



August 2, 1991

Workplan / Proposal
for a

PRELIMINARY SITE ASSESSMENT

at

**CLARK'S WOODWORKING
2620 NORBRIDGE AVE.
CASTRO VALLEY, CA**



Submitted by:

Aqua Science Engineers
1041 Shary Circle
Concord, Ca. 94518
(510) 685-6700



Sept. 10, 1991

Mr. Scott Seery
Alameda County Health Care Services
80 Swan Way
Oakland, Ca. 94621

**Re: Workplan / Proposal for Preliminary Site Investigation at
Clark's Woodworking, 2620 Norbridge Ave., Castro Valley, Ca.**

Dear Mr. Seery,

Attached please find the workplan for the above referenced site. Field activities will be initiated within 2 weeks of review and approval. Please call me with your questions and concerns.

Respectfully,
Aqua Science Engineers, Inc.

Greg Gouvea
Project Manager

attach.

91 SEP 24 11:04



Mr. Larry Clark
Clark's Woodworking
2620 Norbridge Ave.
Castro Valley, Ca. 94546

Re: Workplan-Proposal for Soil and Groundwater Investigation Services
at Clark's Woodworking, 2620 Norbridge Ave., Castro Valley, Ca.

Dear Mr. Clark,

The following is Aqua Science Engineers' workplan-proposal for a preliminary site assessment to be conducted at the site referenced above. The scope of work was developed from the Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites of August 10, 1990. The format for the proposal is from the Appendix A workplan for Initial Subsurface Investigation, Proposal Format attachment to the referenced document. The scope of work is designed to help delineate the vertical extent of soil and groundwater contamination, as per Alameda County Health Care Services correspondence.

I. Introduction

A. Statement of Work Scope:

A preliminary site investigation is to be conducted at Clark's Woodworking, 2620 Norbridge Ave., Castro Valley, Ca. ("the site"), as a result of previous investigative activities and findings. The proposed site assessment activities have been mandated by correspondence from the Alameda County Health Care Services Agency. The letter requires that a soil/groundwater investigation be implemented, as described in the August 10, 1990 Tri-Regional Board document. ASE proposes the drilling, installation, soil sampling and analysis, development, sampling and analysis of one groundwater monitoring well. Prior to commencement of field activities, this workplan will be approved by Alameda County Health Care Services, and a well permit will be obtained from the Alameda County Flood Control and Water Conservation District, Zone 7.

Clark's Woodworking - August 2, 1991

B. Site Location

The site is located on the southern side of Norbridge Ave., less than 1/4 mile south of Interstate 580, in Castro Valley, Ca. (Figure 1). The majority of the site is covered with pavement and a single building. The topography of the surrounding area slopes moderately to the south.

C,D. Background and Site History

Clark's Woodworking is a cabinet manufacturing facility. A single 550 gallon underground fuel storage tank was installed in the early 1970's just behind the building. The dispenser existed directly over the tank. In March, 1991, Aqua Science Engineers, Inc., supervised and documented the excavation, removal, and disposal of the tank, as well as the soil sampling and analysis.

Two soil samples were obtained from native materials beneath the tank. One sample was obtained from about six feet depth below grade (SS-1, 6'), and a second sample from 11 feet depth (SS-2, 11') after further excavation of malodorous soils. Both samples were analyzed for TPH as gasoline, BTEX, and organic lead. SS-1, 6' showed 1,000 ppm TPH as gas with BTEX constituents present in the ppm range. SS-2, 11' contained 1.2 ppm TPH as gas with significantly reduced levels of BTEX. Organic lead was distinctly absent from both samples (Table 1).

Table 1
Soil Sample Analytical Results

Soil Sample Id	TPH mg/kg	benzene ug/kg	toluene ug/kg	ethylbenzene ug/kg	xylenes ug/kg
SS-1,6'	1000	16000	24000	13000	25000
SS-2,11'	1.2	440	21	17	9.3

II. Site Description:

A. Vicinity Description and Hydrogeologic Setting:

The site rests on consolidated Cretaceous sedimentary rocks of the Panoche or Knoxville formations. The site lies between the Hayward Fault, 1/2 mile to the west, and the East Chabot Fault, 1/4 mile to the east. Shallow groundwater is expected within the first 15-20 feet depth below grade at the site.

B,C. Vicinity, Site Maps:

Please see Figures 1 and 2 for maps showing appropriate features.

D. Existing Soil Contamination and Excavation:

Soils and consolidated rock materials which were previously sampled indicated gasoline contamination in the immediate vicinity of the removed fuel facility. Levels of contamination detected were significant directly beneath the tank, and diminished greatly within a few feet further down.

III. Plan for Determining the Extent of Soil Contamination On Site:

The plan for site investigation/remediation includes hollow stem auger drilling, soil sampling and analysis, monitoring well construction, development, and groundwater sampling and analysis..

A. Describe Method/Technique For Determining Extent of Contamination Within the Excavation:

The focus of this investigation is to determine the possible presence of gasoline contamination in soils and groundwater at some distance away from the excavation, which is known to contain gasoline contaminated soils.

B. Describe Sampling Methods and Procedures:

Boring Methods, Numbers, Locations, Abandonment:

To determine whether groundwater and site soils have been impacted by gasoline contamination, one boring is proposed. The boring will be converted into a groundwater monitoring well (MW-1). A Mobile Drill B-57 hydraulic rotary drill with 4 1/4" I.D. by 8" O.D. hollow stem augers will be used. Drilling will proceed to first encountered groundwater plus 5 to 10 feet, with an expected maximum of 30 feet depth.

MW-1 will be emplaced within 10 feet and to the west of the tankpit (Figure 2).

Soil Classification and Sampling Methods:

Each boring will be continuously logged on site by a geologist using the Unified Soil Classification System. Undisturbed soil samples will be taken at 2.5 foot intervals, starting at one foot depth, with a hammer driven California Modified split spoon sampler. The samples will be collected for visual classification and chemical analysis. All sampling equipment will be cleaned in buckets with brushes and a TSP or Alconox solution, then rinsed twice with tap water. Upon encountering free product, samplers will be steam cleaned between uses. The drill rig and augers will be steam cleaned between wells and on site before departure. Rinsates will be contained on site in drums.

C. Describe Methods/Criteria for Screening Soil and Storing Soil:

Soil samples obtained during drilling will be screened in the field via sensory perceptions.

Cuttings generated during drilling will be stored on site, on plastic sheeting, and covered with plastic sheeting. On site treatment or off site disposal of any soils is not included in this proposal. It is likely that a hazardous waste hauler will be required to transport the soils as hazardous waste, under appropriate manifests.

D. Security Measures:

The site is currently fenced around the entire perimeter. A working area will be established with barricades and warning tape around the drill rig and well location. Within the working area only authorized personnel will be allowed.

IV. Plan For Determining Groundwater Contamination:

A. Placement and Rational for Monitoring Well Placement

The well is located near the tankpit at a location which may well be down gradient from the tankpit.

B. Monitoring Well Drilling and Installation Specs.:

The monitoring well will be drilled and installed using equipment described above. The well will be constructed of 2 inch flush threaded schedule 40 PVC casing, with up to 15 feet of .01" or .02" factory slotted well screen. The top of the well screen will extend up to 3 feet above encountered water level to account for seasonal fluctuations (Figure 3). The well casing be inserted through the augers to a point a few inches above hole bottom where it will be suspended until the well is secured within the sand pack. Sand (#2 or #3) will be poured through the augers in one to two foot lifts up to about two feet above the top of the perforated casing. One to two feet of bentonite pellets will be placed above the sand, and activated with tap water. The seal will be finished up to the surface with tremmied cement/bentonite grout. A locking top cap and a flush mounted watertight well cover will be installed.

C. Groundwater Sampling Plans:

The well will be developed by swabbing, bailing, and airlift pumping of water into a tank or drums until the water appears to be reasonably clear or until pH, conductivity, and temperature readings obtained from the groundwater stabilize. The water's clearness is a subjective determination.

Groundwater will be checked for sheen and free product prior to purging and sampling. Free product and sheen will be measured with either an interface probe which will measure the thickness of petroleum product, or an acrylic bailer which will be lowered slowly to the groundwater surface and filled about half full for direct observation. Water level measurements and production testing will be conducted.

V. Site Safety:

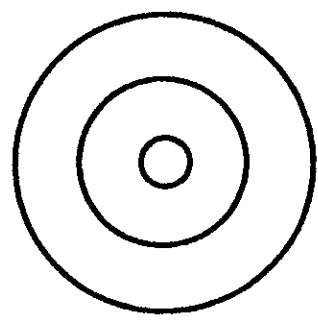
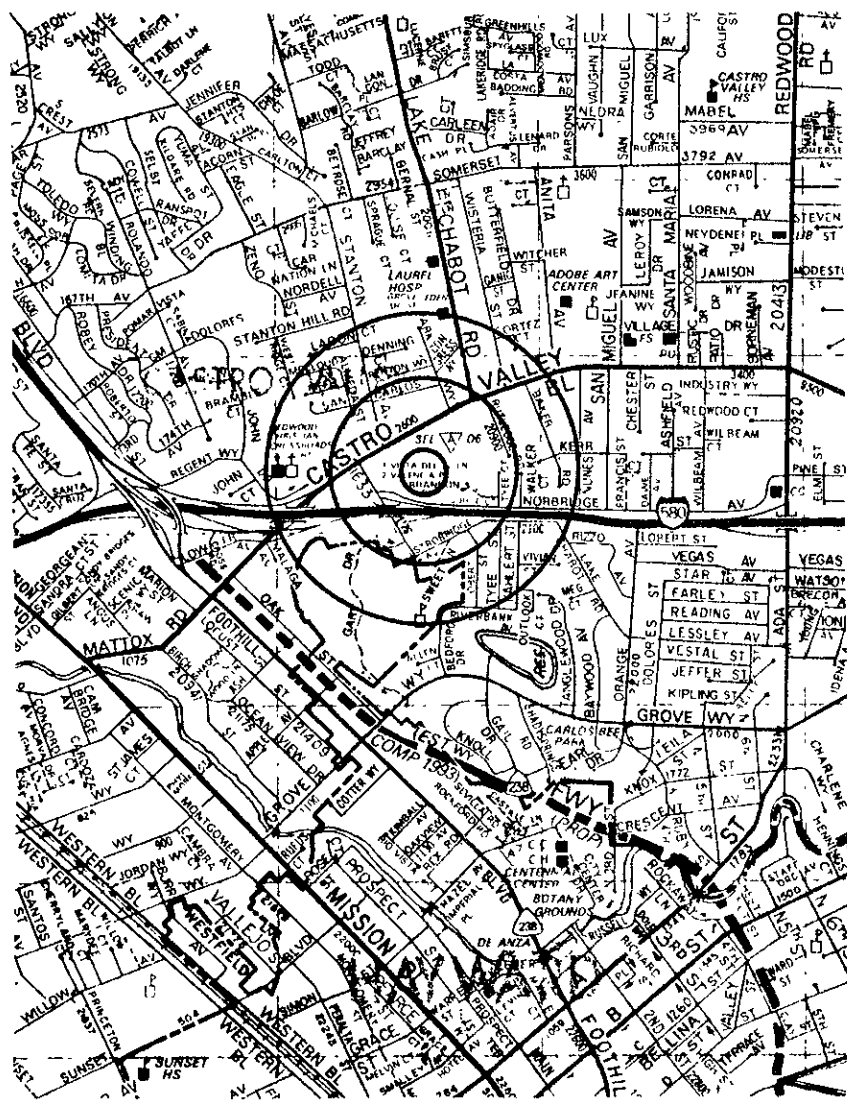
Prior to commencement of field activities, a site safety meeting will be held at a designated command post near the working area. Emergency procedures will be outlined at this meeting. The hazards of the known or suspected chemicals of interest will be explained. Level D personal protection is the anticipated maximum amount of protection needed. A site safety plan which conforms to Part 1910.120 (i) (2) of 29 CFR will be on site at all times during performance of this project.

A working area will be established with barricades and warning tape to delineate the zone where hard hats and steel toed shoes must be worn, and where unauthorized personnel will not be allowed. If, during drilling, fuel product odors are deemed to be substantial, half face respirators with organic vapor cartridges will be worn.

A nearby hospital will be designated in the site safety plan as the emergency medical facility of first choice. A map with a course plotted to the hospital will be on site.

Reporting

A complete and final report of methods, findings, and conclusions from work proposed herein will be submitted to the client for forwarding to the appropriate agencies. The report will be submitted under the seal of a State Registered Civil Engineer, Mr. David Schultz (#38738). Mr. Schultz has implemented hundreds of tank removal, site investigation, and remediation projects for ASE since our inception as a company in 1982.



denotes site location

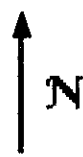
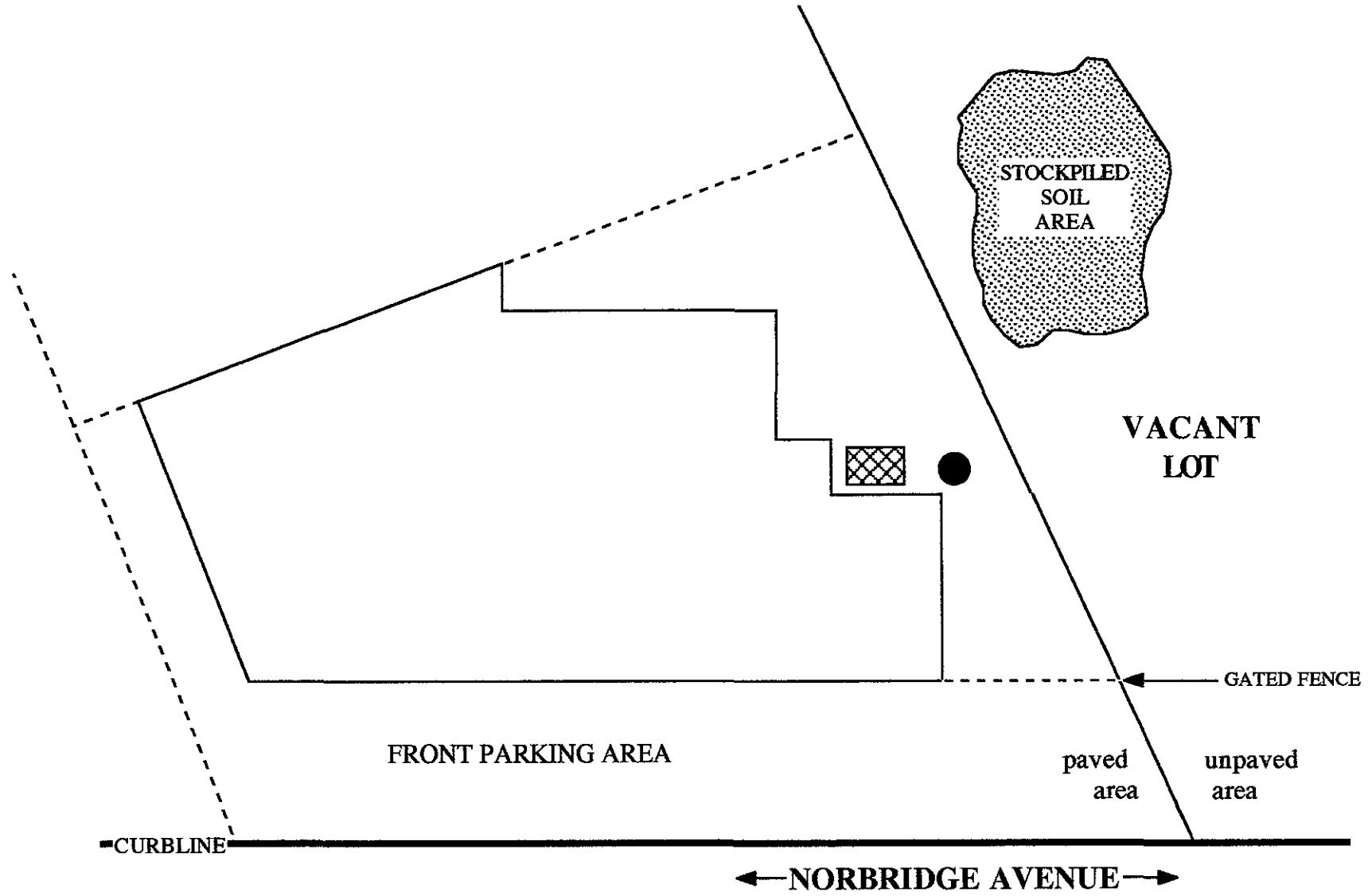




Figure 1
 Site Location Map
 2620 Norbridge Ave.,
 Castro Valley, Ca.
 Aqua Science Engineers, Inc.
 1 inch = approx. 2,200 feet
 after Thomas Bros., 1988



AQUA SCIENCE ENGINEERS
 Facility & Site Layout Diagram
CLARK'S WOODWORKING
 2620 Norbridge Ave.
 Castro Valley, CA
 — FIGURE TWO —

APPROX.
 SCALE : 1"=20'



-  - TANK LOCATION
-  - PROPOSED MONITOR WELL LOCATION