GETTLER-RYAN INC.

January 31, 2000

3693

Mr. Barney Chan
Alameda County Environmental Health Services
1131 Harbor Bay Parkway
Alameda, CA 94502

Subject: **Response to Alameda County Environmental Health Services Letter Dated December 22, 1999, concerning Tosco (76) Service Station No. 3135, located at 845 – 66th Avenue, Oakland, California.**

Mr. Chan:

Gettler-Ryan Inc. (GR) on behalf of Tosco Marketing Company (Tosco) has prepared this letter detailing responses to questions posed in the Alameda County Environmental Health Services (ACEHS) letter dated December 22, 1999. The letter pertained to the Draft Site Conceptual Model (SCM) for Tosco (76 Products) Service Station No. 3135, located at 845 - 66th Avenue, Oakland, California. The questions raised in the ACEHS letter are shown below in italics. Our responses follow each question.

Please provide a rose diagram for the historical gradient and state the predominant or general flow direction.

A rose diagram (Figure 1) is attached to this letter and will be included in the final version of the SCM. Historical groundwater monitoring dating back to 1990 indicates multiple groundwater flow directions at the site. The predominant flow directions are toward the northeast, south-southeast, west-southwest, and north-northwest.

Please provide a map indicating the location of these potential receptors.

Two former water well fields have been identified and are located approximately 1,300 feet northeast (Damon Well Field) and approximately 1,200 feet southeast (Fitchburg Well Field) of the site. Figure 2 is a 1912 map of the two well fields, reproduced from the *Groundwater Study and Water Supply History of the East Bay Plain, Alameda and Contra Costa Counties, CA*, by Norfleet Consultants, dated June 15, 1998. The Damon Well Field, located in the area of a current City Park near Lions Creek, was shut down around 1912. The Fichburg Well Field, operated until approximately 1922, was situated in the present location of the Oakland Colusium. The locations of Lion Creek and the Oakland-Alameda Coliseum Complex are shown on the Vicinity Map (Figure 3) attached with this letter and included with the draft SCM. Currently, no operating municipal water wells have been identified in the Oakland area.

Please comment as to whether the plume has been defined in the direction of these receptors.

Based on the MTBE Isoconcentration Map (Figure 4) attached with this letter and presented in the draft SCM, the plume has been defined to the north, west and east. However, it does not appear that the plume is fully defined to the south.

It is assumed that the absence of documentation of the proper closure of these wells poses a high risk, therefore creating a Class A site. Please discuss your interpretation of these conditions.

The most recent draft Guidelines for Investigation and Cleanup of MTBE and Other Ether-Based Oxygenates (guidelines), issued on December 14, 1999, by the State Water Resources Control Board, prioritizes UST sites, which lie within a vulnerable groundwater basin. A vulnerable groundwater basin is defined as meeting one of the following four criteria: 1) Located in an area designated as having a high degree of hydrogeologic susceptibility to contamination on the statewide map of vulnerable groundwater basins; 2) Located on near surface fractured bedrock geology which is a primary water supply; 3) Located within a 1,000 foot radius of a public drinking water well; and, 4) Located above an aquifer which is a source of water supply for a community. The site does not meet criterion 2, 3, or 4, and the statewide map described in criteria 1 is not available to the public at this time.

If a site is located within a vulnerable groundwater basin, then the guidelines prioritize the site based on two factors: 1) Maximum MtBE concentration in groundwater (ppb); and, 2) Distance to drinking water well (ft). The abandoned water wells of the Fitchburg Well Field are located at least 1,000 feet away from the site, based on review of historical maps. If these historical wells were currently used for drinking water purposes, which they are not, then based on the priority class chart in the guidelines the site would be prioritized as a Class B. Since there were no drinking water wells, municipal wells, or industrial wells identified within 2,000 feet of the site, the guidelines chart prioritizes the site as a Class C.

Based upon comments by Ravi Arulanantham of the RWQCB during a University of California Extension course on Assessment and Management of MTBE-Impacted Sites held in the fall of 1999, there are no Class A sites in Oakland or San Francisco due to the fact that there are no drinking water sources exist in either area.

MTBE Isoconcentration Map denoted MTBE by 8020, not by 8260.

Figure 4 has been revised to show EPA Method 8260 results for MtBE and will be included in the final SCM.

Given the apparent widespread presence of MTBE on the site and the variable groundwater gradient, it appears that the MTBE has not been adequately defined. Please comment on this and make appropriate recommendations for additional site characterization.

MTBE has been defined to the north, east, and west of the site. It does appear that the plume has not been fully defined in the southern direction. Installation of one groundwater monitoring well in the southern area would be acceptable to Tosco if required by the ACEHS.

There have been some thoughts that the current UST system may have inherent problems causing release of MTBE vapors, which eventually manifest as soil or groundwater contamination. Please discuss the current UST system and its potential shortcomings.

The current UST system at the site is an ~~assisted~~ balanced vapor recovery system and meets all current federal, state and local standards. This system was installed using design and construction practices recognized and accepted by both the regulatory community and the UST installation industry at the time of installation.

The best and most recent study available to the public was conducted by Levine-Fricke for the Santa Clara Valley Water District (Groundwater Vulnerability Pilot Study: Investigation of MtBE Occurrence Associated with Operating UST Systems, dated July 22, 1999). This study indicates that MtBE may be released to groundwater even at service stations that are compliant with the 1998 upgrade requirements. The study found a statistically significant correlation between the occurrence of MtBE and the presence of an assisted vapor recovery system. The study also indicates that a balanced vapor recovery system did not show any correlation with the occurrence of MtBE.

If you have any questions or comments please feel free to call either of us.

Sincerely
Gettler-Ryan Inc.,

Jed A. Douglas
Project Geologist

Stephen J. Carter
Senior Geologist
R.G. 5577

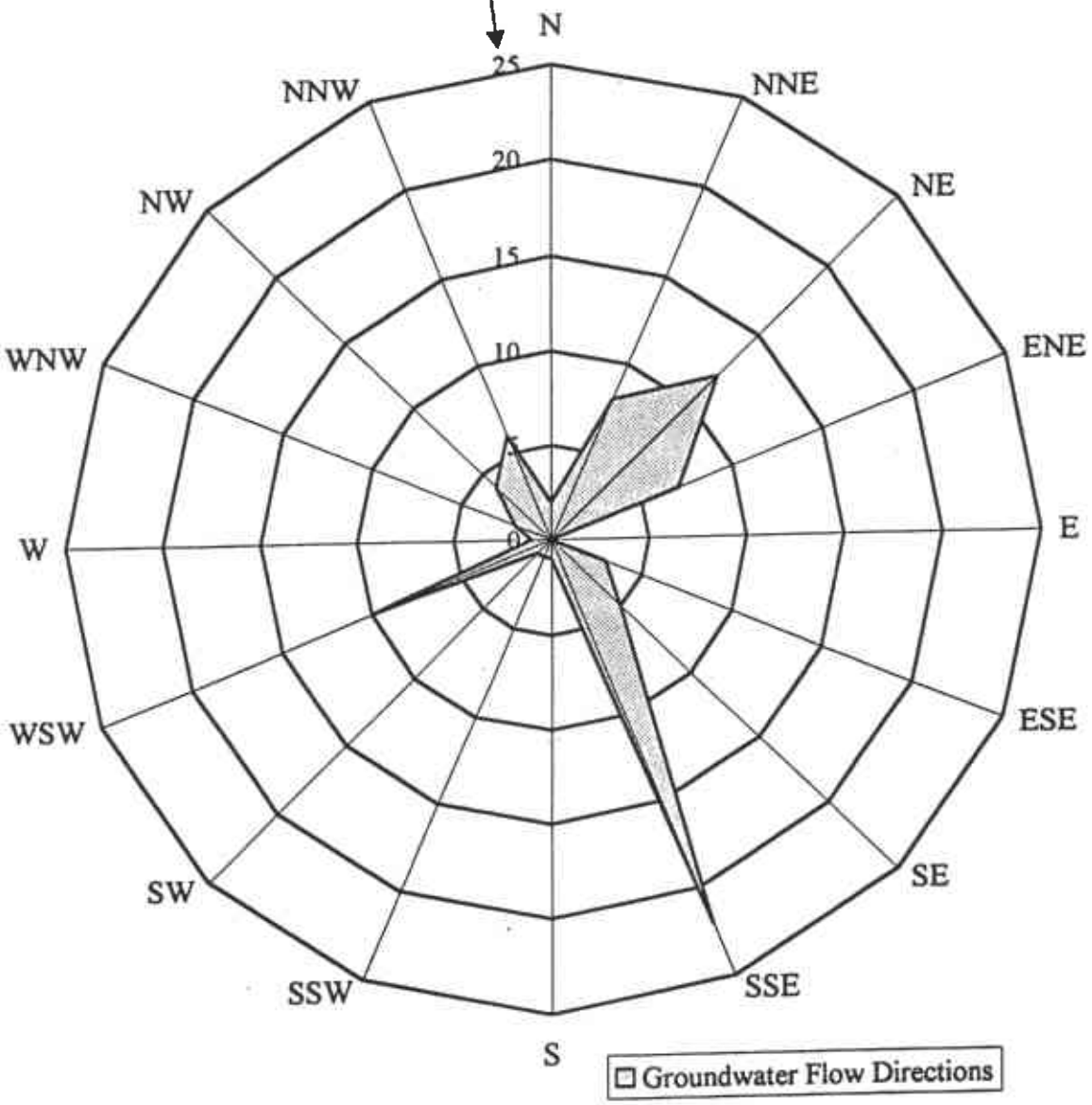
REGISTERED GEOLOGIST
STEPHEN J. CARTER
No. 5577
STATE OF CALIFORNIA

Attachments: Figure 1 - Historical Groundwater Flow Directions
Figure 2 – Fitchburg Well Field - 1912
Figure 3 – Vicinity Map
Figure 4 – MTBE Isoconcentration Map

cc: Mr. David De Witt, Tosco Marketing Company, San Ramon, California

Historical Groundwater Flow Directions for Tosco (76) Service Station No. 3135

Number of monitoring events in which groundwater was reported to flow in a particular direction.
(Note: multiple flow directions were reported during many of the historical monitoring events)



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HISTORICAL GROUNDWATER FLOW DIRECTIONS
Tosco (76) Service Station No. 3135
845 – 66th Avenue
Oakland, California

Figure **1**

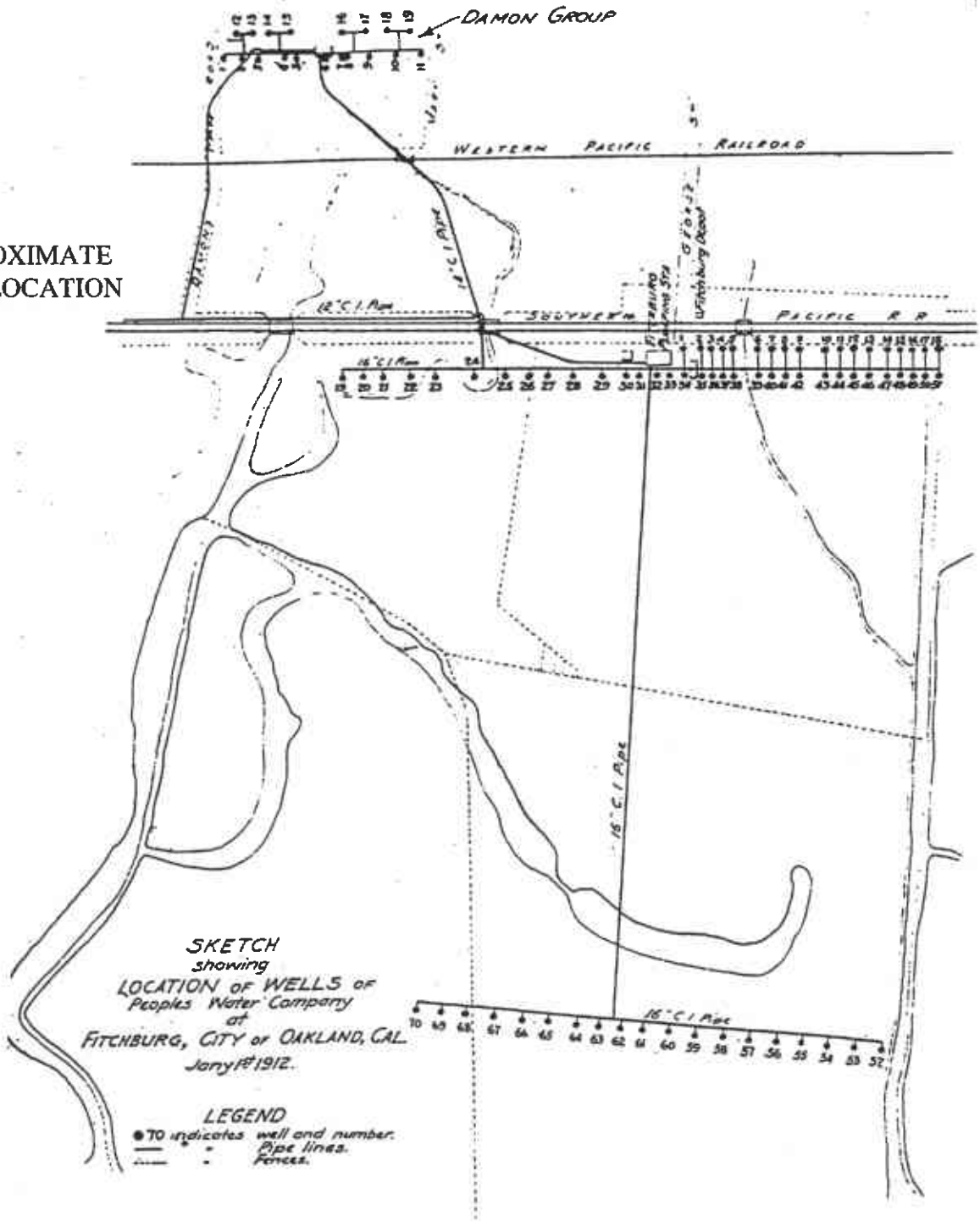
Job Number
140070.03

Date
01/00

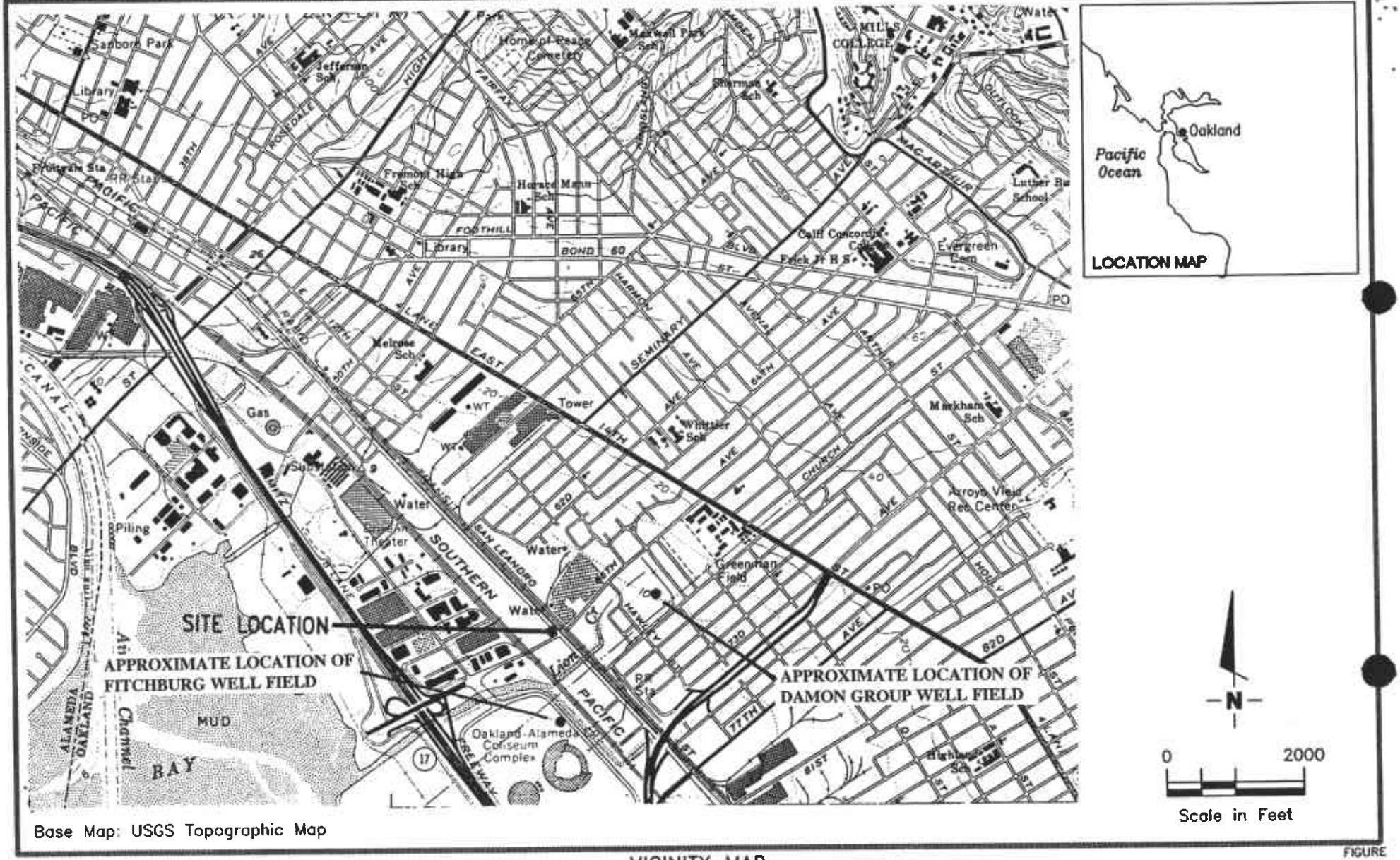
THE FITCHBURG WELL FIELD, OAKLAND - 1912

This map shows the approximate location of the wells in the Fitchburg and Damon Well Fields circa 1912. The Damon wells were shut down soon after this map was made, and is now a city park. The Fitchburg Field was active for another 20 years, and about another 30 wells were drilled. The Fitchburg Field is now the site of the Oakland Coliseum.

APPROXIMATE SITE LOCATION



Norfleet Consultants	FITCHBURG WELL FIELD - 1912		
	EAST BAY PLAIN BENEFICIAL USE STUDY		
	PROJ NO: 981102	DATE: 6/15/98	FIGURE: 2



Base Map: USGS Topographic Map

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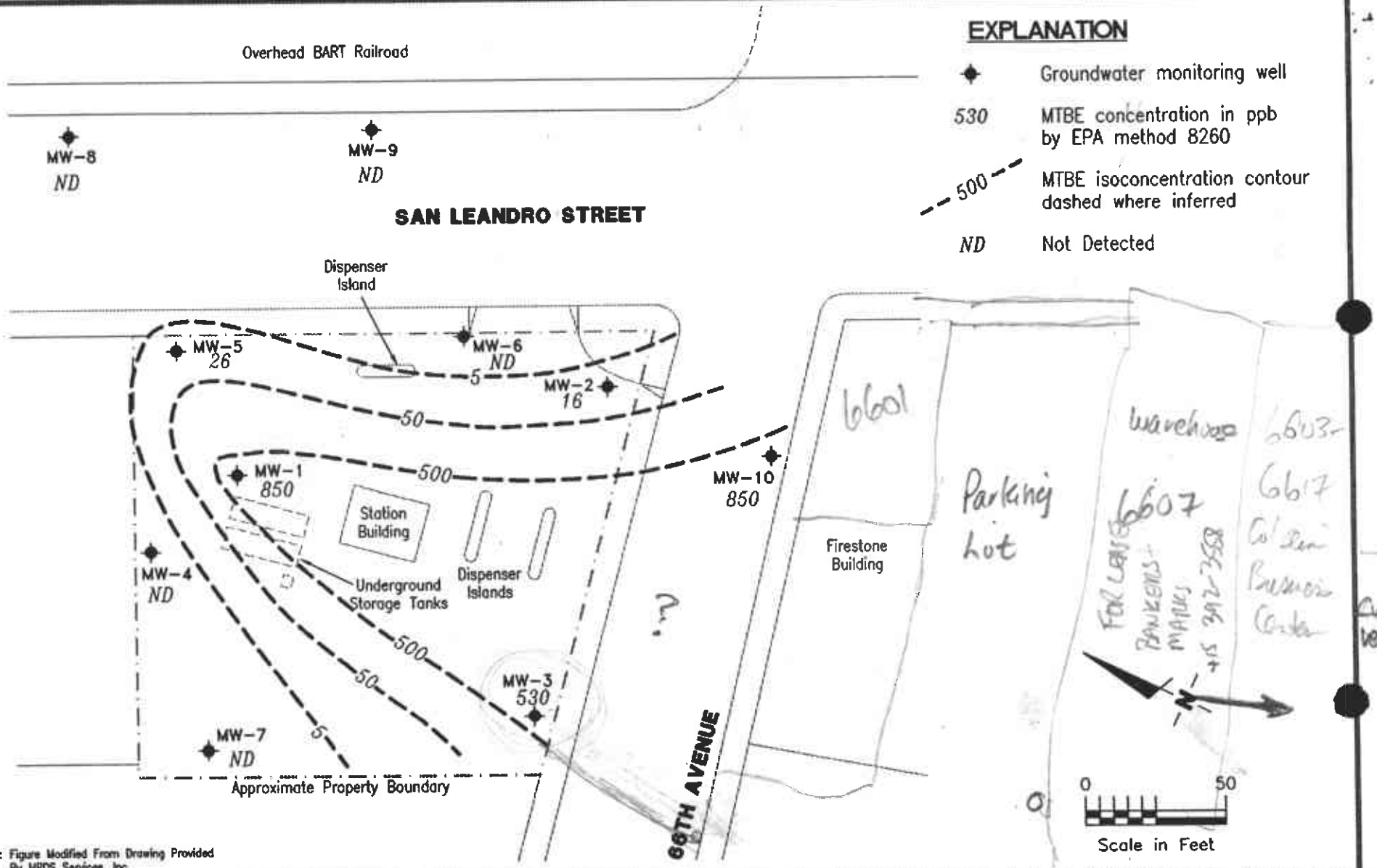
VICINITY MAP
Tosco (76) Service Station No. 3135
845 66th Avenue
Oakland, California

FIGURE
3

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
140070		12/99	



Source: Figure Modified From Drawing Provided By MPDS Services, Inc.

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MTBE ISOCONCENTRATION MAP
Tosco (76) Service Station No. 3135
845 66th Avenue
Oakland, California

FIGURE 4

JOB NUMBER 140070.03
REVIEWED BY
DATE 12/99
REVISED DATE 2/4/99 Results