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REMEDIAL ACTION PLAN

CREDIT WORLD AUTO SALES
2345 E. 14TH STREET
OAKLAND, CA 94601

Prepared For:
MESSRS. AARON AND STANLEY WONG
2200 E. 12TH STREET
OAKLAND, CA 94606

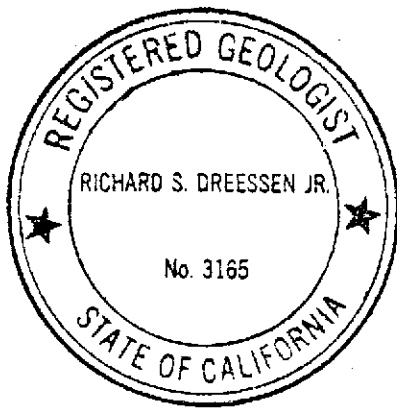
Submitted By:
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April 5, 1999

Project Number 267

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This report has been prepared by the staff of Tank Protect Engineering of Northern California, Inc. under direction of an Engineer and/or Geologist whose seal(s) and/or signature(s) appear hereon.

The findings, recommendations, specifications or professional opinions are presented, within the limits prescribed by the client, after being prepared in accordance with generally accepted professional engineering and geologic practice. We make no other warranty, either expressed or implied.

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FIGURES

1. SITE VICINITY MAP
2. SOIL BORING

1.0 INTRODUCTION

As shown in Figure 1, the subject site is located at 2345 E. 14th Street in the city of Oakland, in Alameda County, California. The site is owned by Messrs. Aaron and Stanley Wong [(Wong), telephone number (510) 532-1672]. The site was previously occupied by a used car dealership known as Credit World Auto Sales.

As shown in Figure 2, soil borings and monitoring wells have been installed at the site that is occupied by a former underground fuel tank area and a building that houses a former office and automotive service bay. Previous work by Tank Protect Engineering of Northern California, Inc. (TPE) has documented soil and groundwater contamination apparently due to leaks or spills associated with the former underground gasoline tank complex.

The purpose of this Remedial Action Plan Addendum (RAP Addendum) is to augment the October 1997, RAP that proposed a passive mode of groundwater remediation at the site to lower the levels of hydrocarbon contamination. There are presently five monitoring wells on the site. To date, free product has been detected in four of these monitoring wells and recent well sampling indicates that a plume of dissolved fuel hydrocarbons is present.

The Environmental Health Services division of the Alameda County Health Care Services Agency (ACHCSA) has jurisdiction over the site.

2.0 SITE HISTORY

Past ACHCSA correspondence is discussed in the Remedial Action Plan for Credit World Auto Sales (RAP), dated October 20, 1997. The site has been monitored for total petroleum hydrocarbons as gasoline (TPHG) and benzene, toluene, ethylbenzene, and total xylenes (BTEX) on a quarterly basis since March 31, 1994.

Recent communication with Mr. Barney Chan of ACHCSA indicated that the State Water Board is presently reviewing all sites that have been under remediation status for five years. Because quarterly monitoring results have not demonstrated attenuation

of free product and dissolved petroleum hydrocarbons, the site's present remediation status could jeopardize the site's qualification for the State's Clean-up Fund. Mr. Chan requested that TPE present a more aggressive mode of remediation with a RAP Addendum. This document was written in response to the County's request.

3.0 STRATIGRAPHY AND HYDROGEOLOGY

TPE discussed regional hydrogeology in the October 1997 RAP. Site stratigraphy consists of fill overlying approximately 17 feet of clay that overlies mostly clayey sand and gravelly clay to the total depth explored. With some local variation, groundwater flow direction at the site has been consistent with regional westward flow.

4.0 EXTENT OF SOIL AND GROUNDWATER CONTAMINATION

Based on field verification sampling of the tank-excavation sidewalls, remnant soil-TPHG contamination ranges from nondetectable to 110 parts per million (ppm). Verification sampling of the excavation floor indicated remnant TPHG and BTEX levels ranging from nondetectable to 66 ppm.

Floating product has been observed in four of the five on-site monitoring wells; MW-1, MW-2, MW-3 and TMW-5. Based on the December 1998 quarterly sampling results, on-site groundwater contains detectable TPHG levels ranging from 26,000 to 46,000 parts per billion (ppb) and benzene level ranging from 1,000 ppb to 5,900 ppb.

5.0 REMEDIAL OBJECTIVES AND REVISED SOURCE REMOVAL

This RAP Addendum is designed to meet the same remedial objectives that were discussed in the October 1997 RAP. Prior, and in addition, to performing the remedial activities discussed in the RAP, this RAP Addendum proposes conducting a more aggressive mode of source removal.

5.1 Free Product Removal and Dual Phase Extraction

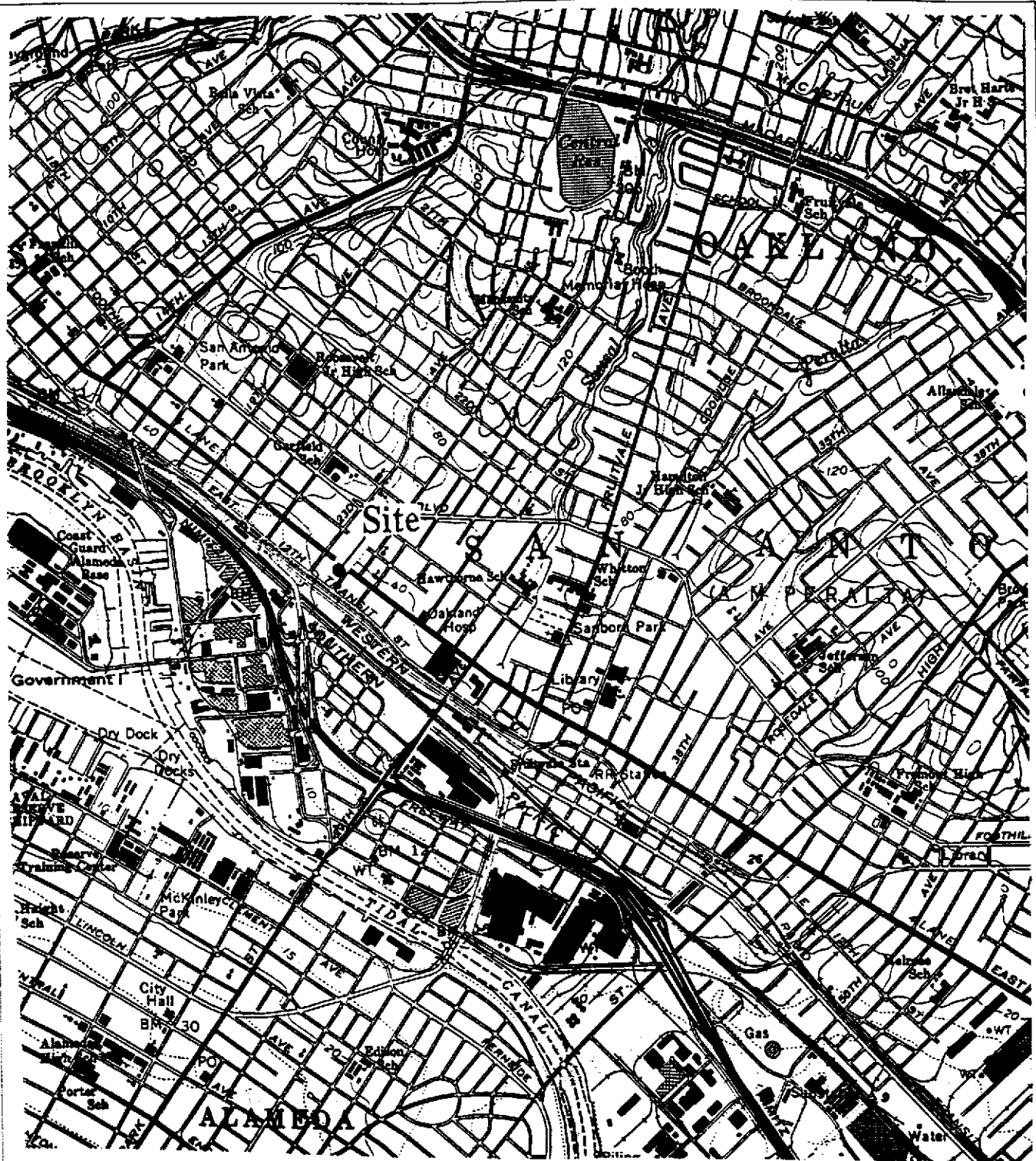
Bay Area consultants reportedly have remediated many hydrocarbon sites by dual phase extraction (DPE). However, DPE remediation will not be effective if substantial free product exists on a site. TPE proposes to accelerate source removal with a pumper truck.

After removing the free product, a DPE pilot test will be conducted to explore remedial options by means of dual phase extraction. Based on results of the pilot test, the specific mode of DPE implantation will be determined.

DPE technology involves the suction removal of hydrocarbon-contaminated liquid and vapor phases into a treatment vessel. Commonly used treatment/destruction modes involve carbon absorption, thermal or catalytic oxidation.

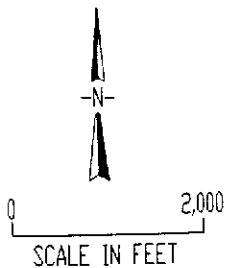
Need:

- 1) justification for selection of the remediation
- 2) specific description of DPE test. eg what wells?
how will influence be monitored? Will monitoring probes be installed?
- 3) How will the results affect the system design?



LEGEND

REFERENCE: USGS 7.5 MINUTE
 SERIES QUADRANGLE MAP
 OAKLAND EAST, CALIFORNIA
 PHOTOREVISED 1980

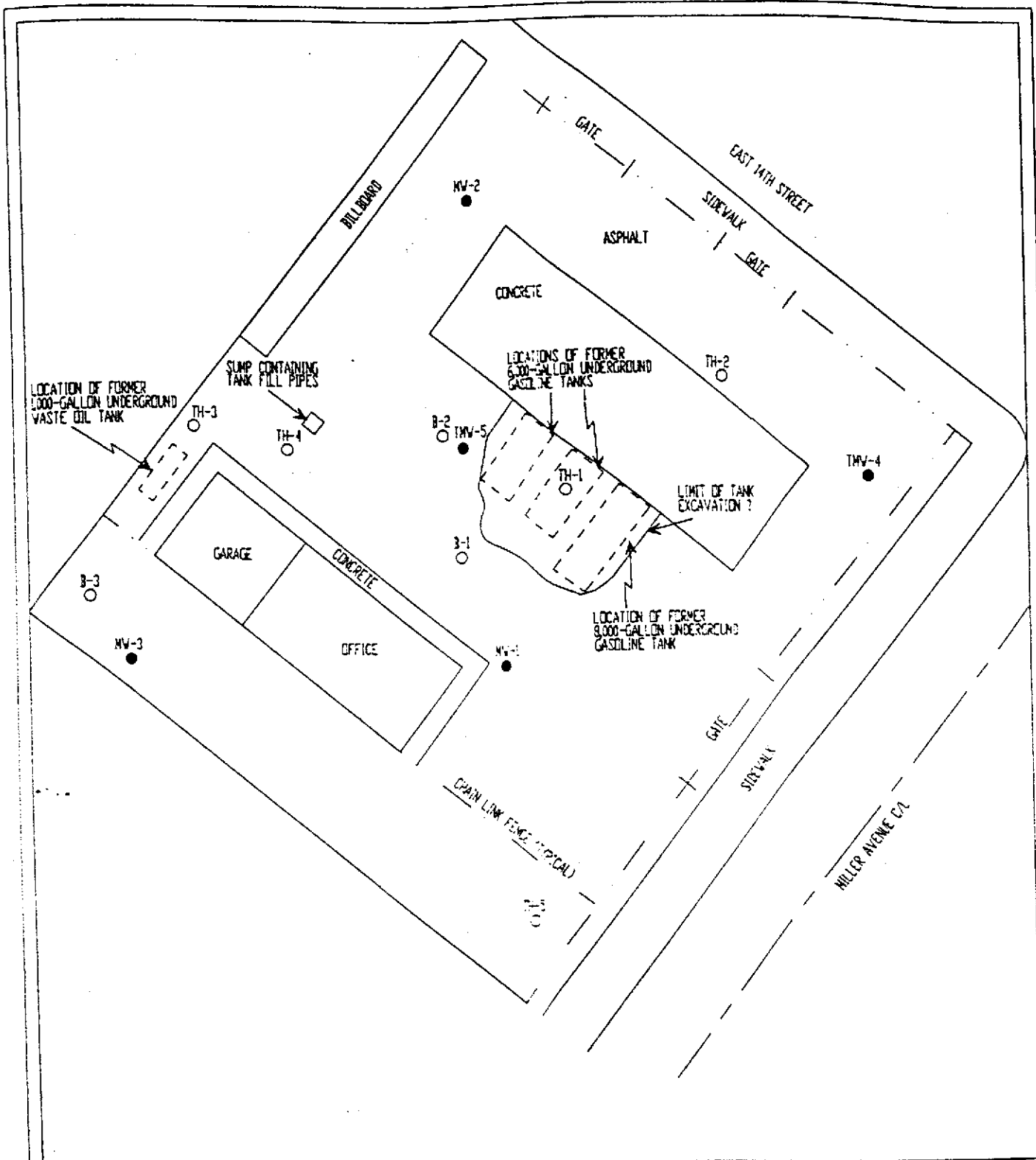


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SITE VICINITY MAP

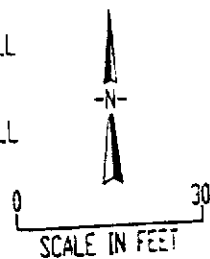
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DATE	5/21/97
FIGURE	1
FILE #	267-IN
DRAWN BY	VK
CHECKED BY	LNH



LEGEND

- MW-4 NAME AND LOCATION OF MONITORING WELL INSTALLED BY TPE
- MW-1 NAME AND LOCATION OF MONITORING WELL INSTALLED BY OTHERS
- B-1 NAME AND APPROXIMATE LOCATION OF SOIL BORING DRILLED BY OTHERS



TANK PROTECT ENGINEERING

SITE PLAN

CREDIT WORLD AUTO SALES
 2345 E. 14TH STREET
 OAKLAND, CA 94601

DATE	10/20/97
FIGURE	2
FILE #	267-2N
DRAWN BY	VK
CHECKED BY	LNH