Chevron

April 20, 1995

Chevron U.S.A. Products Company
6001 Bollinger Canyon Rd., Bldg. L
P.O. Box 5004
San Ramon, CA 94583-0804

Site Assessment & Remediation Group
Phone (510) 842-9500

Mr. Barney Chan
Alameda County Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: **Former Signal Bulk Plant**
2001 Versailles Avenue, Alameda, CA

Dear Mr. Chan:

Enclosed is the Work Plan for Further Site Investigation dated March 13, 1995, prepared by our consultant Touchstone Developments for the above referenced site. The work plan addresses issues discussed in our meeting of December 14, 1994, regarding definition of impacted areas and evaluating whether the water bearing zone is confined or unconfined.

Specifically, the work plan proposes to install nine additional soil borings to complement the existing data set and further define the extent of known source areas. Currently, we anticipate that excavation will be the appropriate remedial strategy and this additional information will assist in defining the scope of remediation. Based on available data gathered during previous investigations, it appears that the water bearing zone beneath the site is unconfined. A more thorough discussion regarding this conclusion is contained in section 4.0 of the work plan.

We would appreciate your review of this document in a timely fashion. As you know, Chevron is eager to complete this phase of investigation and move into remedial activities during the early part of summer, 1995.

Please feel free to contact me at (510) 842-8134 should you have any questions or comments.

Sincerely,
CHEVRON U.S.A. PRODUCTS COMPANY

Mark A. Miller
Site Assessment and Remediation Engineer

Enclosure

cc: Ms. B.C. Owen

Mr. Clifford Mapes
14 Grass Valley Court
Oakland, CA 94605

Exxon Company, U.S.A.
Marketing Department
Attn.: Distribution Manager
800 Bell Street, Suite 2845
Houston, TX 77002

Mr. William J. Stack
Exxon Company, U.S.A.
800 Bell Street, Suite 4137
Houston, TX 77002

File: ABPWP1

Touchstone Developments
Environmental Management

WORK PLAN
FURTHER SITE INVESTIGATION

Former Alameda Bulk Plant
2001 Versailles Avenue
Alameda, California

prepared for

Chevron U.S.A. Products Company
P.O. Box 5004
San Ramon, California

prepared by

Touchstone Developments

MARCH 13, 1995

6280 Stoneridge Mall Rd, #B211 • Pleasanton, CA 94588 • Office Tel/Fax (510) 227-1504 • Mobile Tel/Fax (707) 953-1213

FURTHER SITE INVESTIGATION WORK PLAN

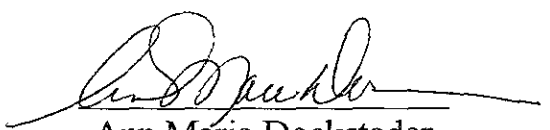
Chevron Former Alameda Bulk Facility
2001 Versailles Avenue
Alameda, California

prepared for

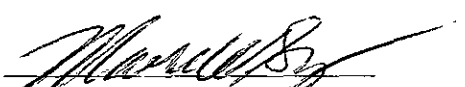
Chevron U.S.A. Products Company
P.O. Box 5004
San Ramon, California

prepared by

Touchstone Developments



Ann Marie Dockstader
Project Manager



Marc Seeley CEG #1014
Technical Review

WORK PLAN
FURTHER SITE INVESTIGATION
FORMER ALAMEDA BULK PLANT
2001 VERSAILLES AVENUE
ALAMEDA, CALIFORNIA

1.0 EXECUTIVE SUMMARY

The former Alameda Bulk Plant (also known as the King Petroleum facility) at 2001 Versailles Avenue in Alameda, California, is impacted with residual hydrocarbons in the soil. This site is intended for beneficial use with a residential development. It is anticipated that excavation and aeration will be used to remediate the site to levels acceptable to Alameda County Environmental Health Department (ACEHD) to protect groundwater and public health.

In the process of preparing the remedial action plan, available analytical site data generated from exploratory trenches and borings was reviewed to determine excavation limits. Six potential source areas have been identified. Due to the large area of this site further soil data is necessary to delineate the scope of the anticipated remediation project. Nine additional exploratory soil borings will be drilled in areas between known source areas at the site for the additional soil data collection. This work plan proposes the location and methodology for the drilling and sampling of these exploratory soil borings.

2.0 BACKGROUND

The former Alameda Bulk Plant is located within the City and County of Alameda and is bordered by Versailles Avenue on the east and Fernside Boulevard on the south. Historic use of the site (by many parties) was for bulk storage and loading of gasoline, diesel, lubrication oils and other petroleum products. The facility has been abandoned and the site is currently a vacant lot (Figure 1).

Investigation activities at this site began in 1984 (HLA, December 1994). In the late 1980's the site was closed by ACEHD based on data available at that time. The change in planned usage for the site has prompted a reexamination of subsurface conditions to determine the remediation required to allow residential occupancy.

Chevron U.S.A Products Company (Chevron) was one of many tenants of the site who used the area for storage and loading of petroleum products. Recent litigation has designated Chevron to design and implement remediation at the site with cost sharing provided by others. Chevron will be the primary liaison between Alameda County and all other responsible parties.

2.1 Site Conditions

Depth to groundwater at the site has varied from 5 to 12 feet below ground surface (bgs) based on groundwater levels measured in recently installed monitoring wells at the site. Based on analytical data from monitoring wells, groundwater does not appear to be significantly impacted

with petroleum hydrocarbons.

Lithology on-site is a mixture of sand, clay and fill materials. Bay mud is encountered at lower depths beneath groundwater. A variety of hydrocarbons have been encountered in the subsurface including gasoline, diesel, and oil and grease.

3.0 SCOPE OF WORK

The objective of this site investigation is to collect additional soil data to outline the areal limits of excavation for soil remediation. Existing soil data was examined and catalogued to determine the number and location of borings necessary to provide a more comprehensive subsurface field picture. A number of exploratory trenches and borings have previously been installed at the site (Figure 2). Nine additional exploratory soil borings are proposed (Figure 3).

3.1 Boring Locations and Rational

ACEHD is expected to propose two sets of health based remediation goals for the ultimate remediation project. The area between ground surface and 4 feet bgs, called the "root zone", will have a more conservative limit for residual hydrocarbons than the area between the root zone and groundwater. Therefore, to help define excavation limits, two soil samples will be collected from each boring, one at approximately 2.5 feet, and one in the unsaturated zone just above the soil/water interface. Only one groundwater sample will be collected from soil Boring No. 5. ok ?

The rationale for each of the exploratory soil borings proposed (Figure 3) is outlined below:

Boring 1: This boring is near a former gasoline underground storage tank (UST). Only one shallow sample has been collected and analyzed in this area for gasoline. All other characterization has been based on field observations and analytical analysis for total petroleum hydrocarbons as diesel (TPH-d) and oil and grease (O&G).

Two soil samples will be collected and analyzed for total petroleum hydrocarbons as gasoline (TPH-g), and aromatic constituents (benzene, toluene, ethylbenzene and xylene (BTEX) using EPA methods 8015/8020 modified.

Boring 2: The former ten-stall garage has not been identified as a source area at the site, however no soil samples have been collected in the western corner of the site. This boring is located up-gradient of a set of former USTs and down gradient of the garage to confirm that no hydrocarbon contamination exists in this area.

Two soil samples will be collected and analyzed for TPH-g, and BTEX, TPH-d using EPA Method 8015 modified, and O&G using EPA Method

not necessary deduct fuel CHC on 8240 Sple 47908-11.

5520 E&F. Soil samples will also be analyzed for chlorinated solvents using EPA Method 8010 and semi-volatiles using EPA Method 8270, organic lead and ICAP metals.

Boring 3: This boring is located in the former location of a concrete wash slab. Sampling here will help determine if surface contamination was generated in the use of this area. Data will also help delineate the gasoline hydrocarbon plume that is believed to exist beneath the former warehouse building and determine if the USTs to the south are also impacting this area.

Two soil samples will be collected and analyzed for TPH-g, TPH-d, O&G, and aromatic constituents (BTEX). Samples will also be analyzed for chlorinated solvents using EPA Method 8010 and semi-volatiles using EPA Method 8270, organic lead and ICAP metals.

Metals already tested

Boring 4: Soil samples from Boring No. 4 will further identify downgradient contamination from the former loading rack and a former 800 gallon spill tank.

Given the constituents of the potential sources, and the fact that a previous soil sample collected in the area showed non-detectable levels of TPH-d, the two soil samples from this boring will be collected and analyzed for TPH-g and BTEX only.

Boring 5: This sample location was selected to determine if known gasoline contamination in this area is moving off-site.

O&G was reported previously at non-detectable, but TPH-g and TPH-d have been identified in samples collected near-by. The shallow and deep soil samples collected in this location will be analyzed for TPH-g, TPH-d and aromatic constituents (BTEX). A grab groundwater sample will be collected from the completed boring to determine water quality and will be analyzed for the same constituents.

Boring 6: In previous correspondence with ACEHD concern about the manifold lines in the vicinity of Boring No. 6 have been expressed. It is believed that this plume is uncharacterized, and this boring is located to evaluate the manifold lines as a source area.

Two soil samples will be collected and analyzed for TPH-g, TPH-d, O&G, and aromatic constituents (BTEX). Samples will also be analyzed for chlorinated solvents using EPA Method 8010 and semi-volatiles using EPA Method 8270.

already done in March & June

Boring 7: This boring is located adjacent to the former warehouse and near a former used oil UST. No chemical analytical data is available in this area.

Two soil samples will be collected and analyzed for TPH-g, TPH-d, O&G, and aromatic constituents (BTEX). The samples will also be analyzed for organic lead and ICAP metals.

Boring 8: An underground spill tank and several former above-ground storage tanks were located near this proposed sample location.

Two soil samples will be collected and analyzed for TPH-g, TPH-d, and aromatic constituents (BTEX).

Boring 9: Several former above ground storage tanks were located near this boring location.

Two soil samples will be collected and analyzed for TPH-g, TPH-d, and aromatic constituents (BTEX). A near-by sample point had O&G levels of 20 ppm, therefore, it will not be resampled.

3.2 Methodology

Conventional hollow stem auger drilling methods will be used to drill the proposed borings. Eight to ten-inch outside diameter augers will be used. Soil borings will be drilled until groundwater is reached. Augers will be steam-cleaned before use in each boring to minimize cross-contamination.

Samples will be obtained at 2.5 feet bgs and approximately one foot above the soil water interface (estimated between 5 and 12 feet bgs). Some continuous sampling may be used in one of the first borings drilled to better determine where the soil/groundwater interface exists. Soil samples will be collected by advancing the boring to a point just above the sampling depth, then driving a California-modified, split spoon sampler containing brass sleeves through the hollow center of the auger into the soil. The sampler is driven 18 inches with a standard 140 pound hammer repeatedly dropped approximately 30 inches. The number of blows needed to drive the sampler for each successive 6 inches will be recorded to evaluate the relative consistency of soil. Sampling equipment will be cleaned between each use with Alconox wash and clear water rinse.

The brass sleeves containing soil samples selected for analysis will be removed from the sampler, and the ends covered with teflon tape and plastic end caps. The samples will be labeled, and promptly placed in iced storage for transport to the laboratory. Chain-of-Custody records will be maintained at the site and accompany the samples to a California State-certified laboratory for analysis.

One grab groundwater sample will be collected. Groundwater will be transferred to appropriate laboratory supplied containers for analysis. The sample will be labeled, recorded on a Chain of Custody and stored on ice prior to transport to the laboratory.

Soil cuttings and samples will be logged using the Unified Soil Classification System. The material will be screened for the presence of hydrocarbons using a photo-ionization detector (PID). The PID will be calibrated using isobutylene gas. Health and safety of the drilling and field crew will also be monitored with the PID as background levels or hydrocarbon vapors in the breathing space are monitored.

Drill cuttings will be stockpiled on-site and covered with visqueen. This method was selected due to pending excavation and treatment at the site, and is more cost effective than drumming the soil for disposal. One discrete sample will be collected for approximately every 25 cubic yards of soil generated and composited into one sample for every 100 cubic yards in the laboratory. Samples will be analyzed for TPH-g, TPH-d and BTEX. This frequency is insufficient to evaluate

After sampling is completed, each empty soil boring will be backfilled with grout tremied from total depth to ground surface. Neat cement or a cement/bentonite grout mixture will be used.

4.0 AQUIFER TESTING

During a December 1995, meeting with Alameda County, the question was raised as to whether the aquifer on-site is confined or unconfined. Such definition is necessary to determine the impact groundwater leaving the site may have to the near-by estuary.

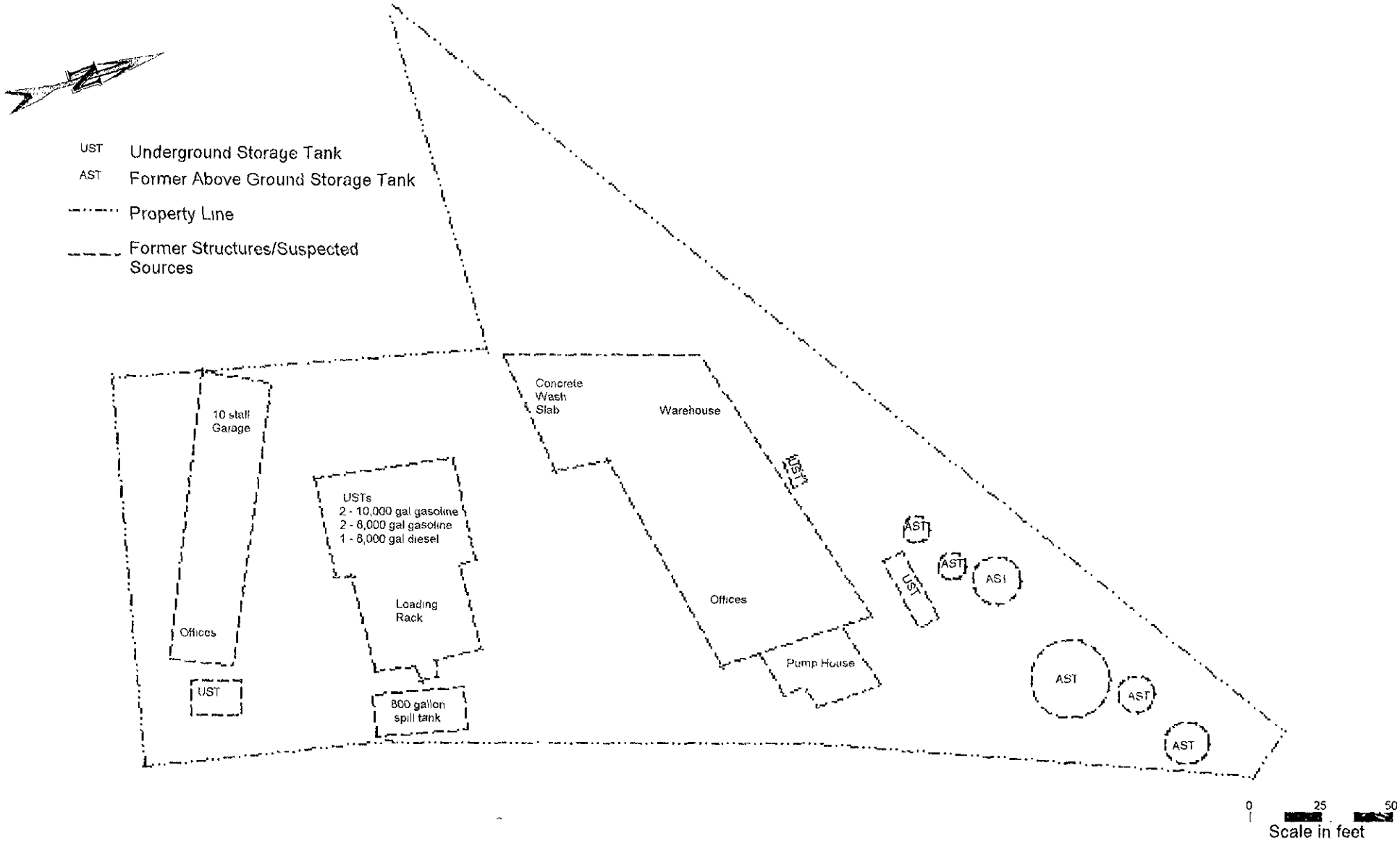
It is believed that existing site data supports the conclusion that the aquifer is unconfined. Kleinfelder installed a series of exploratory trenches and provided subsurface cross sections in their report on site findings "Preliminary Remedial Investigation Report, Former King Petroleum Property" dated November 5, 1990. The soil is predominantly sands or fill material above 5 feet bgs. The non-homogeneity of the soil above groundwater, depth to groundwater, tidal influences and the absence of an aquitard indicate that the aquifer is unconfined.

Should ACEHD require further site testing to verify this conclusion, this work plan can be amended to include a field test during exploratory soil boring drilling. The first boring drilled can be left open, and a PVC piezometer inserted into the bore hole. During field work the water level in this boring can be monitored to see if depth to water changes during the day due to tidal influence or leaching. Changes in depth to water levels over time supports the conclusion that the aquifer is unconfined (e.g. absence of an aquitard). We are not convinced, however, that such a test is necessary given the lithologic conditions.

5.0 SCHEDULE

Upon approval of this work plan, permitting of the borings will begin. It is anticipated that borings will be drilled within two weeks of receipt of applicable permits.

Evaluation of laboratory analytical results from the drilling will require approximately one month. At that time a comprehensive report will be submitted to Alameda County. A work plan for site remediation will follow soon after, with implementation planned for this summer.

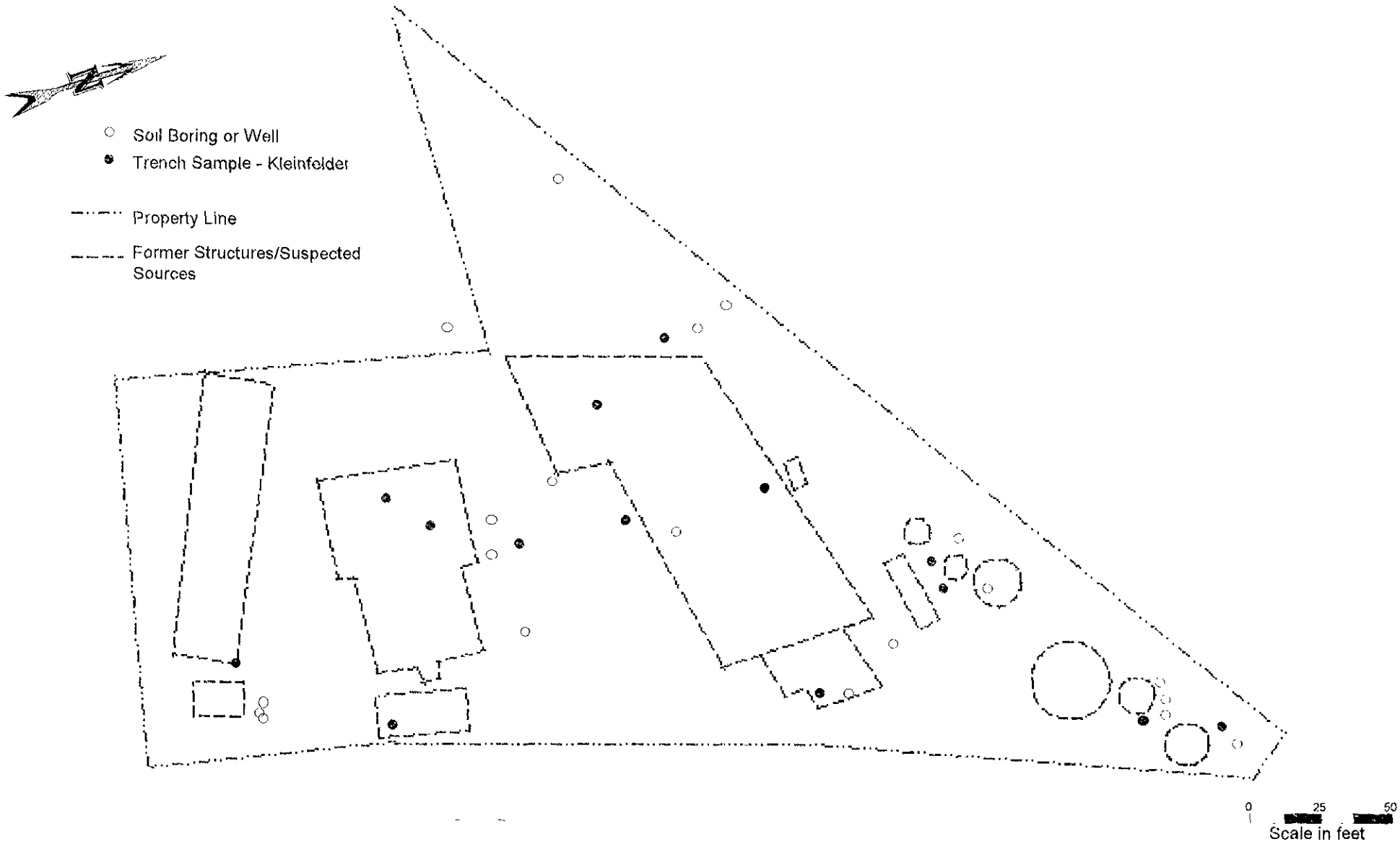


Touchstone Developments
Environmental Management

SITE PLAN
FORMER CHEVRON ALAMEDA BULK PLANT
2001 VERSAILLES AVENUE
ALAMEDA, CALIFORNIA

FIGURE
1

PROJECT NO.	DRAWN BY:	DATE	BASE MAP:
chev-1	AMD	1/95	KLEINFELDER



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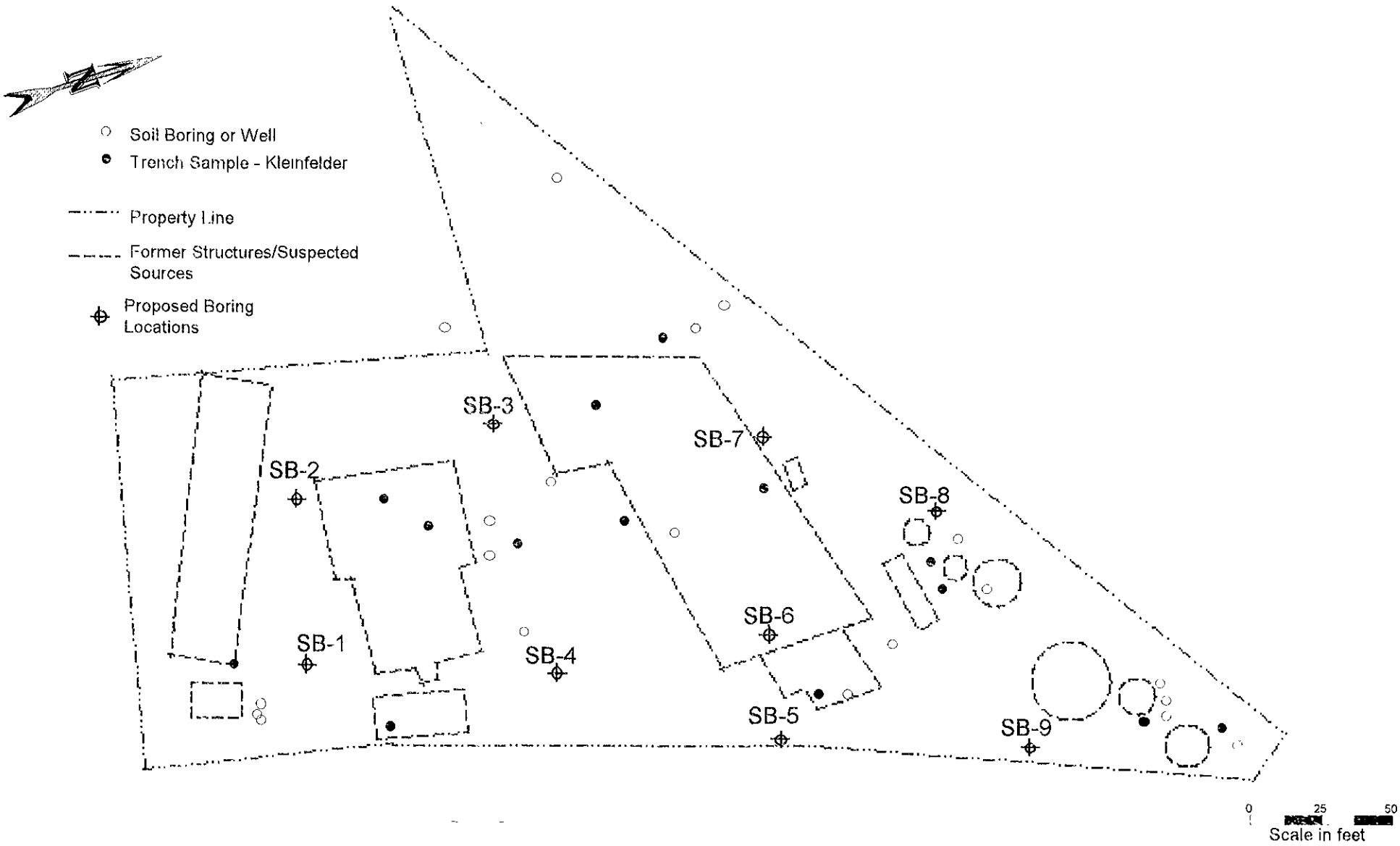
Environmental Management

EXISTING DATA POINTS AND POTENTIAL SOURCE AREAS
FORMER CHEVRON ALAMEDA BULK PLANT
2001 VERSAILLES AVENUE
ALAMEDA, CALIFORNIA

FIGURE
2

PROJECT NO.	DRAWN BY:	DATE	BASE MAP:
chev-1	AMD	1/95	KLEINFELDER



Touchstone Developments
Environmental Management

PROPOSED BORING LOCATIONS
FORMER CHEVRON ALAMEDA BULK PLANT
2001 VERSAILLES AVENUE
ALAMEDA, CALIFORNIA

FIGURE
3

PROJECT NO.	DRAWN BY:	DATE	BASE MAP:
chev-1	AMD	1/95	KLEINFELDER