



Heilshorn Environmental Engineering _____

**Groundwater Monitoring Report
Beck Roofing Company
21123 Meekland Avenue, Hayward, Alameda County
August 11, 1999**

Prepared for: Mrs. Mary Beck, Beck Roofing Company, 21123 Meekland Avenue, Hayward CA 94541

Prepared by: Heilshorn Environmental Engineering, P.O. Box 20546, El Sobrante, CA 94820 0546, (510) 222-7968, fax (510) 222-8573, email: edheilshorn@earthlink.net

Dear Mrs. Beck:

This letter report responds to a July 25, 1999 letter from Mr. Amir Gholami of the Alameda County Department of Environmental Health to Beck Roofing Company (Beck Roofing). That letter specified that monitoring well MW-3 should continue to be monitored. The results of a monitoring event on July 21 are included in this letter. Figure 1 is the site location map.

SITE BACKGROUND

Beck Roofing is a commercial roofing business. The property is located on the south side of Meekland Avenue, 21123 Meekland Avenue. Site usage includes equipment and materials storage, shop and office facilities. Site specific information was obtained from the owners, Mr. Charles and Mrs. Mary Beck, or from existing environmental reports.

Beck Roofing installed an underground 1000-gallon steel tank during the 1970's following the gasoline crisis. The tank stored gasoline for refueling company trucks and serviced a single dispensing pump. Beck Roofing contracted with R.L. Stevens to have the tank tightness tested. The test was performed on January 11, 1990. R.L. Stevens followed the Precision Test Criteria as established by N.F.P.A. Publication 329. R. L. Stevens reported that the tank was tight at the time of the test, January 1990.

The tank was removed during May 1991. Several stages of environmental investigation, remediation and monitoring followed, from 1991 until the present. Figure 2 shows the facility layout and location of four groundwater monitoring wells and other soil borings installed during the environmental investigations.

SITE GEOLOGY AND HYDROGEOLOGY

L&W Environmental Services (L&W) January 1992 report briefly describes area geology and hydrogeology as follows. Site elevation is approximately 55 feet above sea level. San Francisco Bay to the west and the Berkeley Hills to the east affect site geology. Alluvial and bay sediments underlie the site with basement rock at depth. "Groundwater in this region is located at relatively shallow depths, in granular aquifers laid down by alluvial action on the nearby Berkeley Hills. Groundwater is often contained in granular deposits layered and confined by various fine grained deposits at depths of about 20 feet below ground surface." (L&W, 1992)

Site hydrogeology describes aquifer characteristics such as the groundwater flow direction, gradient, levels and well productivity. Groundwater flows roughly west across this site. MW-3 is down gradient from the former underground tank location. The groundwater gradient varies from approximately 0.001 to 0.005 feet per foot. Water levels in the wells rose following well installation per the Anderson and Lush Geosciences quarterly monitoring reports. This suggests that the groundwater is partially confined. Groundwater elevations range from a high of 21.2 feet bgs in MW-4 (2/5/97) to a low of 30.1 feet bgs in MW-1 and MW-4 (10/25/94).

SITE ENVIRONMENTAL ACTIVITIES – GROUNDWATER

Four groundwater monitoring wells were installed to determine groundwater quality and the extent of groundwater contamination. These wells have been sampled regularly since installation in 1991 and 1994. The data indicate decreasing concentrations of TPHg and BTEX compounds at low ppm, low ppb, to nondetectable levels. The Alameda County Department of Environmental Health has approved closure of monitoring wells MW-1, MW-2, and MW-4. HE2 will continue to monitor MW-3 for Beck Roofing until benzene concentrations reach levels acceptable for closure.

Well MW-3 was sampled on July 21, 1999. HE2 measured the water level, purged the well, and collected one groundwater sample. Water pH, specific conductivity, and temperature were measured during well purging. Attachment 1 presents the well sampling field data including pH, specific conductivity, temperature, depth to groundwater, and volume purged. No free product or sheen was noted in the purged well water. A slight odor was detected from MW-3.

GROUNDWATER SAMPLING PROCEDURES AND ANALYTICAL RESULTS

The well was purged, then sampled using a new clean polyethylene bailer. Three casing volumes of groundwater were removed from the well prior to sampling. The well was allowed to recover to at least 80% of the initial water level prior to sampling. The groundwater sample was bailed and poured into 40 ml volatile organic analysis (VOA) vials with Teflon septa. The vials were sealed so that no air bubbles were trapped in the vials (zero headspace). Bailed water not collected as a sample was placed in labeled steel drum within the yard. The water in the drum will be disposed as water with low levels of petroleum hydrocarbons.

The sample was labeled, stored on ice and delivered to the laboratory the same day as collection. Sample labels list the project name, sample location, date, sampler's initials, and analyses requested. After collection and labeling, the sample was sealed in a plastic bag and placed in a cooler with ice. The groundwater sample was analyzed for Total Petroleum Hydrocarbons-gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX) and MTBE by EPA Method 8015-8020-modified. The sample was accompanied by a chain of custody form and delivered to a state certified laboratory, McCampbell Analytical, Pacheco, DHS Certification No. 1644) for analysis. Attachment 2 includes the analytical reports and chain of custody forms for the July 1999 groundwater sample.

The analytical results for the July groundwater data indicate low levels of the analyzed gasoline related hydrocarbons and fuel additives in MW-3. MW-3 groundwater contained TPHg at 490 micrograms per liter ($\mu\text{g/L}$). Other constituent concentrations: Benzene ($5.4 \mu\text{g/L}$), toluene (ND), ethylbenzene ($9.6 \mu\text{g/L}$), xylenes ($0.60 \mu\text{g/L}$), and MTBE (ND<10). The levels detected in MW-3 are below the MCLs for toluene, ethylbenzene and xylenes and MTBE. Benzene slightly exceeds the MCL of $1 \mu\text{g/L}$.

CONCLUSIONS AND RECOMMENDATIONS

The contaminant plume at Beck Roofing is of limited extent and concentration. Both extent and concentration have decreased over time. Based on these data it is reasonable to assume that the contamination has not migrated off-site, and the current extent of the contamination is limited to a small area around MW-3. The data suggest that the concentrations currently observed in MW-3 would continue to drop naturally over time to nondetectable levels.

Beck Roofing is requesting permission to reduce the monitoring frequency of the remaining monitoring well, MW-3, at the Beck Roofing yard from quarterly to annually.

HE2 recommends that the Beck Roofing site be classified as a low-risk soil and groundwater site per the LLNL report and RWQCB memo of January 5, 1996. The basis for this recommendation follows.

- The extent of contamination is limited to less than 250 feet from the presumed source.
- The plume appears stable and decreasing in concentration and extent.
- The shallow groundwater is not used for drinking water within 1/2 mile of the site.

LIMITATIONS

The data, conclusions and recommendations presented in this report were developed in accordance with the generally accepted professional practice. The guidelines, data, conclusions and recommendations developed in, and used for, this report follows California Regional Water Quality Control Board guidelines. The analytical results are based on samples collected at limited locations, at limited times. Therefore, Heilshorn Environmental Engineering cannot have full knowledge of the soil or underlying conditions at the site. Conditions at the site may change with time due to human action or acts of nature. Thus, the findings of this report are subject to change should new information arise.

Please contact me with any questions concerns or information regarding environmental issues at this site. I may be reached by telephone (510-222-7968), fax (510-222-8573) or email (edheilshorn@earthlink.net). Thank you for selecting Heilshorn Environmental Engineering to provide services to your company.

Sincerely,
Heilshorn Environmental Engineering



Elyse D. Heilshorn, P.E.
Consulting Engineer

ATTACHMENT 1

Field Data

GROUNDWATER MONITORING WELL FIELD SAMPLING DATA

CLIENT: Buckley DATE: 7-1-00 Initials: _____

ADDRESS: 21123 Meekins Ave Howard

WELL LOCATION: MW-3 78 ft well

WELL ID: MW-3 SAMPLE ID: _____

START TIME: 2:15 SAMPLING TIME: _____ END TIME _____

Depth to well bottom (from top of casing) 34.7 Height of water column, ft: 25

Depth to water (from top of casing) 24.75 CASING VOLUME 1.7 gal

CASING DIAMETER 2" 3" 4" 5" 6" 8"
 Casing volume per linear foot, gal 0.17 0.38 0.67 1.02 1.50 2.60

Calculated purge volume: 5.1 gal Actual Purge volume: 26 gal

FIELD MEASUREMENTS

Time	Volume, gal	Temp °F	Conductivity, μmhos/cm	pH	Color	Turbidity NTU
2:40	2.5	73	7.33	6.2		
2:50	3.5	69	7.18	6.2		
3:05	5.0	69	7.15	6.2		
3:07	26.0	68	7.10	6.2		

SAMPLING

Odor: NOV Well 80% recharged? 95%

Sample container: # 2 VOA # 2 Liter Bottle # _____ Other _____

Preservative: HCL Ice Other _____

ANALYSES: TPHg BTEX 17715

Purging equipment: _____

Sampling equipment: 1-gal

REMARKS:

ATTACHMENT 2

Analytical Report and Chain of Custody

QC REPORT FOR HYDROCARBON ANALYSES

Date: 07/23/99-07/24/99

Matrix: WATER

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		
	Sample (#15450)	MS	MSD		MS	MSD	RPD
TPH (gas)	0.0	104.4	105.2	100.0	104.4	105.2	0.7
Benzene	0.0	9.2	9.6	10.0	92.0	96.0	4.3
Toluene	0.0	9.5	9.8	10.0	95.0	98.0	3.1
Ethyl Benzene	0.0	9.8	10.0	10.0	98.0	100.0	2.0
Xylenes	0.0	29.4	30.2	30.0	98.0	100.7	2.7
TPH(diesel)	0.0	8020	8254	7500	107	110	2.9
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

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

ATTACHMENT 3

BORING LOGS AND WELLS

Boring Log No. B-3

PROJECT: Beck Roofing Co., Hayward, CA
 DRILL RIG: Hollow Stem Auger
 INITIAL GW DEPTH: Not Enc.

DATE: 07/14/93
 HOLE DIA: 8 in.
 FINAL GW: Not Enc.

LOGGED BY: LAR
 SAMPLER: California
 HOLE ELEV.: NA

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FT.	REMARKS	
3' of Basalrock at surface.	CL		0				
SILTY CLAY: Medium plastic; minor fine sand; moist; dusky yel. brown (JOYR 2/2).			1				
			2				
			3				
			4				
			5				
SANDY CLAY: Low to med. plastic; approx. 35% very fine sand; moist; moderate yel. brown (JOYR 5/4).			6			☒	23
			7				
			8				
			9				
			10				
- Greenish gray at 10'.			11	☒	12	Product odor noted in bottom of sample at 11.5'.	
Note Abandoned at 11.5' and backfilled with neat cement grout.			12				
			13				
			14				
			15				
			16				
			17				
			18				
			19				
			20				
			21				
			22				
			23				
			24				
			25				
		26					
		27					
		28					
		29					
		30					
		31					
		32					
		33					
		34					
		35					

LOUIS A. RICHARDSON
 Consulting Engineering Geologist
 Mountain View, California

Notes:
 BORING NO. B-3: Located on northern side of slurry-filled
 excavation from gasoline tank removal at Beck Roofing Co.
 21123 Meekland Ave., Hayward, Calif.

Project No.
539.44



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Boring Log No. B-4

PROJECT: Beck Roofing Co., Hayward, CA
 DRILL RIG: Hollow Stem Auger
 INITIAL GW DEPTH: Not Enc.

DATE: 07/14/93
 HOLE DIA.: 8 in.
 FINAL GW: Not Enc.

LOGGED BY: LAR
 SAMPLER: California
 HOLE ELEV.: NA

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FT.	REMARKS		
8" of Baserock at surface.	CL		0					
SILTY CLAY: Medium plastic; minor fine sand; moist; dusky yet brown (10YR 2/2).			1					
			2					
			3					
			4					
			5					
SANDY CLAY: Low to med. plastic; approx. 35% very fine sand; moist; moderate yet brown (10YR 5/4).			6			☒	19	
			7					
			8					
			9					
			10					
SILTY SAND: Fine grained; pale yellow brown (10YR 6/2).			11			☒	12	
			12					
	13							
	14							
	15				☒	10	Product odor noted in sample at 15'.	
Hole abandoned at 16.5' and backfilled with neat cement grout.	SM		16					
			17					
			18					
			19					
			20					
			21					
			22					
			23					
			24					
			25					
			26					
			27					
			28					
			29					
			30					
			31					
			32					
			33					
			34					
			35					

LOUIS A. RICHARDSON
 Consulting Engineering Geologist
 Mountain View, California

Notes:
 BORING NO. B-4: Located on northern side of slurry-filled excavation from gasoline tank removal at Beck Roofing Co. 21123 Meekland Ave., Hayward, Calif.

Project No.
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Boring Log No. B-5

PROJECT: Beck Roofing Co., Hayward, CA
 DRILL RIG: Hollow Stem Auger
 INITIAL GW DEPTH: Not Enc.

DATE: 07/14/83
 HOLE DIA.: 8 in.
 FINAL GW: Not Enc.

LOGGED BY: LAR
 SAMPLER: California
 HOLE ELEV.: NA

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FT.	REMARKS
5" of Baserock at surface.	CL	▨	0			
SILTY CLAY: Medium plastic; minor fine sand; moist; dusky yel. brown (10YR 2/2).	CL	▨	1			
	CL	▨	2			
	CL	▨	3			
	CL	▨	4			
SANDY CLAY: Low to med. plastic; approx. 35% very fine sand; moist; moderate yel. brown (10YR 5/4).	CL	▨	5			
	CL	▨	6	☒	18	
	CL	▨	7			
	CL	▨	8			
	CL	▨	9			
SILTY SAND: Fine grained; pale yellow brown (10YR 6/2); approx. 50% silty fines.	SM	▨	10			
	SM	▨	11	☒	12	
	SM	▨	12			
	SM	▨	13			
	SM	▨	14			
	SM	▨	15			Product odor noted in sample at 15'.
	SM	▨	16	☒	13	
Hole Abandoned at 16.5' and backfilled with neat cement grout.			17			
			18			
			19			
			20			
			21			
			22			
			23			
			24			
			25			
			26			
			27			
			28			
			29			
			30			
			31			
			32			
			33			
			34			
			35			

LOUIS A. RICHARDSON
 Consulting Engineering Geologist
 Mountain View, California

Notes:
 BORING NO. B-5: Located on northern side of slurry-filled excavation from gasoline tank removal at Beck Roofing Co. 21123 Meekland Ave., Hayward, Calif.

Project No. 539.44
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Boring Log No. B-6

PROJECT: Beck Roofing Co., Hayward, CA
 DRILL RIG: Hollow Stem Auger
 INITIAL GW DEPTH: Not Enc.

DATE: 07/14/93
 HOLE DIA.: 8 in.
 FINAL GW: Not Enc.

LOGGED BY: LAR
 SAMPLER: California
 HOLE ELEV.: NA

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FT.	REMARKS
2" of Baserock at surface.			0			
SILTY CLAY: Medium plastic; minor fine sand; moist; dusky yel. brown (10YR 2/2).	CL	▨	1			
		▨	2			
		▨	3			
		▨	4			
SANDY CLAY: Low to med. plastic; approx. 35% very fine sand; moist; moderate yel. brown (10YR 5/4).		▨	5			
		▨	6	X	18	
		▨	7			
		▨	8			
		▨	9			
SILTY SAND: Fine grained; pale yellow brown (10YR 6/2); approx. 50% silty fines.	SM	▨	10			
		▨	11	X	12	
		▨	12			
		▨	13			
- Color at 15' is olive gray (5Y 4/1).		▨	14			
		▨	15			Product odor noted in sample at 15'.
		▨	16	X	9	
Hole Abandoned at 16.5' and backfilled with neat cement grout.			17			
			18			
			19			
			20			
			21			
			22			
			23			
			24			
			25			
			26			
			27			
			28			
			29			
			30			
			31			
			32			
			33			
			34			
			35			

LOUIS A. RICHARDSON
 Consulting Engineering Geologist
 Mountain View, California

Notes:
 BORING NO. B-6: Located on northern side of slurry-filled excavation from gasoline tank removal at Beck Roofing Co. 21123 Meekland Ave., Hayward, Calif.

Project No.
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Boring Log No. B-7

PROJECT: Beck Roofing Co., Hayward, CA
 DRILL RIG: Hollow Stem Auger
 INITIAL GW DEPTH: Not Enc. ft.

DATE: 07/14/93
 HOLE DIA.: 8 in.
 FINAL GW: Not Enc. ft.

LOGGED BY: LAR
 SAMPLER: California & Continuous
 HOLE ELEV.: NA

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FT.	REMARKS
3" of Baserock at surface.	CL	[Diagonal Hatching]	0			
SILTY CLAY: Medium plastic; minor fine sand; moist; dusky yel. brown (10YR 2/2).	CL	[Diagonal Hatching]	1			
			2			
			3			
			4			
SANDY CLAY: Low to med. plastic; approx. 35% very fine sand; moist; moderate yel. brown (10YR 5/4).			5			
			6	[X]	16	
			7			
			8			
			9			
			10			
			11	[X]	11	
			12			
SILTY SAND: Fine grained; pale yellow brown (10YR 6/2); approx. 15% silty fines.			SM	[Vertical Lines]	13	
	14					
	15					
	16	[X]			11	
	17					
- Color at 17.7' is dark green-gray (5G 4/1).	18					
	19					
	20					
CLAY: Silty; low plasticity; moist; dark yel. brown mottled mod. yel. brown.	CL	[Diagonal Hatching]	21			
			22			
Hole Abandoned at 23' and backfilled with neat cement grout.			23	[X]		
			24			
			25			
			26			
			27			
			28			
			29			
			30			
			31			
			32			
			33			
			34			
			35			

Continuous sampler used below 18.5'

Product odor evident at 20'.

Pocket penetrometer reading is 0.5 TSF.

LOUIS A. RICHARDSON
 Consulting Engineering Geologist
 Mountain View, California

Notes:
 BORING NO. B-7: Located on northern side of slurry-filled excavation from gasoline tank removal at Beck Roofing Co., 21123 Meekland Ave., Hayward, Calif.



Project No.
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Boring Log No. B-8

PROJECT: Beck Roofing Co., Hayward, CA
 DRILL RIG: Continuous Flight Auger
 INITIAL GW DEPTH: Not Enc.

DATE: 07/15/93
 HOLE DIA.: 6 in.
 FINAL GW: Not Enc.

LOGGED BY: LAR
 SAMPLER: None
 HOLE ELEV.: NA

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FT.	REMARKS	
Tip of Basalrock at surface.	CL		0				
SILTY CLAY: Medium plastic; minor fine sand; moist; dusky yel. brown (10YR 2/2).			1				Boring advanced with continuous flight auger until product odor was noted in cuttings.
			2				
			3				
			4				
			5				
			6				
			7				
			8				
			9				
			10				
			11				
			12				
SANDY CLAY: Low to med. plastic; approx. 35% very fine sand; moist; moderate yel. brown (10YR 5/4).	SM		13			Product odor evident at 17'.	
SILTY SAND: Fine grained; pale yellow brown (10YR 6/2); approx. 15% silty fines.			14				
			15				
			16				
			17				
Hole abandoned at 18' and backfilled with neat cement grout			18				
			19				
			20				
			21				
			22				
			23				
			24				
			25				
			26				
			27				
			28				
			29				
			30				
			31				
			32				
			33				
			34				
			35				

LOUIS A. RICHARDSON
 Consulting Engineering Geologist
 Mountain View, California

Notes:
 BORING NO. B-8: Located west of slurry-filled excavation from gasoline tank removal at Beck Roofing Co., 21123 Meekland Ave., Hayward, Calif.

Project No.
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Boring Log No. B-9

PROJECT: Beck Roofing Co., Hayward, CA
 DRILL RIG: Continuous Flight Auger
 INITIAL GW DEPTH: Not Enc.

DATE: 07/15/93
 HOLE DIA.: 6 in.
 FINAL GW: Not Enc.

LOGGED BY: LAR
 SAMPLER: None
 HOLE ELEV.: NA

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FT.	REMARKS
6" of Baserock at surface.	CL	▨	0			
SILTY CLAY: Medium plastic; minor fine sand; moist; dusky yellow brown (10YR 2/2).	CL	▨	1			Boring advanced with continuous flight auger until product odor was noted in cuttings.
			2			
			3			
			4			
SANDY CLAY: Low to med. plastic; approx. 35% very fine sand; moist; moderate yellow brown (10YR 5/4).			5			
			6			
			7			
			8			
			9			
			10			
			11			
			12			
SILTY SAND: Fine grained; pale yellow brown (10YR 6/2); approx. 15% silty fines.			SM	▨	13	
		▨	14			
		▨	15			
		▨	16			
		▨	17			
		▨	18			Product odor evident at 18'.
Hole abandoned at 19' and backfilled with neat cement grout.			19			
			20			
			21			
			22			
			23			
			24			
			25			
			26			
			27			
			28			
			29			
			30			
			31			
			32			
			33			
			34			
			35			

LOUIS A. RICHARDSON
 Consulting Engineering Geologist
 Mountain View, California

Notes:
 BORING NO. B-9. Located west of slurry-filled excavation from gasoline tank removal at Beck Roofing Co. 2123 Meekland Ave., Hayward, Calif.


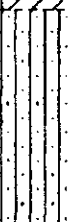
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Boring Log No. B-11

PROJECT: Beck Roofing Co., Hayward, CA
 DRILL RIG: Continuous Flight Auger
 INITIAL GW DEPTH: Not Enc.

DATE: 07/15/83
 HOLE DIA.: 6 in.
 FINAL GW: Not Enc.

LOGGED BY: LAR
 SAMPLER: None
 HOLE ELEV.: NA

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FT.	REMARKS
5' of Baserock at surface.	CL		0			Boring advanced with continuous flight auger until product odor was noted in cuttings.
SILTY CLAY: Medium plastic; minor fine sand; moist; dusky yel. brown (10YR 2/2).			1			
			2			
			3			
			4			
SANDY CLAY: Low to med. plastic; approx. 35% very fine sand; moist; moderate yel. brown (10YR 5/4).			5			
			6			
			7			
			8			
			9			
			10			
			11			
			12			
SILTY SAND: Fine grained; pale yellow brown (10YR 6/2); approx. 15% silty fines.	SM		13			Product odor evident at 18'.
			14			
			15			
			16			
			17			
			18			
			19			
Hole abandoned at 19' and backfilled with neat cement grout.			20			
	21					
	22					
	23					
	24					
	25					
	26					
	27					
	28					
	29					
	30					
	31					
	32					
	33					
	34					
	35					

Boring Log No. B-12

PROJECT: Beck Roofing Co., Hayward, CA
 DRILL RIG: Continuous Flight Auger
 INITIAL GW DEPTH: Not Enc.

DATE: 07/15/93
 HOLE DIA: 6 in.
 FINAL GW: Not Enc.

LOGGED BY: LAR
 SAMPLER: None
 HOLE ELEV.: NA

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FT.	REMARKS
6" of Baserock at surface.	CL	▨	0			
SILTY CLAY: Medium plastic; minor fine sand; moist; dusky yel. brown (10YR 3/2).		▨	1			Boring advanced with continuous flight auger until product odor was noted in cuttings.
		▨	2			
		▨	3			
		▨	4			
SANDY CLAY: Low to med. plastic; approx. 35% very fine sand; moist; moderate yel. brown (10YR 5/4).		▨	5			
		▨	6			
		▨	7			
		▨	8			
		▨	9			
		▨	10			
		▨	11			
		▨	12			
SILTY SAND: Fine grained; pale yellow brown (10YR 6/2); approx. 15% sily fines.	SM	▨	13			
		▨	14			
		▨	15			
		▨	16			
		▨	17			
		▨	18			
		▨	19			
		▨	20			
		▨	21			
		▨	22			
SANDY CLAY: Med. plastic; approx. 20% fine sand; mod. yel. brn.	CL	▨	23			
		▨	24			
Hole Abandoned at 25' and backfilled with neat cement grout			25			Slight product odor evident at 25'.
			26			
			27			
			28			
			29			
			30			
			31			
			32			
			33			
			34			
			35			

LOUIS A. RICHARDSON
 Consulting Engineering Geologist
 Mountain View, California

Notes:
 BORING NO. B-12. Located west of slurry-filled excavation from gasoline tank removal at Beck Roofing Co. 21123 Meekland Ave., Hayward, Calif.

Project No.
 539.44
 Page 1 of 1

Boring Log No. B-14

PROJECT: Beck Roofing Co., Hayward, CA
 DRILL RIG: Hollow Stem Auger
 INITIAL GW DEPTH: 28.5 ft.

DATE: 07/15/93
 HOLE DIA.: 8 in.
 FINAL GW: 28.5 ft.

LOGGED BY: LAR
 SAMPLER: California & Continuous
 HOLE ELEV.: NA

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FT.	REMARKS
5" of Baserock at surface.	CL	[Diagonal Hatching]	0			
SILTY CLAY. Medium plastic; minor fine sand; moist; mod. yel. brown (10YR 5/4).	CL	[Diagonal Hatching]	1 2 3 4 5			
		[Diagonal Hatching]	6	[Sample Icon]	16	TPH = ND @ 5'
CLAYEY SAND. Fine-grained with 10% fine gravel; approx. 10% clayey fines; moist; moderate yel. brown (10YR 5/4).	SC	[Diagonal Hatching]	8 9 10			
		[Diagonal Hatching]	11	[Sample Icon]	20	TPH = ND @ 10'
		[Diagonal Hatching]	12 13 14 15			
		[Diagonal Hatching]	16	[Sample Icon]	17	TPH = ND @ 15'
SILT. Mod. yel. brn. mottled dark yel. brown; v. moist.	ML	[Vertical Lines]	18			Continuous sampler used from 16.5 to 33'
CLAY. Low to medium plasticity; moist; olive gray mottled to olive brown; moist.	CL	[Diagonal Hatching]	19			TPH = ND @ 19'
- 4" sand lens at 22'	SP lens	[Dotted Pattern]	22			TPH = 2.7 ppm @ 22'
- color below 21' is dark yel. brn. with greenish gray vertical pores	CL	[Diagonal Hatching]	23 24 25			Pocket penetrometer reads 1.5 TSF in clay.
- color is lt. olive gray (5Y 5/2) below 28'	CL	[Diagonal Hatching]	26 27			TPH = 23 ppm @ 28' TPH = 4.1 ppm @ 27'
		[Diagonal Hatching]	28			TPH = 91 ppm @ 28.5'
		[Diagonal Hatching]	29			Groundwater encountered at 28.5'
		[Diagonal Hatching]	30 31 32			Water sample taken.
Core Terminated at 33' and back filled with neat cement grout.			33			
			34 35			

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Notes:

BORING NO. B-14: Located on south side of slurry-filled excavation from gasoline tank removal at Beck Roofing Co. 21123 Meekland Ave., Hayward, Calif.

Project No.
539.44

Page 1 of 1

Boring Log No. B-15

PROJECT: Beck Roofing Co., Hayward, CA
 DRILL RIG: Hollow Stem Auger
 INITIAL GW DEPTH: Not Enc.

DATE: 07/15/93
 HOLE DIA.: 8 in.
 FINAL GW: Not Enc.

LOGGED BY: LAR
 SAMPLER: California & Continuous
 HOLE ELEV.: NA

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FT.	REMARKS
6" of Basereck at surface.	CL	[Diagonal Hatching]	0			
SILTY CLAY: Medium plastic; minor fine sand; moist; dusky yel. brown (10YR 2/2).	CL	[Diagonal Hatching]	1			
	CL	[Diagonal Hatching]	2			
	CL	[Diagonal Hatching]	3			
	CL	[Diagonal Hatching]	4			
SANDY CLAY: Low to med. plastic; approx. 35% very fine sand; moist; moderate yel. brown (10YR 5/4).	CL	[Diagonal Hatching]	5			
	CL	[Diagonal Hatching]	6	[X]	27	
	CL	[Diagonal Hatching]	7			
	CL	[Diagonal Hatching]	8			
	CL	[Diagonal Hatching]	9			
	CL	[Diagonal Hatching]	10			
	CL	[Diagonal Hatching]	11	[X]	28	
	CL	[Diagonal Hatching]	12			
SILTY SAND: Fine grained; pale yellow brown (10YR 6/2); approx. 15% silty fines.	SM	[Vertical Lines]	13			
	SM	[Vertical Lines]	14			
	SM	[Vertical Lines]	15			
	SM	[Vertical Lines]	16	[X]	27	
	SM	[Vertical Lines]	17			
- Dark green-gray (5G 4/1) silty clay lens at 18 - 19'; very moist.	CL	[Diagonal Hatching]	18			Continuous sampler used below 18. Slight product odor evident at 19'.
	SM	[Vertical Lines]	19			
CLAY: Silty, low plasticity, moist; dark yel. brown mottled mod. yel. brown.	CL	[Diagonal Hatching]	20			
	CL	[Diagonal Hatching]	21			
	CL	[Diagonal Hatching]	22			
Hole abandoned at 23' and backfilled with neat cement grout.			23			
			24			
			25			
			26			
			27			
			28			
			29			
			30			
			31			
			32			
			33			
			34			
			35			

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Notes:
 BORING NO. B-15: Located west of slurry-filled excavation from gasoline tank removal at Beck Roofing Co. 21123 Meekland Ave., Hayward, Calif.

Project No. 539.44
 Page 1 of 1

Boring Log No. B-16

PROJECT: Beck Roofing Co., Hayward, CA
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: 28.7 ft.

DATE: 07/15/93
HOLE DIA.: 8 in.
FINAL GW: 28.7 ft.

LOGGED BY: LAR
SAMPLER: California & Continuous
HOLE ELEV.: NA

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FT.	REMARKS
2' of Baserock at surface.	CL	[Diagonal Hatching]	0			
SILTY CLAY: Medium plastic; minor fine sand; moist; dusky yel. brown (10YR 2/2)	CL	[Diagonal Hatching]	1			
		[Diagonal Hatching]	2			
		[Diagonal Hatching]	3			
		[Diagonal Hatching]	4			
SANDY CLAY: Low to med. plastic; approx. 35% very fine sand; moist; moderate yel. brown (10YR 5/4).	CL	[Diagonal Hatching]	5			
		[Diagonal Hatching]	6	[Sample Icon]	24	TPH = ND @ 5'
		[Diagonal Hatching]	7			
		[Diagonal Hatching]	8			
		[Diagonal Hatching]	9			
		[Diagonal Hatching]	10			
		[Diagonal Hatching]	11	[Sample Icon]	26	TPH = ND @ 10'
		[Diagonal Hatching]	12			
SILTY SAND: Fine grained; pale yellow brown (10YR 6/2); approx. 15% silty fines.	SM	[Vertical Lines]	13			
		[Vertical Lines]	14			
		[Vertical Lines]	15			
		[Vertical Lines]	16	[Sample Icon]	28	TPH = ND @ 15'
		[Vertical Lines]	17			
- Dark green-gray (5G 4/1) silty clay lens at 18 - 19'; very moist	CL	[Diagonal Hatching]	18			Continuous sampler used from 18' to 30'.
	SM	[Vertical Lines]	19			
		[Vertical Lines]	20			
CLAY: Silty; low plasticity; moist; dark yel. brown mottled mod. yel. brown.	CL	[Diagonal Hatching]	21			
		[Diagonal Hatching]	22			
		[Diagonal Hatching]	23			TPH = 6.9 ppm @ 23'
		[Diagonal Hatching]	24			TPH = 37 ppm @ 24'
- Slightly porous below 25' with lt. gray color at pores.		[Diagonal Hatching]	25			
		[Diagonal Hatching]	26			TPH = 48 ppm @ 26'
		[Diagonal Hatching]	27			
		[Diagonal Hatching]	28			TPH = 23 PPM @ 28'
		[Diagonal Hatching]	29			Groundwater encountered at 28.7'; product odor evident.
		[Diagonal Hatching]	30			TPH = 64 ppm @ 29'
		[Diagonal Hatching]	31			
		[Diagonal Hatching]	32			Groundwater sample taken.
Hole Terminated at 33' and backfilled with neat cement grout.		[Diagonal Hatching]	33			
		[Diagonal Hatching]	34			
		[Diagonal Hatching]	35			

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Notes:
 BORING NO. B-16: Located west of slurry-filled excavation from gasoline tank removal at Beck Roofing Co. 2123 Meekland Ave., Hayward, Calif.

Project No.
 539.44

Page 1 of 1

Boring Log No. B-17

PROJECT: Beck Roofing Co., Hayward, CA
 DRILL RIG: Hollow Stem Auger
 INITIAL GW DEPTH: 29 ft.

DATE: 07/16/93
 HOLE DIA.: 8 in.
 FINAL GW: 29 ft.

LOGGED BY: LAR
 SAMPLER: California & Continuous
 HOLE ELEV.: NA

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FT.	REMARKS		
6" of Baserock at surface.	CL	[Diagonal Hatching]	0					
SILTY CLAY: Medium plastic; minor fine sand; moist; dusky yel. brown (10YR 2/2).	CL	[Diagonal Hatching]	1					
			2					
			3					
			4					
			5					
SANDY CLAY: Low to med plastic; approx. 35% very fine sand; moist; moderate yel. brown (10YR 5/4).	SM	[Vertical Lines]	6	[Sample Icon]	14	TPH = ND @ 5'		
			7					
			8					
			9					
			10					
			11			[Sample Icon]	10	TPH = ND @ 10'
			12					
			13					
			14					
			15			[Sample Icon]	15	TPH = ND @ 15'
	16							
	17							
	18					Continuous sampler used from 18' to 28'.		
	19							
	20					Pocket penetrometer reading is 1.0 TSF in clay.		
- Color is dark green-gray at 20'.	CL	[Diagonal Hatching]	21					
			22				TPH = 2.4 ppm @ 22'	
			23					
			24				TPH = 44 ppm @ 24'	
			25				TPH = 170 ppm @ 25.5'	
			26					
			27				TPH = 11 ppm @ 27'	
			28				TPH = 56 ppm @ 28.5'	
			29				Groundwater encountered at 29'	
			30					
	31					Water sample taken.		
	32							
	33							
Hole abandoned at 33' and backfilled with neat cement grout.			34					
			35					

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Notes:
 BORING NO. B-17: Located on northern side of slurry-filled excavation from gasoline tank removal at Beck Roofing Co. 21123 Meekland Ave., Hayward, Calif.

Project No.
 539.44
 Page 1 of 1

Boring Log No. B-18

PROJECT: Beck Roofing Co., Hayward, CA
 DRILL RIG: Hollow Stem Auger
 INITIAL GW DEPTH: 29 ft.

DATE: 07/18/93
 HOLE DIA.: 8 in.
 FINAL GW: 29 ft.

LOGGED BY: LAR
 SAMPLER: California S Continuous
 HOLE ELEV.: NA

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FT.	REMARKS
3" of concrete at surface.	SM/ML		0			
SILT: Dusky yellow brown (10YR 2/2) topsoil.			1			
			2			
			3			
			4			
SILTY CLAY: med. plastic; moist; mod. yel. brown (10YR 5/4)	CL	/ / / / /	5	X	35	TPH = NO @ 5'
		/ / / / /	6	X		
		/ / / / /	7			
		/ / / / /	8			
SILTY SAND: Fine-grained with minor gravel; sl. moist; moderate yel. brown (10YR 5/4); approx. 15% fines.	SM		9			
			10	X	20	TPH = NO @ 10'
			11			
			12			
			13			
			14			
			15			
			16	X	8	TPH = ND @ 15'
			17			
			18			Continuous sampler used from 18' to 30'.
			19			
			20			
CLAY: Silty, lt. olive gray (5Y 5/2) mottled mod. yel. brown; moist; low to med. plastic.	CL	/ / / / /	21			
		/ / / / /	22			
		/ / / / /	23			TPH = 20 ppm @ 23'
		/ / / / /	24			TPH = 43 ppm @ 24'
		/ / / / /	25			
- dark yel. brn. with lt. gray vertical pores at 28 to 28'		/ / / / /	26			TPH = 87 ppm @ 28'
		/ / / / /	27			
- contains some fine sand below 28'		/ / / / /	28			TPH = 23 PPM @ 28'
		/ / / / /	29			TPH = 61 PPM @ 28.5'
		/ / / / /	30	X		Groundwater encountered at 29'; product odor evident.
		/ / / / /	31			
		/ / / / /	32			Groundwater sample taken.
		/ / / / /	33			
Hole terminated at 33' and backfilled with neat cement grout.		/ / / / /	34			
		/ / / / /	35			

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Notes:
 BORING NO. B-18: Located east of slurry-filled excavation from gasoline tank removal at Beck Roofing Co. 2123 Meekland Ave., Hayward, Calif.

Project No. 539.44
 Page 1 of 1

LOG OF BORING: SB-18

Beck Roofing

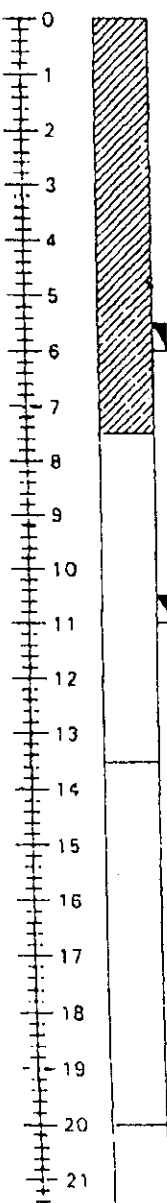
File: 3288-44

Date: 1 August 1994

Elevation: feet

Surface:

Water: None encountered

ELEV	SQR SYMBOLS SAMPLER SYMBOLS & BLOW COUNTS	Sample Number	USCS	Material Description and Remarks	Dry Density (pcf)	Moisture Content (%)	Phi	C (ksf)
DEPTH								
0		SB18-1	CL	Dark grey, moist, medium stiff, silty Clay - some fine Sand				
1								
2								
3								
4		SB18-2	ML-CL	Yellow brown, moist, medium stiff, clayey Silt/silty Clay				
5								
6								
7								
8		SB18-2	SP	Light brown, moist, loose-medium dense, medium coarse, Sand				
9								
10								
11								
12								
13								
14		SB18-2	ML-CL	Olive-mottled, moist, soft to medium soft, clayey silt/silty Clay				
15								
16								
17								
18								
19								
20								
21								

Site description and comments:



**ANDERSON
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Boring: SB-18
Depth: 40.0 ft

LOG OF BORING: SB-18 (Continued)

Beck Roofing

File: 3288-44

DEPTH	SOIL SYMBOLS SAMPLER SYMBOLS & BLOW COUNTS	Sample Number	USCS	Material Description and Remarks	Dry Density (pcf)	Moisture Content (%)	Phi	C (ksf)
22								
23								
24			cl	Olive, moist, stiff, mottled Clay with trace of silt and rhizomes				
25								
26	10/6	SB18-3						
27								
28				Saturated				
29								
30								
31	9/6	SB18-4						
32								
33								
34								
35								
36	9/6	SB18-5						
37								
38								
39								
40								

Boring terminated at 40 feet



**ANDERSON
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GROUP**

Boring: SB-18
Depth: 40.0 ft
Figure:

LOG OF BORING: SB-20

Project: Back Roofing

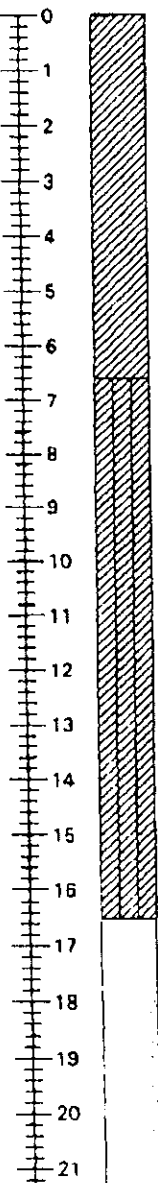
File: 3288-44

Date: 1 August 1994

Elevation: feet

Surface:

Water: None encountered

ELEV	SOIL SYMBOLS SAMPLER SYMBOLS & BLOW COUNTS	Sample Number	USCS	Material Description and Remarks	Dry Density (pcf)	Moisture Content (%)	Phi	C (ksf)
0			CL	Dark brown, moist, soft to mediumstiff silty sandy Clay				
7			CL-ML	Yellow brown, moist, soft to medium stiff, silty clay/clayey silt				
16.5			SP	Light brown, damp, medium dense, Sand				
21		4/6 SB20-1						

Site description and comments:



**ANDERSON
CONSULTING
GROUP**

Boring: SB-20
Depth: 36.5 ft
Figure:

LOG OF BORING: SB-20 (Continued)

Project: Beck Roofing

File: 3288-44

ELEV	SOIL SYMBOLS SAMPLER SYMBOLS & BLOW COUNTS	Sample Number	USCS	Material Description and Remarks	Dry Density (pcf)	Moisture Content (%)	Phi	C (ksf)
DEPTH								
22								
23								
24								
25								
26	6/6	SB20-2						
27								
28			SM	Grey brown, saturated, medium dense silty sand with gravel to 3/8"				
29								
30								
31	3/6	SB20-3						
32								
33								
34								
35								
36								
37								
38	3/6	SB20-4						

Boring terminated at 36.5 feet



**ANDERSON
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Boring: SB-20
Depth: 36.5 ft
Figure:

LOG OF BORING: SB-18

Project: Beck Roofing

File: 3288-44

Date: 1 August 1994

Elevation: feet

Surface:

Water: None encountered

ELEV	SOE SYMBOLS SAMPLER SYMBOLS & BLOW COUNTS	Sample Number	USCS	Material Description and Remarks	Dry Density (pcf)	Moisture Content (%)	Phi	C (ksf)	
DEPTH									
0		11/6 SB18-1	CL	Dark grey, moist, medium stiff, silty Clay - some fine Sand					
1									
2									
3									
4									
5									
6									
7		9/6 SB18-2	ML-CL	Yellow brown, moist, medium stiff, clayey Silt/silty Clay					
8									
9									
10									
11			SP	Light brown, moist, loose-medium dense, medium coarse, Sand					
12									
13									
14			ML-CL	Olive-mottled, moist, soft to medium soft, clayey silt/silty Clay					
15									
16									
17									
18									
19									
20									
21									

Site description and comments:



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GROUP**

Boring: SB-18
Depth: 40.0 ft
Figure:

LOG OF BORING: SB-19

Project: Beck Roofing

File: 3288-44

Date: 1 August 1994

Elevation: feet

Surface:

Water: None encountered

ELEV	SOIL SYMBOLS SAMPLER SYMBOLS & BLOW COUNTS	Sample Number	USCS	Material Description and Remarks	Dry Density (pcf)	Moisture Content (%)	Phi	C (ksf)
DEPTH								
0			ML-CL	Dark grey, damp, soft to medium stiff, silty Clay/clayey Silt				
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11	5/6	SB19-1						
12								
13								
14								
15			SP	Light brown, damp, medium dense, medium coarse, Sand				
16	9/6	SB19-2						
17			CL	Olive-mottled, moist, soft to medium stiff, Clay				
18								
19								
20			CL	Olive brown, moist, medium stiff, silty Clay				
21	4/6	SB19-3						

Site description and comments:



**ANDERSON
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GROUP**

Boring: SB-19
Depth: 40.0 ft
Figure:

LOG OF BORING: SB-19 (Continued)

Project: Beck Roofing

File: 3288-44

ELEV	SOIL SYMBOLS SAMPLER SYMBOLS & BLOW COUNTS	Sample Number	USCS	Material Description and Remarks	Dry Density (pcf)	Moisture Content (%)	Phi	C (ksf)
DEPTH								
22								
23								
24								
25								
26		12/6	SB19-4					
27								
28					Saturated			
29								
30								
31			SB19-5					
32								
33								
34								
35								
36			SB19-6					
37								
38								
39								
40					Boring terminated at 40 feet			



**ANDERSON
CONSULTING
GROUP**

Boring: SB-19
Depth: 40.0 ft
Client:

LOG OF BORING: SB-21

Project: Beck Roofing

File: 3288-44

Date: 1 August 1994

Elevation: feet

Surface:

Water: None encountered

ELEV	SOIL SYMBOLS SAMPLER SYMBOLS & BLOW COUNTS	Sample Number	USCS	Material Description and Remarks	Dry Density (pcf)	Moisture Content (%)	Phi	C (ksf)
DEPTH								
0			fill	0 to 24 feet cement grout backfill				
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24			cl	Olive brown-mottled, wet, medium stiff, silty Clay				
25								
26								
27								
28								
29		SB21-1						
		SB21-2						
30		SB21-3						

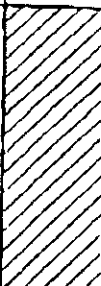



Boring terminated at 30 feet

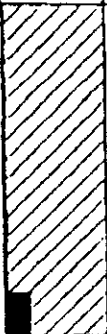
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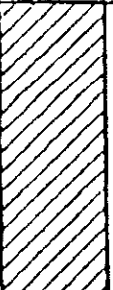
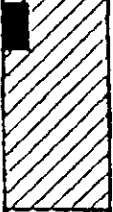
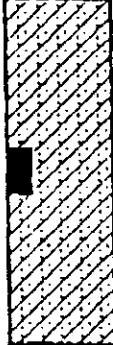

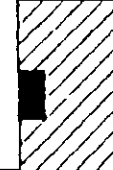


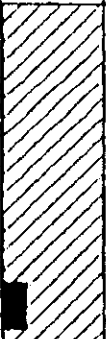

**ANDERSON
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GROUP**

Boring: SB-21
Depth: 30.0 ft

Sample Number	Blows per Foot	Soil Type	Time	Log	Depth in Feet	DESCRIPTION
2116-5-B1	12	CL	910		0	Brown sandy silty clay, moist, no odor, medium plasticity.
					5	Brown sandy silty clay, stiff, moist, no odor, low plasticity.
2116-10-B1	10	CL	915			Brown clayey sand, fine-grained, moist, no odor, grades downward to a silty clay.
					10	Brown sandy silty clay, stiff, moist, no odor, low plasticity.
2116-15-B1	12	SP	927		15	Brown sand, fine-grained, medium dense, moist, no odor.
2116-20-B1	8	CL	940		20	Brown sandy silty clay, medium stiff, moist, odor.
L & W Environmental Services, Inc. 2111 Jennings Street San Francisco, California				Log of Boring Number: B1 Sheet 1 of 2 Beck Roofing 21123 Meekland Avenue Hayward, California		
Project Number: 2116				Date: December, 1991		Figure Number: 7

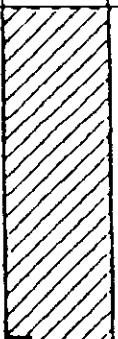


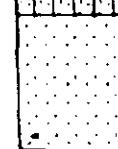
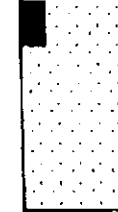
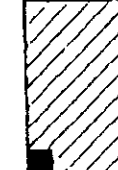


Sample Number	Blows per Foot	Soil Type	Time	Log	Depth in Feet	DESCRIPTION
2116-25-B1	10	CL	950		25	Brown sandy silty clay, stiff, moist, strong odor, medium plasticity.
<p>Boring terminated at 25.5 feet. Groundwater not encountered. Boring drilled 10/31/91 with CME 75 rig.</p>						
L & W Environmental Services, Inc. 2111 Jennings Street San Francisco, California				Log of Boring Number: B1 Sheet 2 of 2 Beck Roofing 21123 Meekland Avenue Hayward, California		
Project Number: 2116				Date: December, 1991	Figure Number: 7	

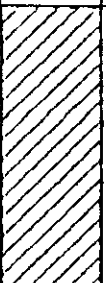
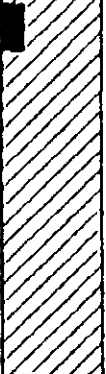
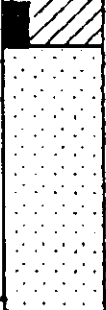
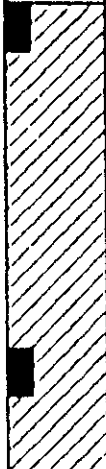
Sample Number	Blows per Foot	Soil Type	Time	Log	Depth in Feet	DESCRIPTION
					0	
2116-5-B2	16	CL	1050		5	Brown silty sandy clay, very stiff, moist, no odor, medium plasticity.
2116-10-B2	10	SM	1112		10	Brown silty sand, fine-grained, loose to medium dense, moist, no odor.
2116-15-B2	9	SP	1120		15	Brown sand, fine-grained, loose, moist, no odor.
2116-20-B2	7	CL	1130		20	Brown silty clay, medium stiff, moist, no odor, medium plasticity.
L & W Environmental Services, Inc. 2111 Jennings Street San Francisco, California				Log of Boring Number: B2 Sheet 1 of 2 Beck Roofing 21123 Meekland Avenue Hayward, California		
Project Number: 2116				Date: December, 1991	Figure Number: 8	

Sample Number	Blows per Foot	Soil Type	Time	Log	Depth in Feet	DESCRIPTION
2116-25-B2	9	CL	1136		25	Brown sandy silty clay, stiff, moist, strong odor, medium plasticity.
2116-30-B2	8	CL	1145		30	Same.

Boring terminated at 30.5 feet.
 Groundwater not encountered.
 Boring drilled 10/31/91 with CME 75 rig.

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Sample Number	Blows per Foot	Soil Type	Time	Log	Depth in Feet	DESCRIPTION
					0	
2116-5-MW1	20	CL	911		5	Brown sandy silty clay, moist, no odor, medium plasticity.
						
2116-10-MW1	15	SM	917		10	Brown silty sand, fine-grained, medium dense, moist, no odor.
						
2116-15-MW1	12	SP	925		15	Brown sand with subangular gravel, fine-grained, medium dense, moist, no odor.
						
2116-20-MW1	5	CL	935			Brown silty clay, medium stiff, moist, no odor, low plasticity.
L & W Environmental Services, Inc. 2111 Jennings Street San Francisco, California				Log of Boring Number: MW 1 Sheet 1 of 3 Beck Roofing 21123 Meekland Avenue Hayward, California		
Project Number: 2116				Date: November, 1991	Figure Number: 5	

Sample Number	Blows per Foot	Soil Type	Time	Log	Depth in Feet	DESCRIPTION
2116-25-MW1	13	CL	944		25	Same, with medium plasticity.
2116-30-MW1	9	CL/SP	959		30	Same, but stiff.
2116-35-MW1	9	SP/CL	1008		35	Brown sand, fine-grained, medium loose, moist, no odor.
2116-40-MW1	11	CL	1025		40	Brown silty clay, stiff, moist to wet near top of sample, no odor, medium plasticity.
L & W Environmental Services, Inc. 2111 Jennings Street San Francisco, California				Log of Boring Number: MW 1 Sheet 2 of 3 Beck Roofing 21123 Meekland Avenue Hayward, California		
Project Number: 2116				Date: November, 1991	Figure Number: 5	

Sample Number	Blows per Foot	Soil Type	Time	Log	Depth in Feet	DESCRIPTION
		CL				
2116-45-MWI	13	CL/SP	1035		45	Same. Brown sand, fine-grained, medium dense, wet, no odor.

Boring terminated at 45.5 feet.
 Groundwater encountered at 30.5 feet.
 Boring drilled 10/30/91 with CME 75 rig.
 Boring grouted from 45.5 to 39 feet and converted into Monitoring Well 1 on 10/30/91

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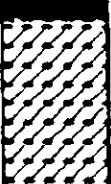
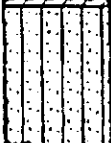

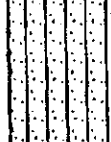

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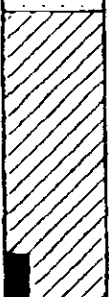
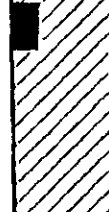

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Sample Number	Blows per Foot	Soil Type	Time	Log	Depth in Feet	DESCRIPTION
		GC			0	3" asphalt cover.
2116-5-MW2	18	SM	145		5	Brown gravel-sand-clay mixture, moist, no odor.
2116-10-MW2	10	SM	150		10	Brown silty sand, fine-grained, medium dense, moist, no odor.
2116-15-MW2	12	SP	200		15	Brown silty sand, fine-grained, loose to medium dense, moist, no odor.
2116-20-MW2	6	SP			20	Brown sand, fine-grained, medium dense, moist, no odor.
L & W Environmental Services, Inc.				Log of Boring Number: MW 2		
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San Francisco, California				Beck Roofing		
				21123 Meekland Avenue		
				Hayward, California		
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Sample Number	Blows per Foot	Soil Type	Time	Log	Depth in Feet	DESCRIPTION
2116-25-MW2	19	CL	235		25	Brown sandy silty clay, very stiff, moist, no odor, medium plasticity.
2116-30-MW2	18	CL	245		30	Same.
2116-35-MW2	12	SM	255		35	Brown sand, fine-grained, medium stiff, wet, no odor.

Boring terminated at 38 feet.
 Groundwater encountered at 33 feet.
 Boring drilled 10/30/91 with CME 75 rig.
 Boring converted into Monitoring Well 2 on
 10/30/91

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Log of Boring Number: MW 2


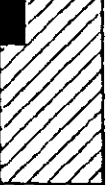


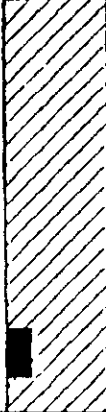
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Sample Number	Blows per Foot	Soil Type	Time	Log	Depth in Feet	DESCRIPTION
					0	Brown silty clay with sand and gravel, moist, no odor.
2116-5-MW3	9	CL	115		5	Brown silty clay, stiff, moist, no odor medium plasticity.
2116-10-MW3	12	SM	125		10	Brown silty sand, fine-grained, medium dense, moist, no odor.
2116-15-MW3	12	SM	135		15	Same.
						Brown silty clay, stiff, moist, slight odor, medium plasticity.
2116-20-MW3	5	CL			20	Brown silty clay, medium stiff, moist, odor, medium plasticity.
L & W Environmental Services, Inc. 2111 Jennings Street San Francisco, California				Log of Boring Number: MW 3 Sheet 1 of 2 Beck Roofing 21123 Meekland Avenue Hayward, California		
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Sample Number	Blows per Foot	Soil Type	Time	Log	Depth in Feet	DESCRIPTION
2116-25-MW3	14	CL	207		25	Same.
2116-30-MW3	13	CL	225		30	Same.
2116-35-MW3	13	SM	230		35	Brown silty sand, fine-grained, medium dense, wet.

Boring terminated at 38 feet.
 Groundwater encountered at 33 feet.
 Boring drilled 10/31/91 with CME 75 rig.
 Boring converted into Monitoring Well 3 on
 10/31/91

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Log of Boring Number: MW 3

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