add MtBE
silica gel clean-up
add 2 add'l SBs
move 1 SB.

PMS - March Crest

SUBSURFACE
SITE INVESTIGATION WORK PLAN
2756 MAIN STREET
ALAMEDA, CALIFORNIA

PREPARED FOR:
CITY OF ALAMEDA, PUBLIC WORKS DEPARTMENT,
ALAMEDA POINT, BUILDING 1, ALAMEDA, CALIFORNIA

PREPARED BY:
Ninyo & Moore Geotechnical and Environmental Sciences Consultants
675 Hegenberger Road, Suite 220
Oakland, California 94621

Kris Larson
633-5640

February 18, 2000
Project No. 400301-02

klarson@ninyoandmoore.com

Ms. Mallika Ramachandran, P.E.
Senior Civil Engineer
Public Works Department
Alameda Point, Building 1
950 West Square Mall, Room 110
Alameda, California 94501

February 18, 2000

Subject: Subsurface Site Investigation Work Plan
2756 Main Street
Alameda, California

Reference: "PSA for 2756 Main Street, Alameda, CA." prepared by the Alameda County Health Care Services Agency, dated February 2, 2000.

Dear Ms. Ramachandran:

In accordance with your request, and your authorization to proceed, Ninyo & Moore is pleased to submit this work plan for a subsurface site investigation as required by the Alameda County Health Care Services Agency at the above-referenced site. Project work will be performed in general accordance with current County of Alameda guidelines. Project tasks, as described in this work plan, include the collection of soil and groundwater samples adjacent to the former tank pit excavation, analyses of these samples, and preparing a report presenting findings, conclusions and recommendations.

Ninyo & Moore appreciates, the opportunity to be of service to the City of Alameda on this project. If you have any questions regarding this work plan, please contact the undersigned.

Sincerely,
NINYO & MOORE

Kristopher M. Larson
Senior Staff Environmental Geologist

York R. Gorzolla, R.G., R.E.A.
Manager of Environmental Sciences

KML/YRG/jms

Distribution: (1) Addressee
(1) Ms. Eva Chu, Hazardous Materials Specialist, Environmental Health Services, 1131 Harbor Bay Parkway, Suite 250, Alameda, California 94502-9335

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Figure 1 – Proposed Boring Location Map

1. INTRODUCTION

In accordance with the request of Ms. Millika Ramachandran, representative for the City of Alameda, Ninyo & Moore has prepared this work plan for a subsurface soil and possible groundwater investigation adjacent to the former tank pit excavation at the above-referenced site. The subsurface investigation was requested by a letter prepared by the Alameda County Health Care Services (HCS), Environmental Protection Division, dated February 2, 2000.

2. SITE DESCRIPTION

The project is located at 2756 Main Street, on the southeast corner of Main and Singleton Streets (Figure 1). The site is currently a vacant dirt lot and was formerly a service station. According to piezometer readings in the area the groundwater beneath the site is expected to be approximately one to two feet below ground surface (bgs).

3. SITE HISTORY

Based on review of the "Underground Storage Tank Removal Report" prepared by ACC Environmental dated January 25, 2000, two 6,000-gallon gasoline underground storage tanks and one 550-gallon oil UST were removed in December, 1999. Groundwater samples collected in the vicinity of the former tanks indicated detectable concentrations of total petroleum hydrocarbons as gas (TPH-G), and diesel (TPH-D), benzene, toluene, ethylbenzene, and total xylenes (BTEX). Soil samples taken in the vicinity indicated detectable concentrations of TPH-G and TPH-D.

4. PROPOSED SUBSURFACE SAMPLING ACTIVITIES

Based on the HCS letter dated February 2, 2000, and verbal communications with HCS project specialist Ms. Eva Chu, the scope of work will include site utility clearance, the preparation of a site-specific health and safety plan (HSP), preparation of required permits, soil and possible

groundwater sampling, and disposal of sampling derived waste which are discussed in the following sections.

4.1. Site Utility Clearance

Underground Service Alert, a public underground utility locator, will be notified prior to implementing field activities to provide information regarding subsurface utilities at the boring locations.

4.2. Site Specific Health and Safety Plan

On-site work will be performed subject to the procedures outlined in a HSP. The HSP will outline methods and procedures to reduce risks to workers potentially exposed to possible soil and groundwater contaminants. Site workers will be required to read and sign the plan prior to commencing field activities, acknowledging their familiarity with and acceptance of its provisions. Physical safety hazards will be reduced by plan implementation and by the installation of temporary pedestrian barriers.

4.3. Permits Required for the Subsurface Investigation

Permits will be required for the subsurface investigation. The boring permits will be obtained from the City of Alameda Public Works Department (PWD) prior to drilling. Ms. Eva Chu, Hazardous Material Specialist, will be notified prior to commencing of fieldwork. Based on our understanding of current regulatory guidelines, no other permits or agency notifications are required to perform this soil and groundwater evaluation.

5. FORMER UST EXCAVATION FIELD SAMPLING PROGRAM

The subsurface investigation will include the assessment of soil and groundwater beneath and adjacent to the former UST excavations. The subsurface investigation will be accomplished using a hydraulically driven Geoprobe sampling tool equipped 1.5-inch, inside diameter, clear

acetate liners. Six soil and groundwater samples will be collected adjacent to the former USTs and along the perimeter of the site. Soil samples will be collected at two feet bgs, or in the case of a high groundwater elevation, in the vadose zone or capillary fringe area. Groundwater samples will be collected at first occurrence of water.

Boring locations were selected based on results of previous tank removal activities performed at the site; however, borings and their locations may be modified from this workplan to take into account information obtained as this evaluation progresses. The proposed boring locations are illustrated on Figure 1. Soil samples will be collected in clear acetate liners. The liners will be sealed with teflon tape and plastic caps and delivered to a state certified laboratory for analysis.

Soil and groundwater samples collected will be analyzed for TPH as gasoline, diesel, and motor oil using EPA Method 8015; BTEX using EPA method 8020; and for priority pollutant metals using EPA method 6010. If, based on the results of the analytical data, the lateral and vertical extent of petroleum hydrocarbons has not been determined, additional soil and/or groundwater samples may be collected from additional boring locations and analyzed for the constituents of concern listed above. Precise locations will be based on specific conditions encountered in the field.

The proposed field activities will be performed in accordance with local regulatory requirements, under the supervision of a California-registered geologist.

5.1. Drilling Records

Drilling records will be kept on individual logs for each boring. The information to be recorded on each field boring log will include the following

- Project name and number.
- Unique boring identifier (such as "B1") and datum:
- Dates and times drilling started and finished:

- Drilling method and boring diameter;
- Name of logger and reviewer;
- Sample number, depth interval and recovery length;
- Earth material descriptions in general accordance with the Unified Soil Classification System (USCS);
- Depths to strata changes, bedrock and groundwater;
- Lithology (if rock or geologic formation material is encountered);
- Boring abandonment summary.

5.2. Drilling and Soil Sampling Equipment Decontamination

Drilling and sampling equipment will be decontaminated using a high temperature, high pressure wash system and/or a three-step wash and rinse cycle which utilizes phosphate-free detergent and potable water solution followed by potable and de-ionized water rinses.

5.3. Soil and Liquid Disposal

Soil cuttings and decontamination fluids and purged groundwater generated from field activities will be placed into 55-gallon, Department of Transportation (DOT) approved drums, labeled and stored in a preselected on-site location pending disposition.

6. QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) RESULTS

All documentation related to sample analysis will be subject to review to assure data validity. The review will consist of verifying that all data are accounted for and the data are valid. The data validity process will include a review of chain-of-custody forms, holding times, laboratory analytical reports, method blanks, relative percent difference, surrogate recoveries, and detection limits. The QA/QC program in effect during the performance of field activities and laboratory testing will include the following:

- Complete documentation of field activities on appropriate forms.
- Proper equipment decontamination in accordance with procedures established in this work plan.
- Chemical testing will be performed by a state-certified laboratory, and QA/QC data will be included with laboratory reports.
- Use of appropriate chain-of-custody forms and adherence to proper chain-of-custody procedures.
- Proper calibration (and recalibration, if necessary) of field equipment, as appropriate.

7. DATA ANALYSIS AND REPORT PREPARATION

Following completion of the soil and groundwater assessment, the data will be compiled and analyzed, and a report summarizing project activities will be prepared. The report will contain a narrative description of field procedures utilized, including sample collection methods, sample extraction and preservation procedures, laboratory analysis methodology, COC and QA/QC documentation, analytical results, assessment findings, conclusions and recommendations.

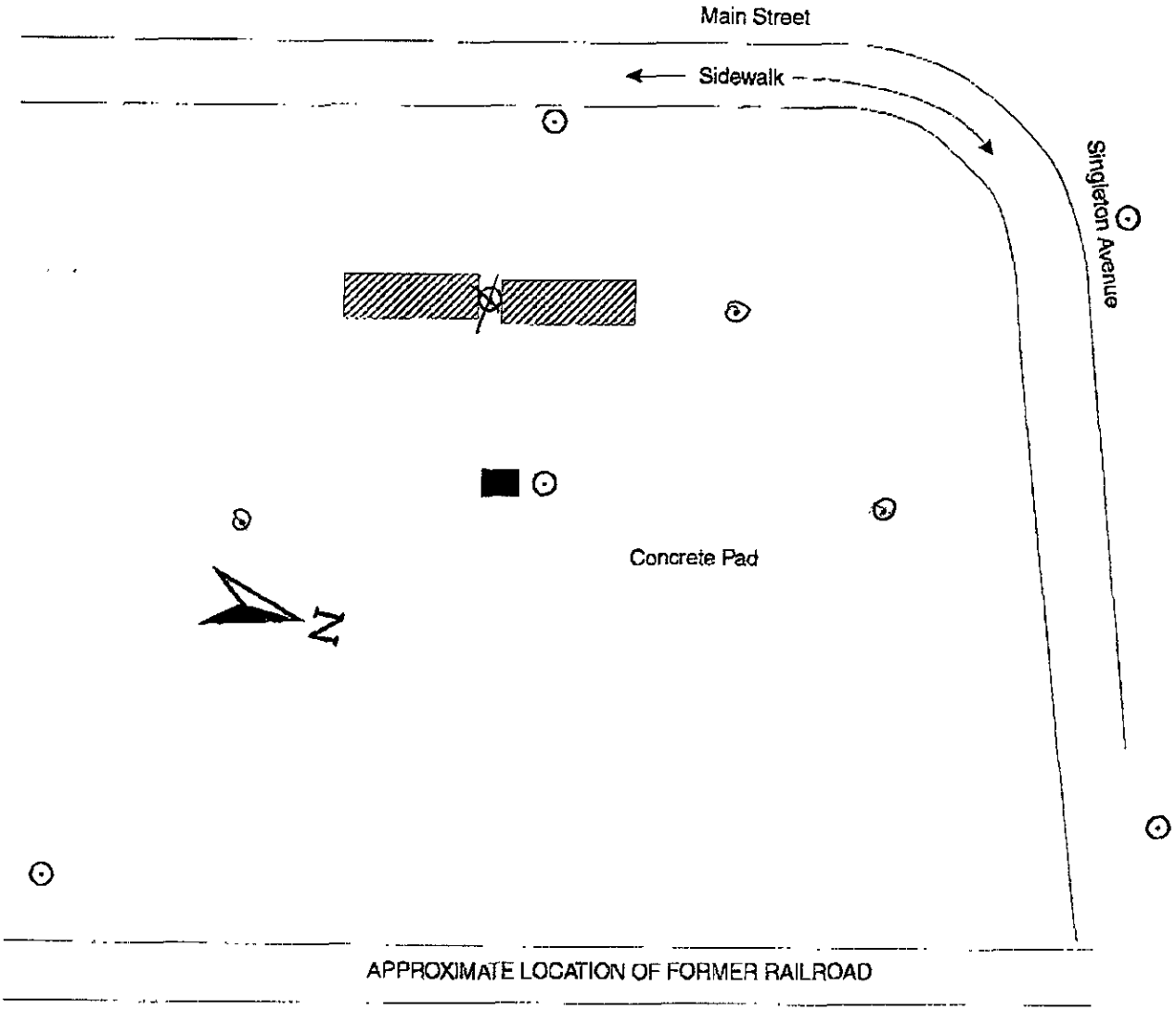
8. SCHEDULE OF PROPOSED WORK

Field work will commence following HCS approval of this workplan and boring permit application. It will take approximately one week to receive the analytical results from the laboratory at which time verbal results and recommendations will be available.

9. REFERENCE

Alameda County Health Care Services Agency, PSA or 2756 main Street; dated February 2, 2000.

ACC Environmental Consultants, Underground Storage tank Report; dated January 25, 2000



REFERENCE: 1/25 UST REPORT ACC ENVIRONMENTAL

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Ninyo & Moore

PROPOSED BORING LOCATION MAP

2756 MAIN ST
ALAMEDA, CA

PROJECT NO.	DATE	FIGURE
400301-02	02/00	1

Ninyo & Moore Transmittal

675 Hegenberger Rd., Ste. 220, Oakland, CA 94621-1919 ◆ Phone 510/633-5640 ◆ Fax 510/633-5646 ◆ www.ninyoandmoore.com

To: Eva Chu **Date:** February 18, 2000

Firm: Alameda County Health Care Services **Fax No:** 510-337-9335

Address: **Telephone No:**

From: Kris Larson **Total Pages:** 2

Subject: Proposed Boring Location Map-2756 Main St. **Project No:**

☐ **Urgent**	☐ **For Approval**	☐ **For Your Use**	☐ **Please Reply**	☐ **As Requested**
Original Document:	☐ **Will Not Follow**	☐ **Will Follow**	☐ **By U.S. Mail**	☐ **By Other**

Eva, attached is the proposed boring location map for 2756 Main Street.

Thank you

Kris Larson
Senior Staff Environmental Geologist

- **Geotechnical Engineering**
- **Engineering Geology**
- **Materials Testing and Inspection**
- **Construction Management**
- **Engineering Design**
- **Environmental Engineering**
- **Environmental Site Assessments**
- **Regulatory Compliance and Permitting**
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