

WORK PLAN
for
SITE CHARACTERIZATION
at
SEKHON GAS STATION
6600 Foothill Boulevard
Oakland, California

Prepared for:

Mr. Ravi Sekhon
6600 Foothill Boulevard
Oakland, California

July 2, 2003

ADVANCED ASSESSMENT AND REMEDIATION SERVICES



2380 Salvio Street, Suite 202
Concord, CA 94520
Phone: (925) 363-1999
Fax: (925) 363-
e-mail: aars@earthlink.net



ADVANCED ASSESSMENT AND REMEDiation SERVICES (AARS)

2380 SALVIO STREET, SUITE 202
CONCORD, CALIFORNIA 94520-2137
TEL: (925) 363-1999 FAX: (925) 363-1998
e-mail: aars@earthlink.net
www.aaars.com

July 2, 2003

Mr. Don Hwang
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Alameda County
Environmental Health
JUL 03 2003

Subject: Submittal of Work Plan for Site Characterization
at Sekhon Gas Station, 6600 Foothill Blvd., Oakland, California

Dear Mr. Hwang:

Enclosed is the work plan for site characterization to delineate the extent of the contaminant plume at the above referred site. The investigation will be conducted in accordance with the guidelines and requirements of the Alameda County Environmental Health Services (ACEHS) and the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). This work plan addresses the technical comments made by ACEHS, dated October 29, 2002 and April 28, 2003.

Please call me at (925) 363-1999 if you have any questions regarding this work plan.

Sincerely,

Advanced Assessment and Remediation Services

Tridib K. Guha, R.G., R.E.A.
Principal

cc: Mr. Ravi Sekhon, Oakland, California
Mr. Sunil Ramdass, USTCF, Sacramento, California

TG/SEKHONWP3/Enclosure

WORK PLAN
for
SITE CHARACTERIZATION
at
SEKHON GAS STATION
6600 Foothill Boulevard
Oakland, California

1.0 INTRODUCTION

This work plan presents the scope of work to conduct a groundwater quality investigation to delineate the extent of the contaminant plume at 6600 Foothill Boulevard, Oakland, California. The proposed scope of work is based on the analytical results of groundwater sampling of additional site investigation conducted in July 2002 (report dated September 6, 2002). This work plan addresses the technical comments made by Alameda County Environmental Health Services (ACEHS), dated October 29, 2002 and April 28, 2003. The samples collected and analyzed during additional investigation, identified elevated petroleum hydrocarbon constituents in soil and groundwater, specifically south of the site. The proposed investigative work is designed to evaluate the extent of the subsurface contamination and whether hydrocarbon constituents have impacted the groundwater off-site affecting the neighboring property.

2.0 PROJECT BACKGROUND

"The site is presently used as a retail gasoline station. The site was formerly operated as a gasoline station by Beacon. Mr. Ravi Sekhon (present owner) purchased the property in 1998. At that time underground storage tank (UST) system consisted of two single wall fiberglass USTs and one single wall steel UST.

As part of the UST system upgrade effort, the steel UST and dispensers were removed on December 16, 1998. Mr. Steve Crawford of the Oakland Fire Department was on site to observe site conditions and to direct sample collection. Soil samples were collected from the UST pit sidewalls and from beneath the dispenser islands. There was no evidence of contamination other than MTBE which was reported in the laboratory reports. Mr. Crawford did not require the pipe trench samples be collected, since the pipe trench between the dispensers and the UST pit was less than 20 feet.

During P&D Environmental site visit on January 9, 1999, approximately 6 inches of groundwater was observed in the bottom of the UST pit. The measured depth to groundwater was 8 feet below the ground surface. Sheen was observed on the water in the UST pit. No petroleum hydrocarbon odors were detected in any of the soil at the site. Tank inspection report is presented in Appendix A.

Copies of the soil samples results for samples collected from beneath the dispenser islands and from the UST pit sidewalls were forwarded to ACEHS on January 11, 1999. In addition, on December 1998, one groundwater grab sample was collected by Edd Clark & Associates. A copy of these results were also forwarded to the ACEHS and presented in Appendix B.

Review of the laboratory reports shows that the only detected compound in soil has been MTBE (with the exception of 25 ppb of toluene in the east dispenser island soil sample). Review of the groundwater sample from the pit shows that TPH-G, BTEX, and MTBE were detected in the groundwater.

Based on the sample results, P&D recommended that the UST pit be backfilled, the upgrade of remaining UST system be completed, and that a groundwater investigation be performed to determine the extent and origin of petroleum hydrocarbons in groundwater.

Subsequently, groundwater was pumped from the UST pit and stored in above ground storage tanks pending carbon filtration and discharge to the storm drain with an approved San Francisco Bay Regional Water Quality Control Board temporary groundwater discharge permit. In addition, the stockpiled soil generated during UST removal was characterized, profiled and removed from the site to the BFI Vasco Road landfill in Livermore, California (P&D Environmental, March 9, 1999)".

Advanced Assessment and Remediation Services (AARS) conducted a preliminary site assessment in June 2001 and additional site investigation in July 2002. The results of site investigations confirmed the presence of elevated petroleum hydrocarbons specifically south of the site. The ACEHS required additional investigations to delineate the extent of the plume.

3.0 PROPOSED SCOPE OF WORK

The proposed site investigation will be conducted in accordance with the requirements and guidelines of ACEHS and California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). AARS proposes:

Installation of four soil borings to 20 feet below ground surface (bgs) each. Two soil borings (SB-3/TW and SB-4/TW) will be drilled onto the empty lot located on the southeastern corner of the intersection of Foothill Boulevard and Havenscourt Boulevard and two soil borings (SB-5/TW and SB-6/TW) will be drilled on the back of the store. These four soil borings will be converted to temporary wells to evaluate the groundwater quality of southwestern extent and southern extent of the plume. Three soil borings (SB-7, SB-8 and SB-9) will be drilled encompassing the removed UST area. These three soil borings will be drilled to 20 feet bgs. Soil samples will be collected from each boring for source characterization. The locations of these soil borings are presented in Figure 1. The various tasks associated with this site investigation are discussed below.

Task 1: Project Preparation, Submit Work Plan and Acquire Necessary Permits

Information pertinent to the site will be reviewed and will include available literature, previous fieldwork and other sources. A work plan will be prepared, including a health and safety plan, and will be submitted to the ACEHS. All required permits will be obtained and field activities will be coordinated with the ACEHS. The site will be marked and the Underground Service Alert will be notified prior to drilling of the soil borings.

Task 2: Preferential Pathway Survey

AARS conducted a preferential pathway study that details the potential migration pathways and potential conduits for horizontal and vertical migration that may be present in the vicinity of the site.

a) Horizontal Conduit Investigation

AARS conducted a conduit study to determine the effects of horizontal conduits on contamination migration and horizontal conduits acting as preferential pathways. The study involved a utility survey – researched the records of City of Oakland Public Works Department (COPWD) past utility work. The COPWD does not have any cross-sections of the utility lines. However, enclosed are copies of selected portion of two maps (Appendix C), with pertinent information i.e. surface elevations and flow lines. The depths of both sanitary sewer and storm conduits are less than five feet near the project area. Also, the records of Pacific Gas and Electric Company and other local agencies were researched. The depth of these utility lines are shallow. The shallowest depth of groundwater in the existing monitoring wells recorded is 7.5 feet bgs. Therefore, contaminant migration through the utility lines is unlikely.

b) Well Search

A quarter mile (1,320 feet) radius well search was performed to ascertain whether active drinking water production wells were located in the area. The search was consisted of a review of the Alameda County Public Works Agency Water Resource Section records. The City of Oakland reports that East Bay Municipal Utility District supplies drinking water to the area. There are no active wells exist within a quarter mile from the site. A tabulated well construction details near the project area is presented in Appendix D.

Task 3: Drill Soil Borings; Install four Temporary Wells

Seven soil borings (SB-3/TW through SB-6/TW, and SB-7, SB-8, and SB-9) will be drilled to 20 feet bgs using a limited access drilling rig (Rhino D-27 Geoprobe) with 2-inch-diameter direct push probe. During drilling soil samples will be collected using a MacroCore lined with clean 1¾" ID, 4-foot long clear acetate tubes. Soil samples will be collected continuously to the total depth of each boring. The selected soil samples for laboratory analyses will be cut by a hacksaw will be sealed using a teflon sheet, polyurethane cap and plastic tapes and placed immediately in iced cooler with sample ID number, depth, date and time of sample collection. At least two soil samples will be analyzed from each soil boring including one sample just above the water table. For soil borings SB-7, SB-8 and SB-9 four soil samples from each boring will be collected for laboratory analyses at every 5 feet interval or at any lithologic changes, starting at 5 feet bgs. Soil borings will be logged lithologically using the Unified Soil Classification System (USCS) and soil samples will be screened in the field using a portable photoionization detector. The samples recovered for chemical analysis will be sealed with teflon tape and plastic caps and placed immediately into an iced-cooler and transported to a certified laboratory under chain-of-custody. Soil borings SB-3/TW through SB-6/TW will be converted into temporary wells.

All drill cuttings will be transferred to 55-gallon drums, labeled and stored at the site for proper disposal.

Task 4: Sample Temporary Wells

Four soil borings (SB-3/TW through SB-6/TW) will be converted into temporary groundwater wells. The soil borings will be 5 feet beyond the top of the saturated zone (approximately 10 to 15 feet bgs). A ¾-inch diameter, flush threaded, schedule 40 PVC screened casing with 0.010-inch perforations will be installed in the bore holes. The water will be allowed to stabilize and a small volume of water will be purged. Following purging, a groundwater sample will be collected and the casing will be removed. The borings will then be completely back filled with neat cement or cement slurry to grade.

The removed water will be transferred to 55-gallon drums, labeled, and stored at the site for proper disposal.

Task 5: Analyze Soil Samples

Soil samples will be transported to North State Environmental Laboratory in South San Francisco, a California-certified laboratory for analysis following proper chain of custody procedures. A minimum of 2 soil samples (one from capillary zone) from each borings (SB-3/TW through SB-6) and four soil samples from soil borings (SB-7, SB-8 and SB-9) will be analyzed for total petroleum hydrocarbons as gasoline (TPHg), using EPA Method 5030/8015M; benzene, toluene, ethylbenzene and xylenes (BTEX) using EPA Method 8020; Methyl Tertiary Butyl Ether (MTBE) using EPA Method 8020. The detection limit for TPHg is 1.0 milligram per kilogram (mg/kg) and the detection limits for BTEX/MTBE are 0.005 mg/kg.

Task 6: Analyze Water samples

Groundwater samples collected from the temporary wells will be analyzed for TPHg, using EPA Method 5030/8015M; BTEX, using EPA Method 8020; MTBE, using EPA Method 8020. The detection limit for TPHg is 50 microgram per liter (µg/L) and the detection limits for BTEX/MTBE are 0.5 µg/L.

Task 7: Analyze Data and Laboratory Results and Prepare Report

Upon completion of the sample analysis and background research, a detailed evaluation of results and available information will be conducted to assess the extent and nature of groundwater contamination. This will include:

Interpretation of geologic and hydrogeologic information.

Description of field and analytical procedures.

Tabulation of soil and groundwater analytical results.

A report presenting the findings of the investigation including conclusions and recommendations, will be prepared for submission to the ACEHS.

4.0 SITE SAFETY PLAN

All field procedures and activities related to the conduct of the site investigation (in accordance with the site specific safety plan) has been developed in compliance with applicable requirements of the California Department of Health Services (DHS) and the Federal and State Occupational Health and Safety Administration (OSHA and Cal-OSHA). The site safety plan is presented in APPENDIX E.

5.0 PROPOSED SCHEDULE OF ACTIVITIES

The proposed schedule includes completion of the following items:

<u>Items</u>	<u>Cumulative Days</u>
1. Work plan and health and safety plan	5
2. Receipt of the soil borings/monitoring well permit from the ACPW	10
3. Field work and sample collection	25
4. Chemical analyses	35
5. Data analyses, integration and interpretation	50
6. Report preparation	60

This schedule may be subject to revision depending on timely receipt of work plan approval and approval of boring/well permit to complete the site investigation. Any changes to the schedule will be communicated in advance to the appropriate agencies and parties involved.

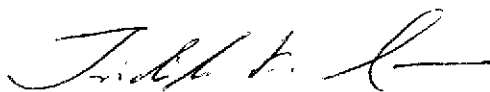
6.0 PROPERTY OWNER AND CONSULTANT

Property owner: Mr. Ravi S. Sekhon
6600 Foothill Blvd.
Oakland, California 94605

Contact: Mr. Ravi S. Sekhon (510) 568-4664

Consultant: Advanced Assessment and Remediation Services
2380 Salvio Street, Suite 202
Concord, California 94520

Contact: Tridib Guha (925) 363-1999 Office; (925) 451-1999



Tridib K. Guha, R.G.

SEKHON WPSITE CHARACTERIZATION

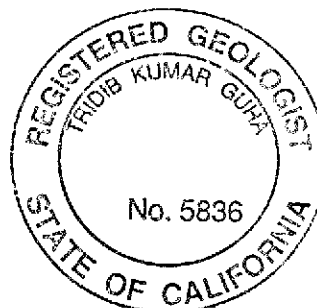


TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 PROJECT BACKGROUND 1

3.0 PROPOSED SCOPE OF WORK 2

 Task 1: Project Preparation, Submit work plan and acquire permits 2

 Task 2: Preferential Pathway Survey 3

 a) Horizontal Conduit Investigation.....3

 b) Well Search.....3

 Task 3: Drill soil borings; install four temporary wells 3

 Task 4: Sample Temporary wells 4

 Task 5: Analyze soil samples 4

 Task 6: Analyze groundwater samples 4

 Task 7: Analyze data laboratory results and prepare report 4

4.0 SITE SAFETY PLAN 5

5.0 PROPOSED SCHEDULE OF ACTIVITIES 5

6.0 PROPERTY OWNER AND CONSULTANT 5

FIGURE Site Map

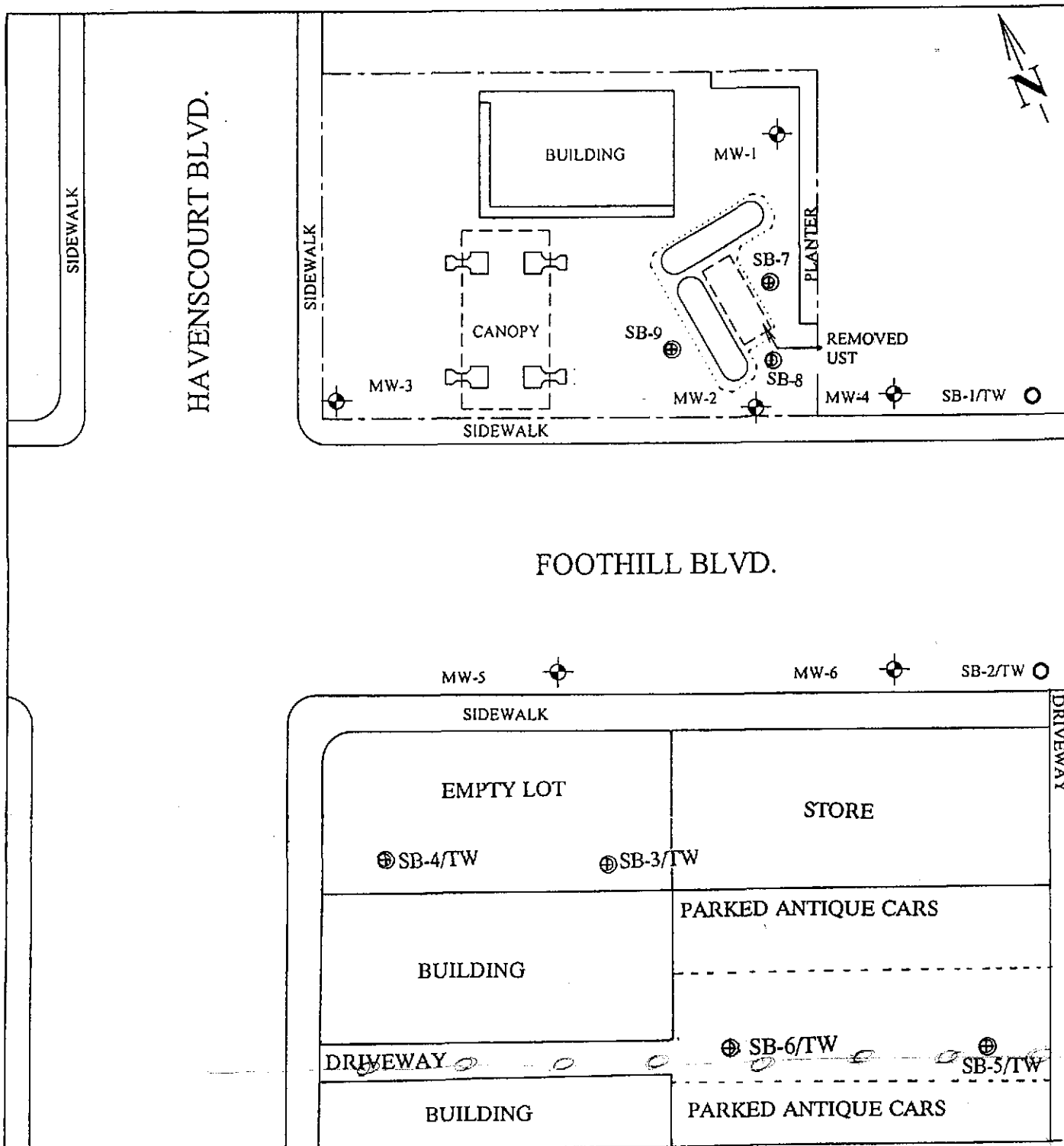
APPENDIX A Tank Removal Inspection Report

APPENDIX B Analytical Results of Grab Groundwater Sample (12/98)

APPENDIX C City of Oakland Public Works Maps Showing Surface Elevations and Flow Lines

APPENDIX D Record of Well Data near Project Area

APPENDIX E Site Safety Plan



HAVENSCOURT BLVD.

FOOTHILL BLVD.

LEGEND

- ◆ MW-2 Monitoring Well
- ⊕ MW-7 Proposed Monitoring Well
- SB-1/TW Soil Boring/ Temporary Well
- ⊕ SB-3/TW Proposed Soil Boring/ Temporary Well
- Present UST
- [- - -] Limits of Excavation
- ⌘ Pumps

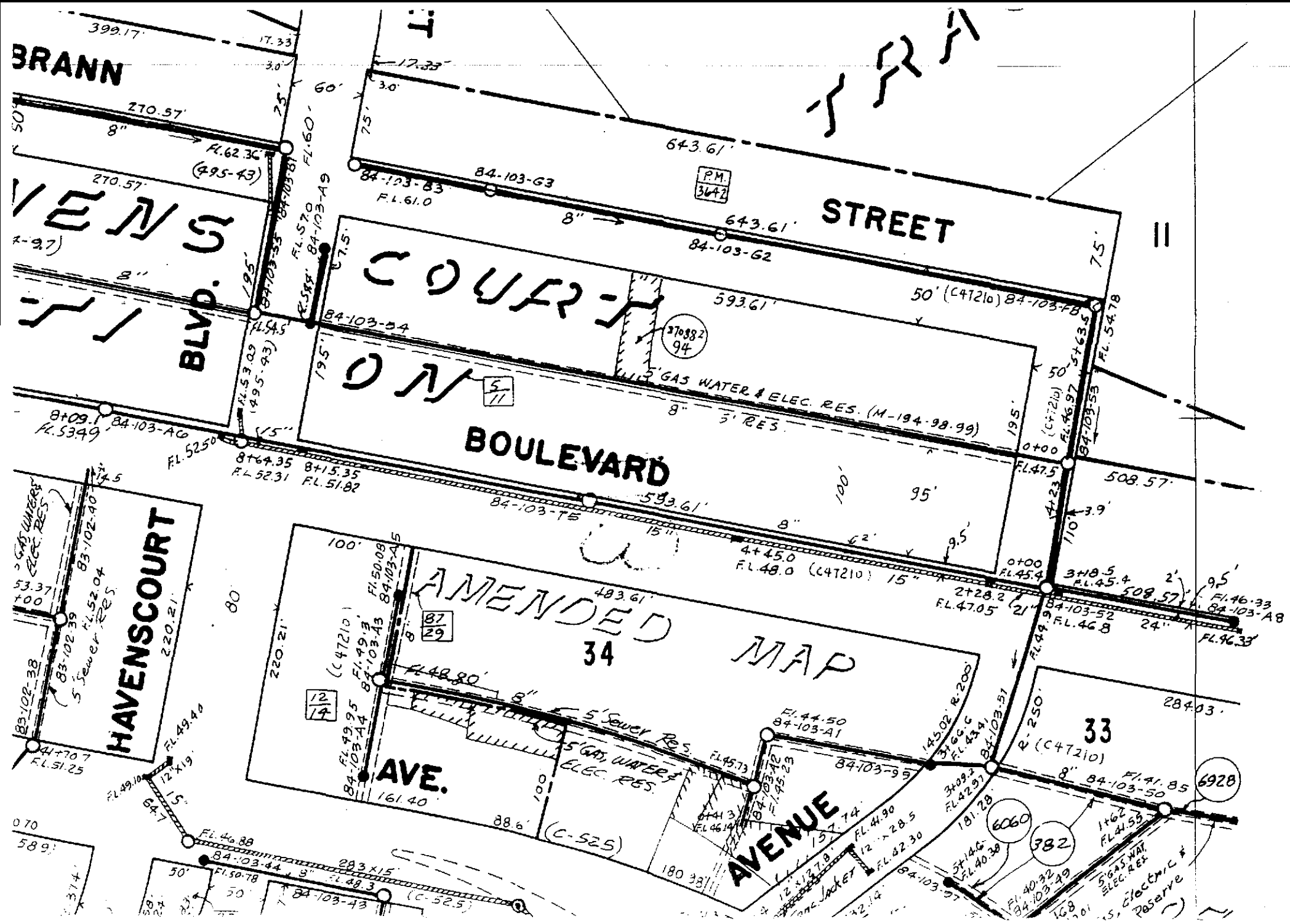
Source of Base Map:
 1. City of Oakland, Engineering Dept.
 2. P&D Environmental Report

SCALE: 1 inch = 40 feet (approx.)

FIGURE 1: SITE PLAN

SEKHON GAS STATION
 6600 Foothill Boulevard
 Oakland, California

**ADVANCED ASSESSMENT AND
 REMEDIATION SERVICES**
 2380 Salvio Street, Suite 202
 Concord, CA 94520



LEGEND

SANITARY SEWER

STORM CONDUIT

FLOW MONITOR

MANHOLE

LAMP HOLE

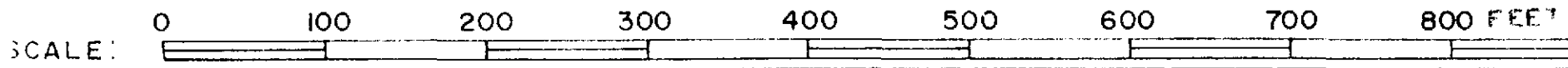
CLEAN OUT

INLET

DEED REFERENCE

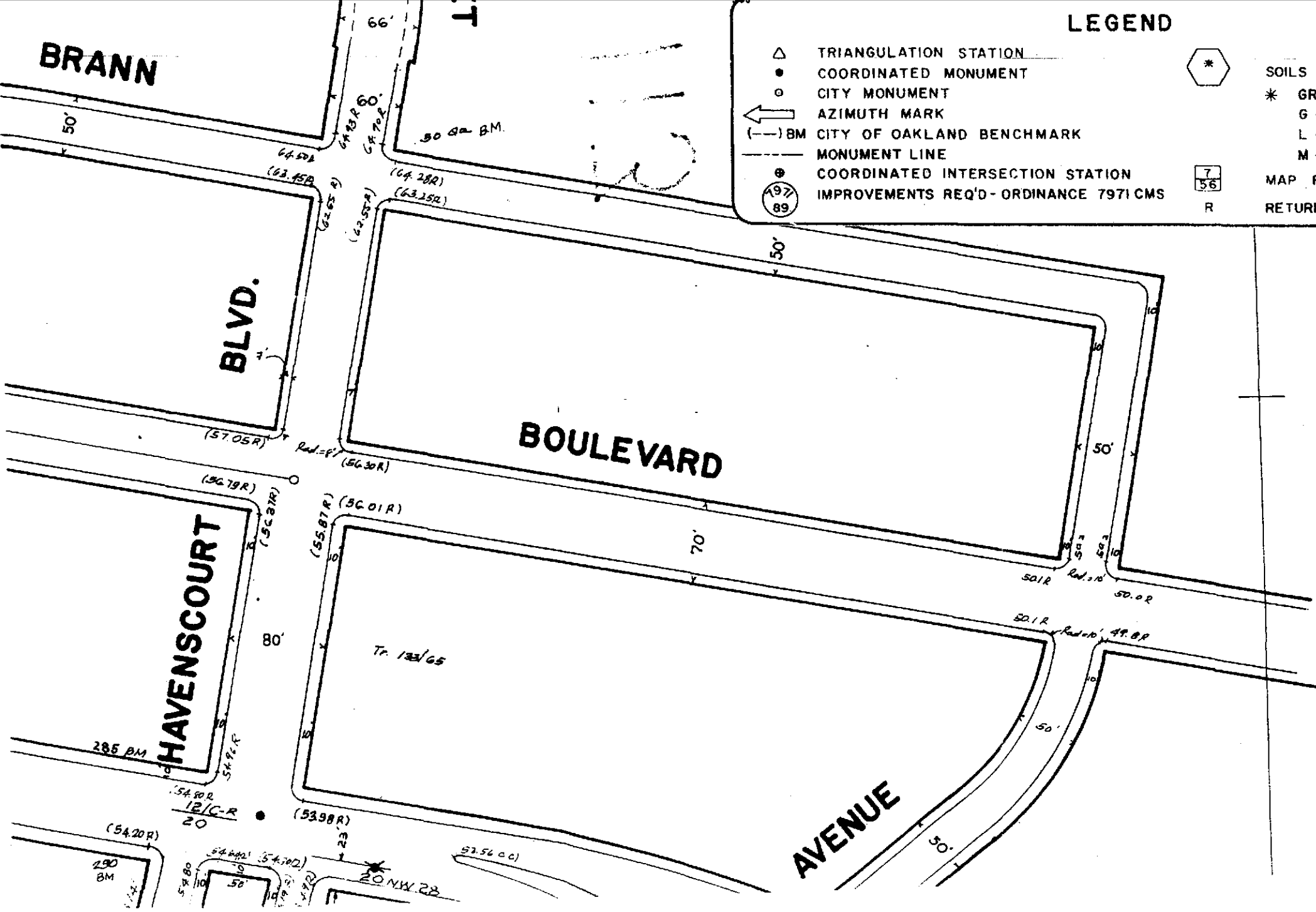
MAP REFERENCE

1512 B466

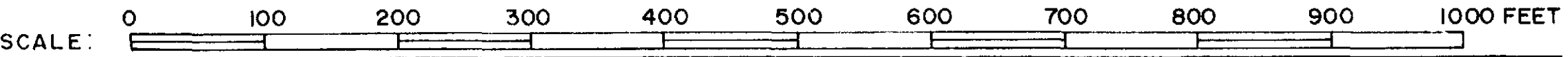


LEGEND

- △ TRIANGULATION STATION
- COORDINATED MONUMENT
- CITY MONUMENT
- ← AZIMUTH MARK
- (---) BM CITY OF OAKLAND BENCHMARK
- MONUMENT LINE
- ⊙ COORDINATED INTERSECTION STATION
- 197
89 IMPROVEMENTS REQ'D - ORDINANCE 7971 CMS
- SOILS FILE REFERENCE
- * GR - GRADING PERMIT
- G - GEOLOGIC REPORT
- L - LAND STABILITY
- M - MISCELLANEOUS
- 7
56 MAP REFERENCE
- R RETURN



1512 B 466



APPENDIX A

Tank Removal Inspection Report

**OAKLAND FIRE SERVICES AGENCY/OFFICE OF EMERGENCY SERVICES
HAZARDOUS MATERIALS UNIT
505 - 14th Street, Oakland, CA 94612 (510) 238-3938**

HAZARDOUS MATERIALS INSPECTION REPORT

Site Number	Facility Name	Facility Address	Zip Code
	SEXTON	6600 FOOT HILL	05

Inspection Report

FINAL ON TWO 10K GAL USE -
2.23.99 - TUBING - SUMM SENSORS OPERATIONAL
ALARM OPERATES - MECH FLOAT SENSORS

TLS-350 INSTALLED & OPERATIONAL

2.24.99 -
ALL 4 DISPENSORS HAVE POSITIVE
SHUTDOWN - ALL OPERATIONAL - MECH FLOAT SENSORS

FINAL Insp - PASSED @ 11:00AM 2.24.99

TANKS TO GO INTO OPERATION TOMORROW

WHITMAN PETROLEUM CONTRACTOR
ROD - BERTOLI

508 4664

Facility Contact/ Print Name: <i>Rod Bertoli</i>	Inspected by: <input type="checkbox"/> Insp. Griffin 238-7759 <input type="checkbox"/> Insp. Johnson 238-3804 <input checked="" type="checkbox"/> Insp. Craford 238-1158 <input type="checkbox"/> Insp. Gomez 238-7253
Facility Contact/ Signature: <i>Rod Bertoli</i>	
Date: 2.23.99 + 2.24.99	

OAKLAND FIRE SERVICES AGENCY/OFFICE OF EMERGENCY SERVICES
 HAZARDOUS MATERIALS UNIT
 505 - 14th Street, Oakland, CA 94612 (510) 238-3938

HAZARDOUS MATERIALS INSPECTION REPORT

Site Number	Facility Name	Facility Address	Zip Code
	SEKTON	6600 FOOTHILL	05

Inspection Report

~~PREPARE~~ DOUBLE WALL FIBERGLASS - (10000)

OLD SINGLE WALL FIBERGLASS - 2 X 10,000

* LEAK TEST Sumps X 2 - OK

* 5 PSC ON TANKS X 1 - PASSED

12 PSC ON VAPOR/VENT - PASSED

SECONDARY ON THURSDAY - 11:AM

ALL PRIMARY PASSED

SAMP TEST PERFORMED

707 936 1907

Facility Contact/Print Name: <i>Rod Berfeli</i>	Inspected by: <input type="checkbox"/> Insp. Griffin 238-7759 <input type="checkbox"/> Insp. Johnson 238-3004 <input checked="" type="checkbox"/> Insp. Craford 238-7758 <input type="checkbox"/> Insp. Gomez 238-7253
Facility Contact/Signature:	
Date: 2.2.99	

OAKLAND FIRE SERVICES AGENCY/OFFICE OF EMERGENCY SERVICES

HAZARDOUS MATERIALS UNIT

505 - 14th Street, Oakland, CA 94612 (510) 238-3938

HAZARDOUS MATERIALS INSPECTION REPORT

Site Number	Facility Name	Facility Address	Zip Code
	TANK REMOVAL	6600 FEOTHILL	05

Inspection Report

OWNER - RAVI SANKHAR - 560 1664

TANK REMOVAL - ONE 9,000 SW
GASOLINE

CALIBRATED IN DECEMBER WITH
A READING OF

700 lbs CO₂ 1/1 O₂ % 10
1% % 1

DENNIS TRIPAL 707 838 1807

ECL ON SITE FOR REMOVAL
@ 1:50 PM

GROUNDH₂O @ TM + 2PT IN DET -
SOME OFOR + FLOABLES - COULD BE
BITUMENS - STUCK PILE HAS OBR

TANK IS APPARENTLY FREE FROM CONTAMINANTS
- ON O FOR TRANSPORT

Facility Contact/ Print Name:	Inspected by:	<input type="checkbox"/> Insp. Griffin 238-7759
Facility Contact/ Signature:		<input type="checkbox"/> Insp. Johnson 238-3804
		<input checked="" type="checkbox"/> Insp. Crawford 238-7758
		<input type="checkbox"/> Insp. Gutierrez 238-7253
	Date:	12.15.98

APPENDIX B

Analytical Results of Grab Groundwater Sample (12/98)



McCAMPBELL ANALYTICAL INC.

110 Second Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

Edd Clark & Associates, Inc. P.O. Box 3039 Rohnert Park, CA 94927	Client Project ID: #0325,001.98; Beacon Station 6600 Foothill Blvd, Oakland	Date Sampled: 12/31/98
	Client Contact: Corey Chrisman	Date Received: 12/31/98
	Client P.O:	Date Extracted: 12/31/98
		Date Analyzed: 12/31/98

01/08/99

Dear Corey:

Enclosed are:

- 1). the results of 1 samples from your #0325,001.98; Beacon Station 6600 Foothill Blvd, Oakland project.
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton, Lab Director



McCAMPBELL ANALYTICAL INC.

110 Second Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

Edd Clark & Associates, Inc. P.O. Box 3039 Rohnert Park, CA 94927	Client Project ID: #0325,001.98; Beacon Station 6600 Foothill Blvd, Oakland	Date Sampled: 12/31/98
	Client Contact: Corey Chrisman	Date Received: 12/31/98
	Client P.O:	Date Extracted: 12/31/98
		Date Analyzed: 12/31/98

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)*	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	% Recovery Surrogate
01249	TP1	W	21,000,a	200,000	420	530	72	7300	103
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	W		50 ug/L	5.0	0.5	0.5	0.5	0.5	
	S		1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

* cluttered chromatogram; sample peak coelutes with surrogate peak

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

QC REPORT FOR HYDROCARBON ANALYSES

Date: 12/31/98-01/01/99

Matrix: WATER

Analyte	Concentration (mg/L)			Amount Spiked	% Recovery		
	Sample (#00973)	MS	MSD		MS	MSD	RPD
TPH (gas)	0.0	85.7	86.1	100.0	85.7	86.1	0.5
Benzene	0.0	10.7	10.1	10.0	107.0	101.0	5.8
Toluene	0.0	11.1	10.4	10.0	111.0	104.0	6.5
Ethyl Benzene	0.0	11.2	10.9	10.0	112.0	109.0	2.7
Xylenes	0.0	33.6	32.7	30.0	112.0	109.0	2.7
TPH(diesel)	0.0	179	172	150	119	115	3.9
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\dagger \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

CHAIN OF CUSTODY REPORT 13527 XFC376

Proj. No. 0325,00198		Project Name & Location BEACON STATION 6600 FOOTHILL BLVD, CAKAMP					No. of Cont-tainer	Analysis TPH, BTEX, MTBE				REMARKS		
Samplers: (Signature) COREY CHRISMAN		12/31/98												
Sta. No.	Date	Time	Comp.	Grab	Media	Station Loc.								
+ TP1	12/31	9:40		✓	W	TANK PIT 1	3	X						
			ICE ✓			PRESERVATION APPROPRIATE CONTAINERS ✓			VOLATILES & METALS ✓			OTHER		
			GOOD CONDITION ✓			HEAD SPACE ABSENT ✓								
Relinquished by: (Signature) COREY CHRISMAN			Date 12/31	Time 2:32	Received by: D. Manuel			Relinquished by: D. Manuel			Date 12/31/98	Time 3:40	Received by: Ama A Butler	
Relinquished by: (Signature)			Date	Time	Received by:			Relinquished by:			Date	Time	Received by:	
Relinquished by: (Signature)			Date	Time	Received for Lab by:			Date	Time	Remarks:				

APPENDIX C

City of Oakland Public Works Maps Showing Surface Elevations and Flow Lines

APPENDIX D

Record of Well Data Near Project Area

TABLE : WELL SURVEY FOR 6600 FOOTHILL BOULEVARD, OAKLAND, CA						
Well I.D. No.	Address	Drill Date	Total Depth (ft)	Water Depth (ft)	Well Status	Distance from Site (ft)
T2S/R3W,10Q1	FOOTHILL & 69th	Mar-51	400	96	Abandoned	1888
T2S/R3W,10G1	64th & MCARTHUR	?	440	55	Irrigation	2211
T2S/R3W,10C1	5000 MCARTHUR	?	?	83	Abandoned	2902
T2S/R3W,9K1	2232 SEMINARY AVE	Oct-77	102	61	Irrigation	3245
T2S/R3W,15F1	1477 76th AVE	?	22	12	Abandoned	3880
T2S/R3W,3P1	BEHIND MILL POND	?	?	24	?	4254
T2S/R3W,11E1	3971 BURCKHALTER AVE	Jan-78	27	23	Irrigation	4837
Note:						
Source	Alameda County Public Works Agency, Water Resources Section					

APPENDIX E

Site Safety Plan

**SITE SAFETY PLAN
SEKHON GAS STATION
6600 Foothill Boulevard
Oakland, California**

INTRODUCTION

This site safety plan has been prepared pursuant to requirements of Alameda County Department of Environmental Health (ACDEH). This plan has been prepared in conformance with the Advanced Assessment and Remediation Services (AARS) Health and Safety Program. It addresses those activities associated with site characterization and will be implemented during all site investigations and field related activities. Compliance with this Site Safety Plan (SSP) is required of all AARS personnel, subcontractors, and third parties that enter the site. The requirements and parameters identified in this SSP will be subject to modification as warranted by existing site conditions or as work progresses. However, no changes will be made without the prior approval of the Project Safety Officer.

PROJECT SAFETY OFFICER

The Project Safety Officer has overall responsibility for the development, coordination, and implementation of the SSP and its conformance with the AARS Health and Safety Program. The Project Safety Officer will also be responsible for field implementation of the SSP. This will include communicating the site-specific requirements to all site personnel and third parties, and assuring compliance with the AARS Health and Safety Program.

AARS PERSONNEL AND SUBCONTRACTORS

All AARS personnel and Subcontractors will be responsible for reading, understanding, signing, and complying with these SSP requirements.

BACKGROUND

In December 1998, two steel underground fuel storage tanks were removed as part of the UST system upgrade. Soil samples were collected from excavations. Sheen was observed on the water in the UST pit. Advanced Assessment and Remediation Services (AARS) conducted a preliminary site assessment in June 2001. The results of preliminary site investigation confirmed the presence of elevated petroleum hydrocarbons. The ACEHD required additional investigations to delineate the extent of the plume.

HAZARD SUMMARY

Major potential hazards to personal safety at the site include:

A. Physical Injury

Exposure to this type of injury can occur while working around heavy equipment during the different field operations; e.g., drilling and associated work. If the surface is wet slip, trip and fall can cause injury. Additionally, exposure to physical injury on this site is increased by the fact this work will be

conducted at the sidewalk of a highway, where there will be frequent vehicular traffic.

B. Explosion and Fire

Petroleum products are highly flammable. Liquid petroleum product readily vaporizes from standing pools or saturated soil. Ignition sources of any kind; e.g., engines, impact sparking, and heat or arc from inappropriate equipment or instrumentation pose a major explosion and fire hazard.

C. Inhalation, Ingestion, or Absorption of toxic vapors, liquids, or dusts associated with petroleum hydrocarbons, and organic chemicals

Gasoline vapors in high concentrations (>300 parts per million (ppm)) can cause eye, nose, and throat irritation, headaches, dizziness, and anesthesia. Skin contact and/or absorption of gasoline may result in irritation and dermatitis. Contact with specific toxic petroleum hydrocarbon and organic chemicals substances such as the following volatile organic compounds (VOC): benzene, toluene, ethylbenzene, and xylenes (BTEX) may seriously affect an individual's health. Benzene is a suspected human carcinogen and along with toluene and xylenes can cause damage to the liver, kidneys, and central nervous system. Ethylbenzene is also known to be a skin irritant in both vapor and liquid forms.

D. Electrical Shock or Electrocutation

Electrical power lines are known to be in the vicinity of both drilling and hand augering operations.

E. Hearing Damage

Noise from the drilling will be both constant and extensive.

F. Sun Burn and Heat Stress

Due to time of the year, heat stress is not expected.

HAZARD ASSESSMENT

Consistent efforts will be made throughout the project to evaluate the chemical and physical hazards described above. Explosion, fire, and VOC exposure hazards will be evaluated through an air monitoring program. Electrical shock, hearing damage, physical damage, and heat stress will be minimized through a hazard reduction program.

AIR MONITORING PROGRAM

A. Fire and Explosion

A direct-reading portable GasTech combustible gas indicator (CGI) (calibrated to hexane) or a photo ionization detector (PID), which measures VOC concentrations in ppm or as a percentage of the lower explosive limit (LEL), will be used to evaluate the possible formation of flammable atmospheres around the work area. Continuous measurements will be obtained at the top of each borehole throughout the temporary well/monitoring well installation and soil boring operations.

B. Exposure to VOC's

Airborne concentrations of VOC's will be monitored with the CGI described above, and/or a PID. Measurements will be obtained from the top of each borehole and all soil samples.

HAZARD REDUCTION PROGRAM/ENGINEERING CONTROLS

Access to work areas will be limited by the Project Safety Officer to essential personnel.

Drill cuttings and soil will be stored on site on a plastic liner. The stored soils will be removed from the site at the earliest opportunity by the responsible party. Underground utilities will be identified through Underground Service Alert prior to operation, and power lines and pipelines will be shut down, locked-out and tagged, as appropriate.

A. Flammable Atmospheres

In the event that combustible gas indicator readings anywhere on the site exceed 10% of the LEL of gasoline (11,000 ppm), work will be suspended, monitoring will be continued as necessary to isolate the area of concern, and some or all of the following environmental controls will be implemented as appropriate:

1. Borings or wells emitting excessive VOC concentrations will be ventilated, capped, or shut in as necessary.
2. Drilling equipment will be bonded and grounded during all operations to control ignition sources.

B. Airborne Toxic Chemicals

Workers will be required to wear half-face air purifying respirators with organic vapor cartridges under the following circumstances:

1. If the worker is continuously exposed throughout the day to VOC vapors that exceed the permissible exposure level (time weighted average) (PEL-TWA) for gasoline (300 ppm), or
2. If the worker is exposed at any time to VOC vapors that exceed the permissible exposure level (short term exposure limit) (PEL-STEL) for gasoline (500 ppm).

Similar precautions will be taken with regard to other toxic chemicals such as BTEX components. If VOC vapors exceed 1,000 ppm, full-face air purifying respirators with organic vapor canisters will be worn.

C. Physical Contact with Contaminated Soil and Groundwater

Workers who must come in direct contact with contaminated soil or ground water for sampling purposes, will be required to wear protective gloves and/or necessary protective clothing to prevent skin contact.

D. Physical Hazards

Accidents will be prevented by personal protective equipment, engineering controls, and the exercise of reasonable caution during work activities. Traffic control will be performed for entire duration of

drilling operation on the sidewalk.

E. Noise Exposures

All workers entering high-noise areas will be required to wear hearing protection (ear plugs or muffs).

H. Heat Stress

Workers will be provided beverages, shaded rest areas, and breaks, as needed, to prevent heat stress.

GENERAL MEASURES AND PROCEDURES

SAFETY INSPECTIONS

Walk-through safety inspections of the work area will be conducted daily before the start of work and as conditions change. The results of these surveys will be communicated to the work crews during regularly scheduled "tailgate safety" meetings. The safety procedures and the day's planned operations will be discussed at these sessions.

PERSONAL PROTECTIVE EQUIPMENT

Field personnel involved in the site investigation will be required to be prepared with the following personal protective equipment:

- *Hard hats
- *Half-face air purifying respirators with organic vapor cartridges and dust/mist filters
- *Safety glasses with side-shields, or splash goggles
- *Tyvek coveralls and other suitable work clothing
- *Chemical-resistant gloves
- *Steel-toe boots or boot covers
- *Hearing protectors or ear plugs

EMERGENCY RESPONSE

The Project Safety Officer will have controlling authority during an emergency. In the event that this person is not available, the Alternate Safety Officer (driller) will be in charge. Emergency response organizations and contacts are listed at the end of this plan.

GENERAL SAFETY REQUIREMENTS

The following requirements will also be observed:

1. The Project Safety Officer has the authority to correct unsafe site conditions. All accidents, injuries, and potentially unsafe working conditions shall be reported to the Project Safety Officer immediately.
2. Eating, smoking, and drinking will be allowed only in designated offsite areas. Site personnel will wash their hands and faces thoroughly prior to eating or drinking.
3. Respirators will be cleaned, sanitized, inspected, and maintained by workers after each use.
4. Fire extinguisher will be onsite for use on equipment or small fires only.
5. An adequately stocked first aid kit will be onsite at all times during work activities.

All practical engineering and geological information, experience, and accepted practices will be employed as necessary to control any and all aspects of site safety while carrying out the proposed site investigation work.

LIST OF KEY PERSONNEL

Project Safety Officer: Tridib Guha, AARS(925) 363-1999 Cell (925) 451-1999
Alternate Safety Officer: Driller, Exploration Geoservices, Inc.(408) 280-6822
Client Contact: Mr. Ravi S. Sekhon(510) 568-4664 Cell (510) 487-7183

EMERGENCY TELEPHONE NUMBERS

911 Police, Fire and Ambulance
(510) 261-5613 Fruitvale Healthcare Center, 3020 E. 15th Street, Oakland, CA
1-800-258-6492 Hazardous Waste Hotline (California DHS)
1-800-342-9293 Poison Control Hotline

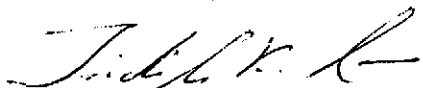
HOSPITAL ADDRESS AND ROUTE

Location and Directions:

Fruitvale Healthcare Center Emergency Room is located at 3020 E 15th Street., Oakland at the intersection of Derby Avenue.

From the site go west on Havenscourt Avenue. Turn right onto E 14th Street/CA-185, continue approximately 1 mile; turn right onto Derby Avenue, immediate left onto E 15th Street.

This site safety plan is prepared by:



Tridib K. Guha
Project Safety Officer