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LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

Letter of Transmittal

Date June 7, 1994

From Michael Stoll

Project No. 1204

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

Subject Polvorosa Business Park,
San Leandro (Alameda
County STID #4462)

The following items are: ☐ **Requested** **X Enclosed** ☐ **Sent Separately**

via Regular mail

Description	No. of Copies
Summary of Hydrogeologic Information, Viking Terminal Site, San Leandro, California, dated February 23, 1990, prepared by Levine•Fricke	1

These data are transmitted:

☐ **At your request**
☐ **For your approval**
☐ **For your review**
☐ **For your action**
X For your files
☐ **For your information**

Comments

Mr. Seery:

Attached is the final summary/report from our files.

Michael Stoll
(Signed)

1900 Powell Street, 12th Floor
Emeryville, California 94608
(510) 652-4500
Fax (510) 652-2246

Submitted 6/7/94

LEVINE·FRICKE
CONSULTING ENGINEERS AND HYDROGEOLOGISTS

February 23, 1990

LF 1204

Mr. Robert Malin
Rouse and Associates
5860 West Las Posital, Suite 21
Pleasanton, California 94588

Subject: Summary of Hydrogeologic Information
Viking Terminal Site
San Leandro, California

Dear Bob:

This Hydrogeologic Assessment Summary presents the soil and ground-water data and our opinions regarding the western 5-acre portion ("the Site") of the Polvorosa Business Park Site ("the PBPS"). The Site is located approximately 500 feet west of the northwest corner of Doolittle Drive and Polvorosa Avenue in San Leandro, California (Figure 1).

A truck terminal for Viking Freight Lines presently occupies the Site. Our review of the previous environmental and geotechnical studies on the PBPS indicated that in 1986 the previously existing terminal building on the Site had been demolished, and three underground tanks had been removed from the area at the north end of the terminal building. The tank removal activities were performed by Blaine Technical Services (BTS) in September 1986.

Samples of ground water found in the bottom of the depressions left by the removal of the waste oil and motor oil tanks from the Site were found to contain a concentration of 36 parts per million (ppm) as waste oil. Blymyer and Sons (BS) was retained by Rouse and Associates (RA) to assess the concentrations and extent of the affected ground water. BS retained Groundwater Technology, Inc. (GT) to perform this work. GT installed a total of nine wells at PBPS. One of the nine wells (MW-5 ~~and MW-11~~)? was located on the Site and another two wells (MW-7 and MW-9) were located on its eastern boundary. The wells were installed in October 1986.

Donald E. Banta Associates (DEBA) was retained by RA to drill seven exploratory borings for foundation design purposes at the PBPS to a depth of approximately 15 to 20 feet in August 1986. Four of the seven borings, namely EB-4, EB-5, EB-7, and EB-8,

1900 Powell Street, 12th Floor
Emeryville, California 94608
(415) 652-4500

Other offices in NEWPORT BEACH and OAKLAND, CA

were located on the Site. The approximate locations of the borings and wells are shown on Figure 1.

In June 1987, Hazardous Materials Mitigation Professionals (HMMP) was retained to further examine the concentrations and extent of hydrocarbons in the soil and ground water. HMMP constructed two new wells and drilled seven exploratory borings at the PBPS. One of the new wells (MW-11) was located east of the previous terminal building location at the Site (see Figure 1). Ground-water samples were collected on several occasions from the newly installed and existing wells for chemical testing. Pumping and recovery tests were performed by HMMP in June 1988 to evaluate the transmissivity and storativity of the shallow water-bearing zone.

Levine·Fricke was retained by RA in August 1988 to review the work conducted at the Site by the previous consultants, to develop and implement a program to better define the extent and amount of hydrocarbons in the ground water and soil, and to develop recommendations for remediation, if considered appropriate. Four new monitoring wells, LF-12 through LF-15, were installed by Levine·Fricke for this study at the PBPS. One of the monitoring wells (LF-15) was located on the Site. Diesel product was observed floating on the ground water in well LF-12, installed on the adjacent PBPS, approximately 100 feet east of the eastern boundary of the subject Site. The diesel product leaked from underground storage tanks and/or associated piping located in the central area of the present Buildiing C at PBPS (see Figure 1). The underground storage tanks, which consisted of four 10,000-gallon diesel tanks, two 10,000-gallon gasoline tanks, and one motor oil tank of unknown size, were removed by BTS in September 1986.

The remedial action evaluation for the PBPS that was performed by Levine·Fricke consisted of a simulation of the ground-water flow below the Site using the USGS Modular Three-Dimensional Finite-Difference Ground-Water Flow Model (MODFLOW). The effectiveness of an extraction system consisting of a single pumping well (LF-12) for removal of floating product and ground-water clean-up purposes was also evaluated. The capture zone of the extraction system for contaminant removal and aquifer remediation includes Building C and the surrounding areas, as shown on Figure 2. The findings and recommendations of the Levine·Fricke study for the Site are included in the report entitled "Report on Hydrogeologic Assessment, Polvorosa Business Park, San Leandro, California," dated November 1, 1988.

Based on recommendations of the above-mentioned report, RA installed a single-well product and ground-water extraction system at PBPS in 1989 to extract free product from the ground water. The extraction system is currently in operation. Ground

water is pumped by a total-fluids, air-powered pump through hoses to the process area where an oil-water separator is used to separate the water from the diesel oil. The diesel oil is placed in drums and the water is discharged to the sewer.

A summary of the ground-water and soil data collected from exploratory borings and wells is listed in Table 1. The Total Petroleum Hydrocarbon (TPH) in soil is shown in Figure 3.

A strong petroleum product odor was detected at a depth of approximately 8 feet in boring EB-4 (the on-site boring nearest well LF-12). No odor was detected in borings EB-5, EB-7, and EB-8.

During well installation, a slight petroleum product odor was detected in the soil at depths of approximately 6, 9, and 11 feet at wells MW-5, MW-9, and MW-7 respectively. No product odors were detected in wells MW-11 and LF-15. Laboratory analytical results indicated that there were relatively low concentrations of gasoline constituents as benzene, toluene, and xylene (BTX) at all well locations except at well LF-15. Laboratory analytical results for the water sample collected from well LF-15 indicated that Total Petroleum Hydrocarbons (TPH) and BTX were below laboratory detection limits. Table 1 summarizes the laboratory analytical results of the monitoring well water samples for BTX and TPH.

Regional Water Quality Control Board (RWQCB) guidelines regarding allowable concentrations of TPH in ground water are not published. Typically, however, the RWQCB uses the analytical detection limit of the petroleum hydrocarbon as a basis for requiring remediation or ground-water monitoring at a site after a tank has been removed. RWQCB guidelines for allowable concentrations of BTX are based on the California Department of Health Services (DHS) Action Levels for acceptable BTX concentrations in drinking water. These Action Levels are: 0.001 mg/l for benzene; 0.100 mg/l for toluene; 1.750 mg/l for xylenes; and 0.680 mg/l for ethylbenzene. Of the BTX, only benzene was detected in ground-water samples collected in 1986 from wells MW-5, MW-7, and MW-9 at concentrations above the regulatory guidelines.

Field observations and laboratory analytical results of the monitoring well ground-water samples suggest that the soil and ground water beneath the eastern boundary of the Site was marginally affected in 1986 due to the presence of diesel product

floating on the ground water in the area of well LF-12. Laboratory analytical results of the most recent ground-water sample collected from well LF-15 (in August 1988) indicated that ground water at an approximate distance of 120 feet west of the eastern boundary of the Site was not impacted.

If you have any questions, please contact me or Peng Leong.

Sincerely,

Ted Splitter, P.E.
Principal Geotechnical Engineer

TABLE 1

SOIL AND GROUND-WATER DATA SUMMARY
Polvorosa Business Park, San Leandro, California
(All results expressed in parts per million)

Sample Location	Date Sampled	Benzene	Toluene	Total Xylenes	TPH (As Diesel)	Comments
Water Sample						
LF-15	8/31/88	ND	ND	ND	ND	
MW-5	10/86	NA	NA	NA	15	
MW-5	10/28/86	0.004	0.023	0.018	NA	Very slight odor detected at about 6 feet
MW-5	10/14/86	NA	NA	NA	ND	
MW-7	10/86	0.016	ND	0.028	64	Slight hydrocarbon odor detected at 11 feet
MW-9	10/86	0.002	0.011	0.004	NA	Slight hydrocarbon odor detected at 9 feet
MW-9	10/86	NA	NA	NA	2.7	
MW-9	10/14/86	NA	NA	NA	ND	
MW-11	8/87	ND	0.00051	0.00069	1.2	No product odor or sheen detected
MW-11	11/87	ND	0.0015	0.011	NA	
Soil Sample						
MW-5	10/86	NA	NA	NA	ND	Monitoring well
MW-7	10/86	NA	NA	NA	ND	Monitoring well
MW-9	10/86	NA	NA	NA	ND	Monitoring well
EB-4	8/87	NA	NA	NA	NA	Geotechnical boring -strong odor detected approx. 8 feet
EB-5	8/87	NA	NA	NA	NA	Geotechnical boring
EB-7	7/20/87	NA	NA	NA	NA	Geotechnical boring
EB-8	7/16/86	NA	NA	NA	NA	Geotechnical boring

Notes:
ND = Not Detected
NA = Not Analyzed
TPH = Total Petroleum Hydrocarbons

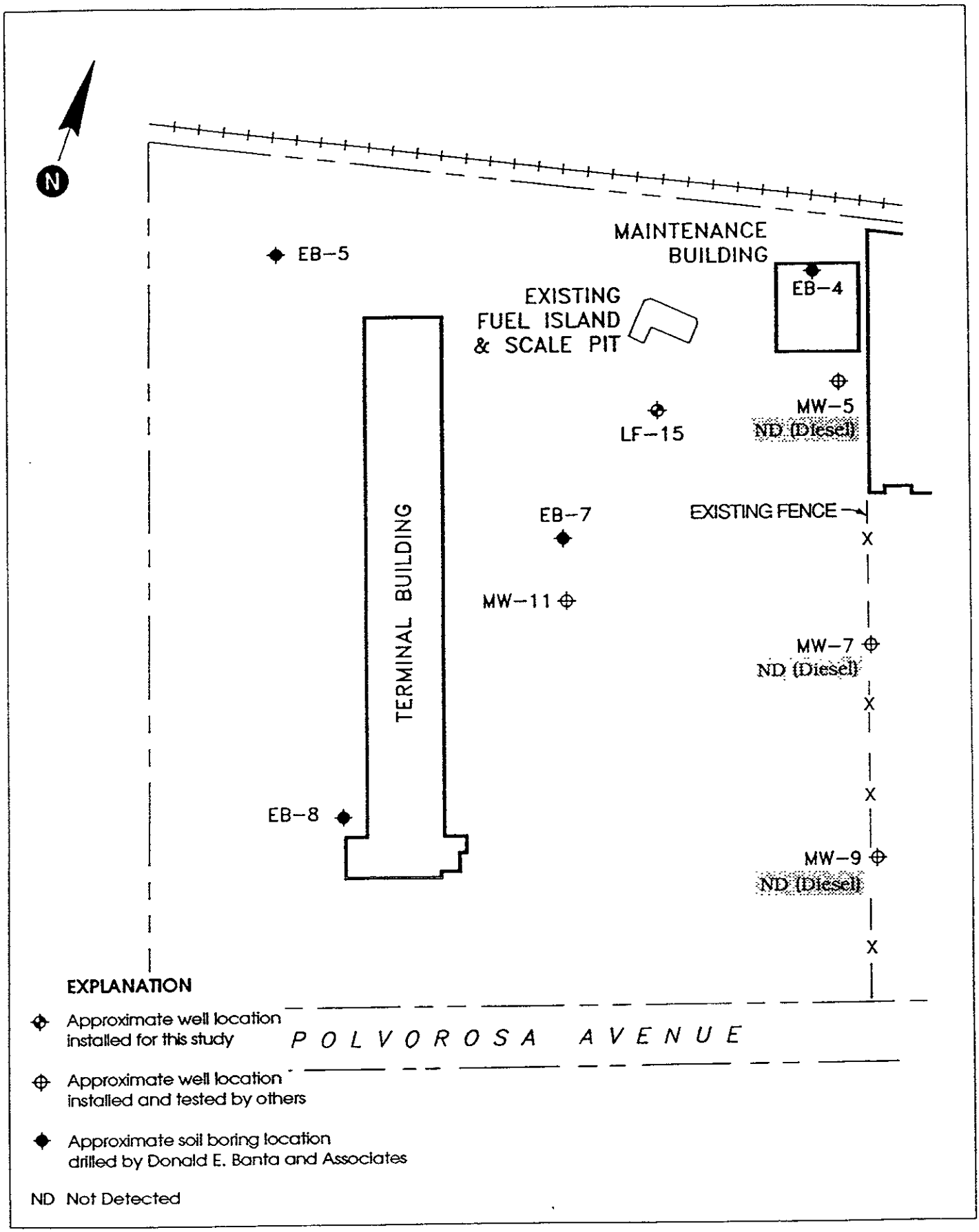

Figure 3 : TOTAL PETROLEUM HYDROCARBONS IN SOIL

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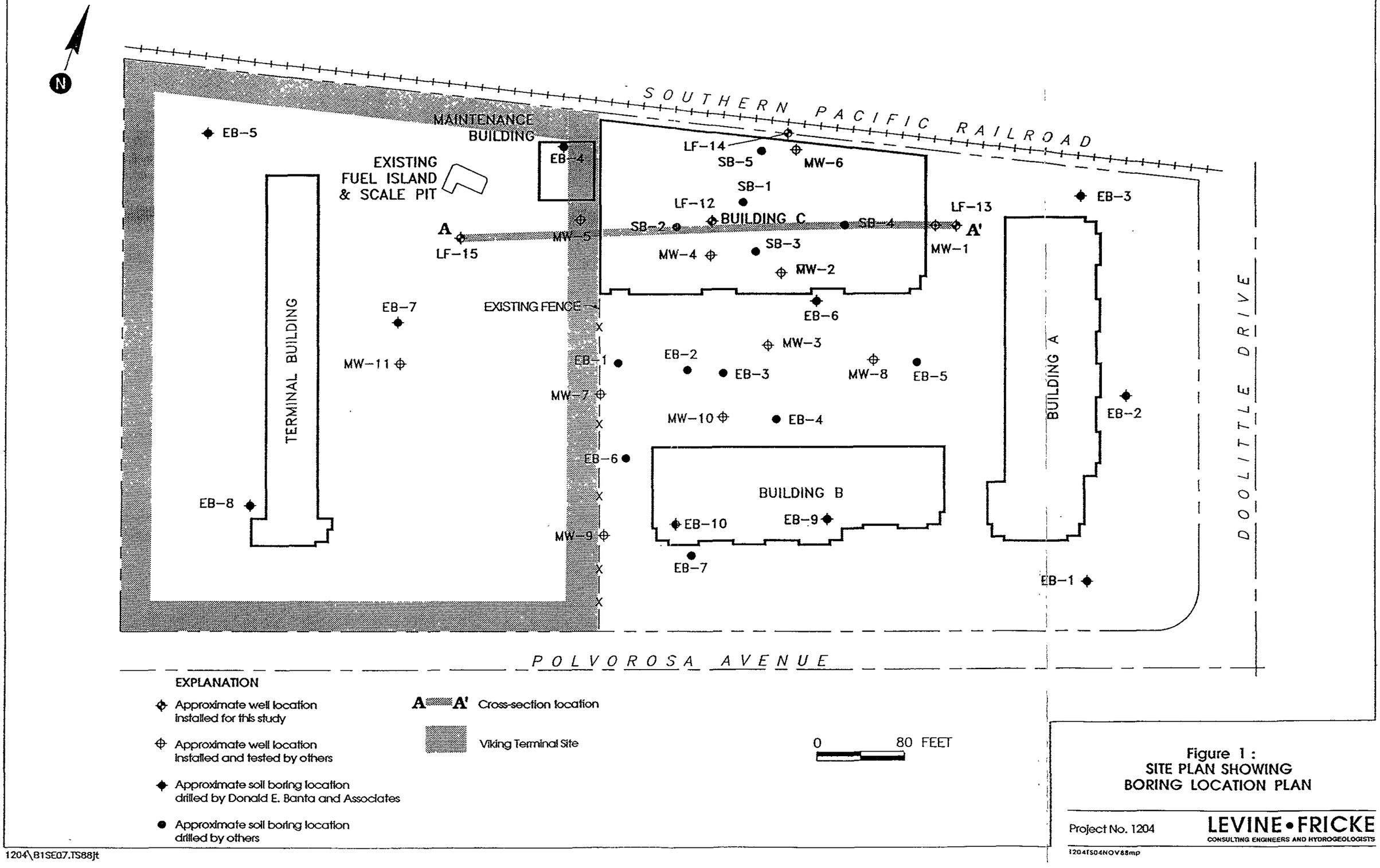

Figure 1 :
SITE PLAN SHOWING
BORING LOCATION PLAN

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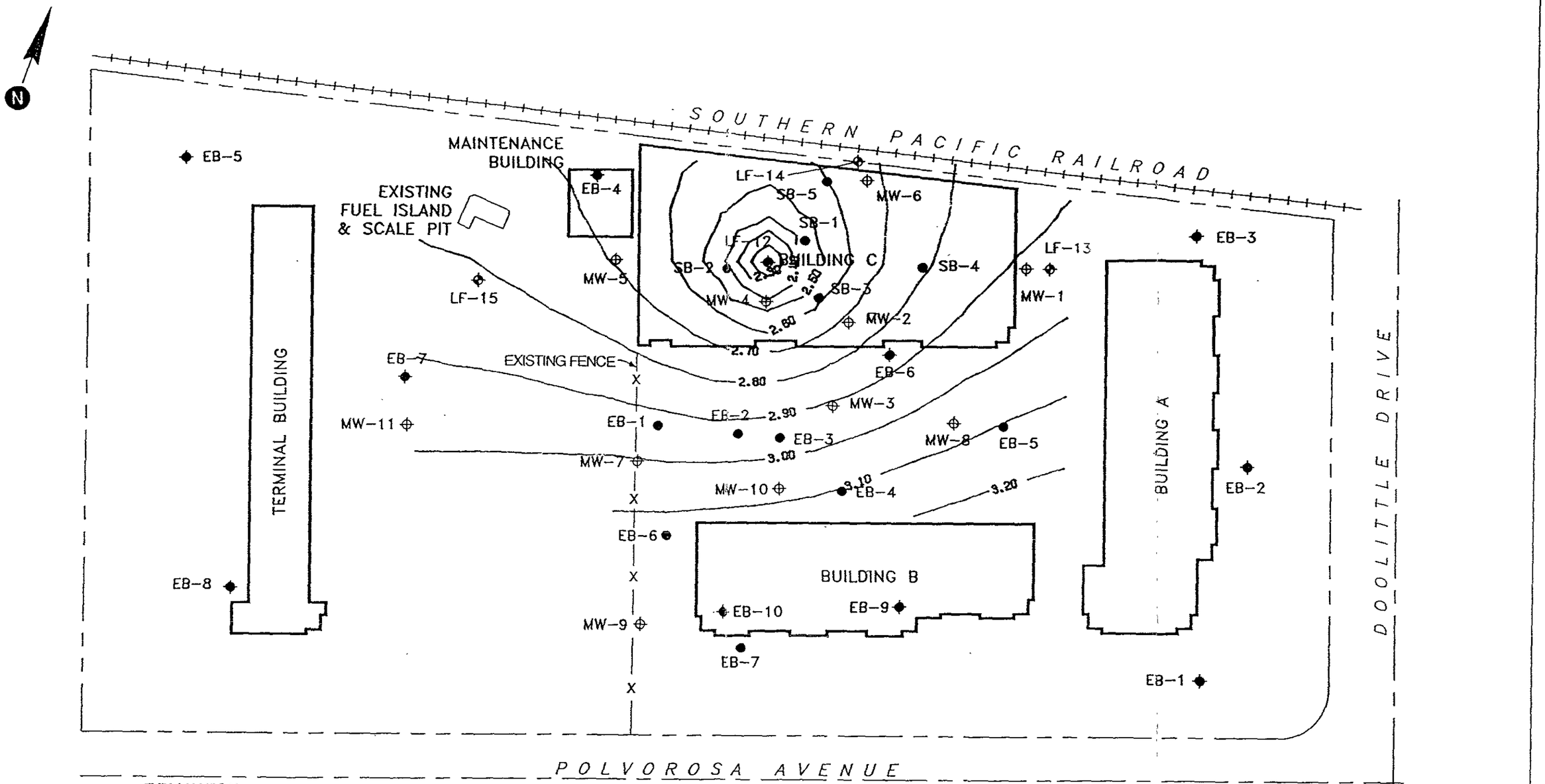

Figure 2 :
SIMULATED GROUND-WATER ELEVATION CONTOURS STEADY-STATE PUMPING AT 2 GPM

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