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April 28, 1998

Mr. Harry Patterson Union Pacific Railroad 1416 Dodge Street, Room 930 Omaha, Nebraska 68179

Subject: Final First Quarter 19987 Monitoring Report Oakland Motor Freight Facility,

1750 Ferro Street, Oakland, California, Laidlaw Project No. 96120-844

Dear Mr. Patterson:

Enclosed is the final copy of the First Quarter 1998 Monitoring Report, for the Union Pacific Motor Freight Facility at 1750 Ferro Street in Oakland, California. The Second Quarter 1997 Monitoring Report, dated July 29, 1997 included the following recommendations:

- Discontinue the operation of the product skimming pump in the recovery well (RW);
- Change the fluid-level measurement frequency in well RW from monthly to quarterly;
- 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 (April and October).

Mr. Larry Seto of the Alameda County Department of Environmental Health (ACDEH) has been assigned to the subject project. Mr. Seto needed time to review the project history and requested that Laidlaw continue the quarterly monitoring program in the meantime. Mr. Seto anticipates providing a response to the recommendations made in the July 1997 report by the beginning of May 1998. We will inform you of his decision as soon as it is known to us.

If you have any questions, please call us at (303) 938-5500.

Sincerely,

Teresa Van

Project Manager

lusa Van

fam Marpin Sam Marquis, R.G., P.G.

Project Hydrogeologist

cc:

Larry Seto, ACDEH

John Prall, Port of Oakland

Jack Murphy, APL

### FIRST QUARTER 1998 MONITORING REPORT

## UNION PACIFIC MOTOR FREIGHT FACILITY OAKLAND, CALIFORNIA

LAIDLAW Project No. 96120-844

### Prepared For:

UNION PACIFIC RAILROAD ENVIRONMENTAL MANAGEMENT 1416 DODGE STREET, ROOM 930 OMAHA, NEBRASKA 68179

### Prepared by:

Laidlaw Consulting Services 5665 Flatiron Parkway Boulder, Colorado 80301

April 28, 1998

### FIRST QUARTER 1998 MONITORING REPORT UNION PACIFIC RAILROAD UNION PACIFIC MOTOR FREIGHT FACILITY OAKLAND, CALIFORNIA Laidlaw Project No. 96120-844

Prepared for:
Union Pacific Railroad
Environmental Management - Room 930
1416 Dodge Street
Omaha, Nebraska 68179

for submittal to:
 Larry Seto
 Alameda County

Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502

Prepared by: Laidlaw Consulting Services 5665 Flatiron Parkway Boulder, Colorado 80301

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#### 1. INTRODUCTION

This report presents the results from the first quarter 1998 groundwater monitoring event conducted at the Union Pacific Railroad Motor Freight (UPMF) facility at 1750 Ferro Street in Oakland, California (Figure 1). It includes a discussion of the background information about the site, field and analytical results for the first quarter 1998 event, and conclusions. The report has been prepared by Consulting Services of Laidlaw Environmental Services (Laidlaw) on behalf of Union Pacific Railroad (UPRR). The first quarter 1998 event has been performed 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.

#### 2. BACKGROUND INFORMATION

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

### 2.1 Site History

The (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 (Laidlaw, 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 is 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 (Laidlaw, 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 contracted with Burns and McDonnell Waste Consultants, Inc. to perform a portion of the field work 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 groundwater samples for the first quarter 1998 monitoring event were analyzed for:

- total petroleum hydrocarbons as diesel (TPH-D) and total petroleum hydrocarbons as gasoline (TPH-G) by EPA Method 8015 Modified; and
- benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020.

Fluid-level measurements are collected from the recovery well RW on a monthly basis by Burns and McDonnell. 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 by Laidlaw personnel on a quarterly basis.

### 3. 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 February 4, 5, and 6, 1998 and are compiled into Table 1. The data were used to produce the groundwater elevation map presented as Figure 3. An increase in groundwater elevations relative to the previous monitoring event (fourth quarter 1997) was noted in all monitoring wells except for APL/UP-W1 and APL/UP-W2. These two wells exhibited water levels slightly lower than the previous quarter. 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 0.009 feet per foot (48 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.

### 3.3 Analytical Results

During the first quarter 1998 monitoring event, samples were collected from monitoring wells OKUS-W2, OKUS-W3, OKUS-W7, OKUS-W8, APL/UP-W1, and APL/UP-W2. Monitoring well OKUS-W1 was gauged but not sampled due to an error on the sample route agenda.

Monitoring well OKUS-W8 did not contain dissolved BTEX concentrations above the method detection limit (MDL) of 0.50 micrograms per liter (µg/l). Monitoring wells OKUS-W2 and OKUS-W3 samples contained dissolved BTEX. The samples collected from monitoring wells APL/UP-W1 and APL/UP-W2 contained dissolved benzene and xylenes. Dissolved BTEX appeared in the samples collected from monitoring well OKUS-W7.

Benzene concentrations ranged from below the MDL in well OKUS-W8 to 210  $\mu$ g/l in OKUS-W3. The range for toluene was from below the MDL in wells OKUS-W3, OKUS-W7, OKUS-W8, APL/UP-W1, and APL/UP-W2 to 11  $\mu$ g/l in OKUS-W2. Ethylbenzene was below the MDL in all wells sampled.

Xylenes ranged from below the MDL in wells OKUS-W3, OKUS-W7 and OKUS-W8 to 22  $\mu$ g/l in APL/UP-W1. Total BTEX concentrations ranged from below the MDL in OKUS-W8 to 210  $\mu$ g/l in OKUS-W3.

Dissolved TPH-G, indicative of gasoline, was detected in samples collected from all monitoring wells sampled during the first quarter 1998 monitoring event except for OKUS-W7. TPH-G concentrations ranged from below the MDL of 50  $\mu$ g/l in OKUS-W7 to 6,000  $\mu$ g/l in OKUS-W3.

Dissolved TPH-D, representing diesel fuel, was detected in samples collected from all monitoring wells sampled during the event. TPH-D concentrations ranged from 730  $\mu$ g/l APL/UP-W2 to 3,400  $\mu$ g/l in OKUS-W3.

The 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 showed that monitoring wells OKUS-W5 and OKUS-W6 continued to contain "bunker C" type product. An accurate determination of product thickness and water level depth in OKUS-W5 and OKUS-W6 was not possible due to the high viscosity of the product and difficulty in measuring product thickness.

A product/water interface was not detected in recovery well RW during the first quarter 1998 sampling event. However, Laidlaw personnel did observe product on the water level probe after gauging the well on February 6, 1998. A site visit was not conducted by Burns and McDonnell field personnel during the first quarter 1998. Historically upon each site visit, Burns and McDonnell field personnel have detected only a sheen in well RW and have found the recovery barrel to be mostly empty.

### 4. CONCLUSIONS

On the basis of the information obtained from the first quarter 1998 monitoring activities, Laidlaw concludes that:

- The groundwater flow direction is to the east at an average gradient of 0.009 feet per foot (48 feet per mile), consistent with previous monitoring events;
- The dissolved BTEX and TPH concentrations in all wells are consistent with historic concentration ranges and, in most cases, are lower than previously observed levels; and
- Historic monitoring results show that residual petroleum contamination in the source area has
  decreased over time, which suggests that a continued source of contamination is not present
  and that remaining residual contamination is relatively static.

### 5. LIMITATIONS

The project and this report were undertaken for the exclusive use of the Union Pacific Railroad. Use by any other person or organization is subject to no warranty by UPRR or Laidlaw Environmental Services.

The conclusions provided in this report are based solely upon information provided to Laidlaw by UPRR, Burns & McDonnell, and as generated by Laidlaw for this project. Additional investigations as well as information not available to UPRR and Laidlaw at the time this project and report were completed may result in modifications to the understanding of the site, conclusions, and other items generated as part of the work.

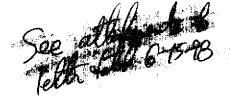
The project and this report were conducted and prepared in accordance with generally accepted environmental and engineering practices with a standard of care appropriate to the project. UPRR and Laidlaw express and imply no other warranty.

### 6. REFERENCES

Laidlaw (formerly USPCI), 1991. "Hydrocarbon Investigation and Remediation Design," Union Pacific Railroad, June 10, 1991.

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

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



WELL	ELEV.*	DATE	DEPTH TO	PRODUCT	DEPTH TO	WATER	CORR'D
NO.	TOC		PRODUCT	THICKNESS	WATER	ELEV.	ELEV.
OKUS-W1	9.17	08/09/95	N/A	NP	8.18	0.99	0.99
Luditu naet ermet vikki	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
TO THE REPORT OF THE PROPERTY	9.17	11/12/96	N/A	NP NP	8.71 <b>7.58</b>	0.46 1.59	0.46 1.59
	9.1 <b>7</b> 9.17	02/17/97 05/21/97	N/A N/A	NP	7.96 8.24	0.93	0.93
	9.17 9.17	03/21/97	N/A	NP L	8.37	0.80	0.80
i - Mariaka (national) I	9.17	11/19/97	N/A	NP	8.28	0.89	0.89
	9.17	02/04/98	N/Â	NP	6.95	2.22	2.22
OKUS-W2	9.71	08/09/95	N/A	NP	9.09	0.62	0.62
OKUSIWZ	9.71	11/29/95	N/A	NP	9.69	0.02	0.02
AND STREET HOUSE	9.71	02/27/96	N/A	NP 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
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	9.71	02/17/97	N/A	NP	8.41	(Mail: 16 but 68 but 18	1.30
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	9.71	08/27/97	N/A	NP NP	9.29 9.21	0.50	0.42
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Section of the sectio	9.80 9.80	05/29/96	N/A N/A	NP NP	9.52	0.80	0.38
	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
15 25-82964	9.80	05/21/97	N/A	NP	9.44	0.36	0.36
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	9.80	11/19/97	N/A	<b>NP</b>	9.45	0.35	0.35
	9.80	02/05/98	N/A	NP	7.65	2.15	2.15
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
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	6.91	02/27/96	N/A	NP NP	4.98	1.93	1.93
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OKUS-W8	6.75	08/09/95	N/A	NP	5.32	1.43	1.43
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	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
1998 2011 (1212) (1997) 1212 1213 (1997)	6.75	08/27/97	N/A	NP	5.59	1.16	1.16
	6.75	11/19/97	N/A	NP	5.45	1.30	1.30
The second of th	6.75	02/04/98	N/A	NP	4.36	2.39	2.39
APL/UP-W1	8.12	08/09/95	N/A	NP	10.01	-1.89	1.89
ESERCE-A Robbides mudifierb	8.12	11/29/95	N/A	NP	10.29	-2.17	-2.17
	8.12	02/27/96	N/A	NP.	WELL INACCES	SABLE	
TITLE AND DESCRIPTION OF PROPERTY OF A	8.12	05/29/96	N/A	NP	WELL INACCES	SABLE	1
	8.12	08/27/96	N/A	NP	WELL INACCES	SABLE	
33.7 (24) - Sign (45)	8.12	11/12/96	N/A	NP	WELL INACCES	SABLE	
	8.12	02/17/97	N/A	NP	10.02	-1.90	-1.90
2.1 1.354	8.12	05/21/97	N/A	NP	10.14	-2.02	-2.02
	8.12	08/27/97	N/A	NP	9.91	-1.79	-1.79
	8.12	11/18/97	N/A	NP	9.32	-1.20	-1.20
	8.12	02/04/98	N/A	NP NP	9.80	-1.68	-1.68
APL/UP-W2	7.31	08/09/95	N/A	NP	9.42	-2.11	-2.11
AT Cambra day of gray an	7. <b>3</b> 1	11/29/95	N/A	NP	9.41	-2.10	-2.10
	7.31	02/27/96	N/A	Y KINP PES	8.89	-1.58	
y a Langerin (differential)	7.31	05/29/96	Transingi YAX assisso N/A	NP	9.68	-2.37	-2.37
	7,31	08/27/96	N/A	NP.	9.53		-2.22
	7.31	11/12/96	N/A	NP	9.60	-2.29	-2.29
	7.31	02/17/97	MANUS N/A	NP 15 NP	9.07		
Bergenblise Geddund Jane Div	7.31	05/21/97	N/A	NP	9.42	-2.11	-2.11

WELL NO.	ELEV.* TOC	DATE	DEPTH TO PRODUCT	PRODUCT THICKNESS	DEPTH TO WATER	WATER ELEV.	CORR'D ELEV.
APL/UP-W2	7.31 7.31 7.31	08/27/97 11/18/97 02/04/98	N/A N/A N/A	NP NP	9.17 8.59 8.80	-1.86 -1.28 -1.49	-1.86 -1.28 -1.49
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RW	<del>-</del>	08/09/95	9.07	0.03	9.10		
and the second second		09/07/95	9.18	0.01	9.19	 al market state of a contract of the contract of	
pegy Jabis.		10/18/95	9.41	0.02	9,43		48594
n iznir qorquasquasquasquasq	 Bilano no Jato no	11/10/95	9.58	 0.12	N/A	   1981	  - - -
		12/15/95 01/10/96	9.46 9.24	0.12	9.58 9.28		man
The morney Place of	en e	01/10/96	9.24 N/A	0.04 36 7 7 3 4 4 4 4 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	9.28 <b>8.73</b>	 1200 - 1200 - 1200 - 1200 - 1200 - 1200 - 1200 - 1200 - 1200 - 1200 - 1200 - 1200 - 1200 - 1200 - 1200 - 1200	
		03/25/96	N/A		8.50		
		03/23/36	N/A	TRONG STELLER RECUESTS	8.30 8.70		
	sti e Tuepau	05/29/96	N/A		8.68		
		06/13/96	N/A	en vinger førre en medlem til sen i Nord i fler i fæld <b>Le</b> fter til fælde sig	8.68		
ertu veztekir ildi.		07/25/96	N/A	in and control was district.	9.09		evier of the state of the stat
		08/27/96	N/A	and the second s	9.18	San	
Partition of the State of the Control of the Contro	er i di nga kasakati Ma <del></del>	09/16/96	N/A	kaén da étukéndaku daud la Mala lulu. <del></del>	9.33	Weiter Inwaktanten i	
	n 144 - 156	10/17/96	N/A		9.50	icaici i -	
ron Et 1962/JERSANSSELE	Twa Men in it enament <del>Te</del>	11/12/96	N/A	—— Pilitar in up augan sinaupen bertua 1999 bil	9.59	18   1859   1859   1851	
* Lainer to the bigging to the control of the contr	elevici <del>i s</del> agelii	12/16/96	9.12	0.10	9.22	idiking ba <del>t</del>	, also see a s
I see the first restriction		01/20/97	N/A	SHEEN	8.50	.en militar var varenni (* 1941 in 1941 ) ==	
te en elektrikan.		02/11/97	N/A	NP	8.33		: •••
		03/06/97	N/A	NP	8.70		
	••	04/29/97	N/A	SHEEN	9.03		
		05/27/97	9.09	0.03	9.12		
		07/15/97	N/A	NP	9.22	igung da kangara da g <u>.    </u>	
		08/27/97	N/A	SHEEN	9.29	**	
to the tought the contract of		11/19/97	N/A	SHEEN	9.29		
		02/06/98	N/A	SHEEN	7.24		

<sup>\*</sup> All well casings measured to mean sea level (MSL).

N/A Non Applicable

NP - No Product

<sup>--</sup> Information not available or inaccurate.

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

SAMPLE	SAMPLE	DATE	TPH/D	TPH/G	В	Т	E	X	BTEX	As
LOCATION	ID	SAMPLED	(ug/l)	(ug/l)	(ug/l)	{ug/l}	(ug/l)	(ug/l)	(ug/l)	(mg/l)
230/1101			(09,17	(agii)	(59,1)	14gm	(0g.1)	1-g/ii	129,77	(g,,,
OKUS-W1	OKUS-W1	01/14/93	ND	410	20	- 4	220	i im NData	240	ND
н	"	05/12/93	120	ND	ND	ND	ND	ND	ND	ND
11 16 15 15 15 15 15 15 15 15 15 15 15 15 15		08/25/83	100	ND	ND	ND	ND	ND	ND	ND
· · · · · · · · · · · · · · · · · · ·	ngarapagnagagar pangg.	11/11/93	160	91	1.1 <0.50	0.88 <b>&lt;0.5</b> 0	21 	1.6 <b>&lt;</b> 0.50 ⋅	24	ND 0.10
Programme of the	19	02/08/94 05/03/94	92 61	<50 <50	< 0.50	< 0.50	<0.50 <0.50	< 0.50	ND ND	<0.10 <0.10
		08/24/94	86	< 50	< 0.50	<0.50 <0.50	< 0.50	<0.50	ND	<0.10
1 (1 - 1 - 1 ) (1 - 1 ) (1 - 1 ) (1 - 1 ) (1 - 1 ) (1 - 1 )	in India Birth 1985 of the 200 14	11/16/94	51	< 50	< 0.50	< 0.50	< 0.50	< 0.50	ND	NA
Magazinia	122, 2 <b>4</b> 1, 271,	02/22/95	120	< 50	< 0.50	<0.50	< 0.50	<0.50	ND	NA.
it .	·····	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
	u ortania mendanda.	11/29/95 02/27/96	480 330	<50 <50	< 0.50 < 0.50	<0.50	<0.50 <0.50	<0.50 <0.50	ND ND	<0.0050 NA
· · · · · · · · · · · · · · · · · · ·	ikitang paditi	05/30/96	330	<50	< 0.50	< 0.50	< 0.50	< 0.50	ND	NA NA
la iraidus etteritia	empare d <b>e</b> celo 2015	08/27/96	440	<50	<0.50	< 0.50	< 0.50	<0.50	ND	< 0.10
	94., verne, 104.990971 ••	11/13/96	180	< 50	< 0.50	< 0.50	< 0.50	< 0.50	ND	NA
	en aperi er <b>a</b> perceptado Reflaggistadado es	02/18/97	400	<b>&lt;</b> 50	<0.50	<0.50	<0.50	<0.50	ND	NA 📑
THE STATE OF THE S		05/21/97	190	< 50	< 0.50	< 0.50	< 0.50	< 0.50	ND	NA
	Campo (Calabarana)	08/27/97	140	35 14 cal 25 4	∴ <0.50	< 0.50	<0.50	<0.50, ∞	ND	< 0.0050
THE RESIDENCE OF THE PROPERTY OF	t en de grage Buildegijk da	11/19/97 02/05/98	260 WELL NOT	<50	<0.50	<0.50	< 0.50	<0.50	ND	NA NA
OKUS-W2	OKUS-W2	01/14/93	5400	14000	480	92	8500	ND	9100	0.036
**************************************	varancia de la completa a completa de la completa del la completa de la completa	05/12/93 08/25/93	2800 6500	8800 22000	220 420	47 92	4600 10000	100 <b>210</b>	5000 11000	0.093 0.089
	M	11/11/93	7700	24000	540	150	13000	280	14000	ND
	rege <del>de</del> Sara	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
LYETHWINE WERE		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	350ò	100	18	1600	66	1800	NA
	Karen de Cenades	06/22/95 08/09/95	3200 2900	13000 4800	260 1 <b>60</b>	62 <b>28</b>	<0.50 <b>&lt;0.50</b>	110 <b>200</b>	430 390	NA 0.92
	id il Carlot in	11/29/95	5600	7100	240	34	< 0.50	58	330	0.049
1 ( <b>F</b> 3 (7)		02/27/96	2400	5300	200	42	3400	∯	3800	NA
P .	**	05/30/96	1900	7000	210	< 0.50	< 0.50	180	390	NA
AFRICANOPYSLINGS	ofutfandirations of 	08/27/96	3100	6700	240	65	170	180	660	0.17
r injulie region to the same	uniteriani, proprinte	11/12/96	2900	6000	160	34	130	64	390	NA
		02/18/97 05/21/97	3000 2500	7800 3300	190 120	44 23	4000 11	150 31	4390 185	NA NA
5.33 <b>*</b> 3# <b>%</b> 1755:5			1800	4600		23 34	76		300	0.052
re summi interestable	6 14 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	11/19/97	2200	3300		23	2400	67	2600	NA
		02/06/98	1600	1100			< 0.50	18	100	NA
OKUS-W3	OKUS-Wa	01/14/93	4200	4900	230	42	2600	44	2900	NA
"	11 and a 11 and 1	05/12/93	4400	4600	290	60	3500	72	3900	
	den var et malende, cas	08/25/93	2700	9400		55		41	4700	
11	"	11/11/93	5000	9500	390	110	5100	130	5700	1
		02/08/94	4400	17000		78		160	10000	
· · · · · · · · · · · · · · · · · · ·		05/03/94 08/24/94	3000 4500	14000 10000	310 350	61 78	6400 7300	210 170	7000	0.14 <0.10
# (# 6 Page 1	•	08/24/94 11/16/94	4500 4700	9100	260	78 64	/300 95	< 0.50	7900 420	<0.10   NA
		02/22/95	2400	7400		51	4400	150	4900	
	, agrapa de la composição de la California. Na composição de la California	06/22/95	3300	8100		53	< 0.50	76	380	
PER TENDE	ik setia Luni da bana	08/09/95	3100	5200	,,200		<0.50	140	380	1.6
, "	*	11/29/95	4500	5300	220	42	< 0.50	44	310	0.18
		02/27/96	4000	7900	A hope were effect, as profit for a fitter of the second			Approximate the second section of the second	7000	
	i i zada i kaniya fi Majapa Kalaya i iya M	05/30/96	2300	8900	200	< 0.50	< 0.50	61	260	ı
		08/27/96 11/12/96	2700 4700	3100 7400		37 60	64 < 0.50	< 0.50	. 310 280	min 1.75
<u> </u>		11/12/30	4/00	7400		60	₹0.50	\0.50	260	IVA

OKUS-W3 OKUS-W3 02/18/97 4600 9300 260 62 5800 85 6210 " " 05/21/97 2400 6100 190 43 120 41 394 " 08/27/97 WELL INACCESSABLE - NOT SAMPLED " " 11/19/97 2800 6800 260 67 5600 280 6200 " " 02/06/98 3400 6000 210 <0.50 <0.50 <0.50 <210  OKUS-W4 OKUS-W4 01/15/93 5400 8900 300 ND 4500 ND 4800 " " 05/12/93 2900 6000 320 110 4600 230 5300 " " 08/26/93 2200 6700 350 72 4800 130 5400 " " " 11/11/93 2400 5500 250 53 4600 140 5000 " " " 02/20/3/94 2700 9100 250 <0.50 4900 150 5300 " " 08/24/94 2900 5200 200 41 3600 190 4000 " " " 11/16/94 2800 5500 320 52 <0.50 120 490 " " 02/22/95 2000 4300 250 47 2900 160 3400 " " 08/22/95 2700 4900 280 38 5200 140 5700 " " 08/09/95 2900 5300 270 54 <0.50 490 150 " " 08/09/95 2900 5300 270 54 <0.50 490 5700 " " 08/05/13/97 WELL DECOMMISSIONED  OKUS-W5 OKUS-W5 01/15/93 2900 550 81 14 250 37 380  OKUS-W5 OKUS-W5 01/15/93 2900 550 13 11 180 20 260 " " 11/11/19/3 1600 590 14 3.1 54 6.2 77  OKUS-W5 OKUS-W5 01/15/93 2900 550 51 14 8.5 18 96 " " 08/24/94 1700 910 55 14 8.5 18 96 " " 08/24/94 1700 910 55 14 8.5 18 96 " " OS/03/94 2000 520 57 9.5 240 27 330 " " 08/24/94 1700 910 55 14 8.5 18 96 " " 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 00	As (mg/l) NA NA NA NA O.16 O.098 O.13 < 0.10 O.12 O.11 NA NA 1.3 O.14 NA O.56 O.53 O.55 O.38
OKUS-W3 OKUS-W3 02/18/97 4600 9300 260 62 5800 85 6210  " " 05/21/97 2400 6100 190 43 120 41 394  " 08/27/97 WELL INACCESSABLE NOT SAMPLED  " 11/19/97 2800 6800 260 67 5600 280 6200  " 02/06/98 3400 6000 210 <0.50 <0.50 <0.50 <0.50 <10  OKUS-W4 OKUS-W4 01/15/93 5400 8900 300 ND 4500 ND 4800  " " 05/12/93 2900 6000 320 110 4600 230 5300  " " 08/26/93 2200 6700 350 72 4800 130 5400  " " 11/11/93 2400 5500 250 53 4600 140 5000  " " 05/03/94 2700 9100 250 <0.50 4900 150 5300  " " 05/03/94 2300 6500 240 34 4200 140 4600  " " " 05/03/94 2900 5200 200 41 3600 190 4000  " " " 08/24/94 2900 5200 200 41 3600 190 4000  " " " 02/22/95 2000 4300 250 47 2900 160 3400  " " 08/09/95 2900 5300 270 54 <0.50 210 530  " " 08/09/95 2900 5300 270 54 <0.50 210 530  OKUS-W5 OKUS-W5 01/15/93 2900 5500 50 11 180 20 260  OKUS-W5 OKUS-W5 01/15/93 2900 5500 50 11 180 20 260  OKUS-W5 OKUS-W5 01/15/93 2900 550 50 11 180 20 260  " " 11/11/99 3100 4500 20 41 <0.50 46 290  OKUS-W5 OKUS-W5 01/15/93 2900 550 51 11 180 20 260  " " 11/11/99 3100 550 51 14 250 37 380  " " 08/25/93 PRODUCT IN WELL NOT SAMPLED  OKUS-W6 OKUS-W6 O7/16/93 BRK ND 2.5 ND ND ND ND 2.5 ND ND 2.5 ND ND 2.5 ND ND ND ND 2.5 ND ND 2.5 ND ND 2.5 ND ND ND ND 2.5 ND ND ND 2.5 ND ND ND ND 2.5 ND ND ND ND 2.5 ND ND 2.5 ND ND 2.5 ND ND ND ND 2.5 ND	NA NA NA NA O.16 O.098 O.13 <0.10 O.12 O.11 NA NA 1.3 O.14 NA O.56
" 05/21/97	NA NA NA O.16 O.098 O.13 <0.10 O.12 O.11 NA NA 1.3 O.14 NA O.56
" 05/21/97	NA NA NA O.16 O.098 O.13 <0.10 O.12 O.11 NA NA 1.3 O.14 NA O.56
" 108/27/97 WELL INACCESSABLE NOT SAMPLED " 11/19/97 2800 6800 260 67 5600 280 6200 " 02/06/98 3400 6000 210 <0.50 <0.50 <0.50 <210  OKUS-W4 OKUS-W4 01/15/93 5400 8900 300 ND 4500 ND 4800 " 05/12/93 2900 6000 320 110 4600 230 5300 " 08/26/93 2200 6700 350 72 4800 130 5400 " 11/11/93 2400 5500 250 53 4600 140 5000 " 02/07/94 2700 9100 250 <0.50 4900 150 5300 " 05/03/94 2300 6500 240 34 4200 140 4600 " 08/24/94 2900 5200 200 41 3600 190 4000 " 11/16/94 2800 5500 320 52 <0.50 120 490 " 06/22/95 2000 4300 250 47 2900 160 3400 " 06/22/95 2700 4900 280 38 5200 140 5700 " 06/22/95 2700 4900 280 38 5200 140 5700 " 06/22/95 2700 4900 280 38 5200 140 5700 " 08/09/95 2900 5300 270 54 <0.50 210 530 " 11/29/95 3100 4500 200 41 <0.50 46 290  OKUS-W5 OKUS-W5 01/15/93 2900 5500 53 11 180 20 260  OKUS-W5 OKUS-W5 01/15/93 2900 550 14 3.1 54 6.2 77  OKUS-W5 OKUS-W5 01/15/93 PRODUCT IN WELL NOT SAMPLED  OKUS-W6 OKUS-W6 07/16/93 BRK ND 72.5 ND ND ND ND 2.5 (ND 4.9 1.3 8.8 6)  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 ND 2.5 (ND 4.9 1.3 8.8 6)	NA NA 0.16 0.098 0.13 <0.10 0.12 0.11 NA NA 1.3 0.14 NA 0.56
OKUS-W4 OKUS-W4 01/15/93 5400 8900 300 ND 4500 ND 4800  " " 05/12/93 2900 6000 320 110 4600 230 5300  " " 08/26/93 2200 6700 350 72 4800 130 5400  " " 11/11/93 2400 5500 250 53 4600 140 5000  " " 02/07/94 2700 9100 250 <5.5 4900 150 5300  " " 08/24/94 2900 5200 200 41 3600 190 4000  " " 11/16/94 2800 5500 320 52 <0.50 120 490  " " 02/22/95 2000 4300 250 47 2900 160 3400  " " 06/22/95 2700 4900 280 38 5200 140 5700  " " 08/09/95 2900 5300 270 54 <0.50 210 530  " " 08/09/95 2900 5300 270 54 <0.50 210 530  " " 05/13/97 WELL DECOMMISSIONED  OKUS-W5 OKUS-W5 01/15/93 2900 550 81 14 250 37 380  " " 08/25/93 PRODUCT IN WELL NOT SAMPLED  " " 11/11/93 1600 590 14 3.1 54 6.2 77  O8/25/93 PRODUCT IN WELL HAS NOT BEEN SAMPLED SINCE 1994  OKUS-W6 OKUS-W6 07/16/93 BRK ND 2.5 ND ND 2.6 ND 4.9 1.3 8.8 6	NA 0.16 0.098 0.13 <0.10 0.12 0.11 NA NA 1.3 0.14  NA 0.56
OKUS-W4 OKUS-W4 01/15/93 5400 8900 300 ND 4500 ND 4800 " " 05/12/93 2900 6000 320 110 4600 230 5300 " 08/26/93 2200 6700 350 72 4800 130 5400 " " 11/11/93 2400 5500 250 53 4600 140 5000 " " 02/07/94 2700 9100 250 <.50 4900 150 5300 " 08/24/94 2900 5200 240 34 4200 140 4600 " " 08/24/94 2800 5500 320 52 <0.50 120 490 " 08/24/94 2800 5500 320 52 <0.50 120 490 " " 11/16/94 2800 5500 320 52 <0.50 120 490 " " 02/22/95 2000 4300 250 47 2900 160 3400 " " 08/02/95 2700 4900 280 38 5200 140 5700 " " 08/09/95 2900 5300 270 54 <0.50 210 530 " " " 11/29/95 3100 4500 200 41 <0.50 46 290  OKUS-W5 OKUS-W5 01/15/93 2900 550 81 14 250 37 380  OKUS-W5 OKUS-W5 01/15/93 2900 550 81 14 250 37 380  OKUS-W5 OKUS-W5 01/15/93 2900 550 81 14 250 37 380  OKUS-W5 OKUS-W5 01/15/93 2900 550 81 14 250 37 380  OKUS-W5 OKUS-W5 01/15/93 2900 550 51 48 3.1 54 6.2 77  OB/02/07/94 1900 760 54 9.4 220 24 310  OKUS-W6 OKUS-W6 07/16/93 BRK ND 550 14 8.5 18 96  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 ND 2.5 0  OKUS-W6 OKUS-W6 07/16/93 BRK ND 2.5 ND ND ND ND 2.5 0  OKUS-W6 OKUS-W6 07/16/93 BRK ND 2.5 ND ND ND ND 2.5 0  OKUS-W6 OKUS-W6 07/16/93 BRK ND 2.5 ND ND ND ND 2.5 0	NA 0.16 0.098 0.13 <0.10 0.12 0.11 NA NA 1.3 0.14 NA 0.56
" " 05/12/93	0.16 0.098 0.13 <0.10 0.12 0.11 NA NA 1.3 0.14 NA 0.56
" " 05/12/93	0.16 0.098 0.13 <0.10 0.12 0.11 NA NA 1.3 0.14 NA 0.56
" 08/26/93 2200 6700 350 72 4800 130 5400 " 11/11/93 2400 5500 250 53 4600 140 5000 " 02/07/94 2700 9100 250 < 0.50 4900 150 5300 " 05/03/94 2300 6500 240 34 4200 140 4600 " 08/24/94 2900 5200 200 41 3600 190 4000 " 11/16/94 2800 5500 320 52 < 0.50 120 490 " 02/22/95 2000 4300 250 47 2900 160 3400 " " 06/22/95 2700 4900 280 38 5200 140 5700 " " 08/09/95 2900 5300 270 54 < 0.50 210 5300 " " 11/29/95 3100 4500 200 41 < 0.50 46 290  " 05/13/97 WELL DECOMMISSIONED  OKUS-W5 OKUS-W5 01/15/93 2900 550 81 14 250 37 380 " " 05/12/93 2100 550 81 14 250 37 380 " " 05/12/93 2100 550 81 14 250 37 380 " " 05/03/94 1900 590 14 3.1 54 6.2 77    02/07/94 1900 760 54 9.4 220 24 310 20 20 20 20 20 20 20 20 20 20 20 20 20	0.098 0.13 <0.10 0.12 0.11 NA NA 1.3 0.14 NA 0.56
" 11/11/93 2400 5500 250 53 4600 140 5000 " 02/07/94 2700 9100 250 <0.50 4900 150 5300 " 05/03/94 2300 6500 240 34 4200 140 4600 " 08/24/94 2900 5200 200 41 3600 190 4000 " " 11/16/94 2800 5500 320 52 <0.50 120 490 " 02/22/95 2000 4300 250 47 2900 160 3400 " 06/22/95 2700 4900 280 38 5200 140 5700 " 08/09/95 2900 5300 270 54 <0.50 210 530 " 08/09/95 3100 4500 200 41 <0.50 46 290 " 05/13/97 WELL DECOMMISSIONED  OKUS-W5 OKUS-W5 01/15/93 2900 550 81 14 250 37 380 " 05/12/93 2100 550 81 14 250 37 380 " 08/25/93 PRODUCT IN WELL NOT SAMPLED " " 11/11/93 1600 590 14 3.1 54 6.2 77 11/11/93 1600 590 14 3.1 54 6.2 77 11/11/93 1600 590 57 9.5 240 27 330 " 08/24/94 1700 910 55 14 8.5 18 96 " 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 (ND SL25/93 590 ND 2.6 ND 4.9 1.3 8.8 (ND SL25/93 590 ND 2.6 ND 4.9 1.3 8.8 (ND SL25/93 590 ND 2.6 ND 4.9 1.3 8.8 (ND SL25/93 590 ND 2.6 ND 4.9 1.3 8.8 (ND SL25/93 SL25/93 590 ND 2.6 ND 4.9 1.3 8.8 (ND SL25/94 ND 4.9 1.3 8	0.13 <0.10 0.12 0.11 NA NA 1.3 0.14 NA 0.56
" 02/07/94 2700 9100 250 <0.50 4900 150 5300   " 05/03/94 2300 6500 240 34 4200 140 4600   " 08/24/94 2900 5200 200 41 3600 190 4000   " 11/16/94 2800 5500 320 52 <0.50 120 490   " 02/22/95 2000 4300 250 47 2900 160 3400   " 06/22/95 2700 4900 38 5200 140 5700   " 06/22/95 2900 5300 270 54 <0.50 210 530   " 11/29/95 3100 4500 200 41 <0.50 46 290   " 05/13/97 WELL DECOMMISSIONED    OKUS-W5 OKUS-W5 01/15/93 2900 550 53 11 14 250 37 380   " 05/12/93 2100 550 81 14 250 37 380   " 05/12/93 PRODUCT IN WELL - NOT SAMPLED   " 11/11/93 1600 590 14 3.1 54 6.2 77   11/11/93 1600 590 14 3.1 54 6.2 77   11/11/93 1600 590 14 3.1 54 6.2 77   11/11/93 1600 590 14 3.1 54 6.2 77   11/11/93 1600 590 57 9.5 240 27 330   " 05/03/94 2000 820 57 9.5 240 27 330   " 08/24/94 1700 910 55 14 8.5 18 96   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 ND 2.5 ( " 08/25/93 590 ND 2.6 ND 4.9 1.3 8.8 (	<0.10 0.12 0.11 NA NA 1.3 0.14 NA 0.56
" 08/24/94 2900 5200 200 41 3600 190 4000 11/16/94 2800 5500 320 52 <0.50 120 490 200 200 200 200 200 200 200 200 200 2	0.11 NA NA NA 1.3 0.14 NA 0.56
" 11/16/94 2800 5500 320 52 <0.50 120 490 200 " 02/22/95 2000 4300 250 47 2900 160 3400 3400 360 360 360 360 360 360 360 360 360 3	NA NA 1.3 0.14 NA 0.56 0.53 0.55
" 02/22/95 2000 4300 250 47 2900 160 3400 " 06/22/95 2700 4900 280 38 5200 140 5700 08/09/95 2900 5300 270 54 <0.50 210 530 11/29/95 3100 4500 200 41 <0.50 46 290 05/13/97 WELL DECOMMISSIONED  OKUS-W5 OKUS-W5 01/15/93 2900 550 53 11/3 180 20 260 37 380 08/25/93 PRODUCT IN WELL NOT SAMPLED  " 11/11/93 1600 590 14 3.1 54 6.2 77 11/11/93 1600 590 14 3.1 54 6.2 77 330 05/03/94 2000 820 57 9.5 240 27 330 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 07/16/93 BRK ND 2.5 ND ND ND 2.5 08/25/93 590 ND 2.6 ND A.9 1.3 8.8 00 08/25/93 590 ND 2.6	NA 1.3 0.14 NA 0.56 0.53 0.55
" " 06/22/95	NA 1.3 0.14 NA 0.56 0.53 0.55
" " 11/29/95 3100 4500 200 41 < 0.50 46 290 " " 05/13/97 WELL DECOMMISSIONED  OKUS-W5 OKUS-W5 01/15/93 2900 550 53 11 180 20 260 " " 05/12/93 2100 550 81 14 250 37 380  " 08/25/93 PRODUCT IN WELL NOT SAMPLED  " " 11/11/93 1600 590 14 3.1 54 6.2 77  11/11/93 1600 590 54 9.4 220 24 310  O5/03/94 2000 820 57 9.5 240 27 330  " 08/24/94 1700 910 55 14 8.5 18 96  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 ( " 08/25/93 590 ND 2.6 ND 4.9 1.3 8.8	1.3 0.14 NA 0.56 0.53 0.55
" " 11/29/95 3100 4500 200 41 <0.50 46 290 05/13/97 WELL DECOMMISSIONED  OKUS-W5 OKUS-W5 01/15/93 2900 550 53 11 180 20 260 37 380 06/12/93 2100 550 81 14 250 37 380 08/25/93 PRODUCT IN WELL NOT SAMPLED 11/11/93 1600 590 14 3.1 54 6.2 77 02/07/94 1900 760 54 9.4 220 24 310 05/03/94 2000 820 57 9.5 240 27 330 06/03/94 2000 820 57 9.5 240 27 330 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 80 80 80 80 80 80 80 80 80 80 80 80 80	0.14 NA 0.56 0.53 0.55
OKUS-W5 OKUS-W5 01/15/93 2900 550 53 11 180 20 260 05/12/93 2100 550 81 14 250 37 380 08/25/93 PRODUCT IN WELL NOT SAMPLED 11/11/93 1600 590 14 3.1 54 6.2 77 02/07/94 1900 760 54 9.4 220 24 310 05/03/94 2000 820 57 9.5 240 27 330 05/03/94 2000 820 57 9.5 240 27 330 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/24/94 1700 910 55 14 8.5 18 96 08/25/93 590 ND 2.6 ND 4.9 1.3 8.8	NA 0.56 0.53 0.55
OKUS-W5 OKUS-W5 01/15/93 2900 550 53 11 180 20 260   " " 05/12/93 2100 550 81 14 250 37 380   " 08/25/93 PRODUCT IN WELL NOT SAMPLED   " " 11/11/93 1600 590 14 3.1 54 6.2 77   11/11/93 1600 590 54 9.4 220 24 310   05/03/94 2000 820 57 9.5 240 27 330   " 08/24/94 1700 910 55 14 8.5 18 96   " " 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 ND 2.5   " 08/25/93 590 ND 2.6 ND 4.9 1.3 8.8	0.56 0.53 0.55
" " 05/12/93 2100 550 81 14 250 37 380	0.56 0.53 0.55
" " 11/11/93 1600 590 14 3.1 54 6.2 77  " " 11/11/93 1600 590 54 9.4 220 24 310  " " 05/03/94 2000 820 57 9.5 240 27 330  " " 08/24/94 1700 910 55 14 8.5 18 96  " " 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 ( " " 08/25/93 590 ND 2.6 ND 4.9 1.3 8.8 (	0.53 0.55
" " 11/11/93 1600 590 14 3.1 54 6.2 77   02/07/94 1900 760 54 9.4 220 24 310   05/03/94 2000 820 57 9.5 240 27 330   08/24/94 1700 910 55 14 8.5 18 96   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 ND 2.5 (   08/25/93 590 ND 2.6 ND 4.9 1.3 8.8	0.55
" " 02/07/94 1900 760 54 9.4 220 24 310 05/03/94 2000 820 57 9.5 240 27 330 17 200 18 20 18 20 18 20 18 20 18 20 18 20 18 20 20 20 20 20 20 20 20 20 20 20 20 20	0.55
" " 05/03/94 2000 820 57 9.5 240 27 330 08/24/94 1700 910 55 14 8.5 18 96	
" " 08/24/94   1700   910   55   14   8.5   18   96   96   96   96   97/16/93   87/16/93	0.30
" 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 08/25/93 590 ND 2.6 ND 4.9 1.3 8.8 0	0.45
OKUS-W6 OKUS-W6 07/16/93 BRK ND 2.5 ND ND ND ND 2.5 08/25/93 590 ND 2.6 ND 4.9 1.3 8.8	0.10
" 08/25/93 590 ND 2.6 ND 4.9 1.3 8.8	
	0.004
	0.013
" PRODUCT IN WELL - THE WELL HAS NOT BEEN SAMPLED SINCE 1993	ND
The state of the s	0.009
" 08/25/93 930 56 2.9 ND 1.2 ND 4.1	ND
ND ND ND	ND
	<0.10
1 3 The standing of the standi	< 0.10
11/16/94 820 <50 0.62 <0.50 <0.50 <0.50	NA
" " 02/22/95 830 <50 0.54 <0.50 <0.50 <0.50	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
The state of the s	0.0095
[ " " 02/27/96   2600 <50  1.5 <0.50 0.54 <0.50 2.0	NA
05/30/96 05/30/96 2.0	NA 10.10
08/27/96 1700 70 2.3 <0.50 <0.50 <0.50 2.3 11/12/96 1400 86 4.1 <0.50 <0.50 <0.50 4.1	< 0.10 NA
" " 02/18/97   2000 <50   0.75 <0.50 <0.50 <0.50 0.7	NA NA
02/18/97 2000 < 50 0.75 < 0.50 < 0.50 < 0.50 05/21/97 1200 < 50 26 < 0.50 0.84 < 0.50 3.4	NA NA
	0.0069
11/19/97 1600 <50 2.0 <0.50 0.84 <0.50 2.8	NA
" " 02/05/98 1500 <50 0.79 <0.50 <0.50 <0.50 0.8	NA
OKUS-W8 O7/16/93 ND ND ND ND ND ND ND	
" 08/27/93 1100 120 1.3 ND ND 0.85 2.2	0.012
	0.012 ND
11711/93 1300 190 135 13 14 14 14 15 15 7	ND
" 02/07/94   1000 120	ND ND
	ND

CALABLE	O A LADI E	DATE	TDUVO	TDUUC	В	Т	E	X	BTEX	As
SAMPLE LOCATION	SAMPLE	SAMPLED	TPH/D	TPH/G	_	•	_		(ug/l)	(mg/l)
LOCATION	ID	SAMPLED	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/i)	(mg/i)
OKUS-W8	OKUS-W8	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
# <b>0</b>	n	06/22/95	870	76	0.92	< 0.50	< 0.50	< 0.50	0.9	NA
	· n	08/09/95	1100	90	1.1	< 0.50	< 0.50	1.3	2.4	0.078
	and the manner of the second	11/29/95	2400	100	0.73	< 0.50	< 0.50	0.91	1.6	< 0.0050
	II .	02/27/96	1900	80	< 0.50	< 0.50	< 0.50	1.3	1.3	NA
okus-wa	OKUS-W8	05/30/96	2200	210	< 0.50	< 0.50	< 0.50	0.7	0.7	NA
***************************************	Pt	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		< 0.50	<0.50		2.4	NA
vicianii <u>A</u> ras reggerii. r	endi on energi est com	08/27/97	1100	100	1.5	< 0.50	1.1	3.2	5.8	<0.0050 NA
na verapera salvado su su c	Naci (Exelesional) comp	11/19/97	1500	94	< 0.50 < 0.50	< 0.50	. 2009	0.69 < 0.50	0.69 ND	NA NA
<del> </del>		02/05/98	1400	56	~∪.5∪	< 0.50	< 0.50	<b>\</b> 0.50	טאי	IVA
APL/UP-W1	APL/UP-W1	07/16/93	700	300	25.4	1.7	, an	3.0	.30	0.011
11 A CONTROL OF THE PART OF TH		08/26/93	810	720	47	1.3	360	14	420	0.013
		11/11/93	530	₩ - 560	26	II ND	220		260	ND
N magazina a digita di Santa Maria (1976). Il	<b>n</b>	02/07/94	660	620	25	< 0.50	180	10	220	< 0.10
Falsain et activa		05/03/94	590	680	48	2.9	260	9.8	320	< 0.10
r mercagraphen Statisty paleman in a	*	08/24/94	420	830	48 36	4.8 3.6	12 9.6	3.2 12	68 61	< 0.10 NA
43 K 1 All 1992		11/15/94 02/22/95	480 510	470 470	33	2.8	9.0 170	9	210	NA NA
ing factors	Sase: Parish Clary (j. 84.54	02/22/95	320	160	33 12	0.82	170 13.5	2.4	19	NA NA
	u	08/09/95	160	69	4.2	< 0.50	< 0.50	2.3	7	< 0.0050
nnggangawikiki inkilor		11/29/95	920	170	7.4	0.58	66	3.5	78	0.018
14	h	02/27/96	WELL INA	tota i grafalya basa	E - NOT SA	MPLED	erangan meningan di	.jb		
	gurta ya 1975 ya 1996 kwa. Maria ya 1975	05/30/96		Carry Contract Con-	E - NOT SA					
The second of th	# ************************************	08/27/96			.E - NOT SA		La Jefakaran			
		11/12/96	1800		E - NOT SA 43		130	20	196	NA
	e <b>ith</b> a teare <b>n</b> ee ises sa sa	02/18/97 - 05/21/97	850	620 2 <b>6</b> 0	43 22	 0.50	130		38	NA NA
i i i i i i i i i i i i i i i i i i i		08/27/97	930	200 310	31	1.2	9.7	8.5	50	0.026
	Lorenza (n. 1844) 1865 - British (n. 1862)	11/18/97	1400	740	53	<sup>™</sup> <0.50	370	28	450	NA
en mar der de Blance (4 de Graff (5 de 14	# (###################################	02/05/98	1000	640	. 55	< 0.50	< 0.50	22	77	NA
APL/UP-W2	APL/UP-W2	07/16/93	ND	ND.	8,0	ND	ND	ND	8	0.016
L VELVOL-MA	~~E+(YE3XX4.//	08/26/93	240	94	ND	ND	35	2.4	37	0.023
11.00	s i dala mediya bir sebi	11/11/93	190	110	14 5.0 L	ND ND	38	2.6	46	ND
		02/07/94	270	120	6.6	< 0.50	38	1.8	46	< 0.10
7 ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	ngara angaranga at	05/03/94	100		< 0.50	<0.50	<0.50	< 0.50	ND	< 0.10
at the second second second	11	08/24/94	330	220	13	0.77	3.5	3.1	20	<0.10
		11/15/94	320		11	< 0.50	24.2.841.0	5.4	79	NA
11	и 	02/22/95	550	320	19	< 0.50	100	9.5	130	NA
		06/22/95	300	10 11 11 11 11 12 12 11 11 11 11 11 11 11	10	62	ت ان در د د د د د د د د د د د د د د د د د د	2.3	76	NA 0.00
**************************************	eri. Indochamestatet artist	08/09/95	180	62	3.5	< 0.50	< 0.50	2.3	5.8	0.22
Haraman and the standing of th		11/29/95 02/27/96	690 480	110 100	7,2 5.3	<0.50 <0.50	49 33	2.3 2.9	59 41	0.019 NA
	nesidende	05/30/96	280		9.3 1.9	<0.50 <0.50	ده 0.50		3.1	NA NA
laretham (Midi	inaryikiinarayadiinkiidii a	08/27/96	320	<50	4	< 0.50	1.0	< 0.50	2.1	<0.10
	erigija propinski ili	11/12/96	470		3.2	< 0.50		0.62	5.5	NA
"	**	02/18/97	770	170	12	0.77	81	9.4	103	NA
		05/21/97	430		4.8	<0.50	1.1		5.9	NA
"		08/27/97	450		6.4	< 0.50	3.8	1.9	12.0	0.017
	girildə Çəbə Aska	11/18/97	640		4 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	< 0.50		15.	150	NA NA
	a	02/05/98	730	180	15	< 0.50	< 0.50	4.9	20	NA NA

SAMPLE	SAMPLE	DATE	TPH/D	TPH/G	В	Ť	E	Х	ВТЕХ	As
LOCATION	ID	SAMPLED	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(mg/l)
COCATION			(09/1)	(Og/I)	109/11	(49/1)	(agr.)	(48,1)	(08/1/	11119717
- AUTOS NEET	DUPLICATES	03.455607.5	50 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Statistical A	i dhe thitee A	**************************************			THE TAKE	. N.A
OKUS-W5	OKUS-W6	01/15/93	2800	510	50		170	19	250	NA
OKUS-W1	OKUS-W6	05/12/93	140	ND	ND 2014	ND	ND	ND	ND	ND 0.040
APL/UP-W1	QA/QC-1	07/16/93 08/26/93	ND 2700	0.21 6200	22.4 340	ND 78	ND 4500	2,4	25 5000	0.012 0.10
OKUS-W4	OKUS-W9	11/11/93	1300	120	1.3		4500	100 1.4	5000 7	2.40
OKUS-W8	OKUS-W9 QA/QC-1	02/08/94	2900	15000	280	64	5800	< 0.50	- Harris	0.12
OKUS-W3			2500	5400	300		5200	130°	6100	0.12
OKUS-W4	OKUS-QC1 OKUS-QC1	05/03/94 08/24/94	950 950	92	1.6	afficial and some	< 0.50	< 0.50	5700	< 0.12
OKUS-W8 APL/UP-W2		11/16/94	310	190	1.0		- 62	4.7	2 77	NA NA
and other Cartife's Tell To	APL-W12	02/22/95	490	360	20		110			NA NA
APL/UP-W2		08/09/95	160	71	3.4		< 0.50	6.7 2.2	140 6	0.20
APL/UP-W2	APL-W12	11/29/95	1100	170	7.5	0.57	66	4.4	79	0.20
AFL/OF-WI	DUPLICATES	11/23/33	1100	170	7.5	0.37	- 00	7,7	, ,	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	Hitchian W. Thatte	< 0.50	< 0.50	ND	NA NA
OKUS-W1	OKUS-W11	08/27/96	370	<b>₹50</b>	<0.50		< 0.50	< 0.50	ND ND	< 0.10
OKUS-W2	OKUS-W12	11/12/96	3000	11000	210			89	380	NA
APL/UP-W1	APL/UP-W11	02/18/97	1800	370	42		140	18	201	NA NA
OKUS-W1	OKUS-W11	05/21/97	220	<50	< 0.50		< 0.50	< 0.50	ND	NA NA
OKUS-W1	OKUS-W12	03/27/97	1500	4800	₹0.30		~0.30 70	23	260	0.068
OKUS-W7	OKUS-W17	11/19/97	1400		日本の 第1.79。 2.1	<.50	0.66	<.50	2.8	NA
	BLANKS	11/13/37	1400	<u> </u>	2.1	₹.50	0.00	₹.50	2.0	110
UPME	OAK-FB 1	07/16/93	- NA	NA NA	ND.	ND	ON	ND:	ND	NA
UPMF	OAK-TB 2	07/16/93	NA	NA	ND	ND	ND	ND	ND	NA
UPME	TB-1	08/27/93	NA.	NA NA	ND.		ND.	ND	ND	NA
UPMF	TB-2	08/27/93	NA	NA	ND	(Milagonéana a fara agamaia a	ND	ND	ND	NA
UPMF	ТВ-7	11/12/93	NA.	NĀ	ND	-	≠ ∌ ND	ND	ND	NA
UPMF	TB-1	08/24/94	NA	NA	ND		ND	ND	ND	NA
UPME	ТВ-1	11/16/94	NA	NA.	NA	NA	NA	NA.	NA	NA
UPMF	TB-1	02/22/95	NA	ND	ND		ND	ND	ND	NA
UPMF	ТВ-1	06/22/95	NA	ND	ND		and Children	ND.	man 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	All a service and the service and	ND	ND	ND	NA
UPMF	TRIP BLANK	11/12/96	NA NA	ND	ND ND		ND	ND	ND	NA
UPMF	TRIP BLANK	02/18/97	NA	ND	ND	The City Marie and Co.	ND	ND	ND	NA
UPMF	TRIP BLANK	05/21/97	NA.	ND	ND		ND		ND.	NA
UPMF	TRIP BLANK	08/27/97	NA	ND	ND		ND	ND	ND	NA
UPME	TRIP BLANK	11/19/97	NA.	ND	ND		ND	ND.	ND	NA
UPMF	TRIP BLANK	02/02/98	NA	NA	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

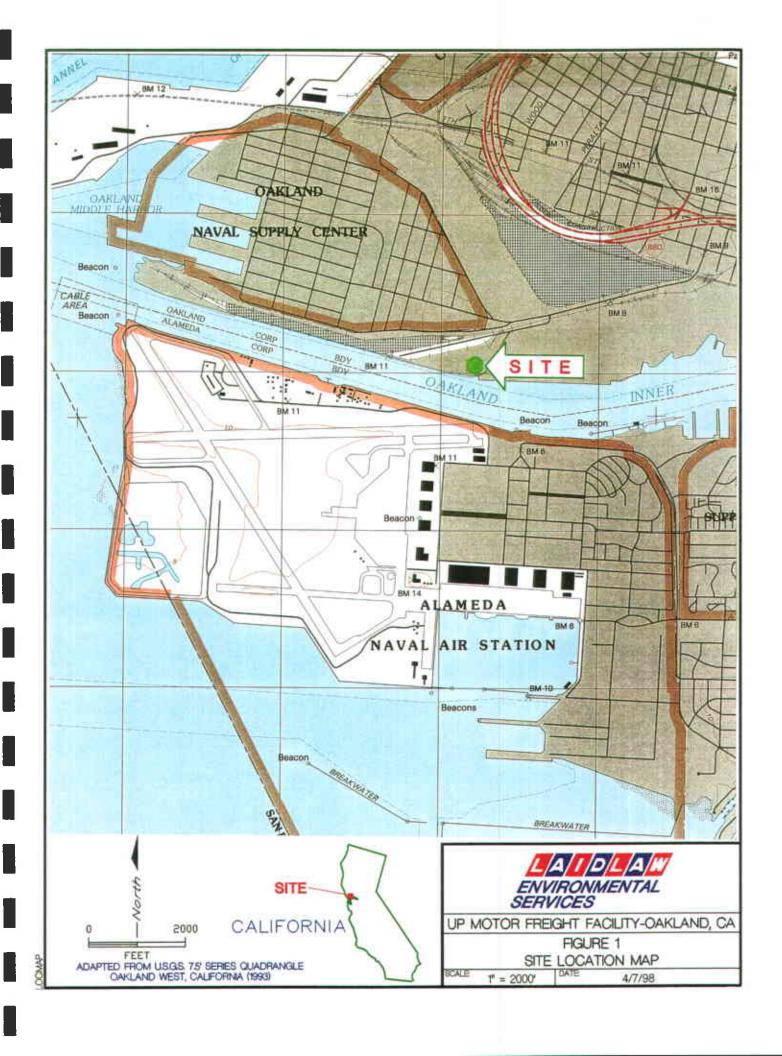
ug/L - microgram per liter

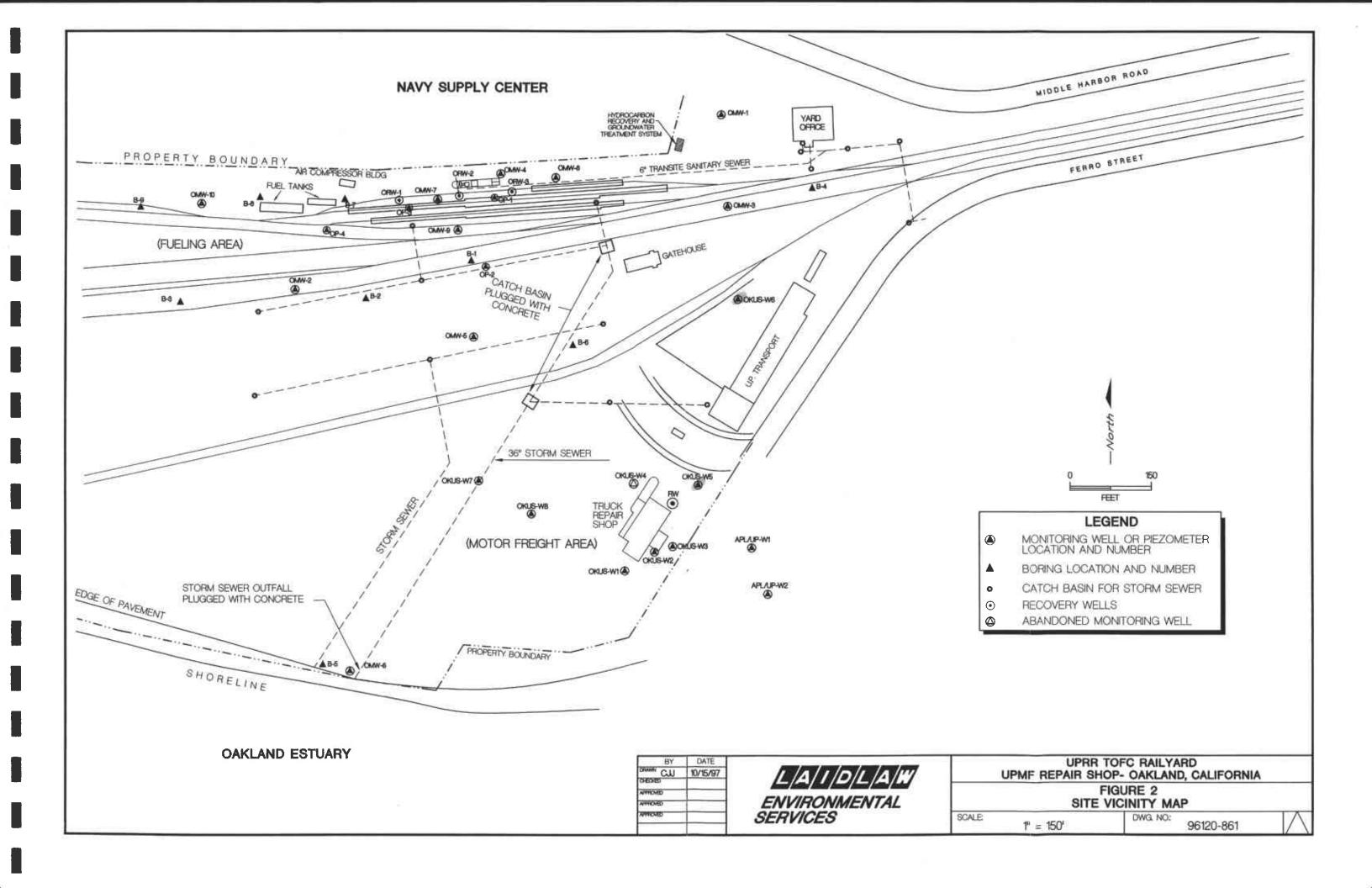
TPH/D - analyzed using EPA Method 8015 Mod.

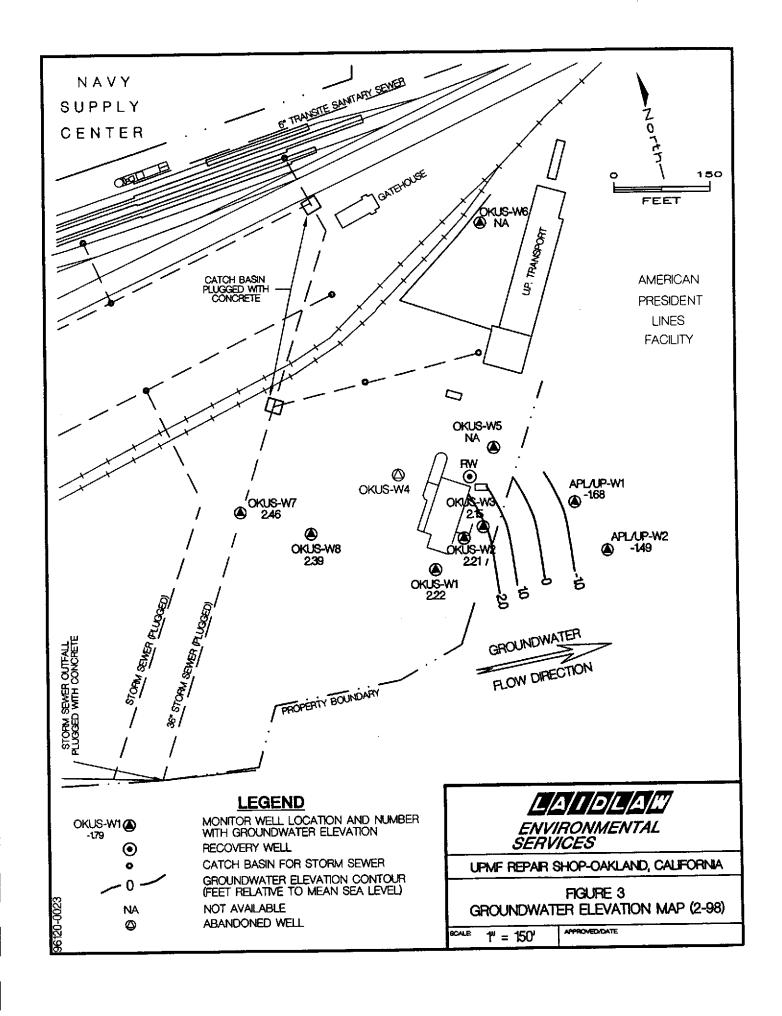
TPH/G - anaylzed using EPA Method 8015 Mod.

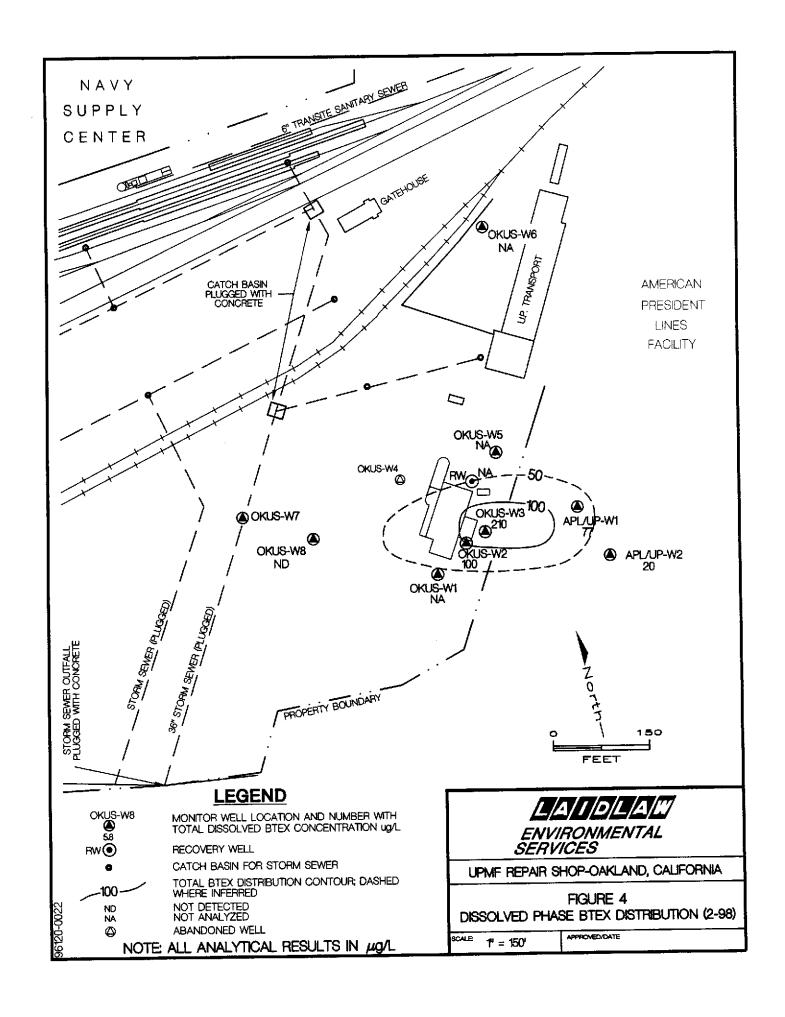
BTEX - analyzed using EPA Method 8020

As - analyzed using EPA Method 7060









# APPENDIX A

FLUID-LEVEL MEASUREMENTS AND SAMPLE COLLECTION LOGS

Laidlaw Project Na	me: UP Motor F	reight			Laidlaw Project Number: 9	6120-844
Measuring Point (M	<del></del>	p Of Casing			Well No. OKU	s_W2
Well Depth: (Below			<del></del>		Well No. Ono.	<b>5-112</b>
Casing Diameter:		<u> </u>			Sampling Date: 2/6/98	
	/ater (Below MP):	7.5 feet			Sample ID No. OKUS-2	and OKUS-2B
Method of Well De	evelopment:				Time: <b>0925</b>	
	Submersible Pump	Bladder Pump		· · · · · · · · · · · · · · · · · · ·	Riser Elevation (MP): 9.71	Feet
	Centrifugal Pump	Other			Top of Screen Elevation: 7	.05 Feet
Sampling Collecti				Sample Appearance	Brown	
Пар	Submersible Pun	np Bladder Pum	p Sample	Odor: Diesel		
✓ Bailer Type	O Teflon O Si	tainless Steel		Sampling Problems	(if any): Rain	
O ABS PI		● HDPE	·			
	ailer Set At N/A		MP	Decontamination Pe	erformed:	
Tubing Type (if use	<del></del>		<del></del>			
Tubing Used For:		tion  Well Develop	ment/Field Tests	Samples Collected:	BTEX, TPH-D	
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)
0915	6.2	2,410	19.0		2	
0920	6.2	2,470	18.5		4	
0925	6.2	2,440	19.0		6	
		<u> </u>	<del></del>			
		<del></del>				
	<del></del>					
	<u> </u>					<del> </del>
		<del> </del> -		1		1
<u></u> _	<u> </u>	<u></u>				
At Least 3 Well B	ore Volumes Wer	e Evacuated Before	e Sampling			
Comments:				·		
			<u> </u>			
<del></del>						
[Comments may continu			Milanessed Dec			
Form Completed I	By: Joe Franzen		Witnessed By:		<u> </u>	<u> </u>

Laidlaw Project Na	ime: UP Motor I	Freight			Laidlaw Project Number:	96120-844
Measuring Point (I	MP) Location: To	p Of Casing			Well No. OKU	S-W3
Well Depth: (Below	w MP): 22.09 feet				11011110. 0110	
Casing Diameter:	2 inches				Sampling Date: 2/5/98	
Depth to Ground V	Vater (Below MP):	7.65 feet			Sample ID No. OKUS-3	and OKUS-3B
Method of Well D	evelopment:			·	Time: 8:57 AM	
□ Тар □	Submersible Pump	Bladder Pump			Riser Elevation (MP): 9.86	) Feet
☑ Bailer □	Centrifugal Pump	Other			Top of Screen Elevation:	6.55 Feet
Sampling Collect	ion Method:			Sample Appearance	: Yellow	
Пар	Submersible Pur	mp 🔲 Bladder Pum	p Sample	Odor: Diesel		
☑ Bailer Type	O Teflon O St	tainless Steel		Sampling Problems	(if any): Rain	
O ABS P	lastic O PVC	HDPE	<u> </u>			· · · · · · · · · · · · · · · · · · ·
Pump Intake Or B	ailer Set At <u>N/A</u>	Feet Below	MP	Decontamination Pe	erformed:	
Tubing Type (if us	ed):					
Tubing Used For:	Sample Collect	tion Well Develop	ment/Field Tests	Samples Collected:	BTEX, TPH-D	
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)
0845	6.2	2,698	20.0		2	
0851	6.2	3,080	19.5		4	
0856	6.2	3,180	20.0		6	
	1					
					<u> </u>	<u> </u>
						<del> </del>
	<u> </u>		<u> </u>			<del>- </del>
ļ						
<u> </u>			0	<u> </u>		
	lore Volumes Were	e Evacuated Before	e Sampling	<u> </u>		······································
Comments:			· · · · · · · · · · · · · · · · · · ·			
[Comments may continu	ue on backj					
	By: Joe Franzen		Witnessed By:			
	-			· · · · · · · · · · · · · · · · · · ·		

Laidiaw Project Na	ame: UP Motor	Freight			Laidlaw Project Number: 9	6120-844
Measuring Point (I		p Of Casing			Well No. OKU	s-w7
Well Depth: (Belov	w MP): 19.84 feet				770111101 01101	
Casing Diameter:	<del></del>				Sampling Date: 2/5/98	
Depth to Ground \	Water (Below MP):	4.45 feet		;	Sample ID No. OKUS-W-	
Method of Well C	evelopment:			<u></u>	Time: 1648	
□ Тар □	Submersible Pump	Bladder Pump	· · · · · · · · · · · · · · · · · · ·		Riser Elevation (MP): 6.91	Feet
✓ Bailer 🔲	Centrifugal Pump	Other		· · · · · · · · · · · · · · · · · · ·	Top of Screen Elevation:	2.4 Feet
Sampling Collec	tion Method:		<u></u> _	Sample Appearance	: Yellowish	
Тар	Submersible Pur	mp 🔲 Bladder Pum	p Sample	Odor: Slight diese	·	
✓ Beiler Type	O Teflon O S	tainless Steel		Sampling Problems	(if any):	
O ABS P	Postic OPVC	● HDPE				
Pump Intake Or B	Bailer Set At <u>N/A</u>	Feet Below	MP	Decontamination Pe	erformed:	
Tubing Type (if us	sed):					
Tubing Used For:	Sample Collec	tion Well Develop	ment/Field Tests	Samples Collected:	BTEX, TPH-D	
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)
1617	6.2	3,370	19.0		3	
1638	5.9	3,300	19.5		6	<u> </u>
At Least 3 Well	Bore Volumes Wer	re Evacuated Befor	e Sampling			
Comments:						
						<del></del>
(Comments may contin	nue on back)		· · · · · · · · · · · · · · · · · · ·		<del></del>	<u></u>
Form Completed	By: Joe Franzen		Witnessed By:		<u> </u>	. <u> </u>

Casing Diameter: 2 inches  Sampling Date: 2/5/98  Depth to Ground Water (Below MP): 4.36 feet  Sample ID No. OKUS-W-8 and OKUS-W8B	8			
Welf Depth: (Below MP): 14.8 feet  Casing Diameter: 2 inches  Depth to Ground Water (Below MP): 4.36 feet  Sample ID No. OKUS-W-8 and OKUS-W8B				
Depth to Ground Water (Below MP): 4.36 feet  Sample ID No. OKUS-W-8 and OKUS-W8B				
Depth to Ground Water (Below MP): 4.36 feet OKUS-W8B				
Method of Well Development: Time: 1721				
☐ Tap ☐ Submersible Pump ☐ Bladder Pump ☐ Riser Elevation (MP): 6.75 Feet				
☑ Bailer ☐ Centrifugel Pump ☐ Other Top of Screen Elevation: 2.11 Fe	et			
Sampling Collection Method: Sample Appearance: Dark Brown	Sample Appearance: Dark Brown			
☐ Tap ☐ Submersible Pump ☐ Bledder Pump Sample Odor: Diesel	Odor: Diesel			
Bailer Type O Teflon O Stainless Steel Sampling Problems (if any):				
O ABS Plastic O PVC  HDPE				
Pump Intake Or Bailer Set At <u>N/A</u> Feet Below MP Decontamination Performed:	Decontamination Performed:			
Tubing Type (if used):				
Tubing Used For: Sample Collection Well Development/Field Tests Samples Collected: BTEX, TPH-D	<u> </u>			
pH Corrected Temperature Water Level Water Removed From Time (Units) Conductance (Centigrade) (Nearest 0.01 Ft.) Well gallo	ping Rate in ns/Minute GPM)			
1703 6.5 5,180 20.0 2				
1707 6.5 5,090 19.0 4				
1720 6.5 5,140 18.5 6				
At Least 3 Well Bore Volumes Were Evacuated Before Sampling				
Comments:				
[Comments may continue on back]				
Form Completed By: Joe Franzen Witnessed By:	<u> </u>			

Laidlaw Project Na	me: UP Motor I	Laidlaw Project Number: 96120-844					
Measuring Point (N	MP) Location: To	p Of Casing			Well No. APL/	UP-W1	
Well Depth: (Belov	v MP): 21.85 feet	···			Well No. Al E	<b>91 17 1</b>	
Casing Diameter: 2 inches					Sampling Date: 2/5/98		
Depth to Ground Water (Below MP): 9.8 feet					Sample ID No. APL/UP-		
Method of Well Development:					Time: 1523		
□ Тар □	Submersible Pump	Bladder Pump			Riser Elevation (MP): 8.12	Feet	
☑ Bailer □	Centrifugal Pump	Other	-		Top of Screen Elevation: 2	.11 Feet	
Sampling Collect	ion Method:			Sample Appearance: Yellow			
□ Тар	Submersible Pur	mp Bladder Pum	p Sample	Odor: Slight diesel odor			
☑ Beiler Type	O Teflon O St	tainless Steel		Sampling Problems	(if any):		
O ABS PI	estic O PVC	● HDPE					
Pump Intake Or B	ailer Set At <u>N/A</u>	Feet Below	MP	Decontamination Performed:			
Tubing Type (if us	ed):						
Tubing Used For:	Sample Collect	tion Well Develop	ment/Field Tests	Samples Collected:	BTEX, TPH-D		
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)	
1512	6.2	2,570	18.0		2		
1517	6.2	2,630	18.5		4		
1522	6.2	2,630	19.5		6	<u> </u>	
		<u> </u>					
				1			
				<u> </u>			
	<u> </u>		L				
At Least 3 Well B	ore Volumes Were	e Evacuated Before	e Sampling			<u>.</u>	
Comments:		· <del>- · · · · · · · · · · · · · · · · · ·</del>					
	·		<u> </u>			<u></u>	
Composite management	e on back!			<del></del>		·	
[Comments may continu			Witnessed By:				
Form Completed I	sy. Jue Franzen	<u></u>					

Laidlaw Project Na	me: UP Motor I	Laidlaw Project Number: 96120-844					
Measuring Point (N	MP) Location: To	p Of Casing			Well No. APL	/IIP_W2	
Well Depth: (Belov	w MP): 16.98 feet				AAGII IAO. WL	JUF-444	
Casing Diameter: 2 inches					Sampling Date: 2/5/98		
Depth to Ground Water (Below MP): 8.8 feet				_	Sample ID No. APL/UP-W1 and APL/UP-W1B		
Method of Well Development:				Time: <b>1548</b>			
☐ Tap ☐ Submersible Pump ☐ Bladder Pump				Riser Elevation (MP): 7.31 Feet			
☑ Bailer ☐ Centrifugal Pump ☐ Other				Top of Screen Elevation: 2.62 Feet			
Sampling Collect	tion Method:			Sample Appearance: Yellowish			
☐ Tap ☐ Submersible Pump ☐ Bladder Pump Sample				Odor: Slight diesel			
✓ Bailer Type	O Teflon O S	tainless Steel		Sampling Problems	(if any):		
O ABS P	lastic O PVC	HDPE					
Pump intake Or B	ailer Set At <u>N/A</u>	Feet Below	MP	Decontamination Performed:			
Tubing Type (if us	ed):						
Tubing Used For: Sample Collection Well Development/Field Tests			Samples Collected: BTEX, TPH-D				
Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From Well (Gallons)		
1540	6.2	2,660	18.5		1.5		
1544	6.2	2,660	18.5		3.0		
1548	6.2	2,660	18.5		4.5		
	<u> </u>						
				-			
	1	<u> </u>			<u> </u>		
	Bore Volumes Wer	e Evacuated Before	Sampling				
Comments:							
[Comments may continu	ue on back)				<del></del>		
Form Completed I	By: Joe Franzen	<del>,</del>	Witnessed By:				
				.,,-			

2/4/54 5 OMW-3 1000 PACKED COOLERS TO = 12.41 DTW= . 94 0830 - 0730 OMW = 10 1015 WENT TO UPS BUT THEY DEON'T OPEN UNTER 10. THEN TRAVELLED TD = 3.0 TO OAKLAND DTW = 12.85 0940 ARRIVED AT DMW-08 1025 CARLAND IN TO = 10.58 DTW = 1.67 OMW-1 0948 TOOK DEW Couldn't get to Woter FREIGHT VELL COUER BROKEN OMUL-02 DTW = 1.78 BMU-06 5mw-05 TD = 12.02 \* . \* = 3 %, % 7 4 % 7

6 3/4/98 LEFT SITE 1030 Checked into Motel 1045 1100 - 1145 LUNCH samples to Lab equip. back to LESE 1245- DROVE STEVE to Airport. 1400 checked back at motel, picked up supplies called SEquein for more bottles

1/4/98 1430 Arrived back at oakland site Got access to FREELY AREA 1536 OMW-6 1630 omw-5 DTW = 3.0.5 TD=12:45 DOES NOT HAVE A LOCK CONTASHED EN POT HOLE

DTW = 1.72 1710 · OKUS-W7 TD = 19.84 1739 okus - w8 TD = 14.8

2/4/98

WEATHER 2/5/58 RAIN 0700 - 0800 Eigure purge vol. Fill out well forms 0800 Arrive at site check - in w/ forman checked dtw & TD at well oxus-wi night before 08 0845-W) ot us - ws TD = 22.09 DTW=7.65 0936 OKUS.-WS DTP=7.13 Extremely thick product

otus -u CALTBEATE CONQUE BEGIN SAMPLING TIME F. No water levels for not contaminated TIME WELL 0945 OMW-1 1030 DMW-8 0MW-10 0MW-6 1308 0MW-5 LUNCH

2/5/98 ARREUS BACK AT SETE 1400 FREIVED A 0800 BEGAN SAMPLING BEGAN SACUPLING TIME WELL TIME WELL 1448 OMW -3 APL/UP-WI 1523 0825 GMW-2 APL/UP-WZ 1548 0857 Okus-3 1648 orus-w7 0925 0XU5- W8 1721 Left site LEST SITE AT 0945 to check out of MOTER ALLEVES BACKAT SETE AT 1130 14 2/6/98: 1130 DTW = 7.24 TD = 15.45

WATER HAD SOMPY APPEARANCE PROBE LAVE SERIES OF BEARS NOT INDICATING OFF.

OFF. PROBE WAS REMOVED PROPERTY WAS OBSERVED ON PROBE.

FOR LAB TO DOOR OFF SAMPLES

2/6/28 1230 ARRIUED AT I FORGOT A DUPLICATE SAMPLE 50 LAB AND WOT BACK TO ANOTHER SAMPLE SET. BACK AT ARKIVED SITE 1415 SAMPLE AT LEFT AT SITE 1420 SHIPPED SAMPLE AT 1500 FROM UPS OUERNIGHT PROCEEDED TO ATAPORT



Redwood City, CA 94063 Walnut Creek, CA 94598 Sacramento, CA 95834

GC021898

(650) 364-9600 (510) 988-9600 (916) 921-9600

GC021798

FAX (650) 364-9233 FAX (510) 988-9673 FAX (916) 921-0100

Laidlaw Environmental Service 5665 Flatiron Pkwy

Boulder, CO 80301 Attention: Lisa Hennessy

QC Batch Number:

Client Project ID: Sample Matrix:

GC021798

Oakland Water Analysis Method:

EPA 5030/8015 Mod./8020

Sampled: Received: Reported:

Feb 5, 1998 Feb 6, 1998 Feb 23, 1998

First Sample #: 

802-0520

GC021798

GC021798

GC021898

#### 802004A 802004A 802004A 802004A TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit μg/L	Sample I.D. 802-0520 OMW-1	Sample I.D. 802-0521 OMW-8	Sample I.D. 802-0522 OMW-10	Sample I.D. 802-0523 OMW-6	Sample I.D. 802-0524 OMW-3	<b>Sample I.D.</b> 802-0525 APL/UP-W1
Purgeable Hydrocarbons	50	N.D.	N.D.	190	N.D.	N.D.	640
Benzene	0.50	N.D.	N.D.	18	N.D.	N.D.	55
Toluene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N D
Total Xylenes	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	22
Chromatogram Par				Unidentified Hydrocarbons > C8 & Discrete Peaks < C7			Gasoline & Discrete Peae
Report Limit Multip		1.0	1.0	2.0	1.0	1.0	5 0
Date Analyzed:		2/17/98	2/17/98	2/18/98	2/17/98	2/17/98	2/18-98
Instrument Identification:		HP-4	HP-4	HP-4	HP-4	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)		107	109	106	113	112	113

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 03/13/98 \*\*

Melissa A. Brewer Project Manager



Reporting

Limit

 $\mu$ g/L

680 Chesapeake Drive 404 N. Wiget Lane 819 Striker Avenue, Suite 8

Redwood City, CA 94063 Walnut Creek, CA 94598 Sacramento, CA 95834

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FAX (650) 364-9233 FAX (510) 988-9673 FAX (916) 921-0100

Laidlaw Environmental Service 5665 Flatiron Pkwy Boulder, CO 80301

Attention: Lisa Hennessy

Client Project ID: Sample Matrix: Analysis Method:

Oakland

802-0526

Water EPA 5030/8015 Mod./8020

Sampled: Received: Reported:

Feb 5 - 6, 98 Feb 6, 1998 Feb 23, 1998

QC Batch Number:

GC021798

First Sample #:

GC021798

Sample

I.D.

802-0527

GC021798

GC021798

GC021898

Analyte

Sample

1.D.

802-0526

GC021798

Sample

I.D.

802-0528

Sample

I.D.

802-0529

Sample

I.D.

802-0530

802009A

Sample

I.D.

802-0531

#### 802004A 802009A 802009A TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

	μg/ <b>L</b>	APL/UP -W2	OKUS-W7	OKUS-W8	OMW-5	OMW-2	OKUS-3
Purgeable Hydrocarbons	50	180	N.D.	56	N.D.	N.D.	6,000
Benzene	Benzene 0.50		0.79	N.D.	N.D.	N.D.	210
Toluene	0.50	N.D.	N.D.	N.D.	N.D.	2.3	N.D.
Ethyl Benzene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Total Xylenes	0.50	4.9	N.D.	N.D.	N.D.	N.D.	N.D.
Chromatogram Pattern:		Gasoline & Discrete Peak		Unidentified Hydrocarbons >C8			Gasoline & Discrete Peak
Quality Control Dat	a		•		·		
Report Limit Multiplic	cation Factor:	1.0	1.0	1.0	1.0	1.0	100
Date Analyzed:	Date Analyzed:		2/17/98	2/17/98	2/17/98	2/17/98	2/18/98
Instrument Identifica	tion:	HP-4	HP-9	HP-9	HP-9	HP-9	HP-9
Surrogate Recovery, (QC Limits = 70-130		123	103	104	104	103	103

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 03/13/98 \*\*

Melissa A. Brewer Project Manager



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Laidlaw Environmental Service

5665 Flatiron Pkwy Boulder, CO 80301

Client Project ID: Sample Matrix:

Oakland

Water EPA 5030/8015 Mod./8020

7 Sampled: Received: Reported:

Feb 6, 1998 Feb 6, 1998 Feb 23, 1998

Attention: Lisa Hennessy 

Analysis Method: First Sample #:

802-0532

GC021798

GC021798

GC021898 GC021898

QC Batch Number:

GC021798

802009A

GC021798

802009A

802009A

802009A 802004A TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit μg/L	Sample I.D. 802-0532 OKUS-2	Sample I.D. 802-0547 Trip Blank	Sample I.D. Method Blank	Sample I.D. Method Blank	Sample I.D. Method Blank	Sample I.D. Method Blank
Purgeable Hydrocarbons	50	1,100	N.D.	N.D.	N.D.	Ñ.D.	N.D.
Benzene	0.50	72	N.D.	N.D.	N.D.	N.D.	N.D.
Toluene	0.50	11	N.D.	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Total Xylenes	0.50	18	N.D.	N.D.	N.D.	N.D.	N.D.
Chromatogram Pat	tern:	Gasoline & Discrete Peak		••			

**Quality Control Data** 

Report Limit Multiplication Factor:	20	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	2/17/98	2/17/98	2/17/98	2/17/98	2/18/98	2/18/98
Instrument Identification:	HP-9	HP-9	HP-4	HP-9	HP-4	HP-9
Surrogate Recovery, %: (QC Limits = 70-130%)	103	104	110	106	112	105

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 03/13/98 \*\*

Melissa A. Brewer Project Manager

8020520.LLL <3>





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Laidlaw Environmental Service 5665 Flatiron Pkwy Boulder, CO 80301 Attention: Lisa Hennessy

Client Project ID: Sample Matrix: Analysis Method:

First Sample #:

Oakland Water

802-0520

EPA 3510/8015 Mod.

Sampled: Received: Reported:

Feb 5, 1998 Feb 6, 1998 Feb 23, 1998

QC Batch Number:

SP021298

SP021298 SP021298

SP021298 8015EXA

SP021298 SP021298 8015EXA 8015EXA

8015EXA 8015EXA 8015EXA TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit $\mu g/L$	<b>Sample</b> I.D. 802-0520 OMW-1B	Sample I.D. 802-0521 OMW-8B	Sample I.D. 802-0522 OMW-10B	Sample I.D. 802-0523 OMW-6B	Sample I.D. 802-0524 OMW-3B	<b>Sample I.D.</b> 802-0525 APL/UP-W1B
Extractable Hydrocarbons	50	N.D.	1,900	9,100	1,500	1,300	1,000
Chromatogram Pa	ittern:		Diesel	Diesel	Diesel	Diesel	Diesel & Unidentified Hydrocarbons < C12

**Quality Control Data** 

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Extracted:	2/12/98	2/12/98	2/12/98	2/12/98	2/12/98	2/12/98
Date Analyzed:	2/12/98	2/12/98	2/12/98	2/12/98	2/12/98	2/12/98
Instrument Identification:	HP-3A	HP-3A	HP-3A	HP-3B	HP-3B	HP-3A

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

elissa a. Brewer

SEQUOIA ANALYTICAL, #1271

Melissa A. Brewer Client Services Representative

8020520.LLL <4>





Redwood City, CA 94063 Walnut Creek, CA 94598 Sacramento, CA 95834

(650) 364-9600 (510) 988-9600 (916) 921-9600 FAX (650) 364-9233 FAX (510) 988-9673 FAX (916) 921-0100

Laidlaw Environmental Service 5665 Flatiron Pkwy Boulder, CO 80301 Attention: Lisa Hennessy 

Client Project ID: Sample Matrix: Analysis Method:

First Sample #:

Oakland Water

802-0526

EPA 3510/8015 Mod.

Sampled: Received: Reported:

SP021298

Feb 5-6, 1998 Feb 6, 1998 Feb 23, 1998

QC Batch Number:

SP021298

SP021298 SP021298 SP021298

SP021298 8015EXA

8015EXA 8015EXA 8015EXA 8015EXA 8015EXA TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit μg/L	<b>Sample</b> I.D. 802-0526 APL/UP -W2B	Sample I.D. 802-0527 OKUS-W7B	<b>Sample I.D.</b> 802-0528 OKUS-W8B	Sample I.D. 802-0529 OMW-5B	Sample I.D. 802-0530 OMW-2B	<b>Sample I.D.</b> 802-0531 OKUS-3B
Extractable Hydrocarbons	50	730	1,500	1,400	2,200	1,800	3,400
Chromatogram Pa	uttern:	Diesel & Unidentified Hydrocarbons < C12	Diesel	Diesel & Discrete Peaks	Diesel & Unidentified Hydrocarbons >C18	Diesel	Diesel & Unidentified Hydrocarbons < C14

**Quality Control Data** 

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Extracted:	2/12/98	2/12/98	2/12/98	2/12/98	2/12/98	2/12/98
Date Analyzed:	2/12/98	2/12/98	2/12/98	2/13/98	2/12/98	2/12/98
Instrument Identification:	HP-3B	HP-3A	HP-3A	HP-3B	HP-3A	HP-3B

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

Client Services Representative



Redwood City, CA 94063 Walnut Creek, CA 94598 Sacramento, CA 95834

(650) 364-9600 (510) 988-9600 (916) 921-9600 FAX (650) 364-9233 FAX (510) 988-9673 FAX (916) 921-0100

Laidlaw Environmental Service

5665 Flatiron Pkwy Boulder, CO 80301 Client Project ID: Sample Matrix:

Oakland

Water

Sampled: Received:

Feb 6, 1998 Feb 6, 1998

Attention: Lisa Hennessy 

Analysis Method: First Sample #:

EPA 3510/8015 Mod. 802-0532

Reported:

Feb 24, 1998

QC Batch Number:

SP021298

SP021298

8015EXA

#### 8015EXA TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit μg/L	Sample I.D. 802-0532 OKUS-2B	Sample I.D. Method Blank
Extractable Hydrocarbons	50	1,600	N.D.
Chromatogram Pa	ttern:	Diesel & Unidentified Hydrocarbons <c12< td=""><td></td></c12<>	

**Quality Control Data** 

Report Limit Multiplication Factor:	1.0	1.0
Date Extracted:	2/12/98	2/12/98
Date Analyzed:	2/12/98	2/12/98
Instrument Identification:	HP-3A	HP-3B

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

Client Services Representative





Redwood City, CA 94063 Walnut Creek, CA 94598 Sacramento, CA 95834 (650) 364-9600 (510) 988-9600 (916) 921-9600 FAX (650) 364-9233 FAX (510) 988-9673 FAX (916) 921-0100

Laidlaw Environmental Service

5665 Flatiron Pkwy Boulder, CO 80301

Attention: Lisa Hennessy

Client Project ID: Oakland Matrix: Liquid

QC Sample Group: 8020520-547

Reported: Feb 23, 1998

# **QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl	Xylenes	Diesel	
•			Benzene			
QC Batch#:	GC021798	GC021798	GC021798	GC021798	SP021298	
	802009A	802009A	802009A	802009A	8015EXA	
Analy, Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M	
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 3510	
Analyst:	K. Nill	K. Nill	K. Nill	K. Nill	K. Grubb	
MS/MSD #:	8020703	8020703	8020703	8020703	BLK021298	
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.	
Prepared Date:	2/17/98	2/17/98	2/17/98	2/17/98	2/12/98	
Analyzed Date:	2/17/98	2/17/98	2/17/98	2/17/98	2/12/98	
strument I.D.#:	HP-9	HP-9	HP-9	HP-9	HP3B	
Conc. Spiked:	20 μg/L	20 μg/L	20 μg/L	60 μg/L	<b>500</b> μg/L	
Result:	21	22	22	67	380	
MS % Recovery:	105	110	110	112	76	
Dup. Result:	20	21	20	62	270	
MSD % Recov.:	100	105	100	103	54	
RPD:	4.9	4.7	9.5	7.8	35	
RPD Limit:	0-20	0-20	0-20	0-20	0-50	

LCS #:	9LCS021798	9LCS021798	9LCS021798	9LCS021798	LCS021298
Prepared Date:	2/17/98	2/17/98	2/17/98	2/17/98	2/12/98
Analyzed Date:	2/17/98	2/17/98	2/17/98	2/17/98	2/12/98
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9	HP-3B
Conc. Spiked:	20 μg/L	20 μg/L	20 μg/L	60 μg/L	500 μg/L
LCS Result:	21	22	22	66	430
LCS % Recov.:	105	110	110	110	86

MS/MSD	÷ 7. 7		<del></del>		
LCS	70-130	70-130	70-130	70-130	60-1 <b>40</b>
Control Limits					

SEQUOIA ANALYTICAL, #1271

Mulissa Q. Brew Melissa A. Brewer

Melissa A. Brewer Client Services Representative Please Note:

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference





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Laidlaw Environmental Service

5665 Flatiron Pkwy Boulder, CO 80301

Attention: Lisa Hennessy

Oakland Client Project ID: Matrix:

Liquid

QC Sample Group: 8020520-547

Feb 23, 1998 Reported:

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl	Xylenes	
•			Benzene		
QC Batch#:	GC021798	GC021798	GC021798	GC021798	
	802004A	802004A	802004A	802004A	
Analy, Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	·
Analyst:	K. Nill	K. Nill	K, Nill	K. Nill	
MS/MSD #:	8020736	8020736	8020736	8020736	
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	
Prepared Date:	2/17/98	2/17/98	2/17/98	2/17/98	
Analyzed Date:	2/17/98	2/17/98	2/17/98	2/17/98	
strument I.D.#:	HP-4	HP-4	HP-4	HP-4	
Conc. Spiked:	20 μg/L	20 μg/L	20 μg/L	60 μg/L	
Result:	21	20	19	59	
VIS % Recovery:	105	100	95	98	
Dup. Result:	20	20	18	57	
MSD % Recov.:	100	100	90	95	
RPD:	4.9	0.0	5.4	3.4	
RPD Limit:	0-20	0-20	0-20	0-20	

LCS #:	4LCS021798	4LCS021798	4LCS021798	4LCS021798
Prepared Date:	2/17/98	2/17/98	2/17/98	2/17/98
Analyzed Date: Instrument I.D.#:	2/17/98 HP-4	2/17/98 HP-4	2/17/98 HP-4	2/17/98 HP-4
Conc. Spiked:	20 μg/L	20 μg/L	20 μg/L	60 μg/L
LCS Result:	21	20	19	59
LCS % Recov.:	105	100	95	98

MS/MSD LCS	70-130	70-130	70-130	70-130	
Control Limits					 

SEQUOIA ANALYTICAL, #1271

Melissa A. Brewer Client Services Representative Please Note:

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Laidlaw Environmental Service

5665 Flatiron Pkwy Boulder, CO 80301

Attention: Lisa Hennessy

Client Project ID: Oakland Matrix: Liquid

QC Sample Group: 8020520-547

Reported: Feb 25, 1998

### **QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl	Xylenes
-			Benzene	
QC Batch#:	GC021898	GC021898	GC021898	GC021898
	802004A	802004A	802004A	802004A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	K. Nill	K. Nill	K. Nill	K. Nill
MS/MSD #:	8020736	8020736	8020736	8020736
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	2/17/98	2/17/98	2/17/98	2/17/98
Analyzed Date:	2/17/98	2/17/98	2/17/98	2/17/98
nstrument I.D.#:	HP-4	HP-4	HP-4	HP-4
Conc. Spiked:	20 μg/L	20 μg/L	20 μg/L	60 μg/L
Result:	21	20	19	59
MS % Recovery:	105	100	95	98
Dup. Result:	20	20	18	57
MSD % Recov.:	100	100	90	95
RPD:	4.9	0.0	5.4	3.4
RPD Limit:	0-20	0-20	0-20	0-20

LCS #:	4LCS021898	4LCS021898	4LCS021898	4LCS021898
Prepared Date:	2/18/98	2/18/98	2/18/98	2/18/98
Analyzed Date: Instrument I.D.#:	2/18/98 HP-4	2/18/98 HP-4	2/18/98 HP-4	2/18/98 HP-4
Conc. Spiked:	20 μg/L	20 μg/L	20 μg/L	60 μg/L
LCS Result:	18	18	17	54
LCS % Recov.:	90	90	85	90

LIN WIND					 	
MS/MSD						
LCS	70-130	70-130	70-130	70-130		
	70-130	70-130	70-100	70-100		
Control Limits						

SEQUOIA ANALYTICAL, #1271

Melissa A. Brewer Client Services Representative Please Note:

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Laidlaw Environmental Service

5665 Flatiron Pkwy Boulder, CO 80301

Attention: Lisa Hennessy

Oakland Client Project ID: Matrix:

Liquid

QC Sample Group: 8020520-547

Reported:

Feb 25, 1998

# **QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl	Xylenes	
			Benzene		
QC Batch#:	GC021898	GC021898	GC021898	GC021898	
	802009A	802009A	802009A	802009A	
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	
Analyst:	K. Nill	K. Nill	K. Nill	K. Nill	
MS/MSD #:	8020821	8020821	8020821	8020821	
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	
Prepared Date:	2/18/98	2/18/98	2/18/98	2/18/98	
Analyzed Date:	2/18/98	2/18/98	2/18/98	2/18/98	
nstrument I.D.#:	HP-9	HP-9	HP-9	HP-9	
Conc. Spiked:	20 μg/L	20 μg/L	20 μg/L	60 μg/L	
Result:	20	21	21	64	
MS % Recovery:	100	105	105	107	
Dup. Result:	21	21	21	64	
MSD % Recov.:	105	105	105	107	
RPD:	4.9	0.0	0.0	0.0	
RPD Limit:	0-20	0-20	0-20	0-20	

LCS #:	9LCS021898	9LCS021898	9LCS021898	9LCS021898
Prepared Date:	2/18/98	2/18/98	2/18/98	2/18/98
Analyzed Date:	2/18/98	2/18/98	2/18/98	2/18/98
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9
Conc. Spiked:	20 μg/L	20 µg/L	20 µg/L	60 µg/L
LCS Result:	19	20	20	61
LCS % Recov.:	95	100	100	102

						 <del> </del>	
-	MS/MSD						
ļ	LCS	70-130	70-130	70-130	70-130		
l	Control Limits						

SEQUOIA ANALYTICAL, #1271

Melissa A. Brewer Client Services Representative Please Note:

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Laidlaw Environmental Service

Client Project ID: Oakland

Received:

Feb 6, 1998

5665 Flatiron Pkwy Boulder, CO 80301

Attention: Lisa Hennessy Lab Number:

8020520-547

Reported: Mar 13, 1998

### LABORATORY NARRATIVE

EPA 5030/8015 Mod./8020: Total Purgeable Petroleum Hydrocarbons with BTEX Distinction

A discrete peak was noted on samples 802-0525, 802-0526, 802-0531, and 802-0532 between the retention times for Chlorobenzene and Ethyl Benzene. This peak was identified as a non-gasoline compound by GC/MS.

Melissa a. Brewen

Melissa A. Brewer Project Manager

*6*73



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Company Name: LATDLAW ENVIRO	NMENTAL	5EAUTEC	Project Name: OFKLAND
Address: 5665 FLATTRON PKW			Billing Address (if different):
City: Boulder State: Co.		80301	
Telephone: (303) 938-5500	FAX #:		P.O. #:
Report To: DENTON MAULDIN Sample	er: JBE FKA	WZEW	QC Data: Level D (Standard) Level C Level B Level A
Turnaround	Days □2-8H	ours   🗅 Dr	Analyses Requested  Analyses Requested  Comments
Client Date/Time Matrix Sample I.D. Sampled Desc.	# of Cont. Cont. Type	Sequoia's Sample	
1.0 MW-1B 2/5/18/0945 Hga		802052	OAB X
2000 - 1 15/18 0745 HA			X
2.000 - 1 15/98 0745 HJG 3.600 - 88 15/98 4.000 8 15/98 5.000 - 10B 1/5/98 5.000 - 10B 1/98		802052	1/8 X
4. OMW 8 1630 Hyd			
5. OMW = 10B 1102 HJD	, 1	80205	22 A8 X
6.0MW-10 1102 HJD	1		
7. OMW-LB 1155 HJS	<u> </u>	80205	23 MB /
8. Draw-6 1155 Hal	>	90305	29 AS X
6.000-10 1102 HD 7.000-68 1155 HD 8.0400-6 1155 HD 9.0400-3 1448 HD 10.000-3 1448 HD		802052	X
10.04W-3 1448 HID			Date: Time:
Relinquished By:	- 17	Time / J	Received By:  Date: Time:  Date: Time:
Relinquished By:	Date	Time •	Received By Lab C. Palmer Date: 2/6/18 Time: 1240
Relinquished By	(),410	Tarur	Page of 3

Land Tree State Method of Shipment



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13 404 N. Winet Lane • Walnut Creek, CA 94598 • (510) 988-9600, FAX (510) 988-9673

Company Name: LAE	Project Name: Oft LAND															
Address: 5665	Billing Address (if different):															
City: Boucher																
Telephone: (363)	P.O. #:															
Report To: PENTON	MANDEN	Sample	1: JOE	ELAN.	2E4/5	QC Da	ta: 🔾	Level	D (Sta	andard)	) 🗓	Level	C (	J Leve	IB L	Level A
Turnaround 0 Worki Time: 0 7 Worki 0 5 Worki	ing Days □ 3 ing Days □ 2	Working [ Working [ Hours	Days	□ 2 - 8 Hou	rs Dria	nking Wa ste Wate	ter r /	_	<del></del>		Ana	lyses	Reque	sted		
Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Sequoia's Sample #		S/Ut	PH								Comments
Sample I.D.  1. APL/UP-WIB  2. APL/UP-WIB  3. APL/UP-WIB  4. APL/UP-WIB  5. OKUS-WIB  6. OKUS-WIB  7. OKUS-WIB  8. OKUS-WIB  9. OMW-5 B  10. OMW-5	2/5/58 1/5/38 1/5/33	420	)		802052	5AB	X									
3.APZ/LP-WIB	2/5/58 1548 2/5/18				8020 <u>5</u> 2	6 AB	X		, 565 - 5							
4. APL/UA-WA 5. OKUS - WTB	1548				802052	7AB	X									
6. 0KUS-257	1645				802052	X <b>24</b> 8	X									
8. OKUS - Wg	1722 1722				802052	24.6	X			-						
10.0MW-5	130	V	V			X										
Relinquished By:	for the		_ Date	14/18	Time:	Y & Re	ceived	Ву:					Date:		Tin	ne:
Relinquished By:			Date	/	Time:	Re	Received By:								Tin	
Inquished By:	Inquished By:				Time:	Received By Lab: ( Jalmen Date: 2/6/95 Ti					Tin	ne: /240				



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Company Name: LATOLAW ENUTRON MENTAL	Project Name: CAKLAND											
Address: 565 FILTERON PRWY	Billing Address (if different):											
Address: 5665 FISTERON PAWY City: Boulder State: Co. Zip Code: 7030)												
Telephone: 333) 438 - 5500 FAX #:	P.O. #:											
Report To: DENTON MAULDEN Sampler: JOE FRANZEN (F	P.O. #:  QC Data: Level D (Standard) Level C Level B Level A  inking Water  Analyses Requested											
Turnaround 10 Working Days 3 Working Days 2 - 8 Hours Time: 7 Working Days 2 Working Days 5 Working Days 24 Hours	aste Water her											
Client Date/Time Matrix # of Cont. Séquoia Sample I.D. Sampled Desc. Cont. Type Sample	Comments											
1.0MU-2B 2/58 1/10 1 80205.  2.0MU-2B 2/6/88 80205.  3.0KUS-3B 6925 80205.  6.0KUS-2B 6925 80205.  7. Top Blank 2/498 80205.	0 N2 X											
20MW-2 2/6/48	Sequoia											
3.0KUS-3B 2/6/13 802053	1 AB X B B B B B B B B B B B B B B B B B											
4.0KUS-3 1.0857	X											
5.0KUS-2B 6925 80205	32 AB X											
6. OKUS- 2 6925	X											
7 Trip Blank 2/2/98 80205	4r2 g											
8.	Sequencial Sequence of the seq											
9.	White -											
10.	3											
Relinquished By: Date: 2/6/98 Time: /2	Received By: Date: Time:											
Relinquished by: Date: Time:	Received By: Date: Time:											
Relinquished By: Date: Time:	Received By Lab: C. Palmer Date: \$1/98 Time: 1240											