



BERNABE AND BRINKER INC.

General Engineering Contractor • Hazardous Substances Removal • License #610617

1281 - 30th Street
Oakland, California 94608

TEL: 510 • 451 • 3482
FAX: 510 • 836 • 2635

Oct. 15, 1992

Mr. J. W. Silveira
499 Embarcadero
Oakland, CA 94606

Subject: 2301-East 12th Street, Oakland, California.
Owner: J.W. Silveira
Tel: 510- 834-9810

Enclosed please find "Sub-surface Investigation Report," completed and compiled by Artesian Environmental Consultants. Artesian was hired by Bernabe and Brinker Inc. to install three monitoring wells in the property located at 2301- East 12th Street, Oakland, California.

It is the understanding of Bernabe and Brinker Inc that all aspect of the wells which were installed on the property and in the street area near the property line were in compliance with all local, state and federal laws to the best of our knowledge.

The reports was submitted to the following agencies:

Mr. Barney Chan, Sr. Hazmat Specialist
Alameda County
Division of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Mr. Lester Feldman
San Francisco Bay Region
Regional Water Quality Control Board
2101 Webster, Suite 500
Oakland, CA 94612

Sincerely,


James E. Brinker

cc. Mr. Barney Chan, Sr. Hazmat Specialist
Mr. Lester Feldman

PROJECT NO. 1001



SUBSURFACE INVESTIGATION


SITE:


2301 East 12th Street
Oakland, California


Prepared For:

Mr. James Brinker
Bernabe and Brinker Incorporated
1281 30th Street
Oakland, CA 94608

August 1992


Matthew H. Walraven
Project Geologist


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



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- B. Boring Logs and Unified Soil Classification System
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EXECUTIVE SUMMARY

Artesian Environmental Consultants (Artesian) installed three monitor wells at 2301 East 12th Street in Oakland, California. The purpose of the investigation was to evaluate whether the groundwater and shallow soil on the property had been impacted from the underground tanks that were removed from the property in December, 1990.

Three soil borings, designated as B-1 through B-3, were drilled on the property. Boring B-1 was drilled and converted into monitor well MW-1 on December 23, 1991. Soil borings B-2 and B-3 were drilled and converted to monitor wells MW-2 and MW-3 on July 8, 1992. The soil borings B-1 through B-3 were drilled to depths of 28.0 feet, 19.0 feet and 19.0 feet below ground surface respectively. All three borings were drilled into native material. Shallow groundwater was encountered in B-1 at 18 feet below ground surface. By the time B-2 and B-3 were drilled, six months later, groundwater was measured to occur at approximately 9 feet below ground surface. The soils were logged by a project geologist under the supervision of a California-registered geologist. Soil samples were collected at least every 5 feet for lithologic, hydrologic and characterization and possible chemical analysis.

Laboratory Analysis

Soil samples from all soil borings (B-1 through B-3) contained detectable levels of total petroleum hydrocarbons as gasoline (TPH-g) and diesel (TPH-d) as well as benzene, toluene, ethylbenzene and xylenes (BTEX). The soil sample from boring B-2 at 9.0 feet below ground surface contained the highest levels of contaminants: 1,900 parts per million (ppm) of TPH-d, 6,500 ppm of TPH-g, and 9.8 ppm, 15 ppm, 41 ppm, and 65 ppm for the BTEX compounds, respectively. Only boring B-2 contained detectable levels of total oil and grease (TOG) at levels of 120 ppm. The sample at 9.0 feet is in the zone near the base of the capillary fringe to top of groundwater. Purgeable halocarbons were not detected in the soils in any of the borings.

Groundwater samples for all monitor wells (MW-1 through MW-3) contained detectable levels of TPH-g, TPHd, and the BTEX compounds. Total oil and grease were not detected in the groundwater. The groundwater sample from MW-2 (boring B-2) contained the highest levels of following contaminants: 20,000 ppb of TPH-g, and 6.0 ppb toluene, 37 ppb ethylbenzene, and 39 ppb xylenes. The water sample from MW-1 contained the highest level of benzene at 600 ppb. Diesel was detected at a maximum level of 1,500 parts per billion (ppb) of TPH-d in MW-3.

Groundwater Gradient

The monitor wells were surveyed relative to each other. The static water level measured on July 21, 1992 ranged from 7.95 to 12.85 feet below ground surface. The groundwater flow direction was estimated to be to the southeast at a gradient of 0.25 feet per foot. Due to tidal influences or perched aquifers in MW-2 and MW-3, gradient results may not reflect regional trends to the west toward the Inner Harbor.

Conclusions and Recommendations

Petroleum hydrocarbons have been detected in the soils and groundwater in MW-1 through MW-3 at levels exceeding the Title 26 California Assessment Code levels for the state action level for drinking water standards. Benzene is listed at 0.5 parts per billion.

Based on past experience, it is likely that additional borings or wells may be required to assess the limits of contamination. It is recommended that the next phase of work include discussions with regulatory personnel to determine clean-up criteria and goals for the site. Artesian Environmental Consultants recommends that all three wells be sampled quarterly for at least one year in order to acquire data throughout a full hydrologic cycle.

1 INTRODUCTION

Artesian Environmental Consultants (Artesian) has been retained by Bernabe and Brinker Incorporated to install and sample three groundwater monitor wells and collect soil and groundwater samples at 2301 East 12th Street, Oakland, California (Figures 1 and 2).

The purpose of the investigation was to evaluate the presence and possible lateral and vertical extent of fuel hydrocarbons that may be present in the soil subsurface and to assess the groundwater quality beneath the site. At least two wells (MW-2 and MW-3) were proposed to be drilled in the suspected downgradient direction, and one well (MW-1) in the suspected upgradient direction. All activities were performed under the supervision of a California-registered geologist.

1.1 Scope of Work

The scope of work for the well installation project was as follows:

- 1) Drill three soil borings and collect soil samples in all the borings for lithologic and hydrologic characterization and possible chemical analysis;
- 2) Analyze selected soil samples for Total Petroleum Hydrocarbons (TPH-g) as gasoline and diesel (TPH-d) by modified EPA Method 8015 and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) by EPA Method 8020, total oil and grease by Standard Method 5520 E and F, and purgeable halocarbons by EPA Method 8010;
- 3) Convert three borings into monitor wells and develop and sample wells. Analyze the groundwater samples for TPH-d and TPH-g by EPA Method 8015, BTEX by EPA Method 8020 and total oil and grease by Standard Method 5520 B and F.
- 4) Review all field and laboratory data and prepare a report of this investigation.

2 BACKGROUND

2.1 SITE DESCRIPTION

The site is located at 2301 East 12th Street in Oakland, California. The project site is located in the southwest corner of the intersection of East 12th Street and 23rd Avenue in Oakland. Presently a one-story building exists on the site. The building is presently used by Alejo Automotive Repair, an automobile service business. A site location map is presented in Figure 1. A site location map showing the location of the site structure and former USTs is presented in Figure 2. The property is located in an industrial area.

2.2 SITE HISTORY

It is Artesian's understanding that four underground storage tanks were excavated and removed from the subject property by Mr. Ray Walker of Walker Hydraulics of Pleasant Hill, California. One 6,000 gallon gasoline tank and one 1,000 gallon ~~gasoline~~ ^{one was diesel, one gasoline} tank were removed on December 21, 1990 and two 500 gallon waste oil tanks were removed on February 11, 1991. According to a letter dated March 14, 1991, from Mr. Barney Chan of the Alameda County Environmental Health Department to Mr. J. Silveira, the owner of the property "Considerable contamination was discovered at both ends of the 1,000 gallon tank and at the east side of the 6,000 gallon tank. . . (from the waste oil tank pit there) had been some release of the tank's contents in the water which was vacuumed from the pit."

3 SUBSURFACE INVESTIGATION

3.1 SOIL BORINGS

Three soil borings, designated as B-1 through B-3, were drilled on the property. Boring B-1 was drilled on December 23, 1991. Soil borings B-2 and B-3 were drilled on July 8, 1992. The soil borings B-1 through B-3 were drilled to depths of 28.0 feet, 19.0 feet and 19.0 feet below ground surface respectively. All three borings were drilled into native material. Shallow groundwater was encountered in B-1 at 18 feet below ground surface. By the time B-2 and B-3 were drilled, six months later, groundwater was measured to occur at approximately 9 feet below ground surface.

Boring B-1 was drilled by Gregg Drilling & Testing, Inc. of Concord, California. Boring B-1 was drilled with a Mobile B-53 hollow stem auger rig. Due to drilling in the roadway portion of 23rd Avenue, borings B-2 and B-3 were drilled by Artesian Environmental Consultants using a Mobile Minute Man rig with 6-inch diameter flight augers.

The soils were logged by a project geologist under the supervision of a California-registered geologist. All phases of work were directed by an Artesian geologist under the supervision of a California Registered Geologist. Appropriate permits and applications are included in Appendix A.

The soil samples were collected at approximately 5 foot depth intervals. The samples were logged in the field for lithologic, hydrologic characteristics using the Unified Soil Classification System. Boring logs and the Unified Soil Classification System are included in Appendix B. One soil sample was obtained from each borehole at the groundwater interface using the standard operating procedure (SOP) for soil sampling outlined in Appendix C.

The soils were screened with a photoionization detector (PID), an instrument to detect organic vapors. PID readings at levels as high as 62 ppm were detected in the soil borings. The organic vapor screening method is described using a standard operating procedure outlined in Appendix C.

Drilling equipment was decontaminated between borings using a steam cleaner for hollow stem augers or Alconox wash and two deionized water rinses for the flight auger drilling equipment. The rinse water and drill cuttings were stored on site in labeled, 55-gallon, DOT 17-H drums in a manner consistent with agency regulations and guidelines.

*deposition of
H₂O & soil cuttings*

All soil samples were labeled and packed on crushed ice for transportation to McCampbell Analytical in Pacheco, California, a State certified hazardous materials laboratory. The soil samples were analyzed for TPH-g and TPH-d by Method 8015 and BTXE by Method 8020, total oil and grease by Standard Method 5520 E and F, and purgeable halocarbons by EPA Method 8010. Chain of Custody documentation (copies attached, see Appendix D) accompanied all samples to the laboratory.

3.2 MONITOR WELL INSTALLATION

Boring B-1 was drilled and converted into a 2-inch diameter monitor well MW-1 on December 23, 1991. Soil borings B-2 and B-3 were drilled and converted to 2-inch diameter monitor wells MW-2 and MW-3 on July 8, 1992. The wells were constructed with two-inch diameter Schedule 40, factory threaded and slotted polyvinyl chloride (PVC) casing. A slot size of 0.020 inches was selected based on the knowledge that the predominant soil type in this area is sandy, silty clay. The slotted interval extends from 5 feet above first encountered water to 10 feet below first encountered water. The annular space around the 0.020 inch slotted sections of casing was packed with Lonestar #3 sand (LS#3 = 1.5 mm) as filter material, from the bottom of the borehole to about one foot above the screened interval. Well completion logs are included in Appendix B.

A bentonite seal of one foot thick was placed in each well between the filter pack and overlying neat cement grout. The bentonite was hydrated with deionized water. The remaining space from the bentonite to the surface was completed with neat cement grout. The well casing was fitted with a locking well cap to prevent tampering. A flush-mounted, traffic-rated Christy box was cemented in place over the well, and slightly above grade, to prevent infiltration by soil and surface runoff.

3.3 WELL DEVELOPMENT

On July 17, 1992, after allowing at least 72 hours for the grout to set, the monitoring wells MW-1 through MW-3 were developed by surging with a fitted surge block. Surging was effected for a minimum of twenty minutes. After surging, the wells were pumped out using a downhole pump fitted with disposable PVC tubing. A minimum of three well volumes was extracted from each well to ensure that a representative sample of groundwater would be obtained. All pumps were cleaned with Alconox wash and rinsed with deionized water to prevent cross contamination between wells. Groundwater well development protocol is described in Appendix C.

The discharged effluent was drummed in DOT 17-H drums and labeled for disposal in a manner consistent with the Regional Water Quality Control Board (RWQCB) and all other regulatory agency regulations and guidelines.

What happened to purge H₂O?

3.4 WELL SAMPLING

Groundwater sampling was attempted on July 24, 1992. The wells were pumped dry after about ten minutes and slow recharge prohibited samples collection. The wells were purged again on July 27, 1992. The wells were pumped dry and the wells were sampled after two hours. The parameters of temperature (T), electrical conductivity (μmohs) and pH were measured. Additional measurements of these three parameters were made to confirm well stabilization (stabilization is defined as two or more subsequent measurements whose values are within 10% of each other). Groundwater sampling commenced after each well had stabilized. The procedures for sampling and transporting samples are described in Appendix A, Standard Operating Procedure (SOP). The groundwater samples were transported to McCampbell Analytical of Pacheco, California, a State certified hazardous materials testing laboratory. The groundwater samples were analyzed for TPH-d and TPH-g by EPA Method 8015, BTEX by EPA Method 8020 and total oil and grease by Standard Method 5520 B and F.

4 ANALYTIC RESULTS

4.1 SOIL ANALYSIS

The soil sample analysis is summarized in Table 1. Soil samples from all soil borings (B-1 through B-3) contained detectable levels of total petroleum hydrocarbons as gasoline (TPH-g) and diesel (TPH-d) as well as benzene, toluene, ethylbenzene and xylenes (BTEX). The soil sample from boring B-2 at 9.0 feet below ground surface contained the highest levels of contaminants: 1,900 parts per million (ppm) of TPH-d, 6,500 ppm of TPH-g, and 9.8 ppm, 15 ppm, 41 ppm, and 65 ppm for the BTEX compounds, respectively. Only boring B-2 contained detectable levels of total oil and grease (TOG) at levels of 120 ppm. The sample at 9.0 feet is in the zone near the base of the capillary fringe to top of groundwater. Purgeable halocarbons were not detected in the soils in any of the borings.

*(8010)
method only*

4.2 GROUNDWATER ANALYSIS

The groundwater sample analysis is summarized in Table 2. Groundwater samples for all monitor wells (MW-1 through MW-3) contained detectable levels of TPH-g, TPHd, and the BTEX compounds. Total oil and grease were not detected in the groundwater. The groundwater sample from MW-2 (boring B-2) contained the highest levels of following contaminants: 20,000 ppb of TPH-g, and 6.0 ppb toluene, 37 ppb ethylbenzene, and 39 ppb xylenes. The water sample from MW-1 contained the highest level of benzene at 600 ppb. Diesel was detected at a maximum level of 1,500 parts per billion (ppb) of TPH-d in MW-3.

*TPH, d, 8010
TOG*

** 2 mws nearest w/o tanks well require also:
~~8270~~ 8270 & selected heavy metals on soils & H₂O spec*

5 HYDROGEOLOGY AND GROUNDWATER FLOW

Shallow groundwater was encountered in B-1 at 18 feet below ground surface. By the time B-2 and B-3 were drilled, six months later, groundwater was measured to occur at approximately 9 feet below ground surface. The shallow aquifer sediments consisted of sandy clay (CL) and clayey sand (SC). The monitor wells were surveyed relative to each other on July 27, 1992. The wells were surveyed to within .01 foot vertically and horizontally.

The static water level measured on July 21, 1992 ranged from 7.95 to 12.85 feet below ground surface. Groundwater elevation data is summarized in Table 3. A potentiometric map is included as Figure 3. The groundwater flow direction was estimated to be to the southeast at a gradient of 0.25 feet per foot. Due to tidal influences or perched aquifers in MW-2 and MW-3, gradient results may not reflect regional trends to the west toward the Inner Harbor.

*don't know if
I buy this
reasoning*

6 DISTRIBUTION

Submission to the RWQCB and the local implementing agency should include a copy of this report (in its entirety) and a cover letter from the property owner/trustee agent.

AGENCY ADDRESSES

Artesian recommends that the client forward copies of this report to the appropriate regulatory agencies and representatives. Copies of this report have been included for this purpose. Copies sent to the regulators should include a cover letter from the client attesting the validity of this report to the best of the client's knowledge. This letter must be prepared on the client's letterhead and signed by the appropriate individual.

Mr. Barney Chan, ~~SR~~ Hazmat Specialist
Alameda County
Division of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Mr. Lester Feldman
San Francisco Bay Region
Regional Water Quality Control Board
2101 Webster, Suite 500
Oakland, CA 94612

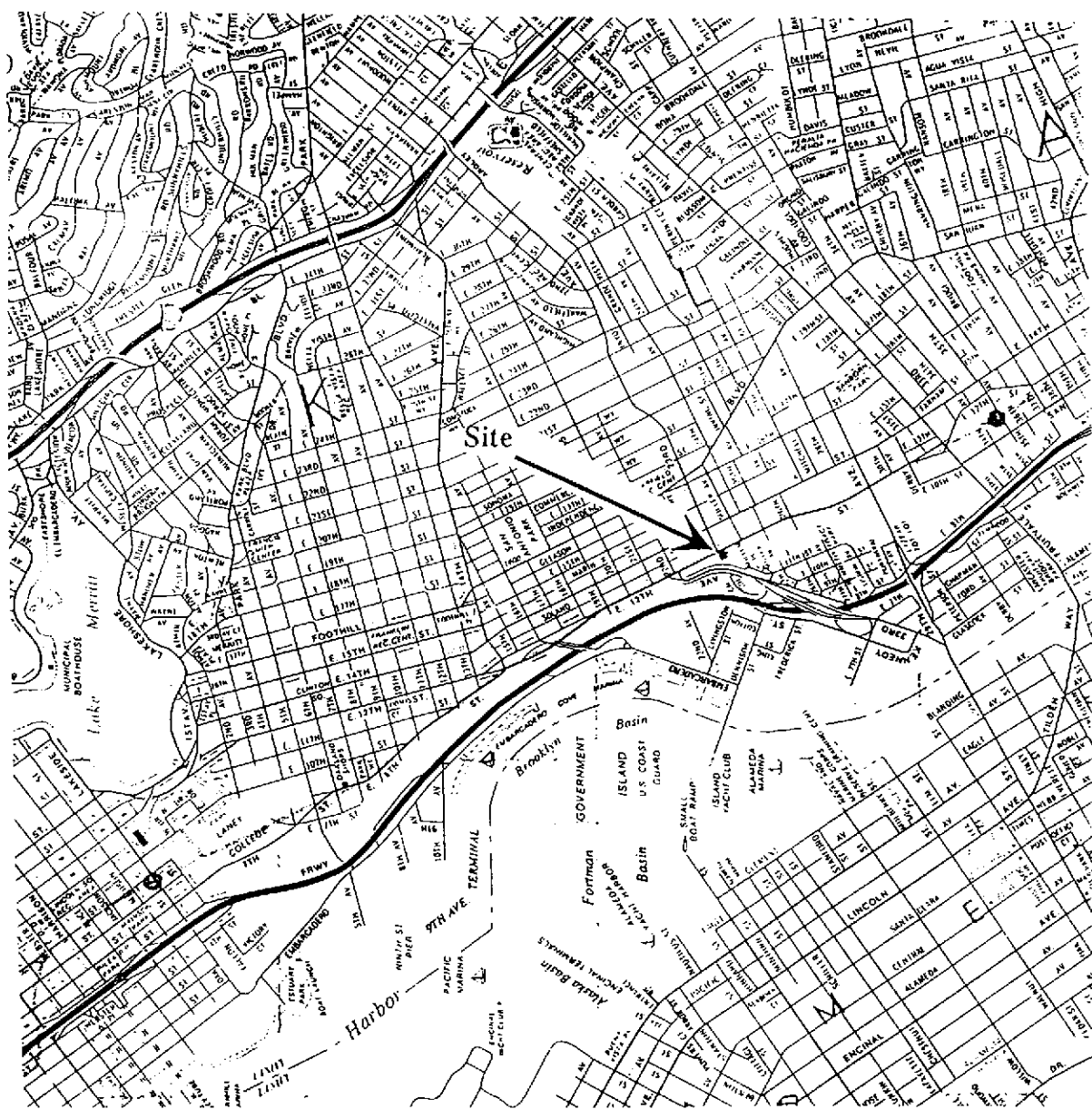
Mr. Craig Mayfield
Alameda County Flood Control District
5897 Parkside Drive
Pleasanton, CA 94588

LIMITATIONS

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 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.

This report and all matters contained herein were prepared for the sole and exclusive benefit of the client specified herein, and is intended only for the use of the client. Neither all, nor any part of the contents of this report, or copy thereof, shall be used for any purpose by anyone but the client specified herein nor shall it be conveyed or disseminated by anyone without the express written consent of the authors. No one, except for the client specified herein, may rely on this report for any purpose. Any person or entity who obtains or reads this report, or a copy thereof, other than the client specified herein, expressly assumes all risk of damages to himself or third persons arising out of reliance thereon or use thereof and waives the right to bring any action based on this report, directly or indirectly, and the authors shall have no liability to any such person or entity.



(Source: CSAA, 1980)

0 Scale 0.50 miles

1" = 0.5 miles

Artesian Environmental Consultants
 100 Shoreline Hwy., Suite 295 B
 Mill Valley, CA 94941
 (415) 381-6456

SITE LOCATION MAP

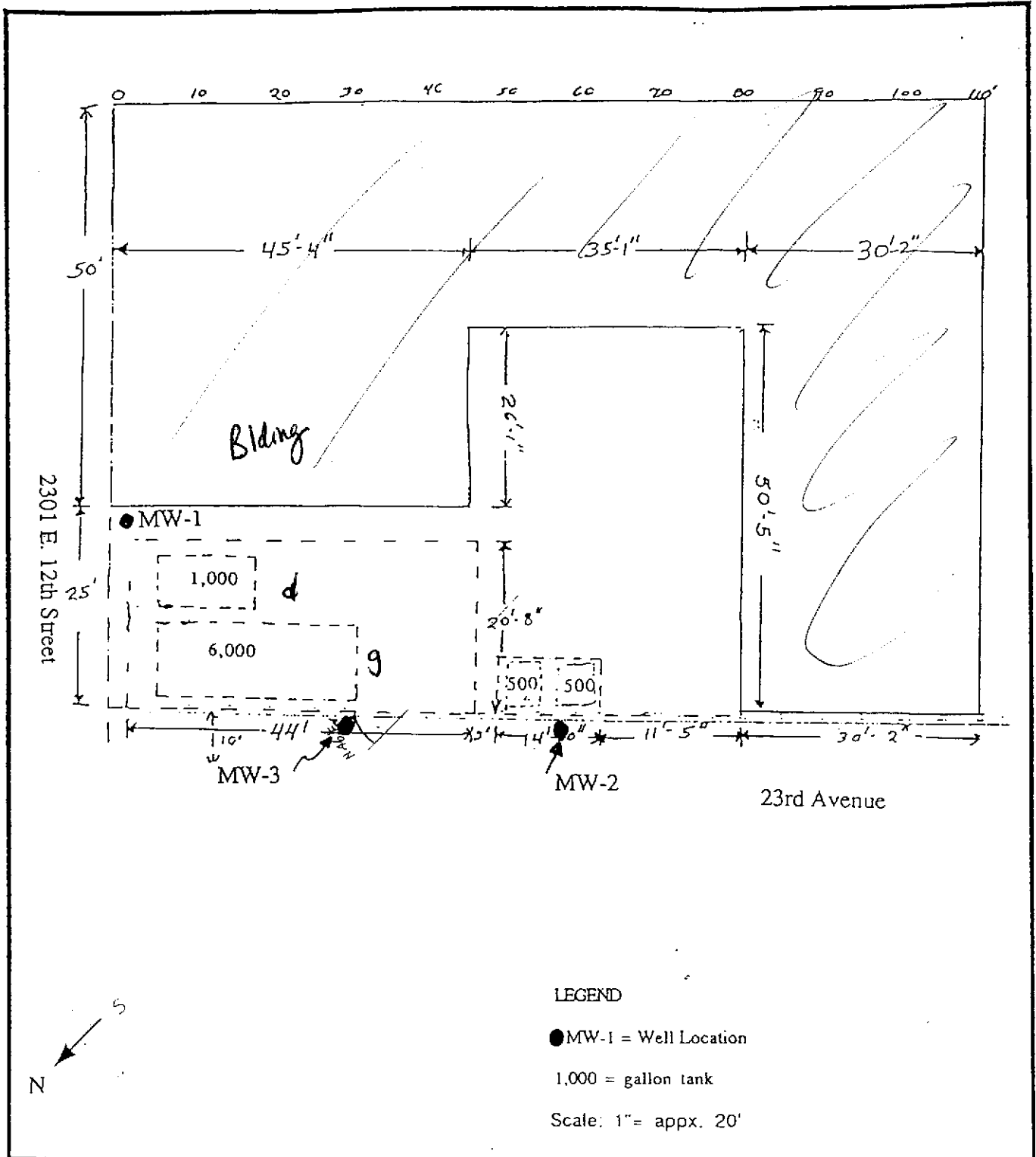
2301 E. 12th Street
 Oakland, California

Project No. B&B-2

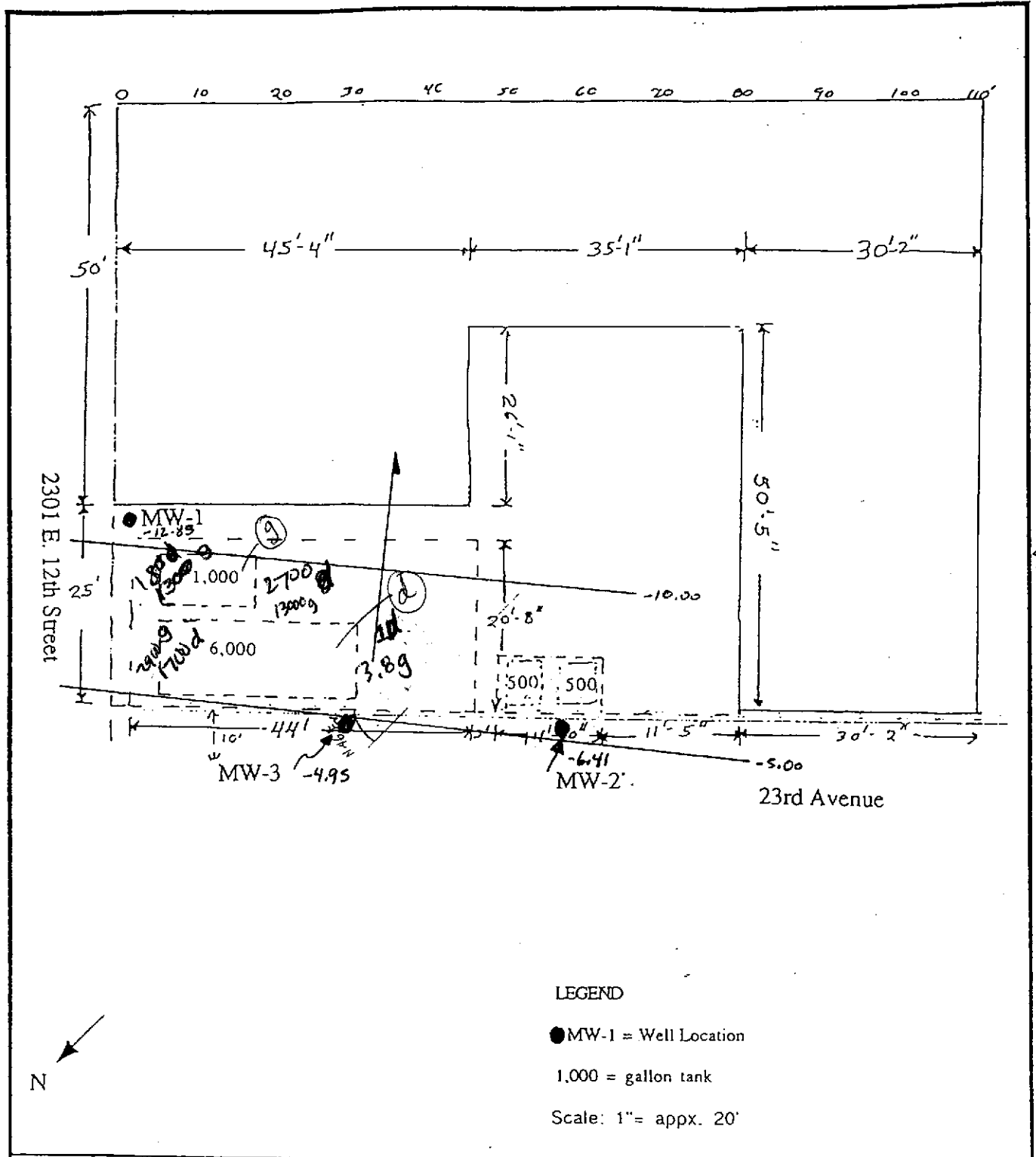
11/22/91

Drawn by: OPJ

Figure No. 1



Artesian Environmental Consultants 100 Shoreline Hwy., Suite 295 B Mill Valley, CA 94941 (415) 381-6456		BORING/WELL LOCATION MAP 2301 E. 12th Street Oakland, California	
Project No. B&B-2	7/29/92	Drawn by: OPJ	Figure No. 2



LEGEND

- MW-1 = Well Location
- 1,000 = gallon tank

Scale: 1" = appx. 20'

Artesian Environmental Consultants 100 Shoreline Hwy., Suite 295 B Mill Valley, CA 94941 (415) 381-6456		Potentiometric Map (Groundwater Elevations) Date: 7/27/92 2301 E. 12th Street Oakland, California	
Project No. B&B-2	7/29/92	Drawn by: OPJ	Figure No. 3

Table 1- Summary of Soil Analysis

Site:
2301 E . 12th Street
Oakland, California

Client:
Mr. James Brinker
Bernabe and Brinker
1281 30th Street
Oakland, California

Results are posted in parts per million (ppm), unless noted

Sample	Boring	Date Sampled	Depth	TPH-d ppm	TPH-g ppm	B-T-E-X ppm	TOG ppm	8010* ppb
S-1-6.0	B-1	12/23/91	6.0-6.5	ND	520	2.0-2.4-3.9-5.0	NA	NA
S-2-11.0	B-1	12/23/91	11.0-11.5	39	590	1.6-1.7-3.3-6.3	NA	NA
S-3-16.0	B-1	12/23/91	16.0-16.5	ND	ND	ND-ND-ND-ND	ND	NA
S-4-21.0	B-1	12/23/91	21.0-21.5	ND	ND	ND-ND-ND-ND	NA	NA
B-2-9.0	B-2	7/8/92	9.0-9.5	1900	6500	9.8-15-41-65	120	ND
B-3-8.0	B-3	7/8/92	8.0-8.5	520	2400	21-4.6-11-21	ND	ND

NOTES:

ND= non detect

NA= not analyzed

TPH-d= total petroleum hydrocarbons as diesel

TPH-g= total petroleum hydrocarbons as gasoline

B-T-E-X= benzene, toluene, ethylbenzene, and xylenes

TOG= total oil and grease

8010= purgeable halocarbons

*= ND for all 8010 compounds

Table 2- Summary of Groundwater Analysis

Site:
2301 E . 12th Street
Oakland, California

Client:
Mr. James Brinker
Bernabe and Brinker
1281 30th Street
Oakland, California

Results are posted in parts per billion (ppb), unless noted

Sample	Well	Date Sampled	TPH-d ppb	TPH-g ppb	B-T-E-X ppb	TOG ppm	8010* ppb
MW-1BB	MW-1	7/27/92	360	1800	<u>600-5.1-13-18</u>	ND	NA
MW-2BB	MW-2	7/27/92	1500	20000	<u>110-6.0-37-39</u>	ND	NA
MW-3BB	MW-3	7/27/92	4000	8800	<u>150-8.6-88-13</u>	ND	NA

NOTES:

ND= non detect

NA= not analyzed

TPH-d= total petroleum hydrocarbons as diesel

TPH-g= total petroleum hydrocarbons as gasoline

B-T-E-X= benzene, toluene, ethylbenzene, and xylenes

TOG= total oil and grease

8010= purgeable halocarbons

*= ND for all 8010 compounds

Table 3- Potentiometric Data

Site:

2301 E . 12th Street
Oakland, California

Client:

Mr. James Brinker
Bernabe and Brinker
1281 30th Street
Oakland, California

Well	Boring	Date Sampled	TOC	DTW	GWE (Relative)	TDW
			feet	feet	feet	feet
MW-1	B-1	7/27/92	0.00	12.85	-12.85	28.00
MW-2	B-2	7/27/92	1.54	7.95	-6.41	19.00
MW-3	B-3	7/27/92	3.05	8.00	-4.95	19.00

NOTES:

TOC= top of casing (in feet relative to MW-1)

DTW= depth to water (in feet below ground surface)

GWE= groundwater elevation (in feet, relative to MW-1)

TDW= total depth of well



ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588

VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 2301 E. 12th Street
Oakland, CA

PERMIT NUMBER _____
LOCATION NUMBER _____

CLIENT
Name J.W. Silveira
Address 499 Embarcadero Phone _____
City Oakland, CA Zip 94606

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT
Name Artesian Environmental Consultants
Attn.: James Jacobs
Address 100 Shoreline 295 Phone 415-381-6456
City Mill Valley Zip 94941

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.

TYPE OF PROJECT

Well Construction	_____	Geotechnical Investigation	_____
Cathodic Protection	_____	General	_____
Water Supply	_____	Contamination	_____
Monitoring	<u>XX</u>	Well Destruction	_____

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.

PROPOSED WATER SUPPLY WELL USE

Domestic	_____	Industrial	_____	Other	_____
Municipal	_____	Irrigation	_____		

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.

DRILLING METHOD:

Mud Rotary	_____	Air Rotary	_____	Auger	<u>XX</u>
Other	_____				

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

DRILLER'S LICENSE NO. 624461

E. WELL DESTRUCTION. See attached.

WELL PROJECTS

Drill Hole Diameter	<u>6</u> in.	Maximum	_____
Casing Diameter	<u>4</u> in.	Depth	_____ ft.
Surface Seal Depth	<u>5'</u> ft.	Number	_____

GEOTECHNICAL PROJECTS

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

ESTIMATED STARTING DATE 7/8/92
ESTIMATED COMPLETION DATE 7/8/92

Approved _____ Date _____

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE James Jacobs Date 7-2-92



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 (510) 484-2600

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 2301 E 12th St Oakland CALIFORNIA

PERMIT NUMBER 91711 LOCATION NUMBER

CLIENT Name B+B Inc / Mr. Silveira Address 1281 30th St Phone 415-451-3482 City Oakland CA Zip 94608

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT Name James A Jacobs Artesian Environmental Consultants Address 600 Shoreline Hwy Phone 415-881-6456 City Mill Valley CA Zip 94941

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

PROPOSED WATER SUPPLY WELL USE Domestic Industrial Other Monitor Municipal Irrigation 25' deep

DRILLING METHOD: Rotary Air Rotary Auger Cable Other

DRILLER'S LICENSE NO. C57624461

WELL PROJECTS Drill Hole Diameter 8 in. Maximum Casing Diameter 2 in. Depth 25 ft. Surface Seal Depth 5 ft. Number 3

GEOTECHNICAL PROJECTS Number of Borings 3 Maximum Hole Diameter 6 in. Depth 25 ft.

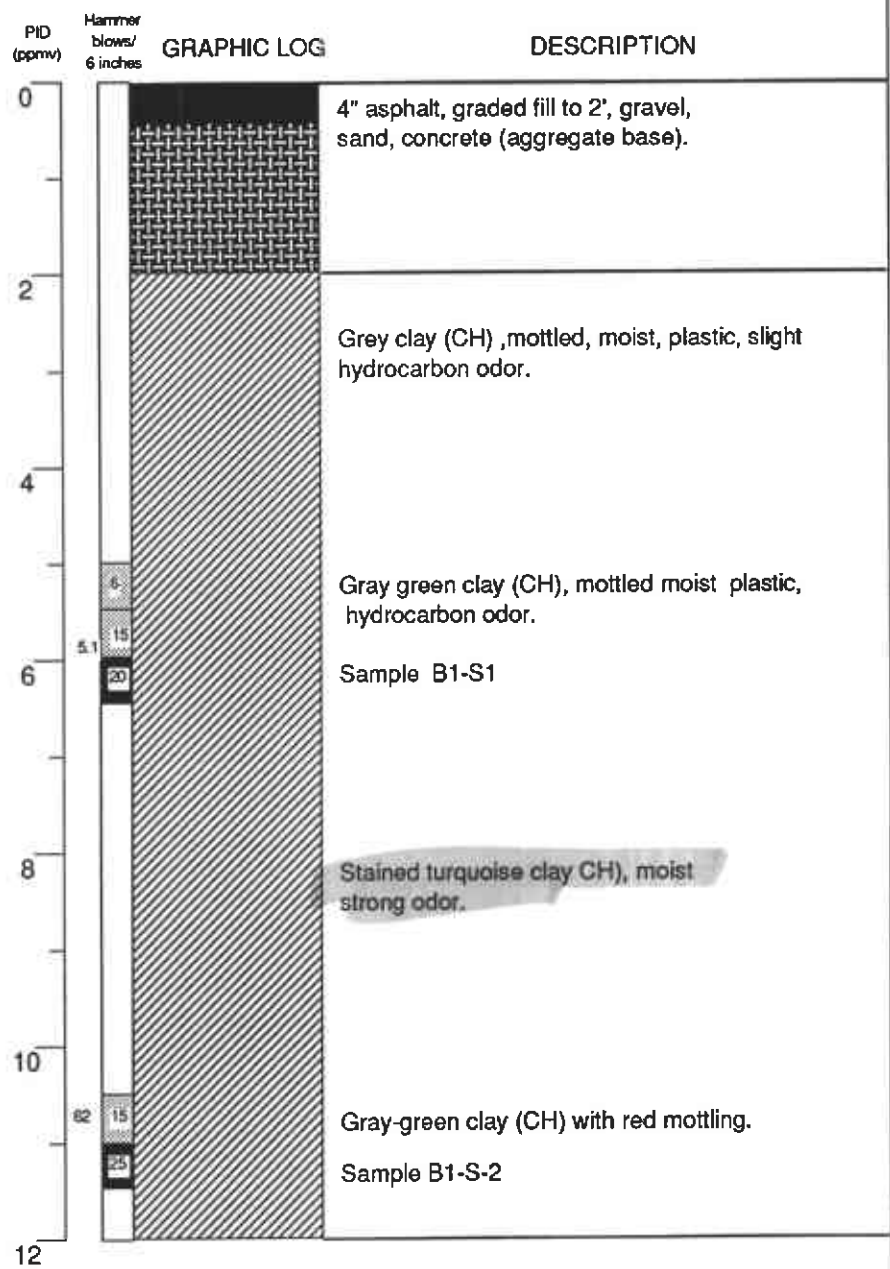
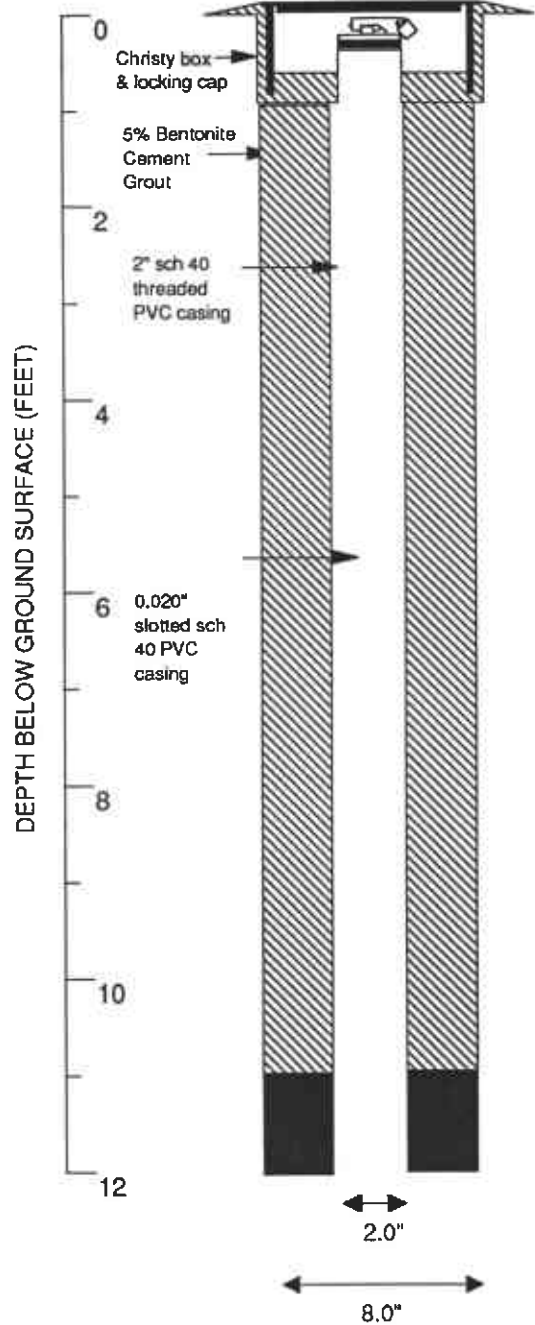
ESTIMATED STARTING DATE 12/23/91 ESTIMATED COMPLETION DATE 12/23/91

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE James A Jacobs Date 12/12/91 C57 624461

- 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 20 Dec 91



Continues

Logged by: Matthew Walraven	Drilling Company: Gregg Drilling	Well Head Completion: Christy box & locking cap
Inspector: Barney Chan	Drilling Method: Mobile B-53	Type of Sampler: California Split Spoon
Dates Drilled: 12/23/91	Driller: Mike Braman	TD (Total Depth): 28 ft.

EXPLANATION	
	Water level in completed well
	Water level during drilling
	Location of drill sample
	Location of sample sealed for chemical analysis
	Sieve sample
	Grab sample
	Contacts: Solid where certain
 Dotted where approximate
	- - - Dashed where uncertain
	////// Hachured where gradational
	est K Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
	NR No recovery

Boring Log and Well Completion Details
Monitor Well-1

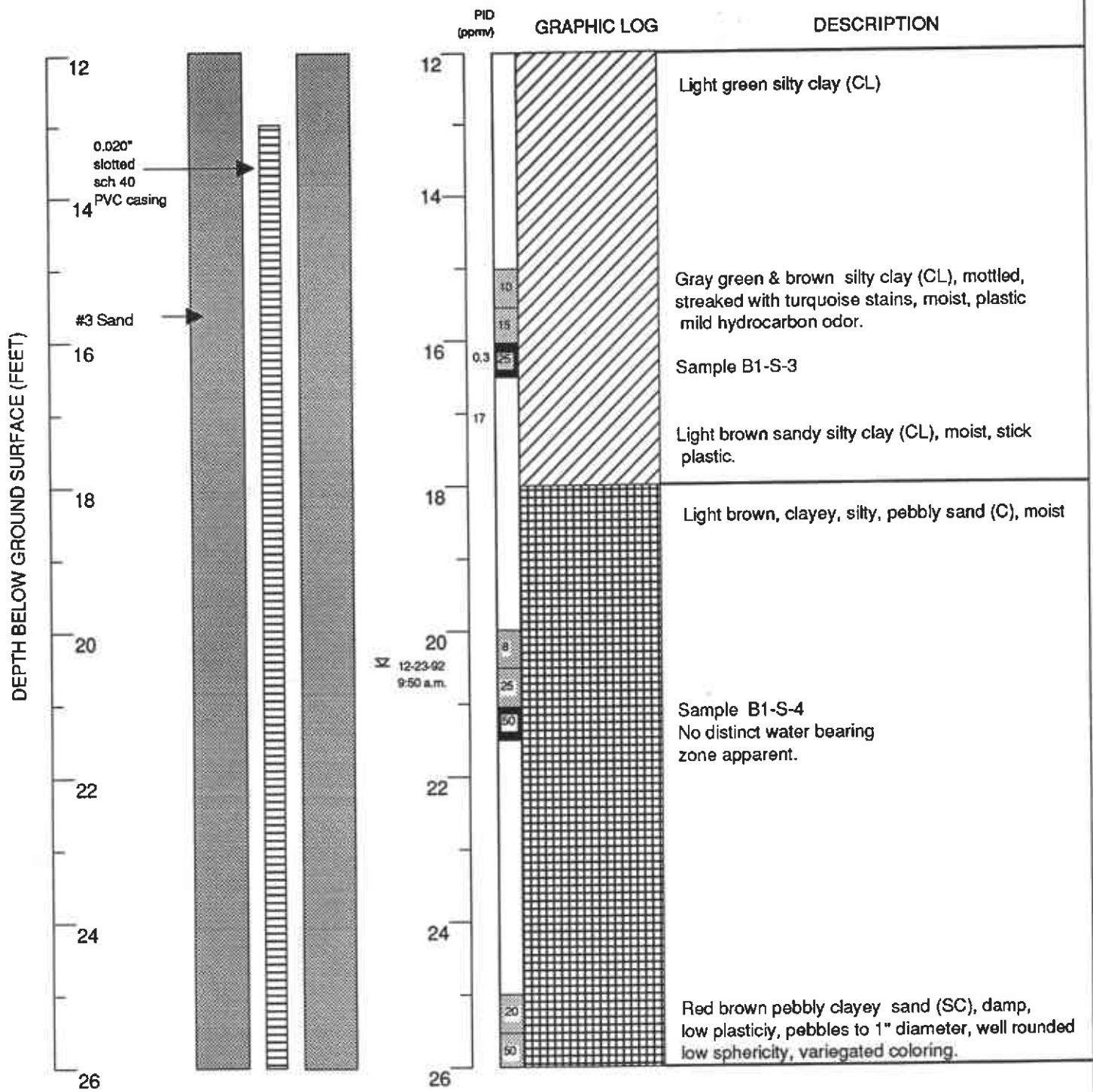
B+B Inc.
 2301 East 12t Street
 Oakland, California

ARTESIAN ENVIRONMENTAL CONSULTANTS
 3175 KERNER BLVD. SAN RAFAEL, CALIFORNIA 94941 (415) 257-4801

MONITOR WELL

1

030-002-01



Final Page

EXPLANATION

- ☒ Water level in completed well
- ☒ Water level during drilling
- ▣ Location of drill sample
- Location of sample sealed for chemical analysis
- ▣ Sieve sample
- ☒ Grab sample
- Contacts: Solid where certain
- Dotted where approximate
- - - Dashed where uncertain
- ////// Hachured where gradational
- est K Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR No recovery

Boring Log and Well Completion Details
MW-1 (Boring B-1)

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Oakland, California

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MONITOR
WELL

1

030-002-01

DEPTH BELOW GROUND SURFACE (FEET)

26

28

30

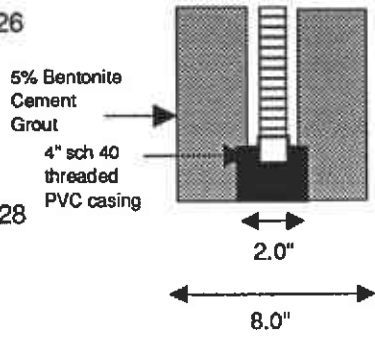
32

34

36

38

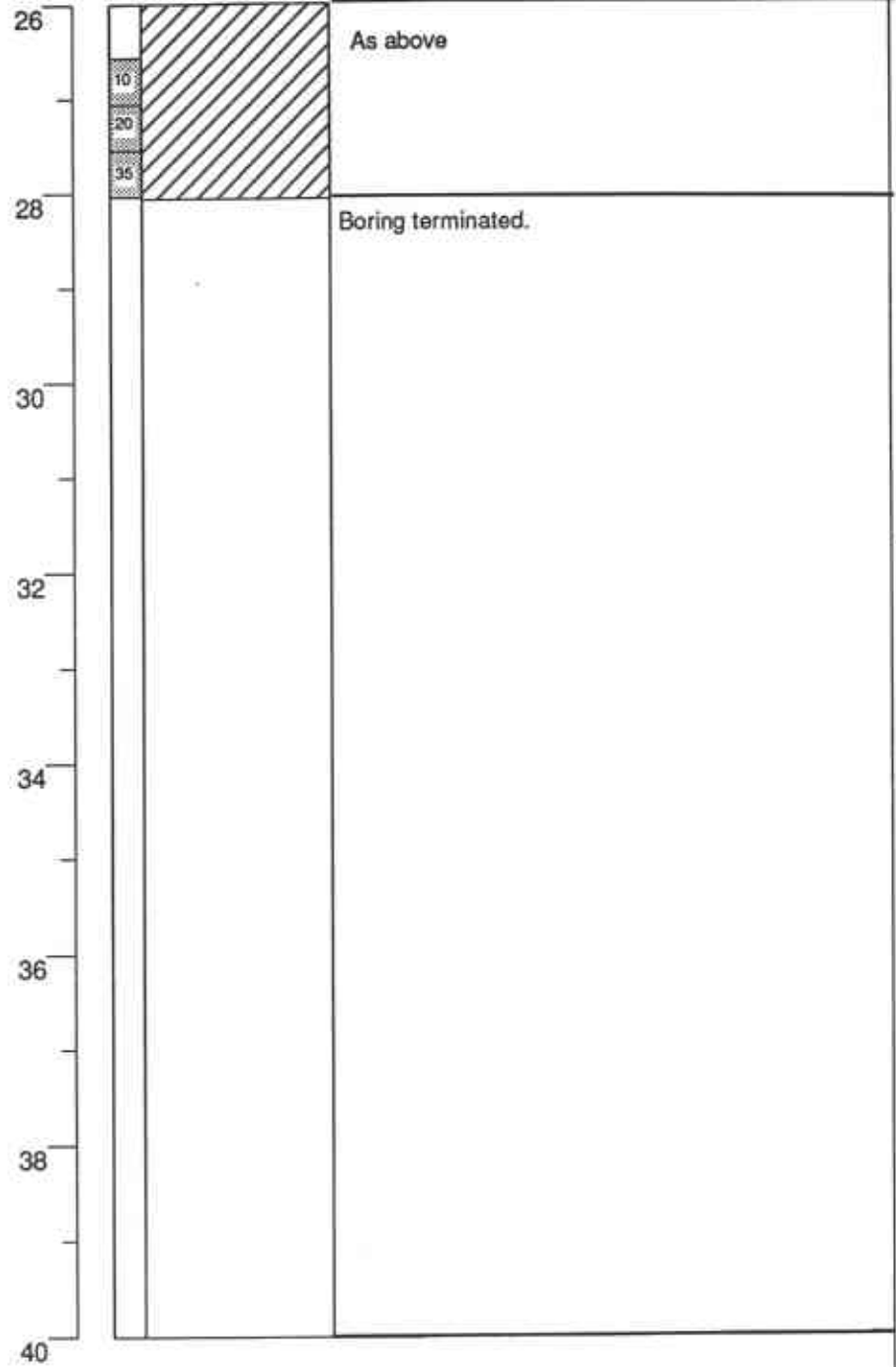
40



PID (ppmv)

GRAPHIC LOG

DESCRIPTION



Continues

EXPLANATION

- ☒ Water level in completed well
- ☒ Water level during drilling
- ☒ Location of recovered drill sample
- ☒ Location of sample sealed for chemical analysis
- ☒ Sieve sample
- ☒ Grab sample
- Contacts: Solid where certain
- Dotted where approximate
- - - Dashed where uncertain
- ////// Hachured where gradational
- est K Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR No recovery

Boring Log and Well Completion Details
MW-1 (Boring B-1)

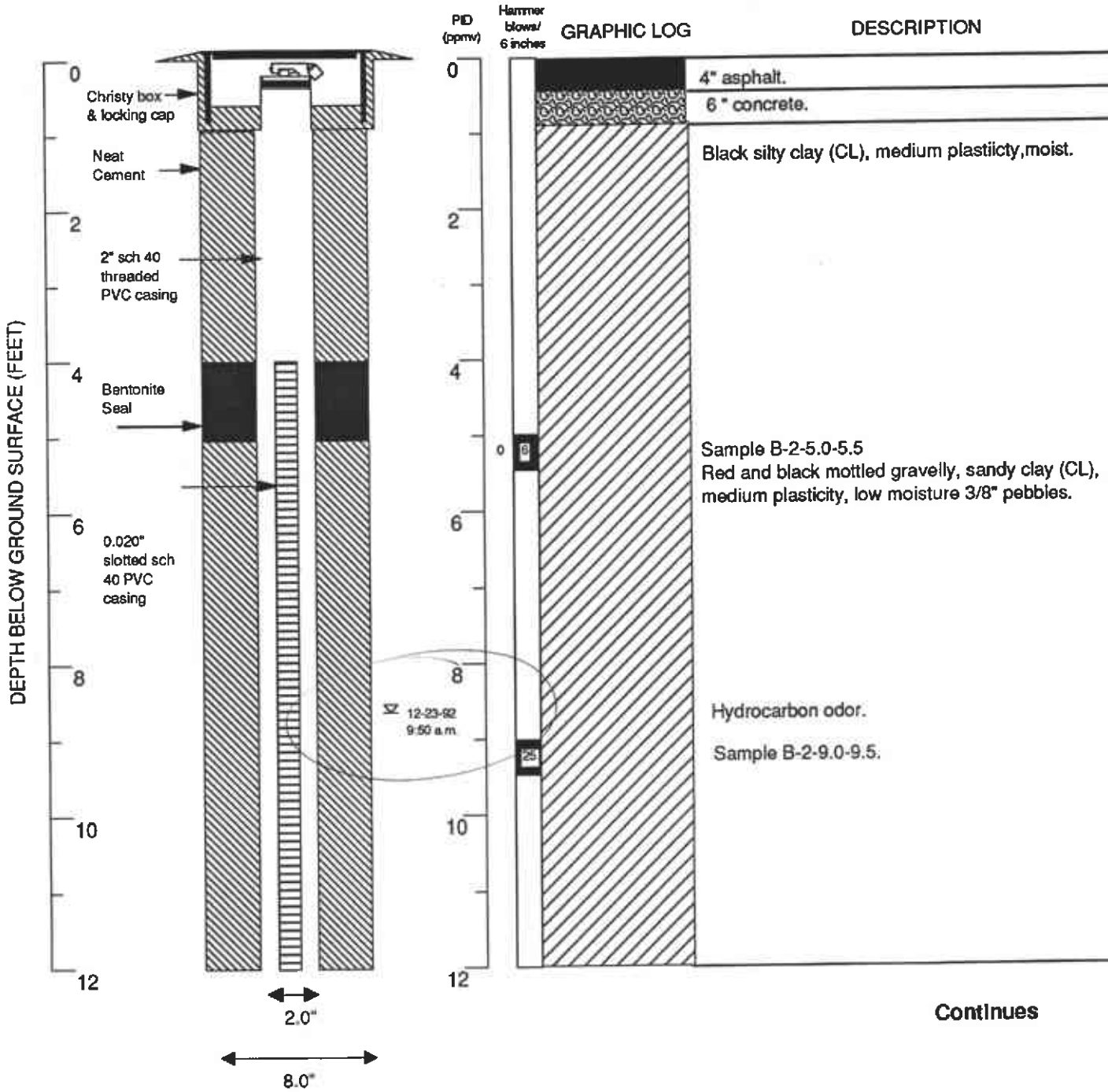
B&B
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Oakland, California

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3175 KERNER BLVD. SAN RAFAEL, CALIFORNIA 94941 (415) 257-4801

MONITOR WELL

1

030-002-01



Logged by: Matthew Walraven	Drilling Company: Artesian Environmental	Well Head Completion: Christy box & locking cap
Inspector: Barney Chan	Drilling Method: Mobile Minuteman	Type of Sampler: California Split Spoon
Dates Drilled: 7/8/92	Driller: Jim Fasano	TD (Total Depth): 19 ft.

EXPLANATION	
☒ Water level in completed well	——— Contacts: Solid where certain
☒ Water level during drilling Dotted where approximate
▨ Location of drill sample	- - - Dashed where uncertain
■ Location of sample sealed for chemical analysis	////// Hachured where gradational
☒ Sieve sample	est K Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
☒ Grab sample	NR No recovery

Boring Log and Well Completion Details
Monitor Well-2

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 Oakland, California

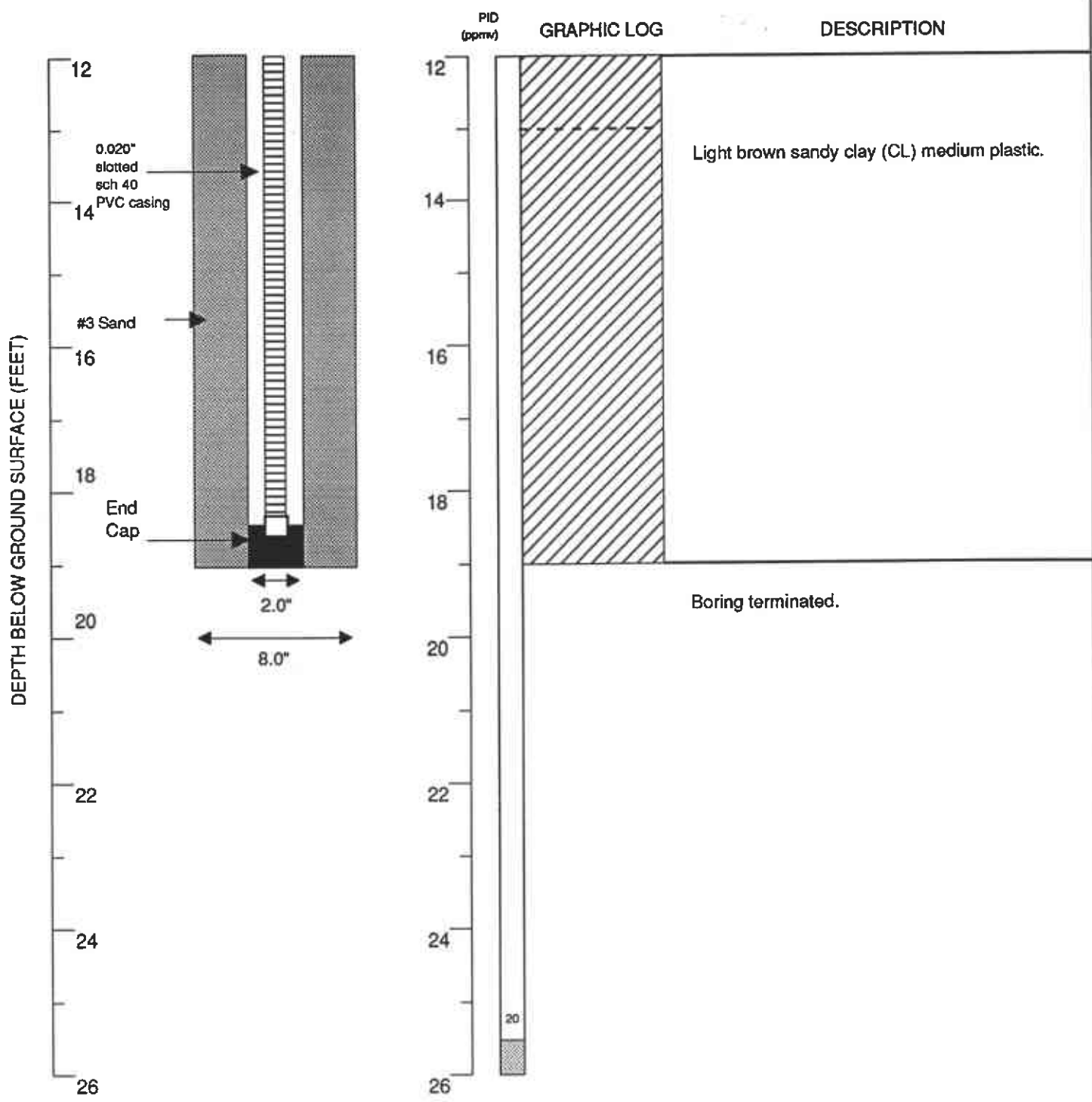
ARTESIAN ENVIRONMENTAL CONSULTANTS
 3175 KERNER BLVD., SAN RAFAEL, CALIFORNIA 94901 (415) 257-4801

MONITOR WELL

2

030-002-01

Continues



Final Page

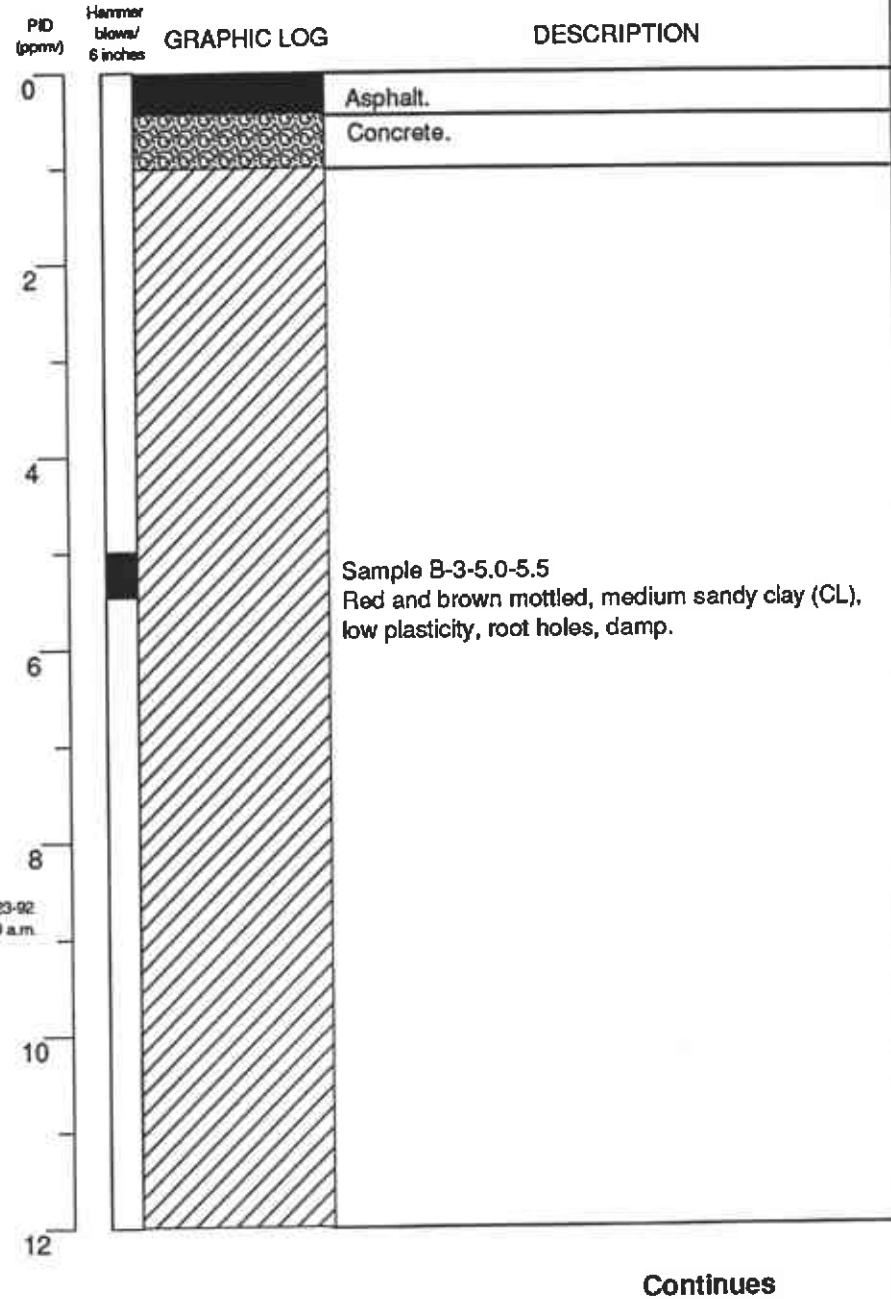
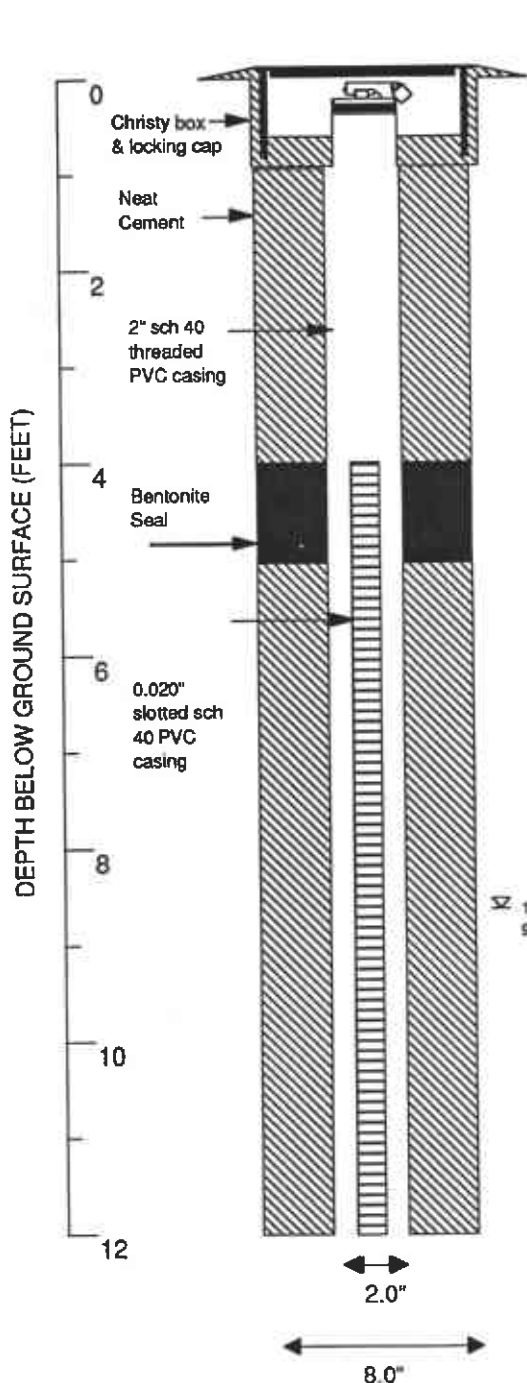
EXPLANATION

- ☑ Water level in completed well
- ☒ Water level during drilling
- ▣ Location of drill sample
- Location of sample sealed for chemical analysis
- ⊞ Sieve sample
- ⊠ Grab sample
- Contacts: Solid where certain
- Dotted where approximate
- - - Dashed where uncertain
- ////// Hachured where gradational
- est K Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
- NR No recovery

Boring Log and Well Completion Details
 MW-2 (Boring B-2)
 B&B
 2301 East 12th Street
 Oakland, California

MONITOR WELL

2



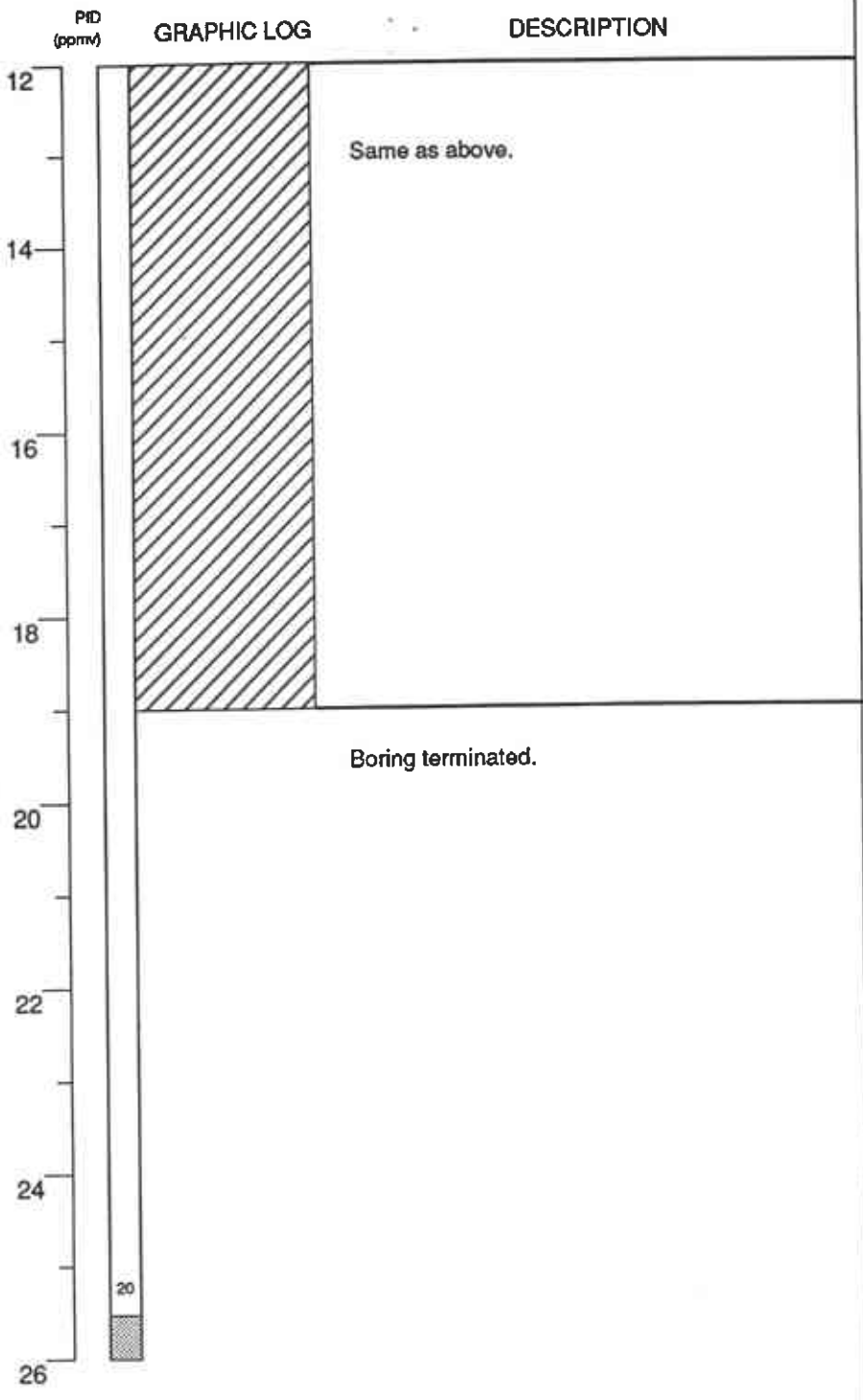
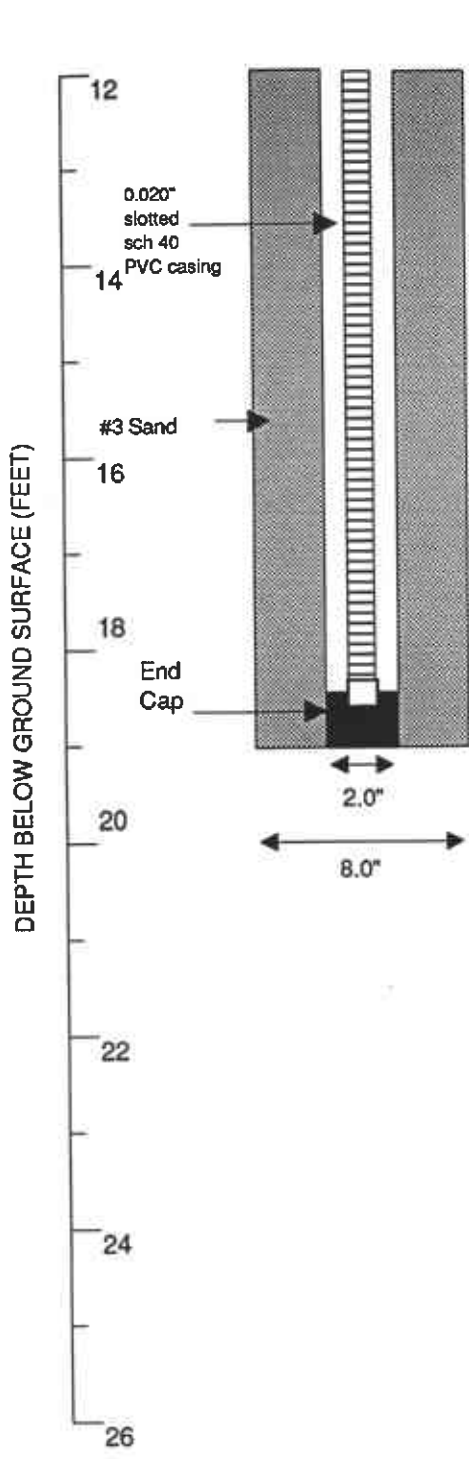
Logged by: Matthew Walraven Drilling Company: Artesian Environmental Well Head Completion: Christy box & locking cap
 Inspector: Barney Chan Drilling Method: Mobile Minuteman Type of Sampler: California Split Spoon
 Dates Drilled: 7/8/92 Driller: Jim Fasano TD (Total Depth): 19 ft.

EXPLANATION	
	Water level in completed well
	Water level during drilling
	Location of drill sample
	Location of sample sealed for chemical analysis
	Sieve sample
	Grab sample
	Contacts: Solid where certain
	Contacts: Dotted where approximate
	Contacts: Dashed where uncertain
	Contacts: Hachured where gradational
	est K Estimated permeability (hydraulic conductivity) 1K = primary 2K = secondary
	NR No recovery

Boring Log and Well Completion Details
 Monitor Well-3
 B+B Inc.
 2301 East 12t Street
 Oakland, California

ARTESIAN ENVIRONMENTAL CONSULTANTS
 3175 KERNER BLVD., SAN RAFAEL, CALIFORNIA 94901 (415) 257-4801

MONITOR WELL
3
 030-002-01



Final Page

EXPLANATION

- Water level in completed well
 Contacts: Solid where certain
- Water level during drilling
 Dotted where approximate
- Location of drill sample
 Dashed where uncertain
- Location of sample sealed for chemical analysis
 Hachured where gradational
- Sieve sample
 est K Estimated permeability (hydraulic conductivity) 1K - primary 2K - secondary
- Grab sample
 NR No recovery

Boring Log and Well Completion Details
MW-3 (Boring B-3)

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Oakland, California

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3175 KERNER BLVD., SAN RAFAEL, CALIFORNIA 94901 (415) 257-4801

MONITOR WELL

3

030-002-01

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		G W	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		G P	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		G M	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	CLEAN SAND (LITTLE OR NO FINES)		S W	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		S P	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		S M	SILTY SANDS, SAND-SILT MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50	CLEAN SAND (LITTLE OR NO FINES)		M L	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		C L	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		O L	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		M H	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		C H	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		O H	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				P T	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

KEY TO LOG OF BORINGS

<u>SAMPLES & BLOW COUNTS</u>	<u>LABORATORY TESTS</u>
HAMMER BLOWS PER FOOT OF PENETRATION	AL ATTERBERG LIMITS TEST
30 ■ INDICATES UNDISTURBED SAMPLE	DSCU DIRECT SHEAR TEST (Consolidated, Undrained)
⊗ INDICATES DISTURBED SAMPLE	CBR CALIFORNIA BEARING RATIO TEST
■ STANDARD PENETRATION TEST SAMPLE	COMP COMPACTION TEST
NR INDICATES NO RECOVERY	CON CONFINED COMPRESSION (Consolidation Test)
SAMPLES DRIVEN WITH A 140-POUND HAMMER DROPPING 30 INCHES	-200 PERCENT PASSING NO. 200 SIEVE (Test Results in Parentheses)

Artesian Environmental Consultants

Standard Operating Procedures

COLLECTING ORGANIC VAPOR DATA FROM SOIL SAMPLES

Soil samples from drill cuttings, soil piles or tank excavations are placed with minimal disturbance into pre-cleaned standard soil sample collection jars. The jars are filled to approximately one half full. The soil samples are broken up to provide sufficient surface area to allow for volatilization. Aluminum foil is placed over the mouth of the jar. The jar mouth is then capped with the lid.

The jars are then placed out of direct sunlight and allowed to sit undisturbed for a minimum of twenty minutes; allowing time for the air in the headspace and soil to equilibrate.

An organic vapor analyzer (OVA) or photoionization detector (PID) is to be calibrated and the batteries checked prior to each use. After the headspace within the sample jar and soil vapor has equilibrated, the probe of the organic vapor analyzer or photoionization detector should be inserted into the jar, puncturing the aluminum foil. The presence of any organic vapor detected should be measured and recorded in parts per million (ppm).

The samples used for collecting organic vapor data are never submitted for analytical testing.

Artesian Environmental Consultants

Standard Operating Procedures

SOIL SAMPLING

Hand Samples: Undisturbed soil samples are obtained using a slide hammer hand sampler with a single sampling cup at the end. The sampler holds one (1), clean, six inch long by two inch diameter brass tube. The sample is obtained by hammering the cup and tube into the undisturbed soil. The sampler is removed, opened, and the brass tube containing the sample is extracted.

Electric Drive Samples: Undisturbed soil samples are obtained using a continuous coring, 1 inch, lined, steel sampler. The sampler is driven into the soil using an electric rotary hammer. The sampler holds one, four foot by one inch diameter, new, plastic, sampling liner. After driving the steel sampler three to four feet, the sampler is extracted and the sampling liner containing the sample is removed.

Pneumatic Drive Samples: Undisturbed soil samples are obtained using a 1.0 inch, steel, outer casing, fitted with a 0.5 inch, inner sampling cup, fitted with a brass liner. The casing is pneumatically driven to the desired depth, an inner plug rod is removed and the sampling cup is inserted into the casing. The sample is obtained by hammering the sampling cup into the undisturbed soil. After driving the sampler six inches, the sampling cup is extracted and the sampling liner containing the sample is removed.

California Split-spoon Samples: Undisturbed soil samples are obtained using a California Split-spoon sampler fitted with three six inch long by two inch diameter brass tubes. The sampler is lowered down inside a hollow stem auger after the auger plug has been removed. The sampler is then driven at least eighteen inches. The sampler is usually driven using a 140 pound hammer dropping 30 inches at each blow. After driving the sampler, the sampler is extracted and the sampling liner containing the sample is removed.

Immediately after extraction the sample tube ends are sealed with Teflon tape, plastic cap plugs, and isolated in hermetically sealed locking plastic bags.

All samples are labeled and chilled to 0° C for transportation to a California State certified hazardous materials laboratory. Chain of Custody documentation accompanies all samples to the laboratory. A copy of the Chain of Custody documentation is attached to the Certificate of Analysis.

All soil samples are collected in accordance with California Regional Water Quality Control Board (RWQCB) procedures described in the *Leaking Underground Fuel Tank (LUFT) Field Manual*, the *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites*, and local regulatory guidelines.

Standard Environmental Protection Agency (EPA), San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), and Department of Health Services (DHS) methodologies for sampling and analyses are routinely utilized.

Chain of Custody documentation accompanies all samples to the laboratory. A copy of the Chain of Custody documentation is attached to the Certificate of Analysis.

Soil cuttings and excess sampling materials are properly stored and labeled on site in DOT 17-H containers pending off site disposal.

Artesian Environmental Consultants,

Standard Operating Procedures

WELL INSTALLATION

The boreholes for monitor / extraction wells are drilled using a truck-mounted, continuous flight, hollow-stem auger drill rig. The diameter of the borehole is a minimum of four inches larger than the outside diameter of the casing when installing the well screen (DWR Publication 74-81). The hollow-stem auger provides minimal interruption of drilling while permitting soil sampling at the desired intervals. All wells are installed by state-licensed drillers.

The monitor / extraction wells are cased with blank and factory-slotted, threaded, schedule 40 polyvinyl chloride (PVC). The slots are generally 0.010-inch or 0.020-inch wide by 1.5-inch long slot size, with approximately 42 slots per foot. Slot sizes are determined by previous well installations in the area or by grain size analysis. A threaded PVC cap is fastened to the bottom of the casing. Centering devices may be fastened to the casing to assure even distribution of filter material and grout within the borehole annulus. The well casing is thoroughly washed and steam-cleaned prior to installation.

After setting the casing inside the hollow stem, sand or gravel filter material is poured into the annular space to fill from the bottom of the boring to 1 foot above the slotted interval. A 1 to 2 foot thick bentonite plug is placed above the filter material to prevent the grout from infiltrating down into the filter material. Neat cement, containing about 5% bentonite, is then tremied into the annular space from the top of the bentonite plug to the surface. A lockable PVC cap is placed on each wellhead. Traffic-rated flush-mounted steel covers are installed around wellheads for wells in parking lots and driveways, while steel stove pipes are usually set over wellheads in landscaped areas.

Artesian Environmental Consultants.

Standard Operating Procedures

WELL DEVELOPMENT

Wells are developed to remove residual drilling materials from the wellbore, and to improve well performance by removing any fine material in the filter pack that can pass from the formation into the well. Well development is performed in accordance with California Regional Water Quality Control Board (RWQCB) procedures described in the *Leaking Underground Fuel Tank (LUFT) Field Manual*, the *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites*, and local regulatory guidelines.

Well development techniques include pumping, bailing, surging, swabbing, jetting, flushing, and airlifting. During well development a minimum of three well volumes are evacuated from the well to permit formation water to move silts and particles into the well for removal. After allowing pH, specific conductivity, temperature and sediment content of the water to stabilize the well may be sampled. All development water and rinseate is collected for temporary storage in labeled 55 gallon, DOT 17-H containers or proper storage tanks, and is then disposed of properly depending on analytical results. To assure that cross-contamination does not occur between wells during development, all development equipment is either steam cleaned or cleaned using Alconox and rinsed twice with dionized water.

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553

Tele: 510-798-1620 Fax: 510-798-1622

Bernabe & Brinker Inc. 1281 30th Street Oakland, CA 94608	Client Project ID: Alejo Auto Parts, 2301 E. 12th Ave, Oakland	Date Sampled: 12/23/91
	Client Contact: Jim Brinker	Date Received: 12/23/91
		Date Analyzed: 12/27-12/31/91

Low Boiling Point TPH* (as Gasoline) and BTEX*

DOHS LUFT procedure; EPA method 5030, modified 8020 & 602

Lab ID	Client ID	Matrix	TPH(G) ⁺	Benzene	Toluene	Ethyl Benzene	Xylenes	% Rec. Surrogate
090245	S-1	S	520,a	2.0	2.4	3.9	5.0	115
090246	S-2	S	590,a	1.6	1.7	3.3	6.3	116
090247	S-3	S	ND	ND	ND	ND	ND	110
090248	S-4	S	ND	ND	ND	ND	ND	108
Detection Limit unless otherwise stated; ND means Not Detected	W		50 ug/L	0.3	0.3	0.3	0.6	
	S		1.0 mg/kg	0.005	0.005	0.005	0.010	

*water samples are reported in ug/L and soils in mg/kg

*cluttered chromatogram; sample peak co-elutes with surrogate peak

*The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) predominately unmodified or weakly modified gasoline; b) heavier gasoline range compounds predominate (aged gasoline?); c) lighter gasoline range compounds predominate (the most mobile gas compounds); d) heavy and light gasoline range compounds predominate (aged gasoline together with introduced light compounds?); e) one to a few isolated peaks predominate; f) gasoline range compounds together with higher boiling point (diesel range) compounds; g) diesel range compounds predominate.

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553
 Tele: 510-798-1620 Fax: 510-798-1622

Bernabe & Brinker Inc. 1281 30th Street Oakland, CA 94608	Client Project ID: Alejo Auto Parts, 2301 E. 12th Ave, Oakland	Date Sampled: 12/23/91
	Client Contact: Jim Brinker	Date Received: 12/23/91
		Date Analyzed: 12/27-01/06/92

Medium Boiling Point TPH (as Diesel) *

DOHS LUFT procedure; modified EPA method 3550

Lab ID	Client ID	Matrix	TPH(D) ⁺
090245	S-1	S	ND
090246	S-2	S	39,d
090247	S-3	S	ND
090248	S-4	S	ND
Detection Limit unless otherwise stated; ND means Not Detected	W		500 ug/L
	S		10 mg/kg

*water samples are reported in ug/L and soils in mg/kg

⁺The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) predominately diesel compounds; b) diesel range compounds together with gasoline range compounds; c) diesel range compounds together with very low boiling point compounds; d) gasoline range compounds predominate; e) medium boiling point pattern that does not match diesel; f) peaks elute in the diesel range but no pattern is present; g) one to a few isolated peaks predominate.

 Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553
 Tele: 510-798-1620 Fax: 510-798-1622

Bernabe & Brinker 1281 30th Street Oakland, CA 94608	Client Project ID: Alejo Automotive Repair	Date Sampled: 07/08/92
		Date Received: 07/13/92
	Client Contact: Jim Brinker	Date Extracted: 07/13/92
	Client P.O:	Date Analyzed: 07/14/92

Low Boiling Point (C6-C12) TPH* as Gasoline and BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(G) ⁺	Benzene	Toluene	Ethyl Benzene	Xylenes	% Rec. Surrogate
105540	B-2-9.0	S	6500,e	9.8	15	41	65	95
105541	B-3-8.0	S	2400,e	2.1	4.6	11	21	84
Detection Limit unless otherwise stated; ND means Not Detected	W		50 ug/L	0.5	0.5	0.5	0.5	
	S		1.0 mg/kg	0.005	0.005	0.005	0.005	

*water samples are reported in ug/L and soils in mg/kg
 *cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) predominately unmodified or weakly modified gasoline; b) heavier gasoline range compounds predominate (aged gasoline?); c) lighter gasoline range compounds predominate (the most mobile gasoline compounds); d) heavy and light gasoline range compounds predominate (aged gasoline together with introduced light compounds?); e) gasoline range compounds predominate; no recognizable pattern; f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds predominate.

EH
 Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.	110 2nd Avenue South, #D7, Pacheco, CA 94553 Tele: 510-798-1620 Fax: 510-798-1622
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Bernabe & Brinker Inc. 1281 30th Street Oakland, CA 94608		Client Project ID: Alejo Auto Parts, 2301 E. 12th Ave, Oakland	Date Sampled: 12/23/91
		Client Contact: Jim Brinker	Date Received: 12/23/91
			Date Analyzed: 12/27/91
<p align="center">Total Recoverable Hydrocarbons as Oil & Grease (with Silica Gel Clean-up) *</p> <p align="center">Standard Methods 5520 E&F or 503 D&E for solids and 5520 B&F or 503 A&E for liquids</p>			
Lab ID	Client ID	Matrix	TRPH
090247	S-3	S	ND
Detection Limit unless otherwise stated; ND means Not Detected		W	5 mg/L
		S	25 mg/kg
*water samples are reported in mg/L and soils in mg/kg			

EH Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553
 Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT

Date: 12/21/91-01/02/92

Matrix: soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
TPH (gas)	0.00	2.25	2.05	2.03	111	101	9.2
Benzene	0.00	0.216	0.196	0.2	108	98	9.7
Toluene	0.00	0.216	0.21	0.2	108	105	2.8
Ethyl Benzene	0.00	0.216	0.214	0.2	108	107	0.9
Xylenes	0.00	0.648	0.65	0.6	108	108	0.3
TPH (diesel)	0	108.2	132.4	150	72	88	20.1
TRPH (oil & grease)	0	445	450	500	89	90	1.1

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

Bernabe & Brinker 1281 30th Street Oakland, CA 94608	Client Project ID: Alejo Automotive Repair	Date Sampled: 07/08/92
	Client Contact: Jim Brinker	Date Received: 07/13/92
	Client P.O:	Date Extracted: 07/13/92
		Date Analyzed: 07/14/92

Medium Boiling Point (C10-C23) TPH* as Diesel
EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GC/FID(3530) or GC/FID(3510)

Lab ID	Client ID	Matrix	TPH(D) ⁺
105540	B-2-9.0	S	1900,d,a
105541	B-3-8.0	S	520,d,a
Detection Limit unless otherwise stated; ND means Not Detected	W	50 ug/L	
	S	10 mg/kg	

*water samples are reported in ug/L and soils in mg/kg

cluttered chromatogram; sample peak co-elutes with surrogate peak

⁺The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) predominately unmodified or weakly modified diesel; b) diesel range compounds predominate; no recognizable pattern; c) diesel range compounds together with gasoline range compounds; d) gasoline range compounds predominate; e) medium boiling point pattern that does not match diesel(); f) one to a few isolated peaks present; g) oil range compounds predominate.

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.	110 2nd Avenue South, #D7, Pacheco, CA 94553 Tele: 510-798-1620 Fax: 510-798-1622
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Bernabo & Brinker 1281 30th Street Oakland, CA 94608	Client Project ID: Alejo Automotive Repair	Date Sampled: 07/08/92
		Date Received: 07/13/92
	Client Contact: Jim Brinker	Date Extracted: 07/24/92
	Client P.O:	Date Analyzed: 07/24/92

Total Recoverable Petroleum Hydrocarbons as Oil & Grease (with Silica Gel Clean-up) *

Standard Methods 5520 B&P or 503 D&B for solids and 5520 B&P or 503 A&E for liquids

Lab ID	Client ID	Matrix	TRPH
105540	B-2-9.0	S	120
105541	B-3-8.0	S	ND
Detection Limit unless otherwise stated; ND means Not Detected	W		5 mg/L
	S		50 mg/kg

*water samples are reported in mg/L and soils in mg/kg

 Edward Hamilton, Lab Director

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

July 21, 1992

ChromaLab File # 0792127 A

Client: McCampbell Analytical

Attn: Ed Hamilton

Date Sampled: Jul. 08, 1992

Date Submitted: Jul. 14, 1992

Date of Analysis: Jul. 20, 1992

Project Name: BB/AAR

Sample I.D.: B-2-9.0

Method of Analysis: EPA 8010

Detection Limit: 50 µg/kg*

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	89% 116%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TRANS)	N.D.	---
1,2-DICHLOROETHENE (CIS)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
TRICHLOROETHENE	N.D.	97% 90%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	95% 98%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	96% 94%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---

*High detection limit due to gasoline in sample.

ChromaLab, Inc.


 Yiu Tam
 Analytical Chemist


 Eric Tam
 Lab Director

CHROMALAB, INC.

Environmental Laboratory (1094)

8 DAYS TURNAROUND

July 21, 1992

ChromaLab File # 0792127 B

Client: McCampbell Analytical

Attn: Ed Hamilton

Date Sampled: Jul. 08, 1992

Date Submitted: Jul. 14, 1992

Date of Analysis: Jul. 20, 1992

Project Name: BB/AAR

Sample I.D.: B-3-8.0

Method of Analysis: EPA 8010

Detection Limit: 50 µg/kg*

COMPOUND NAME	µg/kg	Spike Recovery	
CHLOROMETHANE	N.D.	---	---
VINYL CHLORIDE	N.D.	---	---
BROMOMETHANE	N.D.	---	---
CHLOROETHANE	N.D.	---	---
TRICHLOROFLUOROMETHANE	N.D.	---	---
1,1-DICHLOROETHENE	N.D.	89%	116%
METHYLENE CHLORIDE	N.D.	---	---
1,2-DICHLOROETHENE (TRANS)	N.D.	---	---
1,2-DICHLOROETHENE (CIS)	N.D.	---	---
1,1-DICHLOROETHANE	N.D.	---	---
CHLOROFORM	N.D.	---	---
1,1,1-TRICHLOROETHANE	N.D.	---	---
CARBON TETRACHLORIDE	N.D.	---	---
1,2-DICHLOROETHANE	N.D.	---	---
TRICHLOROETHENE	N.D.	97%	90%
1,2-DICHLOROPROPANE	N.D.	---	---
BROMODICHLOROMETHANE	N.D.	---	---
2-CHLOROETHYLVINYLETHER	N.D.	---	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---	---
CIS-1,3-DICHLOROPROPENE	N.D.	---	---
1,1,2-TRICHLOROETHANE	N.D.	---	---
TETRACHLOROETHENE	N.D.	95%	98%
DIBROMOCHLOROMETHANE	N.D.	---	---
CHLOROBENZENE	N.D.	---	---
BROMOFORM	N.D.	---	---
1,1,2,2-TETRACHLOROETHANE	N.D.	96%	94%
1,3-DICHLOROBENZENE	N.D.	---	---
1,4-DICHLOROBENZENE	N.D.	---	---
1,2-DICHLOROBENZENE	N.D.	---	---

*High detection limit due to gasoline in sample.

ChromaLab, Inc.

[Signature]
Yiu Tam
Analytical Chemist

[Signature]
Eric Tam
Lab Director

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553
 Tele: 510-798-1620 Fax: 510-798-1622

Bernabe & Brinker 1281 30th Street Oakland, CA 94608	Client Project ID: Quarterly monitoring; 2301 E. 12th St, Oakland	Date Sampled: 07/27/92
	Client Contact: Jim Brinker	Date Received: 07/27/92
	Client P.O:	Date Extracted: 08/02/92
		Date Analyzed: 08/02/92

Total Recoverable Petroleum Hydrocarbons as Oil & Grease (with Silica Gel Clean-up) *
 Standard Methods 5520 E&F or 503 D&E for solids and 5520 B&F or 503 A&E for liquids

Lab ID	Client ID	Matrix	TRPH
105733	MW-1-BB	W	ND
105734	MW-2-BB	W	ND
105735	MW-3-BB	W	ND
Detection Limit unless otherwise stated; ND means Not Detected	W		5 mg/L
	S		25 mg/kg

*water samples are reported in mg/L and soils in mg/kg

 Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553
 Tele: 510-798-1620 Fax: 510-798-1622

Bernabe & Brinker 1281 30th Street Oakland, CA 94608	Client Project ID: Quarterly monitoring; 2301 E. 12th St, Oakland	Date Sampled: 07/27/92
	Client Contact: Jim Brinker	Date Received: 07/27/92
	Client P.O:	Date Analyzed: 07/29-08/02/92
		Date Extracted:

Low Boiling Point (C6-C12) TPH* as Gasoline and BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method OCTD(5030)

Lab ID	Client ID	Matrix	TPH(G) +	Benzene	Toluene	Ethyl Ben- zene	Xylenes	% Rec. Sur- rogate
105733	MW-1-BB	W	1800,a	600	5.1	13	18	91
105734	MW-2-BB	W	20,000,a	110	6.0	37	39	92
105735	MW-3-BB	W	8800,a	150	8.6	88	13	93
Detection Limit unless otherwise stated; ND means Not Detected	W		50 ug/L	0.5	0.5	0.5	0.5	
	S		1.0 mg/kg	0.005	0.005	0.005	0.005	

*water samples are reported in ug/L and soils in mg/kg

*cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) predominately unmodified or weakly modified gasoline; b) heavier gasoline range compounds predominate (aged gasoline?); c) lighter gasoline range compounds predominate (the most mobile gasoline compounds); d) heavy and light gasoline range compounds predominate (aged gasoline together with introduced light compounds?); e) gasoline range compounds predominate; no recognizable pattern; f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds predominate.

EA Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Bernabe & Brinker 1281 30th Street Oakland, CA 94608	Client Project ID: Quarterly monitoring; 2301 E. 12th St, Oakland	Date Sampled: 07/27/92
	Client Contact: Jim Brinker	Date Received: 07/27/92
	Client P.O:	Date Extracted: 08/02/92
		Date Analyzed: 08/02/92

Medium Boiling Point (C10-C23) TPH* as Diesel

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(D) [†]
105733	MW-1-BB	W	360,d
105734	MW-2-BB	W	1500,d
105735	MW-3-BB	W	4000,d
Detection Limit unless otherwise stated; ND means Not Detected	W		50 ug/L
	S		10 mg/kg

*water samples are reported in ug/L and soils in mg/kg

* cluttered chromatogram; sample peak co-elutes with surrogate peak

[†]The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) predominately unmodified or weakly modified diesel; b) diesel range compounds predominate; no recognizable pattern; c) diesel range compounds together with gasoline range compounds; d) gasoline range compounds predominate; e) medium boiling point pattern that does not match diesel(); f) one to a few isolated peaks present; g) oil range compounds predominate.

EH
Edward Hamilton, Lab Director

SAMPLERS: (Signature) <i>Matthew W. [Signature]</i>						ANALYSIS REQUESTED									
PROJECT NAME: Alejo Auto Parts						JOB NUMBER:						TOTAL PETROLEUM HYDROCARBONS ⁹⁵ BTX & B VOC - EPA 8240 TOTAL OIL & GREASE TETRAETHYL LEAD TPH - D EPA 8010 <i>Hold off</i>			
DESCRIPTION:						ADDRESS: 2301 E. 12 th Ave, Oakland,									
CROSS REFERENCE NUMBER	DATE	TIME	SOIL	WATER	STATION LOCATION					REMARKS					
S-1	12/23/91	9:10	X		B-1 6.0-6.5 BGS	X	X	X	X	X	Rush				
S-2	"	9:20	X		B-1 11.0-11.5 BGS	X	X	X	X	X	HOLD 5 DAYS				
S-3	"	9:40	X		B-1 16.0-16.5 BGS	X	X	X	X	X	T.A. do. find sample				
S-4	"	9:50	X		B-1 21.0-21.5 BGS	X	X	X	(X)	(X)	HOLD send to do				

No. 090245
 No. 090246
 No. 090247
 No. 090248

RELINQUISHED BY: (Signature) <i>[Signature]</i>	DATE 12/31/01	RECEIVED BY: (Signature) <i>[Signature]</i>	DATE 12-23-91
RELINQUISHED BY: (Signature) <i>[Signature]</i>	TIME 11:50	RECEIVED BY: (Signature) <i>[Signature]</i>	TIME 11:50
RELINQUISHED BY: (Signature) <i>[Signature]</i>	DATE 12-23-91	RECEIVED BY: (Signature) <i>[Signature]</i>	DATE
RELINQUISHED BY: (Signature) <i>[Signature]</i>	TIME 11:50	RECEIVED BY: (Signature) <i>[Signature]</i>	TIME
RELINQUISHED BY: (Signature) <i>[Signature]</i>	DATE 12-23-91	RECEIVED BY: (Signature) <i>[Signature]</i>	DATE 12-23-91
RELINQUISHED BY: (Signature) <i>[Signature]</i>	TIME 10:45	RECEIVED BY: (Signature) <i>[Signature]</i>	TIME 10:45
RELINQUISHED BY: (Signature)	DATE	RECEIVED FOR LABORATORY BY: (Signature)	DATE
RELINQUISHED BY: (Signature)	TIME		TIME

CHAIN OF CUSTODY

B.I.I to B+B

SAMPLERS: (Signature) <i>Matthew Walken</i>						ANALYSIS REQUESTED <div style="display: flex; justify-content: space-between; font-size: small;"> TOTAL PETROLEUM HYDROCARBONS BTEX & E VOC - EPA 8240 TOTAL OIL & GREASE TETRAETHYL LEAD TPH-d SMPS20 E.F.F. AETOS </div>					
PROJECT NAME: <i>Alajo Automotive Repair /B+B</i>				JOB NUMBER: <i>030-02-01</i>							
DESCRIPTION: <i>Installation of 2 GW monitoring wells</i>											
ADDRESS: <i>2301 E 12th St, Oakland, CA</i>											
CROSS REFERENCE NUMBER	DATE	TIME	SOIL	WATER	STATION LOCATION						REMARKS
B-2-9.0	7-8-92	1330	✓		Boring 2	✓	✓				Normal turnaround
B-2-5.0	7-8-92	1150	✓		Boring 2						hold
B-3-5.0	7-8-92	1740	✓		Boring 3						hold
B-3-8.0	7-8-92	1820	✓		Boring 3	✓	✓				Normal turnaround
RELINQUISHED BY: (Signature) <i>Matthew Walken</i>						DATE <i>7/13/92</i>		RECEIVED BY: (Signature) <i>Alanna Tucker</i>			DATE <i>7/13/92</i>
RELINQUISHED BY: (Signature)						TIME <i>1200</i>		RECEIVED BY: (Signature)			TIME <i>1200</i>
RELINQUISHED BY: (Signature)						DATE _____		RECEIVED BY: (Signature)			DATE _____
RELINQUISHED BY: (Signature)						TIME _____		RECEIVED FOR LABORATORY BY: (Signature)			TIME _____
RELINQUISHED BY: (Signature)						DATE _____		RECEIVED FOR LABORATORY BY: (Signature)			DATE _____
RELINQUISHED BY: (Signature)						TIME _____		RECEIVED FOR LABORATORY BY: (Signature)			TIME _____

CHAIN OF CUSTODY

B&B direct

AN787

SAMPLERS: (Signature) Matthew A. Wehr
 PROJECT NAME: B&B, Oakland JOB NUMBER: 030-CC2-01
 DESCRIPTION: Quarterly Monitoring Well Sampling
 ADDRESS: 1032 12th St, Oakland, CA 94612

ANALYSIS REQUESTED

CROSS REFERENCE NUMBER: 2301 G, 12th St, Oakland
 DATE: 7/27 TIME: 13:55
 SOIL: WATER:
 STATION LOCATION: MW-1 (3 VOA; 2,950 ml)

TOTAL PETROLEUM HYDROCARBONS - EPA 4
 BTEX & K
 VOC - EPA 8240
 TOTAL OIL & GREASE
 TETRAETHYL LEAD
 601 Halogenated
 TPH-d
 5520 (B/F) TOG

CROSS REFERENCE NUMBER	DATE	TIME	SOIL	WATER	STATION LOCATION	TOTAL PETROLEUM HYDROCARBONS - EPA 4	BTEX & K	VOC - EPA 8240	TOTAL OIL & GREASE	TETRAETHYL LEAD	601 Halogenated	TPH-d	5520 (B/F) TOG	REMARKS
MW-1BB	7/27	13:55		<input checked="" type="checkbox"/>	MW-1 (3 VOA; 2,950 ml)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Normal TAT
MW-2BB	"	14:30		<input checked="" type="checkbox"/>	MW-2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		" "
MW-3BB	"	14:15		<input checked="" type="checkbox"/>	MW-3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		" "



KEEP PRESERVATIVE
 GOOD CONDITION APPROPRIATE CONTAINERS
 HEAD SPACE ABSENT

RELINQUISHED BY: (Signature) <u>Matthew A. Wehr</u>	DATE <u>7/27/92</u>	RECEIVED BY: (Signature) <u>Norman J. Tucker</u>	DATE <u>7-27-92</u>
RELINQUISHED BY: (Signature) <u>Norman J. Tucker</u>	TIME <u>17:35</u>	RECEIVED BY: (Signature) <u>Ed...</u>	TIME <u>17:35</u>
RELINQUISHED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE
RELINQUISHED BY: (Signature)	TIME	RECEIVED FOR LABORATORY BY: (Signature)	TIME

Ma Crumbell