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QUARTERLY MONITORING REPORT

922

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
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W. A. CRAIG, INC. PROJECT # 3628

October 31, 2001

PROFESSIONAL CERTIFICATION

NOV 0 9 2001

Quarterly Monitoring Report
August 2001

Oakland Truck Stop
1107 5th Street
Oakland, California

Job No. 3628
October 31, 2001

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 site descriptions contained in this document are based upon our current understanding of site conditions. These conditions are subject to change as W.A. Craig, Inc. evaluates additional information.

Opinions or conclusions presented in this document are professional opinions based solely upon a review of existing environmental data. We recognize 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 the user.

Tim D. Cook, P.E.
Principal Engineer

1.0 INTRODUCTION

1.1 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.

1.2 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 to the ACHCS. Upon approval of the work plan these wells will be installed and added to the existing monitoring well network.

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 August 22, 2001 using an electronic water-level indicator. The wells were exposed to atmospheric conditions for approximately 30 minutes to stabilize static water levels. The depth to static water level measurements were subtracted from the top of casing elevations determined by a licensed land surveyor on August 22, 2001, to obtain the groundwater elevations. Due to the unusual distribution of groundwater elevations, the groundwater gradient and flow direction could not be determined from the data collected. Groundwater elevations for this and previous monitoring events are presented on **Table 1**. Groundwater elevations for each monitoring well are shown on **Figure 2**.

Groundwater Sampling

The wells were purged prior to collecting groundwater samples to ensure that formation water was sampled. The dissolved oxygen concentration was intermittently monitored during purging of the wells to verify that formation water was sampled. 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. 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 2.** A copy of the laboratory analytical report and chain-of-custody document are in **Attachment B**.

Conclusions

As in previous sampling event, MtBE concentrations exceeded the primary maximum contaminant level for drinking water in all eight monitoring wells. The MtBE concentration continues to be the highest in well MW-7 (250,000 ug/l). This well yielded MtBE at 520,000 ug/l in the previous sample collected on May 7, 2001. 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 former dispenser island located immediately east of well MW-7.

There are no obvious trends of hydrocarbon concentrations with time, i.e., there is no indication that hydrocarbon concentrations in groundwater are decreasing due to natural attenuation. For example, the MtBE concentration in well MW-7 decreased from 800,000 ug/l on August 30, 2000 to 250,000 on August 22, 2001. However MtBE in well MW-8 increased from 28,000 ug/l to 86,000 ug/l over this same time period.

MtBE is the principal constituent of concern. TPH-g and BTEX constituents are present in many wells but at lower concentrations. Remediation of MtBE will also remove the other hydrocarbon constituents. 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 November 2001.

Recommendations

WAC recommends abandoning well MW-3, due to incompatible well screening with the other seven monitoring wells and replacing it with well MW-3A. Well MW-3A will have a screened interval similar to the most recently installed wells. We also recommend installing two additional monitoring wells south of the Site to determine the groundwater flow direction. Details of this recommendation are presented in the *Site Investigation Work Plan (Revision 1)*, dated October 22, 2001.

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.

We further recommend active remediation of the Site 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. We recommend establishing PARGs and a timeline at a meeting between the stakeholders within the next month.

Table 1
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	7.45	3.70	3.75
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	6.19	5.21	0.98
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	7.50	4.13	3.37

Table 1
Groundwater Elevations
Oakland Truck Stop

Well Number	Date	Top of Casing (ft)	Depth Below TOC (ft)	Elevation Above MSL (ft)
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	7.06	3.88	3.18
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	7.41	3.77	3.64
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	8.70	6.86	1.84
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	7.01	3.56	3.45
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	7.11	3.80	3.31

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.

Casing elevations were updated on 8-22-2001.

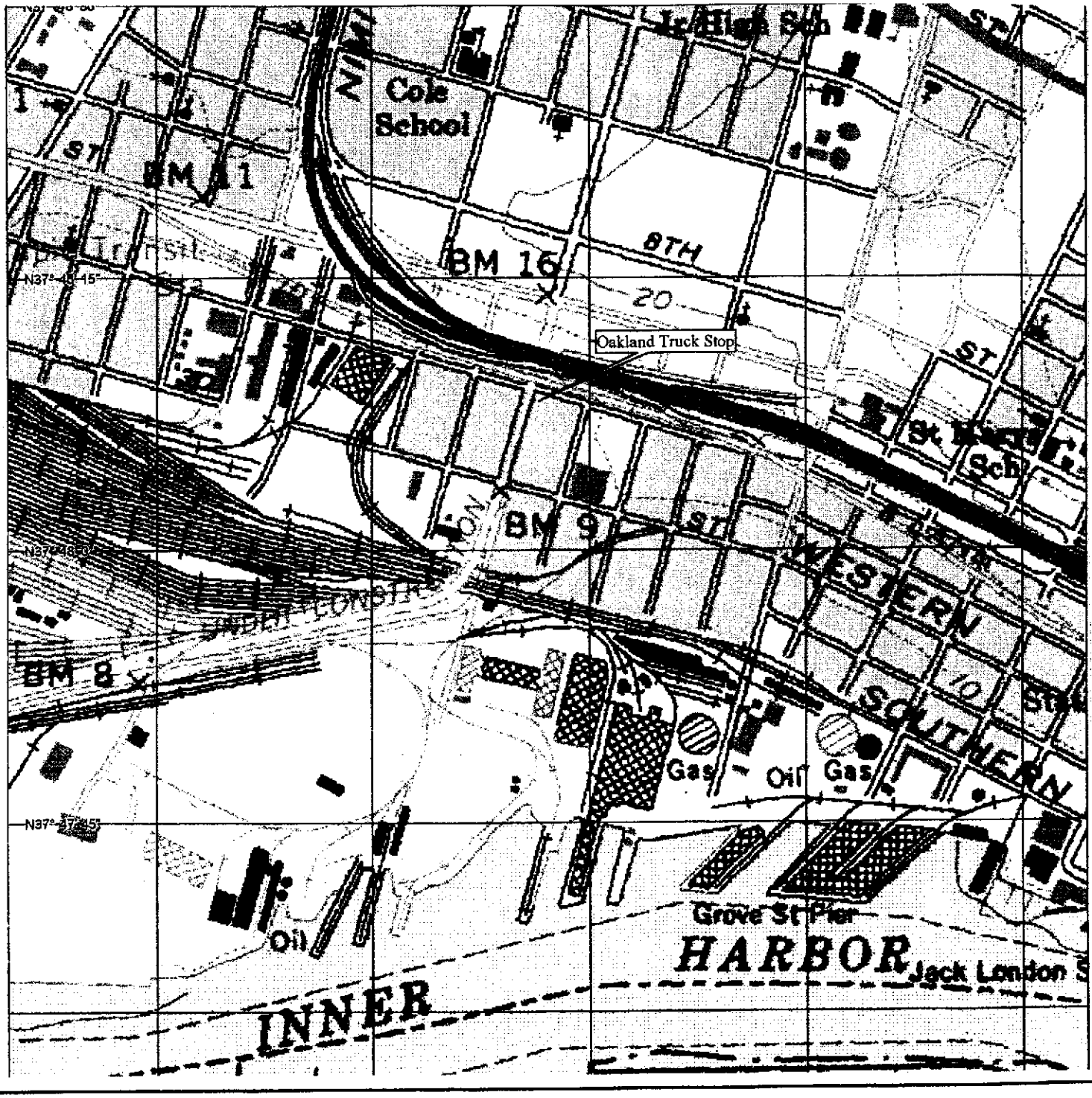
Table 2
Groundwater Analytical Results
Oakland Truck Stop

Well Number	Date Sampled	TPH-g	TPH-d	MtBE	MtBE 8260	benzene	toluene	ethyl-benzene	xylenes
MW-1	11/04/96	ND	220	ND	NA	ND	ND	ND	ND
	03/05/97	ND	230	ND	NA	ND	ND	ND	ND
	06/12/97	ND	290	ND	NA	ND	ND	ND	ND
	09/09/97	ND	180	ND	NA	ND	ND	ND	ND
	02/13/98	ND	590	9.4	NA	ND	ND	ND	ND
	07/07/98	ND	**1,400**	ND	2.7	ND	ND	ND	ND
	10/01/98	ND	**1,100**	ND	1.8	ND	ND	ND	ND
	12/30/98	ND	**1,700**	ND	2.3	ND	ND	ND	ND
	03/21/00	220	**3,100**	**3,800**	**4,800**	11	ND	ND	ND
	08/30/00	140	**1,600**	**2,900**	NS	5.3	ND	ND	ND
	11/06/00	51	**1,500**	**1,700**	**2,100**	1.0	ND	ND	ND
	02/22/01	140	**3,000**	**1,000**	**1,100**	ND	ND	ND	ND
	05/07/01	ND	**3,800**	**780**	**1,100**	ND	ND	ND	ND
	08/22/01	ND<110	**1,800**	**1,900**	**1,600**	ND	ND	ND	ND
MW-2	11/04/96	910	**2,700**	**470,000**	NA	**120**	23	3.5	51
	03/05/97	**4,400**	**2,300**	**760,000**	NA	**1,500**	51	24	100
	06/12/97	**3,600**	**2,400**	**840,000**	NA	**1,200**	14	12	40
	09/09/97	**3,700**	970	**470,000**	NA	**570**	31	19	60
	02/13/98	**6,500**	**2,200**	**750,000**	NA	**2,400**	31	ND	ND
	07/07/98	**5,200**	**2,700**	**950,000**	**1,000,000**	**2,800**	ND	ND	ND
	10/01/98	**1,200**	**1,200**	**420,000**	**360,000**	**330**	12	8.8	11
Well Destroyed	12/30/98	**1,000**	**1,900**	**370,000**	**360,000**	96	ND	ND	ND
MW-3	11/04/96	ND	310	**1,000**	NA	ND	ND	ND	ND
	03/05/97	ND	210	13	NA	ND	ND	ND	ND
	06/12/97	ND	94	17	NA	ND	ND	ND	ND
	09/09/97	ND	**2,300**	12	NA	ND	ND	ND	ND
	02/13/98	ND	570	14	NA	ND	ND	ND	ND
	07/07/98	ND	**1,100**	7.8	6.6	ND	ND	ND	ND
	10/01/98	ND	390	9.2	4.8	ND	ND	ND	ND
	12/30/98	ND	64	6.9	4.5	ND	ND	ND	ND
	03/21/00	ND	**2,800**	6.7	4.8	ND	ND	ND	ND
	08/30/00	ND	260	12	NS	1.3	ND	ND	ND
	11/06/00	ND	940	25	12	ND	ND	ND	ND
	02/22/01	ND	340	18	26	1.2	1.5	ND	0.74
	05/07/01	140	460	25	33	0.76	4.7	2.2	14.0
	08/22/01	ND	130	41	44	ND	ND	ND	ND
MW-4	08/30/00	**1,300**	390	**210,000**	NS	64	63	9.7	110
	11/06/00	ND<3,300	170	**130,000**	**120,000**	80	ND<4	ND<5	ND<3
	02/22/01	ND<3,300	120	**120,000**	**150,000**	30	ND<3	ND<3	ND<3
	05/07/01	ND<4,200	240	**150,000**	**200,000**	ND<20	ND<10	ND<5.0	ND<5.0
	08/22/01	ND<5,400	300	**160,000**	**190,000**	ND<5.0	ND<5.0	ND<5.0	ND<5.0

Table 2
Groundwater Analytical Results
Oakland Truck Stop

Well Number	Date	TPH-g	TPH-d	MtBE	MtBE 8260	benzene	toluene	ethyl-benzene	xylenes
MW-5	08/30/00	**1,000**	450	**52,000**	NS	ND	ND	ND	ND
	11/06/00	ND<1,000	520	**44,000**	**42,000**	ND<1	ND<1	ND<1	ND<1
	02/22/01	ND<1,000	270	**30,000**	**39,000**	ND<1	ND<1	ND<1	ND<1
	05/07/01	ND<1,800	470	**48,000**	**59,000**	ND<5.0	ND<2.0	ND<2.0	ND<2.0
	08/22/01	ND<2,200	780	**63,000**	**70,000**	ND<3.0	ND<3.0	ND<3.0	ND<3.0
MW-6	08/30/00	**1,300**	**1,300**	**23,000**	NS	55	ND	16	27
	11/06/00	ND<630	**1,100**	**26,000**	**27,000**	7	8.1	ND<3	5.2
	02/22/01	ND<200	420	**6,500**	**8,000**	ND	ND	ND	ND
	05/07/01	ND<1000	900	**37,000**	**40,000**	ND<2.0	ND<2.0	ND<1.0	ND<1.0
	08/22/01	ND<350	520	**8,600**	**8,800**	ND<2.0	ND<1.0	ND	ND
MW-7	08/30/00	**160,000**	**2,600**	**800,000**	NS	**28,000**	**15,000**	1,200	**5,900**
	11/06/00	**80,000**	**1,700**	**540,000**	**920,000**	**23,000**	**12,000**	1,200	5,000
	02/22/01	**80,000**	**2,000**	**440,000**	**460,000**	**19,000**	**12,000**	1,100	3,200
	05/07/01	**100,000**	**7,600**	**460,000**	**520,000**	**25,000**	**16,000**	1,700	**6,600**
	08/22/01	**110,000**	520	**240,000**	**250,000**	**18,000**	**12,000**	2,000	**9,400**
MW-7D	02/22/01	**84,000**	**2,400**	**400,000**	**500,000**	**20,000**	**13,000**	1,200	3,400
duplicate	05/07/01	**100,000**	**8,200**	**530,000**	**500,000**	**25,000**	**17,000**	1,700	**6,700**
MW-8	08/30/00	ND	690	**28,000**	NS	ND	ND	ND	ND
	11/06/00	ND<3,300	810	**120,000**	**76,000**	ND<8	ND<5	ND<3	ND<7
	02/22/01	ND<2,500	**1,100**	**99,000**	**130,000**	ND<3	ND<3	ND<3	ND<3
	05/07/01	ND<5,000	**1,300**	**110,000**	**120,000**	32	ND<10	ND<5.0	ND<5.0
	08/22/01	ND<4,000	**1,200**	**76,000**	**86,000**	ND<5.0	ND<5.0	ND<5.0	16
MW-9	08/30/00	ND	770	97	NS	ND	ND	ND	ND
	11/06/00	ND	390	190	220	ND	ND	ND	ND
	02/22/01	ND	240	120	160	ND	ND	ND	ND
	05/07/01	ND	190	120	150	ND	ND	ND	ND
	08/22/01	ND	120	120	120	ND	ND	ND	ND
Proposed PARG		20,000	380	48,000	48,000	3,600	2,400	700	1,880

Notes:
units are micrograms per liter (ug/L)
ND = Not detected
NS = Not sampled
PARG = Preliminary Active Remediation Goal ← Sources ?
Concentrations in excess of the proposed PARGs are in bold
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



Project No: 3628

September 2000

Site Location Map
Oakland Truck Stop
1107 5th Street
Oakland, California

Figure 1

N

W. A. Craig, Inc.
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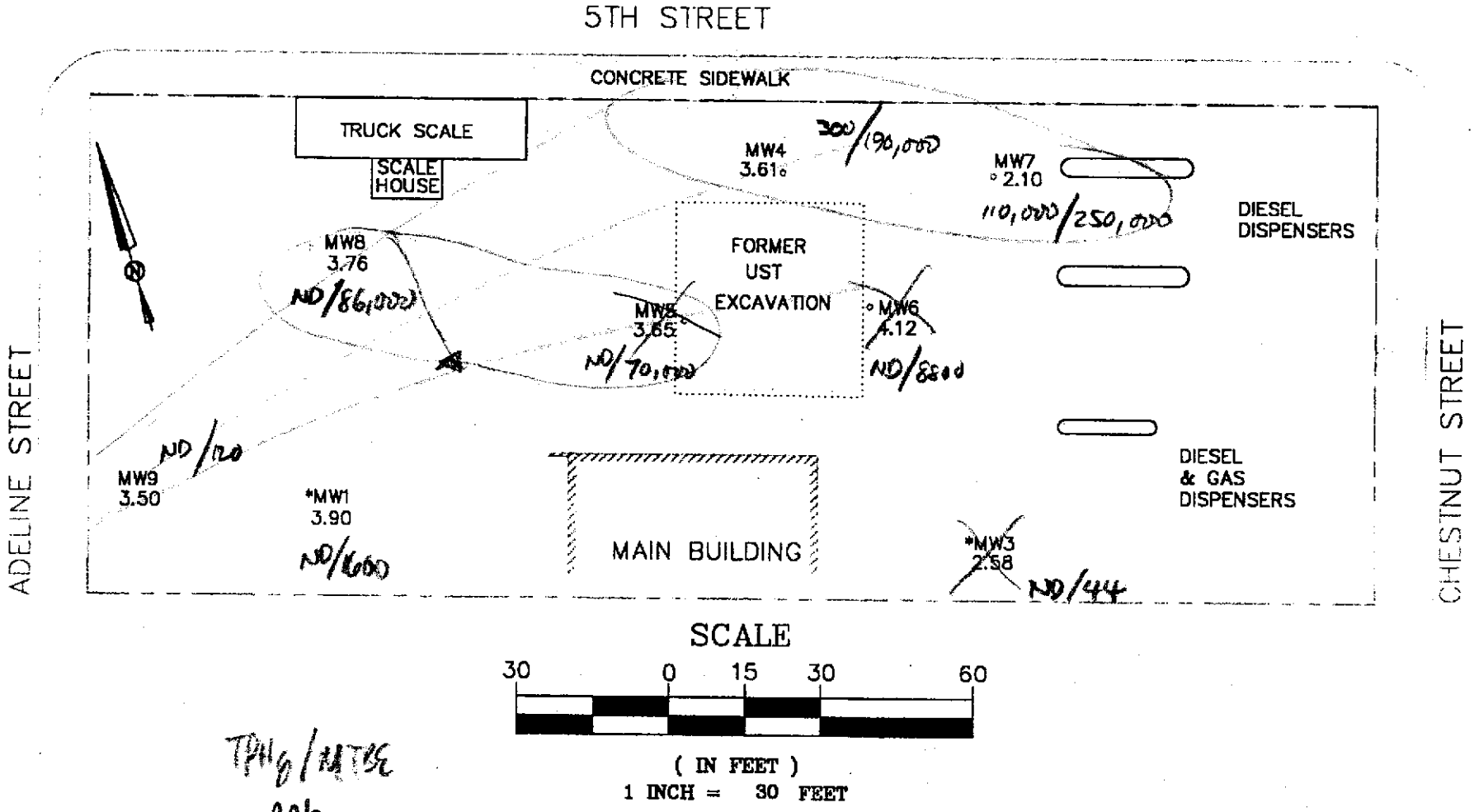
2 releases



TPHg / MTBE
ppb

W.A. Craig, Inc.
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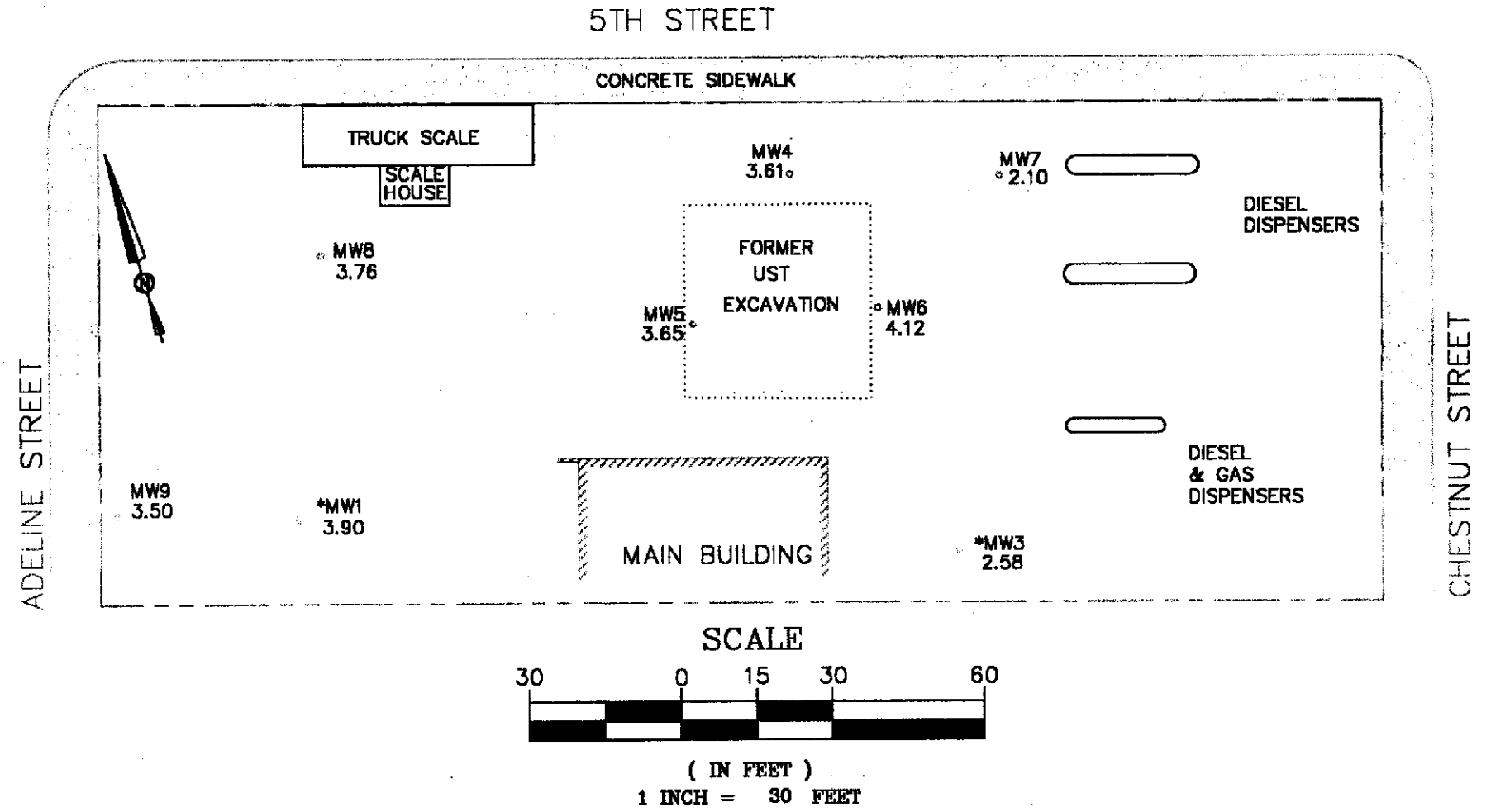
Groundwater Elevations

OAKLAND TRUCK STOP
1107 FIFTH STREET
OAKLAND, CA

Project #: 3628	Figure: 2
Date: 8/22/01	



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Groundwater Elevations

OAKLAND TRUCK STOP
1107 FIFTH STREET
OAKLAND, CA

Project #: 3628
Date: 8/22/01
Figure: 2

ATTACHMENT A
FIELD SAMPLING LOGS

WELL DEVELOPMENT AND SAMPLING LOG

Project Name [illegible] Job No. [illegible] Date [illegible] Weather [illegible]
ler [illegible]

Well Data | **Well Number** MW-1

Total Depth of Well 20' Casing Elevation ____ Depth to Water 3.70' Groundwater Elevation ____
Method of Purging Well bailer Method of Sampling Well bailer
Casing Volume 2.7 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 2.7 x 3 = 8.1 gal. purged ≈ 7.5 gall.

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
						[illegible]ish grey water, slight odor
						DO = 2.2 @ 23.[illegible]

Comments:
needs locking cap!!

Well Data | **Well Number** MW-3

Total Depth of Well 20' Casing Elevation ____ Depth to Water 5.21' Groundwater Elevation ____
Method of Purging Well bailer Method of Sampling Well bailer
Casing Volume 2.5 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 2.5x3 = 7.4 gal. only purged 3 gallons

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
						DO < 0.4 @ 23.7

Comments:
needs locking cap!!

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

FORM WACgwm152198

WELL DEVELOPMENT AND SAMPLING LOG

Project Name Rinehart Job No. 3428 Date 8-22-9[illegible] Weather [illegible]
ler J. Davis

Well Data | **Well Number** MW-4

Total Depth of Well 20.5' Casing Elevation___ Depth to Water 4.13' Groundwater Elevation___
Method of Purging Well bailer Method of Sampling Well bailer
Casing Volume 2.7 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 2.7 x 3 = 8.2 gal.

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
						clear, odor, sheen
						DO = 6.2 @ 24.1°

Comments:

Well Data | **Well Number** MW-5

Total Depth of Well 29.5' Casing Elevation___ Depth to Water 3.88' Groundwater Elevation___
Method of Purging Well bailer Method of Sampling Well bailer
Casing Volume 2.7 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 2.7 x 3 = 8.0 gal.

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
						light green water, odor
						DO = 7.2 @ 26.4°

Comments:

WELL DEVELOPMENT AND SAMPLING LOG

Project Name Rinehart Job No. 3628 Date 5-23-01 Weather [illegible]

ler T. Davis

Well Data | **Well Number** MW-6

Total Depth of Well 20.5 Casing Elevation ____ Depth to Water 3.77' Groundwater Elevation ____

Method of Purging Well bailer Method of Sampling Well bailer

Casing Volume 2.8 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 2.8x3 = 8.3 gal.

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
						greenish, dark grey
						hydrocarbon odor
						DO < 0.15 @ 26.6°

Comments:

Well Data | **Well Number** MW-7

Total Depth of Well 20.5' Casing Elevation ____ Depth to Water 8' Groundwater Elevation ____

Method of Purging Well bailer Method of Sampling Well bailer

Casing Volume 2.3 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 2.3 x 3 = 6.8 gal.

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
						greenish grey water, high sheen
						yellowish film on top of water
						strong odor
						0.4 @ 25.4°

Comments:

WELL DEVELOPMENT AND SAMPLING LOG

Project Name Rinehart Job No. 3623 Date 8-24-01 Weather [illegible]

ler J. Davis

Well Data **Well Number** MW-8

Total Depth of Well 20.5' Casing Elevation ____ Depth to Water 3.56' Groundwater Elevation ____

Method of Purging Well bailer Method of Sampling Well bailer

Casing Volume 2.8 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 2.8 x 3 = 8.4 gal.

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
						green water, odor
						DO = 0.2 @ 26.1'
						< 0.15

Comments:

Well Data **Well Number** MW-7

Total Depth of Well 20.5' Casing Elevation ____ Depth to Water 3.80' Groundwater Elevation ____

Method of Purging Well bailer Method of Sampling Well bailer

Casing Volume 2.8 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 2.8 x 3 = 8.3 gal.

Field Parameters

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
						slight green color, mostly clear
						odor, no sheen
						DO ~ 0.2 @ 23.0'

Comments:

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

FORM WACgwm152198

ATTACHMENT 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: 08/22/01
		Date Received: 08/23/01
	Client Contact: Tim Cook	Date Extracted: 08/23/01
	Client P.O:	Date Analyzed: 08/23/01

08/30/01

Dear Tim:

Enclosed are:

1). the results of **8** 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.
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W. A. Craig, Inc.	Client Project ID: #3628; Rinehart	Date Sampled: 08/22/01
6940 Tremont Road		Date Received: 08/23/01
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 08/24-08/28/01
	Client P.O:	Date Analyzed: 08/24-08/28/01

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
75810	MW-1	W	ND<110	1900	ND	ND	ND	ND	102
75811	MW-3	W	ND	41	ND	ND	ND	ND	108
75812	MW-4	W	ND<5400	160,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0	105
75813	MW-5	W	ND<2200	63,000	ND<3.0	ND<3.0	ND<3.0	ND<3.0	104
75814	MW-6	W	ND<350	8600	ND<2.0	ND<1.0	ND	ND	100
75815	MW-7	W	110,000,a,h	240,000	18,000	12,000	2000	9400	109
75816	MW-8	W	ND<4000	76,000	ND<5.0	ND<5.0	ND<5.0	16	97
75817	MW-9	W	ND	120	ND	ND	ND	ND	105
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

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W. A. Craig, Inc.	Client Project ID: #3628; Rinehart	Date Sampled: 08/22/01
6940 Tremont Road		Date Received: 08/23/01
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 08/23/01
	Client P.O:	Date Analyzed: 08/23/01

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
75810	MW-1	W	1800,c	109
75811	MW-3	W	130,b	104
75812	MW-4	W	300,c	106
75813	MW-5	W	780,c	92
75814	MW-6	W	520,c	94
75815	MW-7	W	22,000,a,d,h	96
75816	MW-8	W	1200,c	93
75817	MW-9	W	120,b	94
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

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W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3628; Rinehart	Date Sampled: 08/22/01
		Date Received: 08/23/01
	Client Contact: Tim Cook	Date Extracted: 08/23-08/28/01
	Client P.O:	Date Analyzed: 08/23-08/28/01

Oxygenated Volatile Organics By GC/MS

EPA method 8260 modified

Lab ID	75810	75811	75812	75813	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<25	ND	ND<5000	ND<1000	5.0	1.0
Ethyl tert-Butyl Ether (ETBE)	ND<25	ND	ND<5000	ND<1000	5.0	1.0
Methyl-tert Butyl Ether (MTBE)	1600	44	190,000	70,000	5.0	1.0
tert-Amyl Methyl Ether (TAME)	ND<25	ND	ND<5000	ND<1000	5.0	1.0
tert-Butanol	ND<130	ND	ND<25,000	ND<5000	25	5.0
Surrogate Recoveries (%)						
Dibromofluoromethane	111	111	107	104		
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

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W. A. Craig, Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3628; Rinehart	Date Sampled: 08/22/01
		Date Received: 08/23/01
	Client Contact: Tim Cook	Date Extracted: 08/23-08/28/01
	Client P.O:	Date Analyzed: 08/23-08/28/01

Oxygenated Volatile Organics By GC/MS

EPA method 8260 modified

Lab ID	75814	75815	75816	75817	Reporting Limit	
Client ID	MW-6	MW-7	MW-8	MW-9		
Matrix	W	W	W	W	S	W
Compound	Concentration*				ug/kg	ug/L
Di-isopropyl Ether (DIPE)	ND<200	ND<5000	ND<1700	ND<5.0	5.0	1.0
Ethyl tert-Butyl Ether (ETBE)	ND<200	ND<5000	ND<1700	ND<5.0	5.0	1.0
Methyl-tert Butyl Ether (MTBE)	8800	250,000	86,000	120	5.0	1.0
tert-Amyl Methyl Ether (TAME)	ND<200	ND<5000	ND<1700	ND<5.0	5.0	1.0
tert-Butanol	ND<1000	ND<25,000	ND<8500	ND<25	25	5.0
Surrogate Recoveries (%)						
Dibromofluoromethane	110	108	100	111		
Comments:		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

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W. A. Craig, Inc.	Client Project ID: #3628; Rinehart	Date Sampled: 08/22/01
6940 Tremont Road		Date Received: 08/23/01
Dixon, CA 95620-9603	Client Contact: Tim Cook	Date Extracted: 08/23-08/28/01
	Client P.O:	Date Analyzed: 08/23-08/28/01

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
75810	MW-1	W	ND<25,j	ND<25	111
75811	MW-3	W	ND	ND	111
75812	MW-4	W	ND<5000,j	ND<5000	107
75813	MW-5	W	ND<1000,j	ND<1000	104
75814	MW-6	W	ND<200,j	ND<200	110
75815	MW-7	W	ND<5000,j,h	ND<5000	108
75816	MW-8	W	ND<1700,j	ND<1700	100
75817	MW-9	W	ND<5.0,j	ND<5.0	111
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.

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QC REPORT

EPA 8015m + 8020

Date: 08/24/01-08/25/01 **Extraction:** EPA 5030 **Matrix:** Water

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 82401					Instrument:	GC-7	
Surrogate1	ND	105.0	104.0	100.00	105	104	1.0
Xylenes	ND	32.9	33.1	30.00	110	110	0.6
Ethylbenzene	ND	10.6	10.9	10.00	106	109	2.8
Toluene	ND	11.2	1.1	10.00	112	11	164.2
Benzene	ND	10.2	10.6	10.00	102	106	3.8
MTBE	ND	10.5	9.4	10.00	105	94	11.1
TPH (gas)	ND	107.7	104.3	100.00	108	104	3.1

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

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

RPD means Relative Percent Deviation

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QC REPORT

EPA 8015m + 8020

Date: 08/23/01 **Extraction:** EPA 5030 **Matrix:** Water

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 81601					Instrument: GC-6 A		
Surrogate1	ND	103.0	113.0	100.00	103	113	9.3
TPH (diesel)	ND	8750.0	7900.0	7500.00	117	105	10.2

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

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 200$$

RPD means Relative Percent Deviation

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QC REPORT

VOCs (EPA 8240/8260)

Date: 08/23/01-08/24/01 **Extraction:** EPA 5030 **Matrix:** Water

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 82401					Instrument:	GC-10	
Surrogate	ND	102.0	102.0	100.00	102	102	0.0
tert-Amyl Methyl Ether	ND	10.1	9.7	10.00	101	97	4.0
Methyl tert-Butyl Ether	ND	10.0	9.9	10.00	100	99	1.0
Ethyl tert-Butyl Ether	ND	9.2	9.2	10.00	92	92	0.0
Di-isopropyl Ether	ND	9.3	9.3	10.00	93	93	0.0
Toluene	ND	9.8	9.9	10.00	98	99	1.0
Benzene	ND	9.8	9.7	10.00	98	97	1.0
Chlorobenzene	ND	9.8	9.8	10.00	98	98	0.0
Trichloroethane	ND	8.2	8.0	10.00	82	80	2.5
1,1-Dichloroethene	ND	9.8	9.6	10.00	98	96	2.1

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

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

RPD means Relative Percent Deviation

27428 ZWAC 560

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: 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, CA
Sampler Signature:

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: Ice	HCl	HNO_3	Other
MW-1		8-22		5	*	X					X	X		
MW-3		"		5		X					X	X		
MW-4		"		5		X					X	X		
MW-5		"		5		X					X	X		
MW-6		"		5		X					X	X		
MW-7		"		5		X					X	X		
MW-8		"		5		X					X	X		
MW-9		"		5		X					X	X		

Analysis Request

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 / 8260 (8260) Freon 113 Lead Scav	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
X	X		-					X						

Other: 75810
Comments: * 3-40mL VOA (HC
2-Liter amber

75811
75812
75813
75814
75815
75816
75817

Relinquished By: Date: 8/23 Time: 5:00A Received By:
Relinquished By: Date: 8/23 Time: 5:50 Received By: $8.50 8/24/10
Relinquished By: Date: Time: Received By:

Remarks: ICE ✓ GOOD CONDITION ✓ HEAD SPACE ABSENT ___ PRESERVATION APPROPRIATE ✓ CONTAINERS ✓

VOA ☐ O&G ☐ METALS ☐ OTHER