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**SECOND QUARTER 1997  
MONITORING REPORT**

**UNION PACIFIC MOTOR FREIGHT  
FACILITY  
OAKLAND, CALIFORNIA**

**LIDLAW PROJECT No.  
792919-844**

**PREPARED FOR:**

**UNION PACIFIC RAILROAD  
ENVIRONMENTAL MANAGEMENT  
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OMAHA, NEBRASKA 68179**

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**July 29, 1997**

**SECOND QUARTER 1997 MONITORING REPORT  
UNION PACIFIC RAILROAD  
UNION PACIFIC MOTOR FREIGHT FACILITY  
OAKLAND, CALIFORNIA  
Laidlaw Project No. 792919-844**

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## 1.0 INTRODUCTION

This report presents the results from the Second Quarter 1997 groundwater monitoring event conducted at the Union Pacific Railroad (UPRR) motor freight facility at 1750 Ferro Street in Oakland, California (Figure 1). The report has been prepared by Consulting Services of Laidlaw Environmental Services (Laidlaw) on behalf of UPRR as part of the groundwater monitoring and reporting program at the facility. The report was prepared in response to an April 29, 1993, Alameda County Department of Environmental Health, Hazardous Materials Division (ACDEH) request for UPRR to begin a quarterly monitoring program at the UPMF facility.

The quarterly monitoring program consists of the collection of fluid-level measurements in the groundwater monitoring wells and an analysis of dissolved contaminants in groundwater. The monitoring program is directed towards an understanding of the groundwater gradient and the changes in the concentration of dissolved petroleum hydrocarbons at the site. This report includes a discussion of the background information about the site, field and analytical results for the second quarter 1997 event, conclusions, and recommendations.

## 2.0 BACKGROUND INFORMATION

The following subsections present information about the site history and investigative procedures.

### 2.1 SITE HISTORY

The Union Pacific Motor Freight (UPMF) site is located on the southeastern portion of the UPRR Oakland trailer-on-flat-car (TOFC) Yard, which is adjacent to the Oakland Inner Harbor or Oakland Estuary (Figures 1 and 2). The area surrounding the site is used for heavy to light commerce. Residential areas are located approximately one-half mile north of the site and across the Oakland Estuary one-half mile south of the site.

Five underground storage tanks (USTs) were removed from the UPMF site between 1987 and 1990. As a result of the tank removal activities, a site assessment was performed in two phases to define the extent of petroleum hydrocarbons in the soil and groundwater (USPCI, 1993). All petroleum hydrocarbons found at the site have been identified as either used motor oil or "bunker C." For brevity, the light non-aqueous phase of these hydrocarbons are referred to as "product."

Groundwater monitoring has been conducted at the site since 1993. A skimming system that removes product only has operated in recovery well RW since May 2, 1994.

The refueling portion of the TOFC yard, approximately 700 feet northwest and upgradient of the UPMF site, is currently undergoing groundwater remediation for recovery of non-aqueous phase liquid as diesel. (The refueling area is a separate project and is not the subject of this report.) The extent of contamination at the refueling area was defined during previous investigations (USPCI, 1991). On the basis of these investigations and subsequent monitoring, petroleum hydrocarbons from the refueling area do not extend to the UPMF facility.

## 2.2 INVESTIGATIVE PROCEDURES

UPRR has subcontracted Burns and McDonnell Waste Consultants, Inc. to perform a portion of the fieldwork associated with the project. Laidlaw and the UPRR subcontractor followed the standard operating procedures previously supplied to and approved by the ACDEH (Laidlaw, 1994). The quarterly monitoring activities consist of the following:

- Measuring fluid-levels in all of the UPMF groundwater monitoring wells;
- Purging and sampling groundwater monitoring wells where product is not observed;
- Analyzing groundwater samples for petroleum hydrocarbons and constituents;
- Removing product from the recovery well (RW) and monitoring the performance of the product skimmer; and
- Determining the local groundwater flow direction and gradient based on the groundwater elevations.

All samples for the second quarter 1997 monitoring event were analyzed for: (1) total petroleum hydrocarbons as diesel (TPH-D) and total petroleum hydrocarbons as gasoline (TPH-G) by EPA Method 8015 Modified; and (2) benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020.

Fluid-level measurements are collected from the recovery well RW on a monthly basis. These measurements are made to assess the temporal variations in the thickness of product and to evaluate the effectiveness of the skimming system. Fluid-level measurements are collected from the remaining monitoring wells on a quarterly basis. The ACDEH has approved Laidlaw's request to begin gauging wells OKUS-W5 and OKUS-W6 on a quarterly basis.

On May 13, 1997, Laidlaw decommissioned groundwater monitoring well OKUS-W4. The decommissioning activity was approved by ACDEH in a letter dated February 4, 1997, and in accordance with the requirements of Alameda County, Zone 7, Water Resources Engineering Department.

## 3.0 FIELD INVESTIGATION RESULTS

The following subsections present the findings from activities completed during the monitoring event.

### 3.1 FLUID-LEVEL MEASUREMENTS

Fluid-levels were measured on May 21, 1997 and are compiled into Table 1. Copies of field notes for the fluid-level measurements are included in Appendix A. The data were used to produce the groundwater elevation map presented as Figure 3. A decrease in groundwater elevations relative to the previous monitoring event (first quarter 1997) was noted in all of the monitoring wells gauged at the site. Since 1995, groundwater elevations have been highest during the first quarter of each year, and are typically lower during the second, third, and fourth quarters.

### 3.2 GROUNDWATER GRADIENT

The groundwater gradient at the site averaged approximately 0.008 foot per foot (40 feet per mile) and the observed groundwater flow direction was to the east. The groundwater gradient and flow direction were consistent with gradients and flow directions observed during previous monitoring events. The lack of product observed during the collection of fluid-level measurements in downgradient groundwater monitoring wells indicates that product has not migrated downgradient.

### 3.3 ANALYTICAL RESULTS

Analytical results for all monitoring wells sampled during the second quarter 1997 monitoring event were compiled into Table 2. Samples were collected from monitoring wells OKUS-W1, OKUS-W2, OKUS-W3, OKUS-W7, OKUS-W8, APL/UP-W2, and APL/UP-W2.

Monitoring well OKUS-W1 did not contain dissolved BTEX concentrations above the method detection limit (MDL) of 0.50 micrograms per liter ( $\mu\text{g}/\text{l}$ ). The samples collected from monitoring wells OKUS-W2 and OKUS-W3 contained dissolved BTEX. The samples collected from monitoring wells OKUS-W7 and APL/UP-W2 contained dissolved benzene and ethylbenzene. The sample from APL/UP-W1 contained dissolved benzene, ethylbenzene, and xylenes and the sample collected from OKUS-W8 contained only dissolved benzene and xylenes.

Benzene concentrations ranged from below the MDL in OKUS-W1 to 190  $\mu\text{g}/\text{l}$  in OKUS-W3. Toluene ranged from below the MDL in wells OKUS-W1, OKUS-W7, OKUS-W8, APL/UP-W1, APL/UP-W2 to 43  $\mu\text{g}/\text{l}$  in OKUS-W3. Ethylbenzene ranged from below the MDL in OKUS-W1 to 120  $\mu\text{g}/\text{l}$  in OKUS-W3. Xylenes ranged from below the MDL in OKUS-W1, OKUS-W7, and APL/UP-W2 to 41  $\mu\text{g}/\text{l}$  in OKUS-W3. Total BTEX concentrations ranged from below the MDL of

0.50  $\mu\text{g/l}$  (OKUS-W1) to 394  $\mu\text{g/l}$  (OKUS-W3).

Dissolved TPH-G, indicative of gasoline, was detected in the samples collected from monitoring wells OKUS-W2, OKUS-W3, OKUS-W8, APL/UP-W1, and APL/UP-W2. The TPH-G concentrations ranged from below the MDL of 50  $\mu\text{g/l}$  (OKUS-W1 and OKUS-W7) to 6,100  $\mu\text{g/l}$  (OKUS-W3).

Dissolved TPH-D concentrations indicating diesel fuel, were detected in the samples collected from all monitoring wells sampled during the during the second quarter 1997 monitoring event. TPH-D concentrations ranged from 190  $\mu\text{g/l}$  (OKUS-W1) to 2,500  $\mu\text{g/l}$  (OKUS-W3).

Groundwater analytical results for the wells at the site are presented in Table 2. The dissolved BTEX plume in the groundwater is presented in Figure 4. Analytical reports and chain of custody forms are included in Appendix B.

### 3.4 NON-AQUEOUS PHASE LIQUID

Fluid-level measurement data indicated that monitoring wells OKUS-W5 and OKUS-W6 continued to contain "bunker C" type product. An accurate determination of product thicknesses in OKUS-W5 and OKUS-W6 was not possible due to the high viscosity of the product and difficulty in measuring product thickness. Laidlaw personnel lowered a disposable bailer down the well until product was encountered. The depth to product was subsequently measured out of the well.

A product/water interface was detected in recovery well RW during the second quarter sampling event. Laidlaw personnel detected approximately 0.02 feet of product in well RW. Burns and McDonnell field personnel reported product "sheen" for the month of April 1997. The product recovery system was inoperable during the second quarter and is currently being repaired.

## 4.0 CONCLUSIONS

On the basis of the information obtained from the monitoring activities, Laidlaw concludes that:

- The groundwater flow direction is to the east at an average gradient of 0.008 foot per foot (40 feet per mile). This result is consistent with previous monitoring events;
- The dissolved BTEX and TPH concentrations are consistent with historical concentrations ranges and in most cases lower than previously observed levels. The finding suggests that the product present in groundwater is weathered and not contributing significant concentrations of BTEX to groundwater;
- The product observed in wells OKUS-W5, OKUS-W6, and RW does not appear to have migrated downgradient;
- The accumulation of product in well RW has decreased by approximately one order of magnitude, which indicates that the recovery of product has progressed; and,
- Historical monitoring results indicate that the residual petroleum contamination in the source area and downgradient wells has decreased over time, which indicates that a continued source of contamination is not present and the remaining residual contamination is relatively static.

## 5.0 RECOMMENDATIONS

On the basis of the above conclusions and the historical monitoring data, Laidlaw recommends the following:

- Discontinue the operation of the product skimming pump in well RW; ?
- Change the fluid-level measurement frequency in well RW from monthly to quarterly; o.k.
- Change the groundwater sample collection frequency from quarterly to semi-annually (first and third quarters); and,
- Change the reporting frequency from quarterly to semi-annually (end of April and September).



## 6.0 REFERENCES

USPCI, 1991. "Hydrocarbon Investigation and Remediation Design," Union Pacific Railroad, June 10, 1991.

USPCI, 1993. "Phase II Site Assessment Report," Union Pacific Railroad, October, 1993.

USPCI, 1994. "Fourth Quarter 1993, Monitoring Event," Union Pacific Railroad, May 1994.

**TABLE 1  
FLUID LEVEL MEASUREMENT DATA  
UNION PACIFIC RAILROAD  
OAKLAND MOTOR FREIGHT FACILITY**

WELL NO.	ELEV.* TOC	DATE	DEPTH TO PRODUCT	PRODUCT THICKNESS	DEPTH TO WATER	WATER ELEV.	CORR'D ELEV.
OKUS-W1	9.17	08/09/95	N/A	NP	8.18	0.99	0.99
	9.17	11/29/95	N/A	NP	8.78	0.39	0.39
	9.17	02/27/96	N/A	NP	7.58	1.59	1.59
	9.17	05/29/96	N/A	NP	7.80	1.37	1.37
	9.17	08/27/96	N/A	NP	8.34	0.83	0.83
	9.17	11/12/96	N/A	NP	8.71	0.46	0.46
	9.17	02/17/97	N/A	NP	7.58	1.59	1.59
	9.17	05/21/97	N/A	NP	8.24	0.93	0.93
OKUS-W2	9.71	08/09/95	N/A	NP	9.09	0.62	0.62
	9.71	11/29/95	N/A	NP	9.69	0.02	0.02
	9.71	02/27/96	N/A	NP	8.49	1.22	1.22
	9.71	05/29/96	N/A	NP	8.72	0.99	0.99
	9.71	08/27/96	N/A	NP	9.24	0.47	0.47
	9.71	11/12/96	N/A	NP	9.63	0.08	0.08
	9.71	02/17/97	N/A	NP	8.41	1.30	1.30
	9.71	05/21/97	N/A	NP	9.13	0.58	0.58
OKUS-W3	9.80	08/09/95	N/A	NP	9.41	0.39	0.39
	9.80	11/29/95	N/A	NP	9.97	-0.17	-0.17
	9.80	02/27/96	N/A	NP	8.73	1.07	1.07
	9.80	05/29/96	N/A	NP	8.94	0.86	0.86
	9.80	08/27/96	N/A	NP	9.52	0.28	0.28
	9.80	11/12/96	N/A	NP	9.90	-0.10	-0.10
	9.80	02/17/97	N/A	NP	8.67	1.13	1.13
	9.80	05/21/97	N/A	NP	9.44	0.36	0.36
OKUS-W4	7.35	08/09/95	N/A	NP	6.10	1.25	1.25
	7.35	11/29/95	N/A	NP	6.70	0.65	0.65
		05/13/97	WELL DECOMMISSIONED				
OKUS-W5	9.25	08/09/95	N/A	Trace	9.75	-0.50	-0.50
	9.25	09/07/95	N/A	Trace	9.56	-0.31	-0.31
	9.25	10/18/95	9.82	P	--	--	--
	9.25	11/10/95	9.97	P	--	--	--
	9.25	12/15/95	9.60	P	--	--	--
	9.25	01/10/96	9.58	P	--	--	--
	9.25	02/16/96	9.08	P	--	--	--
	9.25	03/25/96	8.99	P	--	--	--
	9.25	04/18/96	9.22	P	--	--	--
	9.25	05/29/96	9.06	P	--	--	--
	9.25	06/13/96	9.11	P	--	--	--

**TABLE 1 (Cont.)  
FLUID LEVEL MEASUREMENT DATA  
UNION PACIFIC RAILROAD  
OAKLAND MOTOR FREIGHT FACILITY**

WELL NO.	ELEV.* TOC	DATE	DEPTH TO PRODUCT	PRODUCT THICKNESS	DEPTH TO WATER	WATER ELEV.	CORR'D ELEV.
OKUS-W5	9.25	07/25/96	9.11	P	--	--	--
	9.25	08/27/96	9.44	P	--	--	--
	9.25	09/16/96	N/A	--	--	--	--
	9.25	10/17/96	9.65	P	--	--	--
	9.25	11/12/96	9.87	P	--	--	--
	9.25	12/16/96	N/A	--	--	--	--
	9.25	01/20/97	N/A	--	--	--	--
	9.25	02/17/97	9.09	P	--	--	--
	9.25	05/21/97	9.29	P	--	--	--
OKUS-W6	7.02	08/09/95	5.65	P	--	--	--
	7.02	09/07/95	5.98	P	--	--	--
	7.02	10/18/95	6.38	P	--	--	--
	7.02	11/10/95	6.52	P	--	--	--
	7.02	12/15/95	5.47	P	--	--	--
	7.02	01/10/96	5.58	P	--	--	--
	7.02	02/16/96	4.70	P	--	--	--
	7.02	03/25/96	4.72	P	--	--	--
	7.02	04/18/96	5.19	P	--	--	--
	7.02	05/29/96	5.02	P	--	--	--
	7.02	06/13/96	4.99	P	--	--	--
	7.02	07/25/96	5.23	P	--	--	--
	7.02	08/27/96	5.82	P	--	--	--
	7.02	09/16/96	N/A	--	--	--	--
	7.02	10/17/96	6.50	P	--	--	--
	7.02	11/12/96	6.27	P	--	--	--
	7.02	12/16/96	N/A	--	--	--	--
	7.02	01/20/97	N/A	--	--	--	--
	7.02	02/17/97	4.71	P	--	--	--
7.02	05/21/97	6.03	P	--	--	--	
OKUS-W7	6.91	08/09/95	N/A	NP	5.53	1.38	1.38
	6.91	11/29/95	N/A	NP	6.09	0.82	0.82
	6.91	02/27/96	N/A	NP	4.98	1.93	1.93
	6.91	05/29/96	N/A	NP	5.08	1.83	1.83
	6.91	08/27/96	N/A	NP	5.68	1.23	1.23
	6.91	11/12/96	N/A	NP	5.99	0.92	0.92
	6.91	02/17/97	N/A	NP	4.85	2.06	2.06
	6.91	05/21/97	N/A	NP	5.53	1.38	1.38
OKUS-W8	6.75	08/09/95	N/A	NP	5.32	1.43	1.43
	6.75	11/29/95	N/A	NP	5.95	0.80	0.80
	6.75	02/27/96	N/A	NP	4.84	1.91	1.91
	6.75	05/29/96	N/A	NP	4.93	1.82	1.82
	6.75	08/27/96	N/A	NP	5.52	1.23	1.23
	6.75	11/12/96	N/A	NP	5.89	0.86	0.86
	6.75	02/17/97	N/A	NP	4.69	2.06	2.06
	6.75	05/21/97	N/A	NP	5.36	1.39	1.39

**TABLE 1 (Cont.)  
FLUID LEVEL MEASUREMENT DATA  
UNION PACIFIC RAILROAD  
OAKLAND MOTOR FREIGHT FACILITY**

WELL NO.	ELEV.* TOC	DATE	DEPTH TO PRODUCT	PRODUCT THICKNESS	DEPTH TO WATER	WATER ELEV.	CORR'D ELEV.
APL/UP-W1	8.12	08/09/95	N/A	NP	10.01	-1.89	-1.89
	8.12	11/29/95	N/A	NP	10.29	-2.17	-2.17
	8.12	02/27/96	N/A	NP	WELL INACCESSABLE		
	8.12	05/29/96	N/A	NP	WELL INACCESSABLE		
	8.12	08/27/96	N/A	NP	WELL INACCESSABLE		
	8.12	11/12/96	N/A	NP	WELL INACCESSABLE		
	8.12	02/17/97	N/A	NP	10.02	-1.90	-1.90
	8.12	05/21/97	N/A	NP	10.14	-2.02	-2.02
APL/UP-W2	7.31	08/09/95	N/A	NP	9.42	-2.11	-2.11
	7.31	11/29/95	N/A	NP	9.41	-2.10	-2.10
	7.31	02/27/96	N/A	NP	8.89	-1.58	-1.58
	7.31	05/29/96	N/A	NP	9.68	-2.37	-2.37
	7.31	08/27/96	N/A	NP	9.53	-2.22	-2.22
	7.31	11/12/96	N/A	NP	9.60	-2.29	-2.29
	7.31	02/17/97	N/A	NP	9.07	-1.76	-1.76
	7.31	05/21/97	N/A	NP	9.42	-2.11	-2.11
RW	--	08/09/95	9.07	0.03	9.10	--	--
	--	09/07/95	9.18	0.01	9.19	--	--
	--	10/18/95	9.41	0.02	9.43	--	--
	--	11/10/95	9.58	--	N/A	--	--
	--	12/15/95	9.46	0.12	9.58	--	--
	--	01/10/96	9.24	0.04	9.28	--	--
	--	02/16/96	N/A	--	8.73	--	--
	--	03/25/96	N/A	--	8.50	--	--
	--	04/18/96	N/A	--	8.70	--	--
	--	05/29/96	N/A	--	8.68	--	--
	--	06/13/96	N/A	--	8.68	--	--
	--	07/25/96	N/A	--	9.09	--	--
	--	08/27/96	N/A	--	9.18	--	--
	--	09/16/96	N/A	--	9.33	--	--
	--	10/17/96	N/A	--	9.50	--	--
	--	11/12/96	N/A	--	9.59	--	--
--	12/16/96	9.12	0.10	9.22	--	--	
--	01/20/97	N/A	--	8.50	--	--	
--	02/17/97	8.39	0.01	8.40	--	--	
--	03/17/97	8.39	0.01	8.40	--	--	
--	04/17/97	8.39	0.01	8.40	--	--	
--	05/21/97	9.10	0.01	9.12	--	--	

\* All well casings measured to mean sea level (MSL).

-- Information not available or inaccurate.

P - Product (bunker C) was encountered but the oil/water interface could not be found.

N/A Non Applicable

NP - No Product

**TABLE 2  
ANALYTICAL RESULTS – GROUNDWATER MONITORING WELLS  
UNION PACIFIC RAILROAD  
OAKLAND MOTOR FREIGHT FACILITY**

SAMPLE LOCATION	SAMPLE ID	DATE SAMPLED	TPH/D (ug/l)	TPH/G (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	BTEX (ug/l)	As (mg/l)
OKUS-W1	OKUS-W1	01/14/93	ND	410	20	4	220	ND	240	ND
"	"	05/12/93	120	ND	ND	ND	ND	ND	ND	ND
"	"	08/25/93	100	ND	ND	ND	ND	ND	ND	ND
"	"	11/11/93	160	91	1.1	0.88	21	1.6	24	ND
"	"	02/08/94	92	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10
"	"	05/03/94	61	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10
"	"	08/24/94	86	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10
"	"	11/16/94	51	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
"	"	02/22/95	120	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
"	"	06/22/95	<50	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
"	"	08/09/95	<50	<50	<0.50	<0.50	<0.50	<0.50	ND	0.04
"	"	11/29/95	480	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.0050
"	"	02/27/96	330	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
"	"	05/30/96	320	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
"	"	08/27/96	440	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10
"	"	11/13/96	180	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
"	"	02/18/97	400	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
"	"	05/21/97	190	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
OKUS-W2	OKUS-W2	01/14/93	5400	14000	480	92	8500	ND	9100	0.036
"	"	05/12/93	2800	8800	220	47	4600	100	5000	0.093
"	"	08/25/93	6500	22000	420	92	10000	210	11000	0.089
"	"	11/11/93	7700	24000	540	150	13000	280	14000	ND
"	"	02/08/94	2300	4900	150	29	3000	78	3300	<0.10
"	"	05/03/94	2600	17000	300	<0.50	5800	220	6300	<0.10
"	"	08/24/94	8200	11000	320	67	7500	250	8100	<0.10
"	"	11/16/94	5500	10000	290	79	130	160	660	NA
"	"	02/22/95	2000	3500	100	18	1600	66	1800	NA
"	"	06/22/95	3200	13000	260	62	<0.50	110	430	NA
"	"	08/09/95	2900	4800	160	28	<0.50	200	390	0.92
"	"	11/29/95	5600	7100	240	34	<0.50	58	330	0.049
"	"	02/27/96	2400	5300	200	42	3400	160	3800	NA
"	"	05/30/96	1900	7000	210	<0.50	<0.50	180	390	NA
"	"	08/27/96	3100	6700	240	65	170	180	660	0.17
"	"	11/12/96	2900	6000	160	34	130	64	390	NA
"	"	02/18/97	3000	7800	190	44	4000	150	4390	NA
"	"	05/21/97	2500	3300	120	23	11	31	185	NA
OKUS-W3	OKUS-W3	01/14/93	4200	4900	230	42	2600	44	2900	NA
"	"	05/12/93	4400	4600	290	60	3500	72	3900	0.14
"	"	08/25/93	2700	9400	280	55	4300	41	4700	0.08
"	"	11/11/93	5000	9500	390	110	5100	130	5700	0.14
"	"	02/08/94	4400	17000	420	78	9800	160	10000	0.12
"	"	05/03/94	3000	14000	310	61	6400	210	7000	0.14
"	"	08/24/94	4500	10000	350	78	7300	170	7900	<0.10
"	"	11/16/94	4700	9100	260	64	95	<0.50	420	NA
"	"	02/22/95	2400	7400	250	51	4400	150	4900	NA
"	"	06/22/95	3300	8100	250	53	<0.50	76	380	NA
"	"	08/09/95	3100	5200	200	39	<0.50	140	380	1.6
"	"	11/29/95	4500	5300	220	42	<0.50	44	310	0.18
"	"	02/27/96	4000	7900	330	75	6400	240	7000	NA
"	"	05/30/96	2300	8900	200	<0.50	<0.50	61	260	NA
"	"	08/27/96	2700	3100	170	37	64	36	310	0.20
"	"	11/12/96	4700	7400	220	60	<0.50	<0.50	280	NA
"	"	02/18/97	4600	9300	260	62	5800	85	6210	NA
"	"	05/21/97	2400	6100	190	43	120	41	394	NA

**TABLE 2 (Cont)**  
**ANALYTICAL RESULTS – GROUNDWATER MONITORING WELLS**  
**UNION PACIFIC RAILROAD**  
**OAKLAND MOTOR FREIGHT FACILITY**

SAMPLE LOCATION	SAMPLE ID	DATE SAMPLED	TPH/D (ug/l)	TPH/G (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	BTEX (ug/l)	As (mg/l)	
OKUS-W4	OKUS-W4	01/15/93	5400	8900	300	ND	4500	ND	4800	NA	
"	"	05/12/93	2900	6000	320	110	4600	230	5300	0.16	
"	"	08/26/93	2200	6700	350	72	4800	130	5400	0.098	
"	"	11/11/93	2400	5500	250	53	4600	140	5000	0.13	
"	"	02/07/94	2700	9100	250	<0.50	4900	150	5300	<0.10	
"	"	05/03/94	2300	6500	240	34	4200	140	4600	0.12	
"	"	08/24/94	2900	5200	200	41	3600	190	4000	0.11	
"	"	11/16/94	2800	5500	320	52	<0.50	120	490	NA	
"	"	02/22/95	2000	4300	250	47	2900	160	3400	NA	
"	"	06/22/95	2700	4900	280	38	5200	140	5700	NA	
"	"	08/09/95	2900	5300	270	54	<0.50	210	530	1.3	
"	"	11/29/95	3100	4500	200	41	<0.50	46	290	0.14	
"	"	05/13/97	WELL DECOMMISSIONED								
OKUS-W5	OKUS-W5	01/15/93	2900	550	53	11	180	20	260	NA	
"	"	05/12/93	2100	550	81	14	250	37	380	0.56	
"	"	08/25/93	PRODUCT IN WELL – NOT SAMPLED								
"	"	11/11/93	1600	590	14	3.1	54	6.2	77	0.53	
"	"	02/07/94	1900	760	54	9.4	220	24	310	0.55	
"	"	05/03/94	2000	820	57	9.5	240	27	330	0.38	
"	"	08/24/94	1700	910	55	14	8.5	18	96	0.45	
"	"		PRODUCT IN WELL – THE WELL HAS NOT BEEN SAMPLED SINCE 1994								
OKUS-W6	OKUS-W6	07/16/93	BRK	ND	2.5	ND	ND	ND	2.5	0.004	
"	"	08/25/93	590	ND	2.6	ND	4.9	1.3	8.8	0.013	
"	"	11/12/93	610	ND	3.6	ND	3.7	1.3	8.6	ND	
"	"		PRODUCT IN WELL – THE WELL HAS NOT BEEN SAMPLED SINCE 1993								
OKUS-W7	OKUS-W7	07/16/93	ND	ND	2.1	ND	ND	ND	2.1	0.009	
"	"	08/25/93	930	56	2.9	ND	1.2	ND	4.1	ND	
"	"	11/12/93	1100	ND	ND	ND	ND	ND	ND	ND	
"	"	02/07/94	1100	ND	0.7	<0.50	<0.50	<0.50	0.7	<0.10	
"	"	05/03/94	1300	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10	
"	"	08/24/94	910	<50	2.5	0.54	<0.50	<0.50	3.0	<0.10	
"	"	11/16/94	820	<50	0.62	<0.50	<0.50	<0.50	0.6	NA	
"	"	02/22/95	830	<50	0.54	<0.50	<0.50	<0.50	0.5	NA	
"	"	06/22/95	850	<50	2.4	<0.50	0.52	<0.50	2.9	NA	
"	"	08/09/95	640	71	4.2	<0.50	1.2	1.2	6.6	0.074	
"	"	11/29/95	1300	64	4.3	<0.50	1.3	0.51	6.1	0.0095	
"	"	02/27/96	2600	<50	1.5	<0.50	0.54	<0.50	2.0	NA	
"	"	05/30/96	1900	60	2	<0.50	0.54	<0.50	2.0	NA	
"	"	08/27/96	1700	70	2.3	<0.50	<0.50	<0.50	2.3	<0.10	
"	"	11/12/96	1400	86	4.1	<0.50	<0.50	<0.50	4.1	NA	
"	"	02/18/97	2000	<50	0.75	<0.50	<0.50	<0.50	0.7	NA	
"	"	05/21/97	1200	<50	2.6	<0.50	0.84	<0.50	3.4	NA	
OKUS-W8	OKUS-W8	07/16/93	ND	ND	ND	ND	ND	ND	ND	0.012	
"	"	08/27/93	1100	120	1.3	ND	ND	0.85	2.2	ND	
"	"	11/11/93	1300	190	3.5	1.3	46	4.9	55.7	ND	
"	"	02/07/94	1000	120	0.9	<0.50	<0.50	<0.50	0.9	<0.10	
"	"	05/03/94	780	79	0.99	<0.50	<0.50	<0.50	1.0	<0.10	
"	"	08/24/94	700	100	1.4	<0.50	<0.50	<0.50	1.4	<0.10	
"	"	11/16/94	830	110	0.77	<0.50	<0.50	<0.50	0.8	NA	
"	"	02/22/95	370	150	0.96	<0.50	<0.50	1.2	2.2	NA	
"	"	06/22/95	870	76	0.92	<0.50	<0.50	<0.50	0.9	NA	
"	"	08/09/95	1100	90	1.1	<0.50	<0.50	1.3	2.4	0.078	
"	"	11/29/95	2400	100	0.73	<0.50	<0.50	0.91	1.6	<0.0050	
"	"	02/27/96	1900	80	<0.50	<0.50	<0.50	1.3	1.3	NA	

**TABLE 2 (Cont)**  
**ANALYTICAL RESULTS – GROUNDWATER MONITORING WELLS**  
**UNION PACIFIC RAILROAD**  
**OAKLAND MOTOR FREIGHT FACILITY**

SAMPLE LOCATION	SAMPLE ID	DATE SAMPLED	TPH/D (ug/l)	TPH/G (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	BTEX (ug/l)	As (mg/l)
OKUS-W8	OKUS-W8	05/30/96	2200	210	<0.50	<0.50	<0.50	0.7	0.7	NA
"	"	08/27/96	2100	150	0.64	<0.50	<0.50	<0.50	0.64	<0.10
"	"	11/12/96	1600	170	<0.50	<0.50	<0.50	1.1	1.1	NA
"	"	02/18/97	1900	140	<0.50	<0.50	<0.50	1.3	1.3	NA
"	"	05/21/97	1600	100	1.3	<0.50	<0.50	1.1	2.4	NA
APL/UP-W1	APL/UP-W1	07/16/93	700	300	25.4	1.7	ND	3.0	30	0.011
"	"	08/26/93	810	720	47	1.3	360	14.0	420	0.013
"	"	11/11/93	530	560	26	ND	220	11.0	260	ND
"	"	02/07/94	660	620	25	<0.50	180	10	220	<0.10
"	"	05/03/94	590	680	48	2.9	260	9.8	320	<0.10
"	"	08/24/94	420	830	48	4.8	12	3.2	68	<0.10
"	"	11/15/94	480	470	36	3.6	9.6	12	61	NA
"	"	02/22/95	510	470	33	2.8	170	9	210	NA
"	"	06/22/95	320	160	12	0.82	3.5	2.4	19	NA
"	"	08/09/95	160	69	4.2	<0.50	<0.50	2.3	7	<0.0050
"	"	11/29/95	920	170	7.4	0.58	66	3.5	78	0.018
"	"	02/27/96	WELL INACCESSIBLE – NOT SAMPLED							
"	"	05/30/96	WELL INACCESSIBLE – NOT SAMPLED							
"	"	08/27/96	WELL INACCESSIBLE – NOT SAMPLED							
"	"	11/12/96	WELL INACCESSIBLE – NOT SAMPLED							
"	"	02/18/97	1800	620	43	3.3	130	20	196	NA
"	"	05/21/97	850	260	22	<0.50	13	2.5	38	NA
APL/UP-W2	APL/UP-W2	07/16/93	ND	ND	8.0	ND	ND	ND	8	0.016
"	"	08/26/93	240	94	ND	ND	35	2.4	37	0.023
"	"	11/11/93	190	110	5.0	ND	38	2.6	46	ND
"	"	02/07/94	270	120	6.6	<0.50	38	1.8	46	<0.10
"	"	05/03/94	100	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10
"	"	08/24/94	330	220	13.0	0.77	3.5	3.1	20	<0.10
"	"	11/15/94	320	190	11.0	<0.50	63.0	5.4	79	NA
"	"	02/22/95	550	320	19.0	<0.50	100	9.5	130	NA
"	"	06/22/95	300	170	10.0	62	2.2	2.3	76	NA
"	"	08/09/95	180	62	3.5	<0.50	<0.50	2.3	5.8	0.22
"	"	11/29/95	690	110	7.2	<0.50	49	2.3	59	0.019
"	"	02/27/96	480	100	5.3	<0.50	33	2.9	41	NA
"	"	05/30/96	280	<50	1.9	<0.50	<0.50	1.2	3.1	NA
"	"	08/27/96	320	<50	1.1	<0.50	1.0	<0.50	2.1	<0.10
"	"	11/12/96	470	85	3.2	<0.50	1.7	0.62	5.5	NA
"	"	02/18/97	770	170	12	0.77	81	9.4	103	NA
"	"	05/21/97	430	92	4.8	<0.50	1.1	<0.50	5.9	NA
<b>DUPLICATES</b>										
OKUS-W5	OKUS-W6	01/15/93	2800	510	50	10	170	19	250	NA
OKUS-W1	OKUS-W6	05/12/93	140	ND	ND	ND	ND	ND	ND	ND
APL/UP-W1	QA/QC-1	07/16/93	ND	0.21	22.4	ND	ND	2.4	25	0.012
OKUS-W4	OKUS-W9	08/26/93	2700	6200	340	78	4500	100	5000	0.10
OKUS-W8	OKUS-W9	11/11/93	1300	120	1.3	ND	4	1.4	7	2.40
OKUS-W3	QA/QC-1	02/08/94	2900	15000	280	64	5800	<0.50	6100	0.12
OKUS-W4	OKUS-QC1	05/03/94	2500	5400	300	41	5200	130	5700	0.12
OKUS-W8	OKUS-QC1	08/24/94	950	92	1.6	<0.50	<0.50	<0.50	2	<0.10
APL/UP-W2	OKUS-QC1	11/16/94	310	190	10	<0.50	62	4.7	77	NA
APL/UP-W2	APL-W12	02/22/95	490	360	20	<0.50	110	6.7	140	NA
APL/UP-W2	APL-W12	08/09/95	160	71	3.4	<0.50	<0.50	2.2	6	0.20
APL/UP-W1	APL-W11	11/29/95	1100	170	7.5	0.57	66	4.4	79	0.02
OKUS-W1	OKUS-W11	02/27/96	330	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
OKUS-W1	OKUS-W11	05/30/96	570	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
OKUS-W1	OKUS-W11	08/27/96	330	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10
OKUS-W2	OKUS-W12	11/12/96	3000	11000	210	55	26	89	380	NA
APL/UP-W1	APL/UP-W11	02/18/97	1800	370	42	1.4	140	18	201	NA
OKUS-W1	OKUS-W11	05/21/97	220	<50	<0.50	<0.50	<0.50	<0.50	ND	NA

TABLE 2 (Cont)  
 ANALYTICAL RESULTS – GROUNDWATER MONITORING WELLS  
 UNION PACIFIC RAILROAD  
 OAKLAND MOTOR FREIGHT FACILITY

SAMPLE LOCATION	SAMPLE ID	DATE SAMPLED	TPH/D (ug/l)	TPH/G (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	BTEX (ug/l)	As (mg/l)
<b>TRIP BLANKS</b>										
UPMF	OAK-FB 1	07/16/93	NA	NA	ND	ND	ND	ND	ND	NA
UPMF	OAK-TB 2	07/16/93	NA	NA	ND	ND	ND	ND	ND	NA
UPMF	TB-1	08/27/93	NA	NA	ND	ND	ND	ND	ND	NA
UPMF	TB-2	08/27/93	NA	NA	ND	ND	ND	ND	ND	NA
UPMF	TB-1	11/12/93	NA	NA	ND	ND	ND	ND	ND	NA
UPMF	TB-1	08/24/94	NA	NA	ND	ND	ND	ND	ND	NA
UPMF	TB-1	11/16/94	NA	NA	NA	NA	NA	NA	NA	NA
UPMF	TB-1	02/22/95	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TB-1	06/22/95	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TB-1	08/09/95	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	11/29/95	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	02/27/96	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	05/29/96	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	08/27/96	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	11/12/96	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	02/18/97	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	05/21/97	NA	ND	ND	ND	ND	ND	ND	NA

ND – Not Detected

NA – Not Analyzed

BRK – Bottle broken during shipment

TPH – Total Petroleum Hydrocarbons

mg/L – milligram per liter

ug/L – microgram per liter

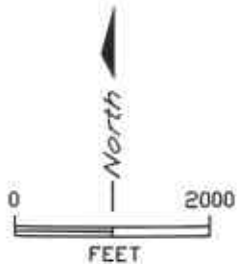
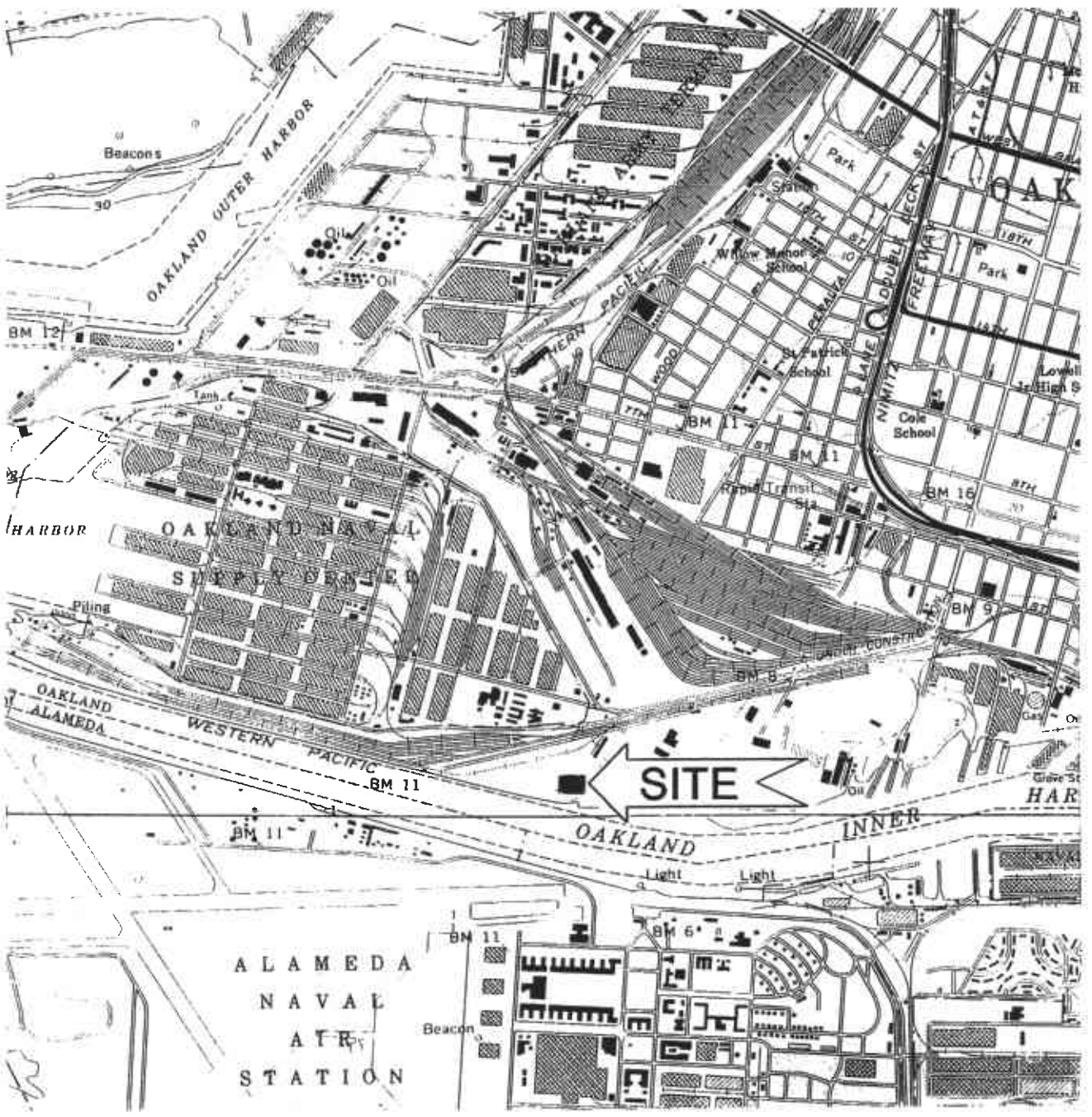
TPH/D – analyzed using EPA Method 8015 Mod.

TPH/G – analyzed using EPA Method 8015 Mod.

BTEX – analyzed using EPA Method 8020

As – analyzed using EPA Method 7060





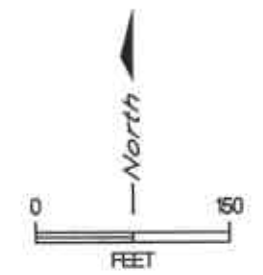
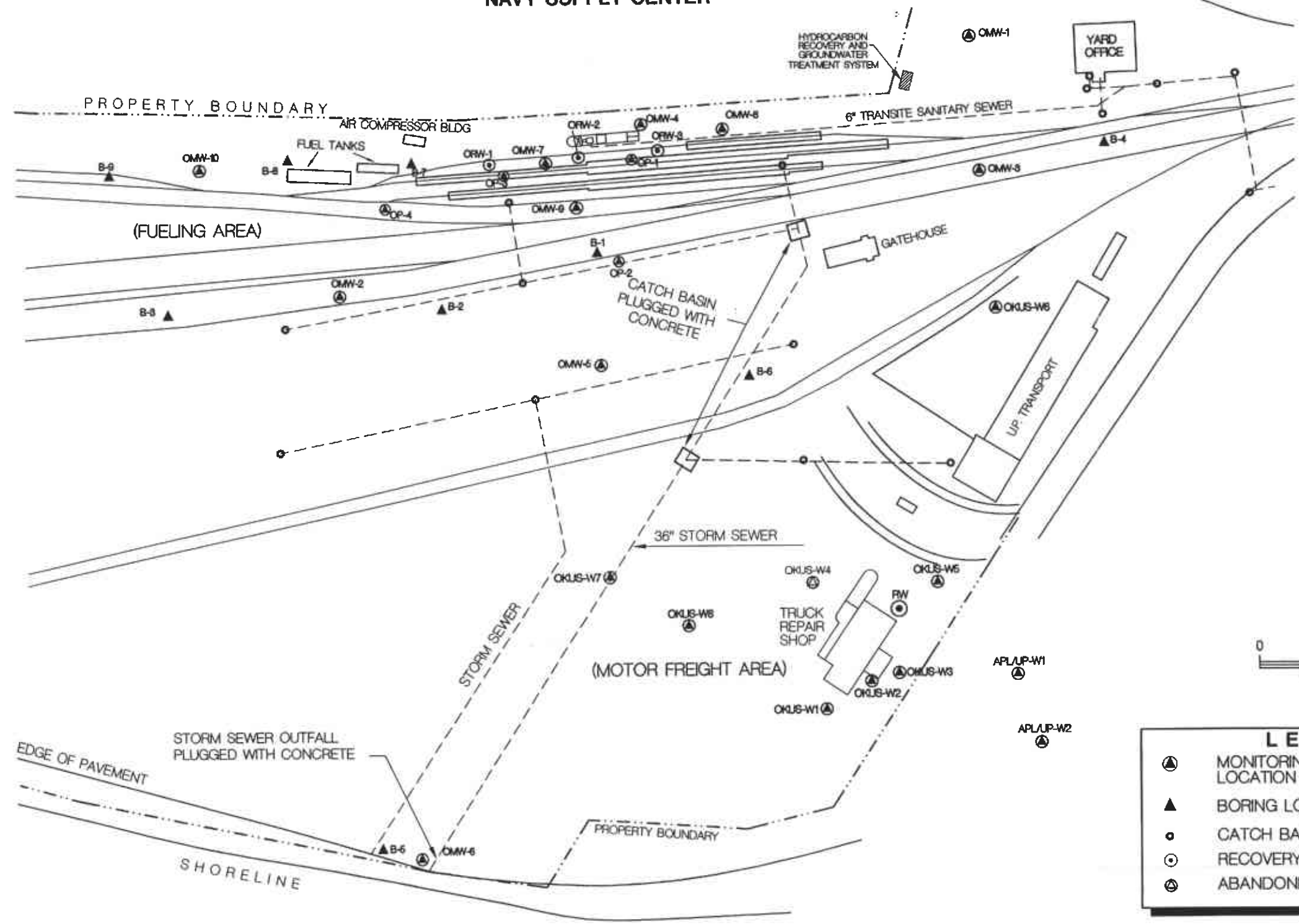
**USPCI**  
A LAIDLAW COMPANY

UP MOTOR FREIGHT FACILITY-OAKLAND, CA

FIGURE 1  
SITE LOCATION MAP

SCALE	DATE
1" = 2000'	6/27/96

NAVY SUPPLY CENTER



**LEGEND**

- ⊕ MONITORING WELL OR PIEZOMETER LOCATION AND NUMBER
- ▲ BORING LOCATION AND NUMBER
- CATCH BASIN FOR STORM SEWER
- ⊙ RECOVERY WELLS
- ⊖ ABANDONED WELL

OAKLAND ESTUARY

BY	DATE
WRB	6/21/97
CHECKED	
APPROVED	
APPROVED	
APPROVED	



UPRR TOFC RAILYARD - OAKLAND, CALIFORNIA

**FIGURE 2  
SITE VICINITY MAP**

SCALE: 1" = 150'      DWG. NO: 96120-940

NAVY  
SUPPLY  
CENTER

6" TRANSITE SANITARY SEWER

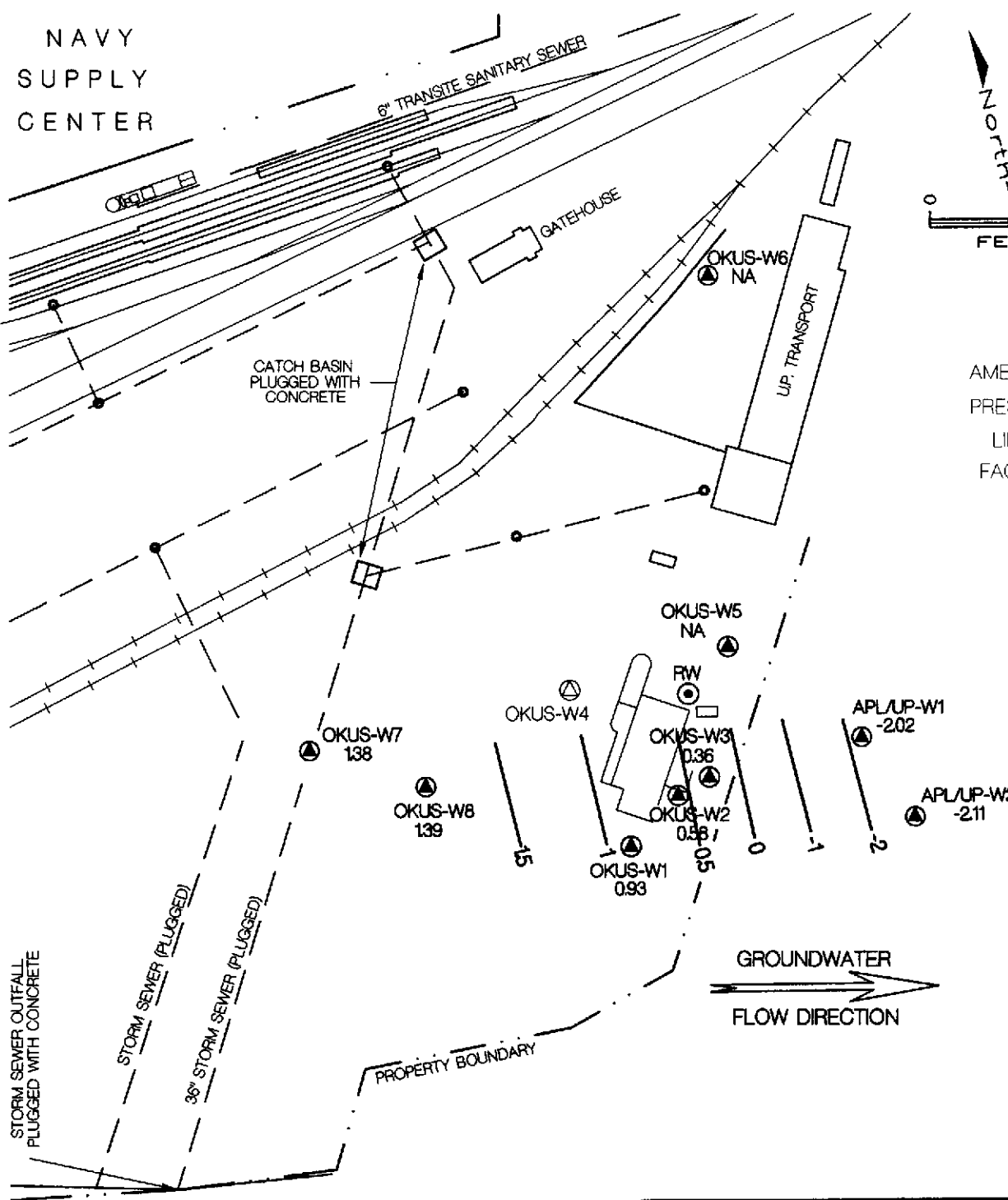
GATEHOUSE

CATCH BASIN  
PLUGGED WITH  
CONCRETE

UP, TRANSPORT



AMERICAN  
PRESIDENT  
LINES  
FACILITY



**LEGEND**

- OKUS-W1 0.39
- RECOVERY WELL
- CATCH BASIN FOR STORM SEWER
- GROUNDWATER ELEVATION CONTOUR (FEET RELATIVE TO MEAN SEA LEVEL)
- NA NOT AVAILABLE
- ABANDONED WELL

**LAIPLAW**  
**ENVIRONMENTAL**  
**SERVICES**

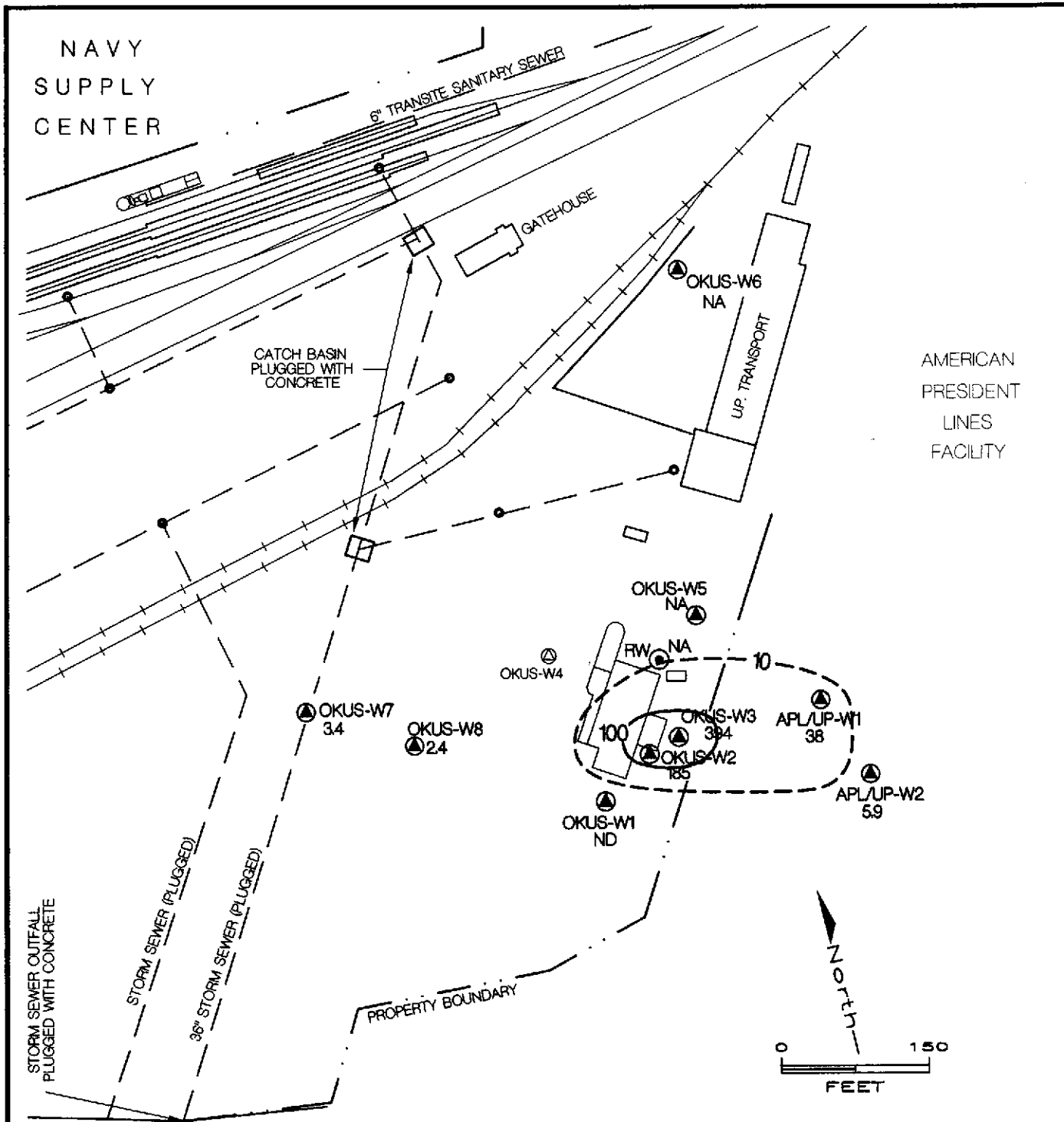
UPMF REPAIR SHOP-OAKLAND, CALIFORNIA

FIGURE 3  
GROUNDWATER ELEVATION MAP (5/97)

SCALE 1" = 150'

APPROVED/DATE 7/21/97

96120-934



**LEGEND**

- OKUS-W8  
▲ 4.0  
MONITOR WELL LOCATION AND NUMBER WITH TOTAL DISSOLVED BTEX CONCENTRATION ug/L
- RW ●  
● RECOVERY WELL
- CATCH BASIN FOR STORM SEWER
- 100 ---  
TOTAL BTEX DISTRIBUTION CONTOUR; DASHED WHERE INFERRED
- ND NOT DETECTED
- NA NOT ANALYZED
- ▲ ABANDONED WELL

NOTE: ALL ANALYTICAL RESULTS IN  $\mu\text{g/L}$

96120-933

**LADLAW**  
**ENVIRONMENTAL SERVICES**

UPMF REPAIR SHOP-OAKLAND, CALIFORNIA

**FIGURE 4**  
**DISSOLVED PHASE BTEX DISTRIBUTION (5/97)**

SCALE 1" = 150'	APPROVED/DATE 7/21/97
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**APPENDIX A**

**FLUID-LEVEL MEASUREMENTS AND SAMPLE  
COLLECTION LOGS**

### USPCI SAMPLING AND WELL STABILIZATION FORM

USPCI Project Name: UPMF Oakland		USPCI Project Number: 96120-844	
Measuring Point (MP) Location Top of casing		Well No. OKUS-W1	
Well Depth: (Below MP): 18.70 Feet			
Casing diameter: 2 Inches		Sampling Date: 5/21/97	
Depth To Ground Water (Below MP): 8.24 Feet		Sample ID No. OKUS-W1	
<u>Method Of Well Development:</u>		Time: 14:15	
<input type="checkbox"/> Tap <input type="checkbox"/> Submersible Pump <input type="checkbox"/> Bladder Pump		Riser Elevation (MP): 9.17 Feet	
<input checked="" type="checkbox"/> Bailer <input type="checkbox"/> Centrifugal Pump <input type="checkbox"/> Other		Top of Screen Elevation: 6.85 Feet	
<u>Sampling Collection Method:</u>		Sample Appearance: Clear	
<input type="checkbox"/> Tap <input type="checkbox"/> Submersible Pump <input type="checkbox"/> Bladder Pump Sample		Odor: Light	
<input checked="" type="checkbox"/> Bailer <u>Type:</u> <input type="radio"/> Teflon <input type="radio"/> Stainless Steel		Sampling Problems (if any):	
<input type="radio"/> ABS Plastic <input type="radio"/> PVC <input checked="" type="radio"/> HDPE plastic disposable			
Pump Intake Or Bailer Set At _____ Feet Below MP		Decontamination Performed: Probe	
Tubing Type (if Used):			
Tubing Used for: <input type="checkbox"/> Sample Collection <input type="checkbox"/> Well Development/Field Tests		Samples Collected: TPH-Gasoline, TPH-Diesel, 8020 BTEX	

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From well (Gallons)	Pumping Rate in Gallons/Minute (GPM)
13:58	Begin well					
14:03	7.0	1,300	19.8		1.75	
14:07	7.1	1,900	19.5		3.50	
14:11	7.1	1,800	19.2		5.25	
14:15	Sample well					

At Least 3 Well Bore Volumes Were Evacuated Before Sampling

Comments: Duplicate sample = OKUS - W11 at 1420

[Comments may continue on back]

Form Completed By: Mark McCormick

Witnessed By:



**USPCI SAMPLING AND WELL STABLIZATION FORM**

USPCI Project Name: UPMF Oakland

USPCI Project Number: 96120-844

Measuring Point (MP) Location Top of casing

**Well No. OKUS-W3**

Well Depth: (Below MP): 22.05 Feet

Casing diameter: 2 Inches

Sampling Date: 5/21/97

Depth To Ground Water (Below MP): 9.44 Feet

Sample ID No. OKUS-W3

**Method Of Well Development:**

Time: 15:30

Tap     Submersible Pump     Bladder Pump

Riser Elevation (MP): 9.80 Feet

Bailer     Centrifugal Pump     Other

Top of Screen Elevation: 6.55 Feet

**Sampling Collection Method:**

Sample Appearance: Clear

Tap     Submersible Pump     Bladder Pump Sample

Odor: Moderate

Bailer Type:     Teflon     Stainless Steel

Sampling Problems (if any):

ABS Plastic     PVC     HDPE plastic disposable

Pump Intake Or Bailer Set At \_\_\_\_\_ Feet Below MP

Decontamination Performed: Probe

**Tubing Type (if Used):**

Tubing Used for:     Sample Collection     Well Development/Field Tests

Samples Collected: TPH-Gasoline, TPH-Diesel, 8020 BTEX

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From well (Gallons)	Pumping Rate in Gallons/Minute (GPM)
15:10	Begin well					
15:15	7.0	3.600	19.7		2.0	
15:20	7.0	3.900	19.7		4.0	
15:24	7.0	3.700	19.7		6.0	
15:30	Sample well					

At Least 3 Well Bore Volumes Were Evacuated Before Sampling

Comments:

[Comments may continue on back]

Form Completed By: Mark McCormick

Witnessed By:



**USPCI SAMPLING AND WELL STABILIZATION FORM**

USPCI Project Name: UPMF Oakland

USPCI Project Number: 96120-844

Measuring Point (MP) Location Top of casing

**Well No. OKUS-W5**

Well Depth: (Below MP): 21.00 Feet

Casing diameter: 2 Inches

Sampling Date: N/A

Depth To Product (Below MP): 9.29 Feet (See comments)

Sample ID No. N/A

**Method Of Well Development:**

Time: N/A

Tap     Submersible Pump     Bladder Pump

Riser Elevation (MP): 9.25 Feet

Bailer     Centrifugal Pump     Other

Top of Screen Elevation: 5.95 Feet

**Sampling Collection Method:**

Sample Appearance: N/A

Tap     Submersible Pump     Bladder Pump Sample

Odor: N/A

Bailer Type:     Teflon     Stainless Steel

Sampling Problems (if any): Product in well water

ABS Plastic     PVC

Pump Intake Or Bailer Set At \_\_\_\_\_ Feet Below MP

Decontamination Performed: Probe

Tubing Type (if Used):

Tubing Used for:     Sample Collection     Well Development/Field Tests

Samples Collected: None

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From well (Gallons)	Pumping Rate in Gallons/Minute (GPM)
WELL NOT	SAMPLED					

Comments: Product was noted as "Bunker C" type hydrocarbon. Depth to water measurement was not available.

The well was not sampled because of the presence of phase-separated hydrocarbon.

[Comments may continue on back]

Form Completed By: Mark McCormick

Witnessed By



## USPCI SAMPLING AND WELL STABILIZATION FORM

USPCI Project Name: <b>UPMF Oakland</b>		USPCI Project Number: <b>96120-844</b>	
Measuring Point (MP) Location <b>Top of casing</b>		<b>Well No. OKUS-W7</b>	
Well Depth: (Below MP): <b>19.88 Feet</b>			
Casing diameter: <b>2 Inches</b>		Sampling Date: <b>5/21/97</b>	
Depth To Ground Water (Below MP): <b>5.53 Feet</b>		Sample ID No. <b>OKUS-W7</b>	
<b>Method Of Well Development:</b>		Time: <b>13:45</b>	
<input type="checkbox"/> Tap <input type="checkbox"/> Submersible Pump <input type="checkbox"/> Bladder Pump		Riser Elevation (MP): <b>7.4 Feet</b>	
<input checked="" type="checkbox"/> Bailer <input type="checkbox"/> Centrifugal Pump <input type="checkbox"/> Other		Top of Screen Elevation: <b>2.4 Feet</b>	
<b>Sampling Collection Method:</b>		Sample Appearance: <b>Clear/very slightly turbid</b>	
<input type="checkbox"/> Tap <input type="checkbox"/> Submersible Pump <input type="checkbox"/> Bladder Pump    Sample		Odor: <b>Slight</b>	
<input checked="" type="checkbox"/> Bailer <u>Type:</u> <input type="radio"/> Teflon <input type="radio"/> Stainless Steel		Sampling Problems (if any):	
<input type="radio"/> ABS Plastic <input type="radio"/> PVC <input checked="" type="radio"/> HDPE plastic disposable			
Pump Intake Or Bailer Set At _____ Feet Below MP		Decontamination Performed: <b>Probe</b>	
Tubing Type (if Used):			
Tubing Used for: <input type="checkbox"/> Sample Collection <input type="checkbox"/> Well Development/Field Tests		Samples Collected: <b>TPH-Gasoline, TPH-Diesel, 8020 BTEX</b>	

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From well (Gallons)	Pumping Rate in Gallons/Minute (GPM)
13:22	Begin well					
13:28	7.1	2,900	19.5		2.5	
13:34	7.2	3,100	19.5		5.0	
13:40	7.1	2,800	19.4		7.5	
13:45	Sample well					

**At Least 3 Well Bore Volumes Were Evacuated Before Sampling**

Comments:

[Comments may continue on back]

Form Completed By: **Mark McCormick**

Witnessed By:

**USPCI SAMPLING AND WELL STABILIZATION FORM**

USPCI Project Name: <b>UPMF Oakland</b>				USPCI Project Number: <b>96120-844</b>		
Measuring Point (MP) Location <b>Top of casing</b>				<b>Well No. OKUS-W8</b>		
Well Depth: (Below MP): <b>14.80 Feet</b>						
Casing diameter: <b>2 Inches</b>				Sampling Date: <b>5/21/97</b>		
Depth To Ground Water (Below MP): <b>5.36 Feet</b>				Sample ID No. <b>OKUS-W8</b>		
<b>Method Of Well Development:</b>				Time: <b>13:10</b>		
<input type="checkbox"/> Tap <input type="checkbox"/> Submersible Pump <input type="checkbox"/> Bladder Pump				Riser Elevation (MP): <b>7.11 Feet</b>		
<input checked="" type="checkbox"/> Bailer <input type="checkbox"/> Centrifugal Pump <input type="checkbox"/> Other				Top of Screen Elevation: <b>2.11 Feet</b>		
<b>Sampling Collection Method:</b>				Sample Appearance: <b>Very slightly turbid, yellow</b>		
<input type="checkbox"/> Tap <input type="checkbox"/> Submersible Pump <input type="checkbox"/> Bladder Pump Sample				Odor: <b>Light</b>		
<input checked="" type="checkbox"/> Bailer <u>Type:</u> <input type="radio"/> Teflon <input type="radio"/> Stainless Steel				Sampling Problems (if any): <b>Water is reactive</b>		
<input type="radio"/> ABS Plastic <input type="radio"/> PVC <input checked="" type="radio"/> HDPE plastic disposable						
Pump Intake Or Bailer Set At _____ Feet Below MP				Decontamination Performed: <b>Probe</b>		
Tubing Type (if Used):						
Tubing Used for: <input type="checkbox"/> Sample Collection <input type="checkbox"/> Well Development/Field Tests				Samples Collected: <b>TPH-Gasoline, TPH-Diesel, 8020 BTEX</b>		

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From well (Gallons)	Pumping Rate in Gallons/Minute (GPM)
12:53	Begin well					
12:56	7.3	4,100	19.7		1.5	
12:59	7.2	4,000	19.2		3.0	
13:02	7.2	4,000	19.8		4.5	
13:10	Sample well					

**At Least 3 Well Bore Volumes Were Evacuated Before Sampling**

Comments:

[Comments may continue on back]

Form Completed By: **Mark McCormick**

Witnessed By:

**USPCI SAMPLING AND WELL STABLIZATION FORM**

USPCI Project Name: UPMF Oakland USPCI Project Number: 96120-844

Measuring Point (MP) Location **Top of casing** **Well No. APL-W1**

Well Depth: (Below MP): **21.86 Feet**

Casing diameter: **2 Inches** Sampling Date: **5/21/97**

Depth To Ground Water (Below MP): **10.14 Feet** Sample ID No. **APL/UP-W1**

**Method Of Well Development:** Time: **11:05**

Tap  Submersible Pump  Bladder Pump Riser Elevation (MP): **7.11 Feet**

Bailer  Centrifugal Pump  Other Top of Screen Elevation: **2.11 Feet**

**Sampling Collection Method:** Sample Appearance: **Clear**

Tap  Submersible Pump  Bladder Pump Sample Odor: **Slight**

Bailer Type:  Teflon  Stainless Steel Sampling Problems (if any):

ABS Plastic  PVC  HDPE disposable

Pump Intake Or Bailer Set At \_\_\_\_\_ Feet Below MP Decontamination Performed: **Probe**

Tubing Type (if Used):

Tubing Used for:  Sample Collection  Well Development/Field Tests Samples Collected: **TPH-Gasoline, TPH-Diesel, 8020 BTEX**

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From well (Gallons)	Pumping Rate in Gallons/Minute (GPM)
10:45	Begin Well					
10:50	7.1	2,700	18.6		2.0	
10:54	7.0	2,700	18.2		4.0	
10:58	7.0	2,800	17.9		6.0	
11:05	Sample Well					

**At Least 3 Well Bore Volumes Were Evacuated Before Sampling**

Comments: **TPH-Diesel X 3 for MS/MSD**

[Comments may continue on back]

Form Completed By: **Mark McCormick** Witnessed By:

## USPCI SAMPLING AND WELL STABLIZATION FORM

USPCI Project Name: <b>UPMF Oakland</b>		USPCI Project Number: <b>96120-844</b>	
Measuring Point (MP) Location <b>Top of casing</b>		<b>Well No. APL-W2</b>	
Well Depth: (Below MP): <b>17.00 Feet</b>			
Casing diameter: <b>2 Inches</b>		Sampling Date: <b>5/21/97</b>	
Depth To Ground Water (Below MP): <b>9.42 Feet</b>		Sample ID No. <b>APL/UP-W2</b>	
<b>Method Of Well Development:</b>		Time: <b>11:35</b>	
<input type="checkbox"/> Tap <input type="checkbox"/> Submersible Pump <input type="checkbox"/> Bladder Pump		Riser Elevation (MP): <b>7.62 Feet</b>	
<input checked="" type="checkbox"/> Bailer <input type="checkbox"/> Centrifugal Pump <input type="checkbox"/> Other		Top of Screen Elevation: <b>2.62 Feet</b>	
<b>Sampling Collection Method:</b>		Sample Appearance: <b>Clear</b>	
<input type="checkbox"/> Tap <input type="checkbox"/> Submersible Pump <input type="checkbox"/> Bladder Pump Sample		Odor: <b>Very slight</b>	
<input checked="" type="checkbox"/> Bailer <u>Type:</u> <input type="radio"/> Teflon <input type="radio"/> Stainless Steel		Sampling Problems (if any):	
<input type="radio"/> ABS Plastic <input type="radio"/> PVC <input checked="" type="radio"/> HDPE disposable			
Pump Intake Or Bailer Set At _____ Feet Below MP		Decontamination Performed: <b>Probe</b>	
Tubing Type (if Used):			
Tubing Used for: <input type="checkbox"/> Sample Collection <input type="checkbox"/> Well Development/Field Tests		Samples Collected: <b>TPH-Gasoline, TPH-Diesel, 8020 BTEX</b>	

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From well (Gallons)	Pumping Rate in Gallons/Minute (GPM)
11:19	Begin well					
11:22	7.1	2,800	18.6		1.25	
11:25	7.0	2,900	18.4		2.50	
11:28	7.0	2,800	18.7		3.75	
11:35	Sample well					

At Least 3 Well Bore Volumes Were Evacuated Before Sampling

Comments:

*[Comments may continue on back]*

Form Completed By: **Mark McCormick**

Witnessed By:

5/21/97

- 0700 > Call Aqua-Bailer, UPS lost shipment from Tenn?  
> No Bailer's
- 0730 > Aqua-Bailer calls back (Mike)  
> Still no word on if bailer's can be delivered today  
> He'll call back
- 0800 > Call UPS - they're not sure what happened  
> No Bailer's!
- 0815 > Call local consultants  
> Mike from Blymer suggests EI in Concord
- 0830 > Leave for EI
- 0930 > Pick up 1 cs bailer's from EI  
> they will bill Boulder
- 1030 > Arrive on site APL
- 1045 > Begin APL/UP-W1
- 1105 > Sample APL/UP-W1: VAS, TPH-D x3 for NS/MSD
- 1119 > Begin APL/UP-W2
- 1135 > Sample APL/UP-W2: VAS, TPH-G + D
- 1150 > Quit APL
- 1205 > Buy ice, grab some eats
- 1253 > Begin OKUS-W8 (VAS)
- 1310 > Sample OKUS-W8; BTEX + TPH-G, TPH-D
- 1322 > Begin OKUS-W7
- 1345 > Sample OKUS-W7: BTEX + TPH-G, TPH-D

1358 Begin OKUS-W1  
1415 Sample OKUS-W1: BTEX+TPH-G, TPH-D  
1420 Dup OKUS-W1 = OKUS-W11  
BTEX+TPH-G, TPH-D  
1433 Begin OKUS-W2  
1455 Sample OKUS-W2; TPH-G+BTEX, TPH-D  
1510 Begin OKUS-W3  
1530 Sample OKUS-W3; TPH-G+BTEX, TPH-D  
1540 Quit site  
1630 Drop samples at Sequoia  
1720 On-site  
1730 OKUS-W6, DTP = 6.03  
1746 OKUS-W5, DTP = 9.29  
1755 RW, DTP = 9.10  
DTW = 9.12  
> Solar Sipper not working  
1810 Get Ollie from UPMF to charge  
battery  
1815 > Ollie hooks up charger, battery  
dead, starts charging,  
compressor motor will not  
shut off  
1827 > Clean Sipper pump unit  
1840 > adjust vac pressure valve  
1847 > shut off relay not working  
1910 > Need new battery & possibly new  
RELAY, pull RELAY, system down  
1932 Quit site



**APPENDIX B**  
**ANALYTICAL REPORTS**



U.S.P.C.I.  
5665 Flatiron Pkwy  
Boulder, CO 80301  
Attention: Denton Mauldin

Client Project ID: UP Motor Freight  
Sample Matrix: Water  
Analysis Method: EPA 5030/8015 Mod./8020  
First Sample #: 705-1480

Sampled: May 21, 1997  
Received: May 21, 1997  
Reported: Jun 4, 1997

QC Batch Number: GC060397 GC060397 GC060297 GC060497 GC060297 GC060297  
802005A 802005A 802005A 802002A 802005A 802005A

**TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION**

Analyte	Reporting Limit µg/L	Sample I.D. 705-1480 APL/UP-W1	Sample I.D. 705-1481 APL/UP-W2	Sample I.D. 705-1482 OKUS-W8	Sample I.D. 705-1483 OKUS-W7	Sample I.D. 705-1484 OKUS-W1	Sample I.D. 705-1485 OKUS-W11
Purgeable Hydrocarbons	50	260	92	100	N.D.	N.D.	N.D.
Benzene	0.50	22	4.8	1.3	2.6	N.D.	N.D.
Toluene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.50	13	1.1	N.D.	0.84	N.D.	N.D.
Total Xylenes	0.50	2.5	N.D.	1.1	N.D.	N.D.	N.D.

Chromatogram Pattern: Gasoline & Discrete Peaks Gasoline & Discrete Peaks Gasoline & Unidentified Hydrocarbons > C8 -- -- --

**Quality Control Data**

Report Limit Multiplication Factor:	5.0	1.0	2.0	1.0	1.0	1.0
Date Analyzed:	6/3/97	6/3/97	6/2/97	6/4/97	6/2/97	6/2/97
Instrument Identification:	HP-5	HP-5	HP-5	HP-2	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	109	103	107	86	113	111

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

Please Note:  
Revised report issued 06/20/97

*Melissa A. Brewer*

Melissa A. Brewer  
Client Services Representative

7051480.USB <1>





# Sequoia Analytical

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U.S.P.C.I. 5665 Flatiron Pkwy Boulder, CO 80301 Attention: Denton Mauldin	Client Project ID: UP Motor Freight Sample Matrix: Water Analysis Method: EPA 5030/8015 Mod./8020 First Sample #: 705-1486	Sampled: May 21, 1997 Received: May 21, 1997 Reported: Jun 4, 1997
--	---	--

QC Batch Number:	GC060297	GC060297	GC060297	GC060297	GC060397	GC060497
	802005A	802005A	802005A	802005A	802005A	802002A

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 705-1486 OKUS-W2	Sample I.D. 705-1487 OKUS-W3	Sample I.D. 705-1488 Trip Blank	Sample I.D. Method Blank	Sample I.D. Method Blank	Sample I.D. Method Blank
Purgeable Hydrocarbons	50	3,300	6,100	N.D.	N.D.	N.D.	N.D.
Benzene	0.50	120	190	N.D.	N.D.	N.D.	N.D.
Toluene	0.50	23	43	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.50	11	120	N.D.	N.D.	N.D.	N.D.
Total Xylenes	0.50	31	41	N.D.	N.D.	N.D.	N.D.
Chromatogram Pattern:		Gasoline & Discrete Peaks	Gasoline & Discrete Peaks	--	--	--	--

### Quality Control Data

Report Limit Multiplication Factor:	20	50	1.0	1.0	1.0	1.0
Date Analyzed:	6/2/97	6/2/97	6/2/97	6/2/97	6/3/97	6/4/97
Instrument Identification:	HP-5	HP-5	HP-5	HP-5	HP-5	HP-2
Surrogate Recovery, %: (QC Limits - 70-130%)	114	104	114	122	121	101

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

Please Note:  
Revised report issued 06/20/97

*Melissa A. Brewer*

Melissa A. Brewer  
Client Services Representative

7051480.USB <2>





U.S.P.C.I. Client Project ID: UP Motor Freight  
5665 Flatiron Pkwy Sample Matrix: Water  
Boulder, CO 80301 Analysis Method: EPA 3510/8015 Mod.  
Attention: Denton Mauldin First Sample #: 705-1480

Sampled: May 21, 1997  
Received: May 21, 1997  
Reported: Jun 4, 1997

QC Batch Number: SF-052897 SP052897 SP052897 SP052897 SP052897 SP052897  
8015EXA 8015EXA 8015EXA 8015EXA 8015EXA 8015EXA

**TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS**

Analyte	Reporting Limit µg/L	Sample I.D. 705-1480 APL/UP-W1	Sample I.D. 705-1481 APL/UP-W2	Sample I.D. 705-1482 OKUS-W8	Sample I.D. 705-1483 OKUS-W7	Sample I.D. 705-1484 OKUS-W1	Sample I.D. 705-1485 OKUS-W11
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Extractable Hydrocarbons	50	850	430	1,600	1,200	190	220
--------------------------	----	-----	-----	-------	-------	-----	-----

Chromatogram Pattern:	Diesel & Unidentified Hydrocarbons > C20	Diesel & Unidentified Hydrocarbons > C20	Diesel & Unidentified Hydrocarbons > C20	Diesel & Unidentified Hydrocarbons > C20	Diesel & Unidentified Hydrocarbons > C20	Diesel & Unidentified Hydrocarbons > C20	Diesel & Unidentified Hydrocarbons > C20
-----------------------	--	--	--	--	--	--	--

**Quality Control Data**

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Date Extracted:	5/28/97	5/28/97	5/28/97	5/28/97	5/28/97	5/28/97	5/28/97
Date Analyzed:	5/29/97	5/29/97	5/29/97	5/29/97	5/29/97	5/29/97	5/29/97
Instrument Identification:	HP-3A	HP-3A	HP-3A	HP-3A	HP-3A	HP-3A	HP-3A

Extractable Hydrocarbons are quantitated against a fresh diesel standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

*Melissa A. Brewer*

Melissa A. Brewer  
Client Services Representative



# Sequoia Analytical

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 FAX (510) 988-9673  
 FAX (916) 921-0100

U.S.P.C.I.  
 5665 Flatiron Pkwy  
 Boulder, CO 80301  
 Attention: Denton Mauldin

Client Project ID: UP Motor Freight  
 Sample Matrix: Water  
 Analysis Method: EPA 3510/8015 Mod.  
 First Sample #: 705-1486

Sampled: May 21, 1997  
 Received: May 21, 1997  
 Reported: Jun 4, 1997

QC Batch Number: SP052897 SP052897 SP052897

8015EXA 8015EXA 8015EXA

## TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 705-1486 OKUS-W2	Sample I.D. 705-1487 OKUS-W3	Sample I.D. Method Blank
Extractable Hydrocarbons	50	2,500	2,400	N.D.
Chromatogram Pattern:		Diesel & Unidentified Hydrocarbons < C15 > C20	Diesel & Unidentified Hydrocarbons < C15 > C20	--

### Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0
Date Extracted:	5/28/97	5/28/97	5/28/97
Date Analyzed:	5/29/97	5/29/97	5/29/97
Instrument Identification:	HP-3A	HP-3A	HP-3A

Extractable Hydrocarbons are quantitated against a fresh diesel standard.  
 Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

*Melissa A. Brewer*

Melissa A. Brewer  
 Client Services Representative

7051480.USP <4>





# SEQUOIA ANALYTICAL CHAIN OF CUSTODY

680 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600 FAX (415) 364-9233  
 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600 FAX (916) 921-0100  
 404 N. Wiget Lane • Walnut Creek, CA 94598 • (510) 988-9600 FAX (510) 988-9673

Company Name: <b>USPCI / LAIDLAW</b>		Project Name: <b>UP MOTOR FREIGHT</b>	
Address: <b>5665 FLATIRON PKWY</b>		Billing Address (if different):	
City: <b>BOULDER</b> State: <b>CO</b> Zip Code: <b>80301</b>	P.O. #: <b>SAME</b>		
Telephone: <b>303-938-5500</b> FAX #: <b>303-938-5520</b>	QC Data: <input type="checkbox"/> Level D (Standard) <input checked="" type="checkbox"/> Level C <input type="checkbox"/> Level B <input type="checkbox"/> Level A		
Report To: <b>DENTON MAULDIN</b> Sampler: <b>MARK MCCORMICK</b>			

Turnaround  10 Working Days  3 Working Days  2 - 8 Hours  
 Time:  7 Working Days  2 Working Days  
 5 Working Days  24 Hours

Drinking Water  
 Waste Water  
 Other **GW**

**Analyses Requested**  
 MDD B015  
 TPH-GASOLINE  
 + B020 BTEX  
 MDD B015  
 TPH-DIESEL

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Sequoia's Sample #	Analyses Requested										Comments			
1. APL/UP-W1	5/21/97 1105	AQU	3	VOA		X	X												
2.			3	11 AMBER															USE FOR MS/MSD
3. APL/UP-WZ	135		3	11 AMBER		X	X												
4.			3	11 AMBER		X	X												
5. DKUS-W8	131		3	VOA		X	X												
6.			3	11 AMBER		X	X												
7. DKUS-W7			3	VOA		X	X												
8.			3	11 AMBER		X	X												
9. DKUS-W1	1415		3	VOA		X	X												
10.			1	11 AMBER															

Relinquished By: <i>[Signature]</i>	Date: <b>5/21/97</b>	Time: <b>1630</b>	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: <i>[Signature]</i>	Date:	Time:
Relinquished By:	Date:	Time:	Received By Lab: <i>[Signature]</i>	Date: <b>5/21/97</b>	Time: <b>1630</b>

Pink - Client  
 Yellow - Sequoia  
 White - Sequoia



# SEQUOIA ANALYTICAL CHAIN OF CUSTODY

680 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600 FAX (415) 364-9233  
 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600 FAX (916) 921-0100  
 404 N. Wiget Lane • Walnut Creek, CA 94598 • (510) 988-9600 FAX (510) 988-9673

Company Name: <u>USPCI/LAIDLAW</u>		Project Name: <u>UP MOTOR FREIGHT</u>	
Address: <u>5665 FLATIRON PKWY</u>		Billing Address (if different):	
City: <u>BOWLDER</u> State: <u>CO</u> Zip Code: <u>80301</u>	P.O. #: <u>SAME</u>		
Telephone: <u>303-938-5500</u> FAX #: <u>303-938-5520</u>	P.O. #:		
Report To: <u>DENTON MAULDIN</u> Sampler: <u>MARK MCCORMICK</u>	QC Data: <input type="checkbox"/> Level D (Standard) <input checked="" type="checkbox"/> Level C <input type="checkbox"/> Level B <input type="checkbox"/> Level A		

Turnaround  10 Working Days  3 Working Days  2 - 8 Hours  
 Time:  7 Working Days  2 Working Days  
 5 Working Days  24 Hours

Drinking Water  
 Waste Water  
 Other GW

### Analyses Requested

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Sequoia's Sample #	Analyses Requested										Comments				
1. <u>OKUS-W1</u>	<u>5/21/97 1720</u>	<u>AQU</u>	<u>3</u>	<u>VOA</u>		<u>X</u>	<u>X</u>													
2. <u>I</u>	<u>I</u>		<u>1</u>	<u>14 AMBER</u>																
3. <u>OKUS-WZ</u>	<u>155</u>		<u>3</u>	<u>VOA</u>		<u>X</u>	<u>X</u>													
4. <u>I</u>	<u>I</u>			<u>14 AMBER</u>																
5. <u>OKUS-W3</u>	<u>153</u>			<u>VOA</u>		<u>X</u>	<u>X</u>													
6. <u>I</u>	<u>I</u>			<u>14 AMBER</u>																
7. <u>TRIP BLANK</u>				<u>VOA</u>		<u>X</u>	<u>X</u>													
8.																				
9.																				
10.																				

Relinquished By: <u>[Signature]</u>	Date: <u>5/21/97</u>	Time: <u>1630</u>	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By Lab: <u>[Signature]</u>	Date: <u>5/21/97</u>	Time: <u>1630</u>

Were Samples Received in Good Condition?  Yes  No

Samples on Ice?  Yes  No

Method of Shipment \_\_\_\_\_

Pink - Client

Yellow - Sequoia

White - Sequoia