



# Industrial Compliance

9838 Old Placerville Road Suite 100 Sacramento, CA 95827-3559  
916/369-8971 FAX 916/369-8370

ENVIRONMENTAL  
HEALTH  
SERVICES  
STUD 3824  
10  
10

August 17, 1995

STUD 3824

IC Project No. 05100535

Ms. Jennifer Eberle  
Alameda County Health Care Services Agency  
Department of Environmental Health  
Division of Hazardous Materials  
1131 Harbor Bay Parkway  
Alameda, California 94501

**Re: Second Quarter 1995 Ground Water Monitoring Report  
Southern Pacific Transportation Company  
1399 Wood Street - Oakland, California**

Dear Ms. Eberle:

Industrial Compliance (IC), on behalf of Southern Pacific Transportation Company (SPTCo), has prepared the attached Second Quarter 1995 Ground Water Monitoring Report for the SPTCo site located at 1399 Wood Street, Oakland, California. The second quarter report incorporates several of the format changes that you suggested in your May 31, 1995 letter to Mr. Mike Grant of SPTCo and during your May 31, 1995 telephone discussion with Mr. James Ackerman of IC's Oakland Field Office. These changes include deletion of site background text and figures and combination of current and historic data tables for ground water elevation measurements and analytical results.

If you have any questions regarding this report, please contact either of the undersigned at (510) 238-9540 or (916) 369-8971.

Sincerely,

INDUSTRIAL COMPLIANCE

James B. Ackerman  
Project Geologist

Richard L. Bateman, R.G.  
Principal Hydrogeologist

JBA/RLB/dao

Attachment

i880-295.ltr/08-17-95/u/kwrigth/keydata/i-880/letters

Denver • Phoenix • Kansas City • Dallas • Houston • Los Angeles • Sacramento • Little Rock • Knoxville



Ms. Jennifer Eberle

August 17, 1995

Page 2

cc: Mr. John Moe, Southern Pacific Transportation Company (with attachment)  
Mr. Darrell J. Maxey, Oakland Program Office, Southern Pacific Transportation  
Company (with attachment)  
Ms. Gina Kathuria, California Regional Water Quality Control Board, San Francisco  
Region (with attachment)





**Industrial Compliance**

9838 Old Placerville Road Suite 100 Sacramento, CA 95827-3559  
916/369-8971 FAX 916/369-8370

**SECOND QUARTER 1995  
GROUND WATER MONITORING REPORT**

**Southern Pacific Transportation Company  
1399 Wood Street  
Oakland, California**

**IC Project No. 05100535**

**Prepared For:**

**Southern Pacific Transportation Company  
One Market Plaza  
San Francisco, CA 94105**

**August 17, 1995**

Denver • Phoenix • Kansas City • Dallas • Houston • Los Angeles • Sacramento • Little Rock • Knoxville



ENVIRONMENTAL  
10/10/95  
95 AUG 10 PM 3:10

**SECOND QUARTER 1995  
GROUND WATER MONITORING REPORT**

**Southern Pacific Transportation Company  
1399 Wood Street  
Oakland, California**

Prepared By:

*James Ackerman / M. D. Dwyer*

James B. Ackerman  
Project Geologist

Reviewed By:

*Richard L. Bateman*

Richard L. Bateman, R.G.  
Principal Hydrogeologist

## TABLE OF CONTENTS

1.0	INTRODUCTION . . . . .	1
2.0	FIELD INVESTIGATION . . . . .	3
2.1	Monitoring Well Water Level Data . . . . .	3
2.2	Monitoring Well Purging . . . . .	3
2.3	Monitoring Well Sampling . . . . .	6
2.4	Quality Assurance/Quality Control . . . . .	8
3.0	ANALYTICAL RESULTS . . . . .	9
4.0	DISCUSSION . . . . .	13
5.0	GLOSSARY OF ACRONYMS . . . . .	18

## FIGURES

Figure 1	Site Location Map . . . . .	2
Figure 2	Contour Map of Ground Water Elevation, June, 1995 . . . . .	5
Figure 3	Estimated Lateral Extent of TPH as Gasoline in Ground Water, June, 1995 . . . . .	14
Figure 4	Estimated Lateral Extent of Diesel Range Compounds in Ground Water, June, 1995 . . . . .	15
Figure 5	Hydrographs of Ground Water Elevation . . . . .	17

## TABLES

Table 1	Ground Water Elevation Data . . . . .	4
Table 2	Ground Water Purge Characterization Data, June, 1995 . . . . .	7
Table 3	Ground Water Analytical Results . . . . .	10



**TABLE OF CONTENTS (continued)**

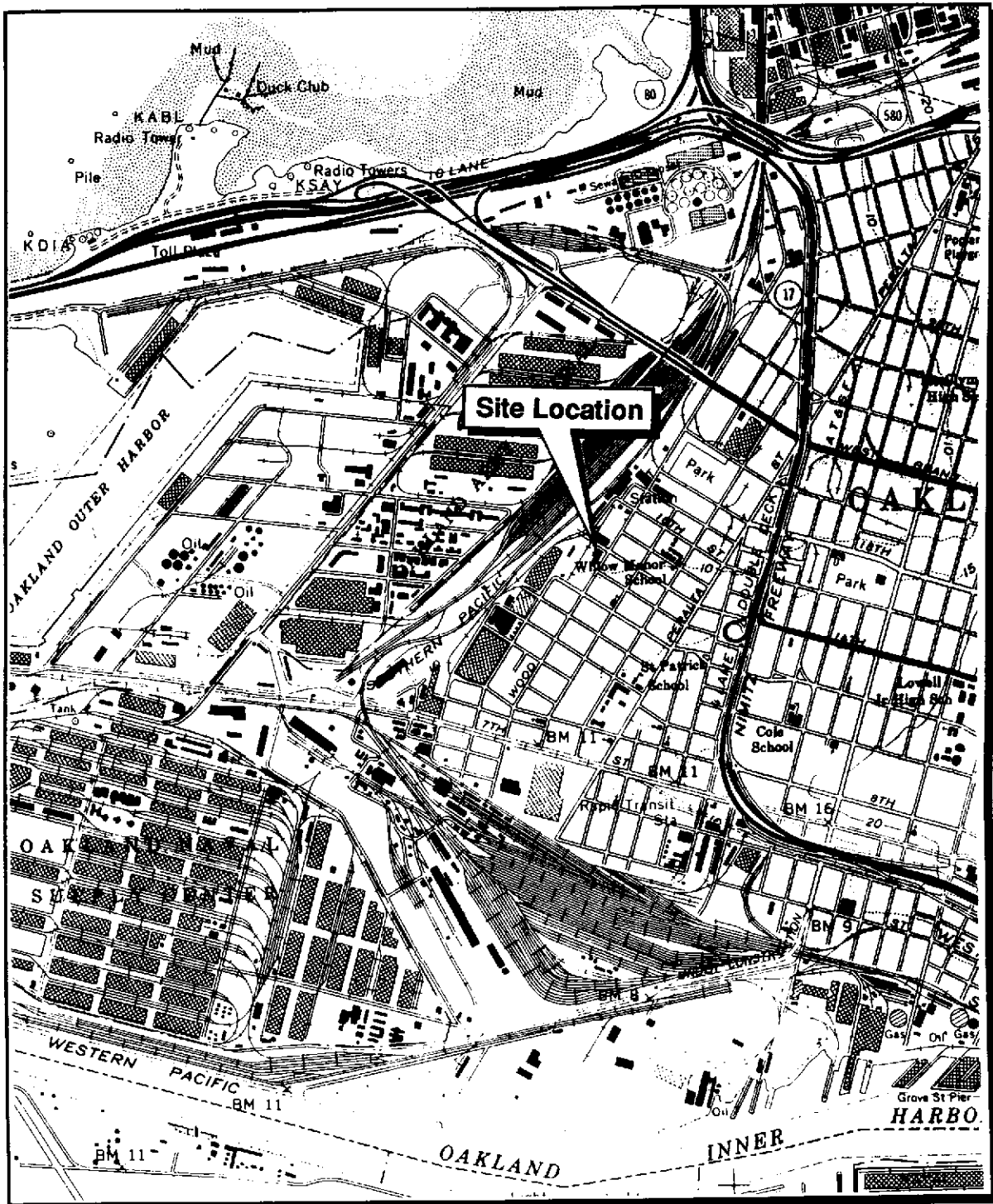
**APPENDICES**

Appendix A	Ground Water Elevation Measurement and Purge Characterization and Sample Logs
Appendix B	Chain-of-Custody Document
Appendix C	Analytical Laboratory Reports, Ground Water Samples
Appendix D	Ground Water Elevation Contour Maps, Previous Monitoring Events



## 1.0 INTRODUCTION

Industrial Compliance (IC), on behalf of Southern Pacific Transportation Company (SPTCo), is conducting quarterly ground water monitoring at the SPTCo property located at 1399 Wood Street, Oakland, California (Figure 1). This report presents second quarter 1995 ground water monitoring results. Second quarter water level measurement and ground water sampling activities occurred on June 28, 1995. The second quarter 1995 monitoring is the fifth quarterly monitoring event for the site.



Approximate Scale in Feet  
 0 2000

**Figure 1**  
**Site Location Map**  
**Southern Pacific Transportation Company**  
**1399 Wood Street**  
**Oakland, California**

Reference:  
 USGS 7.5 Minute Topographic Map  
 Oakland West Quadrangle  
 California



**Industrial Compliance**

A Subsidiary of SP  
 Environmental Systems, Inc.





## 2.0 FIELD INVESTIGATION

This section discusses the procedures and protocol used for the collection of monitoring well water level data and ground water samples for laboratory analyses.

### 2.1 Monitoring Well Water Level Data

On June 28, 1995, prior to conducting any ground water sampling, the depth to ground water was measured in all three monitoring wells on site. All measurements were taken relative to a surveyed reference point of known elevation at the top of each well casing, using a water level probe with an accuracy of 0.01 feet. The ground water elevation measurement log is included in Appendix A. Monitoring well ground water elevation data for this quarter are summarized in Table 1. Figure 2 is a ground water elevation contour map for this quarter. Ground water elevations for the second quarter of 1995 ranged from 3.98 to 4.89 feet above mean sea level (MSL). The direction of ground water flow is to the northeast. The local hydraulic gradient, as calculated from the June 28, 1995 water level data, is approximately 0.008.

### 2.2 Monitoring Well Purging

After measurement of the ground water level in monitoring wells MW-1 and MW-3, the saturated well volume was calculated by subtracting the depth to ground water from the total depth of the well and multiplying the resultant length by the number of gallons per foot of casing. Prior to sample collection, three saturated well volumes were purged from each of the wells by hand-bailing. During purging, ground water characterization data consisting of temperature, electrical conductivity and pH, were measured from the initial water removed from the well, and at least three times during purging. The ground water in each well was assumed to be representative of the formation after a minimum of three well volumes were



TABLE 1  
GROUND WATER ELEVATION DATA

Monitoring Well <sup>a</sup>	Date Measured	Time Measured	Top of Casing Elevation <sup>b</sup> (feet MSL)	Depth to Ground Water <sup>c</sup> (feet TOC)	Ground Water Elevation <sup>d</sup> (feet MSL)
MW-1	06/29/94	0900	7.74	3.36	4.38
	09/30/94	1000	7.71 <sup>e</sup>	4.56	3.15
	12/19/94	0825		1.48	6.23
	03/27/95	0807		1.24	6.47
	06/28/95	0905		2.82	4.89
MW-2	06/29/94	0900		7.00	3.94
	09/30/94	1015	4.04		2.96
	12/19/94	0809	2.06		4.94
	03/27/95	0815	1.64		5.36
	06/28/95	1010	2.58		4.42
MW-3	06/29/94	0900	7.43	3.50	3.84
	09/30/94	1030	7.32 <sup>e</sup>	4.52	2.80
	12/19/94	0810		7.32	4.36
	03/27/95	0810		3.42	3.90
	06/28/95	1015		3.34	3.98

a See Figure 2 for approximate location of monitoring wells.

b Top of casing elevation is the elevation, in feet above mean sea level, of a point marked on the top of the well casing (generally north side) which has been surveyed by a licensed surveyor.

c Depth to ground water measured from top of casing.

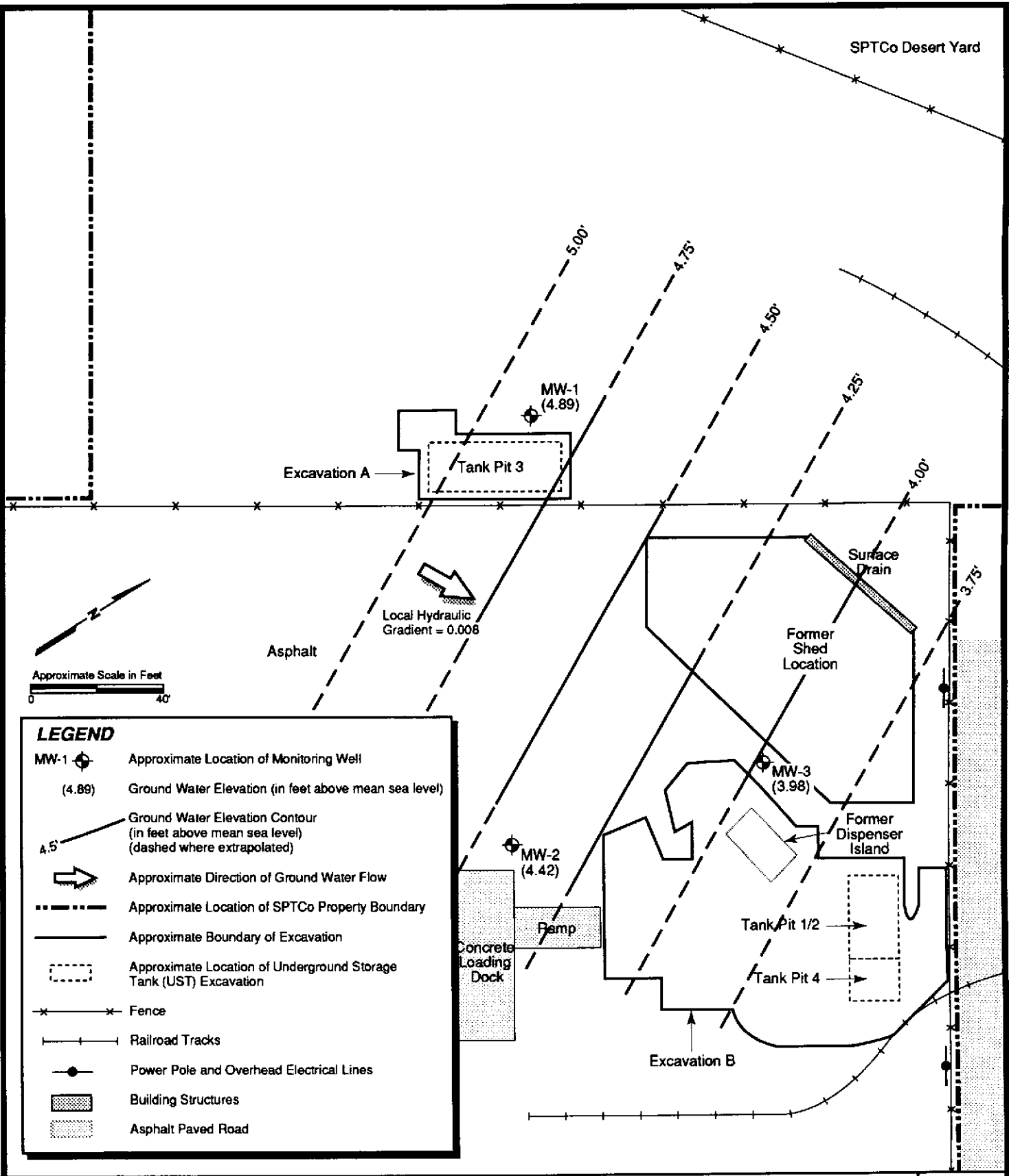
d Ground water elevation calculated by subtracting the depth to ground water from the top of casing elevation.

e Well resurveyed in September of 1994.

MSL Mean sea level

TOC Top of casing





**LEGEND**

- MW-1 Approximate Location of Monitoring Well  
(4.89) Ground Water Elevation (in feet above mean sea level)
- Ground Water Elevation Contour (in feet above mean sea level) (dashed where extrapolated)
- Approximate Direction of Ground Water Flow
- Approximate Location of SPTCo Property Boundary
- Approximate Boundary of Excavation
- Approximate Location of Underground Storage Tank (UST) Excavation
- Fence
- Railroad Tracks
- Power Pole and Overhead Electrical Lines
- Building Structures
- Asphalt Paved Road

Approximate Scale in Feet  
0 40'

	<b>Industrial Compliance</b>
	A Subsidiary of SP Environmental Systems, Inc.
Project No.: 05100535	Date: 07/26/95
Drawn By: Patti Decker	Checked By: Richard Bateman

**CONTOUR MAP OF GROUND WATER ELEVATION**  
**JUNE, 1995**  
**SOUTHERN PACIFIC TRANSPORTATION COMPANY**  
**1399 WOOD STREET**  
**OAKLAND, CALIFORNIA**

Figure:	<b>2</b>
Page:	<b>5</b>
Scale:	as shown

removed and consecutive parameter readings were within 10 percent. After purging was completed, each well was allowed to recover to at least 90 percent of the pre-purge water level prior to sampling. Purge water was collected in 55-gallon Department of Transportation approved drums. Purge water was subsequently disposed of at the SPTCo water treatment plant located in the West Oakland Yard, after analytical results from the ground water sampling indicated that the purge water met treatment plant influent requirements. Ground water purge characterization data are summarized in Table 2. Purge characterization logs are included in Appendix A.

### 2.3 Monitoring Well Sampling

Ground water samples were collected from monitoring wells MW-1 and MW-3 using new, disposable polyethylene bailers. Per recently authorized changes to the monitoring program for this site (Alameda County letter to SPTCo dated June 27, 1995), MW-2 was not sampled. Ground water samples were collected from MW-1 and MW-3 in laboratory-supplied bottles of appropriate volumes and with required preservatives for the intended analyses. Volatile organic analysis (VOA) sample bottles were filled to capacity, sealed with Teflon-lined lids, and checked for air bubbles. If air bubbles were detected, the vial was reopened, additional sample water added, and the vial resealed.

After sample collection was completed, each sample was labeled with a unique sample number, the site name, date of collection, time of collection, initials of collector, and any other pertinent information. The samples were then placed in a chilled ice chest for transport to Chromalab, Inc. Environmental Services (Chromalab) for analysis. A chain-of-custody form was completed concurrent with sample collection and accompanied the samples upon transport to the laboratory. Sample logs are included in Appendix A. The chain-of-custody document is included as Appendix B.

TABLE 2  
GROUND WATER PURGE CHARACTERIZATION DATA  
JUNE, 1995

Monitoring Well <sup>a</sup>	Date Measured	Purge Volume (gallons)	Electrical Conductivity ( $\mu$ mhos/cm)	Temperature ( $^{\circ}$ F)	Field pH (units)
MW-1	06/28/95	0	708	70.3	7.32
		7	705	69.9	7.12
		14	705	69.2	7.07
		21	710	69.5	6.95
MW-2	06/28/95	NS	NS	NS	NS
MW-3	06/28/95	0	809	72.7	7.40
		7	849	72.6	7.07
		14	840	72.8	7.10
		21	854	73.9	7.18

<sup>a</sup> See Figure 2 for approximate location of monitoring wells.

$\mu$ mhos/cm Micromhos per centimeter

$^{\circ}$ F Degrees Fahrenheit

NS Not Sampled

Note: Purge characterization logs included in Appendix A.



Ground water from MW-1 was analyzed for hydrocarbons in the diesel range ( $C_{13} - C_{22}$ ) by Environmental Protection Agency (EPA) Method 8015 Modified. Ground water from MW-3 was analyzed for total petroleum hydrocarbons as gasoline (TPH-G) by EPA Method 8015 Modified and for benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020. This reduced analytical program is again based on the recently authorized changes to the monitoring program for this site.

#### 2.4 Quality Assurance/Quality Control

To evaluate the integrity of the ground water sampling/analysis process, a duplicate ground water sample was collected from MW-3 using the procedures previously described in Section 2.3. This duplicate was analyzed for the same constituents as the original ground water sample.

To assess the potential for cross-contamination of the ground water samples during transport to the laboratory, one trip blank was prepared by Chromalab prior to sampling and accompanied the ground water samples during shipment to the laboratory. The trip blank was analyzed for TPH-G and BTEX compounds only.

In addition, one equipment blank was prepared by pouring deionized (DI) water through the sampling equipment into the sample bottles. The equipment blank was analyzed for TPH-G, BTEX and diesel range compounds ( $C_{13} - C_{22}$ ).

### 3.0 ANALYTICAL RESULTS

Second quarter 1995 ground water samples were analyzed by Chromalab for the suite of constituents listed in Section 2.3. Analytical results are listed in Table 3. Analytical laboratory reports are included as Appendix C. The following is a summary of the second quarter, 1995 analytical results:

- \* TPH-G was detected in MW-3 at a concentration of 280 micrograms per liter ( $\mu\text{g/L}$ ).
- \* Benzene, toluene, and xylenes were detected in MW-3 at concentrations of 1.3  $\mu\text{g/L}$ , 1.2  $\mu\text{g/L}$  and 1.8  $\mu\text{g/L}$  respectively; ethylbenzene was not detected at or above the reporting limit.
- \* Hydrocarbons in the diesel range ( $\text{C}_{13}$  -  $\text{C}_{22}$ ) were detected in MW-1 at a concentration of 130  $\mu\text{g/L}$ .

The analytical results for the duplicate ground water sample collected from MW-3 were consistent with the analytical results for the original sample.

None of the analyzed constituents were detected at or above their respective reporting limits in either the trip blank or the equipment blank.

All laboratory procedures (holding times, methods used, method blanks, documentation, etc.) and subsequent results were monitored throughout the analytical process according to standard quality assurance/quality control (QA/QC) procedures. In addition, all laboratory reports were evaluated as part of QA/QC procedures for ground water monitoring. The



**TABLE 3  
GROUND WATER ANALYTICAL RESULTS**

Well Location	Date Sampled	Total Petroleum Hydrocarbons <sup>a</sup> (µg/L)		Volatile Organic Compounds <sup>b</sup> (µg/L)				PCBs <sup>c</sup> (µg/L)	Sodium Chloride <sup>d</sup> (mg/L)	Total Dissolved Solids <sup>e</sup> (mg/L)
		Gasoline	Diesel	Benzene	Toluene	Ethylbenzene	Xylenes			
MW-1	06/29/94	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	40	410
	09/30/94	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	NA	630
	12/19/94	< 50	160 <sup>f</sup>	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	40	510
	03/27/95	< 50	97	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	110	550
	06/28/95	NA	130	NA	NA	NA	NA	NA	NA	NA
MW-2	06/29/94	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0	48	680
	09/30/94	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	NA	670
	12/19/94	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	35	900
	03/27/95	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	38	670
	06/28/95	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	06/29/94	110	< 50	< 0.5	0.9	< 0.5	0.8	< 1.0	60	850
	09/30/94	160	< 50	0.8	1.6	< 0.5	2.3	< 0.5	NA	880
	12/19/94	410	< 50	5.1	4.5	< 0.5	3.6	< 0.5	49	1020
	03/27/95	290	< 50	2.4	1.2	< 0.5	2.8	< 0.5	38	810
	06/28/95	280	NA	1.3	1.2	< 0.5	1.8	NA	NA	NA
Duplicate (MW-3)	06/28/95	290	NA	1.4	1.3	< 0.5	2.0	NA	NA	NA
Equipment Blank	06/28/95	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	NA	NA	NA
Trip Blank	06/28/95	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	NA	NA	NA
Cal DHS MCLs <sup>g</sup>		NE	NE	1	100 <sup>h</sup>	680	1,750	0.5 <sup>i</sup>	NE	500



TABLE 3 (continued)  
GROUND WATER ANALYTICAL RESULTS

- a** Analyzed by EPA Method 8015 Modified (June 29, 1994 samples analyzed by EPA Method 8260 Modified).
  - b** Analyzed by EPA Method 8020 (June 29, 1994 samples analyzed by EPA Method 8260 Modified).
  - c** Analyzed by EPA Method 608 Modified.
  - d** Analyzed by EPA Method 8020.
  - e** Analyzed by EPA Method 160.1
  - f** Non-typical diesel chromatographic pattern.
  - g** California Department of Health Services (DHS) Maximum Contaminant Levels (MCLs) for drinking water (California RWQCB, May, 1993, Compilation of Water Quality Goals).
  - h** California DHS action level for drinking water (California RWQCB, May, 1993, Compilation of Water Quality Goals).
  - i** U.S. Environmental Protection Agency (USEPA) MCLs for drinking water (California RWQCB, May, 1993, Compilation of Water Quality Goals).
- µg/L** Micrograms per liter
- mg/L** Milligrams per liter
- <** Symbol indicates constituents not detected above method detection or reporting limits as noted.
- NA** Not analyzed.
- NS** Not sampled.
- NE** No MCL established.



analytical data included in this second quarter, 1995 report are considered quantitatively valid.



#### 4.0 DISCUSSION

Based on previous monitoring data and data collected during the second quarter, 1995 ground water monitoring event at the 1399 Wood Street site (Table 3), the chemical compounds present in site ground water consist primarily of petroleum hydrocarbons in the gasoline and diesel range. Figure 3 depicts the estimated lateral extent of TPH-G in ground water.

Gasoline impacted ground water is limited to the area around the former location of the fuel dispensing island, as indicated by the detection of gasoline hydrocarbons in monitoring well MW-3 only. Figure 4 shows the estimated lateral extent of TPH-D in ground water. Diesel impacted ground water is limited to the area around the former location of Tank 3 as indicated by the detection of hydrocarbons in the diesel range ( $C_{13} - C_{22}$ ) in MW-1 exclusively. Benzene was the only constituent detected this quarter at a concentration which exceeds the California Department of Health Services (DHS) maximum contaminant level (MCL) for drinking water. Monitoring well MW-3 contained benzene at a concentration of  $1.3 \mu\text{g/L}$ . The California DHS MCL for benzene is  $1 \mu\text{g/L}$ .

Table 3 summarizes ground water analytical data collected during this and all previous sampling events. A review of these analytical data shows that during past sampling events, TPH-G and BTEX compounds have been detected in MW-3 but have not been detected in MW-1 or MW-2. The concentration of TPH-G this quarter falls within the range of results from previous monitoring events ( $110 \mu\text{g/L}$  to  $410 \mu\text{g/L}$ ). In MW-3, concentrations of benzene and xylenes ( $1.3 \mu\text{g/L}$  and  $1.8 \mu\text{g/L}$ , respectively) decreased this quarter in comparison with the analytical results of the previous two quarters ( $5.1 \mu\text{g/L}$  and  $2.4 \mu\text{g/L}$ , and  $3.6 \mu\text{g/L}$   $2.8 \mu\text{g/L}$ , respectively), while the concentration of toluene has remained the same at  $1.2 \mu\text{g/L}$ . Ethylbenzene has not been detected in MW-3 during any sampling event.

Ground water elevation contour maps for all previous monitoring events are included in Appendix D. Table 1 lists all ground water elevation data collected to date. A comparison



MW-1  
(NA)

Excavation A

Tank Pit 3

Surface  
Drain

Former  
Shed  
Location

Asphalt

Former  
Dispenser  
Island

Tank Pit 1/2

Tank Pit 4

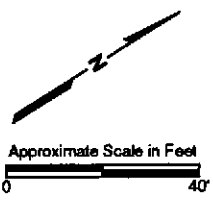
Excavation B

MW-2  
(NA)

MW-3  
(280)

Ramp

Concrete  
Loading  
Dock



**LEGEND**

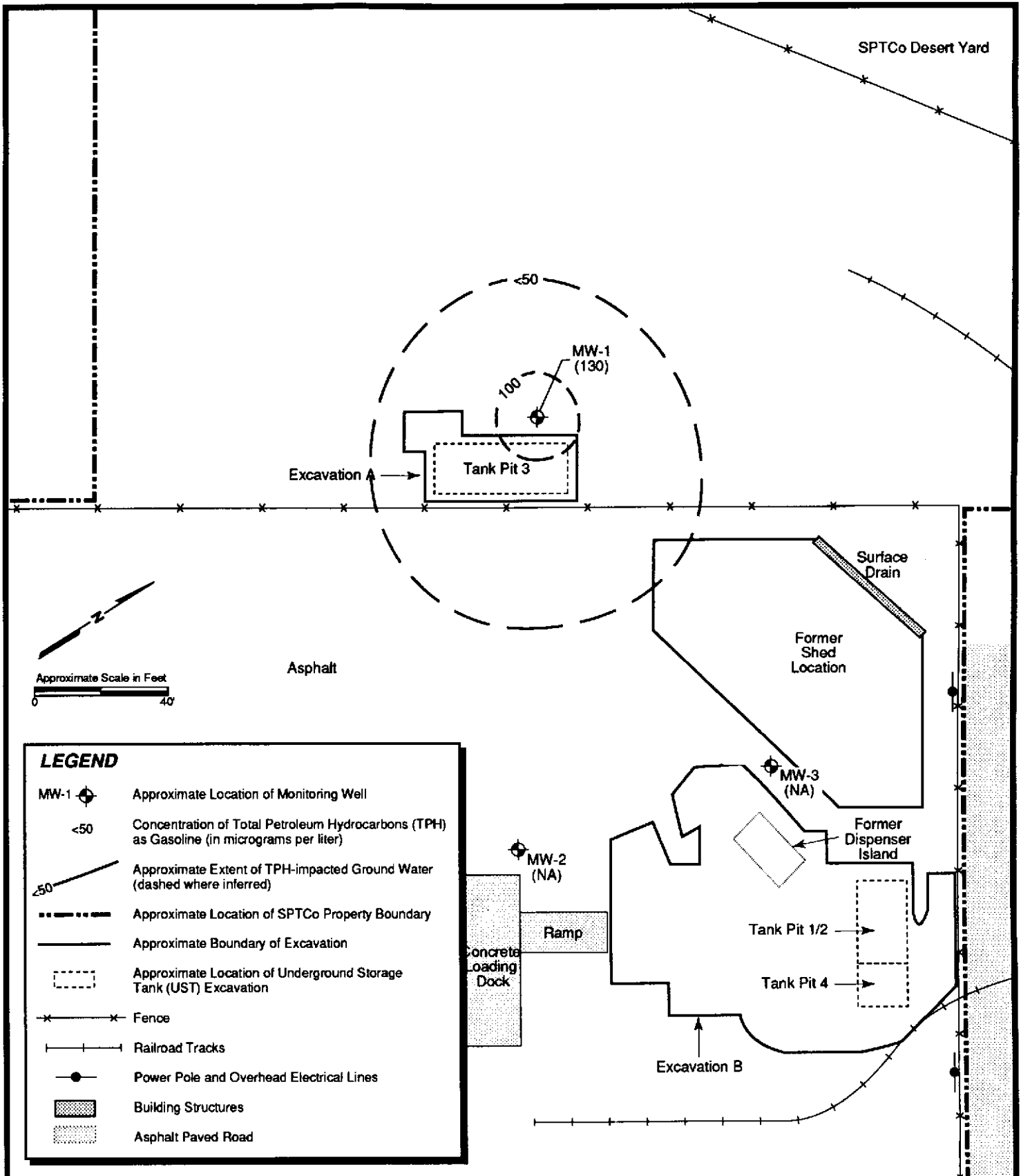
- MW-1 Approximate Location of Monitoring Well
- <50 Concentration of Total Petroleum Hydrocarbons (TPH) as Gasoline (in micrograms per liter)
- Approximate Extent of TPH-impacted Ground Water (dashed where inferred)
- Approximate Location of SPTCo Property Boundary
- Approximate Boundary of Excavation
- Approximate Location of Underground Storage Tank (UST) Excavation
- Fence
- Railroad Tracks
- Power Pole and Overhead Electrical Lines
- Building Structures
- Asphalt Paved Road

**Industrial Compliance**  
A Subsidiary of SP Environmental Systems, Inc.

Project No.: 05100535	Date: 05/02/95
Drawn By: Patti Decker	Checked By: Richard Bateman

**ESTIMATED LATERAL EXTENT OF TPH AS GASOLINE IN GROUND WATER**  
**JUNE, 1995**  
**SOUTHERN PACIFIC TRANSPORTATION COMPANY**  
**1399 WOOD STREET**  
**OAKLAND, CALIFORNIA**

Figure:	<b>3</b>
Page:	<b>14</b>
Scale:	as shown



**Industrial Compliance**  
 A Subsidiary of SP Environmental Systems, Inc.

Project No.: 05100535      Date: 07/26/95

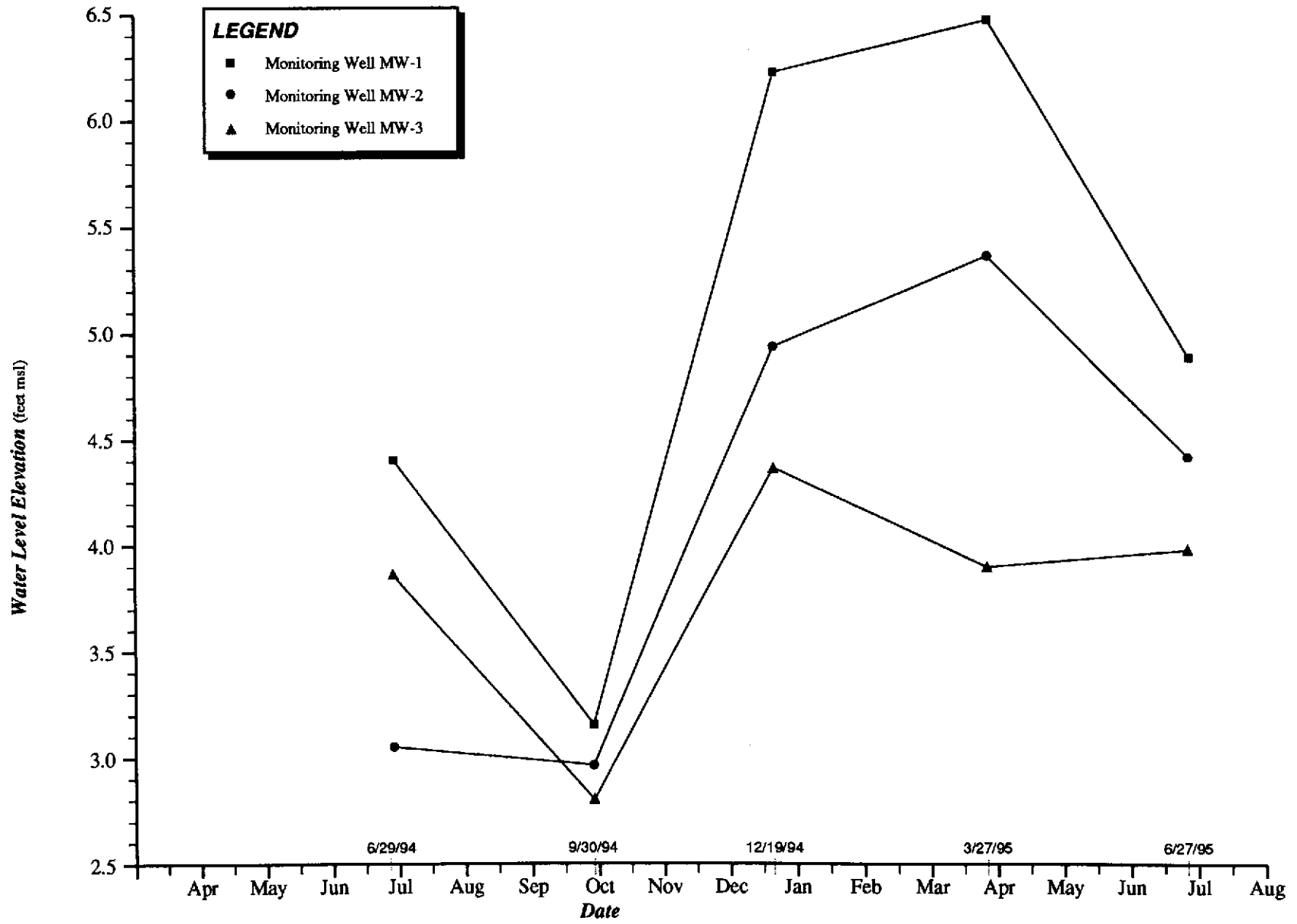
Drawn By: **Patil Decker**      Checked By: **Richard Bateman**

**ESTIMATED LATERAL EXTENT OF DIESEL RANGE COMPOUNDS IN GROUND WATER**  
**JUNE, 1995**  
**SOUTHERN PACIFIC TRANSPORTATION COMPANY**  
**1399 WOOD STREET**  
**OAKLAND, CALIFORNIA**

Figure: **4**  
 Page: **15**  
 Scale: **as shown**

of ground water elevation data collected during the second quarter, 1995 sampling event with ground water elevations measured during the previous sampling event, indicates a decrease in ground water elevation in wells MW-1 and MW-2, whereas ground water elevation in MW-3 has essentially remained the same. The average net change for all the wells is a decrease of 0.08 feet. The local hydraulic gradient for the second quarter, 1995 was calculated to be 0.008 which has decreased greatly relative to the gradient for March, 1995 of 0.024. The direction of ground water flow to the northeast has remained the same as last quarter. The observed decrease in ground water elevation in MW-1 and MW-2 is most likely due to seasonal variation. Figure 5 shows hydrographs of ground water elevation for all monitoring wells.





	Project No.: <b>05100535</b>	Date: <b>07/26/95</b>
	Drawn By: <b>Patti Decker</b>	Checked By: <b>Richard Bateman</b>

**HYDROGRAPHS OF GROUND WATER ELEVATION  
SOUTHERN PACIFIC TRANSPORTATION COMPANY  
1399 WOOD STREET  
OAKLAND, CALIFORNIA**

Figure:	<b>5</b>
Page No.:	<b>17</b>
Scale:	as shown

## 5.0 GLOSSARY OF ACRONYMS

BTEX	Benzene, toluene, ethylbenzene and xylenes
DHS	Department of Health Services
DI	Deionized
EPA	Environmental Protection Agency
IC	Industrial Compliance
MCLs	Maximum contaminant levels
MSL	Mean sea level
QA/QC	Quality Assurance/Quality Control
SPTCo	Southern Pacific Transportation Company
TPH-G	Total petroleum hydrocarbons as gasoline
VOA	Volatile organic analysis
$\mu\text{g/L}$	Micrograms per liter





**APPENDIX A**  
**GROUND WATER ELEVATION MEASUREMENT AND**  
**PURGE CHARACTERIZATION AND SAMPLE LOGS**



**GROUND WATER ELEVATION MEASUREMENT LOG**

Sheet 1 of 1

Project Name: 1399 WOOD ST  
 Date: 6-28-95

Project No. 05100535  
 Equipment: SOLINST PROBE

Task/Phase: 01 / 98000  
 Weather: OVERCAST

Well Number	Reference Elevation (feet-MSL)	Time (military)	Depth to Water (feet)	Depth to Product (feet)	Total Depth (feet)	PT (feet)	PT x 0.8 (feet)	Adjusted DTW <sup>1</sup> (feet)	Ground Water Elevation <sup>2</sup> (feet-MSL)
MCW-1	7.71	0905	2.82	—	13.70	—	—	2.82	4.89
MCW-2	7.00	1010	2.58	—	14.10	—	—	2.58	4.42
MCW-3	7.32	1015	3.34	—	14.10	—	—	3.34	3.98
Comments:									

- 1 Adjusted depth to water = DTW - (PT x 0.8)
- 2 Ground water elevation = Reference elevation - Adjusted DTW
- MSL Mean sea level
- DTW Depth to water (to 0.01 foot)
- PT Product thickness (0.01 foot)

Signature 



Industrial Compliance

A Subsidiary of SP Environmental Systems, Inc.



# PURGE CHARACTERIZATION AND SAMPLE LOG

Project Number: 05100535 Project Name: 1399 WOOD ST. Date: 6/28/95  
 Well Number: MW 1 Sampler: JEFF ROTH Weather: OVERCAST

Military Time	0911	0918	0930	0937	0945	0950	
Gallons Purged	0	7	14	21	5	E	Depth to bottom (DB): <u>13.70</u>
Purge Rate	-	-	-	-	S	Q	Depth to water (DW): <u>2.82</u>
pH	7.32	7.12	7.07	6.95	A	U	Height of water column (H) = DB - DW: <u>10.88</u>
Conductivity	70.2	70.4	70.5	71.0	M	I	One casing volume (CV) = H x multiplier: <u>7.1</u>
Temperature (°F)	70.3	69.9	69.2	69.5	P	P	Three casing volumes (3CV): <u>21.3</u>
Salinity (0/00)	-	-	-	-	L	M	Multipliers = 2" well = 0.16 gallons/foot
Turbidity	Low	MED	MED	HIGH	E	E	4" well = 0.65 gallons/foot
Color	CLR	BRN	BRN	BRN	D	N	6" well = 1.47 gallons/foot
Water Level Casing					-	T	8" well = 2.61 gallons/foot
Calibration	pH:						S.C.:

Sample #	Quantity	Volume	Type	Preserv.	Analysis	Lab	Sample Equip.	Purge Equip.	Field Comments
MW 1	1	1 LT.	AMBER	HCL	TPH DIESEL	CHROM	DISP. BAILER	TEFLON BAILER	
EQUIP	2	40 ml	VOA	HCL	TPH GAS	CHROM	DISP. BAILER	TEFLON BAILER	
	1	1 LT.	AMBER	HCL	TPH DIESEL	"	"	"	
TRIP	2	40 ml	VOA	HCL	TPH GAS	CHROM			LAB PREPARED TRIP BLANK
Cleaning:	WASHED BAILER w/ ALCONOX / RINSED w/ DI WATER								
Comments:									

Sampler's Signature: JEFF ROTH



Industrial Compliance

A Subsidiary of SP Environmental Systems, Inc.



# PURGE CHARACTERIZATION AND SAMPLE LOG

Project Number: 05100535 Project Name: 1399 WOOD ST Date: 6/26/95  
 Well Number: MW-3 Sampler: JEFF ROTH Weather: OVERCAST

Military Time	1018	1025	1032	1040	1050	1055	
Gallons Purged	0	7	14	21	5	1	Depth to bottom (DB): 14.10
Purge Rate	—	—	—	—	5	4	Depth to water (DW): 3.34
pH	7.40	7.07	7.10	7.18	A	P	Height of water column (H) = DB - DW: 10.76
Conductivity	809	849	840	854	M	L	One casing volume (CV) = H x multiplier: 7.0
Temperature (°F)	72.7	72.6	72.8	73.9	P	1	Three casing volumes (3CV): 21.0
Salinity (0/00)	—	—	—	—	L	L	Multipliers = 2" well = 0.16 gallons/foot
Turbidity	LOW	LOW	LOW	LOW	E	A	4" well = 0.65 gallons/foot
Color	CLR	CLR	CLR	CLR	D	T	6" well = 1.47 gallons/foot
Water Level Casing						E	8" well = 2.61 gallons/foot
Calibration	pH:						S.C.:

Sample #	Quantity	Volume	Type	Preserv.	Analysis	Lab	Sample Equip.	Purge Equip.	Field Comments
MW-3	2	40ML	100A	HCL	<sup>BTX</sup> TPH-GAS	CHROM	DISP. BAILEY	TELEFOK BAILEY	
MW 3D	2	40ML	100B	HCL	<sup>BTX</sup> TPH-GAS	CHROM	DISP BAILEY	TELEFOK BAILEY	DUPLICATE WATER SAMPLE
Cleaning:	WASHED BAILEY WITH ALCOHOL / RINSED WITH DI WATER								
Comments:									

Sampler's Signature: Jeff Roth

**APPENDIX B**  
**CHAIN-OF-CUSTODY DOCUMENT**



911/94299-94303

UBM #: 9506411 REP: GC  
 TIENT: INDCOMP-OAK  
 VE: 07/06/95  
 EF #: 22693

22693

No. 20564

INDUSTRIAL COMPLIANCE • 9838 OLD PLACERVILLE ROAD, SUITE 100 • SACRAMENTO, CA 95827-3559 • Phone 916-369-8971 • FAX 916-369-8370

PROJECT NAME 1399 WOOD ST.		PROJECT LOCATION OAKLAND, CA	
PROJ. NO. 05100-535	PROJECT CONTACT JAMES ACKERMAN	PROJECT TELEPHONE NO. (510) 238-9540	
CLIENT'S REPRESENTATIVE		PROJECT MANAGER/SUPERVISOR	

ANALYSIS DESIRED  
 (INDICATE SEPARATE CONTAINERS)  
 BTEX / TPH GAS & LIQ  
 TPH DIESEL BOLS

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED	REMARKS
1	MW 1	6-28	1445		X	MONITOR WELL # 1	2	X	
2	MW 3	6-28	1050		X	MONITOR WELL # 3	2	X	
3	EQUIP	6-28	0950		X	EQUIPMENT BLANK	2	X X	EQUIPMENT BLANK
4	TRIP	6-28			X	TRIP BLANK	2	X	LAB PREPARED TRIP BLANK
5	MW 3D	6-28	1055		X	DUPLICATE OF MW 3	2	X	DUPLICATE SAMPLE OF MW 3
6									
7									
8									
9									
10									

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME	REMARKS
1	1-5	Jeff Roth	K. Am. Adler	6/28/95	15:53	5 DAY TAT
2						
3						PO # 00876
4						SAMPLER'S NAME: JEFF ROTH SAMPLER'S SIGNATURE: Jeff Roth

**APPENDIX C**  
**ANALYTICAL LABORATORY REPORTS**  
**GROUND WATER SAMPLES**



# CHROMALAB, INC.

Environmental Services (SDB)

July 6, 1995

Submission #: 9506411

INDUSTRIAL COMPLIANCE-OAKLAND

Atten: James Ackerman

Project: 1399 WOOD ST.

Project#: 05100-535

Received: June 28, 1995

re: 4 samples for Gasoline and BTEX analysis.

Method: EPA 5030/8015M/602/8020

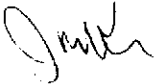
Sampled: June 28, 1995

Matrix: WATER

Run: 7483-J

Analyzed: July 5, 1995

Spl #	Client Sample ID	Gasoline (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
94300	MW 3	0.28	1.3	1.2	N.D.	1.8
94301	EQUIP	N.D.	N.D.	N.D.	N.D.	N.D.
94302	TRIP	N.D.	N.D.	N.D.	N.D.	N.D.
94303	MW 3D	0.29	1.4	1.3	N.D.	2.0
Reporting Limits		0.05	0.5	0.5	0.5	0.5
Blank Result		N.D.	N.D.	N.D.	N.D.	N.D.
Blank Spike Result (%)		95	97	97	97	100



Jack Kelly  
Chemist



Ali Kharrazi  
Organic Manager



# CHROMALAB, INC.

Environmental Services (SDB)

July 6, 1995

Submission #: 9506411

INDUSTRIAL COMPLIANCE-OAKLAND

Atten: James Ackerman

Project: 1399 WOOD ST.

Project#: 05100-535

Received: June 28, 1995

re: 2 samples for C13-C22 Range Compounds analysis.

Method: EPA 3510/8015M

Sampled: June 28, 1995

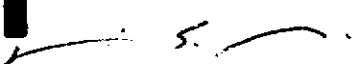
Matrix: WATER


Extracted: June 29, 1995

Run: 7437-D

Analyzed: July 1, 1995

Spl #	Client Sample ID	C13 - C22 (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE RESULT (%)
94299	MW 1	130	50	N.D.	88
94301	EQUIP	N.D.	50	N.D.	88

  
Dennis Mayugba  
Chemist

  
Ali Kharrazi  
Organic Manager

**APPENDIX D**  
**GROUND WATER ELEVATION CONTOUR MAPS**  
**PREVIOUS MONITORING EVENTS**



Apparent Impacted Soil Stockpile (Excavation B)

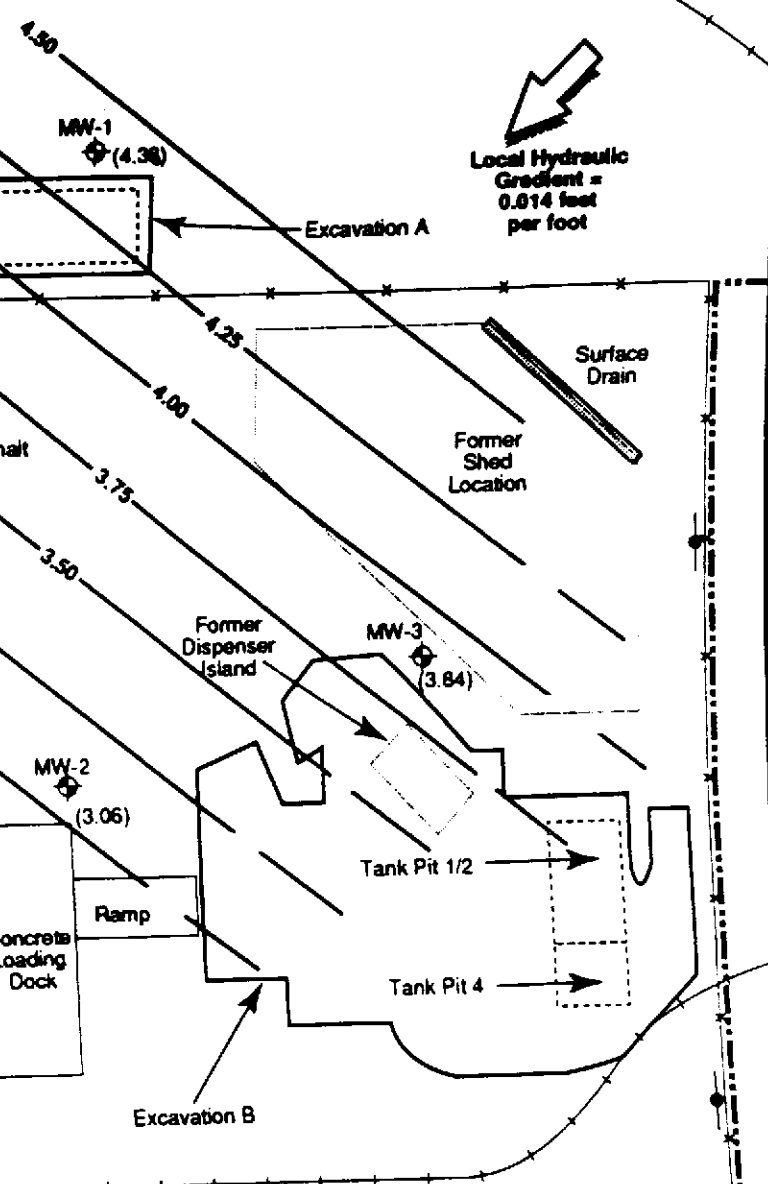
Apparent Impacted Soil Stockpile (Excavation A)



Local Hydraulic Gradient = 0.014 feet per foot

**LEGEND**

- ( 3.84 ) Ground Water Elevation (in feet above mean sea level)
- 4.00 — Ground Water Elevation Contour (in feet above mean sea level) (dashed where extrapolated)
- MW-1 Approximate Location of Monitoring Well
- Approximate Location of SPTCo Property Boundary
- Approximate Boundary of Excavation
- - - - - Approximate Location of Underground Storage Tank (USTs) Excavation
- +—+—+— Fence
- +—+—+— Railroad Tracks
- Power Pole and Overhead Electrical Lines
- Building Structures
- Asphalt Paved Road



Note: Hydraulic gradient calculated to be 0.014 feet per foot, using a standard 3 point problem, incorporating data from MW-1, MW-2, and MW-3.

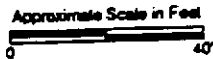
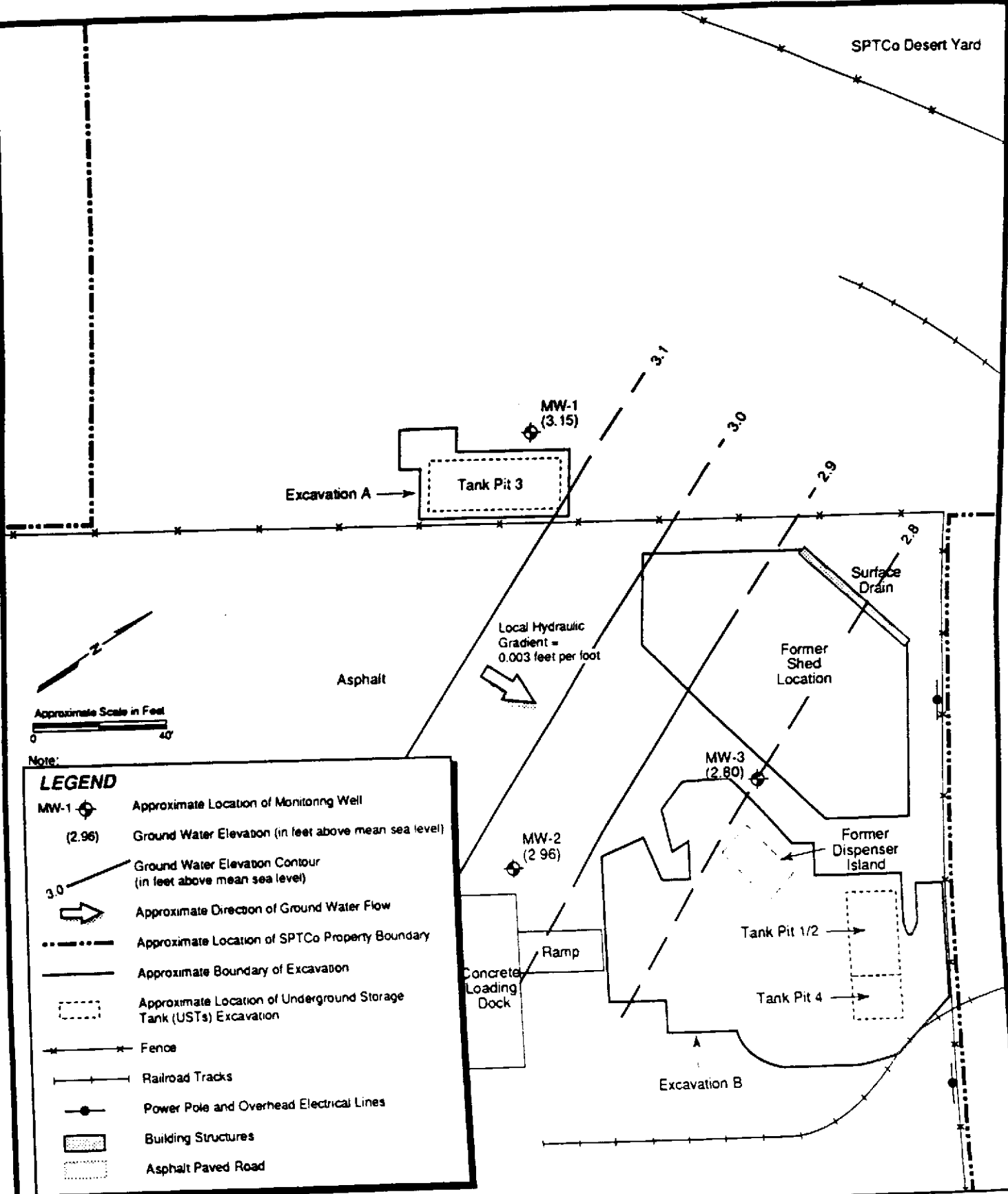


**Industrial Compliance**  
A Subsidiary of SP Environmental Systems, Inc.

**CONTOUR MAP OF GROUND WATER ELEVATIONS WITH HYDRAULIC GRADIENT, JUNE, 1994 SOUTHERN PACIFIC TRANSPORTATION COMPANY 1399 WOOD STREET OAKLAND, CALIFORNIA**

Project No.: 05100535	Date: 08/15/94
Drawn By: Patti Decker	Checked By: James G. Jensen

Figure: 19
Page:
Scale: as shown



Note:

**LEGEND**

- MW-1 Approximate Location of Monitoring Well
- (2.96) Ground Water Elevation (in feet above mean sea level)
- 3.0 Ground Water Elevation Contour (in feet above mean sea level)
- Approximate Direction of Ground Water Flow
- Approximate Location of SPTCo Property Boundary
- Approximate Boundary of Excavation
- Approximate Location of Underground Storage Tank (USTs) Excavation
- Fence
- Railroad Tracks
- Power Pole and Overhead Electrical Lines
- Building Structures
- Asphalt Paved Road



**Industrial Compliance**  
 A Subsidiary of SP Environmental Systems, Inc.

**CONTOUR MAP OF GROUND WATER ELEVATIONS  
 SEPTEMBER, 1994  
 SOUTHERN PACIFIC TRANSPORTATION COMPANY  
 1399 WOOD STREET  
 OAKLAND, CALIFORNIA**

Project No.: 05100535

Date: 01/18/95

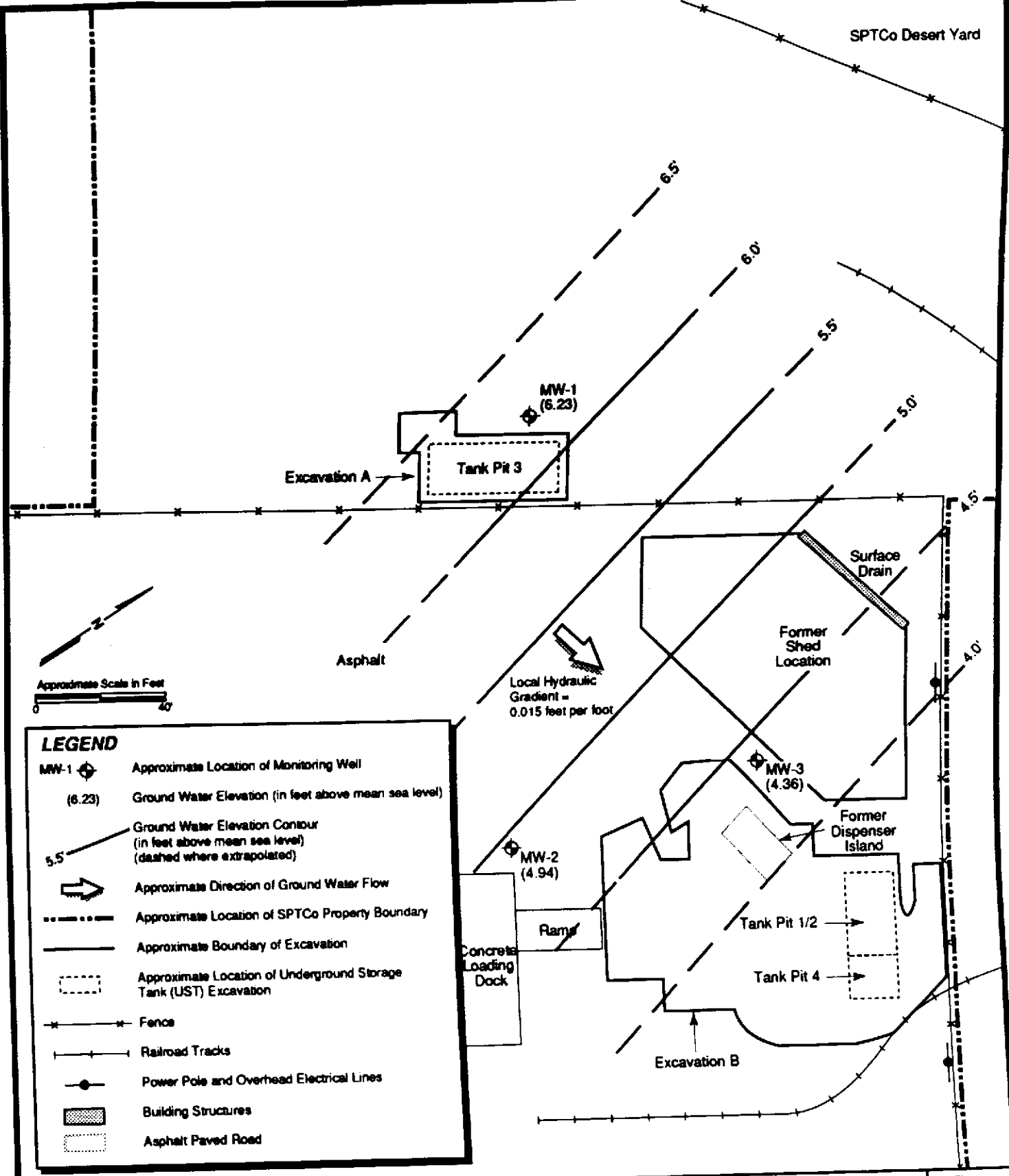
Drawn By: Pattl Decker

Checked By: James Ackerman

Figure: 4

Page:

Scale: as shown



**LEGEND**

- MW-1 Approximate Location of Monitoring Well
- (6.23) Ground Water Elevation (in feet above mean sea level)
- 5.5 Ground Water Elevation Contour (in feet above mean sea level) (dashed where extrapolated)
- Approximate Direction of Ground Water Flow
- Approximate Location of SPTCo Property Boundary
- Approximate Boundary of Excavation
- Approximate Location of Underground Storage Tank (UST) Excavation
- Fence
- Railroad Tracks
- Power Pole and Overhead Electrical Lines
- Building Structures
- Asphalt Paved Road

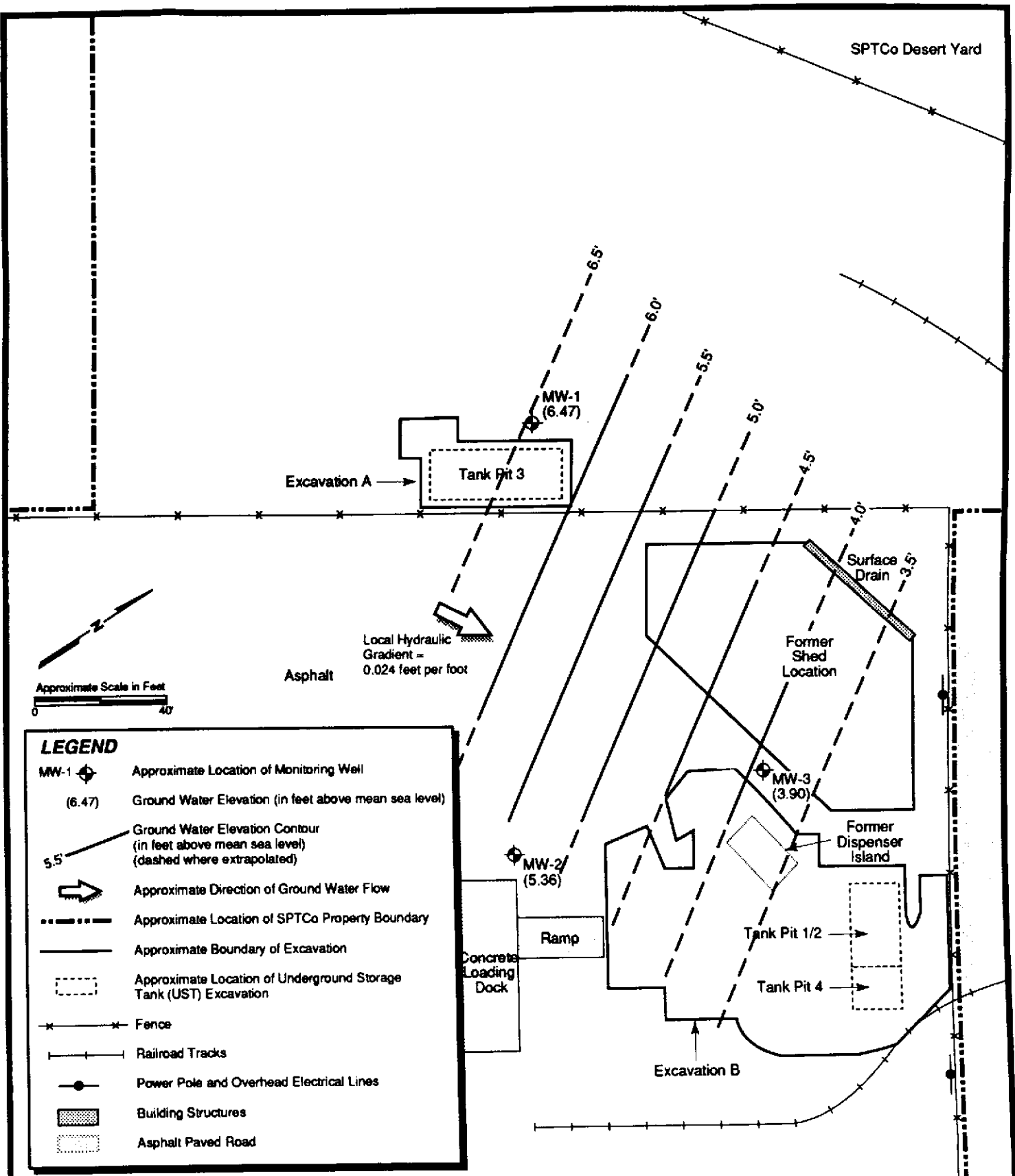
**Industrial Compliance**  
 A Subsidiary of SP Environmental Systems, Inc.

Project No.: 05100535      Date: 02/13/95

Drawn By: Patti Decker      Checked By: Richard Bateman

**CONTOUR MAP OF GROUND WATER ELEVATION  
 DECEMBER, 1994  
 SOUTHERN PACIFIC TRANSPORTATION COMPANY  
 1399 WOOD STREET  
 OAKLAND, CALIFORNIA**

Figure: 4
Page: 9
Scale: as shown



**LEGEND**

- MW-1 Approximate Location of Monitoring Well
- (6.47) Ground Water Elevation (in feet above mean sea level)
- Ground Water Elevation Contour (in feet above mean sea level) (dashed where extrapolated)
- 5.5 Ground Water Elevation Contour (in feet above mean sea level) (dashed where extrapolated)
- Approximate Direction of Ground Water Flow
- Approximate Location of SPTCo Property Boundary
- Approximate Boundary of Excavation
- Approximate Location of Underground Storage Tank (UST) Excavation
- Fence
- Railroad Tracks
- Power Pole and Overhead Electrical Lines
- Building Structures
- Asphalt Paved Road

**Industrial Compliance**  
 A Subsidiary of SP Environmental Systems, Inc.

Project No.: 05100535      Date: 05/02/95

Drawn By: Patti Decker      Checked By: Richard Bateman

**CONTOUR MAP OF GROUND WATER ELEVATION**  
**MARCH, 1995**  
**SOUTHERN PACIFIC TRANSPORTATION COMPANY**  
 1399 WOOD STREET  
 OAKLAND, CALIFORNIA

Figure:	3
Page:	8
Scale:	as shown