SEACOR
Science & Engineering Analysis Corporation

May 3, 1993

Ms. Jennifer Eberle
Hazardous Materials Specialist
Alameda County Department of Environmental Health
80 Swan Way, Room 200
Oakland, California, 94621

4265

RE: **3924 Market Street**
Oakland, California

Dear Ms. Eberle:

This letter is written in response to our telephone conversation today regarding a groundwater investigation at the above referenced site. Attached is a site map taken from a Groundwater Technology, Inc. report depicting investigation sites in the surrounding area. The distances from the San Francisco French Bread Company (SFFB) site to the sites that have reported groundwater flow directions are marked on the map. Also attached are excerpts from the TRI-REGIONAL BOARD STAFF GUIDELINES and from the LUFT FIELD MANUAL as discussed. Under the staff guidelines flow chart methodology, a monitoring well is required in the "verified down gradient direction". The LUFT Manual states that "In some areas the water table may be known well enough to confidently determine direction of flow of the first ground water without determining the potentiometric surface at four or more points", and that a registered professional should sign a statement to that effect.

It is my opinion as a Registered Geologist in the State of California and as an experienced environmental assessor in the Bay Area that the groundwater flow direction at the SFFB site and in the immediate area is in a predominantly westerly direction. This conclusion is supported by evidence from four sites in the area, and by the regional geologic and hydrogeologic conditions as discussed in my letter dated April 13, 1993.

Science & Engineering Analysis Corporation (*SEACOR*) on behalf of the SFFB has requested approval of a work plan to install one groundwater monitoring well to the west of the former tank pit at the above referenced site. Please provide a written response detailing your decision regarding the proposed initial groundwater investigation at this site. Please call myself or Neal Farrar at (510) 686-9780 if you have any questions.

Sincerely,
Science & Engineering Analysis Corporation

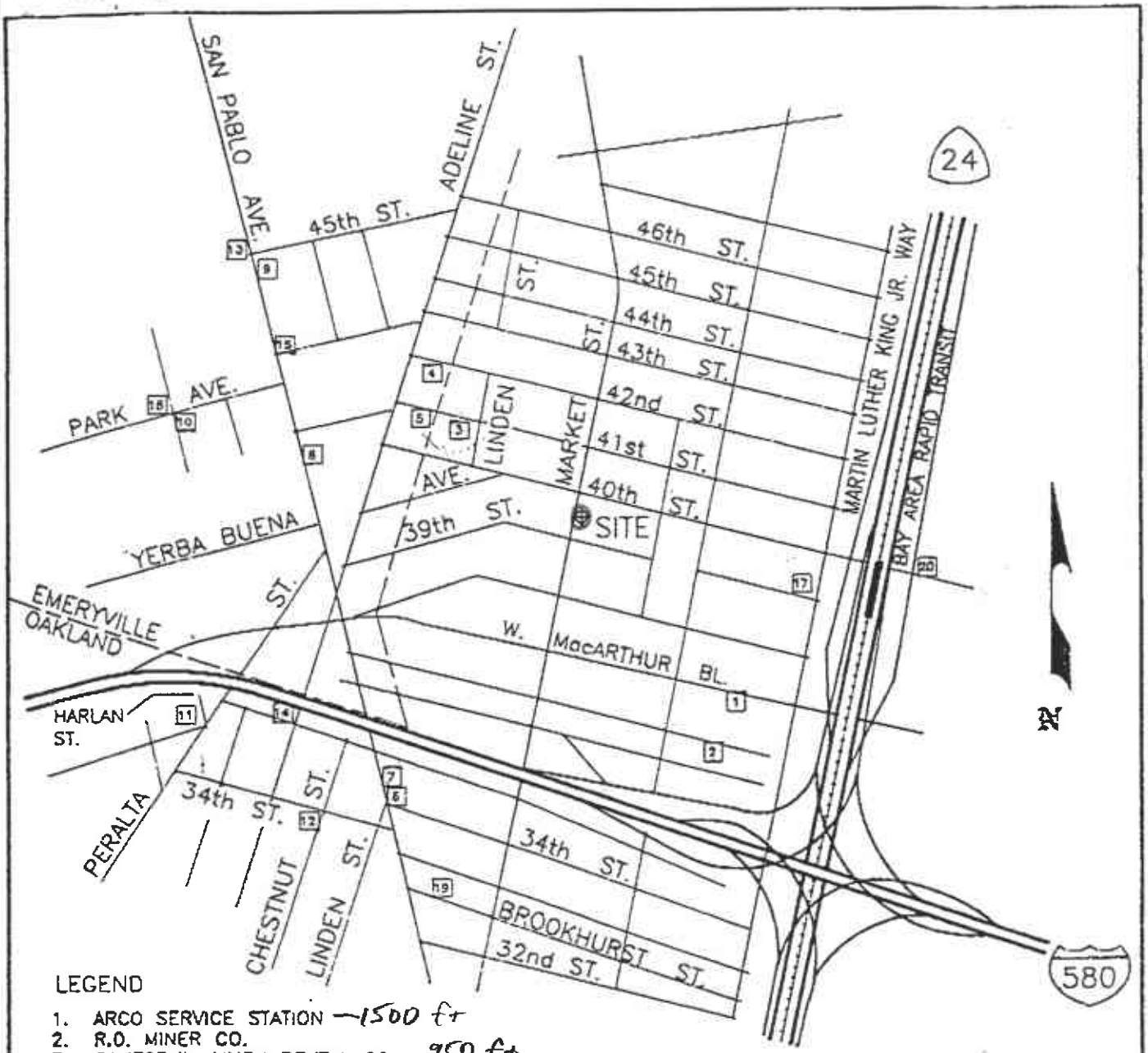
Paul D. Horton

Paul D. Horton R.G.
Principal Hydrogeologist

Attachment

cc: Peter Sher, San Francisco French Bread Co.
Rich Hiett, SFB-RWQCB

SFFBOAKL.L03
05/03/93
Job No. 70007-005-01



LEGEND

1. ARCO SERVICE STATION — 1500 ft
2. R.O. MINER CO.
3. CALIFORNIA LINEN RENTAL CO. — 950 ft
4. OAKLAND NATIONAL ENGRAVING
5. DUNNE QUALITY PAINTS
6. THRIFTY OIL SERVICE STATION
7. SHELL SERVICE STATION 2000 ft
8. SAN FRANCISCO BREAD CO.
9. A.C. TRANSIT FACILITY
10. LES PAUL
11. CITY WOOD CABINET SHOP
12. DOUGCO METAL FINISHING
13. BERKELEY FARMS
14. CITY OF PARIS CLEANERS
15. CITY OF EMERYVILLE
16. ARCO SERVICE STATION
17. JOHNNY'S AUTOMOTIVE
18. DEL MONTE
19. LOOMIS ARMORED
20. SHELL SERVICE STATION - 2250 ft

FIGURE 4
SITE VICINITY MAP

SAN FRANCISCO
FRENCH BREAD CO.
3924 MARKET ST.
OAKLAND, CALIFORNIA

GROUNDWATER TECHNOLOGY, INC.

LUFT Field Manual

velocity is important (such as sites where leaks have occurred and the source stopped in the past), or if it is necessary to proceed to a detailed investigation, then slug tests to estimate hydraulic conductivity and physical soil tests to estimate porosity may be needed. In all cases, investigations relating to gradients and direction should be made or supervised by professionals with expertise in hydrogeology and hydrology.

Caution should be exercised in drilling through contaminated zones and confining layers to avoid creating vertical conduits for contaminant spread. It may be prudent not to drill through confining layers in certain areas, or to drill only partly into them to determine their effectiveness in retarding vertical movement of fuel contaminants.

All piezometers and monitoring wells piercing contaminated zones and confining layers should be adequately sealed, as should all abandoned boreholes and ground water monitoring wells. Evaluation of the specific measures needed to determine gradients, seal borings and abandon wells should be made by an accredited professional. A Registered Geologist (R.G.) or Certified Engineering Geologist (C.E.G.) usually performs this evaluation.

Instructions

In general, a minimum of four measurements of the potentiometric surface, allowing the independent solution of four different three-point problems, should be used to determine ground water gradient. In some areas the water table may be known well enough to confidently determine direction of flow of the first ground water without determining the potentiometric surface at four or more points. However, a registered professional (R.G., C.E.G., or equivalent) should sign a statement or obtain a written statement from an appropriate water district or regional board to that effect.

There are several ways to obtain the needed information. For example, four piezometers could be installed around the tank, gradient determined, and samples collected either from the piezometers or from ground water monitoring wells placed up- and down-gradient. As another example, three monitoring wells could be installed, gradient determined, and a fourth well installed in an appropriate location to help verify gradient. Piezometers or wells arranged in the configuration of a rectangle or equilateral triangle would be

TRI - REGIONAL BOARD STAFF

RECOMMENDATIONS

FOR PRELIMINARY EVALUATION AND

INVESTIGATION OF UNDERGROUND TANK SITES

10 AUGUST 1990

Prepared by Staff of

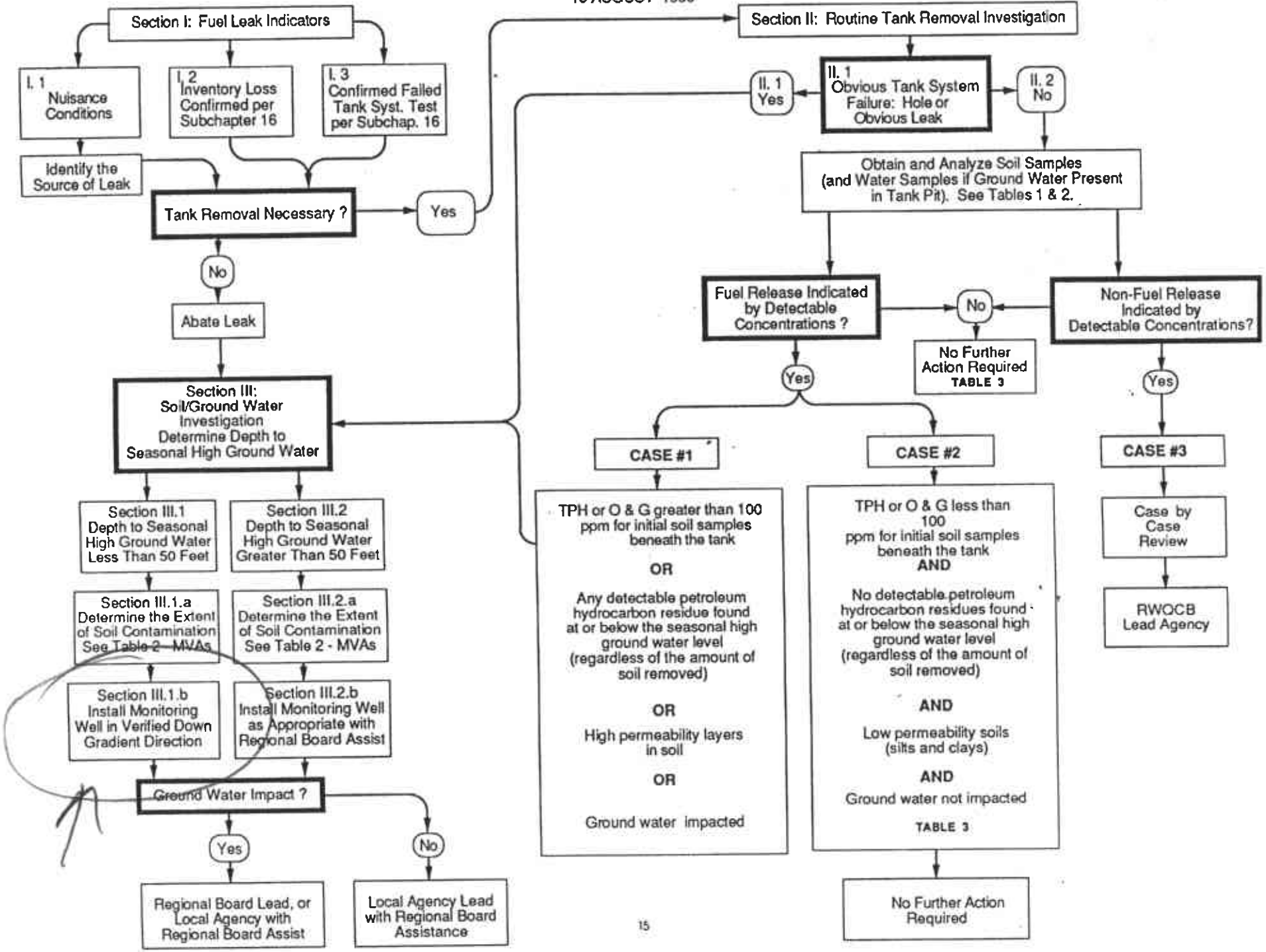
North Coast Regional Water Quality Control Board

San Francisco Bay Regional Water Quality Control Board

Central Valley Regional Water Quality Control Board

FIGURE #1 — UNDERGROUND TANK INVESTIGATION PROCESS

10 AUGUST 1990



CASE #1
Soil/Ground water Investigation Required

A soil/ground water investigation, as described in Section II.2, is required if ANY of the following conditions are found:

A. The concentration of either total petroleum hydrocarbon and/or total oil and grease is greater than 100 ppm in soil samples within the first two feet of native soil beneath the tank.

Local Implementing Agency and Regional Board experience has shown generally that large discharges are likely to have occurred when levels of contamination exceed 100 ppm in the soil.

NOTE: THE 100 PPM LEVEL IS NOT A CLEAN-UP LEVEL. THE ORIGIN OF THE 100 PPM LEVEL WAS TO DEVELOP A METHOD TO PRIORITIZE THE CASE LOAD AND INDICATE WHETHER A SIGNIFICANT VOLUME OF FUEL HAD BEEN RELEASED OR DISCHARGED. THE LEVEL OF CLEAN-UP IS TO BE DETERMINED BY ASSESSING THE POTENTIAL IMPACT OF RESIDUAL SOIL CONTAMINATION ON THE GROUND WATER. IN MANY INSTANCES IT MAY NOT BE APPROPRIATE TO LEAVE SOIL IN-PLACE WHICH IS CONTAMINATED WITH TOTAL PETROLEUM HYDROCARBONS OR OTHER COMPOUNDS AT ANY CONCENTRATION.

B. Detectable concentrations of any petroleum hydrocarbons are verified in the soil at or below the seasonal high ground water level. Sidewall samples, in addition to samples from the base of the excavation may be taken to verify that no lateral migration of the pollutants has occurred. If detectable petroleum hydrocarbons are found in these sidewall samples, then a soil/ground water investigation is required.

Ground water levels may fluctuate significantly from the wet to the dry season. The presence of contaminated soil at or below the seasonal high ground water level indicates the possibility that the ground water has or will have come into contact with this soil and thus become contaminated. Therefore, a soil/ground water investigation is appropriate.

Note: In the event the seasonal high ground water level is located in the backfill, this condition may not be applicable if the soil samples from two feet below the backfill and from the side walls show no contamination. (i.e. the contamination was restricted to backfill material only).

The following may be acceptable sources of the depth to ground water data:

- Borehole logs or monitoring well data from the site.
- Existing reports on adjacent sites which provide representative data.
- Site specific data on depth to ground water from local departments of public works, or county water studies (not California Department of Water Resources regional water table data or general U.S. Geological Survey data, etc.).

Note: Data must include information concerning the depth to first ground water during the wet season. Regional maps and other non-site specific materials may not be appropriate.

C. Detectable levels of any petroleum hydrocarbons are found in the soil sample(s) beneath the tank, within the first two feet of native soil and the soil contains layers of sand, gravel, and/or other high permeability material.

Pollutants are known to migrate rapidly through soil containing layers of sand, gravel and/or other highly permeable material (such as fractured bedrock). Therefore, Regional Board staff concur that any detectable level of petroleum hydrocarbons in soil containing high permeability layers may indicate a ground water problem and, further investigation is warranted (Section III).

D. The ground water has potentially been impacted as evidenced by detectable levels of petroleum hydrocarbons in the water sample(s) from the tank excavation.

Water samples and analyses are required when there is ground water in the tank excavation (Section III). Detectable levels of petroleum hydrocarbons in the water in the excavation are an indication that the ground water has been impacted. Therefore, a soil/ground water investigation is required.

Inconsistant Results: Interpretation of the soil samples taken at the time of tank removal are to be consistent with field observations and Tables 1 and 2. If soil samples are all nondetectable, were taken in full accordance with Tables 1 and 2, and are consistent with site observations, then no further action is required. However, if the data are in conflict, such as nondetectable results when obvious contamination was present in the backfill, an assessment of the site in accordance with the factors in Table 3 must be completed and submitted to the Regulatory Agencies for evaluation.