

Western Operations

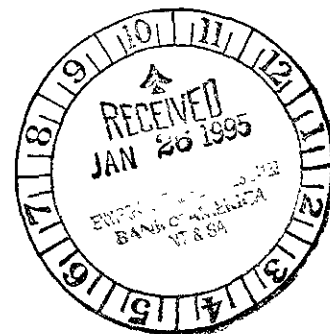
1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

11:21 AM
SEP 20 1995

Clayton
ENVIRONMENTAL
CONSULTANTS

January 25, 1995

Mr. Rick Oliver
Environmental Analyst
BANK OF AMERICA
555 Anton Boulevard, Suite 1025
Costa Mesa, California 92626



Clayton Project No. 57718.00

Subject: Report for Subsurface Investigation at 1528 Webster Street in Alameda, California

Dear Mr. Oliver:

Clayton Environmental Consultants, Inc. is pleased to present five copies of our report for the subsurface investigation at Bank of America Property located at 1528 Webster Street in Alameda, California.

The total petroleum hydrocarbons as diesel (TPH-D) levels in groundwater for the monitoring wells MW-2, MW-3 and MW-4 ranged from 170 to 4,400 microgram per liter ($\mu\text{g/L}$). TPH-D was not detected in groundwater samples from monitoring wells MW-1 and MW-5. The Regional Water Quality Control Board (RWQCB) generally uses the United States Environmental Protection Agency (USEPA) Suspected No-Adverse-Response Level (SNARL) of 100 $\mu\text{g/L}$ to evaluate the significance of site assessment results. Since the TPH-D concentration in monitoring wells MW-2, MW-3 and MW-4 is higher than the SNARL we anticipate that additional work may be requested at this site. According to the analytical reports benzene, toluene, ethylbenzene and xylenes (BTEX) were not detected in the soil or groundwater samples.

Based on the analytical results and our field investigation we recommend the following:

- Submit a copy of the subsurface investigation to the Alameda County Health Care Services Agency (ACHCSA) for review.

ACTIVE57718-00.LTR

Clayton Environmental Consultants, Inc. • Detroit • New York/Newark • Atlanta • San Francisco • Los Angeles
Honolulu • Windsor, ON • Toronto • Birmingham, U.K. • London, U.K. • Southampton, U.K. • Gateshead, U.K.

Mr. Rick Oliver
Bank of America
December 16, 1994

Page 2
Clayton Project No. 57718.00

- Collect groundwater samples from the monitoring wells on a quarterly basis.
- Analyze the groundwater samples for TPH-D, BTEX and total dissolved solids (TDS).

Based on our past experiences with the we believe that ACHCSA may request that Bank of America at the minimum initiate a quarterly groundwater monitoring and sampling at the subject site. A feasibility study and remediation my by required by the ACHCSA based on the out come of the quarterly groundwater analysis results.

If you have any questions please contact me or Mr. John Vargas at (510) 426-2600.

Sincerely,



Dariush Dastmalchi
Geologist

DD/dd

0.000000

03 FEB -9 PM 9:12



Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
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Clayton
ENVIRONMENTAL
CONSULTANTS

Subsurface Investigation Report
at
Bank of America Facility
1528 Webster Street
Alameda, California
ES #302412

Clayton Project No. 57718.00
January 25, 1995

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1.0 INTRODUCTION

Bank of America retained Clayton Environmental Consultants, Inc. to perform a limited subsurface investigation at the Bank of America facility located at 1528 Webster Avenue in Alameda, California. These services included installation of two monitoring wells, soil and groundwater sample collection and analysis. These data will be used to further assess the potential environmental impact of the former underground storage tank located adjacent to the subject facility.

The UST was located on the Haight Street side (south) of the Bank of America building at 1528 Webster Street. A site location map is included as Figure 1. A site diagram is included as Figure 2.

The UST was located under the sidewalk, approximately 5 feet from the building foundation. Several utility lines (sewer and water) run along Haight Street and the sidewalk at a depth of approximately 3 feet below ground surface (bgs), near the former UST location.

The area immediately adjacent to the UST is comprised of Haight Street, sidewalks, and commercial buildings. A mosque and residential buildings are located east of the Bank of America building.

2.0 BACKGROUND

The possibility that a UST might be located at or near the subject property was indicated in a Phase I investigation performed by Tetra Tech Corporation in February 1993. The review of the historical documents indicated that a permit for a 500-gallon UST was issued to Citizens National Bank by the City of Alameda in 1916. Clayton's investigation revealed the presence of a UST under the sidewalk near the subject site (Figure 2). Further inspection of the UST revealed that the tank was full of water and diesel oil.

Clayton was unable to determine when the UST had last used. Clayton's investigations revealed that the building's fuel consumption had been converted to natural gas in the late 1940s or early 1950s. It appears that since the natural gas service was provided, the UST was abandoned.

There was a possibility that the UST was replaced in 1935, when the present building at the site was constructed. The existing UST had a capacity of 750 gallons, indicating that the older 500-gallon UST may have been replaced.

On August 3, 1993 the UST was removed from the subject site. The tank removal activities were performed by Bay Area Tank Removal, Inc. located in San Francisco, California.

Based on a sounding performed prior to the tank removal, the tank contained approximately 4 inches of floating product on top of water. Approximately 750 gallons of liquid (oil and water) were pumped from the UST by H&H Ship Service Company and was transported for proper disposal.

Soil samples collected from the UST excavation pit contained total petroleum hydrocarbons as diesel (TPH-D) concentration ranging from 300 to 1300 milligrams per kilograms (mg/kg).

Because of the TPH-D concentration in the soil samples the UST pit was overexcavated on September 14, 1993. The overexcavation was performed to remove contaminated soil to the extent possible without damaging the near by utility lines or causing structural weakness to the subject building. Approximately 50 tons of soil was excavated and transported for proper disposal. No additional excavation was performed because of the near by utilities lines (i.e., storm drains, sewer lines, water lines). After sampling was completed, the excavation was backfilled using Class II base rock material.

After overexcavation was completed, eight samples were collected from the excavation walls. At the request of Alameda County Health Care Services Agency (ACHCSA) one sample from each wall was analyzed for TPH-D and benzene, toluene, ethylbenzene and xylenes (BTEX). The analytical reports indicated TPH-D concentration ranging from 107 to 1005 mg/kg in soil samples collected from the east west and south walls of the excavation. The soil samples from the excavation pit did not contain BTEX concentrations at or above the analytical detection limits. The analytical report for these samples is included in Appendix A.

During April and May 1994, Clayton installed three monitoring wells (MW-1, MW-2, and MW-3) near the former UST locations. These monitoring wells were installed to assess the extent of soil and possible groundwater contamination from the former UST. Two monitoring wells (MW-1 and MW-3) were installed in the anticipated crossgradient and upgradient directions from the UST. The monitoring well MW-2 was installed within 10 feet of the former UST pit in the downgradient direction from the former UST.

The soil and groundwater samples from the monitoring wells were analyzed for TPH-D and BTEX. According to the analytical reports, TPH-D concentrations in the groundwater samples ranged from 110 micrograms per liter ($\mu\text{g/L}$) in MW-1 to 4,100 $\mu\text{g/L}$ in MW-2. The TPH-D concentrations ranged from less than the detected limited of 1 milligram per kilogram (mg/kg) in the soil sample from MW-3 to 6 mg/kg in the soil sample from MW-1.

The groundwater flow direction, based on the groundwater elevation data collected on April 7, 1994, was calculated to be toward the south.

On July 5, 1994, ACHCSA requested a work plan to further delineate the soil and groundwater contamination near the subject site. Clayton submitted the work plan to ACCOST on September 6, 1994.

3.0 SCOPE OF WORK

The following subsections describe the activities performed during the soil and groundwater investigation at the site as described in Clayton's work plan.

3.1 HEALTH AND SAFETY PLAN

A health and safety plan was prepared for the work outlined in the work plan in accordance with the requirements of Title 29 of the Code of Federal Regulations, Section 1910.120 (29 CFR 1910.120).

3.2 IDENTIFICATION OF UNDERGROUND UTILITY TRENCHES

Before commencing the field activities Clayton contacted the Underground Services Alert (USA) to identify and mark the utilities near the UST pit area (USA No. 320690). No utilities were identified at the monitoring well locations.

3.3 MONITORING WELL INSTALLATION AND SAMPLING

After obtaining the necessary permits from the Zone 7 Water Agency Clayton monitored installation of two monitoring wells (MW-4 and MW-5) at the subject site. A copy of the monitoring well installation permits is included in Appendix B.

Monitoring well MW-4 was located in the estimated downgradient groundwater flow direction. Monitoring well MW-5 was located in the anticipated crossgradient direction from the former UST. The monitoring well locations are shown in Figure 2.

The boreholes were drilled using 8-inch diameter hollow-stem augers to an approximate depth of 20 feet. During the drilling of the boreholes, the soil characteristics were logged in the field by Mr. Dariush Dastmalchi, Clayton Project Geologist. Distinguishing features such as color, odor, and relative soil moisture content were noted. The boring logs and well construction details are included in Appendix C. The boreholes were converted into monitoring wells using a 2-inch diameter schedule 40 polyvinyl chloride (PVC) casing. Because of the shallow water table the screened casing was extended approximately one foot above the water table (approximately 5 feet bgs). Solid casing was then installed to the surface. The sand pack was placed in the well annulus from the bottom of the well to 1 foot above the screen. A 1-foot bentonite seal was placed on top of the sand pack and the well was sealed to the surface using cement grout. A locking cap was used to secure the well in a Christie box raised above the surface grade by approximately 1 inch to prevent surface run-off from entering the well head.

Drilling and sampling activities were conducted in accordance with Clayton's drilling, well construction and sampling protocols for borehole/monitoring well installation (see Appendix D), under the supervision of a geologist registered in the State of California.

3.4 SOIL SAMPLE COLLECTION

The ACHCSA had requested that the soil samples be collected from approximately 8.5 feet bgs. However, because the groundwater table beneath the site is 7 to 8 feet bgs, Clayton collected soil samples at 7 feet bgs. The soil samples were collected using a 2.5-inch split barrel sampler. To aid in locating contamination, Clayton screened the soil cuttings during drilling using a photoionization detector (PID), and visual senses to detect petroleum compounds. The PID did not detect volatile organic compounds. No soil samples were collected for laboratory analysis below the saturated zone.

The soil samples were collected in precleaned brass tubes for the purpose of lithologic logging. The brass tubes selected for analysis were sealed with aluminum foil, plastic caps, and immediately placed in an iced cooler for transport to the laboratory. Legal chain-of-custody procedures were followed for handling of soil samples.

3.5 MONITORING WELL DEVELOPMENT AND SAMPLING

The well seals in the newly constructed wells were allowed to set for at least 72 hours prior to well development. The monitoring wells were developed to increase their yield and to minimize the fine-grained material from entering the well casing. The well development was accomplished by surging and pumping water from the well to remove the finer materials from the annular space. Development of the well can volatilize present contaminants; therefore, the wells were allowed to settle for another 72 hours between development and the first purging/sampling event.

Water samples from the wells were collected using clean disposable bailers. Water was collected in clean laboratory supplied containers and placed immediately into an iced cooler for transport to Clayton's laboratory for analysis. The water sampling field survey forms are included in Appendix E. The groundwater sampling activities were conducted in accordance with Clayton's drilling, well construction and sampling protocols for borehole/monitoring well installation (see Appendix C). Legal chain-of-custody procedures were followed for handling of groundwater samples.

3.6 WELL HEAD SURVEY

The monitoring well location and elevations were surveyed by Virgil Covets Land Surveying (licensed land surveyor) using a surveyed benchmark. The surveyed elevations and locations of the wells were used to confirm the local groundwater flow direction and gradient. The land surveyor report is included in Appendix F.

3.7 GROUNDWATER GRADIENT

Using the groundwater elevations measured during the groundwater sampling activities on October 24, 1994, Clayton calculated the groundwater flow and gradient to be northwest. Figure 4 shows groundwater equipotential surface, based on the groundwater measurements on October 24, 1994. Clayton measured the groundwater elevation again on November 15, 1994. Groundwater flow direction was calculated to the southeast, based on the November groundwater elevations (Figure 5). The cause for fluctuation in the groundwater flow direction could not be determined during this investigation. However, it is possible that the groundwater levels fluctuate seasonally or as the result of local landscape irrigation or discharge. The groundwater gradient was measured to be approximately 0.1 feet per 100 feet of horizontal distance.

3.8 LABORATORY ANALYSIS

A total of two soil samples and five groundwater samples were collected and transported to Clayton's state-certified laboratory in Pleasanton, California. The soil and groundwater samples were analyzed using the following United State Environmental Protection Agency (USEPA) Methods:

- USEPA Method 8015 for TPH-D
- USEPA Method 8020 for BTEX

In addition, the groundwater samples were analyzed for total dissolved solids (TDS) using USEPA Method 160.1. The analytical reports for the soil and groundwater samples are included in Appendix G. Table 1 summarizes the analytical results for the soil samples collected on October 13, 1994.

Table 1
Analytical Summary for the Soil Samples Collected
on October 13, 1994
All concentrations in mg/kg

Sample I.D.	TPH-D	BTEX
MW-4-7.0	5	ND
MW-5-7.0	3	ND

ND Not detected at or above the analytical detection limit

The analytical results for the groundwater samples collected on October 24, 1994, are summarized in Table 2.

Table 2
Analytical Summary for the Groundwater Samples Collected
on October 24, 1994
All Concentrations in µg/l

Sample ID	TPH-D	BTEX	TDS
MW-1	ND	ND	22,000
MW-2	4,400	ND	260
MW-3	1,200	ND	140
MW-4	170	ND	200
MW-5	ND	ND	180

ND Not detected at or above the analytical detection limits

4.0 FINDINGS

Based on the analytical results and our field investigation our findings follow:

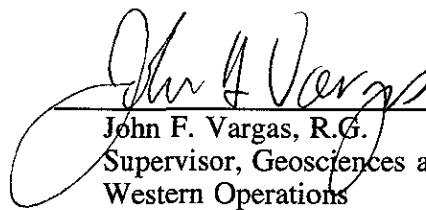
- TPH-D concentrations in the groundwater samples ranged from below the analytical detection limit of 1 µg/L in MW-1 and MW-5 to 4,400 µg/L in MW-2.
- BTEX were not detected in the soil or groundwater samples in concentrations at or above the analytical detection limits.

This report prepared by:



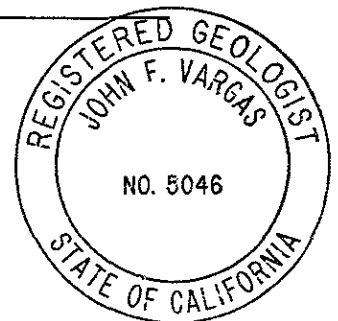
Dariush Dastmalchi
Project Geologist

This report reviewed by:

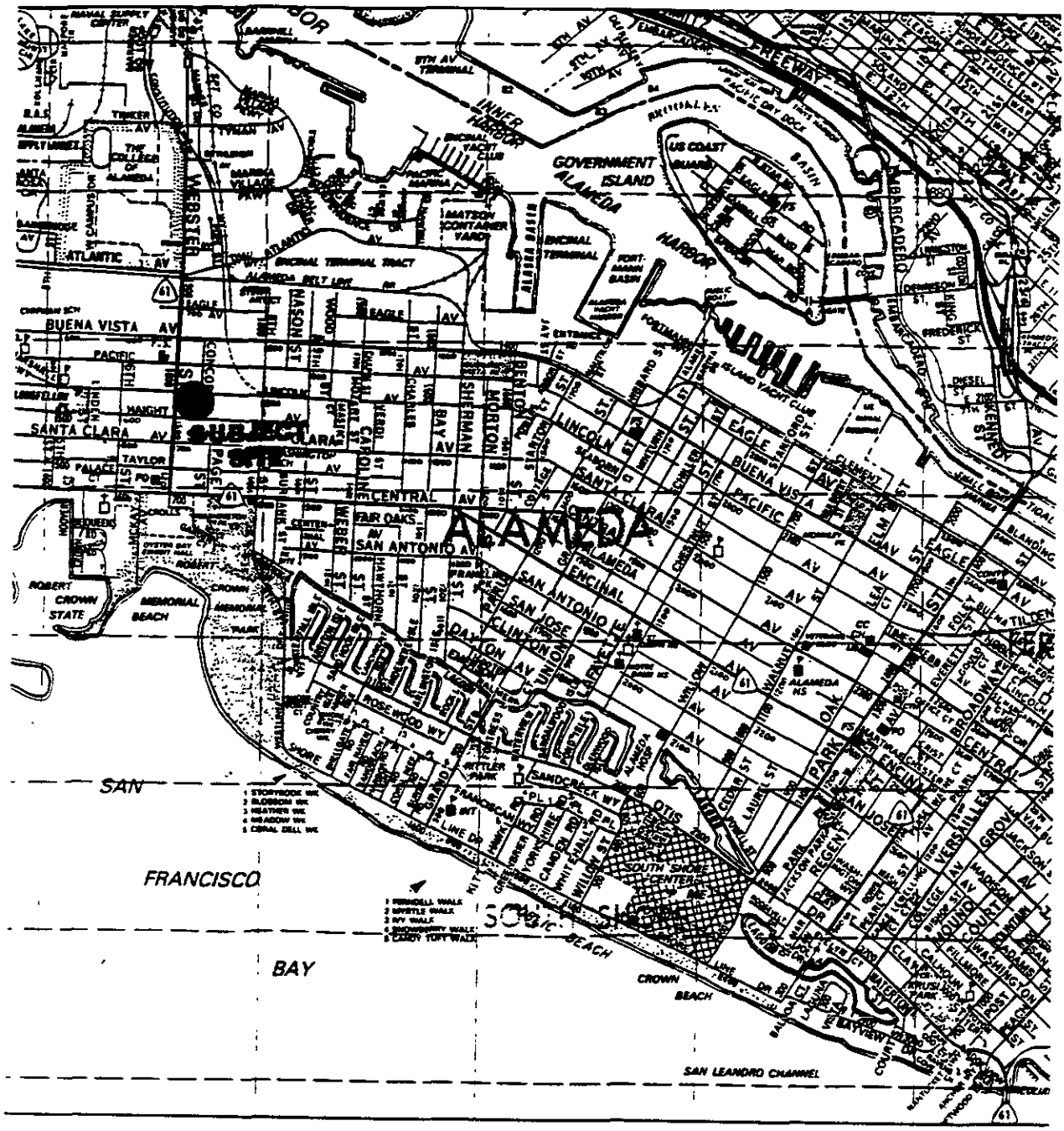


John F. Vargas, R.G.
Supervisor, Geosciences and Remediation
Western Operations

January 25, 1995



FIGURES



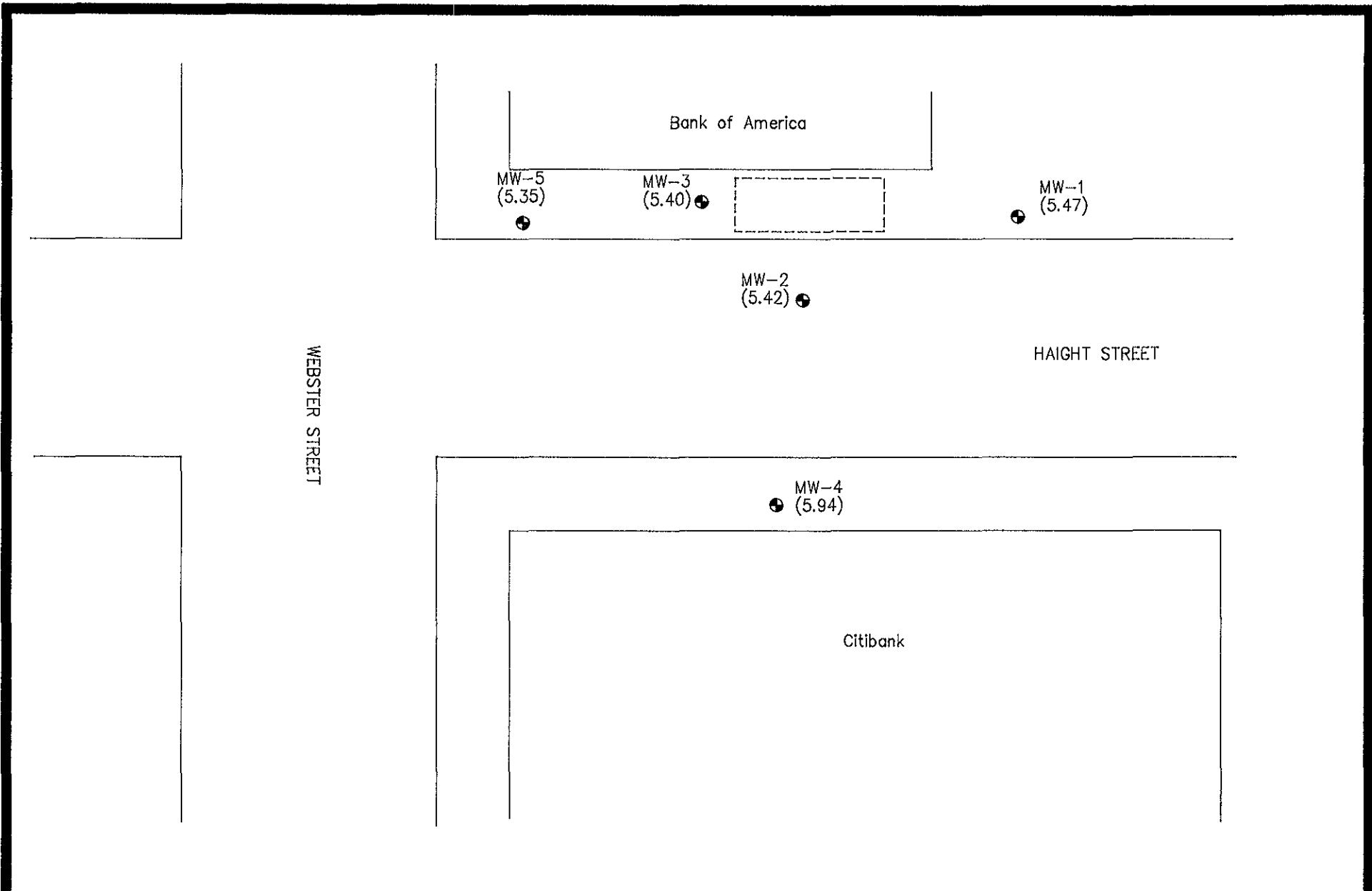
Site Location and Topographic Map
 BANK OF AMERICA
 1523 Webster Avenue
 Alameda, California

Clayton Project No. 57718.00

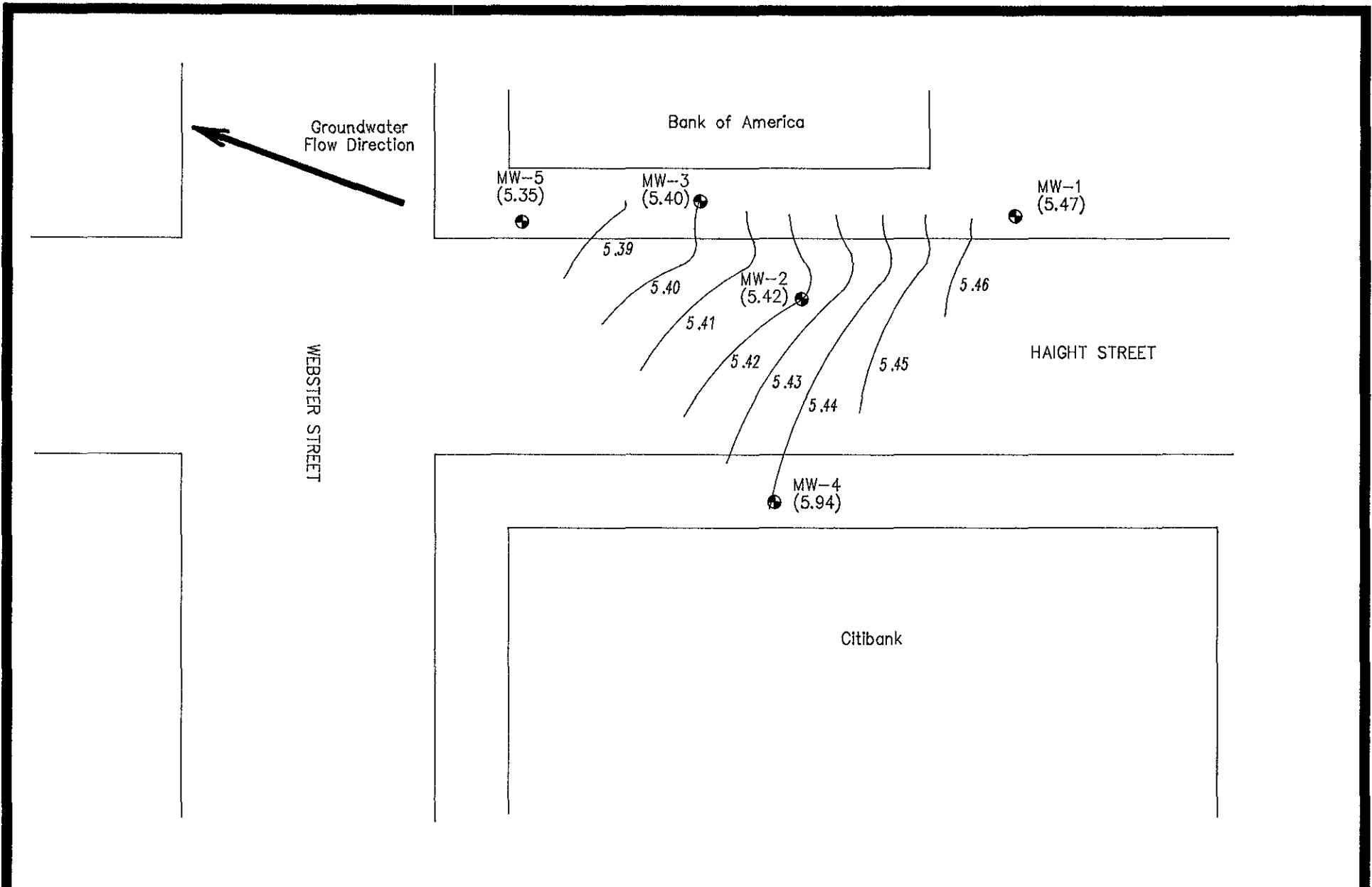
Figure
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57718-01-19

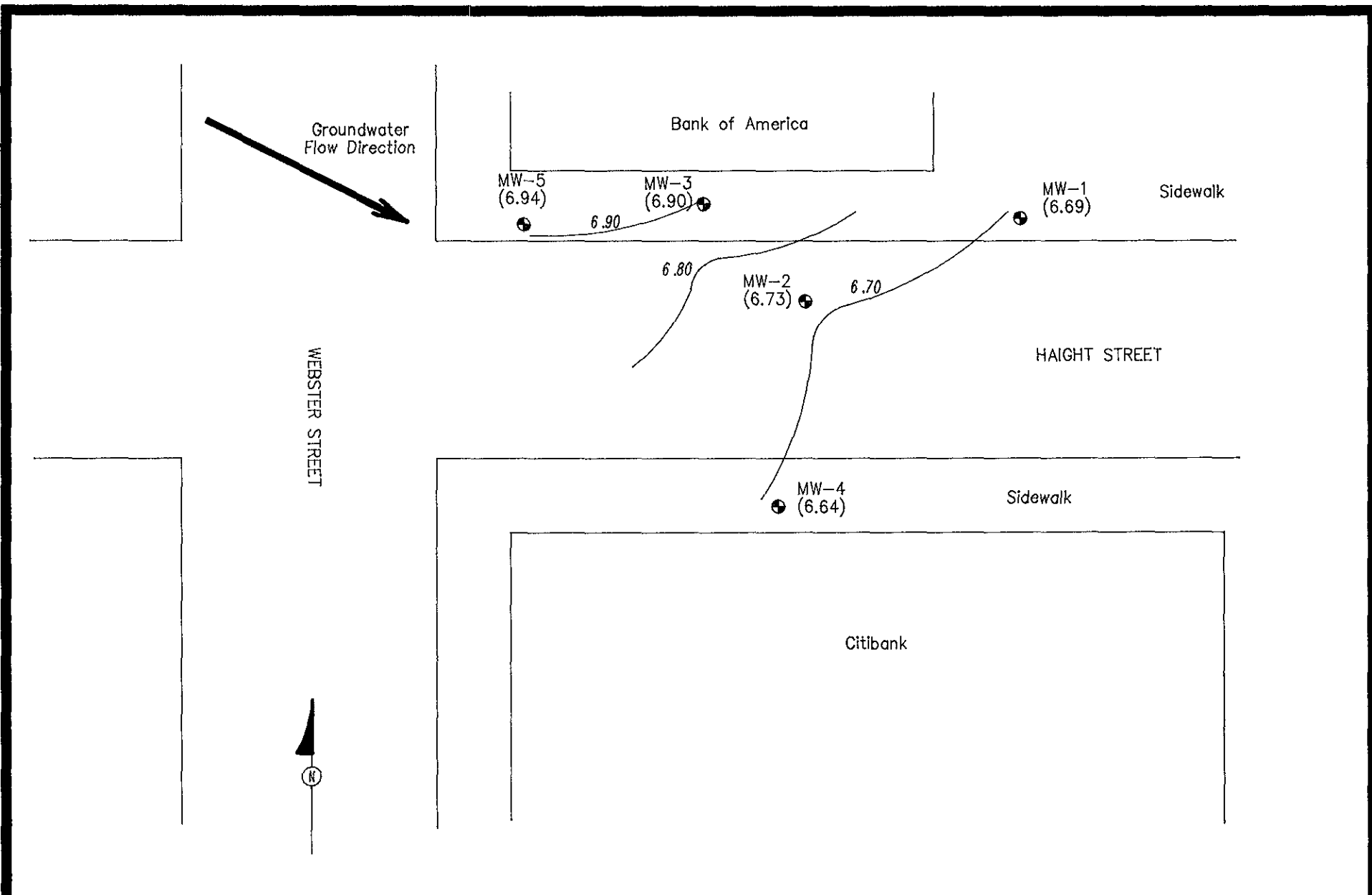
Clayton
 ENVIRONMENTAL
 CONSULTANTS



<p align="center">LEGEND</p>	<p>Groundwater Equipotential Surface (11/15/94) BANK OF AMERICA 1528 Webster Street Alameda, California</p> <p>Clayton Project No. 57718.00</p>	<p>Figure 2</p> <p>57718-01-17</p>	<p align="center">Clayton ENVIRONMENTAL CONSULTANTS</p>
<p>⊕ Monitoring Well</p> <p>Approximate Scale: 1" = 18'</p>			



LEGEND		Groundwater Equipotential Surface (11/15/94) BANK OF AMERICA 1528 Webster Street Alameda, California Clayton Project No. 57718.00	Figure <h1 style="text-align: center;">3</h1>	<h1 style="text-align: center;">Clayton</h1> ENVIRONMENTAL CONSULTANTS
● Monitoring Well Contour Interval = 0.01 Feet Approximate Scale: 1" = 18'	57718-01-16			



<p>LEGEND</p> <p>⊕ Monitoring Well</p> <p>Contour Interval = 0.10 Feet</p> <p>Approximate Scale: 1" = 18'</p>	<p>Groundwater Equipotential Surface (11/15/94)</p> <p>BANK OF AMERICA 1528 Webster Street Alameda, California</p> <p>Clayton Project No. 57718.00</p>	<p>Figure</p> <p>4</p> <p>57718-01-18</p>	<p>Clayton ENVIRONMENTAL CONSULTANTS</p>
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APPENDIX A

**ANALYTICAL REPORTS FOR SOIL SAMPLES COLLECTED
DURING OVEREXCAVATION**



Geochem ENVIRONMENTAL LABORATORIES

Mobile & In-House Laboratories Certified by State of California

Phone: (408) 955-9988 / FAX: (408) 955-9538

ANALYTICAL REPORT

Page: 1 of 1

Client: Bay Area Tank Removal
254 Clara St.
San Francisco, CA 94107
Attn: Jim Tracy

Date Sampled: 09/15/93
Date Received: 09/15/93
Date Analyzed: 09/15/93
Batch: SA-253 Matrix: Soil
Conc. Unit mg/kg (ppm)

Project: Bank of America, Alameda

"ND" means "not detected" at indicated detection limit.

B:benzene, T:toluene, E:ethylbenzene & X:total xylenes.

Samples received at job-site with a chain of custody record.

SAMPLE I.D.	8015M/TPH	8020			
	Diesel	B	T	E	X
DETECTION LIMIT	0.05 ppm	0.0005 ppm			
S-1	107.6	ND /	ND /	ND /	ND
S-2	1005	ND /	ND /	ND /	ND
S-4	ND	ND /	ND /	ND /	ND
S-6	857.0	ND /	ND /	ND /	ND

Reviewed and approved by

George Tsai SEPT. 17, 1993
George Tsai, Laboratory Director

Clayton

ENVIRONMENTAL CONSULTANTS

A Marsh & McLennan Company

REQUEST FOR LABORATORY ANALYTICAL SERVICES

Prop. B of A, ALAMEDA

For Clayton Use Only Page 1 of 1

Project No. _____

Batch No. _____

Ind. Code _____ W.P. _____

Date Logged In _____ By _____

REPORT RESULTS TO Name: BAY AREA TANK REMOVAL Title _____

Company _____ Dept. _____

Mailing Address: 254 CLARA ST

City, State, Zip: SF CA 94101

Telephone No. 415/543-2255 Telefax No. _____

Purchase Order No. _____ Client Job No. _____

SEND INVOICE TO Name _____

Company _____ Dept. _____

Address _____

City, State, Zip _____

Date Results Req.: _____ Rush Charges Authorized? Yes No

Phone / Fax Results

Special Instructions: (method, limit of detection, etc.) _____

* Explanation of Preservative: _____

Samples are: (check if applicable)

Drinking Water

Collected in the State of New York

ANALYSIS REQUESTED (Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added.)

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX MEDIA	AIR VOLUME (specify units)	Number of Containers	ANALYSIS REQUESTED										FOR LAB USE ONLY		
S-1	9/14/93	Soil		1	X												
S-2				1	X												
S-3				1		X											
S-4				1	X												
S-5				1		X											
S-6				1	X												
S-7				1		X											
S-8				1		X											

CHAIN OF CUSTODY

Collected by: DARIUSH DASTMALCHI (print)

Relinquished by: [Signature] Date/Time: 9/15/93

Relinquished by: _____ Date/Time _____

Method of Shipment: _____

Collector's Signature: [Signature]

Received by: [Signature] Date/Time: 9/15/93 12:45

Received at Lab by: _____ Date/Time _____

Sample Condition Upon Receipt: Acceptable Other (explain) _____

Authorized by: _____ Date _____

(Client Signature Must Accompany Request)

Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

- | | | | |
|---|---|--|--|
| 22345 Roethel Drive
Novi, MI 48375
(313) 344-1770 | Raritan Center
160 Fieldcrest Ave.
Edison, NJ 08837
(908) 225-6040 | 400 Chastain Center Blvd., N.W.
Suite 490
Kennesaw, GA 30144
(404) 499-7500 | 1252 Quarry Lane
Pleasanton, CA 94566
(510) 426-2657 |
|---|---|--|--|
- DISTRIBUTION:
 WHITE - Clayton Laboratory
 YELLOW - Clayton Accounting
 PINK - Client Retains

OCT-13-93 WED 11:14 BAY AREA TANK REMOVAL P.03

APPENDIX B

MONITORING WELL INSTALLATION PERMITS



ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588

VOICE (510) 464-2600

FAX (510) 462-3014

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT Bank of America
1528 Webster Street
Alameda, California

PERMIT NUMBER 94657
LOCATION NUMBER _____

CLIENT
Name Bank of America
Address 555 Anton Blvd. 1025 Voice _____
City Costa Mesa Zip 92626

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT
Name Dariusht Dastmalchi
Clayton Environmental Fax 510-426-0106
Address 1252 Quarry Lane Voice 510-426-2609
City Pleasanton Zip 94566

TYPE OF PROJECT
Well Construction _____ Geotechnical Investigation _____
Cathodic Protection _____ General _____
Water Supply _____ Contamination _____
Monitoring XX Well Destruction _____

PROPOSED WATER SUPPLY WELL USE
Domestic _____ Industrial _____ Other _____
Municipal _____ Irrigation _____

DRILLING METHOD:
Mud Rotary _____ Air Rotary _____ Auger XX
Cable _____ Other _____

DRILLER'S LICENSE NO. C57 582696

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum _____
Casing Diameter 2 in. Depth 20 ft.
Surface Seal Depth 4 ft. Number 2

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum _____
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 10/13/94
ESTIMATED COMPLETION DATE 10/14/94

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-88.

APPLICANT'S SIGNATURE Dariusht Dastmalchi Date 10/14/94

- A. GENERAL**
 1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
 2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
 3. Permit is void if project not begun within 90 days of approval date.
- B. WATER WELLS, INCLUDING PIEZOMETERS**
 1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
 2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
- C. GEOTECHNICAL.** Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.
- D. CATHODIC.** Fill hole above anode zone with concrete placed by tremie.
- E. WELL DESTRUCTION.** See attached.

Approved Wyman Hong Date 13 Oct 9-
Wyman Hong

APPENDIX C

BORING LOGS

Monitoring Well No. MW-4

PROJECT: Bank of America, Alameda
 DRILL RIG: Hollow Stem Auger
 INITIAL GW DEPTH: 7.5 ft.

DATE: 10/13/94
 HOLE DIA.: 8 in.
 FINAL GW: ft.

LOGGED BY: Dariush Dastmalchi
 SAMPLER: Modified Cal
 HOLE ELEV.: ft.

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/6 IN.	WELL CONSTRUCTION DETAIL
Concrete sidewalk	CONC		0			
	SP		1			
			2			
			3			
			4			
			5			
Sand with little to no fines (7.5 YR-5/4), damp			6	█	4	
			7	⊗		
			8			
			9			
Sand with little to no fines (7.5 YR-5/4), moist			10	█	5	
			11			
			12			
			13			
			14			
			15			
			16		17	
			17			
			18			
			19			
			20		23	
			21			
			22			
			23			

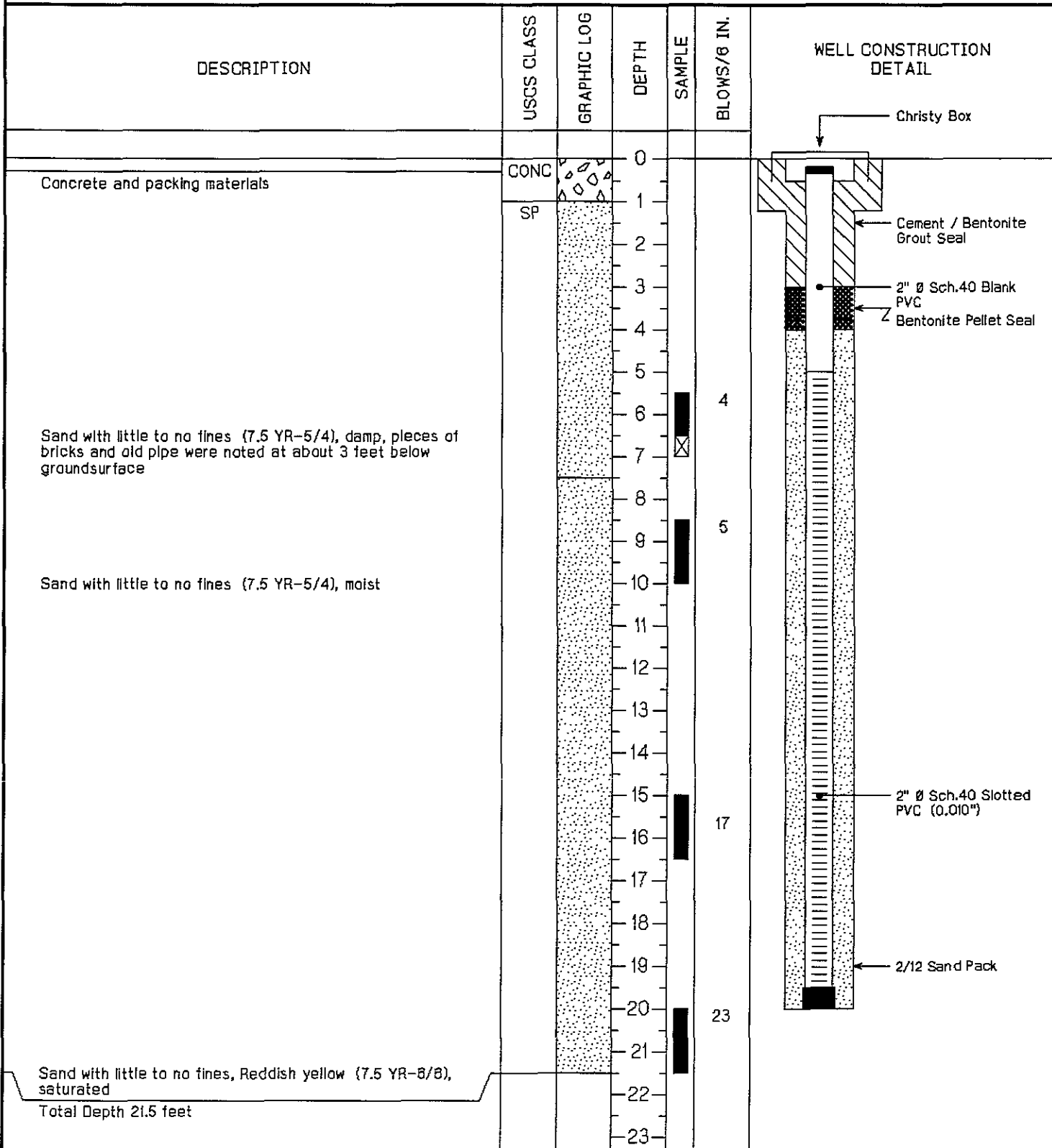
Sand with little to no fines, Reddish yellow (7.5 YR-8/8), saturated
 Total Depth 21.5 feet

Monitoring Well No. MW-5

PROJECT: Bank of America, Alameda
 DRILL RIG: Hollow Stem Auger
 INITIAL GW DEPTH: 7.5 ft.

DATE: 10/13/94
 HOLE DIA.: 8 in.
 FINAL GW: ft.

LOGGED BY: Dariush Dastmalchi
 SAMPLER: Modified Cal
 HOLE ELEV.: ft.



Sand with little to no fines, Reddish yellow (7.5 YR-8/8), saturated
 Total Depth 21.5 feet

Clayton Environmental Consultants
 1252 Quarry Lane
 Pleasanton, California

Notes:

Project No.
 57718.00
 Page 1 of 1

APPENDIX D

**DRILLING, WELL CONSTRUCTION, AND SAMPLING
PROTOCOLS FOR BOREHOLE/MONITORING WELL
INSTALLATION**

**DRILLING, WELL CONSTRUCTION, AND SAMPLING PROTOCOLS
FOR
BOREHOLE/MONITORING WELL INSTALLATION**

BOREHOLE INSTALLATION

Clayton Environmental Consultants, Inc. acquires the proper governmental agency permits to bore, drill, or destroy all proposed boreholes and monitoring wells that intersect with groundwater aquifers and writes a health and safety plan.

Clayton subcontracts only with drillers who possess a current C-57 water well contractor's license issued by the State of California and whose personnel have attended the OSHA 40-hour Hazardous Materials Safety Training. Prior to starting work, a "tailgate" safety meeting including discussion of the safety hazards and precautions relevant to the particular job will be held with all personnel working on the job. Well drillers are identified on permit applications.

Borings are drilled dry by hollow- or solid-stem, continuous flight augers. Augers, drill rods, and other working components of the drilling rig are steam-cleaned before arriving onsite to prevent the introduction of contaminants. These components are also steam-cleaned between borings away from boring locations. Cleaned augers, rods, and other components are stored, and/or covered when not in use.

Our bore logs include a detailed description of subsurface stratigraphy. Clayton examines the soil brought to the surface by drilling operations, and samples undisturbed soil every 5 feet or as otherwise specified. Soil cuttings are screened for hydrocarbon contamination using a photoionization detector. Boring logs are filled out in the field by a professional geologist, civil engineer, engineering geologist who is registered by the State of California, or a technician who is trained and working under the supervision of one of the previously mentioned persons, using the Unified Soil Classification System.

SOIL SAMPLING

Soil samples are taken every 5 feet, at areas of obvious contamination, or as otherwise specified, with a California modified split-spoon sampler that is lined with three six-inch brass tubes. The sampler and rod are inserted into the borehole to the current depth and a hammer of known weight and height above the sampler are allowed to free-fall onto the rod, advancing the assembly 18 inches into undisturbed soil. Clayton uses the number of blows necessary to drive the sampler into the ground to help evaluate the consistency of materials encountered. The sampler is then pulled from the borehole and disassembled, and the three brass tubes are separated for inspection and labeling.

Clayton uses new brass liners or liners cleaned with a trisodium phosphate (TSP) solution, double rinsed with clean tap water, and air dried prior to each sampling. The sampler is also cleaned with TSP and rinsed with tap water between sampling events.

Soil samples selected for laboratory analysis are left in the brass liners, sealed with aluminum foil and plastic caps, taped for air tightness, labeled, and immediately placed into a pre-cooled ice chest chilled to less than 4°C. Labels contain the following information: site name, date and time sampled, borehole number and depth, and the sampler's initials. The samples are transported under chain-of-custody to a state-certified laboratory. The laboratory analyzes soil samples within the prescribed holding time, storing them at temperatures below 4°C at all times.

Pending results of laboratory analysis, excess drilling and sampling cuttings are placed into Department of Transportation (DOT)-approved drums, labeled with the name of the site, address, and well number, and left at the site. Uncontaminated soil may be disposed of by the client. Soil found to contain levels of contaminants above local or state action levels will require that the client dispose of it in accordance with hazardous waste regulations. At the client's request, we will assist with the disposal of contaminated soil.

WELL CONSTRUCTION

Boreholes are converted to monitoring wells by placing 2-inch or 4-inch diameter well casing with flush-threaded joints and slotted screen into the borehole. Construction materials include polyvinyl chloride (PVC), stainless steel, or low carbon steel. The most suitable material for a particular installation will depend on the parameters to be monitored. All screens and casings used are in a contaminant-free condition when placed in the ground. No thread lubrication is used, other than teflon tape, for connecting the casing segments.

Wells extend at least 10 feet into the upper saturated zone, but do not extend through any clay layers greater than 5 feet that are below the shallow water table. The standard practice for wells installed at hydrocarbon contamination sites is to construct a well with a 20-foot long perforated interval extending 15 feet below and 5 feet above the water table in an unconfined aquifer. The top of the well is solid casing. The annular space of the borehole is backfilled with washed, kiln-dried sand to a point at least 1 foot above the slotted screen. A seal above the filter pack is formed by placing a 1- to 2-foot layer of bentonite pellets on top of the sand. The bentonite pellets are moistened by pouring clean tap water down the hole so that they can expand and seal the annulus. A neat cement grout is placed above the bentonite seal and brought to the ground surface.

Well casings are protected from surface contamination, accidental damage, and unauthorized entry or tampering with water-tight locking caps on the well casings. The caps are usually surrounded by a concrete vault. Wells are clearly identified with a metal tag or other device where the following information is recorded: well number, depth to water, depth of well, casing data including location of screened interval.

WELL DEVELOPMENT

The well seal in newly developed wells must set up for 48 to 72 hours prior to development. Since development of the well can volatilize contaminants present, the well must also settle for at least 48 to 72 hours between development and the first purging/sampling incident.

All monitoring wells are initially developed to clean the well and stabilize sand, gravel, and disturbed aquifer materials around the screened internal perforations. Wells are developed by

pumping (or bailing) and surging until water turbidity and specific conductance stabilize. In some cases, where wells are installed in low permeability formations and the wells purge dry, the well is allowed to recover and is purged dry three times. Clean tap water is introduced into the well if it does not recover rapidly enough.

Pending results by laboratory analysis, purge water from well development and sampling is placed into DOT-approved drums, labeled with the name of the site, address, well number, and left at the site. Uncontaminated water may be disposed of by the client. Water found to contain levels of contaminants above local or state action levels requires that the client dispose of it in accordance with hazardous waste requirements. At the client's request, we can assist with the disposal of contaminated purge water.

GROUNDWATER SAMPLING

To collect a representative sample of the groundwater, stagnant water within the well casing and filter material must be purged and fresh aquifer water allowed to replace it. The water is purged from the well by pumping or bailing at least three well volumes. Well volumes are calculated by measuring depth to groundwater to the nearest 0.01 foot upon arrival at the well before any purging has begun. Groundwater samples are collected only after purging has been of sufficient duration for pH, temperature, and electrical conductivity to stabilize. When purging low-yield wells, the wells are purged to dryness. When the well recovers to 80% of the depth measured upon arrival, samples are collected.

Field sampling logs maintained for each well include:

- Monitoring well identification
- Static water level, before and after pumping
- Well depth
- Condition of water prior to purging (e.g., amount of free product)
- Purge rate and volume
- pH, temperature, and conductivity during purging
- Time purged
- Time of sample collection
- Sampling method
- Name of sampler
- Climatic conditions

Water samples are collected using clean teflon bailers. All equipment that contacts samples is thoroughly cleaned before arrival at the site and between sampling events.

Water is collected in clean laboratory-supplied containers, labeled, placed immediately into an ice chest pre-cooled to 4°C, and transported to Clayton's laboratory for analysis. One trip blank will be furnished in accordance with our quality assurance/quality control (QA/QC) program.

All samples are collected in such a manner so as to minimize the volatilization of a sample due to agitation and/or transfer from bailer to sample container. Samples are collected so that contaminants most sensitive to volatilization are sampled first.

Preservatives are not added to any sample, unless instructed. If requested, they are supplied by Clayton's laboratory.

All sample containers are labeled in the field. Labels contain the following information: project name, sample identification number, project number, date and time of collection, and sampler's initials.

Under no circumstances are sealed sample containers opened by anyone other than the laboratory personnel who perform the requested analyses. If it is necessary for samples or sample chests to leave the immediate control of the sampler prior to delivery to the laboratory, for example during shipment by an overnight shipper, a custody seal is placed on each sample container and/or sample chest to ensure that the samples have not been tampered with during transportation. The custody seal is signed by the sampler, and the date and time that the seal was placed is recorded. The elapsed time between sample collection and delivery to the laboratory never exceeds 48 hours. Water samples are not held for more than 14 days prior to analysis and are kept at 4°C at all times.

To document and trace samples from time of collection, a signed chain-of-custody record is filled out by the sampler and accompanies the samples through the laboratory analyses. The completed chain-of-custody is included with the analytical report from the laboratory.

REFERENCES

Groundwater Monitoring Guidelines, Revised February 1990. Alameda County District Groundwater Protection Program.

Leaking Underground Fuel Tank (LUFT) Field Manual: Guidelines for Site Assessment, Cleanup, and Underground Tank Closure, May 1988. State of California LUFT Task Force.

Regional Board Staff Recommendations for Initial Evaluation and Investigation of Underground Tanks, Revised November 1989. North Coast, San Francisco Bay, and Central Valley regions of the California State Water Quality Control Board.

Standards for the Construction and Destruction of Wells and Other Deep Excavations in Santa Clara County, Revised June 1989. Santa Clara Valley Water District.

APPENDIX E

WATER SAMPLING FIELD SURVEY FORMS

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM

Job # 57718.00 Site: BANK OF AMERICA Date: OCTOBER 24, 1994

Well # MW-1 Sampling Team: RICHARD SILVA

Sampling Method: DISPOSABLE BAILER

Field Conditions: PARTLY CLOUDY, COOL, WINDY

Describe Equipment D-Con Before Sampling This Well: SUBMERSIBLE PUMP WAS WASHED WITH DETERGENT THEN TRIPLE RINSED

Total Depth of Well: 19.64 feet Time: 1255 Depth to Water Before Pumping: 7.60 feet

Volume Height of Water Column:	Diameter		Volume	Purge Factor	To Purge
	2-inch	4-inch			
<u>12.04</u> feet *	<u>.16</u>	<u>.65</u>	= <u>1.93</u> gal *	<u>5</u>	= <u>9.65</u>

Depth Purging From: 19 feet Time Surging Begins: 1300

Notes on Initial Discharge: BROWNISH, SILTY, NO ODOR

Time	Volume Purged	pH	Conductivity	T	Notes
<u>1301</u>	<u>2-GAL</u>	<u>8.0</u>	<u>162</u>	<u>22.9</u>	<u>BROWNISH, SILTY</u>
<u>1302</u>	<u>4-GAL</u>	<u>8.0</u>	<u>161</u>	<u>22.7</u>	<u>PURGED DRY BROWNISH, SILTY</u>
<u>1300</u>	<u>6-GAL</u>	<u>7.7</u>	<u>159</u>	<u>22.1</u>	<u>BROWNISH, SILTY</u>
<u>1304</u>	<u>8-GAL</u>	<u>7.6</u>	<u>159</u>	<u>22.3</u>	<u>BROWNISH, SILTY</u>
<u>1308</u>	<u>10-GAL</u>	<u>7.7</u>	<u>158</u>	<u>22.0</u>	<u>BROWNISH, SILTY</u>

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: 1320

	<u>Rep #1</u>	<u>Rep #2</u>	<u>Rep #3</u>	<u>Rep #4</u>
pH	<u>7.5</u>	<u>7.4</u>	<u>7.6</u>	<u>7.5</u>
Conductivity	<u>157</u>	<u>157</u>	<u>156</u>	<u>156</u>
T°C	<u>22.4</u>	<u>22.3</u>	<u>22.3</u>	<u>22.2</u>

Pre-Sample Collection Gallons Purged: 10

Time Sample Collection Begins: 1325

Time Sample Collection Ends: 1330

Total Gallons Purged: 12

Comments: _____

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM

Job # E-7718.00 Site: BANK OF AMERICA Date: OCTOBER 24, 1994
 Well # MW-2 Sampling Team: RICHARD SILVA
 Sampling Method: DISPOSABLE BAILEY
 Field Conditions: CLEAR SKIES, COOL, WINDY

Describe Equipment D-Con Before Sampling This Well: SUBMERSIBLE PUMP WAS WASHED WITH DETERGENT THEN TRIPLE RINSED

Total Depth of Well: 19.58 feet Time: 1202 Depth to Water Before Pumping: 8.10 feet

Volume Height of Water Column:	Diameter		Volume	Purge Factor	To Purge
	2-inch	4-inch			
<u>11.48</u> feet *	<u>.16</u>	<u>.65</u>	= <u>1.84</u> gal *	<u>5</u>	= <u>9.2</u>

Depth Purging From: 19 feet Time Surging Begins: 1210

Notes on Initial Discharge: BROWNISH, SILTY, NO ODOR

Time	Volume Purged	pH	Conductivity	T	Notes
<u>1211</u>	<u>2-GAL</u>	<u>8.4</u>	<u>333</u>	<u>22.8</u>	<u>CLEAR</u>
<u>1212</u>	<u>4-GAL</u>	<u>8.1</u>	<u>329</u>	<u>22.6</u>	<u>CLEAR</u>
<u>1213</u>	<u>6-GAL</u>	<u>7.9</u>	<u>325</u>	<u>22.4</u>	<u>CLEAR</u>
<u>1214</u>	<u>8-GAL</u>	<u>7.8</u>	<u>321</u>	<u>22.4</u>	<u>CLEAR</u>
<u>1215</u>	<u>10-GAL</u>	<u>7.6</u>	<u>330</u>	<u>22.2</u>	<u>CLEAR</u>

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: 1226

	<u>Rep #1</u>	<u>Rep #2</u>	<u>Rep #3</u>	<u>Rep #4</u>
pH	<u>7.3</u>	<u>7.2</u>	<u>7.3</u>	<u>7.2</u>
Conductivity	<u>343</u>	<u>343</u>	<u>343</u>	<u>342</u>
T°C	<u>22.5</u>	<u>22.4</u>	<u>22.4</u>	<u>22.4</u>

Pre-Sample Collection Gallons Purged: 10

Time Sample Collection Begins: 1231

Time Sample Collection Ends: 1240

Total Gallons Purged: 12

Comments: _____

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM

Job # 57718.00 Site: BANK OF AMERICA Date: OCTOBER 24 1994
 Well # MW-3 Sampling Team: RICHARD SILVA
 Sampling Method: DISPOSABLE BAILER
 Field Conditions: CLEAR SKIES, COOL, WINDY

Describe Equipment D-Con Before Sampling This Well: SUBMERSIBLE PUMP WAS WASHED WITH DETERGENT THEN TRIPLE RINSED.

Total Depth of Well: 19.86 feet Time: 1515 Depth to Water Before Pumping: 7.94 feet

Volume Height of Water Column:	Diameter		Volume	Purge Factor	To Purge
	2-inch	4-inch			
<u>11.92</u> feet *	<u>.16</u>	<u>.65</u>	= <u>1.91</u> gal *	<u>5</u>	= <u>9.55</u>
Depth Purging From: <u>19</u> feet	Time Surging Begins: <u>1520</u>				

Notes on Initial Discharge: BROWNISH, SILTY, NO ODOR

Time	Volume Purged	pH	Conductivity	T	Notes
<u>1521</u>	<u>2-GAL</u>	<u>8.1</u>	<u>208</u>	<u>22.7</u>	<u>BROWNISH SILTY</u>
<u>1522</u>	<u>4-GAL</u>	<u>8.0</u>	<u>204</u>	<u>22.6</u>	<u>PURGED DRY BROWNISH SILTY</u>
<u>1527</u>	<u>6-GAL</u>	<u>7.8</u>	<u>207</u>	<u>22.3</u>	<u>BROWNISH SILTY</u>
<u>1530</u>	<u>8-GAL</u>	<u>7.8</u>	<u>203</u>	<u>22.4</u>	<u>PURGED DRY BROWNISH SILTY</u>
<u>1535</u>	<u>10-GAL</u>	<u>7.5</u>	<u>216</u>	<u>22.5</u>	<u>BROWNISH, SILTY</u>

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: 1540

	<u>Rep #1</u>	<u>Rep #2</u>	<u>Rep #3</u>	<u>Rep #4</u>
pH	<u>7.6</u>	<u>7.5</u>	<u>7.6</u>	<u>7.5</u>
Conductivity	<u>208</u>	<u>208</u>	<u>204</u>	<u>200</u>
T°C	<u>22.3</u>	<u>22.4</u>	<u>22.2</u>	<u>22.2</u>

Pre-Sample Collection Gallons Purged: 10

Time Sample Collection Begins: 1545

Time Sample Collection Ends: 1550

Total Gallons Purged: 12

Comments: _____

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM

Job # 57718.00 Site: BANK OF AMERICA Date: OCTOBER 24, 1994
 Well # MW-4 Sampling Team: RICHARD SILVA
 Sampling Method: DISPOSABLE BAILER
 Field Conditions: CLEAR SKIES, COOL, WINDY

Describe Equipment D-Con Before Sampling This Well: SUBMERSIBLE PUMP WAS WASHED WITH DETERGENT THEN TRIPLE RINSED

Total Depth of Well: 19.75 feet Time: 1647 Depth to Water Before Pumping: 8.25 feet

Volume Height of Water Column: <u>11.5</u> feet *	<u>Diameter</u>		Purge Factor	To Purge
	<u>2-inch</u>	<u>4-inch</u>		
	<u>16</u>	<u>.65</u>	<u>= 1.84 gal * 5 =</u>	<u>9.2</u>
Depth Purging From: <u>19</u> feet	Time Surging Begins: <u>1652</u>			

Notes on Initial Discharge: BROWNISH, SILTY, NO ODOR

Time	Volume Purged	pH	Conductivity	T	Notes
<u>1653</u>	<u>2-GAL</u>	<u>7.9</u>	<u>412</u>	<u>19.8</u>	<u>BROWNISH, SILTY</u>
<u>1654</u>	<u>4-GAL</u>	<u>7.7</u>	<u>469</u>	<u>20.1</u>	<u>CLEAR, MURKY</u>
<u>1655</u>	<u>6-GAL</u>	<u>7.8</u>	<u>411</u>	<u>19.9</u>	<u>PURGED DRY</u> <u>BROWNISH, SILTY</u>
<u>1715</u>	<u>8-GAL</u>	<u>7.6</u>	<u>396</u>	<u>19.6</u>	
<u>1716</u>	<u>10-GAL</u>	<u>7.6</u>	<u>394</u>	<u>19.9</u>	

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: 1730

	<u>Rep #1</u>	<u>Rep #2</u>	<u>Rep #3</u>	<u>Rep #4</u>
pH	<u>7.9</u>	<u>7.8</u>	<u>7.7</u>	<u>7.7</u>
Conductivity	<u>225</u>	<u>228</u>	<u>230</u>	<u>229</u>
T°C	<u>19.4</u>	<u>19.7</u>	<u>19.7</u>	<u>19.8</u>

Pre-Sample Collection Gallons Purged: 10

Time Sample Collection Begins: 1735

Time Sample Collection Ends: 1740

Total Gallons Purged: 12

Comments: _____

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM

Job # 57718.00 Site: BANK OF AMERICA Date: OCTOBER 24, 1994
 Well # MW-5 Sampling Team: RICHARD SILVA
 Sampling Method: DISPOSABLE BAILER
 Field Conditions: CLEAR SKIES, COOL, WINDY

Describe Equipment D-Con Before Sampling This Well: SUBMERSIBLE PUMP WAS WASHED WITH DETERGENT AND TRIPLE RINSED

Total Depth of Well: 19.24 feet Time: 1600 Depth to Water Before Pumping: 8.14 feet

Volume Height of Water Column: <u>11.10</u> feet *	<u>Diameter</u>		Volume	Purge Factor	To Purge
	2-inch	4-inch			
	(1.6)	.65	= 1.78 gal *	5	= 8.9

Depth Purging From: 18 feet Time Surging Begins: 1605

Notes on Initial Discharge: BROWNISH, SILTY, NO ODOR

Time	Volume Purged	pH	Conductivity	T	Notes
<u>1606</u>	<u>2-GAL</u>	<u>7.3</u>	<u>389</u>	<u>22.2</u>	<u>BROWNISH, SILTY</u>
<u>1607</u>	<u>4-GAL</u>	<u>7.7</u>	<u>403</u>	<u>22.3</u>	<u>BROWNISH, SILTY</u>
<u>1608</u>	<u>6-GAL</u>	<u>7.8</u>	<u>356</u>	<u>22.1</u>	<u>BROWNISH, SILTY</u>
<u>1609</u>	<u>8-GAL</u>	<u>7.6</u>	<u>315</u>	<u>21.9</u>	<u>BROWNISH, SILTY</u>
<u>1610</u>	<u>10-GAL</u>	<u>7.8</u>	<u>308</u>	<u>21.8</u>	

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: 1622

	<u>Rep #1</u>	<u>Rep #2</u>	<u>Rep #3</u>	<u>Rep #4</u>
pH	<u>8.1</u>	<u>8.1</u>	<u>8.1</u>	<u>8.0</u>
Conductivity	<u>234</u>	<u>232</u>	<u>234</u>	<u>239</u>
T°C	<u>22.1</u>	<u>22.0</u>	<u>22.0</u>	<u>22.0</u>

Pre-Sample Collection Gallons Purged: 10

Time Sample Collection Begins: 1627

Time Sample Collection Ends: 1632

Total Gallons Purged: 12

Comments: _____

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM

Job # 57718.00 Site: Bank of America Stadium Date: 11/15/94
 Well # UW-1 Sampling Team: Richard Silva
 Sampling Method: Groundwater Measurement
 Field Conditions: _____

Describe Equipment D-Con Before Sampling This Well: _____

Total Depth of Well: _____ feet Time: _____ Depth to Water Before Pumping: 6.38 feet

Height of Water Column:	Diameter		Volume	Purge Factor	Volume To Purge
	2-inch	4-inch			
_____ feet * .16	.65	= _____ gal *	_____	_____	_____

Depth Purging From: _____ feet Time Surging Begins: _____

Notes on Initial Discharge: _____

Time	Volume Purged	pH	Conductivity	T	Notes
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM

Job # 57718.00 Site: Bank of America/Slomuch Date: 11/15/94
 Well # MW-2 Sampling Team: Richard Silva
 Sampling Method: Groundwater Measurement
 Field Conditions: _____

Describe Equipment D-Con Before Sampling This Well: _____

Total Depth of Well: _____ feet Time: _____ Depth to Water Before Pumping: 6.79 feet

Height of Water Column:	Diameter		Volume	Purge Factor	Volume To Purge
	2-inch	4-inch			
_____ feet * .16	.65	= _____ gal *	_____	= _____	_____

Depth Purging From: _____ feet Time Surging Begins: _____

Notes on Initial Discharge: _____

Time	Volume Purged	pH	Conductivity	T	Notes
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

CLAYTON ENVIRONMENTAL CONSULTANTS, INC

WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: _____

	<u>Rep #1</u>	<u>Rep #2</u>	<u>Rep #3</u>	<u>Rep #4</u>
pH	_____	_____	_____	_____
Conductivity	_____	_____	_____	_____
T°C	_____	_____	_____	_____

Pre-Sample Collection Gallons Purged: _____

Time Sample Collection Begins: _____

Time Sample Collection Ends: _____

Total Gallons Purged: _____

Comments: _____

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM

Job # 57718.00 Site: Bank of America/Slamuck Date: 11/15/94
 Well # MW-3 Sampling Team: Richard Silva
 Sampling Method: Conductivity Measurement
 Field Conditions: _____

Describe Equipment D-Con Before Sampling This Well: _____

Total Depth of Well: _____ feet Time: _____ Depth to Water Before Pumping: 6.44 feet

Height of Water Column:	Diameter		Volume	Purge Factor	Volume To Purge
	2-inch	4-inch			
_____ feet	* .16	.65	= _____ gal	*	= _____

Depth Purging From: _____ feet Time Surging Begins: _____

Notes on Initial Discharge: _____

Time	Volume Purged	pH	Conductivity	T	Notes
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

CLAYTON ENVIRONMENTAL CONSULTANTS, INC

WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: _____

	<u>Rep #1</u>	<u>Rep #2</u>	<u>Rep #3</u>	<u>Rep #4</u>
pH	_____	_____	_____	_____
Conductivity	_____	_____	_____	_____
T°C	_____	_____	_____	_____

Pre-Sample Collection Gallons Purged: _____

Time Sample Collection Begins: _____

Time Sample Collection Ends: _____

Total Gallons Purged: _____

Comments: _____

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM

Job # 57718.00 Site: Bank of America / Stennis Date: 11/15/94

Well # MW-4 Sampling Team: Richard Silva

Sampling Method: Groundwater Measurement

Field Conditions: _____

Describe Equipment D-Con Before Sampling This Well: _____

Total Depth of Well: _____ feet Time: _____ Depth to Water Before Pumping: 7.02 feet

Height of Water Column:	Diameter		Volume	Purge Factor	Volume To Purge
	2-inch	4-inch			
_____ feet	* .16	.65	= _____ gal	*	= _____

Depth Purging From: _____ feet Time Surging Begins: _____

Notes on Initial Discharge: _____

Time	Volume Purged	pH	Conductivity	T	Notes
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

CLAYTON ENVIRONMENTAL CONSULTANTS, INC

WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: _____

	Rep #1	Rep #2	Rep #3	Rep #4
pH	_____	_____	_____	_____
Conductivity	_____	_____	_____	_____
T°C	_____	_____	_____	_____

Pre-Sample Collection Gallons Purged: _____

Time Sample Collection Begins: _____

Time Sample Collection Ends: _____

Total Gallons Purged: _____

Comments: _____

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM

Job # 57718.00 Site: Bank of America/Slamiah Date: 11/15/94

Well # MW-5 Sampling Team: Richard Silva

Sampling Method: Conductivity Measurement

Field Conditions: _____

Describe Equipment D-Con Before Sampling This Well: _____

Total Depth of Well: _____ feet Time: _____ Depth to Water Before Pumping: 6.58 feet

Height of Water Column:	Diameter		Volume	Purge Factor	Volume To Purge
	2-inch	4-inch			
_____ feet * .16	.65	= _____ gal * _____ = _____			

Depth Purging From: _____ feet Time Surging Begins: _____

Notes on Initial Discharge: _____

Time	Volume Purged	pH	Conductivity	T	Notes
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

CLAYTON ENVIRONMENTAL CONSULTANTS, INC

WATER SAMPLING FIELD SURVEY FORM
(CONTINUED)

Time Field Parameter Measurement Begins: _____

	<u>Rep #1</u>	<u>Rep #2</u>	<u>Rep #3</u>	<u>Rep #4</u>
pH	_____	_____	_____	_____
Conductivity	_____	_____	_____	_____
T°C	_____	_____	_____	_____

Pre-Sample Collection Gallons Purged: _____

Time Sample Collection Begins: _____

Time Sample Collection Ends: _____

Total Gallons Purged: _____

Comments: _____

APPENDIX F

LAND SURVEYOR REPORT

Virgil Chavez Land Surveying

1418 Lassen Street
Vallejo, California 94591
707.553.2476

November 01, 1994
Project No. 1215-01a

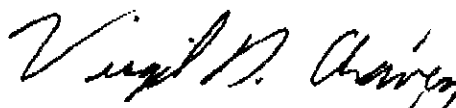
Dariusz Dastmalchi
Clayton Environmental Consultants
1252 Quarry Lane
Pleasanton, Ca. 94566

Subject: Monitoring Well Survey
1528 Webster Street
Alameda, Ca.

Dear Mr. Dastmalchi:

This is to confirm that we have proceeded at your request to survey the ground water monitoring wells located at the above referenced location. The survey was performed on October 31, 1994. My findings are shown in the table on below, and are based on Alameda City Datum (Mean Sea Level = 0.00' when City of Alameda = -3.41'). The benchmark used for the survey was a USC&GS brass disk, stamped "Haight", at the Southwest corner of Webster & Haight, City of Alameda Elev. = 13.21'.

Sincerely,



Virgil D. Chavez, P.L.S. 6323
Virgil Chavez Land Surveying

Virgil Chavez Land Surveying

1418 Lassen Street

Vallejo, California 94591

707.553.2476

November 01, 1994

Project No. 1215-01a

Page 2

Monitoring Well Survey
1528 Webster Street
Alameda, Ca.

Monitoring Well No.	Rim Elevation	Top of Casing Elevation
MW- 1	13.31'	13.07'
MW- 2	13.78'	13.52'
MW- 3	13.71'	13.34'
MW- 4	13.87'	13.69'
MW- 5	13.88'	13.52'

Monitoring Well No.	Station	Offset
MW - 1	84.52	7.45' (Rt.)
MW - 2	48.47	21.12' (Rt.)
MW - 3	32.28	4.43' (Rt.)
MW - 4	43.98	55.27' (Rt.)
MW - 5	2.12	9.82' (Rt.)
Bldg. Cor. (SE)	70.07	0.0
Bldg. Cor. (SW)	0.0	0.0

APPENDIX G

ANALYTICAL REPORTS

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

November 7, 1994

Mr. Dariush Dastmalchi
CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
1252 Quarry Lane
Pleasanton, CA 94566

Client Ref.: 57718.00
Clayton Project No.: 94103.20

Dear Mr. Dastmalchi:

Attached is our analytical laboratory report for the samples received on October 24, 1994. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of after December 7, 1994, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Suzanne Haus, Client Services Supervisor, at (510) 426-2657.

Sincerely,



Harriotte A. Hurley, CIH
Director, Laboratory Services
Western Operations

HAH/tjb

Attachments

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 57718.00
Clayton Project No. 94103.20

Sample Identification: MW-1	Date Sampled: 10/24/94
Lab Number: 9410320-01A	Date Received: 10/24/94
Sample Matrix/Media: WATER	Date Prepared: 11/03/94
Preparation Method: EPA 5030	Date Analyzed: 11/03/94
Method Reference: EPA 8020	Analyst: WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
<u>BTEX</u>			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	92	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 57718.00
Clayton Project No. 94103.20

Sample Identification: MW-2	Date Sampled: 10/24/94
Lab Number: 9410320-02A	Date Received: 10/24/94
Sample Matrix/Media: WATER	Date Prepared: 11/03/94
Preparation Method: EPA 5030	Date Analyzed: 11/03/94
Method Reference: EPA 8020	Analyst: WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
<u>BTEX</u>			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	87	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 57718.00
Clayton Project No. 94103.20

Sample Identification: MW-3	Date Sampled: 10/24/94
Lab Number: 9410320-03A	Date Received: 10/24/94
Sample Matrix/Media: WATER	Date Prepared: 11/03/94
Preparation Method: EPA 5030	Date Analyzed: 11/03/94
Method Reference: EPA 8020	Analyst: WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
<u>BTEX</u>			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	98	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Analytical Results
 for
 Clayton Environmental Consultants, Inc.
 Client Reference: 57718.00
 Clayton Project No. 94103.20

Sample Identification:	MW-4	Date Sampled:	10/24/94
Lab Number:	9410320-04A	Date Received:	10/24/94
Sample Matrix/Media:	WATER	Date Prepared:	11/03/94
Preparation Method:	EPA 5030	Date Analyzed:	11/03/94
Method Reference:	EPA 8020	Analyst:	WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
<u>BTEX</u>			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	103	50 - 150

ND: Not detected at or above limit of detection
 --: Information not available or not applicable

Analytical Results
 for
 Clayton Environmental Consultants, Inc.
 Client Reference: 57718.00
 Clayton Project No. 94103.20

Sample Identification: MW-5	Date Sampled: 10/24/94
Lab Number: 9410320-05A	Date Received: 10/24/94
Sample Matrix/Media: WATER	Date Prepared: 11/03/94
Preparation Method: EPA 5030	Date Analyzed: 11/03/94
Method Reference: EPA 8020	Analyst: WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
---------	-------	----------------------	-------------------------------

<u>BTEX</u>			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4

<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	99	50 - 150

ND: Not detected at or above limit of detection
 ---: Information not available or not applicable

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 57718.00
Clayton Project No. 94103.20

Sample Identification: METHOD BLANK	Date Sampled: --
Lab Number: 9410320-07A	Date Received: --
Sample Matrix/Media: WATER	Date Prepared: 11/03/94
Preparation Method: EPA 5030	Date Analyzed: 11/03/94
Method Reference: EPA 8020	Analyst: WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
<u>BTEX</u>			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	100	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Analytical Results
 for
 Clayton Environmental Consultants, Inc.
 Client Reference: 57718.00
 Clayton Project No. 94103.20

Sample Identification: See Below
 Lab Number: 9410320
 Sample Matrix/Media: WATER
 Extraction Method: EPA 3510
 Method Reference: EPA 8015 (Modified)

Date Received: 10/24/94
 Date Extracted: 10/26/94
 Date Analyzed: 10/27/94

Lab Number	Sample Identification	Date Sampled	TPH-D (ug/L)	Method Detection Limit (ug/L)
-01	MW-1	10/24/94	ND	50
-02	MW-2	10/24/94	4400 a	50
-03	MW-3	10/24/94	1200 a	50
-04	MW-4	10/24/94	170 a	50
-05	MW-5	10/24/94	ND	50
-07	METHOD BLANK	--	ND	50

ND: Not detected at or above limit of detection
 --: Information not available or not applicable

TPH-D = Extractable petroleum hydrocarbons from C10 to C42 quantitated as diesel.
 a Sample does not match the typical diesel pattern.
 Sample appears to be oil.

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 57718.00
Clayton Project No. 94103.20

Sample Identification: See Below
Lab Number: 9410320
Sample Matrix/Media: WATER
Method Reference: EPA 160.1

Date Received: 10/24/94
Date Analyzed: 11/01/94

Lab Number	Sample Identification	Date Sampled	Total Dissolved Solids (mg/L)	Method Detection Limit (mg/L)
-01	MW-1	10/24/94	22000	10
-02	MW-2	10/24/94	260	10
-03	MW-3	10/24/94	140	10
-04	MW-4	10/24/94	200	10
-05	MW-5	10/24/94	180	10
-07	METHOD BLANK	--	<10	10

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Clayton

ENVIRONMENTAL
CONSULTANTS

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only Page 1 of 2

Project No. _____

Batch No. **9410320**

Ind. Code _____ W.P. _____

Date Logged In 10/25/94 By [Signature]

REPORT RESULTS TO

Name DARIUSH DASTMALCHI Title _____

Company CLAYTON Dept. _____

Mailing Address _____

City, State, Zip _____

Telephone No. _____ Telefax No. _____

Purchase Order No. _____ Client Job No. 57718.00

SEND INVOICE TO

Name _____

Company BANK OF AMERICA Dept. _____

Address _____

City, State, Zip _____

Date Results Req.: NORMAL Rush Charges Authorized? Yes No Phone / Fax Results

Special Instructions: (method, limit of detection, etc.) _____

* Explanation of Preservative: P = HCL

Samples are: (check if applicable)
 Drinking Water
 Collected in the State of New York

ANALYSIS REQUESTED
(Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added. *)

Number of Containers	BTEX	TDS	TPH AS DIESEL	HOLD	FOR LAB USE ONLY
----------------------	------	-----	---------------	------	------------------

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX/MEDIA	AIR VOLUME (specify units)	Number of Containers	BTEX	TDS	TPH AS DIESEL	HOLD	FOR LAB USE ONLY
MW-1	10-24-94	H ₂ O	40mls	2	XP				01 A,B
MW-1			250ml(P)	1		X			01 C
MW-1			LITER(G)	2			XP		D,E
MW-2			40mls	2	XP				02 A,B
MW-2			250ml(P)	1		X			C
MW-2			LITER(G)	2			XP		D,E
MW-3			40mls	2	XP				03 A,B
MW-3			250ml(P)	1		X			C
MW-3			LITER(G)	2			XP		03 D,E

CHAIN OF CUSTODY

Collected by: RICHARD SILVA (print) Collector's Signature: [Signature]

Relinquished by: Richard Silva Date/Time 10-24-94/1855

Relinquished by: _____ Date/Time _____

Method of Shipment: _____

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Received by: Carol Hammer Date/Time 10/24/94 7:00pm

Received at Lab by: _____ Date/Time _____

Sample Condition Upon Receipt: Acceptable Other (explain) _____

Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

22345 Roethel Drive Novi, MI 48375 (313) 344-1770	Raritan Center 160 Fieldcrest Ave. Edison, NJ 08837 (908) 225-6040	400 Chastain Center Blvd., N.W. Suite 490 Kennesaw, GA 30144 (404) 499-7500	1252 Quarry Lane Pleasanton, CA 94566 (510) 426-2657
---	---	--	--

DISTRIBUTION:
 WHITE - Clayton Laboratory
 YELLOW - Clayton Accounting
 PINK - Client Retains

2/92

Clayton

ENVIRONMENTAL
CONSULTANTS

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only Page 2 of 2

Project No. _____

Batch No. **9410320**

Ind. Code _____ W.P. _____

Date Logged In 10/25/94 By RP

REPORT RESULTS TO	Name <u>DARIUSH DASTMALCHI</u> Title _____	Purchase Order No. _____	Client Job No. <u>57718.00</u>						
	Company <u>CLAYTON</u> Dept. _____	Name _____							
	Mailing Address _____	Company <u>BANK OF AMERICA</u> Dept. _____							
	City, State, Zip _____	Address _____							
Telephone No. _____	Telefax No. _____	City, State, Zip _____							
Date Results Req.: <u>NORMAL TAT</u>	Rush Charges Authorized? <input type="checkbox"/> Yes <input type="checkbox"/> No	Phone / Fax _____	Results <input type="checkbox"/> <input type="checkbox"/>						
Special Instructions: (method, limit of detection, etc.)		Samples are: (check if applicable) <input type="checkbox"/> Drinking Water <input type="checkbox"/> Collected in the State of New York							
* Explanation of Preservative: <u>P = HCL</u>		ANALYSIS REQUESTED (Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added.)							
CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX/MEDIA	AIR VOLUME (specify units)	Number of Containers	BTEX	TDS	TPH MS DIESEL	HOLD	FOR LAB USE ONLY
<u>MW-4</u>	<u>10-24-94</u>	<u>H₂O</u>	<u>40 MLS</u>	<u>2</u>	<u>XP</u>				<u>04 A,B</u>
<u>MW-4</u>			<u>250ML (P)</u>	<u>1</u>		<u>X</u>			<u>C</u>
<u>MW-4</u>			<u>LITER (GL)</u>	<u>2</u>			<u>XP</u>		<u>D,E</u>
<u>MW-5</u>			<u>40 MLS</u>	<u>2</u>	<u>XP</u>				<u>05 A,B</u>
<u>MW-5</u>			<u>250ML (P)</u>	<u>1</u>		<u>X</u>			<u>C</u>
<u>MW-5</u>			<u>LITER</u>	<u>2</u>			<u>XP</u>		<u>D,E</u>
<u>TRIP BLANKS # 0100294</u>	<u>↓</u>	<u>↓</u>	<u>40ML</u>	<u>2</u>			<u>XP</u>		<u>06 A,B</u>
Collected by: <u>RICHARD SILVA</u> (print)		Collector's Signature: <u>Richard Silva</u>							
CHAIN OF CUSTODY	Relinquished by: <u>Richard Silva</u>	Date/Time: <u>10-24-94/1855</u>	Received by: <u>Carol Hammerberg</u>	Date/Time: <u>10-24-94 7:00A</u>					
	Relinquished by: _____	Date/Time: _____	Received at Lab by: _____	Date/Time: _____					
Method of Shipment: _____		Sample Condition Upon Receipt: <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Other (explain)							
Authorized by: _____ Date: _____		(Client Signature <u>Must</u> Accompany Request)							

Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

22345 Roethel Drive Novi, MI 48375 (313) 344-1770	Raritan Center 160 Fieldcrest Ave. Edison, NJ 08837 (908) 225-6040	400 Chastain Center Blvd., N.W. Suite 490 Kennesaw, GA 30144 (404) 499-7500	1252 Quarry Lane Pleasanton, CA 94566 (510) 426-2657
---	---	--	--

DISTRIBUTION:
WHITE - Clayton Laboratory
YELLOW - Clayton Accounting
PINK - Client Retains

Quality Assurance Results Summary
Matrix Spike/Matrix Spike Duplicate Results
for
Clayton Project No. 94103.20

Quality Assurance Results Summary
for
Clayton Project No. 94103.20

Clayton Lab Number: 9410272-MB
Ext./Prep. Method: EPA3510
Date: 10/26/94
Analyst: HYT
Std. Source: G941010-10W
Sample Matrix/Media: WATER

Analytical Method: EPA8015
Instrument ID: 02883
Date: 10/27/94
Time: 18:00
Analyst: AMN
Units: UG/L

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
DIESEL	ND	1,000	780	78	830	83	81	40	140	6.2	40

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection

LCL = Lower Control Limit

UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 94103.20

Clayton Lab Number: 9410370-02A
Ext./Prep. Method: EPA5030
Date: 11/03/94
Analyst: WAS
Std. Source: V941024-04W
Sample Matrix/Media: WATER

Analytical Method: EPA8015 8020
Instrument ID: 05587
Date: 11/03/94
Time: 13:02
Analyst: WAS
Units: UG/L

Analyte		Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
BENZENE	(PID)	ND	9.50	10.2	107	10.3	108	108	81	118	1.0	20
ETHYLBENZENE	(PID)	ND	8.50	8.90	105	9.40	111	108	81	114	5.5	20
GASOLINE	(FID)	ND	500	473	95	472	94	95	80	150	0.2	25
TOLUENE	(PID)	ND	40.3	42.7	106	44.2	110	108	84	118	3.5	20
TOTAL XYLENE	(PID)	ND	29.3	51.2	175	54.1	185	180*	85	115	5.5	20

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection

LCL = Lower Control Limit

UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 94103.20

Page 1 of 1

Clayton Lab Number:	9410294-01C	Analytical Method:	EPA160_1
Ext./Prep. Method:	--	Instrument ID:	05927
Date:	/ /	Date:	11/01/94
Analyst:	--	Time:	09:00
		Analyst:	TT
Sample Matrix/Media:	WATER	Units:	mg/L

Analyte	Sample Result 1	Sample Result 2	RPD (%)	UCL (%RPD)
Total Dissolved Solids	20,000	20,000	0.0	20

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection

UCL = Upper Control Limit

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

October 26, 1994

Mr. Dariush Dastmalchi
CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
1252 Quarry Lane
Pleasanton, CA 94566

Client Ref.: 57718.00
Clayton Project No.: 94101.65

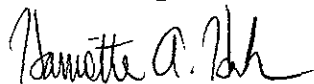
Dear Mr. Dastmalchi:

Attached is our analytical laboratory report for the samples received on October 14, 1994. Please note the low level contamination detected in the method blank for the TPH-diesel analysis. This same contamination was detected in both of the samples, although sample MW-7-7.0 did contain some heavier hydrocarbons also.

A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached. Please note that any unused portion of the samples will be disposed of after November 25, 1994, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Suzanne Haus, Client Services Supervisor, at (510) 426-2657.

Sincerely,



Harriotte A. Hurley, CIH
Director, Laboratory Services
Western Operations

HAH/tjb

Attachments

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 57718.00
Clayton Project No. 94101.65

Sample Identification:	MW-4-7.0	Date Sampled:	10/13/94
Lab Number:	9410165-01A	Date Received:	10/14/94
Sample Matrix/Media:	SOIL	Date Prepared:	10/18/94
Preparation Method:	EPA 5030	Date Analyzed:	10/19/94
Method Reference:	EPA 8020	Analyst:	WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
<u>BTEX</u>			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes	--	ND	0.005
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>OC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	124	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Results are reported on a wet-weight basis, as received.

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 57718.00
Clayton Project No. 94101.65

Sample Identification:	MW-5-7.0	Date Sampled:	10/13/94
Lab Number:	9410165-02A	Date Received:	10/14/94
Sample Matrix/Media:	SOIL	Date Prepared:	10/18/94
Preparation Method:	EPA 5030	Date Analyzed:	10/19/94
Method Reference:	EPA 8020	Analyst:	WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
<u>BTEX</u>			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes	--	ND	0.005
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	115	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Results are reported on a wet-weight basis, as received.

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 57718.00
Clayton Project No. 94101.65

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9410165-03A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Prepared:	10/18/94
Preparation Method:	EPA 5030	Date Analyzed:	10/19/94
Method Reference:	EPA 8020	Analyst:	WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
<u>BTEX</u>			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes	--	ND	0.005
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	109	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Results are reported on a wet-weight basis, as received.

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 57718.00
Clayton Project No. 94101.65

Sample Identification: See Below
 Lab Number: 9410165
 Sample Matrix/Media: SOIL
 Extraction Method: EPA 3550
 Method Reference: EPA 8015 (Modified)

Date Received: 10/14/94
 Date Extracted: 10/18/94
 Date Analyzed: 10/20/94

Lab Number	Sample Identification	Date Sampled	TPH-D (mg/kg)		Method Detection Limit (mg/kg)
-01	MW-4-7.0	10/13/94	5	a	1
-02	MW-5-7.0	10/13/94	3	b	1
-03	METHOD BLANK	--	2	c	1

ND: Not detected at or above limit of detection
 --: Information not available or not applicable

Results are reported on a wet-weight basis, as received.
 TPH-D = Extractable petroleum hydrocarbons from C10 to C42 quantitated as diesel.

a Sample does not match the typical diesel pattern.
 Sample appears to be oil.

b Unidentifiable hydrocarbons do not match the typical diesel pattern.

c Method blank shows a non-hydrocarbon response of reported amount; this may also be present in sample results.
 Actual method blank value; sample results have not been blank corrected.

Quality Assurance Results Summary
Matrix Spike/Matrix Spike Duplicate Results
for
Clayton Project No. 94101.65

Quality Assurance Results Summary
 for
 Clayton Project No. 94101.65

Clayton Lab Number: 9410186-MB
 Ext./Prep. Method: EPA3550
 Date: 10/18/94
 Analyst: LCK
 Std. Source: G941010-10W
 Sample Matrix/Media: SOIL

Analytical Method: EPA8015
 Instrument ID: 02883
 Date: 10/19/94
 Time: 18:39
 Analyst: AMN
 Units: MG/KG

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
DIESEL	2.00	20.0	19.9	90	19.6	88	89	51	147	1.5	30

LCS = Laboratory Control Sample
 ND = Not detected at or above limit of detection

LCL = Lower Control Limit

UCL = Upper Control Limit
 SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 94101.65

Clayton Lab Number: 9410165-01A
Ext./Prep. Method: EPA5030
Date: 10/18/94
Analyst: WAS
Std. Source: V941007-02W
Sample Matrix/Media: SOIL

Analytical Method: EPA8015 8020
Instrument ID: 05587
Date: 10/19/94
Time: 21:33
Analyst: WAS
Units: MG/KG

Analyte		Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
BENZENE	(PID)	ND	0.0520	0.0540	104	0.0560	108	106	53	140	3.6	28
ETHYLBENZENE	(PID)	ND	0.0320	0.0350	109	0.0380	119	114	56	134	8.2	25
GASOLINE	(FID)	ND	2.50	2.90	116	2.80	112	114	41	164	3.5	37
TOLUENE	(PID)	ND	0.200	0.200	100	0.220	110	105	60	139	9.5	22
TOTAL XYLENE	(PID)	ND	0.210	0.220	105	0.240	114	110	61	129	8.7	26

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection

LCL = Lower Control Limit

UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.