
W. A. CRAIG, INC.

Environmental Consulting and Contracting

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~~Napa, California 94559-0448~~

Contractor and Hazardous Substances License #455752

Cal/OSHA Statewide Annual Excavation Permit #559351

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ENVIRONMENTAL
PROTECTION
98 AUG 26 PM 12 0

August 27, 1998

Project No. 3628
LOP STID 922

Mr. Larry Seto
Alameda County Health Care Services Agency
Environmental Health Services
131 harbor Bay Parkway
Alameda, California 94502-6577

Subject: **WORK PLAN ADDENDUM** *Rinehart Pacific*
Soil and Groundwater Quality Investigation
1107 5th Street
Oakland, California

Dear Mr. Seto:

In accordance with your request, W.A. Craig, Inc. (WAC) has prepared this Addendum Work Plan for additional investigation of the Rinehart Oil Inc. Site at 1107 5th Street site in Oakland, California. Eight exploratory soil borings and four additional monitoring wells are proposed to address groundwater quality concerns at the site. The Work Plan includes summary tables of groundwater monitoring performed at the site, with the most recent sampling event having been performed in July, 1998. Our records indicate copies of the monitoring reports have been sent to the Alameda County. Please let me know if you are missing any of the reports for these events and we will forward replacement copies.

If you have any questions or comments regarding the scope of services proposed in this Work Plan Addendum, please contact us at (707) 693-2922.

Yours Truly,
W. A. Craig, Inc.


Geoffery A. Fiedler, R.G.
Senior Geologist

Copies: Addressee (1)
cc: Reed Rinehart
WC/GF:gf

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98 AUG 26 PM 10
ENVIRONMENTAL
PROTECTION

August 27, 1998

Project No. 3628
LOP STD 922

Mr. Reed Rhinehart
Rino Pacific, Inc.
P.O. Box 725
Ukiah, California 95482

Subject: **WORK PLAN ADDENDUM**
Soil and Groundwater Quality Investigation
1107 5th Street
Oakland, California

Dear Mr. Rhinehart:

In accordance with your request, W.A. Craig, Inc. (WAC) has prepared this Addendum Work Plan for additional investigation of the site soil and groundwater quality conditions at the 1107 5th Street site in Oakland, California. Eight exploratory soil borings and four additional monitoring wells are proposed to address groundwater quality concerns at the site.

BACKGROUND

The site was built approximately 40 years ago and has been in operation throughout this period. The water table is reported to fluctuate between 10 inches and 4 feet below grade depending on the tides. The tanks were believed to have been replaced approximately 15 years ago. The current configuration of tanks is as follows: (1) 8,000 gal. regular unleaded tank (single wall steel), (1) 10,000 gal. Midgrade Unleaded tank (single wall steel), (2) 12,000 gal Diesel tanks manifolded (single wall steel). The product lines are believed to be single wall steel. It is not known if the lines have been replaced since the original construction date.

All of the tanks were tightness tested in March of 1996, and passed. However, several disruptions in the UST system may have resulted in releases into the environment. In mid 1995 an unauthorized release of gasoline occurred as a result of a leak in a fuel product line. The USTs associated with the release were removed from service. Interim cleanup of the spill was performed by pumping water and product from two product recovery trenches (Figure 2). WAC

inspected the interior of the product recovery sumps associated with the trenches and noted the presence of approximately 1/4 inch of floating fuel product. Passive field product recovery performed by WAC collected approximately 6.3 gallons of product and reduced the floating product thickness to 0.1 inches to a sheen on the water in the recovery well. The locations of the recovery wells in indicated on **Figure 2**.

Groundwater monitoring has been performed on six occasions during the period following the installation of the monitoring wells from November 1996 through the most recent monitoring event in July 1998. Groundwater elevations for these periods and the results of groundwater sample analyses are presented in **Tables 1 and 2**, attached. ~~The groundwater flow direction has generally been southwest to southeast.~~ The gradient interpretation assumes hydrologic continuity in the subsurface between the three wells at the site. The interpretation of gradient and flow direction on this site are significantly influenced by water levels reported for monitoring well MW-3. Monitoring well MW-3 is very slow to recover after purging, indicating the water bearing soil at this location is of low permeability. ~~It appears monitoring well MW-3 is not in hydrologic communication with monitoring wells MW-1 and MW-2. Interpretation of the groundwater gradient is therefore suspect and additional monitoring wells and site investigation are recommended to characterize the site hydrologic conditions.~~ Water levels have been reported to respond to tidal fluctuations, although this has not been confirmed by WAC's field observations.

Diesel concentrations in groundwater have remained relatively consistent. ~~Gasoline and benzene concentrations have been relatively consistent, with concentrations in the same order of magnitude in monitoring well MW-1 and MW-3, as compared to sampling performed one year ago. MTBE concentrations in MW-2 are extremely high and have increased over the last year.~~ The EPA method 8260 test was used this quarter as a quality control to verify the MTBE concentrations. Since the two types of EPA test were in agreement and no other oxygenates were identified, EPA method 8260 will not be used in future analyses.

It is WAC's understanding that the subject property will be undergoing significant reconstruction in the near future. Redevelopment plans for the property tentatively include expansion of the property to include the street portion of what is now 5th Street. 5th Street will be re-routed, to the north, to a location below the recently improved highway structure. ~~The development plans also tentatively include moving the truck scale, removal and replacement of the existing underground fuel tanks, and replacement of the existing dispensing systems.~~

SCOPE OF SERVICES

The scope of services proposed herein will be performed to obtain further information on the site soil and groundwater quality. Upon completion of the proposed scope of services, the soil and groundwater quality data will be reviewed and WAC will recommend further investigative or remedial actions, if any, to close the site. WAC's scope of work is based on our observations of site conditions during reconnaissance of the site. The proposed scope of work should be performed in accordance with applicable local, state, and federal regulations. The locations of the boreholes and monitoring wells proposed for this work are indicated on the attached Figure 1.

The scope of work proposed for this investigation includes the following:

- Obtaining appropriate permits and notifications prior to drilling the eight proposed boreholes;
- Collecting an estimated three soil samples per borehole for laboratory analysis;
- Constructing groundwater monitoring wells in four of the eight borehole locations;
- Developing the new monitoring wells and sampling the new (four) and existing (three) monitoring wells;
- Analysis of soil and groundwater samples for total petroleum hydrocarbons as diesel (TPH-d) using EPA Method 8015 (modified); total petroleum hydrocarbons as gasoline (TPH-g) using EPA Method 8015 (modified); and benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl tert-butyl ether (MTBE) using EPA Method 8020;
- Preparation of a soil and groundwater quality investigation report.

INVESTIGATION METHODS AND PROCEDURES

Drilling and Soil Sampling

The exploratory soil borings and well installations will be permitted as required. WAC will obtain the services of a California Certified, C-57 licensed, drilling contractor for the drilling services. The soil borings will be drilled using a truck-mounted drill rig equipped with eight-inch outside-diameter hollow stem augers.

The boreholes will be logged in the field by a registered California geologist or by a WAC staff geologist under the direct supervision of a registered California geologist. Soil samples will be collected at a minimum of every five feet and a continuous log of the subsurface

conditions will be prepared in the field during drilling. Soils encountered during drilling will be logged in accordance with the Unified Soil Classification System. Soil samples obtained during drilling will be collected using a two-inch, inside-diameter, Modified California Sampler. The sampler will be lined with three, six-inch long, brass liners and driven eighteen-inches into undisturbed soil using a 140 pound hammer. The drilling and sampling equipment will be decontaminated prior to use by steam cleaning or using a laboratory grade detergent solution with a tap water or deionized water rinse.

Soil samples will be collected at five-foot intervals or when changes in soil type or where contaminated soil is observed or detected by photoionization detector (PID) screening or by visual or olfactory observations. Soil samples selected for analysis will be capped with teflon-lined plastic caps, labeled, sealed in a plastic bag, and stored in a container with ice. Samples retained for chemical analysis will be delivered, under chain of custody control, to a state certified analytical laboratory.

The exploratory boreholes to be converted to monitoring wells will be extended 10 to 15 feet past the first encountered water, although shallow groundwater conditions have been observed at this site. The boreholes will be terminated at a shallower depth if a minimum of five-feet of impermeable soil, such as a clay, is penetrated. The boreholes will be drilled to groundwater or to a maximum depth of 45 feet, if groundwater is not encountered. If the water-bearing unit is found to be greater than 20 feet thick, drilling will be terminated 15 to 20 feet below the top of the aquifer. Borings not completed as monitoring wells will be drilled to the first encountered water and will be sealed by grouting to the ground surface.

All soil cuttings from the drilling operations will be added contained in 55 gallon, DOT-approved, steel, drums and stored at the site. Decontamination rinsate will be collected and contained in appropriately labeled, 55 gallon, DOT-approved, steel, drums and stored at the site.

Monitoring Well Construction

The groundwater monitoring wells will be constructed using two-inch, flush threaded, Schedule 40, PVC, well casing. The wells will be constructed through the hollow-stem augers, with materials placed from the bottom of the borehole to the ground surface. The screened interval of the well will be factory slotted with a slot size of 0.010 inches. The well screen will be installed to approximately 10 to 15-feet below and five feet above the first encountered groundwater, or as conditions warrant. The screened section annulus will be packed with clean graded sand to a level approximately one foot above the screened interval. Approximately one foot of hydrated bentonite pellets will be placed above the sand as a sealing material. The well will be sealed from the bentonite seal to the ground surface using a portland cement/bentonite grout mixture. No glues or other solvents will be used in the construction of the wells. The wells have not been designed to provide optimum flow but should provide hydraulic connection between the water-bearing zone and the well.

The wellheads will be protected from vandalism using a locking expansion-plug cap and will be housed within a traffic-rated boxes to protect the wells from traffic and surface water runoff. The well sealing material (grout) will be allowed to set for a period of 72 hours prior to development, sampling, or other work that may be performed on the well.

Well Development

The wells will be developed by intermittent surging, bailing and/or pumping. Field parameters, including color, odor, free phase liquid, turbidity, specific conductance (EC), temperature, and pH will be intermittently monitored during the development of the wells. Development will continue until field parameters stabilize and the water is relatively clear and free of silt and sand.

Groundwater Sample Collection - Monitoring Wells

Water level measurements will be obtained from all of the site monitoring wells prior to sampling. The wells will be purged of a minimum of three well-casing volumes prior to sampling. The wells will be purged using a disposable polyethylene bailer. Should the well become completely evacuated during purging, **samples will be collected after the well has recovered to 80 percent of its initial water level.** Field parameters will be intermittently monitored during the purging of the well (as described in well development).

Groundwater samples will be decanted from the bailer into laboratory supplied containers, approved for the analyses required. The samples will be immediately placed in refrigerated storage for delivery to the laboratory. The samples will be labeled in such a manner as to maintain client confidentiality. Samples will be delivered under chain of custody control to an analytical laboratory that is certified by the State of California to perform the requested analyses.

Groundwater Sample Collection - Grab Water Samples

Grab groundwater samples will be collected from boreholes not completed as monitoring wells. These boreholes will be drilled using the hollow-stem auger drilling methods described previously to a depth approximately 5-feet below the first encountered groundwater. **A temporary well will be constructed at this location in an effort to obtain representative groundwater samples.** The temporary well will be constructed with approximately three feet of schedule 40 PVC, 0.020-inch slotted, well screen. The screened portion of the temporary well will be placed through the augers to the bottom of the borehole. Clean graded sand may be placed around the temporary well to a level approximately one-foot above the slotted interval. This measure may be required if there is an inadequate supply of groundwater to collect enough water for the required laboratory analyses. The sand will be placed in the same way as described

for the installation of monitoring wells (described above).

The temporary well will be purged of approximately three (3) well-casing volumes and samples will be collected using a disposable polyethylene bailer. Upon completing the sampling, the temporary casing will be removed, the sand material will be reamed to the original depth drilled, and the borehole will be sealed using portland cement grout.

Groundwater samples will be decanted from the bailer into laboratory supplied containers, approved for the analyses required. The samples will be immediately placed in refrigerated storage for delivery to the laboratory. The samples will be labeled in such a manner as to maintain client confidentiality. Samples will be delivered under chain of custody control an analytical laboratory that is certified by the State of California to perform the requested analyses.

RATIONALE FOR THE LOCATION OF BOREHOLES AND MONITORING WELLS

Monitoring wells MW-4 and MW-5 are proposed to be installed at locations downgradient of the underground tank area and recovery well RW-W. Monitoring well MW-6 is proposed at an upgradient (presumably - based on past groundwater gradients for the site) to assess the extent of the unusually high MTBE concentrations consistently reported for groundwater samples from monitoring well MW-2. Monitoring wells MW-6 and MW-7 are located approximately downgradient of the fuel dispensing areas near the eastern margin of the site. Exploratory borehole EB-8 is located in a portion of the west-central portion of the site to further characterize the extent of soil and groundwater quality conditions in this area. Exploratory boreholes EB-9, EB-10, and EB-11 are located in areas between the UST and dispenser systems to assess soil and groundwater in this area.

SCHEDULE

Approval of this Work Plan Addendum, encroachment permitting, well installation and borehole permitting, and scheduling of subcontract services is anticipated to be completed in approximately five weeks. The drilling, well installation, well development, and well sampling activities should be completed in approximately ten working days (allowing for 72 hours curing of the well sealant and sampling 48 hours after well development). The results of soil sample analyses should be completed within 14 days of sample collection. Groundwater sample analytical results from the monitoring wells would be available approximately 20 days after completion of the installation of the new monitoring wells. The results of the additional investigative work would be presented in a report approximately three weeks after completion of the receipt of the final laboratory analytical results. WAC estimates this scope of work could be completed in approximately 12 weeks, although additional time may be required for pre-approval of the investigation costs by the Underground Storage Tank Cleanup Fund.

CLOSURE

We appreciate this opportunity to be of continued service to you on this project. If you have any questions or comments regarding the scope of services proposed in this Work Plan Addendum, please contact us at (707) 693-2922.

Yours Truly,
W. A. Craig, Inc.


Geoffery A. Fiedler, R.G.
Senior Geologist



Copies: Addressee (2)

Attachments: Figure 1 - Site Location Map
Figure 2 - Site Exploration Plan
Table 1 - Summary of Groundwater Elevations
Table 2 - Summary of Groundwater Sample Analytical Results

WC/GF:gf

cc: Larry Seto, Alameda County Health Services Agency



Checked by: C.A.F. 8/19/98

Project No: 3785

August 1998

Site Location Map
Oakland Truck Stop
8255 San Leandro Street
Oakland, California

Figure 1



W. A. CRAIG, INC.
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5th Street

Sidewalk

Scale

Scale house

EB-5

Diesel/Gas
Dispensers

EB-2

EB-9

Diesel Dispenser

EB-8

EB-10

Diesel Dispenser

EB-3

RW-W

RW-E

EB-11






EB-7

Building

Sump

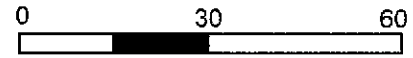
Landscaping

EXPLANATION

-  Location of UST's
-  Existing Monitoring Wells
-  Proposed Soil Boring with Conversion to Monitoring Well
-  Proposed Soil Boring
-  Recovery Well

Olivers Hof Brau
360 Adeline

Parking lot



Approximate Scale: 1 inch = 30 Feet

Checked by: *CAC* 2/27/98



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Project # 3628
February 1998

Site Exploration Plan
Rino Pacific
1107 5th Street
Oakland, CA

TABLE 1
Groundwater Elevations
1107 5th Street
Oakland California

Well Number	Date	Top of Casing (ft)	Depth to Water (ft)	Static Water Elevation
MW-1	10/21/96	3.84	5.08	-1.24
	11/04/96		3.02	0.84
	03/04/97		2.28	1.56
	06/12/97		4.80	-0.96
	07/14/97		2.66	1.18
	09/09/97		2.45	1.39
	09/19/97		2.60	1.24
	02/13/98		2.76	1.08
	07/07/98		2.15	1.69
MW-2	10/21/96	4.48	4.66	-0.02
	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
MW-3	10/21/96	4.81	7.66	-2.85
	11/04/96		5.70	-0.89
	03/04/97		11.38	-6.57
	06/12/97		5.18	-0.37
	07/14/97		7.96	-3.15
	09/09/97		10.16	-5.35
	09/19/97		12.80	-7.99
	02/13/98		11.42	-6.61
	07/07/98		11.76	-6.95
RW-W	06/13/97	5.26	3.11	2.15
	07/14/97		7.96	-2.70
	09/09/97		not measured	not measured
	09/19/97		3.84	1.42
	02/13/97		not measured	not measured
	07/07/98		2.33	2.93
RW-E	06/13/97	4.65	2.88	1.77
	07/14/97		3.08	1.57
	09/09/97		not measured	not measured
	09/19/97		3.40	1.25
	02/13/97		not measured	not measured
	07/07/98		2.82	3.82

Notes: Monitoring wells elevations are based upon the
City of Oakland Datum #16NW15
Recovery well elevations surveyed by W. A. Craig, 6/12/97.

TABLE 2
Groundwater Sample Analytical Results
1107 5th Street, Oakland, California
Analytical Results in micrograms per liter

Sample	Date	ANALYTES (ug/L)							
		Diesel	TPH-g	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE** EPA 8260
MW-1	11/04/96	220	ND	ND	ND	ND	ND	ND	NA
	03/05/97	230	ND	ND	ND	ND	ND	ND	NA
	06/12/97	290	ND	ND	ND	ND	ND	ND	NA
	09/09/97	180	ND	ND	ND	ND	ND	ND	NA
	02/13/98	590	ND	9.4	ND	ND	ND	ND	NA
	07/07/98	1400	ND	ND	ND	ND	ND	ND	2.7
MW-2	11/04/96	2700	910	470,000	120	23	3.5	51	NA
	03/05/97	2300	4400	760,000	1500	51	24	100	NA
	06/12/97	2400	3600	840,000	1200	14	12	40	NA
	09/09/97	970	3700	470,000	570	31	19	60	NA
	02/13/98	2200	6500	750,000	2400	31	ND	ND	NA
	07/07/98	2700	5200	950,000	2800	ND	ND	ND	1,000,000
MW-3	11/04/96	310	ND	1,000	ND	ND	ND	ND	NA
	03/05/97	210	ND	13	ND	ND	ND	ND	NA
	06/12/97	94	ND	17	ND	ND	ND	ND	NA
	09/09/97	2300	ND	12	ND	ND	ND	ND	NA
	02/13/98	570	ND	14	ND	ND	ND	ND	NA
	07/07/98	1100	ND	7.8	ND	ND	ND	ND	6.6
RW-W	06/12/97	51000	27000	58000	4000	360	860	7200	NA
	09/09/97	NS	NS	NS	NS	NS	NS	NS	NA
RW-E	06/12/97	31000	31000	32000	1900	3100	250	12000	NA
	09/09/97	NS	NS	NS	NS	NS	NS	NS	NA
California MCL		None Listed	None Listed	40*	1	150	680	1750	

Notes:

NA = Not Analyzed

ND = Not detected at the laboratory reported limit of detection

NS = Not Sampled

MCL = Maximum Contaminant Level, Drinking Water Standards and Health Advisories Table, EPA document dated August, 1995.

*California Water Quality Goals-Organic Constituents, Human Health and Welfare, Marshak, September 1991.

**Results of the 8260 found DIPE, ETBE, TAME, and tert-Butanol as Non-detected