

ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY  
DAVID J. KEARS, Agency Director



7

ENVIRONMENTAL HEALTH SERVICES  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577  
(510) 567-6700  
FAX (510) 337-9335

November 30, 2005

Mr. David Mik  
Power Engineering  
1501 Viking Street, Suite 200  
Alameda, CA 94501

Subject: SLIC Case Closure; Stone Boat Yard, 2517 Blanding Avenue, Alameda; Case No. [REDACTED]

Dear Mr. Mik:

This letter confirms the completion of site investigation and remedial actions for the soil and groundwater investigation at the above referenced site. We are also transmitting the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported releases at the subject site with the provisions that the information provided to this agency was accurate and representative of existing conditions and the covenant and environmental restriction was accurately recorded with the Alameda County Clerk/Recorder. The subject Spill, Leaks, Investigation, and Cleanup (SLIC) case is closed.

**SITE INVESTIGATION AND CLEANUP SUMMARY**

Please be advised that the following conditions exist at the site:

- This case closure applies to the onshore portion of the site and does not address potential sediment contamination in the submerged areas of the Tidal Canal bordering the site.
- An estimated 10 cubic yards or less of soil contamination with TPH as diesel was left in place beneath the structural footings along the northeast side of the Shop Building in Excavation Area A.
- Soil contaminated with petroleum hydrocarbons was left in place along the south sidewall of Excavation Area B beneath a utility corridor, concrete/fence structure, and light standards.

If you have any questions, please call Jerry Wickham at (510) 567-6791. Thank you.

Sincerely,

Donna L. Drogos, P.E.  
LOP and SLIC Program Manager

Enclosures: SLIC Case Closure Summary

David Mik  
November 30, 2005  
Page 2

cc: Cherie McCaulou (w/enc.)  
San Francisco Bay Regional Water Quality Control Board  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

Marty Spears (w/enc.)  
Power Engineering Contractors  
1501 Viking Street, Suite 200  
Alameda, CA 94501

Donna Drogos, ACEH (w/enc.)  
Roseanna Garcia-LaGrille (w/enc.)  
Jerry Wickham, ACEH (w/ original enc)

File

**CASE CLOSURE SUMMARY  
SPILLS, LEAKS, INVESTIGATION, AND CLEANUP PROGRAM**

**I. AGENCY INFORMATION**

Date: November 29, 2005

Agency Name: Alameda County Environmental Health	Address: 1131 Harbor Bay Parkway
City/State/Zip: Alameda, CA 94502-6577	Phone: (510) 567-6791
Responsible Staff Person: Jerry Wickham	Title: Hazardous Materials Specialist

**II. CASE INFORMATION**

Site Facility Name: Stone Boat Yard		
Site Facility Address: 2517 Blanding Avenue, Alameda, CA		
RB Case No.: --	Local Case No.: --	LOP Case No.: RO0002861
URF Filing Date: --	SWEEPS No.: ---	APN: 070-0196-024-00
Responsible Parties	Addresses	Phone Numbers
David Mik	Power Engineering, 1501 Viking Street, Suite 200, Alameda, CA	510-337-3800

Tank I.D. No	Size in Gallons	Contents	Closed In Place/Removed?	Date
1	500	Gasoline	Closed in place	December 16, 1999
Piping			Removed	NA

**III. RELEASE AND SITE CHARACTERIZATION INFORMATION**

Cause and Type of Release: Elevated metals and petroleum hydrocarbons in soil from boat yard activities		
Site characterization complete? Yes	Date Approved By Oversight Agency: ----	
Monitoring wells installed? No	Number: 0	Proper screened interval? --
Highest GW Depth Below Ground Surface: 5 feet	Lowest Depth: 10'	Flow Direction: Presumed to northeast toward adjacent canal
Most Sensitive Current Use: Potential drinking water source.		

Summary of Production Wells in Vicinity:

A well survey was completed for the Former Signal Oil Marine Terminal at 2332 Blanding Avenue. The closest water supply well to the site is an irrigation well of unknown depth that is approximately 900 feet south of the site. No water supply wells will be impacted by the site.

Are drinking water wells affected? No	Aquifer Name: East Bay Plain
Is surface water affected? No	Nearest SW Name: Alameda Tidal Canal is adjacent to site
Off-Site Beneficial Use Impacts (Addresses/Locations): No	
Reports on file? Yes	Where are reports filed? Alameda County Environmental Health (and Oakland Fire Department)

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL			
Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tank	--	--	--
Piping	--	--	--
Free Product	--	--	--
Soil	1,542 tons	1,440 tons disposed at West Contra Costa Landfill in Richmond, CA 102 tons disposed as Class I RCRA waste at Safety-Kleen Landfill in Buttonwillow, CA	March 2005
Groundwater	10,000 gallons	Approximately 10,000 gallons of stormwater was pumped from the excavation to an on-site storage tank. The water was sampled and following verbal approval from the Water Board, the storm water was filtered and discharged to the Tidal Canal.	June 2005

**MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS BEFORE AND AFTER CLEANUP**  
 (Please see Attachments 1 through 5 for additional information on contaminant locations and concentrations)

Contaminant	Soil (ppm)		Water (ppb)	
	Before	After	Before	After
TPH (Gas)	840	41	93	93
TPH (Diesel)	9,500	150	1,000	1,000
TPH (Motor Oil)	5,100	490	<300	<300
Oil & Grease	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed
Benzene	<0.005	<0.005	<0.5	<0.5
Toluene	<0.005	<0.005	<0.5	<0.5
Ethylbenzene	0.034	<0.005	<0.5	<0.5
Xylenes	0.023	<0.005	<0.5	<0.5
Lead	67,000	159	1,400(1)	1,400(1)
Copper	3,600	10	1,900(2)	1,900(2)
Zinc	1,200	14	4,000(3)	4,000(3)
MTBE	<0.005(4)	<0.005(4)	<5(4)	<5(4)
Other (8240/8270)	4.7(5)	Not Analyzed	<5(6)	<5(6)

- (1) 1,400 µg/L of lead was detected in unfiltered grab groundwater sample; 3.5 µg/L was detected in filtered (0.425 micron) sample
- (2) 1,200 µg/L of copper was detected in unfiltered grab groundwater sample; copper was not detected (<10 µg/L) in filtered (0.425 micron) sample
- (3) 4,000 µg/L of zinc was detected in unfiltered grab groundwater sample; zinc was not detected (20 µg/L) in filtered (0.425 micron) sample
- (4) No other fuel oxygenates analyzed
- (5) Napthalene; no other VOCs detected
- (6) No VOCs detected.

#### Site History and Description of Corrective Actions:

The site borders the Tidal Canal on the northeast end of Alameda Island and was an active boatyard until April 2004. A 500-gallon gasoline underground storage tank (UST) located beneath the sidewalk in front of the office was abandoned in place by filling with cement slurry on December 16, 1999. Based on information from the facility operator, the tank was installed in about 1936 and service was discontinued in 1941. Soil contamination was visually observed around the fill pipe during tank closure. One boring was advanced adjacent to the UST on December 9, 1999. TPH as diesel, TPH as gasoline, BTEX, and MTBE were not detected in one soil sample collected 1.5 to 2 feet below the UST. Based on the sampling results and inspections during tank abandonment, ACEH indicated in correspondence dated January 25, 2000 that no further investigation is warranted for the UST.

A Phase I investigation was conducted at the site in 1999 and was updated in 2004. During the Phase I investigation, an area of metals contaminated fill was identified on the adjacent property to the northwest, which is owned by Allied Engineering and Production Company. The metals-contaminated soil is approximately 8 feet thick where exposed in a bank adjacent to a tidal ditch that is the approximate property boundary. One soil sample collected from the fill soils on the adjacent Allied Engineering property contained elevated concentrations of chromium, nickel, lead, cadmium, and zinc.

During the 2004 update of the Phase I investigation, three sediment samples were collected near the dock and boat ramp. The sediment samples contained elevated concentrations of copper and zinc. This case closure applies to the onshore portion of the site and does not address sediment in the Tidal Canal adjacent to the site.

A Phase 2 environmental investigation was conducted in November 2004. Soil samples were collected from 9 borings and grab groundwater samples were collected from 5 borings. Elevated concentrations of metals and petroleum hydrocarbons were detected in two areas of the site, the Boat Keel Construction Area and the Area Adjacent to the Boat Travelway. Elevated concentrations of lead, chromium, total petroleum hydrocarbons (TPH) as diesel, and TPH as motor oil were detected in soil at the Boat Keel Construction Area. Elevated concentrations of TPH as diesel, TPH as gasoline, and copper were detected in soil in the Area Adjacent to the Boat Travelway.

TPH as diesel was detected in each of the five grab groundwater samples collected at the site at concentrations ranging from 86 to 1,100 µg/L. TPH as gasoline was detected in two grab groundwater samples at concentrations of 78 to 93 µg/L but the analytical results were suspected to be related to diesel in groundwater rather than gasoline. Metals were detected in unfiltered grab groundwater samples at elevated concentrations but in samples filtered at the laboratory, metals were not detected or were detected at concentrations below applicable screening criteria.

Excavation and removal of contaminated soil from three areas (Excavation Areas A, B, and C) of the site took place in February and March 2005. Confirmation sampling indicated that soils with concentrations exceeding the proposed cleanup goals (Environmental Screening Levels for Commercial Land Use, San Francisco Bay Regional Water Quality Control Board, February 2005) were removed with the exceptions of one area beneath building footings in Excavation Area A and one area beneath utilities in Excavation Area B. Soils were generally excavated to depths of 8 to 12 feet bgs. Contaminated soils were excavated both inside and outside the Shop building in Excavation Area A to the maximum feasible extent but contaminated soil was left in place under the concrete footings along the northeast side of the building to preserve the structural integrity of the building. Soil samples collected from the corners of the building indicate that remaining TPH as diesel contamination is limited to the area under the footings and the volume of contaminated soil beneath the footings is estimated to not exceed 10 cubic yards. In Excavation Area B, contamination was left in place along the south sidewall beneath a utility corridor, concrete/fence structure, and light standards. An investigation consisting of 8 borings was conducted in the adjacent off-site area to the southeast to delineate the extent of soil contamination. No analytes were detected at concentrations exceeding environmental screening levels for residential use in the 18 soil samples collected in the off-site area. Approximately 1,440 tons of excavated soil with petroleum hydrocarbon contamination was transported to the West Contra Costa Sanitary Landfill in Richmond, CA. Approximately 102 tons of metals-contaminated soil was removed from the site under hazardous waste manifest and disposed of at the Class I Safety-Kleen Landfill in Buttonwillow, CA.

**IV. CLOSURE**

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes No		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes No		
Does corrective action protect public health for current land use? Alameda County Environmental Health staff does not make specific determinations concerning public health risk. However, based upon the information available in our files to date, it does not appear that the release would present a risk to human health based upon current land use and conditions.		
Site Management Requirements: Case closure for the fuel leak site is granted for commercial land use. If a change in land use to residential or other conservative scenario occurs at this property, Alameda County Environmental Health must be notified and the case needs to be re-evaluated.		
Should corrective action be reviewed if land use changes? Yes		
Was a deed restriction or deed notification filed? No		Date Recorded: --
Monitoring Wells Decommissioned: No	Number Decommissioned: 0	Number Retained: 0
List Enforcement Actions Taken: None		
List Enforcement Actions Rescinded: None		

**V. ADDITIONAL COMMENTS, DATA, ETC.**

Considerations and/or Variances:

This case closure applies to the onshore portion of the site and does not address potential sediment contamination in the submerged areas of the Tidal Canal bordering the site.

An estimated 10 cubic yards or less of soil contamination with TPH as diesel was left in place beneath the structural footings along the northeast side of the Shop Building in Excavation Area A. Soil contaminated with petroleum hydrocarbons was left in place along the south sidewall of Excavation Area B beneath a utility corridor, concrete/fence structure, and light standards.

Conclusion:

Alameda County Environmental Health staff believe that the low levels of residual contamination at the site do not pose a significant threat to water resources, public health and safety, and the environment based upon the information in our files to date. No further investigation or cleanup is necessary. ACEH staff recommend case closure for this site.

**VI. LOCAL AGENCY REPRESENTATIVE DATA**

Prepared by: Jerry Wickham	Title: Hazardous Materials Specialist
Signature: <i>Jerry Wickham</i>	Date: 11/29/05
Approved by: Donna L. Drogos, P.E.	Title: Supervising Hazardous Materials Specialist
Signature: <i>Donna L. Drogos</i>	Date: 11/29/05

This closure approval is based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions.

## VII. REGIONAL BOARD NOTIFICATION

Regional Board Staff Name: Cherie McCaulou	Title: Engineering Geologist
RB Response: Concur, based solely upon information contained in this case closure summary.	Date Submitted to RB:
Signature: <i>Cherie McCaulou</i>	Date: 11/30/05

## VIII. MONITORING WELL DECOMMISSIONING

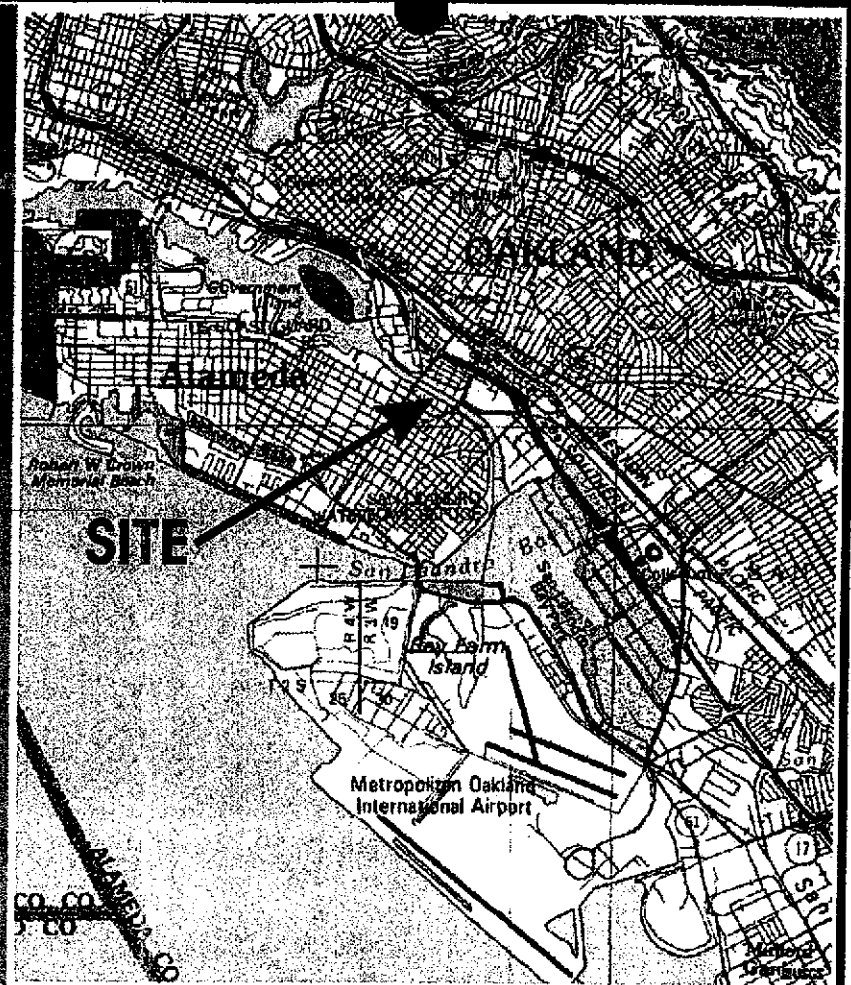
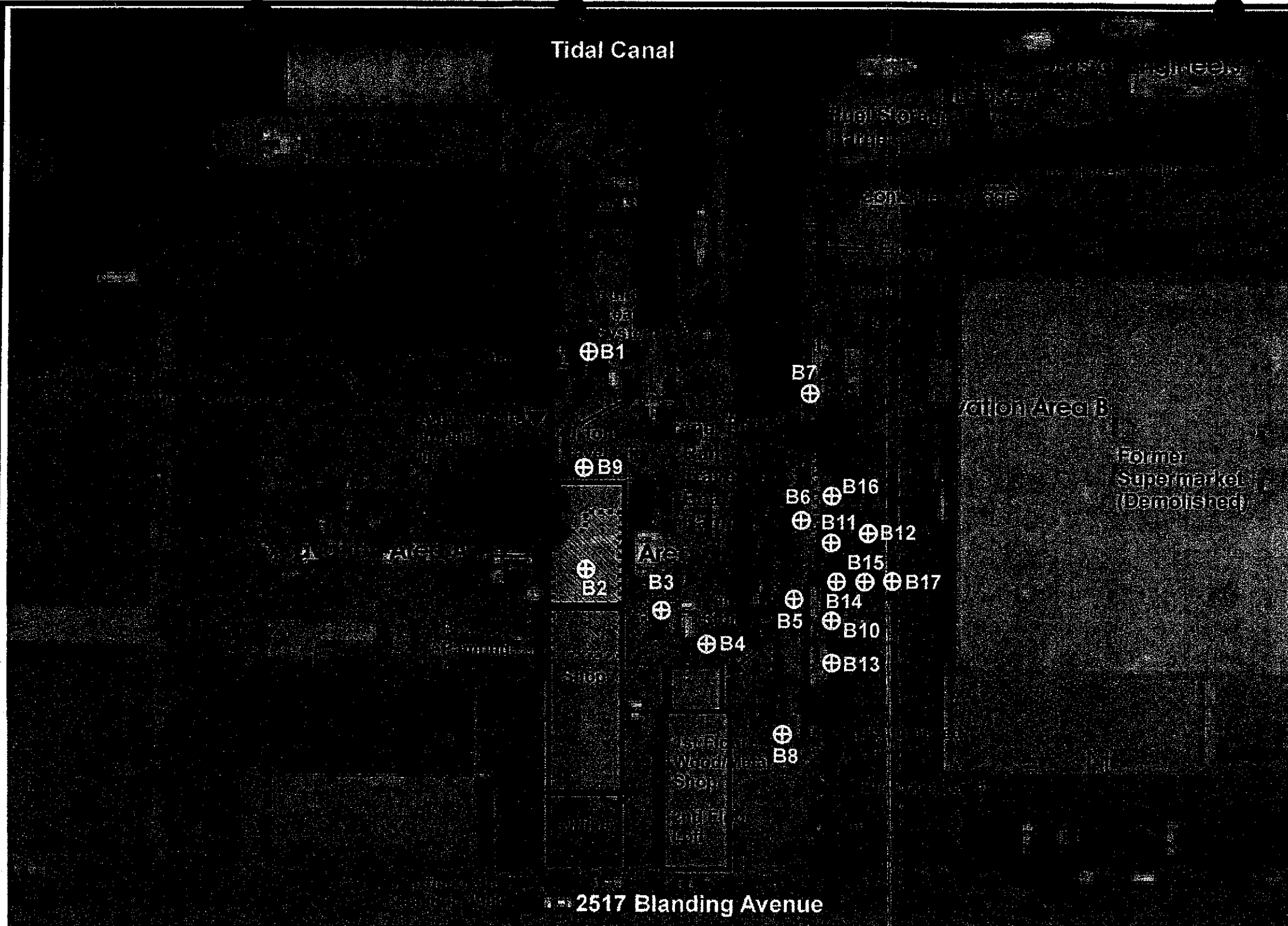
Date Requested by ACEH: NA	Date of Well Decommissioning Report: NA	
All Monitoring Wells Decommissioned: NA	Number Decommissioned: -	Number Retained: -
Reason Wells Retained: NA		
Additional requirements for submittal of groundwater data from retained wells: NA		
ACEH Concurrence - Signature: <i>Jerry Michalski</i>	Date: 11/29/05	

## Attachments:

1. Site Plan/Excavation Sampling Locations (4 pages)
2. Analytical Sampling Results for Soils (4 pages)
3. Analytical Sampling Results for Groundwater (1 page)
4. Tank Closure Correspondence dated January 25, 2000 (1 page)
5. Boring Logs (17 pages)

This document and the related CASE CLOSURE LETTER & REMEDIAL ACTION COMPLETION CERTIFICATE shall be retained by the lead agency as part of the official site file.




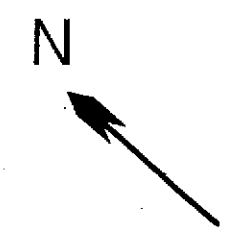


Excavation Area

B1 ⊕ Borehole Location  
 B1- B9 (11/2/04), B10 - B17 (6/23/05)




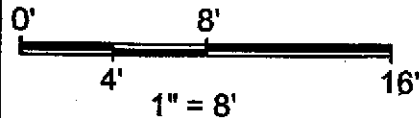
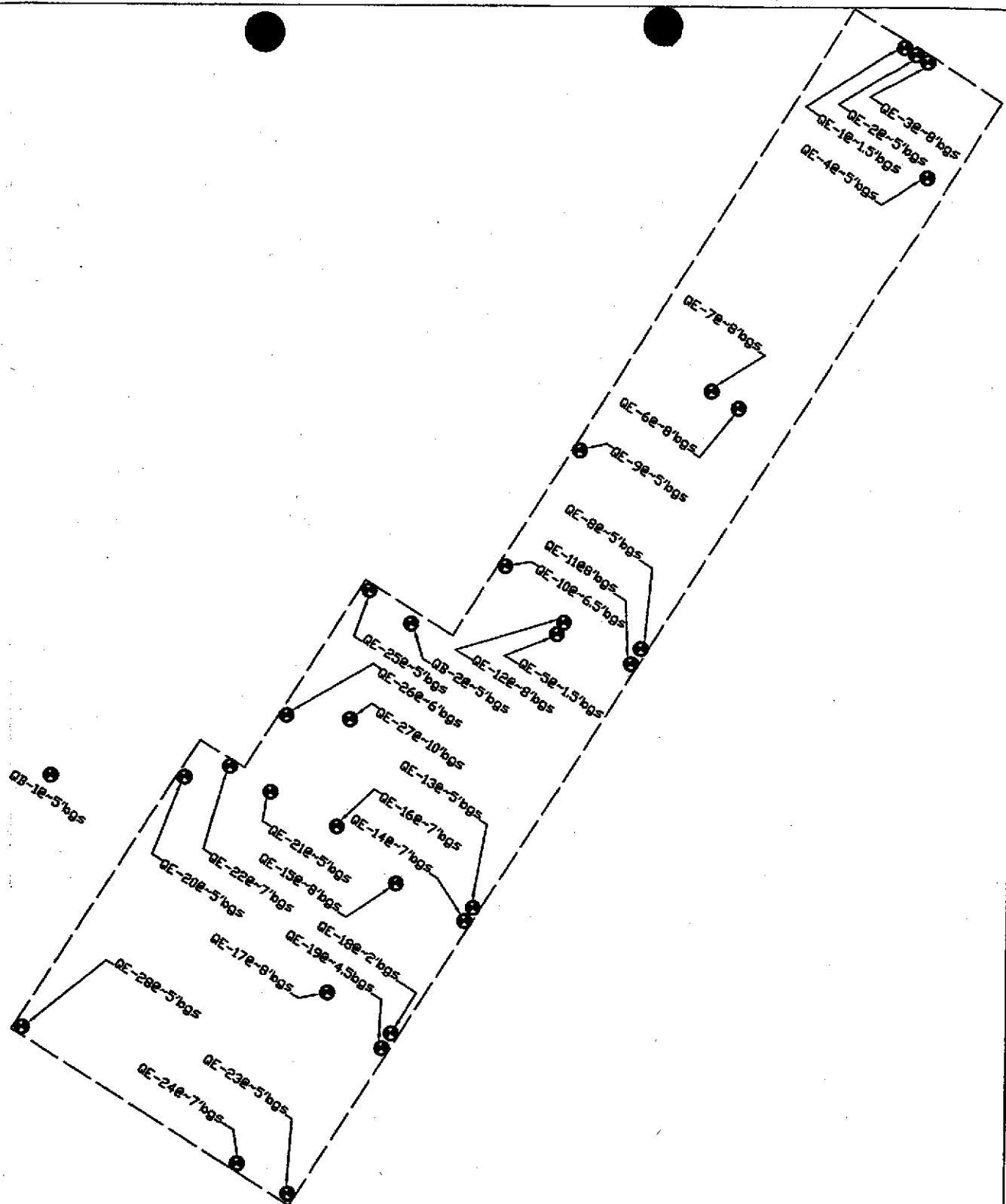
Date: 07/06/05 Drawn: JF Appr'd: WH Dwg. No. 240165_phase3fig.	 QUESTA ENGINEERING CORP. P.O. Box 70366 1220 Brickyard Cove Road, P.O. Box 70366 Richmond, CA 94807	Site Plan/Excavations Stone Boat Yard Alameda, California	FIGURE <b>1</b>
-------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------	--------------------



- G2 X Location of Grab Sample (9/28/04)
- B1 ⊕ Borehole Location (11/2/04)

0 40 80 feet  
scale is approximate only

Date: 11/05/04 Drawn: JF Appr'd: JP Dwg. No. 240165phase2...	 <p>QUESTA ENGINEERING CORP. Environmental &amp; Water Resources P.O. Box 70556 1220 Brickyard Cove Road Point Richmond, CA 94807</p>	Stone Boat Yard Phase 2 Investigation Alameda, California	FIGURE <b>1</b>
-----------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------	--------------------



● QE  
Sample Location



Date: 7/6/2005  
 Drawn: C.H.  
 Appr'd: W.H.  
 Proj. No: 240165

**QUESTA**  
 ENGINEERING CORP.  
 Civil Environmental & Water Resources  
 (510) 236-6114  
 FAX (510) 236-2423  
 queste@questaec.com  
 P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807

**Stone Boat Yard  
 Excavation B  
 Sampling Plan  
 Alameda, California**

FIGURE  
**3**



Excavation A



scale is approximate only



B1 ⊕

Sample Location

Date: 05/25/05  
 Drawn: JF  
 App'd: WH  
 Dwg. No. 240185\_excavation..

**QUESTA**  
 ENGINEERING CORP.  
 Civil Environmental & Water Resources  
 1812 23rd St. #114  
 PO. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807  
 (415) 231-1144  
 FAX (415) 231-0222  
 www.questa.com

Stone Boat Yard  
 Excavation A and C  
 Sampling Plan  
 Alameda, California

FIGURE  
**2**

Table 2. Results of Analytical Testing for Excavation Soil Samples- Excavation A

SAMPLE NUMBER AND DEPTH (FT)	TPH Gasoline (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Cu	Pb	TPH Diesel (mg/kg)	TPH Motor Oil (mg/kg)	Comments
QEA-1 @ 2.0'	na	na	na	na	na	9.1	5.2	na	na	
QEA-2 @ 2'	na	na	na	na	na	na	39	na	na	
QEA-3 @ 2'	na	na	na	na	na	na	440	na	na	Excavated- see QEA-14@2.5'
QEA-4 @ 3'	11	ND	ND	ND	ND	na	140	960	970	Excavated- see QEA-25@5'
QEA-5 @ 9'	34	ND	ND	ND	ND	na	3.5	700	210	Excavated- see QEA-6@10'
QEA-6 @ 10'	ND	ND	ND	ND	ND	na	2.4	ND	ND	
QEA-7 @ 9.5'	ND	ND	ND	ND	ND	na	2.4	ND	ND	
QEA-8 @ 6'	ND	ND	ND	ND	ND	na	2.3	12	25	
QEA-9 @ 5.5'	ND	ND	ND	ND	ND	na	2.9	ND	ND	
QEA-10 @ 8'	ND	ND	ND	ND	ND	na	2.7	ND	ND	
QEA-11 @ 6'	17	ND	ND	ND	0.023	na	3.8	640	230	Excavated- see QEA 12@10' and QEA-16@7'
QEA-12 @ 10'	ND	ND	ND	ND	ND	na	2.3	ND	ND	
QEA-13 @ 7'	ND	ND	ND	ND	ND	na	2.7	ND	ND	
QEA-14 @ 2.5'	na	na	na	na	na	na	180	na	na	Excavated- see QEA-36@2'
QEA-15 @ 2'	na	na	na	na	na	na	16	na	na	
QEA-16 @ 7.0'	ND	ND	ND	ND	ND	na	3.5	ND	ND	
QEA-23 @ 12'	ND	ND	ND	ND	ND	na	na	ND	ND	
QEA-24 @ 5'	ND	ND	ND	ND	ND	na	na	ND	ND	
QEA-25 @ 5'	ND	ND	ND	ND	ND	na	na	ND	ND	
QEA-26 @ 5'	ND	ND	ND	ND	ND	na	na	ND	ND	
QEA-27 @ 8'	ND	ND	ND	ND	ND	na	na	1.5	ND	
QEA-28 @ 8'	ND	ND	ND	ND	ND	na	na	ND	ND	
QEA-29 @ 6' (UFS)	33	ND	ND	0.034	ND	na	na	2,000	490	Under northeast footing of building*
QEA-30 @ 6' (UFN)	41	ND	ND	ND	ND	na	na	1,800	370	Under southeast footing of building*
QEA-33 @ 7'	na	na	na	na	na	na	na	ND	ND	
QEA-34 @ 5'	na	na	na	na	na	na	na	5.2	ND	
QEA-35 @ 4.5'	na	na	na	na	na	na	na	5.7	ND	
QEA-36 @ 2'	na	na	na	na	na	na	159	na	na	
QEA-37 @ 2'	na	na	na	na	na	na	22	na	na	
QEA-38 @ 2'	na	na	na	na	na	na	na	150	66	
QEA-39 @ 2'	na	na	na	na	na	na	na	45	ND	
QEA-40 @ 2'	na	na	na	na	na	na	na	ND	ND	
QEA-41 @ 2'	na	na	na	na	na	na	42	ND	ND	
QEA-42 @ 2'	na	na	na	na	na	na	61	ND	ND	
QEA-AH1	ND	ND	ND	ND	ND	ND	na	ND	ND	Under Southeast corner of building**
QEA-AH2	ND	ND	ND	ND	ND	ND	na	ND	ND	Under Northeast corner of building**
Cleanup Goal	100	0.18	2.9	3.3	1.5	230	750	250	1,000	
ESL Table A Residential (Drinking Water Aquifer)	100	0.044	2.9	3.3	1.5	230	200	100	500	
ESL Table A Commercial (Drinking Water Aquifer)	100	0.044	2.9	3.3	1.5	230	750	100	1,000	
ESL Table B Residential (non-drinking water aquifer)	100	0.18	9.3	4.7	1.5	230	200	500	500	
Environmental Screening Levels (ESLs) Table B Commercial/Industrial (non-drinking water aquifer)	400	0.38	9.3	13	1.5	230	750	500	1,000	

\*Could not excavate soil in this area due to overlying building foundation. \*\*These samples document limits of remaining contamination.

Table 1. Analytical Testing Results for Soil Samples

Constituent	B1-2'	B1-6'	B2-2'	B2-6'	B2-12'	B2-15'	Trap Backfill	B3-1'	B3-5'	B3-10'	B4-1'	B4-5'	B4-15'	B5-1'	B5-5'	B5-8'	B5-15'	B6-1'	B6-5'	B6-10'	B7-1'	B7-5'	B7-10'	B8-1'	B8-6'	B9-1'	B9-6'	Environmental Screening Levels (ESLs) (SFRWQCB) mg/kg	Total Treshhold Limit Concentrations (TTL) (CCR Title 22) mg/kg	
																												Shallow Soil Screening Levels, Commercial/Industrial Land Use (Table B)	Levels at lower limit of what is considered hazardous waste under California law	
METALS																														
Cadmium	3.4	2.5	7.9	2.9	2.6	na	3.8	4.4	3	na	3.3	2.6	na	2.5	3.1	3.5	na	5.3	3.2	na	2.3	<2.4	na	<2.4	2.8	na	na	7.4	100	
Chromium (total)	36	36	<b>100</b>	42	44	na	15	32	40	na	39	42	na	32	38	44	na	43	40	na	30	33	na	28	36	na	na	58**	2,500-total (500-Cr VI)	
Copper	32	12	220	9.2	5.4	na	<b>3,600</b>	89	11	na	140	16	na	45	7.7	8.1	na	<b>3,000</b>	73	na	67	6.8	na	9.2	6.7	na	na	230	2,500	
Lead	110	5.7	<b>67,000</b>	95	11	na	84	<b>1,000</b>	12	na	630	27	na	93	<2.4	<2.4	na	360	3.3	na	24	<2.4	na	7.5	<2.4	na	na	750	1,000	
Nickel	33	35	19	36	44		18	26	40	na	33	27	na	17	36	28	na	22	41	na	21	18	na	7.9	33	na	na	150	2,000	
Zinc	120	5.7	330	26	21	na	420	130	36	na	240	35	na	91	26	25	na	<b>1,200</b>	42	na	56	22	na	15	24	na	na	600	5,000	
TPH GASOLINE (mg/kg)	na	<1.1	150	46	<1.0	na	na	na	na	na	na	na	na	<1.1	85	13	na	<1.1	<b>840</b>	2	<1.0	<1.1	<1.1	<1.0	na	<1.1	400	na		
Benzene	na	ND	ND	ND	ND	na	na	na	na	na	na	na	na	ND	ND	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	na	ND	0.38	na	
Toluene	na	ND	ND	ND	ND	na	na	na	na	na	na	na	na	ND	ND	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	na	ND	9.3	na	
Ethylbenzene	na	ND	ND	ND	ND	na	na	na	na	na	na	na	na	ND	ND	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	na	ND	13	na	
m, p-xylenes	na	ND	ND	ND	ND	na	na	na	na	na	na	na	na	ND	ND	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	na	ND	1.5	na	
o-xylenes	na	ND	ND	ND	ND	na	na	na	na	na	na	na	na	ND	ND	ND	na	ND	ND	ND	ND	ND	ND	ND	ND	na	ND	1.5	na	
TPH DIESEL (mg/kg)	na	1.5	<b>9,500</b>	<b>1,200</b>	4.8	na	na	na	na	na	na	na	na	120	<b>2,400</b>	<b>730</b>	na	170	<b>740</b>	5.5	150	1.7	<1.0	1.2	<1.0	na	100	500	na	
TPH MOTOR OIL (mg/kg)	na	<5.0	<b>5,100</b>	400	<5.0	na	na	na	na	na	na	na	na	170	120	57	na	150	<25	<5.0	96	<5.0	<5.0	<5.0	<5.0	na	170	1,000	na	
Volatile Organic Compounds (except as noted below)																														
Acetone	na	na	ND	na	ND	na	na	na	na	na	na	na	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Methylene Chloride	na	na	ND	na	0.12	na	na	na	na	na	na	na	na	na	0.025	na	na	na	na	na	na	na	na	na	na	na	na	ND	0.5	na
2-Butanone	na	na	ND	na	ND	na	na	na	na	na	na	na	na	na	0.021	na	na	na	na	na	na	na	na	na	na	na	na	ND	1.5	na
Ethylbenzene	na	na	ND	na	ND	na	na	na	na	na	na	na	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	ND	none	na
m,p-xylenes	na	na	ND	na	ND	na	na	na	na	na	na	na	na	na	0.007	na	na	na	na	na	na	na	na	na	na	na	na	ND	13	na
Isopropylbenzene	na	na	ND	na	ND	na	na	na	na	na	na	na	na	na	0.005	na	na	na	na	na	na	na	na	na	na	na	na	ND	1.5	na
Propylbenzene	na	na	0.22	na	ND	na	na	na	na	na	na	na	na	na	0.01	na	na	na	na	na	na	na	na	na	na	na	na	ND	none	na
1,3,5-Trimethylbenzene	na	na	0.21	na	ND	na	na	na	na	na	na	na	na	na	0.027	na	na	na	na	na	na	na	na	na	na	na	na	ND	none	na
tert-Butylbenzene	na	na	0.15	na	ND	na	na	na	na	na	na	na	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	ND	none	na
1,2,4-Trimethylbenzene	na	na	0.82	na	ND	na	na	na	na	na	na	na	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	ND	none	na
sec-Butylbenzene	na	na	0.38	na	ND	na	na	na	na	na	na	na	na	na	0.17	na	na	na	na	na	na	na	na	na	na	na	na	ND	none	na
para-Isopropyl Toluene	na	na	0.41	na	ND	na	na	na	na	na	na	na	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	ND	none	na
n-Butylbenzene	na	na	0.74	na	ND	na	na	na	na	na	na	na	na	na	ND	na	na	na	na	na	na	na	na	na	na	na	na	ND	none	na
Napthalene	na	na	4.7	na	ND	na	na	na	na	na	na	na	na	na	0.067	na	na	na	na	na	na	na	na	na	na	na	na	ND	none	na
															0.053	na	na	na	na	na	na	na	na	na	na	na	na	ND	4.8	na

ND- None Detected; na- not analyzed; All results in Milligrams per Kilogram (mg/kg) unless Sample results shown in **bold** exceed the hazardous waste level (TTL); sample results in **bold italics** exceed the ESL.

Table 3. Results of Analytical Testing for Excavation Soil Samples- Excavation B

SAMPLE NUMBER AND DEPTH (FT)	TPH Gasoline (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Cu	Zn	TPH Diesel (mg/kg)	TPH Motor Oil (mg/kg)	Comments
QE(B)-1 @ 1.5'	na	na	na	na	na	10	14	na	na	
QE(B)-2 @ 5'	ND	na	na	na	na	na	na	ND	na	
QE(B)-3 @ 8'	ND	na	na	na	na	na	na	ND	na	
QE(B)-4 @ 4'	ND	na	na	na	na	na	na	ND	na	
QE(B)-5 @ 1.5'	na	na	na	na	na	6.5	7.5	na	na	
QE(B)-6 @ 8'	25	na	na	na	na	na	na	22	ND	
QE(B)-7 @ 8'	ND	na	na	na	na	na	na	ND	ND	
QE(B)-8 @ 5'	ND	ND	ND	ND	ND	na	na	ND	ND	
QE(B)-9 @ 5'	ND	ND	ND	ND	ND	na	na	ND	ND	
QE(B)-10 @ 6.5'	320	ND	ND	ND	0.85	na	na	370	ND	Adjacent to Travelway
QE(B)-11 @ 8.0'	1.9	ND	ND	ND	ND	na	na	13	ND	
QE(B)-12 @ 8.0'	ND	ND	ND	ND	ND	na	na	ND	ND	
QE(B)-13 @ 5.0'	ND	na	na	na	na	na	na	450	63	see Off-site boreholes
QE(B)-14 @ 7.0'	24	na	na	na	na	na	na	77	74	
QE(B)-15 @ 8.0'	1.3	na	na	na	na	na	na	ND	ND	
QE(B)-16 @ 7.0'	100	na	na	na	na	na	na	1,400	ND	see QEB-27@10'
QE(B)-17 @ 10.0'	ND	ND	ND	ND	ND	na	na	ND	ND	
QE(B)-18 @ 2.5'	ND	ND	ND	ND	ND	na	na	ND	ND	
QE(B)-19 @ 4.5'	220	ND	ND	ND	0.2	na	na	1,400	81	see Off-site boreholes
QE(B)-20 @ 5'	ND	ND	ND	ND	ND	na	na	3.9	ND	
QE(B)-21 @ 5'	120	ND	ND	ND	ND	na	na	510	25	see QEB-27@10'
QE(B)-22 @ 7'	11	ND	ND	ND	ND	na	na	3.0	ND	
QE(B)-23 @ 5'	ND	ND	ND	ND	ND	na	na	2.8	ND	
QE(B)-24 @ 7'	ND	ND	ND	ND	ND	na	na	ND	ND	
QB(B)-2 @ 5'	ND	ND	ND	ND	ND	na	na	ND	ND	
QB(B)-3 @ 5.5'	ND	ND	ND	ND	ND	na	na	ND	ND	
QE(B)-25 @ 5'	ND	ND	ND	ND	ND	na	na	ND	ND	
QE(B)-26 @ 6'	2.6	ND	ND	ND	ND	na	na	2.9	ND	
QE(B)-27 @ 10'	ND	ND	ND	ND	ND	na	na	ND	ND	
QE(B)-28 @ 5'	ND	ND	ND	ND	ND	na	na	ND	ND	
Cleanup Goal	100	na	na	na	na	230	600	250	1,000	
ESL Table A Residential (Drinking Water Aquifer)	100	0.044	2.9	3.3	1.5	230	600	100	500	
ESL Table A Commercial (Drinking Water Aquifer)	400	0.044	2.9	3.3	1.5	230	600	100	1,000	
ESL Table B Residential (non-drinking water aquifer)	100	0.18	9.3	4.7	1.5	230	600	500	500	
Environmental Screening Levels (ESLs) Table B Commercial/Industrial (non-drinking water aquifer)	400	0.38	9.3	13	1.5	230	600	500	1,000	

**Table 4. Results of Analytical Testing for Soil Samples from Off-Site Boreholes**

<b>BOREHOLE NUMBER AND DEPTH (FT)</b>	<b>TPH Gasoline (mg/kg)</b>	<b>Benzene (mg/kg)</b>	<b>Toluene (mg/kg)</b>	<b>Ethyl-benzene (mg/kg)</b>	<b>Total Xylenes (mg/kg)</b>	<b>TPH Diesel (mg/kg)</b>	<b>TPH Motor Oil (mg/kg)</b>	<b>Comments</b>
B10 at 2'	ND	ND	ND	ND	ND	43	110	
B10 at 5-5.5'	ND	ND	ND	ND	ND	1.3	ND	
B10 at 9'	ND	ND	ND	ND	ND	ND	ND	
B11 at 2'	ND	ND	ND	ND	ND	28	91	
B11 at 6-6.5'	ND	ND	ND	ND	ND	ND	ND	
B11 at 10'	ND	ND	ND	ND	ND	68	19	
B12 at 6-6.5'	ND	ND	ND	ND	ND	ND	ND	
B12 at 9.5-10'	ND	ND	ND	ND	ND	ND	ND	
B13 at 6'	ND	ND	ND	ND	ND	1.3	ND	
B13 at 9.5-10'	ND	ND	ND	ND	ND	ND	ND	
B14 at 2'	ND	ND	ND	ND	ND	30	85	
B14 at 6-6.5'	ND	ND	ND	ND	ND	ND	ND	
B14 at 10'	ND	ND	ND	ND	ND	2.7	ND	
B15 at 5.5-6'	ND	ND	ND	ND	ND	ND	ND	
B15 at 8-8.5'	ND	ND	ND	ND	ND	ND	ND	
B15 at 10'	ND	ND	ND	ND	ND	ND	7.2	
B16 at 8'	ND	ND	ND	ND	ND	ND	5.4	
B17 at 7'	ND	ND	ND	ND	ND	ND	6.7	
Cleanup Goal	100	na	na	na	na	250	1,000	
ESL Table A Residential (Drinking Water Aquifer)	100	0.044	2.9	3.3	1.5	100	500	
ESL Table A Commercial (Drinking Water Aquifer)	400	0.044	2.9	3.3	1.5	100	1,000	
ESL Table B Residential (non-drinking water aquifer)	100	0.18	9.3	4.7	1.5	500	500	
Environmental Screening Levels (ESLs) Table B Commercial/Industrial (non-drinking water aquifer)	400	0.38	9.3	13	1.5	500	1,000	



**Table 2. Analytical Testing Results for Groundwater Samples**

Constituent	B2-GW	B2-GW	B3-GW	B3-GW	B4-GW	B4-GW	B5-GW	B5-GW	B9-GW	B9-GW	BLANK	(SFRWQCB) micrograms/Liter for Sites with Shallow Soils with groundwater less than 3 meters below ground surface, groundwater is not
METALS	Unfiltered	Filtered through 0.425 micro-meter filter.	Unfiltered	Filtered through 0.425 micro-meter filter	Unfiltered	Filtered through 0.425 micro-meter filter	Unfiltered	Filtered through 0.425 micro-meter filter	Unfiltered	Filtered through 0.425 micro-meter filter	Unfiltered	
Cadmium	ND	ND	100	<5.0	300	ND	ND	ND	70	ND	na	2.2
Chromium (total)	1,400	ND	1,600	ND	6,200	ND	570	ND	930	ND	na	180
Copper	290	ND	360	ND	1,900	ND	210	ND	100	ND	na	3.1
Lead	1,400	3.5	50	ND	410	ND	ND	ND	ND	ND	na	2.5
Nickel	1,200	ND	1,200	ND	530	ND	410	ND	660	ND	na	8.2
Zinc	780	23	930	ND	4,000	ND	320	ND	450	ND	na	81
TPH GASOLINE	93	na	<50	na	<50	na	78	na	<50	na	<50	500
Benzene	ND	na	ND	na	ND	na	ND	na	ND	na	ND	46
Toluene	ND	na	ND	na	ND	na	ND	na	ND	na	ND	130
Ethylbenzene	ND	na	ND	na	ND	na	ND	na	ND	na	ND	290
m, p-xylenes	ND	na	ND	na	ND	na	ND	na	ND	na	ND	130
o-xylenes	ND	na	ND	na	ND	na	ND	na	ND	na	ND	130
TPH DIESEL	1,000	na	110	na	86	na	610	na	340	na	na	640
TPH MOTOR OIL	<300	na	<300	na	<300	na	<300	na	<300	na	na	640
Volatile Organic Compounds	ND	na	ND	na	ND	na	ND	na	ND	na	ND	

ND- None Detected; na- not analyzed; All results are in micrograms/Liter.

Groundwater samples are grab samples which contained extensive sediment clouding. Concentrations in unfiltered samples do not represent actual groundwater levels, but indicate the presence of compounds within the adjacent soil. Filtered samples more accurately represent the concentration of metals in groundwater, but likely still exceed the levels that are present in groundwater beneath the site.

ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY  
DAVID J. KEARS, Agency Director



*Sent 1/26/00  
Including cc's*

January 25, 2000

ENVIRONMENTAL HEALTH SERVICES  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577  
(510) 567-6700

Ms. Grace Bodle  
2517 Blanding Avenue  
Alameda California 94501

**Subject: Tank closure activities at Stone Boat Yard, 2517  
Blanding Avenue, Alameda CA 94501**

Dear Ms. Bodle:

This office is in receipt of the January 13, 2000 report prepared by Blymyer Engineers, Inc., detailing the activities surrounding the in-place closure of one tank, formerly containing gasoline, at the subject site. The report has been reviewed and it is the opinion of this office that no further investigation is warranted at the site.

This opinion is based upon the available information and with the provision that the information provided to this Agency was accurate and representative of site conditions.

Please contact me at (510) 567-6781 should you have any questions regarding this matter.

Sincerely,

Robert Weston  
Sr. Hazardous Materials Specialist

c: Tom Peacock, ACDEH

ATTACHMENT 4

GW Sample ID

Organic Odor

Soil Sample ID

Blows/Foot

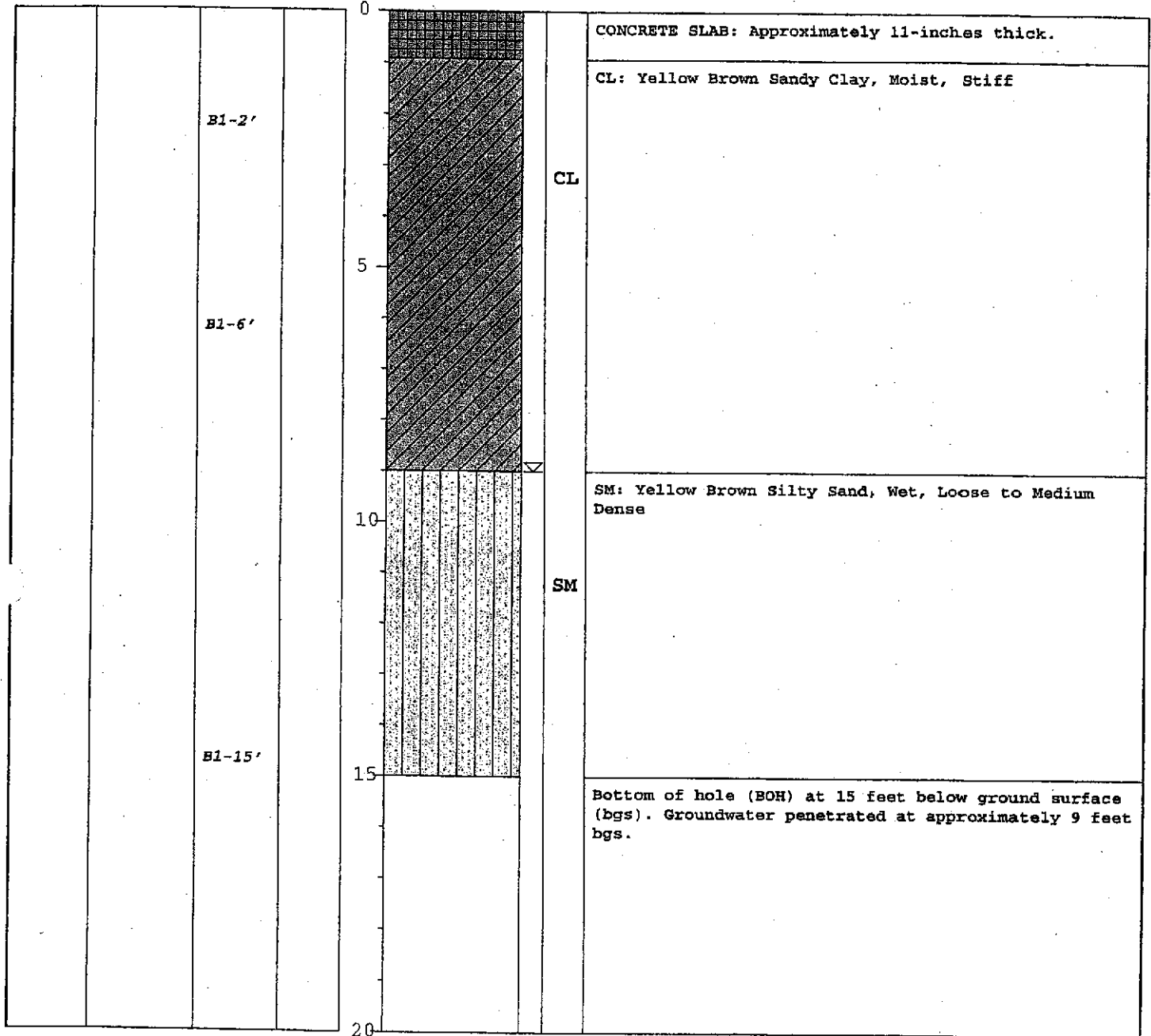
Depth

Graphical Symbol

Groundwater Depth

USCS Symbol

Lithologic Description



**Questa Engineering Corporation**  
 1220 Brickyard Cove Road, Suite 206  
 Point Richmond, CA 94807

**LOG OF BOREHOLE 1**  
 Phase 2 Environmental Investigation  
 2517 Blanding Avenue, Alameda CA

**Figure 2**

GW Sample ID

Organic Odor

Soil Sample ID

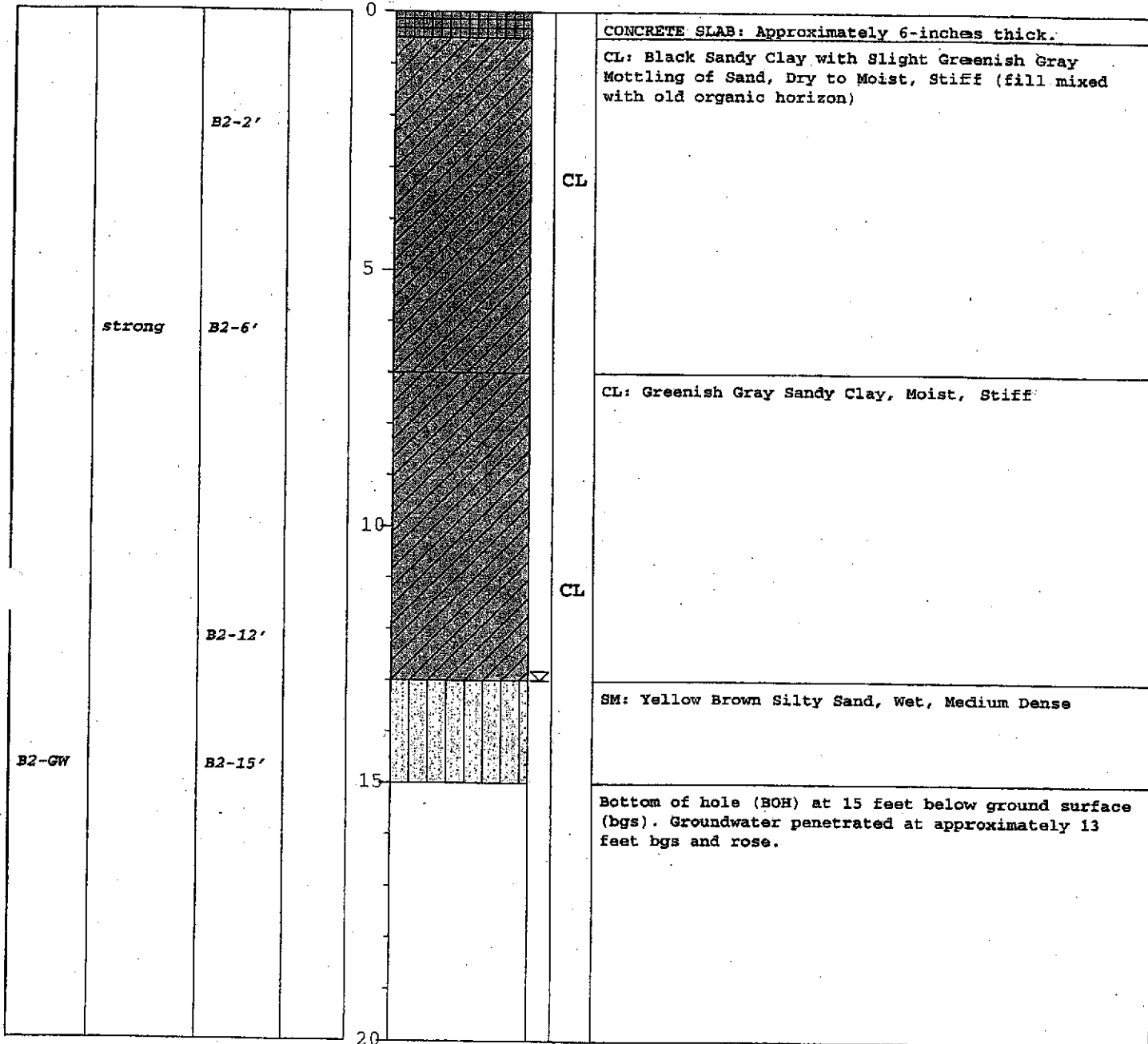
Blows/Foot

Depth

Graphical Symbol

Groundwater Depth  
USCS Symbol

Lithologic Description



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 Point Richmond, CA 94807

**LOG OF BOREHOLE 2**  
 Phase 2 Environmental Investigation  
 2517 Blanding Avenue, Alameda CA

**Figure**  
**3**

GW Sample ID

Organic Odor

Soil Sample ID

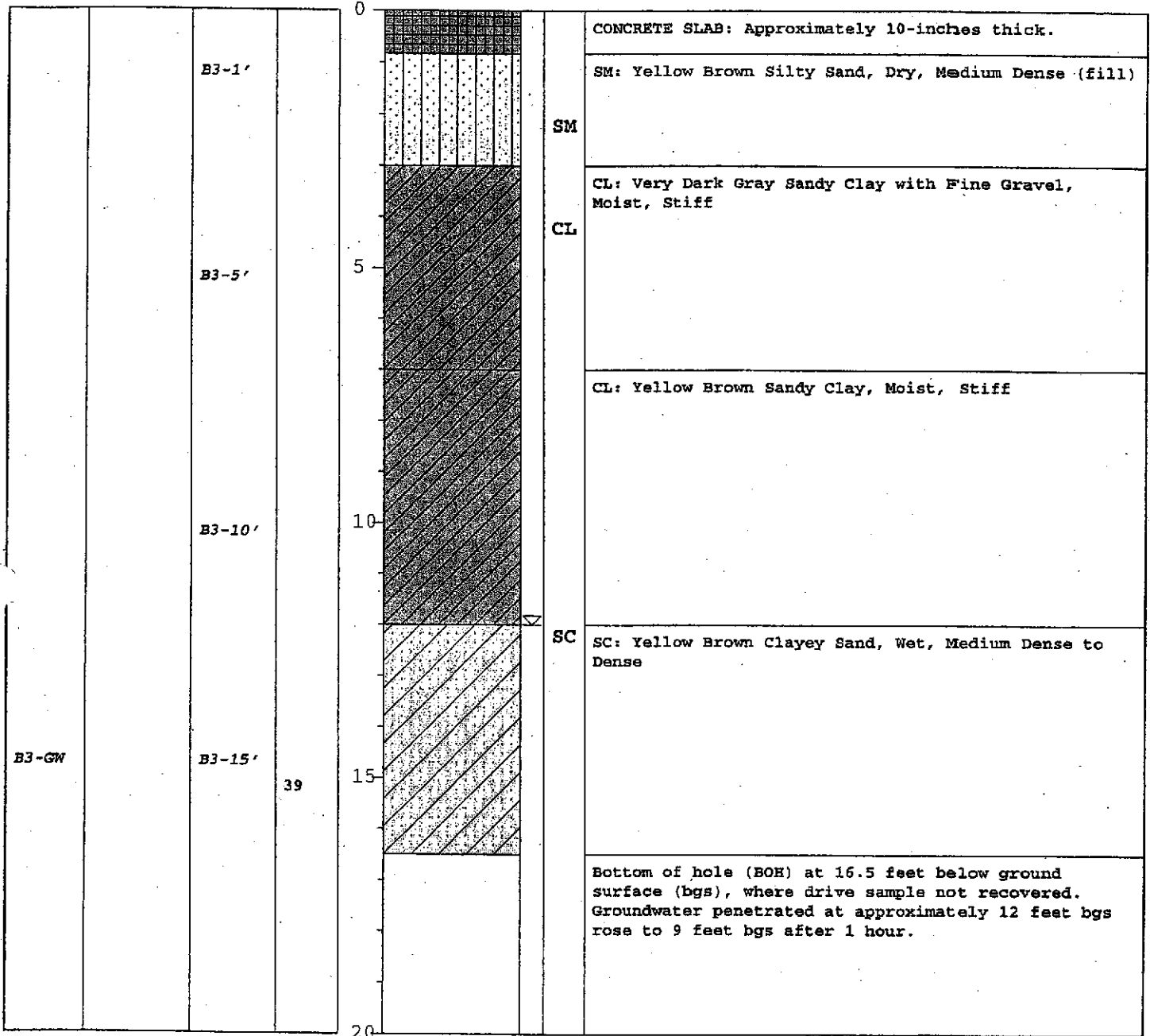
Blows/Foot

Depth

Graphical Symbol

Groundwater Depth  
USCS Symbol

Lithologic Description



**Questa Engineering Corporation**  
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**LOG OF BOREHOLE 3**  
 Phase 2 Environmental Investigation  
 2517 Blanding Avenue, Alameda CA

**Figure**  
**4**

GW Sample ID

Organic Odor

Soil Sample ID

Blows/Foot

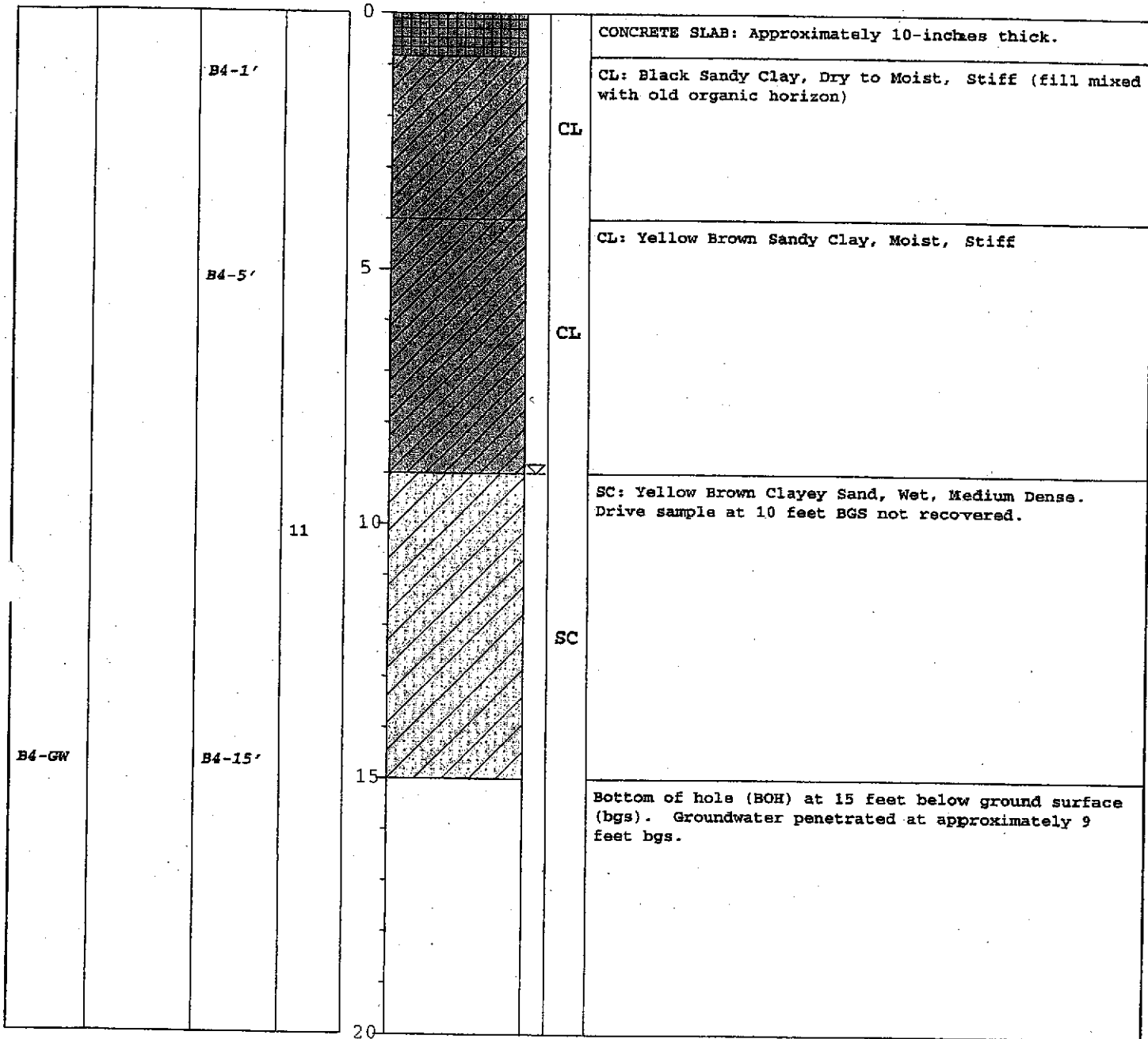
Depth

Graphical Symbol

Groundwater Depth

USCS Symbol

Lithologic Description



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 Point Richmond, CA 94807

**LOG OF BOREHOLE 4**  
 Phase 2 Environmental Investigation  
 2517 Blanding Avenue, Alameda CA

**Figure 5**

GW Sample ID

Organic Odor

Soil Sample ID

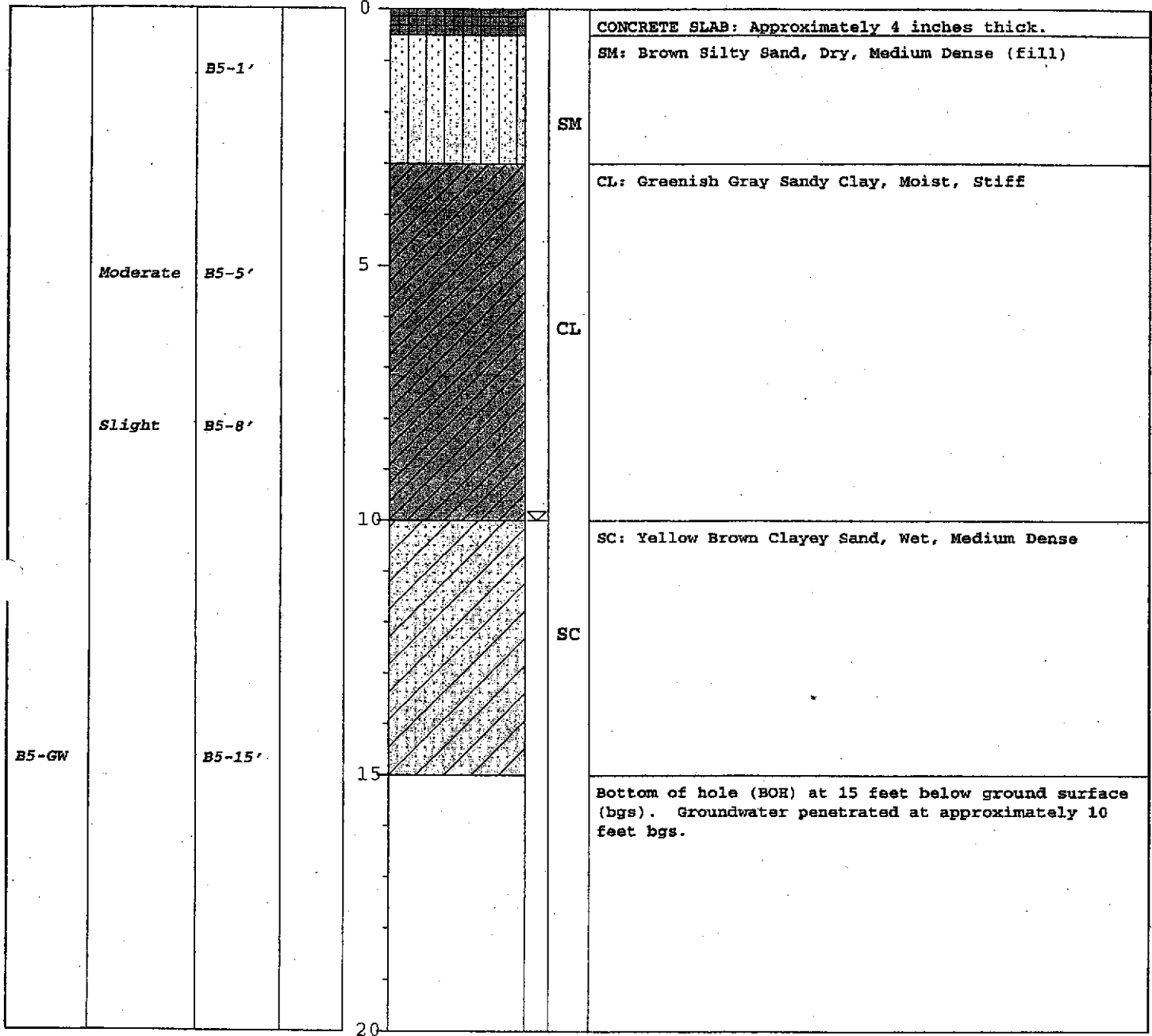
Blows/Foot

Depth

Graphical Symbol

Groundwater Depth  
USCS Symbol

Lithologic Description



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 Point Richmond, CA 94807

**LOG OF BOREHOLE 5**  
 Phase 2 Environmental Investigation  
 2517 Blanding Avenue, Alameda CA

**Figure**  
**6**

GW Sample ID

Organic Odor

Soil Sample ID

Blows/Foot

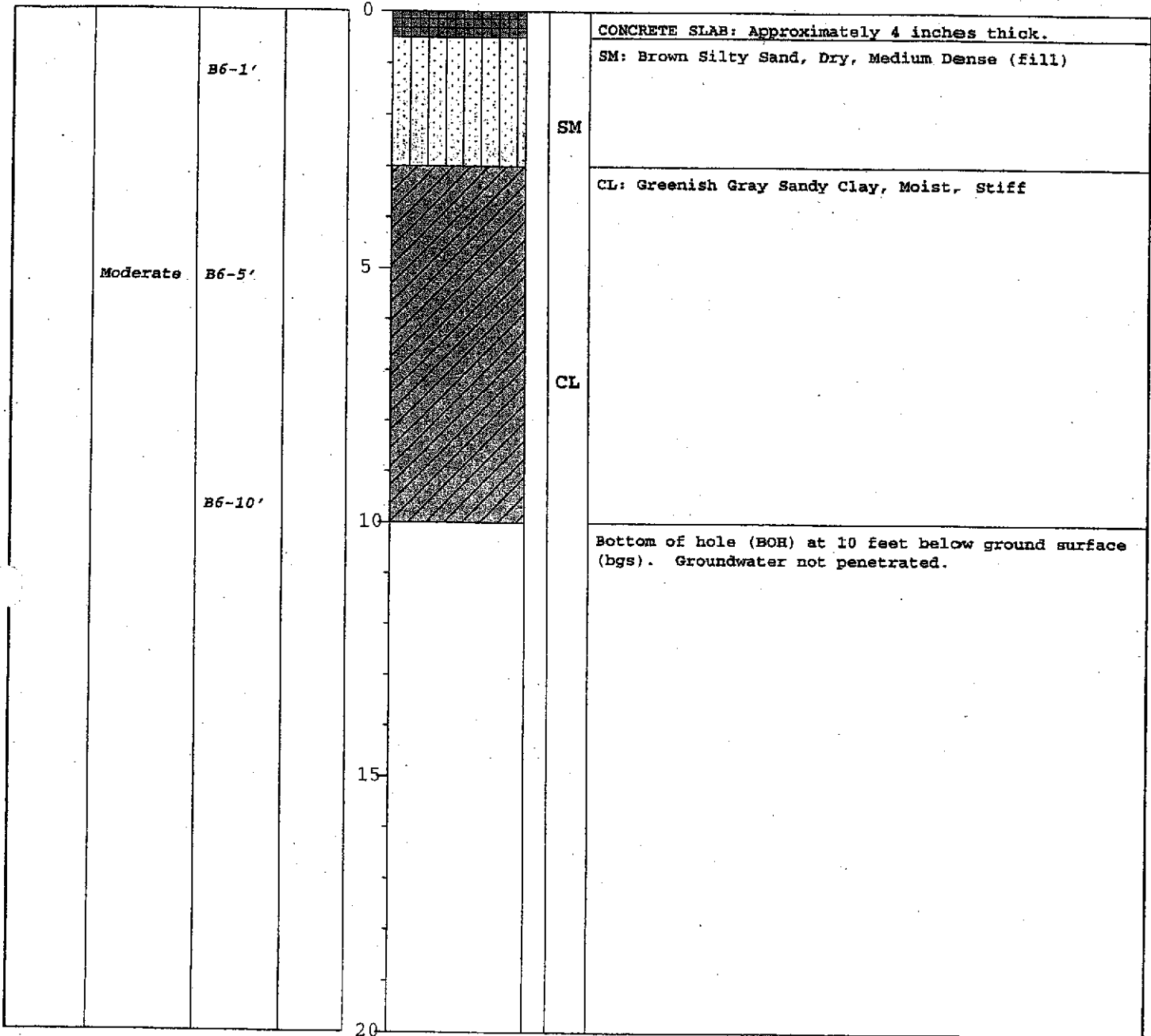
Depth

Graphical Symbol

Groundwater Depth

USCS Symbol

Lithologic Description



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**LOG OF BOREHOLE 6**  
 Phase 2 Environmental Investigation  
 2517 Blanding Avenue, Alameda CA

**Figure**  
**7**



GW Sample ID

Organic Odor

Soil Sample ID

Blows/Foot

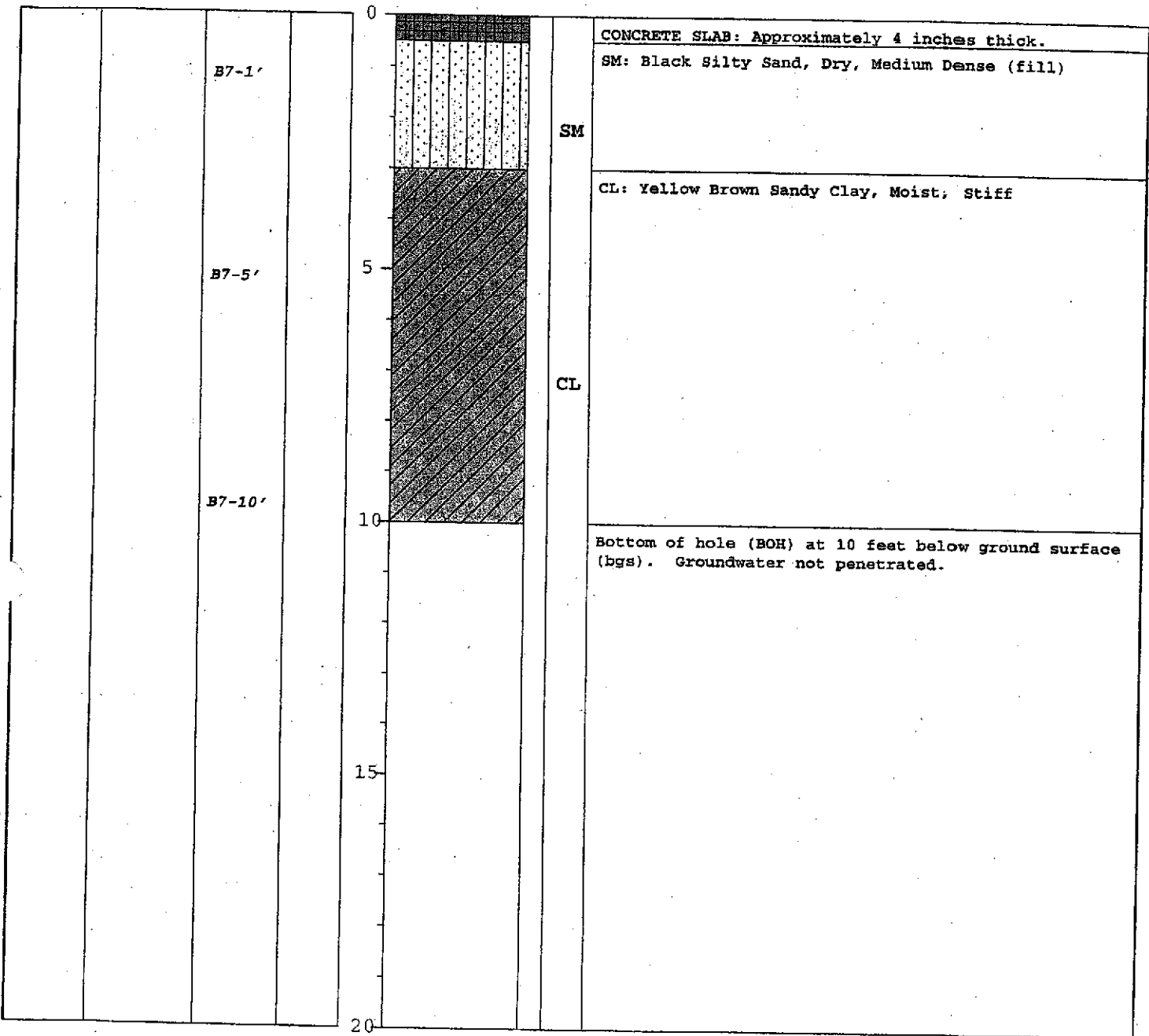
Depth

Graphical Symbol

Groundwater Depth

USCS Symbol

Lithologic Description



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 Point Richmond, CA 94807

**LOG OF BOREHOLE 7**  
 Phase 2 Environmental Investigation  
 2517 Blanding Avenue, Alameda CA

**Figure 8**

GW Sample ID

Organic Odor

Soil Sample ID

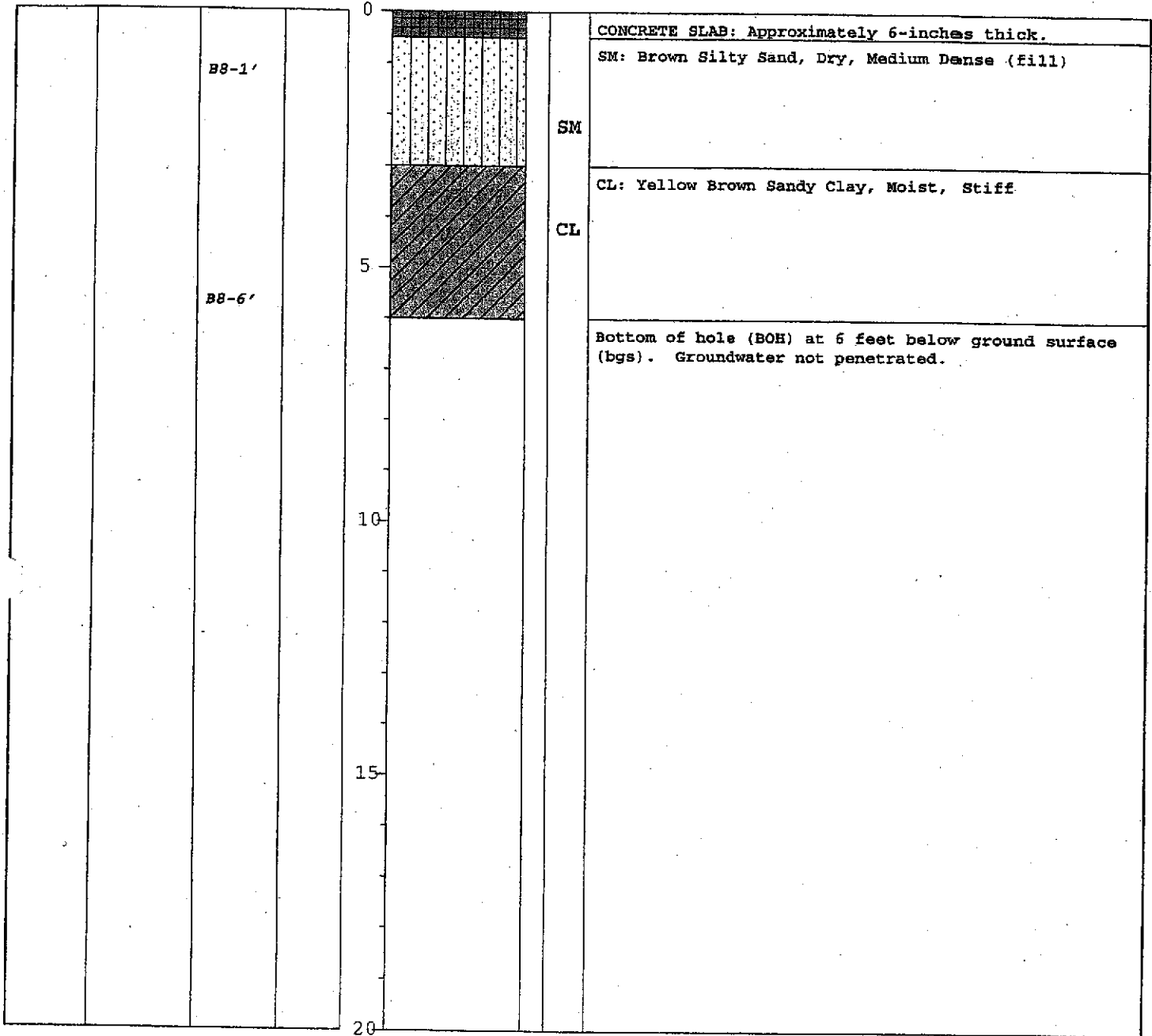
Blows/Foot

Depth

Graphical Symbol

Groundwater Depth  
USCS Symbol

Lithologic Description



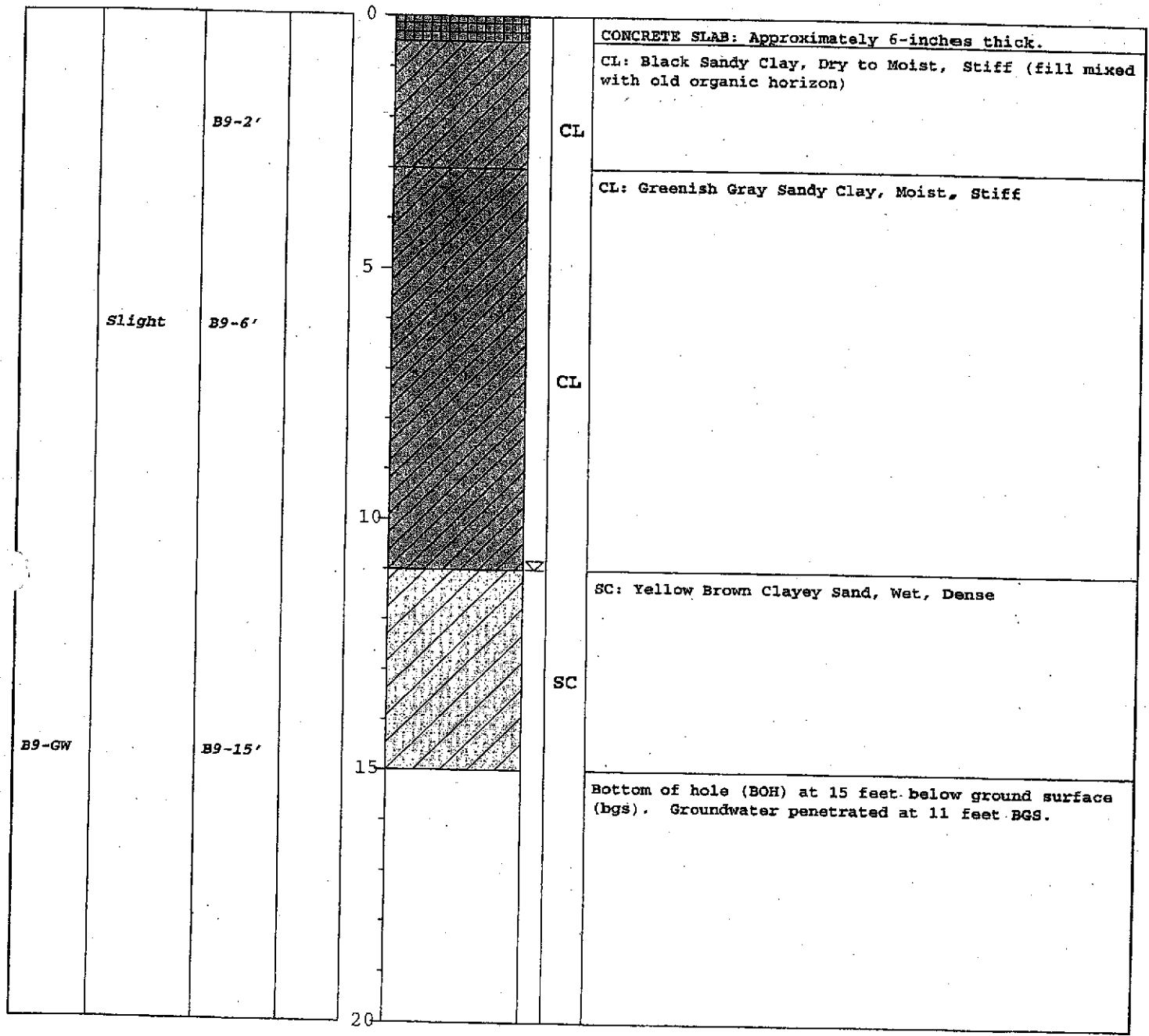
**Questa Engineering Corporation**  
 1220 Brickyard Cove Road, Suite 206  
 Point Richmond, CA 94807

**LOG OF BOREHOLE 8**  
 Phase 2 Environmental Investigation  
 2517 Blanding Avenue, Alameda CA

**Figure 9**

GW Sample ID  
 Organic Odor  
 Soil Sample ID  
 Blows/Foot  
 Depth  
 Graphical Symbol  
 Groundwater Depth  
 USCS Symbol

Lithologic Description



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 Point Richmond, CA 94807

**LOG OF BOREHOLE 9**  
 Phase 2 Environmental Investigation  
 2517 Blanding Avenue, Alameda CA

Figure  
**10**

GW Sample ID

Organic Odor

Soil Sample ID

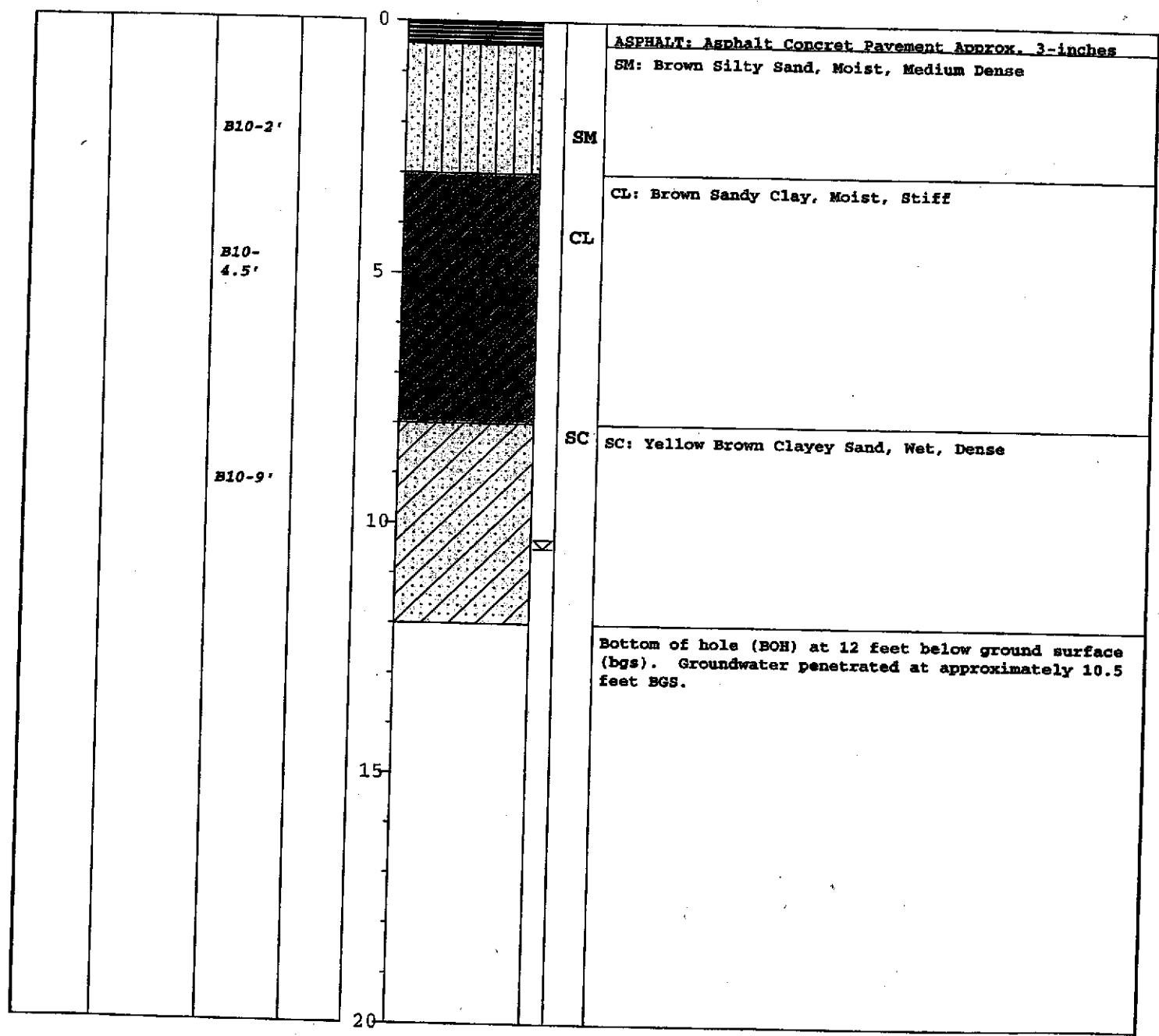
Blows/Foot

Depth

Graphical Symbol

Groundwater Depth  
USCS Symbol

Lithologic Description



GW Sample ID

Organic Odor

Soil Sample ID

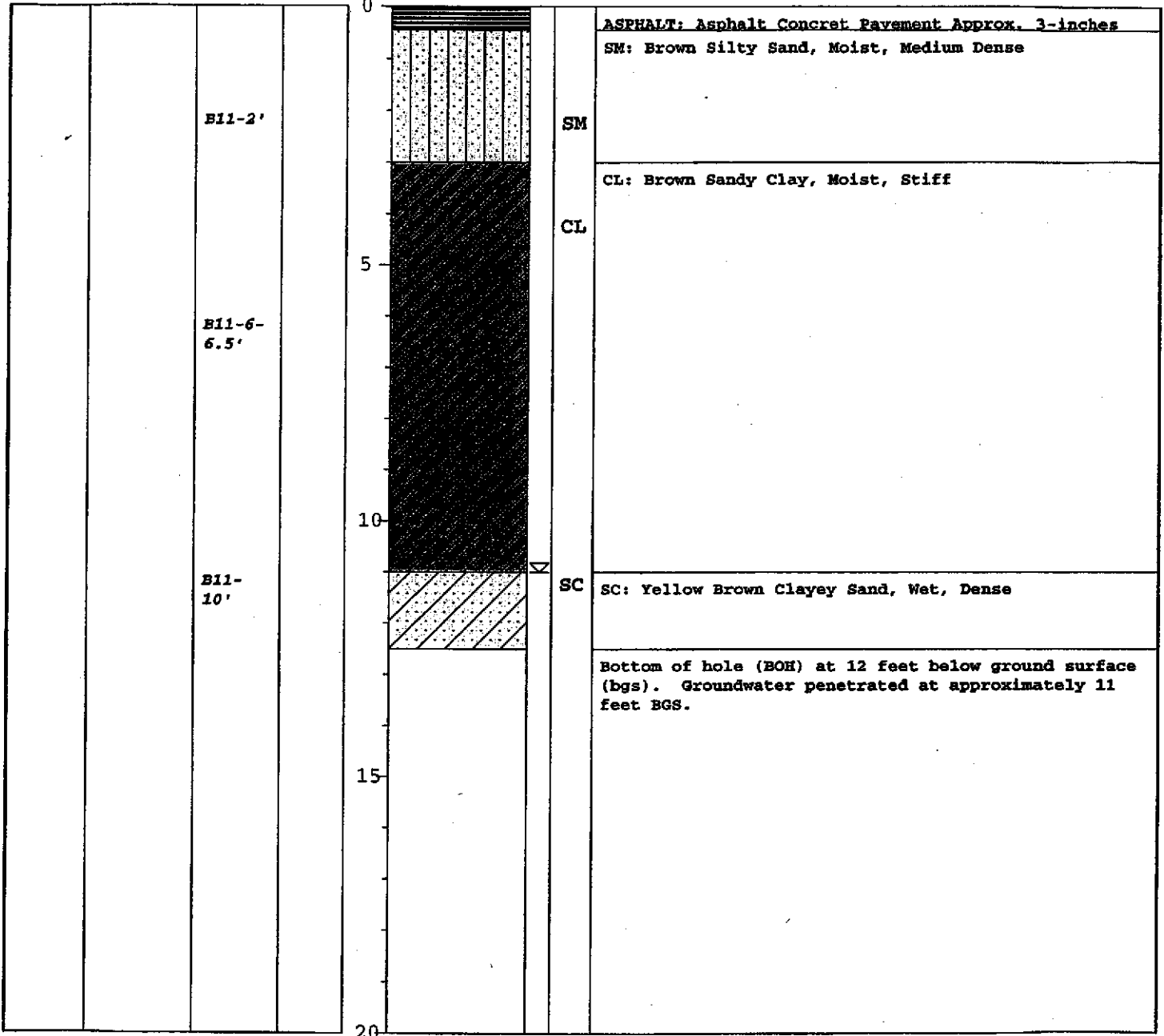
Blows/foot

Depth

Graphical Symbol

Groundwater Depth  
USCS Symbol

Lithologic Description



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 1220 Brickyard Cove Road, Suite 206  
 Point Richmond, CA 94807

**LOG OF BOREHOLE B11**  
 Off-site Investigation  
 2517 Blanding Avenue, Alameda CA

**Figure**  
**5**

GW Sample ID

Organic Odor

Soil Sample ID

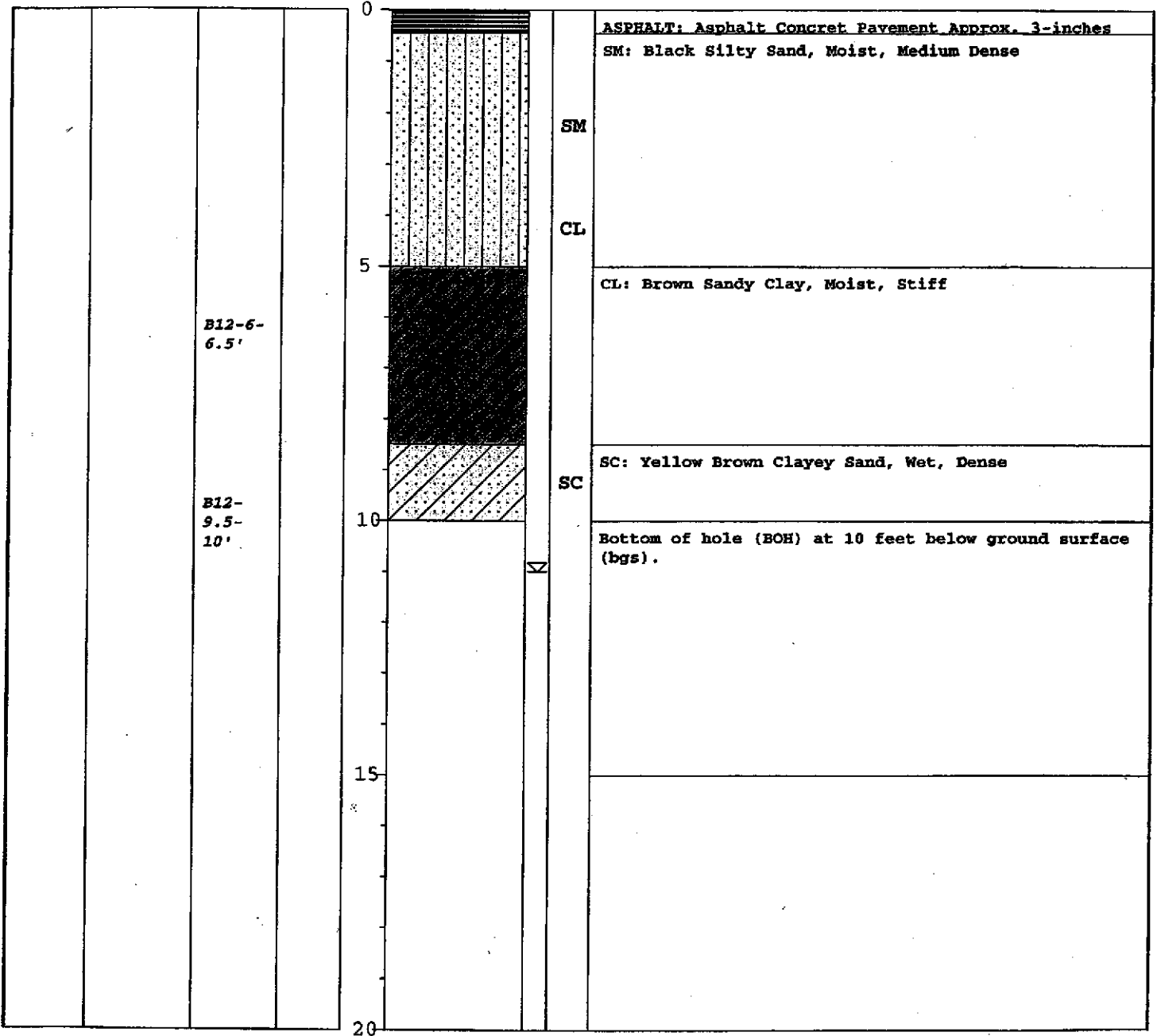
Blows/Foot

Depth

Graphical Symbol

Groundwater Depth  
USCS Symbol

Lithologic Description



Questa Engineering Corporation

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Point Richmond, CA 94807

LOG OF BOREHOLE B12

Off-site Investigation

2517 Blanding Avenue, Alameda CA

Figure

6

GW Sample ID

Organic Odor

Soil Sample ID

Blows/foot

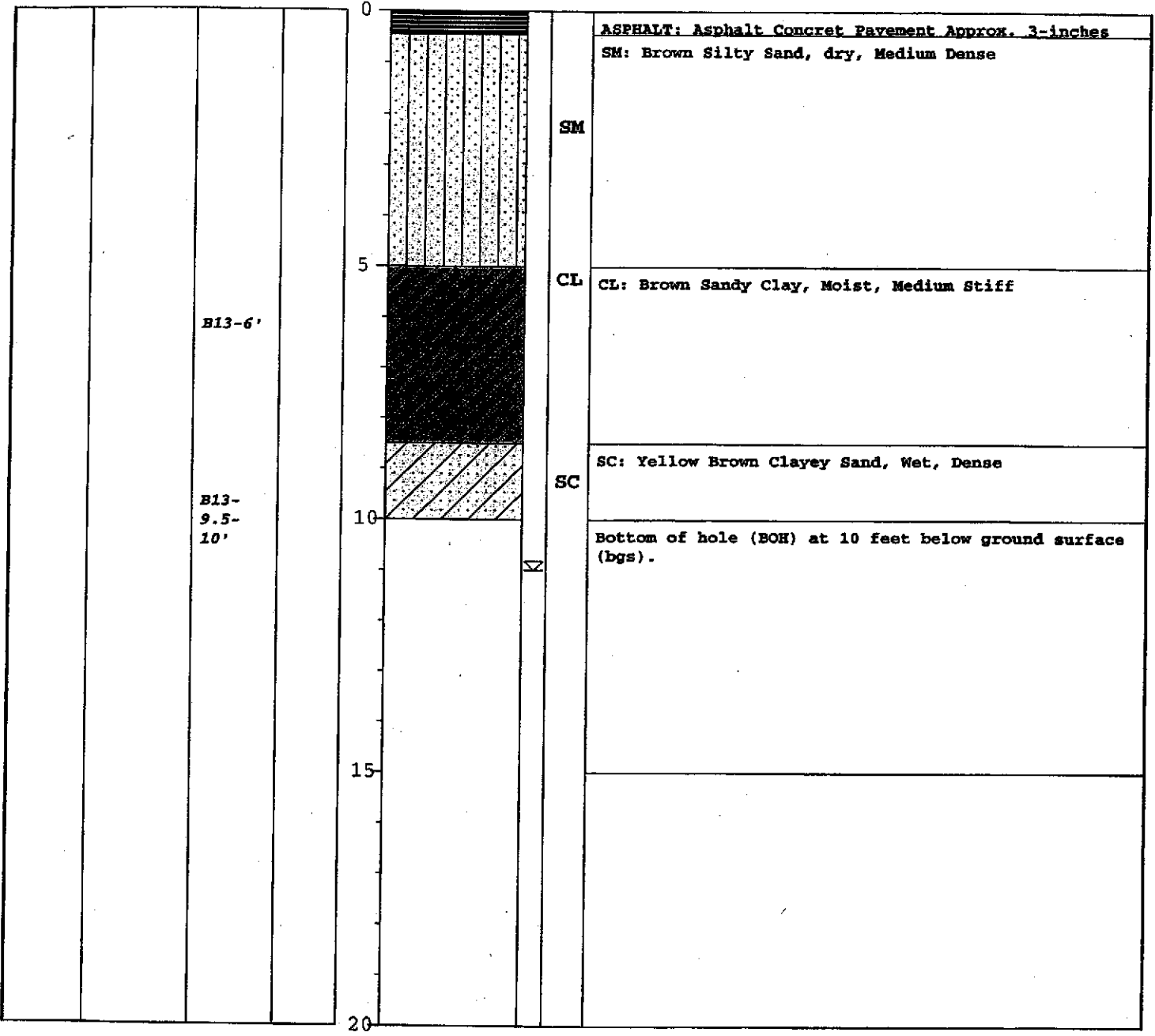
Depth

Graphical Symbol

Groundwater Depth

USCS Symbol

Lithologic Description



**Questa Engineering Corporation**  
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 Point Richmond, CA 94807

**LOG OF BOREHOLE B13**  
 Off-site Investigation  
 2517 Blanding Avenue, Alameda CA

**Figure 7**

GW Sample ID

Organic Odor

Soil Sample ID

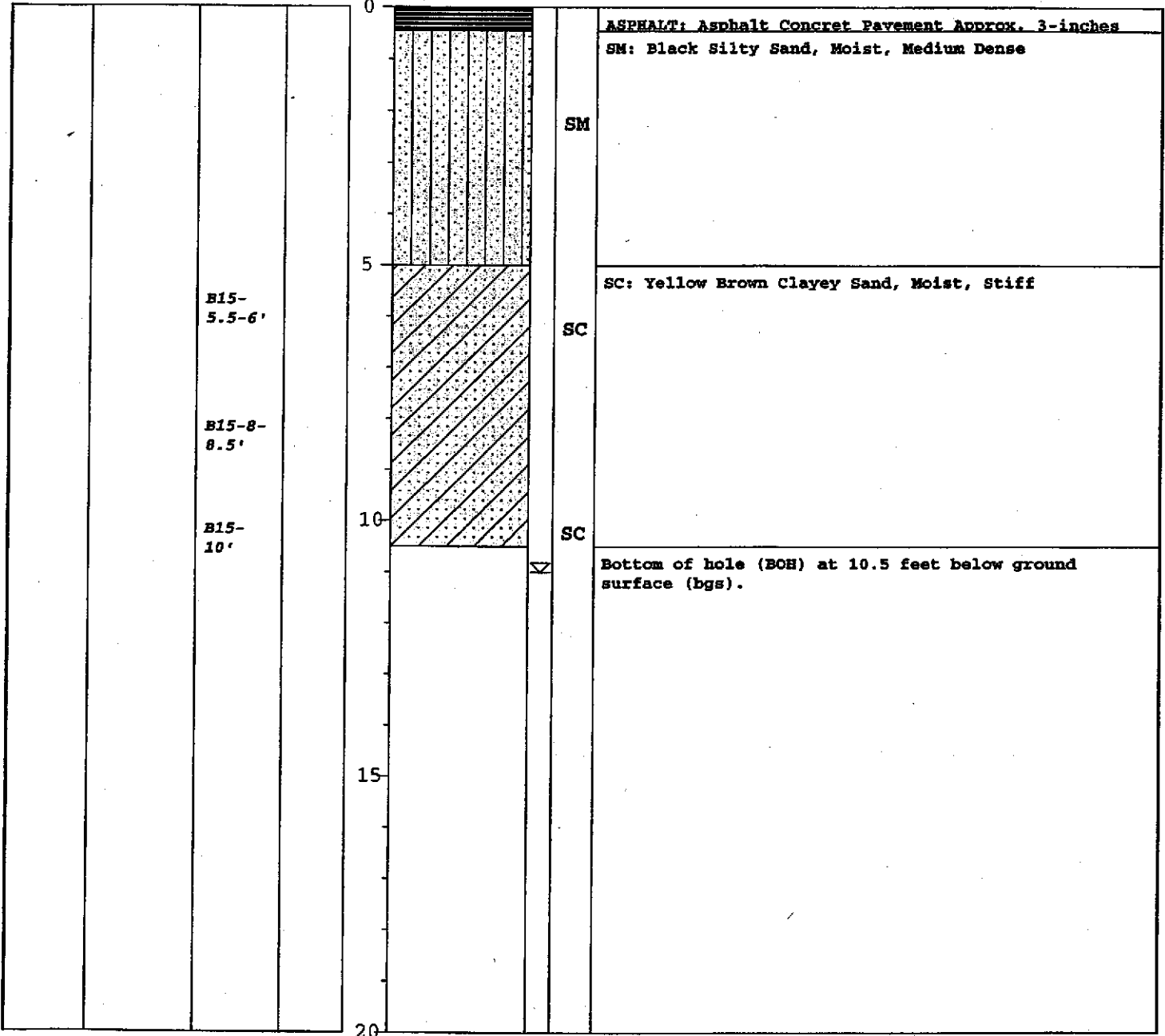
Blows/Foot

Depth

Graphical Symbol

Groundwater Depth  
USCS Symbol

Lithologic Description



**Questa Engineering Corporation**  
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 Point Richmond, CA 94807

**LOG OF BOREHOLE B15**  
 Off-site Investigation  
 2517 Blanding Avenue, Alameda CA

**Figure**  
**9**



GW Sample ID

Organic Odor

Soil Sample ID

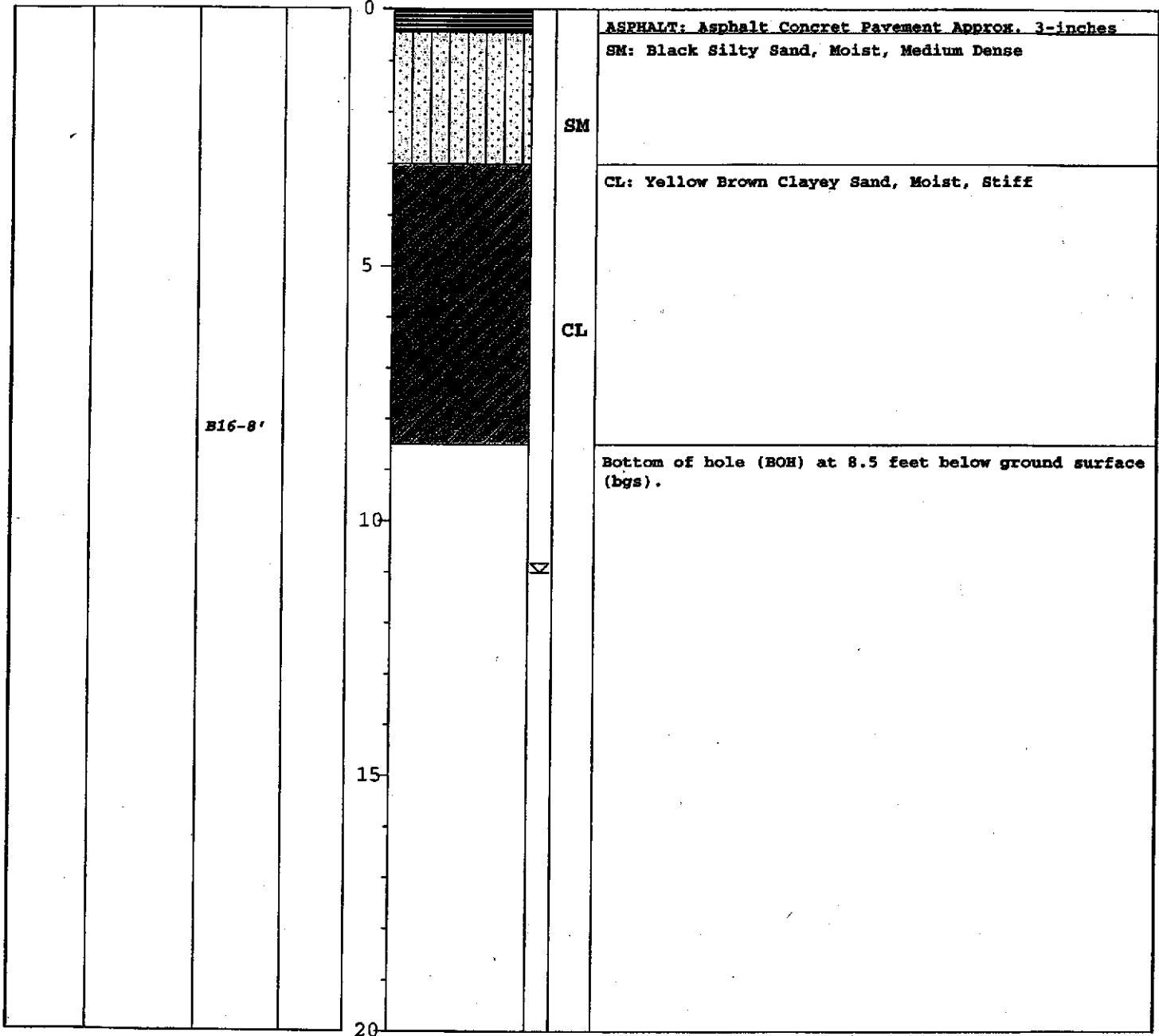
Blows/foot

Depth

Graphical Symbol

Groundwater Depth  
USCS Symbol

Lithologic Description



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 Point Richmond, CA 94807

**LOG OF BOREHOLE B16**  
 Off-site Investigation  
 2517 Blanding Avenue, Alameda CA

**Figure**  
**10**

GW Sample ID

Organic Odor

Soil Sample ID

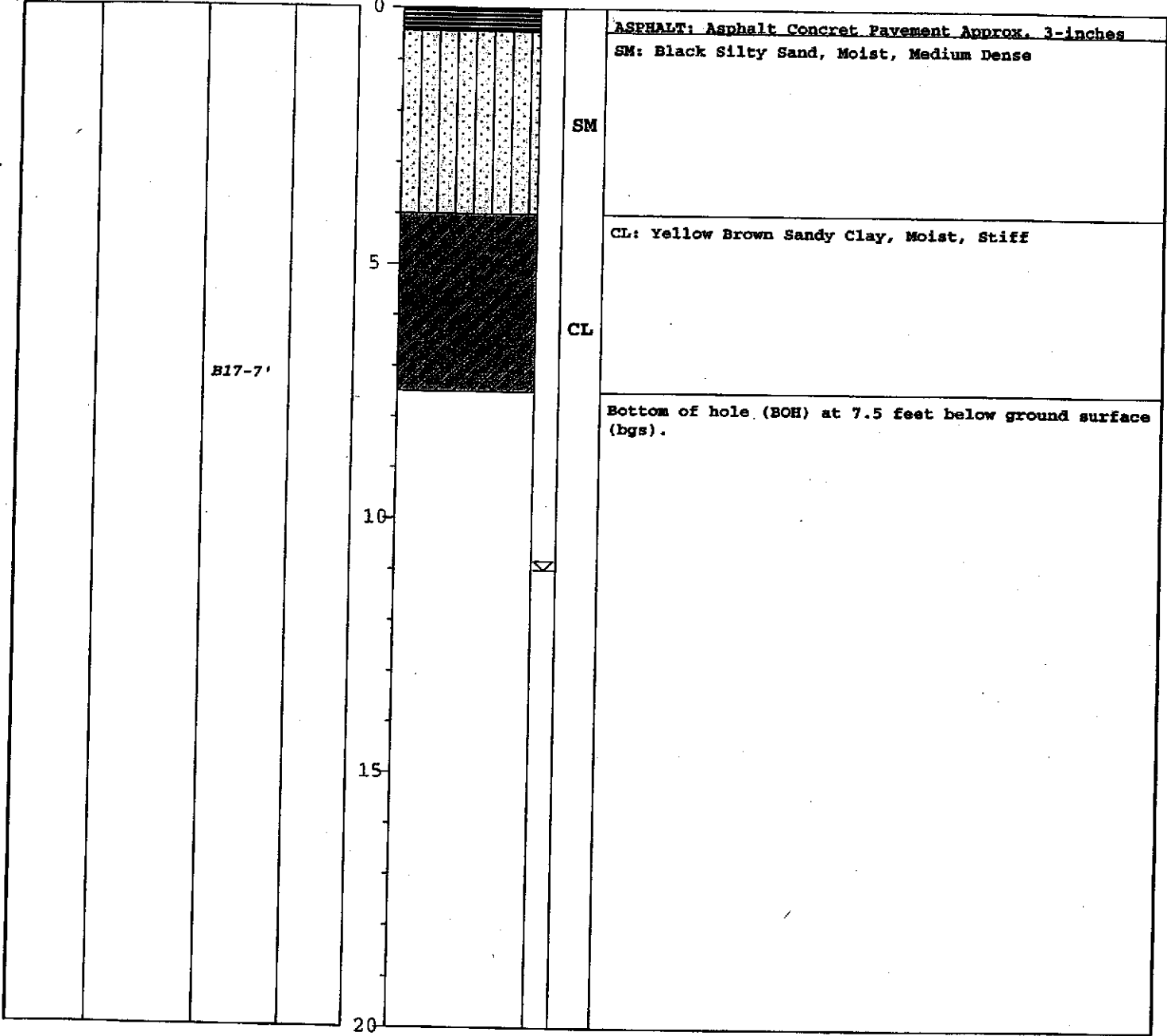
Blows/Foot

Depth

Graphical Symbol

Groundwater Depth  
USCS Symbol

Lithologic Description



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 Point Richmond, CA 94807

**LOG OF BOREHOLE B17**  
 Off-site Investigation  
 2517 Blanding Avenue, Alameda CA

**Figure**  
**11**