EXXON COMPANY, U.S.A.
P.O. BOX 4032 . CONCORD, CA 94524-4032

ENVIRONMENTAL ENGINEERING
MARLA D. GUENSLER
SENIOR ENVIRONMENTAL ENGINEER
(925) 246-8776
(925) 246-8798 FAX

7/2/99 Doesn't seem like air sparge well is appropriate at this time. Need to discuss reasons for this well, etc. before approval.

June 24, 1999

Ms. Eva Chu
Alameda County Health Care Services Agency
Hazardous Materials Specialist
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

RE: Exxon RAS #7-0104, 1725 Park Street, Alameda, CA

Dear Ms. Chu:

Attached for your review and comment is a report entitled ***Work Plan for Installing Air Sparging Well*** for the for the above referenced site. This report was prepared by Delta Environmental Consultants, Inc., of Rancho Cordova, California.

If you have any questions or comments, please contact me at (925) 246-8776.

Sincerely,

Marla D. Guensler
Senior Engineer

MDG/tjm

attachment: Delta's *Work Plan for Installing Air Sparging Well*, dated May 28, 1999

cc: w/o attachment:
Mr. Stephen Hill - California Regional Water Quality Control Board, San Francisco Region

w/o attachment:
Mr. James Brownell - Delta

99 JUN 29 PM 3:19
ENVIRONMENTAL PROTECTION

Delta
Environmental
Consultants, Inc.

3164 Gold Camp Drive
Suite 200
Rancho Cordova, CA 95670-6021
U.S.A.
916/638-2085
FAX: 916/638-8385

May 28, 1999

Ms. Marla Guensler
Exxon Company, U.S.A.
2300 Clayton Road, Suite 1250
Concord, California 94520

Subject: *Work Plan for Installing Air Sparging Well*
Exxon Service Station No. 7-0104
1725 Park Street
Alameda, California
Delta Project No. D094-832

Dear Ms. Guensler:

Delta Environmental Consultants, Inc. (Delta), has been authorized by Exxon Company, U.S.A. (Exxon), to install an air sparging (AS) well at the Exxon Service Station located at 1725 Park Street, Alameda, Alameda County, California (Figure 1). The location of the proposed well is presented in Figure 2.

Proposed Air Sparging Well Boring

One soil boring will be advanced to a depth of 20-feet below surface grade (bsg) and completed as air sparge (AS) well AS-1. The location of the proposed soil boring is illustrated on Figure 2. Soil samples will be collected from the soil boring at 5-foot vertical intervals, or obvious changes in lithology, and will be field-analyzed for the presence of petroleum hydrocarbon vapors with a photoionization detector (PID). The methods proposed to drill and sample the soil borings are included in Enclosure A. A soil-boring log containing soil descriptions and PID readings will be prepared and submitted in a final well installation report.

A minimum of two soil samples will be submitted to a California-certified laboratory for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA Method 8020 Modified, total purgeable petroleum hydrocarbons (TPPH) as gasoline using EPA Method 8015 Modified, and methyl tertiary butyl ether (MTBE) by EPA Method 8260B. Soil sample selection will be based on the depth of the ground water table, field PID readings, and soil lithology. The sample immediately above ground water table from each boring and the sample with the highest PID reading will be submitted for chemical analyses. A soil sample will be collected from the stockpile soil for disposal purposes.

Proposed Air Sparging Well Construction Details

Proposed AS well AS-1 will be constructed of a 1-inch diameter, flush-threaded, Schedule 40 PVC casing. The AS well will be screened with a long KVA air sparge point extending from approximately 18.5 feet bsg to the total depth of the boring (20 feet bsg). The annular space in the AS well will be

filled with No. 3 Lonestar sand from 0.5-feet above the well screen to the maximum depth of the well. A 2.0-foot thick bentonite seal will be placed above the filter pack. The annular space above the bentonite seal will be filled with neat cement grout. A proposed construction detail diagram for the AS well is included in Enclosure B. The well permit application is included in Enclosure C.

Schedule

Delta anticipates that the installation of the AS well will occur within two weeks of approval of this work plan.

Remarks/Signatures

The interpretations contained in this document represent our professional opinions, and are based in part on information supplied by the client. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

Delta recommends that copies of this document be forwarded to:

Ms Eva Chu
Alameda County Department of
Environmental Health
Hazardous Materials Division
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Mr. Steven Hill
California Regional Water Quality Control Board,
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

If you have any questions regarding this document, please do not hesitate to contact Steven Meeks at (916) 536-2613.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

J Brownell for

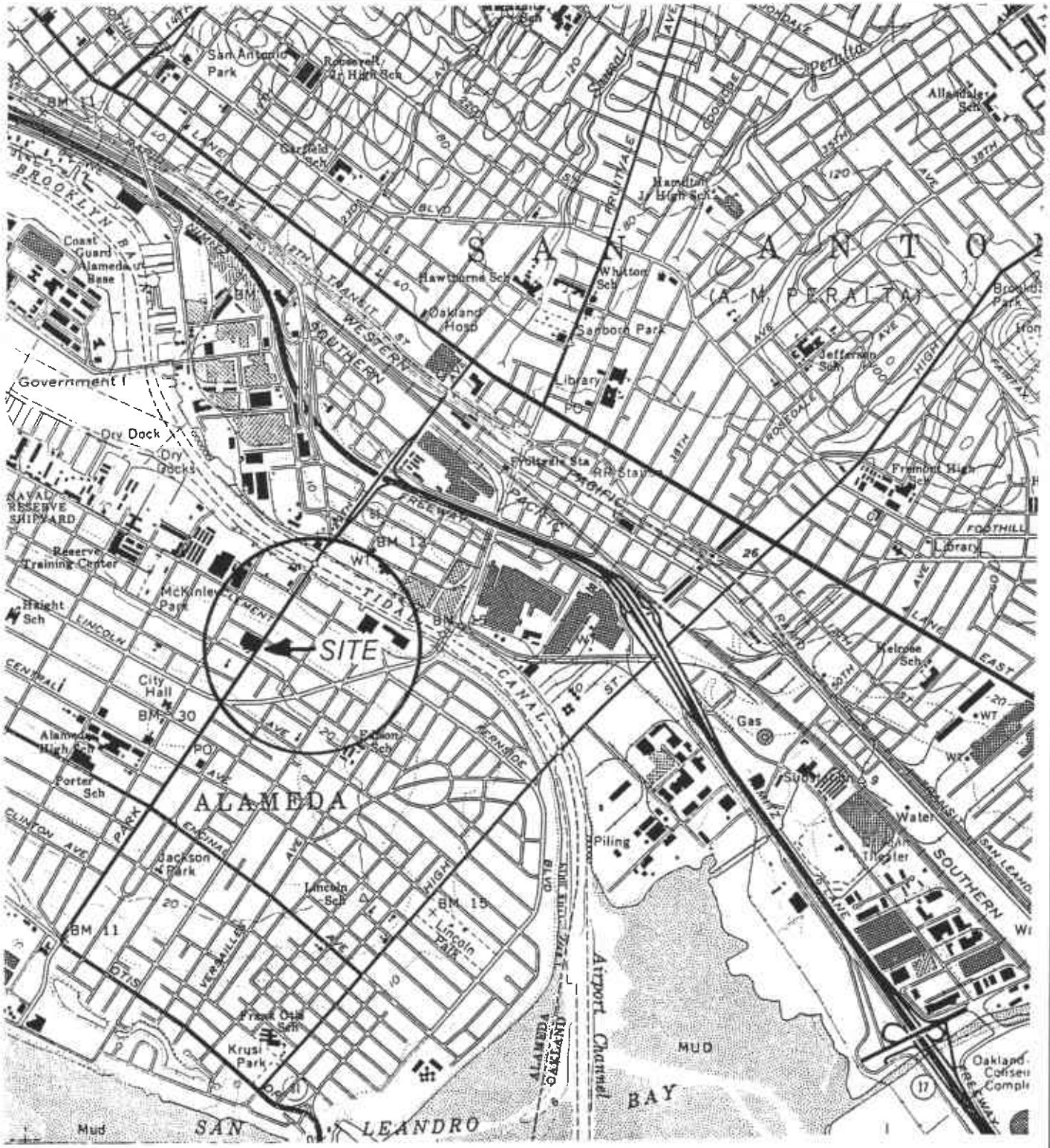
Benjamin I. Heningburg
Staff Geologist

James R Brownell

James R. Brownell, R.G.
Project Manager
California Registered Geologist No. 5078

BIH (LRP024.832)
Enclosures

cc: Steven W. Meeks – Delta Environmental Consultants, Inc.



GENERAL NOTES:
BASE MAP FROM U.S.G.S.
OAKLAND EAST, CA.
7.5 MINUTE TOPOGRAPHIC
PHOTOREVISED 1980

North

QUADRANGLE LOCATION

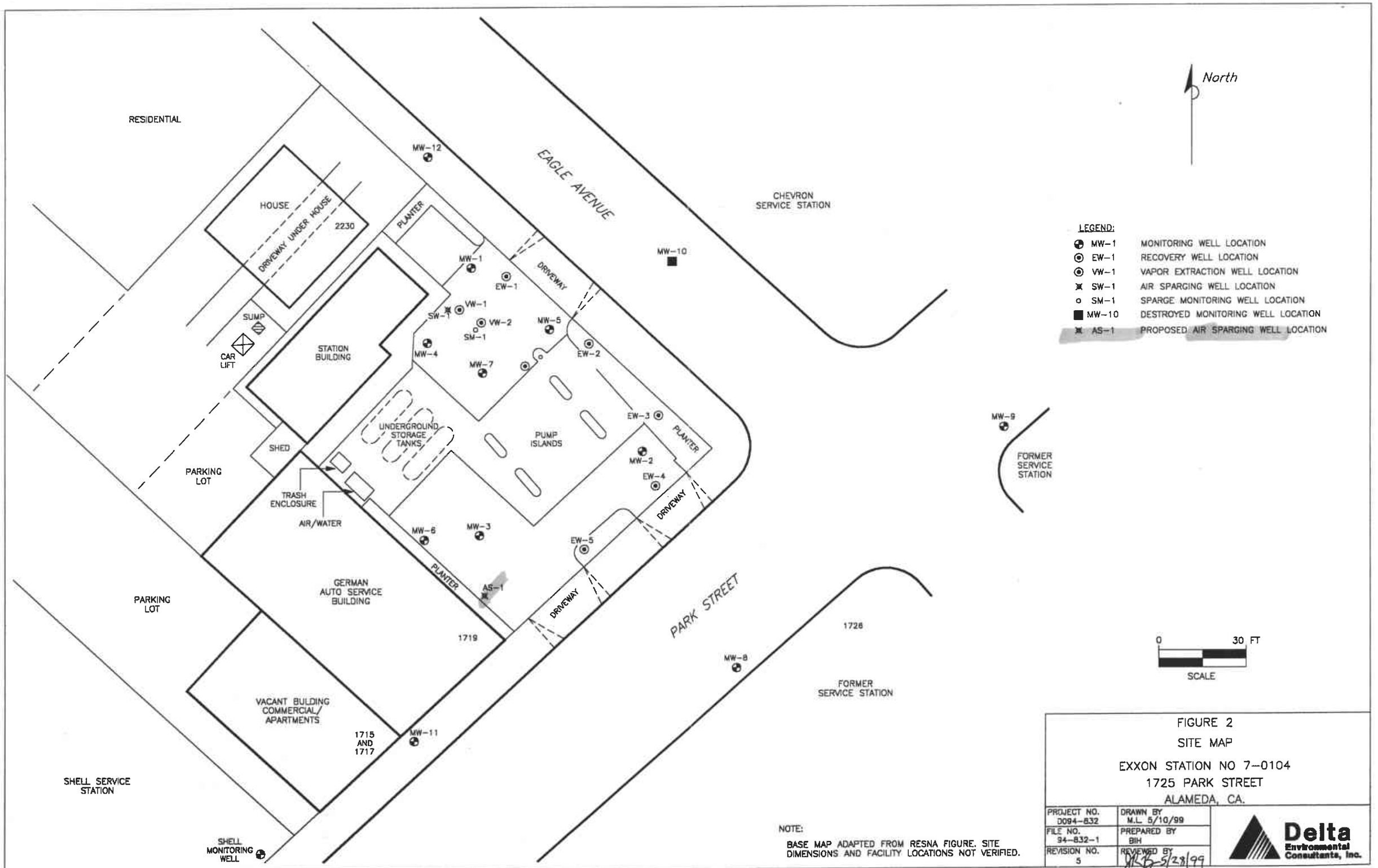
0 2000 FT

SCALE 1 : 24,000

FIGURE 1
SITE LOCATION MAP
EXXON STATION NO 7-0104
1725 PARK STREET
ALAMEDA, CA.

PROJECT NO. 0094-832	DRAWN BY I.H. 9/27/94
FILE NO. —	PREPARED BY RDM
REVISION NO. 1	REVIEWED BY 10/5/94

Delta Environmental Consultants, Inc.



NOTE:

BASE MAP ADAPTED FROM RESNA FIGURE. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

FIGURE 2

SITE MAP

EXXON STATION NO 7-0104

1725 PARK STREET

ALAMEDA, CA.

PROJECT NO. 0094-632	DRAWN BY M.L. 5/10/99
FILE NO. 94-632-1	PREPARED BY BIH
REVISION NO. 5	REVIEWED BY 5/28/99

Delta Environmental Consultants, Inc.

FIELD METHODS AND PROCEDURES

1.0 HEALTH AND SAFETY PLAN

Field work performed by Delta and subcontractors at the site will be conducted according to guidelines established in a Site Health and Safety Plan (SHSP). The SHSP is a document which describes the hazards that may be encountered in the field and specifies protective equipment, work procedures, and emergency information. A copy of the SHSP will be at the site and available for reference by appropriate parties during work at the site.

2.0 LOCATING UNDERGROUND UTILITIES

Prior to commencement of work on site, Delta will research the location of all underground utilities with the assistance of Underground Service Alert (USA). USA will contact the owners of the various utilities in the vicinity of the site to have the utility owners mark the locations of their underground utilities. Work associated with the boring and air-sparging installation will proceed by manual hand augering to a minimum depth of 5-feet below grade to avoid contact with underground utilities.

3.0 SOIL SAMPLING AND CONTAMINATION REDUCTION

Soil borings and soil sampling will be performed under the direction of a Delta geologist. The soil boring will be advanced using a truck-mounted, hollow-stem auger drilling rig.

To reduce cross-contamination between samples, the split-barrel sampler will be washed in a solution of trisodiumphosphate (TSP) soap and water, and double-rinsed between each sampling event.

Soil sampling will be done in accordance with ASTM 1586-84. Using this procedure, a 2-inch inside-diameter California-type sampler with three 6-inch diameter brass tubes is driven into the soil by a 140-pound weight. After an initial set of 6 inches, the number of blows required to drive the sampler an additional 12 inches is known as penetration resistance or the "N" value. The N value is used as an empirical measure of the relative density of cohesionless soils and the consistency of cohesive soils.
Upon recovery, a portion of the soil sample will be placed into a Ziplock© bag and sealed for later screening with a photoionization detector. Another portion of the soil sample will be used for classification and description. The remaining brass tube (closest to the shoe of the sampler) will be sealed at the ends with teflon tape and plastic caps and will be stored at approximately 4°C for transport to the laboratory.

4.0 SOIL CLASSIFICATION

As the samples are obtained in the field, they are classified by the crew chief/geologist in accordance with the Unified Soil Classification System (USCS). Representative portions of the samples will then be retained for further examination and for verification of the field classification. Logs of the borings indicating the depth and identification of the various strata, the N value, and pertinent information regarding the method of maintaining and advancing the borehole will be made.

5.0 SOIL SAMPLE SCREENING/hNu PORTABLE PHOTOIONIZATION DETECTOR METHOD

After the soil samples within the Ziplock© bags have been brought to ambient temperature, the headspace vapors of the soil sample in the bag will be screened with a portable photoionization detector or similar device. The sample corner of the bag will be opened and the detector probe immediately placed within the headspace. The highest observed reading will be recorded.

6.0 QUALITY ASSURANCE PLAN

This section describes the field and analytical procedures to be followed throughout the investigation.

6.1 General Sample Collection and Handling Procedures

Proper collection and handling are essential to ensure the quality of a sample. Each sample will be collected in a suitable container, preserved correctly for the intended analysis, and stored prior to analysis for no longer than the maximum allowable holding time.

6.2 Sample Identification and Chain-of-Custody Procedures

Sample identification and chain-of-custody procedures ensure sample integrity and document sample possession from the time of collection to its ultimate disposal. Each sample container submitted for analysis will have a label affixed to identify the job number, sampler, date and time of sample collection, and a sample number unique to that sample.

This information, in addition to a description of the sample, field measurements made, sampling methodology, names of on-site personnel, and any other pertinent field observations will be recorded on the borehole log or in the field records. A California-certified laboratory will analyze samples.

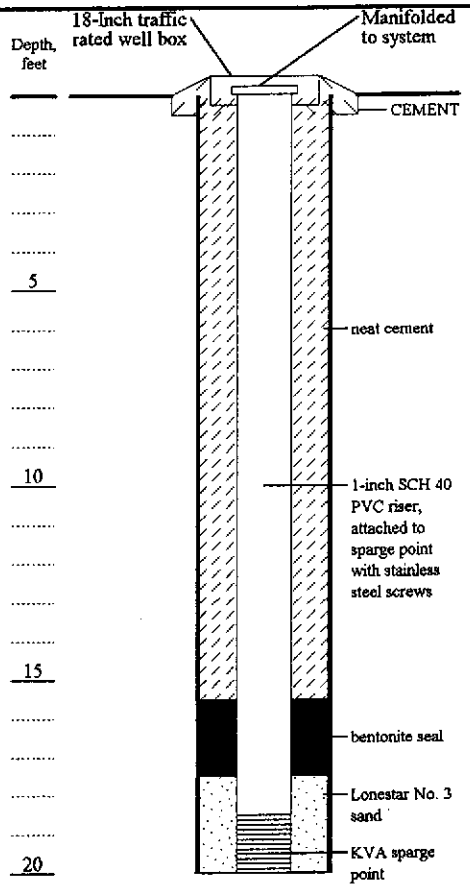
A chain-of-custody form will be used to record possession of the sample from time of collection to its arrival at the laboratory. When the samples are shipped, the person in custody of them will relinquish the samples by signing the chain-of-custody form and noting the time. The sample-control officer at the laboratory will verify sample integrity and confirm that it was collected in the proper container, preserved correctly, and that there is an adequate volume for analysis.

If these conditions are met, the sample will be assigned a unique log number for identification throughout analysis and reporting. The log number will be recorded on the chain-of-custody form and in the legally required log book maintained by the laboratory in the laboratory. The sample description, date received, client's name, and other relevant information will also be recorded.

ENCLOSURE B

Typical Sparging Well Construction Detail

Delta Environmental Consultants, Inc.	Street Address **1725 Park Street**	Project ID **Exxon Station No 7-0104**	
	City & State **Alameda, California**	Surface Elev.	Well / Boring ID **AS-1**
	Delta Project # **D094-832**	Casing Elev.	Total Depth **20'**



PROPOSED WELL CONSTRUCTION

PROPOSED WELL CONSTRUCTION

Dates and Times	Logger **Ben Heningburg**	Sampling Method & Diameter **Split-Spoon 2" ID**	Permitting Agency **Alameda Dept. of Public Works**
Start	Drilling Company & Driller **Western Strata Exploration, Inc.,**	Bore Hole Diameter **8.25-Inches**	Permit #
Total Depth	Drillers C-57# **552198**	Diameter, Type & Slot Size of Casing **1-Inch SCH 40 PVC, Micro-Porous**	
Completion or backfill	Drilling Equipment and method **B-53, Hollow Stem Auger**		Page 1 of 1

PROPOSED 94-832.GPJ 5/7/99

ENCLOSURE C

Air Sparging Well Permit Application

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-5575 ANDREAS GODFREY FAX (510) 670-5262
(510) 670-5248 ALVIN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1725 Park Street
Alameda, Alameda County, California

California Coordinates Source _____ ft. Accuracy ± ___ ft.
CCN _____ ft. CCE _____ ft.
APN _____

CLIENT
Name Exxon Company, U.S.A.
Address 2300 Clayton Road Phone 925 246-8776
City Concord, CA Zip 94520

APPLICANT
Name Delta Environmental Consultants, Inc.
Fax _____
Address 3164 Gold Camp Dr #200 Phone (916) 536-2623
City Rancho Cordova, CA Zip 95670

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☐
Monitoring	☐	Well Destruction	☐
Air sparging	☒		

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other _____	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☒
Cable	☐	Other	☐		

DRILLER'S LICENSE NO. C57 552198

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 1 in. Depth 20 ft.
Surface Seal Depth 16.5 ft. Number 1

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 1 June 99
ESTIMATED COMPLETION DATE 1 June 99

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE G. L. Heinzberg DATE 5/7/99

FOR OFFICE USE

PERMIT NUMBER _____
WELL NUMBER _____
APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC
Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
See attached.

G. SPECIAL CONDITIONS

APPROVED _____ DATE _____