SOMA
CORPORATION

January 27, 1998 SOMA Job No. 95-2053

Ms. Susan Hugo
Hazardous Materials Specialist
Alameda County Health Care Services Agency
Division of Environmental Protection
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

RE: Work Plan for Limited Groundwater Investigation
Fordham Properties, 5515 Doyle Street, Emeryville, CA

Dear Susan:

Enclosed is a copy of a work plan for a Limited Groundwater Investigation at 5515 Doyle Street, Emeryville. If you have any questions regarding this work plan please feel free to contact Norm Ozaki or myself.

Sincerely,

Robert Gilman
Staff Scientist

enclosure

cc: Mr. Ron Silberman, Fordham Properties

1260B 45th Street • Emeryville, CA 94608
(510) 654-3900 • FAX (510) 654-1960

SOMA
CORPORATION

WORK PLAN
FOR
LIMITED GROUNDWATER INVESTIGATION

5515 Doyle Street Property
Emeryville, California

January 27, 1998
SOMA 97-2053

Prepared for:

Mr. Ronald Silberman
Fordham Properties
5743 Landregan Street
Emeryville, California 94608

Prepared by

SOMA Corporation
1260B 45th Street
Emeryville, California 94608
(510) 654-3900
(510) 654-1960 Facsimile

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LIMITED GROUNDWATER INVESTIGATION

5515 Doyle Street
Emeryville, California

1.0 INTRODUCTION

At the request of Mr. Ronald Silberman of Fordham Properties, SOMA Corporation ("SOMA") has prepared this work plan to conduct a limited groundwater investigation near an underground storage tank (UST) that was formerly located at 5515 Doyle Street, Emeryville, California (the Site).

In 1995, SOMA Corporation performed soil remediation at the Site by excavating approximately 90 yd^3 of soil and disposing offsite at Forward Inc. Landfill in Manteca, California. The UST was removed previously by Cottle Engineering in 1994. Following the submittal of a remediation report (SOMA, 1995), Ms. Susan Hugo of the Alameda County Department of Environmental Health (ACDEH) requested a grab groundwater sample be collected from the down-gradient direction of the former UST location (SOMA 1997a). This work plan describes the activities associated with the proposed work.

Groundwater sampling results will be used to assess the possible presence of petroleum hydrocarbons in groundwater adjacent to the former UST location.

2.0 SITE DESCRIPTION

The Site is located on the northwest corner of Doyle Street and 55th Street in Emeryville, California (Figure 1). The Site is essentially flat. A warehouse covers most of the property. The warehouse is currently used by several commercial and light industrial businesses.

3.0 SITE BACKGROUND

Cottle Engineering excavated and removed one 550 gallon UST located at the western portion of the Site in August, 1994 (SOMA 1995a). Prior to initiation of UST excavation activities, an Underground Storage Tank Closure Plan was submitted to the Alameda County Department of Environmental Health (ACDEH). This closure plan was approved by ACDEH in September 1994 and is included in Appendix A. Due to the detection of petroleum hydrocarbons in the soil collected from underneath the UST, the excavation was not backfilled after the tank was removed.

In April 1995, soil remediation activities were performed by SOMA Corporation. Approximately 90 yd^3 of soil was excavated from the UST pit to a depth of 9.5 feet below grade. Excavated soil was classified as non-hazardous and disposed of at Forward Inc. Landfill in Manteca, California. The results of the soil samples collected by Cottle Engineering during the UST removal and the results of the soil samples collected by SOMA from the UST removal stockpile were used to profile the petroleum-affected soils for acceptance at Forward Inc. Landfill. This soil data is presented in Table 1.

Confirmation soil samples were collected from the excavation sidewalls and floor following the SOMA soil removal remediation activities in 1995. Elevated levels of Total Petroleum Hydrocarbons (TPH) as gasoline (TPHg), diesel (TPHd), and benzene, toluene, ethylbenzene, and xylene (BTEX) compounds were detected in the soil samples collected from the south excavation sidewall and floor of the excavation site (Table 2 and Figure 2). Groundwater was not encountered during the removal of the UST.

4.0 SCOPE OF WORK

The scope of work for the activities conducted at the Site will consist of the following tasks:

Task 1: Development of a Health and Safety Plan

Task 2: Groundwater Grab Sampling

Task 3: Laboratory Analyses

Task 4: Profiling and Disposal of Soil Cuttings and Decontamination Water

Task 5: Preparation of a Limited Groundwater Investigation Report

These tasks are described in detail below.

4.1 Task 1: Development of a Health and Safety Plan

In accordance with Occupational Safety and Health Administration (OSHA) guidelines, SOMA will develop a HSP for the Limited Groundwater Investigation activities. The HSP will include an analysis of potential hazards that may be encountered by on-site workers conducting the proposed work and precautions to mitigate the identified hazards. The health and safety measures presented in the HSP will be implemented during the investigation activities.

4.2 Task 2: Groundwater Grab Sampling

Grab groundwater samples will be collected from three soil borings at the site. Two borings (figure 2) will be installed in the assumed down gradient direction (southwest) from the location where the UST previously existed. One boring is proposed in the upgradient direction to assess background groundwater quality at the Site. As requested by ACDEH the down gradient soil borings will be placed within 10 feet of the former UST location, if possible. If it is not possible to place the soil boring within 10 feet, due to the presence of underground utilities or field conditions, the boring will be placed as close to the former UST as possible. The soil borings will be drilled using a Geoprobe™ or equivalent hydraulic push/drive sampling system. As the sampling rods are advanced, a continuous soil core will be collected from the borehole for lithologic description. A permit will be obtained from the Alameda County Public Works Agency, Water Resources Section to install the borings.

The samples will be collected from the soil borings using an appropriate sampling device (Teflon or stainless steel mini-bailer or Hydropunch™ sampler). It is anticipated that groundwater will

be encountered at approximately 10 feet bgs. The samples to be analyzed for TPHg and BTEX will be transferred directly into 40-ml VOA vials with Teflon septa with no headspace. Samples to be analyzed for TPHd will be collected in a 1-liter amber glass bottle.

The samples will be stored in a chilled cooler (4°C) containing crushed ice for delivery to the laboratory. Sample documentation and custody procedures included in Appendix B will be followed. In addition, observations regarding odor and possible oily sheens during sampling will also be noted.

The equipment used during groundwater sampling activities that might come into contact with the groundwater will be thoroughly cleaned before and after each use. This will be accomplished by washing with Alconox (a laboratory-grade detergent) and/or steam cleaning and rinsing with deionized water.

Following collection of the groundwater samples, the soil borings will be grouted to ground surface using a neat cement grout or bentonite pellets. In the event standing water is present, the neat cement grout will be placed by means of a tremie pipe lowered to within three feet of the underlying layer of material or bottom of the soil boring. The tremie pipe will remain in place in the neat cement grout until placement is complete.

The areas to be excavated will be cleared for underground utilities by a private utility locator prior to initiation of excavation activities. The drilling, logging, and soil and groundwater sampling activities will be performed in the presence of a California Registered Geologist or Professional Engineer.

4.3 Task 3: Laboratory Analyses

The groundwater samples will be analyzed by a California State certified laboratory for:

- TPHd using EPA Method 3550/GCFID;
- TPHg using EPA Method 5030/GCFID;

- BTEX and MTBE using EPA Method 8020

4.4 Task 4: Profiling and Disposal of Soil Cuttings and Decontamination Water

The soil cuttings will be placed in a labeled 5-gallon bucket with a secure lid for temporary storage pending receipt of analytical results. Because of the low volume of soil cuttings typically generated using a push/hydraulic sampling system, the soil sampling analytical results will be used for purposes of characterizing soil cuttings for waste disposal. Equipment decontamination water will be collected and stored onsite in a secure location in Department of Transportation approved containers pending receipt of analytical results.

Analytical results for the groundwater samples will be used for purposes of waste characterization. Additional analyses may be performed on the waste characterization samples, depending on the requirements of the disposal facility and results of this investigation. Upon review of the analytical results, SOMA will assist Fordham Properties with the coordination of the removal and appropriate disposal of the residuals. The waste profile will be submitted to an appropriately licensed waste disposal facility for review and acceptance.

4.5 Task 5: Preparation of a Limited Groundwater Investigation Report

This task will include evaluating the field investigation and laboratory analytical data obtained during previous investigations and the groundwater sampling at the Site. A written report will be prepared following completion of limited site investigation activities. The report will present:

- Field observations, measurements and readings
- Lithologic logs
- Laboratory analytical results
- Findings regarding the possible presence of petroleum-affected groundwater
- Recommendations for additional investigations or case closure, if warranted

This report will be prepared and submitted to ACDEH following review by a California Registered Geologist or Registered Civil Engineer within three weeks following receipt of laboratory analytical results.

5.0 IMPLEMENTATION SCHEDULE

The approximate estimated duration for each task and the schedule for the work at the Site is presented below. The estimated durations and proposed schedule do not include work delays due to events beyond the control of Fordham Properties and SOMA.

5.1 Schedule

Once we have received approval of the Workplan from ACDEH, it is estimated that the total time to complete this limited ground-water investigation is 6 to 8 weeks. It is anticipated that Tasks 1 through 4 could be completed within about 4 to 6 weeks of receiving the ACDEH's approval of the Workplan, assuming a normal two- week laboratory turnaround time for sample analysis. A technical report of the results of the limited ground-water investigation (Task 5) can be prepared within 2 weeks of SOMA's receipt of the laboratory data.

6.0 REFERENCES

Cottle Engineering. 1994. Underground Tank Removal Report: Fordham Property, 5515 Doyle Street, Emeryville, California. Prepared for MR. Ronald Silberman, Fordham Properties. October 20.

McCampbell Analytical Inc. 1994. Soil Samples Collected October 20, 1994. Fordham Properties.

SOMA. 1995a. Soil Remediation Activities: Fordham Property, 5515 Doyle Street, Emeryville, California. Prepared for Mr. Ronald Silberman, Fordham Properties. SOMA 95-2053. May 9.

SOMA. 1995b. American Environmental Network: Stockpile Soil Data, SOMA 95-2053. Fordham Property, 5515 Doyle Street, Emeryville, California. Prepared for Mr. Ronald Silberman, Fordham Properties. March 9.

SOMA. 1997a. Telephone Conversation between Dr. Norman Ozaki of SOMA Corporation and Ms. Suzan Hugo of Alameda County Department of Environmental Health. September 11.

TABLE 1

Summary of Stockpile Soil Sample Results (mg/kg)
Sampling Date: October 20, 1994 and February 17, 1995

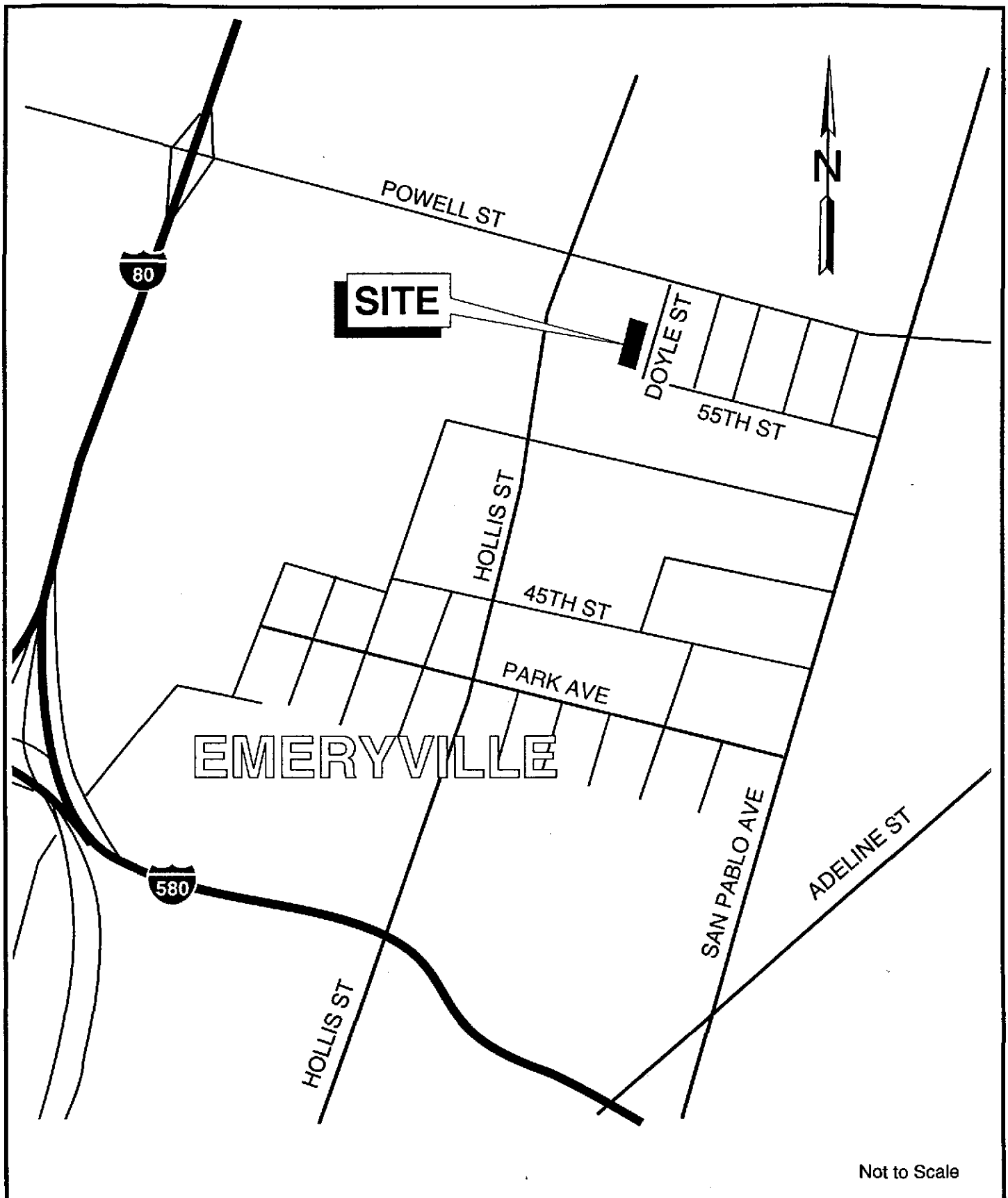
Sample ID	Location	Sample Date	TPHg[a]	TPHd[b]	Benzene	Toluene	Ethylbenzene	Xylenes	Lead	Lead in Wet Extract	Sulfide	Cyanide
SP-1 *	Stockpile composite	2/17/95	ND<0.2	12	ND<5	ND<5	ND<5	ND<5	97	0.7	ND<13	<0.5
FP-1 **	North end excavation	10/20/94	760c,d	NA	0.22	3.3	14	68	NA	NA	NA	NA
FP-2 **	South end excavation	10/20/94	4200[c,d]	NA	ND<1	87	90	540	NA	NA	NA	NA
Comp-FP-1 **	Stockpile composite	10/20/94	73[c,d,e]	NA	ND<0.01	0.23	0.34	1.4	NA	NA	NA	NA

a Total Petroleum Hydrocarbons as gasoline
b Total Petroleum Hydrocarbons as diesel
c Strongly aged gasoline or diesel range compounds are significant [McCampbell Analytical Inc., 1994]
d Heavier gasoline range compounds are significant (aged gasoline?) [McCampbell Analytical Inc., 1994]
e Gasoline range compounds are significant; no recognizable pattern [McCampbell Analytical Inc., 1994]
ND Not Detected
NA Not Analyzed
* Source: SOMA, 1995b
** Source: Cottle Engeneering, 1994

TABLE 2

Summary of Soil SampleResults UST Excavation Sidewalls and Floor (mg/kg)
Sampling Date: April 3, 1995

Sample	Location	Deph (ft.)	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	Diesel	Lead
Excavation Sidewall:									
S-1	north	<9	ND	ND	ND	ND	ND	ND	5
S-2	east	<9	4.9	ND	ND	0.071	0.016	10	6
S-3	south	<9	370	0.29	ND	0.35	0.64	260	7
S-4	west	<9	ND	ND	ND	ND	ND	ND	4
Excavation Floor:									
S-5	base	9.5	5,200	24	180	120	590	580	11
Detection Limit			0.2	0.005	0.005	0.005	0.005	1	3



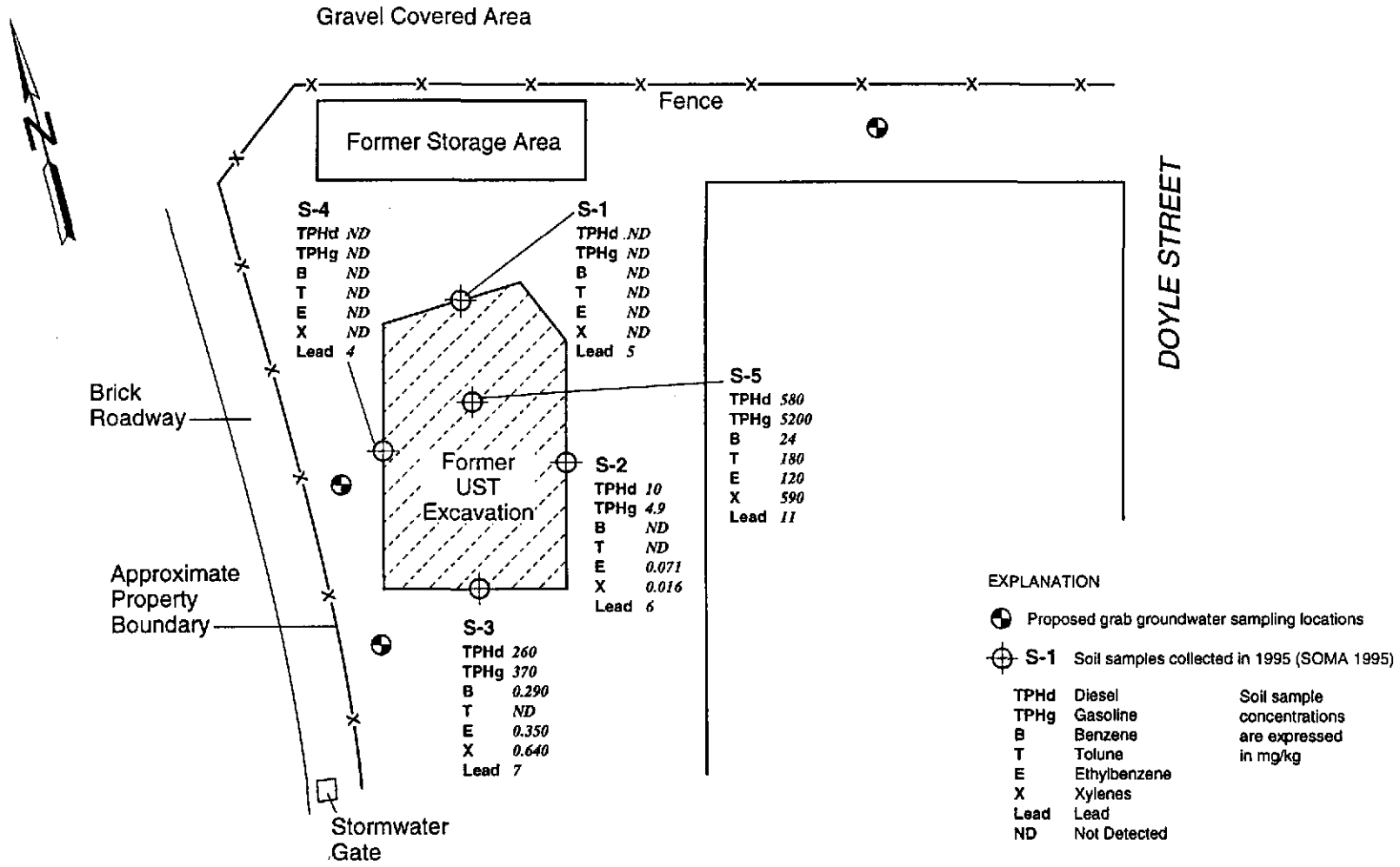
Not to Scale

SOMA CORPORATION

SITE LOCATION
5515 DOYLE STREET

Proj. No. 97-2053 | January 1998

Figure
1



SOMA CORPORATION

SAMPLE LOCATIONS

5515 DOYLE STREET

January 1998

97-2053

Figure 2

APPENDIX A

UNDERGROUND STORAGE TANK CLOSURE PLAN

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
80 SWAN WAY, ROOM 200
OAKLAND, CA 94621
PHONE NO. 510/271-4320

ACCEPTED

Underground Storage Tank Closure Permit Application

Alameda County Division of Hazardous Materials
80 Swan Way, Suite 200,
Oakland, CA 94621
Telephone: (510) 271-4320

These closure/removal plans have been received and found to be acceptable and essentially meet the requirements of State and Local Health Laws. Changes to your closure plans indicated by this Department are to assure compliance with State and local laws. The project proposed herein is now released for issuance of any required building permits for construction/destruction.

One copy of the accepted plans must be on the job and available to all contractors and craftsmen involved with the removal.

Any changes or alterations of these plans and specifications must be submitted to this Department and to the Fire and Building Inspections Department to determine if such changes meet the requirements of State and local laws.

Notify this Department at least 72 hours prior to the following required inspections: *

✓ Removal of Tank(s) and Piping
✓ Sampling
✓ Final Inspection

Issuance of a) permit to operate, b) permanent site closure, is dependent on compliance with accepted plans and all applicable laws and regulations.

*THERE IS A FINANCIAL PENALTY FOR NOT OBTAINING THESE INSPECTIONS

Contact Specialist: Alameda Cnty. Health Brian Oliva 567-6783

Special Instruction
(1) Site Safety Plan must adhere to Title 8 of the CCR (OSHA)
(2) - see change Page 5

Brian Oliva
9/28/94

UNDERGROUND TANK CLOSURE PLAN
* * * Complete according to attached instructions * * *

1. Business Name Fordham Properties
   Business Owner Fordham Properties
2. Site Address 5515 Doyle Street
   City Emeryville zip 94608 Phone 510-547-7177
3. Mailing Address 5743 Landregan Street
   City Emeryville zip 94608 Phone 510-547-7177
4. Land Owner Fordham Properties
   Address 5743 Landregan St city, state Emeryville, CA zip 94608
5. Generator name under which tank will be manifested
   Fordham Properties

EPA I.D. No. under which tank will be manifested CAC

6. Contractor Cattle Engineering

Address P.O. Box 163

City Antioch, CA 94509 Phone 510-754-9335

License Type* A ID# 481444

*Effective January 1, 1992, Business and Professional Code Section 7058.7 requires prime contractors to also hold Hazardous Waste Certification issued by the State Contractors License Board. Indicate that the certificate has been received, in addition, to holding the appropriate contractors license type.

7. Consultant N/A

Address: _____

City _____ Phone _____

8. Contact Person for Investigation

Name Ray Pantle Title Operations Mgr.

Phone 510-754-9335

9. Number of tanks being closed under this plan One

Length of piping being removed under this plan 15 L.F.

Total number of tanks at facility One

10. State Registered Hazardous Waste Transporters/Facilities (see instructions).

** Underground tanks are hazardous waste and must be handled as hazardous waste **

a) Product/Residual Sludge/Rinsate Transporter

Name N/A EPA I.D. No. _____

Driver License No. _____ License Exp. Date _____

Address _____

City _____ State _____ Zip _____

b) Product/Residual Sludge/Rinsate Disposal Site

Name N/A EPA I.D. No. _____

Address _____

City _____ State _____ Zip _____

c) Tank and Piping Transporter

Name Oxarna Ltd. EPA I.D. No. CAD982438566

Hauler License No. 428262 License Exp. Date _____

Address 3104 Alhambra Court

City Concord State CA Zip _____

d) Tank and Piping Disposal Site

Name Erickson Environmental EPA I.D. No. CADC09466392

Address 255 Parr Blvd.

City Richmond State CA Zip 94801

11. Experienced Sample Collector

Name Ron Pantle

Company Pantle Engineering

Address P.O. Box 163

City Orinda State CA Zip 94529 Phone 510-254-9935

12. Laboratory

Name Mc Campbell Analytical

Address 1220 Record Ave. South

City Pacheco State CA Zip 94553

State Certification No. 1644

13. Have tanks or pipes leaked in the past? Yes [ ] No [X]

If yes, describe. _____

14. Describe methods to be used for rendering tank inert

Introduction of dry ice at a ratio of 2.5 lbs. per 100 gallons of tank volume approx. 1 one hour prior to removal of the tank.

Before tanks are pumped out and inerted, all associated piping must be flushed out into the tanks. All accessible associated piping must then be removed. Inaccessible piping must be plugged.

The Bay Area Air Quality Management District (771-6000), along with local Fire and Building Departments, must also be contacted for tank removal permits. Fire departments typically require the use of explosion proof combustible gas meters to verify tank inertness. It is the contractor's responsibility to bring a working combustible gas meter on site to verify tank inertness.

15. Tank History and Sampling Information

Tank		Material to be sampled (tank contents, soil, ground-water, etc.)	Location and Depth of Samples
Capacity	Use History (see instructions)		
550 gal.	Fuel Storage	Soil	1 Foot below bottom of tanks

One soil sample must be collected for every 20 feet of piping that is removed. A groundwater sample must be collected should any ground water be present in the excavation.

Excavated/Stockpiled Soil	
Stockpiled Soil Volume (Estimate)	Sampling Plan
15 yards	One composite from at least five locations in the stockpile

Stockpiled soil must be placed on bermed plastic and must be completely covered by plastic sheeting.

16. Chemical of concern and associated detection limits to be used for analyzing samples

The Tri-Regional Board recommended minimum verification analyses and practical quantitation reporting limits should be followed. See attached Table.

Contaminant Sought	EPA, DHS, or Other Sample Preparation Method Number	EPA, DHS, or Other Analysis Method Number	Method Detection Limit
Diesel	TPH D	8015	1.0 ppm
Gasoline (unleaded)	TPH G	602/8020/8015	1.0 ppm .005 ppm
	BTXE		
Lead	Total Lead		

17. Submit Health and Safety Plan (See Instructions)

18. Submit Worker's Compensation Certificate copy

Name of Insurer IPS Insurance

19. Submit Plot Plan (See Instructions)

20. Enclose Deposit (See Instructions)

21. Report any leaks or contamination to this office within 5 days of discovery. The report shall be made on an Underground Storage Tank Unauthorized Leak/Contamination Site Report form. (see instructions)

22. Submit a closure report to this office within 60 days of the tank removal. This report must contain all the information listed in item 22 of the instructions.

I declare that to the best of my knowledge and belief the statements and information provided above are correct and true.

I understand that information in addition to that provided above may be needed in order to obtain an approval from the Department of Environmental Health and that no work is to begin on this project until this plan is approved.

I understand that any changes in design, materials or equipment will void this plan if prior approval is not obtained.

I understand that all work performed during this project will be done in compliance with all applicable OSHA (Occupational Safety and Health Administration) requirements concerning personnel health and safety. I understand that site and worker safety are solely the responsibility of the property owner or his agent and that this responsibility is not shared nor assumed by the County of Alameda.

Once I have received my stamped, accepted closure plan, I will contact the project Hazardous Materials Specialist at least three working days in advance of this work to schedule the required inspections.

Signature of Contractor

Name (please type) DAVID E. COTTLE, SR.

Signature David E. Cottle, Sr.

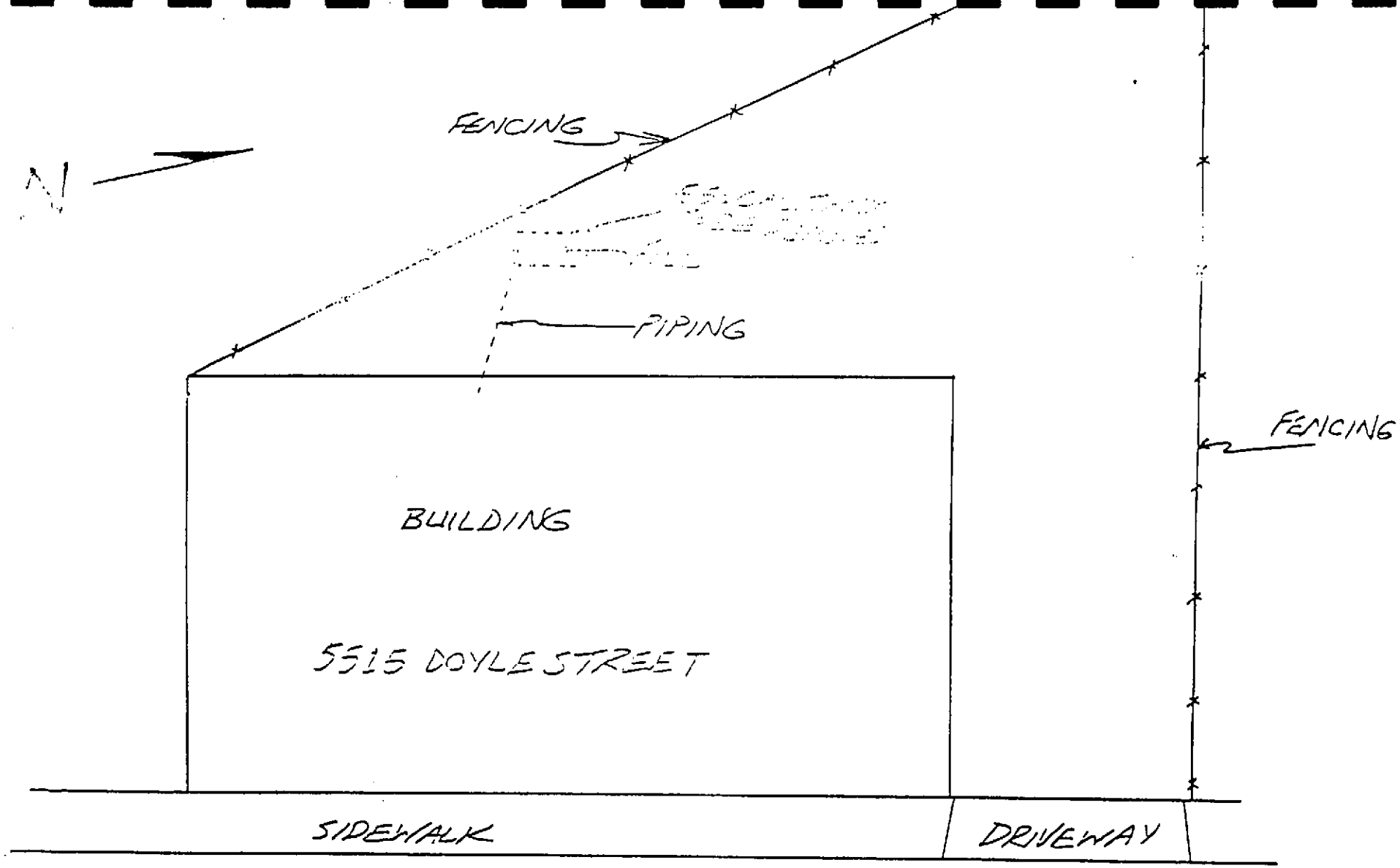
Date 9/2/94

Signature of Site Owner or Operator

Name (please type) JOE PIERI

Signature Joe Pieri

Date 9/2/94



PLOT PLAN: FORDHAM AROPORTIES
5515 DOYLE STREET
EMERYVILLE, CALIFORNIA

APPENDIX B

SAMPLE DOCUMENTATION AND CUSTODY PROCEDURES

SAMPLE DOCUMENTATION AND CUSTODY PROCEDURES

DOCUMENTATION

The following information will be entered on the sample collection data forms at the time of sampling:

- Project name and number
- Sampler's name
- Time and date of sampling
- Sampling location
- Sampling method
- Sample number
- Sample condition (disturbed/undisturbed)
- Laboratory analyses requested
- Type of preservative, if any

Each sample will be packaged and transported appropriately, as described in the following protocol:

- Collect samples in appropriately-sized and prepared containers
- Properly seal and package sample containers.
- Fill out field sample log and chain-of-custody and analyses request forms.
- Separate and place samples into coolers according to laboratory destination. Samples will be packaged so that the potential for shipping damage is minimized.
- Chill samples to approximately 4°C. Blue ice or regular crushed ice used in the coolers will be sealed in a plastic bag other than the one in which it was purchased.
- Seal the top two copies of the chain-of-custody form inside a zip-lock bag. Use strapping tape to hold the packet on the inside of the cooler.
- Seal cooler with several strips of strapping tape.

SAMPLE CUSTODY

In order to check and link each reported datum with its associated sample, sample custody and documentation tracking procedures were established. Three separate, interlinking documentation and custody procedures for field, office, and laboratory can be described. The chain-of-custody (COC) forms, which are central to these procedures, are attached to all samples and their associated data throughout the tracking process.

FIELD CUSTODY PROCEDURES

Field documentation will include sample labels, daily field activities logbook, and chain-of-custody and analyses request forms. These documents will be filled out in indelible ink. Any corrections to the document will be made by drawing a line through the error and entering the correct value without obliterating the original entry. Persons correcting the original document will be expected to initial any changes made.

Sample Labels

Labels will be used to identify samples. The label is made of a waterproof material with a water-resistant adhesive. The sample label, to be filled out using waterproof ink, will contain at least the following information:

- Sampler's name
- Sample number
- Date
- Time
- Sample location
- Preservative used

Field Log of Daily Activities

A field log will be used to record daily field activities. The field geologist/engineer is responsible for making sure that a copy of the field log is sent to the project file as soon as each sampling round is completed. Field log entries will include the following:

- Field worker's name
- Field log number
- Date and time data are entered
- Location of activity
- Personnel present on-site
- Sampling and measurement methods
- Total number of samples collected
- Sample numbers
- Sample distribution (laboratory)
- Field observations, comments
- Sample preservation methods used, if any

Chain-of-Custody (and Analysis Request) Form

The chain-of-custody (COC) form is filled out for groups of samples collected at a given location on a given day. The COC will be filled out in triplicate form, and will accompany every shipment of samples to the respective analytical laboratories.

Two copies will accompany the samples to the analytical laboratory. The third copy is kept in the SOMA QA/QC file. The COC makes provision for documenting sample integrity and the identity of any persons involved in sample transfer. Other information entered on the COC includes:

- Project name and number
- Field logbook number
- COC serial number
- Project location
- Sample number
- Sampler's/recorder's signature
- Date and time of collection

- Collection location
- Sample type
- Number of sample containers for each sample
- Analyses requested
- Results of laboratory's inspection of the condition of each sample and the presence of headspace, upon receipt by the laboratory
- Inclusive dates of possession
- Name of person receiving the sample
- Laboratory sample number
- Date of sample receipt
- Address of analytical laboratory