

# JOHN CARVER CONSULTING

Environmental Consulting • Civil Engineering

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**OCTOBER 12, 2005**

**ALAMEDA COUNTY  
ENVIRONMENTAL HEALTH**

## **WORK PLAN FOR SUBSURFACE INVESTIGATION**

3884 Martin Luther King Way  
Oakland, California  
RO#0000027\_Workplan\_2005-10-12

Project No. 9795  
October 12, 2005

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## INTRODUCTION

This work plan was prepared in response to the Alameda County Environmental Health Department (ACEHD) determinations that further work is required at the site. Mr. Don Wang of the ACEHD in discussions with Mr. John Carver of John Carver Consulting (JCC) indicated that a work plan for any further investigation and/or remediation work is required.

The purpose of this work plan is to describe the procedures and methods to be used in further investigating the extent of soil and groundwater contamination resulting from leaking tanks at the site. The information developed from the work described in this Work Plan may be used to identify the need for further work or if the site can be closed. Additional subsurface investigation is part of the continuing work required by the State Water Resources Control Board's Leaking Underground Fuel Tank (LUFT) manual and The TRI-Regional Board Staff Recommendation for Preliminary Evaluation and Investigation of Underground Tank Sites when evidence of an unauthorized fuel release has been found.

Three Underground Storage Tanks (USTs)) were removed from the site by Pacific Excavators in January 1995 under permits from the ACEHD. The UST activities were documented by Scott Environmental in their Tank Removal Report dated January 17, 1995.

There were positive TPH-G and Benzene results found in three samples from below the removed USTs. There were no samples of the soil above the tanks which was stockpiled and returned to the excavations without testing, nor were there samples from below the dispenser.

Subsequently the ACEHD issued a series of requests to the then owners of the tanks, (Mrs. Lillie Luckett) for further work to be carried out at the site. There was a sampling and testing event of a soil pile of unknown origin done and analyzed and reported in 1996.

This Work Plan describes an investigation which will be carried out to define the limits of impacted soil and to attempt to determine if the groundwater in the area of the tanks has been affected.

The current owner of the property wishes to develop the property and wishes to pursue the required activities to close the Leaking Underground Storage Tank (LUST) case. The current owner is:

Mr. Neil Carter  
2847 Arguello Drive  
Burlingame, CA 94010  
Telephone 415 215 5805

## Scope

The scope of this work plan includes descriptions of:

- Previous Work carried out at the site.
- Required pre-field work activities and permitting.
- Drilling equipment and methods.
- Soil sampling equipment and techniques.
- Soil sample handling and transportation.
- Groundwater sampling equipment and techniques.
- Groundwater and soil sample handling and transportation.
- Sample analyses.
- Data interpretation and reporting procedures.

## Site Location and Description

The subject commercial property is located at the northeast corner of 39th Street and Martin Luther King Way in Oakland, California. The site has been previously identified as the "Grove Street Wash Rack" site. The property is a historic gasoline service station and the gasoline station building, a canopy and out buildings remain on the site. There is currently an automotive repair facility on the property but there are no fuel distribution systems. Figure 1 attached, shows the general site vicinity. The actual location of the tanks as well as nearby streets is shown on the attached Figure 2.

## Site History

The following summary shows the tank designations, size, type of construction and contents based on information in the Tank Removal Report and the ACEHD notes. The tank designations and locations are shown on Figure 2.

Designation	Construction/	diameter (feet)	length (feet)	size (gallons)	contents
TANK 1 (south*)	uncoated steel	na	na	650*	gasoline**
TANK 2 (north*)	uncoated steel	na	na	650*	gasoline**
TANK 3 (east*)	uncoated steel	3'	9'10"*	500*	gasoline**

\* ACEHD notes

\*\* based on analytical protocol of TPH-G only

na not available

During the removal operations, three soil samples were taken and analyzed. Subsequently one sample was taken from a stockpile in 1996 but no details as to the source, location or purpose of the stockpile were available.

The ACEHD field notes sheet indicates that there was rain water or perched water in the east tank (Tank 3). No water sample was taken and no further statements regarding groundwater were made in the ACEHD field notes or the Tank Removal report.

The following presents the results of the four samples taken at the site to date.

Sample ID	TPH-G (ppm)	B/T/E/X (ppb)	Total Lead (ppm)
SS-1 Tank 1 @ 9'	35	590/570/1,300/5,400	2.6
SS-2 Tank 2 @ 9'	140	610/960/580/9,700	7.9
SS-3 Tank 3 @ 7.5'	18	340/400/850/4,600	3.4
3884/0826-SP1 (southern part of site)	ND	ND/ND/ND/ND	--

The locations of the three tank removal samples are shown on the attached Figure 2.

The following Chronology shows the significant work carried out at the site.

- 01/05/95 Tanks 1, 2 and 3 removed from site, soil samples taken under ACEHD observation.
- 01/17/95 Tank Removal Report published by Scott Environmental for Pacific Excavators.
- 05/10/95 ACEHD publishes a letter requiring additional work be carried out at the site to define the extent of contamination.
- 07/17/96 Letter by H20GEO presents laboratory results of a stockpile sample.
- /-- Various letters from ACEHD and the Regional Board requiring additional work.
- 09/10/02 State Water Resources Control Board publishes letter of Notice of Removal from the UST Clean Up Fund.
- No subsequent data in ACEHD files.
- 10/--/05 JCC contacts the ACEHD, reviews files and prepares a Work Plan.

**Site Geology. Soil Conditions and Hydrogeology**

The ACEHD notes taken during the tank removal indicated that the soil was a "clay/gravel". Anticipated general soil conditions in the area would be fine grained soils, sand, and gravels of alluvial deposition.

Groundwater was not encountered during the tank removal operation but would be anticipated to be approximately 20 to 30 feet below surface elevations. No groundwater gradient has been determined, but based on topography and direction to San Francisco Bay, the gradient would be estimated to be toward the southwest.

## **PLANNED WORK**

### **Sequence**

The following is the planned sequence of activities at the site:

- Drill and sample eight "geoprobess" at the approximate locations shown on the attached Figure 3.
- Remove portions of the dispenser island and take two shallow soil samples below the fuel distribution system.
- Extend at least two geoprobess to beyond the first encountered groundwater.
- Install temporary casings in each of the extended geoprobess and allow the groundwater to stabilize.
- Measure the depth to groundwater in each of the temporary casings.
- Sample the groundwater from each of the temporary casings.
- Remove the temporary casings and backfill each geoprobe with neat cement grout.
- Analyze all soil and groundwater samples.
- Prepare a summary report of the work accomplished along with conclusions and recommendations for further work or case closure.

### **Pre-field Activities**

JCC will obtain all permits which are required by the Alameda County Public Works Department, the Oakland Department of Parking and Traffic and the Oakland Department of Public Works. The property owners and tenants will be notified of all field work dates and the precise locations so access is available. Underground Service Alert will be notified at least 72 hours before any drilling so that any utilities are located. When the date of drilling is established, ACEHD will be notified for inspection purposes. JCC will arrange and schedule all exploration and laboratory subcontractor services. An appropriate geoprobe rig will be scheduled and a State Certified Laboratory notified of the impending samples.

### **Geo Probes**

The geoprobess will be advanced at the approximate locations shown on Figure 3, attached. The geoprobe locations were selected in order to obtain soil and groundwater data near the tank locations and within the tank removal excavation backfill. These locations will provide additional data regarding the extent of any soil or groundwater contamination resulting from the unauthorized release at the site.

Geo probe locations are in the assumed up and down gradient direction. The gradient has been estimated to be between the west and west-southwest based the direction to the historic bay and the general topography. The locations were selected to be accessible to equipment and away from known utilities. Actual locations may depend on particular access conditions and the exact drill rig configuration as well as on any discovered underground obstructions. All down-hole equipment will be cleaned before arriving on site and before leaving to prevent off-site contamination.

Drilling will be by a California Licensed Water Well Drilling Contractor (C57), using percussion penetration techniques and sampling equipment. The geoprobes will be logged under the supervision of a registered Civil Engineer. Soil encountered will be classified in accordance with the Unified Soil Classification System by observing the samples and cuttings. There are no significant soil cuttings generated during the geoprobe exploration.

### **Soil Sampling During Drilling**

The geoprobe is a percussion drilling method which advances a plastic liner into the soil and a continuous soil core is obtained. The core is observed and relatively undisturbed soil samples will be obtained from the geoprobes by removing a section of the plastic liner. Samples for analyses will be taken from 4 foot intervals until groundwater is encountered. As the samples are obtained, they will be covered with teflon sheets, capped and sealed with tape. The samples will be labeled and stored in an ice chest for transportation to the analytical laboratory.

### **Dispenser Soil Sampling**

Two soil samples will be obtained from below the dispenser/pump island. The concrete island will be partially demolished using a jack hammer to remove the concrete until soil is exposed. Hand excavation techniques will then be used to expose the soil at two feet below the adjacent grade. Soil samples will be obtained by driving brass tubes into the exposed soil. The soil samples will be covered with teflon sheets, capped and sealed with tape. The samples will be labeled and stored in an ice chest for transportation to the analytical laboratory.

### **"Grab" Groundwater Sample Collection**

At least two geoprobes will be extended about 2 feet beyond first encountered ground water. Groundwater is anticipated to be at about 20 feet below the site. If no groundwater is detected at a depth of 24 feet below ground surface, no groundwater sampling attempts will be made. When groundwater is encountered, a PVC well casing will be installed in the geoprobes to serve as a temporary casing. After a stabilization period, the depth to groundwater will be recorded. The water will then be checked for floating product or iridescent sheen by taking a preliminary water sample with a clear acrylic bailer. If floating product is observed, the thickness and nature of the product will be noted.

A "grab" groundwater sample will be collected from each geoprobe in a disposable bailer and poured directly into laboratory cleaned 40 milliliter volatile organic analysis (VOA)

vials to prevent loss of any volatile constituents. The vials will be filled slowly and in such a manner that the meniscus extends above the top of the VOA vial. After the vials are filled and capped, they will be inverted to insure there are no headspaces or entrapped air bubbles. After sealing with a laboratory provided teflon cap, the VOA vials will then be labeled and placed and stored in a cooled ice chest for transportation to the analytical laboratory. If additional water samples are required, they will be decanted into laboratory cleaned one liter bottles and will be handled using the same procedures as the VOA vials.

### **Backfilling of Geo probes**

After the soil and groundwater sample collection is complete, the casings will be removed from the deepened geoprobes and all of the geoprobes will be backfilled and sealed with a neat cement grout under the observation of the Alameda County Department of Public Works. The pavement will then be restored.

### **Analysis of Soil and Groundwater Samples**

A Chain-of-Custody form will be initiated by JCC personnel at the time of sampling and will accompany the groundwater samples to a state certified laboratory using California Department of Health Services approved methods. The soil and groundwater samples will be analyzed for:

- Total Petroleum Hydrocarbons as Gasoline (TPH-G).
- Volatile aromatic hydrocarbons Benzene, Toluene. Ethylbenzene and total Xylenes (BTEX).
- Fuel Oxygenates.

The samples will not be analyzed for lead because of the previous test results indicated that lead was not a compound of concern.

### **Data Interpretation and Groundwater Report**

Following the completion of all field work, JCC will review the data obtained and prepare a Groundwater Investigation Report. The report will describe the details of the field work, summarize the analytical results, discuss the finding of the water analyses, and provide conclusions and recommendations.

Any groundwater contamination will be assessed according to guidelines set forth by the Regional Water Quality Control Board LUFT Field Manual, October 1989; the TRI-Regional Board Staff Recommendation for Preliminary Evaluation and Investigation of Underground Tank Sites, August 1990.

### **Schedule**

JCC anticipates beginning the drilling operations within one week of receiving authorization from the owner, approval to proceed from ACEHD and receipt of the drilling permits. The report described in the preceding section should be available within 2 weeks of receipt of all analytical results.

### **Report Distribution**

All reports that are prepared during the continuing work on this project will be sent to:

Mr. Neil Carter  
2847 Arguello Drive  
Burlingame, CA 94010  
Telephone 415 215 5805

Mr. Don Wang  
Alameda County Environmental Health Department  
1131 Harbor Bay Parkway Suite 250  
Alameda, CA 94502  
(and electronically uploaded as required by the ACEHD)

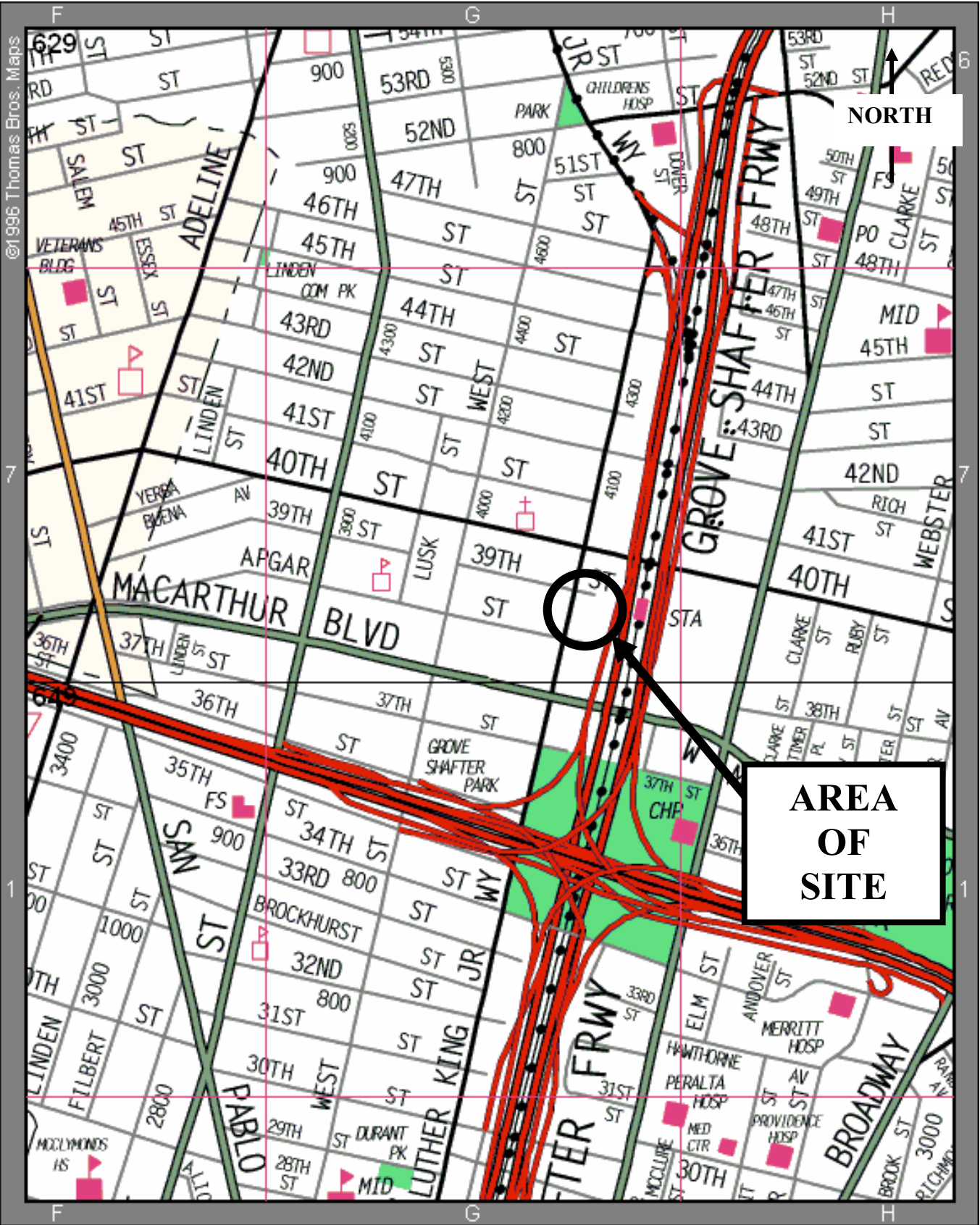
California Regional Water Quality Control Board San Francisco Region  
1515 Clay Street, Suite 1400  
Oakland, California 94612



## **ATTACHMENTS**

3884 Martin Luther King Way  
Oakland, California  
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October 12, 2005



**JOHN CARVER CONSULTING**

**VICINITY MAP**  
 3884 Martin Luther King Way  
 Oakland, California

Project 9795

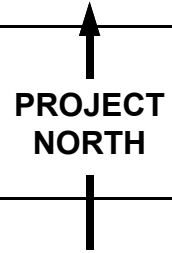
by: jnc

not to scale

October 2005

Figure Number 1

39th Street



sidewalk

Tank #2  
(north)

SS-3@7.5'

SS-2@9'

Tank #3  
(east)

SS-1@9'

office

canopy

Tank #1  
(south)

fuel pump  
island

Martin Luther King Way

sidewalk

● Tank Removal Samples (1995)

**JOHN CARVER CONSULTING**

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**SITE PLAN**

3884 Martin Luther King Way  
Oakland, CA

Project 9795

by: jnc

Scale 1" = 10'

October 2005

Figure 2

39th Street

PROJECT NORTH

sidewalk

Tank #2

Tank #3

office

canopy

Tank #1

fuel pump island

Martin Luther King Way

sidewalk

Proposed Sample locations approximate depending on utility location

**JOHN CARVER CONSULTING**

415 235 4648

**GEOPROBE LOCATION PLAN**

3884 Martin Luther King Way  
Oakland, CA

Project 9763

by: jnc

Scale 1" = 10'

October 2005

Figure 3