A

APPENDIX A

FIELD INVESTIGATION

Our field investigations were performed on July 1, July 2, and July 8, 2002 and more recently on February 22, 2006 and April 27, 2006. Field studies consisted of a site reconnaissance and field mapping, excavation of 10 small diameter borings and 22 exploratory backhoe trenches, 13 seismic refraction traverses and 6 "air-track" borings. Small diameter borings were advanced using a CME 55 and 75 truck mounted drill rig equipped with 8-inch diameter hollow stem augers. During drilling, relatively undisturbed soil samples were obtained by driving a 3-inch, O.D., split-tube sampler into the "undisturbed" soil mass. The sampler was driven with blows from a 140-pound hammer falling a distance of 30 inches. Standard Penetration tests were also performed during drilling. Trenches were excavated using a tire John Deere 310 backhoe equipped with 24-inch wide bucket. During drilling and trenching, bulk samples were obtained. Seismic refraction traverses were performed using an EG&G Geometrics 1225-model, 12-channel seismograph unit. Air-track borings were performed using an ECM-370 track mounted air percussion drill rig equipped with a 4-inch-diameter bit.

Soil conditions encountered in borings and trench excavations were visually examined, classified and logged in general accordance with the American Society for Testing and Materials (ASTM) practice for Description and Identification of Soils (Visual-Manual Procedure D2488). Logs of exploratory excavations are contained herein as Figures A-1 through A-36. The logs depict the soil and geologic conditions encountered and the depth at which samples were obtained. "Air-track" borings are contained as Figures A-1 through A-6 and titled Meadowood Water Reservoirs. The approximate locations of the exploratory excavations are shown on the Geologic Maps (Figure 2, map pocket).

PROJECT NO. 06931-42-01

BORING B 1

ELEV. (MSL.) 260 DATE COMPLETED 7/8/02

EQUIPMENT 8" HOLLOW STEM AUGER

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
2				SM	**TOPSOIL** Loose, dry, dark brown, Silty, fine to medium SAND; plowed field soil			
4					**TERRACE DEPOSIT** Very dense, dry to humid, medium reddish-brown, Silty coarse SAND; massive			
6	B1-1			SM SP		27/6"	118.2	8.2
8								
10	B1-2			ML	Dense, damp, medium olive brown, micaceous SILT	38	91.3	30.4
12					-Becomes silty fine sand (transitional), some gravel in lower part			
14			▼		-Groundwater			
16	B1-3			SW	Medium dense, light to medium brown, fine to coarse SAND	24		
18								
20	B1-4			ML	Medium dense, very moist, olive brown, micaceous SILT	27		
22								
24								
26	B1-5			SP	Medium dense, saturated, medium SAND (Sampling unsuccessful)	28		
28				ML				

Figure A-1, Log of Boring B 1

PF

SAMPLE SYMBOLS

□ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

BORING B 1

ELEV. (MSL.) 260 DATE COMPLETED 7/8/02

EQUIPMENT 8" HOLLOW STEM AUGER

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
30	B1-6			ML	Medium dense, very moist to saturated, micaceous SILT, some very fine sand	20		
32								
34								
36	B1-7					29		
38								
40	B1-8					22		
42					Medium dense, saturated, medium brown, Sandy, micaceous SILT; with very fine sand, and approximately 2" thick calcareous layer (ancient durapan)			
44								
46	B1-9			ML		27		
48					-Becomes very moist (not saturated)			
50	B1-10					25		
52								
54								
56	B1-11			SM-ML	Medium dense to dense, very moist, medium brown, very Silty, very fine SAND to Sandy SILT	30		
58								

Figure A-2, Log of Boring B 1

PF

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING B 1** ELEV. (MSL.) 260 DATE COMPLETED 7/8/02 EQUIPMENT 8" HOLLOW STEM AUGER	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
60	B1-12			ML	Dense, moist to very moist, medium red-brown to brown, Sandy SILT	42		
					BORING TERMINATED AT 61.5 FEET Groundwater at ~14 feet			

Figure A-3, Log of Boring B 1

PF

SAMPLE SYMBOLS
☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)
▨ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

BORING B 2

ELEV. (MSL.) 260 DATE COMPLETED 7/8/02

EQUIPMENT 8" HOLLOW STEM AUGER

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
2					**ALLUVIUM** Stiff, moist, dark gray-olive, Silty CLAY to very Clayey SILT			
4				CL-ML				
6	B2-1					13	86.1	31.7
8								
10	B2-2				Soft, very moist, dark gray-olive, Silty CLAY to very Clayey SILT	3	81.8	40.3
12				CL-ML				
14			▼		-Groundwater at 13.5 feet			
16	B2-3					3	81.4	39.9
18								
20	B2-4			SM-ML	Loose, very moist to wet, medium dark brown, very Silty fine SAND, micaceous	6	100.4	25.5
22								
24					Loose to medium dense, saturated, medium brown, medium SAND			
26	B2-5			SP-SM		10		
28								

Figure A-4, Log of Boring B 2

PF

SAMPLE SYMBOLS

□ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

BORING B 2

ELEV. (MSL.) 260 DATE COMPLETED 7/8/02

EQUIPMENT 8" HOLLOW STEM AUGER

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
30	B2-6				-Sharp deposition-contact	35		
32				CL-SC	**TERRACE DEPOSIT** Very stiff, moist, dark reddish-brown, very Sandy CLAY			
34					-Some gravel			
36	B2-7			SM-ML	Dense, very moist to wet, medium brown, very Silty fine SAND to micaceous Sandy SILT	66		
38	B2-8					27		
					BORING TERMINATED AT 38.5 FEET			

Figure A-5, Log of Boring B 2

PF

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

BORING B 3

ELEV. (MSL.) 287 DATE COMPLETED 7/8/02

EQUIPMENT 8" HOLLOW STEM AUGER

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
2					**ALLUVIUM** Loose, moist, dark brown, Silty, fine to medium SAND			
4								
6	B3-1			SM		3	112.4	17.7
8								
10	B3-2					7	120.9	17.0
12			▼		-Groundwater at 12 feet			
14								
16	B3-3			SM	Medium dense, saturated, dark brown, Gravelly, Silty, medium to coarse SAND	22		
18								
20	B3-4				**TERRACE DEPOSIT** Dense, moist, dark reddish-brown, very Clayey, medium to coarse SAND, massive	46		
22				SC-CL				
24								
26	B3-5					37		
					BORING TERMINATED AT 26.5 FEET			

Figure A-6, Log of Boring B 3

PF

SAMPLE SYMBOLS

□ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

BORING B 4

ELEV. (MSL.) 326 DATE COMPLETED 7/8/02

EQUIPMENT 8" HOLLOW STEM AUGER

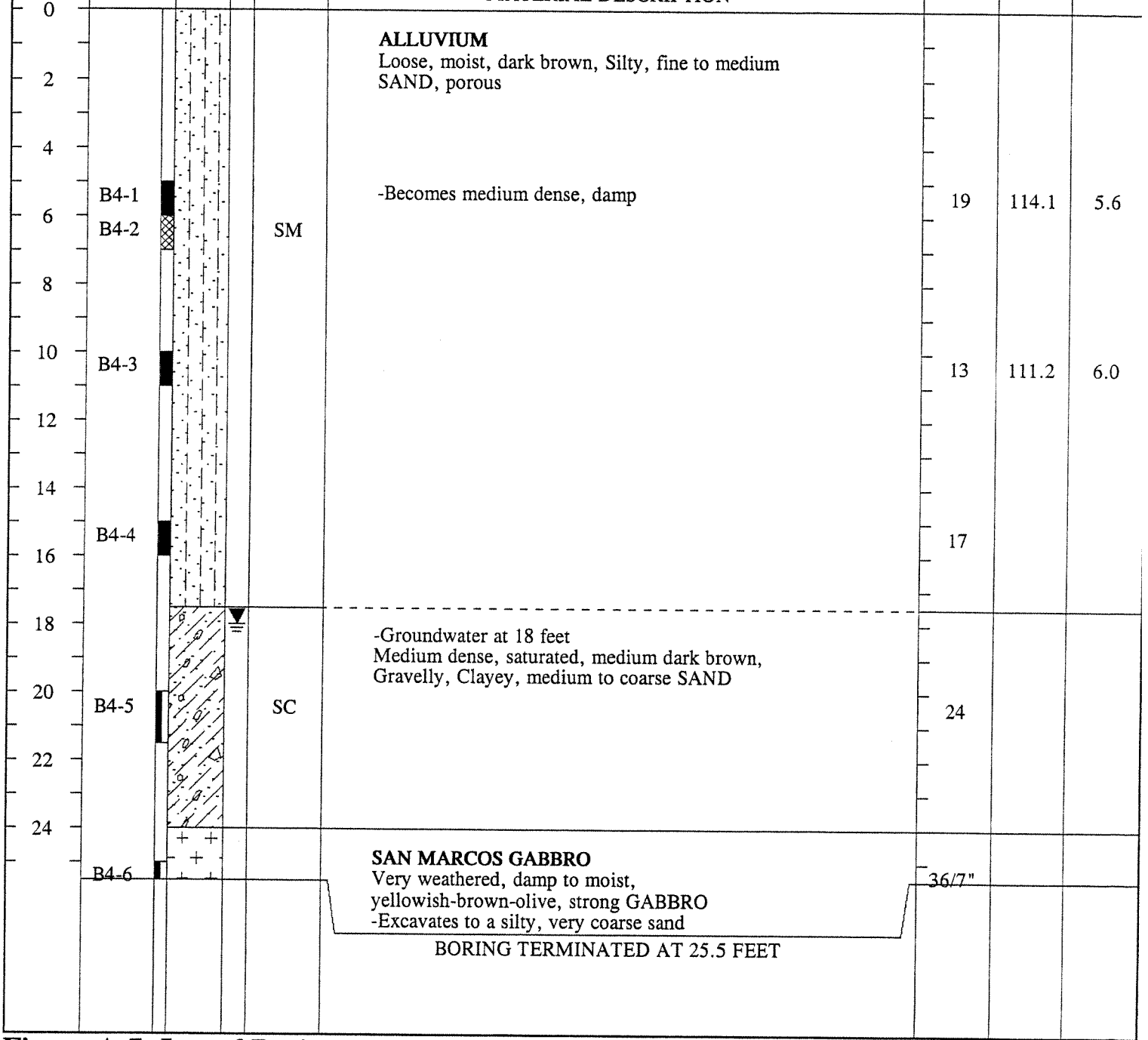


Figure A-7, Log of Boring B 4

PF

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ▨ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

BORING B 5

ELEV. (MSL.) 264 DATE COMPLETED 7/8/02

EQUIPMENT 8" HOLLOW STEM AUGER

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
2					**ALLUVIUM** Loose to medium dense, dry, dark brown, Silty, fine to medium SAND; porous, but with trace clay			
4				SM				
6	B5-1					27		6.8
8								
10	B5-2				**TERRACE DEPOSIT** Medium dense, damp to moist, dark reddish-brown, Clayey, fine to medium SAND, with some silt, massive	27		
12								
14			▼	SC	-Groundwater (possible artesian; rise from 21' to 14' after boring completion)			
16	B5-3					36	118.6	14.9
18								
20			▽					
22					-Becomes very moist to wet Loose to medium dense, wet to saturated, medium brown, Silty, fine to medium SAND			
24				SM				
26	B5-4					8		
28								

Figure A-8, Log of Boring B 5

PF

SAMPLE SYMBOLS

- □ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ▨ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

BORING B 5

ELEV. (MSL.) 264 DATE COMPLETED 7/8/02

EQUIPMENT 8" HOLLOW STEM AUGER

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
30								
32								
34				SM				
36	B5-5					18		
38								
40								
42				SC	Very dense, very moist, reddish-brown, very Clayey medium SAND; massive			
44								
46	B5-6					52		
					BORING TERMINATED AT 46.5 FEET			

Figure A-9, Log of Boring B 5

PF

SAMPLE SYMBOLS

□ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◪ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

BORING SB 6

ELEV. (MSL.) 270' DATE COMPLETED 02-22-2006

EQUIPMENT CME 75 BY: G. C.

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
	SB6-1			SM-ML	**ALLUVIUM** Loose, moist, dark gray brown, very Silty, fine SAND; porous, roots			
4								
	SB6-2			SP	Medium dense, damp, medium gray brown, medium to coarse SAND; laminated, lenticular river sediment; mostly granitic composition origin	17		
8								
10	SB6-3					20	87.5	4.9
12								
14								
	SB6-4				-Very coarse sand lenses	20		
16								
18			▼		-Becomes fine to medium (more mica)			
20	SB6-5					16		
22								
24								
26					-Becomes more dense, medium coarse-grained			
28								

Figure A-1,
Log of Boring SB 6, Page 1 of 2

06931-42-01.GPJ

SAMPLE SYMBOLS

- ☐ .. SAMPLING UNSUCCESSFUL
- ▨ .. DISTURBED OR BAG SAMPLE
- ◧ .. STANDARD PENETRATION TEST
- ◥ .. CHUNK SAMPLE
- ■ .. DRIVE SAMPLE (UNDISTURBED)
- ▼ .. WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

BORING SB 6

ELEV. (MSL.) 270' DATE COMPLETED 02-22-2006

EQUIPMENT CME 75 BY: G. C.

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
30	SB6-6			SP	-Same	30		
32								
34								
36								
38								
40	SB6-7					28		
42								
44								
46								
48								
50	SB6-8					16		
					BORING TERMINATED AT 51.5 FEET Groundwater encountered at 18 feet Backfilled with bentonite grout			

Figure A-1,
Log of Boring SB 6, Page 2 of 2

06931-42-01.GPJ

SAMPLE SYMBOLS

- ☐ .. SAMPLING UNSUCCESSFUL
- ◧ .. STANDARD PENETRATION TEST
- ■ .. DRIVE SAMPLE (UNDISTURBED)
- ⊠ .. DISTURBED OR BAG SAMPLE
- ◥ .. CHUNK SAMPLE
- ▼ .. WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. 06931-42-01

BORING SB 7

ELEV. (MSL.) 263' DATE COMPLETED 02-22-2006

EQUIPMENT CME 75 BY: G. C.

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
	SB7-1			ML-CL	**FILL** Medium dense, moist, dark reddish brown, Clayey, Sandy SILT			
4				MH-CH	**ALLUVIUM** Loose to stiff, wet, dark gray brown, very Clayey SILT to Silty CLAY; micaceous, plastic			
8	SB7-2					12	90.0	30.8
	SB7-2A		▼		-May be perched seepage			
10	SB7-3					8		
16	SB7-4					7		
22			▼		-Becomes more dense			
26	SB7-5					11		
28				SM-ML				

Figure A-2,
Log of Boring SB 7, Page 1 of 2

06931-42-01.GPJ

SAMPLE SYMBOLS

- ☐ .. SAMPLING UNSUCCESSFUL
- ▨ .. DISTURBED OR BAG SAMPLE
- ◧ .. STANDARD PENETRATION TEST
- ◥ .. CHUNK SAMPLE
- ■ .. DRIVE SAMPLE (UNDISTURBED)
- ▼ .. WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

BORING SB 7

ELEV. (MSL.) 263' DATE COMPLETED 02-22-2006

EQUIPMENT CME 75 BY: G. C.

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
30	SB7-6			SM-ML	Loose to medium dense, saturated, medium brown, very Silty, fine SAND with trace clay	10		
32								
34								
36								
38								
40	SB7-7			SC-CL	**TERRACE DEPOSIT** Medium dense, very moist, medium reddish brown, very Clayey, fine SAND to Sandy CLAY	30		
42								
44								
46								
48				SM-ML	Dense, very moist, medium brown, very Silty, fine-grained SAND			
50	SB7-8					50		
					BORING TERMINATED AT 51.5 FEET Groundwater encountered at 9 and 22 feet Backfilled with bentonite grout			

Figure A-2,
Log of Boring SB 7, Page 2 of 2

06931-42-01.GPJ

SAMPLE SYMBOLS

- ☐ .. SAMPLING UNSUCCESSFUL
- ▮ .. STANDARD PENETRATION TEST
- ■ .. DRIVE SAMPLE (UNDISTURBED)
- ⊠ .. DISTURBED OR BAG SAMPLE
- ◣ .. CHUNK SAMPLE
- ▼ .. WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. 06931-42-01

BORING SB 8

ELEV. (MSL.) 281' DATE COMPLETED 02-22-2006

EQUIPMENT CME 75 BY: G. C.

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**ALLUVIUM** Loose, damp, medium dark brown, very Silty, fine to medium-grained SAND; micaceous			
2	SB8-1							
4								
6	SB8-2				-Becomes moist	10	112.5	5.5
8								
10	SB8-3					7		
12					-Saturated			
14			▼					
16	SB8-4					10 8		
18								
20	SB8-5					16		
22								
24								
26				SM	**TERRACE DEPOSIT** Dense, wet, medium reddish brown to brown, Silty, medium-grained SAND with some fine gravel			
28								

Figure A-3,
Log of Boring SB 8, Page 1 of 2

06931-42-01.GPJ

SAMPLE SYMBOLS

- ☐ .. SAMPLING UNSUCCESSFUL
- ▮ .. STANDARD PENETRATION TEST
- ■ .. DRIVE SAMPLE (UNDISTURBED)
- ⊠ .. DISTURBED OR BAG SAMPLE
- ◥ .. CHUNK SAMPLE
- ▼ .. WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

BORING SB 8

ELEV. (MSL.) 281' DATE COMPLETED 02-22-2006

EQUIPMENT CME 75 BY: G. C.

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
30	SB8-6			SM		65	121.5	15.8
32								
34								
36				SC	Dense, wet to saturated, reddish brown, Clayey, fine to medium-grained SAND with some silt			
38								
40	SB8-7					62		
42					-Becomes very gravelly 41 to 49 feet			
44								
46								
48								
50	SB8-8				-Dense, very moist, medium reddish brown, clayey, fine sand with some silt, little gravel	60		
					BORING TERMINATED AT 51.5 FEET Groundwater encountered at 15 feet Backfilled with bentonite grout			

Figure A-3,
Log of Boring SB 8, Page 2 of 2

06931-42-01.GPJ

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

BORING SB 9

ELEV. (MSL.) 311' DATE COMPLETED 02-23-2006

EQUIPMENT CME 75 BY: G. C.

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
30				SC				
32								
34			▼					
36	SB9-7				**BONSALL TONALITE** Weathered, moist, light to medium brown (mottled), strong GRANITIC ROCK	65		
38					-Excavates as a clayey sand			
40	SB9-8				-Less weathered, becoming very strong	50/2"		
					REFUSAL AT 40.1 FEET Groundwater encountered at 34.5 feet Backfilled with bentonite grout			

Figure A-4,
Log of Boring SB 9, Page 2 of 2

06931-42-01.GPJ

SAMPLE SYMBOLS

- ☐ .. SAMPLING UNSUCCESSFUL
- ◧ .. STANDARD PENETRATION TEST
- ■ .. DRIVE SAMPLE (UNDISTURBED)
- ⊠ .. DISTURBED OR BAG SAMPLE
- ◥ .. CHUNK SAMPLE
- ▼ .. WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. 06931-42-01

BORING SB 9

ELEV. (MSL.) **311'** DATE COMPLETED **02-23-2006**

EQUIPMENT **CME 75** BY: **G. C.**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
	SB9-1			SM	**ALLUVIUM** Loose to medium dense, dry, medium reddish brown, Silty, fine to medium-grained SAND with some clay			
2								
4								
	SB9-2					24		
6					-Little clay			
8								
	SB9-3					16		
10								
	SB9-3A				-Becomes dense, some fine gravel			
12								
14				SC	**TERRACE DEPOSIT** Dense, moist, medium to dark reddish brown, Clayey, medium to coarse-grained SAND; massive			
	SB9-4					40		
16								
18								
	SB9-5					45		
20								
22								
24								
	SB9-6					45		
26								
28								

Figure A-4,
Log of Boring SB 9, Page 1 of 2

06931-42-01.GPJ

SAMPLE SYMBOLS

- ☐ .. SAMPLING UNSUCCESSFUL
- ▨ .. DISTURBED OR BAG SAMPLE
- ◧ .. STANDARD PENETRATION TEST
- ◥ .. CHUNK SAMPLE
- ■ .. DRIVE SAMPLE (UNDISTURBED)
- ▼ .. WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

BORING SB 10

ELEV. (MSL.) 320' DATE COMPLETED 02-23-2006

EQUIPMENT CME 75 BY: G. C.

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**ALLUVIUM** Loose, damp, dark brown, Silty, fine SAND; topsoil			
2				SM	Medium dense, damp, dark to medium brown, Silty, fine to medium-grained SAND with some clay			
4								
6	SB10-1					35		
8				SC-CL	Medium dense, moist, dark to medium brown, very Clayey, fine to medium SAND with some silt			
10	SB10-2					25		
12								
14				CL	**TERRACE DEPOSIT** Very stiff, very moist, medium reddish brown, very Sandy CLAY			
16	SB10-3					27		
18								
20	SB10-4	+ +			**BONSALL TONALITE GNEISS** Very weathered and foliated, very moist, light to medium olive brown (mottled), moderately strong GRANITIC GNEISS	75		
22		+ +						
24		+ +			-Becomes strong			
	SB10-5	+ +				50/2"		
					REFUSAL AT 25.1 FEET Groundwater not encountered Backfilled with bentonite grout			

Figure A-5,
Log of Boring SB 10, Page 1 of 1

06931-42-01.GPJ

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. 06931-42-01

TRENCH T 1

ELEV. (MSL.) 265 DATE COMPLETED 7/1/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
2				SM	**ALLUVIUM** Loose, dry to humid, dark brown, Silty, fine to medium SAND; very porous, with burrows, root-voids			
4								
6	T1-1 T1-2							
8				SM	Loose to medium dense, medium to dark brown, Silty, fine to medium SAND; less porosity, with pinhole voids			
10								
12								
14	T1-3		▼	SM	-Groundwater seepage Loose, saturated, medium to dark brown, slightly Silty, fine to medium SAND; caving, low cohesion			
16					TRENCH TERMINATED AT 16 FEET (CAVING)			

Figure A-10, Log of Trench T 1

PF

SAMPLE SYMBOLS

□ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◣ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 2

ELEV. (MSL.) 265 DATE COMPLETED 7/1/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ALLUVIUM** Loose, dry to humid, dark brown, Silty, fine to medium SAND; porous, with burrows, root-voids			
2				SM				
4								
6					Loose, damp to moist, medium to dark brown, slightly Silty, medium to coarse SAND; less porous, with pinhole voids			
8								
10				SM				
12								
14	T2-1			SP	Loose to medium dense, very moist, medium brown-gray, medium to very coarse SAND, with "pea gravel", low cohesion, caving			
16					TRENCH TERMINATED AT 16 FEET			

Figure A-11, Log of Trench T 2

PF

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◪ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 3

ELEV. (MSL.) 262 DATE COMPLETED 7/1/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
2				SM	**UNDOCUMENTED FILL** Loose, humid to damp, medium reddish-brown, Silty fine SAND			
4					**ALLUVIUM** Loose, damp to moist, medium to dark gray-brown, Sandy SILT; abundant laminated mica			
6	T3-1			ML			87.2	23.0
8	T3-2							
10								
12								
14			▼	CL-MH	Soft, saturated, dark olive-gray, very Silty CLAY to Clayey SILT; moderately plastic, caving			
16	T3-3				TRENCH TERMINATED AT 16 FEET (CAVING)			

Figure A-12, Log of Trench T 3

PF

SAMPLE SYMBOLS

□ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 4

ELEV. (MSL.) 280 DATE COMPLETED 7/1/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
2				SM	**ALLUVIUM** Loose to medium dense, dry to humid, medium dark brown, Silty, fine to medium SAND; porous, with burrows, pinhole voids			
4								
6	T4-1				**TERRACE DEPOSIT** Medium dense, moist, medium reddish-brown, Clayey, fine to medium SAND; less porous			
8				SC				
10								
12	T4-2		▼	SM	-Groundwater at 12 feet Loose to medium dense, wet to saturated, slightly Silty, medium to coarse SAND			
14								
					TRENCH TERMINATED AT 15 FEET			

Figure A-13, Log of Trench T 4

PF

SAMPLE SYMBOLS

□ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 5

ELEV. (MSL.) 300 DATE COMPLETED 7/1/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**TERRACE DEPOSIT** Medium dense, dry to humid, medium to dark brown, Silty, fine to medium SAND			
2					becomes humid to damp, moderately porous			
4				SM				
6								
8								
10					-Light tan, clean sand layers, roots, burrows			
12	T5-1				Medium dense, damp to moist, medium reddish-brown, very Silty fine SAND; less porous, pinhole voids		101.2	12.1
14	T5-2			SM				
					TRENCH TERMINATED AT 15 FEET			

Figure A-14, Log of Trench T 5

PF

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ▨ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ⧩ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 6

ELEV. (MSL.) 300 DATE COMPLETED 7/1/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
				SC	**TERRACE DEPOSIT** Medium dense, humid, dark brown, Clayey, fine to medium SAND			
2								
	T6-1				Medium dense, damp, light to medium reddish-brown, Silty, medium to coarse SAND, with some clay		115.4	7.0
4								
	T6-2			SM				
6								
8								
				SC	Medium dense, damp to moist, medium to dark reddish-brown, Clayey, fine to medium SAND			
10								
					TRENCH TERMINATED AT 10.5 FEET			

Figure A-15, Log of Trench T 6

PF

SAMPLE SYMBOLS

□ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 7

ELEV. (MSL.) 293 DATE COMPLETED 7/1/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
					ALLUVIUM Loose, damp to moist, dark brown, Silty, fine to medium SAND, very porous, with roots, burrows			
2								
4				SM				
6								
8					TRENCH TERMINATED AT 8 FEET			

Figure A-16, Log of Trench T 7

PF

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 8

ELEV. (MSL.) 327 DATE COMPLETED 7/1/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
2					**ALLUVIUM** Loose, damp, dark brown, Silty, fine to medium SAND; very porous, with roots, burrows			
4								
6								
8				SM				
10								
12								
14					-Becomes very moist to wet			
					TRENCH TERMINATED AT 15.5 FEET			

Figure A-17, Log of Trench T 8

PF

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◣ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 9

ELEV. (MSL.) 382 DATE COMPLETED 7/1/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
				SC	**TOPSOIL** Loose, dry to humid, dark red-brown, Clayey fine SAND; porous, with roots			
2					**SAN MARCOS GABBRO** Very weathered, humid to damp, medium olive brown, moderately strong GABBRO -Excavates to a silty, medium to very coarse sand, with trace of clay			
	T9-1							
4								
6					TRENCH TERMINATED AT 6 FEET			

Figure A-18, Log of Trench T 9

PF

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◪ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 10

ELEV. (MSL.) 445 DATE COMPLETED 7/2/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
2				GM	**UNDOCUMENTED FILL** Loose, dry to humid, light gray-brown (mottled) SAND, coarse RUBBLE; very porous, with 3-4' chunks of concrete, with voids, some silty sand matrix			
4								
6								
8								
10					TRENCH TERMINATED AT 10 FEET (Refusal on oversize concrete)			

Figure A-19, Log of Trench T 10

PF

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	TRENCH T 11 ELEV. (MSL.) 375 DATE COMPLETED 7/2/02 EQUIPMENT 310 BACKHOE, 24"	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0					**UNDOCUMENTED FILL** Loose, dry to humid, light gray-brown (mottled), Clayey/Sandy coarse RUBBLE; very porous, with 6"-24" chunks of concrete, with voids, some clayey sand, matrix and cobble			
2								
4								
6								
8								
					TRENCH TERMINATED AT 9 FEET (Refusal on oversize concrete)			

Figure A-20, Log of Trench T 11

PF

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◣ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 12

ELEV. (MSL.) 425 DATE COMPLETED 7/2/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
2				SM	**TOPSOIL** Loose, moist, dark brown, Silty, fine to medium SAND; porous, with roots			
4	T12-1 T12-2			SM	**TERRACE DEPOSIT** Dense, moist, dark reddish brown-brown, Silty, medium to coarse SANDSTONE			
6					**SAN MARCOS GABBRO** Weathered, moist, dark brown-olive, moderately strong GABBRO; excavates to a silty, medium to coarse sand, with 6"-12" wide granitic dikes			
					TRENCH TERMINATED AT 7 FEET			

Figure A-21, Log of Trench T 12

PF

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 13

ELEV. (MSL.) 425 DATE COMPLETED 7/2/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
2				GM	**UNDOCUMENTED FILL** Very dense, dry, light gray-brown (mottled) Sandy RUBBLE; porous, but with poured concrete waste or lime-cementation rubble 6"-18" diameter			
4								
6				SM	**ALLUVIUM** Loose, moist, dark brown, Silty, fine to medium SAND; very porous, with roots			
8					**BONSALL TONALITE GNEISS** Weathered, moist, light brown-orange, strong GRANITIC ROCK			
					BORING TERMINATED AT 9 FEET (REFUSAL)			

Figure A-22, Log of Trench T 13

PF

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ▨ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 14

ELEV. (MSL.) 422 DATE COMPLETED 7/2/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
				SM-ML	**ALLUVIUM** Loose, moist, dark gray-brown, very Silty fine SAND; very porous, with pinholes, burrows			
2								
4								
6								
8				GM	Medium dense, moist, dark gray brown, Sandy coarse GRAVEL, with some silt			
10					**SAN MARCOS GABBRO** Very weathered, moist, dark olive to brown, moderate to strong GABBRO -Excavates to a medium to coarse sand			
					TRENCH TERMINATED AT 11 FEET			

Figure A-23, Log of Trench T 14

PF

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ⏚ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 15

ELEV. (MSL.) 465 DATE COMPLETED 7/2/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
2				SM	**ALLUVIUM** Loose, damp, dark brown, Gravelly, Silty fine SAND; very porous, with roots			
4								
6				SM-GM	-Becomes more gravelly			
8				SM	**TERRACE DEPOSIT** Dense, damp, medium dark olive brown, Silty SAND			
					TRENCH TERMINATED AT 9 FEET			

Figure A-24, Log of Trench T 15

PF

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 16

ELEV. (MSL.) 512 DATE COMPLETED 7/2/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
2				SM	**ALLUVIUM** Loose, moist, dark gray-brown, Silty, fine to medium SAND; very porous, with roots, pinhole voids			
4								
6								
					SAN MARCOS GABBRO Very weathered, damp, light to medium olive brown, moderately strong GABBRO; excavates to a silty, medium to coarse sand			
					TRENCH TERMINATED AT 7 FEET			

Figure A-25, Log of Trench T 16

PF

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ⧩ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 17

ELEV. (MSL.) 420 DATE COMPLETED 7/2/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**TOPSOIL** Loose, damp, dark brown, Silty fine SAND			
2				SM	**TERRACE DEPOSIT** Dense, damp, dark gray brown, Silty, medium to coarse SAND; massive			
4								
6					**SAN MARCOS GABBRO** Weathered, damp, medium to dark olive brown to light brown (mottled) strong GABBRO with narrow dikes of TONALITE; -Excavates to a silty coarse sand			
					TRENCH TERMINATED AT 7 FEET (REFUSAL)			

Figure A-26, Log of Trench T 17

PF

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ⏚ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 18

ELEV. (MSL.) 480 DATE COMPLETED 7/2/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
				SC	**ALLUVIUM** Loose, damp, dark brown, Clayey/Silty fine SAND; porous, with roots, burrows			
2								
4								
6					-Gabbro boulder 2' diameter -Becomes very moist			
8				SM	**TERRACE DEPOSIT** Dense, damp, dark brown-olive, Silty, fine to coarse SAND; massive			
					TRENCH TERMINATED AT 9 FEET			

Figure A-27, Log of Trench T 18

PF

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◪ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 19

ELEV. (MSL.) 430 DATE COMPLETED 7/2/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
2				SM	**UNDOCUMENTED FILL** Medium dense, damp, dark to medium brown (mottled) Silty, rubbly SAND			
4				SM	**ALLUVIUM** Loose, moist, dark brown, Silty fine SAND; very porous, with pinhole voids, burrows			
6								
8				SM	**TERRACE DEPOSIT** Dense, damp, medium reddish-brown, Silty, fine to medium SAND; massive			
10				SM	-Becomes very dense, coarse, with pea gravel			
12					TRENCH TERMINATED AT 12 FEET			

Figure A-28, Log of Trench T 19

PF

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ⧩ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 20

ELEV. (MSL.) 485 DATE COMPLETED 7/2/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**TERRACE DEPOSIT** Loose to medium dense, damp, dark brown, Silty fine SAND; minor pinhole pores			
2					-Fine angular gravel layers			
4								
6	T20-1 T20-2			SM				
8					-Becomes moist to very moist			
10								
12				SM	Dense, damp, light to medium reddish-brown, Silty medium SAND; massive, with some fine pea-gravel			
					TRENCH TERMINATED AT 13 FEET			

Figure A-29, Log of Trench T 20

PF

SAMPLE SYMBOLS

□ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◪ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	TRENCH T 21	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					ELEV. (MSL.) 500 DATE COMPLETED 7/2/02 EQUIPMENT 310 BACKHOE, 24"			
					MATERIAL DESCRIPTION			
0				SM	**TOPSOIL** Loose, damp, dark brown, Silty fine, Gravelly SAND; porous, roots			
2					**SAN MARCOS GABBRO** Very weathered, damp, medium gray-brown, moderately strong GABBRO; with thin tonalite dikes 6"-12" wide, with steep-vertical dips			
4								
6								
					TRENCH TERMINATED AT 7 FEET			

Figure A-30, Log of Trench T 21

PF

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

TRENCH T 22

ELEV. (MSL.) 466 DATE COMPLETED 7/2/02

EQUIPMENT 310 BACKHOE, 24"

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
2				GM	**TERRACE DEPOSIT** Dense to very dense, damp to moist, medium reddish-brown, Sandy coarse GRAVEL; massive, with subangular gabbro clasts 2"-18" diameter			
					-Becomes cemented durapan			
					TRENCH TERMINATED AT 3.5 FEET (REFUSAL)			

Figure A-31, Log of Trench T 22

PF

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ⏚ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. 06931-42-01

MEADOWOOD WATER RESERVOIRS

AIR TRACK BORING AT-1

Elevation - 802± Feet (MSL)

GEOCON
INCORPORATED

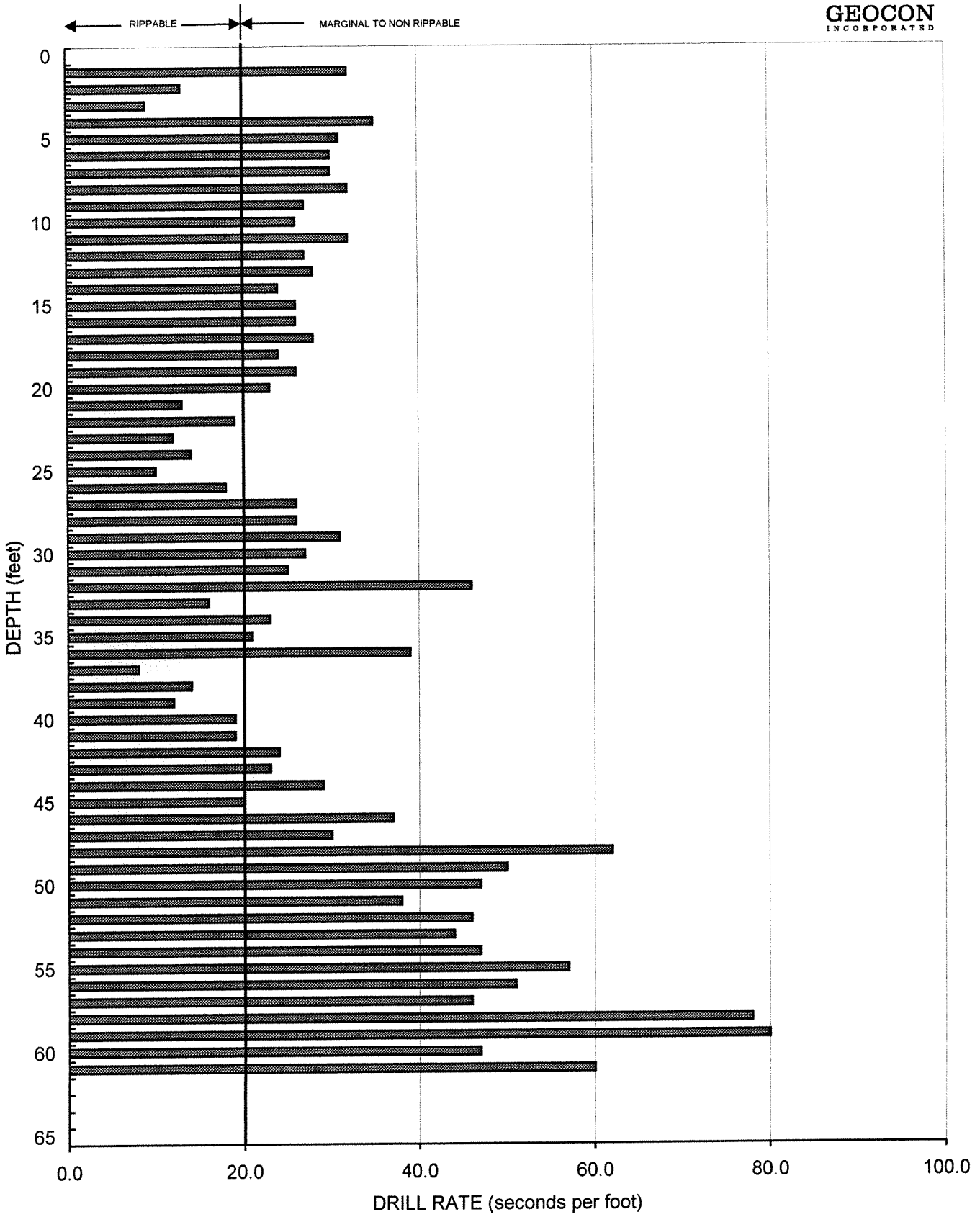


FIGURE A-1

AT001.xls

PROJECT NO. 06931-42-01

MEADOWOOD WATER RESERVOIRS

AIR TRACK BORING AT-2

Elevation - 800± Feet (MSL)

GEOCON INCORPORATED

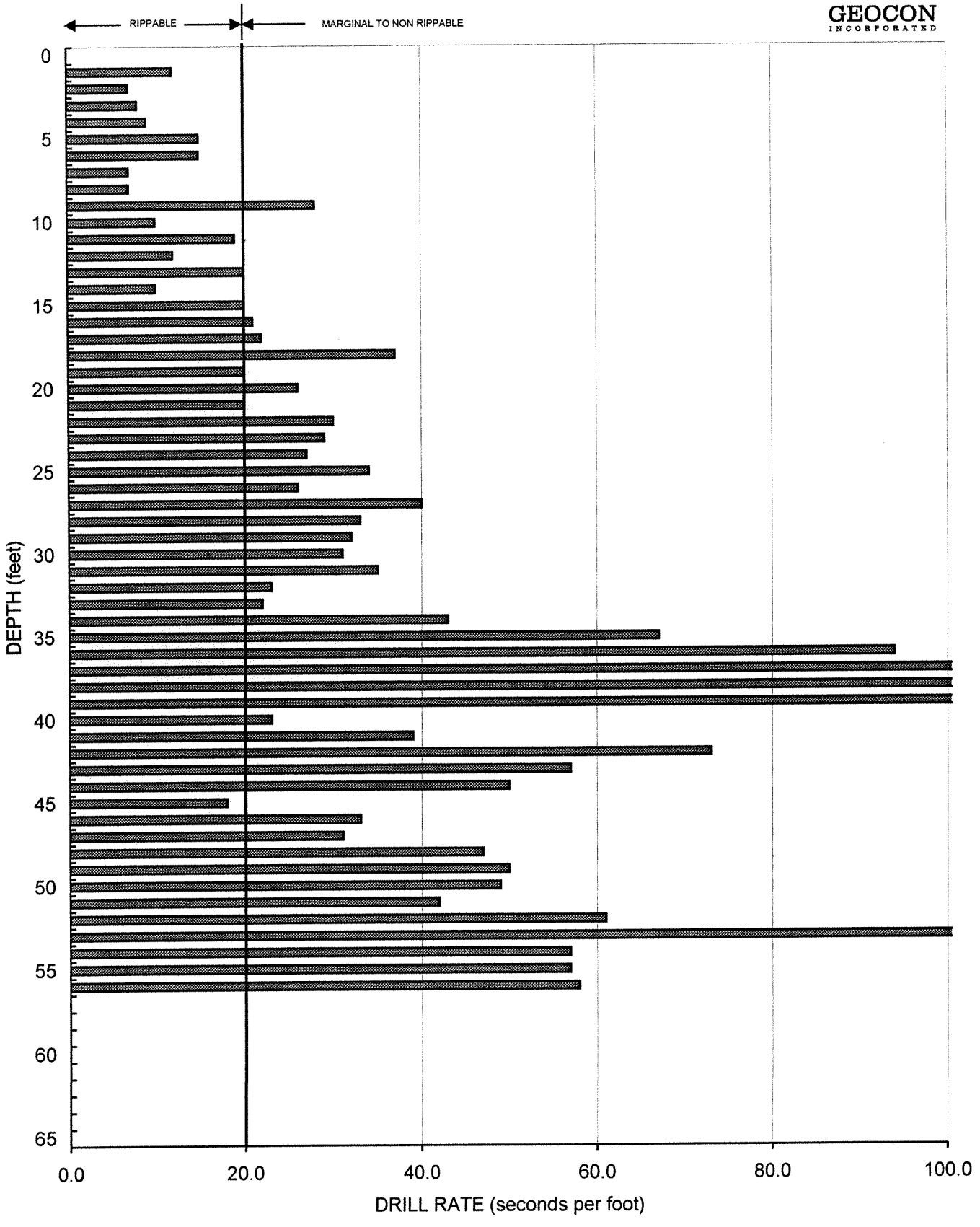


FIGURE A-2

AT002.xls

PROJECT NO. 06931-42-01

MEADOWOOD WATER RESERVOIRS

AIR TRACK BORING AT-3

Elevation - 802± Feet (MSL)

GEOCON INCORPORATED

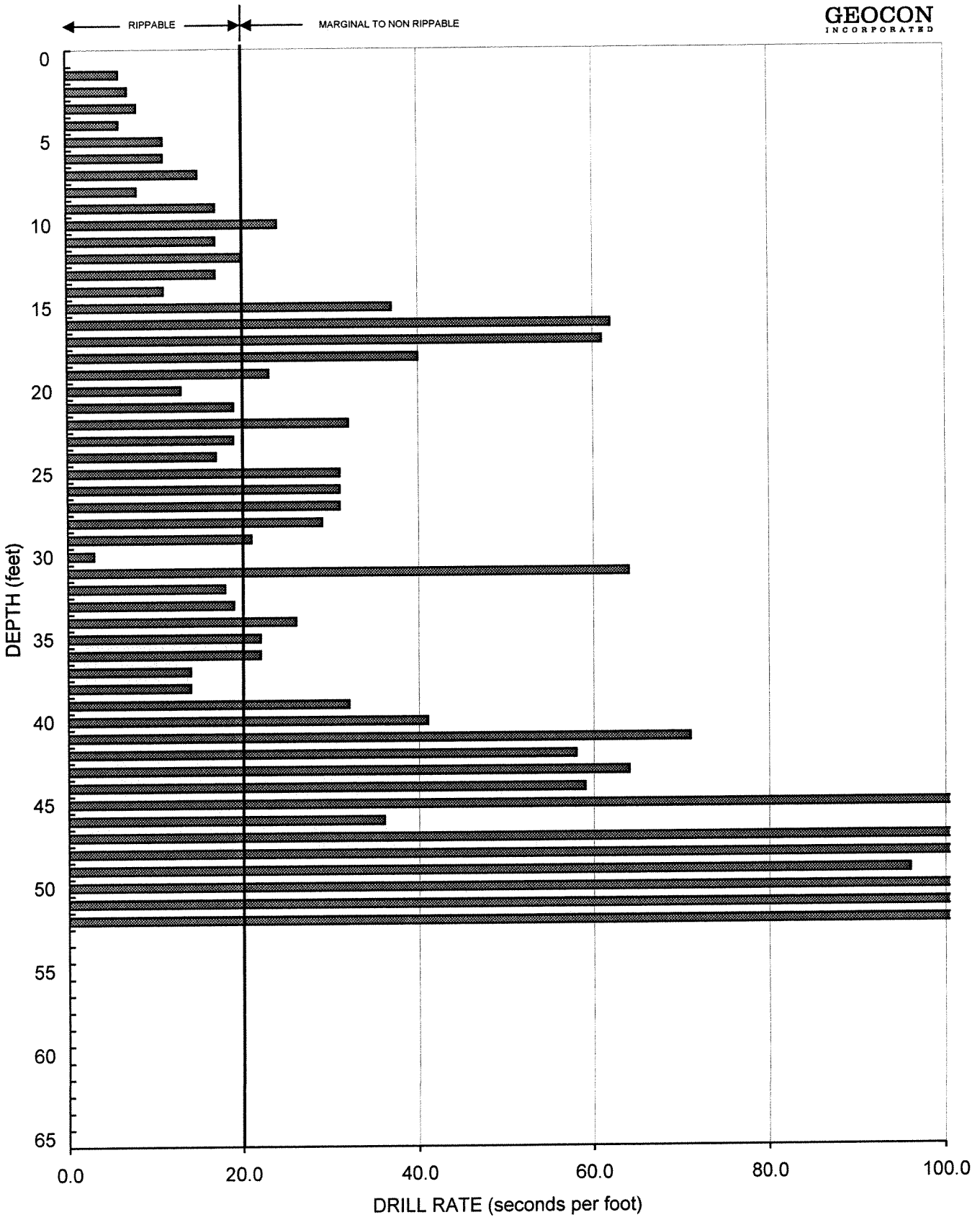


FIGURE A-3

AT003.xls

MEADOWOOD WATER RESERVOIRS

AIR TRACK BORING AT-4

Elevation - 812± Feet (MSL)

GEOCON INCORPORATED

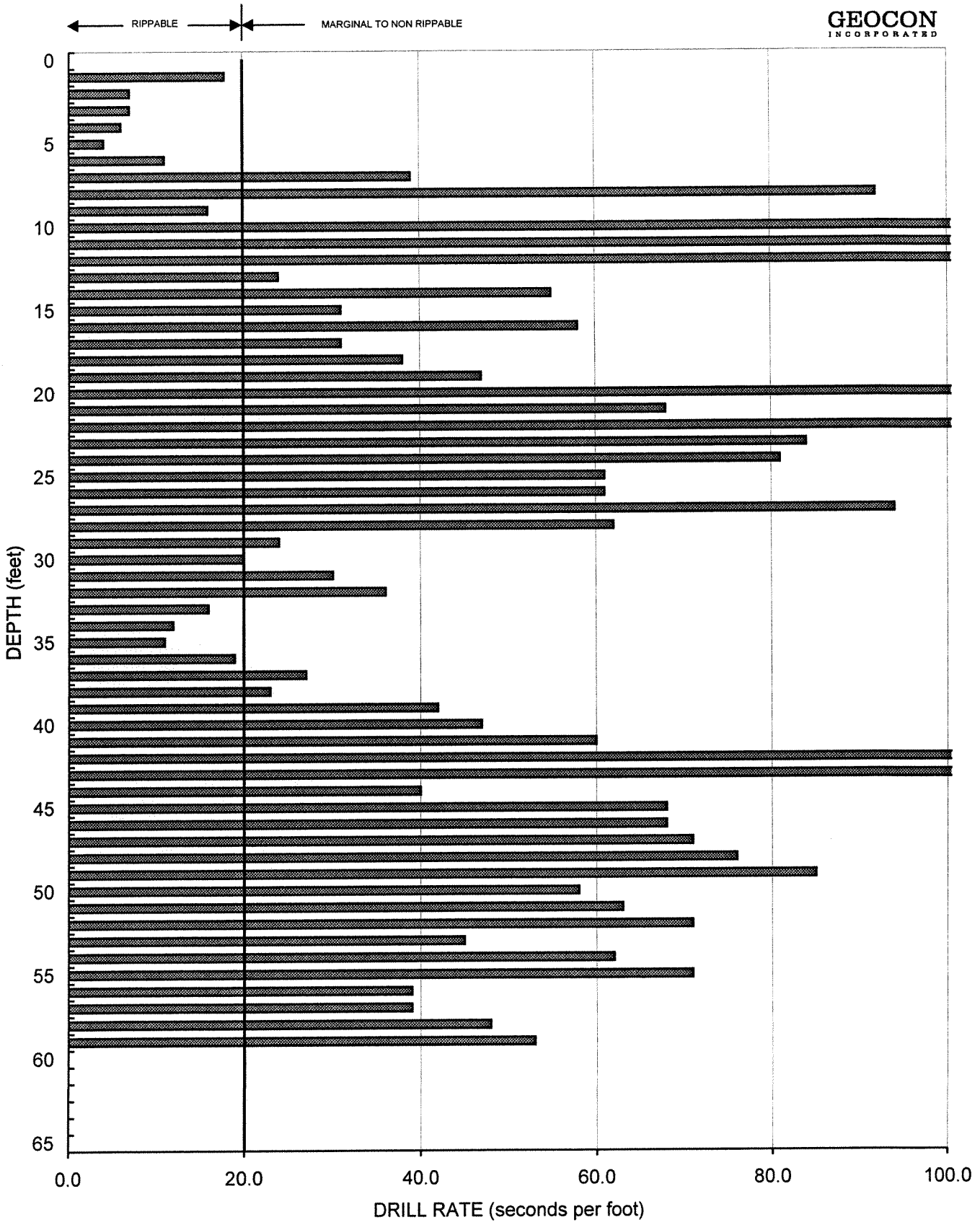


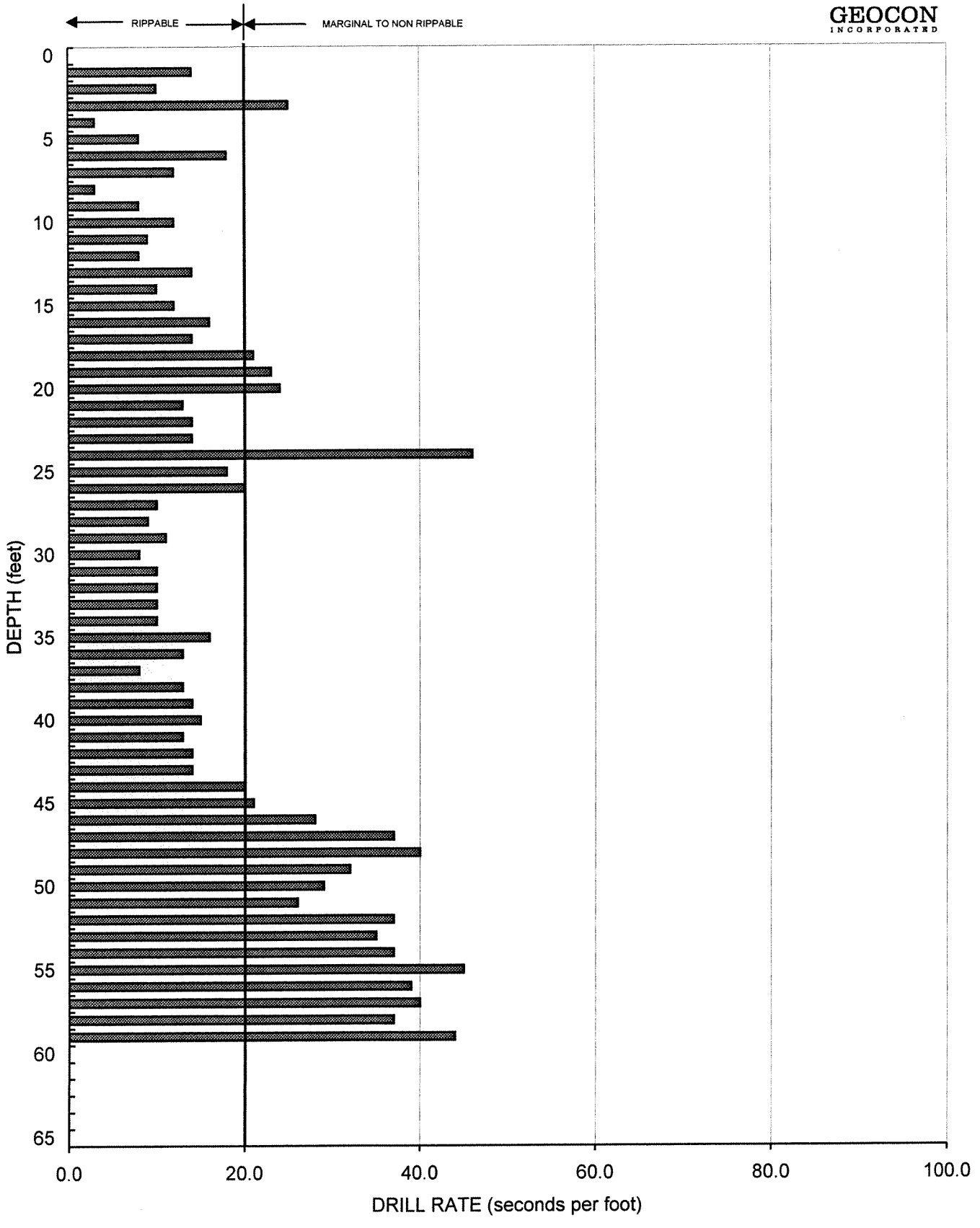
FIGURE A-4

MEADOWOOD WATER RESERVOIRS

AIR TRACK BORING AT-5

Elevation - 812± Feet (MSL)

GEOCON INCORPORATED



AT005.xls

FIGURE A-5

MEADOWOOD WATER RESERVOIRS

AIR TRACK BORING AT-6

Elevation - 775± Feet (MSL)

GEOCON INCORPORATED

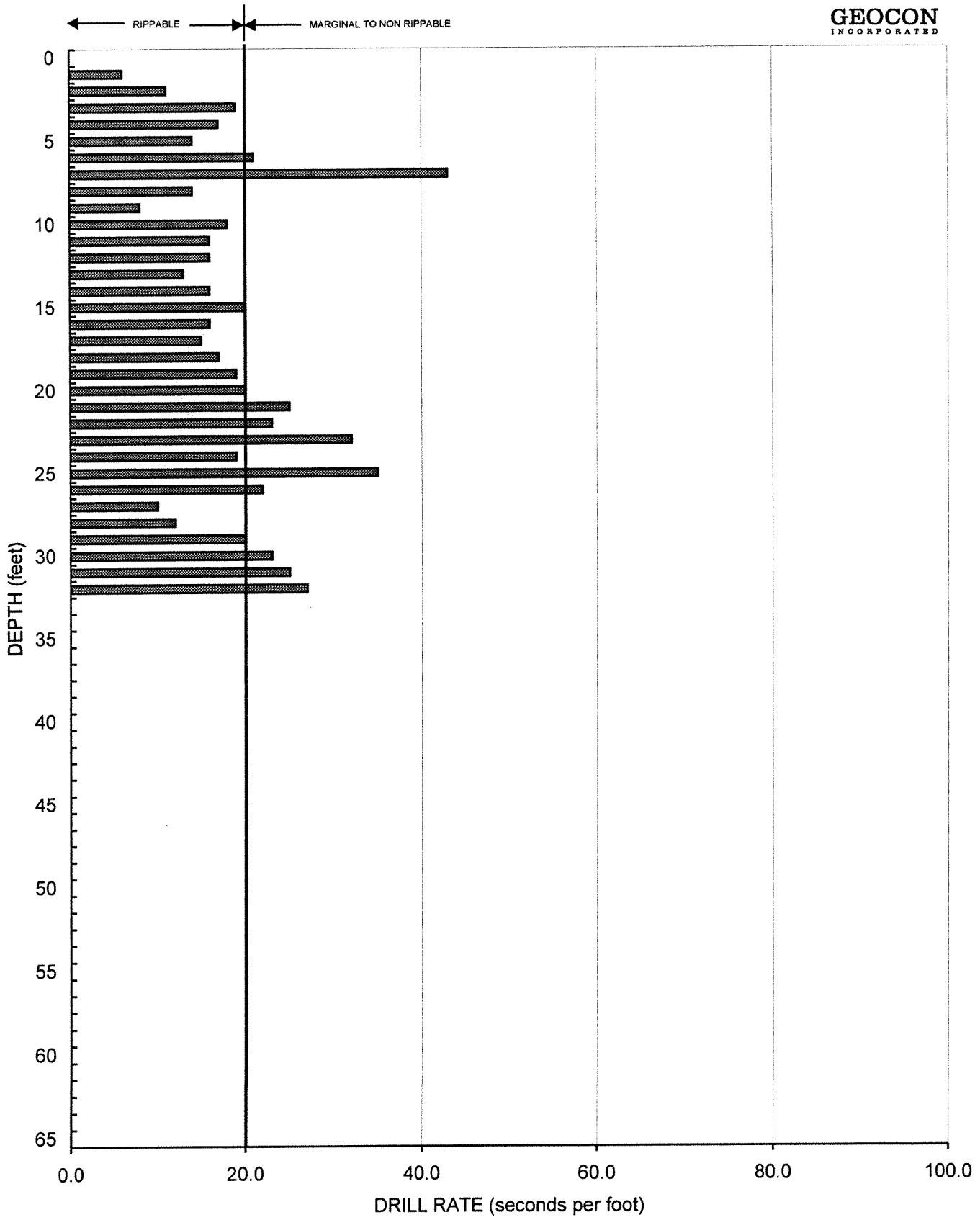


FIGURE A-6

AT006.xls