

W. A. Craig, Inc.

Construction & Engineering

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August ¹⁵/~~7~~, 2006

Mr. Steven Plunkett
Hazardous Materials Specialist
Alameda County
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

RE: Submittal of Revised Work Plan RO0002513, Clamp Swing, 2515 Blanding Avenue, Alameda CA

Dear Mr. Plunkett

I prepared the revised work plan which is accompanying this letter. "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached work plan is true and correct to the best of my knowledge."

Any questions, please call me at 707-693-2922. 2929

Thank you,

W.A. Craig, Inc.

Fred Mueller, P.E.
Senior Engineer
707-693-2929



W. A. Craig, Inc.
Engineering & Construction

SITE INVESTIGATION WORK PLAN

PROJECT SITE:

**Former Clamp Swing Pricing Company
2515 Blanding Avenue
Alameda, California 94501
Site No. RO0002513**

PREPARED FOR:

**Mr. Wilfred Garfinkle
c/o Dr. Jay Garfinkle
352 Capetown Drive
Alameda, California 94501**

SUBMITTED TO:

**Mr. Steven Plunkett
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502**

SUBMITTED BY:

**W. A. Craig, Inc.
6940 Tremont Rd.
Dixon, California 95620
A, B, & Haz Lic. No. 455752**

Project No. 4287

August 15, 2006

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PROFESSIONAL CERTIFICATION

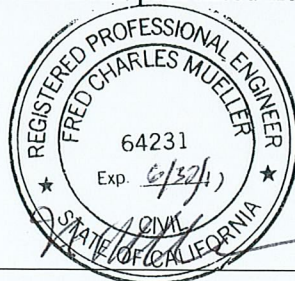
Site Investigation Work Plan

**Former Clamp Swing Pricing Company
2515 Blanding Avenue
Alameda, California 94501
Site No. RO0002513**

**By: W.A. Craig, Inc.
Project No. 4287
August 15, 2006**

This document has been prepared by the staff of W.A. Craig, Inc. under the professional supervision of the person whose seal and signature appears hereon. No warranty, either expressed or implied, is made as to the professional advice presented herein. The analysis, conclusions and recommendations contained in this document are based upon site conditions as they existed at the time of the investigation and they are subject to change.

The conclusions presented in this document are professional opinions based solely upon visual observations of the site and vicinity, and interpretation of available information as described in this work plan. W.A. Craig, Inc. recognizes that the limited scope of services performed in execution of this investigation may not be appropriate to satisfy the needs, or requirements of other regulatory agencies, or of other users. Any use or reuse of this document or its findings, conclusions or recommendations presented herein is at the sole risk of said user.



Fred Mueller, P.E.
Senior Engineer



INTRODUCTION

Objectives

The objective of the Site Investigation described in this Work Plan is to delineate the horizontal and vertical extent of hydrocarbon contamination in the vicinity of a 300-gallon gasoline underground storage tank (UST) formerly located at 2515 Blanding Avenue, Alameda, California (the "Site"). Mr. Wilfred Garfinkle owned the UST and the property and is the responsible party for the Site. The Alameda County Department of Environmental Health (ACDEH) is the lead regulatory agency for the investigation.

Site Location and Description

The Site is located on the northeast corner of Blanding Avenue and Everett Street in a commercial and industrial area of Alameda Island, Alameda County. The Site location is shown on **Figure 1**. The Site was reportedly operated as a light manufacturing plant until 1998 and is currently being remodeled to be used as a mixed commercial/residential development.

The Site is relatively flat with a slight regional slope to the east, towards the Tidal Canal that separates Alameda from Oakland. The Tidal Canal is the nearest surface water and is approximately 350 feet east of the Site.

An engineering and production company is located on the property north of the Site. Other properties in the vicinity of the Site include commercial and residential developments. Site features are depicted on **Figure 2**.

The static depth to groundwater in the UST excavation was reported as 4.5 feet below grade (fbg) on November 27, 2002. The presumed direction of groundwater flow is east-southeast, towards the Tidal Canal. Site soils are anticipated to be primarily silts, clays and sandy-clays.

Site Background

On September 12, 2002, Golden Gate Tank Removal Inc. excavated and removed the UST. The UST was estimated to be approximately 60-80 years old and was not in use at the time it was removed. The UST was a 300-gallon single-walled steel tank that formerly contained gasoline. The tank was reportedly in fair condition with no visible holes. Soils were dark gray to black clays. Water was not encountered in the tank excavation. A petroleum odor and evidence of hydrocarbon staining were noted during the removal. Following UST removal, two soil samples were collected from the tank excavation bottom. A soil sample collected from the center of the UST pit, at approximately 8 fbg, at the time the UST was removed, yielded total petroleum



hydrocarbons as gasoline (TPH-g) at a concentration 0.579 milligrams per kilogram (mg/kg), toluene at 0.005 mg/kg, ethylbenzene at 0.009 mg/kg, and xylenes at 0.027 mg/kg. A sample collected from the soil stockpile excavated from above and around the UST yielded TPH-g at 50.1 mg/kg, toluene at 0.012 mg/kg, ethylbenzene at 0.008 mg/kg, and xylenes at 0.034 mg/kg. Benzene and methyl tert-butyl ether (MtBE) were not detected in either soil sample. At the direction of the ACDEH, the excavation was backfilled after removing the UST.

After reviewing the analytical results, the ACDEH requested additional excavation and sampling. The UST pit was re-opened and over-excavated in November of 2002. A soil sample from the northern sidewall at 6 fbg yielded 1,450 mg/kg of TPH-g and 13 mg/kg of toluene. A grab sample collected from water in the excavation yielded 890 micrograms per liter ($\mu\text{g/L}$) of TPH-g. Low levels ($<8 \mu\text{g/L}$) of ethylbenzene, toluene, and xylenes were detected in the water sample. Fuel oxygenates and additives, including MtBE, were not detected.

Based on the elevated hydrocarbon concentrations remaining in Site soils, additional excavation was performed on January 3, 2003. A sample collected from the northern wall of the excavation at 10 fbg did not yield detectable concentrations of petroleum hydrocarbons. However, a sample from the eastern wall at 6 fbg yielded TPH-g at 9.16 mg/kg, diesel range organics at 105 mg/kg, and low levels ($<0.043 \text{ mg/kg}$) of ethylbenzene, toluene, and xylenes. TPH-g was detected at $8,910 \mu\text{g/L}$ and diesel range organics were detected at $22,200 \mu\text{g/L}$ in a water sample collected from the excavation. For both of the detections of diesel range organics, the laboratory reported that the result "does not match diesel". The two excavation events generated a total of 10.01 tons of soil, which was disposed of at Forward Landfill in Stockton, California on January 8, 2003.

Based on these results, in a letter dated September 2, 2004, the ACDEH requested the preparation of a work plan to further investigate the nature and extent of the release. A *Site Investigation Work Plan* dated December 10, 2004 was submitted to the ACDEH in December 2004 and April 2005. In a phone conversation on January 31, 2006, Amir Gholami of the ACDEH requested one additional boring and that the borings be installed to 25 fbg (instead of the originally proposed 15 fbg). This *Site Investigation Work Plan* describes methods and procedures to install 5 exploratory soil borings to 25 fbg.

SCOPE OF WORK

The following scope of work will be performed as part of this investigation:

- Prepare a *Site-specific Health and Safety Plan* describing the anticipated or potential hazards normally associated with similar projects;
- Obtain a drilling permit from Alameda County;
- Obtain an encroachment permit from the City of Alameda;



- Mark the outline of the work area in white paint and notify Underground Service Alert (USA) of the proposed work a minimum of 48 hours in advance;
- Install five soil borings to a maximum depth of 25 fbg;
- Collect soil samples from each boring;
- Collect groundwater samples from each boring;
- A conduit study of location of potential pathways where volatile hydrocarbons could spread beyond the original contaminated site (includes sewers, storm drains, pipelines, utility trenches),
- Submit the soil and groundwater samples for analysis of TPH-g, TPH-d, BTEX, MtBE, DIPE, EtBE, tAME, tBA, methanol, ethanol, EDB, DCA, EDC, and total lead (see the *Soil Sample Collection* section of this report for analyte names); and
- Prepare and submit a technical report certified by a California Registered Engineer or Geologist describing the results of the Site Investigation.

PREPARATORY PROCEDURES

Site-Specific Health and Safety Plan

W.A. Craig, Inc (WAC) will prepare a *Site-Specific Health and Safety Plan* in accordance with 29 CFR 1910.120. All personnel entering the work area will be asked to indicate that they understand the plan. At a minimum the health and safety plan will specify the nature of the physical and chemical hazards associated with the site, routes of exposure, first aid procedures associated with the expected hazards, and contact information for, and a map to, the nearest emergency medical facility.

Permits and Utility Clearance

Drilling and encroachment permits will be obtained prior to the installation of the soil borings. The appropriate regulatory agency will be given at least 48 hours notice prior to the installation of borings.

WAC will mark the proposed boring locations in white paint and notify Underground Service Alert (USA) a minimum of two working days in advance of the drilling. USA will notify public and private utility companies to mark the location of underground utilities owned and maintained by each company.

Work in the Everett Street right-of-way may require both active (personnel) and passive (signs, cones, barricades, etc.) measures for traffic control. An engineered traffic control plan will be prepared and submitted with an encroachment permit application to the City of Alameda, Department of Public Works. At a minimum, traffic control personnel, cones, barricades,



flagging, and signs will be used as specified in the traffic plan. Work will occur only in daylight hours.

Site Access

In order to install a boring in the asphalt parking lot in front of the Site (B-5) it will be necessary to obtain Site access permission from the current property owner. A Site access agreement will be prepared and the current property owner will be asked to sign it. If Site access is granted, boring B-5 will be installed in the location shown on **Figure 2**. If Site Access is not granted, boring B-5 will be installed in the alternate location shown on **Figure 2**.

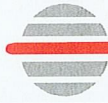
FIELD PROCEDURES

Soil Boring Installation

Five soil borings will be advanced using a drilling rig capable of discreet groundwater sample collection. A California C-57 licensed well driller will advance all borings. The proposed boring locations are shown on **Figure 2**. A California Registered Engineer, Geologist, or technician under the direct supervision of a Registered Engineer or Geologist will supervise drilling and sampling operations. The soil borings will be continuously logged using the Unified Soil Classification System and shall include significant changes in soil type, color, grain size, relative density, and relative moisture content. Attempts will be made to determine water bearing zones so that discreet water samples can be collected in adjacent borings. The borings will be advanced to approximately 25 fbg.

The first five feet of each boring will be cleared with a hand auger to ensure the hole is clear of buried utilities. Soil samples will be collected using a 4-foot long steel sampler lined with a 1½-inch diameter acrylic sampling sleeve. Soil samples will be collected from each soil boring at 5-foot intervals and at the capillary fringe. Samples will be selected for chemical analysis based on visual observation and screened using a photo-ionization detector (PID). Part of the soil sample will be placed in a glass jar sealed with a Teflon-lined lid or a self-sealing plastic bag and allowed to volatilize. A headspace measurement will be taken from this sample for total organic compounds using the PID. If the PID indicates hydrocarbons are present in the soil core, the section of core with the highest relative concentration will be selected for laboratory analysis. The ends of the sample tube will be sealed with Teflon coated tape and plastic end caps.

The samples will be labeled indicating sample ID, sample depth, project ID, and date collected. The samples will be placed on ice in an ice chest for transport and submittal under documented chain-of-custody control to a State of California certified analytical laboratory within 72 hours of collection. The soil samples will be analyzed for TPH-g, TPH-d, benzene, toluene, ethylbenzene, xylenes (BTEX), MtBE, di-isopropyl ether (DIPE), ethyl tert-butyl ether (EtBE), tert-amyl



methyl ether (tAME), tert-butyl alcohol (tBA), methanol, ethanol, ethylene dibromide (EDB), ethylene dichloride (EDC), 1,2-dichloroethane (DCA), and total lead.

GROUNDWATER SAMPLING

Groundwater samples will be collected from borings advanced adjacent to the borings used to collect soil samples. Groundwater samples will be collected from the top two feet of the first encountered water-bearing zone and from 10-feet below the first encountered water bearing zone. The groundwater sampler operates (**Figure 3**) by advancing 1 ¾ inch hollow push rods with the filter tip in a closed configuration to the base of the desired sampling interval. Once at the desired sample depth, the push rods are retracted; exposing the encased filter screen and allowing groundwater to infiltrate hydrostatically from the formation into the inlet screen. A small diameter bailer or clean tubing (approximately ½ or ¾ inch) is lowered through the push rods into the screen section for sample collection. Upon completion of sample collection, the push rods and sampler, with the exception of the PVC screen and steel drop off tip are retrieved to the ground surface, decontaminated and prepared for the next sampling event.

Groundwater samples will be decanted into laboratory supplied vials. Care will be taken to ensure that the vials were completely full and that no air bubbles were present after capping. Groundwater samples will be labeled with the project ID, sample ID, sample depth, and date collected. Groundwater samples will be placed in an ice chest cooled with ice pending delivery to a DHS certified laboratory. The samples will be submitted under chain-of-custody control within 72 hours of collection, to Kiff Analytical LLC (Kiff, DHS certification number 2236) of Davis, California. The samples will be analyzed for TPH-g, TPH-d, benzene, toluene, ethylbenzene, xylenes (BTEX), MtBE, di-isopropyl ether (DIPE), ethyl tert-butyl ether (EtBE), tert-amyl methyl ether (tAME), tert-butyl alcohol (tBA), methanol, ethanol, ethylene dibromide (EDB), ethylene dichloride (EDC), 1,2-dichloroethane (DCA), and total lead.

Abandonment of Borings

The borings will be abandoned on the same day they are advanced by backfilling with Portland type I-II cement. The surface will be backfilled with concrete or asphalt to match the existing grade. A high pressure grout pump will be used to pump grout into the probe hole as the screen and rods are extracted (**Figure 3**).

Soil cuttings from the drilling operations will be stored on-site in properly labeled, sealed 55-gallon, DOT-approved, steel drums. Drums will be labeled with contents, date filled, generator name, and contact information. After drilling is completed one soil sample will be collected by combining roughly equal amounts of soil from each drum of cuttings. This sample will be analyzed for TPH-g, BTEX, and total lead to determine the appropriate method of disposal. The



investigation-derived wastes will be characterized as hazardous or non-hazardous based on the results of the laboratory analysis and disposed of according to applicable regulations.

Field Equipment Decontamination Procedures

Field equipment that comes into contact with soil and groundwater, including the split spoon sampler and drive rods, will be decontaminated before each use by steam cleaning or washing in a laboratory grade detergent solution, followed by a tap water rinse. Potable water will be used for decontamination of drilling equipment.

Rinseate water used in the decontamination process will be stored onsite in 55-gallon drums for subsequent disposal pending analytical results. Disposal of water will conform to applicable requirements.

CONDUIT STUDY

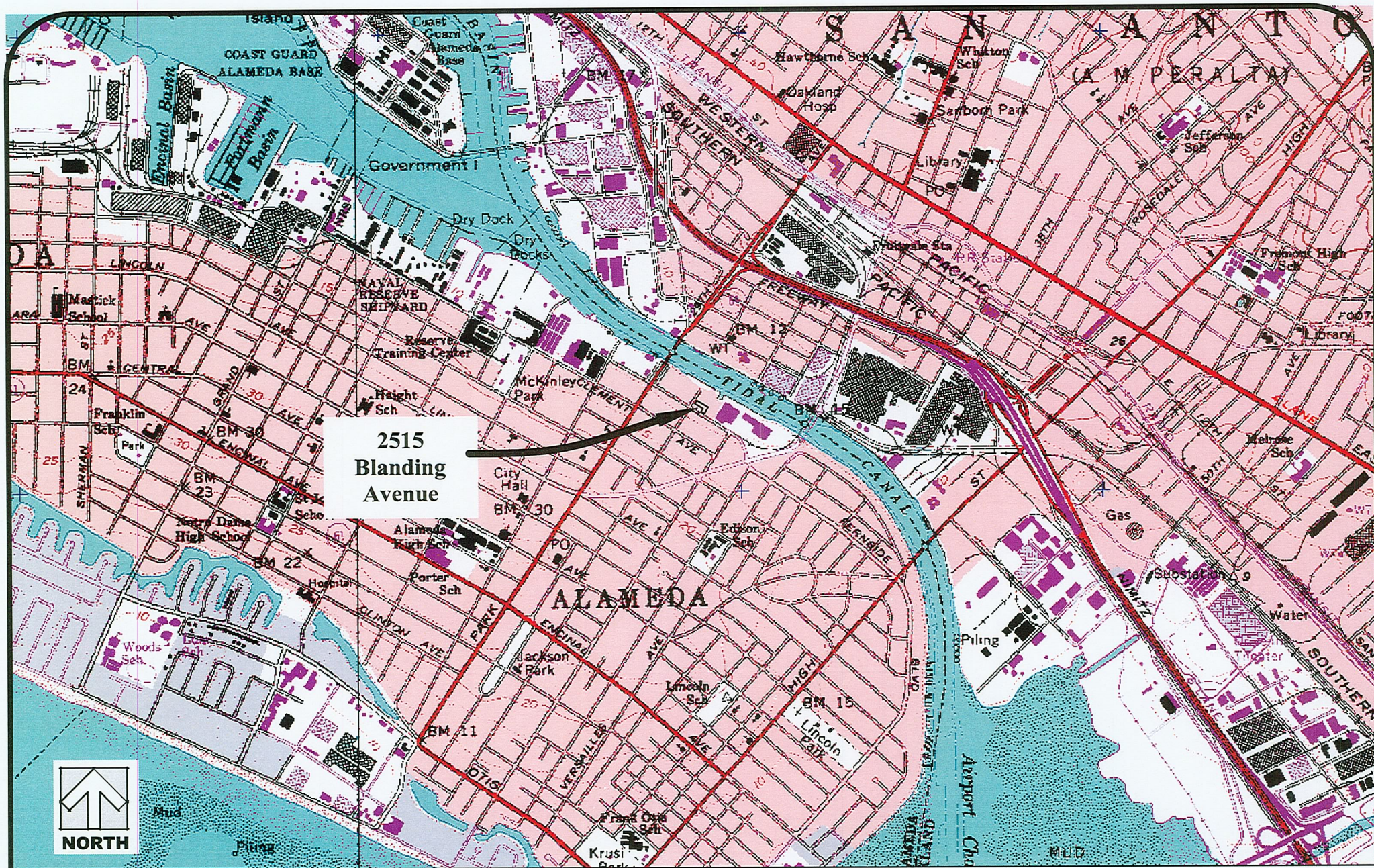
All potential pathways via conduits such as utility trenches, sewer lines, pipe-lines will be investigated and shown in the Site Investigation Report that will detail the results of drilling and sampling. The report will discuss whether there are potential problems with migration of the volatile substances off the site.

REPORTING

A *Site Investigation Report* will be prepared and submitted to the ACDEH. The report will include a description of the installation of the soil borings, a figure indicating boring and sample locations and site features, a tabulation of analytical results, laboratory analytical reports, soil boring logs, conclusions, and recommendations for additional investigation or remedial work, if necessary. If the data suggests that no further action is required, case closure will be recommended.

SCHEDULE

WAC will obtain well permits and schedule subcontractor services upon approval of this work plan by the ACDEH. Soil boring installation and sampling activities could be completed in approximately 14 days after receiving all of the permits. The results of soil and groundwater sample analyses will be obtained within 30 days of sample collection. The *Site Investigation Report* will be submitted to the ACDEH within 30 days after receiving the analytical results.



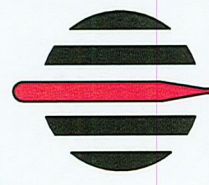
**2515
Blanding
Avenue**



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS

Scale: |————| 750 ft

Datum: WGS84



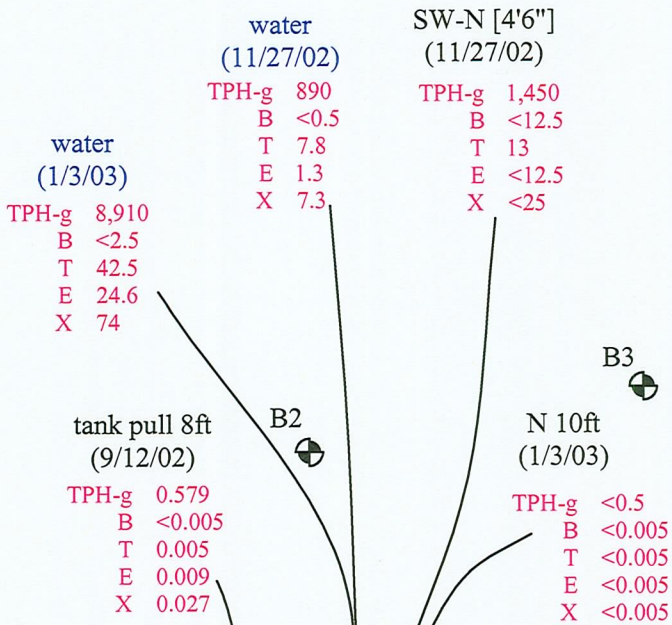
W.A. Craig, Inc.
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Site Location Map
Former Clamp Swing Pricing Company
2515 Blanding Avenue
Alameda, California

Project #: 4287	1
Date: 2/1/06	
Scale: as shown	



Everett Street



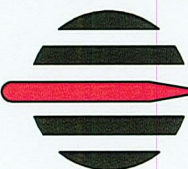
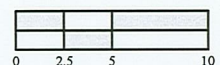
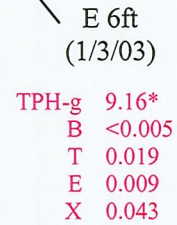
LEGEND

- B1 Proposed Boring Location
- Soil Sample Location (date collected in parentheses)
- Fence Line
- Former Tank and Trench Excavation
- Covered Structure
- TPH-g Total Petroleum Hydrocarbons as Gasoline
- B Benzene
- T Toluene
- E Ethylbenzene
- X Xylenes
- * Laboratory reports that result "does not match gasoline"

Note: Soil samples recorded in mg/kg.
 Water samples recorded in µg/L.
 Scale is approximate.

Approximately 350' to
 the Tidal Canal
 (presumed groundwater
 flow direction)

2515 Blanding Avenue

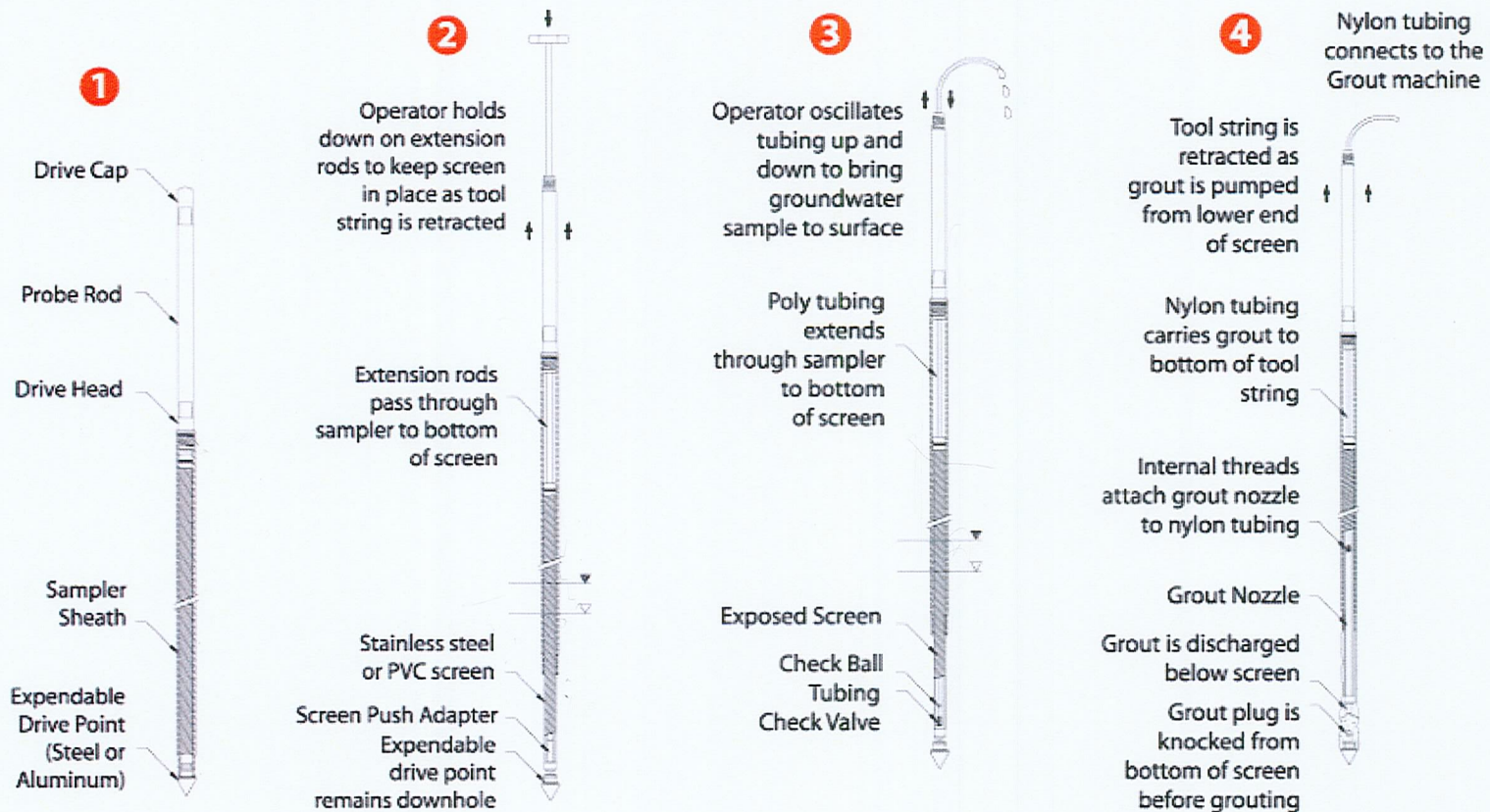


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**Site Plan and Proposed
 Sampling Locations
 Former Clamp Swing Pricing Company
 2515 Blanding Avenue
 Alameda, California**

Project #: 4287	Figure:
Date: 2/1/06	2
Scale: 1"=10'	



1. Driving

The assembled Screen Point 15/16 Groundwater Sampler is driven to the desired sampling depth using standard Geoprobe® rods.

3. Sampling

The tubing check valve can be used to sample and measure NAPLs within the screen interval as well as sample groundwater. A small bladder pump may be used to collect high-integrity VOC samples.

2. Deployment

Extension rods are used to hold the screen in position while the rods and sheath are retracted. The screen sheath forms a mechanical annular seal above the screen interval.

4. Grouting

Abandonment grouting can be conducted to meet ASTM guidelines. A high-pressure grout pump is used to pump grout into the probe hole as the screen and rods are extracted using the rod grip pull assembly.

W. A. CRAIG, INC.
Environmental Contracting and Consulting
6940 Tremont Road
Dixon, California 95620

Geoprobe Groundwater Sample Procedure
Former Clamp Swing Pricing Company
2515 Blanding Avenue, Alameda, California

FIGURE
3
Job No. 4287