W. A. CRAIG, INC.
Environmental Contracting and Consulting

6940 Tremont Road
Dixon, California 95620
Contractor and Hazardous Substances License #455752
e-mail: tech@wacraig.com
(800) 522-7244
Dixon (707) 693-2929 Napa (707) 252-3353
Fax: (707) 693-2922

QUARTERLY MONITORING REPORT
FEBRUARY 2002

RO 234

SITE LOCATION:
Oakland Truck Stop
1107 Fifth Street
Oakland, California

PREPARED FOR:
Mr. Reed Rinehart
Rinehart Distribution, Inc.
P.O. Box 725
Ukiah, California 94582

SUBMITTED TO:
Mr. Barney Chan
Alameda County Department of Environmental Health Services
Division of Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577
(510) 567-6774
fax (510) 337-9335

W. A. CRAIG, INC. PROJECT # 3628
April 8, 2002

PROFESSIONAL CERTIFICATION

Quarterly Monitoring Report – February 2002

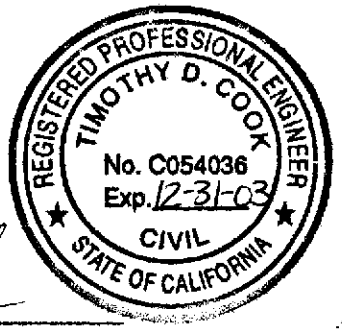
Oakland Truck Stop
1107 Fifth Street
Oakland, California

W.A. Craig, Inc.
Project No. 3628

April 8, 2002

This document has been prepared by the staff of W. A. Craig, Inc., under the professional supervision of the persons whose seals and signatures appear hereon. No warranty, either expressed or implied, is made as to the professional advice presented herein. The analysis, conclusions and recommendations contained in this document are based upon site conditions as they existed at the time of the investigation and they are subject to change.

The conclusions presented in this document are professional opinions based solely upon visual observations of the site and vicinity, and interpretation of available information as described in this document. W.A. Craig, Inc., recognizes that the limited scope of services performed in execution of this investigation may not be appropriate to satisfy the needs, or requirements of other state agencies, or of other users. Any use or reuse of this document or its findings, conclusions or recommendations presented herein is at the sole risk of said user.



Tim Cook, P.E.
Principal Engineer

INTRODUCTION

Site Location and Description

The Oakland Truck Stop located at 1107 5th Street in Oakland, California ("the Site") is owned by Mr. Tony Muir. Rino Pacific, Inc. and Rinehart Distribution, Inc. lease the property from the owner. The Site is in a commercial and industrial district at the intersection of Adeline and 5th Streets **(Figure 1)**. A service station building, two underground storage tanks, four pump dispenser islands, a truck scale and scale house currently occupy the Site.

The Site topography is flat and is bounded on the north by Fifth Street, on the west by Adeline Street, on the south by a restaurant and parking lot and on the east by Chestnut Street. The nearest surface water is the Oakland Estuary located approximately 2,400 feet south of the Site.

Background

The Site was developed as a truck stop approximately 40 years ago and has been in operation throughout this period. Three 10,000-gallon underground storage tanks (USTs) and one 8,000-gallon UST were formerly maintained at the Site. All four USTs were constructed of single-wall steel. Of the 10,000-gallon USTs, two contained diesel fuel and one contained mid-grade unleaded gasoline. The 8,000-gallon UST contained regular unleaded gasoline. Prior to the recent remodel of the Site, fuel product lines were constructed of single-wall fiberglass.

In mid-1995 an unauthorized release of fuel occurred as a result of a leak in a product line. Product lines associated with this release were replaced as soon as the leak was discovered. Interim cleanup of the spill was performed by installing and operating two product recovery sumps in the vicinity of the release. The sumps recovered approximately 6.3 gallons of gasoline using a skimmer device and reduced the floating product thickness to a sheen on the water in the recovery wells. The sumps were removed during recent leaseholder improvements at the Site. The water table fluctuates seasonally between 10 inches and 4 feet below grade.

In March 1999, the four single-walled USTs were replaced with two 15,000-gallon double-walled fiberglass USTs. An interim remedial action was performed during UST replacement activities to remove the grossly contaminated soil and groundwater.

The following is a summary of interim remedial activities performed at the Site by Trinity Excavating and Engineering, Inc. of Santa Rosa, California. The work was performed between February 8, 1999 and May 5, 1999.

2/8 through 2/10, 1999	Excavated to tops of tanks and rinsed three gasoline and one diesel underground fuel tanks
2/11/1999	Removed tanks and disposed offsite (observed by Fire Inspector)
3/3 &3/4, 1999	Removed approximately 2,100 tons of contaminated soil from excavation bottom and sides before sampling as directed by Fire Inspector. Collected excavation and stockpile samples. Removed water from pit as needed. Stored approximately 33,000 gallons of contaminated water in temporary storage tanks.
2/24 through 5/19, 1999	Loaded, manifested and disposed of 2,000.5 tons of contaminated soil at the Forward non-hazardous disposal facility near Stockton, California.
2/1 through 5/6, 1999	Provided and placed approximately 1,700 tons of backfill.
5/3 through 5/5, 1999	Disposed of contaminated water at Seaport Environmental.

The lateral extent of hydrocarbon contamination has not yet determined. Quarterly groundwater monitoring is being conducted. The direction of groundwater flow has varied from southwest to north. Interpretation of the groundwater gradient is suspect and could be affected by tidal fluctuation, improper monitoring well construction or by very localized recharge (i.e., leaking water or sewer lines).

The shallow aquifer beneath the Site has no beneficial use as a potential drinking water resource due to its high total dissolved solids concentration (>3,000 mg/l). Proposed Groundwater Amendments to the Water Quality Control Plan (Basin Plan), dated April 2000, specifically states that shallow groundwater to a depth of about 100 feet in portions of the East Bay Plain is often brackish due to naturally-occurring saltwater intrusion. However, well yields may be sufficient for industrial or irrigation uses.

This same document states that cleanup in areas that have no beneficial use as a drinking water resource, should be protective of ecological receptors, human health and probable non-potable uses (e.g., irrigation or industrial process supply). Pursuant to State Board Resolution No. 92-49, pollution sites will continue to be required to demonstrate that 1) reasonably adequate source removal has occurred, 2) the plume has been reasonably defined both laterally and vertically and 3) a long-term monitoring program is established to verify that the plume is stable and will not impact ecological receptors or human health (e.g., from volatilization into trenches and buildings). In the East Bay Plain there are deep aquifers that will continue to be designated as potential drinking water resources. In such a setting, the deep aquifers (defined as aquifers below the Yerba Buena Mud) are subject to protection as potential drinking water resources.

In a letter to Rinehart Distributing Inc. dated July 27, 2001, Alameda County Health Care Services (ACHCS) requested that additional investigation be performed to delineate the extent of petroleum hydrocarbons both on-site and off-site. Specifically, they requested monitoring wells to the south or adjacent to the main building. A *Site Investigation Work Plan* dated October 22,

2001 has been submitted and approved by the ACHCS. A site access agreement has been executed with the adjacent property owner. We will install two additional monitoring wells upon approval of the budget for this task by the UST Cleanup Fund.

SCOPE OF WORK

The scope of work conducted by W.A. Craig, Inc (WAC) during this period included the following:

- Measure dissolved oxygen concentrations and static water levels in eight on-site monitoring wells;
- Purge and sample groundwater from these wells;
- Analyze groundwater samples for total petroleum hydrocarbons as gasoline (TPH-g), total petroleum hydrocarbons as diesel (TPH-d), benzene, toluene, ethylbenzene, xylenes (BTEX), fuel oxygenates (MtBE, ETBE, TAME, DIPE, tert-Butanol, methanol, ethanol) and lead scavengers (EDB and 1,2 DCA); and
- Prepare this Quarterly Monitoring Report.

GROUNDWATER SAMPLING AND ANALYSIS

Groundwater Elevations

WAC measured water levels in the eight monitoring wells on February 15, 2002 using an electronic water-level indicator. The wells are located as shown on **Figure 2**. Well construction details are summarized in **Table 1**. The wells were exposed to atmospheric conditions for approximately 30 minutes to stabilize static water levels. The depths to static water level measurements were subtracted from the top of casings to obtain static water elevations. Groundwater appears to be mounding in the vicinity of the former UST excavation. Flow directions radiate from the former UST excavation, however the gradient is steepest toward monitoring well MW-7. Groundwater elevations for this and previous monitoring events are presented on **Table 2**.

Groundwater Sampling

On February 15, 2002, the wells were purged prior to collecting groundwater samples to ensure that formation water was sampled. The dissolved oxygen concentration was measured prior to sampling. Dissolved oxygen concentrations and temperature are summarized in **Table 3**.

Three well volumes were purged from each well prior to sampling to ensure that water samples were representative of the ambient groundwater quality. Groundwater sampling logs are included in **Attachment A**.

Groundwater samples were collected using disposable polyethylene bailers. The samples were collected in laboratory cleaned sample bottles appropriate for each analysis. Monitoring well MW-7 contained approximately ½ inch of floating product. Two samples were collected from the well. One sample was decanted from the top of the bailer and a second duplicate sample was collected from the bottom of the bailer. The samples were submitted under chain-of-custody control to McCampbell Analytical, Inc. (MAI), of Pacheco, California. The purged groundwater is currently stored on-site in labeled, DOT approved, 55-gallon, steel drums.

Groundwater Analytical Results

The groundwater samples were analyzed for TPH-g/TPH-d using EPA Method 8015 (modified), for purgeable aromatic hydrocarbons (BTEX) using EPA Method 8020 and for fuel oxygenates and lead scavengers using EPA Method 8260. MAI is certified by the State of California to perform these analyses. The results of the analyses are summarized in **Table 4.** A copy of the laboratory analytical report and chain-of-custody document are in **Attachment B.**

Conclusions

MtBE concentrations remain very high in wells MW-4, MW-7 and MW-8. MtBE and all other petroleum constituents continue to have the highest in concentrations in well MW-7. Approximately ½ inch of floating free product was observed in well MW-7. Groundwater sample MW-7D yielded the highest TPH-g and benzene concentrations at 160,000 µg/L and 30,000 µg/L, respectively. Hydrocarbons in the vicinity of MW-7 may have originated from the former UST excavation, a leak from the former product piping or a leak from the pump dispenser located east of well MW-7. The distribution of MtBE in groundwater samples is presented on **Figure 3**.

MtBE is the principle constituent of concern (COC). TPH-g and BTEX constituents are present in many wells but at lower concentrations. Remediation of MtBE will also remove the other COCs. The hydrocarbon plume appears to be centered about wells MW-4, MW-5, MW-6, MW-7 and MW-8. This area includes the former UST pit, and dispenser islands to the west, and east of the former UST pit. This area will be the focus of the remedial action. The next quarterly sampling event will be in May 2002.

Recommendations

We will abandon well MW-3, due to incompatible well screening with the other seven monitoring wells and replace it with well MW-3A. Well MW-3A will have a screened interval similar to the most recently installed wells. We will also install two additional monitoring wells on an adjacent property south of the Site to determine the groundwater flow direction. Details of this proposed investigation are presented in the *Site Investigation Work Plan (Revision 1)*, dated October 22, 2001. This work is scheduled for May 2002. Sampling results from the new wells will be included in the next Quarterly Monitoring Report.

After the direction of groundwater flow has been determined, we recommend the installation of offsite temporary borings to determine the lateral extent of the contaminant plume. In a meeting with the UST Fund representative, Dave Charter, temporary borings adjacent to underground utility lines were recommended to identify possible preferential pathways.

We further recommend active remediation in the vicinity of well MW-7 to remove a portion of the hydrocarbon mass present in the shallow groundwater. To this end, we propose Preliminary Active Remediation Goals (PARGs). The purpose of the PARGs is to establish remediation cleanup goals that are achievable and that will remove a large mass of the contaminant plume.

We recommend that this Site be included in the pilot study Pay for Performance Program (PFP) administered by the State Water Resources Control Board, UST Cleanup Fund. The purpose of this pilot PFP is to demonstrate expedited site cleanups using PARGs and payment of the consultant based on performance (i.e., attainment of clean up milestones). We propose establish PARGs and a timeline that are mutually agreeable to the owner, the environmental consultant, ACHCS and the California UST Cleanup Fund.

Table 1
Well Construction Data
Oakland Truck Stop

Well Number	Date Installed	Casing Diameter (inches)	Borehole Depth (feet)	Screened Interval (feet)	Filter Pack Interval (feet)	Bentonite Interval (feet)	Grouting Interval (feet)
MW-1	10/10/96	2	20.5	10-20	9-20	7-9	1-7
MW-2	10/10/96	2	14.0	8-13	7-8	5-7	1-5
MW-3	10/10/96	2	17.0	12-17	11-17	9-11	1-9
MW-4	08/16/00	2	20.5	5-20	4-20	3-4	1-3
MW-5	08/16/00	2	20.5	5-20	4-20	7-13	1-3
MW-6	08/16/00	2	20.5	5-20	4-20	3-4	1-3
MW-7	08/17/00	2	20.5	5-20	4-20	3-4	1-3
MW-8	08/16/00	2	20.5	5-20	4-20	3-4	1-3
MW-9	08/23/00	2	20.5	5-20	4-20	3-4	1-3

Notes: MW-2 was abandoned during the UST excavation and removal in March 1999.

Table 2
Groundwater Elevations
Oakland Truck Stop

Well Number	Date	Top of Casing (ft)	Depth Below TOC (ft)	Elevation Above MSL (ft)
MW-1	10/21/96	7.60	5.08	2.52
	11/04/96		3.02	4.58
	03/04/97		2.28	5.32
	06/12/97		4.80	2.80
	07/14/97		2.66	4.94
	09/09/97		2.45	5.15
	09/19/97		2.60	5.00
	02/13/98		2.76	4.84
	07/07/98		2.15	5.45
	10/01/98		3.63	3.97
	12/30/98		4.40	3.20
	03/21/00		2.62	4.98
	08/30/00		3.21	4.39
	11/06/00		3.10	4.50
	02/22/01		3.50	4.10
	05/07/01		2.94	4.66
	08/22/01		3.70	3.90
	11/04/01		3.89	3.71
	02/15/02		2.95	4.65
MW-2	10/21/96	4.48	4.66	-0.18
	11/04/96		4.60	-0.12
	03/04/97		3.68	0.80
	06/12/97		3.70	0.78
	07/14/97		4.16	0.32
	09/09/97		3.88	0.60
	09/19/97		4.50	-0.02
	02/13/98		3.08	1.40
	07/07/98		3.74	0.74
	10/01/98		4.63	-0.15
	12/30/98		3.90	0.58
	03/21/00		Well Destroyed	
MW-3	10/21/96	7.79	7.66	0.13
	11/04/96		5.70	2.09
	03/04/97		11.38	-3.59
	06/12/97		5.18	2.61
	07/14/97		7.96	-0.17
	09/09/97		10.16	-2.37
	09/19/97		12.80	-5.01
	02/13/98		11.42	-3.63
	07/07/98		11.76	-3.97
	10/01/98		11.34	-3.55
	12/30/98		4.56	3.23
	03/21/00		10.92	-3.13
	08/30/00		5.12	2.67
	11/06/00		4.10	3.69
	02/22/01		6.60	1.19
	05/07/01		6.30	1.49
	08/22/01		5.21	2.58
	11/04/01		5.47	2.32
	02/15/02		4.65	3.14

Table 2
Groundwater Elevations
Oakland Truck Stop

Well Number	Date	Top of Casing (ft)	Depth Below TOC (ft)	Elevation Above MSL (ft)
MW-4	08/30/00	7.74	3.74	4.00
	11/06/00		3.85	3.89
	02/22/01		4.66	3.08
	05/07/01		2.66	5.08
	08/22/01		4.13	3.61
	11/04/01		4.53	3.21
	02/15/02		3.62	4.12
MW-5	08/30/00	7.53	3.01	4.52
	11/06/00		3.35	4.18
	02/22/01		3.00	4.53
	05/07/01		2.73	4.80
	08/22/01		3.88	3.65
	11/04/01		3.95	3.58
	02/15/02		2.84	4.69
MW-6	08/30/00	7.89	3.40	4.49
	11/06/00		3.72	4.17
	02/22/01		3.34	4.55
	05/07/01		3.08	4.81
	08/22/01		3.77	4.12
	11/04/01		4.33	3.56
	02/15/02		3.22	4.67
MW-7	08/30/00	8.96	6.72	2.24
	11/06/00		6.85	2.11
	02/22/01		6.00	2.96
	05/07/01		6.35	2.61
	08/22/01		6.86	2.10
	11/04/01		6.66	2.30
	02/15/02		6.45	2.51
MW-8	08/30/00	7.32	3.06	4.26
	11/06/00		2.98	4.34
	02/22/01		2.46	4.86
	05/07/01		2.76	4.56
	08/22/01		3.56	3.76
	11/04/01		3.76	3.56
	02/15/02		2.72	4.60
MW-9	08/30/00	7.30	2.81	4.49
	11/06/00		2.68	4.62
	02/22/01		2.20	5.10
	05/07/01		2.75	4.55
	08/22/01		3.80	3.50
	11/04/01		3.61	3.69
	02/15/02		2.92	4.38

Notes : Monitoring wells elevations are based on City of Oakland Datum # 16NW10 which lies 15 ft west of the centerline intersection of 3rd Street and Linden Street.: Elevation = 8.108 (City of Oakland Datum = 5.108 + 3.00 = 8.108). Elevations have been converted to U.S. Geodetic Datum by adding 3.00 feet.

Table 3
Dissolved Oxygen Concentrations
Oakland Truck Stop

Monitoring Well	Date	Dissolved Oxygen Concentration (mg/l)	Temperature (Celsius)	Dissolved Oxygen Percent of Saturation
MW-1	08/30/00	0.27	24.2	3.2%
	11/06/00	0.24	21.8	2.7%
	02/22/01	0.76	15.7	7.6%
	05/07/01	0.79	20.3	8.6%
	08/27/01	0.20	23.9	2.4%
	11/04/01	0.60	22.5	6.9%
	02/15/02	0.32	17.8	3.3%
MW-3	08/30/00	0.35	26.4	4.4%
	11/06/00	0.23	22.7	2.6%
	02/22/01	0.97	15.3	9.6%
	05/07/01	NS	NS	NS
	08/27/01	0.40	23.9	4.7%
	11/04/01	NS	NS	NS
	02/15/02	0.37	18.7	3.9%
MW-4	08/30/00	0.16	27.4	2.0%
	11/06/00	0.30	23.9	3.5%
	02/22/01	0.85	16.3	8.6%
	05/07/01	0.95	20.5	10.4%
	08/27/01	0.20	26.1	2.5%
	11/04/01	0.30	23.7	3.5%
	02/15/02	0.18	17.0	1.8%
MW-5	08/30/00	0.28	27.0	3.6%
	11/06/00	0.24	22.6	2.8%
	02/22/01	0.77	14.7	7.5%
	05/07/01	0.99	19.8	10.7%
	08/27/01	0.20	26.4	2.5%
	11/04/01	0.60	23.1	7.0%
	02/15/02	0.27	16.9	2.8%
MW-6	08/30/00	0.42	27.7	5.4%
	11/06/00	0.23	23.0	2.7%
	02/22/01	1.01	15.3	10.0%
	05/07/01	0.89	21.0	9.9%
	08/27/01	0.15	26.5	1.9%
	11/04/01	0.50	23.0	5.8%
	02/15/02	0.23	18.3	2.4%
MW-7	08/30/00	0.17	26.8	2.1%
	11/06/00	0.25	23.5	2.9%
	02/22/01	0.66	17.1	6.8%
	05/07/01	0.56	21.0	6.2%
	08/27/01	0.40	25.4	4.9%
	11/04/01	0.42	24.0	5.0%
	02/15/02	0.18	18.3	1.9%

differs w/ Temp.
8.4
(10)

Table 3
Dissolved Oxygen Concentrations
Oakland Truck Stop

Monitoring Well	Date	Dissolved Oxygen Concentration (mg/l)	Temperature (Celsius)	Dissolved Oxygen Percent of Saturation
MW-8	08/30/00	0.18	26.4	2.3%
	11/06/00	0.25	23.7	2.9%
	02/22/01	0.69	17.1	7.1%
	05/07/01	0.96	21.1	10.7%
	08/27/01	0.15	26.1	1.9%
	11/04/01	0.3	24.2	3.6%
	02/15/02	0.25	17.0	2.6%
MW-9	08/30/00	0.30	22.8	3.5%
	11/06/00	0.31	21.7	3.5%
	02/22/01	0.71	16.2	7.2%
	05/07/01	0.97	18.8	10.3%
	08/27/01	0.2	23.0	2.3%
	11/04/01	0.3	22.1	3.4%
	02/15/02	0.22	17.6	2.3%

Notes: NS = not sampled

Table 4
Groundwater Analytical Results
Oakland Truck Stop

Well Number	Date	TPH-g	TPH-d	MtBE 8260	benzene	toluene	ethyl-benzene	xylenes
MW-5	08/30/00	1,000	450	NS	ND	ND	ND	ND
	11/06/00	ND<1,000	520	42,000	ND<1.0	ND<1.0	ND<1.0	ND<1.0
	02/22/01	ND<1,000	270	39,000	ND<1.0	ND<1.0	ND<1.0	ND<1.0
	05/07/01	ND<1,800	470	59,000	ND<5.0	ND<2.0	ND<2.0	ND<2.0
	08/22/01	ND<2,200	780	70,000	ND<3.0	ND<3.0	ND<3.0	ND<3.0
	11/04/01	ND<1,700	670	37,000	ND<2.0	ND<2.0	ND<2.0	ND<2.0
	02/15/02	ND<1,100	480	33,000	ND<1.0	ND<1.0	ND<1.0	ND<1.0
MW-6	08/30/00	1,300	1,300	NS	55	ND	16	27
	11/06/00	ND<630	1,100	27,000	7	8.1	ND<3	5.2
	02/22/01	ND<200	420	8,000	ND	ND	ND	ND
	05/07/01	ND<1000	900	40,000	ND<2.0	ND<2.0	ND<1.0	ND<1.0
	08/22/01	ND<350	520	8,800	ND<2.0	ND<1.0	ND	ND
	11/04/01	ND<500	420	17,000	ND<2.0	ND<2.0	ND	ND
	02/15/02	ND<960	910	26,000	2.6	4.5	ND<1.0	4.2
MW-7	08/30/00	160,000	2,600	NS	28,000	15,000	1,200	5,900
	11/06/00	80,000	1,700	920,000	23,000	12,000	1,200	5,000
	02/22/01	80,000	2,000	460,000	19,000	12,000	1,100	3,200
	05/07/01	100,000	7,600	520,000	25,000	16,000	1,700	6,600
	08/22/01	110,000	520	250,000	18,000	12,000	2,000	9,400
	11/04/01	85,000	6,500	180,000	17,000	2,700	2,100	9,700
	02/15/02	96,000	21,000	200,000	21,000	7,300	2,600	13,000
MW-7D duplicate	02/22/01	84,000	2,400	500,000	20,000	13,000	1,200	3,400
	05/07/01	100,000	8,200	500,000	25,000	17,000	1,700	6,700
	02/15/02	160,000	29,000	200,000	30,000	27,000	3,700	19,000
MW-8	08/30/00	ND	690	NS	ND	ND	ND	ND
	11/06/00	ND<3,300	810	76,000	ND<8	ND<5	ND<3	ND<7
	02/22/01	ND<2,500	1,100	130,000	ND<3	ND<3	ND<3	ND<3
	05/07/01	ND<5,000	1,300	120,000	32	ND<10	ND<5.0	ND<5.0
	08/22/01	ND<4,000	1,200	86,000	ND<5.0	ND<5.0	ND<5.0	16
	11/04/01	590	1,100	49,000	6.9	ND	ND	ND
	02/15/02	ND<3,400	1,500	91,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0
MW-9	08/30/00	ND	770	NS	ND	ND	ND	ND
	11/06/00	ND	390	220	ND	ND	ND	ND
	02/22/01	ND	240	160	ND	ND	ND	ND
	05/07/01	ND	190	150	ND	ND	ND	ND
	08/22/01	ND	120	120	ND	ND	ND	ND
	11/04/01	ND	160	120	ND	ND	ND	ND
	02/15/02	ND	150	98	ND	ND	ND	ND

Notes:

units are micrograms per liter (ug/L)

ND = Not detected

NS = Not sampled

PARG = Preliminary Active Remediation Goal

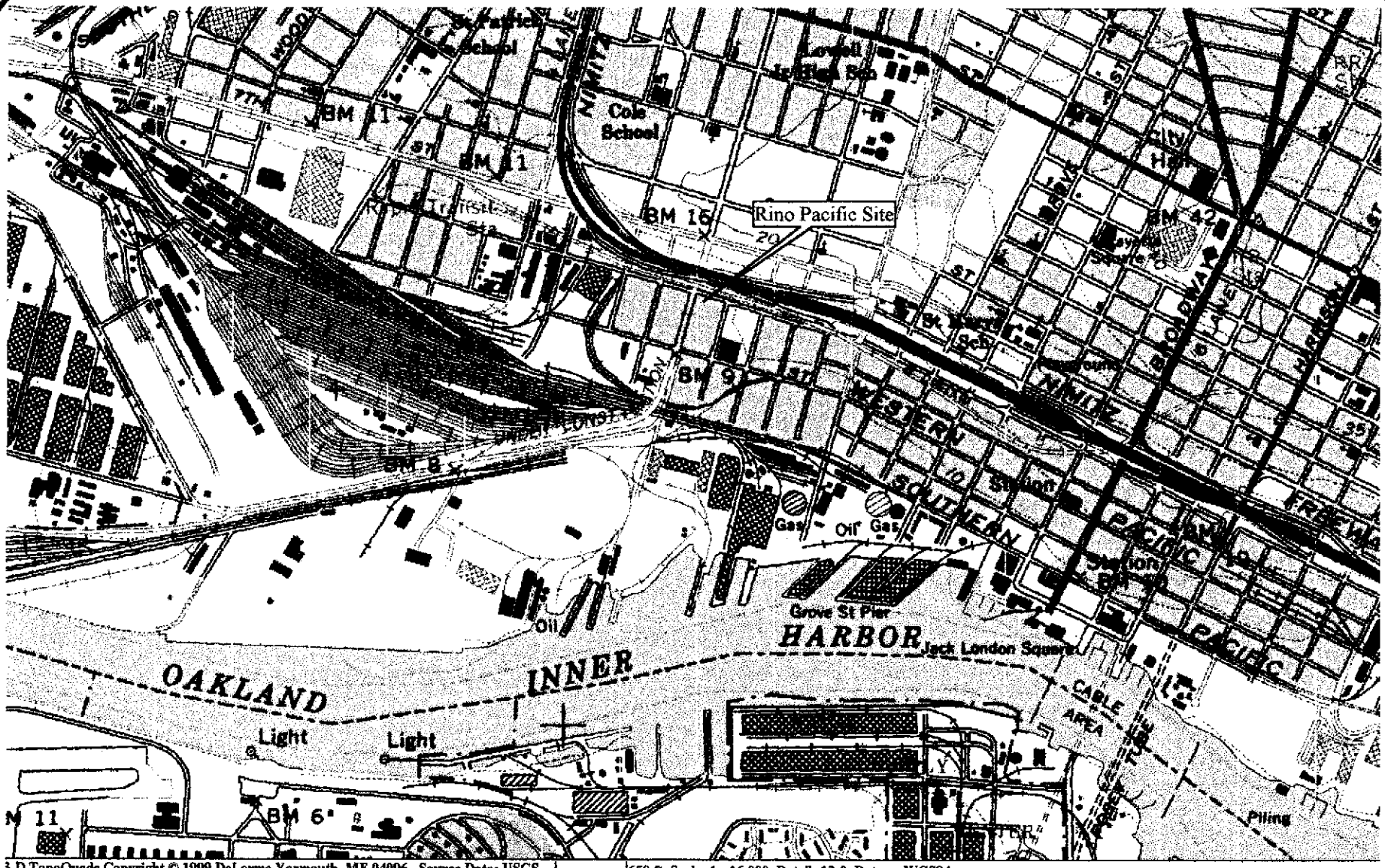
MW-2 was destroyed during excavation of contaminated soil

MW-4 through MW-9 were constructed in August 2000

The following petroleum hydrocarbon constituents have not been detected to date DIPE, ETBE, TAME, TBA, methanol, ethanol, EDB and 1,2-DCA

Table 4
Groundwater Analytical Results
Oakland Truck Stop

Well Number	Date Sampled	TPH-g	TPH-d	MtBE 8260	benzene	toluene	ethyl-benzene	xylenes
MW-1	11/04/96	ND	220	NA	ND	ND	ND	ND
	03/05/97	ND	230	NA	ND	ND	ND	ND
	06/12/97	ND	290	NA	ND	ND	ND	ND
	09/09/97	ND	180	NA	ND	ND	ND	ND
	02/13/98	ND	590	NA	ND	ND	ND	ND
	07/07/98	ND	1,400	2.7	ND	ND	ND	ND
	10/01/98	ND	1,100	1.8	ND	ND	ND	ND
	12/30/98	ND	1,700	2.3	ND	ND	ND	ND
	03/21/00	220	3,100	4,800	11	ND	ND	ND
	08/30/00	140	1,600	NS	5.3	ND	ND	ND
	11/06/00	51	1,500	2,100	1.0	ND	ND	ND
	02/22/01	140	3,000	1,100	ND	ND	ND	ND
	05/07/01	ND	3,800	1,100	ND	ND	ND	ND
	08/22/01	ND<110	1,800	1,600	ND	ND	ND	ND
	11/04/01	ND	1,300	1,500	ND	ND	ND	ND
	02/15/02	ND	2,000	770	ND	ND	ND	ND
MW-2	11/04/96	910	2,700	NA	120	23	3.5	51
	03/05/97	4,400	2,300	NA	1,500	51	24	100
	06/12/97	3,600	2,400	NA	1,200	14	12	40
	09/09/97	3,700	970	NA	570	31	19	60
	02/13/98	6,500	2,200	NA	2,400	31	ND	ND
	07/07/98	5,200	2,700	1,000,000	2,800	ND	ND	ND
	10/01/98	1,200	1,200	360,000	330	12	8.8	11
Well Destroyed	12/30/98	1,000	1,900	360,000	96	ND	ND	ND
MW-3	11/04/96	ND	310	NA	ND	ND	ND	ND
	03/05/97	ND	210	NA	ND	ND	ND	ND
	06/12/97	ND	94	NA	ND	ND	ND	ND
	09/09/97	ND	2,300	NA	ND	ND	ND	ND
	02/13/98	ND	570	NA	ND	ND	ND	ND
	07/07/98	ND	1,100	6.6	ND	ND	ND	ND
	10/01/98	ND	390	4.8	ND	ND	ND	ND
	12/30/98	ND	64	4.5	ND	ND	ND	ND
	03/21/00	ND	2,800	4.8	ND	ND	ND	ND
	08/30/00	ND	260	NS	1.3	ND	ND	ND
	11/06/00	ND	940	12	ND	ND	ND	ND
	02/22/01	ND	340	26	1.2	1.5	ND	0.74
	05/07/01	140	460	33	0.76	4.7	2.2	14.0
	08/22/01	ND	130	44	ND	ND	ND	ND
	11/04/01	ND	190	43	ND	ND	ND	ND
	02/15/02	ND	780	45	ND	ND	ND	ND
MW-4	08/30/00	1,300	390	NS	64	63	9.7	110
	11/06/00	ND<3,300	170	120,000	80	ND<4.0	ND<5.0	ND<3.0
	02/22/01	ND<3,300	120	150,000	30	ND<3.0	ND<3.0	ND<3.0
	05/07/01	ND<4,200	240	200,000	ND<20	ND<10	ND<5.0	ND<5.0
	08/22/01	ND<5,400	300	190,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0
	11/04/01	ND<5,000	210	170,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0
	02/15/02	ND<5,000	340	160,000	ND<5.0	ND<5.0	ND<5.0	ND<10



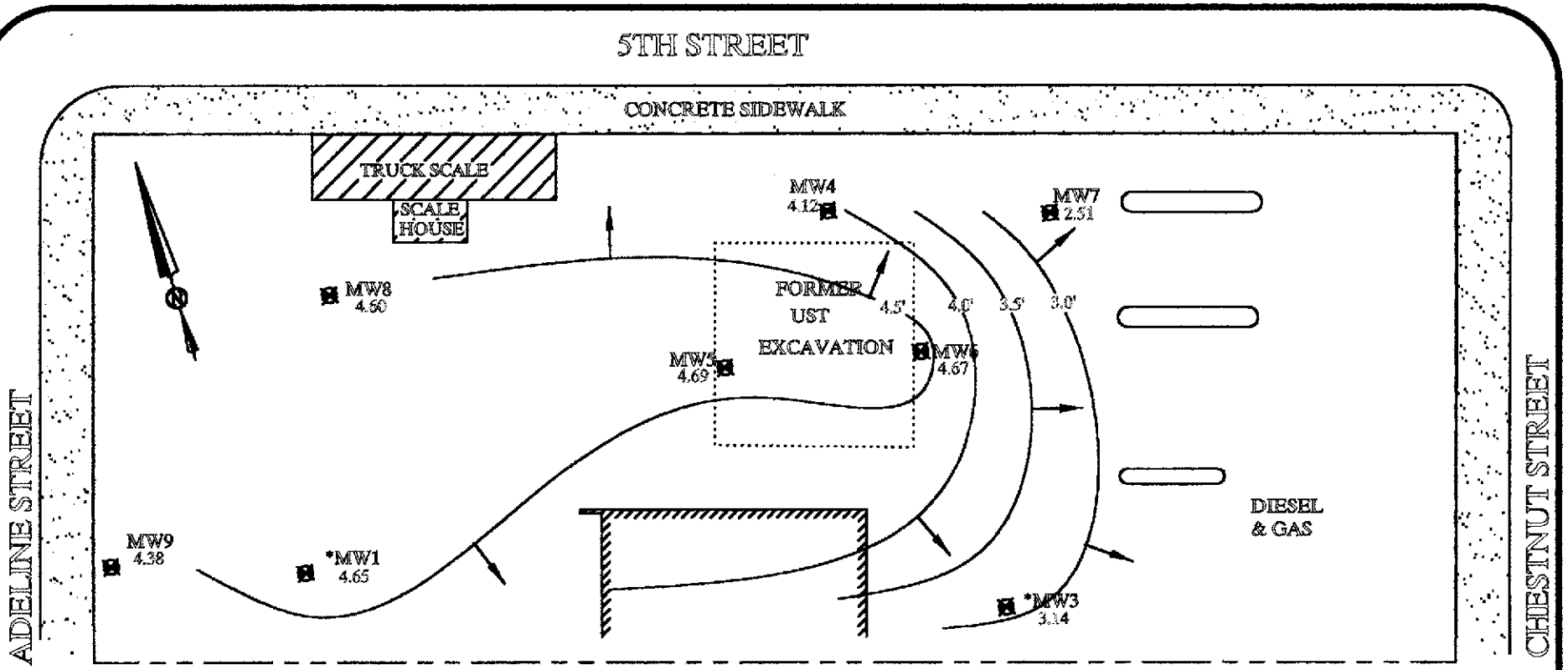
3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS 650 ft Scale: 1 : 16,000 Detail: 13-0 Datum: WGS84

W.A. Craig, Inc.
6940 Tremont Road LIC# 455752
Dixon, California 95620-9603
PH# (707) 693-2929 Fax# (707) 693-2922

Site Map

OAKLAND TRUCK STOP
1107 FIFTH STREET
OAKLAND, CA

Project #: 3628
Date: 02/15/02
Figure: 1



LEGEND

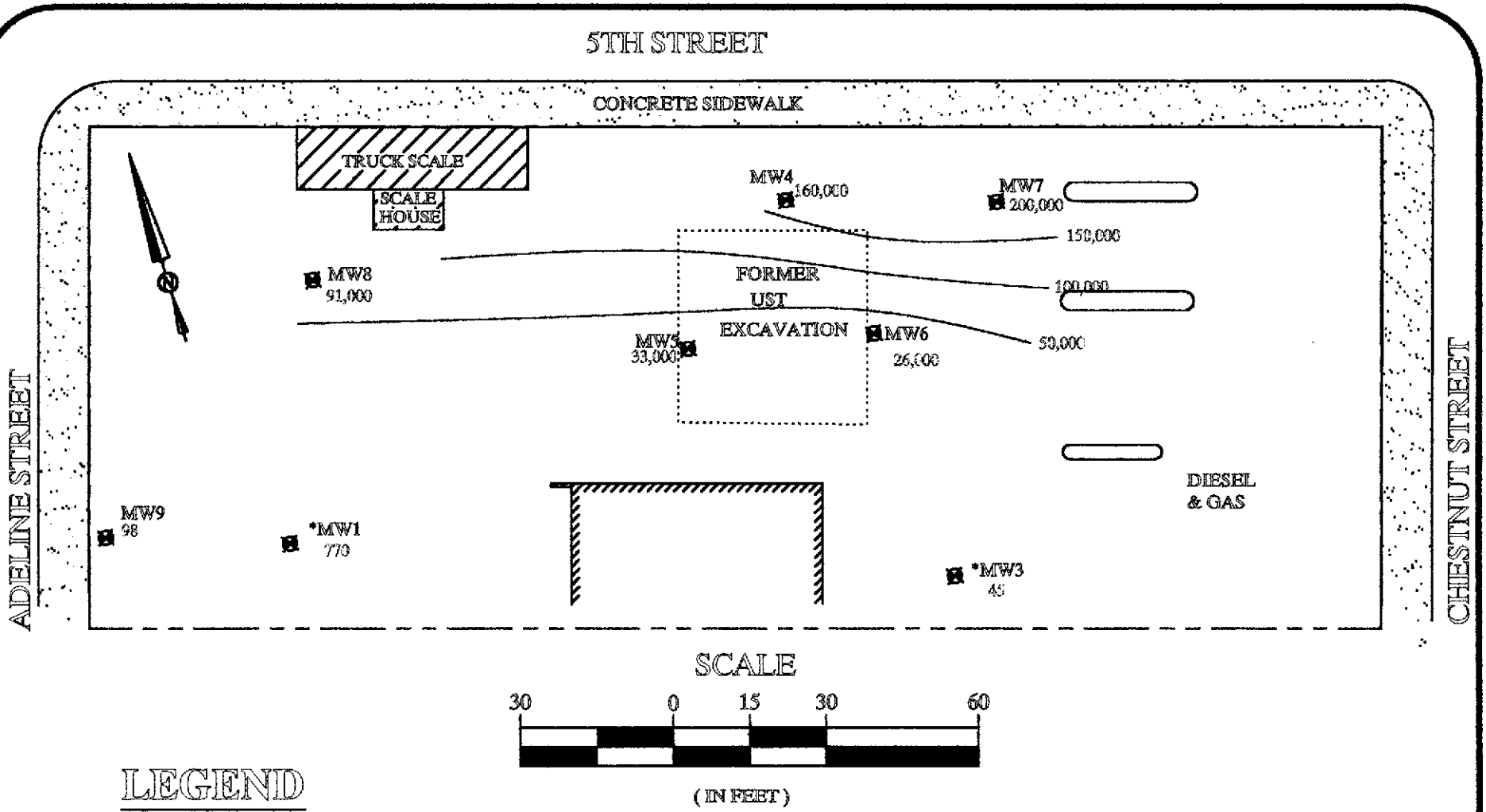
- Monitoring Well Location
- Groundwater Gradient
- Groundwater Flow Direction

W.A. Craig, Inc.
6940 Tremont Road LIC# 455752
Dixon, California 95620-9603
PH# (707) 693-2929 Fax# (707) 693-2922

Groundwater Elevations

OAKLAND TRUCK STOP
1107 FIFTH STREET
OAKLAND, CA

Project #: 3628	Figure: 2
Date: 02/15/02	



W.A. Craig, Inc.
LIC# 455752
6940 Tremont Road
Dixon, California 95620-9603
PH# (707) 693-2929 Fax# (707) 693-2922

MtBE Concentrations

OAKLAND TRUCK STOP
1107 FIFTH STREET
OAKLAND, CA

Project #: 3628
Date: 02/15/02
Figure: 3

APPENDIX A
GROUNDWATER SAMPLING LOGS

WELL DEVELOPMENT AND SAMPLING LOG

Project Name Rinehart Job No. 3625 Date 2-15-02 Weather Cloudy

ler Cook/Mokri

MW-9

Well Data **Well Number MW-9**

Total Depth of Well 19.78 Casing Elevation _____ Depth to Water 2.12 Groundwater Elevation _____

Method of Purging Well _____ Method of Sampling Well _____

Casing Volume 2.83 Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft

Depth to Water Prior to Sampling 2.83 x 3 = 8.5 gals

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
	3	16.5	3692	7.14	1	odor & sheen fast recharge
	5	16.8	3351	7.19	1	" " "
	9	17.4	3999	7.14	1	

Comments: WATER IN well box D.O. 2.6 @ 17.0°C

Well Data **Well Number MW-8**

Total Depth of Well 18.68 Casing Elevation _____ Depth to Water 2.92 Groundwater Elevation _____

Method of Purging Well _____ Method of Sampling Well _____

Casing Volume 2.6 Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft

Depth to Water Prior to Sampling 2.6 x 3 = 7.8 gals

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
	3	17.5	1926	7.19	1	odor and sheen fast recharge
	6	18.2	2024	7.19	1	" " "
	9	18.3	1985	7.19	1	

Comments: WATER IN well box D.O. 2.3 @ 17.6 C°

WELL DEVELOPMENT AND SAMPLING LOG

Project Name Riverl APT Job No. ~~345~~ 3628 Date 2-15-02 Weather Cloudy
ler Cook/Makai

Well Data

Well Number MW-3

Total Depth of Well 14.51 Casing Elevation ______ Depth to Water 4.65 Groundwater Elevation ______
Method of Purging Well ______ Method of Sampling Well ______
Casing Volume 1.6 Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft
Depth to Water Prior to Sampling 1.6 x 3 = 4.8 gals

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
	3 gals	18	2609	6.99		TDS = 1341 ppm
	4 gals	17.6	2535	7.14		Well recharges very slowly TDS 1267

Comments:
Dry well box DO ~~6.3~~ % ~~17.4~~ °C
3.7% 18.7 °C

Well Data

Well Number MW-1

Total Depth of Well 11.35 Casing Elevation ______ Depth to Water 2.95 Groundwater Elevation ______
Method of Purging Well ______ Method of Sampling Well ______
Casing Volume 2.4 Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft
Depth to Water Prior to Sampling 2.4 x 3 = 7.2 gals

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
	2 gal	17.9	3999	7.04	3	NO/S Slow Recharge
	5 gal	17.9	3999	7.05	3	TDS < 2000
	8 1/2 gal	18.0	3999	7.14		

Comments:
~~[illegible]~~ ~~[illegible]~~ sed DO 3.3 @ 17.8°C
Dry well box ~~[illegible]~~ Needs cap & bolts

W.A. Craig Inc., Dixon, California
(707)693-2929

FORM WACgwm152198

WELL DEVELOPMENT AND SAMPLING LOG

Project Name [redacted] Rockmart Job No. [redacted] 3628 Date 2-15-02 Weather cloudy

ler Cook/Molzi

Well Data **Well Number** MW-5

Total Depth of Well 17.48 Casing Elevation _____ Depth to Water 2.64 Groundwater Elevation _____

Method of Purging Well _____ Method of Sampling Well _____

Casing Volume 2.4 Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft

Depth to Water Prior to Sampling 2.4 x 3 = 7.3 gals

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					

Comments: WATER in well box D.O. 2.8 @ 16.9 °C

Well Data **Well Number** MW-9

Total Depth of Well 19.72 Casing Elevation _____ Depth to Water 3.62 Groundwater Elevation _____

Method of Purging Well _____ Method of Sampling Well _____

Casing Volume _____ Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft

Depth to Water Prior to Sampling _____ purge 8 gal

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
	2	16.5	2698	7.19	2	last recharge Little odor/ Little sheen
	6	17.5	3108	7.18	2	" " " "
	8	18.3	3439	7.22	2	" " " "

Comments: WATER in well box D.O. 1.8 @ 17.0 °C

WELL DEVELOPMENT AND SAMPLING LOG

Project Name B Rinehart Job No. 3628 Date 2-15-02 Weather Cloudy
ler Cook / Mickel

Well Data — **Well Number** MW-6

Total Depth of Well 16.89 Casing Elevation ____ Depth to Water 3.22 Groundwater Elevation ____
Method of Purging Well ____ Method of Sampling Well ____
Casing Volume 2.2 Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft
Depth to Water Prior to Sampling ____ 2.2 x 3 = 6.8

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
	3	14.8	1211	7.14	5	sheen light odor
	6	14.6	1102	7.14	5	" "
	7	14.7	1120	7.14	5	" " "

Comments: Water in well box D.O. 2.4 @ 18.3 °C fast recharge

Well Data — **Well Number** MW-7

Total Depth of Well 19.39 Casing Elevation ____ Depth to Water 6.45 Groundwater Elevation ____
Method of Purging Well ____ Method of Sampling Well ____
Casing Volume 2.1 Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft
Depth to Water Prior to Sampling ____ 2.1 x 3 = 6.4 gals

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					well recharges vy quickly
	5 gal	18.3	1518	7.14	very	1/2" of free product on water
	6.8 gal	18.3	1408	7.14	gray	water is vy dark gray color
						vy strong HC odor
						TDS 760 ppm

Comments: Collected sample MW-7 from top of water (decant)
Water in well box D.O. [illegible] @ 18.3 °C
Collected sample MW-7D from 1.9 bottom of bailer (ball valve)

W.A. Craig Inc., Dixon, California
(707)693-2929

FORM WACgwm152198

APPENDIX B
LABORATORY ANALYTICAL REPORTS

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3628; Rinehart	Date Sampled: 02/15/2002
		Date Received: 02/15/2002
	Client Contact: Tim Cook	Date Extracted: 02/15/2002
	Client P.O:	Date Analyzed: 02/15/2002

02/25/2002

Dear Tim:

Enclosed are:

1). the results of **9** samples from your **#3628; Rinehart** project,

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc.	Client Project ID: #3628; Rinehart	Date Sampled: 02/15/2002
6940 Tremont Road		Date Received: 02/15/2002
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 02/20-02/22/2002
	Client P.O:	Date Analyzed: 02/20-02/22/2002

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	% Recovery Surrogate
90550	MW-1	W	ND	610	ND	ND	ND	ND	103
90551	MW-3	W	ND	38	ND	ND	ND	ND	108
90552	MW-4	W	ND<5000	160,000	ND<5.0	ND<5.0	ND<5.0	ND<10	97
90553	MW-5	W	ND<1100	33,000	ND<1.0	ND<1.0	ND<1.0	ND<1.0	98
90554	MW-6	W	ND<960	23,000	2.6	4.5	ND<1.0	4.2	99
90555	MW-7	W	96,000,a,h	180,000	21,000	7300	2600	13,000	102
90556	MW-7D	W	160,000,a,h	170,000	30,000	27,000	3700	19,000	103
90557	MW-8	W	ND<3400	110,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0	97
90558	MW-9	W	ND	92	ND	ND	ND	ND	101
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3628; Rinehart	Date Sampled: 02/15/2002
		Date Received: 02/15/2002
	Client Contact: Tim Cook	Date Extracted: 02/15/2002
	Client P.O:	Date Analyzed: 02/15/2002

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)+	% Recovery Surrogate
90550	MW-1	W	2000,c	104
90551	MW-3	W	780,g,b	103
90552	MW-4	W	340,b,g	105
90553	MW-5	W	480,c	102
90554	MW-6	W	910,c	103
90555	MW-7	W	21,000,d,h	100
90556	MW-7D	W	29,000,d,h	100
90557	MW-8	W	1500,c	93
90558	MW-9	W	150,c	92
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	
		S	1.0 mg/kg	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/L

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc.	Client Project ID: #3628; Rinehart	Date Sampled: 02/15/2002
6940 Tremont Road		Date Received: 02/15/2002
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 02/20-02/21/2002
	Client P.O:	Date Analyzed: 02/20-02/21/2002

Seven Oxygenated Volatile Organics By GC/MS

EPA method 8260 modified

Lab ID	90550	90551	90552	90553	Reporting Limit	
Client ID	MW-1	MW-3	MW-4	MW-5		
Matrix	W	W	W	W	S	W
Compound	Concentration*				ug/kg	ug/L
Di-isopropyl Ether (DIPE)	ND<20	ND	ND<2500	ND<1250	5.0	1.0
Ethyl tert-Butyl Ether (ETBE)	ND<20	ND	ND<2500	ND<1250	5.0	1.0
Methyl tert-Butyl Ether (MTBE)	770	45	160,000	33,000	5.0	1.0
tert-Amyl Methyl Ether (TAME)	ND<20	ND	ND<2500	ND<1250	5.0	1.0
tert-Butanol	ND<100	ND	ND<12,500	ND<6250	25	5.0
Methanol	ND<10,000	ND	ND<1,250,000	ND<625,000	2500	500
Ethanol	ND<1000	ND	ND<125,000	ND<62,500	250	50
Surrogate Recoveries (%)						
Dibromofluoromethane	107	106	97	99		
Comments:						

* water samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L

ND means not detected above the reporting limit; N/A means surrogate not applicable to this analysis

(h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3628; Rinehart	Date Sampled: 02/15/2002
		Date Received: 02/15/2002
	Client Contact: Tim Cook	Date Extracted: 02/20-02/21/2002
	Client P.O:	Date Analyzed: 02/20-02/21/2002

Seven Oxygenated Volatile Organics By GC/MS

EPA method 8260 modified

Lab ID	90554	90555	90556	90557	Reporting Limit	
Client ID	MW-6	MW-7	MW-7D	MW-8		
Matrix	W	W	W	W	S	W
Compound	Concentration*				ug/kg	ug/L
Di-isopropyl Ether (DIPE)	ND<1000	ND<5000	ND<5000	ND<2500	5.0	1.0
Ethyl tert-Butyl Ether (ETBE)	ND<1000	ND<5000	ND<5000	ND<2500	5.0	1.0
Methyl tert-Butyl Ether (MTBE)	26,000	200,000	200,000	91,000	5.0	1.0
tert-Amyl Methyl Ether (TAME)	ND<1000	ND<5000	ND<5000	ND<2500	5.0	1.0
tert-Butanol	ND<5000	ND<25000	ND<25000	ND<12,500	25	5.0
Methanol	ND<500,000	ND<2,500,000	ND<2,500,000	ND<1,250,000	2500	500
Ethanol	ND<50,000	ND<250,000	ND<250,000	ND<125,000	250	50
Surrogate Recoveries (%)						
Dibromofluoromethane	98	97	95	94		
Comments:		h	h			

* water samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L

ND means not detected above the reporting limit; N/A means surrogate not applicable to this analysis

(h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3628; Rinehart	Date Sampled: 02/15/2002
		Date Received: 02/15/2002
	Client Contact: Tim Cook	Date Extracted: 02/20-02/21/2002
	Client P.O:	Date Analyzed: 02/20-02/21/2002

Seven Oxygenated Volatile Organics By GC/MS

EPA method 8260 modified

Lab ID	90558				Reporting Limit	
Client ID	MW-9					
Matrix	W				S	W
Compound	Concentration*				ug/kg	ug/L
Di-isopropyl Ether (DIPE)	ND<2.5				5.0	1.0
Ethyl tert-Butyl Ether (ETBE)	ND<2.5				5.0	1.0
Methyl tert-Butyl Ether (MTBE)	98				5.0	1.0
tert-Amyl Methyl Ether (TAME)	ND<2.5				5.0	1.0
tert-Butanol	ND<12.5				25	5.0
Methanol	ND<1250				2500	500
Ethanol	ND<125				250	50
Surrogate Recoveries (%)						
Dibromofluoromethane	105					
Comments:						

* water samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L

ND means not detected above the reporting limit; N/A means surrogate not applicable to this analysis

(h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3628; Rinehart	Date Sampled: 02/15/2002
		Date Received: 02/15/2002
	Client Contact: Tim Cook	Date Extracted: 02/20-02/21/2002
	Client P.O:	Date Analyzed: 02/20-02/21/2002

Ethylene Dibromide (1,2-Dibromoethane) and 1,2-Dichloroethane (1,2-DCA)
EPA method 8260

Lab ID	Client ID	Matrix	EDB	1,2-DCA	% Recovery Surrogate
90550	MW-1	W	ND<20,j	ND<20	107
90551	MW-3	W	ND	ND	106
90552	MW-4	W	ND<2500,j	ND<2500	97
90553	MW-5	W	ND<1250,j	ND<1250	99
90554	MW-6	W	ND<1000,j	ND<1000	98
90555	MW-7	W	ND<5000,j,h	ND<5000	97
90556	MW-7D	W	ND<5000,j,h	ND<5000	95
90557	MW-8	W	ND<2500,j	ND<2500	94
90558	MW-9	W	ND<2.5,j	ND<2.5	105
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	1.0 ug/L	1.0	
		S	5.0 ug/kg	5.0	

* water and vapor samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / SPLP extracts in ug/L

h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) sample diluted due to high organic content.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

EPA 8015m + 8020

Date: 02/20/02 **Extraction:** EPA 5030 **Matrix:** Water

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 22002					Instrument:	GC-3	
Surrogate1	ND	102.0	100.0	100.00	102	100	2.0
Xylenes	ND	30.0	29.8	30.00	100	99	0.7
Ethylbenzene	ND	9.9	9.8	10.00	99	98	1.0
Toluene	ND	10.1	9.7	10.00	101	97	4.0
Benzene	ND	8.5	9.4	10.00	85	94	10.1
MTBE	ND	8.9	8.6	10.00	89	86	3.4
TPH (gas)	ND	89.4	87.0	100.00	89	87	2.7

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

McCAMPBELL ANALYTICAL INC.
110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

EPA 8015m + 8020

Date: 02/15/02 **Extraction:** EPA 5030 **Matrix:** Water

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 21102					Instrument: GC-2 B		
Surrogate1	ND	89.0	90.0	100.00	89	90	1.1
TPH (diesel)	ND	6650.0	6750.0	7500.00	89	90	1.5

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{Amount Spiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

McCAMPBELL ANALYTICAL INC.
110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

VOCs (EPA 8240/8260)

Date: 02/20/02 **Extraction:** EPA 5030 **Matrix:** Water

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 21102					Instrument:	GC-10	
Surrogate	ND	100.0	98.0	100.00	100	98	2.0
tert-Amyl Methyl Ether	ND	9.5	9.4	10.00	95	94	1.1
Methyl tert-Butyl Ether	ND	9.3	9.2	10.00	93	92	1.1
Ethyl tert-Butyl Ether	ND	9.9	9.9	10.00	99	99	0.0
Di-isopropyl Ether	ND	9.8	9.8	10.00	98	98	0.0
Toluene	ND	10.5	10.5	10.00	105	105	0.0
Benzene	ND	10.0	10.3	10.00	100	103	3.0
Chlorobenzene	ND	10.3	10.5	10.00	103	105	1.9
Trichloroethene	ND	9.1	9.3	10.00	91	93	2.2
1,1-Dichloroethene	ND	11.1	11.3	10.00	111	113	1.8

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{Amount Spiked} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

30110 zwiscwa.doc

McCAMPBELL ANALYTICAL INC.
110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

Report To: Tim Cook Bill To:
Company: W. A. Craig
6940 Tremont Road
Dixon, CA 95620-9603
Tele: (707) 693-2929 Fax: (707) 693-2922
Project #: 3628 Project Name: Rinehart
Project Location: Oakland
Sampler Signature: Tim Cook

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	BTEX & TPH as Gas (602/8020 + 8015)/ MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260 9 oxys	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
MW-1		2/15		4		X					X	X			X	X							X								90550
MW-3						X					X				X	X							X								90551
MW-4						X					X				X	X							X								90552
MW-5						X					X				X	X							X								90553
MW-6						X					X				X	X							X								90554
MW-7						X					X				X	X							X								90555
MW-7D						X					X				X	X							X								90556
MW-8						X					X				X	X							X								90557
MW-9						X					X				X	X							X								90558

Relinquished By:	Date:	Time:	Received By:
Tim Cook	2/15	2:50	Shino Hamilton 2/15/02 14:50
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

Remarks:

ICE/t° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓

	VOAS	O&G	METALS	OTHER
PRESERVATION	✓			

APPROPRIATE CONTAINERS ✓