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September 16, 1996

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

Project No. 3628-2

Subject: **WORKPLAN - Soil and Groundwater Quality Investigation**
1105 5th Street
Oakland, California

Dear Mr. Rhinehart:

In accordance with your request, W.A. Craig, Inc. (WAC) is pleased to submit this Workplan for a soil and groundwater quality investigation for the 1105 5th Street site in Oakland, California. **Seven exploratory soil borings and three groundwater monitoring wells are proposed in this Workplan** to evaluate the soil and groundwater quality at the site.

BACKGROUND

It is WAC's understanding that there are four 10,000-gallon underground fuel storage tanks (USTs) at the site. These underground tanks have been used to store diesel and gasoline fuel products. WAC further understands that a fuel product discharge associated with a leak from a broken product line has occurred and that the corresponding UST has been temporarily removed from service. To our knowledge, there have been no investigations of the site subsurface conditions.

Two groundwater recovery wells were observed near the presumed south side of the existing USTs during WAC's reconaissance of the site (WAC was not able to locate scaled plans of the site prior to preparing this Workplan). Floating petroleum hydrocarbons were observed on shallow groundwater in the recovery wells. The location of the recovery wells is shown on the attached siteplan.

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:

- Preparation of a site-specific health and safety plan for submittal to the Alameda County Health Services Agency;
- Obtaining appropriate permits and notifications prior to drilling the proposed, seven, boreholes;
- Collecting an estimated three soil samples per borehole for laboratory analysis;
- Constructing groundwater monitoring wells in three of the seven boreholes;
- Developing and sampling the 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.

Details of the drilling, well installation, and sampling tasks related to this scope of work are included as **Attachment A.**

We appreciate this opportunity to be of service to you on this project. If you have any questions or comments regarding the scope of services proposed in this Workplan, please contact us at (707) 252-3353.

Respectfully,

W. A. Craig, Inc.

REGISTERED ENVIRONMENTAL ASSESSOR
WILLIAM A. CRAIG, II
No. 01414
Expires 6-97
STATE OF CALIFORNIA

W.A. Craig, II, R.E.A
Owner

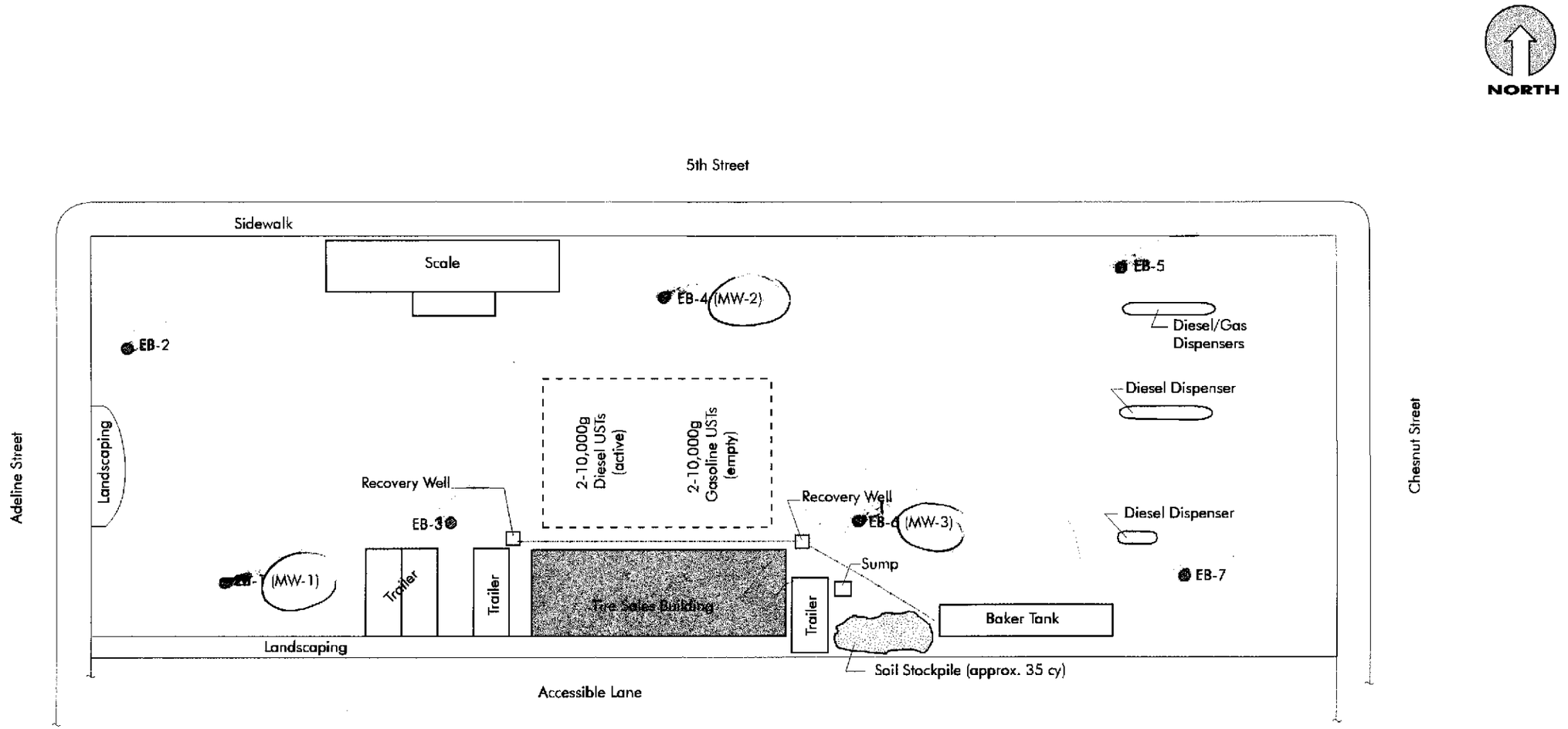
REGISTERED PROFESSIONAL GEOLOGIST
GEOFFERY A. FIEDLER
No. 6340
Exp. 9/30/97
STATE OF CALIFORNIA

Geoffery A. Fiedler, R.G.
Geologist

Copies: Addressee (1)
Attachments: Figure 1 - Site Location Map
Figure 2 - Site Exploration Plan
A - Methods and Procedures

WC/GF:gf

cc: Jennifer Eberle, Alameda County Health Services Agency



EXPLANATION

EB-1 Exploratory Borehole (proposed)

(MW-1) Monitoring Well Location (proposed)

0 30 60

Approximate Scale: 1 Inch = 30 Feet

NOTE: Site features and locations were approximated by pacing and should be considered accurate only to the degree implied .

Checked by: _____

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SITE PLAN
Subsurface Investigation Workplan
1107 5th Street
Oakland, CA

Figure 1

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 and installed to approximately 10 to 15-feet below and five feet above, the first encountered groundwater. 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 wellhead will be protected from vandalism using a locking expansion-plug cap and will be housed within a traffic-rated box to protect the well from traffic and surface water runoff. The grout will be allowed to set for a period of 72 hours. During that period no development or other work should 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, appropriate 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.

Laboratory Analyses

The soil and groundwater samples will be analyzed for the following constituents:

- Total petroleum hydrocarbons as gasoline using EPA Method 8015 (modified);
- Total petroleum hydrocarbons as diesel using EPA Method 8015 (modified); and
- Benzene, toluene, ethylbenzene, xylenes, and methyl tertiary butyl ether using EPA Method 8020;

Purge and Decontamination Water Disposal

Purge water from the well development and sampling and decontamination rinsate from the drilling and sampling operations will be labeled and stored on-site in 55-gallon, steel, DOT approved, drums. The drums will be appropriately labeled and left on-site for subsequent disposal pending analytical results.