



August 22, 2007

Mr. Keith Matthews
Oakland Fire Department
Hazardous Materials Unit
250 Frank Ogawa Plaza, Suite 3341
Oakland City Hall
Oakland, CA 94612-2032

Keith Matthews
Aug 24, 2007

RE: Work Plan-Preliminary Site Characterization

**SITE: 7600 MacArthur Boulevard, Oakland, California
GGTR Project 8894**

Dear Mr. Matthews:

On behalf of Hong Nguyen Gardner & Company, Golden Gate Tank Removal, Inc. (GGTR) is pleased to submit the enclosed *Work Plan for Preliminary Site Characterization*, which GGTR proposes to perform at the former Service Station Facility located at 7600 MacArthur Blvd., Oakland, California.

Should you have any questions, please contact us at your earliest convenience. In my absence from the office, I may be reached by cellular service at (415) 686-8846.

Sincerely,
Golden Gate Tank Removal, Inc.

Brent A. Wheeler
Project Manager

Enclosure/1

cc: Mrs. Hong Nguyen Gardner.
1501 23rd Avenue, Oakland, California 94606



**WORK PLAN
FOR
PRELIMINARY SITE CHARACTERIZATION**

*Former Service Station Facility
7600 MacArthur Boulevard
Oakland, California*

Prepared For:

Mrs. Hong Nguyen Gardner
1501 23rd Avenue
Oakland, California 94606

Prepared By:

Golden Gate Tank Removal, Inc.
3730 Mission Street
San Francisco, CA 94110

GGTR Project No. 8894
August 22, 2007

Brent Wheeler
Project Manager

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INTRODUCTION

Purpose

This work plan was prepared at the request of Mr. Keith Matthews of the Oakland Fire Department - Hazardous Materials Unit (OFD-HMU) in response to the Underground Storage Tank (UST) removal activities conducted at 7600 MacArthur Boulevard in Oakland, California (the Site) in January 2007. The work plan activities included a site reconnaissance and an interview with the current property owner.

Scope

The general scope of work proposed in this work plan includes the following:

- Pre-field work activities and permitting
- Hand Auger soil boring and sampling activities
- Grab Groundwater sampling activities
- Sample analysis
- Backfilling activities
- Waste management
- GeoTracker AB2886 Analytical Uploading
- Data interpretation and report preparation and submittal.

Site Location and Description

The Site is located at 7600 MacArthur Boulevard, at the northeast corner of the intersection of MacArthur Blvd. and 76th Avenue in Oakland, California (Alameda County). The Site is currently a vacant lot that lies approximately 0.8 mile west of Interstate 580 and approximately 2.3 miles northeast of Interstate 880 and the San Francisco Bay. The attached Figure 1 depicts the general Site location.

The Site is relatively flat lying, slightly sloping to the west-southwest with an estimated grade surface elevation of approximately 92 feet above Mean Sea Level (MSL; Figure 1). The topographic relief in the immediate vicinity of the Site is also generally directed toward the west-southwest, toward the San Francisco Bay. Regional topographic relief appears to be directed toward the west-southwest, in the general direction of the San Francisco Bay that connects to the Oakland Inner Harbor. One 1,000-gallon UST (#1) was reportedly located centrally in the northwest half of the property, and beneath the grade surface of the Site. The tank was reportedly constructed of single wall bare steel measuring approximately 10 feet in length by 4 feet in diameter. Another 300-gallon UST (#2) was reportedly located beneath the sidewalk along the MacArthur Blvd. frontage of the Site. This tank was also constructed of single wall bare steel, measuring approximately 6 feet in length by 3 feet in diameter. Both tanks reportedly contained gasoline and were filled with concrete circa 1970 and subsequently removed in January 2007. Figure 2 depicts the approximate former location of the USTs.

Site Geology and Hydrogeology

Based on the Geologic Map of the San Francisco-San Jose Quadrangle published by the California Department of Conservation, the Site is underlain by Sand and Quaternary Alluvium and possibly marine sandstone, greenstones, shale, conglomerates, and cherts of the Mesozoic Franciscan Complex (thicknesses not established). The map also indicates that the Site lies approximately on top of the trace of the Hayward Fault Zone.

Native subsurface soil observed at the Site during the GGTR site reconnaissance on July 25, 2007 was predominantly silty sand with some fine-grained gravel. Groundwater at the Site is estimated to be approximately less than 20 feet below grade surface (fbg) based on topography and proximity to the San Francisco Bay, and a cursory review of groundwater data from surrounding sites, as provided by on the State Water Resources Control Board's Geotracker database. The regional groundwater flow in the vicinity of the Site is assumed to be towards the west-southwest, in the direction of the San Francisco Bay, and generally following the natural topographic relief of the area (Figure 1).

The site is in the East Bay Plain groundwater basin according to the San Francisco Bay Basin Water Quality Control Plan prepared by the California Regional Water Quality Control Board – Region 2 (CRWQCB, 1995). Groundwater in this basin is designated beneficial for municipal and domestic water supply and industrial process, service water, and agricultural water supply. The nearest surface water body is Arroyo Viejo Creek, flowing generally southwest to the Oakland Inner Harbor and located approximately 0.4 mile southwest and presumably down-gradient of the site (Figure 1).

PLANNED WORK

Sequence

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

- Notify all representative parties of scheduled field activities
- Obtain site Excavation Permit from City of Oakland Department of Public Works Engineering for all work conducted in public right of way
- Conduct Site mark out and notify Underground Service Alert for utility clearance
- Conduct a Site inspection to confirm existence of additional UST
- Conduct excavation, removal, and confirmation soil sampling below UST location
- Conduct Hand Auger soil sampling to delineate vertical extent of source soil in direct vicinity of former UST and hydraulic lift locations
- Conduct grab groundwater sampling
- Backfill borings with neat Portland cement
- Conduct soil stockpile confirmation sampling
- Backfill excavation with appropriate fill material
- Submit all samples to State-licensed environmental laboratory for analysis
- Profile, transport, and dispose of all impacted solid/liquid waste
- Interpret all field and analytical data and prepare summary report

Pre-Field Activities

GGTR will obtain an excavation permit from the City of Oakland Department of Engineering. GGTR will notify all property owners as well as the OFD-HMU, and if warranted, the Alameda County Health Care Service agency (ACHCSA) of all scheduled work activities. At least 72 hours before commencing field activities, GGTR will visit the Site and outline the proposed work areas in white surface paint and subsequently notify Underground Service Alert (USA) to locate and mark any subsurface utilities extending through the designated work areas. Also, GGTR will prepare a traffic control plan should partial or complete closure of the parking lane and/or sidewalk along the MacArthur Boulevard frontage of the Site be warranted.

As required by the California Occupational Health and Safety Administration (Cal-OSHA) Title 8, 5192 Hazardous Waste Operations and Emergency Response and the U.S. Occupational Health and Safety Administration (OSHA) 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response, a Site Health and Safety Plan will be prepared for use by the contractor and subcontractors while conducting the preliminary Site characterization activities.

Preliminary Site Characterization Activities

Site Inspection

GGTR will conduct a thorough visual property inspection and magnetometer survey to determine whether there is any additional UST or other anomalies beneath the surface of the Site and the sidewalk/parking lanes along both frontages of the Site. At this time, GGTR will also try to confirm the exact location of UST #2. If an additional UST is found, GGTR will notify the owner of the property and the OFD-HMU. The removal and disposal of any additional tank(s) will be considered additional work and GGTR will prepare a separate work plan, if warranted. Upon authorization, GGTR will obtain the appropriate permits for removal and disposal of the tank(s).

Proposed Boring Locations

Based on review of the July 2007 Site reconnaissance findings, GGTR proposes drilling four (4) hand auger soil borings (B1, B2, B3 and B4) in the direct vicinity of the former USTs and hydraulic to define the lateral and vertical extent of soil and potential groundwater contamination at the Site. GGTR provides the following rationale for the proposed soil boring locations, which are shown in Figure 2.

GGTR will advance soil borings B1 and B2 adjacent to the northeast and southwest end of former 1,000-gal UST location, and soil boring B3 will be advanced in the center of the area of the former hydraulic lift(s). GGTR will advance soil boring B4 beneath the center of the former 300-gal UST location. These proposed soil boring locations will assess the vertical extent of potential soil contamination as a result of possible historical unauthorized release from the former USTs and/or hydraulic lifts. If encountered, a grab groundwater sample may be collected from each borehole to assess groundwater quality at each location. Each hand auger boring will be advanced to approximately 12 to 14 fbg and sampled in discrete intervals (discussed below).

Drilling and Soil Sampling Activities

Since proposed soil borings B1 and B2 are located in a 5-foot deep open excavation, GGTR proposes to manually drill all soil borings using a 2 to 3-inch diameter hand auger. GGTR will collect discrete soil samples in each boring using a remote core sampler lined with two 3-inch long brass tubes that will be manually driven approximately 6 inches into relatively undisturbed native soil. To minimize any non-representative slough material from the borehole sidewalls, the deeper of the 3-inch brass tube sections at each location will be retained for sample analysis.

Utilizing a backhoe equipped with a 2-foot wide bucket, GGTR will first excavate a pothole at each boring location B1 and B2 to approximately 9 fbg (presumed depth of bottom of former 1,000-gallon UST) to remove any overlying slough material generated during the UST removal activities. Soil borings B1 and B2 will be advanced to approximately 14 fbg, to assess potential contamination in unsaturated zone soil. Two soil samples will be collected from each boring at approximately 11 and 13 fbg.

Soil boring B3 will be advanced to approximately 10 fbg, to assess potential contamination in unsaturated zone soil of the area of the former hydraulic lift(s). Based on the presumed depth of the bottom of a typical hydraulic lift at 7 fbg, two soil samples will be collected from B3 at approximately 7 and 9 fbg.

GGTR will initially saw cut one flag of the concrete sidewalk at the proposed soil boring location of B4. Subsequently, GGTR will hand auger soil boring B4 to approximately 12 fbg to assess potential contamination beneath the former 300-gallon UST in the unsaturated zone soil. Based on the presumed depth of the bottom of the former UST at 7 fbg, two soil samples will be collected from B4 at approximately 9 and 11 fbg.

All soil samples retained for laboratory analysis will be sealed with Teflon and plastic end caps, appropriately labeled, and transferred to a cooler chilled to approximately 4° Centigrade. Soil boring samples will also be screened using a Mini-Rae® Photo Ionization Detector (PID) and described using the Unified Soil Classification System and Munsell Soil Color Chart.

Hand auger soil cuttings generated during drilling activities will be added to the existing excavation soil stockpile (Figure 2). GGTR will collect 2 four-point composite soil samples for analysis and characterization of the soil stockpiles for offsite transport/disposal or potential onsite reuse for excavation backfill. One composite soil sample will be collected from the UST excavation stockpile and one sample will be collected from the existing imported soil stockpile (Figure 2).

All down hole drilling and sampling equipment will be decontaminated prior and between each sample/boring location using an Alconox® solution and double rinsed with potable water. Equipment wash and rinse water will be transferred directly to a 55-gallon drum. All drilling and sampling activities will be conducted under the direct supervision of a registered professional civil engineer or geologist and a representative of the OFD-HMU.

Grab Groundwater Sampling Activities

If groundwater is encountered during drilling activities, GGTR will install temporary 0.75-inch-diameter, factory-sealed, screened PVC casing directly through borehole to the approximate total depth of each borehole. GGTR will monitor and record the depth to groundwater in the cased borehole and allow sufficient time for stabilization. If a sufficient volume of groundwater is present, GGTR will collect a grab groundwater sample using a clean, stainless steel bailer or peristaltic pump.

GGTR will carefully drain the volatile groundwater sample directly into laboratory-cleaned, 40-milliliter volatile organic analysis (VOA) vials. A specialized drainage tip will be used to prevent loss of any volatile constituents during sample transfer. GGTR will seal each sample container with a threaded cap and invert the VOA vials to insure no headspace or entrapped air bubbles are present. Groundwater samples analyzed for non volatile analysis, will be transferred to laboratory-supplied amber glass and/or polyethylene bottles.

Backfilling Activities

Immediately following soil sampling and any grab groundwater sampling if required, GGTR will extract all temporary well casing (if any) and backfill all soil borings with neat Portland cement up to approximately 0.5 fbg. If groundwater is encountered, GGTR will tremie grout the associated boreholes. GGTR will backfill the balance of each borehole with concrete. GGTR will replace the sidewalk flag at the location of boring B4.

Following receipt of the stockpile composite sample results, GGTR will evaluate whether the soil stockpiles are acceptable as excavation backfill material. If acceptable for re-use and if authorized by the responsible party (RP), GGTR will then re-visit the Site and backfill with the stockpiled excavation overburden soil and stockpiled import fill material. GGTR will backfill the excavation to grade surface while compacting the soil in 2-foot lifts. GGTR will then resurface the excavation area to restore original site conditions.

Soil & Groundwater Sample Analysis

A Chain-of-Custody form will be initiated by GGTR personnel at the time of sampling and will accompany the soil and groundwater samples to a State-certified environmental laboratory using California Department of Health Services approved analytical methods.

The soil and grab groundwater samples collected in B1, B2, and B4, will be analyzed for:

- Extractable Total Petroleum Hydrocarbons (TPH-D, -MO; EPA 8015M) w/ Silica Gel Cleanup (EPA 3630)
- Total Petroleum Hydrocarbons as Gasoline (TPH-G; EPA 8260)
- Volatile Organic Compounds (VOCs), including Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX) and Fuel Oxygenates by EPA Method 8260
- Total Oil & Grease (SM 5520)

The soil samples collected in B1, B2, and B4 will additionally be analyzed for total cadmium, chromium, lead, nickel, and zinc (LUFT 5 Metals) by EPA 6010B/ICAP.

The soil samples collected in B3 will be analyzed for:

- TPH as Hydraulic Oil (EPA Method 8015M) w/ Silica Gel Cleanup.

The stockpile composite soil sample will be analyzed for:

- TPH-D (EPA 8015M)
- TPH-G (EPA Method 8020)
- BTEX & MTBE (EPA Method 8020)
- Total Lead (EPA Method 6010B/ICAP)

Waste Management

All soil generated during the proposed boring activities will be added to the existing UST excavation stockpile. If either of the soil stockpiles is unacceptable for onsite reuse, GGTR, upon authorization by the RP, will subsequently profile and transport the waste to an appropriate licensed disposal facility under uniform waste manifest.

Equipment wash and rinse water generated from the decontamination of soil boring and sampling equipment will be transferred to a 55-gallon, D.O.T.-approved steel drum, labeled, and stored onsite in a secure area. The liquid waste will be profiled for disposal/recycling under uniform waste manifest following receipt of the laboratory results of soil boring grab groundwater sample analysis.

AB2886 GeoTracker Uploading

If warranted, all soil/groundwater sample analytical data collected during the preliminary site characterization activities will be uploaded in Electronic Deliverable Format to the State Water Resources Control Board's GeoTracker Database System. Also, geologic boring logs, a scaled site plan, and any reports prepared during current and future phases of this site investigation, may be required to be uploaded in PDF format to the State GeoTracker Database.

Data Interpretation and Report Preparation

Following the completion of all field work, GGTR will review all field and analytical data and prepare a technical report, discussing the activities and findings of the investigation and present conclusions and recommendations. The report will be submitted to the OFD-HMU for regulatory review.

Schedule

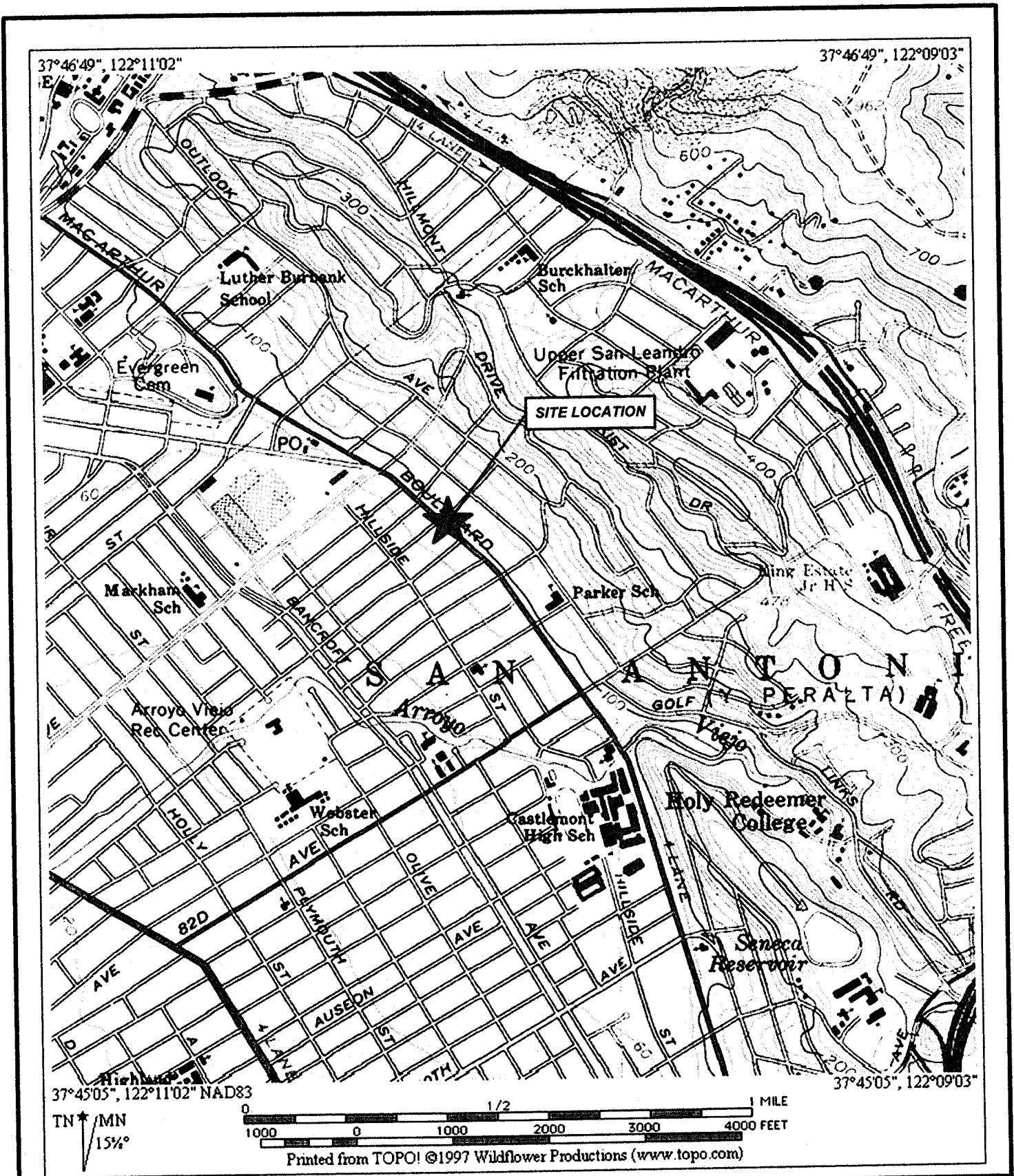
GGTR anticipates beginning the preliminary site characterization activities upon work plan approval and upon receiving client authorization to proceed. The aforementioned report should be available within 45 days following receipt of all soil and groundwater analytical results.

Report Distribution

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

Oakland Fire Department
Fire Prevention Bureau
Hazardous Materials Unit
250 Frank Ogawa Plaza, Suite 3341
Oakland City Hall
Oakland, CA 94612-2032
Attention: Mr. Keith Matthews (1 Copy, Unbound)

Mrs. Hong Nguyen Gardner
1501 23rd Avenue
Oakland, California 94606 *(1 Bound Copy)*



GOLDEN GATE TANK REMOVAL

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SITE LOCATION MAP

7600 MacArthur Boulevard
 Oakland, California 94605

GGTR Project No. 8894

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Figure By: ed/08.07

Figure 1

