

SUBSURFACE INVESTIGATION

YOUNG'S APPLIANCE

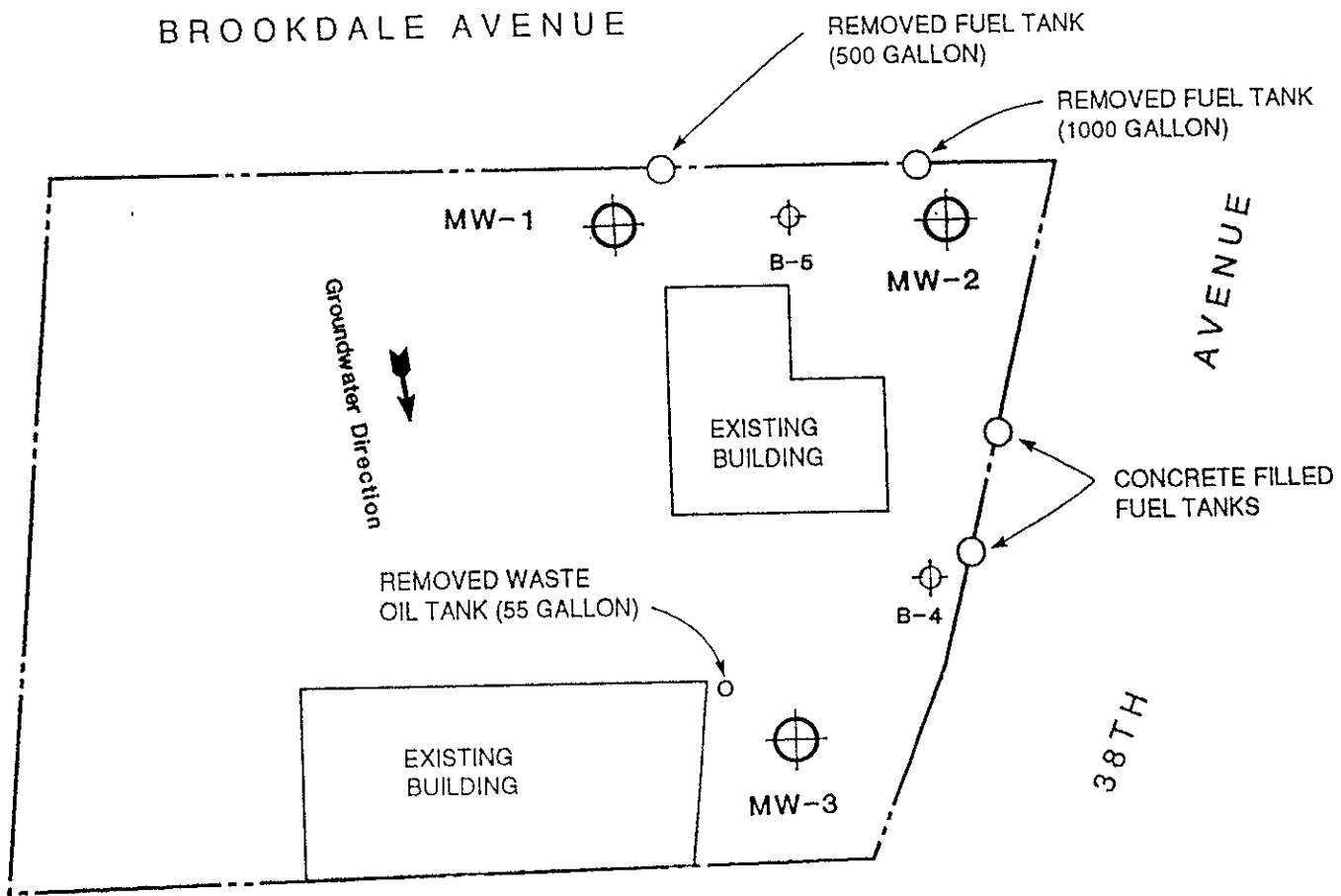
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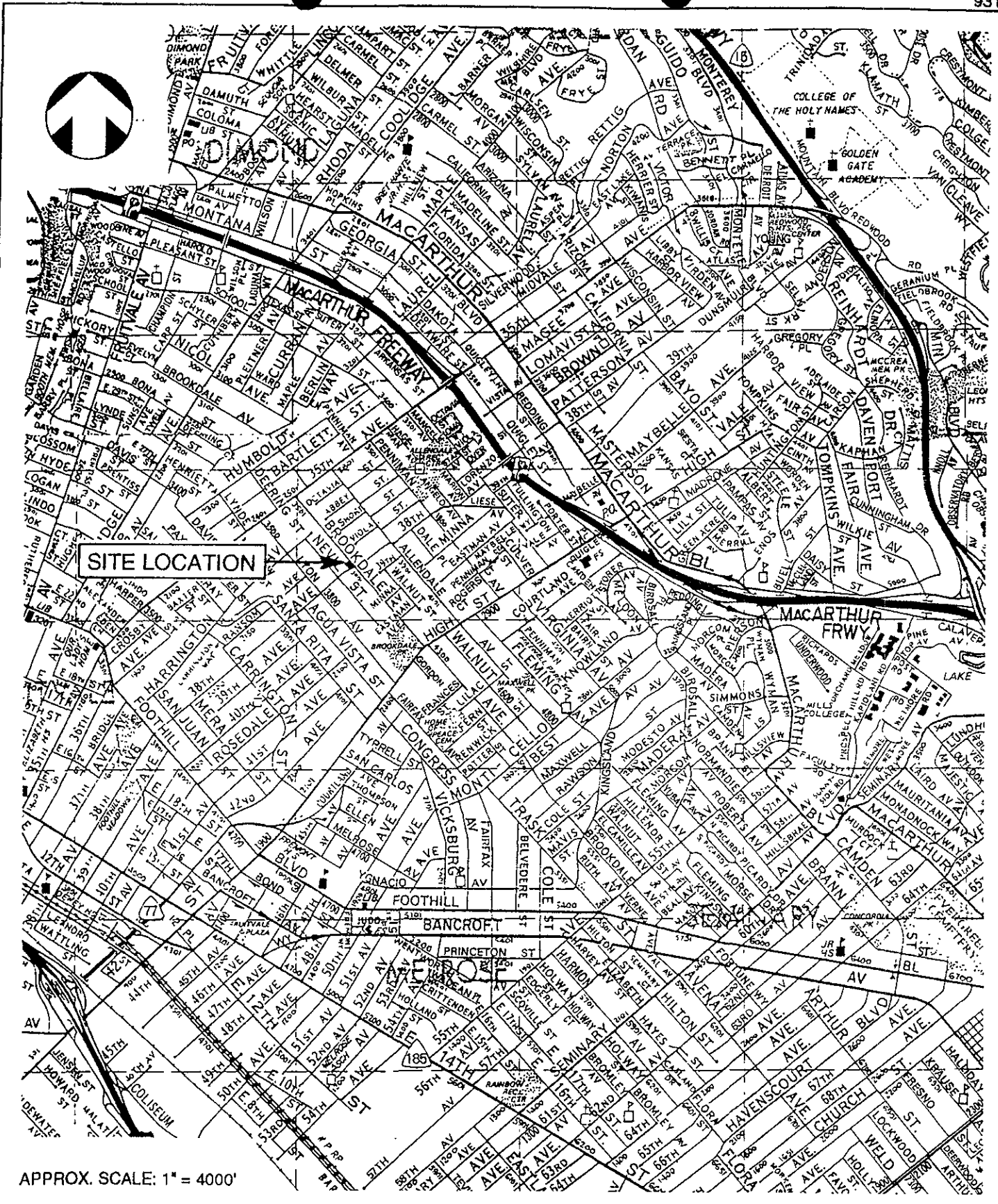
**Mr. Floyd Young
3775 Brookdale Avenue
Oakland, California**

Prepared By:

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

August 1994





SITE LOCATION

APPROX. SCALE: 1" = 400'

QUESTA ENGINEERING CORPORATION
POINT RICHMOND, CALIFORNIA

SITE LOCATION MAP
3775 BROOKDALE AVENUE, OAKLAND

FIGURE
1

T A B L E 1

GROUNDWATER QUALITY PARAMETERS
3775 Brookdale Avenue, Oakland

MONITORING WELL	pH	TEMPERATURE (F)	SPECIFIC CONDUCTANCE	WATER LEVEL (ft)
Pre-Development - 05/24/94				
*MW-1 (132.56)	8.72	64.6	400	124.14
*MW-2 (133.22)	8.17	66.4	480	124.11
*MW-3 (133.06)	8.92	67.1	340	124.04
Post-Development - 05/24/94				
MW-1	8.29	65.6	420	-
MW-2	8.22	65.5	390	-
MW-3	8.16	66.8	310	-
Groundwater Sampling - 05/26/94				
MW-1	8.05	65.6	460	124.96
MW-2	8.32	66.1	380	124.95
MW-3	8.56	66.8	370	124.82

Notes: *MW-1 (132.56) = Top of casing elevation, feet above mean sea level.

PROJECT: Young's Appliance Service
 PROJECT LOCATION: 3775 Brookdale, Oakland
 DRILL METHOD: Hollow Stem Auger
 BORING DIAMETER: 8" OD
 SAMPLER: 18" Modified Split Barrel
 OD: 2.5" ID: 2.0"
 DRILLING COMPANY: Clearheart
 DRILLER: Tim

PROJECT NUMBER: 93128
 HOLE NUMBER: B-1 (MW-1)
 DATE STARTED: 5/19/94
 DATE COMPLETED: 5/19/94
 BORING DEPTH: 20'
 GROUNDWATER DEPTH: 9.25'
 LOGGED BY: Randall D. Smith
 CHECKED BY: Will Hopkins

SHEET: 1 OF: 2
 TIME: 900
 TIME: 1135

Well Construction	PID (ppm)	Recovery	Sample Number	Submitted Sample	Blow Counts	Depth (feet)	Lithology	USCS Symbol	SOIL DESCRIPTION / FIELD NOTES
Asphalt						0.0			Asphalt
GROUT	0					1.0		SP	Gravelly Sand, brown, loose, dry, fine to coarse gravel, moderate est K
					4	2.0		CL	Gravelly Sandy Clay, yellowish-brown, stiff, damp, fine sand to medium gravel, low est K
BENTONITE	0		B1-2.5'	X		13.0		CL	Gravelly Clay, brown, stiff, dry, with concretions of fractured rock, 30-35% medium to coarse gravel
					6	4.0		CL	Sandy Clay, brownish-yellow with white motting, stiff, damp, 10-15% fine to coarse sand
SAND	0		B1-5.0'	X		15.0		CL	Clay, gray with greenish-gray, very stiff, plastic, moist, low est K
					6	9.0		GC	Clayey Gravel, greenish-gray, medium dense, wet, 20-30% fines, low est K. (Noticeable hydrocarbon odor)
	40		B1-10.0'	X		10.0			

Questa Engineering Corporation
 Point Richmond, California

LOG OF MONITORING WELL MW-1
 (BORING B-1)
 YOUNG'S APPLIANCE SERVICE
 3775 Brookdale, Oakland

Plate
 1

PROJECT: Young's Appliance Service
 PROJECT LOCATION: 3775 Brookdale, Oakland
 DRILL METHOD: Hollow Stem Auger
 BORING DIAMETER: 8" OD
 SAMPLER: 18" Modified Split Barrel
 OD: 2.5" ID: 2.0"
 DRILLING COMPANY: Clearheart
 DRILLER: Tim

PROJECT NUMBER: 93128
 HOLE NUMBER: B-1 (MW-1)
 DATE STARTED: 5/19/94
 DATE COMPLETED: 5/19/94
 BORING DEPTH: 20'
 GROUNDWATER DEPTH: 9.25'
 LOGGED BY: Randall D. Smith
 CHECKED BY: Will Hopkins

SHEET: 2 OF: 2
 TIME: 900
 TIME: 1135

Well Construction	PID (ppm)	Recovery	Sample Number	Submitted Sample	Blow Counts	Depth (feet)	Lithology	USCS Symbol	SOIL DESCRIPTION / FIELD NOTES
SAND	0		B1-15.0'		11	11.0	GC	GC	Clayey Gravel, greenish-gray, medium dense, wet, 20-30% fines, low est K
						12.0	CL	CL	
SAND	0		B1-20.0'		10	13.0			Gravelly Clay, dark brown, stiff, moist, 15-20% fines to coarse gravel, low est K
						14.0			
					3	15.0			Clay, light brown with reddish mottling, stiff, damp, low est K
					7	16.0	CL	CL	
					6	17.0			
					5	18.0			
					6	19.0			
					5	20.0			

Questa Engineering Corporation
 Point Richmond, California

LOG OF MONITORING WELL MW-1
 (BORING B-1)
 YOUNG'S APPLIANCE SERVICE
 3775 Brookdale, Oakland

Plate
 1

PROJECT: Young's Appliance Service
 PROJECT LOCATION: 3775 Brookdale, Oakland
 DRILL METHOD: Hollow Stem Auger
 BORING DIAMETER: 8" OD
 SAMPLER: 18" Modified Split Barrel
 OD: 2.5" ID: 2.0"
 DRILLING COMPANY: Clearheart
 DRILLER: Tim

PROJECT NUMBER: 93128
 HOLE NUMBER: B-2 (MW-2)
 DATE STARTED: 5/18/94
 DATE COMPLETED: 5/18/94
 BORING DEPTH: 20'
 GROUNDWATER DEPTH: 9.25'
 LOGGED BY: Randall D. Smith
 CHECKED BY: Will Hopkins

SHEET: 1 OF: 2
 TIME: 1340
 TIME: 1530

Well Construction	PID (ppm)	Recovery	Sample Number	Submitted Sample	Blow Counts	Depth (feet)	Lithology	USCS Symbol	SOIL DESCRIPTION / FIELD NOTES
GROUT BENTONITE SAND SAND	0					0.0		SP	Gravelly Sand, brown, loose, dry, 20-30% fine to coarse gravel
						1.0		CL	Clay, gray with blue-green gleying, medium stiff, damp, low est K
						2.0			
						5.0			
		0		B2-2.5'	X	6	6.0		
							3.0	CL	Clay, light olive with white mottling, stiff, damp, low est K
						4.0			
		0		B2-5.0'	X	12	5.0		
							6.0		
							7.0		
						8.0			
	105				8	8.0		GM	Sandy Gravel, dark gray, dense, wet, 10-15% fines, 20% fine to coarse sand, low to moderate est K. (Hydrocarbon odor)
					18	9.0			
			B2-10.0'	X	20	10.0			

Questa Engineering Corporation
 Point Richmond, California

LOG OF MONITORING WELL MW-2
 (BORING B-2)
 YOUNG'S APPLIANCE SERVICE
 3775 Brookdale, Oakland

Plate
 2

PROJECT: Young's Appliance Service
 PROJECT LOCATION: 3775 Brookdale, Oakland
 DRILL METHOD: Hollow Stem Auger
 BORING DIAMETER: 8" OD
 SAMPLER: 18" Modified Split Barrel
 OD: 2.5" ID: 2.0"
 DRILLING COMPANY: Clearheart
 DRILLER: Tim

PROJECT NUMBER: 93128
 HOLE NUMBER: B-2 (MW-2)
 DATE STARTED: 5/18/94
 DATE COMPLETED: 5/18/94
 BORING DEPTH: 20'
 GROUNDWATER DEPTH: 9.25'
 LOGGED BY: Randall D. Smith
 CHECKED BY: Will Hopkins

SHEET: 2 OF 2

TIME: 1340
 TIME: 1530

Well Construction	PID (ppm)	Recovery	Sample Number	Submitted Sample	Blow Counts	Depth (feet)	Lithology	USCS Symbol	SOIL DESCRIPTION / FIELD NOTES
SAND	0		B2-14.5'		4	11.0	GC	GC	Sandy Gravel, dark gray, dense, wet, 10-15% fines, 20% fine to coarse sand, low to moderate est K
						12.0	CL	CL	
SAND	0		B2-20.0'		7	13.0	CL	CL	Gravelly Clay, brown, stiff, moist, 25-30% medium to coarse gravel, low est K
						14.0	CL	CL	
					10	15.0	CL	CL	Clay, brown with reddish mottles, stiff, damp, low est K (Some cobbles present at 17' to 20' BGS)
					12	16.0			
					5	17.0			
					7	18.0			
					14	19.0			
						20.0			

Questa Engineering Corporation
 Point Richmond, California

LOG OF MONITORING WELL MW-2
 (BORING B-2)
 YOUNG'S APPLIANCE SERVICE
 3775 Brookdale, Oakland

Plate
 2

PROJECT: Young's Appliance Service	PROJECT NUMBER: 93128	SHEET: 1 OF: 2
PROJECT LOCATION: 3775 Brookdale, Oakland	HOLE NUMBER: B-3 (MW-3)	
DRILL METHOD: Hollow Stem Auger	DATE STARTED: 5/18/94	TIME: 1555
BORING DIAMETER: 8" OD	DATE COMPLETED: 5/18/94	TIME: 1830
SAMPLER: 18" Modified Split Barrel	BORING DEPTH: 20'	
OD: 2.5" - ID: 2.0"	GROUNDWATER DEPTH: 10.25'	
DRILLING COMPANY: Clearheart	LOGGED BY: Randall D. Smith	
DRILLER: Tim	CHECKED BY: Will Hopkins	

Well Construction	PID (ppm)	Recovery	Sample Number	Submitted Sample	Blow Counts	Depth (feet)	Lithology	USCS Symbol	SOIL DESCRIPTION / FIELD NOTES
GROUT BENTONITE SAND	0					0.0	Asphalt		Asphalt
						1.0	Gravelly Sand, brown, loose, damp, 25-30% fine to coarse gravel	SP	Gravelly Sand, brown, loose, damp, 25-30% fine to coarse gravel
						2.0	Clay, dark brown with blue-green gleying, damp, stiff, low est K	CL	Clay, dark brown with blue-green gleying, damp, stiff, low est K
						5.0			
				B3-2.5'	X	7.0			
						3.0	Clay, light olive with black mottling, stiff, damp	CL	Clay, light olive with black mottling, stiff, damp
						4.0			
						7.0			
				B3-5.0'	X	9.0			
						8.0	Gravelly Clay, dark gray, stiff, moist, 20-30% fine to medium gravel	CL	Gravelly Clay, dark gray, stiff, moist, 20-30% fine to medium gravel
	160				10.0				
					8				
			B3-10.0'	X	9	10.0			

PROJECT: Young's Appliance Service PROJECT LOCATION: 3775 Brookdale, Oakland DRILL METHOD: Hollow Stem Auger BORING DIAMETER: 8" OD SAMPLER: 18" Modified Split Barrel OD: 2.5" ID: 2.0" DRILLING COMPANY: Clearheart DRILLER: Tim	PROJECT NUMBER: 93128 SHEET: 2 OF: 2 HOLE NUMBER: B-3 (MW-3) DATE STARTED: 5/18/94 TIME: 1555 DATE COMPLETED: 5/18/94 TIME: 1830 BORING DEPTH: 20' GROUNDWATER DEPTH: 10.25' LOGGED BY: Randall D. Smith CHECKED BY: Will Hopkins
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Well Construction	PID (ppm)	Recovery	Sample Number	Submitted Sample	Blow Counts	Depth (feet)	Lithology	USCS Symbol	SOIL DESCRIPTION / FIELD NOTES
SAND	0				5	11.0	▽	CL	First water at 10.25'
						12.0	█	GC	Clayey Gravel, light brown, medium dense, wet, 25-30% fines, 15% fine to coarse sand, low est K
						13.0	█		
SAND	0		B3-15.0'		8	14.0	█	CL	Clay, brown, stiff, moist, low est K
					11	15.0	█		
					16.0	17.0	█		
			B3-20.0'		5	19.0	█		
					6	20.0	█		

PROJECT: Young's Appliance Service
 PROJECT LOCATION: 3775 Brookdale, Oakland
 DRILL METHOD: Hollow Stem Auger
 BORING DIAMETER: 8" OD
 SAMPLER: 18" Modified Split Barrel
 OD: 2.5" ID: 2.0"
 DRILLING COMPANY: Clearheart
 DRILLER: Tim

PROJECT NUMBER: 93128 SHEET: 1 OF: 2
 HOLE NUMBER: B-4
 DATE STARTED: 5/18/94 TIME: 830
 DATE COMPLETED: 5/18/94 TIME: 940
 BORING DEPTH: 15'
 GROUNDWATER DEPTH: 9.75'
 LOGGED BY: Randall D. Smith
 CHECKED BY: Will Hopkins

Well Construction	PID (ppm)	Recovery	Sample Number	Submitted Sample	Blow Counts	Depth (feet)	Lithology	USCS Symbol	SOIL DESCRIPTION / FIELD NOTES
						0.0	Asphalt		
	0					0.0 - 1.0	Gravelly Sand, (fill) brown, loose, damp, 20-30% fine to coarse gravel	SP	
					3	1.0 - 2.0	Clay, dark brown with grayish-green mottling, damp, stiff, high plasticity. (Slight hydrocarbon odor)	CL	
	10		B4-2.5'	X	4	2.0 - 3.0			
					6	3.0 - 4.0			
					4	4.0 - 5.0	Clay, light olive with black mottling, damp, stiff, low est K. (Noticeable hydrocarbon odor)	CL	
	19		B4-5.0'	X	6	5.0 - 6.0			
					11	6.0 - 7.0			
						7.0 - 8.0			
						8.0 - 9.0			
					5	9.0 - 9.75	Gravelly Clay, dark gray, stiff, wet, 25-30% fine to coarse gravel	CL	
	25				4	9.75 - 10.0			
			B4-10.0'	X	10	10.0			

PROJECT: Young's Appliance Service
 PROJECT LOCATION: 3775 Brookdale, Oakland
 DRILL METHOD: Hollow Stem Auger
 BORING DIAMETER: 8" OD
 SAMPLER: 18" Modified Split Barrel
 OD: 2.5" ID: 2.0"
 DRILLING COMPANY: Clearheart
 DRILLER: Tim

PROJECT NUMBER: 93128
 HOLE NUMBER: B-4
 DATE STARTED: 5/18/94
 DATE COMPLETED: 5/18/94
 BORING DEPTH: 15'
 GROUNDWATER DEPTH: 9.75'
 LOGGED BY: Randall D. Smith
 CHECKED BY: Will Hopkins

SHEET: 2 OF 2
 TIME: 830
 TIME: 940

Well Construction	PID (ppm)	Recovery	Sample Number	Submitted Sample	Blow Counts	Depth (feet)	Lithology	USCS Symbol	SOIL DESCRIPTION / FIELD NOTES
								CL	Gravelly Clay, dark gray, stiff, wet, 25-30% fine to, coarse gravel
						11.0		GM	Sandy Gravel, brown, medium dense, wet, 20-25% fine to medium sand, moderate est K
						12.0			
						13.0			
					3			GC	Clayey Gravel, light brown, medium dense, moist
					9				
						14.0			
			B4-15 0'		13	15.0		CL	Clay, dark brown/gray, very stiff, moist, low est K
							BOH		
						16.0			
						17.0			
						18.0			
						19.0			
						20.0			












Questa Engineering Corporation
 Point Richmond, California

LOG OF BORING B-4
 YOUNG'S APPLIANCE SERVICE
 3775 Brookdale, Oakland

Plate
 4

PROJECT: Young's Appliance Service
 PROJECT LOCATION: 3775 Brookdale, Oakland
 DRILL METHOD: Hollow Stem Auger
 BORING DIAMETER: 8" OD
 SAMPLER: 18" Modified Split Barrel
 OD: 2.5" ID: 2.0"
 DRILLING COMPANY: Clearheart
 DRILLER: Tim






PROJECT NUMBER: 93128 SHEET: 1 OF: 2
 HOLE NUMBER: B-5
 DATE STARTED: 5/18/94 TIME: 1000
 DATE COMPLETED: 5/18/94 TIME: 1145
 BORING DEPTH: 15'
 GROUNDWATER DEPTH: 9.25'
 LOGGED BY: Randall D. Smith
 CHECKED BY: Will Hopkins

Well Construction	PID (ppm)	Recovery	Sample Number	Submitted Sample	Blow Counts	Depth (feet)	Lithology	USCS Symbol	SOIL DESCRIPTION / FIELD NOTES
	0					0.0		SP	Gravelly Sand, (fill) brown, loose, dry, 20-30% fine to coarse gravel
					4	1.0		CL	Clay, dark gray with blue gleying, damp, stiff, damp, low est K
	0		B5-2.5'	X	5	2.0			
					7	3.0		CL	Clay, light olive with white mottling, damp, stiff, low est K
	0		B5-5.0'	X	10	4.0			
					8	5.0		CL	Clay, greenish-gray, very stiff, high plasticity, moist
					20	6.0			
					8	7.0		CL	Clay, greenish-gray, very stiff, high plasticity, moist
					20	8.0			
					26	9.0		GC	Clayey Gravel, dark gray, dense, wet, 15-20%, low to moderate est K
			B5-10.0'	X	26	10.0			

PROJECT: Young's Appliance Service
 PROJECT LOCATION: 3775 Brookdale, Oakland
 DRILL METHOD: Hollow Stem Auger
 BORING DIAMETER: 8" OD
 SAMPLER: 18" Modified Split Barrel
 OD: 2.5" ID: 2.0"
 DRILLING COMPANY: Clearheart
 DRILLER: Tim

PROJECT NUMBER: 93128
 HOLE NUMBER: B-5
 DATE STARTED: 5/18/94
 DATE COMPLETED: 5/18/94
 BORING DEPTH: 15'
 GROUNDWATER DEPTH: 9.25'
 LOGGED BY: Randall D. Smith
 CHECKED BY: Will Hopkins

SHEET: 2 OF 2
 TIME: 1000
 TIME: 1145

Well Construction	PID (ppm)	Recovery	Sample Number	Submitted Sample	Blow Counts	Depth (feet)	Lithology	USCS Symbol	SOIL DESCRIPTION / FIELD NOTES
						11.0		GC	Clayey Gravel, dark gray, dense, wet, 15-20%, low to moderate est K
						12.0			
						13.0		CL	Gravelly Clay, dark brown, stiff, moist, 20-30% fine to medium gravel, low est K
					3	14.0			
	0				8	15.0		CL	Clay, light brown with reddish mottles, stiff, damp, low est K
			B5-15 0'		10	15.0	BOH		
						16.0			
						17.0			
						18.0			
						19.0			
						20.0			