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W.A. Craig, Inc.
Construction & Engineering

RO2513

DEC 23 2004
Environmental Health
County

TRANSMITTAL

To: Mr. Amir Goulami Alameda County Department of Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502	**Date:** December 21, 2004 **Job No:** 4287

We are sending you: X Attached ☐ Under separate cover **Via:** Postal Service

The following items:

☐ Proposal ☐ Prints X Work Plan ☐ Samples ☐ Reports

☐ Letter ☐ Change Order ☐ Specifications ☐ Invoice

Item #	Date	Copies	Description
1	12/10/04	1	**Site Investigation Work Plan** **2515 Blanding Avenue, Alameda, California**

These are transmitted as indicated below:

X For approval ☐ For your information ☐ For your use

☐ As requested ☐ For review and comment ☐ Returned for corrections

☐ Handle as Required ☐ Returned after loan ☐ For payment

Remarks:

Dear Mr. Goulami,

Attached is the Site Investigation Work Plan for 2515 Blanding Avenue in Alameda, California. We will proceed with the work as soon as the work plan is approved. If you have any questions or comments please call me at 707-693-2929.

Sincerely,

W.A. Craig, Inc.

Thaniel Davis

Associate Engineer

Cc: Dr. Jay Garfinkle

6940 Tremont Road, Dixon, California 95620 • 707/693-2929 Fax: 707/693-2922

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. Amir K. Gholami
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

December 10, 2004

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

By: W.A. Craig, Inc.
Project No. 4287
December 10, 2004

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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.

Brian Milton, P.E.
Principal 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 unoccupied.

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 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 feet below grade (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 (µg/L) of TPH-g. Low levels (<8 µg/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 mg/kg) of ethylbenzene, toluene, and xylenes. TPH-g was detected at 8,910 µg/L and diesel range organics were detected at 22,200 µg/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 the ACDEH requested the preparation of a work plan to further investigate the nature and extent of the release.

SCOPE OF WORK

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

- Prepare and submit a Site-specific Health and Safety Plan to Alameda County 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 four soil borings to a maximum of 15 feet below grade (fbg);
- Collect soil samples from each boring;

- Collect groundwater samples from each boring;
- Submit the soil and groundwater samples for analysis of TPH-g, benzene, toluene, ethylbenzene, and xylenes (BTEX); 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 read the plan and indicate that they have read and understood it. 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.

FIELD PROCEDURES

Soil Boring Installation

Four soil borings will be advanced using a truck-mounted drilling rig capable of using both direct push and hollow stem auger drilling methods. A California C-57 licensed well driller will install all of the proposed borings. The proposed boring locations are shown on **Figure 2**. A staff

Geologist, Engineer, or a field technician under the direct supervision of a California Registered Engineer will supervise drilling and sampling operations. Drilling will cease approximately 10 feet below the first encountered water-bearing zone. Groundwater is expected to occur between 4 and 5 fbg at the Site.

Borings will be continuously logged in the field using the Unified Soil Classification System. The field technician will observe significant changes in material penetrated, changes in drilling conditions, lithologic changes, the relative moisture content of soils, and water-producing zones. This record will be used later to prepare detailed boring logs. Lithologic descriptions will include soil type, color, grain size, texture, presence of hydrocarbons, and other pertinent information. A photo-ionization detector (PID) will be used to screen for the presence of volatile chemicals in the soil cores. PID measurements will be recorded on the boring logs.

Soil Sample Collection

Soil samples will be collected from each soil boring at 5-foot intervals and at the soil-groundwater interface. Soil samples will be collected using a 4-foot long split tube sampler lined with an acrylic sampling tube. The sampler will be placed down the boring and driven using a hydraulic ram. Immediately after removing the acrylic tube from the sampler, the tube will be cut to access the soil core and the PID will be used to screen the soil core. If the PID indicates hydrocarbons are present in the soil core, the section of core with the highest relative concentration in each 4-foot tube, as measured by the PID, will be selected for laboratory analysis. An additional soil sample obtained at the soil-groundwater interface in each of the borings will be collected and analyzed.

Soil samples will be collected using Encore samplers. The Encore sampler meets the requirements for field preservation of soil samples analyzed for volatile organic compounds using EPA Method 3550. The EnCore sampler will be pushed into the soil cores using the T-handle until the coring sampler is completely full. The cap coring body will be properly seated and locked in place to form an airtight seal. The EnCore samplers will be placed in a zipper foil pouch labeled with the project number, sample ID, sample depth, and date collected. The same information will be recorded on a chain-of-custody form. Samples will be stored in an ice chest cooled with ice pending submittal to an analytical laboratory. Samples will be submitted to the laboratory within 48 hours of collection.

Groundwater Sample Collection

Discreet groundwater samples will be collected from each soil boring at the soil-groundwater interface (the upper three feet of the first water bearing zone) and from 10 feet below the soil-groundwater interface. The soil sample assembly will be driven into the undisturbed soil at the

desired depth and the sample barrel will be retracted to expose a 2-foot long section of temporary well screen inserted through the core barrel. Samples will be obtained either with a clean bailer, or with clean vinyl tubing fitted with a ball-check on one end and lowered inside the drill string to the depth of the discrete sampling zone. Water samples will be decanted from the bailer or tubing into three laboratory supplied, 40-ml volatile organic analysis (VOA) vials pre-preserved with hydrochloric acid. Care will be taken to ensure an airtight seal with no headspace in the sample vials. The samples will be labeled with the project number, sample ID, sample depth, and date collected. The same information will be recorded on the chain-of-custody form. Samples will be stored in an ice chest cooled with ice pending submittal to an analytical laboratory. Samples will be submitted to the laboratory within 48 hours of collection.

Abandonment of Soil 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 to match the existing grade. If standing water is present in the boring, the cement will be placed with a Tremie piped lowered to within three feet of the bottom of the boring.

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.

LABORATORY ANALYTICAL METHODS

The soil and groundwater samples will be submitted under documented chain-of custody control to a California Department of Health Services certified analytical laboratory. The samples will

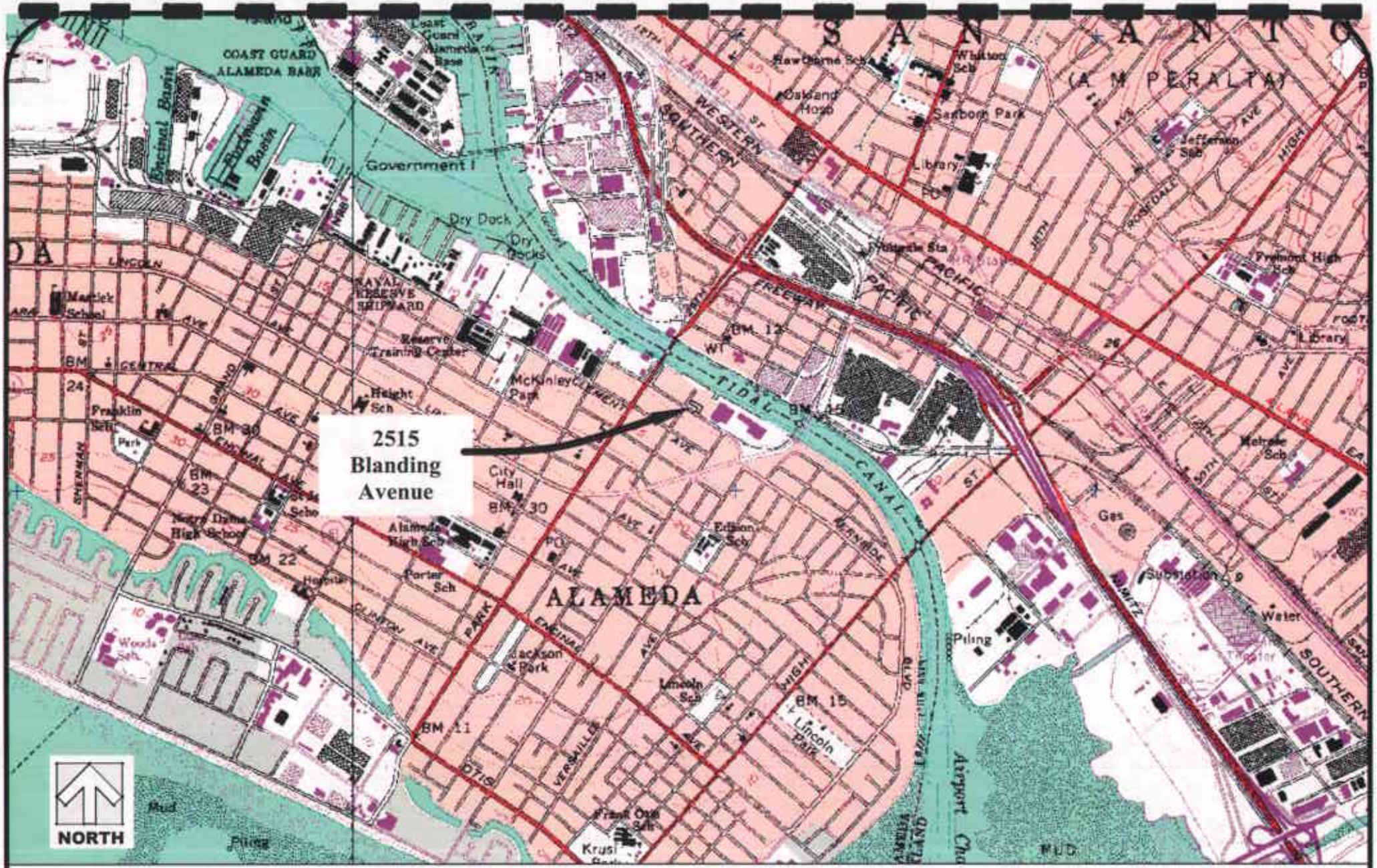
be analyzed for TPH-g using EPA Method 8015 modified, and for BTEX using EPA Method 8021B.

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.



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

Scale: 750 ft

Datum: WGS84

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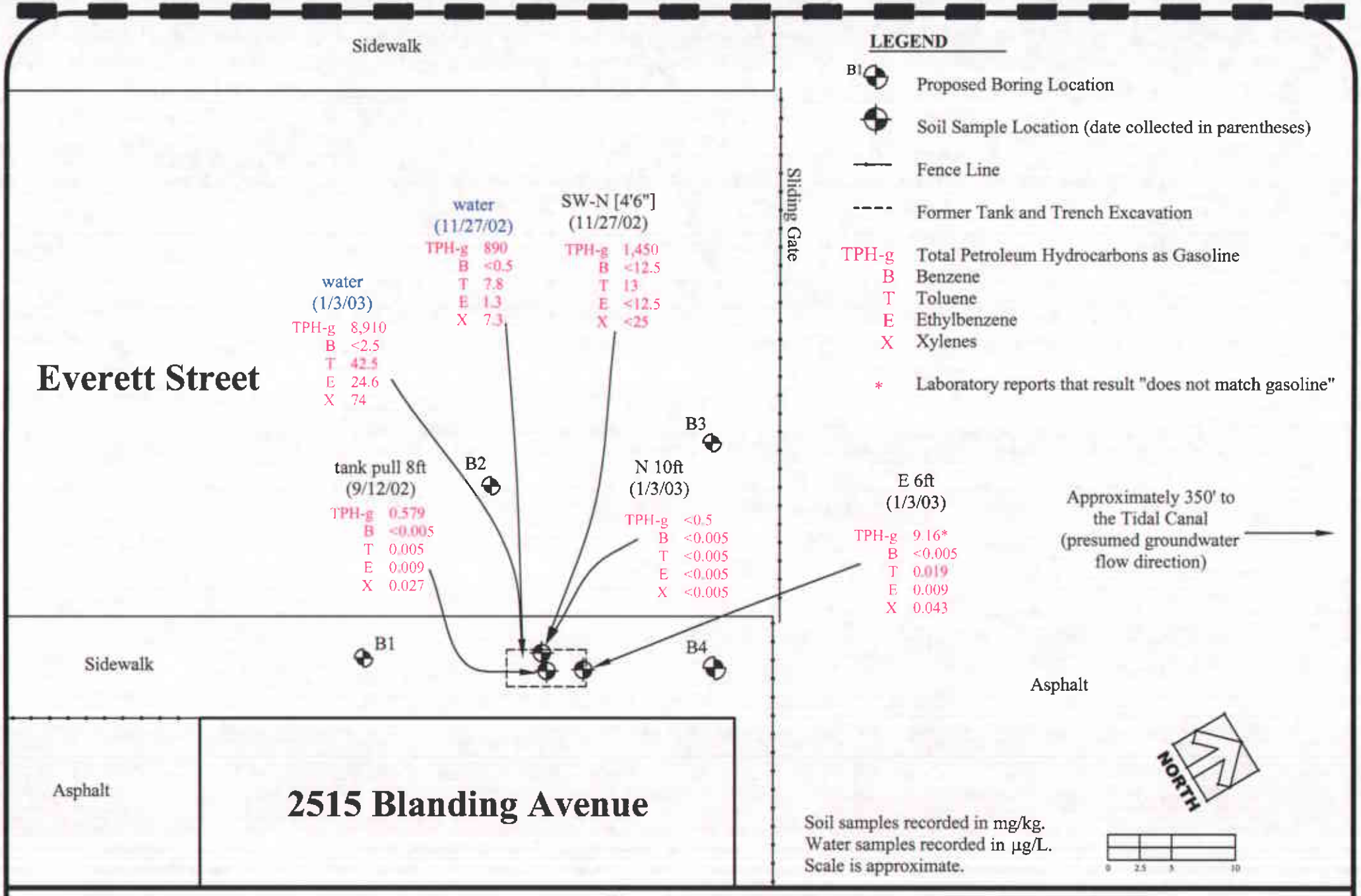
Site Location Map

Former Clamp Swing Pricing Company
2515 Blanding Avenue
Alameda, California

Project #: 4287	Figure: 1
Date: 12/10/04	
Scale: as shown	



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Site Plan and Proposed Sampling Locations

Former Clamp Swing Pricing Company
2515 Blanding Avenue
Alameda, California

Project #: 4287
Date: 12/10/04
Scale: 1"=10'

Figure: 2