

Date: 7-19-91

Mr. Bob Bingaman
Industrial Caster and Wheel Company
2077 Edison Avenue
San Leandro, CA 94577

RE: Phase II Work at 1280 Doolittle Dr., San Leandro, California

Two soil borings, designated as B-1 and B-2 were drilled on the above mentioned property under the direction and supervision of a California-registered geologist on July 24, 1991. The soil borings B-1 and B-2 were drilled to depths of 12.0 and 9.5 feet below ground surface, respectively. Soil samples collected and analyzed indicated that hydrocarbons were not detected on the property.

The lithology encountered in both soil borings was predominantly stiff, plastic clays. These clays have an extremely low estimated permeability. The clay unit encountered at about 8.0 feet is locally called "Bay Mud". The "Bay Mud" is generally classified as an aquitard. According to Groundwater and Wells by F. G. Driscoll (1986), an aquitard is a part of a geologic formation through which virtually no water moves. Because of the low permeability of the "Bay Mud", water or hydrocarbons are also less likely to be able to move horizontally or vertically through aquitards than through highly permeable sands and gravels.


After the holes were drilled, soil borings B-1 and B-2 were allowed to remain undisturbed for four and two hours respectively. Groundwater was not encountered after the waiting period.

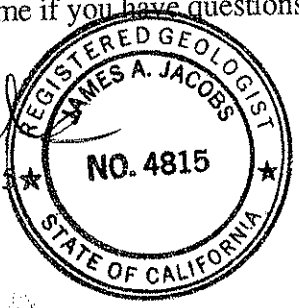
An electronic water probe, tested and cleaned prior to use, was used to measure the presence of the groundwater. Groundwater was not present in either boring. It is likely that with the five year drought still depressing and affecting the groundwater table, that water was not present on July 24, 1991.

Since the soil samples which were collected and analyzed did not contain hydrocarbons at levels above the aquitard, further drilling is not recommended at this time. Drilling through aquitards is generally not practiced as it creates potential conduits for any contamination to penetrate to deeper levels.

Please do not hesitate to call me if you have questions or comments.

Sincerely,


James A. Jacobs, R.G. #4815
Geologist




PHASE II SUBSURFACE INVESTIGATION

1280 Doolittle Drive
San Leandro, California

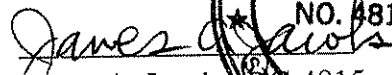
Prepared for: Mr Bob Bingaman
Industrial Caster and Wheel Company
2077 Edison Avenue
San Leandro, CA 94577

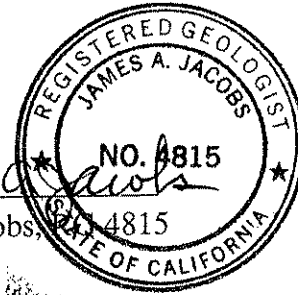
Prepared by: ACC Environmental Consultants

August 3, 1991


Susan Bayne Churchill, REA 668
Principal




James A. Jacobs, No. 4815
Geologist



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FIGURES

- 1 Property Location Map
- 2 Location Map of Borings

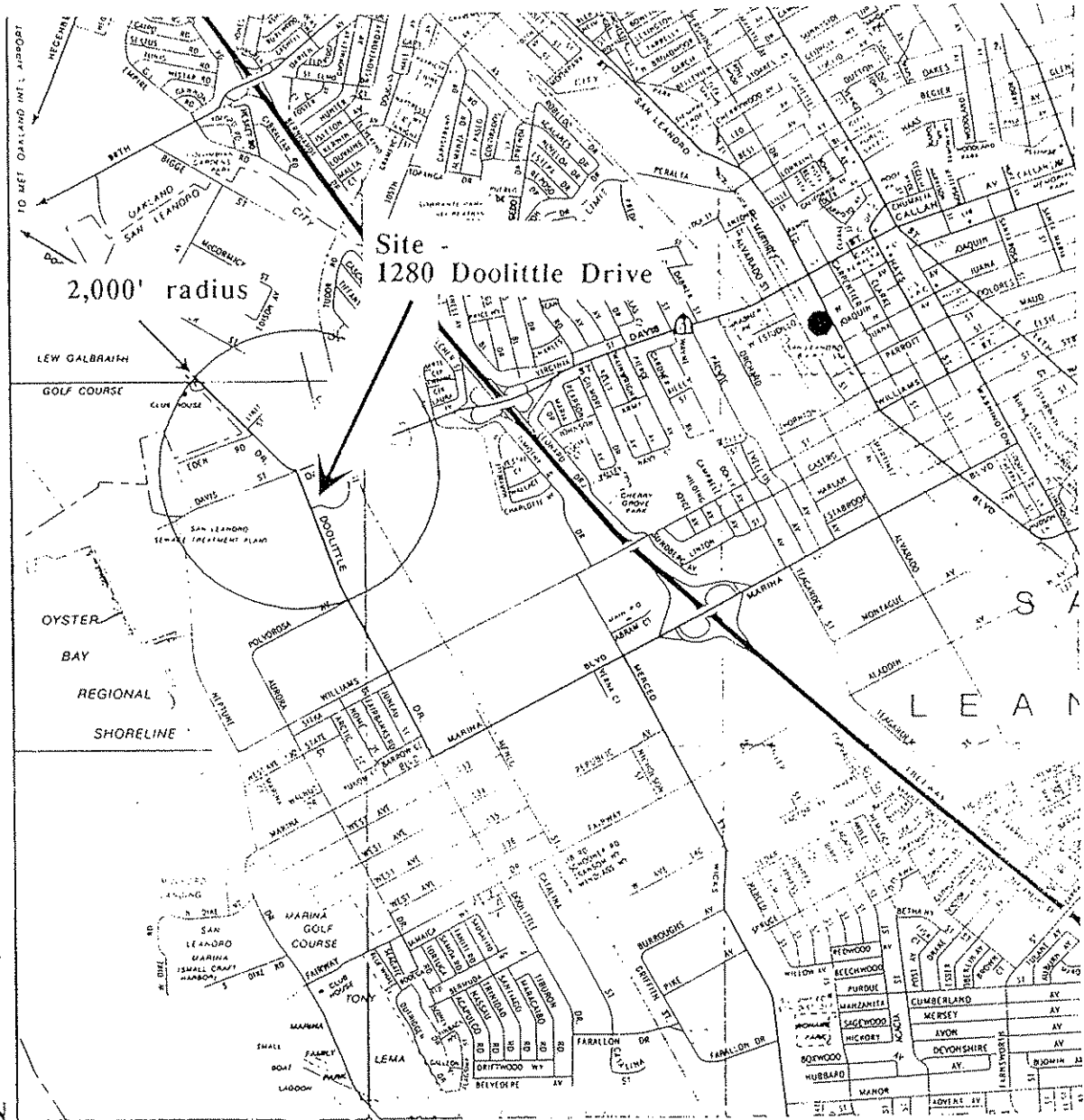
TABLES

- 1 Analytical Results: Soil Samples

APPENDICES

- A Boring Logs
 - B Chain of Custody Forms
 - C Laboratory Analytical Reports: Soil
-

FIGURES



(Source: CSAA, 1980)

0 Scale 0.50 miles

1" = 0.5 miles

ACC Environmental Consultants, Inc.
 1000 Atlantic Ave., Suite 110
 Alameda, CA 94501

SITE LOCATION MAP
 1280 Doolittle Drive
 San Leandro, California

Project No. 6016-1

Date: 5/6/91

Drawn by: OPJ

Figure No. 1

EXECUTIVE SUMMARY

ACC Environmental Consultants, Inc. ("ACC"), of Alameda, California conducted a Phase II Subsurface Investigation at 1280 Doolittle Drive, San Leandro, California. The purpose of the investigation was to evaluate the shallow subsurface conditions on the property.

Two soil borings, designated as B-1 through B-2, were drilled on the property, under the direction and supervision of a California-registered geologist on July 24, 1991. The soil borings B-1 and B-2 were drilled to depths of 12.0 and 9.5 feet below ground surface, respectively. Three soil samples were collected from each boring.

The six soil samples were analyzed for Total Petroleum Hydrocarbons (TPH-g) as gasoline; benzene, toluene, ethylbenzene and xylenes (BTEX). The laboratory results indicate that TPH-g and BTEX were not present in the soil samples above the measured detection levels.

Shallow groundwater was not encountered during drilling. An electronic water level measuring device was used in both boreholes after the boreholes were allowed to remain undisturbed for up to four hours after drilling. Groundwater was not located in either boring. Therefore, groundwater samples were not available to be obtained.

The property is located in a highly industrial area in San Leandro. Based on the limited number of soil samples collected from two borings on the property, it does not appear that soils at those locations have been impacted above the measured detection levels from on-site or off-site sources. Because shallow groundwater was not encountered on July 24, 1991, it is unknown whether the groundwater on the property has been impacted. However, based solely on the soil analysis, it appears that groundwater was not impacted from the overlying soils. Additional work, including further subsurface investigation, can reduce the inherent uncertainties associated with this type of investigation, however, based on the results of this investigation, further work at this time does not appear to be necessary.

1 INTRODUCTION

This report presents the results of the Phase II Subsurface Investigation conducted by ACC Environmental Consultants (ACC), at 1280 Doolittle Drive (the property) in San Leandro, California.

A Phase I Environmental Site Assessment on the property was conducted by ACC in May, 1991.

The purpose of the investigation was to evaluate the shallow subsurface conditions on the property. All activities were performed under the direction and supervision of a California-registered geologist. The property is located in an industrial area. The property is zoned for industrial uses.

1.1 Scope of Work

The scope of work for the subsurface investigation is as follows:

- 1) Drill two soil borings and collect soil samples in all the borings;
- 2) Analyze soil samples for Total Petroleum Hydrocarbons (TPH-g) as gasoline by modified EPA Method 8015 and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) by EPA Method 8020;
- 3) Collect groundwater samples, if available, and analyze the samples for TPH-g and BTEX.
- 4) Review all field and laboratory data and prepare a report of this investigation.

2 PROPERTY DESCRIPTION

2.1 Property Setting

The property is bounded on the northern side by an automotive brake shop, on the west by Doolittle Drive and on the south by Carden Street. The Southern Pacific Railroad system flanks the property on the east.

The property consist of a vacant 30,000 square foot lot. The lot is paved with a gravel surface. According to the May 8, 1991 Phase Environmental Site Assessment by ACC, one 10,000-gallon underground storage tank previously containing diesel fuel was removed in October, 1990. According to the May, 1991 ACC report, the results of the soil sampling accompanying the removal were within acceptable regulatory limits, therefore the case has been closed (San Leandro Fire Department file review, May, 1991).

3 SOIL BORINGS

3.1 Drilling

On July 24, 1991, soil borings B-1 through B-2 were drilled by ACC using pneumatic rotary drilling equipment. The boreholes were drilled using 2" outer diameter flight augers. Borings B-1 and B-2 were drilled in the northeast and southwest corners of the property, respectively. The borings were drilled to a depth of 12.0 and 9.5 feet below ground surface. The borings were grouted to the surface with a cement grout.

3.2 Soil Sampling

Soil samples were collected at approximately 3-foot depth intervals for lithologic and hydrogeologic description and chemical analysis. The soil samples collected were evaluated by a California registered geologist in the field for soil characteristics using the Unified Soil Classification System. Boring logs are included in Appendix A. On July 24, 1991, six samples were collected from the borings. The soil samples were collected in both pre-cleaned, thin-walled brass tubes, 6-inches long and about 2-inch in the outside diameter and in hard shell plastic tubes, 1/2-inch in diameter and 6-inches long.

The procedure described below was developed to minimize the potential for cross-contamination and volatilization of volatile organic compounds prior to chemical analysis. The soil sampler was driven for six inches using a 12-pound drop hammer. The sampler was then lifted from the borehole. The brass tube containing the soil sample was removed from the sampler. Upon removal from the sampler, the sample tubes were immediately capped with both pre-cut teflon sheets at each end and also plastic caps. The soil sample then hermetically sealed in a zip-lock bag, labeled and stored and transported in a refrigerated environment under chain-of-custody to Chromalab, Inc. of San Ramon, California, a state-certified laboratory.

3.3 Decontamination

All drilling and soil sampling equipment was decontaminated prior to use in each borehole and between soil samples to minimize the potential for cross contamination. The augers and sampling equipment were cleaned with an Alconox wash and deionized water rinse before and after drilling each borehole. All rinse water was collected in one 5 gallon bucket.

3.4 On-Site Hydrogeology

Based on borings drilled on July 24, 1991, the property is underlain by predominantly low-estimated permeability brown clays, silty clays and clayey fine grained sands. Shallow groundwater was not encountered in either boring during drilling operations on July 24, 1991. Borings B-1 and B-2 were allowed to remain undisturbed after drilling for four and two hours, respectively. An electronic water measuring device was used in both boreholes to determine the static groundwater elevation. Shallow groundwater did not seep into either borehole on July 24, 1991, and therefore groundwater samples could not be obtained.

4 LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for soil are summarized in Table 1. The chain-of-custody form and laboratory reports with quality control documents for soil and groundwater samples are included in Appendix B. A concentration level of nondetect (ND) on the laboratory reports indicates that for that particular sample location and depth at the time of sampling that the compounds analyzed may be present, but at concentrations below the method detection limit and therefore were not detected.

4.1 Soil Analytical Results

Analytical results of soil samples are summarized in Table 1. Laboratory reports for soil samples collected are included in Appendix C. TPH characterized as gasoline and BTEX were not detected in any of the soil samples at levels exceeding the measured detection limit.

5 LIMITATIONS FOR SUBSURFACE SAMPLING AND INVESTIGATIONS

The authors and firm offer no assurance and assume no responsibility for site conditions or activities which were beyond the scope of work requested by the client and referenced in the introduction of this report. The compensation agreed to by the client and the firm corresponds to the scope of work defined, with the associated limitations which are an integral and important part of this report. This report was prepared in accordance with generally accepted standards of environmental geological practice in California at the time this investigation was performed. This investigation was conducted solely as a tool in assessing environmental conditions of the soil and/or groundwater with respect to relative hydrocarbon product contamination in the immediate vicinity of the former underground storage tank. No soil engineering or geotechnical recommendations are implied or should be inferred. Evaluation of the geologic conditions at the site for the purpose of this investigation is made from a limited number of observation points. There may be variations in subsurface conditions away from the sample points available. There are no representations, warranties, or guarantees that the points selected for sampling are in anyway representative of the entire site. Data from this report reflects the sample conditions at specific locations at a specific point in time. No other interpretations, representations, warranties, guarantees, express or implied, are included or intended by this report. Additional work, including further subsurface investigation, can reduce the inherent uncertainties associated with this type of investigation. There are no guarantees or warranties, express or implied, that undocumented, nonpermitted, illegally or improperly abandoned subsurface containers (such as underground storage tanks or drums) or other sources of contamination or contaminated soil or groundwater itself, or covered, encapsulated, inaccessible or nonobservable hazardous materials (such as inaccessible asbestos) either do or do not exist on the property.

This project involved hazardous or toxic compounds and there are certain inherent risk factors involved (such as limitations on laboratory or analytical methods or equipment, variations in subsurface conditions, and risks associated with specific analysis not requested by the client), which may adversely affect the results of the project, even though the services were performed with such skill and care as are generally accepted professional standards for the environmental geology profession.

6 REFERENCES

ACC Environmental Consultants, May 18, 1991, Phase I Environmental Site Assessment, 1280 Doolittle Drive, San Leandro, California; Prepared for Mr. Bob Bingaman.

TABLE

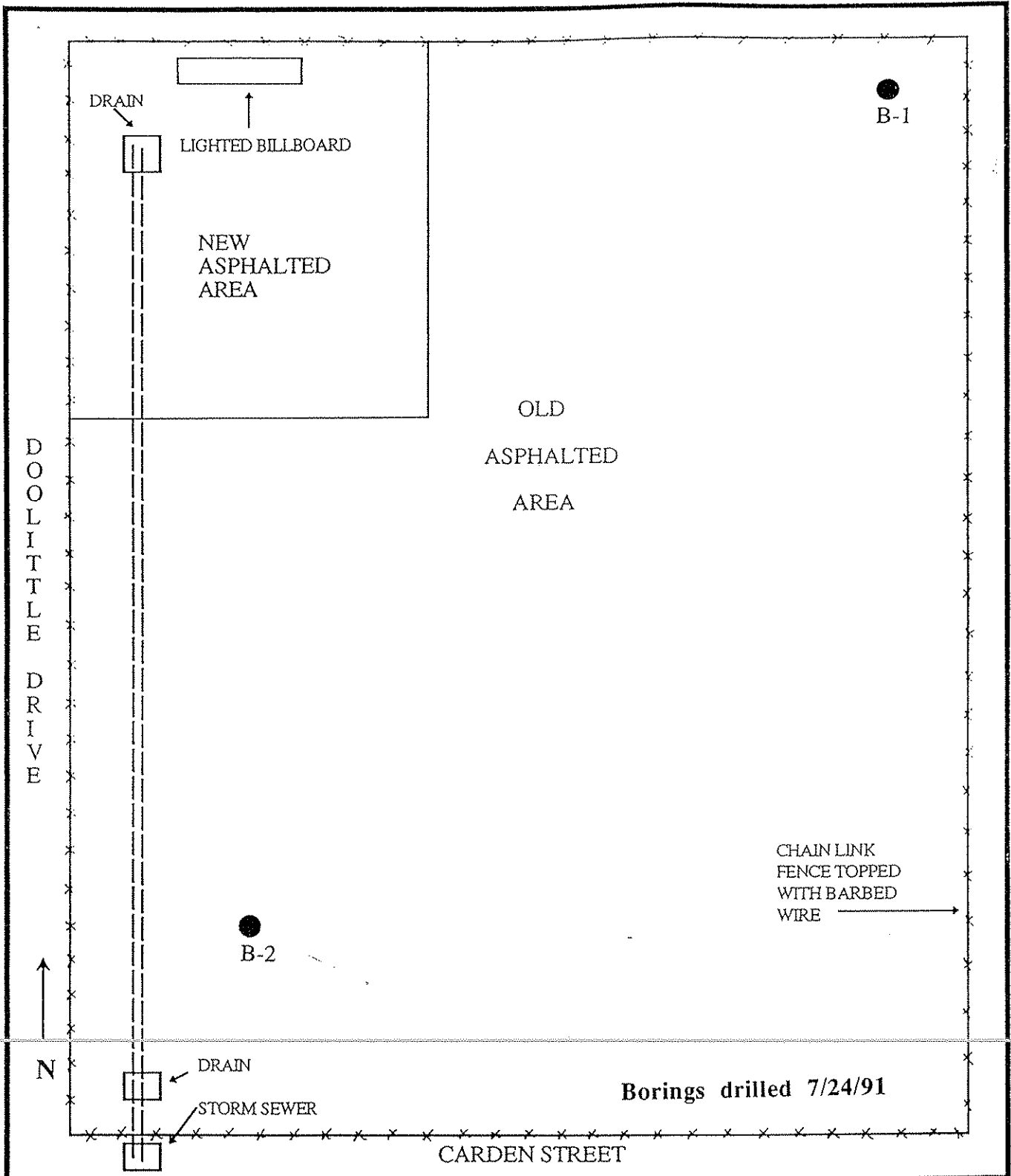
Table 1- Analytical Results: Soil Samples

Samples Collected: July 24, 1991 by James A. Jacobs, R.G.

1280 Doolittle Drive
 San Leandro, California

Boring	Sample Number	Depth (feet)	TPH (gas) mg/kg	B T E X			
				-----µg/kg----->			
B-1	B-1-3	3	ND	ND	ND	ND	ND
B-1	B-1-6	6	ND	ND	ND	ND	ND
B-1	B-1-9	9	ND	ND	ND	ND	ND
B-2	B-2-2.5	2.5	ND	ND	ND	ND	ND
B-2	B-2-6	6	ND	ND	ND	ND	ND
B-2	B-2-9	9	ND	ND	ND	ND	ND

APPENDIX A-BORING LOGS



<p>0' 25'</p> <p>Scale</p>	<p>ACC Environmental Consultants, Inc. 1000 Atlantic Ave., Suite 110 Alameda, CA 94501</p>	<p>Detailed Site Location Map 1280 Doolittle Drive San Leandro, California</p>	
<p>Project No. 6016-1</p>	<p>Date: 8/3/91</p>	<p>Drawn by: OPJ</p>	<p>Figure No. 2</p>



Above - Using magnetic and cable locating equipment prior to drilling.
Below - Coring through asphalt while drilling boring B-1.



ACC Environmental Consultants, Inc.

**1000 Atlantic Ave., Suite 110
Alameda, CA 94501**

Photographs

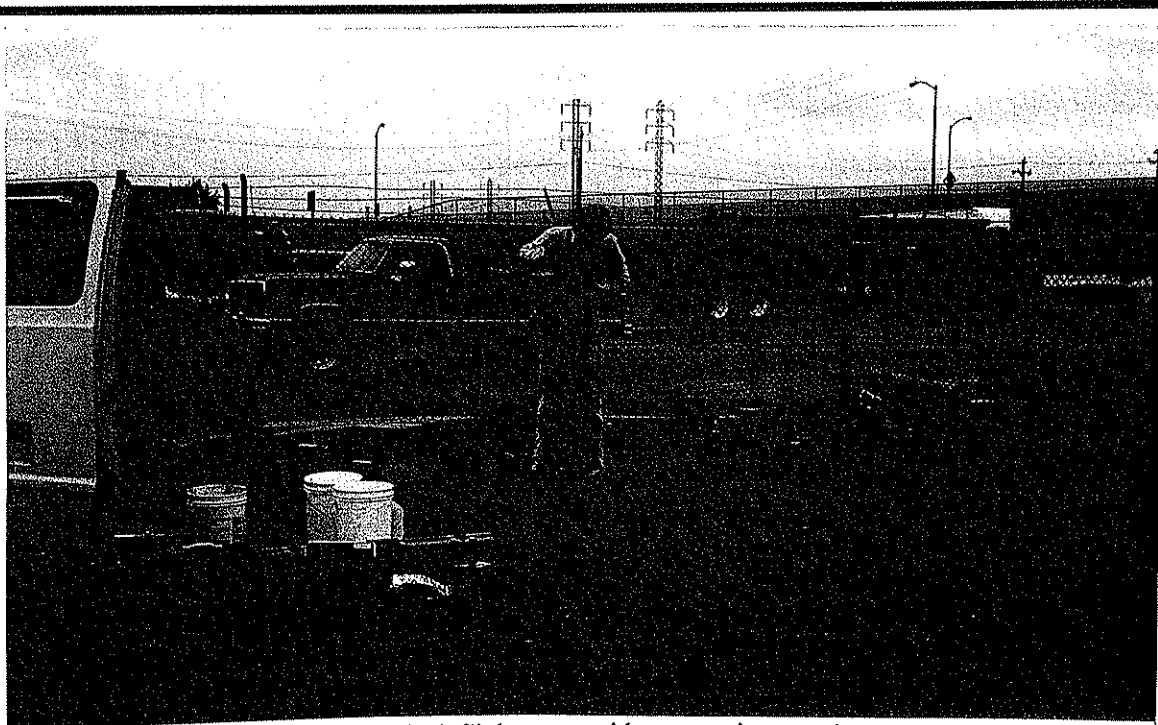
**1280 Doolittle Drive
San Leandro, California**

Project No. 6016-2

Date: 8/3/91

Drawn by: OPJ

Photographs



Above - Using two inch flight auger with pneumatic rotary hammer.
Below - Using bucket auger to clean out hole.



ACC Environmental Consultants, Inc.

**1000 Atlantic Ave., Suite 110
Alameda, CA 94501**

Photographs

**1280 Doolittle Drive
San Leandro, California**

Project No. 6016-2

Date: 8/3/91

Drawn by: OPJ

Photographs

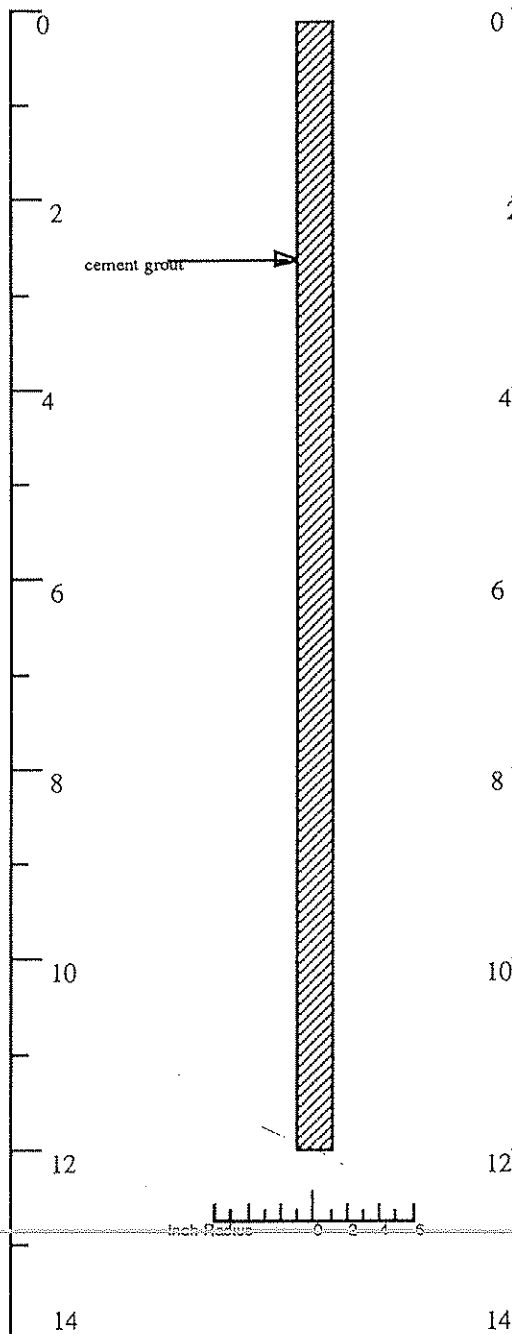
DEPTH
IN FEET

BORING COMPLETION

Blows/ft
Sample #
Sample depth

BORING LOG

DESCRIPTION



0	Asphalt
1	Lt. brn. silty clay (CL) w/ pebble fill.
2	Black clay (CH), plastic no odor, slightly moist
3	Brn to black clay (CL), stiff, mod. plastic, sl. moist, no odor. Debris from dump- pieces of plastic, glass @ 5.5 feet
6	Med. brn. clay (CH), stiff, plastic, no odor.
9	Bay Mud, Black-dark grey clay (CH) high plast., stiff, moist no odor.
11	Med. brn clay (CL), mod plast., moist, no odor.
12	Total depth = 12.0 feet
14	NO WATER ENCOUNTERED DURING DRILLING

Drilled by: J. Jacobs

Logged by:

J. Jacobs, RG #4815

Dates drilled: 7/24/91

Date: August, 1991

Drilling method: Pneumatic Rotary

ACC ENVIRONMENTAL CONSULTANTS

Boring B-1

1280 Doolittle Drive
San Leandro, California

Client: Mr. Bob Bingaman

Date: 8/3/91

Drawn by: JAJ

Boring B-1

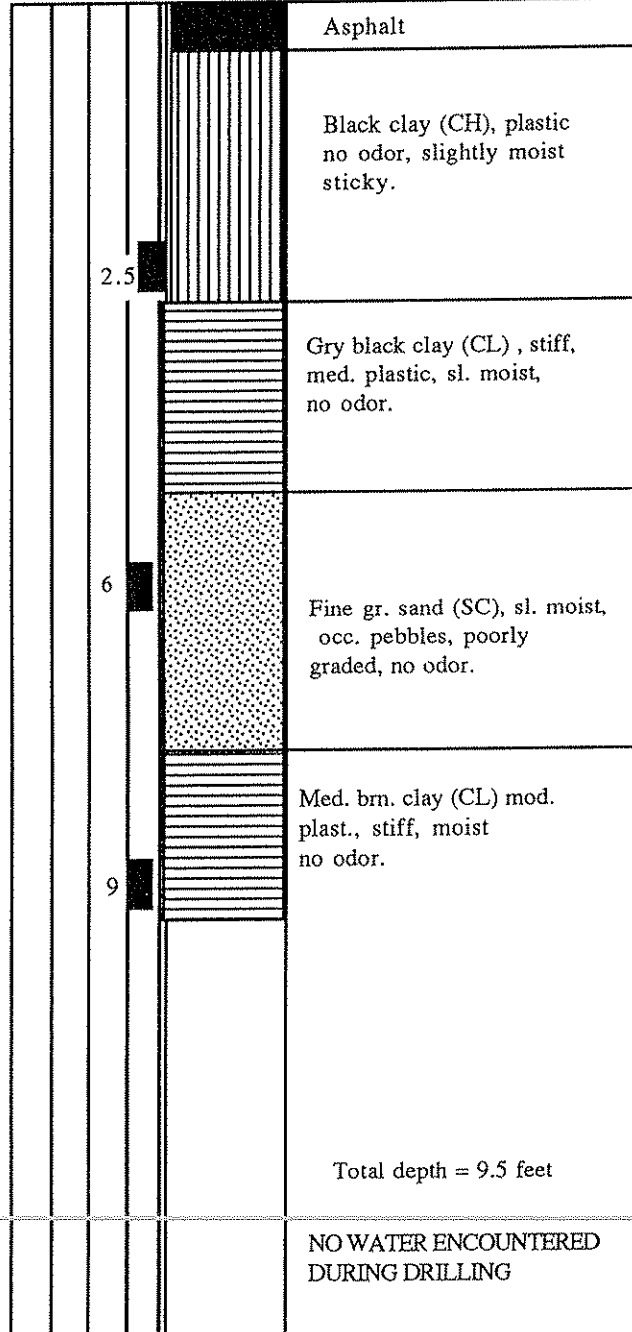
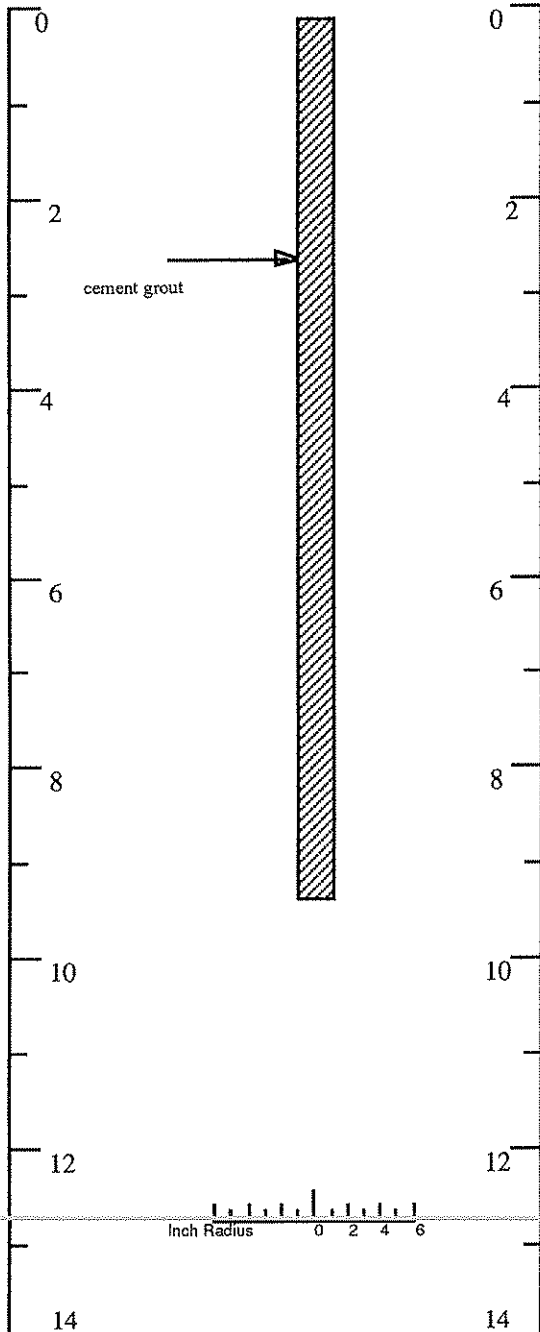
DEPTH
IN FEET

BORING COMPLETION

Blows/ft
Sample #
Sample depth

BORING LOG

DESCRIPTION



Drilled by: J. Jacobs
 Logged by: J. Jacobs, RG #4815
 Dates drilled: 7/24/91
 Date: August, 1991
 Drilling method: Pneumatic Rotary

ACC ENVIRONMENTAL CONSULTANTS
 Boring B-2
 1280 Doolittle Drive
 San Leandro, California

Client: Mr. Bob Bingaman

Date: 8/3/91

Drawn by: JAJ

Boring B-2

APPENDIX B- CHAIN OF CUSTODY FORMS

APPENDIX C- LABORATORY ANALYTICAL RESULTS: SOIL

CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

August 1, 1991

ChromaLab File No.: 0791198

ACC ENVIRONMENTAL

Attn: James A. JacobsRE: Six soil samples for Gasoline/BTEX analysis

Project Name: 1280 DOOLITTLE PHASE II

Project Location: San Leandro, CA

Date Sampled: July 24, 1991

Date Submitted: July 25, 1991

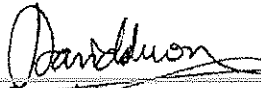
Date Extracted: July 29, 1991

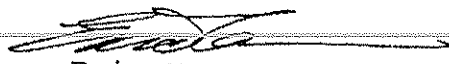
Date Analyzed: July 29, 1991

RESULTS:

Sample No.	Gasoline (mg/kg)	Benzene (μ g/kg)	Toluene (μ g/kg)	Ethyl Benzene (μ g/Kg)	Total Xylenes (μ g/kg)
B-1-3'	N.D.	N.D.	N.D.	N.D.	N.D.
B-1-6'	N.D.	N.D.	N.D.	N.D.	N.D.
B-1-9'	N.D.	N.D.	N.D.	N.D.	N.D.
B-2-2.5'	N.D.	N.D.	N.D.	N.D.	N.D.
B-2-6'	N.D.	N.D.	N.D.	N.D.	N.D.
B-2-9'	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	94.9%	89.6%	91.4%	92.6%	92.8%
DUP SPIKE REÇ.	87.6%	99.7%	100.3%	99.6%	101.9%
DETECTION LIMIT	1.0	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	5030/ 8015	8020	8020	8020	8020

ChromaLab, Inc.


 David Duong
 Chief Chemist


 Eric Tam
 Laboratory Director