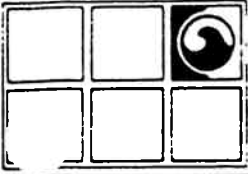


**WELL REPLACEMENT AND GROUNDWATER  
ASSESSMENT REPORT  
BAY CENTER PROJECT  
EMERYVILLE, CALIFORNIA  
FOR  
THE MARTIN COMPANY**

**JUNE 1989**

**GROUNDWATER TECHNOLOGY, INC.  
CONCORD, CALIFORNIA**



**GROUNDWATER  
TECHNOLOGY, INC.**

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~~1990~~

June  
1989

**WELL REPLACEMENT AND GROUNDWATER  
ASSESSMENT REPORT  
BAY CENTER PROJECT  
EMERYVILLE, CALIFORNIA  
FOR  
THE MARTIN COMPANY**

Prepared for:

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**WELL REPLACEMENT AND GROUNDWATER  
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**INTRODUCTION**

This report presents the results of the monitoring well replacement and groundwater assessment work conducted by Groundwater Technology, Inc. (GTI) for The Martin Company at the Bay Center site located at 6400 Christie Avenue in Emeryville, California (Figure 1). In brief, this assessment included the installation of six groundwater-monitoring wells and the collection and analyses of groundwater samples. The wells, which were installed to replace the previous monitoring wells destroyed during construction activities, will be used to determine the magnitude and extent of dissolved hydrocarbons in the groundwater, to monitor the local groundwater gradient and to verify the degree of hydraulic control obtained by the site groundwater-extraction-and-treatment system.

**SCOPE OF WORK**

The scope of work performed by GTI was designed to replace six of seven wells which were inadvertently destroyed during construction activities, and to assess groundwater conditions underlying the site. The following work steps were conducted during the monitoring-well replacement activities:

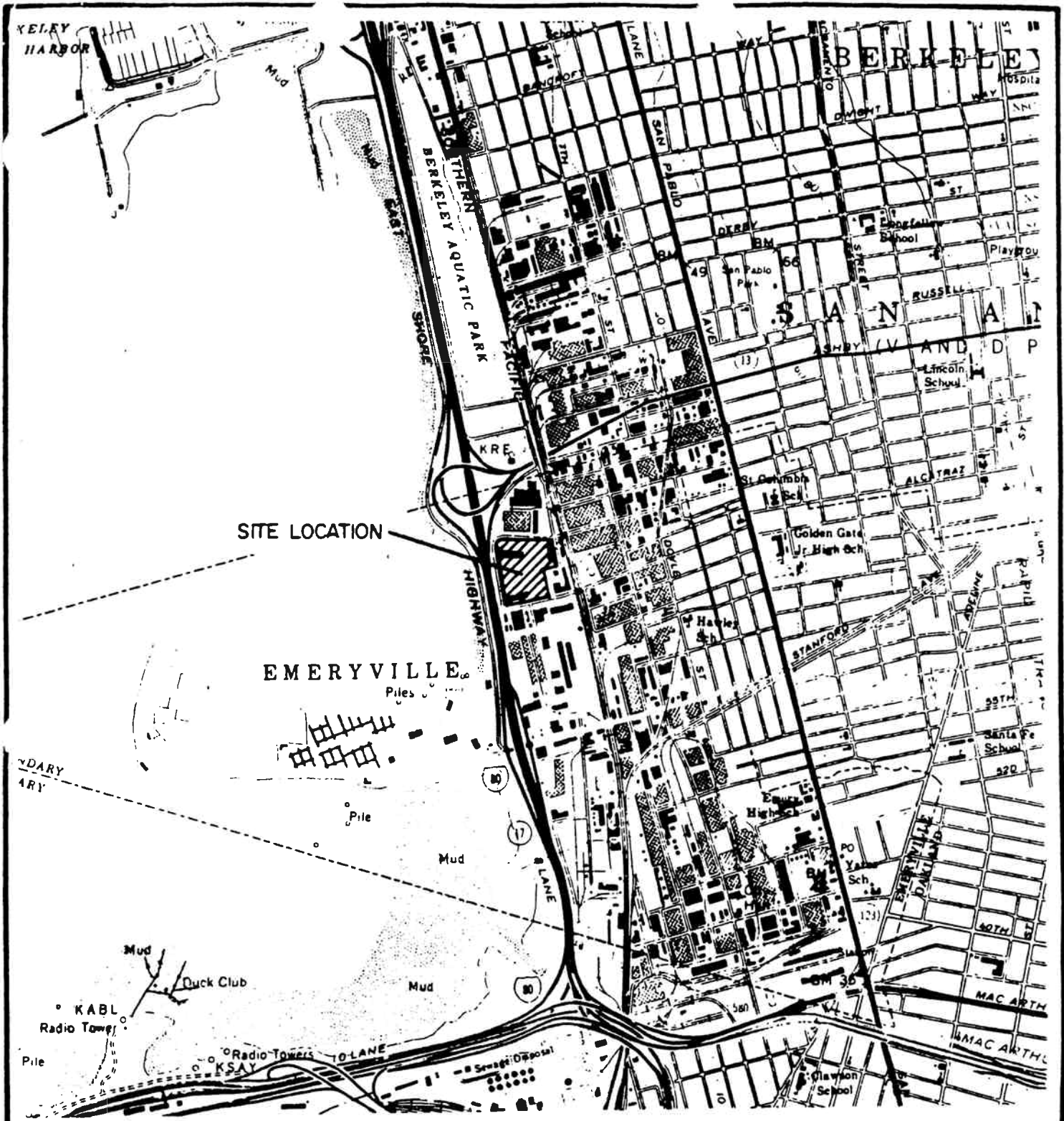
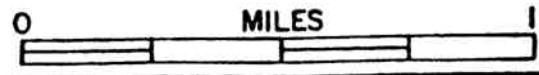


Figure 1. Site Location Map



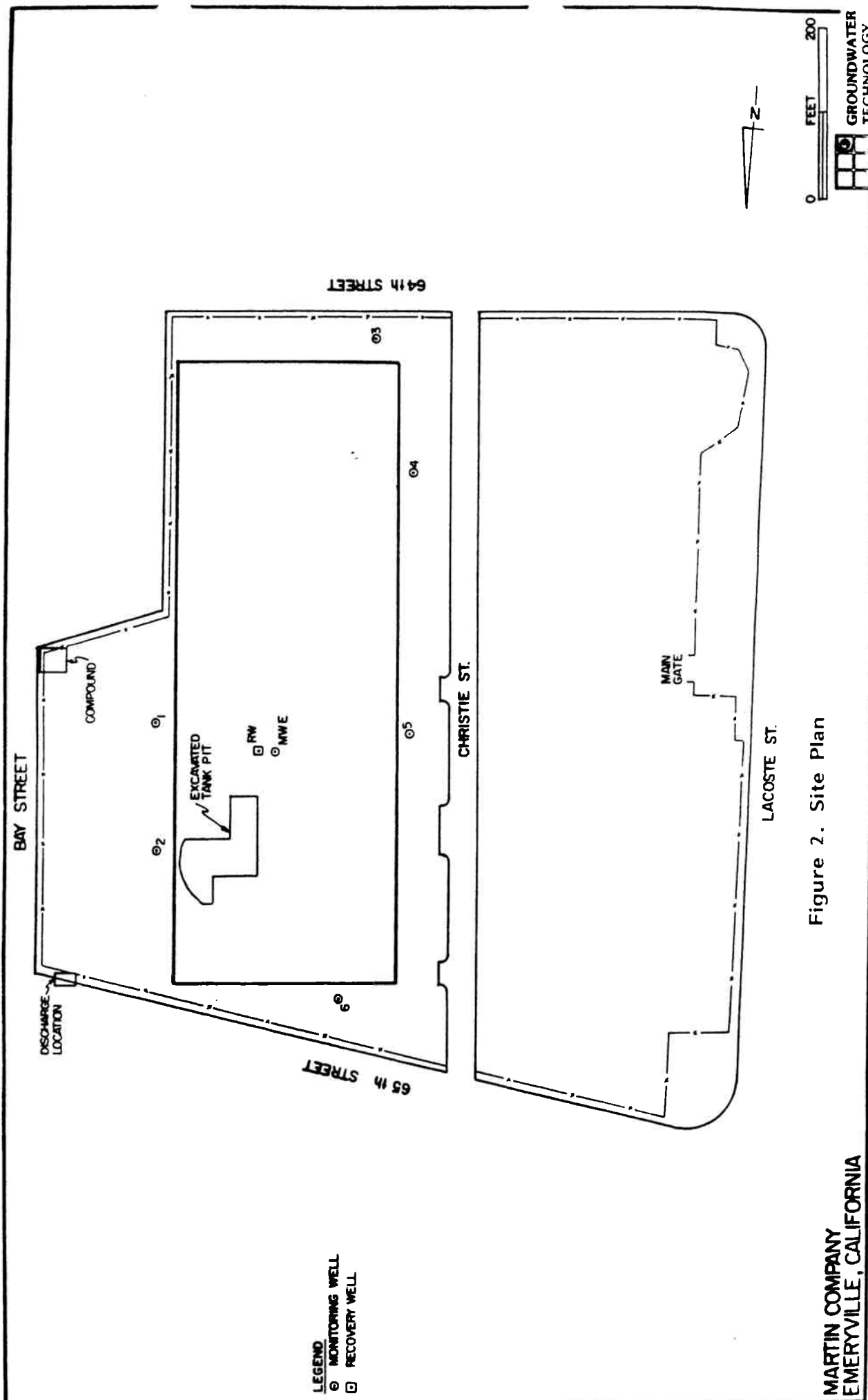
MARTIN COMPANY  
EMERYVILLE, CALIFORNIA



- o Drilled and installed six groundwater-monitoring wells on the site. The wells were located in approximately the same locations as the previously destroyed wells (Figure 2).
- o Collected soil samples at approximately 5-foot intervals during the drilling of each monitoring-well boring for lithologic characterization.
- o Surveyed all wellhead elevations and obtained depth-to-water measurements in order to determine the local groundwater-gradient and flow direction.
- o Developed the newly installed wells and collected groundwater samples for laboratory analyses of benzene, toluene, ethylbenzene, xylenes (BTEX), total petroleum hydrocarbon (TPH)-as-gasoline and TPH-as-diesel. The sample collected from MW-3 was also analyzed for polynuclear aromatic hydrocarbons.
- o Resampled all the monitoring wells for analyses of BTEX, TPH-as-gasoline, TPH-as-diesel and metals.
- o Prepared a report presenting the results of the site assessment.

#### **MONITORING WELL INSTALLATION**

Well Borings. On December 15, and 16, 1989, six borings for monitoring well installation were drilled at selected on-site locations. The borings were drilled with a truck-mounted drill



LEGEND  
 ○ MONITORING WELL  
 □ RECOVERY WELL

Figure 2. Site Plan

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rig using 7.5-inch, outside-diameter (O.D.), hollow-stem augers. During drilling, groundwater was encountered at a depth of 10- to 12-feet below grade. All of the soil borings were drilled to a total depth of 25 feet. The drilling was performed under the supervision of a GTI geologist who logged the materials as they were encountered in the borings (Appendix A).

Soil Sampling. Soil samples were collected during drilling at 5-foot intervals beginning at approximately 4-feet below grade. The samples were collected with a 2.5-inch, O.D., split-spoon sampler lined with 2-inch-diameter by 6-inch-long brass sample tubes. The samples were used to describe the lithology encountered. All the drill cuttings and soil samples collected from each boring were stored on site in labeled, 55-gallon drums for subsequent disposal pending the results of laboratory analyses.

Monitoring Well Construction. Monitoring wells were installed in each of the borings immediately after drilling. The wells were constructed of 2-inch-diameter well screen (0.020-inch machine-slotted) and blank PVC casing. A well filter pack consisting of No. 2 Monterey sand was placed in the annulus from the bottom of each borehole to approximately one foot above the well's screened interval. All of the wells were completed with a one-foot-thick bentonite seal and cement grout to the surface. A locking cap and traffic-rated street box was installed at the surface to provide access to each well. Well completion details are presented in Appendix A.

Groundwater Monitoring and Sampling. Between December 27 and 29, 1988, the six newly installed monitoring wells (MW-1 through MW-6) were developed, monitored for depth-to-water, and

sampled. Wellhead elevations were professionally surveyed to the nearest benchmark to help determine groundwater elevations. During development of MW-3, a thick tarlike substance was collected from the well. A sample of the material was retained for analyses.

New wells MW-1 through MW-6, as well as previously existing wells MW-E and RW-1, were again monitored on May 3, May 11 and May 31, 1989. All of the wells were sampled on May 5, 1989. Because of wellhead modifications, the elevations of all the wellheads were professionally resurveyed on May 3, 1989. The monitoring data and survey results are presented in Appendix B.

Separate-phase petroleum hydrocarbons were detected in the recovery well during each of the May monitoring events. The static groundwater levels measured in all of the wells ranged from about 7- to 10-feet below grade. The most recent monitoring data were used to generate a groundwater gradient map (Figure 3). The gradient map shows that the groundwater beneath the site flows in a radial pattern toward the recovery well and MW-E. The groundwater flows at a gradient ranging from approximately 0.005 to 0.01 ft/ft.

As discussed above, groundwater samples were obtained from MW-1 through MW-6 on December 27 through 29, 1988, and from all of the wells on May 5, 1989. Prior to sampling, wells MW-1, MW-2, MW-4, MW-5 and MW-6 were purged by hand bailing, and wells MW-3 and MW-E were purged using a systaltic pump. All wells were purged a minimum of five well volumes of water and then allowed to recover to at least 80 percent of their original static levels. Purged water was stored on site in a Baker Tank for subsequent disposal pending the results of laboratory analyses.

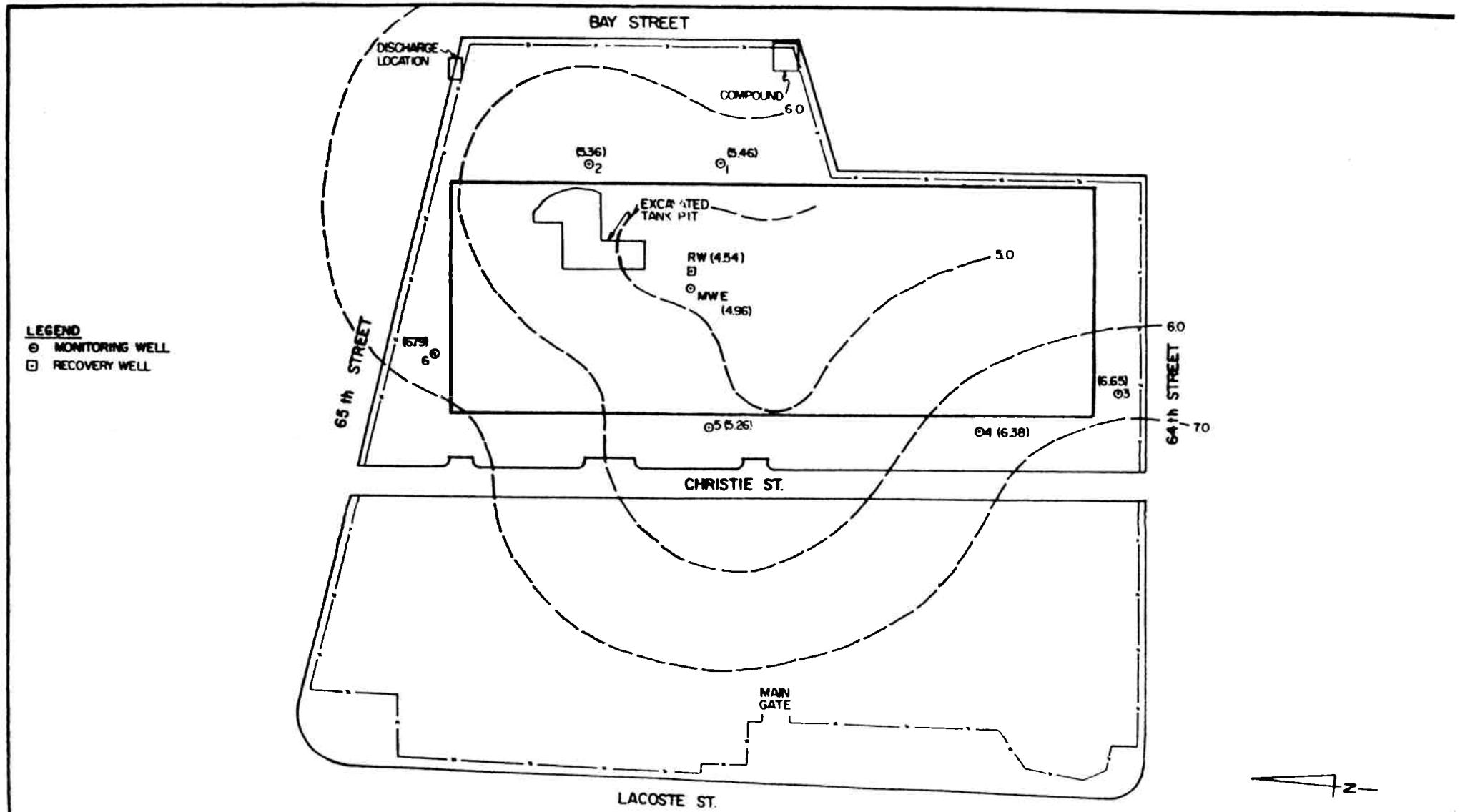


Figure 3. Groundwater Gradient Map (5/31/89)

The wells were sampled using a U.S. Environmental Protection Agency (EPA)-approved Teflon<sup>R</sup> sampler (except for wells MW-3 and MW-E which were sampled using the systaltic pump and Tygon<sup>R</sup> tubing). The groundwater samples were placed in the appropriate containers, sealed, labeled, stored on ice and transported under Chain-of-Custody Manifest to GTEL Environmental Laboratories, Inc. (GTEL) in Concord, California. All the samples collected on December 27 through 29, 1988 and May 5, 1989 were analyzed for BTEX and TPH-as-gasoline using modified EPA Methods 5030/8020/8015 and for TPH-as-diesel using modified EPA Method 8015. The December 28 1988 groundwater and sludge samples collected from MW-3 were also analyzed for polynuclear aromatic hydrocarbons using EPA Method 8310. Additionally, the samples collected on May 5, 1989 from all the wells were analyzed for arsenic, cadmium, chromium, nickel, zinc and copper using EPA Methods 3020/6010; for lead using EPA Method 3020/7421; and for mercury using EPA Method 7471. The groundwater laboratory reports are presented in Appendix C.

## RESULTS

### SITE HYDROGEOLOGY

The subsurface materials in the vicinity of the site consist of fill material to a depth of 9- to 17-feet below grade. The sediments encountered below the fill material consisted of silty organic clays, sandy clays, clayey sands and sands. During drilling, groundwater was encountered at a depth of 9.5- to 12-feet below grade. Subsequent monitoring indicated static water levels approximately 7- to 10-feet below grade. The radial groundwater-flow pattern observed beneath the site is likely controlled by the underlying fill material. A variety of material with different permeability characteristics was probably

used to fill in the area. Because the San Francisco Bay lies approximately 1,000 feet to the west, it would be expected that the groundwater beneath the site would predominantly flow in a westerly to southwesterly direction toward the bay.

#### **ANALYTICAL RESULTS**

The results of the groundwater analyses for hydrocarbons are presented in Table 1. Concentrations of BTEX and TPH-as-gasoline indicate that the groundwater beneath the site has been impacted by hydrocarbons with the highest concentrations being found in wells MW-1, MW-3 and MW-E. The December 1988 analytical results also indicate that TPH-as-diesel was detected in MW-1, MW-2 and MW-5. The more recent sampling round (May 5, 1989) shows that TPH-as-diesel was present in all the samples collected from the wells. The laboratory reports also indicate that the diesel was severely biodegraded.

The analytical results of the polynuclear aromatic hydrocarbon analyses for the groundwater and sludge samples collected from well MW-3 are presented in Table 2. The concentrations of the compounds detected indicate that the sludge found in MW-3 is a tarlike substance, and that the groundwater has been impacted by this material.

The results of the analyses for metals indicate that there are elevated levels of metals in the groundwater samples collected from MW-3, MW-4 and MW-6. Table 3 presents the concentrations of the metals detected.

PROJECT: THE MARTIN COMPANY  
 DATE: JUNE 1989  
 JOB NUMBER: 203 799 8200

TABLE 1  
 GROUNDWATER ANALYSES RESULTS  
 in Parts Per Billion (ppb)

Date	Well No.	Benzene	Toluene	Ethyl- benzene	Xylenes	TPH-as- Gasoline	TPH-as- Diesel
12/27-28/88	MW-1	8600	940	250	570	17000	380
	MW-2	<0.5	<0.5	<0.5	<0.5	22	72
	MW-3	77	1400	140	560	4200	<10
	MW-4	2	1	<0.5	2	100	<10
	MW-5	<1	<1	1	3	890	530
	MW-6	1	<0.5	<0.5	<0.5	52	<10
05/05/89	MW-1	16000	2100	300	1200	24000	130
	MW-2	<0.5	<0.5	<0.5	<0.5	18	40
	MW-3	64	250	61	110	1800	110
	MW-4	1	<0.5	<0.5	<0.5	18	60
	MW-5	1	<0.5	<0.5	<0.5	5	90
	MW-6	1	<0.5	<0.5	<0.5	31	140
	MW-E	3200	690	97	330	5400	100

PROJECT: THE MARTIN COMPANY  
 JOB NUMBER: 203 799 8200  
 DATE: JUNE 1989

TABLE 2  
 POLYNUCLEAR AROMATIC HYDROCARBON ANALYSES RESULTS  
 MW-3  
 in Parts Per Billion (ppb)

DATE	COMPOUND	MW-3 (water sample)	MW-3P (sludge sample)
12/28/89	NAPHTHALENE	26.0	26.0
	ACENAPHTHENE	<0.01	0.61
	PHENANTHRENE	0.64	2.80
	FLUORANTHENE	0.01	0.07
	PYRENE	0.20	0.42
	CHRYSENE	0.06	0.06
	BENZO (k) FLUORANTHENE	0.39	0.39
	BENZO (a) PYRENE	0.45	1.3
	BENZO (ghi) PERYLENE	1.20	1.3

PROJECT: THE MARTIN COMPANY  
 JOB NUMBER: 203 799 8200  
 DATE: JUNE 1989

TABLE 3  
 ANALYTICAL RESULTS FOR METALS  
 5/5/89

SAMPLE I.D.	COMPOUND	CONCENTRATION (ppm)
MW-3	ARSENIC	0.005
MW-4	ARSENIC	0.005
	CHROMIUM	0.04
	LEAD	0.30
MW-6	ARSENIC	0.015
	LEAD	0.02
	NICKEL	0.04
	ZINC	0.14
	COPPER	0.08

(ppm) = Parts per million



**APPENDIX A**  
**BORING LOGS**



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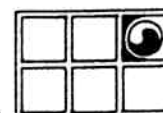
# UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISION	SYMBOLS	TYPICAL NAMES
<b>COARSE GRAINED SOILS</b> OVER 50% > NUMBER 200 SIEVE SIZE	<b>GRAVELS</b>	
	MORE THAN 1/2 OF COARSE FRACTION > No. 4 SIEVE SIZE	GW  Well graded gravels or gravel-sand mixtures, little or no fines
		GP  Poorly graded gravels or gravel-sand mixtures, little or no fines
		GM  Silty gravels, gravel-sand-silt mixtures
		GC  Clayey gravels, gravel-sand-clay mixtures
	<b>SANDS</b>	
	MORE THAN 1/2 OF COARSE FRACTION < No. 4 SIEVE SIZE	SW  Well graded sands or gravelly sands, little or no fines
		SP  Poorly graded sands or gravelly sands, little or no fines
	SM  Silty sands, sand-silt mixtures	
	SC  Clayey sands, sand-clay mixtures	
<b>FINE GRAINED SOILS</b> OVER 50% < NUMBER 200 SIEVE SIZE	<b>SILTS &amp; CLAYS</b>	
	LL < 50	ML  Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL  Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL  Organic silts and organic silty clays low plasticity
	<b>SILTS &amp; CLAYS</b>	
	LL > 50	MH  Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH  Inorganic clays of high plasticity, fat clays	
	OH  Organic clays of medium to high plasticity, organic silty clays, organic silts	
<b>HIGHLY ORGANIC SOILS</b>		Pt  Peat and other highly organic soils

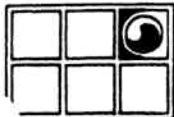
## CLASSIFICATION CHART

CLASSIFICATION	RANGE OF GRAIN SIZES	
	U.S. Standard Sieve Size	Grain Size In Millimeters
<b>BOULDERS</b>	Above 12"	Above 305
<b>COBBLES</b>	12" to 3"	305 to 76.2
<b>GRAVEL</b>	3" to No. 4	76.2 to 4.76
COARSE FINE	3" to 3/4"	76.2 to 4.76
	3/4" to No. 4	19.1 to 4.76
SAND COARSE FINE MEDIUM	No. 4 to No. 200	4.76 to 0.074
	No. 4 to No. 10	4.76 to 2.00
	No. 10 to No. 40	2.00 to 0.420
	No. 40 to No. 200	0.420 to 0.074
<b>SILT &amp; CLAY</b>	Below No. 200	Below No. 0.074

**GRAIN SIZE CHART**



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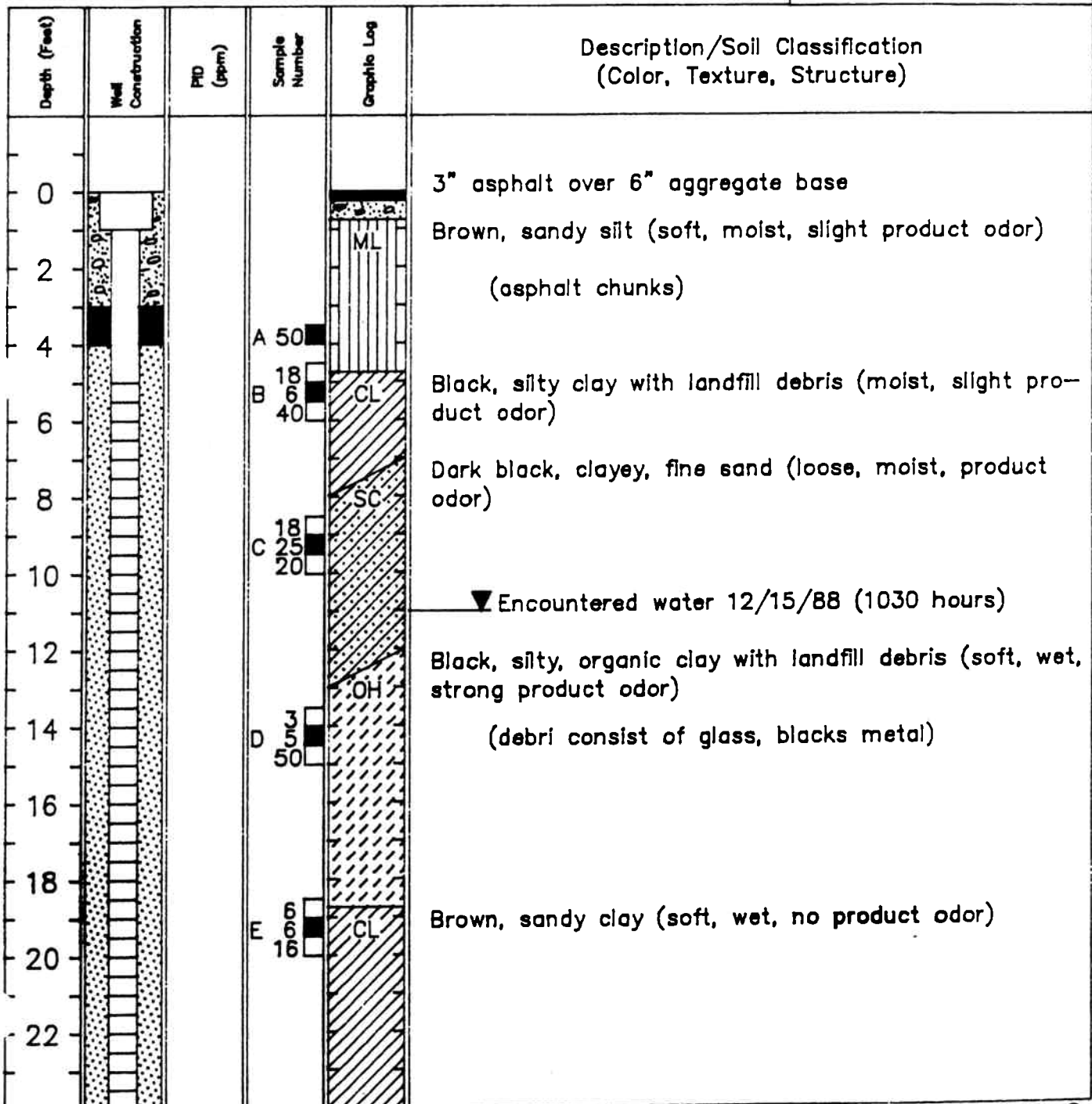
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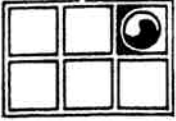
Monitoring Well 1

Drilling Log

Sketch Map  
  
See Site Plan  
  
Notes

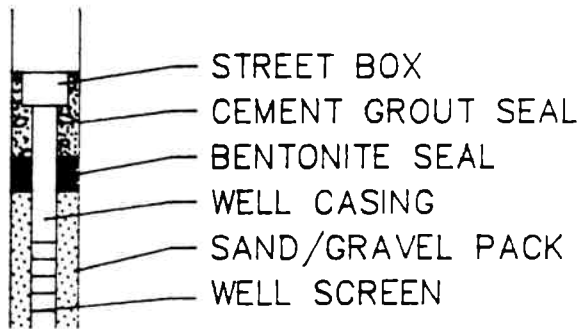
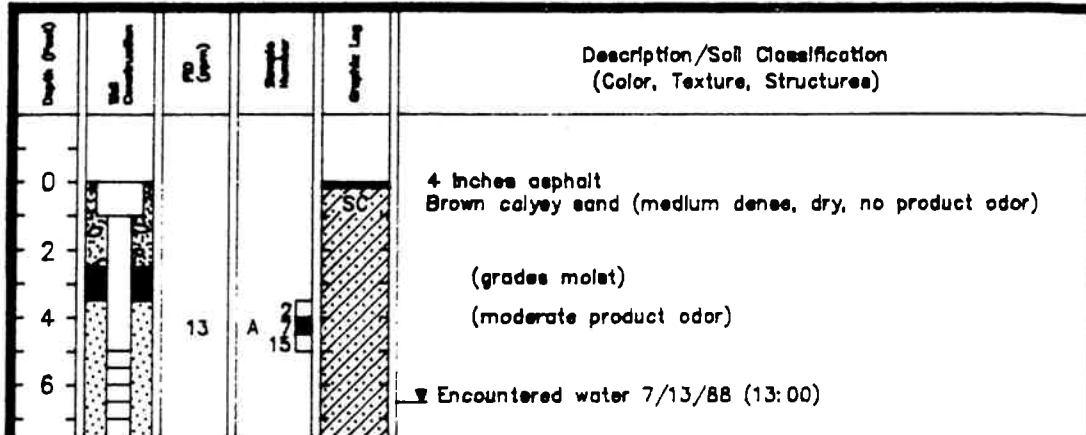
Project Bay Center Owner Martin Company  
 Location Emeryville, CA Project Number 203-799-8200.01  
 Date Drilled 12/15/88 Total Depth of Hole 25 FT Diameter 7.5 IN  
 Surface Elevation \_\_\_\_\_ Water Level Initial 11 FT 24-hour \_\_\_\_\_  
 Screen: Dia. 2 IN Length 20 FT Slot Size 0.020 IN  
 Casing: Dia. 2 IN Length 5 FT Type PVC  
 Drilling Company Sierra Pacific Drilling Method Hollow Stem Auger  
 Driller Chris DeSocio Log by Kelly Kline  
 Geologist/Engineer \_\_\_\_\_ License No. \_\_\_\_\_







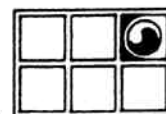


Depth (Feet)	Well Construction	PH (ppm)	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
26					End of boring, installed monitoring well
28					
30					
32					
34					
36					
38					
40					
42					
44					
46					
48					
50					
52					
54					

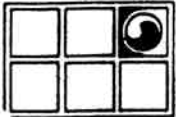
# KEY TO BORING LOG



- 13      ORGANIC VAPOR CONCENTRATION DETERMINED BY PHOTO IONIZATION DETECTOR (P.I.D.) IN PARTS PER MILLION (ppm) FROM SOIL SAMPLES
- A      SAMPLE IDENTIFICATION
- 2/7 15      BLOW COUNTS TO DRIVE A SPLIT BARREL SAMPLER USING A 140 lb. HAMMER FALLING 30 INCHES. COUNTS ARE FOR EACH 6 INCH INCREMENT THE SAMPLER IS DRIVEN
-       INTERVAL SAMPLED
-       SAMPLE INCREMENT RETAINED FOR LABORATORY ANALYSES
-       SOIL CLASSIFICATION GRAPHIC/SYMBOL (SEE UNIFIED SOIL CLASSIFICATION SYSTEM)
-       DEPTH TO WATER, DATE, TIME



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Monitoring Well 2

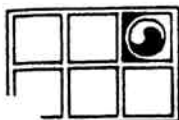
Sketch Map

See Site Plan

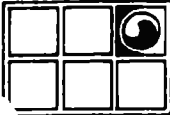
Project Bay Center Owner Martin Company  
 Location Emeryville, CA Project Number 203-799-8200.01  
 Date Drilled 12/15/88 Total Depth of Hole 25 FT Diameter 7.5 IN  
 Surface Elevation \_\_\_\_\_ Water Level Initial 11 FT 24-hour \_\_\_\_\_  
 Screen: Dia. 2 IN Length 20 FT Slot Size 0.020 IN  
 Casing: Dia. 2 IN Length 5 FT Type PVC  
 Drilling Company Sierra Pacific Drilling Method Hollow Stem Auger  
 Driller Chris DeSocio Log by Kelly Kline  
 Geologist/Engineer \_\_\_\_\_ License No. \_\_\_\_\_

Notes

Depth (feet)	Well Construction	PID (ppm)	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structure)
0					8" asphalt over 4" aggregate base
0 - 2				SC	Brown, clayey, gravelly sand (loose, moist, slight product odor)
2 - 4			A 34 28	SC	Black, clayey sand with gravel (loose, moist, no product odor)
4 - 6				SC	Brown, clayey sand (loose, moist, no product odor)
6 - 8				SC	
8 - 10			B 01014	SC	
10 - 12					▼ Encountered water 12/15/88 (1300 hours)
12 - 14			C 15015	SC	Gray-green, clayey sand with brick and wood debris (loose, wet, no product odor)
14 - 16				OH	Black, silty, organic clay (soft, wet, no product odor)
16 - 18					
18 - 20			D 12013	SC	Brown, clayey, fine sand (loose, wet, no product odor)
20 - 22					



Depth (feet)	Well Construction	PID (ppm)	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
					End of boring, installed monitoring well
26					
28					
30					
32					
34					
36					
38					
40					
42					
44					
46					
48					
50					
52					
54					



**GROUNDWATER TECHNOLOGY, INC.**

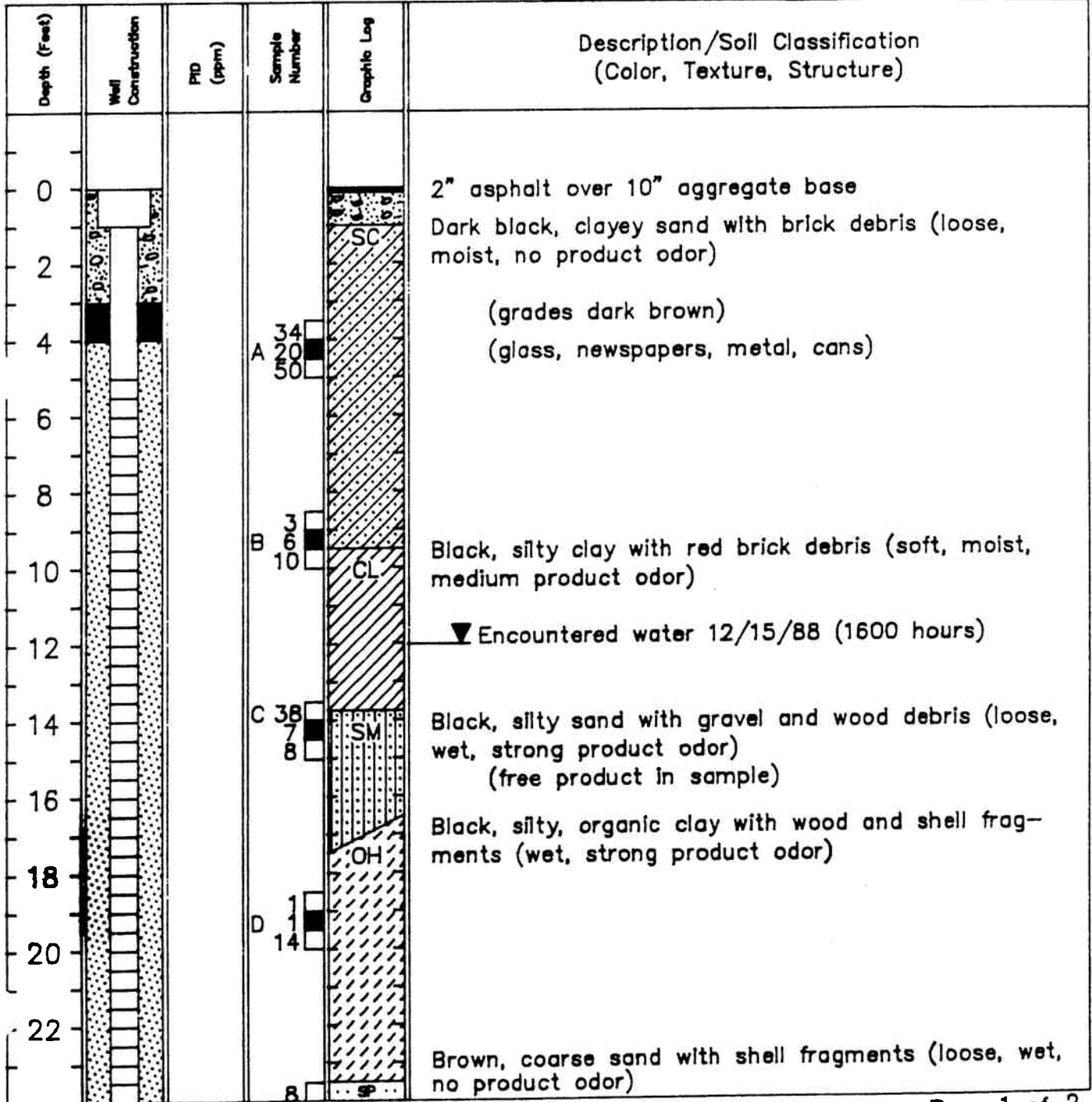
Monitoring Well 3

Sketch Map

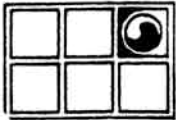
See Site Plan

Project Bay Center Owner Martin Company  
 Location Emeryville, CA Project Number 203-799-8200.01  
 Date Drilled 12/15/88 Total Depth of Hole 25 FT Diameter 7.5 IN  
 Surface Elevation \_\_\_\_\_ Water Level Initial 12 FT 24-hour \_\_\_\_\_  
 Screen: Dia. 2 IN Length 20 FT Slot Size 0.020 IN  
 Casing: Dia. 2 IN Length 5 FT Type PVC  
 Drilling Company Sierra Pacific Drilling Method Hollow Stem Auger  
 Driller Chris DeSocio Log by Kelly Kline  
 Geologist/Engineer \_\_\_\_\_ License No. \_\_\_\_\_

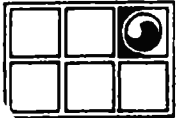
Notes







Depth (Feet)	Well Construction	PID (ppm)	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
			E 12		Brown, fine sandy clay (soft, wet, no product odor) End of boring, installed monitoring well
			12	CL	
26					
28					
30					
32					
34					
36					
38					
40					
42					
44					
46					
48					
50					
52					
54					



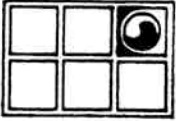
**GROUNDWATER TECHNOLOGY, INC.**

Monitoring Well 4

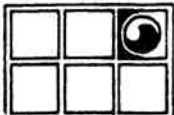
Sketch Map  
  
See Site Plan  
  
Notes  
ND=Non Detectable

Project Bay Center Owner Martin Company  
 Location Emeryville, CA Project Number 203-799-8200.01  
 Date Drilled 12/16/88 Total Depth of Hole 25 FT Diameter 7.5 IN  
 Surface Elevation \_\_\_\_\_ Water Level Initial 9.5 FT 24-hour \_\_\_\_\_  
 Screen: Dia. 2 IN Length 20 FT Slot Size 0.020 IN  
 Casing: Dia. 2 IN Length 5 FT Type PVC  
 Drilling Company Sierra Pacific Drilling Method Hollow Stem Auger  
 Driller Chris DeSocio Log by Kelly Kline  
 Geologist/Engineer \_\_\_\_\_ License No. \_\_\_\_\_

Depth (Feet)	Well Construction	PID (ppm)	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structure)
0					2" asphalt over 10" aggregate base
0 - 2				SC	Brown, clayey sand with gravel and landfill debris (loose, moist, no product odor)
2 - 4		ND	A 31 20 24		
4 - 10		ND	B 4 1 1		▼ Encountered water 12/16/88 (0800 hours)
10 - 14		130	C 2 2 7	SP CL	Black, fine sand with cobbles and wood (loose, wet, no product odor) Green, sandy clay with cobbles (soft, wet, no product odor)
14 - 20		ND	D 2 4 7	CL SP	Green, fine sandy clay with shell fragments (soft, wet, no product odor) Brown, very fine sand (dense, wet, no product odor)
20 - 22					
22 - 25			3		



Depth (Feet)	Well Construction	PID (Open)	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
26			E 15 19	SP	End of boring, installed monitoring well
28					
30					
32					
34					
36					
38					
40					
42					
44					
46					
48					
50					
52					
54					

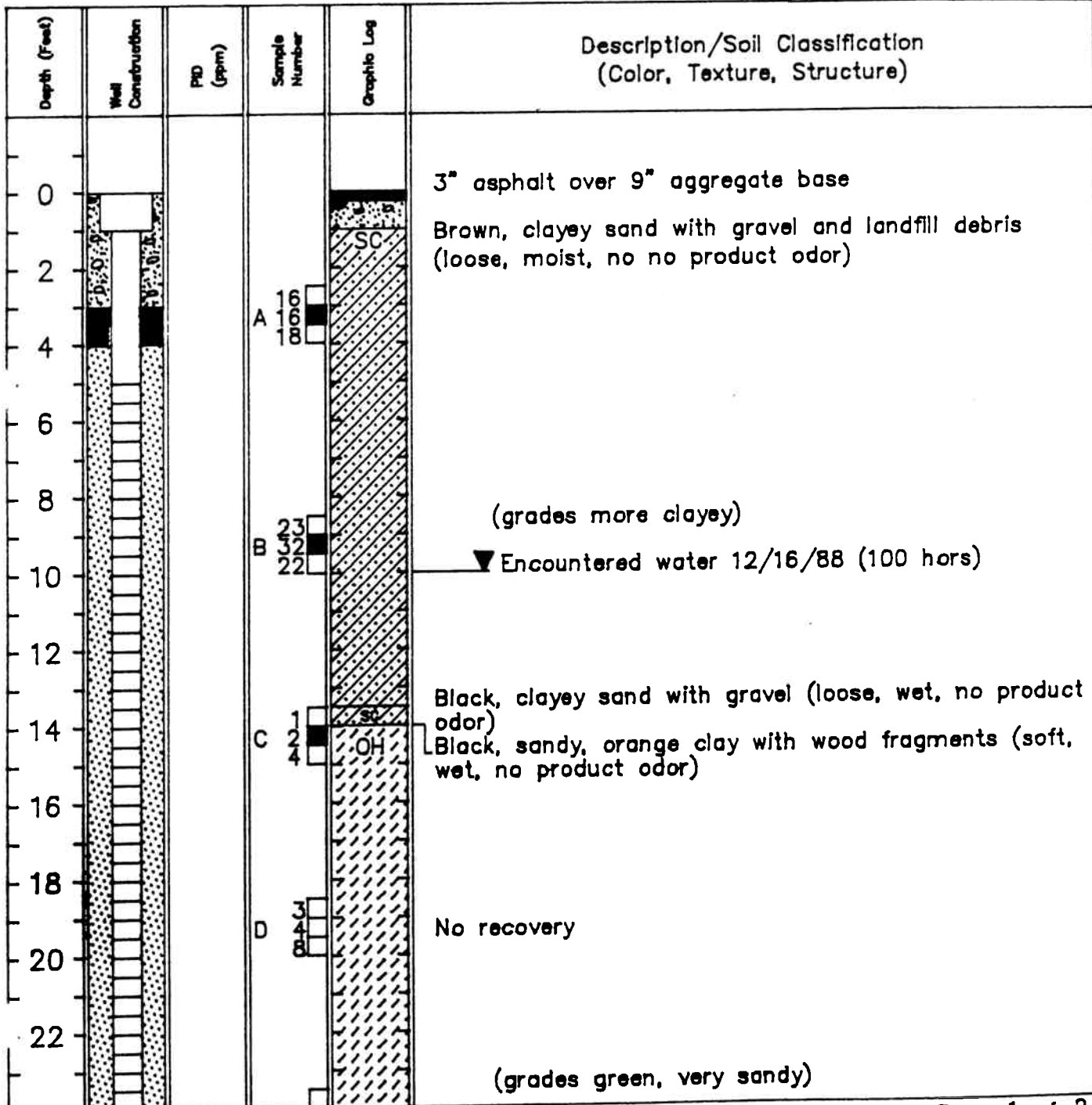


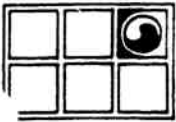
**GROUNDWATER TECHNOLOGY, INC.**

Monitoring Well 5

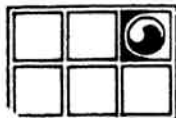
Sketch Map  
  
See Site Plan  
  
Notes

Project Bay Center Owner Martin Company  
 Location Emeryville, CA Project Number 203-799-8200.01  
 Date Drilled 12/16/88 Total Depth of Hole 25 FT Diameter 7.5 IN  
 Surface Elevation \_\_\_\_\_ Water Level Initial 10 FT 24-hour \_\_\_\_\_  
 Screen: Dia. 2 IN Length 20 FT Slot Size 0.020 IN  
 Casing: Dia. 2 IN Length 5 FT Type PVC  
 Drilling Company Sierra Pacific Drilling Method Hollow Stem Auger  
 Driller Chris DeSocio Log by Kelly Kline  
 Geologist/Engineer \_\_\_\_\_ License No. \_\_\_\_\_





Depth (Feet)	Well Construction	PH (ppm)	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
26			E		Brown sandy clay with shell fragments (soft, wet, no product odor) End of boring, installed monitoring well
28					
30					
32					
34					
36					
38					
40					
42					
44					
46					
48					
50					
52					
54					



**GROUNDWATER TECHNOLOGY, INC.**

Monitoring Well 6

Sketch Map

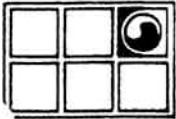
See Site Plan

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Notes

Project Bay Center Owner Martin Company  
 Location Emeryville, CA Project Number 203-799-8200.01  
 Date Drilled 12/16/88 Total Depth of Hole 25 FT Diameter 7.5 IN  
 Surface Elevation \_\_\_\_\_ Water Level Initial 11 FT 24-hour \_\_\_\_\_  
 Screen: Dia. 2 IN Length 20 FT Slot Size 0.020 IN  
 Casing: Dia. 2 IN Length 5 FT Type PVC  
 Drilling Company Sierra Pacific Drilling Method Hollow Stem Auger  
 Driller Chris DeSocio Log by Kelly Kline  
 Geologist/Engineer \_\_\_\_\_ License No. \_\_\_\_\_

Depth (Feet)	Well Construction	PID (ppm)	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structure)
0					3" asphalt
0 - 3.5				GP	Gray-brown, sandy gravel (dense, moist, no product odor)
3.5 - 4.5			A 24, 21, 54	SC	Gray, clayey sand with gravels and landfill debris (loose, moist, no product odor)
4.5 - 8.5				SP	Green-gray sand with gravels (loose, moist no product odor)
8.5 - 10.5			B 3, 4, 7	CL	(Green-gray, sandy clay with shell fragments (soft, moist, no product odor) ▼ Encountered water 12/16/88 (1230 hours)
10.5 - 13.5				CL	
13.5 - 14.5			C 50	SC	Black, clayey sand with shell fragments (dense, wet, no product odor)
14.5 - 18.5				SP	Black gravelly sand (dense, wet, no product odor)
18.5 - 20.5					No recovery
20.5 - 22.5					
22.5 - 25			E 21	CL	Light brown, sandy clay (dense, wet, no product odor)



Depth (Feet)	Well Construction	PFD (ppm)	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
26			31 50 / 3"	CL	End of boring, installed monitoring well
28					
30					
32					
34					
36					
38					
40					
42					
44					
46					
48					
50					
52					
54					

**APPENDIX B**  
**MONITORING DATA**



**GROUNDWATER  
TECHNOLOGY, INC.**



PROJECT: THE MARTIN COMPANY  
 JOB NUMBER: 203 799 8200

MONITORING DATA

WELL I.D.	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-E	RW-1	
DATE	ELEV. (ft.)	14.39	14.36	14.53	14.21	14.65	14.75	NM	NM
12/29/88	DTW	9.60	9.64	8.93	8.29	10.23	8.10	NM	NM
	DTP	-	-	trace	-	-	-		
	ADJ.DTW	-	-	-	-	-	-		
	WTR.ELEV.	4.79	4.72	5.60	5.92	4.42	6.65		
05/03/89 RESURVEYED	ELEV. (ft.)	14.31	14.28	14.43	14.12	14.56	14.67	15.32	14.54
05/03/89	DTW	8.73	8.78	8.69	7.75	9.29	7.58	10.39	10.29
	DTP	-	-	-	-	-	-	-	10.14
	ADJ.DTW	-	-	-	-	-	-	-	10.17
	WTR.ELEV.	5.58	5.50	5.74	6.37	5.27	7.09	4.93	4.37
05/11/89	DTW	8.77	8.84	8.59	7.75	9.27	7.66	10.37	10.16
	DTP	-	-	-	-	-	-	-	9.81
	ADJ.DTW	-	-	-	-	-	-	-	9.88
	WTR.ELEV.	5.54	5.44	5.84	6.37	5.29	7.01	4.95	4.66
05/31/89	DTW	8.85	8.92	7.78	7.74	9.30	7.88	10.36	10.43
	DTP	-	-	-	-	-	-	-	9.89
	ADJ.DTW	-	-	-	-	-	-	-	10.00
	WTR.ELEV.	5.46	5.36	6.65	6.38	5.26	6.79	4.96	4.54

DTW = DEPTH TO WATER  
 DTP = DEPTH TO PRODUCT  
 ADJ.DTW = ADJUSTED DEPTH TO WATER  
 WTR.ELEV. = WATER ELEVATION

MD8200B

**APPENDIX C**  
**GROUNDWATER LABORATORY ANALYSES**



**ENVIRONMENTAL  
LABORATORIES, INC.**

**Western Region**  
4080-C Pike Ln., Concord, CA 94520  
(415) 685-7852  
In CA: (800) 544-3422  
Outside CA: (800) 423-7143

01/09/89mt

Page 1 of 1

WORK ORD#: 8812380

CLIENT: KELLY KLINE  
GROUNDWATER TECHNOLOGY, INC.  
4080 PIKE LANE  
CONCORD, CA 94520

PROJECT#: 203-799-8200.01-4  
LOCATION: EMERYVILLE, CA

SAMPLED: 12/28/88 BY: B. ROBITAILLE  
RECEIVED: 12/28/88  
ANALYZED: 01/04/89 BY: R. CONDIT

MATRIX: Water  
UNITS: ug/L (ppb)

PARAMETER	MDL	SAMPLE # I.I.D.	Q1 RE4	Q2 MW4	Q3 MW3
Benzene	0.5		<0.5	2	77
Toluene	0.5		<0.5	1	1400
Ethylbenzene	0.5		<0.5	<0.5	140
Xylenes	0.5		<0.5	2	560
Total BTEX	0.5		<0.5	5	2200
Misc. Hydrocarbons (C4-C12)	1		<1	95	2000
Total Petroleum Hydrocarbons as Gasoline	1		<1	100	4200

MDL = Method Detection Limit; compound below this level would not be detected.  
Results rounded to two significant figures.

METHOD: Modified EPA 5030/8020/8015

*Emma P. Popek*  
EMMA P. POPEK, Laboratory Director



**Western Region**  
 4080-C Pike Ln., Concord, CA 94520  
 (415) 685-7852  
 In CA: (800) 544-3422  
 Outside CA: (800) 423-7143

01/09/89mt

Page 1 of 1

WORK ORD#: 8812360  
 CLIENT: KELLY KLINE  
 GROUNDWATER TECHNOLOGY, INC.  
 4080 PIKE LANE  
 CONCORD, CA 94520  
 PROJECT#: 203-799-8200.01-1  
 LOCATION: EMERYVILLE, CA

SAMPLED: 12/27/88 BY: R. ROBITAILLE  
 RECEIVED: 12/28/88  
 ANALYZED: 01/04/89 BY: R. CONDIT

MATRIX: Water  
 UNITS: ug/L (ppb)

PARAMETER	MDL	SAMPLE # I.I.D.	01 MW-5	02 MW-6	03 MW-1	04 MW-2
Benzene	0.5		<1*	1	8600	<0.5
Toluene	0.5		<1*	<0.5	940	<0.5
Ethylbenzene	0.5		1	<0.5	250	<0.5
Xylenes	0.5		3	<0.5	570	<0.5
Total BTEX	0.5		4	1	10000	<0.5
Misc. Hydrocarbons (C4-C12)	1		890	51	7000	22
Total Petroleum Hydrocarbons as Gasoline	1		890	52	17000	22

MDL = Method Detection Limit; compound below this level would not be detected.  
 Results rounded to two significant figures.

METHOD: Modified EPA 5030/8020/8015

\*Detection limit raised due to sample foaming.

EMMA P. POPEK, Laboratory Director



01/13/89 rw

Page 1 of 1

WORK ORD#: 8812361

CLIENT: KELLY KLINE

GROUNDWATER TECHNOLOGY, INC.

4080-C PIKE LANE

CONCORD, CA 94520

PROJECT#: 203-799-8200.01-2

LOCATION: EMERYVILLE, CA

**Western Region**

4080-C Pike Lane, Concord, CA 94520

(415) 685-7852

(800) 544-3422 from inside California

(800) 423-7143 from outside California

SAMPLED: 12/27/88

BY: B. ROBITAILLE

RECEIVED: 12/28/88

ANALYZED: 01/04/89

BY: P. HANNERS

MATRIX: Water

UNITS: ug/L (ppb)

PARAMETER	MDL	SAMPLE #	01	02	03	04
	I.I.D.		MW-5	MW-6	MW-1	MW-2

Total Petroleum Hydrocarbons as Diesel	10	530	<10*	380*	72
--	----	-----	------	------	----

MDL = Method Detection Limit; compound below this level would not be detected. Results rounded to two significant figures.

METHOD: Modified EPA 8015

\* CHROMATOGRAPHIC PATTERN INDICATES THE PRESENCE OF GASOLINE.

*Emma P. Popek*  
EMMA P. POPEK, DIRECTOR



01/14/89 rw

Page 1 of 1

Western Region  
4080-C Pike Lane, Concord, CA 94520  
(415) 685-7852  
(800) 544-3422 from inside California  
(800) 423-7143 from outside California

WORK ORD#: 8812381  
CLIENT: KELLY KLINE  
GROUNDWATER TECHNOLOGY, INC.  
4080-D PIKE LANE  
CONCORD, CA 94520

PROJECT#: 203-799-8200.01-5  
LOCATION: EMERYVILLE, CA

SAMPLED: 12/28/88 BY: B. ROBITAILLE  
RECEIVED: 12/28/88  
ANALYZED: 01/04/89 BY: P. HANNERS

MATRIX: Water  
UNITS: ug/L (ppb)

PARAMETER	MDL	SAMPLE #	01	02			
		I. D.	MW4	MW3			

Total Petroleum Hydrocarbons as Diesel	10	<10	<10
--	----	-----	-----

MDL = Method Detection Limit; compound below this level would not be detected.  
Results rounded to two significant figures.

METHOD: Modified EPA 3510/8015

*Emma P. Popek*  
EMMA P. POPEK, Director



Western Region  
4080-C Pike Lane, Concord, CA 94520  
(415) 685-7852  
(800) 544-3422 from inside California  
(800) 423-7143 from outside California

CLIENT: Kelly Kline  
Groundwater Technology, Inc.  
4080 Pike Ln., Suite D  
Concord, CA 94520

PROJECT #: 203-799-8200.01-6  
LOCATION: Emeryville, CA  
SAMPLED: 12/28/88 BY: B. Robitaille  
RECEIVED: 12/28/88 BY: E. Larsen  
ANALYZED: 01/13/89 BY: P. Hanners  
MATRIX: Water  
UNITS: ug/L

TEST RESULTS

COMPOUNDS	MDL	LAB # I.I.D.#	3577E MW 3
Naphthalene	0.01		26
Acenaphthylene	0.01		<0.01
Acenaphthene	0.01		<0.01
Fluorene	0.01		<0.01
Phenanthrene	0.01		0.64
Anthracene	0.01		<0.01
Fluoranthene	0.01		0.01
Pyrene	0.01		0.20
Benzo (a) anthracene	0.01		<0.01
Chrysene	0.01		0.06
Benzo (b) fluoranthene	0.01		<0.01
Benzo (k) fluoranthene	0.01		0.39
Benzo (a) pyrene	0.01		0.45
Bibenzo (a,h) anthracene	0.01		<0.01
Benzo (ghi) perylene	0.01		1.20
Indeno (1,2,3-cd) pyrene	0.01		<0.01

MDL=Method Detection Limit.  
METHOD: EPA Method 8310

EMMA P. POPEK, Director



Western Region  
4080-C Pike Lane, Concord, CA 94520  
(415) 685-7852  
(800) 544-3422 from inside California  
(800) 423-7143 from outside California

CLIENT: Kelly Kline  
Groundwater Technology, Inc.  
4080 Pike Ln., Suite D  
Concord, CA 94520

PROJECT #: 203-799-8200.01-8  
LOCATION: Emeryville, CA  
SAMPLED: 12/28/88 BY: B. Robitaille  
RECEIVED: 12/28/88 BY: E. Larsen  
ANALYZED: 01/13/89 BY: P. Hanners  
MATRIX: Sludge  
UNITS: ug/g

TEST RESULTS

COMPOUNDS	MDL	LAB #	35777
		I.I.D.#	MW 3P
Naphthalene	0.01		26
Acenaphthylene	0.01		<0.01
Acenaphthene	0.01		0.61
Fluorene	0.01		<0.01
Phenanthrene	0.01		2.8
Anthracene	0.01		<0.01
Fluoranthene	0.01		0.07
Pyrene	0.01		0.42
Benzo (a) anthracene	0.01		<0.01
Chrysene	0.01		0.06
Benzo (b) fluoranthene	0.01		<0.01
Benzo (k) fluoranthene	0.01		0.39
Benzo (a) pyrene	0.01		1.3
Bibenzo (a,h) anthracene	0.01		<0.01
Benzo (ghi) perylene	0.01		1.3
Indeno (1,2,3-cd) pyrene	0.01		<0.01

MDL=Method Detection Limit.  
METHOD: EPA Method 8310

*Emma P. Popek*  
EMMA P. POPEK, Director







4080-C Pike Lane  
Concord, CA 94520  
800-544-3422 (In CA)  
800-423-7143 (Outside CA)  
415-685-7852

# CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

*Kelly Kline*

Phone #:

FAX #:

Address:

*OTE 577*

Project Number:

*2037978200.01*

Project Name:

*Morton Co. Eureka*

Project Location:

*Eureka*

Sampler Signature:

*Bob Robertson*

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix				Method Preserved				Sampling			
				WATER	SOIL	AIR	SLUDGE	OTHER	HCl	HNO <sub>3</sub>	ICE	NONE	OTHER	DATE	TIME
<i>1102</i>		<i>1</i>	<i>1 L</i>	<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>			<i>12/16/01</i>	<i>10:00 AM</i>
<i>1103</i>		<i>2</i>	<i>2 L</i>	<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>			<i>12/16/01</i>	<i>10:00 AM</i>
<i>1104</i>		<i>1</i>	<i>1 L</i>	<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>			<i>12/16/01</i>	<i>10:00 AM</i>

ANALYSIS REQUEST		OTHER	SPECIAL HANDLING
<input type="checkbox"/>	BTEX (602/8020)		
<input checked="" type="checkbox"/>	BTEX/TPH as Gasoline (602/8020/8015)		
<input type="checkbox"/>	TPH as Diesel (8015 or 8270)		
<input type="checkbox"/>	TPH as Jetfuel (8015 or 8270)		
<input type="checkbox"/>	Total Oil & Grease (413.1)		
<input type="checkbox"/>	Total Oil & Grease (413.2)		
<input type="checkbox"/>	Total Petroleum Hydrocarbons (418.1)		
<input type="checkbox"/>	EPA 601/8010		
<input type="checkbox"/>	EPA 602/8020		
<input type="checkbox"/>	EPA 608/8080		
<input type="checkbox"/>	EPA 608/8080-PCBs Only		
<input type="checkbox"/>	EPA 624/8240		
<input type="checkbox"/>	EPA 625/8270		
<input type="checkbox"/>	CAM - 17 Metals		
<input type="checkbox"/>	EPTOX - 8 Metals		
<input type="checkbox"/>	EPA - Priority Pollutant Metals		
<input type="checkbox"/>	LEAD(7420/7421/239.2)		
<input type="checkbox"/>	ORGANIC LEAD		
<input checked="" type="checkbox"/>	<i>Hold</i>		
<input type="checkbox"/>	PRIORITY ONE SERVICE (24 hr)		
<input type="checkbox"/>	EXPEDITED SERVICE (2-4 days)		
<input type="checkbox"/>	VERBALS/FAX		
<input type="checkbox"/>	SPECIAL DETENTION LIMITS (SPECIFY)		
<input type="checkbox"/>	SPECIAL REFILING REQUIREMENTS		

Remarks:  
*See*

Relinquished by:	Date	Time	Received by:
<i>[Signature]</i>			
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	<i>12/16/01</i>	<i>10:00 AM</i>	<i>[Signature]</i>





05/11/89 JP

PAGE 1 OF 2

Northwest Region  
 4080 Pike Lane  
 Concord, CA 94520

(415) 685-7852  
 (800) 544-3422 from inside California  
 (800) 423-7143 from outside California

WORK ORD#: C905169  
 CLIENT: CHIP PROKOP  
 GROUNDWATER TECHNOLOGY, INC.  
 4080-D PIKE LANE  
 CONCORD, CA 94520  
 PROJECT#: 203-799-8200.02-24  
 LOCATION: 7600 CHRISTIE AVE, EMERYVILLE

SAMPLED: 05/05/89 BY: M. CZIPKA  
 RECEIVED: 05/06/89  
 ANALYZED: 05/08/89 BY: P. HANNERS

MATRIX: WATER  
 UNITS: ug/L (ppb)

PARAMETER	MDL	SAMPLE # I.I.D.	01 MW-E	02 MW-3	03 RB MW-4	04 MW-4	05 MW-2
Benzene	0.5		3200	64	<0.5	1	<0.5
Toluene	0.5		690	250	3	<0.5	<0.5
Ethylbenzene	0.5		97	61	<0.5	<0.5	<0.5
Xylenes	0.5		330	110	<0.5	<0.5	<0.5
Total BTEX	0.5		4300	480	3	1	<0.5
Misc. Hydrocarbons (C4-C12)	1		1100	1300	15	17	18
Total Petroleum Hydrocarbons as Gasoline	1		5400	1800	18	18	18

MDL = Method Detection Limit; compound below this level would not be detected.  
 Results rounded to two significant figures.

METHOD: Modified EPA 5030/8020/8015



Northwest Region  
 4080 Pike Lane  
 Concord, CA 94520

PAGE 2 OF 2

(415) 685-7852  
 (800) 544-3422 from inside California  
 (800) 423-7143 from outside California

WORK ORD#: C905169

CLIENT: CHIP PROKOP  
 PROJECT#: 203-799-8200.02-24  
 LOCATION: 7600 CHRISTIE AVE, EMERYVILLE

MATRIX: WATER  
 UNITS: ug/L (ppb)

PARAMETER	MDL	SAMPLE # I.D.	06 MW-6	07 MW-5	08 MW-1	09 BT
Benzene	0.5		1	1	16000	220
Toluene	0.5		<0.5	<0.5	2100	28
Ethylbenzene	0.5		<0.5	<0.5	300	5
Xylenes	0.5		<0.5	<0.5	1200	690
Total BTEX	0.5		1	1	20000	940
Misc. Hydrocarbons 1 (C4-C12)			30	4	4000	4900
Total Petroleum Hydrocarbons as Gasoline	1		31	5	24000	5800

MDL = Method Detection Limit; compound below this level would not be detected.  
 Results rounded to two significant figures.

METHOD: Modified EPA 5030/8020/8015

*Emma P. Popek*  
 EMMA P. POPEK, Laboratory Director



05/15/89 JP

Page 1 of 2

Northwest Region  
4080 Pike Lane  
Concord, CA 94520

(415) 685-7852  
(800) 544-3422 from inside California  
(800) 423-7143 from outside California

WORK ORD#: C905170  
CLIENT: CHIP PROKOP  
GROUNDWATER TECHNOLOGY, INC.  
4080-D PIKE LANE  
CONCORD, CA 94520

PROJECT#: 203-799-8200.02-5  
LOCATION: 7600 CHRISTIE AVE, EMERYVILLE

SAMPLED: 05/05/89 BY: M. CZIPKA  
RECEIVED: 05/06/89  
ANALYZED: 05/09/89 BY: D. VLAHOGLIANI

MATRIX: Water  
UNITS: ug/L (ppb)

PARAMETER	MDL	SAMPLE # I.D.	01 MW-E	02 MW-3	03 MW-4	04 MW-2	05 MW-6
Total Petroleum Hydrocarbons as Diesel	10		100	110	60	40	140

MDL = Method Detection Limit; compound below this level would not be detected.  
Results rounded to two significant figures.

METHOD: Modified EPA 3510/8015



Northwest Region  
4080 Pike Lane  
Concord, CA 94520

Page 2 of 2

(415) 685-7852  
(800) 544-3422 from inside California  
(800) 423-7143 from outside California

WORK ORD#: C905170

CLIENT: CHIP PROKOP  
PROJECT#: 203-799-8200.02-5  
LOCATION: 7600 CHRISTIE AVE, EMERYVILLE

MATRIX: Water  
UNITS: ug/L (ppb)

PARAMETER	MDL	SAMPLE #	06	07	08		
		I.I.D.	MW-5	MW-1	BT		

Total Petroleum Hydrocarbons as Diesel	10	90	130	3400
--	----	----	-----	------

MDL = Method Detection Limit; compound below this level would not be detected.  
Results rounded to two significant figures.

METHOD: Modified EPA 3510/8015  
\*All samples contain severely biodegraded diesel.

*Emma P. Popek*  
EMMA P. POPEK, Laboratory Director



05/17/89 mh

PAGE 1 OF 2

**Northwest Region**  
4080 Pike Lane  
Concord, CA 94520

(415) 685-7852  
(800) 544-3422 from inside California  
(800) 423-7143 from outside California

WORK ORD#: C905171  
CLIENT: CHIP PROKOP  
GROUNDWATER TECHNOLOGY, INC.  
4080-D PIKE LANE  
CONCORD, CA 94520

PROJECT#: 203-799-8200.02-6  
LOCATION: 7600 CHRISTE AVE.  
EMERYVILLE, CA

SAMPLED: 05/05/89 BY: M. CZIPKA  
RECEIVED: 05/05/89 BY: E. LARSEN  
ANALYZED: 05/12/89 BY: A. MAMANGUN  
MATRIX: WATER L. CALLEN  
UNITS: mg/L

TEST RESULTS

PARAMETER	MDL	SAMPLE # I. D.	01A MWE	02A MW3	03A MW4	04A MW2	05A MWE
Arsenic	0.005		<0.005	0.005	0.005	<0.005	0.015
Cadmium	0.05		<0.05	<0.05	<0.05	<0.05	<0.05
Chromium	0.05		<0.05	<0.05	0.04	<0.05	<0.05
Lead	0.005		<0.005	<0.005	0.30	<0.005	0.02
Nickel	0.05		<0.05	<0.05	<0.05	<0.05	0.04
Zinc	0.05		<0.05	<0.05	<0.05	<0.05	0.14
Copper	0.05		<0.05	<0.05	<0.05	<0.05	0.08
Mercury	0.0002		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

MDL = Method Detection Limit; compound below this level would not be detected.  
METHODS: Hg by EPA 7471; Pb by EPA 3020/7421; Others by EPA 3020/6010.



Northwest Region  
 4080 Pike Lane  
 Concord, CA 94520

(415) 685-7852  
 (800) 544-3422 from inside California  
 (800) 423-7143 from outside California

WORK ORD#:C905171

CLIENT: CHIP PROKOP  
 PROJECT#: 203-799-8200.02-6  
 LOCATION: 7600 CHRISTE AVE.  
 EMERYVILLE, CA

MATRIX: WATER  
 UNITS: mg/L

TEST RESULTS

PARAMETER	MDL	SAMPLE # I.D.	06A MW5	07A MW1	08A BT
Arsenic	0.005		<0.005	<0.005	<0.005
Cadmium	0.05		<0.05	<0.05	<0.05
Chromium	0.05		<0.05	<0.05	<0.05
Lead	0.005		<0.005	<0.005	<0.005
Nickel	0.05		<0.05	<0.05	<0.05
Zinc	0.05		<0.05	<0.05	<0.05
Copper	0.05		<0.05	<0.05	<0.05
Mercury	0.002		<0.002	<0.002	<0.002

MDL = Method Detection Limit; cp\ompound  
 METHODS: Hg by EPA 7471; Pb by EPA 3020/7421; Others by EPA 3020/6010.

*Emma P. Popek*  
 EMMA P. POPEK, Director







4080-C Pike Lane  
Concord, CA 94520  
415-685-7852

800-544-3422 (In CA)  
800-423-7143 (Outside CA)

**CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST**

Project Manager:

Chip Paskop

Phone #:

Address:

611 J Concord

FAX #:

Project Number:

205799 8200 02

Project Name:

Merkin Co.

Project Location:

7600 Chinda Ave Folsom

Sampler Signature:

*[Signature]*

Sample ID	Lab # (Lab use only)	# CONTAINERS	Matrix				Method Preserved				Sampling			
			WATER	SOIL	AIR	SLUDGE	OTHER	HCl	HNO3	ICE	NONE	OTHER	DATE	TIME
MW5		1	W										5/15/94	
RG-MW1		1	W											
MW1		2	W											
MW1		1	W											
MW1		1	W											
BT		2	W											
BT		2	W											
BT		1	W											
BT		1	W											
BT		1	W											

ANALYSIS REQUEST												OTHER		SPECIAL HANDLING			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270)	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	EPTOX - 8 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD	

Metals Arsenic, Lead, Cadmium, Hg, Pb

Remarks: Pg 2 of 5

Relinquished by: *[Signature]* Date Time: \_\_\_\_\_  
 Received by: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date Time: \_\_\_\_\_  
 Received by: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date Time: 5/15/94  
 Received by Laboratory: *[Signature]*