REMEDIATION SERVICE, INT'L.
2060 KNOLL DRIVE, SUITE 200, VENTURA, CALIFORNIA 93003
(805) 644-5892 • FAX (805) 654-0720

October 27, 1994

Ms. Jennifer Eberle, Haz. Materials Specialist
Alameda County Health Care Service
Department of Environmental Health
80 Swan Way, Rm. 200
Oakland, CA 94621

Subject: Groundwater Monitoring Report for
4035 Park Blvd.
Oakland, California 94602

Dear Ms. Eberle:

Enclosed is the most recent Groundwater Monitoring Report for the above referenced property.

Please call Mr. Rick Pilat at RSI if you have any questions regarding this report.

Sincerely,

Heather Davis
Remediation Service, Int'l.

cc: John Rutherford
Desert Petroleum

Mr. Rich Hiett
San Francisco Bay RWQCB
2101 Webster St., Ste. 500
Oakland, CA 94612

enclosure

REMEDIATION SERVICE, INT'L.

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GROUNDWATER MONITORING REPORT
for
4035 Park Blvd.
Oakland, California

Prepared for:
DESERT PETROLEUM
P.O. Box 1601
Oxnard, CA 93032
(805) 644-6784

Prepared by:
RSI - REMEDIATION SERVICE, INT'L
2060 Knoll Drive, Suite 200
Ventura, CA 93003
(805) 644-5892

Michael E. Mulhern
E.G. #1507
Exp. 10/31/96

Richard W. Pilat
RSI Program Director

October 7, 1994

TABLE OF CONTENTS

1.0 INTRODUCTION

This report presents the results of groundwater monitoring for the real property located at 4035 Park Boulevard, Oakland, Alameda County, California (Figure 1). Remediation Service, Int'l. (RSI) is under contract to provide environmental services.

The property was previously operated as a retail fuel station under the name of J & M Service Station. In November, 1989, the Alameda County Department of Environmental Health (ACDEH) gave notice that gasoline was leaking into a sewer near the station on Brighton Avenue (Figure 2). Pressure tests revealed a leak in the unleaded supply line. In December, 1989 the fuel tanks were emptied, the station was closed and an Unauthorized Release Report was filed. The fuel tanks and associated product lines were removed in June, 1994.

2.0 SITE DESCRIPTION

The subject property is located at the intersection of Park Boulevard and Hampel Road (Figure 2). Former site improvements included one station building, three steel underground fuel storage tanks, one steel waste oil tank, two pump islands, three on-site groundwater monitoring wells and one on-site vapor extraction well (Figure 3). One groundwater monitoring well, RS-7, was also installed in the street below and approximately 200 feet northwest of the subject site (Figure 2). All four tanks and associated fuel lines were removed in June, 1994 (Western Geo-Engineers, Waste Oil and Fuel UST and Product Line Removal Sample Report, July 23, 1994).

The site is situated on the flank of a hill which slopes approximately 10 degrees to the west. The surface of the property is fairly level (Figure 3). Based on the U.S. Geologic Survey topographical map (East Oakland Quadrangle), the surface elevation of the station is approximately 240 feet above mean sea level (MSL). There is an approximate 12 foot drop from the surface of the property at the far western corner to the ground surface below.

3.0 GROUNDWATER MONITORING

3.1 Groundwater Monitoring Procedures

Groundwater monitoring wells RS-1, RS-5, RS-6 and RS-7 were monitored on September 17, 1994. The wells were first measured for depth to water and checked for the presence of free product. The wells were measured to an

accuracy of 0.01 feet. The measuring point for each well was the top of the well casing on the north side. Free product was not found in any of the wells. The wells were then purged until dry or a minimum of three well volumes had been removed. Purging was accomplished using a PVC bailer and a Grundfos Rediflo pump. The pump, hose and bailer were decontaminated between each well using TSP and a standard 3-bucket wash method. The purged water was monitored for temperature, conductivity and pH. These measurements, along with all other pertinent data, were recorded on Water Sample Logs (Appendix A). The purged water was placed in 55 gallon DOT approved drums which were sealed and labeled as pending laboratory analysis.

Once the well parameters had stabilized and each well had recharged to a minimum of 80 percent of its initial water level (or a two hour time period had lapsed), the wells were sampled using disposable polyethylene bailers. The samples were sealed, labeled and placed on blue ice for transportation under standard Chain of Custody to Atkins Environmental, a state certified laboratory in Ventura, California. All samples were analyzed for total petroleum hydrocarbons as gasoline (TPH) and benzene, toluene, ethyl-benzene and total xylenes (BTEX) using standard EPA Methodology. The laboratory report and chain of custody are included as Appendix B.

3.2 Groundwater Monitoring Results

Depth to groundwater on September 17, 1994 ranged between 16.33 feet and 19.63 feet below ground surface (bgs) in the on-site wells (RS-1, RS-5 and RS-6; Table 1). The original survey datum from May, 1994 for each of the wells onsite has been changed due to recent damage from heavy equipment in July, 1994; therefore the groundwater flow direction on this site could not be determined. Previous monitoring reported groundwater flow in a northwesterly direction.

Analytical results for the samples collected during the current and previous monitoring episodes are summarized on Table 2 and the current results are shown graphically on Figure 4. The laboratory report and Chain-of-Custody documents are included in Appendix B. As reported on Table 2, elevated concentrations of TPH and BTEX were detected in the samples collected from all five wells.

4.0 LIMITATIONS

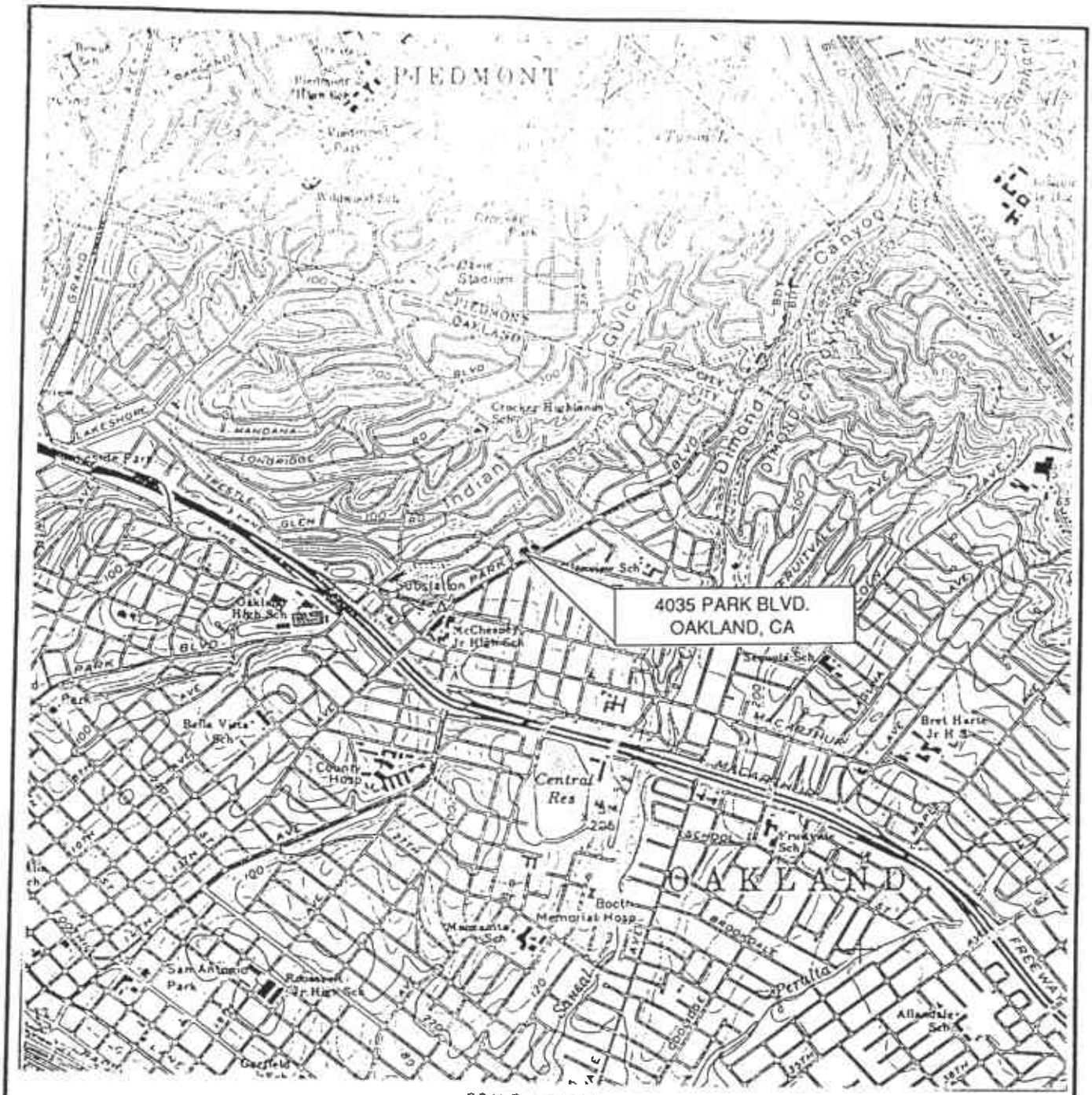
The discussion, conclusion and any recommendations presented in this report are based on the professional performance of the personnel who

conducted the investigations, the observations of the field personnel, the results of laboratory analyses performed by a state certified laboratory, any referenced documents and our understanding of the regulations of the State of California and any other applicable local regulations.

Variations in the soil and groundwater conditions may exist beyond the points explored in this investigation.

The services performed by Remediation Service, Int'l. have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the State of California.

Please note that contamination of soil and/or groundwater must be reported to the appropriate agencies in a timely manner. No other warranty, expressed or implied, is made.



SCALE 1:24000

1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 KILOMETER

CONTOUR INTERVAL 20 FEET

DOTTED LINES REPRESENT 5 FOOT CONTOURS

NATIONAL GEODETIC VERTICAL DATUM OF 1929

DEPTH CURVES IN FEET—DATUM IS MEAN LOWER LOW WATER

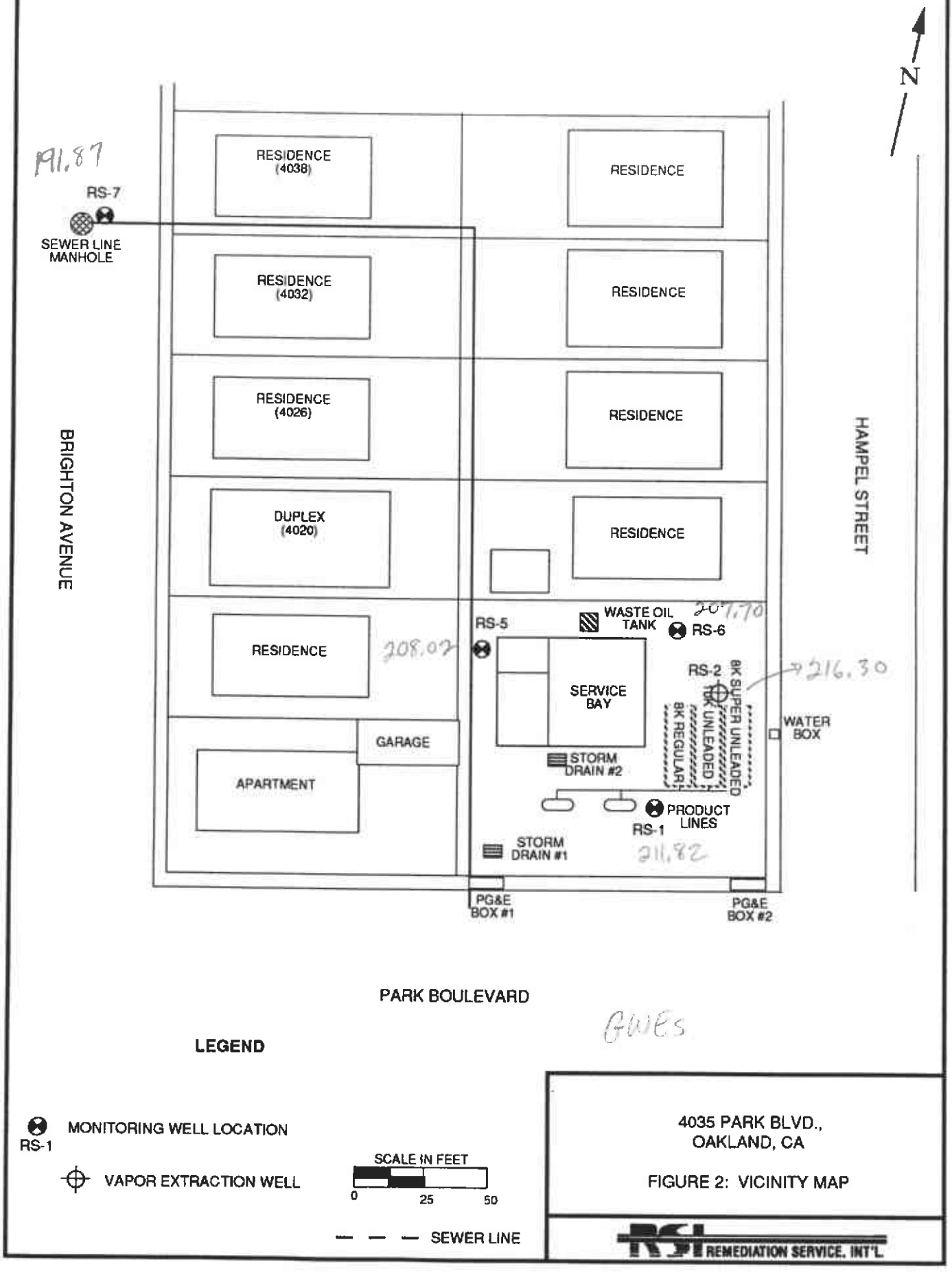
FROM U.S.G.S. 7.5' TOPOGRAPHIC QUADRANGLE "OAKLAND EAST, CALIFORNIA," 1959, PHOTOREVISED 1980.

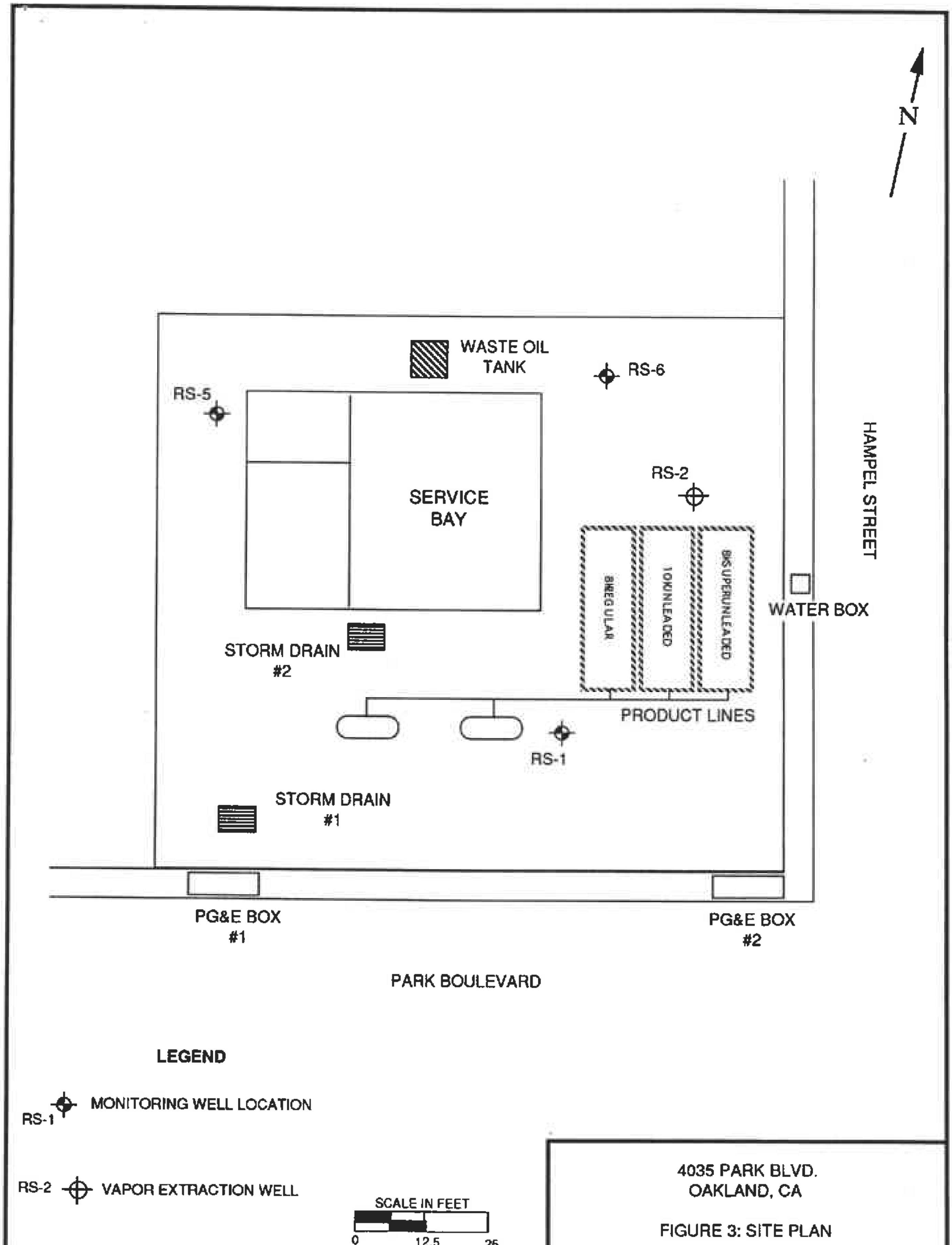
N

4035 PARK BLVD.,
OAKLAND, CA

FIGURE 1: LOCATION MAP

RSI REMEDIATION SERVICE, INT'L.

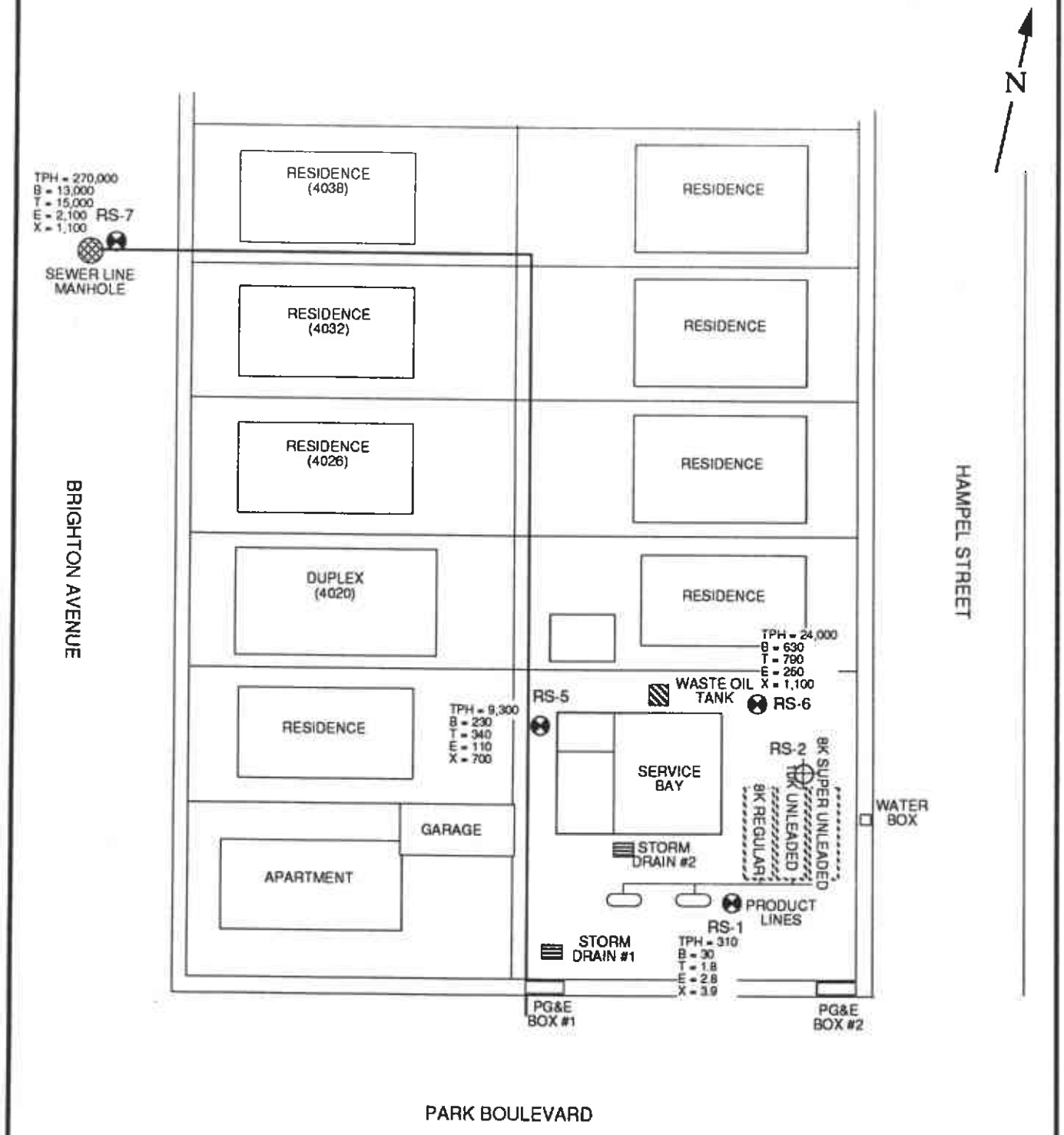

N
RESIDENCE (4038)
RESIDENCE
RESIDENCE (4032)
RESIDENCE
RESIDENCE (4026)
RESIDENCE
DUPLEX (4020)
RESIDENCE
RESIDENCE
GARAGE
APARTMENT
RS-7
SEWER LINE MANHOLE
RS-5
WASTE OIL TANK
RS-6
RS-2
SERVICE BAY
8K SUPER UNLEADED
8K UNLEADED
8K REGULAR
WATER BOX
STORM DRAIN #2
PRODUCT LINES
RS-1
STORM DRAIN #1
PG&E BOX #1
PG&E BOX #2
BRIGHTON AVENUE
HAMPEL STREET
PARK BOULEVARD
LEGEND
MONITORING WELL LOCATION
VAPOR EXTRACTION WELL
SEWER LINE
SCALE IN FEET
0
25
50
4035 PARK BLVD., OAKLAND, CA
FIGURE 2: VICINITY MAP
REMEDIATION SERVICE, INT'L.



4035 PARK BLVD.
OAKLAND, CA

FIGURE 3: SITE PLAN

RSI REMEDIATION SERVICE, INT'L



LEGEND

RS-1
TPH = 1400
B = 150
T = 12
E = 52
X = 87
GROUNDWATER MONITORING WELL LOCATION WITH GROUNDWATER ANALYTICAL RESULTS IN µg/L

VAPOR EXTRACTION WELL

SCALE IN FEET
0 25 50

SEWER LINE

4035 PARK BLVD.
OAKLAND, CA

FIGURE 4: VICINITY MAP
WITH GROUNDWATER ANALYTICAL RESULTS
SEPTEMBER 17, 1994

REMEDIATION SERVICE, INT'L.

TABLE 1
SUMMARY OF GROUND WATER ELEVATION DATA
4035 PARK BLVD.
OAKLAND, CA

Measurements are in feet.

Well	Date Measured	Depth to Water	Well Head Elevation*	Water Table Elevation*	Change in Elevation
RS-1	11/9/92	17.05	100.18	83.13	
	4/7/94	13.00		87.18	4.05
	6/19/94	13.37	228.15	214.78	—
	9/17/94	16.33		211.82	-2.96
RS-2	6/19/94	10.89	227.19	216.30	—
RS-5	11/9/92	20.73	98.99	78.26	
	4/7/94	18.16		80.83	2.57
	6/19/94	18.11	227.65	209.54	—
	9/17/94	19.63		208.02	-1.52
RS-6	11/9/92	19.43	99.27	79.84	
	4/7/94	14.42		84.85	5.01
	7/18/94	14.45	227.22	212.77	—
	9/17/94	19.52		207.70	-5.07
RS-7	11/9/92	4.62	67.88**	63.26	
	4/7/94	4.03		63.85	0.59
	6/19/94	4.07	195.92	191.85	—
	9/17/94	4.05		191.87	0.02

*Elevation in feet above Mean Sea Level.
**RS-7 elevation from survey, RESNA Groundwater Monitoring Report 2/92.
11/92 to 4/94 surveyed elevation for wells RS-1, RS-5, and RS-6 based on RESNA survey datum for well RS-1.

Wells RS-1, RS-2, RS-5, and RS-6 elevations were resurveyed in May, 1994 to City of Oakland Benchmark #2814, 1927 NGVD survey datum. Elevation avo Benchmark elevation = 250.53'

REMEDIATION SERVICE, INT'L.

TABLE 2
SUMMARY OF GROUND WATER ANALYTICAL RESULTS
4035 PARK BLVD.
OAKLAND, CA

Measurements are in [redacted] (parts per billion)

WELL #	DATE SAMPLED	TPH (as gasoline)	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
RS-1	12/89	19,000	2,600	2,700	200	1,200
	12/90	15,000	3,500	330	170	760
	2/91	6,900	910	200	39	540
	6/91	1,600	56	180	12	26
	9/91	4,100	730	7.6	5.1	24
	12/91	8,300	950	160	71	190
	11/92	1,700	730	9.6	16	14
	4/94	860	84	12	16	110
	6/94	1,400	150	12	52	87
9-17-94	[redacted]	[redacted]	[redacted]	1.8	2.8	3.9
RS-2	6/94	140	9.2	34	4.3	24
RS-5	12/89	57,000	3,100	4,300	670	3,400
	2/91	Not sampled due to presence of free product				
	6/91	Not sampled due to presence of free product				
	9/91	Not sampled due to presence of free product				
	12/91	Not sampled due to presence of free product				
	11/92	50,000	650	4,800	1,100	15,000
	4/94	27,000	5,000	8,700	550	2,800
	6/94	20,000	2,100	5,300	470	2,500
	[redacted]	[redacted]	[redacted]	340	110	700
RS-6	12/89	11,000	1,400	1,700	160	860
	2/91	Not sampled due to presence of free product				
	6/91	95,000	4,200	4,200	650	3,700
	9/91	Not sampled due to presence of free product				
	12/91	64,000	3,700	2,300	730	4,100
	11/92	19,000	1,600	710	500	1,600
	4/94	16,000	1,200	1,300	290	1,100
	7/94	23,000	1,300	2,200	590	2,200
	[redacted]	[redacted]	[redacted]	790	250	1,100
RS-7	7/90	5,600,000	24,000	210,000	50,000	740,000
	2/91	Not sampled due to presence of free product				
	6/91	Not sampled due to presence of free product				
	9/91	Not sampled due to presence of free product				
	12/91	270,000	11,000	22,000	2,000	13,000
	11/92	81,000	12,000	16,000	1,900	13,000
	4/94	74,000	16,000	16,000	1,400	8,500
	6/94	83,000	22,000	19,000	1,500	9,500
	[redacted]	[redacted]	[redacted]	15,000	2,100	1,100

Note:
TPH analyzed by EPA Method 8015M
BTEX analyzed by EPA Method 8020

REMEDIATION SERVICE, INT'L.

APPENDIX A

WATER SAMPLE LOGS

WATER SAMPLE LOG

DATE: 9/17/94

PROJECT LOCATION: 4035 Park Blvd., Oakland, CA

WELL NUMBER: RS-1

WEATHER CONDITIONS: Sunny, warm

FIELD OBSERVATIONS: Well box not intact; soil has possibly entered well.
Bailed well until dry

TOTAL DEPTH OF WELL: 21.85 feet
DEPTH TO FREE PRODUCT: NONE
DEPTH TO WATER: 16.33 feet
DEPTHS MEASURED FROM: Top of well casing, north side.

CASING DIAMETER: 4 inches
ONE WELL VOLUME = 6.76 gallons
PURGING METHOD: PVC Bailer

WELL PURGING DATA

Time	Discharge (gallons)	pH	Temp in F.	Specific Conductance (µmhos/cm)	Comments
2:53	0	6.44	71.2	1.28	Brown, silty, product odor
2:55	2	6.40	71.0	1.22	Brown, silty, product odor
2:57	4	6.32	69.8	1.27	Brown, silty, product odor
3:01	8	6.28	69.9	1.18	Brown, silty, product odor
	Dry				

TOTAL DISCHARGE: 8 gallons
WELL VOLUMES REMOVED: 1.2

TIME SAMPLE COLLECTED: 6:08 PM
DEPTH TO WATER AT TIME OF SAMPLE: 20.31 feet
PERCENT RECHARGE: 28
METHOD OF SAMPLE COLLECTION: Disposable Bailer
APPEARANCE OF SAMPLE: Brown, v. silty
AMOUNT AND SIZE OF SAMPLE CONTAINERS: 3 x 40 ML VOA's, 1 x 250 ml plastic bottle
SAMPLE TRANSPORTED TO: Atkins Environmental Labs, Ventura

SAMPLED BY: J. Jensen

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WATER SAMPLE LOG

DATE: 9/17/94

PROJECT LOCATION: 4035 Park Blvd., Oakland, CA

WELL NUMBER: RS-5

WEATHER CONDITIONS: Sunny, warm

FIELD OBSERVATIONS: No cement around well box.

Purged well until dry (dry @ 65 gal.).

TOTAL DEPTH OF WELL: 39.40 feet

DEPTH TO FREE PRODUCT: NONE

DEPTH TO WATER: 19.63 feet

DEPTHS MEASURED FROM: Top of well casing, north side.

CASING DIAMETER: 4 inches

ONE WELL VOLUME = 24.20 gallons

PURGING METHOD: Rediflo pump

WELL PURGING DATA

Time	Discharge (gallons)	pH	Temp in F.	Specific Conductance (µmhos/cm)	Comments
3:48	2	7.16	71.5	1.26	Clear, moderate product odor
3:54	10	7.26	71.2	1.02	Clear, moderate product odor
3:57	20	7.26	72.4	0.99	Lt. brown, strong product odor
4:00	30	7.24	72.6	1.04	Lt. brown, strong product odor
4:03	40	7.22	72.6	0.96	Lt. brown, strong product odor
4:07	45	7.21	72.2	1.09	Clear, moderate product odor
4:11	50	7.22	69.8	1.22	Clear, moderate product odor
4:16	60	7.20	68.1	1.10	Clear, moderate product odor
4:18	65	7.21	68.0	1.08	Clear, moderate product odor

TOTAL DISCHARGE: 65 gallons

WELL VOLUMES REMOVED: 2.7

TIME SAMPLE COLLECTED: 6:40 PM

DEPTH TO WATER AT TIME OF SAMPLE: 20.39 feet

PERCENT RECHARGE: 96

METHOD OF SAMPLE COLLECTION: Disposable Bailer

APPEARANCE OF SAMPLE: Clear, product odor present

AMOUNT AND SIZE OF SAMPLE CONTAINERS: 3 x 40 ML VOA's, 1 x 250 ml plastic bottle

SAMPLE TRANSPORTED TO: Atkins Environmental Labs, Ventura

SAMPLED BY: J. Jensen

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WATER SAMPLE LOG

DATE: 9/17/94

PROJECT LOCATION: 4035 Park Blvd., Oakland, CA

WELL NUMBER: **RS-6**

WEATHER CONDITIONS: Sunny, warm

FIELD OBSERVATIONS: No bolts on well cover.
Purged well until dry.

TOTAL DEPTH OF WELL: 34.05 feet
DEPTH TO FREE PRODUCT: NONE
DEPTH TO WATER: 19.52 feet
DEPTHS MEASURED FROM: Top of well casing, north side.

CASING DIAMETER: 4 inches
ONE WELL VOLUME = 17.78 gallons
PURGING METHOD: Rediflo pump

WELL PURGING DATA

Time	Discharge (gallons)	pH	Temp in F.	Specific Conductance (µmhos/cm)	Comments
3:16	2	7.33	76.6	1.69	Clear, strong product odor
3:19	5	7.45	76.0	1.25	Clear, strong product odor
3:22	8	7.40	74.2	1.19	Clear, strong product odor
3:24	10	7.42	72.7	1.00	Clear, strong product odor
3:28	16	7.94	71.9	1.03	Clear, strong product odor
3:30	18	7.92	71.7	1.02	Clear, strong product odor
	Dry				

TOTAL DISCHARGE: 18 gallons
WELL VOLUMES REMOVED: 1.0

TIME SAMPLE COLLECTED: 6:25 PM
DEPTH TO WATER AT TIME OF SAMPLE: 23.51 feet
PERCENT RECHARGE: 73
METHOD OF SAMPLE COLLECTION: Disposable Bailer
APPEARANCE OF SAMPLE: Clear
AMOUNT AND SIZE OF SAMPLE CONTAINERS: 3 x 40 ML VOA's, 1 x 250 ml plastic bottle
SAMPLE TRANSPORTED TO: Atkins Environmental Labs, Ventura

SAMPLED BY: J. Jensen

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(805) 644-5892 • FAX (805) 654-0720

WATER SAMPLE LOG

DATE: 9/17/94

PROJECT LOCATION: 4035 Park Blvd., Oakland, CA

WELL NUMBER: RS-7

WEATHER CONDITIONS: Clear, sunny

FIELD OBSERVATIONS:

TOTAL DEPTH OF WELL: 7.16 feet
CASING DIAMETER: 4 inches
DEPTH TO FREE PRODUCT: NONE
ONE WELL VOLUME = 3.81 gallons
DEPTH TO WATER: 4.05 feet
PURGING METHOD: PVC Bailer
DEPTHS MEASURED FROM: Top of well casing, north side.

WELL PURGING DATA

Time	Discharge (gallons)	pH	Temp in F.	Specific Conductance (µmhos/cm)	Comments
4:45	1	7.33	76.9	0.84	Clear, moderate product odor
4:48	4	7.40	76.9	0.71	Clear, strong product odor, sheen
4:52	8	7.44	77.9	0.64	Clear, strong product odor, sheen
4:56	12	7.43	76.8	0.68	L. brown, strong product odor, sheen
5:00	16	7.40	76.7	0.67	L. brown, strong product odor, sheen

TOTAL DISCHARGE: 16 gallons
WELL VOLUMES REMOVED: 4.2

TIME SAMPLE COLLECTED: 5:30 PM
DEPTH TO WATER AT TIME OF SAMPLE: 4.86 feet
PERCENT RECHARGE: 74
METHOD OF SAMPLE COLLECTION: Disposable Bailer
APPEARANCE OF SAMPLE: Cloudy, slt. sheen
AMOUNT AND SIZE OF SAMPLE CONTAINERS: 3 x 40 ML VOA's, 1 x 250 ml plastic bottle
SAMPLE TRANSPORTED TO: Atkins Environmental Labs, Ventura

SAMPLED BY: J. Jensen

RCI REMEDIATION SERVICE, INT'L.
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(805) 644-5892 • FAX (805) 654-0720

APPENDIX B

LABORATORY REPORTS
AND
CHAIN OF CUSTODY

Atkins Environmental
HELP LABS
2889 Bunsen Ave, Suite A
Ventura, CA 93003
805-644-1044

LABORATORY RESULTS

HELP LABS JOB #:

Client Name: RSI

Client Reference: DP793
Sample Matrix: WATER
Sample I.D: SEE UNDER SAMPLE I. D. COLUMN
Lab Number: 000855-000858
Date Sampled: 09/17/94
Date Extracted: NA
Date Analyzed: 09/28/94

VOLATILE ORGANIC COMPOUNDS E.P.A. METHOD 8260 **TPH GASOLINE BY MS DETECTOR**

WATER *MDL SAMPLE I. D.	DF	0.3 BENZENE	0.3 TOLUENE	0.3 E. BENZENE	0.6 T. XYLENE	40 T. P. H. G.	ug/L UNITS
RS-1	5	30	1.8	2.8	3.9	310	ug/L
RS-5	5	230	340	110	700	9300	ug/L
RS-6	250	630	790	250	1100	24000	ug/L
RS-7	2K	13000	15000	2100	11000	270000	ug/L

Russell Teague, Laboratory Director
Certificate Number: E.L.A.P. #1966

THE TEST RESULTS REPORTED REPRESENT ONLY THE ITEMS BEING TESTED AND MAY NOT REPRESENT THE ENTIRE MATERIAL FROM WHICH THE SAMPLE WAS TAKEN

DF = Dilution Factor
ND = Not Detected
*MDL (METHOD DETECTION LIMIT) = MDL X DF

BQL = Below Practical Quantitation Limit
PQL = Practical Quantitation Limit

Atkins Environmental
HELP LABS
2889 Bunsen Ave, Suite A Ventura, CA 93003
805-644-1044 Fax 805-644-0236

Chain of Custody Record
Analytical Services Request

CLIENT NAME	ADDRESS	TELEPHONE/FAX NUMBER	METHOD OF SHIPMENT/SHIPPING DOCUMENT #
RSI	2600 Knoll Dr Ste 200	(805) 644-5892 654-0720 (Fax)	

PROJECT NAME/LOCATION	CLIENT PROJECT NO.	REQUESTED TURNAROUND TIME	HELP LABS QUOTE #	HELP LABS PROJECT #
	DP793	24 HOURS:_____ 10 DAY:_____ 5 DAY:_____		

PROJECT MANAGER	SAMPLER (S)	P.O. NO.
Richard Pilat	John Jensen	

SAMPLE IDENTIFICATION NO.	LAB NUMBER	DATE SAMPLED	TIME SAMPLED	CONTAINER #TYPE	GRAB	COMPOSITE	SOIL	H2O	OTHER	524.2	624	8260	TPH g/MS	BTEX	REMARKS
RS-1		9/17/94		3) 40ml VOAs 1) plastic									X	X	
RS-5		↓		↓									↓	↓	
RS-6															
RS-7															

CONDITION OF SAMPLE:	RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE	TIME
TEMPERATURE UPON RECEIPT:	John Jensen	Kimberly Clarke	9-19-94	
SEALS INTACT: YES / NO	RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE	TIME
SAMPLE DISPOSAL:	RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE	TIME

SEND INVOICE TO:

PAGE 1 OF 1