ARTESIAN ENVIRONMENTAL CONSULTANTS

June 7, 1993

Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
UST Local Oversight Program
80 Swan Way, Rm. 200
Oakland, CA 94621

Re: Soil Remediation Workplan
4341 Howard Street
Oakland, California 94601
Formerly, El Monte RV Center

Dear Mr. Chan,

Enclosed please find the proposed workplan for the 4341 Howard Street, Oakland, California site. If this workplan meets with your approval we will begin work at this site as soon as we are given notice to proceed by your department.

Should you have any questions or comments, please do not hesitate to call me at (415) 257-4801.

Sincerely,

Darrell Taylor
Geologist

Oct 6, 1993 Report - mw installation

3175 Kerner Blvd., Suite E • San Rafael, CA 94901 • TEL 415.257-4801 • FAX 415. 257-4805

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Oakland, California 94601
Formerly, El Monte RV Center

Dear Mr. Chan,

Artesian Environmental Consultants (Artesian) is pleased to present this proposal and site safety plan to you regarding soil remediation on 4341 Howard Street, Oakland California. Artesian has been retained by Mr. Jim Minor. Artesian Environmental Consultants is a state licensed general engineering contractor (CA: A, Haz Waste, C-57: 624461).

INTRODUCTION

This work plan presents the proposed activities by Artesian Environmental Consultants, (Artesian) at 4341 Howard Street, Oakland, California (Figures 1 and 2). The purpose of the project is to clean-up contaminated soil identified during the removal of a 1,000 gallon underground gasoline tank on this property.

Groundwater depth is expected to be within 10 feet below ground surface (bgs). The depth of the former tank pit was 8 feet bgs. The depth of the excavation will be approximately 10 feet bgs . The summary of the scope of work is listed below:

Scope of Work

Soil Remediation

1. Prepare a workplan and site safety plan.

2. Using an backhoe, remove gasoline contaminated soil to a depth of approximately 10 feet bgs in the vicinity of the former 1,000 gallon tank. Overexcavate radially until clean native soil is encountered, at which point clearance samples will be taken.

3. Transport samples to a State certified laboratory under chain of custody documentation for analysis.

4. Supervise the filling of the excavation with clean fill and compact to proper compaction.

5. If the total amount of contaminated soil is deemed small it will be transported directly to a State approved Class I disposal facility. If excessive yardage warrants, the excavated soil will first be bioremediated before transportation to a State approved Class III disposal facility.

6. Install one groundwater monitoring well within ten feet of the excavation in the downgradient direction. The downgradient direction will be determined by wells which are located on the neighboring property located just west of the site property. Cobble ditch Kibbe

7. Document the field activities, review laboratory data and prepare a report of the soil remediation and groundwater well installation.

3175 Kerner Blvd., Suite E · San Rafael, CA · 94901 · (415) 257-4801 · FAX (415) 257-4805

BACKGROUND

Site Setting

The project site is located within the city limits of Oakland, Alameda County, California. The site is surrounded by industrial properties. The site is located two blocks west of the Nimitz Freeway, and one block south of High Street (Figure 1).

Previous Work

On November 15, 1991 Zaccor Corporation of Menlo Park, California removed one underground storage tank (UST) from the property at 4341 Howard Street, in Oakland, California. The tank had a capacity of 1,000 gallons. The tank contained gasoline.

The soil samples TP-1 and TP-2 collected from underneath the tank (8' bgs) contained total petroleum hydrocarbons as gasoline at 8,200 parts per million (ppm) and 140 ppm respectively. The tank did not appear to have any holes in it, although rust and pitting was noted and the soil in the excavation was described as having a hydrocarbon odor.

SOIL REMEDIATION

Site Safety Plan

The site safety plan has been prepared (Attachment A) and will be on-site during all field activities. All persons in the decontamination area will be signed in on the site safety forms and informed of the safety regulations on site. Underground Service Alert (USA) will be notified to identify underground utilities and other possible subsurface obstacles. An underground line locating survey will be performed in the vicinity of the proposed subsurface activities.

Soil Excavation

Soil containing gasoline in the former tank area will be removed using a backhoe. The soils will be excavated to approximately 10 feet below ground surface. Groundwater depth is assumed to be at 10 feet bgs. For safety purposes, an organic vapor meter will be used in the field to detect the lighter ends of gasoline (BTEX) in the breathing zone and respiratory safety equipment will be on hand in the event it is needed.

Soils will be visually isolated and segregated in the field for staining and discoloration and field screened with a photo ionization detector. Artesian will document the soil removal process with field reports and photographs. After the removal of soil having obvious staining, discoloration or odor, confirmatory soil samples will be collected as follows: one sample in the base of the former tank pit, two soil samples in opposite walls at the maximum depth of the over-excavated area. Additional samples may be selected on the recommendation of the geologist and regulator. All sampling will be performed according to the Standard Operating Procedures in Attachment B.

Confirmation Soil Samples

Soil samples will be sent to Chromalab, Inc. of San Ramon, California, a state-certified hazardous materials testing laboratory. Soils will be analyzed for total petroleum hydrocarbons (TPH-g) by EPA Method 8015 and BTEX by EPA Method 8020, and one total lead analysis by flame AA. Composite of 4.

Soils from the excavation will be placed onto plastic sheeting. Soil stockpiles will be sampled with pre-cleaned brass tubes, 6 inches long and 1.5 inches in diameter. The soils will be characterized using the same analyses as mentioned above. Contaminated soils will be disposed of at a proper landfill, pending analytical results and possible bioremediation.

DISTRIBUTION

Artesian will submit copies of this workplan to the following individuals:

Name

Mr. Jim Minor
P.O. Box 726
Diablo, CA 94528

Mr. Patrick Kelly
440 High Street
Oakland, California 94601

Mr. Richard Hiett
Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster St., 5th Floor
Oakland, CA 94612

Mr. Barney Chan, Hazardous Materials Specialist
Alameda County Environmental Health Services Agency
Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621

Please call me at (415) 257-4801 if there are any questions or if you have any comments.

Sincerely,

Darrell Taylor
Geologist

James A. Jacobs, R.G. #4815
Principal Geologist

REGISTERED GEOLOGIST
JAMES A. JACOBS
NO. 4815
STATE OF CALIFORNIA

Artesian Environmental Consultants

Standard Operating Procedures

SOIL EXCAVATION AND SAMPLING

Excavated soil is screened and segregated in the field using a vapor analyzing device such as a photo-ionization detector (PID) or organic vapor analyzer (OVA). Documentation of soil removal activities include field reports and photographs. After the removal of soil having obvious staining, odor or detectable levels of organic vapors as detected on a PID or OVA, confirmatory soil samples in the walls and floor of the excavation will be selected at least every 20 feet laterally. Additional samples will be selected on the recommendation of the geologist and regulator. All sampling will be performed with a backhoe.

Soil samples for chemical analysis are collected in pre-cleaned, thin-walled tubes, typically 6-inches long and 2-inches in the outside diameter. After removing the top 2-inches of soil, the sample tube is pushed or driven with a wooden mallet into the native soil near the teeth of the backhoe bucket. The brass tube is immediately capped on both ends with Teflon tape, trimmed and hermetically sealed with plastic end caps. The samples are then labeled and placed in individual see-through zip-lock plastic storage bags. The samples are stored in an ice chest with crushed ice to maintain a constant temperature of 4 ° Celsius. A thermometer is kept in the ice chest to ensure that the proper temperature is maintained. The samples are then delivered under chain-of-custody procedures to a state-certified hazardous materials testing laboratory. The above mentioned procedures minimize the potential for cross-contamination and volatilization of volatile organic compounds (VOCs) prior to chemical analysis.

Artesian Environmental Consultants

Standard Operating Procedures

ORGANIC VAPOR SAMPLING

Soil samples from drill cuttings, soil piles or tank excavations are placed with minimal disturbance into pre-cleaned standard soil sample collection jars. The jars are filled to approximately one half full. The soil samples are broken up to provided sufficient surface area to allow for volatilization. Aluminum foil is placed over the mouth of the jar. The jar mouth is then capped with the lid.

The jars are then placed out of direct sunlight and allowed to sit undisturbed for a minimum of twenty minutes; allowing time for the air in the headspace and soil to equilibrate.

An organic vapor analyzer (OVA) or photoionization detector (PID) is to be calibrated and the batteries checked prior to each use. After the headspace within the sample jar and soil vapor has equilibrated, the probe of the organic vapor analyzer or photoionization detector should be inserted into the jar, puncturing the aluminum foil. The presence of any organic vapor detected should be measured and recorded in parts per million (ppm).

The samples used for collecting organic vapor data are never submitted for analytical testing.

Artesian Environmental Consultants

Standard Operating Procedures

WELL INSTALLATION

The boreholes for monitor / extraction wells are drilled using a truck-mounted, continuous flight, hollow-stem auger drill rig. The diameter of the borehole is a minimum of four inches larger than the outside diameter of the casing when installing the well screen (DWR Publication 74-81). The hollow-stem auger provides minimal interruption of drilling while permitting soil sampling at the desired intervals. All wells are installed by state-licensed drillers.

The monitor / extraction wells are cased with blank and factory-slotted, threaded, schedule 40 polyvinyl chloride (PVC). The slots are generally 0.010-inch or 0.020-inch wide by 1.5-inch long slot size, with approximately 42 slots per foot. Slot sizes are determined by previous well installations in the area or by grain size analysis. A threaded PVC cap is fastened to the bottom of the casing. Centering devices may be fastened to the casing to assure even distribution of filter material and grout within the borehole annulus. The well casing is thoroughly washed and steam-cleaned prior to installation.

After setting the casing inside the hollow stem, sand or gravel filter material is poured into the annular space to fill from the bottom of the boring to 1 foot above the slotted interval. A 1 to 2 foot thick bentonite plug is placed above the filter material to prevent the grout from infiltrating down into the filter material. Neat cement, containing about 5% bentonite, is then tremied into the annular space from the top of the bentonite plug to the surface. A lockable PVC cap is placed on each wellhead. Traffic-rated flush-mounted steel covers are installed around wellheads for wells in parking lots and driveways, while steel stove pipes are usually set over wellheads in landscaped areas.

Artesian Environmental Consultants

Standard Operating Procedures

WELL DEVELOPMENT

Wells are developed to remove residual drilling materials from the wellbore, and to improve well performance by removing any fine material in the filter pack that can pass from the formation into the well. Well development is performed in accordance with California Regional Water Quality Control Board (RWQCB) procedures described in the *Leaking Underground Fuel Tank (LUFT) Field Manual*, the *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites* , and local regulatory guidelines.

Well development techniques include pumping, bailing, surging, swabbing, jetting, flushing, and airlifting. During well development a minimum of three well volumes are evacuated from the well to permit formation water to move silts and particles into the well for removal. After allowing pH, specific conductivity, temperature and sediment content of the water to stabilize the well may be sampled. All development water and rinseate is collected for temporary storage in labeled 55 gallon, DOT 17-H containers or proper storage tanks, and is then disposed of properly depending on analytical results. To assure that cross-contamination does not occur between wells during development, all development equipment is either steam cleaned or cleaned using Alconox and rinsed twice with de-ionized water.

Artesian Environmental Consultants

Standard Operating Procedures

MONITORING WELL SAMPLING

Prior to groundwater sampling, initial water level and floating liquid hydrocarbon measurements are recorded for each well. Each well is sounded for depth to ascertain if silting has occurred and to verify the actual depth below ground surface. These measurements are used to calculate the volume for each well. At this time, all non-dedicated pumping and sampling supplies are washed with an Alconox solution, rinsed with clean water, and final rinsed with either distilled or deionized water to prevent any cross contamination from other sampling events.

Each well is purged by evacuating a minimum of three well-casing volumes of groundwater from the well. The well water may be evacuated either by bailing, or pumping. Any of the following may be used for bailing: a dedicated pvc bailer, sterile disposable polyethylene bailer, or a stainless steel bailer. For pumping the groundwater out of the well, a downhole impeller type pump (dedicated or removable with PVC tubing), a downhole dedicated bladder pump, or a surface peristaltic pump is used.

After three to four well volumes are pumped, each well is permitted to recharge to at least 80% of original capacity or for two hours; whichever occurs first. The water is then measured to verify whether the well has stabilized. Stabilization is determined by measuring the parameters of pH; temperature; and electrical conductivity. Stabilized measurements indicate that formation water has entered the well. When two subsequent measurements of these three parameters are within 10% of each other, the well is considered stabilized and is ready to be sampled.

The samples are collected using a new polyethylene bailer with a bottom siphon and nylon cord. The bailers are disposable, and therefore, never reused. The groundwater sample is visually inspected for the presence of free product in the sampling bailer. Agitation is minimized during sample retrieval to prevent aeration during the transfer from the well to the laboratory prepared sample containers. Duplicate water samples are collected from the well and siphoned into three, 40 ml, VOA, septum top vials, with additional 950 ml samples collected in an amber glass bottles or polyethylene bottles depending on the analyses to be performed. The VOA vials are filled completely, leaving no headspace, and are sealed with Teflon-lined lids. All samples are labeled, chilled to 0° C in an ice chest, and sent to a California State Certified hazardous materials testing laboratory under chain-of-custody documentation .

All groundwater samples are collected in accordance with California Regional Water Quality Control Board (RWQCB) procedures described in the *Leaking Underground Fuel Tank (LUFT) Field Manual*, the *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites*, and local regulatory guidelines.

Standard Environmental Protection Agency (EPA), San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), and Department of Health Services (DHS) methodologies for sampling and analyses are routinely utilized.

Chain of Custody documentation accompanies all samples to the laboratory. A copy of the Chain of Custody documentation is attached to the Certificate of Analysis.

Monitor well purge water is properly stored and labeled on site in DOT 17-H containers pending off site disposal.

ARTESIAN ENVIRONMENTAL CONSULTANTS.
JOB SAFETY PLAN

Project location: 4341 Howard St., Oakland, California
Artesian Job #100-001-01

The possible hazards on this job are expected to be: physical hazards associated with working a backhoe, and the excavation of gasoline contaminated soil.

Possible chemical hazards from soil contaminated with gasoline or any pure product of the aforementioned substance.

Required personal protective equipment for this project: Level D protection (steel toe neoprene boots, coveralls, work gloves, hard hat, safety glasses), level C protection on standby (OV cartridges).

ARTESIAN ENVIRONMENTAL CONSULTANTS
JOB SAFETY PLAN

1. Site: Dailey Body Company (formerly, El Monte RV Center)

2. Location: 4341 Howard Street, California

3. Plan Prepared: Artesian Environmental Consultants Date: 6-8-93

4. Plan Approved: Darrell Taylor, PM _____
Jim Jacobs, RG _____

5. Facility Description: .Truck Body Shop

6. Status (active, inactive, unknown): Active.

7. Surroundings: Business; bounded by High Street on the north, businesses to the east, west, and south.

8. Site map: Attached

9. Climate: Moderate dry summers, cool wet winters.

10. Site history (origin of contamination and history of injuries exposure, chemical spills, complaints, etc.): A 1,000 galon underground gasoline storage tank was removed on November 15, 1991. Additional gasoline inmpacted soil was noted at this time.

11. Description of work: Overexcavation to extricate hydrocarbon impacted soil. Excavated soil will be stockpiled on visqueen, and will be covered with visqueen pending final disposition. The soil may be bioremediated before it is transported to a disposal facility.

12. Chemical contaminants:

Chemical	Media	Minimum	Maximum
Gasoline	Soil/pure product	0	Unknown

13. Procedures to mitigate hazards:

A) Mechanical Hazards
- verify that all equipment is in good condition
- barricade area or otherwise restrict access
- exercise caution when working in close proximity to the 580K backhoe, bobcat, and trench shoring plates.

B) Electrical Hazards

- locate and mark buried utilities before excavating
- maintain at least 10 feet of clearance from overhead power lines
- properly ground all electrical equipment
- avoid standing in water when operating electrical equipment

- be familiar with specific operating instructions for each piece of equipment
- barricade area or otherwise restrict access
- deactivate any source of ignition within 25 feet of work area

C) Chemical Hazards

- use personal protective equipment listed above
- conduct direct reading air monitoring to evaluate respiratory and explosion hazards
- wash hands before eating or drinking
- avoid hand to mouth contact before washing hands
- keep dust to a minimum, avoid breathing dust

D) Temperature Hazards

- Heat: when temperature exceeds 70 F, take frequent breaks in shaded area. Unzip or remove coveralls during breaks. Have cool water or electrolyte replenishment solution available. Drink small amounts frequently to avoid dehydration. Count the pulse rate for 30 seconds, as early as possible in the rest period. If the pulse rate exceeds 110 beats per minute at the beginning of the rest period, shorten the work cycle by one-third.

- Cold: wear multilayer cold weather outfits- the outer layer should be of wind-resistant fabric

- Wet: wear proper raingear and shoes with slip resistant tread

E) Acoustical Hazards

- use earplugs when noise level prevents conversation in normal voice at a distance of three feet

F) Organic Vapors

- monitor organic vapors. If total hydrocarbons exceed 5 ppm above background, don Level C personal protective equipment

- if total hydrocarbons exceed 500 ppm, supply mechanical ventilation

- monitor lower explosive limit. If LEL exceeds 20%, leave area and call the fire department

- no smoking within 25 feet of working area

- post no smoking signs

14. Decontamination procedures: Steam clean equipment before leaving work area. Wash boots and gloves. Launder coveralls. Wash hands and face as soon as possible after stopping work.

15. Materials generated on-site: Drum drill cuttings and decon water in DOT approved drums with proper labels and markings. Place soil stockpiles on visqueen and cover with weighted visqueen.

16. Site resources: water, restrooms, phone, electricity

Ambulance 911
Police 911
Fire Department 911
Oakland Hospital (510) 532-6300
2648 E 14th, Oakland, CA
Poison Control Center: 800-233-3360 or
415-821-8324
Project Manager: Office (415) 257-4801or
hm (510) 758-3341
Health & Safety Officer: Office (510) 633-

19. **Emergency route to Hospital:**
Exit Howard Street, go right onto High Street,
continue on High Street across 880 to E 14th,
Turn left onto E 14th,
Go down approximately 17 blocks down E 14th to the Oakland Hospital (2648 E 14th)

20. Project personnel list and safety plan distribution record: All project staff must sign, indicating they have read and understand the safety plan.

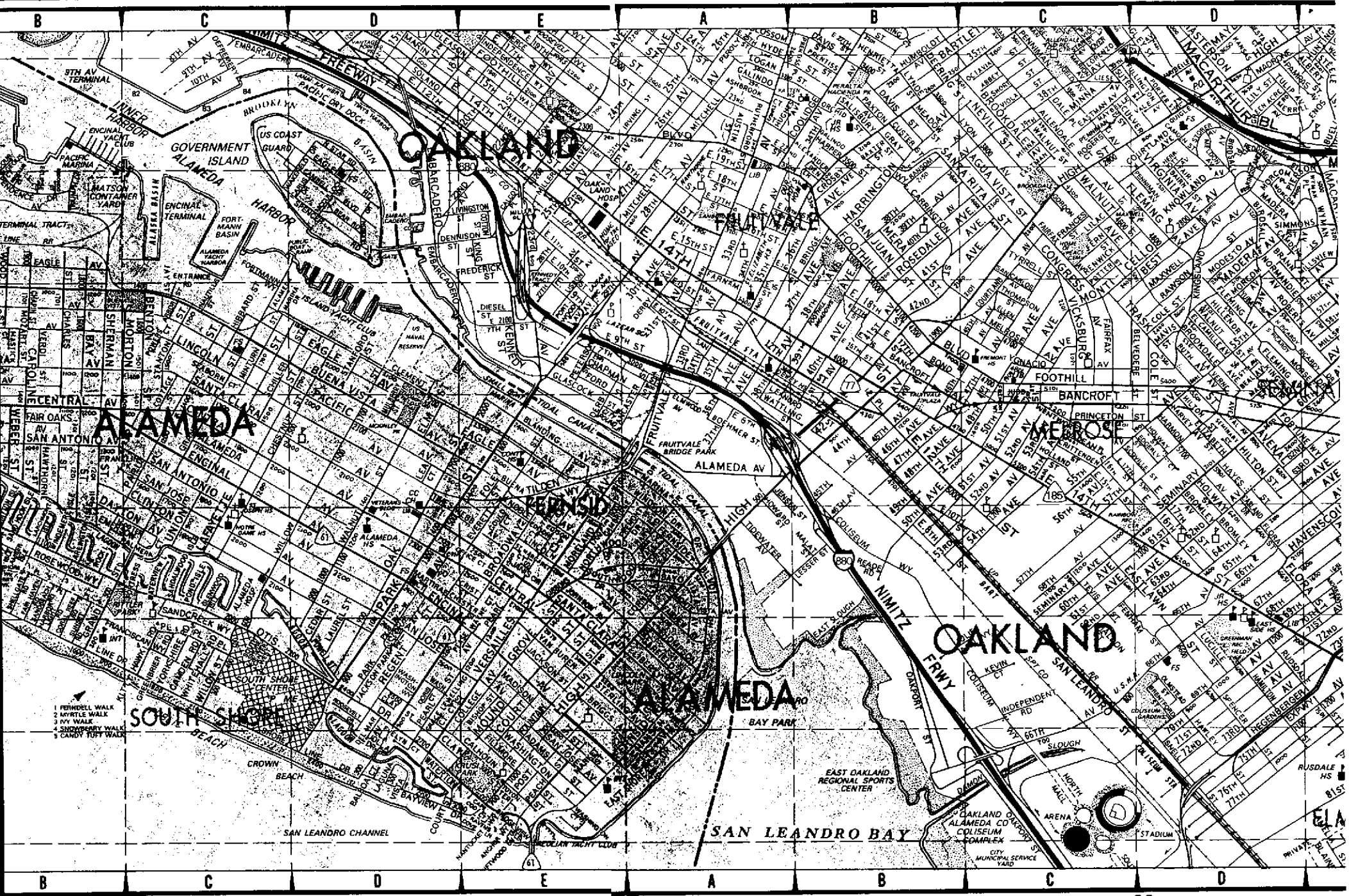
Employee Name	Date/Time	Signature

21. Health and safety meeting: All personnel participating in the project must receive initial health and safety orientation. Thereafter, a brief "tailgate" safety meeting is required as deemed necessary by the Health and Safety Officer.

Name	Topics	Date	Employee Initial

22. Visitors: It is Artesians' policy that visitors must furnish his/her own personal protective equipment. All visitors are required to sign the visitor log and comply with the safety plan requirements.

Name of Visitor	Firm Name	Date/Time	Signature



FOR CONTINUATION SEE MAP 21

FOR CONTINUATION SEE MAP 22

OAKLAND HOSPITAL - 2648 E 14TH ph 532-6300