are summarized in Table 1. Copies of certified analytical reports are contained in Enclosure D.

TABLE 1

Soil Sample Analytical Results
 Concentrations in parts per million (ppm)
 March 26, 1991

<u>Location</u>	<u>Depth (Feet)</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-benzene</u>	<u>Xylenes</u>	<u>TPH as Gasoline</u>	<u>TPH as Diesel</u>
MW-1	15	0.16	0.10	0.010	0.050	<1.0	<10
	20	13	110	33	300	3200	<10
MW-2	10	0.013	0.26	0.11	0.68	8.1	<10
	15	19	120	42	240	3200	<10
	20	0.39	0.22	0.11	0.41	5.6	<10
MW-3	15	<0.005	<0.005	<0.005	<0.005	<1.0	<10
	20	<0.005	0.18	0.44	5.9	230	<10

Ground Water Level Measurements

Ground water level measurements were made in each well on March 26, 1991, and again on April 1, 1991 (Table 2). Ground water was present at depths ranging from 20.82 to 22.37 feet below the top of the well casings on April 1, 1990. Water level measurements indicate an inferred direction of ground water flow toward the southwest as illustrated in Figure 3. The ground water gradient was approximately 0.015-foot per foot.

TABLE 2

Water Elevation Data

<u>Monitoring Well</u>	<u>Date</u>	<u>Top of Riser (feet)^a</u>	<u>Depth to Water (feet)</u>	<u>Ground Water Elevation (feet)</u>	<u>Physical Observation</u>
MW-1	03/26/91	156.55	22.43	134.12	No product
	04/01/91		22.37	134.18	No product
MW-2	03/26/91	155.17	20.91	134.26	No product
	04/01/91		20.82	134.35	No product
MW-3	03/26/91	157.13	21.62	135.51	No product
	04/01/91		21.55	135.58	No product

^aRiser elevations were surveyed relative to county bench mark GRO-RED, a brass monument 3 inches in diameter located on the curb on the northwest corner of the intersection of Redwood Road and Grove Way.

Ground Water Analytical Results

On April 1, 1990, ground water samples were collected from the three on-site monitoring wells (MW-1, MW-2, and MW-3). Samples were collected as described in Enclosure A, Section 5. Each ground water sample was analyzed for BTEX, TPH as gasoline, and TPH as diesel, by EPA Methods 8020/602 and 8015. Analytical results are summarized in Table 3. Copies of certified analytical reports are contained in Enclosure E. The inferred distribution of dissolved benzene in ground water beneath the site is illustrated in Figure 4.

TABLE 3

Ground Water Sample Analytical Results
Results in Parts Per Billion (ppb)

<u>Monitoring Well</u>	<u>Date Sampled</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-benzene</u>	<u>Xylenes</u>	<u>TPH as gasoline</u>	<u>TPH as diesel</u>
MW-1	04/01/91	340	570	76	460	4,100	<100
MW-2	04/01/91	650	640	150	960	10,000	<100
MW-3	04/01/91	41	91	37	420	3,100	<100

Mr. Randall K. Stephenson

July 12, 1991

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Discussion

Petroleum hydrocarbon constituents were detected in soil samples from each of the borings. Concentrations of TPH as gasoline greater than 100 ppm were detected in samples obtained from depths of 20 feet at MW-1, 15 feet at MW-2, and 20 feet at MW-3.

Detectable concentrations of BTEX and TPH as gasoline were present in ground water samples collected from each of the three on-site monitoring wells. It appears likely that petroleum hydrocarbon constituents in the area of monitoring well MW-3 are derived from an upgradient off-site source. A ground water sample collected from monitoring well C-3 in October 1989, located on the former Chevron station property at the northeast corner of the intersection of Redwood Road and Grove Way, upgradient of the former Beacon station No. 574, contained 610 ppb benzene (see Geostrategies Inc., January 5, 1990, letter report for former Chevron station No. 2960, 2416 Grove Way). The known ground water contamination at this upgradient property and the lack of a potential source of petroleum constituents in the area of monitoring well MW-3 on the Beacon station property indicate that petroleum constituents in ground water in the area of MW-3 have an off-site source.

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

Mr. Richard Hiatt
California Regional Water Quality Control Board,
San Francisco Bay Region
1800 Harrison Street, Room 700
Oakland, California 94612

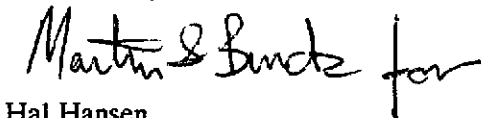
Mr. Scott Seery
Department of Environmental Health
Alameda County
80 Gwen Way, Room 200
Oakland, California 94021

Sincerely,

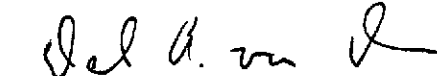
DELTA ENVIRONMENTAL CONSULTANTS, INC.



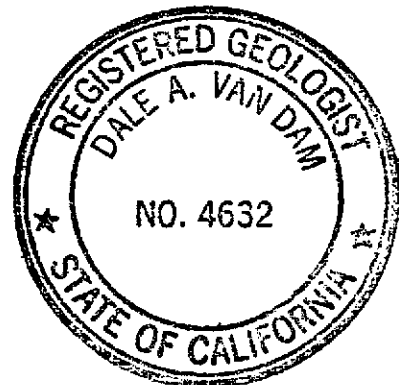
Richard E. Chandler
Hydrogeologist



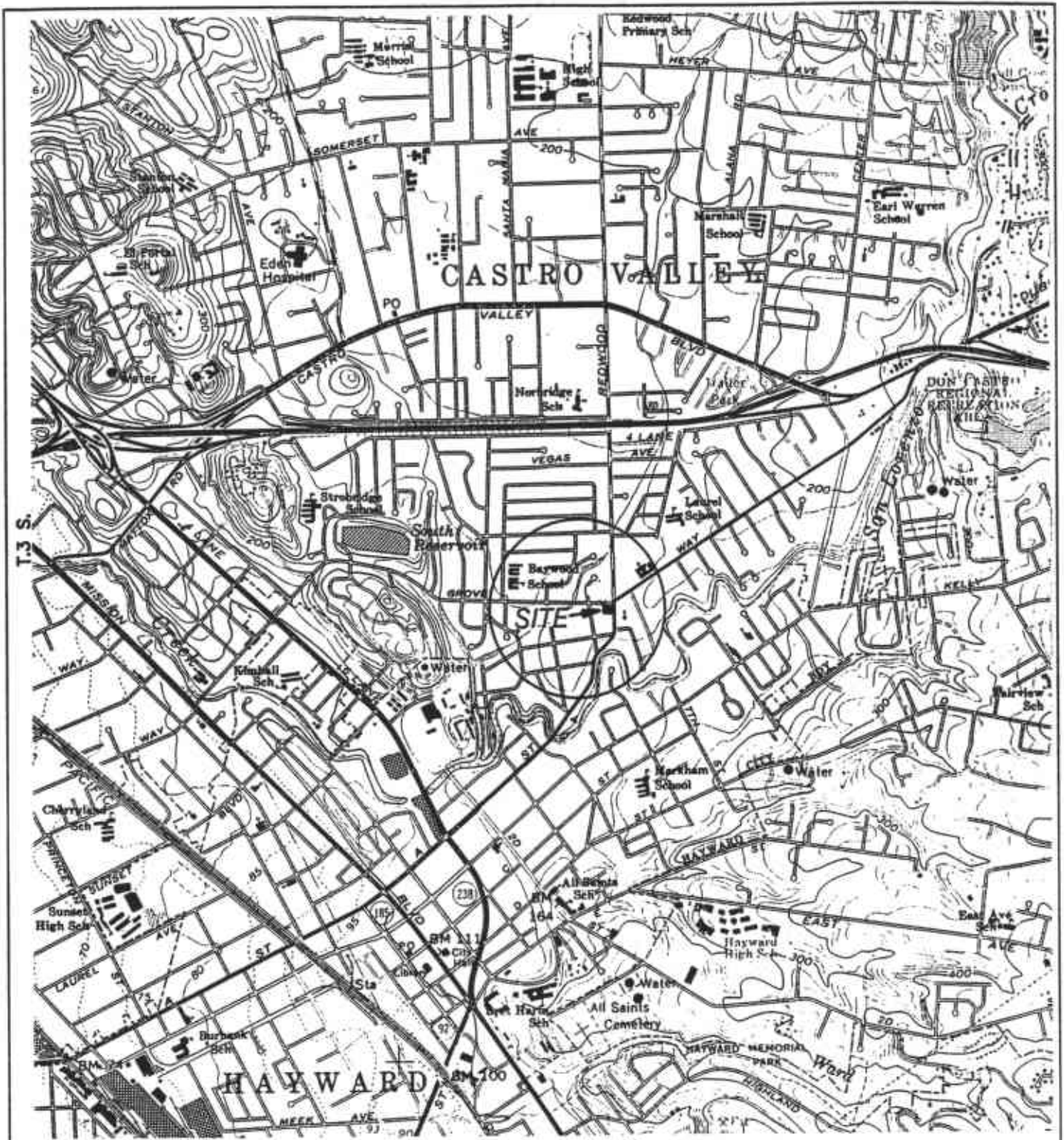
Hal Hansen
Hydrogeologist/Project Manager



Dale A. van Dam, R.G.
Hydrogeologist



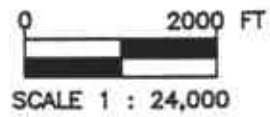
REC:HH:DVD:bp
Enclosures



GENERAL NOTES:
 BASE MAPS FROM U.S.G.S.
 HAYWOOD, CA.
 15 MINUTE TOPOGRAPHIC



QUADRANGLE LOCATION



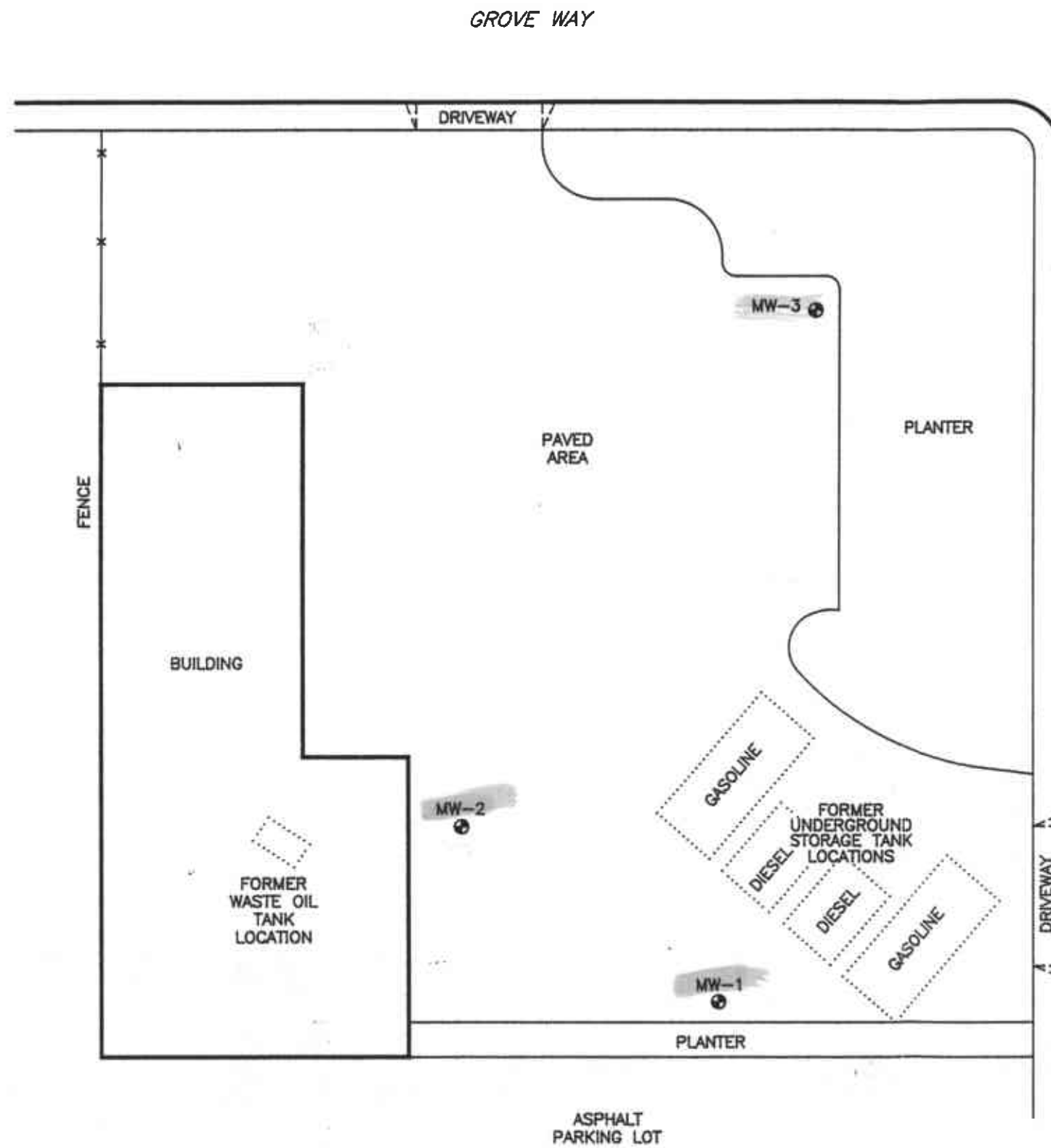
R.2 W.

FIGURE 1
 SITE LOCATION MAP
 FORMER BEACON STATION NO 574
 22315 REDWOOD ROAD
 CASTRO VALLEY, CA.

PROJECT NO. 40-90-818	DRAWN BY LH 8/17/90
FILE NO.	PREPARED BY HEH 8/17/90
REVISION NO. 1	REVIEWED BY DJD 8/17/90



Delta
 Environmental
 Consultants, Inc.



LEGEND:

● MW-1 MONITORING WELL LOCATION

NOTE:

SITE MAP ADAPTED FROM FIGURE SUPPLIED BY ULTRAMAR INC. 8/16/90. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

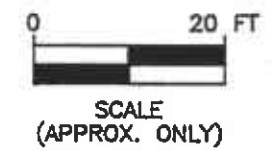
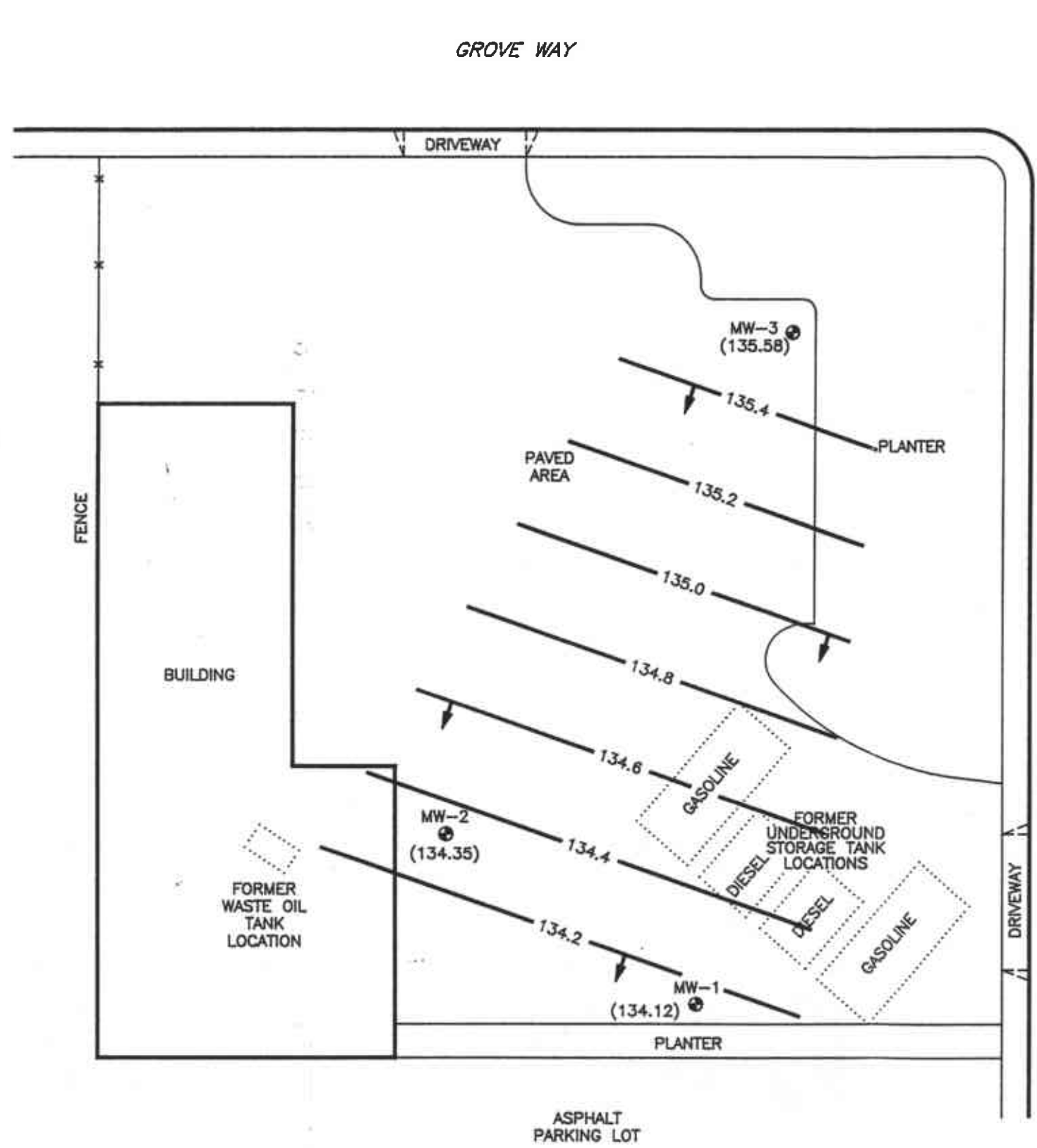


FIGURE 2
SITE MAP
FORMER BEACON STATION NO 574
22315 REDWOOD ROAD
CASTRO VALLEY, CA.

PROJECT NO. 40-90-818	DRAWN BY L.J. 5/2/91
FILE NO. 90-818-1	PREPARED BY HEH
REVISION NO. 2	REVIEWED BY HEH





LEGEND:

- ⊕ MW-1 MONITORING WELL LOCATION
- (134.12) GROUND WATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 135.2 — WATER TABLE CONTOUR IN FEET ABOVE MEAN SEA LEVEL
- ⚡ GROUND WATER FLOW DIRECTION

NOTE:

SITE MAP ADAPTED FROM FIGURE SUPPLIED BY ULTRAMAR INC. 8/18/90. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

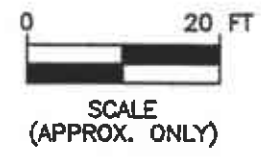
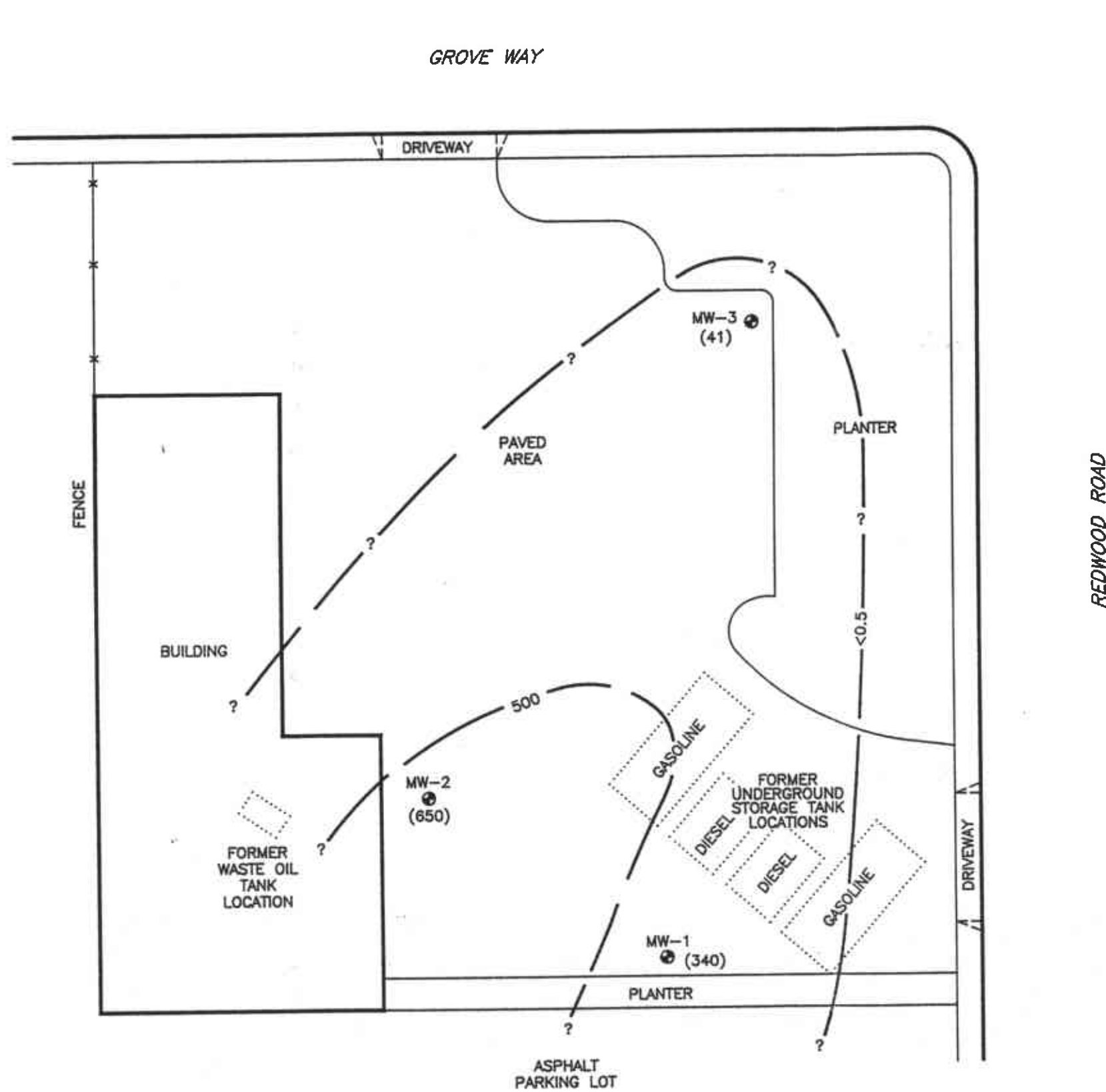


FIGURE 3
WATER TABLE CONTOUR MAP - 4/1/91
FORMER BEACON STATION NO 574
22315 REDWOOD ROAD
CASTRO VALLEY, CA.

PROJECT NO. 40-90-818	DRAWN BY LH, 5/10/91
FILE NO. 90-818-1	PREPARED BY REC
REVISION NO. 1	REVIEWED BY HCT

Delta
Environmental
Consultants, Inc.



LEGEND:

- ⊕ MW-1 MONITORING WELL LOCATION
- (340) BENZENE CONCENTRATION IN PARTS PER BILLION
- 500— BENZENE ISOCONCENTRATION CONTOUR IN PARTS PER BILLION

NOTE:

SITE MAP ADAPTED FROM FIGURE SUPPLIED BY ULTRAMAR INC. 8/16/90. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

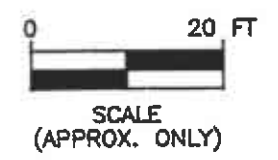


FIGURE 4
 BENZENE ISOCONCENTRATION MAP -4/1/91
 FORMER BEACON STATION NO 574
 22315 REDWOOD ROAD
 CASTRO VALLEY, CA.

PROJECT NO. 40-90-618	DRAWN BY LH 5/10/91
FILE NO. 90-618-1	PREPARED BY REC
REVISION NO. 1	REVIEWED BY HEH



FIELD PROCEDURES

The following section describes field procedures that were completed by Delta personnel in the performance of the tasks involved with this project.

1.0 LOCATING UNDERGROUND UTILITIES

Prior to the commencement of work on site, Delta researched the location of all underground utilities with the assistance of Underground Service Alert (USA). USA contacted the owners of the various utilities in the vicinity of the site to have the utility owners mark the locations of their underground utilities. Work associated with the boring and monitoring well installation was preceded by manual advance of the soil boring to a minimum depth of 5 feet to avoid contact with underground fuel distribution and vent lines and other unmarked utilities.

2.0 SOIL BORING AND SOIL SAMPLING PROTOCOL

Soil borings and soil sampling were performed under the direction of a Delta engineer or geologist. The soil borings were advanced using a truck-mounted hollow-stem auger drill rig.

To reduce the chances of cross-contamination between boreholes, all downhole drilling equipment was steam-cleaned between each boring. To reduce cross-contamination between samples, the split-barrel sampler was washed in soap solution and double-rinsed between each sampling event.

Soil sampling was done in accordance with ASTM 1586-84. Using this procedure, a 2-inch outside-diameter split-barrel sampler or a 2-inch inside-diameter California-type sampler is driven into the soil every 5 vertical feet by a 140-pound weight falling 30 inches. The number of blow counts required to advance the sampler 18 inches was recorded at each sample interval.

Upon recovery, a portion of the soil sample was placed in a plastic bag and sealed for later screening with a photoionization detector (PID). Another portion of the soil sample was used for classification and description. That part of the soil sample collected in brass tubes within the California-type sampler was stored at approximately 4°C for transport to the laboratory.

After soil samples placed in plastic bags were brought to ambient temperature, the headspace vapors of the soil sample bags were screened with a PID equipped with a 10.2 eV lamp calibrated to benzene. The sample bag was opened and the detector probe immediately placed within the headspace of the bag. The highest observed reading was then recorded.

3.0 SUBJECTIVE ANALYSIS OF GROUND WATER

Following completion of each monitoring well and prior to development and purging, a water sample was collected from the monitoring well for subjective analysis. The sample was retrieved by gently lowering a clean, disposable, plastic bailer to approximately one-half the bailer length past the air/liquid interface. The bailer was then retrieved and the sample contained within the bailer was examined for floating product and appearance of a petroleum product sheen.

4.0 GROUND WATER AND FREE FLOATING PRODUCT DEPTH DETERMINATION

A water/petroleum product interface probe was used to determine free product thickness and ground water depth in each well. If a free floating product layer was not detected by the interface probe, the tip of the probe was subjectively analyzed for product sheen. Depth to ground water was measured to the nearest 0.01-foot.

5.0 MONITORING WELL DEVELOPMENT, PURGING, AND SAMPLING

After monitoring wells were installed, each monitoring well was developed by removing a minimum of six well volumes, or until the well was dry. The development and purging procedure was repeated until the water produced from the well had become substantially clear of silt.

Ground water samples were collected a minimum of 24 hours after the well was developed. Three to five casing volumes were purged from the well and the sample was collected with a clean, disposable plastic bailer. Samples were contained in air-tight vials and then packed in ice and sent to the laboratory for analysis. Ground water samples were transported to the laboratory and analyzed within the EPA-specified holding times for requested analyses.

Proper collection and handling are essential to ensure the quality of a sample. Each sample was collected in a suitable container, preserved correctly for the intended analysis, and stored prior to analysis for no longer than the maximum allowable holding time.

Sample identification and chain-of-custody procedures ensure sample integrity and document sample possession from the time of collection to its ultimate disposal. Each sample container submitted for analysis had a label affixed to identify the job number, sampler, date, time of sample collection, and a sample number unique to that sample. This information, in addition to a description of the sample, field measurements made, sampling methodology, names of on-site personnel, and any other pertinent field observations were recorded on the boring log or in the field notebook. Samples were analyzed by a California-certified laboratory.

A chain-of-custody form was used to record possession of the sample from time of collection to its arrival at the laboratory. When the samples were shipped, the person in custody of them relinquished the samples by signing the chain-of-custody form and noting the time. The sample-control officer at the laboratory verified sample integrity and confirmed that it was collected in the proper container, preserved correctly, and that there was an adequate volume for analysis.

6.0 SURVEY

Each well riser was surveyed using automatic-leveling survey equipment. The survey point on each well riser was notched to insure all water level measurements would be taken from the same location. All elevations were measured relative to that point to the nearest 0.01 foot.

PROJECT NAME / LOCATION Former Beacon Station #574 22315 Redwood Road Castro Valley, CA	PROJECT NUMBER: 40-90-818	BORING NUMBER:	SHEET 1 OF 2
	CONTRACTOR: West Hazmat Drilling		DRILLING METHOD: H.S.A.
	DRILLER: Gene Reinhart		DRILLING RIG: Acker
	START: 8:15/03-26-91		COMPLETED: 9:30/03-26-91

LAND OWNER: Paul Wilson	SURFACE ELEVATION: 156.55	LOGGED BY: Hal Hansen
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S A Y M P L E	T A U M P L E	S N A U M P L E	B C L O U M P L E	S I A N M P L E	S R A E M C P O L V E	DEPTH SCALE 1"= 4'	DESCRIPTIONS OF MATERIALS AND CONDITIONS	CONTAMINANT OBSERVATION	GENERAL OBSERVATION NOTES
								INSTRUMENT: hNu UNITS: ppm	
CA	MW-1-1	15/30/50 for 5"	5.0-6.5	18"	1	ASPHALT AND ROADBASE			
CA	MW-1-2	24/37/20	10.0-11.5	18"	2	GRAVELLY SAND; olive, fine to coarse-grained, common plastic fines, moist (SP)	0		
CA	MW-1-3	50 for 6"	15.0-16.5	7"	3	SANDY CLAY; olive, moderately plastic, fine to coarse sand, some gravel, moist (CL)	0		
CA	MW-1-4	30/50 for 5"	20.0-21.5	8"	4	CLAYEY SAND; olive-brown, fine to coarse sand, moist (SC)	60		
					5				
					6				
					7				
					8				
					9				
					10				
					11				
					12				
					13				
					14				
					15				
					16				
					17				
					18				
					19				
					20		180	3200 ppm	
					21				
					22				
					23	SAND; olive-brown, fine-grained, separated (SP)			

WATER LEVEL DATA				GEOLOGIST	
DATE	03-26			<i>Hal Hansen</i> SIGNATURE Hal Hansen TYPED NAME	
TIME	6:29				
GWL	22.43				
CASING DEPTH	30'				

PROJECT NAME / LOCATION Former Beacon Station #574 22315 Redwood Road Castro Valley, CA	PROJECT NUMBER: 40-90-818	BORING NUMBER: MW-1	SHEET 2 OF 2
	CONTRACTOR: West Hazmat Drilling		DRILLING METHOD: H.S.A.
	DRILLER: Gene Reinhart		DRILLING RIG: Acker
	START: 8:15/03-26-91		COMPLETED: 9:30/03-26-91

LAND OWNER: Paul Wilson	SURFACE ELEVATION: 156.55	LOGGED BY: Hal Hansen
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S T A Y M P L E	S N A U M P L E R	B C L O U W N T S	S I A N M T P L E (ft)	S R A E M C P O L V E (in)	D E P T H S C A L E 1"= 4'	D E S C R I P T I O N S O F M A T E R I A L S A N D C O N D I T I O N S	CONTAMINANT OBSERVATION	G E N E R A L O B S E R V A T I O N N O T E S
							I N S T R U M E N T : hNu U N I T S : p p m	
CA	MW-1-5	8/23/25	25.0-26.5	8"	25	SILTY SAND; olive-brown, fine-grained sand, saturated (SM)	8	
					26			
					27			
					28			
					29			
CA	MW-1-6	12/14/50 for 5"	30.0-31.5	7"	30		3	
					31			
					32	Total Depth 31.5 feet		
					33			
					34			
					35			
					36			
					37			
					38			
					39			
					40			
					41			
					42			
					43			
					44			
					45			
					46			
					47			

WATER LEVEL DATA				GEOLOGIST	
DATE	03-26			<i>Hal Hansen</i> SIGNATURE Hal Hansen TYPED NAME	
TIME	6:29				
GWL	22.43				
CASING DEPTH	30'				

PROJECT NAME / LOCATION Former Beacon Station #574 22315 Redwood Road Castro Valley, CA	PROJECT NUMBER: 40-90-818	BORING NUMBER: MW-2	SHEET 1 OF 2
	CONTRACTOR: West Hazmat Drilling		DRILLING METHOD: H.S.A.
	DRILLER: Gene Reinhart		DRILLING RIG: Acker
	START: 10:30/03-26-91		COMPLETED: 11:45/03-26-91

LAND OWNER: Paul Wilson	SURFACE ELEVATION: 155.17	LOGGED BY: Hal Hansen
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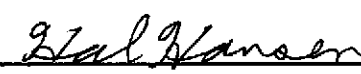
S T A Y L E	T M P L E	S N A U M P L E	B C L O U M B O U N T S	S I A N T P L E(ft)	S R A E M C P O L V E(in)	DEPTH SCALE 1"= 4'	DESCRIPTIONS OF MATERIALS AND CONDITIONS	CONTAMINANT OBSERVATION	GENERAL OBSERVATION NOTES
								INSTRUMENT: hNu UNITS: ppm	
CA	MW-2-1	20/30/50 for 5"	5.0-6.5	7"	1	ASPHALT AND ROADBASE			
					2	GRAVELLY SAND; olive, fine to coarse-grained, common plastic fines, moist (SP)			
					3				
					4				
					5		15		
					6				
					7	SANDY CLAY; olive, moderately plastic, fine to coarse sand some gravel, moist (CL)			
					8				
					9				
CA	MW-2-2	10/50 for 6"	10.0-11.5	12"	10				
					11				
					12				
					13				
					14				
CA	MW-2-3	30/50 for 5"	15.0-16.5	7"	15		90*	3200 ppm	
					16				
					17				
					18				
					19				
CA	MW-2-4	7/14/15	20.0-21.5	15"	20		90*		
					21				
					22				
					23	SAND; olive-brown, fine-grained, saturated (SP)			

WATER LEVEL DATA			GEOLOGIST	
DATE	03-26		 SIGNATURE Hal Hansen TYPED NAME	
TIME	6:22			
GWL	20.9'			
CASING DEPTH	30'			

PROJECT NAME / LOCATION Former Beacon Station #574 22315 Redwood Road Castro Valley, CA	PROJECT NUMBER: 40-90-818	BORING NUMBER: MW-2	SHEET 2 OF 2
	CONTRACTOR: West Hazmat Drilling		DRILLING METHOD: H.S.A.
	DRILLER: Gene Reinhart		DRILLING RIG: Acker
	START: 10:30/03-26-91		COMPLETED: 11:45/03-26-91

LAND OWNER: Paul Wilson	SURFACE ELEVATION: 155.17	LOGGED BY: Hal Hansen
--------------------------------	----------------------------------	------------------------------

S T A Y M P L E	S N A U M P L E	B C L O U M P S	S I A N T P L E (ft)	S R A E M C P O L V E (in)	D E P T H S C A L E 1"= 4'	D E S C R I P T I O N S O F M A T E R I A L S A N D C O N D I T I O N S	CONTAMINANT OBSERVATION	G E N E R A L O B S E R V A T I O N N O T E S
							I N S T R U M E N T : hNu U N I T S : p p m	
CA	MW-2-5	15/16/18	25.0-26.5	16"	25	SILTY SAND; olive-brown, fine grained sand, substantiated (SM)	3	
					26			
					27			
					28			
					29			
CA	MW-2-6	14/22/43	30.0-31.5	14"	30		0	
					31			
					32	Total Depth 31.5 feet		
					33			
					34			
					35			
					36			
					37			
					38			
					39			
					40			
					41			
					42			
					43			
					44			
					45			
					46			
					47			

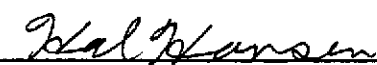
WATER LEVEL DATA				GEOLOGIST	
DATE	03-26			 SIGNATURE Hal Hansen TYPED NAME	
TIME	6:22				
GWL	20.91				
CASING DEPTH	30'				

PROJECT NAME / LOCATION Former Beacon Station #574 22315 Redwood Road Castro Valley, CA	PROJECT NUMBER: 40-90-818	BORING NUMBER: [REDACTED]	SHEET 1 OF 2
	CONTRACTOR: West Hazmat Drilling		DRILLING METHOD: H.S.A.
	DRILLER: Gene Reinhart		DRILLING RIG: Acker
	START: 1:40/03-26-91		COMPLETED: 3:00/03-26-91

LAND OWNER: Paul Wilson	SURFACE ELEVATION: 157.13	LOGGED BY: Hal Hansen
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S T A Y E	T M P L E	S N M P L E	N A U M B E R	B C L O U M B E R	S I A N M P L E	S R A E M C P O L V E	DEPTH SCALE 1"= 4'	DESCRIPTIONS OF MATERIALS AND CONDITIONS	CONTAMINANT OBSERVATION	GENERAL OBSERVATION NOTES
									INSTRUMENT: hNu UNITS: ppm	
CA	MW	3-1	15/26/37	5.0-6.5	18"	1	ASPHALT AND ROADBASE			
						2	SAND; brown, fine-grained, well sorted moist (SP)			
						3				
						4				
						5			0	
						6				
						7				
						8	CLAY; dark gray, lightly plastic, moist (CL)			
						9				
CA	MW	3-2	16/18/32	10.0-11.5	7"	10			0	
						11				
						12				
						13	SANDY CLAY; olive-brown, moderately plastic, moist (CL)			
						14				
CA	MW	3-3	23/50 for 5"	15.0-16.5	8"	15			1	
						16				
						17				
						18				
						19				
CA	MW	3-4	50 for 6"	20.0-21.5	7"	20	SILTY CLAY; olive, moderately plastic, very moist (CL)		8	
						21				
						22				
						23				

230 ppm

WATER LEVEL DATA				GEOLOGIST	
DATE	03-26			 SIGNATURE Hal Hansen TYPED NAME	
TIME	6:14				
GWL	21.62				
CASING DEPTH	30'				

PROJECT NAME / LOCATION Former Beacon Station #574 22315 Redwood Road Castro Valley, CA	PROJECT NUMBER: 40-90-818	BORING NUMBER: MW-3	SHEET 2 OF 2
	CONTRACTOR: West Hazmat Drilling		DRILLING METHOD: H.S.A.
	DRILLER: Gene Reinhart		DRILLING RIG: Acker
	START: 1:40/03-26-91		COMPLETED: 3:00/03-26-91

LAND OWNER: Paul Wilson	SURFACE ELEVATION: 157.13	LOGGED BY: Hal Hansen
--------------------------------	----------------------------------	------------------------------

S A Y M P L E	T Y P E	S N A U M P L E	B C L O U M P L E	S I A N M P L E (ft)	S R A E M C P O L V E (in)	D E P T H S C A L E 1"= 4'	D E S C R I P T I O N S O F M A T E R I A L S A N D C O N D I T I O N S	CONTAMINANT OBSERVATION	G E N E R A L O B S E R V A T I O N N O T E S
								I N S T R U M E N T : hNu U N I T S : p p m	
CA	MW-3-5	13/50 for 6"	25.0-26.5	8"	25	CLAYEY SAND; olive-brown, medium-grained sand, consolidated (SC)	0.0		
CA	MW-3-6	14/50 for 6"	30.0-31.5	8"	26		0		
						30	Total Depth 31.5 feet		
						31			
						32			
						33			
						34			
						35			
						36			
						37			
						38			
						39			
						40			
						41			
						42			
						43			
						44			
						45			
						46			
						47			

WATER LEVEL DATA				GEOLOGIST	
DATE	03-26			<i>Hal Hansen</i> SIGNATURE Hal Hansen TYPED NAME	
TIME	6:14				
GWL	21.62				
CASING DEPTH	30'				

**YOUNGDAHL
& ASSOCIATES INC.**
GEOTECHNICAL ENGINEERS & CONSTRUCTION LABS.

Project No. 91086.1T
8 April 1991

Delta Environmental Consultants, Inc.
3330 Data Drive
Rancho Cordova, CA. 95670

Attention: Mr. Hal Hansen
Subject: Laboratory Test Results
#40-90-818.01

Dear Hal;

As requested, YOUNGDAHL & ASSOCIATES, INC. has performed laboratory testing on a sample from the subject site submitted to our laboratory on 4 April 1991.

A gradation analysis was performed on the submitted sample as requested. Results of the analysis are recorded on the attached graph, (Grain Size Distribution Test Report).

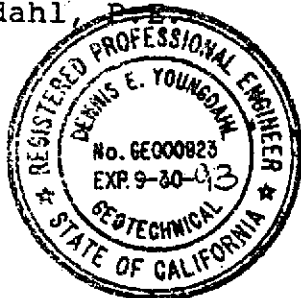
Should you have any questions or require additional information, please contact our office at your convenience.

Reviewed by,



Dennis E. Youngdahl, P.E.

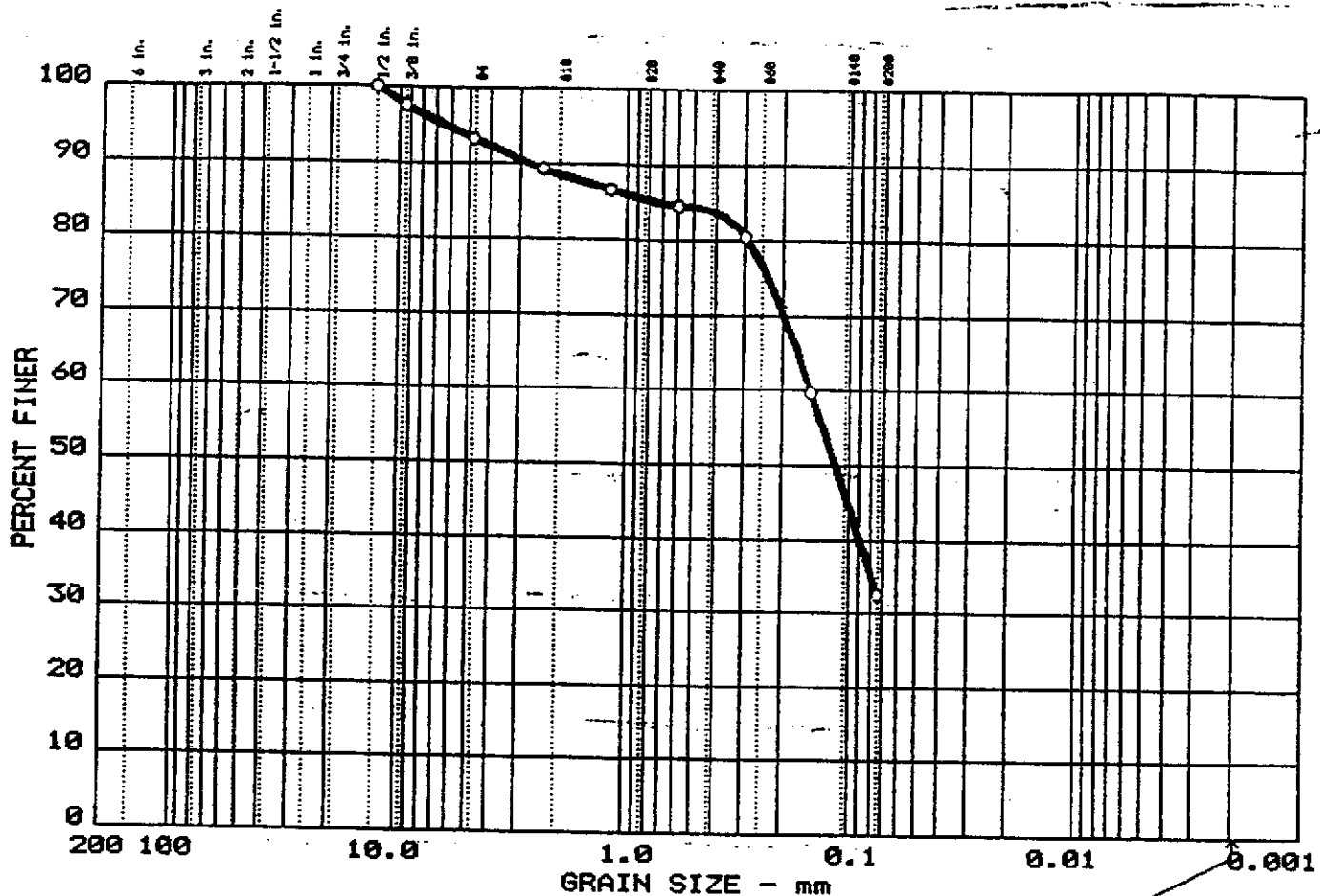
ML:DEY/lj



Very truly yours,
YOUNGDAHL & ASSOCIATES, INC.

Mark Leitschuh
Laboratory Supervisor

GRAIN SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
0	12	0.0	60.8	32.4	

LL	PI	D85	D60	D50	D30	D15	D10	Cc	Cu
0	N.P.	N.P.	0.74	0.15	0.12				

MATERIAL DESCRIPTION	USCS	AASHTO
0 Olive Brown to Blue, silty f-m SAND, gravel	SM	A-2-4(0.0)

Project No.: 91086.1T
 Project: Delta Environmental
 0 Location: Composite of MW-1-5 & MW-1-6
 Date: 4-8-1991

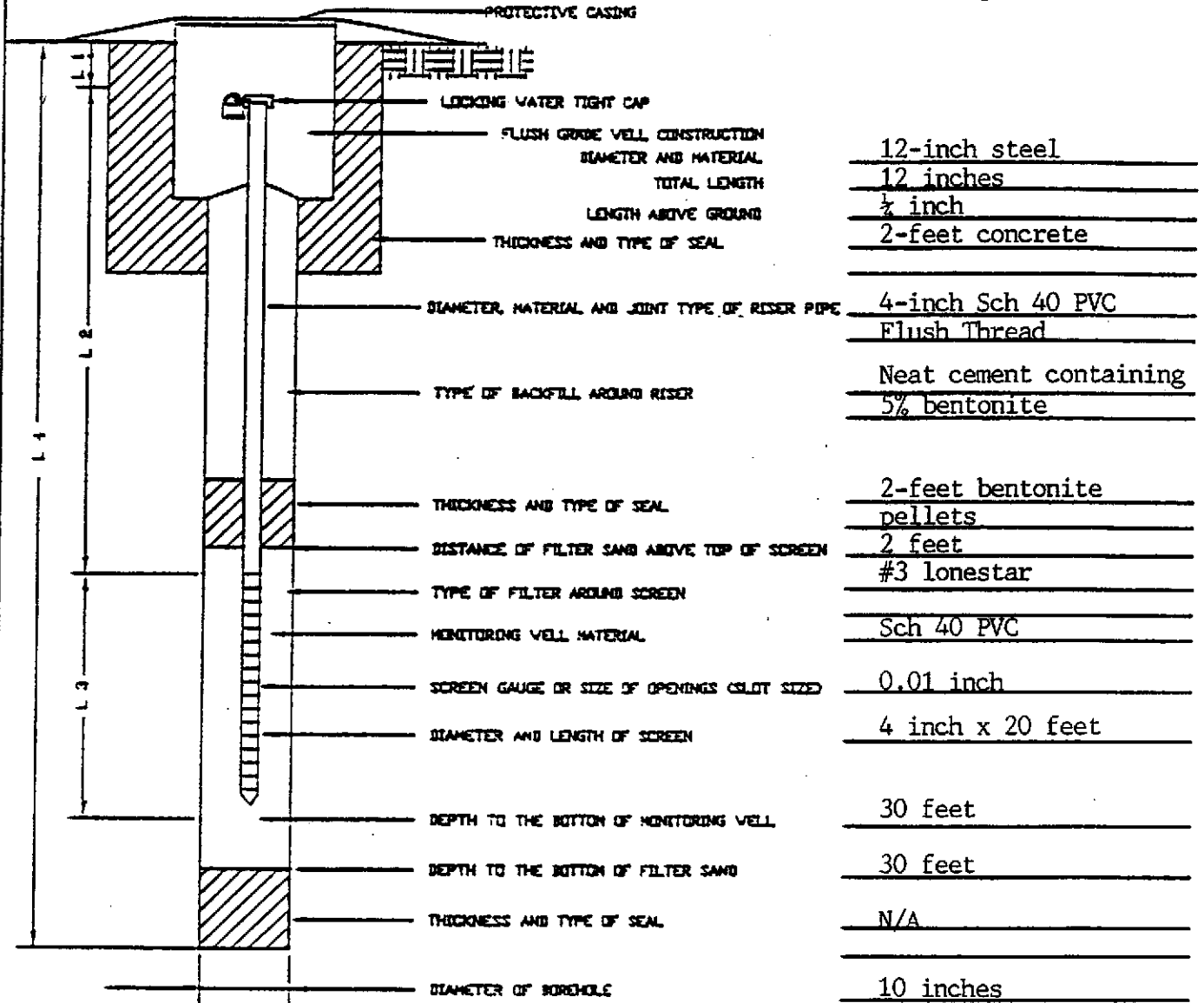
Remarks:
 Job # 40-90-818.01
 MW-1-5 DEPTH 25'
 MW-1-6 DEPTH 30'

GRAIN SIZE DISTRIBUTION TEST REPORT
YOUNGDAHL & ASSOCIATES INC.

Figure No.1

INSTALLATION OF FLUSH GRADE MONITORING WELL

PROJECT Former Beacon Station #574 MONITORING WELL NO. MW-1
22315 Redwood Road, Castro Valley, ELEVATIONS: TOP OF RISER 156.55
CA GROUND LEVEL _____
 DELTA NO. 40-90-818



L 1 = 0.25 FT.
 L 2 = 9.75 FT.
 L 3 = 20 FT.
 L 4 = 30 FT.

INSTALLATION COMPLETED
 DATE 3/26/91
 TIME 10:30

MONITORING WELL WATER LEVEL MEASUREMENTS		
DATE	TIME	WATER LEVEL *
3-26-91	6:29	22.43

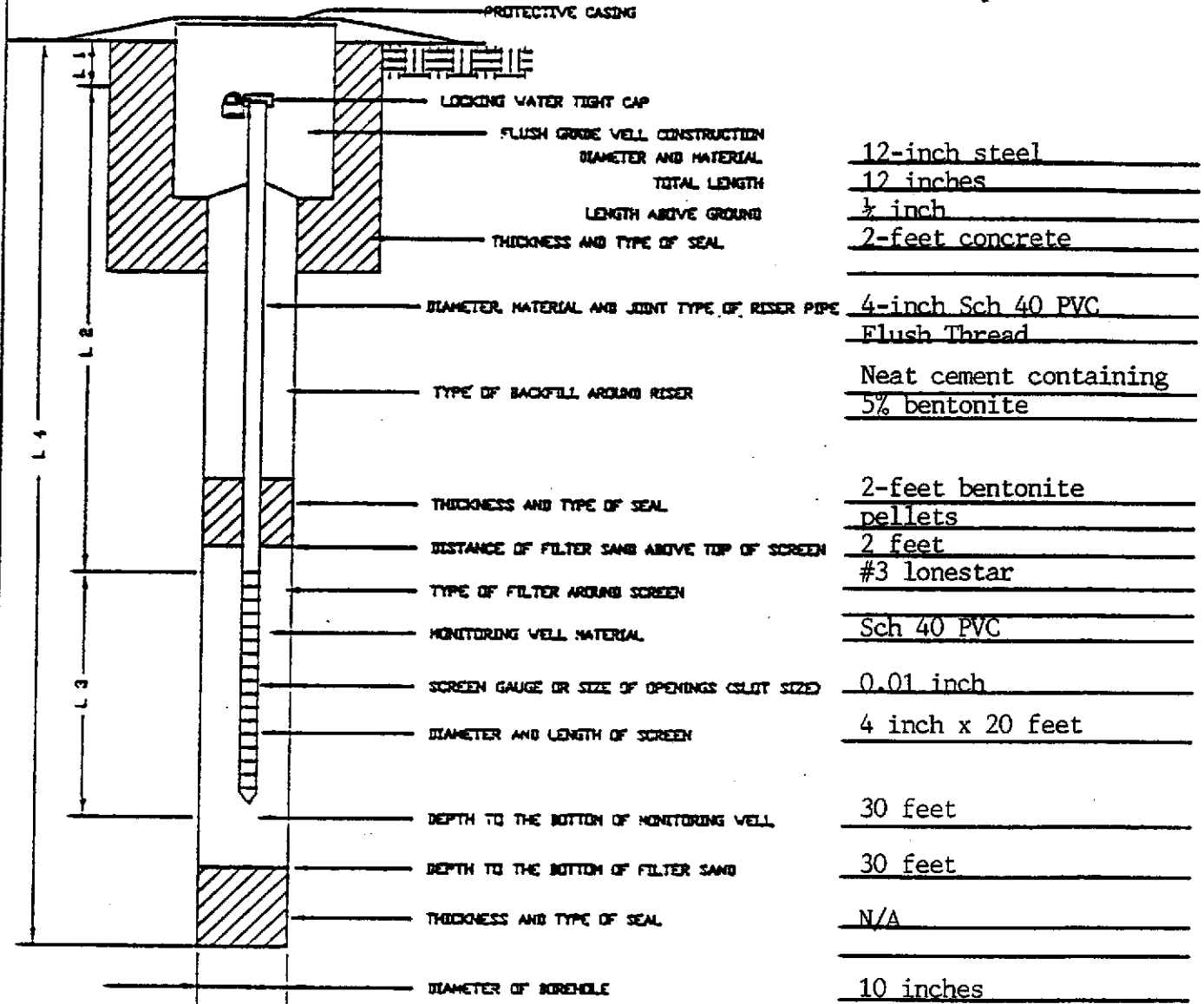
* MEASURE POINT: Top of casing



INSTALLATION OF FLUSH GRADE MONITORING WELL

PROJECT Former Beacon Station #574
22315 Redwood Road, Castro Valley,
CA
 DELTA NO. 40-90-818

MONITORING WELL NO. MW-2
 ELEVATIONS: TOP OF RISER 155.17
 GROUND LEVEL _____



- L 1 = 0.25 FT.
- L 2 = 9.75 FT.
- L 3 = 20 FT.
- L 4 = 30 FT.

INSTALLATION COMPLETED
 DATE 3/26/91
 TIME 12:45

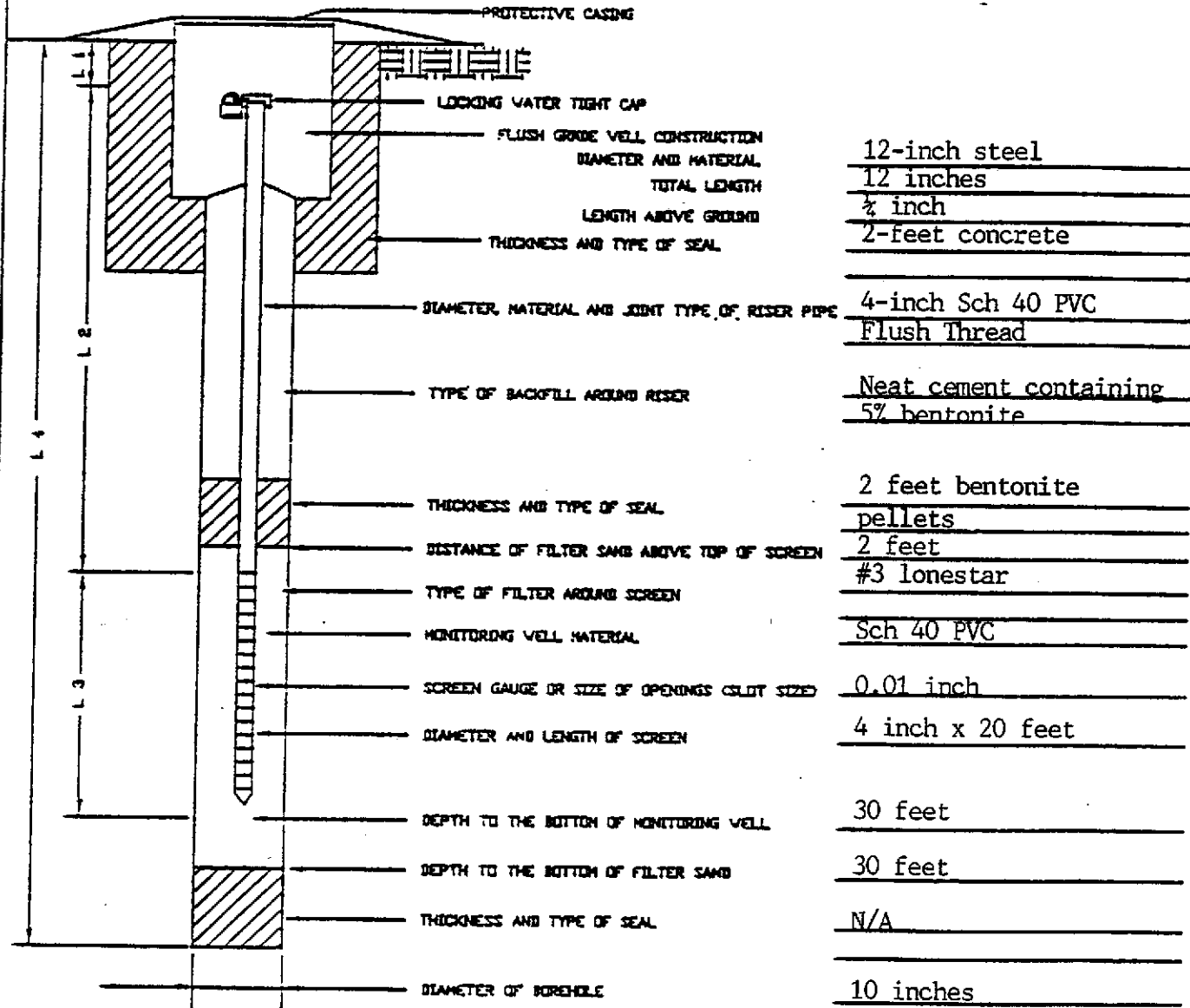
MONITORING WELL WATER LEVEL MEASUREMENTS		
DATE	TIME	WATER LEVEL *
3-26-91	6:22	20.91

* MEASURE POINT: Top of casing



INSTALLATION OF FLUSH GRADE MONITORING WELL

PROJECT Former Beacon Station #574 MONITORING WELL NO. MW-3
22315 Redwood Road, Castro Valley, ELEVATIONS: TOP OF RISER 157.13
 DELTA NO. 40-90-818 CA GROUND LEVEL _____



DIAMETER AND MATERIAL	<u>12-inch steel</u>
TOTAL LENGTH	<u>12 inches</u>
LENGTH ABOVE GROUND	<u>1/2 inch</u>
THICKNESS AND TYPE OF SEAL	<u>2-foot concrete</u>
DIAMETER, MATERIAL AND JOINT TYPE OF RISER PIPE	<u>4-inch Sch 40 PVC</u> <u>Flush Thread</u>
TYPE OF BACKFILL AROUND RISER	<u>Neat cement containing</u> <u>5% bentonite</u>
THICKNESS AND TYPE OF SEAL	<u>2 feet bentonite</u> <u>pellets</u>
DISTANCE OF FILTER SAND ABOVE TOP OF SCREEN	<u>2 feet</u>
TYPE OF FILTER AROUND SCREEN	<u>#3 lonestar</u>
MONITORING WELL MATERIAL	<u>Sch 40 PVC</u>
SCREEN GAUGE OR SIZE OF OPENINGS (SLIT SIZE)	<u>0.01 inch</u>
DIAMETER AND LENGTH OF SCREEN	<u>4 inch x 20 feet</u>
DEPTH TO THE BOTTOM OF MONITORING WELL	<u>30 feet</u>
DEPTH TO THE BOTTOM OF FILTER SAND	<u>30 feet</u>
THICKNESS AND TYPE OF SEAL	<u>N/A</u>
DIAMETER OF BOREHOLE	<u>10 inches</u>

L 1 = 0.25 FT.
 L 2 = 9.75 FT.
 L 3 = 20 FT.
 L 4 = 30 FT.

INSTALLATION COMPLETED
 DATE 3/26/91
 TIME 4:30

DATE	TIME	WATER LEVEL *
<u>3-26-91</u>	<u>6:14</u>	<u>21.62</u>

* MEASURE POINT: Top of casing

APPLIED ANALYTICAL

Environmental Laboratories

42501 Albrae St., Suite 100
Fremont, CA 94538
Bus: (415) 623-0775
Fax: (415) 651-8647

ANALYSIS REPORT

ALY 4/25/91

1020lab.frm

Attention: Mr. Hal Hansen
Delta Environmental
3330 Data Dr. Suite 100
Rancho Cordova, CA 95670
Project: 19505-L, Station #574
Project #40-90-818, Castro Valley

Date Sampled: 03-26-91
Date Received: 03-28-91
BTEX Analyzed: 03-29-91
TPHg Analyzed: 03-29-91
TPHd Analyzed: 03-29-91
Matrix: Soil

	Benzene	Toluene	Ethyl- benzene	Total Xylenes	TPHg	TPHd
	<u>ppm</u>	<u>ppm</u>	<u>ppm</u>	<u>ppm</u>	<u>ppm</u>	<u>ppm</u>
Detection Limit:	0.005	0.005	0.005	0.005	1.0	10

SAMPLE Laboratory Identification

Stockpile (A-D) S1103696	ND	0.034	0.015	0.12	1.0	ND
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ppm = parts per million = mg/kg = milligrams per kilogram.

ND = Not detected. Compound(s) may be present at concentrations below the detection limit.

NR = Analysis not requested.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.

TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.

TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.



Laboratory Representative

April 1, 1991
Date Reported



Ultramar Inc.
CHAIN OF CUSTODY REPORT

BEACON

91397

Beacon Station No. <i>Former Beacon Station #574</i>		Sampler (Print Name) <i>Hal Hansen</i>			ANALYSES				Date <i>3-27-91</i>	Form No. <i>1 of 1</i>	
Project No. <i>40-90-818</i>		Sampler (Signature) <i>Hal Hansen</i>			BTEX	TPH (gasoline)	TPH (diesel)			No. of Containers	
Project Location <i>Castro Valley</i>		Affiliation <i>Delta</i>									
Sample No./Identification		Date	Time	Lab No.						REMARKS	
<i>MW-1-3 20 15' S</i>		<i>3-26-91</i>	<i>945</i>		<i>X</i>	<i>X</i>				<i>2 sweep rush</i>	
<i>MW-1-4 20'</i>			<i>955</i>		<i>X</i>	<i>X</i>					
<i>MW-2-2 10'</i>			<i>1050</i>		<i>X</i>	<i>X</i>					
<i>MW-2-3 15'</i>			<i>1100</i>		<i>X</i>	<i>X</i>					
<i>MW-2-4 20'</i>			<i>1110</i>		<i>X</i>	<i>X</i>					
<i>MW-3-3 15'</i>			<i>200</i>		<i>X</i>	<i>X</i>					
<i>MW-3-4 20'</i>			<i>220</i>		<i>X</i>	<i>X</i>					
<i>stock pile A, B, C, D</i>			<i>500</i>		<i>X</i>	<i>X</i>			<i>4</i>		<i>composite these 4 samples 48 hr rush</i>
Relinquished by: (Signature/Affiliation) <i>Hal Hansen Delta</i>		Date <i>3-27-91</i>	Time <i>230</i>	Received by: (Signature/Affiliation) <i>M. Blum EXPRESS-IT</i>				Date <i>3/27/91</i>	Time <i>1545</i>		
Relinquished by: (Signature/Affiliation) <i>M. Blum EXPRESS-IT (mw)</i>		Date <i>3-28-91</i>	Time <i>930</i>	Received by: (Signature/Affiliation) <i>Anthony Mendez - Applied Analytical</i>				Date <i>3/28</i>	Time <i>9:30</i>		
Relinquished by: (Signature/Affiliation)		Date	Time	Received by: (Signature/Affiliation)				Date	Time		
Report To: <i>Hal Hansen c/o Delta Env. Cons. 3330 Bata Dr. Rancho Cordova Ca 95670</i>				Bill to: ULTRAMAR INC. 525 West Third Street Hanford, CA 93230 Attention: <u><i>Randy Stephenson</i></u>							

WHITE: Return to Client with Report

YELLOW: Laboratory Copy

PINK: Originator Copy

ENCLOSURE E

Ground Water Sample Analytical Results

APPLIED ANALYTICAL

Environmental Laboratories

42501 Albrae St., Suite 100

Fremont, CA 94538

Bus: (415) 623-0775

Fax: (415) 651-8647

ANALYSIS REPORT

GCJ 4/26/91

1020lab.frm

Attention: Mr. Hal Hansen
Delta Environmental
3330 Data Dr. Suite 100
Rancho Cordova, CA 95670
Project: AGS 19505-L, Project #40-90-818
Station #574, Castro Valley

Date Sampled: 04-01-91
Date Received: 04-04-91
BTEX Analyzed: 04-15-91
TPHg Analyzed: 04-15-91
TPHd Analyzed: 04-11-91
Matrix: Water

	Benzene	Toluene	Ethyl- benzene	Total Xylenes	TPHg	TPHd
	ppb	ppb	ppb	ppb	ppb	ppb
Detection Limit:	0.5	0.5	0.5	0.5	50	100

SAMPLE

Laboratory Identification

MW-1 W1104077	340	570	76	460	4100	ND
MW-2 W1104078	650	640	150	960	10000	ND
MW-3 W1104079	41	91	37	420	3100	ND
Trip Blank W1104080	ND	ND	ND	ND	ND	ND

ppb = parts per billion = $\mu\text{g/L}$ = micrograms per liter.

ND = Not detected. Compound(s) may be present at concentrations below the detection limit.

NR = Analysis not requested.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.

TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.


TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.


Laboratory Representative

April 16, 1991

Date Reported

CHAIN OF CUSTODY

 Delta Environmental Consultants, Inc.		Delta Environmental Consultants, Inc. 3330 Data Drive, Suite 100 Rancho Cordova, CA 95670 916/638-2085 • FAX 916/638-8385				LABORATORY SAMPLES SENT TO: <u>Applied Analytical</u> ADDRESS: <u>42501 Albrae St</u> <u>Fremont, CA 94538</u> <u>415-623-0775</u>					
		PROJ. NO. 40-90-818	PROJECT NAME: <u>Castro Valley - Old Beacon #574</u>			Analysis Requested & Container Description					
		PROJECT LOCATION: <u>Castro Valley</u>		PROJECT MANAGER: <u>Hol Hansen</u>							
SAMPLERS (Signature) <u>Linda C. Schneider</u>						NUMBER OF CONTAINERS BTEX-TPH ^g TPH-d		REMARKS 40 ml VOA's (HCl) 1-Liter Amber (non-pres.) 2 2 I broke 140 ml vial in the field 3 2 3 2 * 2 1 * 1 bottle broke (rec'd) 1 bottle partially leaked out.			
LABORATORY SAMPLE ID	SAMPLE ID	DATE	TIME	SAMPLE TYPE	SAMPLE LOCATION						
	MW-1	4/1/91	13:38	H ₂ O	along south side of site in driveway to Redwood Rd						
	MW-2	↓	13:20	↓	along side-front of bldgs midway-in front of donut shop						
	MW-3	↓	14:04	↓	in the north west corner of the site next to planter						
	TRIP Blank	4/1/91	09:00	H ₂ O							
Relinquished by: (Signature)		Date	Time	Received by: (Signature)		Date	Time	Received by: (Signature)			
<u>Linda Schneider</u>		4/3/91	13:15	<u>Don Carson</u>				<u>Don Carson</u>			
Relinquished by: (Signature)		Date	Time	Received for Laboratory by: (Signature)		Date	Time	Turnaround Time:			
<u>EXPRESS-IT X748 (m)</u>		4-4-91	9:15	<u>Anthony Guerra</u>		4/4/91	9:15	Normal			
Sealed for shipment by: (signature)						Date/Time	Shipment method:				
<u>Linda Schneider</u>						4/3/91	12:30	<u>Courier</u>			
Sampler Comments:						Laboratory Comments:					
<u>Samples kept on ice</u>											
Condition of Samples:											

ENCLOSURE D

Soil Sample Analytical Results

APPLIED ANALYTICAL

Environmental Laboratories

42501 Albrae St., Suite 100
Fremont, CA 94538
Bus: (415) 623-0775
Fax: (415) 651-8647

APR 15 1991

AD 4/25/91

ANALYSIS REPORT

Attention: Mr. Hal Hansen
Delta Environmental
3330 Data Dr. Suite 100
Rancho Cordova, CA 95670
Project: 19505-L, Proj. #40-90-818
Station #574, Castro Valley

Date Sampled: 03-26-91
Date Received: 03-28-91
BTEX Analyzed: 04-05-91
TPHg Analyzed: 04-05-91
TPHd Analyzed: 04-04-91
Matrix: Soil

1020lab.frm

	Benzene	Toluene	Ethyl- benzene	Total Xylenes	TPHg	TPHd
	<u>ppm</u>	<u>ppm</u>	<u>ppm</u>	<u>ppm</u>	<u>ppm</u>	<u>ppm</u>
Detection Limit:	0.005	0.005	0.005	0.005	1.0	10

SAMPLE

Laboratory Identification

MW-1-3 S1103667	0.16	0.10	0.010	0.050	ND	ND
MW-1-4 S1103668	13	110	33	300	ND	ND
MW-2-2 S1103669	0.013	0.26	0.11	0.68	8.1	ND
MW-2-3 S1103670	19	120	42	240	3200	ND
MW-2-4 S1103671	0.39	0.22	0.11	0.41	5.6	ND

ppm = parts per million = mg/kg = milligrams per kilogram.

ND = Not detected. Compound(s) may be present at concentrations below the detection limit.

NR = Analysis not requested.

ANALYTICAL PROCEDURES

BTEX— Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.

TPHg—Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.

TPHd—Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

[Signature]
Laboratory Representative

April 11, 1991
Date Reported

APPLIED ANALYTICAL

Environmental Laboratories

42501 Albrae St., Suite 100
Fremont, CA 94538
Bus: (415) 623-0775
Fax: (415) 651-8647

ANALYSIS REPORT

1020lab.frm

Attention: Mr. Hal Hansen
Delta Environmental
3330 Data Dr. Suite 100
Rancho Cordova, CA 95670
Project: 19505-L, Proj. #40-90-818
Station #574, Castro Valley

Date Sampled: 03-26-91
Date Received: 03-28-91
BTEX Analyzed: 04-05-91
TPHg Analyzed: 04-05-91
TPHd Analyzed: 04-04-91
Matrix: Soil

	Benzene	Toluene	Ethyl- benzene	Total Xylenes	TPHg	TPHd
	<u>ppm</u>	<u>ppm</u>	<u>ppm</u>	<u>ppm</u>	<u>ppm</u>	<u>ppm</u>
Detection Limit:	0.005	0.005	0.005	0.005	1.0	10

SAMPLE

Laboratory Identification

MW-3-3 S1103672	ND	ND	ND	ND	ND	ND
MW-3-4 S1103673	ND	0.18	0.44	5.9	ND	ND

ppm = parts per million = mg/kg = milligrams per kilogram.

ND = Not detected. Compound(s) may be present at concentrations below the detection limit.

NR = Analysis not requested.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.

TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.

TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.


Laboratory Representative

April 11, 1991
Date Reported