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Working To Restore Nature

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3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Phone: (408) 264-7723
FAX: (408) 264-2435

TRANSMITTAL

TO: Mr. Barney Chan
Alameda County Health
Care Services Agency
80 Swan Way, Room 200
Oakland, California 94621

DATE: January 20, 1994
PROJECT NUMBER: 62026.05
SUBJECT: ARCO Station 2185

FROM: Erin D. Krueger

WE ARE SENDING YOU:

COPIES DATED

DESCRIPTION

COPIES DATED	DESCRIPTION
1 01/20/94	Work Plan and Response Letter to perform a Record Search and Additional Offsite Subsurface Environmental Investigation at ARCO Station 2185, 9800 East 14th Street, Oakland, California.

THESE ARE TRANSMITTED as checked below:

- | | | |
|--|---|--|
| <input type="checkbox"/> For review and comment | <input type="checkbox"/> Approved as submitted | <input type="checkbox"/> Resubmit ___ copies for approval |
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REMARKS:

Copies: 1 to RESNA project file no. 62026.05


Erin D. Krueger, Staff Geologist

cc: Mr. Michael Whelan, ARCO
Mr. Richard Hiatt, RWQCB

3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Phone: (408) 264-7723
FAX: (408) 264-2435

January 20, 1994

Mr. Michael Whelan
ARCO Products Company
Post Office Box 5811
San Mateo, California 94402

**Subject: Work Plan and Response Letter to perform a Record Search and Additional Offsite Subsurface Environmental Investigation
ARCO Station 2185
9800 East 14th Street, Oakland, California.**

Mr. Whelan:

At the request of ARCO Products Company (ARCO), RESNA Industries Inc. (RESNA) has prepared this Work Plan for review by the Alameda County Health Care Services Agency (ACHCSA). The Work Plan was initiated in response to a December 2, 1993 letter from Hazardous Materials Specialist Barney Chan of the ACHCSA. In his letter, Mr. Chan indicated that specific items needed to be addressed before the subject site can be considered for Alternative Points of Compliance under the Tentative Resolution of the California Regional Water Quality Control Board's (CRWQCB) Basin and Amendment Plan (CRWQCB, November 20, 1992).

Specifically, Mr. Chan requested that the following items be addressed: (1) further characterize the presence of impacted soil and groundwater offsite; (2) remove onsite hydrocarbon source soils to mitigate impact to groundwater; and (3) control the apparent offsite migration of impacted groundwater.

Based on the results of our preliminary review of historical aerial photographs, it appears possible that impacted groundwater in the vicinity of offsite well MW-7 could be related to an offsite source. On historical aerial photographs it appears that properties situated at the southwestern (near well MW-7) and northwestern corners of the intersection of East 14th Street and 98th Avenue may have previously been gasoline service stations. As a result, it appears possible that hydrocarbons in the vicinity of MW-7 may have an offsite source and the onsite plume may not have migrated offsite. For this work plan we have proposed a

records search be performed to evaluate whether offsite sources are likely in the downgradient groundwater flow direction.

During tank and product line removal at the site, overexcavation was performed to the extent possible, removing significant quantities of source soils. Overexcavation was vertically limited by shallow groundwater, and laterally limited by existing structures on the site. To evaluate the feasibility of remediating impacted soils, vapor extraction and aquifer pumping field tests have been performed at the site. As discussed in our Initial Offsite and Additional Onsite Subsurface Investigation and Aquifer Pumping Test Report (RESNA, October 12, 1993), the results of these tests appear to indicate that these remediation technologies may be limited by the presence of impermeable clay soils. To evaluate whether significant hydrocarbon sources are present in the vadose zone beneath the site, and whether impacted groundwater is migrating offsite, compliance point monitoring wells need to be established. Therefore, we propose constructing two additional offsite wells in the downgradient flow direction. Assuming the proposed record search indicates that offsite hydrocarbon sources are not likely, quarterly monitoring of the two proposed offsite point of compliance wells, and existing offsite well MW-7, will help us evaluate whether the hydrocarbon plume has migrated offsite. If it has, the proposed wells will also help us to evaluate whether hydrocarbon concentrations in groundwater are increasing due to continued offsite migration of the hydrocarbon plume.

RESNA has prepared this Work Plan to: 1) research the previous uses of properties located in the downgradient groundwater flow direction, at the intersection of East 14th Street and 98th Avenue, 2) to further evaluate the vertical and lateral extent of gasoline hydrocarbons in offsite soil and groundwater, and 3) establish point of compliance wells offsite in the downgradient groundwater flow direction.

After receiving approval of this Work Plan from ACHCSA, the tasks proposed for this phase of work include: conducting a records search for the properties located at the southwestern, northwestern, and northeastern corners of the intersection of East 14th Street and 98th Avenue; obtaining encroachment permits from the City of Oakland and CalTrans, and an excavation permit from the City of Oakland (or negotiating offsite access with private property owners); drilling and sampling two offsite soil borings to an estimated total depth of 30 feet; installing two 2-inch diameter groundwater monitoring wells in the borings; developing and sampling the monitoring wells; surveying the wells to a local Geodetic Vertical Datum; analyzing and interpreting data; and preparing a report.

PREVIOUS ENVIRONMENTAL WORK

Previous environmental work performed at the site is summarized in RESNA's Report of Findings, Initial Offsite and Additional Onsite Subsurface Investigation and Aquifer Pumping Test (RESNA, October 12, 1993), and Letter Report, Quarterly Groundwater Monitoring Third Quarter 1993 (RESNA, November 3, 1993).

PROPOSED WORK

Field work involved with the following project steps will be performed in accordance with RESNA's Field Protocol and an updated Site Specific Safety Plan which will be prepared.

RESNA recommends the following work at the site based on the findings and conclusions of previous investigations:

- Step 1** Upon gaining regulatory approval of this work plan, conduct a records search utilizing available information from business licenses, fire department records, historic fire insurance maps, and business directory lists, and county assessors records, to evaluate previous uses of the properties located at the southwestern, northwestern, and northeastern corners of the intersection of East 14th Street and 98th Avenue in Oakland, California, prior to drilling in the proposed locations shown on Plate 2.

- Step 2** Obtain encroachment permits from the City of Oakland and CalTrans, excavation permits from the City of Oakland, and well construction permits from the Alameda County Flood Control and Water Conservation District (ACFCWCD), Zone 7.

- Step 3** Drill and collect soil samples for soil classification and possible laboratory analysis from two offsite borings (B-15 and B-16) as shown on Plate 2, Proposed Boring/Well Locations. Drill borings B-15 and B-16 to an anticipated depth of approximately 25 to 30 feet which includes 5 feet into a possible confining layer beneath first encountered groundwater. Install two 2-inch-diameter groundwater monitoring wells (MW-8 and MW-9) using 2-inch-diameter polyvinyl chloride (PVC) well casing and 0.02 inch machine slotted screen. Submit selected soil samples to a State-Certified laboratory for analyses for TPHg and BTEX. Chain of custody protocol will be observed for all samples submitted for analysis.

- Step 4** Develop groundwater monitoring wells MW-8 and MW-9 using bailing and surge block techniques.

- Step 5** Measure depths-to-water, purge, and collect groundwater samples from monitoring wells MW-8 and MW-9. Submit groundwater samples from the wells to a State-Certified laboratory for analysis for TPHg and BTEX. Chain of custody protocol will be observed for all samples submitted for analysis.

- Step 6** Direct a survey of wellhead elevations to a U.S. Coast and Geodetic Survey Datum, by a licensed surveyor.
- Step 7** Analyze the data and prepare a report summarizing research conducted, field and laboratory results, interpretations, and conclusions for submittal to the ACHCSA and the CRWQCB.

SCHEDULE

A Preliminary Time Schedule to perform Steps 1 through 7 is included on Plate 3. This time schedule is an estimate and is dependent upon receiving the encroachment and excavation permits from the City of Oakland and CalTrans. ARCO and appropriate regulatory agencies will be informed should the estimated time for completion of the work proposed in the Work Plan be delayed. Time is estimated in weeks after gaining regulatory approval of this Work Plan.

DISTRIBUTION


It is recommended that copies of this Work Plan be forwarded to

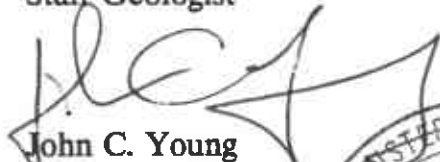
Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

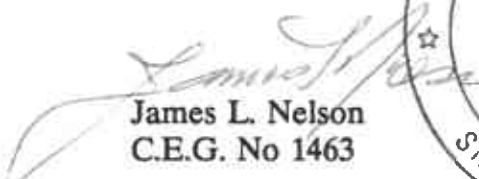
Mr. Richard Hiett
Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

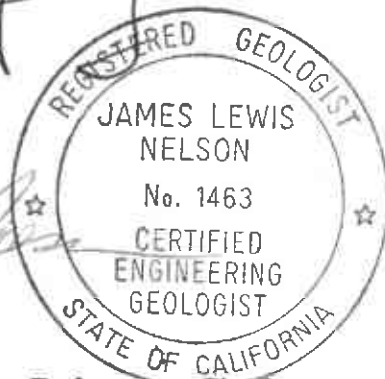
If you have any questions regarding this Work Plan please contact us at (408) 264-7723.

Sincerely,
RESNA Industries Inc.


Erin D. Krueger
Staff Geologist


John C. Young
Project Manager


James L. Nelson
C.E.G. No 1463



Attachments:

References Cited

- Plate 1, Site Vicinity Map
- Plate 2, Proposed Boring/Well Locations
- Plate 3, Preliminary Time Schedule

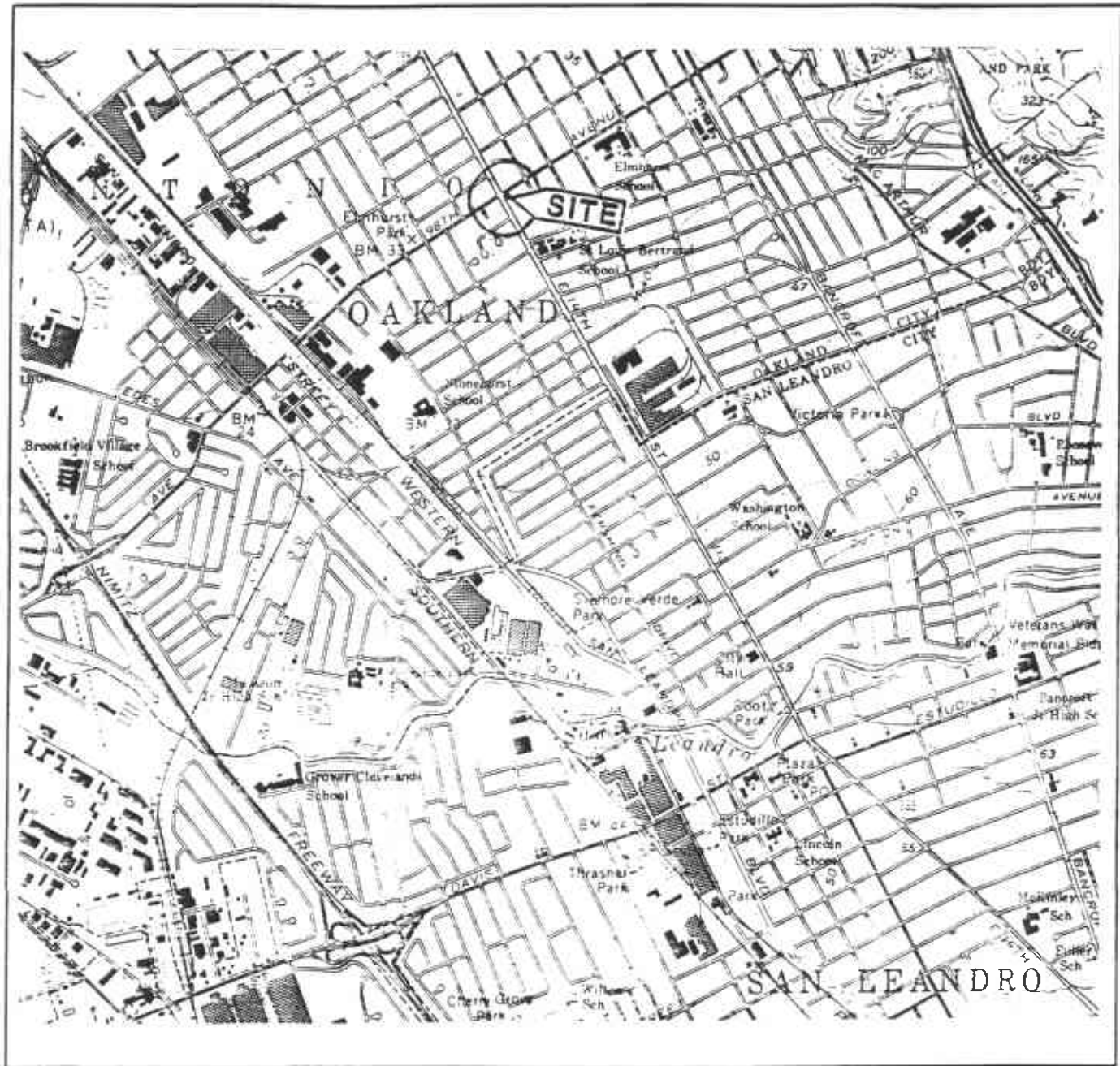
REFERENCES CITED

Alameda County Health Care Services Agency, December 2, 1993. Letter regarding Status of Subsurface Investigation at ARCO Station 2185, 9800 E. 14th St., Oakland CA 94603

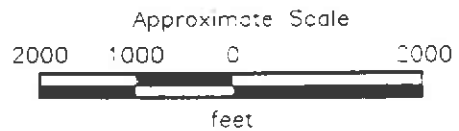
California Regional Water Quality Control Board San Francisco Bay Region, November 20, 1992. Ground Water Basin Plan Amendments.

RESNA Industries Inc., October 12, 1993. Report of Findings, Initial Offsite and Additional Onsite Subsurface Investigation and Aquifer Pumping Test. RESNA Report 62026.02

RESNA Industries Inc., November 3, 1993. Letter Report, Quarterly Groundwater Monitoring Third Quarter 1993. RESNA Report 62026.04



Source: U.S. Geological Survey
 7.5-Minute Quadrangle
 San Leandro, California
 Photorevised 1980

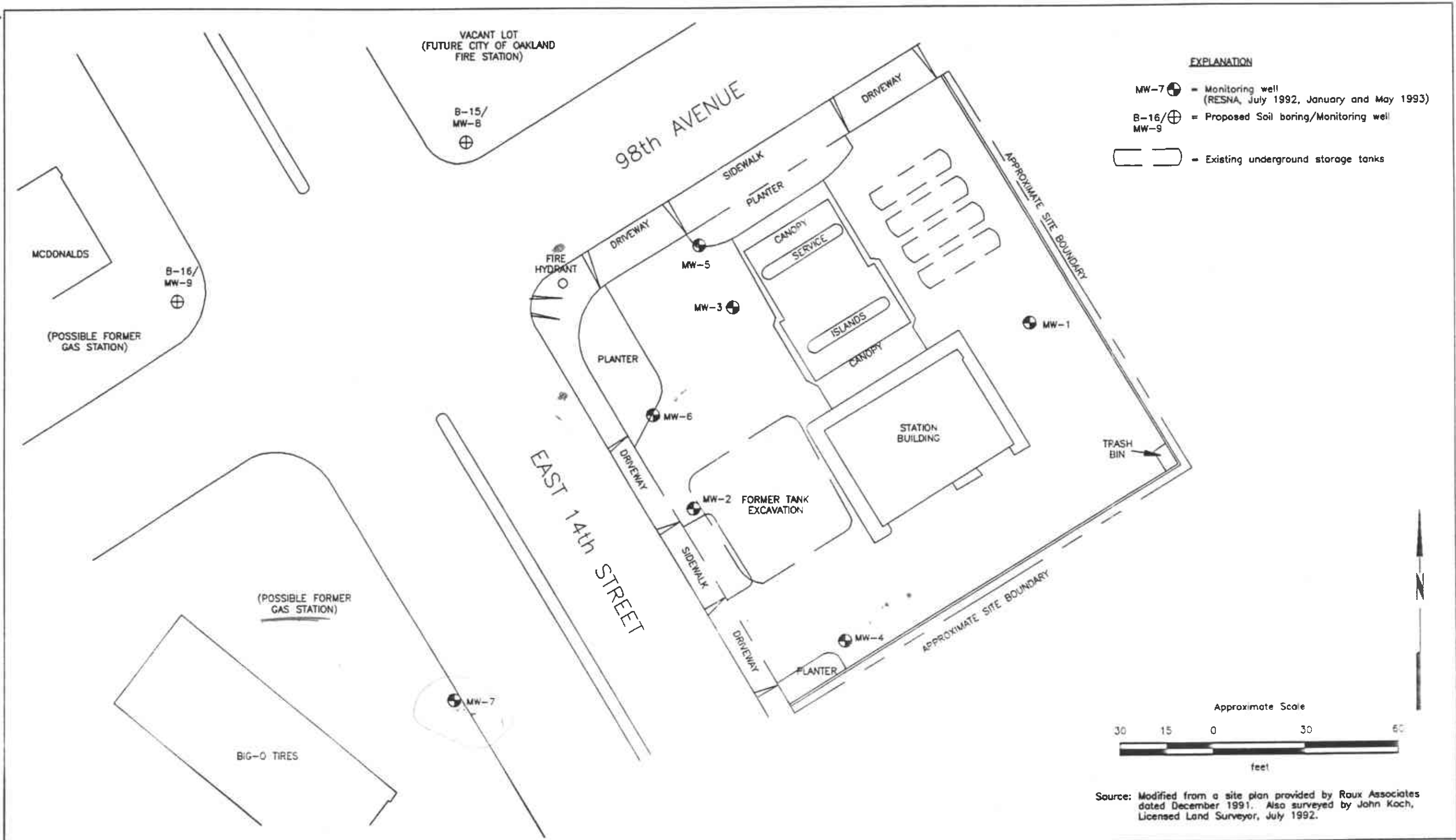


RESNA
 Working to Restore Nature

PROJECT 62026.05

SITE VICINITY MAP
 ARCO Station 2185
 9800 East 14th Street
 San Leandro, California

PLATE
 1



STEP 1:
Conduct a records search.

STEP 2:
Obtain encroachment, excavation, and well construction permits from CalTrans, City of Oakland, and Zone 7.

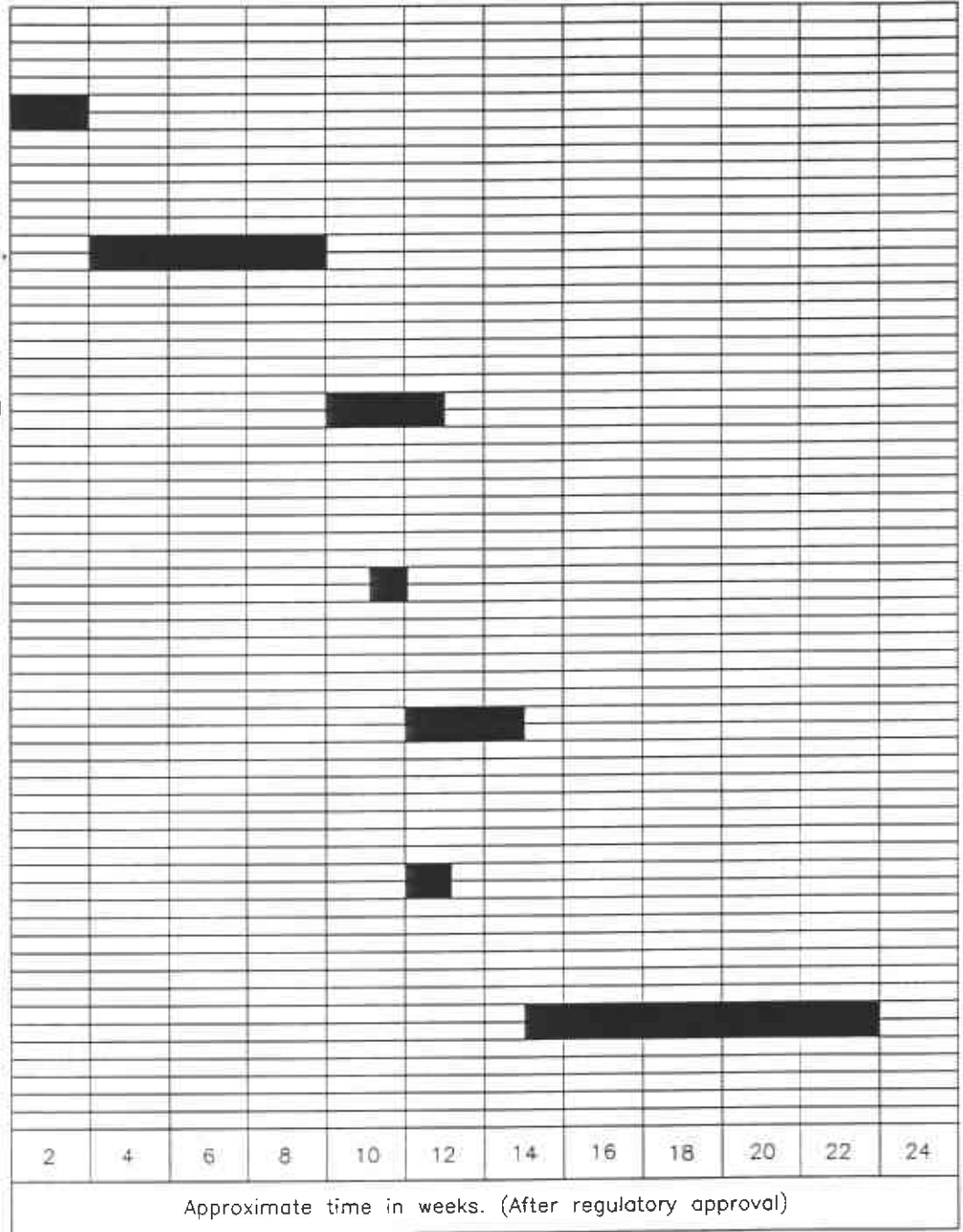
STEP 3:
Drill two soil borings (B-15 and B-16) and install two monitoring wells (MW-8 and MW-9). Submit selected soil samples and receive results.

STEP 4:
Develop monitoring wells MW-8 and MW-9.

STEP 5:
Sample monitoring wells MW-8 and MW-9. Submit water samples and receive results.

STEP 6:
Survey wellhead elevations.

STEP 7:
Prepare a report for submittal to ACHCSA and CRWQCB.



PRELIMINARY TIME SCHEDULE
ARCO Station 2185
9800 East 14th Street
Oakland, California

PLATE
3

PROJECT 62026.05