

ENVIRONMENTAL
PROTECTION
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WORK PLAN

**Underground Storage Tank Removal
and Verification Sampling
University California Berkeley
Gill Tract**

Prepared for:

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1.0 INTRODUCTION

IT Corporation (IT) has prepared this technical work plan for the underground storage tank removal and tank closure verification sampling at the University of California, Berkeley, Gill Tract located in Albany, California (Figures 1 and 2), as described in the Project Description dated 17 April 1997 (Project 765895).

IT will provide trained personnel, material, and equipment to clean, excavate, transport, and dispose of one (1) 500 gallon diesel tank and one (1) 500 gallon gasoline tank and associated piping from the referenced project site. This document outlines the field procedures that will be utilized to complete the project activities.

1.1 Proposed Scope of Work

The proposed Scope of Work outlined below is based on the Project Description dated 17 April 1997, the site visit, and Addendum No. 001 dated 28 April 1997.

- 1) Obtain all permits required by the Alameda County Health Department and the Bay Area Air Quality Management District.
- 2) Conduct a utility survey of the project area.
- 3) Saw cut and remove the asphalt/concrete overlying the tank.
- 4) Expose, clean, inert, and dispose of one (1) 500 gallon diesel underground storage tank (UST) and one (1) 500 gallon gasoline UST.
- 5) Obtain two soil samples from beneath the UST and analyze them for total petroleum hydrocarbons for gasoline, diesel and fuel components, methyl tertiary butyl ether (MTBE), benzene, toluene, ethylbenzene, and xylene. Samples will also be analyzed for total lead. Samples will be analyzed on a 24-hour turnaround basis.

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- 7) Obtain one (1) 4-point composite soil sample per 50 cubic yards of excavated soil.
 - 8) Backfill and compact the UST excavation to existing grade. The excavation will be restored with asphalt.
 - 9) Prepare a report documenting all site activities.

2.0 TECHNICAL APPROACH

The following sections detail the field procedures that will be utilized during this project.

2.1 Preliminary Activities

Project site features such as overhead lines, mapped utilities, manholes, site restrictions, fences and retaining walls were all noted and discussed during the initial site visit on 7 April 1995. The utilities and other underground hazards will be located and marked prior to initiation of the excavation activities.

IT will prepare a Site Specific Health and Safety Plan that will outline all hazards associated with the activities expected to be encountered during this project. A site health and safety meeting will be held with all applicable personnel prior to initiating any site activities.

2.2 Tank Removal Activities

The following procedures will be utilized to remove the UST from the east side of the Maintenance Building (Refer to Photos):

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- IT will contact the 24-hour Underground Service Alert and a utility survey company will be utilized to mark all underground utilities prior to commencing excavation activities.

 - IT personnel will sawcut, stockpile and remove the asphalt. A 710 John Deere backhoe will be utilized to expose the tank.

 - The site will be marked with CAUTION tape and traffic cones.

 - All excavated soils will be placed on, and covered with, 5 mil visqueen. If possible, potentially clean soils will be kept separate from obviously contaminated soils. A photo-ionization detector will be utilized as a field screening instrument to note the presence or absence of hydrocarbons in the excavated soils (note: this instrument is not always helpful with heavy fuel oils). All concrete/asphalt will be kept separate from the soil stockpiles.

 - The waste product from the tank, associated piping, and rinsate will be pumped into a 55-gallon Department of Transportation (DOT) approved drum for appropriate disposal, approved by UC Berkeley personnel.

 - IT will triple rinse each tank with clean water and inert with 15 pounds of dry ice (15 pounds lbs of dry ice per 1,000 gallons of tank volume).

 - IT personnel will monitor the tank atmosphere with a Gastek, percent oxygen/lower explosive limit (LEL) meter. Monitoring will take place at both ends of the tank (if possible) and at varying heights within the tank. The tank will be rendered inert when the tank vapors are below 10 percent LEL and 5-10% oxygen. UC Berkeley Fire Prevention Officials, the County of Alameda Health

Department and UC Berkeley personnel will be on site to witness the removal procedures and verify tank LEL and O2 readings. *And Albany Fire Dept.*

- The tank will be lifted out of the excavation, inspected, photographed and loaded on to a State-certified hazardous waste hauler. Care will be taken to minimize the potential for spilling any tank residue (if any) into the excavation.
- The tank will be transported under California Hazardous Waste Manifest to Erickson Environmental Services, a State certified tank disposal facility in Richmond, California.
- All associated accessible piping will be removed and transported with the tank for disposal.
- Two soil samples will be obtained from the tank excavation at each end. A four-point composite soil sample will be obtained from the soil stockpile.
- Upon receipt of "clean" analytical data, the excavation will be returned to grade with the excavated soils and imported clean fill. Fill will be placed to within a foot of subgrade in 6-inch lifts and compacted to 90%. The final 12-inches will be compacted with baserock to 95% (material will be consistent with Addendum No. 1).
- The site will be re-finished with asphalt as necessary.

2.3 Site Controls

Only approved personnel will be allowed in the vicinity of the project site during the site activities (8:00 AM to 4:00 PM). Caution tape and traffic pylons will alert vehicles of the work activities.

Depending on the orientation and size of the final excavation, temporary fencing or traffic barricades will be utilized to protect the project site.

2.4 Shoring

IT does not anticipate that shoring will be required on this project. The excavation and removal of the UST will be designed to move the tank away from the building. However, If shoring is deemed to be required by onsite personnel (observable soil sloughing, nearness of the tank wall to the building etc.), IT will utilize hydraulic Speed Vertical Shores. Flange beams and spreader rams will be utilized to fully stabilize the excavation. The Speed Shore will be inserted down with the excavation to provide a constant internal force against the walls of the excavation. The shores are installed and removed from above ground, avoiding worker exposure to unshored excavations. NO personnel will enter the excavation at any time, either shored or unshored.

2.5 Spill Prevention Plan

IT will clean and remove all liquids from the tank prior to any movement of the tank from the excavation. At times, the tank may be tilted up in order to allow the liquids to collect in the bottom of the tank and facilitate a thorough collection of the tank material. IT will have 20 -30 pound bags of Solidisorb to promptly absorb any liquids that may leak from the tank should there be any holes present in the floor of the tank. The Solidisorb, if utilized, will be immediately shoveled into 55-gallon (DOT) approved drums. The drums will then be profiled and transported for disposal at an appropriate disposal/recycle facility.

At times, equipment failure has resulted in the release of small volumes of hydraulic or motor oil. The faulty equipment will be immediately shutoff and repaired or replaced. Solidisorb will be utilized on the release and handled as previously described.

2.6 Sampling Activities

2.6.1 Soil Sampling

Soil samples for chemical analysis will be collected in thin-walled brass tubes, 6-inches long by 2.5-inches outside diameter. The tube is set inside a 2.5-inch inside diameter slide hammer sampling device. The sampler is driven its entire length into undisturbed soils at the bottom of the excavation (a maximum of 2-feet below the floor of the excavation) or at the lower front area of the backhoe bucket. The sampler is extracted from the excavation or backhoe bucket and the brass tube containing the soil sample is removed. Upon removal from the sampler, the brass tube is immediately trimmed and capped with aluminum foil or Teflon liners and plastic end caps. They are then labeled and refrigerated to 4° C for delivery, under chain-of-custody, to the analytic laboratory.

Soil sampling equipment will be decontaminated prior to use in a non-phosphate cleaning solution and rinsed in tap water followed by a distilled water rinse. All of the brass tubes are new and stored in the manufacturer's packaging. These procedures help minimize the potential for cross-contamination and volatilization of volatile organic compounds (VOCs) prior to chemical analysis.

2.6.2 Ground Water Sampling

If ground water is encountered in the excavation, the contents will be pumped into 55-gallon DOT approved drums, allowed to recharge, and sampled to determine whether or not the tank

contents have impacted ground water. Sampling equipment will consist of a gloves, eye wear, and one (1) dedicated Teflon bailer. The sample containers will consist of, two (2) 40 milliliter (ml) volatile organic analysis (VOA) vials and one (1) liter (L) amber glass bottles.

From the Teflon bailer, the ground water is decanted into each VOA vial to form a meniscus at the top to eliminate air bubbles when capped. Usually, at least two (2) VOA vials are filled from the excavation to ensure a duplicate. The sample is labeled with date, time, sample identification number, and analysis, chilled to 4° C, and delivered under chain-of-custody to the analytical laboratory.

2.6.3 Product Line Sampling

IT does not anticipate that there will be any product line sampling associated with this UST removal project.

2.7 Site Closure and Restoration

Upon receipt of the appropriate analytical results, and in concurrence with the Alameda County Environmental Health Department personnel, IT will restore the excavation site to the original condition. Appropriate backfill will be placed in the excavation to grade and compacted in 6-inch lifts. All asphalt and concrete will be replaced as outlined in Amendment No. 001 and the Statement of Work.

2.8 Residual Hydrocarbons

Removal of residual hydrocarbons from the tank excavation are not in the scope of work associated with this project.

3.0 Laboratory Analytical Procedures

3.1 Soil and Ground Water Samples

IT expects that a total of six (6) soil samples, ⁽²⁾four ~~(4)~~ tank excavation and two four-point soil stockpile composite sample, will be collected and sent under chain-of-custody protocol to Chromalab, a State certified analytical laboratory located in Pleasanton, California. All of the soil samples will be analyzed for total petroleum hydrocarbons as diesel and gasoline by EPA method 8015, and fuel components benzene, toluene, ethyl-benzene, and xylene (BTEX) by EPA method 8020. Samples will also be analyzed for methyl tertiary butyl ether (MTBE) by EPA Method 8020 and total lead by EPA Method 6010. Samples will be analyzed on a 24-hour basis.

Ground water samples, if any, will be analyzed for the same chemical constituents as the soil samples.

Gill Tract UST Photos, Page 1



Figure 1. Location of Gill Tract USTs, looking north towards entrance to site. The tanks are located under the pavement to the right of the two fuel pumps shown in the photo.

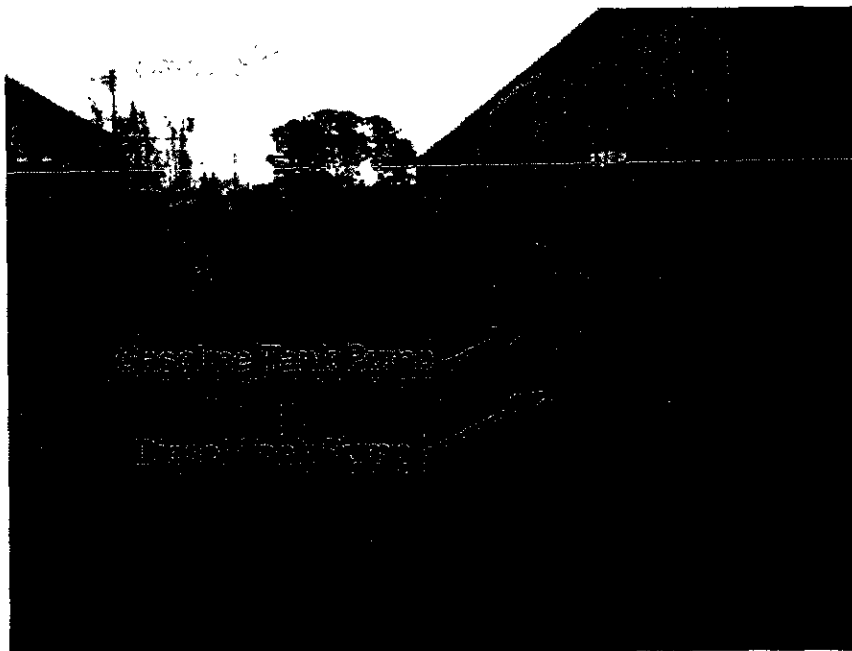


Figure 2. Location of Gill Tract USTs, looking south from entrance to site.

Gill Tract UST Photos, Page 2

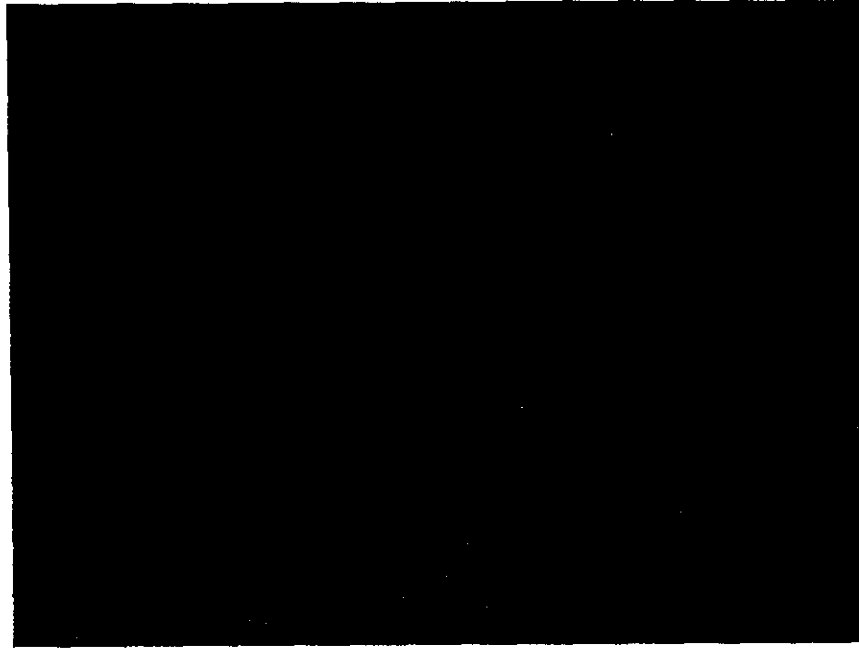


Figure 3. Gasoline UST hand pump and fill port, shown with lid open. Diesel pump is to the right just outside of photo.

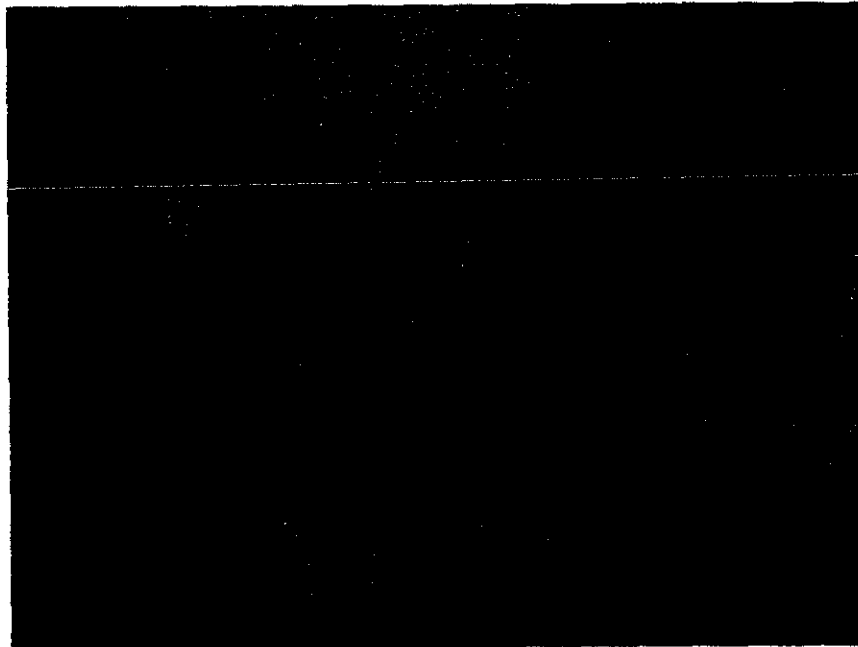


Figure 4. Diesel UST hand pump. Gasoline pump is to the left just outside of photo.

FIGURES

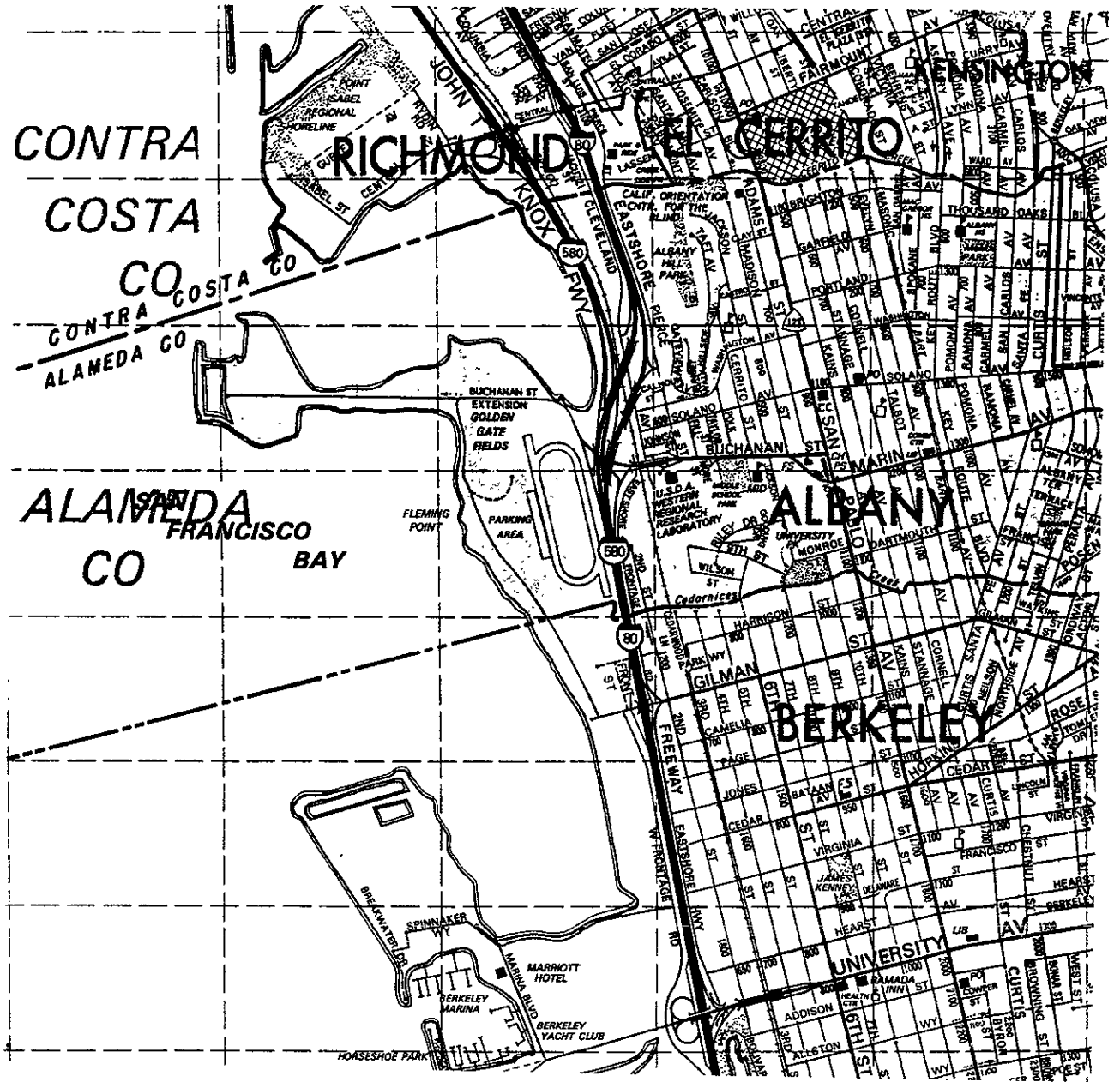


Figure 1
 SITE LOCATION MAP
 UC BERKELEY GILL TRACT